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Rob Sinterniklaas

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Development of the air campaign in Afghanistan and how it supported strategic and operational goals of civil and military policy makers between 2001 and 2016

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Chapter 1

1. Introduction

1.1. Airpower, Irregular Warfare, and Military Innovation

The air weapon has changed significantly during the last three decades. Changes involved implementation of new technologies, of which the range can be summarized by the terms "stealth", "precision" and "information technologies". Technological innovations are associated with the highly debated Revolution in Military Affairs (RMA), and made the air weapon much more effective than before. Their promising impact became clear in 1991, during operation *Desert Storm*, when a handful of information age weapons systems had an impact out of proportion to their numbers.[1] After 1991, mainly the United States embarked on a program by the name of "Transformation" that initially aimed at expanding and perfecting the technological innovations of its military. Later, the intellectual innovations Network Centric Warfare (NCW) and Effects Based Operations (EBO) provided the conceptual foundation for deployment of the information age military. The North Atlantic Treaty Organization (NATO) somewhat belatedly followed suit with its own transformation program, and at some points deviated from the developments in the United States. While not specifically an airpower revolution, the air weapon was an important theme in the debates associated with the RMA, as it arguably changed the relative roles of ground power and airpower during operations. Airpower became an important tool reaching an "asymmetric advantage" over the enemy, as the RMA had a beneficial influence on the traditional airpower combination of height, range, speed, flexibility, precision and lethality.[2] In short, technological and intellectual innovations improved military effectiveness, especially of the air weapon, and it spawned debates on organizational change.

During the same time the air weapon technologically and conceptually "became of age", as some theorists claim, the operational environment changed significantly as well. Conventional regular wars allegedly became a thing of the past, spurring the debates on irregular types of conflict and 4th Generation Warfare or Hybrid Warfare.[3] One type of warfare specifically became problematic with regard to the deployment of the air

1 Max Boot, *War Made New: Technology, Warfare, and the Course of History, 1500 to Today* (New York, NY: Penguin Group, 2006), 349.

2 David S. Fadok, "John Boyd and John Warden: Airpower's Quest for Strategic Paralysis", In: *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Philip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 2001), 357-398, 374, Richard P. Hallion, "Air and Space Power: Climbing and Accelerating", In: *A History of Air Warfare*, ed. John Andreas Olsen (Washington, DC: Potomac Books, 2010), 371-393, 374, Frans Osinga, "'Airpower' in Het Postmoderne Tijdperk: Revolutie in De Lucht", ['Airpower' in the Post-modern Era: Revolution in the Air] *Militaire Spectator* 172, no. 6 (2003): 338-357,Frans Osinga, "The Rise of Military Transformation", In: *A Transformation Gap?: American Innovations and European Military Change*, ed. Terry Terriff, Frans Osinga and Theo Farrell (Stanford, CA: Stanford University Press, 2010), 14-34, and Keith L. Shimko, *The Iraq Wars and America's Military Revolution* (Cambridge, UK: Cambridge University Press, 2010), 11-12.

3 Aaron Karp, Regina Karp and Terry Terriff, "The Fourth Generation Warfare Debate", In: Global Insurgency and the Future of Armed Conflict: Debating Fourth-generation Warfare, ed. Terry Terriff, Aaron Karp and Regina Karp, Routledge Global Security Studies, ed. Aaron Karp, Regina Karp and Terry Terriff (Abingdon and New York (NY): Routledge, 2008), 3-13.

weapon, namely Irregular Warfare (IW), and its subtype Counterinsurgency (COIN). Within counterinsurgency theory, the balance between "population-centric" and "target-centric" approaches shifted in favor of the former. As a result the theoretical interest and advised operational approach focused more on collaboration with the indigenous population. It downplayed the element of killing or capturing insurgent combatants, sometimes euphemistically referred to as "kinetic" engagements.[4] This potentially problematizes the role of airpower in irregular warfare because its RMA-induced increase of effectiveness allegedly benefitted mainly kinetic targeting in a more conventional setting, one that is characterized by clashing armies. An indicator of this tension is found in two American doctrines on the subject. The US Army and US Marine Corps doctrine on COIN of 2006 showed a different approach than the US Air Force's doctrine on Irregular Warfare of 2007.[5] It highlights the question which role airpower, and more specifically information age airpower, has in modern irregular wars.

So, characteristics of both modern airpower and modern irregular warfare changed. The logical follow-on question is how modern airpower adapted to the challenges posed by modern irregular warfare environments. Literature shows a recent renewal of the academic debate on the question of how and why military organizations change and adapt themselves to their environments. This debate is known as the debate on military innovation and adaptation.[6] In the context of the contemporary wars in Iraq and Afghanistan, it has spawned publications on innovation and adaptation of military organizations in these and other conflicts. Therefore, the development of the air weapon in irregular conflicts is, at least to some extent, a matter of military innovation and adaptation. It offers subjects of study and the opportunity to describe and explain their evolvement over time. The question thus becomes how information age airpower evolved within the context of irregular war, and how this evolvement can be explained.

1.2. Knowledge Gaps

Bodies of literature concerning all three topics are voluminous. One might suspect that the answer to the questions posed above could be more or less readily available in the vast

4 Boot, *War Made New*, 471-473, David Kilcullen, *Counterinsurgency* (Oxford, NY: Oxford University Press, 2010), David Kilcullen, *The Accidental Guerrilla: Fighting Small Wars in the Midst of a Big One* (Oxford, NY: Oxford University Press, 2009), and John A. Nagl, *Learning to Eat Soup with a Knife: Counterinsurgency Lessons From Malaya and Vietnam* (Chicago and London: The University of Chicago Press, 2005).

5 United States Headquarters, Department of the Army, *FM 3-24 / MCWP 3-33.5: Counterinsurgency*, December 15, 2006, http://www.fas.org/irp/doddir/army/fm3-24.pdf (accessed November 13, 2011), and United States Air Force, *Air Force Doctrine Document 2-3: Irregular Warfare*, August 1, 2007, www.fas.org/irp/doddir/usaf/afdd2-3.pdf (accessed November 13, 2011).

6 Stuart Griffin, "Military Innovation Studies: Multidisciplinary Lacking Discipline?", *Journal of Strategic Studies* 40, no. 1-2 (2017): 196-224, and Adam Grissom, "The Future of Military Innovation Studies", *The Journal of Strategic Studies* 29, no. 5 (2006): 905-934.

amount of related publications. This is, however, not the case. Four distinct knowledge gaps exist.

First, literature on airpower application largely ignores irregular warfare environments. For instance, influential introductory works such as *A History of Air Warfare* and *The Paths of Heaven: The Evolution of Airpower Theory,* both dedicate one chapter on the role of the air weapon in irregular conflicts.[7] The chapters of the recently published *Routledge Handbook of Air Power* are not organized along the lines of types of conflict. Consequently, it does not address the topic of airpower in irregular warfare directly, even though several contributing authors refer to irregular warfare environments in their respective chapters.[8] Martin van Creveld's *The Age of Airpower* might classify as an exception. This monograph on airpower history dedicated almost one hundred pages on "war amongst the people". It however shows severe academic shortcomings.[9]

Second, literature on irregular warfare largely ignores airpower application. Most of the mainstream contemporary works on counterinsurgency do not contain a section on the role of airpower. Examples include David Kilcullen's *The Accidental Guerrilla: Fighting Small Wars in the Midst of a Big One,* John Nagl's *Learning to Eat Soup with a Knife: Counterinsurgency lessons from Malaya and Vietnam,* and David Ucko's *The New Counterinsurgency Era: Transforming the U.S. Military for Modern Wars.* Even though authors' thoughts on the role of airpower in irregular warfare could be abstracted when studying a whole monograph, this role is not systematically investigated.[10] The exception in this context is provided by US Air Force (USAF) Major General Charles Dunlap, who wrote a chapter on airpower in the edited volume *Understanding Counterinsurgency: Doctrine, Operations, and Challenges.* Although informative, this one short chapter hardly constitutes proper incorporation of airpower application in the vast amount of irregular warfare literature.[11]

Third, airpower is hardly included in the discourse on military innovation and adaptation. This discourse shows increased interest in innovation and adaptation

7 Dennis M. Drew, "Air Theory, Air Force, and Low Intensity Conflict: A Short Journey to Confusion", In: *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Philip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 1997), 321-355, and James S. Corum, "Air Power in Small Wars: 1913 to the Present", In: *A History of Air Warfare*, ed. John Andreas Olsen (Washington, DC: Potomac Books, 2010), 327-350.

8 John Andreas Olsen (ed), *Routledge Handbook of Air Power* (London and New York, NY: Routledge, 2018).

9 Van Creveld argued that the role of airpower has started to undergo a steady decline shortly after the end of World War II, and that this decline continues to this day. In the concluding chapter Van Creveld claimed that he focused on military effectiveness on the enemy and relative to other services. He however did not qualify this effectiveness. So, the conclusions lack perspective:Martin Van Creveld, *The Age of Air Power* (New York, NY: Public Affairs Press, 2011). It also contains many factual errors. See: Karl P. Mueller, "Airpower: Two Centennial Appraisals", *Strategic Studies Quarterly* 5, no. 4 (2011): 123-132.

10 Kilcullen, *Accidental Guerrilla*, Kilcullen, *Counterinsurgency*, Andrew F. Krepinevich, *The Army and Vietnam* (Baltimore and London: The Johns Hopkins University Press, 1988), Nagl, *Learning to Eat Soup with a Knife*, Paul B. Rich, and Isabelle Duyvesteyn (eds), *The Routledge Handbook of Insurgency and Counterinsurgency* (London and New York, NY: Routledge, 2012), and David H. Ucko, *The New Counterinsurgency Era: Transforming the U.S. Military for Modern Wars* (Washington, DC: Georgetown University Press, 2009).

11 Thomas Rid, and Thomas Keany (eds), *Understanding Counterinsurgency: Doctrine, Operations, and Challenges* (London and New York, NY: Routledge, 2010). The chapter is: Charles J. Dunlap, "Airpower", In: *Understanding Counterinsurgency: Doctrine, Operations, and Challenges*, ed. Thomas Rid and Thomas Keany (London, New York: Routledge, 2010), 100-113.

of military organizations in the context of recent conflicts that could be classified as irregular, thereby overlapping with literature on irregular conflict. This includes a few publications on innovation and adaptation of opposing forces. However, the air weapon is rarely properly incorporated in this narrative, with the Israeli conflicts with Hamas and Hizbollah as possible exceptions.[12] Reversely, airpower-related research on innovation and organizational learning does not include irregular warfare into the set of case studies.[13] In this context, a publication of Donald Mrozek may be considered the exception. In a monograph on the American contribution to the Vietnam War (1956 - 1975), published in 1988, Mrozek focused analysis on the employment of airpower in relation to ground operations in South Vietnam, and discussed this in the contexts of airpower theory and of political and strategic goals of the conflict. He thereby effectively described adaptations of several elements relating to air operations, such as command arrangements, in search of options to make airpower more effective. He devoted a separate chapter on innovation, and used the examples of the developments of fixed-wing gunship aircraft, of use of B-52s in support of ground forces, and of defoliation programs, as examples. While not Mrozek's main argument, it can be deduced that lack of agreement on the nature of the operational environment, preconceived perceptions on the use of force, and interservice rivalry, impeded forceful innovation and adaptation of the air weapon, and led to compromise

12 See for instance: Ben Barry, "Adapting in War", *Survival* 54, no. 6 (2012): 171-182, Lazar Berman, "Capturing Contemporary Innovation: Studying IDF Innovation Against Hamas and Hizballah", *Journal of Strategic Studies* 35, no. 1 (2012): 121-147, Theo Farrell, "Improving in War: Military Adaptation and the British in Helmand Province, Afghanistan, 2006-2009", *The Journal of Strategic Studies* 33, no. 4 (2010): 567-594, Theo Farrell, Frans Osinga, and James A. Russell (eds), *Military Adaptation in Afghanistan*, Stanford Securities Studies (Stanford, CA: Stanford University Press, 2013), Theo Farrell and Sten Rynning, "NATO's Transformation Gaps: Transatlantic Differences and the War in Afghanistan", *The Journal of Strategic Studies* 33, no. 5 (2010): 673-699, Brian A. Jackson and Bryce Loidolt, "Considering Al-Qa'ida's Innovation Doctrine: From Strategic Texts to "Innovation in Practice"", *Terrorism and Political Violence*, no. 284-310 (2013), Raphael D. Marcus, "Military Innovation and Tactical Adaptation in the Israel-Hizballah Conflict: The Institutionalization of Lesson-Learning in the IDF", *Journal of Strategic Studies* 38, no. 4 (2015): 500-528, Assaf Moghadam, "How Al Qaeda Innovates", *Security studies* 22, no. 3 (2013): 466-497, Williamson Murray, "Military Adaptation in War", (Institute for Defense Analyses, September 18, 2009) http://www.au.af.mil/au/awc/awcgate/dod/ona_murray_adapt_in_war.pdf (accessed January 8, 2013), Williamson Murray, *Military Adaptation in War: With Fear of Change* (New York, NY: Cambridge University Press, 2011), Nagl, *Learning to Eat Soup with a Knife*, L.G.D. Richards, "NATO in Afghanistan: Transformation on the Front Line", *The RUSI Journal* 151, no. 4 (2006): 10-14, James A. Russell, "Innovation in War: Counterinsurgency Operations in Anbar and Ninewa Provinces, Iraq, 2005-2007", *The Journal of Strategic Studies* 33, no. 4 (2010): 595-624, James Avery Russell, *Innovation, Transformation, and War: Counterinsurgency Operations in Anbar and Ninewa, Iraq, 2005-2007* (Stanford, CA: Stanford Security Studies, 2011), Chad C. Serena, *A Revolution in Military Adaptation: The US Army in the Iraq War* (Washington, DC: Georgetown University Press, 2011), Shimko, *Iraq Wars*, Robert R. Tomes, *US Defense Strategy From Vietnam to Operation Iraqi Freedom: Military Innovation and the New American War of War, 1973-2003*, Strategy and History, ed. Colin Gray and Williamson Murray (London and New York, NY: Routledge, 2007), David Ucko, "Innovation or Inertia: The US Military and the Learning of Counterinsurgency", *Orbis* 52, no. 2 (2008): 290-310, Ucko, *New Counterinsurgency Era*, and Mark Webber, "NATO: The United States, Transformation and the War in Afghanistan", *The British Journal of Politics & International Relations* 11, no. 1 (2009): 46-63.

13 Most recent study is: Adam R. Grissom, Caitlin Lee and Karl P. Mueller, *Innovation and the United States Air Force: Evidence From Six Cases* (Santa Monica, CA: RAND Corporation, 2016). Grissom, Lee and Mueller stated that they selected straightforward cases, due to limitations of time and resources (p.4). An earlier study by Charles Abbot on organizational learning stopped analysis of the recent conflicts in Afghanistan and Iraq after major combat operations ended (Charles Spencer Abbot, "Flying to Learn: Organizational Learning and the Evolution of U.S. Airpower Doctrine and Practice, 1991-2003", (Dissertation, Fletcher School of Law and Diplomacy, September, 2010) http://search.proquest.com/docview/883387011/EE018ABA96554CCDPQ/1?accountid=35226 (accessed January 30, 2015)).

agreements and absorption of innovations into tasks beyond their intended origin.[14] Mrozek's publication however does not refute the notion that, in relation to the theoretical context of military innovation and adaptation and in relation to the conceptual context of contemporary irregular warfare environments, airpower is studied and analyzed less thoroughly than ground power or even the enemy.

Fourth, and partly as a consequence of the existence of the other three gaps, there are few publications that address the topic of airpower in irregular warfare directly. Although there seems to be an increase of attention since 2008, publications that address it are still few and far between. Arguably the best historical monograph dealing with the role of the air weapon in conflicts that do not constitute a clash between large regular armed forces is *Airpower in Small Wars: Fighting Insurgents and Terrorists*, written in 2003 by James Corum and Wray Johnson. Corum and Johnson however analyze the role of the air weapon in conflicts that pre-date the RMA.[15] Historiography reveals the existence of a handful of publications that compare the role airpower played in several irregular wars, and some of them also address changes resulting from the RMA. However, they do not match Corum and Johnson's publication in terms of comprehensiveness and thoroughness of the study.[16] In addition to these studies, there are publications on the role of airpower in specific conflicts that could be classified as irregular.[17] Scientific value of these publications however varies

14 Donald J. Mrozek, *Air Power and the Ground War in Vietnam. Ideas and Actions* (Maxwell Air Force Base, AL: Air University Press, January, 1988). The chapter on innovation was a revised version of an article published four years earlier in the *Air University Review*: Donald J. Mrozek, "The Limits of Innovation: Aspects of Air Power in Vietnam", *Air University Review* January-February (1985) http://www.au.af.mil/au/afri/aspj/airchronicles/aureview/1985/jan-feb/mrozek.html (accessed January 12, 2017). This is by no means an argument that the US was the only country that innovated and adapted in the air weapon in support of COIN operations. As will be described in chapter three, the USSR adapted the air weapon in Afghanistan as well. Mrozek was however one of the few authors that have made the connection between airpower, irregular war, and innovation.

15 James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence, KS: University Press of Kansas, 2003).

16 The other publications are: A.K. Agarwal, *The Third Dimension: Air Power in Combating the Maoist Insurgency* (New Delhi: Vij Books India, 2013), David J. Dean, *The Air Force Role in Low-intensity Conflict* (Maxwell Air Force Base, AL: Air University Press, 2001), James Fergusson, and William March (eds), *No Clear Flight Plan: Counterinsurgency and Aerospace Power* (Winnipeg, MB: Centre for Defense and Securities Studies, The University of Manitoba, 2008), Joel Hayward (ed), *Air Power, Insurgency, and the "War on Terror"* (Cranwell: Royal Air Force Centre for Air Power Studies, 2009), http://www.airpowerstudies.co.uk/Hayward%20Insurgency%20Book%20%20A5%20Web.pdf (accessed November 13, 2011), Sanu Kainikara (ed), *Friends in High Places: Airpower in Irregular Warfare* (Canberra: Air Power Development Centre, 2009), http://airpower.airforce.gov.au/Publications/Details/393/Friends-in-High-Places-Air-Power-in-Irregular-Warfare.aspx (accessed November 13, 2011), Sebastian Ritchie, *The RAF, Small Wars, and Insurgencies: Later Colonial Operations, 1945-1975* (Air Historical Branch, 2011), http://www.airpowerstudies.co.uk/RAF%20and%20Small%20Wars%20Part%202.pdf (accessed January 31, 2013), and Philip Anthony Towle, *Pilots and Rebels: The Use of Aircraft in Unconventional Warfare 1918-1988* (London: Brassey's, 1989). Databases indicate the existence of a dissertation by Tamara Duffield Koontz, written in 2010 and called *The Role of Airpower in Counterinsurgency During the Twentieth Century: Case Studies From the United States Air Force and Israeli Air Force*. The dissertation may be of interest for this study. Unfortunately, the dissertation is not widely disseminated, and is not consulted for reasons of non-availability.

17 William M. Arkin, *Divining Victory: Airpower in the 2006 Israel-Hezbollah War* (Maxwell Air Force Base, AL: Air University Press, 2007), Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (New York, NY: The Free Press, 1989), Mahmood Ahmed Ghazi, *Afghan War & the STINGER Saga: How the Air Battle Was Fought and Won in Afghanistan* (Lahore: Ahmad Publications, 2013), Dag Henriksen (ed), *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives* (Maxwell Air Force Base, AL: Air University Press, 2014), Karl P. Mueller (ed), *Precision and Purpose: Airpower in the Libyan Civil War* (Santa Monica, CA: RAND Corporation, 2015), https://www.rand.org/pubs/research_reports/RR676.html (accessed July 6, 2017), Benjamin S. Lambeth, *Airpower Against Terror: America's Conduct of Operation Enduring Freedom* (Santa Monica,

greatly. Also, some authors focus their research on the phases or parts of the conflicts that most resemble traditional conventional deployment of airpower, stopping when major combat operations ended. They are therefore less helpful for understanding the role of airpower within the entire spectrum of irregular warfare.[18] Finally, as a body of knowledge, the publications only reflect research on a handful of conflicts, while the air weapon was deployed in several dozen from the invention of the airplane onwards.[19] So, as far as monographs or edited volumes are concerned, literature on airpower in irregular warfare is scarce. Outside the realm of monographs and edited books, literature on airpower and irregular warfare is more voluminous. There are several hundreds of journal articles, magazine articles, theses, and reports available that deal with the subject of airpower and irregular warfare. One has to dig deep, however, to distinguish a professional discourse on the role of airpower in irregular warfare, and the direction the debate is taking.

1.3. The Problem

This current state of research is problematic. The result of the four gaps is that the three subject matters - airpower, irregular warfare, and military innovation and adaptation - do not seem to meet, at least not to the extent it does for land power. Consequently, the body of knowledge with regard to irregular warfare is overly land-centric. However, no scholar would argue that airpower is not important in irregular environments. On the contrary, the air weapon is often described in terms of delivering firepower, for which it is celebrated for its life-saving support to ground forces. It is however also reviled for inducing collateral damage, which in most irregular environments is detrimental for reaching strategic objectives. In other words, airpower in irregular warfare is acknowledged as being important, but with paradoxical effects.[20]

CA: RAND Corporation, 2005), http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG166-1.pdf (accessed November 13, 2011), Benjamin S. Lambeth, *Air Operations in Israel's War Against Hezbollah. Learning From Lebanon and Getting It Right in Gaza* (Santa Monica, CA: RAND Corporation, 2011), https://www.rand.org/pubs/monographs/MG835.html (accessed July 6, 2017), Benjamin S. Lambeth, *The Unseen War: Allied Air Power and the Takedown of Saddam Hussein* (Annapolis, MD: Naval Institute Press, 2013), David E. Omissi, *Air Power and Colonial Control: The Royal Air Force 1919-1939*, Studies in Imperialism (Manchester and New York, NY: Manchester University Press, 1990), Tim Ripley, *Air War Afghanistan: US and NATO Air Operations From 2001* (Barnsley: Pen & Sword Books Aviation, 2011), and Arun Kumar Tiwary, *Air Power and Counter Insurgency. A Review: Jammu and Kashmir As a Model* (New Delhi: Lancer's Books, 2002). This list is not exhaustive. Some publications are not consulted due to limited availability. This is for instance the case with: Anne Baker and Ronald Ivelaw-Chapman, *Wings Over Kabul: The First Airlift* (London: Kimber, 1975), Bernard C. Nalty, *Air Power and the Fight for Khe Sanh* (Washington, D.C.: DIANE Publishing, 1986), and Roy Nesbit and Dudley Cowderoy, *Britain's Rebel Air Force: The War From the Air in Rhodesia, 1965-1980* (London: Grub Street, 1998).

18 This is for instance the case with: Clodfelter, *Limits of Air Power*, Nalty, *Khe Sahn*, Lambeth, *Airpower Against Terror*, and Lambeth, *Unseen War*.

19 Corum and Johnson, *Airpower in Small Wars*, 1-10.

20 Lara M. Dadkhah, "Close Air Support and Civilian Casualties in Afghanistan", *Small Wars Journal Website* (December 30, 2008) http://smallwarsjournal.com/jrnl/art/close-air-support-and-civilian-casualties-in-afghanistan (accessed October 13, 2014), and Dag Henriksen, "Introduction", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), xxiii-xxxiii, xxiv-xxv.

The problem with this situation is twofold. First, the seeming separation of airpower and irregular warfare could invoke simplistic and contradictory conclusions on the role of the air weapon in irregular environments, focusing on either the life saving element or the life taking element. However, the dynamics of this seeming paradox require additional research and need to be put into the proper perspective in order to fully understand the contribution of the air weapon in irregular environments. Airpower involves more than employment of weapons, and the entire realm of air operations has to be taken into account when evaluating the role of the air weapon in irregular warfare environments. Second, the role of airpower needs to be understood within the proper operational context, meaning within the context of the required effects at the strategic and operational levels of military operations as well as at just at the tactical level. Implicit scholarly focus on a limited set of tactical effects on a limited set of strategic and operational goals leads to a limited picture, and therefore to incomplete understanding of the military campaign. Reversely, this incomplete understanding is not compensated by airpower scholars, as they show little interest in irregular conflicts. As history among other things informs both military theory and doctrine[21], this lack of interest potentially leads to incomplete airpower theory, and incomplete or contradictory doctrine on irregular warfare.

A similar situation exists within the context of military innovation and adaptation, albeit more at a theoretical level. As with the operational discourses, the discourse on military innovation has become focused on land power. Therefore, the understanding of military innovation and on airpower innovation in irregular environments remains incomplete. A study by Adam Grissom, Caitlin Lee, and Karl Mueller on innovation of the USAF provides a valuable starting point, as it concluded that the US Air Force, and possibly air arms in general, appeared to have a distinct approach to innovation, with a higher degree of decentralization and a smaller role for doctrine than literature suggests. By doing so, they stated that the US Air Force also differed from other services. Although valuable, the authors themselves acknowledged that they based their conclusions on a limited set of case studies. And none of the case studies involved an irregular conflict.[22]

So in short, the four identified knowledge gaps lead to incomplete understanding of irregular warfare, the role of airpower in it, and of innovation dynamics of military organizations.

Simultaneously, there are indications that the research theme, airpower innovation and adaptation in irregular warfare environments, is controversial. Especially western militaries have a reputation of failing to adapt to irregular operating environments and incorporate lessons learned into their organizations. They historically suffered from a "counterinsurgency syndrome": a cyclical tendency to forget counterinsurgency experiences and re-focus on high intensity warfare. Identified reasons for this are lack of

21 Floribert Baudet and Eric A. Sibul, "Historical Research in the Military Domain", In: *Routledge Handbook of Research Methods in Military Studies*, ed. Joseph Soeters, Patricia M. Shields and Sebastiaan Rietjens (London and New York: Routledge, 2014), 67-77, 68-69.

22 Grissom, Lee, and Mueller, *Innovation and USAF*, vii-ix, and 3.

conceptual clarity, engagement front-loaded with assumptions, and an offensive culture of the military.[23] Another term that can be found in this respect is the "phoenix cycle". In an airpower-related article, George Monroe described this cycle, consisting of nine phases, in which services were forced to take initial actions to take the necessary steps to adapt to irregular warfare, after which the process gained momentum. But, after the end of the specific conflict, it was treated as an aberration, with the services disposing lessons learned and reconfiguring their organizations back to other priorities, only to be forced to repeat the cycle during the next irregular conflict.[24] Since then, this "phoenix cycle" can be found in a handful of other publications on airpower in irregular conflicts.[25] These classifications can provide useful clues on what had changed during a cycle, and what the drivers were. They also suggest that the processes of military innovation and adaptation might be problematic, despite visible change. It is however not enough to comprehensively explain the developments surrounding airpower in irregular warfare environments. It remains unclear what exactly the drivers and manifestations were, and how they related to each other.

The discourse on military innovation and adaptation further complicates research due to its own dynamics. David Ucko in 2009 aptly summarized these dynamics in the following manner: "*There is no consensus on precisely which agent of change is the most influential in prompting military innovation. Plausibly, such ranking would depend on the particular institution and the circumstances facing it*".[26] Since then, the discourse has made progress, but Ucko's quote implies two statements that are still current today. First, he implicitly invites scholars to isolate institutions and their particular circumstances, and study those within the context of military innovation. This has an impact on the research topic, and therefore on the research question. Second, Ucko hypothesizes that every institution might have its own innovation dynamic. After all, he observes a lack of consensus of relating causal factors, or their mutual relationships, prohibiting formulation of a generally applicable theory

23 Ucko, *New Counterinsurgency Era*, 44-45.

24 George M. Monroe, "The Rebirth of the Outback Air Force", *Armed Forces Journal* (2008) http://search.proquest.com/docview/200739289/fulltext/C21B296C8D104182PQ/1?accountid=35226 (accessed September 8, 2016).

25 Athanasia G. Austin, "Development of US Irregular Warfare Capabilities", *The Journal of the JAPCC* 6 (2007): Additional article http://www.japcc.org/wp-content/uploads/JAPCC_Journal_Edition_6.pdf (accessed June 15, 2017), 1, and Patrick Daley, "Exporting Airpower: The Challenges of Building Partner Nation Air Capacity for Irregular War", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2008) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZVgtZWRpYS8zNzAyOA==.pdf (accessed July 3, 2013), 111-112. The official website of Nellis Air Force base mentioned it in relation to the break of the cycle (Nellis Public Affairs Office, "Irregular Warfare Center Opens", *Website Nellis Air Force Base, US Air Force* (April 16, 2009) http://www.nellis.af.mil/news/story.asp?id=123144726 (accessed February 16, 2016)). Hock did not refer specifically to the analogy of the phoenix, but did describe the cycle of creating squadrons with specific tasks and dismantling them afterwards (George H. Hock, "Closing the Irregular Warfare Air Capability Gap. The Missing Puzzle Piece: Rugged Utility Aircraft and Personnel", *Air & Space Power Journal* 24, no. 4 (2010): 57-68, 59). Rolleston, Trimillos and Gill hinted that the services could give the analogy of the phoenix a positive twist by suggesting that some elements, in this case a system of air advisors, simply could be resurrected, like a phoenix out of the ashes, when the need arose (Mort Rolleston, Ric Trimillos and Tom Gill, "Aviation Security Cooperation: Advancing Global Vigilance, Global Reach, and Global Power in a Dynamic World", *Air & Space Power Journal* 28, no. 5 (2014): 92-117, 93).

26 Ucko, *New Counterinsurgency Era*, 15.

of military innovation and adaptation. This lack of consensus touches upon a frame of reference.

1.4. Research Question

For reasons relating to the first of Ucko's implicit statements, and for reasons of practicality and feasibility of the research, this study isolates airpower in irregular warfare as theme of study. As for the particular circumstances, it is desirable to select circumstances in which information age airpower operated, because it might highlight differences with airpower contributions of earlier times. A few conflicts qualify. The conflicts in Afghanistan between 2001 and 2015 and in Iraq between 2003 and 2011 offer the best prospects. During both conflicts a wide range of airpower related activities took place in various stages of irregular warfare.[27] Afghanistan is of special interest for a variety of reasons. Contrary to Iraq, the conflict in Afghanistan had a recent precedent during the Soviet involvement in the country between 1979 and 1989. This allows scholars to compare the airpower contributions. Second, as will be argued below, the military contribution of the opening stages of the latest conflict in Afghanistan, between late 2001 and early 2002, was remarkable to the extent that it received its own classification: the "Afghan Model". This was induced by the "transformed" military of the United States, and it became a benchmark for subsequent operations. Finally, Afghanistan is of special interest due to involvement of NATO. As NATO at least formally led the military effort for most of the duration of the conflict, the conflict in Afghanistan represented the largest "out of area" operation of an organization that was established and tailored for collective defense in the context of the Cold War. So, to a large extent the topic for this study will be NATO airpower in Afghanistan between 2001 and 2015, although parts of the air campaign were executed under direct leadership of NATO's prime member, the United States.

Historiography on the recent conflict in Afghanistan shows that a comprehensive study on this topic is lacking, and that it reflects the knowledge gaps identified above. Standard works on the Afghan conflict, such as *In the Graveyard of Empires: America's War in Afghanistan* by Seth Jones, or *Descent Into Chaos: The US and the Failure of Nation Building in Pakistan, Afghanistan, and Central Asia* by Ahmed Rashid, acknowledge the role of airpower during the opening stages of operation *Enduring Freedom*. However, after these opening stages ended, the role of the air weapon moved to the background. It was only described in terms of the fire support it delivered for troops that were in a Troops In Contact (TIC) situation, or in connection with the number of civilian casualties the air weapon inflicted.[28] They therefore

27 These other conflicts include those in Libya in 2011 and in Iraq after 2011. Both operations cover a limited set of activities in the context of airpower in irregular warfare. See: Mueller, *Precision and Purpose* for operations above Libya. There is no comparable study on latest operations above Iraq and Syria.

28 Seth G. Jones, *In the Graveyard of Empires: America's War in Afghanistan* (New York, NY and London: W.W. Norton, 2009), and Ahmed Rashid, *Descent Into Chaos: The US and the Failure of Nation Building in Pakistan, Afghanistan, and Central Asia* (New York:

reinforce the tendency towards the simplistic and contradictory conclusions mentioned above. Literature on airpower in Afghanistan is not comprehensive enough to fill this gap. Arguably, there are only two well-referenced books on airpower in Afghanistan. The first is Benjamin Lambeth's *Airpower Against Terror: America's Conduct of Operation Enduring Freedom*. This monograph however stops investigating the period after 2002.[29] The other monograph is *Flight Risk: The Coalition's Air Advisory Mission in Afghanistan, 2005-2015*, written by Forrest Marion. Although this monograph covers most of airpower's period of employment in Afghanistan, it does so from the perspective of only one context, namely air advising.[30] There are only two more books on airpower in Afghanistan that expand their analyses beyond the fall of the Taliban. These are *Air War Afghanistan: US and NATO Air Operations From 2001* by Tim Ripley, and *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, edited by Dag Henriksen. These two publications do not have any academic pretensions, and lack either context, depth, or comprehensiveness.[31]

So in short, there is reason to believe that historiography of airpower in Afghanistan, and airpower in irregular conflict, is incomplete, and that therefore so are understanding of the entire military campaign in Afghanistan and understanding of operational employment of information age airpower.

This is remarkable, because even a cursory glance at the role of airpower in Afghanistan shows that its posture changed significantly during the course of the conflict, requiring explanation. Operation *Enduring Freedom* started in 2001 as a strictly US Counterterrorism (CT) operation to oust the Taliban regime and dismantle Al Qaida. Modern airpower proved to be highly effective when deployed in a combination with special forces and indigenous forces. This combination became known as the "Afghan Model", and its applicability has been debated since its successful implementation in 2001 and 2002.[32] After the Taliban regime fell, the NATO-led International Security and Assistance Force (ISAF) entered the stage with a Stabilization and Reconstruction (S&R) task. But due to the emergence of an insurgency, the conflict evolved into a COIN mission. This change required different postures of the air weapon, namely protection and support of ground forces, while simultaneously continuing the CT mission.[33] Finally, the task of security in Afghanistan had to be handed over to the Afghan security forces. This meant that western airpower had a role of training, advising and assisting the Afghan Air Force (AAF). That part of the

Viking, 2008).

29 Lambeth, *Airpower Against Terror*.

30 Forrest L. Marion, *Flight Risk: The Coalition's Air Advisory Mission in Afghanistan, 2005-2015*, The History of Military Aviation, ed. Paul J. Springer (Annapolis, MD: Naval Institute Press, 2018).

31 Henriksen, *Airpower in Afghanistan*, and Ripley, *Air War Afghanistan*.

32 Richard Andres, "The Afghan Model in Northern Iraq", *Journal of Strategic Studies*. 29, no. 3 (2006): 395-422, Richard B. Andres, Craig Wills and Thomas E. Griffith, "Winning with Allies: The Strategic Value of the Afghan Model", *International Security* 30, no. 3 (2006): 124-160, Stephen D. Biddle, "Allies, Airpower, and Modern Warfare: The Afghan Model in Afghanistan and Iraq", *International Security* 30, no. 3 (2006): 161-176, and Lambeth, *Airpower Against Terror*.

33 Robert Perkins, "Airpower in Afghanistan: How NATO Changed the Rules, 2008-2014", (Action on Armed Violence, London, December, 2014) http://reliefweb.int/sites/reliefweb.int/files/resources/AOAV-Air-Power-in-Afghanistan.pdf (accessed November 28, 2015).

mission became the main effort in preparation of the formal handover of security tasks to the Afghan government on January 1, 2015.[34] On that date, NATO's ISAF mission ended and operation *Resolute Support* started. Simultaneously, the American operation *Enduring Freedom* ended, and became operation *Freedom's Sentinel*. These new missions had the primary task of training, advising and assisting the Afghan air force, that was required to deliver airpower with increased independence. In short, there are many indications that the air weapon indeed adapted significantly between 2001 and 2015. Thus, the primary timeframe for study will be from commencement of air operations in 2001 until the end of ISAF in 2015. However, mainly the task of building the AAF was not finished in 2015 and continued into 2016 and beyond. Some key developments were initiated before January 1, 2015, but their effects became visible in 2016. Therefore, the timeframe of study will be extended to include 2016 in order to incorporate these developments into the analysis.

The main research question of this study thus becomes: what was the role of airpower during the conflict in Afghanistan during the period between 2001 and 2016, how did this role evolve, and how can this evolving role be explained? The recent conflict in Afghanistan offers the opportunity to correct and update understanding of the recent military campaign in Afghanistan, because it adds airpower to the currently land-centric narrative. It also corrects and updates understanding of airpower operating in irregular environments, supplementing both airpower literature and literature on airpower in irregular warfare with an additional case study which incorporates the element of the information revolution. Formulated differently, answering this question first delivers a comprehensive description of the contribution of the air weapon within the context of the military campaign in Afghanistan for the period that extends beyond 2002. It thereby incorporates the air weapon into the narrative of the conflict. Second, by describing and explaining developments of the air weapon in the irregular warfare environment of Afghanistan, this study establishes links with literature on airpower, irregular warfare, and airpower in irregular warfare.

1.5. Research Method: Using the Discourse on Military Innovation and Adaptation

Although the research question addresses distinct knowledge gaps within the narrative of the recent western military involvement in Afghanistan, it is too wide-ranging to answer it in a coherent manner without a frame of reference. Without such a frame, formulation of subquestions becomes problematic. The discourse on military innovation and adaptation is helpful in this respect. It offers the opportunity to narrow the seemingly endless set of subquestions into a manageable one, without losing coherence. It potentially also offers

34 Michael A. Keltz, "Getting Our Partners Airborne: Training Air Advisors and Their Impact In-theater", *Air & Space Power Journal* 28, no. 3 (2014): 5-28, and Forrest L. Marion, "Training Afghan Air Force Pilots, 2006-2011", *Air Power History* 63, no. 1 (2016): 22-31.

options to analyze and explain certain changes the air weapon went through during deployment in and over Afghanistan.

Using the discourse on military innovation and adaptation offers both opportunities and challenges. First opportunity is that the discourse potentially offers hypotheses for driving factors on change of military organizations. In other words, it offers explanatory theories that can be developed or tested. Furthermore, a study on airpower innovation and adaptation potentially updates the discourse on military innovation and adaptation in general. The discourse on military innovation and adaptation shows that a study on the changing role of airpower in Afghanistan can be a welcome addition. There are several publications on innovation and adaptation of NATO in Afghanistan, or on military units that had operated in Afghanistan. These publications however do not incorporate the air weapon.[35] So, adopting the discourse on military innovation and adaptation as a source for a theoretical framework offers a third opportunity besides filling the identified knowledge gaps on the conflict in Afghanistan and airpower theory: it could serve as a case study on wartime innovation of a specific type of military organization.

There are however two challenges that prevent adoption of a theoretical framework based on the discourse on military innovation and adaptation unreservedly. First reason is related to the research of this particular study. As it investigates the role of airpower in irregular warfare, with established links with literatures on airpower and irregular warfare, adding a theoretical framework potentially leads to conceptual convolution. The second reason is that the discourse on military innovation and adaptation is convoluted by itself. As Ucko observed, scholars associated with the discourse lack consensus on the agents of change. The situation is, however, more severe than the quote above suggests. A recent discourse analysis shows that scholars in the academic field of military innovation and adaptation lack consensus on the most basic of issues, which include the definition of the subject matter, and the identification of and the relationship between dependent, independent and intervening variables. Most fundamentally, the discourse shows different functions of the related research. The discourse analysis revealed that associated research could serve the function of theory building or theory testing, of offering advice for enhancing the practice of organizational innovation, and of explaining historical developments. These functions largely remain implicit in the discourse, but significantly influence related research questions and frameworks. The result of these developments is that there is a plethora of publications that address the topic of military innovation. However, it in fact deals with more types of military change, without clear definitions. Incorporation of ever more variables in addition lead to frameworks that are either unworkable due to their comprehensiveness or unrealistic due to their simplification.

35 Sergio Catignani, "'Getting COIN' at the Tactical Level in Afghanistan: Reassessing Counter-Insurgency Adaptation in the British Army", *Journal of Strategic Studies* 35, no. 4 (2012): 513-539, Farrell, "Improving in War", Farrell and Rynning, "NATO's Transformation Gaps", Richards, "Transformation on the Front Line", and Webber, "NATO".

All the while, the goal of the research, and by extension the academic field of military innovation, is unspecified.[36]

In short, a workable theoretical framework in the academic field of military innovation and adaptation seems to be non-existent. However, the discourse also provided some solutions. The discourse analysis mentioned above outlined several recommendations. First of all, the challenge of multiple functions of the research can be countered simply by explicating the goal of the research. Second, it recommended to refrain from rigid definitions of innovation and adaptation, and adopt loosely defined definitions which indicate that innovation relates to change with new elements, and adaptation with any change in response to an environmental situation, or change in it. Third, it recommended to adopt a general list of driving factors and manifestations of military change, of which the discourse seems to agree, and allowing conceptual leeway for multiple combinations of acting driving factors and manifestations.[37]

These recommendations resolve the challenges for this study. The risk of conceptual convolution is mitigated by explicating that this study uses the discourse on military innovation and adaptation for explanation of historical developments. Therefore, the discourse functions not so much as a theoretical framework, but rather as a frame of reference that helps guide the research in a manner that is commonly used in historical research.[38] This study discards the goal of enhancing the practice of organizational innovation and adaptation. There is a conceptual link with theory development and theory testing, for instance via the method of process tracing which is used in several of the social sciences. This method, which contains varieties based on the role theory has in it, uses multiple historical case studies to identify causal relationships of phenomena, and the circumstances in which they present themselves, ultimately with the goal of theory development.[39] By using the discourse on military innovation and adaptation as a frame of reference, the study can serve as one of the building blocks for theory building and theory testing.[40] But, as stated, theory development is not a goal of this study, although it is possible to provide for some observations in this respect. This manifests itself in two ways in this study: it refrains from formulating hypotheses based on theory, as is common in historical sciences. Also, it does not compare cases, which is in contrast with common practice with process tracing.

36 Rob Sinterniklaas, "Military Innovation: Cutting the Gordian Knot", (Research Paper 116, Netherlands Defence Academy, Faculty of Military Sciences, Breda, October, 2018).

37 Sinterniklaas, "Cutting the Gordian Knot", 29-32.

38 See for discussion on the role of theory in historical sciences chapter eight of John Tosh, *The Pursuit of History: Aims, Methods & New Directions in the Study of Modern History* (Harlow and New York (NY): Longman Group Limited, 1991), pages 152-183.

39 See on this method for instance: Andrew Bennett and Colin Elman, "Case Study Methods in the International Relations Subfield", *Comparative Political Studies* 40, no. 2 (2007): 170-195, Alexander L. George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences*, BCSIA Studies in International Security (Cambridge, MA, and London: MIT Press, 2005), 205-233, James Mahoney, "Process Tracing and Historical Explanation", *Security Studies* 24, no. 2 (2015): 200-218, and Nina Tannenwald, "Process Tracing and Security Studies", *Security Studies* 24, no. 2 (2015): 219-227.

40 George and Bennett, *Case Studies*, 215.

The challenge of convolution of the discourse of military innovation and adaptation itself is met by adopting the second two recommendations mentioned above. Definitions should not be too rigid. In addition, close examination of the discourse of military innovation and adaptation reveals that scholars generally agree on which elements constitute the driving factors of military change, and which elements constitute the manifestations, together forming a useful frame of reference. Moreover, these elements strongly overlap with elements that the military themselves find important when evaluating effectiveness.

The identified manifestations are:
- Military strategy;
- Plans and operations;
- Doctrine;
- Force levels;
- Resources;
- Organizational structures;
- Education, training, and lessons learned.

These manifestations potentially are influenced by the following driving factors:
- Technology;
- Operational environment;
- Civil-military relations;
- Alliance politics and domestic politics;
- Cultural norms;
- Leadership.[41]

When the manifestations are described, and analyzed within the context of the potential driving factors, it becomes possible to describe and explain the changing role of airpower in Afghanistan over a significant amount of time, while still maintaining conceptual focus. The outcome potentially serves as one of the building blocks for theory on military innovation and adaptation. Although this is useful, after all, literature on military innovation and adaptation virtually ignores airpower, this is not the stated goal of this study, which remains description and explanation of the historical development of airpower in Afghanistan over the period between 2001 and 2016.

Three challenges remain when using this research method. First, by using the propositions derived from the discourse on military innovation and adaptation, adhering to the frame of reference induces the risk of missing developments that fall outside of it. Even though the frame of reference is comprehensive, theoretically it is possible that there are instances that components of military capacity were influenced by drivers that

41 Sinterniklaas, "Cutting the Gordian Knot", 31.

are not identified in the discourse, or that another manifestation presents itself. This study will be vigilant on such instances. If one is found, that means that the single case study of innovation and adaptation of the air weapon during the recent conflict in Afghanistan challenges the frame of reference. If applicable, the nature of this challenge and a proposed solution will be described in the epilogue of this study, which offers observations in the context of the theory of military innovation and adaptation. Nevertheless, there is a residual risk of overlooking developments, as the frame of reference directs the study towards what is incorporated in it, instead of what falls outside it. This is also related to the availability of primary sources. Much of the potential sources remain classified for the immediate future. New explanations may present themselves when new sources become available.

The second challenge is the depth of research on the manifestations. The frame of reference bounds the research question and identifies the topics of interest. Nevertheless, the theme is too broad to study all manifestations to the smallest detail. It still covers the entire spectrum of military capacity and operations. Also, on some topics, lack of publicly available sources prevent scholars to access the details which may lead future scholars to find new developments and explanations. Within the context of the frame of reference, this is not problematic. The frame of reference allows scholars to conduct analysis on and reach conclusions about causal factors of certain developments. However, a consequence is that the descriptive element of this study to some extent lacks detail commonly expected in the historical sciences. In this sense, description of the course of air operations in Afghanistan serves as a first and sometimes general outline. As stated, currently available literature insufficiently provides for such a general outline, so it still holds inherent value. Nevertheless, the descriptive element of this study, besides offering ammunition for several debates, serves as a stepping stone for future research that can refine the conclusions on the development of air operations in Afghanistan, the relationship of the air campaign in Afghanistan with ground operations, and airpower history.

Third, before the frame of reference can be used, the drivers and manifestations need operationalization. The discourse is not explicit on what the driving factors and manifestations encompass, and how they potentially relate to the developments of the air weapon. Also, explication of the variables need to be tailored for the topic of airpower in Afghanistan. Specifically, the list of driving factors and manifestations has to be translated into airpower-related processes and activities that can be observed in the Afghan environment. In order to do so, the next four paragraphs in sequence narrow the scope of research, define key elements of studying airpower development during deployment in and above Afghanistan, operationalize the airpower-related variables that changed during the deployment - the manifestations -, and operationalize the variables that potentially influence the manifestations - the driving factors -.

1.6. Scope

As already implied when describing the knowledge gaps, this study focuses its attention on the operational level of military operations. This level is positioned between the strategic level on the one hand, involving long term planning, and day-to-day tactical execution on the other. The reason for this focus is that air operations generally bring their effects most profoundly at the operational level within the context of military innovation. Grissom, Lee and and Mueller formulated this as follows: "*Generally speaking, the best way to determine if the USAF has innovated is to examine how operational units conduct operations in practice. Thus, contrary to the academic literature focusing on the doctrinal and organizational underpinnings of ground forces, the most reliable indicator of major strategic-level Air Force innovation is the de facto emergence of a new type of air campaign*".[42] In effect, this study uses the perspective of senior in-theater commanders as a starting point. They had the task of making airpower as effective as possible for the Joint Force Commander (JFC) or strategic leadership, and in doing so help formulate strategic guidance and profoundly influence the operational and tactical posture of airpower, including other elements of the military metier like doctrine development. It therefore does not include the effectiveness or usefulness of the entire strategy *per se*, but mainly the airpower contribution to it. So, for instance, airpower served specific roles in the context of Afghan state-building, and this study focuses on these roles rather than the effectiveness and theory related to state-building.

The operational scope furthermore enforces an important restriction on one of the research topics. Throughout this introduction, "airpower" has implicitly been regarded as a monolithic military institution. In fact, it is not. At least thirty nations and NATO as an organization deployed separate airpower-delivering contingents, big and small and for long and short periods of time. This dynamic collective of assets could be labeled "airpower in Afghanistan". It therefore becomes of interest which national dynamics these contingents were subjected to. This would severely complicate this study and impracticably broaden the subject of study, as all thirty one entities deserve separate attention.

Organizational structures, one of the manifestations of military innovation and adaptation, offer a solution to this seemingly unsurmountable problem. For flight safety reasons, and because of airpower's ability to influence a large area of operations in a short period of time, national air assets could not operate freely according to national priorities. All air movements were subject to an in-theater command and control architecture from either the United States or NATO.[43] As will be shown, existence of these two systems severely convoluted command arrangements at the tactical level. But it greatly relieves the challenge of studying several national decision making processes. Because the United States was also the primary member of NATO, all national issues regarding deployment

42 Grissom, Lee, and Mueller, *Innovation and USAF*, 88.

43 Technically, there is a small gap. As will be outlined, the first three rotations of ISAF formally were not part of the NATO command and control architecture. The lead nations however were NATO members, which acknowledged this situation as a shortcoming. It was corrected in 2003, when NATO formally assumed responsibility for ISAF.

of airpower passed through Brussels. Therefore, this study devotes significant attention to developments within NATO, thereby bypassing the requirement to study every airpower-delivering nation separately. As with the descriptive narrative of air operations in Afghanistan, this suffices for deduction of explanations for operationally relevant developments. However, it is acknowledged that national decision making processes are influenced by national political dynamics which in this study only reveal themselves when they influence NATO decision making directly and in a problematic fashion. This means that national considerations with regard to the deployment of national airpower contingents to a large extent remain underexposed. This in turn influences the research on one of the potential driving factors, namely the civil-military relations. As will be shown below, this element will be incorporated in the driving factor "alliance politics". Future research may reveal new insights about the background of airpower deployment in Afghanistan when national decision making processes are systematically investigated and compared.

1.7. Defining Airpower and Irregular Warfare

While airpower and irregular warfare provide for the major themes of this study, some preliminary notion of what is meant by them is in order. The term "airpower" is not synonymous with terms "air force" or "airman". The US Air Force currently defines airpower as "*the ability to project military power or influence through the control and exploitation of air, space, and cyberspace to achieve strategic, operational, or tactical objectives*".[44] Airpower has distinctive characteristics that separates it from land power or sea power. In general, airpower is described in terms of its high speed in which it operates, long ranges on which it can be projected, high level of flexibility in operations, high precision of its sensors and weapon systems, and high lethality. Within these domains, airpower distinguishes itself from other manifestations of military power.[45] For this study, airpower also includes all non-military organizations that perform activity in direct support of the military operations. This is for instance the case with various civilian contractors. It excludes civilian air traffic and air traffic related to operations by Non-Governmental Organizations (NGOs). These elements will only be described when relevant for military operations. Airpower is not necessarily related to specific systems or organizations. Armies, navies, and marines can also deliver airpower, the determining factor being military operations in a specific dimension

44 United States Air Force, *U.S. Air Force Doctrine Volume 1: Basic Doctrine,* February 27, 2015, https://www.doctrine.af.mil/Portals/61/documents/Volume_1/Volume-1-Basic-Doctrine.pdf (accessed November 18, 2018), no page number. In literature, the notion of "air weapon" is also commonly in use. In this study, airpower and air weapon are treated as synonyms.

45 United States Air Force, *Air Force Doctrine Document 1: Air Force Basic Doctrine, Organization and Command,* October 14, 2011, http://www.e-publishing.af.mil/shared/media/epubs/AFDD1.pdf (accessed December 7, 2012), 16, and Hallion, "Climbing and Accelerating", 374.

and with specific characteristics.[46] It also involves more than airborne platforms. All supporting missions and functions, such as maintenance, logistics and airbase defense, are considered to be airpower as well.[47] Most militaries do have an air force, a service branch of the armed forces that specializes in delivering airpower. Air forces in turn are populated by airmen, which encompasses all military and civilian personnel of that service branch.[48] By this definition, airpower is delivered by both airmen and personnel from other service branches. For example, operations of a US Army attack helicopter is regarded to be airpower, but not delivered by airmen. Airmen of the air force deliver airpower while repairing an airplane, but so do the soldiers of the army, the sailors of the navy, and the marines, when repairing their airplanes. It should be noted however that the term "airman" in common usage could include virtually every member of the military that contributes to airpower.

A different term is used for personnel actually manning airborne platforms, namely "aircrew". Aircrews operate aircraft while in flight. Obviously, aircrews consist of pilots, but there are other specialties as well. Examples include navigators, weapon systems operators, loadmasters, door gunners, airborne air traffic controllers and combat controllers, and flight engineers. Again, personnel can be regarded as aircrew regardless of service affiliation.

A final distinction that needs to be made is that between "airpower" and "air operations". Whereas airpower means the ability to project military power or influence, air operations, refer to the act of actually projecting them. Air operations are the most important part of the practical application of airpower, and in literature implicitly or explicitly serve as the most prominent measure of effectiveness. Therefore, air operations will form the thread that runs through the study.

A more murky concept is that of "irregular warfare". Initially dubbed "small wars" to distinguish these conflicts from large scale conventional conflicts, during the twentieth century other terms became commonly used, such as military operations other than war, peacekeeping operations, low intensity conflict, guerrilla warfare, revolutionary warfare, hybrid warfare, and fourth generation warfare. This list shows that scholars and military professionals had difficulty with separating "irregular war" from "regular war", and with separating irregular war executed by opponents from irregular war as a (western) military reaction to it. According to James Kiras, the difficulty of separating irregular war from regular war reflected confusion about the function of violence in a specific conflict. Kiras acknowledged that conflicts that do not involve a clash between more or less equal, large, mechanized, state directed armed forces come in many forms and are difficult to understand. However, scholars and military professionals sometimes mistakenly believed

46 United States Air Force, *AFDD 1 (2011)*, 5-6.

47 Michael W. Kometer, *Command in Air War: Centralized Versus Decentralized Control of Combat Airpower* (Maxwell Air Force Base, AL: Air University Press, 2007), 55.

48 United States Air Force, *AFDD 1 (2011)*, 128-129.

irregular forms of violence are unchanging and absolute, that complexity of these types of warfare reflect the nature of war, and confused a method of violence with its purpose.[49] Kiras chose "irregular warfare" as overarching concept, which already had become common since 2004. He defined irregular warfare as "*the use of violence by substate actors, groups within states or state actors working by, with or through such groups or actors, for the political purpose of achieving power, control and legitimacy, using unorthodox or unconventional approaches to warfare contrary to prevailing norms, due to a fundamental weakness in resources or capabilities or the desire to limit the escalation of conflict*".[50] He further distinguished five categories or subdenominations of irregular conflicts, discerned by the resources the irregular warriors have at their disposal. These were: coup d'état, terrorism, revolution, insurgency, and civil war.[51] For reasons of clarity and consistency, this study adopts these definition and subdenominations. Where needed, the subdenominations will be clarified further.

The two definitions of regular and irregular warfare highlight an important difference of scope. Whereas the definition of regular warfare refers to a clash of opponents, the definition of irregular warfare refers to action of only one actor, namely the substate actors or groups. The definition of irregular warfare does not include actions that are aimed to counter the actions of the substate actors or groups. From the western military perspective, irregular warfare consequently consisted of a range of activities that are employed in an irregular warfare environment, making irregular warfare an overarching concept. The US Department of Defense adopted the term "irregular warfare" in 2004. This term in turn encompassed a whole range of military activities that became, or were already part of, military vocabulary. Examples included counterinsurgency, unconventional warfare, counterterrorism, foreign internal defense, and stabilization, security, transition, and reconstruction operations, to name but a few.[52] Without addressing the issue of defining irregular warfare from the western perspective directly, the US Department of Defense *de facto* provided a definition in 2010 by naming a joint operating concept *Irregular Warfare: Countering Irregular Threats*.[53] This document also structured the plethora of concepts into five operations or activities: Counterterrorism (CT), Unconventional Warfare (UW), Foreign Internal Defense (FID), Counterinsurgency (COIN), and Stability Operations (SO). According to the document, these operations and activities all could take place in a single operational theater, did not reflect any sequence of events, and finally could include a

49 James D. Kiras, "Key Concepts and Terms of Irregular Warfare", In: *Understanding Modern Warfare*, ed. David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, and others (New York, NY: Cambridge University Press, 2016), 301-318, 301-307, and James D. Kiras, "Current Irregular Warfare", In: *Understanding Modern Warfare*, ed. David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, and others (New York, NY: Cambridge University Press, 2016), 344-378, 368-369.

50 Kiras, "Irregular Warfare", 308.

51 Kiras, "Irregular Warfare", 308-315.

52 Robert M. Chavez, "Basic and Operational Doctrine for Airpower in Irregular Warfare", (Monograph, School of Advanced Military Studies, United States Army Command and General Staff College, Fort Leavenworth, KS, 2007) http://www.dtic.mil/dtic/tr/fulltext/u2/a475385.pdf (accessed August 9, 2013), 12-13.

53 United States Department of Defense, *Irregular Warfare: Countering Irregular Threats. Joint Operating Concept, Version 2.0*, May 17, 2010, http://www.dtic.mil/doctrine/concepts/joint_concepts/joc_iw_v2.pdf (accessed March 18, 2016).

whole range of other activities.[54] This classification has become commonly used in the US military, but other classifications can still be found as well. Discussions and codification are however part of doctrinal developments and strategic guidelines, and not of definition of irregular warfare. Suffice here to note that the definition of irregular warfare refers to the operational environment, while the western reaction for a long time was not defined but described in terms of actions that could counter irregular threats.

1.8. Operationalization: The Manifestations

1.8.1. Strategy

As stated in paragraph 1.6, a useful perspective of studying the developing role of airpower in Afghanistan is that of the senior commander. Senior commanders are the link between strategy on the one hand, and actual operations on the other. This range of conceptual perspectives is also known as the "strategy to task" methodology. Within this methodology, strategy is dissected in a series of steps, leading to actual force application. Reversely, force application is given meaning in the context of strategic goals.[55] This means that the manifestations "strategy" and "plans and operations" serve as the backbone of changing role of the air weapon in Afghanistan. As strategy is important, highly conceptual, and complex, some elaboration on this manifestation is in order.

The concept of strategy has its origins in the late eighteenth century. One of the most famous of the classical strategic thinkers, the Prussian General Carl von Clausewitz (1780-1831), defined strategy as "*the use of engagement for the purpose of the war*".[56] Clausewitz goes on to note that in order to use the engagements effectively, the strategist needs to define the aim of the entire operational side of the war in such a manner that it is in accordance with its purpose. According to Clausewitz, planning and managing the campaign were also tasks of the strategist. It had the purpose of managing the campaign in a manner in which all actions harmoniously suited the objectives and the available resources, which eventually became evident in final success.[57] During the ninetheenth and twentieth centuries, influenced by industrialized warfare and the threat of nuclear engagement in de context of the Cold War, strategic theorists expanded Clausewitz's definition beyond the military

54 United States Department of Defense, *IWJOC Version 2.0*, 5.

55 For an analysis of the dynamics of this methodology, see: David E. Thaler, *Strategies to Tasks: A Framework for Linking Means and Ends* (Santa Monica, CA: Rand Corporation, 1993), https://www.rand.org/pubs/monograph_reports/MR300.html (accessed December 18, 2018).

56 Carl Von Clausewitz, *On War*, ed. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1984), 177.

57 Von Clausewitz, *On War*, 177-178.

realm to include the political realm as well.[58] Currently, various definitions of the concept can be found that as the following examples indicate.

Peter Paret remained rather close to Clausewitz in the classical work *Makers of Modern Strategy* by defining strategy as "*the use of armed force to achieve the military objectives and, by extension, the political purpose of the war*".[59] Colin Gray defined strategy as the direction and use of (military) assets for the purposes of policy as decided by politics.[60] A textbook on modern warfare defined strategy as "*the process that converts military power into policy effect*".[61] Hew Strachan argued that it could refer to both a process of formulation and the result of it.[62] These and other definitions led Jeffrey Meiser to conclude that definitions of strategy suffered from three problems: some were defined too narrowly in military terms, others were overly inclusive, and still others were actually not definitions of what strategy is but rather descriptions what strategy does.[63] He proposed his own definition: simply "*a theory of success*"[64], a variant of an earlier definition from Alan Stephens that included classifying strategy as "*the art of winning*"[65].

Although there is no commonly accepted description of what strategy is or how inclusive it is, there is either implicit or explicit consensus on the purpose of strategy. It involves the notion that military activity is not a goal in itself, but must serve some higher purpose, mostly a political one. It therefore provides meaning to military activity in a larger context, and helps to define the situation of victory.[66] Also, there is little disagreement on the elements that comprise a strategy. In the late 1980s, United States Army Colonel Lykke identified strategy as being the coherent and harmonious combination of the ends that the action serves, the ways in which that the goals should be accomplished, and the means by which the ends should be achieved. This equation became popular within western militaries and can be found in many academic publications as well.[67]

58 Elinor C. Sloan, *Modern Military Strategy: An Introduction* (London and New York, NY: Routledge, 2012), 1-2, Hew Strachan, "The Lost Meaning of Strategy", *Survival* 47, no. 3 (2005): 33-54, 33-47, and Hew Strachan, "Strategy and War", In: *The Oxford Handbook of War*, ed. Julian Lindley-French and Yves Boyer (Oxford: Oxford University Press, 2012), 30-42.

59 Peter Paret, "Introduction", In: *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, ed. Peter Paret (Princeton, NJ: Princeton University Press, 1986), 3-10, 3. This definition was adopted by Elinor Sloan in 2012: Sloan, *Modern Military Strategy*, 2.

60 Colin S. Gray, *Airpower for Strategic Effect* (Maxwell Air Force Base, AL: Books Express Publishing, 2012), 37.

61 David J. Lonsdale, "Strategy Defined", In: *Understanding Modern Warfare*, ed. David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, and others (New York, NY: Cambridge University Press, 2016), 39-60, 40.

62 Strachan, "Lost Meaning of Strategy", 52.

63 Jeffrey W. Meiser, "Ends + Ways + Means = (Bad) Strategy", *Parameters* 46, no. 4 (2017): 81-91, 85-86.

64 Meiser, "Ends + Ways + Means", 86.

65 As quoted by John Olsen: John Andreas Olsen, "The Quest for a New Airpower Strategy: Systemic Paralysis and Systemic Empowerment", *Air & Space Power Journal* 29, no. 3 (2015): 29-41, 30.

66 David J. Lonsdale, "The Study and Theory of Strategy", In: *Understanding Modern Warfare*, ed. David Jordan, James D. Kiras, David J. Lonsdale, Ian Speller, and others (New York, NY: Cambridge University Press, 2016), 21-38, 23.

67 Colin S. Gray, *Airpower Advantage in Future Warfare: The Need for Strategy*, Airpower Research Institute Papers (Maxwell Air Force Base, AL: Airpower Research Institute, 2007), 32, Colin S. Gray, "Strategic Thoughts for Defence Planners", *Survival* 52, no. 3 (2010): 159-178, 172, Gray, *Airpower for Strategic Effect*, 45-46, Lonsdale, "Strategy Defined", 42, Thomas G. Mahnken, "Strategic Theory", In: *Strategy in the Contemporary World: An Introduction to Strategic Studies*, ed. John Baylis, James J. Wirtz and Colin S. Gray (Oxford: Oxford University Press, 2010), 67-83, 69, Meiser, "Ends + Ways + Means", 82,

Also, little disagreement exists on the notion of theoretical levels of military operations that classify the relationship between strategy and military action. Clausewitz identified two of these levels: tactical and strategical. According to Clausewitz, the tactical level included the use of armed forces in engagement and strategy the use of engagements for the object of the war.[68] Later, under the influence of the above mentioned expansion of the definition of strategy, strategic thinkers added levels of strategy and military operations, which subsequently became commonplace.[69] Currently, it is generally accepted that the process of strategy formulation begins with the politicians. This level, called policy, formulates the political ends. Politicians and policymakers then coordinate the state's resources towards the attainment of the policy objectives. This level is called the level of grand strategy, which includes formulation of ways and means of military, economical and all other sources of power at the state's disposal. One of the elements of grand strategy is military strategy. At the level of military strategy, military ways and means are isolated, but still linked directly with the policy objectives, as the use of military force serves to achieve them. The level below the military strategic level is called the operational level. At this level, political ends and military ways and means are tailored to specific geographical areas. It is the level of military campaigns, were ideas are put into action. The last level, the tactical level, is the level where the actions actually take place in the form of engagements with the opponent. Classified this way, tactical actions have a direct and harmonious relationship with policy. Groups of tactical actions are clustered in operational plans. The combined operational plans in turn serve to achieve military strategic goals, which can be combined with other, non-military, strategies to form grand strategy. The strategies serve to achieve the goals of policy.[70]

There are, however, complications to the formulation of strategy. While the classifications of the levels of strategy and operations suggest a clear development from conceptual policy towards practical tactics, the boundary where the concepts end and practice begins is not clear and therefore subject to debate. It highlights the role of strategic theory within the practice of strategizing. Strategic theory refers to the conceptual foundation of understanding war, and can offer hypotheses of how military force is best used and is related to other forms of state power.[71] General strategic theories are used for educating those involved in thinking strategically, and therefore have links with education and training, as well as lessons learned processes and doctrine.[72] The problematic element

Olsen, "Quest or New Airpower Strategy", 30, Strachan, "Lost Meaning of Strategy", 52, Strachan, "Strategy and War", 39, and Hew Strachan, "Strategy or Alibi?: Obama, McChrystal and the Operational Level of War", *Survival: Global Politics and Strategy* 52, no. 5 (2010): 157-182, 166-167.

68 Von Clausewitz, *On War*, 128.

69 Strachan, "Strategy and War", 34-38, and Strachan, "Lost Meaning of Strategy", 33-47.

70 Gray, *Airpower for Strategic Effect*, 32-37, Lonsdale, "Strategy Defined", 40, David J. Lonsdale, "Strategy: The Challenge of Complexity", *Defence Studies* 7, no. 1 (2007): 42-64, 42-47, and Olsen, "Quest or New Airpower Strategy", 30.

71 Gray, *Airpower for Strategic Effect*, 36, and Mahnken, "Strategic Theory", 68.

72 Gray, *Airpower for Strategic Effect*, 36, Lonsdale, "Study and Theory of Strategy", 35, and Mahnken, "Strategic Theory", 68.

is that strategic theory has a practical element or, as Elinor Sloan put it, strategy should be transferable to the world of action. She identified finding the right balance between practicality and general applicability as being the main challenge in strategic thought.[73] While the relationship between strategic theory and strategy is challenging, the situation is complicated further by recognizing that strategizing in itself is complex and difficult. Formulating a strategy to reach an end state somewhere in the future while maintaining harmony between the levels of operation is fraught with uncertainties, friction, and paradoxes. It requires a high level of situational understanding to be able to choose the right instruments to achieve the desired effects. Therefore, strategy sometimes is referred to as an art rather than a science.[74] So, devising a strategy can easily go wrong, especially when there are systemic deficiencies.

Several scholars identified such deficiencies. According to Hew Strachan, it concerned the confusion of strategic theory and strategic practice, and the application of the term "strategy" outside its military connotation. Especially during the Cold War, with its threat of mutual assured nuclear destruction, strategy became a tool to avoid war, rather than a tool to wage it. In addition, the strategists themselves increasingly were civilians, using mathematical models to produce theory that was detached from reality. As a result, policy and strategy conflated, and during the course of decades, statesmen and stateswomen lost the ability to strategize in the practical sense in its connotation that it was originally intended.[75] This situation was later called "strategic illiteracy".[76] Military professionals then focused on the operational level, but this could not make up for lack of sound strategy. On the contrary, it focused on practical applications of operations in doctrine. The operational level, or the operations and campaigns, therefore did not perform the function of the link between tactics and strategy, but rather became a replacement of strategy. After the Cold War, this situation was not corrected. Mainly the western militaries focused on a lasting technological advantage over any adversary, making prudent choices unnecessary. Threat-based planning was replaced by capabilities-based planning. Strategic functions were not performed, and therefore the operational level increased the strategic illiteracy.[77] In variance to this observation, Meiser argued that the ends, ways, means formula and the military tendency to overemphasize a simplistic application of resources in the so-called whole-of government approach led to a situation where strategy is reduced to "*a perfunctory*

73 Sloan, *Modern Military Strategy*, 2.

74 Lonsdale, "Strategy", passim, Lonsdale, "Strategy Defined", 45-57, and Mahnken, "Strategic Theory", 70

75 Strachan, "Strategy and War", 30, and 34-39, and Strachan, "Lost Meaning of Strategy", 33-47.

76 H. Amersfoort, "Nederland, De Weg Kwijt: Over De Teloorgang Van De Militaire Strategie En De Noodzaak Van Geschiedenis" [The Netherlands, Lost in Its Way: On the Downfall of Military Strategy and the Necessity of History], *Militaire Spectator* 185, no. 5 (2016): 217-231, I.G.B.M. Duyvesteyn, "Strategisch Analfabetisme: De Kunst Van Het Strategisch Denken in Moderne Militaire Operaties"[Strategic Illiteracy: The Art of Strategic Thinking in Modern Military Operations], (Inaugural Lecture, Leiden University, Leiden, June 10, 20130) https://openaccess.leidenuniv.nl/handle/1887/20943 (accessed June 21, 2017), 1-5, and Gray, "Strategic Thoughts", 164.

77 Amersfoort, "Nederland, De Weg Kwijt", 228, Gray, "Strategic Thoughts", 167-171, and Strachan, "Strategy or Alibi?", 159-170.

exercise in allocating resources".[78] So, while strategy is important, performing strategic functions has proven to be problematic in the recent past.

These developments have important implications for the study of airpower deployment in Afghanistan. Strategies are crucial for understanding the role of air operations over Afghanistan, as they conceptually provide the rationale behind its deployment. In a practical sense, NATO civilian and military top headquarters provide the level on which policy, grand strategy and military strategy are formulated. It can be argued that for NATO, the entities that comprise the (military) strategic level are the North Atlantic Council (NAC) and Military Committee (MC). Theoretically, a specific airpower strategy might be part of this as well. The operational level is represented by the JFC and possibly the senior commanders in Afghanistan. The output of the operational level are plans and operations, which are executed at the tactical level. This division of strategy, operations and tactics concurs with the division of military activities on several levels, moving from the tactical level of operations (the level of individual units) via the operational level (the level of campaigns and major operations) to the strategic level of operations (the level of campaigns and up).[79] Ideally, all these activities are in line with each other. As suggested above, strategies are also influenced by strategic theory. As these theories offer hypotheses about how the military instrument can serve policy goals, it is also possible to formulate hypotheses about the airpower contribution. So, from strategic theory, general theory of airpower can be derived, providing generally applicable concepts on how to use airpower. Airpower theory, then, can be helpful in formulating an airpower strategy and writing doctrine.[80] Adjustments of strategies, or substitution of one strategy for another, could therefore be indicative of a changing role of airpower or even adjustment of airpower theory.

So, in short, the definition of strategy has been extended beyond the battle space to include the political realm. Its function is to provide political meaning to military action. Although formulating a commonly accepted definition might be difficult, it is generally accepted that a strategy includes some form of description of a harmonious combination of ends, ways, and means. It is formulated out of both (historic) reality and strategic theory, although the ideal balance between practicality and general applicability is a delicate one. This is also applicable to the air weapon. There is, or should be, an airpower strategy in Afghanistan, which is either implicit or explicit. It can be derived from its application in the context of "higher" strategies, from airpower theory, or both. Therefore, it is relevant to know which strategies were applicable to deployment of the air weapon in Afghanistan, whether these strategies were deemed effective, and if not, which rationale lay behind changes of these strategies.

78 Meiser, "Ends + Ways + Means", 82.

79 United States Air Force, *AFDD 1 (2011)*, 133-134.

80 Gray, *Need for Strategy*, viii, Gray, *Airpower for Strategic Effect*, 30-36, 41-34, Jeffrey J. Smith, "Beyond the Horizon: Developing Future Airpower Strategy", *Strategic Studies Quarterly* 8, no. 2 (2014): 74-95, passim.

1.8.2. Plans and Operations

The second manifestation of changes of posture of the air weapon is the combination of plans and operations. It is the observable outcome of the "new type of air campaign" that Grissom, Lee and Mueller referred to. It constitutes the execution of the strategy using the doctrinal concepts with the available force levels and resources. In the area of operations, actual missions and operations are planned and executed. At this stage, the question of what to achieve with a strategy has already been answered, and the military can focus on the question of how to serve the strategy, rather than the policy ends, and with which assets. Therefore, the term "strategy" no longer applies. When individual units execute operations, they will use operational concepts and tactics which are best suited to meet operational objectives.[81]

To some extent, it is expected that there is tension between strategy on the one hand and plans and operations on the other, because the feasibility of the strategy becomes visible in the missions's outcomes. Therefore, with regard to plans and operations, the questions will be asked how the role of airpower in Afghanistan was conceptualized in plans and operations relating to Afghanistan, which relationship it had with other forms of military power such as land operations, and to what extent these operations were in line with operational and strategic objectives.

1.8.3. Doctrine

Doctrine is the third manifestation of military change. Doctrine has a reciprocal relationship with strategic theory and strategy. According to Colin Gray, doctrine follows from strategic theories, as it links strategic theory with best practices from the field. It describes how the tenets of the aspect of military force, for instance, army or air force doctrine, are applicable in generally described environments. Doctrine influences strategy by indicating what might theoretically be possible, but in the end has to be in line with that strategy. Doctrine concerns only generally applicable concepts, with only a loose relationship with specific circumstances.[82] For instance, both US and NATO airpower doctrines emphasized that doctrine only describes fundamental principles on the application of airpower.[83] Functioning as a corporate body of knowledge regarding employment of airpower in generally described environments, doctrines could also be used for educational purposes. Changes in doctrine therefore are also indicators for a

81 Gray, *Airpower for Strategic Effect*, 45-46.

82 Gray, *Airpower for Strategic Effect*, 32 and 41-43.

83 United States Air Force, *AFDD 1 (2011)*, 1 and NATO, *AJP-3.3(A): Allied Joint Doctrine for Air and Space Operations*, November, 2009, http://www.scribd.com/doc/92437242/a-Allied-Joint-Doctrine-for-Air-and-Space-Operations-05NOV09#scribd (accessed March 15, 2016), xiii.

functioning lessons learned process.[84] Formulated differently, doctrine can serve both as a codification of strategic theory and as the conceptual foundation for actual operations. Concurrently, changes in doctrines can be expression of a combination of renewed theoretical insight and operational developments. Also, doctrinal changes are expressions of two manifestations of military change, namely doctrine itself and education, training and lessons learned. At the same time, Ucko warned that importance and impact of doctrine should not be overstated, because mere existence of new doctrine does not necessarily mean the military adheres to it.[85]

This multilayered influence problematizes the approach of the study of doctrine in the context of this analysis. For reasons of clarity, doctrine will not be discussed in the context of the discourse of airpower in irregular warfare, unless doctrines themselves became part of the discourse, that is, when it obtained a role in theory development. Also, the consequence is that the theoretical roots are somewhat artificially separated from the practical roots, and it allows for the approach to doctrine as the institutionalized mindset of the military towards a certain operational environment or type of operations. This immediately necessitates the question of the extent to which the doctrines were implemented in practice. Other forms of institutionalization, such as educational curricula or institutions, serve as an indication for implementation. Reciprocally, the changes in doctrine can serve as an indication of a functioning lessons learned process, which is another manifestation of military change.

So, for studying airpower in Afghanistan, the questions with regard to doctrine are as follows: which doctrines were available or applicable for the conduct of air operations in Afghanistan? To which extent adhered airpower professionals to those doctrines? How did these doctrines relate to the operational reality in Afghanistan? Did the operational experience inspire doctrinal changes and, if so, what were the reasons for it?

1.8.4. Force Levels and Resources

Changes in force levels and resources, the fourth and fifth of the manifestations, can be considered clear indications of military change. There is no straight line from policy, via strategy and operations, to tactics. Rather, policy objectives, threat perceptions, and availability of means interact with each other.[86] In short, formulation of strategy is influenced by a political desire, availability of assets and perceptions of the threat for a specific campaign. Changes in force levels and resources are therefore indications of changing policy or strategies, even when the official strategies or written doctrines do not

84 David J. Lyle, "Operation Anaconda: Lessons Learned, or Lessons Observed?", (Master's Thesis, US Army Command and General Staff College, Fort Leavenworth, KS, 2009) http://www.dtic.mil/get-tr-doc/pdf?AD=ADA502029 (accessed November 5, 2013), 18.

85 Ucko, *New Counterinsurgency Era*, 17-18.

86 Gray, *Airpower for Strategic Effect*, 45-46, and Mahnken, "Strategic Theory", 70.

follow suit. Force levels and resources however are not clearly defined. Literature shows that force levels are usually associated with numbers of troops, sometimes specified by specific assets.[87] Resources can involve a variety of means. For this study, by force levels are meant: all assets that deliver the product of airpower. All assets which do not directly deliver airpower but are its enablers, such as adequate logistics, efficient maintenance, base defense, available money, and supporting personnel, will be considered resources. Data on these phenomena will be questioned on availability and major changes, such as for instance a shift from reliance on one type of asset in favor of another, and why these changes are implemented.

1.8.5. Command Relationships

Organizational structures to a large extent reveal types of missions for which military organizations are optimized.[88] Discrepancies between the military organizations and the requirements of the tasks the air weapon had in Afghanistan might require the leadership to create (sub)organizational structures that are more effective.[89] This in essence reflects changes in division of tasks and the way execution of these tasks are coordinated.[90] Strictly, organizational structures refer only to how certain functionaries are placed in relation to one another, downplaying the process of human interaction between commanders and subcommanders. This, however, is the reason why organizational structures exist. Therefore, this study prefers to use "command relationships" as leading concept for the sixth manifestation, which includes command and control architectures, or organizational structures.

87 The term "troop level" is also used: Amy Belasco, "Troop Levels in the Afghan and Iraq Wars, FY 2001-FY 2012: Cost and Other Potential Issues", (Congressional Research Service Report for Congress, DIANE Publishing, July 2, 2009) http://www.fas.org/sgp/crs/natsec/R40682.pdf (accessed February 27, 2013), Rudra Chaudhuri and Theo Farrell, "Campaign Disconnect: Operational Progress and Obstacles in Afghanistan, 2009-2011", *International Affairs* 87, no. 2 (2011): 271-296, 281, Helle C. Dale, "NATO in Afghanistan: A Test Case for Future Missions", *Backgrounder*, no. 1985 (2006) http://blog.dsos.org/wp-content/gallery/stab/nato-afghanistan.pdf (accessed July 20, 2012), Andrew R. Hoehn and Sarah Harting, *Risking NATO: Testing the Limits of the Alliance in Afghanistan* (Santa Monica, CA: RAND Corporation, 2010), https://www.rand.org/pubs/monographs/MG974.html (accessed July 6, 2017), 45-48, Vincent Morelli and Paul Belkin, "NATO in Afghanistan: A Test of the Transatlantic Alliance", In: *War in Afghanistan: Strategy, Military Operations, and Congressional Issues*, ed. Easton H. Ussery (New York: Nova Science Publishers, 2010), 1-32, 13-15, Timo Noetzel and Sibylle Scheipers, *Coalition Warfare in Afghanistan: Burden-sharing or Disunity?*, Chatham House Briefing Paper (London: Chatham House, October, 2007), http://www.chathamhouse.org.uk/publications/papers/view/-/id/552/ (accessed April 11, 2012), 7, Frans Osinga and James A. Russell, "Conclusion: Military Adaptation in the War in Afghanistan", In: *Military Adaptation in Afghanistan*, ed. Theo Farrell, Frans Osinga and James A. Russell, Stanford Securities Studies (Stanford, CA: Stanford University Press, 2013), 288-326, 309, Shimko, *Iraq Wars*, 201-206, and Astri Suhrke, "A Contradictory Mission?: NATO From Stabilization to Combat in Afghanistan", *International Peacekeeping* 15, no. 2 (2008): 214-236, 227.

88 Ucko, *New Counterinsurgency Era*, 18-19.

89 Russell, *Innovation, Transformation, and War*, 200-204, and Matthew Alan Tattar, "Innovation and Adaptation in War", (Dissertation, Brandeis University, February, 2011) http://search.proquest.com/dissertations/docview/852369907/fulltextPDF/13C813BDCA879CCA51C/1?accountid=35226 (accessed February 27, 2013), 24.

90 H. Mintzberg, *Organisatiestructuren* [Organizational Structures] (Amsterdam: Pearson Education Benelux, 2010), 2.

Even at first glance, studying organizational elements of airpower operating in Afghanistan reveals some interesting topics. As stated, the delivery of airpower is not reserved to a single organization. Armies, navies, and marines can all contain organizational elements tasked with delivering airpower. Only air forces are organizations specialized in delivering it. Also, both literature on airpower and literature on counterinsurgencies show that there is discussion about which tasks can and should be delegated to the air weapon. Whereas literature on information age airpower suggest that the relative roles of airpower and land power have shifted in favor of the former, literature on counterinsurgencies suggest that those roles are reverse.[91] Finally, airpower's distinctive features prescribe some general principles that influence airpower's organization. Both US and NATO airpower doctrine regard the dictum of "centralized control and decentralized execution" to be one of the fundamental principles of organizing airpower's deployment. Centralized control, concentrating command authority high up in de chain of command, is needed for efficient deployment of scarce assets. Decentralized execution, delegation of authority to low-level commanders for the duration of the mission, provides the maximum amount of flexibility to the air weapon.[92] This means that the use of airpower in principle is coordinated outside the span of control of most ground and naval commanders.

Therefore, with regard to organizational structure, the questions will be asked to what extent the command relationships and command and control architectures were optimized for the tasks at hand, whether changes to them were deemed necessary during the course of the conflict, and finally, if so, what the drivers were for these changes.

1.8.6. Education, Training, and Lessons Learned

Education, training and lessons learned processes form the seventh manifestation of military change. Part of the lessons learned processes can be informal, for instance during handover over detachments, and informal communications between deployed units and their home bases. Sergio Catignani equated this type of information sharing with adaptation, as opposed to formal, codified, organizational learning. Informal networks were essential for compensating deficiencies in the military's formal education and training systems, and were necessary for organizational learning to ensue. They were however not sufficient. They tend to focus on localized and tactical issues, and organizational learning suffered from personnel and unit turnover rates. These networks could therefore even lead to an "adaptation trap" of relearning the lessons with

91 See for instance: Corum and Johnson, *Airpower in Small Wars*, David E. Johnson, *Learning Large Lessons: The Evolving Roles of Ground Power and Air Power in the Post-Cold War Era* (Santa Monica, CA: RAND Corporation, 2007), http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA454776&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011), Mueller, *Precision and Purpose*, Murray, "Military Adaptation in War", 1-14, John Andreas Olsen (ed), *Airpower Reborn: The Strategic Concepts of John Warden and John Boyd* (Annapolis, MD: Naval Institute Press, 2014), and Osinga, "'Airpower'".

92 United States Air Force, *AFDD 1 (2011)*, 38-39, and NATO, *AJP-3.3(A) 2009*, 1-4.

every rotation, without inducing higher-level, permanent, organizational learning.[93] Paraphrased, Catignani argued that just sharing of information is not enough for an organization to learn, but rather only to adapt to local circumstances. Literature on or relating to military innovation and adaptation confirms that a successful change in this respect occurs only when lessons learned are in some way institutionalized. Arguably, changes that are not institutionalized to have a lasting effect can not be considered changes at all.[94] According to Conrad Crane, a learning organization incorporates lessons learned processes, which was in constant dialogue with lessons learned reports from the field, and incorporated the lessons actually learned in doctrine, leadership development, and collective training.[95] In organization literature, education and training is also a way of standardizing tasks and therefore a coordination mechanism.[96]

Changes in education curricula and training and exercise guidelines therefore to a large extent reflect changes on how organizational elements, in this case airpower, conceptualized the missions it is anticipated to execute, in this case irregular warfare in Afghanistan. However, no educational curriculum, training or exercise will exactly match the complexities of the operational environment, leaving room for improvement. An important facet of military change is dealing with the gap between theoretical guidelines and the actual tasks at hand during deployment. A well-functioning lessons learned program is needed to institutionalize the solutions to those gaps. Consequently, the effectiveness of a lessons learned program, education curricula, and training and exercise guidelines are important indicators for identifying conceptual realignment of the air weapon.[97] Therefore, education curricula, training and exercises and lessons learned processes will be analyzed regarding conceptual changes regarding airpower for within the context of irregular warfare, and the reasons for change.

93 Sergio Catignani, "Coping with Knowledge: Organizational Learning in the British Army?", *Journal of Strategic Studies* 37, no. 1 (2014): 30-64.

94 Theo Farrell, "Culture and Military Power", *Review of International Studies* 24, no. 03 (1998): 407-416, 412, Farrell, "Improving in War", 569, Joint Analysis and Lessons Learned Centre, *The NATO Lessons Learned Handbook*, September, 2011, http://www.jallc.nato.int/newsmedia/docs/Lessons_Learned_Handbook_2nd_edition.pdf (accessed November 18, 2012), 8, Russell, *Innovation, Transformation, and War*, 26-27, Serena, *Revolution in Military Adaptation*, 99-100 and 118-119, Adam N. Stulberg and Michael D. Salomone, *Managing Defense Transformation: Agency, Culture and Service Change* (Aldershot and Burlington, VT: Ashgate, 2007), 1, Tomes, *US Defense Strategy*, 13, Ucko, *New Counterinsurgency Era*, 15-16, 169, and 173, and Webber, "NATO", 58.

95 Conrad Crane, "United States", In: *Understanding Counterinsurgency: Doctrine, Operations, and Challenges*, ed. Thomas Rid and Thomas Keany (London, New York: Routledge, 2010), 59-72, 60.

96 See on the division of labor and coordination of tasks: Mintzberg, *Organisatiestructuren*, 3-9.

97 Richard D. Downie, *Learning From Conflict: The US Military in Vietnam, El Salvador, and the Drug War* (Praeger Westport, CT, 1998), 4-5, Kilcullen, *Counterinsurgency*, 1-5, Joint Analysis and Lessons Learned Centre, *NATO Lessons Learned Handbook*, 1, Serena, *Revolution in Military Adaptation*, and Ucko, *New Counterinsurgency Era*, passim.

1.9. Operationalization: The Driving Factors

1.9.1. *Technology*

Technological developments have a profound influence on airpower. Some authors argue that the air weapon is inherently technology-centric, because technology enables developments on all tenets of airpower, and therefore its effects during operations.[98] However, most authors agree that new technologies are not a panacea, and implementation of new technological systems should be accompanied by changes in other domains. In short, new technologies require conceptual and organizational changes in order to become effective on the battlefield.[99] Also, new technologies are not developed in a vacuum and have a mutual relationship with operational reality, as is recognized in the "technology push" and "demand-pull" concepts.[100] For modern airpower, this is clearly visible on two levels.

First, the effectiveness of the air weapon changed significantly during the last three decades as part of the "Revolution in Military Affairs" (RMA). In essence, the RMA involved creating a military that made full use of the possibilities of the information age. This involved organizational and conceptual changes, besides new technologies such as stealth, precision weapons and IT-related technologies.[101] Retired Admiral William A. Owens, former vice chairman of the United States Joint Chiefs of Staff and closely related to the American Transformation program, stated the relationship between technologies and operational reality clearly. During the Cold War, he stated, innovation was technology centered and linear, reacting to comparable developments in the Soviet Bloc. In the age of both RMA and changing operational environments, the nature of technological innovations changed, and technological parochialism focusing on traditional platforms could actually hamper the transformation process.[102]

Second, technological developments are viewed by some with skepticism when it involves non-conventional warfare. According to those authors, irregular warfare, and especially its subdenominations S&R and COIN are in essence "low tech" conflicts, in which

98 Hallion, "Climbing and Accelerating", 374.

99 Clingendael Centre for Strategic Studies (CCSS), "No Future Without Innovation: Eighth of a Series of Nine Essays on the Future of the Air Force", (Essay, Clingendael Centre for Strategic Studies (CCSS), November, 2006) Personal Collection, United States Air Force, *AFDD 1 (2011)*, 8, Boot, *War Made New*, 9-16, Theo Farrell and Terry Terriff, "The Sources of Military Change", In: *The Sources of Military Change: Culture, Politics, Technology*, ed. Theo Farrell and Terry Terriff (Boulder, CO: Lynne Rienner Publishers, 2002), 3-20, 16, Theo Farrell, "Introduction: Military Adaptation in War", In: *Military Adaptation in Afghanistan*, ed. Theo Farrell, Frans Osinga and James A. Russell (Stanford, CA: Stanford University Press, 2013), 1-23, 9, and Shimko, *Iraq Wars*, 17-19.

100 Farrell, "Military Adaptation in War", 9, and Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military*, Cornell Studies in Security Affairs, ed. Robert J. Art and Robert Jervis (Ithaca and London: Cornell University Press, 1991), 44 and 52.

101 See for instance: Osinga, "Rise of Military Transformation", and Shimko, *Iraq Wars*.

102 William A. Owens, "Creating a U.S. Military Revolution", In: *The Sources of Military Change: Culture, Politics, and Technology*, ed. Theo Farrell and Terry Terriff (Boulder, CO: Lynne Rienner Publishers, 2002), 205-220.

new technologies almost by definition have only limited effect. This stance is challenged by others.[103] In short, implementation of new technologies could both impede and enhance adaptation and innovation, its effectiveness is debated, and potentially could influence all manifestations. This poses the question which role technological developments had during the deployment of the air weapon in Afghanistan, and whether these developments were deemed effective.

1.9.2. *Operational Environment*

The operational environment also has a profound influence on all military operations. In the operational intelligence community, which supports operational commanders' decision making processes by providing environmental situational awareness, the operational environment has to be understood in terms of both physical and human environments.[104] The physical environment consist of geographical characteristics, such as mountains, rivers, soil, and foliage. It also covers climatological and meteorological circumstances. Manmade structures also fall within the classification of geographical environment. Central question in this process is how the physical terrain influences both own forces and the adversary. In traditional conventional conflicts, the human environment primarily consists of "the enemy". The opponents were generally operating within the same set of principles, meaning large armies consisting of relatively easy recognizable uniformed soldiers, sailors and airmen, and using equally recognizable equipment and operating with large units. Enemy soldiers and equipment in this environment are considered targets when deployed in a wartime setting, which legitimately can be engaged. Especially in non-conventional types of warfare, the opponents use different foundations of military operations. The enemy uses unconventional tactics and the relationship between opponent and population is murky. Also, the adversary is constantly adapting.[105] The enemy is not easily distinguishable from the population or the local government. All segments of the human environment influence the course of the conflict, so the operational commander needs additional situational awareness. Therefore,

103 Compare for instance: James S. Corum, "Air Power and Counter-insurgency: Back to the Basics", In: *Air Power, Insurgency and the "War on Terror"*, ed. Joel Hayward (Cranwell, United Kingdom: Royal Air Force Centre for Air Power Studies, 2009), http://www.airpowerstudies.co.uk/Hayward%20Insurgency%20Book%20%20A5%20Web.pdf (accessed November 13, 2011), 205-220, Drew, "Short Journey to Confusion", Charles J. Dunlap, "Making Revolutionary Change: Airpower in COIN Today", *Parameters* 38, no. 2 (2008): 52-66 http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA490505&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011), and Charles J. Dunlap, *Shortchanging the Joint Fight?: An Airman's Assessment of FM 3-24 and the Case for Developing Truly Joint COIN Doctrine* (Maxwell Air Force Base, AL, 2008), http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA475806&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011).

104 United States Joint Chiefs of Staff, *Joint Publication 2-01.3: Joint Intelligence Preparation of the Operational Environment*, June 16, 2009, www.fas.org/irp/doddir/dod/jp2-01-3.pdf (accessed January 25, 2012).

105 Kilcullen, *Counterinsurgency*, 1-5 and 204-205.

in unconventional conflicts the human environment includes local population, the local government, local security forces, and criminals.[106]

As with all types of operations, the environment and air operations have a reciprocal relationship. At the technical level, airborne platforms are bound by meteorological and climatological constraints, which differ for each type of platform. The combination of physical environment and platform offers tactical opportunities and limitations which can change over time. Airpower's tenets of altitude, speed, range, flexibility, precision, and lethality still apply. Operational planning and tactics need to ensure that these tenets are maximized, depending on the operational situation. For instance, due to the nature of its design the operational ceiling of a helicopter is low compared to a fixed wing aircraft, which can restrict movements in areas with large elevations. On the other hand, helicopters can use the same elevations to avoid visual detection, and can still reach areas which might be restricted by ground movements. When the characteristics of a weapon system change, for instance via technological improvements, the capabilities of that weapon system change as well, and with it the relationship between capability and environment. How the air weapon, in this case a helicopter, is deployed is a matter of planning.[107]

As for the human environment, the murky relationship between insurgents, population and government potentially impedes the effectiveness of the air weapon, as the enemy is not easily identifiable from the air. For aircrews, this poses the challenge of engaging the right targets without causing collateral damage or creating civilian casualties, themes that figure prominently in literature on airpower in counterinsurgencies.[108] However, airpower is more than just engaging targets, as other tasks such as intelligence gathering and air transport are also inherent part of it.[109] Also, technological or organizational innovations could alleviate some of the limitations. Identification could be done by ground forces.[110] More importantly, developments in, for instance, sensor and munitions technologies alleviate some of the traditional impediments of the air weapon. Capabilities of modern sensors vastly exceed the capabilities of traditional aerial

106 Martijn W.M. Kitzen, "Westerse Militaire Cultuur En Counter-Insurgency: Een Tegenstrijdige Realiteit", [Western Military Culture and Counter-insurgency: A Contradictory Reality] *Militaire Spectator* 177, no. 3 (2008): 123-134.

107 See for a comprehensive description of the relationship between airpower and operations in a COIN setting: Omissi, *Air Power and Colonial Control*, 84-106.

108 G. Beck, "Offensive Air Power in Counter-insurgency Operations: Putting Theory Into Practice", (Paper, Canadian Forces College, 2008) http://airpower.airforce.gov.au/Publications/Details/56/26-Offensive-Air-Power-in-Counter-Insurgency-Operations-Putting-Theory-into-Practice.aspx (accessed December 1, 2010), 16-17, Mark Clodfelter, "Forty-five Years of Frustration: America's Enduring Dilemma of Fighting Insurgents with Air Power", *Air & Space Power Journal* 25, no. 1 (2011): 78-88, 85, Corum and Johnson, *Airpower in Small Wars*, 428-430, Catherine Dale, "War in Afghanistan: Strategy, Military Operations, and Issues for Congress", In: *War in Afghanistan: Strategy, Military Operations, and Congressional Issues*, ed. Easton H. Ussery (New York: Nova Science Publishers, 2010), 53-122, 76, Jones, *Graveyard*, 303-306, Omissi, *Air Power and Colonial Control*, 150-183, Thomas R. Searle, "Understanding Peace Operations: A Reply to Col Robert C. Owen", *Air & Space Power Journal* 13, no. 3 (1999): 92-101, 99-100, Rashid, *Descent Into Chaos*, 361, Suhrke, "Contradictory Mission?", 230, and Astri Suhrke, *When More Is Less: The International Project in Afghanistan* (London: C. Hurst & Co. Ltd., 2011), 68-69.

109 Corum, "Back to the Basics", 222, and Derek Read, "Airpower in COIN: Can Airpower Make a Significant Contribution to Counter-insurgency?", *Defence Studies*. 10, no. 1/2 (2010): 126-151, 127-131.

110 Lambeth, *Airpower Against Terror*, 261-262.

photography, allowing analysts to increase the situational awareness.[111] The combination of precision guidance with less-destructive or even inert ordnance in turn allows for execution of airstrikes with decreased risk for collateral damage and civilian casualties compared to airstrikes without those capabilities.[112] These capabilities only compile the possibilities and limitations of the (employment) of the air weapon. How it should be employed, and which effects it needs to bring, is again a matter of planning.[113]

The combination of the operational environment and airpower capabilities offers both possibilities and limitations. As with all military operations, air operations balance on the fine line between exploiting the possibilities and minimizing the effect of limitations. The way this is done has strong local variations, as it depends on the deployed airborne platforms and the nature of the environment at a particular time and place. Also, both airpower and the adversary are in processes of constant change. The question with regard to airpower in Afghanistan is what the nature of the operational environment is, and how they influenced air operations.

1.9.3. *Alliance Politics*

Domestic political processes, civil-military relations, and alliance politics can have strong explanatory power when studying innovation and adaptation. However, it has been indicated in the paragraph on the scope of the study that, for reasons of feasibility of the research, domestic politics will be largely bypassed, focussing on NATO developments instead. The same situation applies to civil-military relations. The immediate consequence is that the direct influence of domestic politics will be studied primarily through the lens of NATO developments and the outcome of internal national decision making processes. Therefore, for the purpose of this research this driving factor will be referred to as "alliance politics", which includes civil-military relations on NATO level, and partially includes civil-military relations and domestic politics of nations that deployed military contingents to Afghanistan.

Nations were able to influence the course of events in Afghanistan in three ways, namely through using their influence on NATO policy, by granting or denying requests for deployment of air assets, and by adjusting national mandates, called national caveats,

111 A.G.H. Ordelmans and W. Ligtenberg, "*Geospatial Intelligence:* Militaire Geografie, *Imint* En GIS En Hoe Deze Leiden Tot *Geospatial Intelligence* [Geospatial Intelligence: Military Geography, IMINT and GIS and How These Lead to Geospatial Intelligence]", In: *Inlichtingen- En Veiligheidsdiensten [Intelligence and Security Services]*, ed. B.A. De Graaf, E.R. Muller and J.A. Van Reijn (Kluwer, 2010), 475-492.

112 Boot, *War Made New*, Corum and Johnson, *Airpower in Small Wars*, 430-431, Dunlap, "Making Revolutionary Change", Dunlap, *Shortchanging*, 27, Hallion, "Climbing and Accelerating", 374, and James E. Hickey, *Precision-guided Munitions and Human Suffering*, Military and Defense Ethics Series, ed. Don Carrick, James Connelly, Paul Robinson and George Lucas (Farnham and Burlington, VT: Ashgate Publishing Limited and Ashgate Publishing Company, 2012), 223.

113 Read, "Airpower in COIN", 127-131.

of their airpower contingents.[114] They therefore influenced the manifestations "force levels and resources" and to a lesser extent "plans and operations" directly. National decision making processes mentioned earlier thus manifest themselves via these three ways. Therefore, NATO policy, force levels and resources, and plans and operations will be investigated on differences of opinion of the nations.

Civil-military relations may be of a different nature than originally acknowledged by early scholars within the discourse of military innovation and adaptation. Early innovation studies focused on "top down" civil intervention in order to innovate entire military organizations, with only minor differences between the processes in wartime and peacetime.[115] Then "bottom up" innovative processes were identified, along with additional driving factors, and in irregular conflicts. Concurrently, the appreciation of civil-military relations changed. For instance, James Russell argued that innovation in Iraq occurred despite problematic civil-military relations.[116] Also, Theo Farrell pointed at the possibility of public opinion as an influential factor on innovation and adaptation.[117] In modern counterinsurgencies, this could be even more influential, as insurgents are able to influence the homeland populations quickly via modern means of communication.[118] Within this context, the air weapon is extensively associated with incidents involving unintended human suffering and destruction, also known as the civilian casualties and collateral damage problems. Trumpeting or exaggerating civilian casualties and collateral damage inflicted by airpower could instigate public pressure on national governments to react.[119] This reaction however tends to get formalized in restrictions on the use of force, closing the loop with enforcing Rules of Engagement (ROEs) and national caveats, and therefore with NATO.[120]

Consequently, the causal factors of domestic politics and civil-military relations will primarily be studied within the perspective of the NATO. In practice, this will involve NATO developments and the problems of civilian casualties and collateral damage. The most pressing question in this regard is how changing mandates influenced air operations.

114 Understanding internal civil-military dynamics of nations, and their consequences for state behavior in coalitions, in itself is difficult. In 2013 David Auerswald and Stephen Saideman published a monograph in which they searched for an explanatory model for caveats. They found that there are strong variations between the nations. They however also state that the caveats and force levels were the most visible outcome of the internal processes:David P. Auerswald and Stephen M. Saideman, *NATO in Afghanistan: Fighting Together, Fighting Alone* (Princeton, NJ, and Oxford: Princeton University Press, 2014), 28-29 and 218-221.

115 Grissom, "Future of Military Innovation Studies", 908-910, Barry R. Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars*, Cornell Studies in Security Affairs, ed. Robert J. Art, Robert Jervis and Stephen M. Walt (Ithaca and London: Cornell University Press, 1984), 227 and 239, and Rosen, *Winning the Next War*, 9 and 255.

116 Russell, *Innovation, Transformation, and War*, 195.

117 Farrell, "Military Adaptation in War", 11-12.

118 Nagl, *Learning to Eat Soup with a Knife*, 24-25.

119 Boot, *War Made New*, 367, Hoehn and Harting, *Risking NATO*, 54-55,Morelli and Belkin, "NATO in Afghanistan", 20, Jeffrey M. Smith, "Is Airpower Relevant in a COIN Fight?", (Report, U.S. Army War College, Carlisle Barracks, PA, 2010) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA520144 (accessed February 12, 2012), 4, Rashid, *Descent Into Chaos*, 361, and Suhrke, *When More Is Less*, 68-69.

120 Hoehn and Harting, *Risking NATO*, 54-55, and Morelli and Belkin, "NATO in Afghanistan", 20.

National decision making processes and in-depth analysis of civil-military relations will be left for further study.

1.9.4. Cultural Norms

As is shown by several scholars, culture can have an impact on the process of military change, and it can be both impeding and enabling.[121] It is associated with identity, a generally accepted way of doing things, or a theory of what works. To some extent, doctrines can function as a manifestation of culture, as it describes the operational way of doing things, based on theory and best practices in the field. As the US Air Force basic doctrine states: "*Doctrine establishes a common frame of reference including intellectual tools that commanders use to solve military problems. It is what we believe to be true about the best way to do things based on the evidence to date*".[122] However, service cultures are more deeply embedded than just in doctrines. Measuring the cultural influence on military change however is difficult, although the level of institutionalization could be important. Strong ideas, standardized ways of doing things, and resistance to change, could be indicators.[123] Adam Stulberg and Michael Salomone pointed at the lack of exact meanings accompanying the cultural approach, and Elizabeth Kier acknowledged that it is difficult to determine causality of cultural factors.[124] Indeed, cultural norms are hard to measure, as a definition by Theo Farrell, one of the leading authors within the discourse of military innovation, illustrates: "*the intersubjective beliefs about the social and natural world that define actors, their situations and the possibilities of action*".[125] However, cultural norms do have a function in shaping the identity of the military organization. Furthermore, culture has a profound influence on how its actors define their interests, generating a generally accepted way of doing things, which makes some options unthinkable.[126] Andrew Hill called this the concept of the "ideal combatant". When (proposed) alterations of the existing order align with the concept of the ideal

121 Serena, *Revolution in Military Adaptation*, 13.

122 United States Air Force, *USAF Basic Doctrine 2015*, no page number.

123 Terry Terriff, "'Innovate or Die'": Organizational Culture and the Origins of Maneuver Warfare in the United States Marine Corps", *Journal of Strategic Studies* 29, no. 3 (2006): 475-503, 481.

124 Elizabeth Kier, *Imagining War: French and British Military Doctrine Between the Wars*, Princeton Studies in International History and Politics, ed. Jack L. Snyder and Richard H. Ullman (Princeton, NJ: Princeton University Press Princeton, 1997), 33-35, Stulberg and Salomone, *Managing Defense Transformation*, 21-27, and T. Terriff, "Warriors and Innovators: Military Change and Organizational Culture in the US Marine Corps", *Defence Studies* 6, no. 2 (2006): 215-247.

125 Farrell and Terriff, "Sources", 7. In 1998, Farrell stated: "*Culture helps us to explain organizational choice. Broadly defined, organizational culture consists of beliefs, symbols, rituals and practices which give meaning to the activity of an organization. But in order to examine culture as a cause (as opposed to context) of organizational action, we must focus on cultural norms, i.e., those beliefs which prescribe action for organizational members. Peter Katzenstein distinguishes between constitutive norms, which 'express actor identities', and regulatory norms, which 'define standards of appropriate behavior'. Taken together,'these norms establish expectations about who the actors will be in a particular environment and about how these particular actors will behave'*" (Farrell, "Culture", 410).

126 Kier, *Imagining War*, 31, and Serena, *Revolution in Military Adaptation*, 13.

combatant of the organization that has to adopt it, or when the culture itself encourages behavior supporting innovation, culture could have an enabling influence on innovation.[127]

From this follows that culture will be apparent in smooth incorporation of innovations and adaptations. However, resistance can be expected when senior leaders mutually have different perceptions of what the ideal combatant looks like. Challenge to the concept of the ideal combatant becomes a challenge of identity, according to Hill potentially challenging the order of military society. Hence, culture becomes apparent in what is *not* adopted, but continuously fought over, as human nature has the instinct to protect its identity.[128] Identifying this impeding influence however remains murky, because some changes are not direct attacks on, but rather subtle deviations from, the established norm. Discussion between senior leaders, the guardians of culture and also the officials empowered to resist or embrace change, could therefore have the appearance of logical reasoning, because resistance on moral grounds is often inappropriate.[129] Besides this link between culture and leadership, the established norm could also be influenced by developments of the operational environment. As Hill states: "*the organization's natural resistance to embracing an effective innovation will not alter an enemy's exploitation of a stubborn adherence to ineffective approaches*".[130] In other words, the cultural dimension could manifest itself in continuous bickering about proposed changes, possibly in the face of operational setback. Outside the theater, it could manifest itself in official publications, in which military professionals directly challenge the implicit assumptions generated by culture.[131] In theater, it could manifest itself in arguments between personnel with different cultural backgrounds. When persistent problems occur, it is likely to become more visible in literature. And if the problems are severe enough, decisions may be enforced, culture then becoming a driving factor for change. Therefore, any kind of friction, irrationality, tension, argument, debate, paradox, or impasse will be challenged on the question to what extent culturally induced prejudices may have been in play.

In variation to this point, some authors coupled cultural influences with the organization's willingness and ability to learn from lessons learned processes. Both David Ucko and Williamson Murray suggested that the conceptual gap between the conflict a military is prepared for and the conflict it is actual fighting should be as small as possible. Both the width of the gap and the willingness to close it influences how adaptable an organization is. That willingness becomes apparent in a well-functioning lessons learned

127 Andrew Hill, "Military Innovation and Military Culture", *Parameters* 45, no. 1 (2015): 85-98, 85-88.

128 Hill, "Military Innovation", 86.

129 Hill, "Military Innovation", 91 and 95.

130 Hill, "Military Innovation", 94.

131 Kier, *Imagining War*, 30-31.

process.[132] Also, some authors suggested that an environment that encourages learning, involving openness to new ideas, is part of culture as well.[133]

In addition, there may be more cultures influencing change at the same time. Several scholars observed relationship between military innovation and adaptation on the one hand and the existence of subcultures on the other.[134] At first glance, there are many subcultures operating in Afghanistan. From the top down, first, there are national cultures effecting developments within NATO, and within ISAF as well because air operations over Afghanistan constitute an international endeavor. Second, the operational mindset of western militaries to execute conventional operations could be at odds with the operational reality encountered in Afghanistan. Ucko and Martijn Kitzen point at the cultural dimension of the belated change of the operational mindset from conventional warfare to unconventional warfare in Iraq and Afghanistan.[135] Third, armed services have their own way of doing things, which becomes problematic when tasks overlap, or the members of several services need to work together on the same task. Literature shows that rivalries and parochialism of several kinds could stall or severely delay developments of change, fielding of new technologies, new concepts, or adaptation to new types of warfare.[136] Further down the chain of command, other subcultures such as cultures related to branches within each service, influence the process of military change as well.

Airpower professionals encountered all these cultures at the same time, as they are part of an international alliance. Service cultures are expected to influence operations, because airpower is not restricted to air forces, and operations are executed with several service branches simultaneously. Finally, airmen bring their own set of norms and beliefs, also known by the term "airmindedness".[137] As cultural elements of the process of change become apparent in service literatures, educational curricula, lessons learned processes, and friction and discussions during concept-development and operations, these

132 Murray, *Fear of Change*, 308-309 and 312-313, and Ucko, *New Counterinsurgency Era*, 17.

133 Russell, *Innovation, Transformation, and War*, 42-43, Serena, *Revolution in Military Adaptation*, and Stulberg and Salomone, *Managing Defense Transformation*, 54-55.

134 Berman, "Capturing Contemporary Innovation", 140-143, Murray, *Fear of Change*, 6, 308-309 and 312-313, Serena, *Revolution in Military Adaptation*, 13, and Stulberg and Salomone, *Managing Defense Transformation*, 21-27.

135 Kitzen, "Westerse Militaire Cultuur", Martijn W.M. Kitzen, "Aanpassen of Aanmodderen?: De Amerikaanse Omschakeling Naar Counterinsurgency in Irak", [Adapting or Muddling Through?: The American Switch to Counterinsurgency in Iraq] *Militaire Spectator* 178, no. 6 (2009): 1-17, and Ucko, *New Counterinsurgency Era*, 44-45. Ucko even called this, partially culturally induced, reluctance a "counterinsurgency syndrome".

136 Farrell and Terriff, "Sources", 13-15, Ian Hope, "Unity of Command in Afghanistan: A Forsaken Principle of War", In: *War in Afghanistan: Strategy, Military Operations, and Congressional Issues*, ed. Easton H. Ussery (New York: Nova Science Publishers, 2010), 33-52, 36-37, Johnson, *Learning Large Lessons*, Kitzen, "Westerse Militaire Cultuur", Lambeth, *Airpower Against Terror*, 301, Owens, "Creating", 211-213, John Stone, "The British Army and the Tank", In: *The Sources of Military Change: Culture, Politics, and Technology*, ed. Theo Farrell and Terry Terriff (Boulder, CO: Lynne Rienner Publishers, 2002), 187-204, 190, and Craig D. Wills, "Airpower, Afghanistan, and the Future of Warfare: An Alternative View", (CADRE Papers, Nr. 25, Air University Press, Maxwell Air Force Base, AL, November, 2006) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA462965 (accessed November 13, 2011).

137 Charles J. Dunlap, "Air-minded Considerations for Joint Counterinsurgency Doctrine", *Air & Space Power Journal* 21, no. 4 (2007): 63-74, and United States Air Force, *AFDD 1 (2011)*, 8.

manifestations of culture will be analyzed to answer the question which role culture has in shaping air operations over Afghanistan.

1.9.5. *Leadership*

Leadership can be a powerful enabler or inhibitor for military change. Leaders provide a crucial link between theory and practice. Leadership is required in order to keep all military operational concepts, from strategy via operational plans and operations to tactics, in line with each other. As strategic theory, strategy and doctrine provide only fundamental principles or general concepts, translating them into operations require judgement in application by military commanders.[138] Also, operational and tactical leadership is required to deal with operational contingencies and ensuring that military actions are kept in line with the goals of higher echelons. In a standard work on leadership, Gary Yukl proposed the following definition: "*Leadership is the process of influencing others to understand and agree about what needs to be done and how to do it, and the process of facilitating individual and collective efforts to accomplish shared objectives*".[139] According to Yukl, most scholars evaluate leadership effectiveness in terms of the consequences of the leader's influence on a single individual, or on a team or a group. There are however strong variations on the kinds of the measurements of effectiveness these scholars use, and there are many theories that try to explain leadership effectiveness.[140]

It is beyond the scope of this thesis to extensively describe and explain leadership within the framework of leadership theories. It does not seek to evaluate leadership effectiveness *per se*, but only the role of leadership in the context of the changing role of airpower. It does acknowledge the influence of individual leaders on the process of military change. Also, it is possible that leadership issues could have mutual links with developments (or lack thereof) in other domains such as training and education, lack of doctrine or cultural biases.[141] Therefore, this study will focus on leadership attitudes towards change, and the activities military commanders display in attempts to implement changes. Which commanders identified needs for change with regard to air operations? What was the rationale behind those changes? How receptive was the immediate environment towards the new or adaptive ideas? What were considerations behind their suggestions? Answers to these questions will provide a picture of how military leadership in Afghanistan valued and changed the role of airpower in Afghanistan.

138 Formulation derived from AFDD-1: United States Air Force, *AFDD 1 (2011)*, 1.

139 Gary Yukl, *Leadership in Organizations* (Harlow: Pearson Education Limited, 2013), 23.

140 Yukl, *Leadership in Organizations*, 24-26.

141 NATO, *Joint Analysis Handbook*, October, 2007, http://www.jallc.nato.int/newsmedia/docs/Joint_Analysis_Handbook_3rd_edition.pdf (accessed November 18, 2012), 43.

1.10. On Sources

Many sources supported research for this study. There are books, edited volumes, and journal articles that deal with subtopics that are relevant for answering the research question. These topics include cooperation between air-and land forces, air command and control, and operations using Unmanned Aerial Systems (UASs), to name but a few. Special mention deserves the body of theses and reports from students of the various US military colleges and universities. The US made many of these theses and reports publicly available via the Defense Technical Information Center (DTIC). They were invaluable for analysis of specific topics, as well as for delivering information on air operations that could be processed.

There are several books, booklets, and magazine articles that can be classified as non-scientific in the sense that they lack a professional reference system and a research question. In addition to the already mentioned publication of Tim Ripley, among them are memoirs of aircrews and senior level military and civilian leaders, issues of the *Osprey Combat Series*, and many articles in, for instance, *Air Forces Monthly* magazine. Although information retrieved from these publications requires additional corroboration, they offer data on the tasks and missions of the air weapon, and insights in the dynamics of air operations. In some instances, it was not possible to verify information coming from one of the sources. In that case, the specific piece of information remains anecdotal. This will be addressed specifically, and conclusions will be adapted accordingly.

Of special interest are the opinions of the senior commanders themselves. Dag Henriksen's edited book proved to be invaluable in this respect, as it offers reflections from nine senior airmen on a period where many problematic issues surfaced. This study has supplemented these insights with sixteen interviews of the author with partially the same air commanders, senior ground commanders, and specialists in specific fields. The US Air Force Historical Research Agency (AFHRA) provided transcripts of five more interviews conducted in the context of its research on training, advising, and assisting the Afghan Air Force. *Airpower in Afghanistan 2005-10* and the interviews were very useful for identifying problematic issues and verification of information found elsewhere.

Whenever information gaps remained, this study reverted to magazine articles, newspaper articles, wire feeds, and websites. These sources deliver much, albeit scattered, information, and proved to be useful for extraction of "hard data", such as arrival or departure of national contingents. Consequently, the number and locations of non-US air assets in theater, or NATO Air Order of Battle (AOB), is largely based on these sources. But sometimes, use of websites and wire feeds was necessary to support an argument. This is especially true for the more recent episodes of air operations in Afghanistan. This is hazardous due to the fluent nature of these sources, sometimes unknown background, and prejudices of some monitoring groups. This challenge is mitigated in several ways. First, this study systematically sought to corroborate all information using a different

source. Second, databases that log wire feeds, magazine articles, and other media that deliver news, most notably ProQuest, are used extensively. Third, especially websites are challenged on their source. This means a strong preference for official websites, and websites that have an established name, such as, for instance, *Small Wars Journal*.

Available sources also pose challenges of a more fundamental nature. First, to a large extent, the research of this study has been executed while the operations in Afghanistan were still ongoing. The immediate consequence is that early air operations in Afghanistan are better documented than the later ones. The recent nature of the conflict has necessarily led to a shortage of primary sources, as most of these sources are classified and have not be released to the public yet. This is especially visible with the topics of formal lessons learned and the exact number of US aircraft in theater at any given time. Formal lessons learned surfaced when incidents and persistent challenges induced formal investigations and discussions in the media and scholarly reports. Also, the lessons that were learned manifested themselves in the events that followed. Changes of guidelines are a reflection of lessons learned. This remains problematic to some extent, because the causal relationships between identified problem and actual changes are not always visible. Future research is required to confirm or deny propositions made in this respect in this study. In addition, the exact number of US aircraft available for air operations to some extent remains unknown. This is partly due to the releasability of the information, but also due to the circumstance that the US air command and control architecture in theater also served operations above other countries than Afghanistan. Most notably, it involved Iraq and of late Syria. Nevertheless, general locations of units and their types of aircraft are publicly available. In addition, the US Air Force publishes data on actual operations on their website on a monthly basis. Combined with general assessments on the availability of airpower, it is still possible to draw conclusions in the context of the changing role of the air weapon operating above Afghanistan.

Second, information obtained from interviews and official websites requires additional corroboration, because of their inherent risk that the reality is approached rather uncritically. Their use is unavoidable, due to the relative dearth of availability of primary sources. As this study offers the first general outline of the developing role of airpower in Afghanistan, this is justifiable to a certain extent. In addition, a large amount of sources, and a large diversity of types of sources, serve as a safeguard for reliability of the conclusions reached.

Third, most of the sources are in the (American) English language. This means that the implicit focus to a large extent is on the USAF and NATO. As the conceptual focus is that of the senior air commanders, this is justifiable. However, the narrative of the role of airpower in Afghanistan may be updated with national perspectives in the future.

1.11. Thesis Structure

The central research question and the use of a frame of reference deduced from the discourse on military innovation and adaptation proscribe a certain structure to this monograph. Analysis of the various bodies of literature shows that some preparatory research is in order before the developments of the role of the air weapon can be properly analyzed. First, proper analysis of airpower in Afghanistan requires insight in the theoretical role of airpower in irregular environments. The notion that the debate on airpower in irregular warfare is somewhat hidden from mainstream literature does not exempt scholars from analyzing it. After all, it was the theoretical foundation on which the deployment of airpower in Afghanistan rested. Chapter two analyses this discourse in search of an answer to the question whether there is an inherent tension between airpower and irregular warfare, whether this tension has changed during the debate, and which influence it potentially could have on the actual conduct of air operations. Formulated differently: did the RMA influence the theory of airpower application in irregular warfare?

Second, analysis of the role of the air weapon in Afghanistan requires a description of the political and military context of the conflict. The narrative on Afghanistan leaves the gap of air operations. But isolating the air weapon without the proper incorporation in the political context and the military context on the ground would be equally objectionable. Consequently, chapter three answers the subquestion of what the environmental context was for airpower deployment between 2001 and 2016. It has historical, social, physical, political, and contemporary operational dimensions. It therefore offers a general outline of Afghanistan and its people, and of historical deployment of airpower in Afghanistan. It also describes the developments on the ground during the most recent conflict, and the challenges the militaries faced. Significant attention will be paid to the dynamics within NATO before and during the conflict in Afghanistan. This sets the stage on which airpower acted. In addition, it answers the subquestion how national decision making processes within the alliance influenced operations in Afghanistan.

These two chapters provide the conceptual and operational backgrounds for research on air operations in Afghanistan. Chapter three identifies four main phases of the conflict: a phase that had a focus on large scale operations in a CT context (2001 - 2002), a phase that mainly contained both CT and S&R operations (2002 - 2008), a phase in which the requirement for COIN was recognized, and actions were taken accordingly (2008 - 2012), and a phase in which the main focus of effort was building Afghan security forces (2012 - 2016). These phases overlap to some extent, especially with regard to building the Afghan Air Force, which started in 2005 and continued into 2016. Nevertheless, the phases offer the opportunity to describe and explain the changing role of the air weapon during the conflict, using the discourse of military change as a frame of reference. This will be done in chapters four to seven. These chapters provide for the actual analysis of airpower in Afghanistan, and are arranged by the identified phases of the conflict. They have similar

structures. After a short introduction, each chapter systematically describes developments of the manifestations of military change that have been identified in the frame of reference. These developments are merged in an analytical paragraph, which answers the question which driving factors were responsible for eventual changes, and what the nature of the influence was. The concluding paragraph of each chapter then explains developments from the operational-level perspective. In the last chapter, the conclusion, the developments within the time frames will be combined, delivering description and explanation of posture changes of airpower during deployment in Afghanistan between 2001 and 2016. An epilogue provides for some observations with regard to airpower innovation, as witnessed during application in Afghanistan between 2001 and 2016.

1.12. Summary

This study addresses the theme of airpower in irregular warfare, more specifically information age airpower in modern irregular conflict. It uses the case study of airpower application in Afghanistan between 2001 and 2016. Its central research question is: what was the role of airpower during the conflict in Afghanistan during the period between 2001 and 2016, how did this role evolve, and how can this evolving role be explained? It investigates the question from the context the senior-level military commanders. By doing so, this study effectively describes and explains the development of the air campaign that senior airmen planned and executed in Afghanistan in support of the strategic and operational goals that were formulated by senior civilian and military policy makers. In order to answer this main question, the study will first answer the subquestion what the conceptual foundation of airpower application in irregular environments was. Second, it will answer the subquestion what the operational context of airpower application in Afghanistan was. Third, it will describe and explain actual changes of airpower application in the four identified phases, covering the period between 2001 and 2016. Answering these questions contribute to the knowledge and understanding of theory on airpower in irregular warfare, and adds airpower to the narrative of the conflict in Afghanistan.

In order to focus the research, the discourse of military innovation and adaptation is used. This discourse provides for a frame of reference, which however has to be tailored to the specific context of airpower in Afghanistan. The frame of reference consists of seven manifestations, namely: strategy, plans and operations, doctrine, force levels and resources, command relationships, and education, training and lessons learned. Of those, strategy and plans and operations provide for the backbone of airpower development. The frame of reference also consists of five driving factors influencing the manifestations, which are: technology, operational environment, alliance politics, cultural norms, and leadership.

This frame of manifestations and driving factors allows for structured description of military operational developments via the manifestations, and explanations for these developments using a comprehensive set of driving factors. By doing so, the frame of reference primarily is used for explanation of the historical development of the air weapon during employment in Afghanistan. This is one of the three applications identified in the discourse. This study will not formulate recommendations for enhancing an organization's innovative ability, which is the second application. The relationship with the third application, building or testing theory of military innovation, is less clear-cut. This endeavor can serve as one of the building blocks for future comparative research, and therefore for theory development. Consequently, this study allows for some analysis of the processes of military innovation and adaptation. This will be done in the epilogue, because the main goal remains description and explanation of airpower development in the specific irregular warfare context of Afghanistan between 2001 and 2016.

While this frame of reference offers the opportunity to supplement airpower theory and the narrative of the conflict in Afghanistan, this study also has several limitations. First limitation is the risk of missing elements that fall outside the frame of reference and are not apparent in unclassified and publicly available sources. This is unavoidable for a study on a recent subject such as airpower in Afghanistan. Second limitation is a choice of breadth at the expense of depth of research on the manifestations. The absence of a comprehensive narrative on airpower in Afghanistan, combined with a dearth on available unclassified sources, impose and legitimize this choice. The third restriction is cursory treatment of domestic developments of each nation delivering airpower, and the consequence for the analysis via one of the drivers, namely civil-military relations. This driver is incorporated in the driver "alliance politics", leaving national decision making processes relatively underexposed. Negative influences of these limitations are mitigated as much as possible, for instance via the use of many sources, and in large variety. Nevertheless, the three limitations offer opportunities for future research about detailed developments of the manifestations and national varieties with regard to employment of airpower in Afghanistan.

Chapter 2

2. Discourse on Airpower in Irregular Conflict[1]

2.1. Introduction

Chapter one observed that mainstream literature lacks a proper discourse on the topic of airpower in irregular warfare. The total number of books that deal with the topic is less than a dozen, and their scientific value varies greatly. Most of them offer well-referenced descriptions of the airpower contribution in past insurgencies. But with the exception of James Corum and Wray Johnson's *Airpower in Small Wars,* they do not offer comprehensive conclusions.[2] Other books are of a more conceptual nature, offering mostly practical recommendations for existing air forces, such as advise to write doctrine. However, they lack fundamental analysis on the role the air weapon had or should have in irregular wars.[3] Articles in peer-reviewed journals are evenly scarce. Although of high quality, recent publications have been few and far between, and, with the exception of Harry Kemsley's "Air Power in Counter-insurgency: A Sophisticated Language or Blunt Expression?", they don't reveal a debate of any substance.[4] Articles in military journals, reports and theses written by officers of various military colleges, and even articles in blogs, offer more potential. They are sometimes of very good quality. The main problem of these publications is their target audience. They are written primarily to reach (sub)communities within the military and, in case of the reports and theses, the professors who grade them. In short, the debate, if there is any, takes place outside mainstream literature and within the military. It is a niche which, with some notable exceptions that will be discussed below, rarely reaches audiences outside the military. One of the peer-reviewed articles indicates that this has

1 An earlier version of this chapter is published as a research paper by the Netherlands Defense Academy: Rob Sinterniklaas, "Airpower and Irregular Warfare Thinking (1991-2011)", (Research Paper No. 104, Netherlands Defence Academy, Faculty of Military Sciences, Breda, January, 2013).

2 James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence, KS: University Press of Kansas, 2003), James Fergusson, and William March (eds), *No Clear Flight Plan: Counterinsurgency and Aerospace Power* (Winnipeg, MB: Centre for Defense and Securities Studies, The University of Manitoba, 2008), Sanu Kainikara (ed), *Friends in High Places: Airpower in Irregular Warfare* (Canberra: Air Power Development Centre, 2009), http://airpower.airforce.gov.au/Publications/Details/393/Friends-in-High-Places-Air-Power-in-Irregular-Warfare.aspx (accessed November 13, 2011), Sebastian Ritchie, *The RAF, Small Wars, and Insurgencies: Later Colonial Operations, 1945-1975* (Air Historical Branch, 2011), http://www.airpowerstudies.co.uk/RAF%20and%20Small%20Wars%20Part%202.pdf (accessed January 31, 2013), and Philip Anthony Towle, *Pilots and Rebels: The Use of Aircraft in Unconventional Warfare 1918-1988* (London: Brassey's, 1989).

3 A.K. Agarwal, *The Third Dimension: Air Power in Combating the Maoist Insurgency* (New Delhi: Vij Books India, 2013), and David J. Dean, *The Air Force Role in Low-intensity Conflict* (Maxwell Air Force Base, AL: Air University Press, 2001).

4 Richard B. Andres, Craig Wills and Thomas E. Griffith, "Winning with Allies: The Strategic Value of the Afghan Model", *International Security* 30, no. 3 (2006): 124-160, Stephen D. Biddle, "Allies, Airpower, and Modern Warfare: The Afghan Model in Afghanistan and Iraq", *International Security* 30, no. 3 (2006): 161-176, John P. Cann, "Lessons in Airpower Projection: Indochina and Algeria", *Small Wars and Insurgencies* 24, no. 1 (2013): 103-128, Dennis M. Drew, "U.S. Airpower Theory and the Insurgent Challenge: A Short Journey to Confusion", *The Journal of Military History* 62, no. 4 (1998): 809-832, Harry Kemsley, "Air Power in Counter-insurgency: A Sophisticated Language or Blunt Expression?", *Contemporary Security Policy* 28, no. 1 (2007): 112-126, Andrew Mumford, "Unnecessary or Unsung? The Utilisation of Airpower in Britain's Colonial Counterinsurgencies", *Small Wars & Insurgencies* 20, no. 3/4; (2009): 636, and Derek Read, "Airpower in COIN: Can Airpower Make a Significant Contribution to Counter-insurgency?", *Defence Studies*. 10, no. 1/2 (2010): 126-151.

basically been the case since at least the end of the Second World War.[5] This is remarkable because, as has been described in the introduction, the situation is different for literatures on both airpower and irregular warfare. In addition, lack of a mature debate could be an indication that theory on airpower in irregular warfare is immature as well. This is problematic, as it would mean that the role the air weapon ideally has in environments such as Afghanistan has insufficiently evolved, with potential problems looming in its application.

The reason for this remarkable situation may lie in the combination of institutional lack of interest on the part of the airmen on the topic of irregular conflict on the one hand, and scholarly consensus on the preferred method of airpower employment on the other. In 1997, Dennis Drew published a chapter on airpower in Counterinsurgency (COIN) in *The Paths of Heaven: The Evolution of Airpower Theory*.[6] In this chapter he analyzed reports and theses, articles in professional military journals, and military doctrine, from the end of the Second World War until the mid-1990s. He found that there was an institutional lack of interest on the topic of airpower in irregular conflict until at least the 1980s. The issues of strategic nuclear bombing and interdiction missions in the context of the Cold War were found to be more pressing. The conflict in Vietnam did not alter that stance, as mixed feelings about the conduct and the, in the end, undesirable outcome led military professionals to desire a refocus on the conventional threat of the Soviet Union. During the 1980s and early 1990s, the emotional trauma of the Vietnam war had sufficiently faded in order to devote some professional attention to airpower in irregular warfare, most notably in doctrine. However, in general, Drew argued that the US Air Force (USAF) regarded irregular wars as a smaller version of conventional wars, which led to haphazard institutionalization of the insights in doctrines. Most notably, these insights were incorporated into low-level doctrines, and were not institutionalized at service and joint levels. Drew found it unfortunate that the most influential airpower theorist at the time, John Warden[7], seemed to reinforce the pre-eminence of strategic bombing, this time conventional, while largely ignoring irregular warfare.[8] This was problematic, as Drew stated that *"the nature of insurgency challenges nearly every facet of US airpower theory and makes the application of traditional airpower theory problematic"*.[9]

Drew argued that the few publications of professional scholars show consensus from the mid-1980s onwards on airpower deployment in an insurgency environment. With some minor variations, it concerned consensus on four topics. First, they agreed on the nature of COIN as being a struggle for legitimacy of the government. Second, this type of conflict required a comprehensive strategy that included the least amount of lethal

5 Drew, "U.S. Airpower Theory".

6 Dennis M. Drew, "Air Theory, Air Force, and Low Intensity Conflict: A Short Journey to Confusion", In: *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Philip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 1997), 321-355. This chapter was later published in *The Journal of Military History*:Drew, "U.S. Airpower Theory".

7 Warden's ideas and influence will be discussed in the next paragraph.

8 Drew, "Short Journey to Confusion", passim.

9 Drew, "Short Journey to Confusion", 323.

application of firepower in order to minimize collateral damage. Third, they regarded the role of technology to be ambiguous. The helicopter, by then still a fairly new weapon system, was regarded to be very useful. But in general, aircraft designed for high-speed conventional warfare were regarded to be ineffective, in favor of low-speed aircraft. Fourth and finally, the authors Drew studied agreed that supporting roles of the air weapon, such as reconnaissance, troop transport and resupply, would be the roles where it was most useful.[10] From this description it can be derived that military professionals largely ignored the consensus of professional scholars on theories on the proper application of airpower in irregular wars. Instead, focusing on conventional threats.

Drew's publication requires significant attention because it aptly describes and analyzes the development of airpower theory in the context of irregular warfare up and until the 1990s. By this time, however, two developments were already taking shape which potentially altered the balance. First, the air weapon itself was subject to significant change. From the 1970s onwards it became much more capable than before. This was shown dramatically during operation *Desert Storm* in 1991, which to a large extent was master-minded by John Warden, and in which airpower produced results that surprised even some US military experts.[11] The course of events during *Desert Storm* was one of the most promising indicators of a fledgling Revolution in Military Affairs (RMA), which entailed incorporation of technologies of the information age into the military along with theoretical concepts.[12] The United States pursued further development of the RMA-influenced military under the name of "Transformation". Although not strictly an airpower revolution, these developments benefitted the air weapon significantly. The changes airpower went through spawned a renewed, and more effective, combination of range, speed, flexibility, precision and lethality. As *Desert Storm* showed, this renewed combination allowed the air weapon to deliver desired effects at the strategic level, i.e. on the Iraqi leadership. To some contemporary airpower thinkers, the air weapon became of age during the 1990s, because it seemed finally able to deliver the effects early airpower proponents of the 1920s dreamt of.[13] As the air weapon changed, it could also be that its role in irregular conflict changed.

Second, the physical, political, and military environment airpower operated in changed as well. Military conflicts between roughly comparable regular standing armed forces became less likely after the Cold War, in favor of a kaleidoscopic set of irregular conflicts.

10 Drew, "Short Journey to Confusion", 340-344.

11 Fred Frostic, "The New Calculus: The Future of Airpower in Lights of Its Qualitative Edge", In: *Air Power Confronts An Unstable World*, ed. Richard P. Hallion (London and Washington: Brassey's, 1997), 203-225, 203-204, John Andreas Olsen, *Strategic Air Power in Desert Storm* (London and New York, NY: Routledge, 2003), passim, and Frans Osinga, "The Rise of Military Transformation", In: *A Transformation Gap?: American Innovations and European Military Change*, ed. Terry Terriff, Frans Osinga and Theo Farrell (Stanford, CA: Stanford University Press, 2010), 14-34, 19.

12 Eliot Cohen, "A Revolution in Warfare", *Foreign Affairs* 75, no. 2 (1996): 37-54.

13 Richard P. Hallion, "Air and Space Power: Climbing and Accelerating", In: *A History of Air Warfare*, ed. John Andreas Olsen (Washington, DC: Potomac Books, 2010), 371-393, 374, and Frans Osinga, "'Airpower' in Het Postmoderne Tijdperk: Revolutie in De Lucht", ['Airpower' in the Post-modern Era: Revolution in the Air] *Militaire Spectator* 172, no. 6 (2003): 338-357, 338-340.

Contemporary scholars on irregular warfare are grasping the challenges associated with modern, globalized, irregular warfare, building on classical counterinsurgency thinking that had its roots mainly in decolonization wars and revolutionary wars of the twentieth century.[14] However, the role of airpower in these conflicts is not investigated systematically. It therefore remains unknown how modern airpower theoretically could operate in modern irregular conflict.

This means that the research question for this chapter should be slightly different from the one that has been implicitly posed thus far: how did military professionals conceptualize the role of information age airpower in contemporary irregular conflicts? A small part of the question already has been answered above: there still is no mature discourse on airpower theory for irregular contexts, and there are indications that the reason for this situation up and until the 1990s is that there was a implicit consensus between scholars and military professionals about the theory on airpower in irregular warfare. It has to be supplemented with developments during the period after 1991. This chapter therefore will address in sequence how airpower theory and irregular warfare theory have evolved over the last two decades. Then, a section will be devoted to contemporary book chapters, theses and reports, and articles in professional military journals, that deal with airpower in irregular war. In this sense, this chapter takes over where Dennis Drew stopped. The goal of that section will be to investigate whether there are any fundamental differences of opinion on ideal employment of airpower in irregular environments, what these differences entail, and how they can be explained. It will not provide the answer to the question which role the air weapon played, plays or should play in irregular warfare. Also, it will not answer the question whether an air weapon shaped for conventional warfare will be just as effective in irregular warfare. It outlines how various authors defined the role of airpower in irregular warfare and it shows the progress on thinking on these topics. By addressing both irregular warfare theory and airpower theory and then turning to theory on airpower in irregular warfare, the above mentioned differences of opinion will be put in perspective. This perspective will be assessed in a separate paragraph. If applicable, developments that show a relationship with the discourse on military innovation and adaptation will also be addressed in this paragraph. This will allow the concluding paragraph to answer the main question of how contemporary airpower is conceptualized in contemporary irregular environments.

14 See for an introduction on these challenges: Thomas Rid, and Thomas Keany (eds), *Understanding Counterinsurgency: Doctrine, Operations, and Challenges* (London and New York, NY: Routledge, 2010).

2.2. Airpower Theory

2.2.1. *Airpower and the Revolution in Military Affairs*

Irregular warfare theory has played only a marginal role in airpower thinking of the last two decades. Mainstream airpower thinking instead has focused on the evolution of the air weapon within the context of a clash between more or less equally organized, state directed, militaries. This could have a valid reason, as the most important mission of the air weapon has been, and still is, achieving control of the air.[15] Without the ability to exploit the airspace to one's own advantage, other roles, such as furnishing mobility, executing air to surface attack and delivering situational awareness of the battle space, will be nearly impossible.[16] Thus, maintaining a qualitative edge over the adversary's weapon systems, being their air defense fighters or Ground Based Air Defense (GBAD), is crucial to the aircrew's survival above the battlefield. Because western airpower has historically enjoyed air superiority in irregular conflicts, the operations most life threatening to aircrews did not have to be executed. In this argument the existential threat posed by potential peer or near-peer adversaries is deemed more important than non-existential threat posed by more topical irregular adversaries. Conceptually then, it seemed sensible to strive for excellence in the field that is most threatening, and devote conceptual thinking to that topic as well. Priorities could dictate that the air weapon should display a higher level of competence in fighting regular wars than in fighting irregular wars. Hence the conceptual focus on winning regular conflicts.[17]

In a parallel process, a paradigm shift was taking place in western way of conducting war, and one that profoundly influenced the qualitative edge that western airpower enjoyed. These changes are also known by the much debated term "Revolution in Military Affairs" (RMA). Max Boot argues in his monograph *War Made New* that revolutions in military affairs historically provided leverage to those states that incorporated technological innovations best in their organizations. New technologies could only create a potential for a revolution. For an actual revolution to take place the incorporation of technological innovations into the military should be accompanied by changes in (political) leadership, organization, doctrine, strategy, tactics, leadership, training and morale. A RMA delivered a military edge to those states who were the most effective in adapting their bureaucracies to incorporation of relevant technological innovations.[18] In short, effective military organizations not only incorporated new technologies, they also learned how to use

15 Hallion, "Climbing and Accelerating", 379-380.

16 Richard P. Hallion, "Introduction: Air Power, Past, Present and Future", In: *Air Power Confronts An Unstable World*, ed. Richard P. Hallion (London and Washington: Brassey's, 1997), 1-12, 3.

17 David J. Lonsdale, "Strategy: The Challenge of Complexity", *Defence Studies* 7, no. 1 (2007): 42-64, 51, and Keith L. Shimko, *The Iraq Wars and America's Military Revolution* (Cambridge, UK: Cambridge University Press, 2010), 225.

18 Max Boot, *War Made New: Technology, Warfare, and the Course of History, 1500 to Today* (New York, NY: Penguin Group, 2006), 9-16.

them properly. According to Boot, the latest and mainly American RMA evolved around *"developing an Information Age military built around smart weapons and smart people"*.[19] However, whether or not the changes western militaries underwent are to be characterized as an evolution, an "*evolutionary revolution*"[20], or a revolution proper remained subject to debate.[21]

Although its roots can be traced to the 1970s, the promising impact of the latest RMA became fully visible during *Desert Storm* in 1991, where a *"a handful of the most advanced U.S. weapons systems had an impact out of all proportions to their numbers"*.[22] From a technological standpoint three types of advances characterized the RMA. The advances made were in the realms of weapons, sensors, and communications, which together form what Keith Shimko called the *"reconnaissance-strike complex"*.[23] According to Shimko, the effectiveness of weapons increased due to improved guidance techniques such as laser guidance of Laser Guided Bombs (LGBs), satellite navigation of cruise missiles, and GPS-guidance for Joint Direct Attack Munitions (JDAMs).[24] Also, the "fog of war" could largely be diminished, albeit not eliminated, by a whole set of new sensors. Enhanced night vision equipment, blue force trackers using GPS, satellite imagery, airborne radars, such as Airborne Warning and Control System (AWACS) and the Joint Surveillance Target Attack Radar System (JSTARS), are examples of this.[25] Shimko further indicated that Unmanned Aerial Vehicles (UAVs) and their armed versions, Unmanned Combat Aerial Vehicles (UCAVs), were of special interest. Not only did these systems contribute to the Intelligence, Surveillance and Reconnaissance (ISR) effort, weaponized UAV's also shortened the sensor-to-shooter cycle by merging sensor and shooter, which was seen as a great advantage.[26] However, in order to maximize the potential of the new sensors and weapons they needed to be interoperable. This meant that sensors, weapons, and military personnel operating them had to be electronically linked in a timely manner. That way, the military decision cycle was not delayed by bottlenecks in the information system, thus enabling all participants to act and interact with the same level of situational awareness. This was especially relevant in a time-sensitive environment, where emergent or highly mobile targets had to be engaged. Therefore, redundant communications were a critical enabler for an effective reconnaissance-strike complex.[27] According to Shimko, both possibilities and limitations of the reconnaissance-

19 Boot, *War Made New*, 349.

20 Frostic, "New Calculus", 203.

21 Cohen, "Revolution", and Shimko, *Iraq Wars*, 1-25.

22 Boot, *War Made New*, 349. See also: Cohen, "Revolution", Colin S. Gray, *Airpower for Strategic Effect* (Maxwell Air Force Base, AL: Books Express Publishing, 2012), 189-235, Richard P. Hallion, *Storm Over Iraq: Air Power and the Gulf War* (Washington and London: Smithsonian Institution Press, 1992), and Osinga, "'Airpower'".

23 Shimko, *Iraq Wars*, 93-99.

24 Shimko, *Iraq Wars*, 94-95.

25 Shimko, *Iraq Wars*, 95-96, and Boot, *War Made New*, 328-331.

26 Frans P.B. Osinga, *Science, Strategy and War: The Strategic Theory of John Boyd*, Strategy and History, ed. Colin Gray and Williamson Murray (London and New York, NY: Routledge, 2007), 245-249, and Shimko, *Iraq Wars*, 95-96.

27 Shimko, *Iraq Wars*, 95-99, and Boot, *War Made New*, 328-330 and 362-363.

strike complex then in place became apparent during operation *Desert Storm*, and during in the 1990s the US spent considerable effort to technologically perfect it.[28]

As stated, indications were that technological innovations were only useful if the organizations applying them were able to use them properly. During the second half of the 1990s the US started to develop intellectual innovations to accompany the technological ones. Of those, the concept of Network Centric Warfare (NCW) stands out.[29] The goal was to accelerate the military decision making process and increase the operational tempo by creating "information dominance" over the enemy.[30] Rapidly collecting, processing and disseminating information back and forth to all command levels would create a high level of situational awareness by all commanders, allowing them to respond quickly and effectively to changing operational situations. The idea had links with the already existing theory of John Boyd's decision cycle of Observation, Orientation, Decision and Action (OODA-loop).[31] Boyd's concept was that the friendly military force was able to force psychological paralysis on the enemy to the point where the latter was no longer willing or able to resist. This could be done by simultaneously and systematically trying to minimize friction in one's own decision making cycle, while trying to frustrate the enemy's cycle through swift and destabilizing military actions.[32] Success in conflict thus followed from a faster and more effective decision cycle than the enemy's. It also implied that it was dependent on rapid dissemination of timely and accurate information and intelligence, which in turn needed, besides an effective intelligence organization, an elaborate information network to get all the right information and intelligence to the right participants.

But merely exchanging information between sensors, weapons systems and command levels was not sufficient. In order to exploit information dominance to the full military operations had to be joint, because the renewed combination of weapons, sensors and information systems allowed commanders to choose the most effective option for each situation.[33] In addition, the concept theoretically changed the nature of the principle of mass. Leverage over the enemy no longer required concentrating large numbers of forces, but rather concentrating effects. The combination of information dominance, joint operations, and new stand-off precision weapons allowed dispersed and distant forces to rapidly concentrate firepower, and operate at strategic, operational and tactical levels at once.[34] A citation from Boot make these theoretical lines of thought more specific: "*The*

28 Osinga, *Science, Strategy and War*, 249, and Shimko, *Iraq Wars*, 95-99.

29 Shimko, *Iraq Wars*, 108.

30 Osinga, "Rise of Military Transformation", 21, and Shimko, *Iraq Wars*, 110.

31 Osinga, *Science, Strategy and War*, 234-257, and Shimko, *Iraq Wars*, 110-111.

32 David S. Fadok, "John Boyd and John Warden: Airpower's Quest for Strategic Paralysis", In: *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Philip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 2001), 357-398, 376-368, and Osinga, "'Airpower'", 344-345, and Frans P.B. Osinga, "'Getting' *A Discourse on Winning and Losing:* A Primer on Boyd's 'Theory of Intellectual Evolution'", *Contemporary Security Policy* 34, no. 3 (2013): 603-624.

33 Shimko, *Iraq Wars*, 110.

34 Osinga, "Rise of Military Transformation", 24-25, and Shimko, *Iraq Wars*, 114-115.

salvation of the Information Age military, at least when they are conducting conventional operations, is their ability to use a wireless communications device to call in supporting fire on exact coordinates".[35] This implied that much of a military's firepower now came from airpower.

The technological innovations associated with the RMA also influenced intellectual thinking on targeting. Of the associated thinkers, the theories of John A. Warden III are of interest, as his ideas found their ways in US strategic visions of the future.[36] In the late 1980s USAF Colonel John Warden reintroduced the conventional strategic air campaign as operational concept of success in war. At that time "strategic" primarily meant "nuclear". Other airpower missions, air support, interdiction, and counter air, were considered to be tactical.[37] Warden's ideas encompassed analyzing the enemy as a system consisting of five concentric rings, in which enemy leadership formed the innermost ring. The leadership of the state was the key center of gravity to be influenced. The other rings were, from the inside out, enemy key production facilities, infrastructure, population and fielded forces.[38] Each ring could be broken down into five rings of similar structure, revealing the enemy's secondary centers of gravity. The enemy's leadership could be attacked directly by force, or indirectly by attacks on the centers of gravity in the other rings.[39] When these centers of gravity were to be attacked simultaneously, later expanded into the concept of "parallel warfare"[40], the enemy capability to fight would be diminished. This would in turn lead to strategic paralysis of the state. In theory, and when executed properly, an enemy state could therefore be defeated with paying only minor attention to the fielded forces.[41] Also, attack did not automatically mean destruction. Because the desired political end-state was the basis for the air campaign, targeting should be based on the desired political effects, not destruction per se.[42] It was in essence this idea of the strategic conventional air campaign that formed the basis for the first two phases of air operations executed over the Kuwaiti Theater of Operations (KTO) in 1991.[43]

During the aftermath of *Desert Storm* various schools of thought debated about defining targetable centers of gravity, how and how long they should be targeted, and with what type of weapons system. All schools met in the overarching concept of Effects Based Operations (EBO), which the US formally adopted in 2001.[44] As said, Warden's theory of strategic paralysis did not prescribe physical destruction per se, but rather influencing a

35 Boot, *War Made New*, 421.

36 Osinga, "'Airpower'", 345, and Shimko, *Iraq Wars*, 48-49.

37 Olsen, *Strategic Air Power in Desert Storm*, 72.

38 Olsen, *Strategic Air Power in Desert Storm*, 83-84.

39 Fadok, "Boyd and Warden", 371-372, and Olsen, *Strategic Air Power in Desert Storm*, 84.

40 Olsen, *Strategic Air Power in Desert Storm*, 149.

41 Olsen, *Strategic Air Power in Desert Storm*, 84-85.

42 Olsen, *Strategic Air Power in Desert Storm*, 85.

43 See for the origins of the plans, changes made, and the position within the entire operation plan: Hallion, *Storm Over Iraq*, 141-162, and Olsen, *Strategic Air Power in Desert Storm*.

44 Osinga, "Rise of Military Transformation", 26-27.

target state in a way that was most beneficial to the political goals. This idea had links with the more traditional concept of coercion, defined by Pape as *"efforts to change the behavior of a state by manipulating costs and benefits"*.[45] EBO encompassed a conscientious formulation of political goals and the desired end state. A thorough investigation of the nature of the conflict was a prerequisite for this formulation. It was also needed to define the military goals to achieve the end state, but from a slightly different perspective than before. The military goals should be linked to the desired political effects by identifying the centers of gravity for that specific campaign. When political goals and centers of gravity were clear, a set of effects could be formulated, resulting in a course of action that was directly linked to the military and political objectives.[46] EBO, stated simply, was a disciplined way to first understand the strategic objective, take a comprehensive look at possible courses of action, and then link tasks to that objective through the effects they create. By defining military action in terms of achieved effects instead of destruction, a course of action could be short and decisive or gradual, and could involve desired physical or psychological effects. Also, because defining the centers of gravity depended heavily on timely and accurate intelligence, effective EBO depended on effective application of the NCW-concept.[47]

From an airpower perspective, new technologies and concepts potentially encompassed radical changes in the way the air weapon was deployed. For instance, increased effectiveness allowed for decrease of sorties. Whereas in Wold War II a thousand bombers had to release thousands of bombs in order to destroy a target, it now became possible to engage multiple targets with a single sortie. As a result of the revolutionized reconnaissance-strike complex, weapons delivered by or through the third dimension enabled airpower to detect, identify and engage targets with an unprecedented level of precision from high altitudes and in adverse atmospherical conditions.[48] It was also able to do that with minimized risk of hitting the wrong targets or inflicting unintended damage. Stealth-technology, which was a combination of new types of materials and shapes applied to airframes and developments in Electronic Warfare (EW), enabled the air weapon to penetrate enemy airspace relatively unseen, and when detected harder to engage. This enhanced the effectiveness of the air weapon even further. [49] Also, digital networks allowed changes in planning and reaction times. Within an intricate and global network that allowed for near real time sharing of information, pilots were now able to take off without knowing exactly where they needed to go because this information could be obtained in flight.[50] When all developments merged, airpower seemed to be able to find, fix, track,

45 Robert A. Pape, *Bombing to Win: Air Power and Coercion in War*, Cornell Studies in Political Economy, ed. Peter J. Katzenstein (Ithaca, NY and London: Cornell University Press, 1996), 4.

46 Paul M. Carpenter and William F. Andrews, "Effects-based Operations: COMBAT PROVEN", *Joint Forces Quarterly*, no. 52 (2009): 78-81, 79.

47 Osinga, "Rise of Military Transformation" 26.

48 Osinga, "Rise of Military Transformation", 18-22.

49 Osinga, "Rise of Military Transformation", 18-22.

50 Boot, *War Made New*, 328 and 363.

target, engage and assess targets anywhere on the globe, at any time, in any weather.[51] In other words, the air weapon became more agile in its effects it could bring. In addition, it was not only applicable to state of the art stealthy airframes. The new combination of communications, targeting, surveillance and ordnance technologies made older systems more effective at every level of operations.[52] This meant that a strategic bomber like the B-1 was now able to execute the tactical-level mission of Close Air Support (CAS) to ground forces, while reversely originally tactical platforms like the F-15 could perform strategic bombing missions. Combined, these modern technologies and concepts led to "asymmetric operations" which according to Andrew Vallance focus on: *"using the growing asymmetries in the capabilities of aviation forces to destroy the enemy army and navy"*.[53] Later the term "asymmetric advantage" became more common.

The net result of these developments was a new way of conducting warfare, which has been labeled "postmodern warfare" or "information age warfare". This way of warfare had left the industrial-style attrition-type warfare, which was characterized by massed armies fighting each other on long and relatively static front lines. The new way of war was won by dispersed, agile, adaptable, and jointly operating military units that exploited information dominance provided by their intelligence and communications networks to enforce both moral and physical paralysis on the enemy by parallel delivery of selectively massed effects in a battle space that was characterized by non-linearity and high tempo of operations.[54] Within the process, the military principle of mass was altered. Whereas traditionally, mass was delivered by concentration of soldiers and their weapons, in the new way of war this was made possible with stand-off precision weapons.[55] The air weapon fitted neatly within these developments, because the technological and conceptual developments greatly enhanced airpower's combination of range, speed, flexibility, precision and lethality. The air weapon now had the capabilities to deliver the desired effect when needed, whether it was required at the strategic, operational, or tactical levels of military operations. It seemed like the role of airpower relative to ground power had shifted in favor of airpower, effectively reversing the traditional division of roles ground power and airpower. This led some authors to suggest that the RMA was an airpower revolution.[56] Also, as EBO had its origins in the theory of coercion, the notions of parallel warfare and strategic paralysis coincided with developments of the air weapon. Airpower seemed to work best as a part

51 See for a brief description: David A. Deptula, "Air Force Transformation: Past, Present, and Future", *Aerospace Power Journal* 15, no. 3 (2001): 85-91.

52 Boot, *War Made New*, 419.

53 Andrew G.B. Vallance, "The Changing Nature of Air Warfare", In: *Air Power Confronts An Unstable World*, ed. Richard P. Hallion (London and Washington: Brassey's, 1997), xiii-xxiii, xix.

54 Osinga, *Science, Strategy and War*, 243-251,

55 Osinga, "'Airpower'", 346, and Shimko, *Iraq Wars*, 214.

56 Fadok, "Boyd and Warden", 374, Osinga, "'Airpower'", and Shimko, *Iraq Wars*, 11-12.

of an *"effects-based strategy, one that emphasizes simultaneous, parallel, time-compressing, and nodal power projection"*.[57]

2.2.2. *Implementation of the RMA*

These developments were influenced by two parallel processes, with both positive and negative impacts. First, western politicians during the 1990s had started to notice airpower's increase of effectiveness, and the air weapon seemed to have become their preferred weapon of choice, as was witnessed by deployments above Iraq in the aftermath of *Desert Storm* and operations over the Balkans during the 1990s.[58] Its RMA-induced increase of effectiveness made it possible to employ force quickly and with minimal risk of a high number of losses of mainly friendly ground forces but also of aircrews. In addition, increased precision of the air weapon reduced the risk of collateral damage and civilian casualties in an era of declining public willingness to bear the cost of war fought in remote countries.[59] However, there was a downside to the increased link between political goals and force projection by airpower. Effective deployment of the air weapon became dependent on existence of a sound political strategy. When this was lacking, effectiveness of the air weapon was directly affected. As Benjamin Lambeth noted in his final remarks of his monograph on the Kosovo campaign in 1999: *"after years of false promises by its most outspoken prophets, air power has become an unprecedentedly capable instrument of force employment in joint warfare. Even in the best of circumstances, however, it can never be more effective than the strategy it is trying to support"*.[60]

Second, increased precision allowed for very selective targeting, offering the possibility to win wars with a minimum of destruction and bloodshed. Although desired in earlier times, only at the end of the twentieth century it became possible to conduct what became known as humane warfare, and fight humanitarian wars, such as for instance in Kosovo in 1999.[61] This development had a downside too. As it became possible to minimize human suffering and physical destruction, it became a prerequisite to do so. In other words, wars were required to be humane in order to be just.[62] In the context of sensitivity of public opinion, the rise of humane warfare also increased risk management among western

57 Hallion, "Climbing and Accelerating", 384.

58 Sanu Kainikara, *A Fresh Look at Air Power Doctrine* (Tuggeranong, A.C.T.: Air Power Development Centre, 2008), http://airpower.airforce.gov.au/Publications/Details/30/A-Fresh-Look-at-Air-Power-Doctrine.aspx (accessed February 6, 2014), 55-58, and Osinga, "'Airpower'", and Pape, *Bombing to Win*, 3-4.

59 Benjamin S. Lambeth, *NATO's Air War for Kosovo: A Strategic and Operational Assessment* (Santa Monica, CA: RAND Corporation, 2001), 224 and Pape, *Bombing to Win*, 2.

60 Lambeth, *Air War for Kosovo*, 250.

61 Christopher Coker, "Targeting in Context", In: *Targeting: The Challenges of Modern Warfare*, ed. Paul A.L. Ducheine, Michael N. Schmitt and Frans P.B. Osinga (The Hague: T.M.C. Asser Press, 2016), 9-25, 16-17, and Osinga, *Science, Strategy and War*, 244.

62 Osinga, *Science, Strategy and War*, 244.

politicians, and by extension airmen conducting the operations, who ran the risk of being ostracized by public opinion if perceived unjust damage or human suffering did occur.[63] Worse, actors on the receiving end of western airpower, aware of political and public machinations of western nations, were able to exploit this sensitivity by either trumpeting or exaggerating civilian casualties in the media.[64] So, possibly partly due to over-promising the attributes of precision by some, or by oversensitivity of western publics to unwanted effects of military action, airmen continued to be accused of causing collateral damage and civilian casualties, despite their continued efforts to minimize it while deploying their weapons systems.

The question emerges to which extent the US and the North Atlantic Treaty Organization (NATO) institutionalized the associated concepts. In the US, organizational changes surfaced shortly after the end of the Cold War. The Air Combat Command (ACC) and Air Mobility Command (AMC) replaced the classic Strategic Air Command (SAC), Tactical Air Command (TAC), and Military Airlift Command (MAC) of the US Air Force. Also, centralized control over all forces through the Joint Force Commander (JFC) and all air assets through his subordinate, the Joint Force Air Component Commander (JFACC) became institutionalized. This made command and control more flexible, while reaffirming the airpower dictum of centralized control and decentralized execution. It also did away with the notion of airframes being either strategic or tactical, in favor of the notion of delivering strategic, operational, and tactical effects by all airframes.[65] Second, after 1991 the US military embarked on an endeavor which has become known as "Transformation". Although the idea of military transformation existed before 2000, "Transformation" as a program was formally adopted by the United States in 2001, when US Department of Defense declared it to be a focal point of the strategic way ahead.[66] It encompassed integration of the legacy of RMA, namely EBO, NCW and IT developments. But it went much further. It also incorporated operational reality of expeditionary warfare, stimulating organizational change to make effective deployment of military units in remote areas possible. As a result, operations in Afghanistan in 2001 and Iraq in 2003 were markedly different from *Desert Storm* with regard to the use of new technologies and new concepts. Between *Desert Storm* and *Enduring Freedom* and *Iraqi Freedom* the use of precision-guided weapons increased from nine to sixty percent, and sensor to shooter times dropped from three days to in some cases several minutes.[67] There were also other indicators that the RMA was well underway, such as implementation of many of the technological innovations mentioned earlier, increased cooperation between the services, and activities to create

63 Coker, "Targeting in Context", 19-20, Osinga, "'Airpower'", 356-357, and Vallance, "Changing Nature of Air Warfare", xv.

64 Boot, *War Made New*, 367.

65 Deptula, "Air Force Transformation", 86.

66 Theo Farrell and Terry Terriff, "Military Transformation in NATO: A Framework for Analysis", In: *A Transformation Gap?: American Innovations and European Military Change*, ed. Terry Terriff, Frans Osinga and Theo Farrell (Stanford, CA: Stanford University Press, 2010), 1-13, 2.

67 Shimko, *Iraq Wars*, 139 and 164.

a networked operating environment.[68] As of 2005 all branches of the armed forces were actively planning structured reorganization towards the new way of war fighting.[69]

There is, however, no single line success-story with regard to implementation of the RMA. In the United States, Secretary of Defense Donald Rumsfeld, a fervent supporter of the RMA, shortly before September 11, 2001 *"viewed the military itself as the greatest obstacle to genuine transformation. As a result of service cultures, institutional interests, and bureaucratic inertia, changes in force structure and doctrine lagged behind advances in technology"*.[70] In the light of the following events, this situation changed, but the RMA and its components continued to be debated in professional literature. For instance, in 2008 US Joint Forces Command (USJFCOM), headed by US Marine Corps General James N. Mattis, no longer supported EBO and associated systems because it created confusion within the joint armed forces and international partners.[71] Mattis hinted in an article in *Parameters* that elements of the EBO concept could be more useful to "closed" systems in which effects can be measured. Mattis named the air force targeting cycle as an example of such a closed system.[72] This implied that more open systems, where desired effects were harder to define and harder to measure afterwards, were less suitable for use of the EBO concept. This sparked a debate on the applicability of EBO, which however lies beyond the scope of this study.[73]

Implementation within NATO proved problematic as well. NATO formally embraced Transformation, and operationalized it in 2003 by creation of the Allied Command Transformation (ACT), based in Norfolk, Virginia. But, for reasons that will be detailed in the next chapter, NATO did not fully embrace the concepts of EBO and NCW but formally adopted slightly altered versions of them. Also, NATO members showed differences in implementation of the new technologies and concepts, leaving differences in capabilities within the alliance.[74] These developments underline that finding a balance between quick incorporation of not yet fully developed innovations and disposing of legacy systems and associated concepts is a delicate one. According to Boot, organizations need not only learn how to transform, but also learn how to structure a transformation process.[75]

As the course of events in Iraq, Afghanistan, and other conflict areas unfolded, they started to influence the debate on the RMA. In 2015, Shimko suggested that the heyday of the RMA could be the period between operation *Desert Storm* in 1991 and the beginning of

68 Shimko, *Iraq Wars*, 140.

69 Osinga, "Rise of Military Transformation", 7.

70 Shimko, *Iraq Wars*, 133.

71 James N. Mattis, "USJFCOM Commander's Guidance for Effects-Based Operations", *Parameters* 38, no. 3 (2008): 18-25, 18.

72 Mattis, "Commander's Guidance", 19

73 See for arguments and counter-arguments for instance: Carpenter and Andrews, "Effects-Based Operations", and Mattis, "Commander's Guidance".

74 Osinga, "Rise of Military Transformation".

75 Boot, *War Made New*, 467.

operation *Iraqi Freedom* in 2003.[76] The reconnaissance-strike complex proved to be highly effective in initial operations that resembled conventional conflicts, such as the highly successful attack in Iraq in 2003. According to Shimko, progress in follow-on stages of the conflict, those which did not resemble conventional conflict, seemed to indicate that it did not deliver a decisive advantage. Especially the collection of intelligence by purely technological means showed its limitations in environments where the opponent could hide effectively from electronic sensors. Effective reconnaissance was dependent on the operational environment and the primary information requirements. Assessment of the "strike" element changed too. According to Shimko, developments after 2003 showed that the relative contribution of kinetic effects to achieve political goals was dependent on the operational environment. So he concluded that the RMA was able to fundamentally change some military conflicts, but its influence in other conflicts was more modest.[77] Andrew Futter argued that, in general, the notion of the RMA largely disappeared from both academic and policy debate and literature, which he partially explained in the context of unconventional warfare that had become prominent after 2003. However, central ideas, concepts, and technologies remained. This was especially the case with the developments in cyber capabilities and developments relating to unmanned systems.[78] Michael Raska noticed several phases in the debate on the RMA. In this debate, Raska observed that from 2005 onwards, the RMA was no longer assessed to provide a paradigm shift, but rather a shift in emphasis.[79] So, while still current, scholars started to realize some of the limitations of the RMA as well.

2.2.3. *Information Age Airpower*

Concluding this section, western militaries underwent far-reaching innovation and adaptation processes, collectively labelled RMA. Although the range and impact of changes remained debated, the technologies and concepts that spawned from the RMA altered the way of conducting warfare. In the narrow sense, new combinations of modernized weapons, sensors, and information technologies, combined with conceptual innovations such as NCW and EBO led to an increased effectiveness on the battlefield. It was a highly offensive type of warfare aimed at speedy paralysis of the enemy. Main focus was a regular conflict, and the achievements of the information age military also had societal impact. Increased sensitivity towards unwanted effects of military power projection led to

76 Keith L. Shimko, "The United States and the RMA: Revolutions Do Not Revolutionize Everything", In: *Reassessing the Revolution in Military Affairs: Transformation, Evolution and Lessons Learnt*, ed. Jeffrey Collins and Andrew Futter (Basingstoke: Palgrave MacMillan, 2015), 16-32, 16.

77 Shimko, "United States and RMA", passim.

78 Andrew Futter, "Conclusion: Reflecting on the RMA Concept", In: *Reassessing the Revolution in Military Affairs: Transformation, Evolution and Lessons Learnt*, ed. Jeffrey Collins and Andrew Futter (Basingstoke: Palgrave MacMillan, 2015), 175-179.

79 Michael Raska, *Military Innovation in Small States: Creating a Reverse Asymmetry*, Cass Military Studies (London and New York, NY: Routledge, 2016), 28-55.

increased influence of public opinion on politicians, and resulted in increased activity on part of politicians to manage risks of military operations.

The air weapon adapted relatively swift to the new way of operating, despite Rumsfeld's complaints regarding the compliance of the US military to the Transformation project. It appealed to airpower's strengths. Classical airpower theory identified the air weapon as the weapon that could deliver strategic, operational, and tactical effects at time of one's own choosing. Increased effectiveness as a result of the air weapon due to implementation of stealth, precision and IT developments finally provided the air weapon with this asymmetric advantage. The concepts of Effects Based Operations and Network Centric Warfare had roots in classical airpower theory, and made it more effective. As a result of the formal implementation known as "Transformation", airpower increased its effectiveness in terms of range, speed, flexibility, precision and lethality. That made the air weapon able to influence a greater spectrum of operations, including expeditionary warfare.[80] It was able to effect a wider range of targets and with lower risks and with high tempo, something the risk-averse politicians came to appreciate.

However, not all traditional airpower challenges were resolved completely. Collateral damage and civilian casualties remained a problem, despite airpower's renewed precision. In addition, formal attempts in the west to build information age militaries resembled a kaleidoscopic process rather than a linear one that the term "Transformation" seemed to to imply. There were signs that the process partially had to be forced on the US military in general. NATO adopted altered versions of the theoretical concepts, and nations of the alliance implemented the innovations with different speeds and emphases. Finally, the element of time influenced the process. The phase of active implementation of the information age military largely coincided with a period in which western militaries were preoccupied with irregular warfare, mainly in Iraq and Afghanistan. Although the literature on this topic is not voluminous, first indications exist that the effectiveness of the information age military in irregular wars are more modest than in regular wars. Moreover, as with all revolutions, achievements of the current RMA will eventually be challenged by non-western actors, either by copying the technologies and doctrine, or devising effective countermeasures.[81] This is especially the case when opponents are exploiting the weakness of risk-averse western politicians by accepting high levels of risk or ignoring military operational law.

80 Vallance, "Changing Nature of Air Warfare", xix.

81 Boot, *War Made New*, 16.

2.3. Irregular Warfare Theory

2.3.1. *Classical Counterinsurgency: From Target-Centric to Population-Centric*

When exploring irregular warfare literature, lack of attention paid to the air weapon stands out. This lack of attention may have valid reasons, as insurgents traditionally do not present targets that are easily engaged by airpower. As hinted upon above, the topic of airpower in irregular warfare may have led to smooth consensus. Literature instead focused on the population, to be dealt with by ground forces that were able to communicate with it. It is also to a large extent focused on a specific form of irregular warfare, namely counterinsurgency.

A theoretical basis of irregular warfare was delivered by Mao, written down in his work *Guerrilla Warfare* in 1936, within the context of revolutionary or decolonization wars. According to John Nagl, *Guerrilla Warfare* altered the relationship between the traditional trinity of people, army and the government: *"Mao's contribution to the theory of warfare is an even closer interlinking of the people, the army, and the government than that discovered by Napoleon and analyzed by Clausewitz. In fact, the people in and of themselves were the greatest weapon the Communists possessed".*[82] Clear dividing lines between the three entities were absent, and combatants were living within the population, waiting for the right moment before emerging to strike at the enemy and afterwards fading back into the cover provided by the population.[83] Mao also showed the role of violence within this type of conflict. In order to win, the insurgent movement executed a three phased war, starting with the organization, consolidation and preservation phase. The next phase was one of progressive expansion. And finally, physical destruction of the enemy ended the conflict. According to Nagl, Mao regarded this three-phased war to be inherently protracted. The use of military action had a place in all three phases, albeit with different emphasis. It consisted mainly of hit-and-run tactics, breaking off contact and dissolve within the population when it was tactically opportune. Conventional operations could play a role too, mainly in later stages of the conflict and again when it was tactically opportune. All phases could and should be executed simultaneously and/or in various sequences.[84]

Nagl stated that revolutionary wars became more effective after World War II. The tactics did not change, but the ends and means did. The new means were small mobile weapons such as portable Rocket Propelled Grenades (RPGs), and new media like television. The new weapons allowed the revolutionary warfighter to be tactically more effective due to the increased lethality. New media made it possible for the revolutionaries to influence public opinion, both in theater and at the home front of their adversary. The ends changed

82 John A. Nagl, *Learning to Eat Soup with a Knife: Counterinsurgency Lessons From Malaya and Vietnam* (Chicago and London: The University of Chicago Press, 2005), 21.

83 Nagl, *Learning to Eat Soup with a Knife*, 22.

84 Nagl, *Learning to Eat Soup with a Knife*, 23.

because the defensive nature of the revolutionary war changed. It was recognized that a revolutionary war was an offensive form of warfare in its own right, with support from the population as center of gravity. As the trinity changed, modern counterrevolutionary armies therefore also had to address the population. The importance of the population increased because it provided logistical support, intelligence, cover and concealment to anyone who it chose to or was forced to support. Revolutionary wars became a struggle for control of the people. Coupled with the new ends and means revolutionary wars described by Mao differed from what became known as insurgencies.[85]

In these theories, the use of violence by counterinsurgent forces was highly problematic. The tactics the insurgent used made it hard to distinguish him from the population. Because insurgents used violence in all phases of the insurgency, determining in which phase the conflict was became difficult. Only the third phase of insurgency resembled conventional war that may require a conventional response using heavy firepower. In other phases of the conflict, the hit-and-run tactics and cover and concealment within the population created a targeting problem for the counterinsurgent force. Using heavy firepower against fleeting insurgents could alienate the local population from the counterinsurgent force, which in turn fueled support for the insurgency. This created the dilemma of hitting the right targets without losing popular support. Andrew Krepinevich showed that this dilemma was highly problematic during the US involvement in Vietnam.[86] Whether Mao's concept of revolutionary war is applicable to contemporary conflicts remains a question to be solved by scholars of insurgent warfare. It has moved somewhat to the background of historiography, but the dilemma to some extent remained the same. For instance, Mark Clodfelter argued that the problem of the use of heavy firepower in Iraq and Afghanistan showed similarities with that of Vietnam.[87]

There were two theoretical approaches to solving this dilemma. The first focused on engaging the insurgents, and is called the enemy-centric approach. By viewing the insurgents as a military organization, it could be treated as one. This view was clearly visible during the US involvement in South Vietnam, where highly mobile regular units went out to search and destroy the Vietcong. The US military became fixated to reach the "crossover point": *"the point where the enemy's losses in battle would exceed his capability to replace them"*.[88] This had the inherent risk of becoming fixated with creating damage to the insurgents, with a high risk of excessive force and civilian casualties. Therefore, western authors on counterinsurgency proposed an alternative approach, which has become the dominant one. According to David Kilcullen, winning support for governance had become a critical mission for western militaries, because counterinsurgency was at its heart a form

85 Nagl, *Learning to Eat Soup with a Knife*, 24-25.

86 Andrew F. Krepinevich, *The Army and Vietnam* (Baltimore and London: The Johns Hopkins University Press, 1988), 261-268.

87 Mark Clodfelter, "Forty-five Years of Frustration: America's Enduring Dilemma of Fighting Insurgents with Air Power", *Air & Space Power Journal* 25, no. 1 (2011): 78-88.

88 Krepinevich, *The Army and Vietnam*, 179.

of opposed or contested governance.[89] Safety and security of the local population should be addressed first, and in a way that is appropriate to the local circumstances.[90] That meant that the counterinsurgent force needed to have a thorough understanding of the nature of the conflict, the nature of the eventual supported government, and especially, the social, cultural and economical environment in which the conflict took place.[91]

According to this population-centric approach, indiscriminate violence in general was regarded to be detrimental to the popular support, and therefore became a threat to success of the campaign. Cooperation with the population while using minimum force was required.[92] Local power structures also were important. It increasingly became recognized that military action significantly influenced the social and political landscape of the area of operations, and that it became important to assess to what extent changing or using the existing power structures was desirable and feasible. Blurring of boundaries between political and military activities in irregular warfare, already present to a larger extent than in conventional wars, could go even further than perviously assessed.[93] Some authors went as far as suggesting that *all* harm done to civilians undermined mission success, and that the counterinsurgents should put the safety and security of the population above their own.[94] However, there were still targets that had to be engaged by force, the "irreconcilables", who not wished to accept the counterinsurgent's terms under any circumstances. These enemies were fluid and largely subsurfaced within the population. Many times it was impossible to find them, because they were not pinpointed to fixed locations. Insurgents did have a center of gravity, namely the population. So cutting off the insurgent from the population became a critical task in a counterinsurgency. When deprived of their political key terrain, the insurgent movement was forced to emerge into the open, where it was susceptible to engagement by western superior firepower, or be marginalized due to lack of support.[95] This meant that insurgents were only to be physically engaged when they were isolated, thereby minimizing collateral damage, while the counterinsurgent force focused on good governance and security and safety of the population.

89 David Kilcullen, *Counterinsurgency* (Oxford, NY: Oxford University Press, 2010), 1-5.

90 Sarah Sewall, "Ethics", In: *Understanding Counterinsurgency: Doctrine, Operations, and Challenges*, ed. Thomas Rid and Thomas Keany (London, New York: Routledge, 2010), 242-254, 206-207.

91 Kilcullen, *Counterinsurgency*, 1-5.

92 Kilcullen, *Counterinsurgency*, 1-5, and Nagl, *Learning to Eat Soup with a Knife*, 28-30.

93 See for instance: Martijn W.M. Kitzen, "The Course of Co-Option: Co-option of Local Power-Holders As a Tool for Obtaining Control Over the Population in Counterinsurgency Campaigns in Weblike Societies", (Dissertation, University of Amsterdam, December 14, 2016), and Emile Simpson, *War From the Ground Up: Twenty-first Century Combat As Politics* (New York, NY: Columbia University Press, 2012).

94 Sewall, "Ethics".

95 Kilcullen, *Counterinsurgency*, 8-10, and Nagl, *Learning to Eat Soup with a Knife*, 28-30.

2.3.2. Contemporary Counterinsurgency Theories: Global, Neo-Classical and Post-Classical

These theories were followed by theories that introduced modern conflicts. Influenced by the wars in Afghanistan and Iraq, and in the general context of the Global War on Terror (GWOT), western scholars and military professionals showed renewed interest for COIN theory, but applied in modern context. Since then, theory on insurgencies of the Cold War era are known by the term "classical counterinsurgency". In search of ways to apply classical COIN principles in modern environments, two schools emerged. One school focused on their application to counter globalized roots of local insurgencies, called the "global counterinsurgency" school.[96] This school focuses on the broader scope and increased complexity of modern insurgencies, when compared to the classical ones. Modern insurgencies have gained international dimensions, with links to modern terrorism. There have emerged regional, theater level actors, providing a critical link between local and global insurgents. Modern communications make it increasingly possible to exchange money, support and knowledge. This means that a counterinsurgent could have to deal with local, regional and global actors.[97] In addition, the insurgent groups are evolving with high complexity and speed. Modern insurgencies are highly adaptive. According to Kilcullen, the more adaptive an insurgent group is, the more dangerous it becomes. Modern information links make this possible. Modern counterinsurgency thus becomes a race in adaptability, requiring constant innovation of new methods to stay ahead of the adaptation process of the opposing actors. Organizational learning and adaptation become critical success factors for counterinsurgent forces.[98] The other school focused on redesign of principles of classical counterinsurgency in a contemporary regional or local setting, called "neo-classical counterinsurgency". New imperatives involve include management of information and expectation, wise use of firepower, learning and adaptation, decentralization of command and control, and support to the host nation.[99]

The nature of modern insurgencies and the challenges they pose to modern militaries are heavily debated. It is beyond the scope of this study to describe these developments in depth. What stands out is that governance operations and civil-military integration have become an integral part of modern counterinsurgency thinking.[100] Also, intimate understanding of culture and social constructs are essential because the counterinsurgents target the population. That prescribes a different approach to intelligence, which may resemble ethnography more than traditional target-centric intelligence. As perceptions of the population are a major player in a counterinsurgency, functions of ethics and information operations and media change. All branches of the armed forces could be

96 Kitzen, "Course of Co-Option", 111-112.

97 Kilcullen, *Counterinsurgency*, 181-203, and David Kilcullen, "Counter-insurgency Redux", *Survival* 48, no. 4 (2006): 111-130, 113-114.

98 Kilcullen, *Counterinsurgency*, 1-5 and 204-205.

99 Kitzen, "Course of Co-Option", 111-113.

100 Kitzen, "Course of Co-Option", 170-171.

forced to re-evaluate their roles within irregular warfare. That in turn might lead to changes in doctrine, lessons learned and training, and organizational structures.[101]

Actual developments in Afghanistan and Iraq showed signs of development in opposite direction as well. Kilcullen pointed at the impact of the temporary nature of the surges of forces in both Iraq and Afghanistan. The timeline that accompanied the surges led to a concept he called "accelerated counterinsurgency". Main difference with other concepts was that it entailed a three-pronged approach. Besides the traditional security measures directed at the population associated with COIN, he noticed that western forces were also implementing reconciliation and reintegration efforts for insurgents who might be convinced to end their activities. The third element of the approach was aggressive counter-network targeting, directed to kill and capture the irreconcilable insurgents. Kilcullen regarded Special Operations Forces (SOF) and airpower to be the primary tools for this direct action. He however acknowledged that drawing far-reaching conclusions could be hazardous, as the final outcomes of the conflicts were not yet determined when he proposed his theory.[102] This touched upon a related but separate topic, namely the level of violence especially western nations are willing or able to use to win irregular conflicts. Case studies on irregular warfare showed that the use of force could be detrimental to the counterinsurgent effort.[103] Historiography showed a development towards the use of persuasion of the population or insurgents rather than the use of coercion.[104] However, scholars pointed at two elements that put this into perspective. First, restraint of the use of force can expose western forces to increased risk, as violence was used essentially only in case of self defense. Second, in certain circumstances use of violence in countering irregular threats might be a strategically sound option. But for moral and expedient reasons, use of violence by western militaries was problematic. Again, it is beyond the scope of this study to describe and analyze this debate in depth. What stands out, however, is that according to several scholars, violence in irregular conflict either can not or should not be dismissed by default, and that its use should be the outcome of sound strategic analysis.[105]

101 These developments are described in separate chapters of a book edited by Thomas Rid and Thomas Keany: Rid and Keany, *Understanding Counterinsurgency*.

102 David Kilcullen, "Counterinsurgency: The State of a Controversial Art", In: *The Routledge Handbook of Insurgency and Counterinsurgency*, ed. Paul B. Rich and Isabelle Duyvestein (London and New York, NY: Routledge, 2012), 128-154, 141-143. Kilcullen proposed that this would lead to "post-classical COIN" theory, as he believed it challenged several paradigms of neo-classical COIN theory (Kilcullen, "Controversial Art", 140-146). Kitzen however argued that neo-classical counterinsurgency principles still provided the guidelines for operations in Iraq and Afghanistan (Kitzen, "Course of Co-Option", 143).

103 Christopher Paul, Colin P. Clarke, Beth Grill and Molly Dunigan, *Paths to Victory: Detailed Insurgency Case Studies* (Santa Monica, CA: RAND Corporation, 2013), http://www.rand.org/content/dam/rand/pubs/research_reports/RR200/RR291z2/RAND_RR291z2.pdf (accessed September 27, 2013), and Christopher Paul, Colin P. Clarke, Beth Grill and Molly Dunigan, *Paths to Victory: Lessons From Modern Insurgencies* (Santa Monica, CA: RAND Corporation, 2013), http://www.rand.org/content/dam/rand/pubs/research_reports/RR200/RR291z1/RAND_RR291z1.pdf (accessed September 27, 2013).

104 Kitzen, "Course of Co-Option", 170-173.

105 This conclusion was derived after consultation of the following publications:Ivan Arreguín-Toft, *How the Weak Win Wars: A Theory of Asymmetric Conflict*, Cambridge Studies in International Relations (New York, NY: Cambridge University Press, 2005), Robert Egnell, "Between Reluctance and Necessity: The Utility of Military Force in Humanitarian and Development

2.3.3. The Changing Operational Environment

In conclusion of this paragraph, the operational environment western militaries encountered changed significantly during the twentieth and early twenty-first century. Not only became irregular conflicts more prominent, the dynamics of insurgencies changed as well. This enforced an adaptive capability of counterinsurgent forces. Modern insurgencies, and therefore counterinsurgency operations, are regarded to be inherently political. The target-centric approach to counterinsurgency has largely been replaced by the population-centric approach, even though an "accelerated" version of COIN could highlight an increased use of targeting of insurgent leadership. Center of gravity for both insurgents and counterinsurgents is the population. Winning support of the local population is important to success of the mission. In order to do that, the counterinsurgent is required to separate the insurgents from the population. The safety and security of the population have become strategic imperatives. This already complex situation is further aggravated in modern counterinsurgencies due to the international dimension and networked organizations. These networks are also highly adaptive, requiring the counterinsurgent force to follow suit. The role of intelligence has increased, but at the same time changed in scope. Use of force in general, and that of heavy firepower in particular, is regarded to be problematic, and all theorists agree that it should be applied with great caution because of the risk of collateral damage and civilian casualties. Nevertheless, several scholars recently pointed at necessity of violence, albeit after thorough assessment of the environment.

2.4. Airpower and Irregular Conflict

2.4.1. Combining Airpower Theory and Irregular Warfare Theory

What happens when airpower theories and irregular warfare theories, or more specifically counterinsurgency theories, are combined? At first glance, this combination seems problematic. According to Drew, classical insurgencies differed fundamentally from conventional conflicts in five respects. First, was the protracted nature, contrary to the quest for quick and decisive results. Second, part of the strategy was the strong civilian aspect of the counterinsurgent strategies, instead of a mostly military aspect. Third were the hit-and-run tactics used by insurgents, instead of the massed forces. Fourth, insurgent logistics base offered few opportunities for interdiction, as their logistics base was

Operations", *Small Wars & Insurgencies* 19, no. 3 (2008): 397-422, Jacqueline L. Hazelton, "The "Hearts and Minds" Fallacy: Violence Coercion, and Success in Counterinsurgency Warfare", *International Security* 24, no. 1 (2017): 80-113, Charles T. Hunt, "All Necessary Means to What Ends? The Unintended Consequences of the 'Robust Turn' in UN Peace Operations", *International Peacekeeping* 24, no. 1 (2017): 108-131, Gil Merom, *How Democracies Lose Small Wars: State, Society, and the Failures of France in Algeria, Israel in Lebanon, and the United States in Vietnam* (New York, NY: Cambridge University Press, 2003), and David H. Ucko, "'The People Are Revolting': An Anatomy of Authoritarian Counterinsurgency ", *Journal of Strategic Studies* 39, no. 1 (2016): 29-61.

positioned inside the population rather than at separate areas or installation in the rear area. And fifth, the centers of gravity differed fundamentally, as they were the population for both the insurgents and the counterinsurgents.[106]

Combining airpower theory and irregular warfare theory, and more specific counterinsurgency theory, thus seems to be problematic by nature. The air weapon of the late twentieth century and the early twenty-first century seemed to become ever more optimized for conventional warfare, in which many targets presented themselves in the open. Technology-intensive airpower in this scenario was ideally suited to find, fix, track, target and engage these targets. Insurgencies challenged some central characteristics of the air weapon, which favored speedy massing of firepower to reach strategic paralysis by engaging political and military leadership. This in theory could produce friction with counterinsurgency warfare. In an insurgency targets are mostly human individuals, who are hard to distinguish from the population. The air weapon, to some *"at bottom, a blunt instrument designed to break things and kill people in pursuit of clear and military achievable objectives"*[107], might not be suited to operate in an environment where use of violence is deemed detrimental to the counterinsurgency effort.

However, there is a small but noticeable shift in appreciation of the use of violence in these types conflict. While all scholars agree that use of violence should be minimized as much as possible, in some circumstances it might be the only sound option. Combined with contemporary capabilities of airpower with regard to precision, this potentially narrows the conceptual gap between the attitude of pundits on irregular warfare on the use of violence, and the airpower pundits focusing on the reconnaissance-strike complex. After all, airpower pundits argue that modern airpower has become increasingly capable of delivering the kinetic effects with reduced chance of unintended human suffering and destruction. In addition, airpower involves more than "breaking things" and "killing people". ISR, transportation, and airborne command and control in a networked environment could still enable ground forces to create dispersed massed effects, albeit with a different connotation.

This raises the follow-on question of how the information age air weapon is valued in a counterinsurgency environment, and which roles theorists allocated to it. Although mainstream literature lacks a mature debate on airpower in irregular warfare, outside the mainstream publications there exists a plethora of other publications that show different approaches towards the ideal application of airpower in an irregular environment. It can be argued that there is a division in three approaches, namely a ground-centric approach, a technology-centric approach, and a joint approach.

106 Drew, "Short Journey to Confusion", 322-326.

107 Lambeth, *Air War for Kosovo*, 249.

2.4.2. *Option One: The Ground-Centric Approach*

The first option builds on the consensus Dennis Drew found. The introductory paragraph of this chapter indicated a certain level of consensus among scholars and military professionals with regard to employment of airpower in counterinsurgencies. During the late 1990s and after, airpower in irregular warfare became the focus of renewed scholarly attention, and several scholars continued the line of reasoning Drew had described. Some studies rediscovered the roles airpower played in colonial warfare, more recent counterinsurgencies, and other forms of irregular warfare.[108] Other studies drew on counterinsurgency theory and focused on the political nature of the conflict. According to these scholars, military operations in general had a subordinate role to a comprehensive strategy, which also encompassed economical, social, and political factors. As the purpose of the counterinsurgency was gaining support for the legitimate government, preventing civilian casualties and collateral damage became a strategic goal. These scholars argued that ground attack by air should be minimized, because it was imprecise and the effects that airpower could deliver were limited.[109]

Also, offensive airpower could be perceived to be a symbolic repressive weapon of the West. Insurgents used civilian casualties and collateral damage inflicted by the air weapon, real or not, to their advantage. Even if collateral damage was kept to a minimum, the use of airpower could still be portrayed as a western means of bullying innocent civilians. This message could be effectively sent by insurgents using modern media, influencing both indigenous populations and the populations of western nations. Therefore, minimizing use of force under strict Rules of Engagement (ROEs) should be the norm, while actively presenting the counterinsurgent's message to both indigenous populations and populations at home.[110]

The problem of targeting insurgents was also addressed. An example frequently used was the British doctrine of air policing. During the 1920s and 1930s, the Royal Air Force (RAF) was used in a dominant role of policing remote areas of the Empire by air, to the point

108 See for case studies: Cann, "Lessons", Corum and Johnson, *Airpower in Small Wars*, Joel Hayward (ed), *Air Power, Insurgency, and the "War on Terror"* (Cranwell: Royal Air Force Centre for Air Power Studies, 2009), http://www.airpowerstudies.co.uk/Hayward%20Insurgency%20Book%20%20A5%20Web.pdf (accessed November 13, 2011), Kainikara, *Friends in High Places*, Mumford, "Unnecessary or Unsung?", David E. Omissi, *Air Power and Colonial Control: The Royal Air Force 1919-1939*, Studies in Imperialism (Manchester and New York, NY: Manchester University Press, 1990), and Towle, *Pilots and Rebels*.

109 W.R. Johnson, "All Thrust and No Vector? Classical Airpower Theory and Small Wars", In: *No Clear Flight Plan: Counterinsurgency and Aerospace Power*, Silver Dart Canadian Aerospace Studies, ed. James Fergusson and William March (Winnipeg: Centre for Defence and Security Studies, University of Manitoba, September, 2008), 117-134, 127, and Thomas R. Searle, "Understanding Peace Operations: A Reply to Col Robert C. Owen", *Air & Space Power Journal* 13, no. 3 (1999): 92-101.

110 Corum and Johnson, *Airpower in Small Wars*, 425-430, James S. Corum, "On Airpower, Land Power, and Counterinsurgency: Getting Doctrine Right", *Joint Force Quarterly* 49, no. 2nd quarter (2008): 93-97, 96, and Alan J. Vick, Adam Grissom, William Rosenau, Beth Grill and Karl P. Mueller, *Air Power in the New Counterinsurgency Era. The Strategic Importance of USAF Advisory and Assistance Missions* (Santa Monica, CA: RAND Corporation, 2006), http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG509.pdf (accessed January 3, 2014), 45-47. It should be stated that this critique is not limited to the use of airpower, but to all forms of heavy firepower with high risk of civilian casualties and collateral damage, such as artillery and mortars. See for instance:Krepinevich, *The Army and Vietnam*.

where traditional army tasks were substituted by the RAF.[111] Some authors argued that the RAF colonial air control experience should not be viewed as an example of how to execute modern counterinsurgencies. These operations had specific goals in a colonial setting, for instance punitive strikes to enforce tax leverage. More importantly, they argued that the British failed to recognize the political nature of uprisings, and that airpower could reach the desired effect only temporarily. In order to maintain order, "boots on the ground" were always needed to interact with the local populations in one way or another to create or consolidate safety and security.[112] They argued that in counterinsurgencies, the air weapon in most cases operated in support of ground forces, because it was the *"inevitable consequence of the nature of COIN"*.[113]

Coupling of the air weapon to the nature of counterinsurgency and the predominance of ground forces and other actors on the ground, such as Non-Governmental Organizations (NGOs), had theoretical consequences at all levels of air operations. First of all, as airpower was supporting ground operations, supporting missions became more important. These missions are grouped between air mobility, involving all kinds of intra-and inter-theater transport, and ISR missions, providing information and intelligence.[114] These missions gave ground commanders access to valuable intelligence, achieved surprise over insurgents, and enabled ground units to sustain operations in remote areas. Also, the mission could be supported with a variety of other capabilities such as airborne command and control.[115] Offensive use of airpower was generally regarded as problematic, due to the detrimental effect of civilian casualties to the overall mission, even when deployed with high precision.[116] Therefore, offensive airpower should be deployed as force protection asset, meaning protection of the own ground forces with CAS.[117] Also, they pointed at the limitations of airpower's ability to collect intelligence. New technologies were able to find, fix and track many activities that took place on the surface of the earth and

111 Omissi, *Air Power and Colonial Control*.

112 James S. Corum, "The Myth of Air Control: Reassessing the History", *Aerospace Power Journal* 14, no. 4 (2000): 61-77, 65-75, Peter W. Gray, "The Myths of Air Control and the Realities of Imperial Policing", *Aerospace Power Journal* 15, no. 3 (2001): 21-31, and D.W. Parsons, "British Air Control: A Model for the Application of Air Power in Low-intensity Conflict?", (Paper, Air War College, Advanced Airpower Studies, Maxwell Air Force Base, AL, 1997) http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA329097 (accessed December 20, 2011).

113 Karl P. Mueller, *Air Power* (Santa Monica, CA: RAND Corporation, 2010), http://www.rand.org/pubs/reprints/RP1412.html (accessed November 13, 2011), 13. A similar conclusion was reached by for instance Brozenick: N.J. Brozenick, "Small Wars, Big Stakes: Coercion, Persuasion and Airpower in Counterrevolutionary War", (Thesis, Air University, School of Advanced Airpower Studies, June, 1998) www.au.af.mil/au/awc/awcgate/saas/brozenick_nj.pdf (accessed November 13, 2011), 186.

114 James S. Corum, "Airpower and Peace Enforcement", *Airpower Journal* 10, no. 4 (1996): 10-25, 13-18, James S. Corum, "The Air War in El Salvador", *Airpower Journal* 12, no. 2 (1998): 27-44, 32-41, James McKenzie, "Airpower Contributions to Irregular Warfare", (Research Report, Air War College, Air University, Maxwell Air Force Base, AL, February 6, 2009) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA540261&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011), 28, and Richard D. Newton, "Reinventing the Wheel: Structuring Air Forces for Foreign Internal Defense", (CADRE Report No. AU-ARI-CPSS-91-1, Air University Press, Maxwell Air Force Base, AL, August, 1991) http://www.dtic.mil/dtic/tr/fulltext/u2/a272302.pdf (accessed November 13, 2011), 12-16.

115 Corum and Johnson, *Airpower in Small Wars*, 430-435.

116 Mueller, *Air Power*, 16.

117 Corum, "Airpower and Peace Enforcement", 20-21.

within the electromagnetic spectrum. However, the nature of the intelligence collected by airpower, Imagery Intelligence (IMINT) and Signals Intelligence (SIGINT), marginally provided indicators to reveal intentions of the insurgents. In short, intelligence collected by airpower could reveal that certain activities took place, but not why. In an insurgency, understanding the insurgent's motivations was regarded to be of utmost importance. Therefore, IMINT and SIGINT could only be supplementary to Human Intelligence (HUMINT) collected on the ground to complete the intelligence picture.[118]

In relation to CAS and ISR, the development of specialized counterinsurgency aircraft should be mentioned. Academics traced its roots back to the 1920s, where the British fielded a multirole airplane to police parts of the Empire. COIN aircraft alleviated some of the limitations of the aircraft then in service, especially their limited range. At the same time they were able to deliver capabilities that were needed in remote irregular wars, namely precision CAS and ISR. Associated scholars argued that these aircraft should be simple to maintain in austere environments, physically able to reach remote area's by longer range or making stops at small rugged airfields, and able to provide CAS and ISR missions.[119] During some of the irregular wars fought by western countries, "vintage" or "legacy" aircraft, aircraft that were phased out or nominated to be phased out, were recommissioned for this reason. They were regarded to be more effective than the, then, contemporary aircraft.[120]

This idea was expanded to development of aircraft that were tailored to executing ISR and CAS missions, to be used in modern counterinsurgency operations.[121] A prerequisite was that the use of airspace was not contested by enemy aircraft or GBAD. In modern counterinsurgency theories, this "low-tech" approach re-emerged frequently, as these aircraft supposedly were more effective in ISR and CAS at lower operating costs than "high tech" airpower used by most western nations.[122] They also had another advantage: they were relatively cheap to buy and simple to operate, allowing them to be transferred to indigenous air forces with relative ease. This opened a whole range of possible additional

118 Michael R. Boera, "The Combined Air Power Transition Force: Building Airpower for Afghanistan", *Air & Space Power Journal* 24, no. 1 (2010): 16-26, 24, Corum, "Airpower and Peace Enforcement", 17-18, Corum and Johnson, *Airpower in Small Wars*, 434, James S. Corum, "Air Power and Counter-insurgency: Back to the Basics", In: *Air Power, Insurgency and the "War on Terror"*, ed. Joel Hayward (Cranwell, United Kingdom: Royal Air Force Centre for Air Power Studies, 2009), http://www.airpowerstudies.co.uk/Hayward%20Insurgency%20Book%20%20A5%20Web.pdf (accessed November 13, 2011), 205-220, 210-211, William Brian Downs, "Unconventional Airpower", *Air & Space Power Journal* 19, no. 1 (2005): 20-25, 21, McKenzie, "Airpower Contributions", 22, and Arun Kumar Tiwary, *Air Power and Counter Insurgency. A Review: Jammu and Kashmir As a Model* (New Delhi: Lancer's Books, 2002), 65-77.

119 Omissi, *Air Power and Colonial Control*, 134-149.

120 Corum and Johnson, *Airpower in Small Wars*.

121 Downs, "Unconventional Airpower", 22-24, George H. Hock, "Closing the Irregular Warfare Air Capability Gap. The Missing Puzzle Piece: Rugged Utility Aircraft and Personnel", *Air & Space Power Journal* 24, no. 4 (2010): 57-68, and John A. Tirpak, "The Irregular Air Battle", *Air Force Magazine*. 92, no. 8 (2009): 22-26, 23.

122 See for instance: Arthur D. Davis, "Back to the Basics: An Aviation Solution to Counterinsurgent Warfare", (Report, Air University Press, December, 2005) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA444383 (accessed February 12, 2012), and Steven J. Tittel, "Cost, Capability, and the Hunt for a Lightweight Ground Attack Aircraft", (Master's Thesis, U.S. Army Command and General Staff College, Fort Leavenworth, KS, 2009) www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA510947 (accessed September 15, 2016).

tasks for airpower professionals. They could assist building host nation air forces that could take over the counterinsurgency effort in due time. These tasks could comprise assistance in building airfields, providing airfield protection and setting up an air force organization and airspace control nodes, in addition to training of indigenous pilots and providing them with airframes. This concept of Foreign Internal Defense (FID), did not receive much attention in the early 1990s, but has become more prominent in recent studies, often along with the use of the counterinsurgency aircraft.[123]

The described approach is critical of employing mainly offensive airpower in irregular wars. As James Corum put it in 1996 in relation to peace enforcement operations:

> "the ability to put fire and steel on target with great efficiency cannot substitute for a coherent strategy based upon a sound understanding of the culture and politics of the people we are fighting or defending. In peace enforcement, the military is only one part of an equation that includes nation building and developing long-term political solutions".[124]

In 2010, Corum more directly put the role of the air weapon in perspective of counterinsurgency, and also added the element of modernized airpower:

> "The lessons of air power in counterinsurgency have been remarkably consistent since 1913. For example, the basic missions of air power in conflict with nonstate forces have changed little since air power was first employed in such operations. Despite the hopes of airmen, the primary role of air power in counterinsurgency is supporting the army and police. Although aviation technology has become highly sophisticated, there is little evidence that air power technology has changed the fundamental dynamics of counterinsurgency operations. Indeed, insurgents and irregular forces have shown an ability to adapt to the advances in air power technology and find means to limit the effects of air power".[125]

123 Steven J. Ayre and Jeremy F. Hough, "Air Power in Irregular Warfare", (Thesis, Naval Postgraduate School, Monterey, CA, December, 2012) http://www.dtic.mil/docs/citations/ADA573582 (accessed November 28, 2013), 146 and 151-152, Corum and Johnson, *Airpower in Small Wars*, 437-439, James S. Corum, "Airpower Roles and Missions in Counterinsurgency", In: *No Clear Flight Plan: Counterinsurgency and Aerospace Power,* Silver Dart Canadian Aerospace Studies, ed. James Fergusson and William March (Winnipeg: Centre for Defence and Security Studies, University of Manitoba, September, 2008), 203-219, 217, Downs, "Unconventional Airpower", 22, John D. Jogerst, "Preparing for Irregular Warfare", *Air & Space Power Journal* 23, no. 4 (2009): 68-79, 75-77, Edward A. Kostelnik, "Airmen First: Shaping the Expeditionary Air Force for Counterinsurgency", (Master's Thesis, Naval Postgraduate School, September, 2006) http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA457349 (accessed February 12, 2012), Donald A. Maccuish, "The Flight to Irrelevance? Air Power and Fourth Generation Warfare", In: *Global Insurgency and the Future of Armed Conflict: Debating Fourth-generation Warfare*, ed. Terry Terriff, Aaron Karp and Regina Karp, Routledge Global Security Studies, ed. Aaron Karp, Regina Karp and Terry Terriff (Abingdon and New York (NY): Routledge, 2008), 208-225, 217 and 220-222, Tirpak, "The Irregular Air Battle",Tiwary, *Jammu and Kashmir*, 153-160, and Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 32-50.

124 Corum, "Airpower and Peace Enforcement", 24.

125 James S. Corum, "Air Power in Small Wars: 1913 to the Present", In: *A History of Air Warfare*, ed. John Andreas Olsen (Washington, DC: Potomac Books, 2010), 327-350, 349.

More importantly, this approach became institutionalized in US Army and Marine Corps Doctrine. In 2006, a combined US Marine Corps (USMC) and US Army (USA) doctrine on counterinsurgency was published, called *FM 3-24 / MCWP 3-33.5 Counterinsurgency.* It clearly reflected the population-centric approach to counterinsurgency.[126] The *FM 3-24*, as it was commonly known, contained a small annex on airpower in counterinsurgency which apportioned a supporting role for airpower, and defined it in terms common in the population-centric approach found in literature on insurgencies.[127] So, in short, this approach regarded the fundamentals of airpower deployment in counterinsurgencies to be unaltered when compared to earlier time frames. Modern airpower did not deliver any fundamentally new capabilities, just improved ones. Moreover, this approach became institutionalized in doctrine for ground forces, increasingly equalling "population-centric" with "ground-centric". The consensus on the issues Dennis Drew referred to still applied.

2.4.3. Option Two: The Technology-Centric Approach

Publication of the *FM 3-24* provoked a reaction by airpower proponents who did not agree with the ground-centric perspective on counterinsurgency, and the role airpower was allocated in it. One of the most outspoken critics of *FM 3-24* was USAF Major General Charles J. Dunlap. He regarded the COIN approach of the *FM 3-24* to be too ground-force intensive. He proposed an alternative that, he hastened to say, should not necessarily be air-centric. Rather, he argued the approach to COIN should be *"technology-centric"*.[128] Another classification that can be found, including from Dunlap, is "air-minded".[129] Background of this approach was that Dunlap assessed that the latest developments with regard to precision, persistence, and information technologies required a "*complete rethinking as to how the US ought to conduct counterinsurgency operations*".[130] He stated that the counterinsurgency approach described in the *FM 3-24* could work. However, it wrongfully

126 See on the realization of the *FM 3-24* and its tenets on counterinsurgency: Conrad Crane, "United States", In: *Understanding Counterinsurgency: Doctrine, Operations, and Challenges*, ed. Thomas Rid and Thomas Keany (London, New York: Routledge, 2010), 59-72.

127 United States Headquarters, Department of the Army, *FM 3-24 / MCWP 3-33.5: Counterinsurgency*, December 15, 2006, http://www.fas.org/irp/doddir/army/fm3-24.pdf (accessed November 13, 2011), Appendix E and the concluding chapter of Corum and Johnson, *Airpower in Small Wars* show striking similarities.

128 Charles J. Dunlap, "Airpower", In: *Understanding Counterinsurgency: Doctrine, Operations, and Challenges*, ed. Thomas Rid and Thomas Keany (London, New York: Routledge, 2010), 100-113, 101.

129 Charles J. Dunlap, "Air-minded Considerations for Joint Counterinsurgency Doctrine", *Air & Space Power Journal* 21, no. 4 (2007): 63-74, Charles J. Dunlap, "Developing Joint Counterinsurgency Doctrine. An Airman's Perspective", *Joint Forces Quarterly*, no. 49 (2008): 86-92, 87 and 89, Charles J. Dunlap, *Shortchanging the Joint Fight?: An Airman's Assessment of FM 3-24 and the Case for Developing Truly Joint COIN Doctrine* (Maxwell Air Force Base, AL, 2008), http://www.dtic.mil/cgi-bin/GetTR Doc?AD=ADA475806&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011), 45, Buck Elton, "Shortchanging the Joint Doctrine Fight: One Airman's Assessment of the Airman's Assessment", *Small Wars Journal Website* (December 25, 2008) http://smallwarsjournal.com/jrnl/art/shortchanging-the-joint-doctrine-fight (accessed February 6, 2014), and Andrew S Kovich, "Airpower in Small Wars", (January, 2009) http://www.dtic.mil/docs/citations/ADA619097 (accessed March 27, 2017), 4,

130 Dunlap, "Airpower", 101.

derived its conclusions about airpower from historical examples, as it did not incorporate the increased capabilities of the air weapon resulting from the RMA. According to Dunlap, the *FM 3-24* therefore did not fully appreciate the new and still developing capabilities of modern airpower that could be decisive in a counterinsurgency.[131] In addition, he argued that the American troop surge in Iraq in 2007 was accompanied by a surge in kinetic airpower deployment, delivering empirical evidence that airpower played an increasingly important role in counterinsurgencies.[132] Dunlap's alternative approach involved acknowledgement of the usefulness of the information age military in counterinsurgencies, regardless of whether it operated on the ground, in the air, or at sea. Dunlap regarded the required counterinsurgency doctrine to be inherently joint and interdependent, just as the RMA suggested in other types of warfare.[133]

The new revolutionary technologies Dunlap was referring to can be summarized with the terms "precision" and "persistence".[134] Precision was mainly relevant when the air weapon executed "kinetic" missions. These missions encompassed precision engagement of High Value Target (HVTs), dynamic targeting, and CAS. Precision guided weapons allowed the air weapon to single out an individual target, and deliver scalable effects using variety of weapons.[135] This precision, coupled with technological developments in ordnance, such as Small Diameter Bombs (SDBs) with less explosive effect, helped to avoid civilian casualties and collateral damage.[136] It was however a prerequisite that it was acknowledged that the core of some insurgencies consisted of "*ideologically immovable extremists*".[137] These insurgents could not be convinced by other means than use of force, and consequently the use of force should be valued as a significant contribution to the COIN effort.[138] In other words, Dunlap and others focused their argument on proper incorporation of the use of force directed at the "irreconcilables", whose existence was also acknowledged in the irregular warfare literature. Increased precision of the air weapon was able to diminish traditional impediments, namely inducement of collateral damage and civilian casualties. Modern day airpower in this respect was therefore more effective. Some went as far as discarding COIN altogether. In one of the very few publications that directly linked the RMA to irregular warfare, Alexander Salt argued that the protracted conflict in

131 Dunlap, *Shortchanging*, and 15-18.

132 Charles J. Dunlap, "Making Revolutionary Change: Airpower in COIN Today", *Parameters* 38, no. 2 (2008): 52-66 http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA490505&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011), 53-54, and Dunlap, "Airpower", 100.

133 Dunlap, "Air-minded Considerations", Dunlap, "Making Revolutionary Change", and Dunlap, *Shortchanging*.

134 Dunlap, "Making Revolutionary Change", 56-60.

135 Eugene L. McFeely, "Balancing Kinetic Effects of Airpower with Counterinsurgency Objectives in Afghanistan", (Report, U.S. Army War College, Carlisle, PA, March 30, 2009) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA494289 (accessed February 12, 2012), 10.

136 Jeffrey M. Smith, "Is Airpower Relevant in a COIN Fight?", (Report, U.S. Army War College, Carlisle Barracks, PA, 2010) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA520144 (accessed February 12, 2012), 5.

137 Dunlap, "Making Revolutionary Change", 60.

138 Dunlap, "Making Revolutionary Change", 60.

Afghanistan had shown that nation-building was beyond the capacity of the military. A more achievable aim was to focus on counterterrorism of a limited scope, that is, using SOF and airpower, particularly with unmanned systems, to target terrorists. This should be accompanied by a limited aim of preventing terrorists to use a region as a hub to plan and prepare attacks on the United States.[139]

Persistence was revolutionary as well, and referred to both sensors and weapons systems. Modern technologies made airborne sensors ubiquitous, as symbolized by deployment of Unmanned Aerial Systems. Increased availability of space-based sensors, air-to-air refueled manned airborne platforms, and the increased tactical usefulness of originally strategic airframes increased persistence even further. It was claimed that persistent airborne and space-based ISR-capabilities provided intelligence which in some cases could be, in terms of delivered situational awareness, superior to intelligence delivered by personnel on the ground (i.c. HUMINT). Reason was that airpower could monitor individuals, individual objects, or areas, for extended periods of time. In addition, technological innovations of sensor technology made the sensors themselves more effective, which decreased the enemy's ability to conceal himself.[140] Combined, these developments could reveal intentions of individuals and patterns of life.[141] In short, according to this alternative line of reasoning, modern information age airpower was not only able to observe what took place on the surface of the earth, but also why. Weapon systems became ubiquitous as well due to weaponized UAVs, increased range of manned platforms as a result of Air-to-Air Refueling (AAR) capabilities, and increased effectiveness of long range bombers.[142] These weapons systems had the ability to strike the observed object at will. This ability to mass effects at time of choosing had a dual effect. First, it allowed ground forces to disperse and interact with the population with confidence, as aerial firepower would be available when needed.[143] Second, ubiquity of sensors and weapons systems had a psychological impact on the insurgents. It imposed a sense of vulnerability and hopelessness on them which made them more cautious and induced stress upon them, which in turn added to the counterinsurgent's goal of controlling an area.[144]

General Dunlap was not the only advocate of incorporation of new technologies in counterinsurgency operations. Other authors revealed similar opinions.[145] Besides

139 Alexander Salt, "Transformation and the War in Afghanistan", *Strategic Studies Quarterly* 12, no. 1 (2018): 98-126.

140 Craig D. Wills, "Airpower, Afghanistan, and the Future of Warfare: An Alternative View", (CADRE Papers, Nr. 25, Air University Press, Maxwell Air Force Base, AL, November, 2006) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA462965 (accessed November 13, 2011), 50.

141 Dunlap, "Making Revolutionary Change", 58.

142 Wills, "Airpower, Afghanistan, and the Future of Warfare", 12-13.

143 Smith, "Airpower Relevant?", 7-8.

144 Dunlap, "Making Revolutionary Change", 59, and Dunlap, *Shortchanging*, 40-42.

145 See for instance: Phillip S. Meilinger, "Counterinsurgency From Above", *Air Force Magazine* 91, no. 7 (2008): 36-39, Allen G. Peck, "Airpower's Crucial Role in Irregular Warfare", *Air & Space Power Journal* 21, no. 2 (2007): 10-15, and Smith, "Airpower Relevant?".

monitoring and killing insurgents, airpower proponents claimed a variety of airpower contributions that made ground operations possible or more effective. This referred to intelligence, command and control, but also inter-and intra theater transport, medical evacuation, personnel recovery, and the like. By claiming a rightful place in doctrine, these authors called for a proper appreciation of the airpower contribution in COIN.[146]

As might be expected, this approach disagreed with most of the operational consequences of the ground-centric approach General Dunlap referred to. The contribution of intelligence has already been mentioned. It also challenged the notion that airpower should be supporting ground forces, or *de facto* be controlled by the ground commanders.[147] It defied airpower's premium on centralized control and decentralized execution. And its asymmetric advantage could not be exploited fully when placed under the command of a non-specialist, as the ground-centric approach suggested.[148] In fact, the balance could in some cases be reversed, as the increased capabilities of the air weapon to deliver effects on the battlefield made it possible for the ground commanders just to force the insurgents out of concealed positions, effectively shaping the battlefield for the air weapon. In addition, fewer vulnerable ground forces were needed to fulfill the task, or the same amount of ground forces could be dispersed, increasing its footprint.[149] According to Dunlap, there still could be a need for a significant number of "boots on the ground", but they did not necessarily had to be *American* boots. He suggested that indigenous ground forces should provide the bulk of the counterinsurgency resources on the ground. They should be augmented by a small number of information age western ground forces with airpower readily available to provide needed effects.[150] Finally, some authors suggested to revisit the British air control experience, because it offered a cheap alternative to deploying large numbers of ground forces, while it in some cases still could be politically effective.[151] The opening phase of operation *Enduring Freedom* (OEF) in 2001 was a perfect example of how this could work in practice. Small amounts of dispersed SOF teamed with Afghan allies were able to generate spectacular effects with modern airpower.[152] This "Afghan Model" spurred publications on its applicability within the framework of US policy, which will be discussed below. The Afghan Model allowed airpower to achieve effects utilizing RMA's achievements to the full, and with minimal requirement of US ground forces. According to some authors, this effectiveness would allow the bulk of the US military (i.e. US ground forces) to focus on

146 Peck, "Airpower's Crucial Role". See also Smith, "Airpower Relevant?" with respect to the JP 3-24, which was published in 2009.

147 Dunlap, "Air-minded Considerations", 68 and Meilinger, "Counterinsurgency From Above", 37.

148 Dunlap, "Air-minded Considerations", 68-70.

149 Mueller, *Air Power*, 13-14, and Wills, "Airpower, Afghanistan, and the Future of Warfare", 6-9.

150 Dunlap, "Making Revolutionary Change", 64, and Dunlap, *Shortchanging*, 61.

151 Meilinger, "Counterinsurgency From Above", 39.

152 See for a detailed description of the operations: Benjamin S. Lambeth, *Airpower Against Terror: America's Conduct of Operation Enduring Freedom* (Santa Monica, CA: RAND Corporation, 2005), http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG166-1.pdf (accessed November 13, 2011).

counterinsurgencies and nation building. The air weapon could provide support to these missions, while focusing mainly on other missions such as counterterrorism.[153]

Also, the problem of civilian casualties and collateral damage was challenged. Precision guided munitions decreased the risk when deployed by highly disciplined aircrews. In addition, these airmen could make better judgments from the air because they were not under fire.[154] Lastly, the air-minded approach put the concepts of Foreign Internal Defense and specialized counterinsurgency aircraft in perspective. The USAF published its own doctrine in 2007, called *Air Force Doctrine Document 2-3: Irregular Warfare (AFDD 2-3)*. It placed FID in the larger context of Building Partnership Capacity (BPC). FID encompassed helping setting up affordable, sustainable and capable airpower for friendly nations fighting an insurgency.[155] Dunlap criticized the large role BPC played in USAF doctrine, because it was too time consuming and expensive. Counterinsurgency aircraft were regarded to be too vulnerable to engagement by even old anti-aircraft systems because of their slow speed and low operating altitudes. Modern high-altitude fixed wing aircraft were able to provide CAS and ISR missions as well as these counterinsurgency aircraft. At the same time, they were not vulnerable to the anti-aircraft systems commonly encountered in counterinsurgencies.[156]

2.4.4. Stalemate?

It can be argued that the two approaches differed in their classification of the usefulness of the information age military in irregular environments. The ground-centric approach argued that the RMA did not fundamentally change the manner western militaries operate, the technology-centric approach argued that it does. Although this topic was specific enough to set off a fruitful debate, at least in the US this did not materialize. Besides Dunlap's publications, only a few authors addressed the combination of irregular warfare and the RMA in relation to airpower deployment.[157] This is remarkable, as the number of publications that addressed the topic of airpower in irregular warfare rose significantly between 2006 and 2010. This rise can be explained by the increased urgency of the wars in Iraq and Afghanistan, but the lack of a debate based on content can not. Part of the

153 Conclusion derived from: Biddle, "Allies" 162-163, and Wills, "Airpower, Afghanistan, and the Future of Warfare", 58-64.

154 Dunlap, *Shortchanging*, 27.

155 United States Air Force, *Air Force Doctrine Document 2-3: Irregular Warfare*, August 1, 2007, www.fas.org/irp/doddir/usaf/afdd2-3.pdf (accessed November 13, 2011), 27-30.

156 Dunlap, "Making Revolutionary Change", 61, Hallion, "Climbing and Accelerating", 390, and Newton, "Reinventing the Wheel", 12-16.

157 John T. Farquhar, "Airpower and Irregular War", *Air & Space Power Journal* 31, no. 1 (2017): 51-59, Benjamin S. Lambeth, "Counterinsurgency in Airpower Thought", In: *No Clear Flight Plan: Counterinsurgency and Aerospace Power*, Silver Dart Canadian Aerospace Studies, ed. James Fergusson and William March (Winnipeg: Centre for Defence and Security Studies, University of Manitoba, September, 2008), 147-166, and Elinor Sloan, "Peacekeeping and the Revolution in Military Affairs: A Question of Relevancy", *Journal of Conflict Studies* 22, no. 2 (2002): 83-98.

explanation for the lack of fundamental debate could be the way Dunlap formulated his approach. Key point of his approach was a changed operational dynamic as a result of the revolution in persistence and precision. However, the proclaimed key thesis of Dunlap's primary publication in reaction to the *FM 3-24* rather involved the notion that airmen brought a specific mindset to the COIN fight.[158] Persistence and precision, and technology in general, did figure in this publication, but was not part of the main thesis or hypothesis.[159] In other publications, Dunlap was more comprehensive in his argument, but these publications did not receive as much attention as his primary reaction to the *FM 3-24*.[160] Conversely, scholars that were associated with the ground-centric approach did not pick up this notion, or denied the influence of the RMA, arguing that the airpower tasks remained the same. So, in essence, at the conceptual level, the two approaches resided in their own environments, restating their positions with minor variations, and with little reference to each other.

Consequently, discussions that did take place focused on the practical consequences of their standpoints, such as the relative usefulness of certain types of intelligence. However, tone and content of some arguments caused discussions between supporters of both approaches to become grim and obstinate, up to a point where it becomes reasonable to suspect that two cultural systems collided. There were those who lamented that the *FM 3-24* relegated airpower to a five page annex. Moreover, they found that this annex showed unduly attention the civilian casualties the air weapon supposedly was inclined to cause. In their view, the *FM 3-24*, but also its overarching joint doctrine that was published later, the *JP 3-24*, focused too much on systems and not on effects, and on the implied supporting role of the air weapon. They argued that the air weapon was excessively identified with civilian casualties, while increased precision mitigated this issue. Combined with other airpower tasks, they proposed a more joint solution, just as described in the *AFDD 2-3*.[161]

However, their opponents put this in the context of inter-service rivalry, in reaction to the dialectical tone and the, sometimes implicit, proposed substitution of ground forces by air forces. The counterargument included the accusation that the USAF proposed an airpower-centric, or even airpower-only, alternative to a type of warfare it had not been interested in for decades, for the primary reason of safeguarding budgetary interests, and partially by using false arguments.[162] Others acknowledged that modern technologies

158 Dunlap, *Shortchanging*, 6.

159 In the online *Small Wars Journal* there is an indication that Dunlap did regard precision and persistence to be central themes. In the comments of a highly critical article on one of Dunlap's publications, he noted that the author who wrote the critique missed this critical point. It should be stated however that *Small Wars Journal* was not able to verify the identity of the commentator as being Dunlap. In addition, there was no response to this comment. So, there was no mature debate. (Elton, "Shortchanging").

160 These publications were: Dunlap, "Airpower", and Dunlap, "Making Revolutionary Change".

161 Daniel Baltrusaitis, "Airpower: The Flip Side of COIN", *Georgetown Journal of International Affairs* 9, no. 2 (2008): 89-96, 90-91, Paul D. Berg, "Airpower and Irregular Warfare", *Air & Space Power Journal* 21, no. 4 (2007): 21, 21, Dunlap, "Air-minded Considerations", Dunlap, "Developing Joint Counterinsurgency Doctrine", Dunlap, "Making Revolutionary Change", Dunlap, *Shortchanging*, and Smith, "Airpower Relevant?", 25 and 64.

162 Elton, "Shortchanging", Jogerst, "Preparing", 73, and Kovich, "Airpower", 5.

increased the effectiveness of the air weapon at the tactical level, but disputed the effects at the operational and strategic levels.[163] In addition, several authors suggested that the USAF had the inclination to redefine current COIN to fit within the classical airpower paradigm, which was characterized by a preference for employment of high-tech, offensive, and lethal airpower at the strategic level and executed by independent air forces.[164] To some military professionals, this could be explained by incorporation of this preference into air force culture. They suggested that the USAF had a culturally induced preference towards air-to-air combat, strategic strike capabilities, and conventional conflicts. This was at the expense of all other endeavors, especially those that involved supporting roles.[165] Donald MacCuish made a statement in this regard even more directly, accusing the USAF of translating irregular warfare into concepts it understood best, requiring a culture shift to change.[166] George Hock coupled this offensive culture to USAF existential question of organizational independence.[167] The *AFDD 2-3* was also placed in this context. Criticism included that the document predominantly just discussed the use of conventional assets in an irregular warfare setting, that it stressed technological capabilities, and that BPC was insufficiently dealt with.[168]

In short, indications are that the topic of the changing nature of mass, already current in relation to conventional warfare, found its way into the publications on airpower in irregular warfare as well. It was however submerged into debates on practical issues. It was in essence a discussion about decisiveness in battle and, by extension, about the question who owned the battle space at the tactical level.[169] During the 1980s, this debate had focused on the operational level. But for the tactical level, it was clear that the ground commander was in charge of CAS.[170] Exactly this became problematic, as airpower implicitly or explicitly challenged this consensus. More specifically, incorporation of information age airpower into COIN theory had a tendency to become apparent in a repetitive and unhelpful polemic about practical issue of which element could be designated as "supporting" and which as "supported".[171]

163 Clive Blount, "Modern Airpower, Counter Insurgency and Lawrence of Arabia", *Air Power Review* 13, no. 2 (2010): 21-32, Jogerst, "Preparing", and Daniel J. Magruder, "The US Air Force and Irregular Warfare: Success As a Hurdle", *Small Wars Journal Website* (2009) www.smallwarsjournal.com/blog/.../272-magruder.pdf (accessed July 2, 2014).

164 John W. Bellflower, "The Soft Side of Airpower", *Small Wars Journal Website* (2008) http://smallwarsjournal.com/jrnl/art/the-soft-side-of-airpower (accessed March 27, 2017), Johnson, "All Thrust and No Vector?", 131-132, and Jon C. Wilkinson and Andrew Hill, "Airpower Against the Taliban: Systems of Denial", *Air & Space Power Journal* 31, no. 3 (2017): 44-59.

165 Hock, "Closing", 63, Kovich, "Airpower", 5, and Magruder, "Success As a Hurdle".

166 Maccuish, "Flight to Irrelevance?", 214-215.

167 Hock, "Closing", 57-58.

168 Ayre and Hough, "Air Power", 35, Corum, "Airpower Roles and Missions", 212-214, and Corum, "Back to the Basics", 219.

169 Lambeth, "COIN in Airpower Thought", 160.

170 Philip S. Meilinger (ed), *The Paths of Heaven: The Evolution of Airpower Theory* (Maxwell Air Force Base, AL: Air University Press, 2001), xv-xxvi.

171 David E. Johnson, *Learning Large Lessons: The Evolving Roles of Ground Power and Air Power in the Post-Cold War Era* (Santa Monica, CA: RAND Corporation, 2007), http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA454776&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011), Lambeth, "COIN in Airpower Thought", 162, and James R. Macklin, "Air Power

2.4.5. Option Three: The Joint Approach

Both the ground-centric and the technology-centric approaches claim that they acknowledge the joint character of counterinsurgency operations. However, there were only a few authors that emphasized jointness and interdependency as a leading principle to apply in an irregular environment. In doing so, they largely circumvented the unfruitful discussions outlined above. They did not name this approach specifically, but may be called a joint approach, or, due to its conceptual flexibility, a context-dependent approach. These scholars and military professionals reached different conclusions on historical experiences. Peter Gray lamented the abuses of history of those who selectively used historical case studies on the one hand to prove that airpower could do it alone, or at the very least should be in the lead, or on the other hand prove that the air weapon was an inhumane instrument of excessive human suffering. He pleaded for historical research in the proper, contemporary, context.[172] So did Paul Smyth.[173]

And there were scholars and military professionals who did just that. With regard to the much referred to British experience with air control, David Omissi argued already in 1990 that *"air policing was perhaps most politically and militarily successful where financial, geographical and strategic logic pointed in the same direction"*.[174] Thomas Barber argued that the air weapon in the British experience was neither subordinate or superior, but a partner with sister services, intelligence services, and civilian agencies.[175] In choosing this joint perspective, associated authors reached different conclusions on the general posture of the air weapon in irregular conflicts. In 1997 Dennis Drew stated that the key to effective application of the air weapon in a counterinsurgency was total integration in the overall military campaign.[176] Robert Owen suggested in 1999 in relation to peace operations that deciding which branch is supporting or supported should be dependent on the nature of the mission at hand. Force composition and tasks could therefore differ for each mission.[177] Several years later the idea re-emerged, but with the concepts of the Joint Force Commander and Effects Based Operations added to the discussion. Several authors argued that the main role for airpower still was support to ground forces, albeit not in the nature of supporting-supported relationships one might expect from modern doctrinal thinking. Some form of

and Counterinsurgency: A Strategic Study in Efficiency", (Report, U.S. Army War College, Carlisle Barracks, PA, February 2, 2010) http://www.dtic.mil/get-tr-doc/pdf?AD=ADA518133 (accessed June 15, 2017),12-18.

172 Peter Gray, "RAF Air Policing Over Iraq. Uses and Abuses of History", *Air Power Review* 14, no. 1 (2011): 1-10.

173 Paul Smyth, "Airpower and Counterinsurgency: Building on a Proper Foundation", *Air & Space Power Journal* 25, no. 2 (2011): 115-126, 116-118.

174 Omissi, *Air Power and Colonial Control*, 59.

175 Thomas D. Barber, "Airpower in Counterinsurgency: The Search for Missing Doctrine", (Paper, Naval War College, Newport, RI, May 10, 2007) http://www.dtic.mil/docs/citations/ADA470743 (accessed March 30, 2017), 10-11.

176 Drew, "Short Journey to Confusion", 343.

177 Robert C. Owen, "Aerospace Power and Land Power in Peace Operations", *Airpower Journal* 13, no. 3 (1999): 4-22.

joint service cooperation was required.[178] Within this setting, all military activities were supporting to one commander, the JFC, and his concept of operations. The JFC in turn should have a clear understanding of the mission, and the effects he wanted to achieve. This required a thorough understanding of the nature of the conflict on the one hand, and of the capabilities and limitations of all his weapons systems and organizations under his command on the other. He was then able to decide which capability or combination of capabilities could deliver the desired effects.[179] In 2009, RAND corporation argued that integrating in, rather than deconflicting with, a joint force structure would enhance effectiveness and efficiency of fire support for both air-and ground power within a mainly, but not exclusively, conventional setting.[180] The same statement could be true for irregular warfare.[181]

By choosing "jointness" as the leading principle in conducting irregular warfare, many aspects of airpower theory and irregular warfare theory were merged. Associated authors recognized that the nature of counterinsurgency was inherently political, had local and regional variants, and that the population was the center of gravity for both insurgents and counterinsurgent forces. Firepower, regardless which service applied it, could undermine the political and strategic goals of the counterinsurgency effort and could be subject to restrictions.[182] A thorough understanding of the human and physical environment in this perception was key to developing an effective counterinsurgent strategy, reaffirming the need for a complete, accurate and timely intelligence picture.[183] Associated authors also incorporated the concepts of Network Centric Warfare and Effects Based Operations. In a joint force structure EBO secured a continued link between the political end state of the conflict, formulated in military terms by the JFC, and the deployment of forces. This would *"enable air to regain its ability to shape operations at the strategic levels, rather than provide tactical response in the form of airborne surveillance and artillery"*.[184] Also, it would provide the theoretical base for delivering (a combination of) effects, being kinetic or non-physical or cognitive. Offensive roles of airpower, delivered by airframes that might or might not

178 Barber, "Missing Doctrine", 14, David Jordan, "Countering Insurgency From the Air: The Postwar Lessons", In: *Dimensions of Counter-Insurgency: Applying Experience to Practice*, ed. Tim Benbow and Rod Thornton (London and New York, NY: Routledge, 2008), 90-105, 103, and James Parker, "Air Power Lessons From the Counter Insurgency Operations in Malaya, Borneo and Aden", *Air Power Review* 13, no. 2 (2010): 43-54, 43.

179 Johnson, *Learning Large Lessons*, 137-207, and Smyth, "Airpower and Counterinsurgency", 121.

180 Jody Jacobs, David E. Johnson, Katherine Comanor, Lewis Jamison, and others, *Enhancing Fires and Maneuver Capability Through Greater Air-ground Joint Interdependence* (Santa Monica, CA: RAND Corporation, 2009), http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA496942&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011).

181 See introductory and conclusive chapters by Sanu Kainikara in:Kainikara, *Friends in High Places*, 1-13 and 239-243.

182 Mark Clodfelter, "Airpower Versus Asymmetric Enemies: A Framework for Evaluating Effectiveness", *Air & Space Power Journal* 16, no. 3 (2002): 37-46, G. Beck, "Offensive Air Power in Counter-insurgency Operations: Putting Theory Into Practice", (Paper, Canadian Forces College, 2008) http://airpower.airforce.gov.au/Publications/Details/56/26-Offensive-Air-Power-in-Counter-Insurgency-Operations-Putting-Theory-into-Practice.aspx (accessed December 1, 2010), 9 and 16-17 and Read, "Airpower in COIN", 126-127.

183 Beck, "Offensive Air Power", 8, Mueller, *Air Power*, 12, and Lambeth, "COIN in Airpower Thought", 161.

184 John Alexander, "Air Power in Countering Irregular Warfare", *Military Technology* 33, no. 6 (2009): 99-106, 105. See also: Read, "Airpower in COIN".

be designed primarily for conventional aerial warfare, still could be beneficial to the counterinsurgency effort.[185] Key was choosing the right type of effect that would support the political goal of winning support of the population and the military goal of separating the insurgents from their support.[186] It was therefore imperative that all participants, including airmen, understood the nature of the conflict and were able to support their joint commander by giving advice about the effects their respective assets could bring to the fight, regardless of their specialty or their place in the command structure. Proponents of this concept regarded NCW as critical enabler for provision of the necessary tools to deliver the required situational awareness and understanding about own forces and the insurgent environment.[187]

All discussions mentioned throughout this chapter were still relevant, but became less urgent because the stakes were, at least in theory, less high. The discussion of the supporting versus supported branch while executing military operations became muted, as all military operations were executed in support of the JFC. The discussion of the relative roles of intelligence was also less urgent, as it was acknowledged that all types of intelligence could contribute to understanding of the environment.[188] All missions, including offensive ones, could have a positive effect on the counterinsurgency effort, as long as these effects were understood within the context of the insurgent environment. Therefore, airpower did not have to restrict itself to ISR, mobility and CAS. Discussions about specialized counterinsurgency aircraft, collateral damage, civilian casualties, and building indigenous air forces were still relevant, but became less of a dogma. For instance, the discussion of "high-tech" or "low-tech" was circumvented by using the term "right-tech", which could vary in each operational context.[189]

This line of reasoning did have practical implications, which have not been challenged yet. It required change of organization, processes and procedures to make it work. The JFC had to have increased authority to command and control all assets in his Area of

185 Barber, "Missing Doctrine", 18, Beck, "Offensive Air Power", Farquhar, "Airpower and Irregular War", Harry Kemsley, "Combat Air Power in Irregular Warfare", *Air Power Review* 10, no. 2 (2007): 15-50, and Read, "Airpower in COIN".

186 Alexander, "Air Power", 99 and 102.

187 Alexander, "Air Power".

188 Read, "Airpower in COIN", 127-131, Smyth, "Airpower and Counterinsurgency", 119, and Paddy Teakle, "Air's Toughest Challenge Yet? Air & Space's Role in Counter Insurgency", *The Journal of the JAPCC*, no. 11 (2010): 51-54 http://www.japcc.org/publications/journal/Journal/JAPCC_Journal_Edition_11.pdf (accessed July 11, 2014).

189 Robyn Read, "Irregular Warfare and the US Air Force: The Way Ahead", *Air & Space Power Journal* 21, no. 4 (2007): 42-52, 49. For instance, Glen Beck argues that counterinsurgency aircraft, such as A-37 Dragonfly, A-29 Super Tucano, IA-58 Pucara, and OV-10 Bronco, are more optimized for delivering effects typically needed in a counterinsurgency (Beck, "Offensive Air Power", 26-27). See also: D.A. Pinnell, "The Tenets of Airpower in An Insurgent Environment", (Report, U.S. Army War College, Carlisle Barracks, PA, March 29, 2009) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA498809&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011) and Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 32-50 and 98. An overview of the airframes can be found in: Thomas R. Searle, "Making Airpower Effective Against Guerrillas", *Military Technology* 30, no. 3 (2006): 30-37. Ronald Stuewe made an argument that does not fit into any of the approaches. He stated in 2006 that embracing of new technologies optimized for regular war in general limit effectiveness of airpower in small wars, but to a certain degree. His solution was not to discard technological innovations, or to embrace them without question, but rather increase understanding of their usefulness before deploying them (Ronald F. Stuewe, "One Step Back, Two Steps Forward: An Analytical Framework for Airpower in Small Wars", *Air & Space Power Journal* 20, no. 1 (2006): 89-96, 96).

Operations (AO) and interdependent operations required intensive communications between the various commanders.[190] The joint commanders had to have thorough understanding of the capabilities and strengths and weaknesses of each asset. The RAF already acknowledged before World War II that tactical communications between army and air force were important for the counterinsurgency mission, and at that time was a proponent of joint training and permanent liaison officers assigned to other services to enhance coordination.[191] Conversely, in order to advise the commander, airpower professionals too should have an intimate understanding of the tenets of the specific insurgency they were fighting. According to Benjamin Maitre, this required them to expand their specific and technological way of defining situational awareness with foundations of irregular warfare.[192] Harry Kemsley agreed by stating that counterinsurgencies evolved around perceptions, and that counterinsurgents should use both kinetic and non-kinetic effects as messages to both insurgents and the civilian population. In order to bring these messages effectively airmen should be able to understand the "*wider complexities*" of the environment, so they would be able to dynamically bring several types of messages to that environment.[193] This increased understanding in turn required adaptation of the organizational structure of the air force, educational curriculum of airmen, as well as training requirements and doctrine.[194]

With respect to command and control of the air weapon, the situation could appear fluid, as the supporting-supported relationship could vary. As advise in relation to developing a truly joint mindset Lambeth argued:

> "In doing their part towards pursuing a more cooperative spirit in the COIN arena, airmen should feel no compulsion to argue for an air-centric COIN strategy. Like their fellow combatants in the other components, they should instead recognize and accept that in some circumstances, airpower can swing desired joint-force outcomes all by itself; in others, it will be supporting of other force elements, and in still others, it may be all but irrelevant to mission needs....At the same time, would-be detractors of airpower have an obligation to understand and accept that the best interests of COIN operations will never be served until airpower is duly regarded as co-equal to all other force elements, neither more or less pivotal in and of itself, but a vital participant in the joint effort, because of the extent of its leverage and promise depending on the mission needs of the moment."[195]

190 Jacobs, Johnson, Comanor, and others, *Enhancing Fires*, 61-66.

191 Omissi, *Air Power and Colonial Control*, 70-75.

192 Benjamin R. Maitre, "The Paradox of Irregular Airpower", *Air & Space Power Journal* 21, no. 4 (2007): 36-41. Smyth reached a similar conclusion: Smyth, "Airpower and Counterinsurgency", passim.

193 Kemsley, "Air Power in Counter-Insurgency", 113-119.

194 Alexander, "Air Power", 103-106, Maitre, "Paradox", Kemsley, "Air Power in Counter-Insurgency", 121-124, and Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 51 and 114.

195 Lambeth, "COIN in Airpower Thought", 163.

As with other approaches, this viewpoint potentially had specific consequences for the level of (de)centralization of command and control. Some authors suggested re-evaluation of the structure of Combined Air Operation Centers (CAOC). Group Captain Alexander of NATO's Joint Air Power Competence Centre (JAPCC) in 2009 proposed a decentralized command and decentralized control structure, which NCW made possible.[196] In order to make this effective, joint air/land teams should be found at virtually all levels of the chain of command, which would be able to advise the joint commanders properly. CAOCs would still be needed, but more in a coordinating role. Effective command and control would be done lower in the chain of command, depending on the mission.[197]

Finally, this approach assessed the doctrines differently. For instance, James McCall argued that the *AFDD 2-3* had made great strides with regard to incorporating COIN within the irregular concept, compared to earlier doctrine. However, it could not substitute for joint doctrine, which was still lacking at the time he made this conclusion. Also, criticism on the *FM 3-24* was mostly directed at the lack of a joint approach in air command and control.[198] In addition, Lambeth agreed with Dunlap in the assessment that the *FM 3-24* singled out the air weapon as virtually the only asset that induced collateral damage and civilian casualties, and on the notion that the assessment was based on outdated examples. He therefore, like Dunlap, dismissed the suggestion of a natural development towards a supporting role for the air weapon. But he disagreed with Dunlap's repeated statements that referred to substituting manpower with technology.[199] With regard to the *AFDD 2-3*, he stated that as far as counterinsurgency theory was concerned, it showed a high level of agreement with the *FM 3-24*, but that the *AFDD* was more joint-oriented than the *FM*.[200] So, this joint approach refrained from any dogmatic standpoints, while still incorporating the achievements of the RMA.

2.5. Airpower in Irregular Conflict "Debate"

Up and until now, this chapter addressed the question of how scholars and military professionals conceptualized airpower application in irregular environments. It revealed differences of opinion on several subtopics. The question remains whether there are differences of opinion about the fundamental concepts, and if so, whether the nature of the arguments found in publications after 1991 was any different than that of the preceding

196 Alexander, "Air Power", 103-106. Alexander used the NATO variant of NCW, called Network Enabled Capabilities (NEC). The difference between NEC and NCW will be addressed in the next chapter.

197 Alexander, "Air Power", 103-106. RAND corporation worked out an organizational structure based on Air Support Operations Centers (ASOCs), which were located down the chain of command:Jacobs, Johnson, Comanor, and others, *Enhancing Fires*.

198 James A. III McCall, "Adapting Airpower in Counterinsurgency: A Roadmap for the Operational Planner", (Paper, Naval War College, November 6, 2007) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA476729 (accessed July 3, 2013), 5-6.

199 Lambeth, "COIN in Airpower Thought", 153-158.

200 Lambeth, "COIN in Airpower Thought", 158-160.

period. Continuing lack of consensus on various topics, along with the dialectical tone of some of the publications, indicate that this is indeed the case. This is remarkable, as authors show a high degree of agreement at the conceptual level with regard to both irregular warfare and airpower employment. All authors affirm the need for joint operations, and realize that a counterinsurgent force needs operations in all dimensions. The population-centric approach to counterinsurgency is not seriously challenged. Reversely, all realize that modern technologies can be beneficial to the counterinsurgent cause. And the *FM 3-24* specifically stated that *"today's high-technology air and space systems have proven their worth in COIN operations"*.[201] Also, despite its reputation, one could argue that modern counterinsurgency aircraft, also known by the acronym LAAR (Light Attack Armed Reconnaissance), hardly constitute "low-tech" aircraft due to their modern sensors, weapons, and communications systems.[202] All agree that availability of CAS is essential for survival of lightly equipped and dispersed ground forces, and therefore that a certain level of violence is unavoidable.

The collective set of publications on airpower in irregular warfare from the late 1990s until the mid-2010s can possibly best be characterized by what it is not. It is not a proper debate in the sense that various schools of thought exchanged ideas using widely read media, thereby moving the debate in a certain direction. Albeit not exclusively, scholars and military professionals largely expressed their view on "the" role of airpower in irregular conflict, rarely commenting on each other's publications unless it fitted their own arguments. It also did not have an agreed upon problem to be challenged. Although Dunlap quite clearly stated that a new approach towards the topic was necessary, this was only rarely noticed. Instead, debates, if there were any, focused on subtopics. It is by looking at the stances of the authors on the subtopics through the lens of the potential influence of the information revolution on the theory of airpower in irregular warfare that differences became apparent. However, as most authors did not nominate their stance on this lens directly, classifying them in a school of thought is somewhat artificial. In addition, some authors only addressed one subtopic. For instance, the publication of Peter Gray on the abuse of historical cases dealt solely with that topic. Gray refrained from standpoints on any of the other subtopics. Furthermore, while the three identified approaches show several characteristics, there are also authors that show signs of several approaches. For instance, Lieutenant General Peck, commander of the US Air Force Doctrine Center, acknowledged the increased need for development of a proper joint irregular warfare concept that included BPC/FID, while retaining preference for adherence of centralized command and decentralized execution of the air weapon.[203] Finally, friction on practical issues obstructed open-minded discussion at the theoretical level. Lambeth remarked that

201 United States Headquarters, Department of the Army, *FM 3-24*, E-3. Also see: Corum and Johnson, *Airpower in Small Wars*, 430-431.

202 Marcus Weisberger, "The Light Attack Aircraft", *Air Force Magazine* 93, no. 1 (2010): 56-58.

203 Peck, "Airpower's Crucial Role".

by 2008, the debate had become polluted by interservice friction, frustrating discussions on resource allocations, up to a point where a serious discussion about developing joint solutions to operational needs became nearly impossible.[204]

In addition, the collective set of publications on airpower in irregular warfare does not reflect a dispute between the US Air Force on one hand, and the Army and the Marines on the other, *per se*. Many of the publications were written by airmen, and were published in journals that were managed by air forces, such as the USAF's *Air and Space Power Journal* and the RAF's *Airpower Review*. It was presented as inter-service rivalry by several authors, possibly because the main source of contention involved the question which was the supporting element and which the supported element. Despite possible animosity at a practical level that may have existed, the body of literature also shows that at least the USAF and RAF were open to internal debate too. However, lack of a mature debate could be an indication that the devil is in the details. Paradoxically, reflection on the details is required to identify possible differences of opinion on potentially fundamental issues.

The first observation relates to the question of definition. As stated in the introduction, the definitions of irregular warfare could be a source of confusion. In addition it was outlined that the categorization of the subdenominations of actions to counter irregular threats - Counterterrorism (CT), Unconventional Warfare (UW), Foreign Internal Defense (FID), Counterinsurgency (COIN), and Stability Operations (SO) - was fully codified in 2010 by the US military, even though most of the classifications already existed. This means that much of the discourse on airpower in irregular conflict had taken place in a state of conceptual confusion, because the several subdenominations were not explicated yet. As has been outlined throughout this chapter, the most problematic concept within the context of airpower in irregular warfare was that of COIN. However, as subdenominations were not explicated, the themes of airpower in irregular warfare and airpower in counterinsurgency could easily be intermixed. The publication of US doctrines on the topic serve as a case in point. US Army and US Marines worked with doctrine on COIN, the USAF with doctrine on, what later became, the overarching concept of IW. The same holds true for many publications, which all address "airpower in irregular conflict" directly or indirectly, but could show strong variations in identified subdenominations. It could have as a consequence that the notion that the proper role of airpower in irregular conflict could change along the chosen set of actions to counter irregular threats could be overlooked.

The second observation is that lack of consensus on one of the subtopics reveals difference of opinion on one of the foundations of irregular warfare theory, namely the proper level of violence in counterinsurgency. It can be argued that decisions in practical application of most of the contentious issues were more helpful or less helpful for the counterinsurgent endeavor, depending on the theoretical approach one supports. For the use of violence, the difference is more fundamental. One approach considers it a strategic liability, the other a strategic necessity, the third regarded as context dependent. Dunlap

204 Lambeth, "COIN in Airpower Thought", 150.

acknowledged this by indicating that part of the interservice antagonism was caused by "*honest disagreements as to how to address the greatest threats of the 21st century*".[205] While the topic is fundamental, its role in the debate is marginal. However, the various viewpoints uncover problematic issues, such as the delicate balance between the threat to the overall mission on the one hand and the threat to the force that executes that mission on the other. Another problem is the difficulty in measuring the effectiveness of precision engagement of HVTs, one of the practical applications of violence. Finally, the air weapon continues to be accused of creating civilian casualties and collateral damage, despite efforts of airmen to correct the record. This accusation has a profound effect on discussions about ROE's.[206] These discussions sometimes become blurred by a focus on limitations and capabilities of the air weapon and the use of operational metrics as a guideline for measuring operational effectiveness, while not addressing the fundamental question of which role violence should have in counterinsurgencies.

Third, of the contentious issues, the practical options open to two of them seem mutually exclusive. The ground-centric approach and joint approach tend towards a preference of decentralization of command relationships. The air-minded approach favors centralization. This problematizes issues of command and control philosophy and relationship between air and land forces, as there seems to be no middle ground. Disagreements arose about the desirable level of centralization or decentralization of airpower deployment. It however touched upon an understudied element of the RMA. As far as communications technologies are concerned, airpower theory had long focused on its influence in optimizing the reconnaissance-strike complex. It ignored the potential influence on command relationships in a joint setting, as did the discourse on irregular warfare and the body of knowledge on airpower in irregular warfare. Consequently, the potential influence of the revolution in communications technologies on command relationships in an irregular environment remained underexposed. However, the discussions on supporting-supported relationships, and on the related topic of the desired level of centralization, indicate that the issue was urgent.

The significant factor in the argument is that modern communications systems allow for both centralization and decentralization, as well as for an intermediate form, but not at the same time. It therefore requires conscious decisions of commanders on the extent of this decentralization or centralization. Michael Kometer called this a search for the right "depth" of command relationships, by which he meant that when

> "different parts come together to accomplish a mission, there will be a control node capable of coordinating their actions so they will be working toward the same goals. This node must have the situational awareness to know what is happening with the parts and the authority

205 Charles J. Dunlap, "Understanding Airmen: A Primer for Soldiers", *Military Review* 87, no. 5 (2007): 126-130, 126.
206 McFeely, "Balancing Kinetic Effects".

> to direct them—or to allow them autonomy, as required. Achieving this depth therefore helps to leverage command relationships to achieve both capability and adaptability".[207]

Paraphrased in the context of this chapter: the joint air/land teams mentioned earlier should not by default be placed high or low in the command and control architecture, nor at every level, but at the level and at the time when and where the actual decisions are being made. As will be illustrated in the next chapter, operational experiences preceding operation *Enduring Freedom* had shown that ability for networked communications could have diametrically opposed consequences for command and control. On the one hand, it could lead to centralization, as for instance the conflict in Kosovo illustrated. It could lead to interference from echelons above the CAOC, of which Rules of Engagement and a tight target approval process are examples. It could also lead to decentralization of command, especially when time sensitive targets needed to be engaged. Finally, technological innovations within the sensor-to-shooter chain complicated airpower tasks.[208] This was especially important if the air weapon supported ground forces, by definition a situation where several elements come together to deliver air support to troops. Depth in command relationships precludes centralization of command authority at the same command element all the time. To illustrate, Kometer added an example derived from operation *Iraqi Freedom*, in which pilots told the CAOC the missions they were supporting, instead of the other way round, because communication systems and tactical situation allowed this.[209]

The point here is that the central airpower tenet of "centralized command and decentralized execution" could be subject to change even within an operation. The same could be true for the preference for decentralized command on part of the ground forces. But most importantly, this change logically does not have an independent dynamic. It requires conscious decisions of commanders belonging to several services and, in case of coalitions, from different nations. Adaptability of the command relationships in order to find the right "depth" could require repeated renegotiation of the foundations of command relationships for a specific time and place. In short, the information revolution could proscribe that the "supporting-supported" discussion has to be repeated periodically, depending on the operational situation.

Fourth, the debate on the Afghan Model in the set of publications is indistinct. Although Erica Borghard and Constantino Pischedda called it an important debate[210], it was mostly conducted in newspapers and magazines during and directly after the initial operations up and until March 2002, rather than in scholarly publications.[211] These articles

207 Michael W. Kometer, *Command in Air War: Centralized Versus Decentralized Control of Combat Airpower* (Maxwell Air Force Base, AL: Air University Press, 2007), 62.

208 Kometer, *Command in Air War*, 270-273.

209 Kometer, *Command in Air War*, 242.

210 Erica D. Borghard and Costantino Pischedda, "Allies and Airpower in Libya", *Parameters* 42, no. 1 (2012): 63-74, 63.

211 Conclusion derived from the sources used by Stephen Biddle: Biddle, "Allies", 161, notes 1 and 2.

were later augmented with scientific publications, which were few and far between.[212] The scientific publications however show distinctive approaches, which revolved around the questions of how disruptive the new model was, to what extend it was repeatable, and what the policy implications of the answers to these questions were. The first approach was formulated mainly by Stephen Biddle, who argued that the combination of SOF and airpower was not able to trump a major skill imbalance between indigenous belligerents. The operations in Afghanistan up and until 2002, and also in Iraq in 2003, showed many characteristics of orthodox fire and maneuver tactics and close combat. As this close combat would be executed by the indigenous forces, they had to have the skills that roughly matched those of the opponents. The Afghan Model was therefore not disruptive. It was applicable only when indigenous allies with sufficient skills were available. Biddle cautioned against drawing drastic conclusions and restructuring the armed forces in favor of airpower and SOF development, at the expense of western ground forces.[213] In a study on airpower application in the Second Lebanon War of 2006, Ralph Shield argued that this conflict confirmed Biddle's analysis.[214] Borghard and Pischedda called this the "balance of skills" approach.[215]

This approach was challenged by Richard Andres, Craig Wills and Thomas Griffith, and was called the "balance of technology" approach by Borghard and Pischedda.[216] Andres c.s. argued that the Kurdish irregular forces in Northern Iraq showed a imbalance of skill relative to the conventional Iraqi Army. The Kurdish forces were however very successful against the Iraqi Army, due to its link with western SOF and airpower. As did the Taliban and Al Qaida in 2001 - 2002, the Iraqi Army in 2003 faced a dilemma to which it did not have an answer. On the one hand, it could mass to fight the numerically and tactically inferior Kurdish forces, which had the downside of becoming a lucrative target for western airpower. On the other hand, it could disperse. This had the advantage of reducing vulnerability to western airpower, but also decreased its ability to hold territory. Therefore, western technology was the linchpin of the concept in which the skills of the indigenous allies had a subordinate role. They regarded it as a revolutionary new tool, because it did not resemble the fire and maneuver tactics Biddle referred to. They argued that the concept,

212 These publications were: Richard Andres, "The Afghan Model in Northern Iraq", *Journal of Strategic Studies*. 29, no. 3 (2006): 395-422, Andres, Wills, and Griffith, "Winning with Allies", Stephen Biddle, "Afghanistan and the Future of Warfare", *Foreign Affairs* 82, no. 2 (2003): 31-46, Stephen Biddle, "Afghanistan and the Future of Warfare: Implications for Army and Defense Policy", (November, 2002) http://library.uoregon.edu/ec/e-asia/read/PUB109.pdf (accessed December 5, 2014), Biddle, "Allies", Stephen Biddle, "Special Forces and the Future of Warfare: Will SOF Predominate in 2020?", (Discussion Paper, U.S. Army War College, Strategic Studies Institute, May 25, 2004) http://www.offnews.info/downloads/2020special_forces.pdf (accessed October 28, 2015), Borghard and Pischedda, "Allies and Airpower", Ralph Shield, "Israel's Second Lebanon War: A Failure of Afghan Model Warfare?", (Paper, Naval War College, Newport, RI, May 10, 2007) www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA470727 (accessed October 27, 2015), and Wills, "Airpower, Afghanistan, and the Future of Warfare".

213 Biddle, "Future", Biddle, "Implications", Biddle, "Allies", and Biddle, "Special Forces 2020".

214 Shield, "Second Libanon War", 2.

215 Borghard and Pischedda, "Allies and Airpower", 65.

216 Borghard and Pischedda, "Allies and Airpower", 65.

which allowed airpower and SOF to substitute for western ground forces, should receive a prominent place in foreign policy.[217] Andres, Wills and and Griffith did not go as far as making recommendations for force restructuring. Wills did in a separate publication. In a paper published by the US Air Force Air University, he concluded that, force restructuring was necessary in favor of the combination of SOF and airpower due to the repeatability of the Afghan Model.[218]

Finally, Borghard and Pischedda added their own contribution to the debate. They did not propose a new school or approach, but still argued that both approaches had limited validity because they both failed to properly address the element of time into the analyses. They used the case study of operation *Unified Protector* (OUP) in Libya in 2011. During OUP, the operations of western SOF and airpower on the one hand, and of indigenous allies on the other hand, to a large extent were decoupled. They argued that this conflict did not provide convincing evidence for the validity of the balance of technology approach. It also showed limited confirmation of the balance of skill model. They however argued that the concept of attrition had a prominent role. Western airpower gradually weakened the Libyan armed forces, allowing the irregular opponents to increase their required skill while the conflict progressed. Also, they regarded their evidence to be inadequate for making normative claims regarding desirability of intervention using this model in any case, which depended on specific circumstances.[219]

The reason why the role of this debate is indistinct is that it is not a proper debate. There were only a few participants, and a few publications. After 2012 little has been published on the Afghan Model.[220] So the debate, and therefore the merits of the arguments based on operational outcome of the conflicts mentioned above, are undecided. In addition, the relationship with irregular warfare is unclear. At first glance, the arguments used by both the "balance of skills" and the "balance of technology" are reminiscent of those of the debate on the Revolution in Military Affairs, and the applicability in irregular conflict. It also addressed the fundamental question of limits of information age militaries. Dunlap made quite straightforward remarks in this regard. In addition, Borghard and Pischedda's remarks regarding time also could serve as an opportunity to couple the training of additional forces, within the BPC/FID framework, into the equation. This was however not challenged with arguments based on content. It was only suggested that the USAF promoted a COIN-scheme that enhanced dependence on external support, using cursory remarks.[221] This is rather an illustration of pollution of the debate on airpower

217 Andres, "Iraq", Andres, Wills, and Griffith, "Winning with Allies".

218 Wills, "Airpower, Afghanistan, and the Future of Warfare", 58-64.

219 Borghard and Pischedda, "Allies and Airpower", 66-71.

220 A Master thesis on the Afghan Model provides the latest state of affairs with regard to publications about the applicability of the Afghan Model:Tijs H.M. Althuizen, "The New Way of Limited Warfare: The Value of the Afghan Model of Warfare After the Fight Against ISIS", (Master's Thesis, Netherlands Defence Academy, August, 2018) Available at Library Netherlands Defense Academy.

221 Corum, "Airpower Roles and Missions", 212-214.

in irregular conflict, in which the distinction between insurgencies and other forms of irregular warfare was blurred by all sides, and which was influenced by interservice friction. It precluded an open debate of the potential role of indigenous allies in various forms of irregular warfare, or in various phases of the conflict. However, beneath the surface the stances made on subtopics on irregular warfare are in line with the developments of the RMA. So it can be argued that the preferred approach to modern airpower in modern irregular warfare at least to some extent equates with the importance authors attributed to the developments associated with the RMA. However, the debate on the Afghan Model is informative for the topic of airpower in irregular warfare to only a very limited and circumstantial extent.

2.6. Relevance for Military Innovation

The debate offers some suggestions about the influence of some of the driving factors of military innovation and adaptation. One could argue that technologies had a major impact on the discussion on contemporary airpower theory in irregular wars. After all, much of the discussion evolved around incorporation of the achievements of the RMA, a transformation in its own right, into the irregular context. It was however only in combination with changes in the environment that the discussion started. At the operational and tactical levels, the changes in the operational environment were not so much instigated by actions of the opponents. Rather, they were inspired by the grand strategic environment, which forced militaries to focus on irregular wars, and the military institutional environment of the US Air Force, which seemed to push airpower's contribution into a, for airpower proponents, unwanted direction. It was only after the publication of the *FM 3-24* that the debate was renewed, and the USAF doctrine on irregular warfare was published shorty after, and in reaction to, the *FM 3-24*. Before 2006, airpower proponents largely ceded the debate to land forces.[222] In other words, the environment provided the urgency for renewal of the debate, and technologies drove its content.

Other driving factors show absence or only circumstantial influence in the debate. For instance, NATO did not show a prominent presence in the body of literature on airpower in irregular warfare, even though the debate was not exclusively American. NATO published its own doctrine on COIN in 2011.[223] But the circumstances in which it was written differed from the US, in the sense that it did not have a function in any public debate. Leadership emerged in the context of reluctance of US General Officers to incorporate the political vision of an information age military. The potential consequences could be significant,

222 James J. Fergusson, "Aerospace Power in Counterinsurgency", In: *No Clear Flight Plan: Counterinsurgency and Aerospace Power*, Silver Dart Canadian Aerospace Studies, ed. James Fergusson and William March (Winnipeg: Centre for Defence and Security Studies, University of Manitoba, September, 2008), 1-4, 2.

223 NATO, *AJP-3.4.4: Allied Joint Doctrine for Counterinsurgency (COIN)*, February 4, 2011, http://publicintelligence.net/nato-allied-joint-doctrine-for-counterinsurgency/ (accessed October 12, 2012).

because in the end, the USAF embraced it more intimately than other services, as the statements of General Mattis testify. It has been shown above that the position of scholars towards the RMA to a large extent also influenced their position on the topic of airpower in irregular conflict. It is therefore conceivable the same is true for General Officers responsible for implementing the information age military and deployment of the air weapon in Afghanistan. Additional research is however required to confirm this statement.

The influence of culture is more prominent. There are ample indications that culture, more specifically service culture, inhibited constructive building of an alternative theory on airpower in irregular warfare, made necessary by the new element of RMA in the debate. Chapter one hypothesized that friction could manifest itself where two concepts of the "ideal combatant" meet, but are not aligned. As these concepts are part of the identity of members of a certain culture, this challenge may provoke fierce resistance in order to protect it. Manifestations theoretically are continuous bickering among senior leaders about proposed changes, instead of a frontal assault on the concept of the ideal combatant. Historiography about airpower in irregular conflict showed several developments that fit this description. One could argue that in the debates on contentious issues, most notably regarding the supporting-supported issue, reflected non-alignment of different conceptions of the "ideal counterinsurgent". However, urgent operational challenges in Afghanistan and Iraq reinvigorated the ground-centric approach. In addition, the US Marine Corps and US Army initially bore the brunt of facing these challenges.[224] Urgency of these challenges forced these two services to adapt to a counterinsurgency mindset earlier than the US Air Force. But these services potentially view the role of airpower within the context of irregular warfare differently, which has the risk of equating army or marine corps aviation with airpower in general. The latter service in general had a different approach, favoring quick and decisive results. The two concepts collided as soon as intimate collaboration with ground forces was required by operational necessity or experience, or endorsed by political leaders such as Rumsfeld. So, the theoretical differences of opinion largely reflected the different foundations services generally used for developing the ideal approach to irregular warfare. The army and marines used one that applied the tenets of classical COIN, tenets that are in itself debated by for instance Kilcullen. The air force applied the change of principle of mass as a result of the RMA. This resulted in recurring, culturally induced, and obstinate friction on, sometimes age-old, issues.

Finally, the discourse on airpower in irregular warfare has potential links with all manifestations of military innovation. Sometimes the link is not direct and has to be deduced. The attitude towards the role of violence potentially influences all theoretical manifestations identified in chapter one, except maybe organizational structures. A stance on the role of violence could easily be written down in strategy, doctrine, operational plans, and educational curricula. It could also influence force levels in the form of preferred weapons systems. Discussion of the types of missions most directly influence the

224 Lambeth, "COIN in Airpower Thought", 149.

manifestation "plans and operations". Opinions about the level of required ground forces, about the usefulness of certain types of intelligence, and about the level of integration of the air and the land components potentially influence strategy, force levels and resources, and command relationships. The topic of specialized aircraft has a direct link with force levels and resources. And the requirement to train indigenous air forces potentially influences all manifestations, as this involves a whole separate type of operation. Although the discourse shows strong overlap between the contentious issues and the manifestations, the discourse does not offer many potential additional hypotheses of the drivers, with the issue of command and control philosophy as possible exception. The body of knowledge related to information age airpower in contemporary irregular conflict indicate that the influence of the revolution in communication technologies on "depth" in command relationships is understudied. However, this touches upon two other relevant elements. First, it is the one element where different standpoints in the debate are mutually exclusive. Second, the related issue of centralization is under relatively strong influence of service culture. This would mean that the driving factor "cultural norms" influences the "organizational structures". It depends on the dominant culture, favoring a decentralized, centralized, or fluid command and control philosophy, whether it becomes inhibiting or enabling. This could manifest itself between bickering among General Officers of different services in which air commanders favor a centralized command structure, and ground and marine commanders favoring a more decentralized structure.

2.7. Conclusion

This chapter started with Dennis Drew's observation, made in 1997, that lack of a mature debate on airpower in irregular conflict might be rooted in an institutional lack of interest on the part of the airmen on the topic of irregular conflict on the one hand, and scholarly consensus on the preferred method of airpower employment on the other. As this study observed changes in both airpower theory and irregular warfare theory, the question was then asked whether Drew's observation might be applicable to the two decades that followed. The superficial answer is yes: a mature debate about airpower in irregular warfare is still lacking in mainstream literature. There are signs of continuing disinterest among airpower professionals on the topic of irregular warfare. In the fall of 2017, Jon Wilkinson and Andrew Hill observed that the lack of operational progress in Afghanistan suggested that "*the joint force in general, and the US Air Force (USAF) in particular, is ignoring information that contradicts long-standing assumptions about the application of airpower*".[225] Conversely, there are no signs that the, ground-centric, consensus among scholars with regard to airpower deployment in irregular warfare changed, despite a modest but observable revaluation of targeting insurgents in the irregular warfare theory.

225 Wilkinson and Hill, "Airpower Against the Taliban", 45.

Whereas mainstream literature largely abstained from the topic of airpower and irregular warfare, there is a plethora of publications on it in the form of professional journal articles, theses and reports, and online articles. At first glance, these publications do not seem to show any coherence. Rather, they show differences of opinion on several seemingly separate topics with "airpower in irregular warfare" as overarching theme, but without a clearly formulated problem. The topics of contention were: the role of violence in the conflict, types of missions the air weapon was most suitable to perform, the level of (western) ground forces that were required, command and control philosophy, relationship between air and ground forces, usefulness of certain types of intelligence, the need for specialized aircraft, and the requirement to train indigenous air forces. Foundations of these potential differences of opinion on these topics have been laid well before the end of the Cold War, but they did not surface because of the seeming consensus of professional scholars, combined with the professional disinterest by the military. This changed after the end of the Cold War. The pre-eminence of regular conflict faded, in favor of irregular conflicts. But both the irregular conflicts and the air weapon had been subject to change, mostly as a result of the information revolution. Consequently, the issue of proper employment of the air weapon in irregular environments increased in urgency and importance. Older potential disagreements resurfaced, but in modern context, leading to different conceptual approaches, especially when these different approaches were codified in service-specific doctrine.

Discussions on these issues, most notably command and control philosophy and relationship between air and ground forces, tended to become influenced by culturally induced preconceptions about the effectiveness of airpower in general. However, a closer look at the arguments revealed that the publications can be classified according to the most likely attitude of the authors towards the Revolution in Military Affairs. To a large extent, their stances towards the role of airpower in irregular warfare coincided with their viewpoints on the influence of the RMA in irregular warfare. Hence, three approaches revealed themselves, without becoming schools of thought. The first was the ground-centric approach. This approach focused on literature on insurgencies and largely denied fundamental influence of the RMA on airpower's role in the irregular context. The RMA did not deliver fundamentally new capabilities, only improved ones. The second approach might be called technology-centric or airminded. This approach embraced the RMA, and subsequently argued that it fundamentally changed the way of war, including irregular war, or at least enlarged airpower's role in irregular conflicts. The third approach, which can be called a joint approach, attempted to embrace both concepts, and searched for ways to merge them, refraining from dogmatic standpoints. The overarching problem consequently was the influence of the RMA on airpower in irregular warfare. Other debates, such as the debate on the role of airpower during the conflicts in Former Yugoslavia during the 1990s and the debate on the Afghan Model, do not show significant impact on the debate on airpower in irregular conflicts.

What stands out from the debate is that it sometimes became grim, highlighting inter-service friction, but that the number of fundamental problems was limited to just one: the role of violence in irregular war. On this issue, the debate on irregular warfare and the debate on the RMA show signs of rapprochement. On the one hand, irregular warfare theory recently showed increased interest in employment of kinetic effects on the "irreconcilables". Information age airpower, with its short sensor-to-shooter loop and in this context embodied in the UAV, increasingly was able to focus on those individuals. Reversely, RMA literature increasingly acknowledged limitations of technologies and accompanying concepts that the information age brought. This element was important within the ground-centric approach. This topic was however not addressed in sufficient depth in the discourse on airpower in irregular warfare.

Another element that stands out is that most alternative options on the contentious issues were not mutually exclusive, except for the command and control philosophy and the relationship between airpower and ground power. Discussions on the centralization of command and on who was supporting and who was supported was particularly prone to inter-service bickering. This partially obscured that the RMA provided a possible solution to these problems too. Modern information technologies potentially are able to alter the relationships on short notice, and the concept of "depth" of command relationships could provide useful hints as to how to organize these relationships on a short-term basis. Those who favored a joint approach at least partially provided intentional proposals for solutions to these two sets of problems by abstaining from dogmatic standpoints. However, this approach is not prominent in the publications. In addition, partly due to the inter-service friction that accompanied the polemic between the ground-centric and technology-centric approaches, these approaches did not evolve into a proper debate, and the possible solutions that theory offered were largely lost.

Consequently, partially culturally induced differences of opinion about the ideal organizational structure that incorporated air and land forces were unresolved throughout the period in which the US and many other western nations were trying to resolve irregular conflicts in Iraq and Afghanistan. The conflict in Afghanistan started in 2001, and in Iraq in 2003. Debate started in 2006, and most publications are from 2008 and after. Institutional disinterest in irregular conflict on part of western militaries during the last decades of the twentieth century obscured these differences of opinion, despite availability of relevant publications on the topic. That changed only after the conflicts in Afghanistan and Iraq provided an increased sense of urgency to the matter. So, the immediate outcome of the debate was that participants of the conflict in Afghanistan and Iraq, at least in part, operated with different conceptual ideas about the airpower's role in it. Also, they entered the conflict with a latent difference of opinion about the main contentious issue identified in the discourse on airpower in irregular conflict: the preferred command relationships. The conceptual foundations of the proper application of airpower in irregular war was not in place when the conflicts in Afghanistan and Iraq started, and continued to be for the

first years of the conflicts. This meant that, when the theoretical issue of developing proper command relationships became a practical problem, it had to be solved during wartime.

Chapter 3

3. Operational Context

3.1. Introduction

Chapter one identified the requirement to outline the operational context of Afghanistan. The air weapon does not operate in a vacuum. It is influenced by geographical, meteorological, political, and historical backgrounds, as well as operational developments on the ground. This chapter fulfills this requirement by asking the question what the historical, political and military backgrounds for airpower deployment were when operation *Enduring Freedom* began in 2001. It does so by offering a general outline consisting of two parts. The first part introduces Afghanistan, and describes the historical development of airpower deployment in the country. The second part focuses on political and military developments of the most recent conflict. The conclusion offers an synthesis of the operational influences on the air weapon, referring to the frame of reference of military change if applicable.

3.2. Airpower History of Afghanistan Until 2001

3.2.1. Afghanistan

Afghanistan's characteristics profoundly influence the way military operations are conducted, and air operations are no exception. It is a landlocked country located in Central Asia. It covers about 652,000 square kilometers (252,000 square miles), and is therefore slightly larger than the European country of France, but somewhat smaller than the American State of Texas. It generally has a high elevation, with an average elevation of 610 meter (2,000 feet) above sea level. It borders the countries of Tajikistan, Uzbekistan, Turkmenistan, Iran, Pakistan, and China. Its most eye-catching geographical feature is its varied landscape. Although there are several different classifications, recent military country studies divide Afghanistan into three geographic regions: the Northern Plains, the Central Highlands of the Hindu Kush, and the Southern Plateau. The Northern Plains consist of foothills and plains, and is the most fertile area of the country. Major cities include Mazar-e-Sharif, Kunduz, and Taloqan. The Central Highlands of the Hindu Kush are rugged and inhospitable due to their large elevations, which rise up to 7,600 meters (25,000 feet) above sea level. It consists of narrow gorges, wide valleys, deserts and meadows. It is transected by a limited number of passes, the most well-known being the Khyber Pass leading to the Indian subcontinent. Major inhabited areas include the cities of Kabul, Jalalabad, Ghazni, and Bamyian. The Southern Plateau consist of arid salt flats, stony expanses and sandy deserts. It is largely infertile, except in areas bordering riverbanks.

Irrigation and agricultural activities resulted in areas with lush vegetation, called "green zones". Largest cities are Kandahar, Herat, and Laskhar Gah.[1] A political map of Afghanistan is provided in appendix 1.1. Appendix 1.2 provides for an elevation map of the country.

As the landscape is varied, so is the climate. In general, Afghanistan has a climate of arid or semiarid steppe, with cold winters and dry summers. There are however strong regional differences. The Northern Plains are the most mild, with winter temperatures around freezing level, and temperatures between 15 and 40 degrees Celsius (59 and 104 degrees Fahrenheit) in the summer. In the Central Highlands, the winter temperatures can drop to -40 degrees (-40 degrees Fahrenheit) at higher elevations, but can rise in the summer to 40 degrees (104 degrees Fahrenheit) at lower elevations. On the Southern Plateau, winter temperatures can drop below freezing level, but can rise to 50 degrees (122 degrees Fahrenheit) in the summer.[2]

Besides these general geographical and climatological characteristics, there are several other distinctive features of the physical environment. The area is frequently plagued by earthquakes.[3] In the summer there is an increased chance of both sand and dust storms, and tropical rainfalls, especially on the Southern Plateau.[4] The infrastructure of Afghanistan is largely underdeveloped. During the 1960s a circular road system was constructed that connected major cities with each other and with border crossings. Outside this structure, roads were largely unpaved in 2001.[5] Aviation infrastructure was also underdeveloped. In 2007, Afghanistan had forty six airports. Twelve of them had paved runways, but only four of those were longer than 3,000 meters (9,800 feet). Supporting infrastructure also was outdated and badly maintained.[6] The final distinctive features are various types of caves or cave complexes. There are natural caves, and simple cliff overhangs and natural crevices. In addition, there are manmade caves for agricultural purposes. Afghanistan is known for usage of the *karez* system. This system was designed to divert river

1 Mir Bahmanyar and Ian Palmer, *Afghanistan Cave Complexes 1979-2004: Mountain Strongholds of the Mujahideen, Taliban & Al Qaeda*, Fortress, ed. Marcus Cowper and Nikolai Bogdanivic (Oxford: Osprey Pubishing, 2004), 4-6, Nancy Hatch Dupree and Thomas E. Gouttierre, "Chapter 2: The Society and Its Environment", In: *Afghanistan: A Country Study*, ed. Peter R. Blood (2002), http://public-library.uk/ebooks/10/35.pdf (accessed February 21, 2017), 32-73, 32-36, Lester W. Grau (ed), *The Bear Went Over the Mountain: Soviet Combat Tactics in Afghanistan*, Cass Series on the Soviet (Russian) Study of War, ed. David M. Glantz (Frank Cass Publishers: London and Portland, OR, 1998), xxi, Richard F. Nyrop and Donald M. Seekins, *Afghanistan: A Country Study*, Foreign Area Studies (Washington, DC: The American University, 1986), http://www.dtic.mil/docs/citations/ADA176034 (accessed January 12, 2017), 78-85, David Matthews and Raspal Khosa, *Pre-Deployment Handbook: Afghanistan (post-2014)*, May, 2014, http://www.dtic.mil/docs/citations/ADA605161 (accessed January 18, 2017), 2-6, and Marine Corps Institute, *Afghanistan: An Introduction to the Country and the People*, 2003, http://www.dtic.mil/docs/citations/ADA485637 (accessed January 17, 2017), 6-7.

2 This difference suggests a nearly unrealistic population growth, which can be explained by the unreliability of available statistics. These statistics were, in addition to the lack of reliable censuses, be influenced by, for instance, manipulation and migration: Hatch Dupree and Gouttierre, "Society", 35-36, and Matthews and Khosa, *Pre-Deployment Handbook*, 3.

3 Nyrop and Seekins, *Afghanistan*, 83.

4 Nyrop and Seekins, *Afghanistan*, 83, and Matthews and Khosa, *Pre-Deployment Handbook*, 3.

5 Hatch Dupree and Gouttierre, "Society", 35.

6 Jeffrey W. Nelson, "Airghanistan: Aviation and Nation-building in Central Asia", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2010) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8yNTIyMg==.pdf (accessed July 3, 2013), 23.

streams underground towards agricultural lands, and are characterized by a linear series of vertical shafts for the purposes of access and maintenance. In addition to these natural and non-military caves, Afghanistan contains caves that are completely manmade. Some of them originally had a non-military purpose, but could be used as such. In addition, Mujahideen were able to construct caves and tunnel systems during the Soviet intervention of 1979 - 1989.[7]

As for the human environment, determination of the size of the population is problematic. Sustained periods of conflict precluded execution of reliable censuses. Therefore, population statistics rely on samples and estimates. In 1995, Afghanistan was estimated to have 18.4 million people. In 2008, this number had grown to 32.7 million.[8] The main ethnic groups are Pasthun, Tajik, Hazara, Uzbek and Turkmen. Tribal affiliations and institutions play a large role in Afghan society, although they are the strongest with the ethnic Pashtun, located mainly in the south of Afghanistan. The majority of the Afghan population is Sunni Muslim.[9] Please turn to appendix 1.3 for a visual depiction of the various ethnic groups in Pakistan and Afghanistan.

It is beyond the scope of this study to describe Afghan social, economic, and historical developments extensively. There are, however, a few features that deserve separate attention. First, throughout Afghanistan's recent history, the population and the centralized government had a troubled relationship. Throughout the nineteenth century, Afghanistan was under influence of Russia and Great Britain, both imperial powers at the time. British and Afghans fought three Anglo-Afghan Wars, in 1839 - 1842, 1878 - 1880, and 1919. In 1919 Britain formally recognized Afghan independence.[10] According to Thomas Barfield, western involvement of the nineteenth and early twentieth centuries had changed the political and social dynamics of Afghanistan. Before British armed involvement in Afghanistan, society reverted to the royal lineages of the Durrani family after periods of turmoil. After the Anglo-Afghan Wars various Afghan rulers were only able to temporarily unite the tribal and regional power holders to fight foreign threats, to resort to internal power struggles when the foreign threat was successfully fought off. Since then, rulers have had trouble gaining political legitimacy for their reforms, mostly framed in terms of "modernization", a dynamic that continued into the twenty first century.[11]

Second, this situation is complicated by the *de facto* political structure of the Afghan society that had developed, especially after the Soviet intervention between 1979 and 1989. Before 1979, a delicate balance existed between the central government in Kabul and the politically fragmented leadership of the many tribal groups in the countryside.

7 Bahmanyar and Palmer, *Afghanistan Cave Complexes*, 6 and 13.

8 Hatch Dupree and Gouttierre, "Society", 36, and Library of Congress - Federal Research Division, "Country Profile: Afghanistan", *Country Profile: Afghanistan* (August, 2008) https://www.loc.gov/rr/frd/cs/profiles/Afghanistan.pdf, 6.

9 Hatch Dupree and Gouttierre, "Society", 37-46.

10 Nyrop and Seekins, *Afghanistan*, 24-46.

11 Thomas Barfield, *Afghanistan: A Cultural and Political History* (Princeton, NJ, and Oxford: Princeton University Press, 2010), 5 and 341.

In recognition of the need to incorporate the tribal leaders of the countryside, members of the central government acted as intermediaries for distribution of foreign resources, but without attempting to enhance state penetration to the countryside. A system of personal ties that led from the countryside to Kabul prevented tribal leaders to unite, as the system served the self-interest of the tribal leaders. The Soviet intervention disturbed this balance. Many tribal leaders were killed, leaving a power vacuum. This vacuum was filled by new types of power holders, most notably warlords and the Taliban. Various parties fought each other in rapidly changing alliances in order to protect their interests in which local commanders increasingly acted as predatory warlords.[12] As a result of the deteriorating security situation, the type of social network known as *qawm* became more important, which can best be described as a solidarity group that protected the interest of its members. These interests could be based on ethnic, religious, tribal, economic, local, or other foundations.[13] As a result, Afghanistan's socio-political makeup can be characterized as a nation-wide web-like society, in which a complicated network of constantly changing kin-based solidarity groups protect the interests of their members from outside threats, including competing solidarity groups.[14]

Third, a large part of the culturally and religiously homogenous Pasthu population became divided between two countries. Under British pressure, Afghan Emir Abdur Rahman accepted a boundary between Afghanistan and British India in 1893. This boundary, named "Durand Line" after the British Indian Foreign Secretary Mortimer Durand, was drawn without much consideration for geography or demography. The area informally known as "Pashtunistan" was divided in half, while a large part of the 2,400 kilometer (7,800 miles) long boundary between Afghanistan and British India ran through the rugged mountains of the Central Highlands of the Hindu Kush. After Pakistan's independence in 1947, the Durand Line became Afghanistan's boundary with Pakistan. But because the way the border was enforced, and because of the unnatural division of the Pashtu population, it resulted in tensions between Afghanistan and Pakistan, while the border itself was hard to control.[15] For a visual display of the Durand line, and locations of Pasthu groups on both sides of the line, see appendix 1.3.

The geographical, climatological and historical backgrounds potentially influence air operations significantly. The situation that Afghanistan has no access to an ocean means that deployment of military units must be done via land routes or by air. This potentially increases the strategic necessity of strategic airlift. It is however the situation at the tactical level that potentially has the most influence. Even without the presence of opposing

12 Martijn W.M. Kitzen, "The Course of Co-Option: Co-option of Local Power-Holders As a Tool for Obtaining Control Over the Population in Counterinsurgency Campaigns in Weblike Societies", (Dissertation, University of Amsterdam, December 14, 2016), 338-341, and Allard J.E. Wagemaker, "Afghanistan 2001-2011: Gewapende Interventie En Staatsvorming in Een Fragiele Staat [Afghanistan 2001-2011: Armed Intervention and Statebuilding in a Fragile State]", (Dissertation, Leiden University, October 25, 2012), 79-82.

13 Kitzen, "Course of Co-Option", 345-346, and Wagemaker, "Afghanistan 2001-2011", 78-79.

14 Kitzen, "Course of Co-Option", 346.

15 Bahmanyar and Palmer, *Afghanistan Cave Complexes*, 14, and Nyrop and Seekins, *Afghanistan*, xxii-xxiii and 37-38.

forces, Afghanistan is not a benign country to conduct operations in.[16] This is due to the situation that extreme geographical and meteorological situations may present themselves within a single area of operations and within a very short time frame. Virtually every land form can be found in Afghanistan.[17] Temperatures can vary from desert heat to sub arctic frost, and meteorological conditions can change quickly. The challenging element is that the situation in Afghanistan could degrade performance of aircraft and weapons systems. This is especially the case in the vast mountainous areas. High altitude reduces aircraft aerodynamic and engine performance due to decreased air density. This situation is exacerbated when temperatures rise. For transport aircraft and transport helicopters, it reduces the maximum payload that can be lifted. Fixed wing aircraft need longer runways. This was however exactly what Afghanistan lacked. In addition, mountains negatively affect weapon accuracy and narrows weapon system delivery envelopes. Mountain weather is peculiar, with possibility of heavy fog, cloud bases, and turbulence.[18] During winter or in mountains, whirling snow caused by helicopter downwash could reduce visibility of the pilots during take off and landing to nearly zero, a situation called "whiteout".[19] In many other areas of Afghanistan a similar situation could arise with sand and dust, called "brownout".[20] The environment even influences maintenance of the aircraft. Especially the all-present dust causes engines and other equipment to wear down faster than usual, requiring adaptations to maintenance schedules and procurement of spare parts.[21]

These physical challenges in turn translated into tactical ones. The landlocked location of Afghanistan and the dearth of suitable runways could easily lead to overcrowding of airfields. For modern fighter aircraft, it could also mean that they had limited possibility to divert to another airfield in case of emergency, or sudden changes of meteorological conditions at airfields. Reduced payloads lead to increased number of required sorties to move a fixed amount of cargo or personnel. Finding the opponent is hard due to opportunities for cover and concealment in green zones and caves, the latter having the additional advantage of providing physical protection against ordnance. In mountainous areas, navigation to and locating of targets on the right location is problematic as it is easy to confuse one valley from another. Engaging targets is more difficult due to the

16 See for the manner in which geographical, climatological and meteorological conditions in general influence military operations: John M. Collins, *Military Geography for Professionals and the Public* (Washington, DC: National Defense University Press, 1998).

17 Collins listed three types of land forms: high ground, relatively level land, and depressions: Collins, *Military Geography*, 28.

18 Ashish Singh, "Airpower in Mountains", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2012) Personal Collection, 1-12.

19 Singh, "Airpower in Mountains", 7.

20 Rebecca Grant, *Airpower in Afghanistan. How a Faraway War Is Remaking the Air Force* (Mitchell Institute Press, February, 2009), http://www.afa.org/mitchell/reports/0209airpowerinafghan.pdf (accessed November 13, 2011), 78-79.

21 Guus De Koster, "Mission Uruzgan: The Use of Air Power in Uruzgan", In: *Collaborating in Multiple Coalitions in Afghanistan*, ed. Robert Beeres, Jan van der Meulen, Joseph Soeters and Ad Vogelaar (Amsterdam: Pallas Publications - Amsterdam University Press, 2012), 119-131, 129, and M. Waanders, "Materieeldegradatie in Afghanistan: Een Onderzoek Naar Motordegradatie Van De AH-64D Apache in Het Uitzendgebied", (Bachelor's Thesis, Royal Netherlands Military Academy, Breda, February, 2012) http://defbib.kma.nl/art2/pdf/KMA/2012/Waanders.pdf (accessed February 23, 2017).

combination of smaller engagement area and smaller engagement envelope. Modern equipment and weapon systems, such as precision guided munitions and GPS navigation, mitigate these challenges, but do not diminish them.[22] Also, mountains increase vulnerability to anti-aircraft weapons, because the vertical proximity between weapon and aircraft is reduced. Aircraft that are not able to fly over higher mountains, such as helicopters, can even be confronted with fire from above, because they are forced to fly through valleys, thus allowing opponents to fire their weapons from mountain slopes.[23]

These impediments do not necessarily lead to a decrease of the use of airpower in an environment such as Afghanistan. Ground forces are also affected by the harsh environment, and in several situations even more so than the air weapon. For instance, a lack of traversable roads or large elevations can severely decrease maneuverability of ground forces. Tactical airlift can compensate this, even with reduced payloads. Another example could be to use the air weapon for surveillance of the porous Afghan-Pakistani border. Asish Singh argued that military operations in environments such as Afghanistan had a tendency to rely on airpower to compensate for restrictions the terrain imposed on ground forces. It thus induced joint operations, especially in relation to direct support of ground forces.[24]

The human environment potentially influences air operations as well, although it is difficult to predict beforehand how exactly it will respond. It can be hypothesized, however, that external intervention would influence the interest groups described above. These interest groups have a history of unification under pressure, i.e. when threatened externally, to resort to mutual strife when this served their interest best.[25] This has implications for western forces in dealing with both opponents and Afghan allies, because both Afghan allies and opponents have a tradition of changing behavior when it suits their self-interest best. For western forces, and airpower in its wake, this can mean relative sudden extra opposition, or extra support. Furthermore, the existence of an artificial boundary through inhospitable terrain that separates one of the main religious groups is a potential liability, as neighboring Pakistan can be used as a safe haven. Finding opponents is hard due the nature of the terrain, and entering Pakistan unannounced would be a violation of international law. This could restrict air operations significantly.

So, in short, the operational environment presented by Afghanistan is far less than ideal for air operations. Nevertheless, the relative advantage of the tenets of airpower were still present, and therefore so was the dependency on airpower. This was because naval power could not influence the area of operations at all, and Afghanistan restricted ground power in several ways. This could lead to the seemingly paradoxical situation that demand

22 Singh, "Airpower in Mountains", 7-11.

23 Singh, "Airpower in Mountains", 11.

24 Singh, "Airpower in Mountains", 83-86.

25 Kitzen, "Course of Co-Option", 346.

for air operations could increase, despite the harsh conditions presented by the Afghan physical environment.

3.2.2. Air Operations in Afghanistan 1919 - 1989

The influence of the human environment manifests itself mainly through historical developments regarding airpower deployment in Afghanistan. The area of operations described in the previous paragraph saw foreign air operations soon after the invention of the airplane. They were conducted by the fledgling Royal Air Force (RAF), primarily in the North-West Frontier Province of British India, bordering Afghanistan. This area was populated by tribes that challenged the central government and occasionally revolted against British forces. The RAF executed bombing missions within the concept of air policing, a policy that the British also used in other areas they governed. It entailed a strategy of coercion by bombing the livelihood and sources of water of rebelling tribes, thereby forcing them into submission. In doing so, the RAF extended the range of British control, and also partly could substitute for use of ground forces. In addition to the air policing missions, the RAF provided for direct support of ground operations by executing missions relating to reconnaissance, direct attack on rebels, resupply, show of force, evacuation of casualties, and delivery of messages.[26] The air control policy was plagued by inter-service friction, due to the implied substitution of ground forces by airpower. The debate was, however, fought with moral arguments. Opponents, mostly found within the army, lamented the inducement of civilian casualties, despite the success in putting down revolts during larger operations in 1925, 1928, and 1935. Proponents, of course, focused on the success and the potential to become even more successful. The debate lingered until the outbreak of the Second World War in 1939, when it became moot. After the war, the political situation had changed, and the policy of air control did not return in this area.[27]

The RAF also conducted operations inside Afghanistan itself. During the Third Anglo-Afghan War, Afghan forces crossed the Durand Line into British India, forcing the British

26 Robert P. Lyons, "Afghanistan in the Balance: Air Politik", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2010) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8zMzc5MA==.pdf (accessed July 3, 2013), 95-97, and Singh, "Airpower in Mountains", 20-21. There are slight differences of definition between the term "air policing" on the one hand, and the related terms "air control" and "air substitution" on the other hand. Air Policing refers to the use of aircraft to uphold the internal security of the state. Air control refers to the situation where the air ministry assumes responsibility for a specific area. Air substitution was used in relation to replace other forms of power with airpower. (David E. Omissi, *Air Power and Colonial Control: The Royal Air Force 1919-1939*, Studies in Imperialism (Manchester and New York, NY: Manchester University Press, 1990), xv).

27 Bruce Hoffman, "British Air Power in Peripheral Conflict, 1919-1976", (RAND Corporation, Santa Monica, CA, 1989) https://www.rand.org/content/dam/rand/pubs/reports/2007/R3749.pdf (accessed February 24, 2017), 21-24, Michael A. Longoria, "A Historical View of Air Policing Doctrine. Lessons From the British Experience Between the Wars, 1919-39", (Thesis, Air University Press, Maxwell Air Force Base, AL, June, 1993) http://www.dtic.mil/dtic/tr/fulltext/u2/a370087.pdf (accessed July 3, 2013), 11, Omissi, *Air Power and Colonial Control*, 47-50, and Philip Anthony Towle, *Pilots and Rebels: The Use of Aircraft in Unconventional Warfare 1918-1988* (London: Brassey's, 1989), 35-45.

Army to counterattack. The RAF delivered close air support.[28] The RAF also bombed Afghan forces in their garrisons near Dakka and Jalalabad and the city of Jalalabad itself in May 1919. In addition, the RAF bombed Kabul itself. On May 24, a single Handley Page V/1500 aircraft bombed the royal palace in Kabul. These operations made a significant impression on the Afghan King Amanullah Khan, the Afghan Army, and the Afghan tribal militia, and helped to turn the tide in favor of the British. They impeded the Afghan ability to mass forces, and they also had a psychological impact. But also, it convinced Amanullah of the usefulness of this new weapon, leading to a wish for an own air force.[29] A more benign operation was conducted by the RAF between December 28, 1928, and February 25, 1929. At that time, Afghanistan was embroiled in a civil war in which Great Britain was not a warring party. But the civil war led to a deteriorating security situation for foreign nationals present in Kabul, mostly personnel from foreign embassies and their families. Russia had flown its citizens out of Kabul earlier, using commercial aircraft, but the rapidly deteriorating security situation prevented other nations to do the same. On initiative of the British Legation, the RAF opened an airbridge in which a handful of transport aircraft safely extracted 586 people from Sherpur airfield near Kabul to Peshawar in British India. This was no small feat, as the pilots had to fly 300 kilometers (190 miles) in severe winter weather in ungainly aircraft with open cockpits. In addition, the flight partly ran though mountainous areas of the Khyber Pass.[30]

In response to the developing early air operations in an irregular warfare setting, rebels started to develop countermeasures as well. During the period described above, the RAF found that resisting an air attack by firing back, attacking an airfield, or even creating an own air force, were only a few options open to the anti-colonial war fighters. And from their perspective these were usually not the preferred or feasible ones.[31] Instead, they could try to counter the effectiveness of air attacks by making sure that they were not at the target site at the moment of air attack, that they could not be found by air surveillance and reconnaissance, that they were not a lucrative target, that the ordnance dropped by air was less effective, and that they were not recognizable as combatants. In order to do that, anti-colonial fighters adaptively developed tactics, techniques and procedures for early

28 Angad Singh, "Hinds of the Hindu Kush: The Mi-25/35 in Afghanistan", *Vayau Aerospace and Defence Review*, no. 3 (2016): 106-110, 22.

29 Lennart Andersson, "The First 30 Years of Aviation in Afghanistan, Part 1", *Andersson Aviation History Site* http://www.artiklar.z-bok.se/Afghanistan-1.html (accessed September 6, 2016), Longoria, "Historical View", 10, Lyons, "Air Politik", 91-94, Forrest L. Marion, *Flight Risk: The Coalition's Air Advisory Mission in Afghanistan, 2005-2015*, The History of Military Aviation, ed. Paul J. Springer (Annapolis, MD: Naval Institute Press, 2018), 7-8, Forrest L. Marion, "The Destruction and Rebuilding of the Afghan Air Force, 1989-2009", *Air Power History* 57, no. 2 (2010): 22-31, 24, Singh, "Airpower in Mountains", 23, and Towle, *Pilots and Rebels*, 37.

30 Andersson, "First 30 Years Part 1", Lyons, "Air Politik", 98, and Andrew Roe, "Evacuation by Air: The All-but-forgotten Kabul Airlift of 1928-29", *Air Power Review* 15, no. 1 (2012): 21-38. There were other routes from Kabul to British India, but they were longer and therefore posed significant logistical challenges. According to Andrew Roe, these routes were to Kohat through the Kurram Pass (370 kilometer, 230 miles), to Kandahar via Ghazni (514 kilometer, 320 miles), and to Quetta (724 kilometers, 450 miles) (Roe, "Evacuation", 35.)

31 Omissi, *Air Power and Colonial Control*, 122-132.

warning, cover and concealment, dispersal, physical protection, and dressing as civilians respectively.[32] This complicated airpower's task of finding, fixing, and engaging the targets.

During the first three decades of the twentieth century, development of the air weapon was still in its infant stages. Only a handful of aircraft or squadrons participated in the air operations above or near Afghanistan. This changed with the military involvement of the Soviet Union in Afghanistan between 1979 and 1989. During the previous timeframe, "operations" consisted of not much more than the sum of individual tactical missions, even though they were executed in support of some higher goal. However, during the Soviet involvement, the operations could collectively be labeled an air campaign, with several phases and involving vast amounts of aircraft that executed a great variety of operations during a long time frame. Large scale Soviet military intervention started on December 24, 1979, after a period of increased disorder, political instability, and rebellion against the Afghan central government. Initially, the intentions of the USSR were modest: reinstate Babrak Karmal as legitimate, yet cooperative, President of Afghanistan, help Afghan security forces to restore order, and then leave.[33] However, the USSR became involved in a prolonged insurgency against a collective of armed opposition groups known as Mujahideen.[34] Airpower figured prominently at all levels of operations, and during the course of the conflict several phases can be discerned.

Before the actual commencement of combat operations, the Russian air force conducted Intelligence, Surveillance, and Reconnaissance (ISR) missions along the border areas between the USSR and Afghanistan, partly using airplanes with markings of the Afghan air force and partially manned by Tajik and Uzbek crews.[35] The initial entry, most notably the take over from Kabul and subsequent build up of ground forces, was extensively supported by Soviet military and civilian air transport aircraft, reportedly amounting up to thirty percent of the entire inventory.[36] After the successful initial operations, lasting only a couple of days and in which the Soviet Forces took over the country, both Afghan and Soviet forces met with increased resistance from the Mujahideen. Initially, the Soviet operations were ground-centric, relying on mechanized and motorized infantry units. The air weapon was used extensively, even though the Soviets found out that meteorological

32 Omissi, *Air Power and Colonial Control*, 107-133.

33 Edward B. Westermann, "The Limits of Soviet Airpower: The Bear Versus the Mujahideen in Afghanistan, 1979-1989", (Thesis, Air University, School of Advanced Airpower Studies, Maxwell Air Force Base, AL, June, 1997) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA391797 (accessed July 3, 2013), 17, and Thomas Withington, "The Experience of the Soviet Air Force in Afghanistan 1979-1989", *Air Power Review* 8, no. 1 (2005): 114-128, 116.

34 The Russian General Staff, *The Soviet-Afghan War: How a Superpower Fought and Lost*, trans. Lester W. Grau and Michael A. Gress (Lawrence, KS : University Press of Kansas, 2002), 53-57.

35 Thomas Withington, "Night of the Flying Hooligans: Soviet Army Aviation and Air Force Operations During the War in Afghanistan 1979-1989", In: *Air Power, Insurgency and the "War on Terror"*, ed. Joel Hayward (Cranwell, United Kingdom: Royal Air Force Centre for Air Power Studies, 2009), http://www.airpowerstudies.co.uk/Hayward%20Insurgency%20Book%20%20A5%20Web.pdf (accessed November 13, 2011), 128-141, 130.

36 Denny R. Nelson, "Soviet Air Power: Tactics and Weapons Used in Afghanistan", *Air University Review* January-February (1985) http://www.au.af.mil/au/afri/aspj/airchronicles/aureview/1985/jan-feb/nelson.html (accessed January 12, 2017), Westermann, "Limits", 15, and Withington, "Back to the Basics", 131-132

and geographical conditions of Afghanistan were far less from ideal for conducting air operations, inducing aircraft losses.[37] The role of airpower was mainly support of the ground strategy of intimidation of the population, either by preparatory bombing ahead of ground operations or by bombardment of the border areas with Pakistan in conjunction with artillery. Underlying idea was to deprive the insurgents of their logistical bases provided by the population, but mostly resulted in a large number of civilian casualties, and a severe refugee problem. In addition, due to threat the Mujahideen posed to large military formations, infantry units increasingly became averse to dismounted operations, thereby inducing a development of substituting ground operations for arial bombardment. This effectively led to a stalemate between Soviet and Afghan forces on one side, and the Mujahideen on the other.[38]

This situation lasted until 1984, after which the Soviet Union changed its tactics. Still in an offensive mindset directed towards combating the insurgents directly, the USSR reverted to air maneuver operations, known as "desant". It was in essence a tactic of combined arms, in which the Soviets aimed to encircle the enemy vertically, i.e. by air. Without completely abandoning the other airpower tasks, the main focus of the air weapon became massed heliborne operations with specially trained airborne and air assault forces. Helicopter packages sometimes contained up to sixty airframes, and were supported by fixed-wing aircraft.[39] These new tactics, involving an increase of helicopters in the country, produced some hopeful operational results, but were not able to defeat the Mujahideen decisively. In addition, the Mujahideen received increasing amounts of surface-to-air weapons. It concerned heavy machine guns, and license-built, passive infra red guided Russian SA-7 Man Portable Air Defense Systems (MANPADs). These systems were able to inflict some losses to Soviet aircraft, and also forced aircraft to change their flight profiles. In general, however, they were relatively easy to mislead by using flares in combination with heavy maneuvering. But from 1986 onwards, American-built FIM-92A Stinger and British Blowpipe MANPADs were supplied to the Mujahideen. Especially the Stinger turned out to be the game-changing system, because operating the Blowpipe was cumbersome, requiring significant skills from the operators. Russian aircraft were unable to counter the Stinger technologically, and were forced to change their tactics. Fixed wing aircraft were forced to increase their operating altitude, decreasing the effectiveness of their weapon systems. Aircraft that could not increase their altitude outside the operational envelope of the Stinger reverted to low level flying, which impeded target acquisition. This decreased their effectiveness, as they now also flew within range of other weapon systems. So, in general, Soviet Airpower did not have an answer to the Stinger, although the effectiveness of the system has been mystified. For this reason, as well as other operational and political reasons, the Soviet forces from 1986 onwards reverted to a defensive strategy, increasingly

37 Towle, *Pilots and Rebels*, 199.

38 Westermann, "Limits", 28-54.

39 Westermann, "Limits", 57-59, and Withington, "Back to the Basics", 132.

operating from large populated areas. Depopulation of rural areas by areal bombardment continued, but large scale "desant" operations decreased in favor of smaller scale hit-and run operations, performed by Spetsnaz commando forces. In the end, the USSR withdrew its forces, leaving an estimated toll of 15,000 men, several hundred aircraft and helicopters, and many more vehicles and other equipment.[40]

This general outline highlights the Soviet strategic mistake of terrorizing the population instead of cooperating, and also the strategic importance of the tactical deployment of surface to air missile systems. But it could obscure that both the Soviet aircrews and Mujahideen were engaged in an adaptation battle in search of opportunities to exploit their own strengths and each other's weaknesses. During the course of the conflict, the Soviets implemented several changes to better be able to find, fix, and engage the Mujahideen fighters. Some of these were technological, such as for instance deployment of the Su-25 "Frogfoot" tactical bomber, and use of new flares to counter the MANPADs. Others were tactical, mostly concerning attack profiles of attack helicopters and fighter bombers to increase surprise. Finally, there were organizational adaptations. Especially the "desant" operations required decentralization of command and control of the air weapon, most notably the Mi-24V "Hind" gunships, and tightened the link between air and ground operations with increased use of Forward Air Controllers (FACs). With the exception of adaptations that were directed towards the population, such as for instance the use of the infamous "butterfly mines", these adaptations can be considered improvements, as they at least temporarily and locally put the Mujahideen off balance, or increased survivability of the aircrews.[41]

Conversely, the Mujahideen adapted as well. Initially, they suffered from Soviet air superiority. At the operational level Soviet airpower challenged the logistical lines of the Mujahideen. It did so by bombing the population, depriving the Mujahideen of their support base. Also, Soviet interdiction missions hampered logistical support. At the tactical level, Mujahideen actions were highly dangerous due to airborne protection of Soviet ground movements by helicopters. The Mujahideen tried to counter these operations by waging a political campaign for external support.[42] In addition, they tried to mitigate the intended effects of Soviet air operations, while remaining focused on Soviet ground

40 Mahmood Ahmed Ghazi, *Afghan War & the STINGER Saga: How the Air Battle Was Fought and Won in Afghanistan* (Lahore: Ahmad Publications, 2013), 11-59, Nelson, "Soviet Air Power", Towle, *Pilots and Rebels*, 203-205, Westermann, "Limits", 59-101, Withington, "Back to the Basics", 139-140, and Withington, "Experience of the Soviet Air Force", 125-126.

41 Robert A. Sutley, "The Soviet's Use of Airpower in a Counterinsurgency Campaign", (Report, Air University, Air Command and Staff College, Maxwell Air Force Base, AL, 1987) http://www.dtic.mil/dtic/tr/fulltext/u2/a180349.pdf (accessed August 8, 2013), Beau G. Rollie, "Helicopters in Irregular Warfare: Algeria, Vietnam, and Afghanistan", (Master's Thesis, U.S. Army Command and General Staff College, Fort Leavenworth, KS, 2013) http://www.dtic.mil/dtic/tr/fulltext/u2/a590399.pdf (accessed February 23, 2017), 96-97, Charles J. Wallace, "Airpower Against 'irregular' Adversaries: How Terrorist, Insurgent, and Guerrilla Forces Have Attempted to Negate Airstrikes", (Thesis, Maxwell Air Force Base, Alabama, June, 2006) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8zMTQ5Mg==.pdf (accessed June 21, 2013), 22-27, Westermann, "Limits", 29, 40-49, 65, 74-75, 80, and 101, Withington, "Back to the Basics", passim, and Withington, "Experience of the Soviet Air Force", passim.

42 Wallace, "Airpower Against 'Irregular' Adversaries", 29 and 32.

forces.[43] Especially in the mountainous areas near Pakistan, the Mujahideen reverted to using the cover of darkness, tunneling and digging caves, which increased their physical protection, and decreased the chance of being spotted.[44] They also used earth-colored cloaks whenever they heard helicopters approaching to avoid visual detection.[45] The Mujahideen in addition became proficient in exploiting situations where Soviet aircraft presented predictable targets, for instance by attacking airfields with direct attacks or indirect fire in order to destroy parked aircraft.[46] They became adept in countering air assaults, by developing an early warning system, laying of mines on expected landing zones, and rapid massing of fires on landing zones. An effective countermeasure to Close Air Support (CAS) was engaging the Soviets from such a close distance that CAS became unavailable due to the increased risk of hitting own forces.[47] Another tactic was engaging aircraft during phases of flight in which they were vulnerable, typically during take off and landing. Also, they found ways to engage low and slow flying aircraft. Due to their technological limitations, they were restricted to operating in valleys rather than above it, could in various ways be lured in to an ambush using Surface-to Air Missiles (SAM), aptly called a "SAMBUSH". Most of these ambushes were however not executed with MANPADs, but with Heavy Machine Guns (HMG) and Rocket Propelled Grenades (RPGs). Besides inflicting losses, this also had the tactical consequence that the Soviets became more cautious, leading to reduced or delayed availability of airpower, thereby impeding effectiveness.[48]

It was however the Stinger which allowed the Mujahideen to actively challenge Soviet air superiority. Contrary to other weapon systems that were delivered, the Stinger was easy to use, and its design and operation fitted Mujahideen tactics.[49] It was in this latter context where the Stinger proved its effectiveness, rather than in the context of the sometimes overrated claims of actual downing of aircraft. While it certainly must have had a detrimental effect on available airframes, it was the decreased effectiveness of the air weapon resulting from cautious tactics and flight profiles that allowed the Mujahideen to operate more freely, even during daytime. This in turn allowed them to resupply and

43 Wallace, "Airpower Against 'Irregular' Adversaries", 33-34.

44 Wallace, "Airpower Against 'Irregular' Adversaries", 32, and Withington, "Back to the Basics", 135.

45 Westermann, "Limits", 41.

46 Ali Ahmad Jalali and Lester W. Grau, *Afghan Guerrilla Warfare in the Words of the Mujahideen Fighters* (St. Paul, MN: MBI Publishing Company, 2001), 405, and Towle, *Pilots and Rebels*, 201. Jalali's book was first published in 1995 with the title *The Other Side of the Mountain*.

47 Jalali and Grau, *Afghan Guerrilla Warfare*, 227-238.

48 Jalali and Grau, *Afghan Guerrilla Warfare*, 405, H. John Poole, *Tactics of the Crescent Moon: Militant Muslim Combat Methods* (Emerald Isle, NC: Posterity Press, 2004), 109, Westermann, "Limits", 64, and Withington, "Back to the Basics", 139-140. These were not executed with dedicated surface to air weapons, but also with other weapons that were primarily designed for attacking armored vehicles, such as RPGs.

49 Wallace, "Airpower Against 'Irregular' Adversaries", 35.

conduct operations more effectively, enabling the Mujahideen to focus on their primary targets, Soviet and Afghan ground forces.[50]

The developments of the Soviet armed forces in Afghanistan were largely known by the west. This was due to western contacts with the Mujahideen, such as for instance through intelligence services and journalists present in the country. After the Cold War, when the political equilibrium had changed, there was even formal exchange of lessons learned between Russia and the US.[51] Even when the conflict had not yet ended, there was some scholarly attention on the Afghan air war.[52] Soviet experience in Afghanistan showed that airpower could serve as a force multiplier and even as a force substitute, but could not compensate for lack of viable strategy or doctrine.[53] The question remains, however, to what extent the lessons identified were institutionalized into lessons learned. The United States Air Force (USAF) organized a conference on airpower in low intensity conflict in 1985, during the Afghan conflict and only a decade after the end of the Vietnam War. This conference can be regarded as a serious attempt to understand irregular warfare. It was however strongly focused on Foreign Internal Defense (FID), the military component of nation building executed by Special Operation Forces (SOF). The conference proceedings showed the operational frame of reference was the Vietnam War, rather than the Afghan insurgency of 1979 - 1989.[54] Also, as has been described in chapter two, serious attempts to write doctrine on Counterinsurgency (COIN) started only when the US and NATO were embroiled in a new irregular conflict nearly two decades later. In addition, the Soviet experience in Afghanistan does not hold a prominent place in mainstream literature on airpower in irregular warfare.[55] So, there are few indications that western airpower, at least at the operational and strategic levels, adapted as a result of the Afghan conflict of 1979 - 1989. On the other hand, there are some scattered indications that the Afghans indeed had learned from this conflict. Some of the Mujahideen would later become related to the

50 Singh, "Airpower in Mountains", 34-41, Wallace, "Airpower Against 'Irregular' Adversaries", 31-33, and Westermann, "Limits", 75-81, and 107-108.

51 Grau, *The Bear Went Over the Mountain*, xx.

52 See for instance: Terence L. Gilbert, "Practice Makes Perfect: Soviet Air Support Doctrine and Its Tactical Application in Afghanistan", (Monograph, U.S. Army Command and General Staff College, School of Advanced Military Studies, Fort Leavenworth, KA, December 4, 1987) http://www.dtic.mil/dtic/tr/fulltext/u2/a190845.pdf (accessed November 28, 2013), Nelson, "Soviet Air Power", Keith J. Stalder, "The Air War in Afghanistan", (Thesis, Marine Corps Command and Staff College, Quantico, VA, January 25, 1985), and Sutley, "Soviet's Use of Airpower".

53 Westermann, "Limits", 115-116.

54 Allen Dodson, Donald Johnson, Ronald Merriott, and David Schlachter (eds), *The Ninth Air University Airpower Symposium 11-13 March 1985: The Role of Airpower in Low Intensity Conflict. Proceedings* (Maxwell Air Force Base, AL: Air War College in cooperation with the Air University, May, 1985), http://www.dtic.mil/dtic/tr/fulltext/u2/a158845.pdf (accessed September 4, 2018).

55 See for instance: James S. Corum and Wray R. Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence, KS: University Press of Kansas, 2003), James Fergusson, and William March (eds), *No Clear Flight Plan: Counterinsurgency and Aerospace Power* (Winnipeg, MB: Centre for Defense and Securities Studies, The University of Manitoba, 2008), Joel Hayward (ed), *Air Power, Insurgency, and the "War on Terror"* (Cranwell: Royal Air Force Centre for Air Power Studies, 2009), http://www.airpowerstudies.co.uk/Hayward%20Insurgency%20Book%20%20A5%20Web.pdf (accessed November 13, 2011), and Sanu Kainikara (ed), *Friends in High Places: Airpower in Irregular Warfare* (Canberra: Air Power Development Centre, 2009), http://airpower.airforce.gov.au/Publications/Details/393/Friends-in-High-Places-Air-Power-in-Irregular-Warfare.aspx (accessed November 13, 2011).

Taliban. These individuals could spread the knowledge, experience, and tactics, that could be used against foreign airpower.[56]

3.2.3. Afghan Air Force 1919 - 2001

Scholarly attention on foreign intervention in Afghanistan and on Afghanistan's internal troubles obscures the fact that Afghanistan retained some form of own air force, with various names, from the early days of manned flight. Surprisingly little has been written on its development.[57] Historiography however does provide for some indications on it. Between Afghanistan's independence in 1919 and the end of the Second World War, the country formally remained neutral. The successive Afghan governments were however influenced by political developments in Europe. During the Interbellum, Afghanistan acquired a few aircraft from Britain, Italy, Germany, and the Soviet Union. There were also supporting personnel from these countries present in Afghanistan, such as mechanics, instructor pilots, and engineers. Conversely, Afghan pilots were sent to these countries for training. In 1937 the air arm of the Afghan army became the Afghan Air Force. During the Second World War, Britain became the primary supplier of military aircraft to Afghanistan. By 1947 the Royal Afghan Air Force possessed primarily British light bombers and trainers, a few Italian reconnaissance aircraft, and a single American aircraft for VIP transport. The entire air force consisted of three operational squadrons and one training squadron, all located on Sherpur airfield near Kabul. Operationally, the air force was used for internal policing missions reminiscent of the British method of operating, suspectedly sometimes flown by foreign crews. The situation in which Great Britain was the main supplier of of Afghan military aircraft was to some extent problematic. Great Britain controlled the delivery of spare parts, and therefore by extension the operational status of the Afghan Air Force. Great Britain wanted to keep the Afghan Government within British influence, and therefore had a motive of using delivery of spare parts as coercive instrument. In addition, Great Britain needed its spare parts for its own purposes in times of increased threat of war at home, as was the case several times within the initial developing Cold War. As a result of these two reasons, delivery of spare parts was low, and therefore so was the serviceability

56 Charles Wallace remarked that the fighting experience of the Taliban was directly derived from the conflict of the 1980s, and also from the conflict with the Northern Alliance in the during the 1990s (Wallace, "Airpower Against 'Irregular' Adversaries", 64). However, he makes this statement without a reference to a source that could back it up. Nevertheless, it is plausible that some skills and knowledge remained, and could be re-learned relatively quickly due to recent combat experience. On the other hand, Antonio Giustozzi remarked that most members of the Taliban that had been active in the 1980s, only were so in junior roles. In addition, he noted that the Taliban by 2001 had little experience handling a guerrilla war (Antonio Giustozzi, "Insurgency in Afghanistan", In: *The Routledge Handbook of Insurgency and Counterinsurgency*, ed. Paul B. Rich and Isabelle Duyvesteyn (London and New York, NY: Routledge, 2012), 218-226, 218). Both are cursory remarks, which require additional research.

57 Virtually the only publications that are addressing the topic directly are: Marion, *Flight Risk*, and Marion, "Destruction and Rebuilding".

of the Afghan aircraft. It also had a negative effect on the currency of the pilots and maintenance crews.[58]

Influence of the Soviet Union grew in the period after the Second World War, up to a point that the entire Afghan Air Force became equipped with Soviet aircraft. It also expanded, leading up to about a planned four hundred aircraft in 1979.[59] The Democratic Republic of Afghanistan Air Force (DRAAF) executed a few bombing missions in an attempt to subdue the rebellion that eventually led to the Soviet intervention, but to no avail. In addition, about twenty Soviet helicopters and their crews were already in the country from late 1978 onwards, on request of President Taraki.[60] They were accompanied by Soviet advisors, who had the task of assisting the Afghan armed forces to suppress the rebellion.[61] During the occupation, the Soviets trained and expanded the DRAAF. They however questioned the loyalty of the Afghans. Especially the members of the Afghan army had a bad reputation for desertion and delivering passive and active support to the Mujahideen. This lack of trust also effected the DRAAF. It can be found in literature that Afghan airmen were unwilling to employ weapons on their fellow countrymen, and defections did take place.[62] Although information is scattered, there are indications that Russians responded by sometimes flying Afghan airframes themselves. Also, Afghan helicopters in general were tasked in the least sensitive areas, and with Soviet helicopters accompanying them for oversight. In the end, training and equipping of the Afghan air force did not lead to a sustainable organization. Towards the end of the conflict, when the Soviets made attempts to hand over the responsibility of the security situation to the Afghans, the DRAAF was not able to take over the tasks Soviet airpower executed before, and the Afghan army relied heavily on Soviet air support until the complete withdrawal en beyond.[63]

During the decade that followed, Afghanistan once again fell victim to civil war, and the DRAAF effectively ceased to exist as an organization. The inventory became separated between various militia leaders, parts of the DRAAF becoming what can be called air militias of the several factions, who used the aircraft on each other. As the civil war progressed, most of the airframes had either left the country, were destroyed, or were rendered unserviceable due to lack of maintenance or unavailability of pilots. By 2001, the militia that controlled most of Afghanistan, the Taliban headed by Mullah Omar, serviced only about twenty Russian fighter aircraft.[64] Omar's main opponent was the United Front for Islamic Salvation of Afghanistan, better known as the Northern Alliance.

58 Andersson, "First 30 Years Part 1", Lennart Andersson, "The First 30 Years of Aviation in Afghanistan, Part 2", *Andersson Aviation History Site* http://www.artiklar.z-bok.se/afghanistan-2.html (accessed September 6, 2016), Marion, *Flight Risk*, 14-17, and Marion, "Destruction and Rebuilding", 24.

59 Marion, *Flight Risk*, 17-22, and Marion, "Destruction and Rebuilding", 24.

60 Marion, "Destruction and Rebuilding", 24, Westermann, "Limits", 11-12, and Withington, "Back to the Basics", 130.

61 According to Westermann, there were about 5,000 Soviet advisors in the country who, in preparation of the actual invasion, were used to sabotage Afghan military equipment: Westermann, "Limits", 14.

62 Gilbert, "Practice Makes Perfect", 21, Singh, "Hinds", 109, and Westermann, "Limits", 12 and 18.

63 Marion, "Destruction and Rebuilding", 25, and Westermann, "Limits", 90-94.

64 Marion, *Flight Risk*, 22-47.

It was an alliance that was brought together by a common enemy, and consisted mainly of Tajik, Uzbek and Hazara power holders and their forces.[65] The Northern Alliance was headed by Ahmad Shah Massoud, and it operated a few transport helicopters, a fixed wing transport aircraft, and some helicopter gunships.[66] The Taliban, who eventually became NATO's opponent, lacked external support to acquire weapon systems due to their international isolation. In general, they were dependent on purchases on the black market. This involved mainly unsophisticated weaponry, such as RPGs and heavy machine guns. As for MANPADS, they reportedly were able to acquire relatively outdated systems in small quantities.[67] Whereas the Taliban did not have much airworthy airframes or pilots to operate them, they still had some strong points. They reportedly also possessed three radar guided SA-3 SAMs, albeit without the knowledge to maintain them. Of more significance were the other weapons and weapons systems that had been moved into the country during the period between 1979 - 1989. It concerned unguided Anti Aircraft Artillery (AAA) guns and infrared guided SA-7. But most importantly, it was assessed that there were still about one hundred to two hundred unused Stinger missile systems present in Afghanistan on September 11, 2001.[68]

3.2.4. A Harsh Operational Environment

Analysis of the physical and human environment shows that Afghanistan can make conflicting demands on the air weapon. On the one hand, it could increase the demands on airpower. The strategic location and harsh environmental conditions could lead to increased requirements for airpower-delivered ISR, transport, and firepower. On the other hand, effectiveness of the air weapon could be impeded by a variety of factors. Geographical, meteorological and climatological challenges are abound in Afghanistan. Historical description of airpower deployment in Afghanistan however shows that, while more difficult than in other parts of the globe, airpower could still be successfully employed. The development of the air weapon also shows that traditional challenges decreased as the technological capabilities of aircraft increased. Most problematic challenge however was the development of countermeasures by Afghan opponents of (foreign) airpower. One could safely argue that the Afghan opponents by 1989 were no longer impressed by the air weapon the same way King Amanullah was in 1919. Effectively using opportunities the environment offered them, the Mujahideen figured out ways to

65 Kitzen, "Course of Co-Option", 355, and Wagemaker, "Afghanistan 2001-2011", 128.

66 Marion, "Destruction and Rebuilding", 25-27.

67 Giustozzi, "Intelligence-Gathering", 223, and Antonio Giustozzi, *Koran, Kalashnikov, and Laptop: The Neo-Taliban Insurgency in Afghanistan* (New York, NY: Columbia University Press, 2008), 150-151.

68 Don Chipman, "Air Power and the Battle for Mazar-e Sharif", *Air Power History* 50, no. 1 (2003): 34-45, 38, and Benjamin S. Lambeth, *Airpower Against Terror: America's Conduct of Operation Enduring Freedom* (Santa Monica, CA: RAND Corporation, 2005), http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG166-1.pdf (accessed November 13, 2011), 76-77.

degrade airpower's effectiveness at the strategic level, and influenced Soviet tactics. There are indications remnants of both weapons systems and the knowledge to use those systems in tactical situations were present in Afghanistan in 2001. So, airpower that was about to be deployed in late 2001 would face a difficult operational environment.

3.3. NATO and Afghanistan

3.3.1. NATO after the Cold War

The indigenous human and physical environments were only one part of the operational environment. The other part consisted of the international political context in which the operations took place and of the actual operational developments on the ground in Afghanistan between 2001 and 2016. The two elements were highly interlinked, and had their origins in the new security situation NATO faced after the end of the Cold War. During the 1990s the existential threat of the Warsaw Pact and its leader, the Soviet Union, disappeared. Since then, Western states are instead threatened by a set of wide ranging, adaptive, and elusive risks. The binding organizational principle of NATO, territorial defense, increasingly became an inadequate response to those risks.[69] In reaction, NATO set out to adapt to the new security situation essentially by shifting its policy from emphasis on collective defense to emphasis on collective security, if need be outside the Treaty Area.[70] In short, NATO had to go *"out-of-area or out of business"*.[71] Within this context, NATO changed its Strategic Concept, expanded membership with Eastern European Countries, started development of small and deployable forces, and renegotiated its relationship with other international organizations such as the United Nations (UN) and the European Union (EU).[72] Operationally, this new outlook initially manifested itself

69 Christian F. Anrig, *The Quest for Relevant Air Power. Continental European Responses to the Air Power Challenges of the Post-Cold War Era* (Maxwell Air Force Base, AL: Air University Press, Air Force Research Institute, 2011), http://www.au.af.mil/au/aupress/digital/pdf/book/b_0125_anrig_quest_relevant_power.pdf (accessed March 17, 2014), 14. See also: Sten Rynning, *NATO Renewed: The Power and Purpose of Transatlantic Cooperation* (New York, NY: Palgrave Macmillan, 2005), 169-270, and M.J. Williams, *NATO, Security and Risk Management: From Kosovo to Kandahar* (London and New York: Routledge, 2009).

70 Richard E. Rupp, *NATO After 9/11: An Alliance in Continuing Decline* (New York: Palgrave Macmillan, 2006), 52, and Rynning, *NATO Renewed*, 20-23.

71 Andrew R. Hoehn and Sarah Harting, *Risking NATO: Testing the Limits of the Alliance in Afghanistan* (Santa Monica, CA: RAND Corporation, 2010), https://www.rand.org/pubs/monographs/MG974.html (accessed July 6, 2017), 9.

72 These processes all have dynamics of their own, which however are of minor significance to air operations in Afghanistan. For detailed descriptions, and for the mutual relationships between the various processes, see: Anrig, *Quest for Relevant Air Power*, 16-20, N. Bensahel, *The Counterterror Coalitions: Cooperation with Europe, NATO, and the European Union* (Santa Monica, CA: RAND Corporation, 2003), http://www.rand.org/pubs/monograph_reports/MR1746.html (accessed July 6, 2017), Sven Biscop, "In Search of a Strategic Concept for the ESDP", *European Foreign Affairs Review* 7 (2002): 473-490, Sven Biscop, "NATO, ESDP and the Riga Summit: No Transformation Without Re-equilibration", (Policy Paper, European Union Center of Excellence, 2006) http://streitcouncil.org/uploads/PDF/NATO_ESDP_Riga_Summit.pdf (accessed July 20, 2012), Joe Burton, *NATO's Durability in a Post-Cold War World* (Albany, NY: State University of New York Press, 2018), 1-75, Brian J. Collins, *NATO: A Guide to the Issues* (Santa Barbara, CA: Praeger Publishers, 2011), 90-102 and 135, Giovanni Grevi, Damien Helly, and Daniel Keohane (eds), *European Security and Defense Policy: The First 10 Years (1999-2009)* (Paris: The European Institute for Security Studies, 2009), http://www.iss.europa.eu/uploads/media/ESDP_10-web.pdf (accessed

in new types of concepts, such as peacekeeping, peace enforcing, and humanitarian intervention. Relating missions also took place in new areas outside the treaty area, and were endorsed by resolutions of the United Nations Security Council. Most well-known of these missions were those in the Balkans, an area that was plagued by internal conflict after dissolution of the country of Yugoslavia. During operations in the Balkans, NATO executed their first out of area missions, in which they also were authorized to use force on support of an UN resolution.[73]

Beneath the surface, however, there existed a fundamental problem, namely NATO's requirement to make decisions by consensus of sovereign nation-states, in an age when changing threats left ample room for interpretation. This allowed for nations to disagree on risk assessments, and consequently also on the best ways to respond to the risks.[74] David Auerswald and Stephen Saideman argued in 2014 that the requirement of unanimity in NATO decision making setup was implicit, with formal unanimity only being required on the issue of expansion of NATO membership. This provided considerable leeway for individual nations to pursue their own interests within the alliance, although nations with the most leverage could influence the decision making process significantly.[75] It is however plausible that NATO nations had, or perceived to have, more leeway in absence of a commonly shared assessment of the risks. Consequently, nation's national stances within the alliance increasingly became dependent on domestic considerations. Nations did not denounce the core values of the alliance. However, they were all in a position to explain the generally formulated strategic concepts in the context of their national policies and risk assessments.

This had the implication that diverging national assessments of risks and the preferred method to face those risks translated themselves into disagreements on more specific and practical policy decisions. First, there was difference within the alliance with regard to the preferred policy. In 2009, Timo Noetzel and Benjamin Schreer argued that the

June 20, 2012), 9, Ellen Hallams, *The United States and NATO Since 9/11: The Transatlantic Alliance Renewed* (London and New York: Routledge, 2010), 33 and 111, Jolyon Howorth, "ESDP and NATO: Institutional Complexities and Political Realities", *Politique étrangère* English edition, no. 4 (2009): 95-106, Daniel Keohane, "ESDP and NATO", In: *European Security and Defense Policy: The First 10 Years (1999-2009)*, ed. Giovanni Grevi, Damien Helly and Daniel Keohane (Paris: The European Institute for Security Studies, 2009), http://www.iss.europa.eu/uploads/media/ESDP_10-web.pdf (accessed June 20, 2012), 127-138, Julian Lindley-French, *Headline Goal 2010 and the Concept of the EU Battle Groups: An Assessment of the Build-Up of A European Defence Capability. Lecture in the International Seminar for Experts "European Security and Defence Policy and the Transatlantic Relationship: How to Strike a New Balance?", Organised by the Cicero Foundation in the Series Great Debates, Paris, 8 - 9 December 2005* (Cicero Foundation, December 9, 2005), http://www.cicerofoundation.org/pdf/lecture_lindleyfrench_dec05.pdf (accessed June 8, 2012), Rupp, *NATO After 9/11*, 53-61 and 90, Rynning, *NATO Renewed*, 50-59 and 78-79, Stanley R. Sloan, *Defense of the West: NATO, the European Union and the Transatlantic Bargain* (Manchester: Manchester University Press, 2016),103-174, and Neil Winn, "CFSP, ESDP, and the Future of European Security: Whither NATO", *The Brown Journal of World Affairs* IX, no. 2 (2003): 149-160.

73 Burton, *NATO's Durability*, 10-75, and Ellen Hallams and Benjamin Schreer, "Towards a 'post-American' Alliance? NATO Burden-sharing After Libya", *International Affairs* 88, no. 2 (2012): 313-327, 315.

74 Timo Noetzel and Benjamin Schreer, "Does a Multi-tier NATO Matter?: The Atlantic Alliance and the Process of Strategic Change", *International Affairs* 85, no. 2 (2009): 211-226, 220. The phrase on assessments and causes of threats derived from: Rynning, *NATO Renewed*, 167.

75 David P. Auerswald and Stephen M. Saideman, *NATO in Afghanistan: Fighting Together, Fighting Alone* (Princeton, NJ, and Oxford: Princeton University Press, 2014), 34-35.

national threat perceptions and preferred responses became divided into three approaches, which they called camps or tiers. There was a "reformist" tier of countries. It consisted of the Anglo-Saxon countries that identified new globalized risks as the primary risks, such as weapons of mass destruction. They aimed at NATO integration in globalized US policies. The second tier, composed of France, Germany, and several other countries, did not subscribe to this globalized threat perception, and rather defined risks more in the traditional European context. They preferred strengthening the European ties within the alliance. Therefore, Noetzel and Schreer called this the "status quo" tier. Third, there were mainly Eastern European countries that still saw in NATO a primary protection against Russian aggression. As this in effect was a renewed focus on the element of collective defense, Noetzel and Schreer called this the "reversal"-oriented tier.[76] Second, virtually all nations also seized in what they saw as an opportunity to collect the so called "peace dividend". They used the removal of the threat from the east to legitimize ongoing and far-reaching budget cuts, and cuts in personnel and weaponry. However, they did not all do so to the same extent.[77] So, the increased number of nations that were part of NATO did not reach consensus on the nature of the future risks the alliance would encounter and differed on the ideal way forward. These nations also faced internal pressure to transfer funds from defense to other national priorities. But decision making of NATO still had to be done unanimously. Consequently, NATO decision making became slow and cumbersome.[78]

This constellation had many consequences, but two of them deserve separate attention, as they would heavily influence developments in Afghanistan. First, it had direct impact on operations when crises arose that required NATO's military intervention. Two operations, both air campaigns, proved to be telling in this respect. The first operation was called operation *Deliberate Force*. This was an US-led limited air campaign directed towards Bosnian Serbs in former Yugoslavia in 1995, preceded by an operation to enforce a no-fly zone, called *Deny Flight*. The second operation was *Allied Force*, a gradual coercive air campaign directed towards Serbians who were in conflict with separatist Kosovo in 1999. Although both air campaigns showed some differences, indicating that NATO had learned some lessons, they also showed some of the same problems. As a result of disagreements on the nature of the threat and the most desired course of action, decision making was slow up to a point that some officials referred to it as "war by committee". During the execution, the resulting discussions could also regard actual targets. This was especially the case during operation *Deliberate Force*, where NATO's command relationships with its forces was shared with the UN, known as the "dual key" arrangement. This induced discussions about mandates, Rules of Engagement (ROEs), and civilian casualties. These discussions reflected disputes over targeting, intensity of the bombing and command and control issues, which

76 Noetzel and Schreer, "Multi-tier NATO", 216.

77 Hallams and Schreer, "'Post-American'", 315, and Benjamin Zyla, "Years of Free-Riding? Canada, the New NATO, and Collective Crisis Management in Europe, 1989--2001", *American Review of Canadian Studies* 40, no. 1 (2010): 22-39.

78 Williams, *From Kosovo to Kandahar*, 67.

in turn led to lengthening of targeting cycles and frustrations at the military operational level.[79]

The second development was related to the practical impact of building the "Information Age Military" referred to in chapter two. That chapter also suggested that NATO did not fully embrace the concepts related to the Revolution in Military Affairs (RMA). Initially, NATO as an organization also embraced Transformation, and operationalized it by creation of the Allied Command Transformation (ACT) in 2003, based in Norfolk, Virginia.[80] ACT relied heavily on US concepts for its NATO transformation program, but gave it its own twist. The alliance desired a more modest position of electronic networks within the business of war fighting. It adapted the American concept of Network Centric Warfare (NCW) accordingly, and called it Network Enabled Capabilities (NEC). Similarly, ACT added political, economic and civil elements to the strictly military oriented American concept of Effects Based Operations (EBO), and renamed the concept Effects Based Approach to Operations (EBAO).[81] This resulted in a conceptual gap between the US on the one hand, and NATO on the other. Furthermore, US and NATO drifted apart technologically. NATO collectively did not invest as much in RMA-related projects as the US, and the coalition partners showed mutual differences as well. According to Richard Rupp, European and Canadian forces were not equipped to engage in global conflict, nor had their respective governments a desire to acquire such a power. This was, at least in part, due to differences between the US and the rest about threat perceptions and difference of opinion about the means to deal with those threats. Consequently, they differed about the level of investment that was required, proscribed to build armed forces that were suitable for their tasks .[82] Thus, *de facto* implementation within the alliance's national militaries proved to be kaleidoscopic, and quality of militaries that formed the military branch of NATO showed mutual differences. A study by Terriff, Osinga and Farrell suggested that at least some NATO allies adopted Transformation-related terminology, but that the willingness and ability to truly implement Transformation varied among those nations. They also strongly suggest that there exists not only a "capability gap" between NATO and the US, but there

79 Anrig, *Quest for Relevant Air Power*, 35-36, Hallams, *US and NATO Since 9/11*, 22-30 and 41-46, and Rupp, *NATO After 9/11*, 64-70. A study of operation *Deliberate Force*, including the preceding operation *Deny Flight* is provided by the United States Air Force Air University: Robert C. Owen (ed), *Deliberate Force: A Case Study in Effective Air Campaigning* (Maxwell Air Force Base, AL: Air University Press, January, 2000). Rand corporation provided two studies on operation *Allied Force*:Benjamin S. Lambeth, *NATO's Air War for Kosovo: A Strategic and Operational Assessment* (Santa Monica, CA: RAND Corporation, 2001), and Bruce R. Nardulli, Walter R. Perry, Bruce Pirnie, John IV Gordon and Jign G. McGinn, *Disjointed War: Military Operations in Kosovo, 1999* (Santa Monica, CA: RAND Corporation, 2002), https://www.rand.org/content/dam/rand/pubs/monograph_reports/2007/MR1406.pdf (accessed August 24, 2018).

80 Frans Osinga, "The Rise of Military Transformation", In: *A Transformation Gap?: American Innovations and European Military Change*, ed. Terry Terriff, Frans Osinga and Theo Farrell (Stanford, CA: Stanford University Press, 2010), 14-34, 14.

81 Osinga, "Rise of Military Transformation", 32-33.

82 Rupp, *NATO After 9/11*, 80-88. Riecke reached a similar conclusion in 2009: Henning Riecke, "Transformation: What Next Steps?", In: *NATO's New Strategic Concept: Moving Beyond the Status Quo? Proceedings of the Conference 'NATO's New Strategic Concept'*, ed. A. Boxhoorn and David Den Dunnen (The Hague: Netherlands Atlantic Association supported by the Atlantic Treaty Atlantic Treaty Organization, 2009), 56-67, 56.

are several "capability-gaps" within the alliance.[83] According to Rupp, the assets NATO as an organization was lacking most were air-related, such as strategic transport and air-to-air refueling capability, precision strike munitions, electronic warfare, long range missile strike capability and C4ISR assets.[84] Christian Anrig confirmed this suggestion in his study on European air forces, by stating that *"each air force has responded to the air power challenges of the post-Cold War era according to its context"*.[85]

The problematic element of the existence of these capability gaps was twofold. First, in contrast to the United States, no European state was able to cover the full spectrum of operations due to both financial and political constraints and in context of escalating costs of high-tech weapons systems.[86] This implied that NATO was not able to launch large scale missions on the high end of the spectrum of violence without US support.[87] Before 2001, operation *Allied Force* confirmed the existence of a transatlantic military capabilities gap. The United States flew the most sorties, dropped the bulk of the weapons, especially Precision Guided Munitions (PGMs), and provided virtually all of the air-to-air refueling (AAR) missions. Also, the European contributors lacked airborne stand-off jamming capabilities.[88] Second, the existence of several doctrinal and, especially, technological standards hampered interoperability between military units, and therefore the effectiveness of multinational military units. The inability to "plug and play" in a highly networked environment impeded joint and combined operations and therefore decreased operational effectiveness of the combined force, as for instance was shown by the French experience during *Desert Storm*.[89] *Allied Force* proved to be informative in this respect as well. Lack of interoperable secure communications systems delayed sortie generation and hampered sharing of intelligence. Taken together, the capabilities gap proved to be frustrating for the operators.[90]

Especially after the experiences in Kosovo, NATO became aware of this capabilities gap, and addressed it at the highest levels. In 1999 it adopted the Defense Capabilities Initiative (DCI). This document, drafted on American initiative, identified five areas in

83 See: Terry Terriff, Frans Osinga, and Theo Farrell (eds), *A Transformation Gap?: American Innovations and European Military Change* (Stanford, CA: Stanford University Press, 2010) for the analytical framework and case studies. Conclusion derived from: Terry Terriff and Frans Osinga, "Conclusion: The Diffusion of Military Transformation to European Militaries", In: *A Transformation Gap?: American Innovations and European Military Change*, ed. Terry Terriff, Frans Osinga and Theo Farrell (Stanford, CA: Stanford University Press, 2010), 187-209, 2. A similar statement is made by Farrell in the *Journal of Strategic Studies*:Theo Farrell and Sten Rynning, "NATO's Transformation Gaps: Transatlantic Differences and the War in Afghanistan", *The Journal of Strategic Studies* 33, no. 5 (2010): 673-699. The capability gap between the US and other western partners was also noted by Shimko: Keith L. Shimko, *The Iraq Wars and America's Military Revolution* (Cambridge, UK: Cambridge University Press, 2010), 220.

84 Rupp, *NATO After 9/11*, 101-102. Other assets Rupp mentions are surface ships and submarines. C4ISR stands for Command, Control, Communications Computers, Intelligence, Surveillance and Reconnaissance.

85 Anrig, *Quest for Relevant Air Power*, 337.

86 Anrig, *Quest for Relevant Air Power*, 50-51.

87 Rupp, *NATO After 9/11*, 10-11.

88 Anrig, *Quest for Relevant Air Power*, 33-36, and Nardulli, Perry, Pirnie, and others, *Disjointed War*, 47.

89 Anrig, *Quest for Relevant Air Power*, 102-103, and Osinga, "Rise of Military Transformation", 31.

90 Hallams, *US and NATO Since 9/11*, 48-50, and Nardulli, Perry, Pirnie, and others, *Disjointed War*, 47.

which capabilities needed to be improved. These areas were mobility and deployability, sustainability, effective engagement, survivability and interoperable communications.[91] Further, there were fifty eight specific but classified shortcomings within those five area's. Some authors suggest that these shortcomings existed in the realms of command and control, interoperability, ISR, logistical support, air-to-air refueling, and rapid deployment of forces.[92] A High Level Steering Group was erected to oversee the transformation process.[93] The fundamental problem, however, remained, and led to increased frustration from the US.

3.3.2. Watershed 9/11

Just how severe NATO's challenges were became apparent in the next crisis NATO became involved in. The terrorist attacks of September 11, 2001, proved to be a watershed for both US foreign policy and NATO, because the Bush Administration executed an unilateralist response to them.[94] On September 12, the North Atlantic Council (NAC) decided to invoke Article V of the NATO Charter, which states that an attack on one NATO-member would be regarded as an attack on all members. Shortly after this invocation NATO offered the United States a list of possible supporting functions. However, the Bush Administration did not want to wage a "war by committee" as was the case in Kosovo, and sought to retain operational freedom and flexibility.[95] The US decided to decline most offers, accepting only those which could help the impending attack on Taliban-led Afghanistan.[96] On September 26, Paul Wolfowitz, Deputy Secretary of Defense, briefed NATO defense ministers that the US would not employ NATO's command structure. Also, only a few of the bilateral offers would be accepted.[97] Secretary of Defense Donald Rumsfeld later remarked:

91 NATO, "Defence Capabilities Initiative, Approved by the Heads of State and Government Participating in the Meeting of the North Atlantic Council", *NATO Website* (April 25, 1999) https://www.nato.int/cps/en/natolive/official_texts_27443.htm? (accessed August 24, 2018), NATO, "Statement on the Defence Capabilities Initiative Issued at the Meeting of the North Atlantic Council in Defence Ministers Session Held in Brussels on 8 June 2000", *NATO Website* (June 8, 2000) https://www.nato.int/cps/su/natohq/official_texts_18205.htm?selectedLocale=en (accessed August 24, 2018), NATO, "Statement on the Defence Capabilities Initiative of the North Atlantic Council in Defence Minister Session Held in Brussels", *NATO Website* (June 7, 2001) https://www.nato.int/cps/en/natohq/official_texts_18881.htm?selectedLocale=en (accessed August 24, 2018), Nardulli, Perry, Pirnie, and others, *Disjointed War*, 47, and Rynning, *NATO Renewed*, 102-103.

92 It was most directly stated by Rand Corporation: Nardulli, Perry, Pirnie, and others, *Disjointed War*, 120. Rupp derived his conclusions from statements made by the US Secretary of Defense Cohen: Rupp, *NATO After 9/11*, 202-203.

93 Rynning, *NATO Renewed*, 102-103.

94 Hoehn and Harting, *Risking NATO*, 13, and Mark Webber, "NATO: The United States, Transformation and the War in Afghanistan", *The British Journal of Politics & International Relations* 11, no. 1 (2009): 46-63, 60.

95 Tim Bird, "'Perennial Dilemmas': NATO's Post-9/11 Afghanistan 'Crisis'", In: *NATO Beyond 9/11: The Transformation of the Atlantic Alliance*, ed. Ellen Hallams, Luca Ratti and Benjamin Zyla, New Security Challenges, ed. Stuart Croft (Basingstoke and New York, NY: Palgrave MacMillan, 2013), 118-139, 123, Hallams, *US and NATO Since 9/11*, 6-7, and Hallams and Schreer, "'Post-American'", 316.

96 Hoehn and Harting, *Risking NATO*, 13.

97 Rupp, *NATO After 9/11*, 100.

> "wars can benefit from coalitions of the willing, to be sure, but they should not be fought by committee. The mission must determine the coalition, the coalition must not determine the mission, or else the mission will be dumbed down to the lowest common denominator."[98]

On several occasions, this led to frustrations among the European allies towards US policy.[99]

Besides sidelining NATO's command structure and rejection of most of the offers for military support, some European NATO members were disturbed by American threat perceptions and the desired response. In a set of speeches and policy papers, Bush and several members of his administration formulated a foreign policy that would later become known as the "Bush Doctrine". According to Robert Singh, this set showed four key elements: the notion of a preventive war against terrorism and those states who harbor or support them, confronting the nexus of Weapons of Mass Destruction (WMD) and catastrophic terrorism, regime change for so-called "rogue states", and promotion of democracy.[100] In the more immediate context, the administration framed it in the concept of "Global War On Terrorism" (GWOT). Shortly after the attack on September 11, Bush stated that "*this will be a monumental struggle of good versus evil*"[101]. On January 29, 2002, he took this stance one step further. In his second State of the Union he mentioned the now famous "axis of evil", broadening the war on terror both in scope and geography.[102] The Bush Doctrine and the GWOT also affected the relationship between the US and its allies. In his speech before the House of Representatives on September 20, 2001, President Bush stated that nations were "*either with us or against us*".[103] Bush's statements about the axis of evil, and the relationship with alliances such as NATO and the United Nations, became formal in the "National Security Strategy of the United States of America. September 2002", shortened "NSS-02". It formalized the option of unilateral pre-emptive military action against a perceived threat if deemed necessary, or to do so with coalitions of the willing.[104]

98 Donald H. Rumsfeld, "Transforming the Military", *Foreign Affairs* 81, no. 3 (2002) http://search.proquest.com.nlda.idm.oclc.org/docview/214304368?OpenUrlRefId=info:xri/sid:wcdiscovery&accountid=35226 (accessed April 5, 2017).

99 Stanley R. Sloan, *NATO, the European Union, and the Atlantic Community: The Transatlantic Bargain Reconsidered* (Lanham, MD: Rowman & Littlefield Publishers, 2003), 185-192, and Stanley R. Sloan, *Permanent Alliance?: NATO and the Transatlantic Bargain From Truman to Obama* (New York, NY: Continuum, 2010), 241-247.

100 Robert Singh, "The Bush Doctrine", In: *The Bush Doctrine and the War on Terrorism: Global Responses, Global Consequences*, ed. Mary Buckley and Robert Singh (London and New York, NY: Routledge, 2006), 12-32, 12.

101 As cited by Peña: Charles Peña, *Winning the Un-war: A New Strategy for the War on Terrorism* (Washington, DC: Potomac Books, 2007), xxvii.

102 Burton, *NATO's Durability*, 77-78, Rupp, *NATO After 9/11*, 105-107, and Shah M. Tarzi, "The Folly of a Grand Strategy of Coercive Global Diplomacy: A Fresh Perspective on the Post-9/11 Bush Doctrine", *International Journal on World Peace* 31, no. 3 (2014): 27-52.

103 Rupp, *NATO After 9/11*, 97-98.

104 Rupp, *NATO After 9/11*, 111-113. Coalitions and alliances share many characteristics, but differ in level of formalization, purpose and scope. Also, in practice the distinction between coalitions and alliances is not always clear and may change over time. In this study, following A.S.M. Ali Ashraf in his recent dissertation on coalitions and burden-sharing, the term coalitions will be used when referred to ad hoc military cooperation among states (A.S.M. Ali Ashraf, "The Politics of Coalition Burden-sharing: The Case of the War in Afghanistan", (Dissertation, University of Pittsburgh, April 5, 2011) http://d-scholarship.pitt.edu/7898/1/ThePoliticsOfCoalitionBurden-Sharing.pdf (accessed August 8, 2013), 1-18). See

The Bush Doctrine and GWOT were widely debated in literature on international relations. Some of the themes included the conceptual background and content of the Bush Doctrine, the extent to which the Bush Doctrine marked a shift in US foreign policy and relationships with its partners an allies, and the nature, feasibility, and practicability of GWOT as a strategy.[105] Thorough analysis of these debates falls beyond the scope of this dissertation. In addition, most of the debates in a practical sense focused on the developments leading up to the invasion of Iraq in 2003. In relation to Afghanistan, what is most relevant is that the US stance in what became known as GWOT to a certain extent polarized international relations.[106] Nations had to figure out to what extent they were with or against the US. However, the decision to intervene militarily in Afghanistan was not disputed, and sixty nine countries participated in the US-led coalition that conducted operation *Enduring Freedom* (OEF). Twenty one countries contributed militarily, of which fourteen were NATO-members. The contribution of NATO as an organization mainly consisted of deployment of eight Airborne Warning and Control Systems (AWACS) to the US airspace, so the US could make theirs available for OEF.[107]

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also: Russell W. Glenn, *Band of Brothers or Dysfunctional Family?: A Military Perspective on Coalition Challenges During Stability Operations* (Santa Monica, CA: RAND Corporation, 2011), https://www.rand.org/pubs/monographs/MG903.html (accessed July 6, 2017), 1.

105 See for instance: Stephen D. Biddle, "American Grand Strategy After 9/11: An Assessment", (April, 2005) https://ssi.armywarcollege.edu/pdffiles/PUB603.pdf (accessed October 4, 2018), Chris Brown, "Reflections on the 'War on Terror', 2 Years on", *International Politics* 41, no. 1 (2004): 51-54, Mary Buckley, and Robert Singh (eds), *The Bush Doctrine and the War on Terrorism: Global Responses, Global Consequences* (Abingdon: Routledge, 2006), Charles-Philippe David, and David Grondin (eds), *Hegemony or Empire?: The Redefinition of US Power Under George W. Bush* (Hampshire and Burlington, VT: Ashgate, 2006), Chris J. Dolan, *In War We Trust: The Bush Doctrine and the Pursuit of Just War* (Abingdon: Routledge, 2005), Lawrence Freedman, *The Transformation of Strategic Affairs*, Adelphi Paper (Abingdon and New York, NY, 2006), Hall Gardner, *American Global Strategy and the "War on Terrorism"* (Aldershot: Ashgate, 2005), Erik W. Goepner, "Measuring the Effectiveness of America's War on Terror", *Parameters* 46, no. 1 (2016): 107-120, Thomas G. Goodnight, "Strategic Doctrine, Public Debate and the Terror War", (Working Paper of Ridgeway Working Group on Preemptive and Preventive Military Intervention, University of Southern California, Annenberg School of Communication, 2006) http://www.ridgway.pitt.edu/Portals/1/pdfs/Publications/KellerMitchellPPP.pdf?ver=2013-08-19-214627-847 (accessed April 5, 2017), Melvin Gurtov, and Peter Van Ness (eds), *Confronting the Bush Doctrine: Critical Views From the Asia-Pacific*, Asia's Transformations, ed. Mark Selden (Abingdon and New York, NY: Routledge, 2005), Mel Gurtov, *Superpower on Crusade: The Bush Doctrine in US Foreign Policy* (Boulder, CO: Lynne Rienner Publishers, 2006), Michael Harland, *Democratic Vanguardism: Modernity, Intervention, and the Making of the Bush Doctrine* (Lanham, MD, and Plymouth: Lexington Books, 2013), Michael Howard, "A Long War?", *Survival* 48, no. 4 (2006): 7-14, Michael Howard, "Mistake to Declare This a 'War'", *RUSI Journal* 146, no. 6 (2001): 1-4, Michael Howard, "What's in a Name? How to Fight Terrorism", *Foreign Affairs* 81, no. 1 (2002): 8-13, Robert Gordon Kaufman, *In Defense of the Bush Doctrine* (Lexington, KY: University Press of Kentucky, 2007), Melvyn P. Leffler, and Jeffrey W. Legro (eds), *To Lead the World: American Strategy After the Bush Doctrine* (Oxford and New York, NY: Oxford University Press, 2008), Timothy J. Lynch and Robert S. Singh, *After Bush: The Case for Continuity in American Foreign Policy* (Cambridge: Cambridge University Press, 2008), Thomas R. Mockaitis, and Paul B. Rich (eds), *Grand Strategy in the War Against Terrorism* (London and Portland, OR: Frank Cass, 2003), Ian Peleg, *The Legacy of George W. Bush's Foreign Policy: Moving Beyond Neoconservatism* (New York, NY, and Abingdon: Routledge, 2009), Douglas Porch, "Writing History in the "End of History" Era: Reflections on Historians and the GWOT", *The Journal of Military History* 70, no. 4 (2006): 1065-1079, Donald J. Reed, "Why Strategy Matters in the War on Terror", (October, 2006) http://search.proquest.com.nlda.idm.oclc.org/docview/1266211234/791858D83ABD45E5PQ/1?accountid=35226 (accessed April 5, 2017), Stanley A. Renson, and Peter Suedfeld (eds), *Understanding the Bush Doctrine: Psychology and Strategy in An Age of Terrorism* (Abingdon and New York, NY, 2007), Rupp, *NATO After 9/11*, Singh, "Bush Doctrine", Andrew T.H. Tan, *U.S. Strategy Against Global Terrorism: How It Evolved, Why It Failed, and Where It Is Headed* (New York, NY: Palgrave Macmillan, 2009), and Tarzi, "Folly".

106 Brown, "Reflections", 51, Rupp, *NATO After 9/11*, 97-98, and Singh, "Bush Doctrine", 12.

107 Bensahel, *The Counterterror Coalitions*, 8-9 and 55-63, and Hallams, *US and NATO Since 9/11*, 71-72.

Actual operations in the context of operation *Enduring Freedom* commenced on October 7, 2001. It marked the first phase of the conflict in Afghanistan, which is best characterized as a phase with large scale combat operations with characteristics of a conventional war, within a Counterterrorism (CT) framework.[108] Confronted with an enemy in a landlocked country, and with time of the essence, the United States did not have many options. The US eventually chose an operational concept that was a novelty, and involved speedy insertion of a limited amount of ground forces. Many preparatory activities preceded the operations, first of all basing rights and overflight rights. Also, operatives of the Central Intelligence Agency (CIA) were inserted to establish links with local power brokers. Once the links were established, the CIA operatives were augmented with SOF, who were able to advise and assists the combined irregular forces of the Northern Alliance. These SOF units contained Joint Terminal Attack Controllers (JTACs), specialists who carried satellite communications and mobile target designation equipment, and were able to call in air support. This combination of forces *de facto* made information age airpower available to the irregular Northern Alliance. In the mostly conventional style battles that ensued between Western-backed Northern Alliance on the one hand and Taliban and Al Qaida on the other hand, western airpower proved to be the leverage of the former over the latter. This proved to be highly effective, even though there were some complaints about a slow targeting process. This, together with lack of motivation of indigenous forces to fight them, allowed several members of the Taliban and Al Qaida to escape to Pakistan, making use of the inhospitable terrain for cover and concealment. However, by spring 2002, the Taliban government was defeated and Al Qaida could no longer use Afghanistan as a staging area. So in general, this phase was highly effective.[109]

Operationally, the decision to bypass NATO initially worked very well. It was a US-led coalition, which allowed the US to retain operational freedom and flexibility. It was able to avoid the much-despised consensus warfare. There was however a drawback, because it potentially changed the relationship between the US and NATO. On the one hand, the US benefitted from the support and capabilities from those NATO-members who were willing to participate. On the other hand, US wanted to have as much decision-making authority as possible on the deployment of the participating assets. To some scholars, this was a sign of NATO becoming a toolbox for US operations.[110]

In addition, the conflict did not end. After the large scale operations, a new phase started in which CT and Stabilization & Reconstruction (S&R) coexisted side by side. As stated, OEF started as a CT mission, aimed at the terrorist threat posed by the organizations led by Osama bin Laden and Mullah Omar. After major combat operations ended, this

108 Joseph J. Collins, "Initial Planning and Execution in Afghanistan and Iraq", In: *Lessons Encountered: Learning From the Long War*, ed. Joseph J. Collins and Richard D. Hooker (Washington, DC: National Defense University Press, 2015), 21-88, 41-42.

109 Chapter four will describe and explain this phase of the conflict in depth. This section is derived from Lambeth, *Airpower Against Terror.*

110 Hallams, *US and NATO Since 9/11*, 71-72.

mission still applied, but on a smaller scale. OEF increasingly became a S&R mission.[111] After the large battles were over, operations mainly involved intelligence driven "cordon and search" operations, and small scale raids on High Value Targets (HVTs). Also, the US established Provincial Reconstruction Teams (PRTs), in an attempt to stabilize and rebuild the country and assist the interim government of Afghanistan headed by Hamid Karzai. The Bush administration chose to do so with a "light footprint", which meant using a very modest amount of military presence on Afghan soil. According to Seth Jones, the US wanted to hunt down remnants of Al Qaida and the Taliban using about 8,000 troops, while an international peacekeeping force should focus on assisting the Karzai government in stabilizing and rebuilding the country.[112] The Bush Administration however did not want to get involved in nation building and peacekeeping, because it was tainted by the American experience in Vietnam and Clinton-led operations in the Balkans. Besides, the troops were needed elsewhere. By early 2002, the US was already diverting its attention, and some of its capabilities, to Iraq.[113] Additionally, peacekeeping and nation-building were regarded not to be tasks for the military. The Administration had a genuine belief that state-building and security matters were Afghan problems.[114] The US military was also not suited to perform nation building. Julian Lindley-French argued that there was an inherent tension between the need for highly networked expeditionary forces, which are small in numbers, and the need for troops on the ground to stabilize and reconstruct after the initial conflict ended. In short, an Information Age military could be suitable for initial entry, but might not be able to generate enough capacity for post-war reconstruction.[115] The US Military concurred with the position that they were not equipped or trained to perform peace building missions. They also argued that a modest presence on the ground could prevent it from being seen as an occupying force. Lastly, large forces were not needed, as the necessary firepower could

111 Lambeth, *Airpower Against Terror*, 158.

112 Seth G. Jones, *In the Graveyard of Empires: America's War in Afghanistan* (New York, NY and London: W.W. Norton, 2009), 114-115.

113 Tim Bird and Alex Marshall, *Afghanistan: How the West Lost Its Way* (New Haven, CT and London: Yale University Press, 2011), 48-52, Bird, "Pirennial Dilemmas", 121, Maurice H. Forsyth, "Airpower As a Second Thought", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, November, 2014), 107-121, 107, Jones, *Graveyard*, 125-129, James D. Kiras, "T. Michael Moseley: Air Power Warrior", In: *Air Commanders*, ed. John Andreas Olsen (Washington, DC: Potomac Books, 2013), 395-427, and Sloan, *Defense of the West*, 187-188. Although there were some monthly variations, during the period 2002-2008 US "boots on the ground" gradually increased from 6000-8000 to about 32.000: Amy Belasco, "Troop Levels in the Afghan and Iraq Wars, FY 2001-FY 2012: Cost and Other Potential Issues", (Congressional Research Service Report for Congress, DIANE Publishing, July 2, 2009) http://www.fas.org/sgp/crs/natsec/R40682.pdf (accessed February 27, 2013), 33.

114 Jones, *Graveyard*, 109-115, and Wagemaker, "Afghanistan 2001-2011", 136-138. The latter stance was also supported by UN resolutions. See for instance UNSCR 1413, which states that "the responsibility for providing security and law and order throughout the country resides with the Afghans themselves" (United Nations Security Council, "UNSCR 1413" (May 23, 2002) http://unscr.com/files/2002/01413.pdf (accessed August 5, 2013), 1). The UN Security Council repeated this statement in other resolutions as well.

115 Julian Lindley French called this the "capability-capacity crunch". See: Julian Lindley-French, "The Capability-Capacity Crunch: NATO's New Capacities for Intervention", *European Security* 15, no. 3 (2006): 259-280, and Julian Lindley-French, "NATO and the Search for Strategic Credibility", In: *European Security in a Global Context: Internal and External Dynamics*, ed. T. Tardy, Contemporary Securities Studies, ed. James Gow and Rachel Kerr (London and New York, NY: Routledge, 2009), 37-54, 39.

quickly be brought to bear using the air weapon.[116] As a result of this modest presence, Jones argued that, while the attention of the US in terms of funding, SOF capacity, and ISR was already shifting towards the impending war in Iraq, Afghanistan by late 2002 had "*too few soldiers, too little assistance, and too little awareness of what was happening*".[117] In addition, Ahmed Rashid argued that a light footprint forced the US to rely heavily on the support of warlords, which in time could become a destabilizing factor.[118]

3.3.3. Follow-on Operations: The Plan

Although the US decided to go to war without using NATO's command structure, the alliance did become involved in Afghanistan early on. It originally started as an UN-mandated mission. Shortly after the capture of Kabul by the SOF-assisted Northern Alliance, the United Nations Security Council adopted resolution 1378. This resolution encouraged members of the international community to *"support efforts to ensure the safety and security areas of Afghanistan no longer under Taliban control, and in particular to ensure respect for Kabul as the capital for all the Afghan people, and especially to protect civilians, transitional authorities, United Nations and associated personnel, as well as personnel of humanitarian organizations"*.[119] Furthermore, the international community, including an Afghan delegation, organized a conference on the future of Afghanistan in the German city of Bonn between November 27 and December 5, 2001, under auspices of the UN. The outcome were the so called Bonn Agreements of December 5, 2001, and United Nations Security Council Resolution (UNSCR) 1386 of December 20, 2001, further specified the arrangements for the support mentioned in resolution 1386. In the Bonn Agreements, major Afghan power brokers and the international community agreed to relegate Afghan political power to an Interim Authority with an Interim Administration, who were responsible for the day to day conduct of the affairs of the Afghan State. In parallel, special meetings were organized, called "Loya Jirga's", in which tribal leaders would decide on permanent matters of the state, such as establishment of a new constitution and provisions for a permanent government.

In doing so, NATO embarked on a complex state-building mission. The organization had gained experience with these kinds of missions during the 1990s, mostly known by the name of peacekeeping missions. These missions had the ultimate goal of enhancing international security through (re-) establishment of liberal democratic institutions in states emerging from conflict, advance their economy, and promote the general well-being of its inhabitants. Essential within this concept was creation or maintenance of a

116 Jones, *Graveyard*, 115.

117 Jones, *Graveyard*, 129.

118 Ahmed Rashid, *Descent Into Chaos: The US and the Failure of Nation Building in Pakistan, Afghanistan, and Central Asia* (New York: Viking, 2008), 196.

119 United Nations Security Council, "UNSCR 1378" (November 14, 2001) http://unscr.com/files/2001/01378.pdf (accessed August 4, 2013), 2.

certain level of security and stability, which allowed for direct support for building the democratic institutions and follow-on actions. [120] In the short-term Afghan context, this state-building mission went by the name of S&R. This meant that the security situation in Afghanistan required immediate attention. In order to maintain peace and stability, all armed groups that participated in the fight against the Taliban and Al Qaida were put under command of the Interim Authority. Recognizing that it would take some time to organize permanent and functioning security forces, the United Nations called upon the international community to assist the Interim Administration with maintaining security of Kabul and its surrounding areas and, if deemed appropriate, other areas. In other words, the UN invited all nations to contribute to the to be established International Security and Assistance Force (ISAF), which was initially envisioned for the duration of six months in order to provide for security provisions that could allow Afghan security forces to become constituted and functional.[121] This period was first extended by another six months, and after that, the Security Council renewed the mandate on a yearly basis.[122]

The mission was organized according to the "lead nation" concept, meaning that the overall command and organization rested upon one nation. The first lead nation was the United Kingdom, taking command of ISAF I (December 2001 to June 2002), followed by Turkey who commanded ISAF II (June 2002 to January 2003), and finally a combined effort of Germany and The Netherlands commanded ISAF III (February 2003 to August 2003). After ISAF III, NATO command structure was used to command ISAF. On August 11, 2003, NATO formally assumed command over ISAF.[123]

120 Frans Osinga and James A. Russell, "Conclusion: Military Adaptation in the War in Afghanistan", In: *Military Adaptation in Afghanistan*, ed. Theo Farrell, Frans Osinga and James A. Russell, Stanford Securities Studies (Stanford, CA: Stanford University Press, 2013), 288-326, 288-289, and Daniel Serwer and Patricia Thomson, "A Framework for Success: International Intervention in Societies Emerging From Conflict", In: *Leashing the Dogs of War: Conflict Management in a Divided World*, ed. Chester A. Crocker, Fen Osler Hampson and Pamela Aall (Washington, DC: United States Institute of Peace Press, 2008), 369--388, 371.

121 Kitzen, "Course of Co-Option", 356, Sloan, *Defense of the West*, 205, United Nations Security Council, "Agreement on Provisional Arrangements in Afghanistan Pending the Re-establishment of Permanent Government Institutions" (December 5, 2001) http://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/Afgh%20S2001%201154.pdf (accessed August 4, 2013), and United Nations Security Council, "UNSCR 1386" (December 20, 2001) http://unscr.com/files/2001/01386.pdf (accessed August 4, 2013).

122 United Nations Security Council, "UNSCR 1413", 2, United Nations Security Council, "UNSCR 1444" (November 27, 2002) http://unscr.com/files/2002/01444.pdf (accessed August 5, 2013), United Nations Security Council, "UNSCR 1510" (October 13, 2003) http://unscr.com/files/2003/01510.pdf (accessed August 4, 2013), United Nations Security Council, "UNSCR 1563" (September 17, 2004) http://www.nato.int/isaf/topics/mandate/unscr/resolution_1563.pdf (accessed August 5, 2013), United Nations Security Council, "UNSCR 1623" (September 13, 2005) http://www.nato.int/isaf/topics/mandate/unscr/resolution_1623.pdf (accessed August 5, 2013), United Nations Security Council, "UNSCR 1707" (September 12, 2006) http://www.nato.int/isaf/topics/mandate/unscr/resolution_1707.pdf (accessed August 5, 2013), United Nations Security Council, "UNSCR 1776" (September 17, 2007) http://www.nato.int/isaf/topics/mandate/unscr/resolution_1776.pdf (accessed August 5, 2013), United Nations Security Council, "UNSCR 1833" (September 22, 2008) http://www.nato.int/isaf/topics/mandate/unscr/resolution_1833.pdf (accessed August 5, 2013), United Nations Security Council, "UNSCR 1890" (October 8, 2009) http://unscr.com/files/2009/01890.pdf (accessed August 5, 2013), United Nations Security Council, "UNSCR 1943" (October 13, 2010) http://unscr.com/files/2010/01943.pdf (accessed August 5, 2013), United Nations Security Council, "UNSCR 2011" (October 12, 2011) http://unscr.com/files/2011/02011.pdf (accessed August 5, 2013), and United Nations Security Council, "UNSCR 2069" (October 9, 2013) http://unscr.com/files/2012/02069.pdf (accessed August 5, 2013).

123 Sten Rynning, *NATO in Afghanistan: The Liberal Disconnect* (Stanford, CA: Stanford University Press, 2012), 44, and Rynning, *NATO Renewed*, 126.

ISAF was mandated to execute S&R operations in Kabul and the immediate surroundings. In accordance, ISAF's tasks were disarming indigenous militia's that were still present after fighting the Taliban and Al Qaida, reforming the justice system, training the national police and army, combat narcotics industry, and providing security for scheduled presidential and parliamentary elections.[124] From 2004 onwards, ISAF received mandates to expand its area of responsibility to cover the whole of Afghanistan. The ISAF leadership divided Afghanistan into five Regional Commands (RCs), which consisted of several provinces in which authority would be assumed, or taken over from the American troops executing operation Enduring Freedom. Stage one involved expansion to RC North, which was dominated by German and French troops. It was followed by expansion to RC West, led by mainly Spanish and Italian forces. During stage three, ISAF expanded to the southern part of Afghanistan, in RC South, in which mainly British, Canadian, Dutch and American troops operated. Finally, expansion in stage four to RC East would complete the transition. The American units that operated there remained, but became part of ISAF. The expansion to RC North was completed in 2004, to RC West in 2005, RC South in July 2006 and RC East in October 2006.[125]

The second element of ISAF's approach was execution of reconstruction activities within the concept of PRTs and Observer, Mentor, Liaison Teams (OMLTs). PRTs were small military units, designed to assist local population and officials with rebuilding initiatives. They were lightly armed and in a military context had a relatively strong civil component. OMLTs were teams designed to be embedded within the Afghan security forces. So, PRTs would be executing the reconstruction efforts, OMLTs the mentoring efforts, while additional forces would provide security operations. The ultimate goal was enabling the Afghan government to provide security and stability in Afghanistan without external support.[126] These military activities were accompanied by political plans for Afghan

124 Vincent Morelli and Paul Belkin, "NATO in Afghanistan: A Test of the Transatlantic Alliance", In: *War in Afghanistan: Strategy, Military Operations, and Congressional Issues*, ed. Easton H. Ussery (New York: Nova Science Publishers, 2010), 1-32, 5-6, Tonita Murray, "Security Sector Reform in Afghanistan 2002-2011: An Overview of a Flawed Process", *International Studies* 48, no. 1 (2011): 43-63, 47, and Rob Sinterniklaas, "1 (NL) PRT PEK," (Presentation given as member of Netherlands Provincial Reconstruction Team Pol-E Khomri to the Netherlands AH-64 Apache Detachment Kabul, January, 2005) Personal Collection.

125 Auerswald and Saideman, *NATO in Afghanistan*, 46-50, and Morelli and Belkin, "NATO in Afghanistan", 5-6.

126 Anonymous, "The Afghanistan Compact: Building on Success. The London Conference on Afghanistan. London 31 January - 1 February 2006", (2006) http://www.nato.int/isaf/docu/epub/pdf/afghanistan_compact.pdf (accessed June 16, 2013), 3 and 6, Auerswald and Saideman, *NATO in Afghanistan*, 48-50, M.L. Everett, "Merging the International Security and Assistance Force (ISAF) and Operation Enduring Freedom (OEF): A Strategic Imperative", (Report, U.S. Army War College, Carlisle Barracks, PA, March 15, 2006) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA449812 (accessed July 20, 2012), 3, Jones, Seth G., *Counterinsurgency in Afghanistan* (Santa Monica, CA: RAND Corporation, 2008), https://www.rand.org/pubs/monographs/MG595.html (accessed July 6, 2017), 106-109, Jones, *Graveyard*, 301-303, William Maley, "Provincial Reconstruction Teams in Afghanistan - How They Arrived and Where They Are Going", *NATO Website* (2007) https://www.nato.int/docu/review/2007/issue3/english/art2.html (accessed September 9, 2018), Murray, "Security Sector Reform", 54, NATO, *AJP-3.4.4: Allied Joint Doctrine for Counterinsurgency (COIN),* February 4, 2011, http://publicintelligence.net/nato-allied-joint-doctrine-for-counterinsurgency/ (accessed October 12, 2012), 5-22, and 5-26, NATO, "ISAF's Strategic Vision. Declaration by the Heads of State and Government of the Nations Contributing to the UN-mandated NATO-led International Security Assistance Force (ISAF) in Afghanistan" (April 3, 2008) http://www.nato.int/cps/en/natolive/official_texts_8444.htm (accessed June 4, 2012), NATO, "Istanbul Summit Communiqué Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council" (June 28, 2004) http://www.nato.int/cps/

redevelopment, in which the Afghan Government played a large part. In January 2006, the Government of Afghanistan and the international community signed a political agreement for cooperation, called Afghanistan Compact. The follow-on activity was description of the Afghan National Development Strategy (ANDS), describing a plan for comprehensive combating of Afghanistan's challenges. The Afghan Government approved the ANDS in April 2008.[127]

3.3.4. Follow-on Operations: Reality

While the plan looked good on paper, the reality in Afghanistan did not. As always, the enemy got a vote. As soon as major operations in Afghanistan ended, the opposing forces started to prepare for renewal of their activities.[128] The exact composition and background of these forces remain largely unknown, as they consisted of various sets of groups with different motivations and goals. In general, they were in some way linked to the Taliban, which in turn consisted of at least three entities. The first were Taliban leadership, which mainly operated from the tribal areas in Pakistan, bordering Afghanistan. Second were the semi-autonomous regional Taliban commanders, who received their orders from the first entity. Finally, there were the local Afghan Taliban. There were also reports of a few thousand foreign fighters. In all, there were estimations of several tens of thousands of potential opposing forces, which could operate both full time and part time. They were allied by two strategic objectives: forcing US and NATO forces to leave, and regain as much of their former control over the country as possible.[129]

There has been much discussion about why the Taliban was able to reorganize itself and decided to renew its activities at the time it did. Seth Jones and Ahmed Rashid argued in separate monographs that the US tendency to maintain a "light footprint" in Afghanistan

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en/natolive/official_texts_21023.htm (accessed June 4, 2012), NATO, "Summit Declaration on Afghanistan Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Strasbourg / Kehl on 4 April 2009" (April 4, 2009) http://www.nato.int/cps/en/natolive/news_52836.htm (accessed June 4, 2012), Rashid, *Descent Into Chaos*, 198, Sinterniklaas, "1 (NL) PRT PEK", Sloan, *Permanent Alliance?*, 190-191, Sloan, *Defense of the West*, 207-208, Astri Suhrke, "A Contradictory Mission?: NATO From Stabilization to Combat in Afghanistan", *International Peacekeeping* 15, no. 2 (2008): 214-236, 223-224, Peter Dahl Thruelsen, "NATO in Afghanistan: What Lessons Are We Learning, and Are We Willing to Adjust?", (Report, Danish Institute for International Studies, 2007) http://www.diis.dk/graphics/publications/reports%202007/diis_2007-14_uk_f_web.pdf (accessed July 20, 2012), 10, United Nations Security Council, "UNSCR 1563", United Nations Security Council, "UNSCR 1623", Webber, "NATO", and Donald P. Wright, James R. Bird, Peter W. Connors, Scott C. Farquhar, and others, *A Different Kind of War: The United States Army in Operation Enduring Freedom (OEF), October 2001-September 2005* (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, May, 2010), http://usacac.army.mil/cac2/csi/docs/DifferentKindofWar.pdf (accessed December 8, 2014).

127 Anonymous, "Afghanistan Compact", Nelson, "Airghanistan", 29-30, and Rynning, *Liberal Disconnect*.

128 Giustozzi, *Koran, Kalashnikov, and Laptop*, 11-15.

129 Giustozzi, "Intelligence-Gathering", 219-220, Jones, Seth G., *Counterinsurgency in Afghanistan*, 37-66, James D. Kiras, "Modern Irregular Warfare: Afghanistan and Iraq", In: *The Practice of Strategy From Alexander the Great to the Present*, ed. John Andreas Olsen and Colin S. Gray (Oxford: Oxford University Press, 2011), 260-286, 264-265, and William Selber, "A Question of 'Government' Control: Afghanistan DDR Programs Since 2001", *Small Wars & Insurgencies* 29, no. 2 (2018): 344-355. See for detailed case studies on the Taliban: Peter Bergen, and Katherine Tiedemann (eds), *Talibanistan: Negotiating the Borders Between Terror, Politics, and Religion* (New York, NY: Oxford University Press, 2013).

offered the Taliban, Al Qaida, other "jihadist" groupings, criminals, and local warlords the opportunity to fill a power vacuum. This tendency was strengthened after the invasion of Iraq.[130] The insurgents seized the opportunity as the war in Iraq made Afghanistan a side show for the US, and ISAF increasingly becoming a substitute.[131] At the same time, the insurgents perceived NATO to be military weaker than the US, as it was in a deploying phase and executing one of its first missions outside the Atlantic Treaty Area.[132] Astri Suhrke offered a different interpretation, stating that militants mobilized in reaction to the increased military presence as a result of ISAF expansion. This was partly due to the light footprint and the enemy-centric approach to the conflict. The militants were able to portray western forces as occupiers, who had to resort to a raiding approach that caused collateral damage.[133] According to Suhrke, this led to a fundamental contradiction between combat functions of western forces and stabilization operations.[134] All authors agreed on the negative influence of other factors, such as the sanctuary Pakistan offered to the militant leadership, corruption within the Karzai government, and drug-related internal power struggles.

Whatever the relationships of cause and effect, the opposing forces soon started to react to the new situation. As early as 2002 the Taliban conducted small offensive operations in an attempt to overthrow the Karzai government and coerce US and NATO forces to withdraw. Also, they managed to decrease the security situation by using tactics such as ambushes in rural areas, stand-off rocket and mortar attacks, emplacement of Improvised Explosive Devices (IEDs), suicide bombers, night letters and other forms of intimidation, kidnapping for raising money, and targeted assassinations. The targets they chose increasingly became "soft targets", which were non military targets such as police forces, Non-Governmental Organizations (NGOs), or population accused of cooperation with western forces.[135] As both Afghan forces and international security forces were unable to counter this, the security situation deteriorated. This in turn led to a disgruntled population, that became dissatisfied with the weakness of the government and became susceptible to influence of ideologically motivated insurgent leaders.[136]

Between 2002 and 2006, the situation became worse. Especially while deploying in the southern parts of Afghanistan, western forces were interfering in a delicate and strongly localized balancing act of power holders. Besides the remnants of Al Qaida and emerging Taliban, there were tribal leaders, mullahs, warlords and criminals, all retaining some form

130 Jones, *Graveyard*, 148-150, and Rashid, *Descent Into Chaos*, 125-144.

131 Rynning, *Liberal Disconnect*, 101.

132 Rashid, *Descent Into Chaos*, 358-359.

133 Suhrke, "Contradictory Mission?", 220-222.

134 Suhrke, "Contradictory Mission?".

135 Antonio Giustozzi, "Military Adaptation by the Taliban, 2001-2011", In: *Military Adaptation in Afghanistan*, ed. Theo Farrell, Frans Osinga and James A. Russell, Stanford Securities Studies (Stanford, CA: Stanford University Press, 2013), 242-262, passim, Jones, Seth G., *Counterinsurgency in Afghanistan*, 51, Jones, *Graveyard*, 148-150 and 228-228, Rashid, *Descent Into Chaos*, 245-247, and Suhrke, "Contradictory Mission?", 217-219.

136 Jones, *Graveyard*, 161, and Rashid, *Descent Into Chaos*, 189.

of leverage over parts of the population. Therefore, western forces encountered interlinked tribal rivalries and disputes over drug interests and water and land to be a part of their operational environment, in addition to the threat to security posed by remnants of Al Qaida and emerging Taliban.[137] They either did not have the understanding, the proper mandate, or required forces to effectively counter the deteriorating security situation as a result of these complexities. The Taliban and Al Qaida were able to conduct operations from their sanctuaries in Pakistan. Local governance was not taking hold, and narco-trafficking and associated crime were emerging as significant threats to security. Reconstruction efforts were lagging behind schedule, and international troops were not able to respond sufficiently to the deteriorating security situation.[138] In short, while ISAF was in the process of expanding its S&R mission across Afghanistan, and the United States kept executing its CT mission mainly in the border area's with Pakistan, from 2006 onwards the government forces and international coalition increasingly got involved in a COIN mission.[139]

3.3.5. Follow-on Operations: Working Towards an Exit

As a result, by 2006 ISAF was forced to conduct relatively large scale combat operations in which several thousands of troops were involved. Fighting continued throughout the year with insurgent actions, followed by limited offensive operations by NATO and US troops.[140] In response to the quickly deteriorating security situation in Afghanistan, ISAF adopted the "clear, hold, build" or "ink-spot" strategy, in which so-called Afghan Developments Zones (ADZs) would be cleared of insurgent activities, in order to enhance the security situation and to make reconstruction efforts possible.[141] Also, integration of military and civilian activities was to be better incorporated in a concept called Comprehensive Approach (CA) which became one of the guiding principles of NATO's approach to Afghanistan after the NATO Summit in Bucharest in 2008. This was later further formalized in the Comprehensive Strategic Political Military Plan (CSPMP), which became the leading planning document.[142]

137 Bird, "Pirennial Dilemmas", 130, Theo Farrell and Antonio Giustozzi, "The Taliban at War: Inside the Helmand Insurgency, 2004-2012", *International Affairs* 89, no. 4 (2013): 845-871, 851 and 867, Martijn W.M. Kitzen, "Close Encounters of the Tribal Kind: The Implementation of Co-option As a Tool for De-escalation of Conflict--The Case of the Netherlands in Afghanistan's Uruzgan Province", *Journal of Strategic Studies* 35, no. 5 (2012): 713-734, and Rynning, *Liberal Disconnect*, 104.

138 Jones, *Graveyard*, 183-204.

139 Bird, "Pirennial Dilemmas", 128. The terms Counterinsurgency (COIN), Counterterrorism (CT) and Stabilization & Reconstruction (S&R) were not well defined, and may not reflect the reality military personnel experienced. According to Noetzel and Scheipers, different nations defined operations by 2007 in either CT, COIN of S&R, while their forces in reality were conducting operations across the whole operational spectrum: Timo Noetzel and Sibylle Scheipers, *Coalition Warfare in Afghanistan: Burden-sharing or Disunity?*, Chatham House Briefing Paper (London: Chatham House, October, 2007), http://www.chathamhouse.org.uk/publications/papers/view/-/id/552/ (accessed April 11, 2012), 6.

140 Jones, *Graveyard*, 211-220.

141 Jones, *Graveyard*, 253-255.

142 Bird, "Pirennial Dilemmas", 133-135, Farrell and Rynning, "NATO's Transformation Gaps", 693, NATO, "ISAF's Strategic Vision", L.G.D. Richards, "NATO in Afghanistan: Transformation on the Front Line", *The RUSI Journal* 151, no. 4 (2006): 10-14, 11-12, and Rynning, *Liberal Disconnect*, 56-57.

However, NATO still lacked the available manpower to "hold" an area, forcing NATO to sweep the same area's repeatedly using raids.[143] By 2008 this led to the possibility of an enduring strategic stalemate or even defeat of NATO and Coalition forces in Afghanistan.[144] So, in short, lack of military and civilian resources and problematic integration of military and civilian activities resulted in the situation in which the state-building project became stuck in the phase of trying to secure a stable and secure environment, without large-scale and durable reconstruction. According to Catherine Dale, this reinforced the perception among the Afghans that the coalition forces were aggressors, decreasing legitimacy of the endeavor.[145]

At this time, the US stepped in and added additional troops in two "surges". It marked the start of a new phase, in which the operational environment was assessed to be an insurgency, requiring a COIN approach. Sten Rynning suggested that, besides operational urgency, changes in US leadership increased cooperation with NATO. In 2006, US Secretary of Defense Donald Rumsfeld resigned and was succeeded by Robert Gates. Gates' affiliation and history with the US transformation program was less tight than was the case with Rumsfeld, and Gates was more willing to work with NATO, provided that it benefitted the mission. In addition, President Bush was succeeded by Barack Obama in 2009, who provided for a new leadership impulse.[146] The Obama Administration moved away from the jargon surrounding GWOT, instead favoring terminology that was more directly linked to Al Qaida.[147] The strategic outlook also became more focused on Afghanistan, stressing development of Afghan government and security forces, while retaining the goal of disrupting Al Qaida, especially in Pakistan.[148] Shortly after inauguration, Obama raised US commitment with 17,000 troops, and a year later 30,000 more followed, in response to a strategic assessment of the new commander of ISAF (COMISAF), General Stanley McChrystal. This was made possible because of the decreased American commitment in Iraq, and led to an "Americanization" of the operation in Afghanistan.[149] By 2010, about

143 Jones, *Graveyard*, 253-255, and David D. McKiernan, "Winning in the Islamic Republic of Afghanistan", *Army* 58, no. 10 (2008): 127-134, 130.

144 Webber, "NATO", 56.

145 Catherine Dale, "War in Afghanistan: Strategy, Military Operations, and Issues for Congress", In: *War in Afghanistan: Strategy, Military Operations, and Congressional Issues*, ed. Easton H. Ussery (New York: Nova Science Publishers, 2010), 53-122, 73-74.

146 Rynning, *Liberal Disconnect*, 135 and 175.

147 Greg C. Reeson, *Stalemate: Why We Can't Win the War on Terror and What We Should Do Instead* (Lanham, MD: Government Institutes, 2011), 43.

148 John R. Ballard, David W. Lamm and John K. Wood, *From Kabul to Baghdad and Back: The US at War in Afghanistan and Iraq* (Annapolis, MD: Naval Institute Press, 2012), 230.

149 Matthew C. Brand, *General McChrystal's Strategic Assessment: Evaluating the Operating Environment in Afghanistan in the Summer of 2009*, Air Force Research Institute Papers (Maxwell Air Force Base, AL: Air University Press, July, 2011), http://aupress.au.af.mil/digital/pdf/paper/ap_brand_mcchrystals_assessment.pdf (accessed April 3, 2013), 10-11, Farrell and Rynning, "NATO's Transformation Gaps", 693, and Hoehn and Harting, *Risking NATO*, 45-48. "Re-Americanization" might be a better term, because operations started as strictly an American-led endeavor. Much has been written on this decision. For the military perspective, publications of consecutive senior American commanders see: Brand, *McChrystal's Strategic Assessment*, Matthew C. Brand, "Resourcing General McChrystal's Counterinsurgency Campaign: The 2009 "Troop-to-Task" Planning Effort to Determine the Right Force Package Necessary to Defeat the Insurgency in Afghanistan",

three quarters of all coalition forces operating in Afghanistan were American, although some other NATO members also sent more troops.[150] Also, some operational changes were made. As for the US forces, they changed their stance and organization from a war-fighting force towards a counterinsurgency force. This meant decreased dependance on "kinetic" use of force to combat terrorism and increased emphasis on "population-centric" reconstruction and other activities associated with counterinsurgency, although part of the new approach was also an increase of leadership targeting missions.[151] US commanders had to find the right balance between the restrictions of the use of force and stability activities. This led to, for instance, severe tightening of the ROEs under General McChrystal in 2009, and subsequent loosening in 2010 by his successor, General David Petraeus.[152] The new strategy was accompanied by efforts to involve Pakistan and bringing Afghanistan and Pakistan closer together in a so called AF-PAK strategy.[153] Finally, as we have seen in the preceding chapter, increased attention was paid to doctrine development. Following the US, which had an Army COIN doctrine as of 2006 and a joint doctrine on the same subject in 2009, NATO started doctrine development on COIN in 2008. That doctrine was finalized in 2011.[154]

(Air University Press, Maxwell Air Force Base, AL, July, 2013) http://www.au.af.mil/au/aupress/digital/pdf/paper/ap_1301_brand_resourcing_mcchrystal_counterinsurgency.pdf (accessed February 27, 2014), Karl W. Eikenberry, "The Limits of Counterinsurgency Doctrine in Afghanistan: The Other Side of the COIN", *Foreign Affairs* 92, no. 5 (2013) https://search-proquest-com.nlda.idm.oclc.org/docview/1428163502 (accessed September 12, 2018), Stanley A. McChrystal, "COMISAF's Initial Assessment" (August 30, 2009) http://media.washingtonpost.com/wp-srv/politics/documents/Assessment_Redacted_092109.pdf (accessed January 14, 2014), Stanley A. McChrystal, *ISAF Commander's Counterinsurgency Guidance,* 2009, http://www.nato.int/isaf/docu/official_texts/counterinsurgency_guidance.pdf (accessed January 15, 2014), and McKiernan, "Winning in Afghanistan". Bob Woodward provides insights into the internal dynamics of the Obama Administration: Bob Woodward, *Obama's Wars* (New York, NY: Simon & Schuster, 2010). Examples of assessments of the political and military strategy include: Leonard Cutler, *President Obama's Counterterrorism Strategy in the War on Terror: An Assessment* (New York, NY: Palgrave Macmillan, 2017), Jamie Lynn De Coster, "Negotiating the Great Game: Ending the US Intervention in Afghanistan", *Fletcher Forum of World Affairs* 38, no. 2 (2014): 73-100, Frank G. Hoffmann and G. Alexander Crowther, "Strategic Assessment and Adaptation: The Surges in Iraq and Afghanistan", In: *Lessons Encountered: Learning From the Long War,* ed. Richard D. Hooker and Joseph J. Collins (Washington, DC: National Defense University Press, 2015), 89-163, Rathnam Indurthy, "The Obama Administration's Strategy in Afghanistan", *International Journal on World Peace* XXVIII, no. 3 (2011): 7-52, Erika G. King, *Obama, the Media, and Framing the U.S. Exit From Iraq and Afghanistan* (Farnham and Burlington, VT: Ashgate, 2014), and Shivan Mahendrarajah, "Conceptual Failure, the Taliban's Parallel Hierarchies, and America's Strategic Defeat in Afghanistan", *Small Wars & Insiurgencies* 25, no. 1 (2014): 91-21.

150 Ivan Dinev Ivanov, *Transforming NATO: New Allies, Missions, and Capabilities* (Lanham, MD and Plymouth: Lexington Books, 2011), 212, NATO, "Statement on Afghanistan by Ministers of Foreign Affairs of Nations Participating in the International Security Assistance Force (ISAF)" (December 4, 2009) http://www.nato.int/cps/en/natolive/news_59701.htm (accessed June 4, 2012), and Rynning, *Liberal Disconnect*, 185.

151 Rudra Chaudhuri and Theo Farrell, "Campaign Disconnect: Operational Progress and Obstacles in Afghanistan, 2009-2011", *International Affairs* 87, no. 2 (2011): 271-296, 273, Jones, *Graveyard*, 297, Rynning, *Liberal Disconnect*, 188, and Suhrke, "Contradictory Mission?".

152 Chaudhuri and Farrell, "Campaign Disconnect", 282, and Brian Glyn Williams, *Counter Jihad: America's Military Experience in Afghanistan, Iraq, and Syria* (Philadalphia, PA: University of Pennsylvania Press, 2017), 239.

153 Rynning, *Liberal Disconnect*, 175.

154 NATO, "Counterinsurgency in Afghanistan", *Website NATO Multimedia Library* http://natolibguides.info/content.php?pid=164385&sid=1386988&search_terms=coin+doctrine (accessed July 18, 2012), United States Headquarters, Department of the Army, *FM 3-24 / MCWP 3-33.5: Counterinsurgency,* December 15, 2006, http://www.fas.org/irp/doddir/army/fm3-24.pdf (accessed November 13, 2011), and United States Joint Chiefs of Staff, *Joint Publication 3-24: Counterinsurgency Operations,* October 5, 2009, http://www.dtic.mil/doctrine/new_pubs/jp3_24.pdf (accessed November 18, 2013).

With regard to other NATO forces, to some extent the reverse development took place. According to a former commander of ISAF, General David Richards, the ISAF mission gradually became a mission in which combat operations had to be executed, and the concept of COIN "crept" into the mission.[155] There were however regional differences on this classification. The insurgency was the most violent in RC South, often requiring kinetic response. Despite many discussions in several national parliaments, the non-American nations who had deployed the most troops there (United Kingdom, Canada and The Netherlands) eased restrictions on their soldiers to become involved in combat operations. This however was not the case for other parts of Afghanistan. In the north, were the security situation was still more favorable, some nations kept insisting that their forces were there solely for stabilization and reconstruction and refused to become involved in combat operations.[156] Overall, the combination of changing mandates, a strategic approach, and increased force levels had something to show for. By 2010, ISAF and their Afghan partners regained operational momentum, meaning that ISAF and its partners were able to deliver some protection to the population, and had expanded initiatives for building Afghan security and governance systems. However, strategic and conceptual challenges still remained.[157]

These developments overlapped with another process, that of handing over the responsibility of the security situation to the Afghan National Defense and Security Forces (ANDSF), marking the fourth and final phase of the conflict. The surge was supposed to be temporary, in an attempt to generate suitable conditions for handing over responsibility for internal security to the Afghans. Therefore, the surge had a planned end in the year 2012.[158] This phase to a large extent overlapped with the previous one, and was known by the term "Inteqal", which meant "transition" in both Dari and Pasthu.[159] It involved a markedly different set of activities, namely assessing, assisting, training, and advising the Afghan army, air force, police forces, and other forces, who would take over the tasks western militaries executed before. Mid 2009 the NATO Heads of State decided to increase the

155 Morelli and Belkin, "NATO in Afghanistan", 11-13. See also: Ivanov, *Transforming NATO*, 202-210.

156 See for different standpoints of the major troop contributors during the period 2005-2010: Ivanov, *Transforming NATO*, 207-209, and Morelli and Belkin, "NATO in Afghanistan". Developments with regard to the required changes are described and explained in several contributions of the edited book *Military Adaptation in Afghanistan*:Theo Farrell, "Back From the Brink: British Military Adaptation and the Struggle for Helmand, 2006-2011", In: *Military Adaptation in Afghanistan*, ed. Theo Farrell, Frans Osinga and James A. Russell, Stanford Securities Studies (Stanford, CA: Stanford University Press, 2013), 108-135, Martijn Kitzen, Sebastiaan Rietjens and Frans Osinga, "Soft Power the Hard Way: Adaptation by the Netherlands' Task Force Uruzgan", In: *Military Adaptation in Afghanistan*, ed. Theo Farrell, Frans Osinga and James A. Russell, Stanford Securities Studies (Stanford, CA: Stanford University Press, 2013), 159-191, Thomas Rid and Martin Zapfe, "Mission Command Without a Mission: German Military Adaptation in Afghanistan", In: *Military Adaptation in Afghanistan*, ed. Theo Farrell, Frans Osinga and James A. Russell, Stanford Securities Studies (Stanford, CA: Stanford University Press, 2013), 192-218, Osinga and Russell, "Conclusion", and Stephen M. Saideman, "Canadian Forces in Afghanistan: Minority Government and the Generational Change While Under Fire", In: *Military Adaptation in Afghanistan*, ed. Theo Farrell, Frans Osinga and James A. Russell, Stanford Securities Studies (Stanford, CA: Stanford University Press, 2013), 219-241.

157 Burton, *NATO's Durability*, 125-127, Chaudhuri and Farrell, "Campaign Disconnect", and Robert Egnell, "Winning 'Hearts and Minds'?: A Critical Analysis of Counter-Insurgency Operations in Afghanistan", *Civil Wars* 12, no. 3 (2010): 282-303.

158 Rynning, *Liberal Disconnect*, 188.

159 Rynning, *Liberal Disconnect*, 66 and 194.

efforts of training Afghan National Police (ANP) and Afghan National Army (ANA).[160] NATO leaders decided at the Lisbon Summit of 2010 to arrange for a gradual takeover from ISAF to ANSF, starting in 2011 and ending in 2014.[161] This was affirmed at the Chicago Summit of 2012 and Wales Summit of 2014, when the NATO leaders stated that the transition was on track.[162] Meanwhile, the ISAF mission had to change character. After 2012, western forces gradually redeployed to their home countries, and the rebuilding of the Afghan security forces became the main task. As indicated by a NATO declaration on Afghanistan after the Chicago Summit of 2012, ISAF would start to "*gradually and responsibly drawing down its forces to complete its mission by 31 December 2014*".[163] From June 2013 onwards, Afghan security forces took over the lead for operations. And on January 1st, 2015, both ISAF and OEF ended, becoming missions solely focused on training. They were called operations *Resolute Support* for NATO and *Freedom's Sentinel* for the US contribution. Both entities pledged continuing support as part of an enduring partnership.[164] Officially, remaining forces were allowed to engage in combat only to protect themselves. However, insurgents, including a new group called Islamic State (IS), stepped up their activities and managed to destabilize the country. The unstable situation reached the point where US Army General John W. Nicholson, commander of operation *Resolute Support*, testified early 2017 before the US Senate Armed Services Committee that the Afghan forces and coalition faced a stalemate.[165] Shortly after

160 NATO, "Summit Declaration on Afghanistan", and NATO, "Statement on Afghanistan".

161 NATO, "Lisbon Summit Declaration Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Lisbon" (November 20, 2010) http://www.nato.int/cps/en/natolive/official_texts_68828.htm (accessed June 4, 2012).

162 NATO, "Chicago Summit Declaration Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Chicago on 20 May 2012 (Press Release 062)" (May 20, 2012) http://www.nato.int/cps/en/SID-8BD38D70-C173BCA1/natolive/official_texts_87593.htm?mode=pressrelease (accessed June 5, 2012), and NATO, "Chicago Summit Declaration on Afghanistan Issued by the Heads of State and Government of Afghanistan and Nations Contributing to the NATO-led International Security and Assistance Force (ISAF)" (May 21, 2012) http://www.nato.int/cps/en/natolive/official_texts_87595.htm? (accessed June 4, 2012).

163 NATO, "Chicago Summit Declaration on Afghanistan".

164 Anonymous, "A New Chapter in NATO-Afghanistan Relations", *NATO Website* (May, 2015) http://nato.int/nato_static_fl2014/assets/pdf/pdf_2016_05/20160518_1605-backgrounder-afghanistan-en.pdf (accessed September 19, 2016), Anonymous, "FACT SHEET: Wales Summit -- NATO's Changing Role in Afghanistan", *White House Press Releases, Fact Sheets and Briefings / FIND* (September 4, 2014) http://search.proquest.com/docview/1560185499/8F0DBEE21C614650PQ?accountid=35226 (accessed September 8, 2014), T.X. Hammes, "Raising and Mentoring Security Forces in Afghanistan and Iraq", In: *Lessons Encountered: Learning From the Long War*, ed. Richard Hooker and Joseph J. Collins (Washington, DC: National Defense University Press, 2015), 277-344, 302, Lead Inspector General for Overseas Contingency Operations, "Operation Freedom's Sentinel; Quarterly Report to the United States Congress, April 1, 2015-June 30, 2015", (2015) http://www.globalsecurity.org/military/library/report/2015/lig_oco_ofs_08032015.pdf (accessed October 18, 2016), foreword. No page number, NATO, "Joint Statement by the Islamic Republic of Afghanistan, NATO and Resolute Support Operational Partners", *NATO Website* (December 2, 2014) http://www.nato.int/cps/en/natohq/official_texts_115587.htm?selectedLocale=en (accessed September 22, 2016), NATO, "Wales Summit Declaration Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Wales", *NATO Website* (September 5, 2014) http://www.nato.int/cps/en/natohq/official_texts_112964.htm?selectedLocale=en (accessed September 22, 2016), NATO, "Wales Summit Declaration on Afghanistan Issued by Heads of State and Government of Allies and Their International Security Assistance Force (ISAF) Troop Contributing Partners", *NATO Website* (September 4, 2014) http://www.nato.int/cps/en/natohq/news_112517.htm?selectedLocale=en (accessed September 22, 2016), Richard W. Weitz, "Transition in Afghanistan", *Parameters* 43, no. 3 (2013): 29-41, 29-32, and M.J. Williams, "State-building and the Armed Forces in Modern Afghanistan: A Structural Analysis", *International Politics* 52, no. 3 (2015): 305-334.

165 Michael R. Gordon, "U.S. General Seeks 'a Few Thousand More' Troops in Afghanistan", *New York Times (Online)* (February 9, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1866307717/ADA516904CAD44FAPQ?accountid=35226

the appearance of IS, targeting rules were loosened. Airstrikes in support of Afghan forces were allowed, and the US increased the number of raid missions as well.[166] So, after January 1, 2015, responsibility for the security situation was formally transferred to the Afghan Government, but activities related to training of the Afghan security forces, as well as western combat operations, continued well into 2016.[167]

3.3.6. Operational Challenges

NATO's participation in ISAF is generally regarded as the test case for NATO's credibility or even viability.[168] As a result, problems of NATO troops in Afghanistan radiated on NATO as an organization. These problems involved strategy development, operational initiatives of participating nations, national restrictions placed on deployed contingents, and defining command relationships.

As for the the first problem, several scholars pointed at NATO's inability to define a strategy for achieving success in Afghanistan.[169] As a result, there was none. According to Julianne Smith and Michael Williams in 2008, NATO members up and until then had not reached agreement on the nature of the conflict in Afghanistan. This reflected deeper divisions within the alliance about the role it should play in out-of-area operations. As a result, statements, concepts, and guidelines coming from Brussels reflected issues on which consensus was reached. These were too generally formulated to be of much practical use for the troops in Afghanistan.[170] Although some progress was made, for instance by adopting the Comprehensive Approach, Catherine Dale stated that a strategic vision on Afghanistan dated in 2008 did not detail the ways and means ISAF had to use

(accessed February 19, 2017), and Cheryl Pellerin, "Resolute Support Commander: More Troops Needed to Break Afghan 'stalemate'", *U.S. Department of Defense Informatino / FIND* (February 9, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1866369193/ADA516904CAD44FAPQ?accountid=35226 (accessed February 19, 2017).

166 Williams, *Counter Jihad*, 252-257.

167 NATO, "Statement by Foreign Ministers of NATO - Resolute Support Nations and Afghanistan", *NATO Website* (December 1, 2015) http://www.nato.int/cps/en/natohq/official_texts_125449.htm?selectedLocale=en (accessed September 22, 2016), NATO, "Warsaw Summit Communiqué Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Warsaw 8-9 July 2016", *NATO Website* (July 9, 2016) http://www.nato.int/cps/en/natohq/official_texts_133169.htm?selectedLocale=en#top (accessed September 22, 2016), and NATO, "Warsaw Summit Declaration on Afghanistan Issued by the Heads of State and Government of Afghanistan and Allies and Their Resolute Support Operational Partners", *NATO Website* (July 9, 2016) http://www.nato.int/cps/en/natohq/official_texts_133171.htm?selectedLocale=en (accessed March 19, 2017).

168 Bird, "Pirennial Dilemmas", 128, Dale, "War in Afghanistan", Hallams, *US and NATO Since 9/11*, 81, Morelli and Belkin, "NATO in Afghanistan", 3, and Webber, "NATO", 54.

169 See for instance: Dale, "War in Afghanistan", 59-60, Hoehn and Harting, *Risking NATO*, Seth A. Johnston, *How NATO Adapts: Strategy and Organization in the Atlantic Alliance Since 1950* (Baltimore, MD: Johns Hopkins University Press, 2017), 172, Morelli and Belkin, "NATO in Afghanistan", 13-15, Noetzel and Scheipers, *Coalition Warfare in Afghanistan*, 3, Noetzel and Schreer, "Multi-tier NATO", 217, Julianne Smith and Michael Williams, "What Lies Beneath: The Future of NATO Through the ISAF Prism", *Center for Strategic & International Studies* (2008): 1-7 http://csis.org/files/media/csis/pubs/080331_nato.pdf (accessed August 20, 2012), Thruelsen, "NATO in Afghanistan", and Webber, "NATO", 55.

170 Smith and Williams, "What Lies Beneath", 2.

to achieve its objectives.[171] A problematic consequence was that the strategic planning had to be formulated lower in the chain of command, mostly at the level of operational commanders or even national contingents. The situation in Afghanistan itself complicated the situation further, because the US forces initially did not have a nation-building strategy for Afghanistan, and the security situation in Afghanistan developed into an insurgency. Therefore, NATO not only had to devise a strategy, but also constantly adapt it to match the security situation.[172] In the meantime, collective NATO and US strategy essentially constituted whatever the unwritten and uncoordinated sum of the national approaches of the troop contributing nations turned out to be.[173] This situation ended to some extent only after the US stepped up its commitment in Afghanistan, and proposed a COIN strategy. NATO was consulted in formulation of this strategy, but accepted it without much input.[174]

Also, NATO member states individually were able to use the strategic leeway the generally formulated guidelines provided them, which became the basis of the second problem. Primary NATO bodies designated to formulate strategy were North Atlantic Council, Military Committee, Summits, strategic level commands, and other official bodies. But the sovereignty of nation states induced the locus of power resting at the collective of these nations.[175] When the collective of nations was not able to devise strategy directly, which was the case in Afghanistan, individual influence of nations on operations increased. The first manner the nations did so was through delivery of troops. The alliance showed variances of a nation's willingness to deploy forces to Afghanistan, leading to a general shortage of forces. Hence, the variance manifested itself as a problem of burden sharing within the coalition. The theme of burden sharing between nations of the alliance had been part of internal debate since the 1980s, but for Afghanistan it manifested itself in the question of delivery of troops to the country.[176] The level of troop contributions varied strongly between nations as a result of the capabilities gap and political differences of opinion both within the alliance and within the governments and parliaments of the contributing nations.[177] This was especially problematic because the countries that were sending troops were also paying for them due to NATO's financial arrangement.[178] According to Julianne Smith and Michael Williams, this arrangement delivered scant

171 Dale, "War in Afghanistan", 59-60.

172 Hallams, *US and NATO Since 9/11*, 74-75.

173 Kiras, "Modern Irregular Warfare", 268.

174 Rynning, *Liberal Disconnect*, 62 and 182.

175 Auerswald and Saideman, *NATO in Afghanistan*, 33-36.

176 A.S.M. Ali Ashraf defined burden sharing as "*the distribution of the military and non-military costs and risks among ad hoc coalition partners fighting a joint war*" (Ali Ashraf, "Politics of Coalition Burden Sharing", 51). According to this definition, all contributions, including financial and diplomatic contributions, fall within this definition. The debates however focus more on troop contributions and the mandates these troops are provided with. Also, the burden sharing debate in practice also applies to the NATO alliance, and not solely Coalitions.

177 See for standpoints of different contributing nations: Morelli and Belkin, "NATO in Afghanistan".

178 Dale, "War in Afghanistan", 63-64, and Smith and Williams, "What Lies Beneath", 5.

incentive for NATO members to participate in ISAF.[179] Mark Joyce added that domestic politics of the contributing nations, competing claims by NATO, EU and UN on the same forces, and the financial pressure as a result of the transformation programs of the nations, proved to be additional disincentives for nations to volunteer for expeditionary operations.[180]

In addition, frustrations arose between countries that were contributing to ISAF and those that were not. This led some scholars to conclude that NATO became divided between several tiers within NATO, discernible by its members' willingness to contribute to costly and risky operations.[181] As a direct result, the Supreme Allied Commander Europe (SACEUR) had a great difficultly raising the desired amount of troops for ISAF. He had to lobby each nation, which occasionally was either unwilling or unable to contribute, resulting in a lack of resources available in Afghanistan. This situation was never fully resolved.[182] For SACEUR's subordinate in theater, COMISAF, it had the consequence that he structurally had fewer resources available than he would like, especially airborne assets in the form of CAS-capable aircraft and transport helicopters.[183] Also, there were shortages of supporting assets, such as intelligence, engineers for IED dismantling, interpreters, medical staff, logistical assets, and digital command and control means.[184] According to some scholars, operational commanders in Afghanistan had to plan their mission according to the means available, instead of the desired outcome.[185]

A third problem ISAF encountered was closely linked to the first two. National governments imposed restrictions, called national caveats, on their deployed militaries. They were national additions to the ROEs. ROEs were drafted to ensure adherence to the law of armed conflict and avoid extensive collateral damage, were operation-specific, and were applicable to all ISAF personnel.[186] Caveats in essence were restrictions in authority delegated by national governments to their deployed militaries.[187] They could serve a variety of purposes. Most obviously, they were aimed to minimize casualties, and they acted as an assurance that national contingents adhered to national laws. They could,

179 Smith and Williams, "What Lies Beneath", 5.

180 Mark Joyce, "Reforming NATO Force Generation: Progress, Problems and Outstanding Challenges", (RUSI Report, RUSI, October, 2005) http://www.rusi.org/downloads/assets/NATO_FORCE_GENERATION_REPORT.pdf (accessed June 6, 2012), 21-22.

181 Burton, *NATO's Durability*, 117, Dale, "War in Afghanistan", Noetzel and Schreer, "Multi-tier NATO", and Webber, "NATO", 58.

182 Steve Beckman, "From Assumption to Expansion: Planning and Executing NATO's First Year in Afghanistan at the Strategic Level", (Report, U.S. Army War College, March 18, 2005) http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA431768 (accessed July 20, 2012), 10, and Morelli and Belkin, "NATO in Afghanistan", 27.

183 Beckman, "From Assumption to Expansion", 12, Morelli and Belkin, "NATO in Afghanistan", 13, Rupp, *NATO After 9/11*, 163, and Smith and Williams, "What Lies Beneath", 3.

184 Jones, *Graveyard*, 248 and 252.

185 Dale, "War in Afghanistan", 73-76, Hoehn and Harting, *Risking NATO*, 54-56, and Smith and Williams, "What Lies Beneath", 4.

186 Thruelsen, "NATO in Afghanistan", 40.

187 Stephen M. Saideman and David P. Auerswald, "Comparing Caveats: Understanding the Sources of National Restrictions Upon NATO's Mission in Afghanistan", *International Studies Quarterly* 56, no. 1 (2012): 67-84, 68.

however, also be a reflection of an internal desire to maintain public support, logistic ability to support a contingent, technological limitations, or limitations of training of the forces.[188] At least three levels of caveats existed in Afghanistan. The first level consisted of restrictions that were officially and clearly stated in advance. Second, caveats could be unofficial, becoming apparent when a situation arose that a nation had to withhold support to a particular mission. A so-called red card holder, an officer present in theater charged with safeguarding adherence to the ROEs and national caveats, was key in determining whether a particular mission was compliant to the national guidelines, both official and unofficial. Finally, military commanders sometimes imposed restrictions on themselves in anticipation of a possible political backlash in their home countries.[189] According to Dale, ISAF in 2006 suffered from more then one hundred national restrictions, half of which significantly hampered ISAF operations.[190] Although these caveats fulfilled a useful purpose in the political settings of the home nations, and also allowed deployments of contingents in the first place, high level commanders in theater generally regarded them as impediments to military operations.[191]

National caveats aggravated the problem of troop contributions, because the already limited amount of troops were restricted in which types of missions they could participate in. For instance, Saideman and Auerswald suggested that the nations that pledged to send the most troops, Italy and Germany, were also the countries that imposed the most limiting restrictions on their troops. So the resources problem was only alleviated, not solved.[192] This was especially frustrating for commanders, because they not only had to plan around the capabilities that were in theater, but also around the national willingness to apply these capabilities. The troops serving in Afghanistan in effect had a variety of operational mandates, depending on the nation they belonged to. This was especially problematic when combat operations were involved, because some military contingents were allowed to execute stability operations only.[193] In addition, the existence of many caveats, that varied in scope and were partly unknown to commanders until the planning phase operations

188 Auerswald and Saideman, *NATO in Afghanistan*, 1-22, J.L.H. Eikelboom, Lieutenant General, Royal Netherlands Air Force Retired, Interview with the Author, April 24, 2013, and Thruelsen, "NATO in Afghanistan", 22.

189 Hoehn and Harting, *Risking NATO*, 53, Saideman and Auerswald, "Comparing Caveats", 69-70, and Winston S. Williams, "Multinational Rules of Engagement: Caveats and Friction", *The Army Lawyer* January (2013): 24-28, 25.

190 Helle C. Dale, "NATO in Afghanistan: A Test Case for Future Missions", *Backgrounder*, no. 1985 (2006) http://blog.dsos.org/wp-content/gallery/stab/nato-afghanistan.pdf (accessed July 20, 2012), 1. McNamara gives examples of problematic caveats, which include restrictions on nighttime operations, confinement to an operational area, barring from operations in snow, and requirement of guaranteed transportation time to a hospital. (Sally McNamara, "NATO Allies in Europe Must Do More in Afghanistan", *Backgrounder*, no. 2347 (2009) http://s3.amazonaws.com/thf_media/2009/pdf/bg2347.pdf, 6-7).

191 See for instance: Thruelsen, "NATO in Afghanistan", 19-22. General Jones even referred to the caveats as an "*operational cancer*":Rashid, *Descent Into Chaos*, 354. A Canadian panel that investigated the future role of the Canadian Armed Forces stated that some nations enforced so much restrictions that these nations "*effectively keep those forces out of the conflict*":John Manley (Chair), Derek H. Burney, Jake Epp, Paul Tellier and Pamela Wallin, "Independent Panel on Canada's Future Role in Afghanistan", (2008) http://publications.gc.ca/collections/collection_2008/dfait-maeci/FR5-20-1-2008E.pdf (accessed January 7, 2016), 13.

192 Saideman and Auerswald, "Comparing Caveats", 81.

193 Thruelsen, "NATO in Afghanistan", 19-22.

began, made command and control difficult. From the perspective of caveats, ISAF was built around limitations of about 40 nations. It became hard to plan operations. The plan had to fit the caveats, or, reversely, the assets that were allowed to execute a specific operation had to be found. In both cases complexity of planning increased. Planning also became more lengthy, as red card holders frequently had to communicate with officials of their respective nations to get permission for executing a specific operation.[194] The PRTs and OMLTs suffered from a comparable problem, although this did not specifically involve caveats. These units were nationally sponsored and led. This situation decreased situational awareness in the ISAF command line on what the progress was on the activities of the PRTs.[195] As a result, they had no overarching operational concept, no common range of services, no unified chain of command and no communication between them.[196]

Politically, the issue of national caveats became problematic as well. National caveats were a reflection of the larger burden sharing debate. It aggravated the division in "tiers" within NATO. Not only was the alliance split between those countries that were willing to participate in ISAF and those who were not, there was also a division between countries that were willing to engage in more risky combat missions, and accept casualties among their militaries, and those that were hesitant to do so.[197] This extended even beyond NATO, as some non-NATO nations, such as Australia, could rightfully claim that they were doing more for NATO then some key nations within NATO.[198] This "*casualty differential*"[199] led to tensions within the alliance, because some nations lost credibility because of not participating, or imposing very limiting caveats, while those nations who were willing to accept the risks were able to influence ISAF, and NATO, policy more than others.[200] At a more theoretical level, the variety in scope and extent of the national caveats reflected differences of opinion about the ideal nature of NATO in the post-Cold War security environment.[201] According to Andrew Hoehn and Sarah Harting the challenges of burden sharing and national caveats in Afghanistan induced a strategy that was formulated in general terms, and in an unstructured adoption of roles and responsibilities of nations.[202]

The fourth and final problem ISAF encountered also had links with the other problems, and concerned command relationships. As stated, the United States decided not to use the NATO command structure for execution of operation *Enduring Freedom*. Instead, the

194 Auerswald and Saideman, *NATO in Afghanistan*, 8-9, Dale, "War in Afghanistan", 64, Dale, "NATO in Afghanistan", 3-5, Hoehn and Harting, *Risking NATO*, 56, Morelli and Belkin, "NATO in Afghanistan", 6-7, Saideman and Auerswald, "Comparing Caveats", 69-70, and Thruelsen, "NATO in Afghanistan", 22.

195 Auerswald and Saideman, *NATO in Afghanistan*, 48-50, and Dale, "War in Afghanistan", 65.

196 Morelli and Belkin, "NATO in Afghanistan", 8-9.

197 Hallams, *US and NATO Since 9/11*, 76, and Hoehn and Harting, *Risking NATO*, 52.

198 Hoehn and Harting, *Risking NATO*, 51.

199 Sloan, *Permanent Alliance?*, 202- 205.

200 Jones, *Graveyard*, 248-255, and Saideman and Auerswald, "Comparing Caveats", 81-82.

201 Smith and Williams, "What Lies Beneath", 1 and 7.

202 Hoehn and Harting, *Risking NATO*, 55-56.

US used its own Central Command (CENTCOM), located in Tampa, Florida. It was headed by Army General Tommy Franks. Franks deployed the subordinate commands Combined Forces Land Component Command (CFLCC), Combined Forces Air Component Command (CFACC), Combined Forces Maritime Component Command (CFMCC) and the predecessor of the Combined Joint Special Operations Task Force (CJSOTF) in the Arabian Gulf, which was CENTCOM's Area of Operations (AO). Besides commanding US troops, CENTCOM also was responsible for deployments of the assets of the coalition of the willing.[203] This command arrangement functioned until October 2003, when a joint and combined operational level headquarters, Combined Forces Command-Afghanistan (CFC-A), was established in Kabul to coordinate operations of the service components, as well as the coalition contributors to operation *Enduring Freedom*.[204] CFC-A had two subordinate commands: the Combined Security Transition Command-Afghanistan (CSTC-A), responsible for training of Afghan security forces, and the Combined Joint Task Force (CJTF), which represented the conventional forces fighting Taliban, Al Qaida and other insurgent groupings.[205] This situation changed when ISAF entered the stage. As noted earlier, national command structures of the respective lead nations initially applied during the first rotations. As of 2003, NATO assumed command over ISAF. Its commander, COMISAF, had a totally different command line than the commander of CFC-A, leading from Kabul to the Joint Forces Command (JFC) in Brunssum, The Netherlands, to the Supreme Headquarters Allied Powers Europe (SHAPE), located in Mons, Belgium.[206] By the end of 2003 therefore, there were two competing commands executing operations in the same AO, one US and one NATO, which was a deviation of the military dictums of unity of effort and unity of command.

The United States wanted to merge the US and NATO commands as early as 2003, but were opposed by several European NATO members. The main reason for this was the difference of tasks between the stabilization and reconstruction tasks of ISAF and the counterterrorism operation of *Enduring Freedom*. Mainly France, Germany and the United Kingdom were hesitant to engage in combat missions performed by ISAF. Also, the issue of counter-narcotics was problematic, because it supposedly was not part of S&R.[207] The expansion of the ISAF area of operations to cover the entire country exacerbated the problem, as it involved shifting some of the US forces from OEF to ISAF.[208] Late 2006, the CJTF was transferred to ISAF, while CSTC-A remained within the American command structure. CFC-A was deactivated in February 2007.[209] This in turn meant that the national

203 Ian Hope, "Unity of Command in Afghanistan: A Forsaken Principle of War", In: *War in Afghanistan: Strategy, Military Operations, and Congressional Issues*, ed. Easton H. Ussery (New York: Nova Science Publishers, 2010), 33-52, 41, and Lambeth, *Airpower Against Terror*, 49-51.

204 Dale, "War in Afghanistan", 66, and Hope, "Unity of Command in Afghanistan", 41.

205 Dale, "War in Afghanistan", 66.

206 Hope, "Unity of Command in Afghanistan", 42.

207 Everett, "Merging ISAF and OEF", 6-8, Morelli and Belkin, "NATO in Afghanistan", 16-17, and Rupp, *NATO After 9/11*, 166-167 and 173-175.

208 Dale, "NATO in Afghanistan", 2.

209 Dale, "War in Afghanistan", 66, and Hope, "Unity of Command in Afghanistan", 43.

command line of about 12,000 American forces ran to the US European Command (EUCOM), while 8,000 kept reporting to CENTCOM. This confused command arrangement even further.[210]

The situation was somewhat alleviated in 2008 by creation of a new US command in Afghanistan, US Forces-Afghanistan (USFOR-A). Its first commander (COMUSFOR-A), General David McKiernan, also became COMISAF. This dual hatted arrangement streamlined both the OEF and ISAF missions. Yet complete unity of command and unity of effort was not accomplished.[211] His successor, General Stanley McChrystal, in 2009 also streamlined command and control at the operational level, erecting the ISAF Joint Command (IJC).[212] Simultaneously, command relationships within the context of training the Afghan security forces were streamlined. Early 2009, NATO had approved the creation of the NATO Training Mission-Afghanistan (NTM-A). In November 2009, NTM-A was activated and complemented the American counterpart, CSTC-A. Commander of the training effort was a dual hatted US General Officer.[213] However, some military functions and tasks, such as Special Operations, counter-narcotics, regional engagement with neighboring countries such as Pakistan, ISR, Close Air Support and some other functions, still were directed from CENTCOM in Tampa.[214] Sensitive counterterrorist operations remained a strictly American endeavor.[215] Also, some issues remained outside the reach of ISAF. Coordination with civilian agencies remained problematic, and the new approach did not encompass three strategic-level issues, namely the endemic corruption of the Afghan government, political support of the mission in troop contributing countries, and the existence of insurgent home bases in Pakistan.[216]

Besides these main problems, literature reveals some less-emphasized problems that can partially be attributed to indecisiveness at the higher levels. For instance, information sharing between the various commands was not optimal, because of diverging communication channels (NATO versus national), language restraints, and unwillingness of the nations to share information.[217] This in practice meant that not all ISAF units were operating with the same information and intelligence, and therefore had different levels of situational awareness. A second problem involved interoperability, especially with regard to communication systems. This again hampered information sharing.[218] A third problem was the difference in rotation times of NATO countries and other contributing nations on

210 Dale, "NATO in Afghanistan", and Hope, "Unity of Command in Afghanistan", 43-44.

211 Dale, "War in Afghanistan", 66.

212 Chaudhuri and Farrell, "Campaign Disconnect", 275, and Alexander Mattelaer, "How Afghanistan Has Strengthened NATO", *Survival* 53, no. 6 (2012): 127-140, 129.

213 Hammes, "Raising", 285, Rynning, *Liberal Disconnect*, 59-60 and 176-179.

214 Hope, "Unity of Command in Afghanistan", 43.

215 Hoehn and Harting, *Risking NATO*, 29.

216 Chaudhuri and Farrell, "Campaign Disconnect", 284-296.

217 Auerswald and Saideman, *NATO in Afghanistan*, 46, and Dale, "War in Afghanistan", 65.

218 Dale, "NATO in Afghanistan", 6.

the one hand, and the US on the other. ISAF HQ personnel generally served a tour of six months, which some considered to be too short. When CFC-A existed this was a problem, because it hampered continuity in command and development of a standing relationship between CFC-A and ISAF.[219]

3.3.7. NATO's Post-9/11 Developments

Operational developments in Afghanistan influenced NATO. Issues such as force transformation, interoperability, burden sharing, and strategic concepts were put on the agenda of various summits conducted between 2002 and 2016. Although there were several initiatives for improvement, such as for instance the activation of the NATO Response Force (NRF) and Allied Command Transformation (ACT), consensus on the direction of the alliance was still lacking. Instead, nations kept pursuing their own interests, which could coincide with NATO goals. Several nations started bi-or multinational procurement and development programs, programs of shared ownership of assets and forces, and procurement programs by buying commercially off the shelf. These programs could partly compensate for duplication of forces, lack of integration between the forces, outdated structures, price escalation of sophisticated weapons systems, shrinking defense budgets, and limited resources for research and development.[220] The fundamental problem was however not solved, and consequently there was no fundamental change of direction.

At NATO level, the results of this continued to be enlargement of the alliance, fragmented implementation of new capabilities and expansion of missions, and still declining defense budgets of most countries.[221] Therefore, operational challenges also largely remained the same. This was witnessed by another operation NATO executed, namely operation *Unified Protector* in Libya in 2011. The Libyan regime, led by Muammar Qaddafi, faced an internal rebellion and responded by terrorizing its own citizens in an attempt to fight the rebels. The international community responded by adopting United Nations Security Resolutions that allowed the use of force in order to protect civilians, enforcing an arms embargo, and enforcing a no-fly zone above Libya. These officially were the military goals as well, although the coalition executing the operation *de facto* supported

219 Hope, "Unity of Command in Afghanistan", 43.

220 Anrig, *Quest for Relevant Air Power*, 50-55 and 356.

221 Anrig, *Quest for Relevant Air Power*, 13-64, Bird, "Pirennial Dilemmas", John R. Deni, "NATO's Rebirth: NATO's New Trajectories After the Wales Summit", *Parameters* 44, no. 3 (2014): 57-65, Ellen Hallams, Luca Ratti and Benjamin Zyla, "Conclusion - 9/11: A Systemic or Paradigm Shift for NATO?", In: *NATO Beyond 9/11: The Transformation of the Atlantic Alliance*, ed. Ellen Hallams, Luca Ratti and Benjamin Zyla, New Security Challenges, ed. Stuart Croft (Basingstoke and New York, NY: Palgrave MacMillan, 2013), 321-331, Hallams and Schreer, "'Post-American'", Ivanov, *Transforming NATO*, 231, Jeffrey H. Michaels, "NATO After Libya: Alliance Adrift?", *The RUSI journal* 156, no. 6 (2011): 56-61, Noetzel and Schreer, "Multi-tier NATO", James W. Peterson, *NATO and Terrorism: Organizational Expansion and Mission Transformation* (New York, NY and London: The Continuum International Publishing Group, 2011), Riecke, "NATO's New Strategic Concept", Jens Ringsmose and Sten Rynning, *Come Home NATO?: The Atlantic Alliance's New Strategic Concept*, DIIS Report (Copenhagen: Danish Institute for International Studies, 2009), Rynning, *Liberal Disconnect*, Smith and Williams, "What Lies Beneath", Terriff and Osinga, "Diffusion of Military Transformation", and Webber, "NATO".

the rebel cause, which was toppling the Qadaffi regime.[222] At first glance, NATO seemed to have made great strides by taking over command from the US, which was executing operation *Odyssey Dawn*. The US intentionally took a back seat in *Unified Protector* as part of policy to become more restrictive in the conflicts the US would become involved in, but also as a result of both internal and international political developments.[223] However, *Unified Protector* suffered from the same challenges as ISAF. NATO was not unanimous on the intervention, or the role it should have in it. It suffered from capability gaps. Some nations refused to participate, and other nations imposed caveats, thus increasing the burden on other nations. And the US still had to provide the bulk of the enabling assets such as ISR capabilities, Joint Surveillance Target Attack Radar System (JSTARS), Airborne Warning and Control System (AWACS), and Air-to-Air Refueling aircraft.[224] *Unified Protector* therefore showed that NATO's challenge of defining its *raison d'être* still was not countered conclusively or decisively.

There has been a lively debate about how to interpret NATO's reactions to the post-Cold War challenges, and whether they were effective. In this respect, there are several schools of thought in the academic field of international security studies. First there is the Realist school, which focuses on the concepts of national interests and balance of power.[225] With regard to NATO, a common threat is the unifying factor in maintaining the alliance. Within this line of thought NATO's one unifying threat, the Soviet Union, disappeared without emergence of a new threat. In this perspective, efficient execution of effective operations becomes almost impossible. The requirement of unanimous decision making in a debatable security environment leads to execution of "war by committee", as Kosovo illustrated. Scholars within this school of thought generally are highly critical of NATO's transformation since 1991, and interpret periodical waves of inter-alliance and especially transatlantic tensions as signs of the decline of NATO, which will eventually collapse.[226] Competing Institutionalist or Constructivist perspectives disagree with this conclusion,

222 Burton, *NATO's Durability*, 146-150, Christoher S. Chivvis, "Strategic and Political Overview of the Intervention", In: *Precision and Purpose: Airpower in the Libyan Civil War*, ed. Karl P. Mueller (Santa Monica, CA: RAND Corporation, 2015), https://www.rand.org/pubs/research_reports/RR676.html (accessed July 6, 2017), 11-42, passim, Karl P. Mueller, "Examining the Air Campaign in Libya", In: *Precision and Purpose: Airpower in the Libyan Civil War*, ed. Karl P. Mueller (Santa Monica, CA: RAND Corporation, 2015), https://www.rand.org/pubs/research_reports/RR676.html (accessed July 6, 2017), 1-10, 1, and Karl P. Mueller, "Victory Through (not By) Airpower", In: *Precision and Purpose: Airpower in the Libyan Civil War*, ed. Karl P. Mueller (Santa Monica, CA: RAND Corporation, 2015), https://www.rand.org/pubs/research_reports/RR676.html (accessed July 6, 2017), 373-392, 373-376.

223 Christopher S. Chivvis, *Toppling Qaddafi: Libya and the Limits of Liberal Intervention* (New York, NY: Cambridge University Press, 2014), 1-13 and 44-59, Hallams and Schreer, "'Post-American'", 319, and Robert C. Owen, "The U.S. Experience: National Strategy and Campaign Support", In: *Precision and Purpose: Airpower in the Libyan Civil War*, ed. Karl P. Mueller (Santa Monica, CA: RAND Corporation, 2015), https://www.rand.org/pubs/research_reports/RR676.html (accessed July 6, 2017), 69-106, 75-77.

224 Chivvis, *Toppling Qaddafi*, 71-79 and 110-119, Hallams and Schreer, "'Post-American'", 314 and 322-323, and Mueller, "Victory Through (Not By) Airpower", 386-389.

225 Hallams, *US and NATO Since 9/11*, 4, Veronica M. Kitchen, *The Globalization of NATO: Intervention, Security and Identity*, Routledge Global Security Studies, ed. Aaron Karp, Regina Karp and Terry Terriff (London and New York, NY, 2010), 7-10, Rupp, *NATO After 9/11*, 1-10, and Rynning, *NATO Renewed*, xiii.

226 Williams, *From Kosovo to Kandahar*, 4. See for instance: Rupp, *NATO After 9/11*.

claiming that the Realist school fails to explain why NATO has not collapsed already, or why states behave differently within the same international system. They point at the role which organizations play in shaping the behavior of national governments and the binding role of values, ideas, norms, and culture respectively. In general, these schools view adaptation of NATO as signs of its continuing relevance, despite the problems that are encountered.[227]

Of course, there are variations within these schools. For instance, Sten Rynning in 2005 considered himself to be both a realist and a NATO optimist, because NATO was adapting towards a coalition identity. After the identity of collective defense became obsolete, and the identity of collective security proved to be unworkable in an era of elusive risks, NATO was becoming an organization in which flexible coalition making was predominant. According to Rynning, this was the only viable option to NATO, because it offered flexibility in operations while maintaining a certain level of alliance cohesion.[228] He later proposed that NATO had evolved from a failed strategic actor to a fairly successful strategic enabler of leading coalitions, largely as a result of the Afghan experience.[229] However, as this dissertation studies NATO's challenges in relation to ISAF, the subtleties of this debate on the nature of NATO is beyond the scope of this study and will not be expanded on further.

A part of the discussion involves the US reaction to NATO's lack of consensus, and to what extent the developments after 9/11 showed a paradigm shift in US-NATO relationships. The unilateral stance of the US in 2001 and subsequent developments have been assessed as involving a fundamental split between US on the one hand and NATO on the other, born out of American frustration about NATO's reticence.[230] Other assessments indicate that there was no fundamental change, but rather acceleration of already existing dynamics, or just a more outspoken variant of already existing opinions.[231] Still other assessments seem to indicate that in 2001 the alliance simply was not ready yet to become fully engaged in expeditionary operations, or that the initial rejection of NATO's offers were part of improvisation under duress of war, as the US was still developing a plan.[232] Extensive analysis of this part of the discussion is beyond the scope of this study. It is however important to note that all scholars agree that long standing lack of consensus within the alliance strained the relationship between its leader, the US, and the rest. Hallams noted that this went as far as that US policy elite equalled NATO with the European members, as if the US was no part of it.[233] Whether or not this notion was wide spread may be subject

227 Williams, *From Kosovo to Kandahar*, 4. See also: Ali Ashraf, "Politics of Coalition Burden Sharing", iv-v, Hallams, *US and NATO Since 9/11*, Rebecca R. Moore, *NATO's New Mission: Projecting Stability in a Post-Cold War World* (Westport, CT and London: Praeger Security International, 2007), and Rynning, *NATO Renewed*.

228 Rynning, *NATO Renewed*. Rupp, also a realist, in 2006 acknowledged the "coalition-of-the-willing identity" of NATO. He was however not convinced that this is a viable identity because it is detrimental to cohesion of and sustained cooperation within the alliance. Rupp, *NATO After 9/11*, 197-200.

229 Rynning, *Liberal Disconnect*, 14.

230 Noetzel and Schreer, "Multi-tier NATO", 214-215, and Rupp, *NATO After 9/11*, 94.

231 Hallams, Ratti, and Zyla, "Conclusion - 9/11", 326, and Webber, "NATO", 53-53.

232 Hallams, *US and NATO Since 9/11*, 1-3, and Rynning, *Liberal Disconnect*, 73-79.

233 Hallams and Schreer, "'Post-American'", 325.

to debate. But there is one specific element of the Afghan deployment that supports it, namely command and control. As has been described in previous paragraphs, NATO and US command relationships kept co-existing in parallel, dovetailing only with dual hatted American commanders.

3.3.8. NATO's Challenges and Their Consequences in Afghanistan

On balance, between the end of the Cold War end the formal end of the ISAF mission, NATO was struggling with the tension between a high level of autonomy of the member states on the one hand, and the need for unity in decision making on the other. It was not able to reach consensus on the nature of the new threats, the means required to counter these threats, and the best ways to implement the means completely and adequately. In short, NATO lacked a strategy. NATO nations had different opinions on the best answers to the questions, and as a result NATO concepts and guidelines were products of consensus that left ample room for interpretation. As a result, nations addressed NATO-wide issues in manners that fitted their own contexts. During peacetime this resulted in a smoldering division in tiers within the alliance. During times of deployment, the divisions became painfully visible, and affected operational effectiveness in a negative way, increasing intra-allied tensions in the process. Most notably, it led to a rift between the US and the other NATO allies. The prospect of internal bickering among allies, who had limited capabilities anyway, at least partially led the Bush Administration to conclude that operational freedom and flexibility would be best served by starting operation *Enduring Freedom* with only limited support of NATO assets. This approach initially worked notably well, as the information age American military was able to topple the Taliban regime in a very limited period of time. However, it can be argued that it aggravated the much despised internal bickering, because the unilateral stance led to a critique of some of the allies on the Global War on Terror, and by extension decreased the willingness to cooperate in the associated armed conflicts the US led.

When the initial operations of the US-led coalition of the willing was over, the US largely left the stabilization and reconstruction mission to NATO, focusing on the counterterrorism operations in the east of Afghanistan. When ISAF entered the stage in 2003, the problems it encountered to a large extent reflected NATO's internal problems. NATO did not agree on the nature of the mission and ISAF until increased involvement of the US. Until then, ISAF therefore lacked a coherent strategy. Also, it offered individual nations to interpret its mission according to their own contexts. In doing so, their reactions to the conflict in Afghanistan differed as well. As a result, there were strong variations in the number of troops the nations deployed to Afghanistan, and the national caveats these troops had. National authority extended to the Area of Operations. To a large extent, commanders in the field had to solve the problems that originated in Brussels and

Washington. COMISAF had a structural lack of resources while the American footprint was already "light" by design. Restrictions of the troops COMISAF had at his disposal aggravated this problem even further, as he and his subordinate commanders had to maneuver around the strongly varying capabilities of the nations. This in turn impeded command and control, which was already confusing due to the dual command lines of OEF and ISAF, because both missions were different but had overlapping AOs. The problems reached its zenith when ISAF expanded to cover the whole of Afghanistan. ISAF's expanded area of operations required more troops, highlighting the burden-sharing problem. As the security situation deteriorated both ISAF and OEF had to adapt to the new counterinsurgency mission. In this respect, the national caveats were especially problematic, because counterinsurgency involved "kinetic" or combat missions for which many ISAF troops were neither equipped or authorized. When ISAF expanded to the areas were OEF was mostly active, new command and control arrangements had to be made to streamline activities of both commands.

NATO's dependence on US leadership once again became apparent in Afghanistan. Despite the criticism on the light foot print the Bush administration chose to adopt, the US eventually developed a COIN doctrine, delivered the bulk of the needed extra forces, and was the driving force behind streamlining command and control issues. NATO quickly put all relevant issues on the agenda, and the new threat invoked an increased sense of urgency. However, the organization moved ahead only very slowly, and in the face of a raging insurgency in Afghanistan. It lagged behind on force generation, doctrine development and adaptation towards modern, interoperable, sustainable, and highly deployable forces. These issues were on the agenda basically unaltered since 1991. So, the conflict had to be handled with US leadership, heavily drawing on US capabilities. Lack of consensus on the most fundamental question, NATO's *raison d'être,* prevented resolute decision making on Afghanistan.

3.4. Conclusion

Analysis of the operational context of Afghanistan shows that the air weapon would be operating in a very complex environment. Conducting air operations in Afghanistan is both hazardous and arduous, due to the geographical and climatological features of the country. This would not necessarily lead to limited employment of the air weapon. On the contrary, as ground forces were also effected by these conditions, the relative advantage of airpower's height, speed, and range could still apply, leading to undiminished relevance. Especially the Soviet experience showed both the possibilities and limitations of the air weapon when confronted with an Afghan insurgency in which the insurgents were trained in and equipped with modern surface-to-air weapons. By 2001, many of these weapon systems were outdated or not longer present in the country. But the threat they posed was

not diminished, even though western airpower was more technologically advanced than in 1989. The same holds true for the level of knowledge and training of potential adversaries. Although it can be derived that by 2001 only a few of the adversaries had direct experience in fighting airpower, this experience could not be discarded altogether. So, western airpower professionals had to take into account that the adversaries were to some extent able to influence air operations to their advantage.

Developments of the two coalitions that operated in Afghanistan between 2001 and 2016 potentially influence the air weapon significantly. First, the phases of the conflict are of interest. Throughout the chapter, four partially overlapping operational phases were identified:

- A phase with a center of gravity on large scale operations in a CT context (2001 - 2002);
- A phase that mainly contained both CT and S&R operations (2002 - 2008);
- A phase in which the requirement for COIN was recognized and actions were taken accordingly (2008 - 2012);
- A phase in which the main focus of effort was building advising Afghan security forces (2012 - 2016).

These phases are of interest for the airpower contribution, because the tasks the air weapon performed, or the effects it needed to bring, could be markedly different in each phase. It legitimizes airpower analysis along these four phases that was annunciated in the introduction.

Second, the analysis allows for drawing an interim conclusion on the influence of one of the driving factors of military innovation and adaptation, namely alliance politics. Institutional history of NATO since the end of the Cold War shows that the alliance has not been able to reach consensus on the nature of the new threats or risks, the best ways to manage them, and the means that were required to manage them with. The general development of the conflict in Afghanistan between 2001 and 2016 shows that the same was true for Afghanistan. The alliance did not agree on the nature of the conflict, a proper strategy to influence the situation in the alliance's favor, and the means that were required to implement the strategy with. This situation lasted until the US stepped in and took over. Preliminary conclusion is that alliance politics inhibited military change. By extension, one could argue that leadership had an enabling influence. It concerned leadership of the United States within the coalition. In addition, the analysis above could indicate the level of innovation and adaptation that actually took place. As long as NATO was conceptually paralyzed in providing useful guidelines, the burden of change fell on the senior level commanders or national contingents. The process of innovation and adaptation may be characterized as "bottom up" not so much as a driving force in itself, but rather as a forced result of a dysfunctioning top level.

Third, the Afghan conflict offers suggestions on which manifestations were influenced by the inhibiting dynamics of alliance politics. Nations could influence NATO developments, and ideally also ISAF developments, in three ways. They could use the official NATO structure. However, the analysis in this chapter shows that this mainly led to division in tiers within the alliance. The two options that were left were to accept or reject requests for troop contributions, and impose lenient or restrictive caveats on deployed forces. At the operational level too many rejections and restrictive caveats mostly impeded the ISAF mission as a whole, and manifested itself in low force levels and resources, and increased complexity of planning and execution of operations. More specifically as a result of the fissure between the US and the rest of NATO, it also induced a convoluted command and control architecture.

This potentially influences national airpower contingents more than national contingents of ground forces. Contingents of ground forces operated along national guidelines, at least until an ISAF strategy was agreed upon. This was mainly a problem at the operational and strategic levels, because the activities of all participating nations did not show unity of effort. This could lead to dilemmas of operational commanders in the field when requirements of higher operational echelons are not in line with national restrictions.[234] For the air weapon, the situation could be more severe. Due to the tenets of altitude, range, speed, and flexibility, and due to their relative scarcity, air assets are generally organizationally clustered and centrally commanded. The air weapon also is able to support various national contingents spread over a vast area, as well as ISAF or OEF strategy. In short, the air weapon by nature crosses the national lines. This could mean that airpower professionals face similar dilemmas as the operational commanders, but now at the tactical level within a single mission. At this stage, it is too premature to draw definite conclusions on the influence of alliance politics on the airpower manifestations of force levels and resources, plans and operations, and command relationships. There is however reason to suspect that, as it influenced these manifestations for ground forces, it influenced airpower as well.

234 Auerswald and Saideman, *NATO in Afghanistan*, 42-44.

Chapter 4

4. Ousting the Taliban (2001 - 2002)

4.1. Introduction

Parts of the first phase of airpower employment in Afghanistan are relatively well known, and are also described in the previous chapters. Between September 2001 and March 2002 a combination of Special Operations Force (SOF), indigenous Afghan forces, and modern airpower toppled the Taliban regime and largely dismantled Al Qaida's network in Afghanistan within the larger context of the Global War on Terror (GWOT). This scheme, also known as the Afghan Model, generally is regarded as successful.[1] The opening stages of operation *Enduring Freedom* are also well documented. Virtually all services and types of operations are represented in publications, and several actors wrote memoirs that cover the period. These publications are not all of academic quality, and those published by the armed services could also reflect service preferences in their assessments of the events.[2]

1 Richard B. Andres, Craig Wills and Thomas E. Griffith, "Winning with Allies: The Strategic Value of the Afghan Model", *International Security* 30, no. 3 (2006): 124-160, and Stephen D. Biddle, "Allies, Airpower, and Modern Warfare: The Afghan Model in Afghanistan and Iraq", *International Security* 30, no. 3 (2006): 161-176.

2 At the political level, Bob Woodwards book *Bush at War* has become highly influential (Bob Woodward, *Bush at War* (New York, NY: Simon & Schuster, 2002)). In their memoirs US Army General Tommy Franks and his deputy US Marine Corps General DeLong offer insights in some of the planning mechanisms at CENTCOM during this phase. (Tommy Franks, *American Soldier* (New York, NY: Harper Collins, 2004), 238-317, and Michael DeLong, *Inside Centcom: The Unvarnished Truth About the Wars in Afghanistan and Iraq* (Washington, DC: Regnery Publishing, 2004), 17-97. Lester Grau wrote a dissertation on the first stages of Operation *Enduring Freedom* (Lester W. Grau, "The Coils of the Anaconda: America's First Conventional Battle in Afghanistan", (Dissertation, No place of publication, April 27, 2009) http://search.proquest.com.nlda.idm.oclc.org/docview/304910650/7ABD8CD5FD404645PQ/1?accountid=35226 (accessed October 19, 2015)). CIA teamleaders Gary Schroen and Gary Berntsen wrote memoirs on the initial insertions and contacts with Northern Alliance Commanders (Gary Berntsen and Ralph Pezzullo, *Jawbreaker: The Attack on Bin Laden and Al Qaeda: A Personal Account by the CIA's Key Field Commander* (New York, NY: Crown Publishers, 2005), and Gary C. Schroen, *First In: An Insider's Account of How the CIA Spearheaded the War on Terror in Afghanistan* (New York, NY: Presidio Press/Ballantine Books, 2005)). Detailed accounts of the Special Operations Forces can be found in Charles Harry Briscoe, Richard L. Kiper, James A. Schroder and Kalev I. Sepp, *Weapon of Choice: US Army Special Operations Forces in Afghanistan* (Fort Leavenworth, KS: Combat Studies Institute Press, 2003), http://www.history.army.mil/html/books/070/70-100-1/cmhPub_70-100-1.pdf (accessed October 19, 2015), Richard D. Camp, *Boots on the Ground: The Fight to Liberate Afghanistan From Al-Qaeda and the Taliban, 2001-2002* (Minneapolis, MN: Zenith Press, 2011), Doug Stanton, *Horse Soldiers : The Extraordinary Story of a Band of U.S. Soldiers Who Rode to Victory in Afghanistan* (New York: Scribner, 2009), andDarrel D. Whitcomb, *On a Steel Horse I Ride: A History of the MH-53 Pave Low Helicopters in War and Peace* (Maxwell Air Force Base, AL: Air University Press, Air Force Research Institute, 2012), 505-549. Steve Call offers an insight in how the process of Close Air Support worked (Steve Call, *Danger Close: Tactical Air Controllers in Afghanistan and Iraq*, Williams Ford Texas A&M University Military History Series (College Station, TX: Texas A&M University Press, 2007)). Accounts of the US Army are described in Richard W. Stewart, "The United States Army in Afghanistan: Operation Enduring Freedom, October 2001 - March 2002", (2003) http://www.history.army.mil/brochures/Afghanistan/Operation%20Enduring%20Freedom.htm (accessed November 12, 2014) and Donald P. Wright, James R. Bird, Peter W. Connors, Scott C. Farquhar, and others, *A Different Kind of War: The United States Army in Operation Enduring Freedom (OEF), October 2001-September 2005* (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, May, 2010), http://usacac.army.mil/cac2/csi/docs/DifferentKindofWar.pdf (accessed December 8, 2014). In relation to carrier operations, publications of Lambeth and Grant are informative (Benjamin S. Lambeth, *American Carrier Air Power at the Dawn of a New Century* (Santa Monica, CA: RAND Corporation, 2005), http://www.dtic.mil/dtic/tr/fulltext/u2/a440448.pdf (accessed November 28, 2013), 9-38, and Rebecca Grant, *Battle Tested: Carrier Aviation in Afghanistan and Iraq* (Washington, DC: IRIS Press, 2005)). Lambeth's *Airpower Against Terror* is the most authoritative publication with regard to air operations until early 2002 (Benjamin S. Lambeth, *Airpower Against Terror: America's Conduct of Operation Enduring Freedom* (Santa Monica, CA: RAND Corporation, 2005), http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG166-1.pdf (accessed November 13, 2011)), although publications of Rebecca Grant and Tim Ripley are informative as well (Tim Ripley, *Air War Afghanistan: US and NATO Air Operations From 2001* (Barnsley: Pen & Sword Books Aviation, 2011),

Furthermore, these publications strongly focus on the operations and the immediate supporting functions. This leads to the conclusion that additional context is required, while description of operational events can remain relatively brief.

Chapter one identified several knowledge gaps in relation to discourses on airpower, irregular warfare, airpower in irregular warfare, and military change. These gaps converge in the main research question of this study: what was the role of the air weapon during the conflict in Afghanistan during the period from 2001 to 2016, how did this role evolve, and how can this evolving role be explained? Chapter one also argued that the debate on military innovation and adaptation, or military change, can be used for distillation of a frame of reference. This frame of reference will be used to describe and explain historical developments, in this case air operations in Afghanistan. Chapters two and three then provided the conceptual and operational backgrounds of the employment of the air weapon in Afghanistan at the dawn of the twenty first century. This chapter and the three chapters that follow will turn to the actual employment of airpower, in line with the four phases of the conflict identified in chapter three. As annunciated in chapter one, this will be done with the manifestations and driving factors found in the discourse on military change. Paragraphs 4.2 and 4.3 describe development of strategy, and the manner in which the strategy was reformulated into a role of the military in general and the role of the air weapon in particular, as it manifested itself in its core business: conduct of operations. Paragraphs 4.4 to 4.7 then address the supporting functions that influence success or failures of the plans and operations along the lines of the remaining manifestations of military change. Paragraph 4.8 then analyzes the developments of these manifestations, and searches for driving factors, again using the frame of reference of military change. The concluding paragraph then describes and explains the role of airpower in the first phase of the conflict, and puts it in perspective of the debate on airpower in irregular warfare.

4.2. Strategy: Focus on Terrorists in Afghanistan

As stated in chapter one, the process of formulating strategy starts with defining political end states, after which the actual strategies are formulated by adding ways and means to the description. Subsequently, strategies are ideally reformulated several times within the politico-military hierarchy for the purpose of making strategy practicable for all levels of military operations. After September 11, 2001, it became clear to the Bush Administration that a response was required. But defining a political end state was problematic. The most obvious opponent was Al Qaida, the organization the perpetrators of the terrorist attacks of September 11 belonged to. But, as has been described in chapter three, the Bush Administration defined the perceived threats to be more broad, including international

and Rebecca Grant, *The First 600 Days of Combat: The US Air Force in the Global War on Terrorism* (Washington, DC: IRIS Press, 2004)).This summary is not exhaustive.

terrorism. That meant that the area of operations theoretically was not defined, which led some neoconservative members of the Bush government to argue that the real vital American interests were in Iraq. This idea was left because it received too little internal support, mainly in anticipation of lack of international support.[3] But the expansion of the threat remained. So, operation *Enduring Freedom* started as a legitimate response in Afghanistan with backing of the United Nations, and was later expanded to include response to terrorism, known as the "Bush Doctrine" and "Global War on Terror" (GWOT). It can be argued that the Bush Doctrine had the goal of protecting Americans and their allies by embracing American supremacy in a manner that allowed for pre-emptive intervention.[4] The GWOT in turn could be regarded as grand strategy, as it offered some idea for the use of the government's instruments of power, based on the policy of the Bush Doctrine.[5] What the strategy was lacking was a clearly defined end state, even though the immediate focus of attention was Al Qaida in Afghanistan. According to Donald Read, failing to understand the full scope of GWOT had led to multiple national strategies that had it broken down into several segments that could be understood more easily.[6]

As a result, translating policy and grand strategy that was formulated in this manner into a military strategy, a strategy for Afghanistan, and then an airpower strategy, became challenging in two respects. The first challenge to political and military planners encountered was conceptual. As the political end state was not entirely clear, it also became difficult to define the military effects that were required to support the political end state.[7] Operationalizing "terrorism" into a strategy to counter it was problematic. Secretary of Defense Donald Rumsfeld acknowledged this by indicating that the nation had to be defended against the "*unknown, the uncertain, the unseen, and the unexpected*".[8] Scholars agued that the terms "terror" and "terrorism" lacked sufficient specification to wage a war against.[9] Moreover, the specifications that did exist indicated that "terror" constituted a

3 Lambeth, *Airpower Against Terror*, 41-44, and Allard J.E. Wagemaker, "Afghanistan 2001-2011: Gewapende Interventie En Staatsvorming in Een Fragiele Staat [Afghanistan 2001-2011: Armed Intervention and Statebuilding in a Fragile State]", (Dissertation, Leiden University, October 25, 2012), 137.

4 See for instance: Robert Singh, "The Bush Doctrine", In: *The Bush Doctrine and the War on Terrorism: Global Responses, Global Consequences*, ed. Mary Buckley and Robert Singh (London and New York, NY: Routledge, 2006), 12-32, and Shah M. Tarzi, "The Folly of a Grand Strategy of Coercive Global Diplomacy: A Fresh Perspective on the Post-9/11 Bush Doctrine", *International Journal on World Peace* 31, no. 3 (2014): 27-52.

5 Tim Bird and Alex Marshall, *Afghanistan: How the West Lost Its Way* (New Haven, CT and London: Yale University Press, 2011), 57, and Haley Stauss, "U.S. Strategy in Afghanistan From 2001 to Today", *Pepperdine Policy Review* 5 (2012): 20-39, 20.

6 Donald J. Reed, "Why Strategy Matters in the War on Terror", (October, 2006) http://search.proquest.com.nlda.idm.oclc.org/docview/1266211234/791858D83ABD45E5PQ/1?accountid=35226 (accessed April 5, 2017).

7 Wagemaker, "Afghanistan 2001-2011", 139.

8 Donald H. Rumsfeld, "Transforming the Military", *Foreign Affairs* 81, no. 3 (2002) http://search.proquest.com.nlda.idm.oclc.org/docview/214304368?OpenUrlRefId=info:xri/sid:wcdiscovery&accountid=35226 (accessed April 5, 2017).

9 Chris Brown, "Reflections on the 'War on Terror', 2 Years on", *International Politics* 41, no. 1 (2004): 51-54, 53, Erik W. Goepner, "Measuring the Effectiveness of America's War on Terror", *Parameters* 46, no. 1 (2016): 107-120, 108 and 110, Michael Howard, "A Long War?", *Survival* 48, no. 4 (2006): 7-14, Michael Howard, "Mistake to Declare This a 'War'", *RUSI Journal* 146, no. 6 (2001): 1-4, Michael Howard, "What's in a Name? How to Fight Terrorism", *Foreign Affairs* 81, no. 1 (2002): 8-13, and Reed, "Why Strategy Matters".

method and "terrorism" a tactic. Neither constituted an identifiable enemy.[10] Even if the focus would be put on the organization of Al Qaida, it would be difficult to define victory, as the operation could be considered a failure when not all its members and especially its leaders were killed or captured and the organization was completely dismantled.[11] In short, the nature of the adversaries was not adequately defined, nor were the overall strategic objectives, resulting in a potential lack of focused attention by the various elements of national power, including military power.

Even though these strategic concepts fell short of identifying specific enemies, and also specific ends, for the GWOT, there were some indications of the means that were to be used to fight it. Although they had the benefit of hindsight, several scholars saw in the actions taken after September 11 confirmation of the dominant models for success in warfare, in which the information age military strove to achieve quick victory.[12] Rumsfeld implicitly confirmed this in 2002 in an article in *Foreign Affairs*.[13] As has been described in chapter two, transformation of the American military, in accordance with the end of the Cold War, had led politicians to regard the air weapon as the weapon of choice. Thus, planning efforts were complicated by some deep rooted beliefs. The combination of disdain for nation building by the US military, resulting from perceived dismal experiences of the Vietnam War and peace support missions of the 1990s, and the firm belief of effectiveness of the technologically advanced "transformed" military, resulted in a focus on short and decisive victory and quick withdrawal.[14] Formulated military strategy furthermore was constrained by political and geographical realities. The sheer distances from the envisioned staging areas to the operational area (Afghanistan) and diplomatic clearances from governments of surrounding countries that were needed to get there ruled out quick deployment of ground forces. Geography of Afghanistan and the relative dearth of logistical bases in the region impeded execution of large scale conventional operations. Some members of the Bush Administration did not want to commit a large force in Afghanistan due to the anticipated focus on Iraq in the future. Finally, the US wanted to refrain from a large amount of American troops on Afghan soil in order to be seen as an occupying force.[15] So in short, development of a strategy gravitated towards a rapid response against terrorists

10 Charles Peña, *Winning the Un-war: A New Strategy for the War on Terrorism* (Washington, DC: Potomac Books, 2007), xxviii, and Reed, "Why Strategy Matters".

11 Michael E O'Hanlon, "A Flawed Masterpiece", *Foreign Affairs* 81, no. 3 (2002): 47-63, 56-57.

12 Warren Chin, "Operation 'Enduring Freedom': A Victory for a Conventional Force Fighting An Unconventional War", In: *Grand Strategy in the War Against Terrorism*, ed. Thomas R. Mockaitis and Paul B. Rich (London and Portland, OR: Frank Cass, 2003), 57-76, 65, Alastair Finlan, *Contemporary Military Strategy and the Global War on Terror: US & UK Armed Forces in Afghanistan and Iraq 2001-2012* (Bloomsbury, New York, NY, London, New Delhi, and Sydney, 2014), 44.

13 Rumsfeld, "Transforming".

14 Bird and Marshall, *Afghanistan*, 48-52, and Wagemaker, "Afghanistan 2001-2011", 140.

15 John R. Ballard, David W. Lamm and John K. Wood, *From Kabul to Baghdad and Back: The US at War in Afghanistan and Iraq* (Annapolis, MD: Naval Institute Press, 2012), 33-35, Bird and Marshall, *Afghanistan*, 64-65, Finlan, *Contemporary Military Strategy*, 44, Seth G. Jones, *In the Graveyard of Empires: America's War in Afghanistan* (New York, NY and London: W.W. Norton, 2009), 115, Grant, *First 600 Days*, 51, Lambeth, *Airpower Against Terror*, 59-61, Ahmed Rashid, *Descent Into Chaos: The US and the Failure of Nation Building in Pakistan, Afghanistan, and Central Asia* (New York: Viking, 2008), 196, Woodward, *Bush at War*, passim, Wagemaker, "Afghanistan 2001-2011", 140, andWright, Bird, Connors, and others, *Different Kind of War*, 28 and 44.

in Afghanistan, using both a strong diplomatic and military component, but using the least amount of forces as possible, and with minimal attention paid to the option of nation building by American forces.

This notion was amplified by the second challenge, namely that of time constraints. In the direct aftermath of the attack on September 11, US Congress had authorized President Bush to *"use all necessary and appropriate force against those nations, organizations, or persons he determines planned, authorized, committed, or aided the terrorist attacks that occurred on September 11, 2001, or harbored such organizations or persons"*.[16] By then, the concept of GWOT had yet to be formulated. And even though some members of the Bush Administration preferred to incorporate Iraq in the strategy, the President and other members of his Cabinet rather focused on Afghanistan, the country that supported the perpetrators of the attack.[17] However, there was a sense that time was critical. By late 2001, the weather in Afghanistan was already starting to deteriorate in some parts of the country, and the Bush Administration feared that delays could have an adverse affect on the support then enjoyed by key Muslim countries, as well as by the population of the United States.[18]

So, formulation of a formal strategy was murky and under development, especially at the levels of policy and grand strategy. In the meantime, time was of the essence. Direct result was that a coherent military strategy was absent, and that operational plans partially had to fill the gap. In the operational sphere, there was some precedent. The US had suffered from terrorist attacks in the 1990s, which resulted in increased American attention for Counterterrorism (CT), Al Qaida, and Osama bin Laden. On August 20, 1998, the Clinton Administration responded to terrorist attacks on US Embassies in Tanzania and Kenya with cruise missile attacks on Osama bin Laden and Al Qaida sites in Sudan and Afghanistan. And after the attack on the USS *Cole* in the Yemenite Port of Aden on October 12, 2000, planning orders were given to investigate the options for response, with codenames *Infinite Reach* and *Infinite Resolve*. The latter involved fourteen options, in essence various combinations of small scale attacks conducted by SOF or strike aircraft, missile strikes, and covert activity. These efforts did not produce significant results. Osama bin Laden was not killed in the cruise missile attack of 1998, and the planning orders had no follow-up.[19] So, in essence, there was neither coherent strategy nor sound operational planning for success available, even for Afghanistan, just a list of options for the use of force.

16 As cited by Peña: Peña, *Winning the Un-War*, 10.

17 Ballard, Lamm, and Wood, *From Kabul to Baghdad and Back*, 33, and Joseph J. Collins, "Initial Planning and Execution in Afghanistan and Iraq", In: *Lessons Encountered: Learning From the Long War*, ed. Joseph J. Collins and Richard D. Hooker (Washington, DC: National Defense University Press, 2015), 21-88, 24.

18 Bird and Marshall, *Afghanistan*, 65, Lambeth, *Airpower Against Terror*, 59, Walter L. Perry and David Kassing, *Toppling the Taliban: Air-ground Operations in Afghanistan, October 2001/June 2002* (Santa Monica, CA: RAND Corporation, 2015), https://www.rand.org/pubs/research_reports/RR381.html (accessed July 6, 2017), 12, Woodward, *Bush at War*, passim, and Wright, Bird, Connors, and others, *Different Kind of War*, 44.

19 Ballard, Lamm, and Wood, *From Kabul to Baghdad and Back*, 20-30, and Walter L. Perry and David Kassing, *Toppling the Taliban: Air-ground Operations in Afghanistan, October 2001/June 2002* (Santa Monica, CA: RAND Corporation, 2015), https://www.rand.org/pubs/research_reports/RR381.html (accessed July 6, 2017), 18-22.

What followed was a period lasting from mid-September until the start of operations on October 7, 2001, in which formulation of operational goals and operational planning coincided. On September 17, the President approved a plan that was a combination of the separate options briefed by George Tenet, Director of the Central Intelligence Agency (CIA), and US Army General Henry Hugh Shelton, the Chairman of the Joint Chiefs of Staff (JCS). Tenet proposed to insert CIA operatives and SOF, who were in a position to move in quickly, in order to link up with the loosely linked assembly of solidarity groups called Northern Alliance.[20] Shelton offered several military options to fight Al Qaida. All options in one way or another involved airpower, varying from an attack using only cruise missiles to a bombing campaign combined with a ground operation. The Cabinet finally decided to execute a combination of Tenet's plan and a bombing campaign. So, the ways and means of the strategy were formulated. By then, the goals were also more clear:

- Topple the Taliban regime;
- Dismantle Al Qaida and deny its supporters sanctuary in Afghanistan;
- Help a democratic government emerge in Afghanistan.[21]

Formally, actions were still directed towards Al Qaida, and theoretically, there was still a diplomatic solution, provided that the Taliban government would cooperate in dismantling Al Qaida training camps, and handing over the perpetrators of the attacks on 9/11. They however refused on September 21, leaving only the military option open. On October 3, 2001, the Cabinet reached consensus on incorporating regime change in Afghanistan as an additional strategic goal.[22] This was a more specific formulation of the political end state: Afghanistan had to cease being a sanctuary for terrorists.[23]

This expansion of strategic goals had important implications. To the loosely formulated end of combating terrorism were added the specific aims of regime change and *de facto* nation building. Especially the latter addition was problematic because, as has been described above, the American strategy did not encompass nation building. President Bush recognized this and argued that the Afghans were responsible for their own security, and that additional support should come from coalition partners. Both were, however, not guaranteed.[24] Consequently, the strategy lacked the option of consolidating victory, however defined, through stabilization operations or nation building.[25] It had as a consequence that the strategy in effect became strictly military action to topple the Taliban and dismantle terrorist organizations active in Afghanistan as much as possible. So, the

20 See chapter three for description of the socio-political composition of Afghan society and the role of power holders.

21 Ballard, Lamm, and Wood, *From Kabul to Baghdad and Back*, 32-35, Chin, "Operation 'Enduring Freedom'", 62, Franks, *American Soldier*, 258-262, and Perry and Kassing, *Toppling*, 25-26.

22 Bird and Marshall, *Afghanistan*, 62, Lambeth, *Airpower Against Terror*, 53, and Perry and Kassing, *Toppling*, 27-28.

23 Wagemaker, "Afghanistan 2001-2011", 140-141.

24 Wagemaker, "Afghanistan 2001-2011", 137-138.

25 Wagemaker, "Afghanistan 2001-2011", 141.

strategic scheme had the characteristics of a punitive expedition against the perpetrators of the terrorist attacks of September 11, 2001, as well as against their their hosts.[26] As a result, the existential threat of international terrorism and the strategic problem of countering it increasingly became formulated in military operational terms.[27] This in turn blurred the distinction between strategic levels and the operational level.

In conclusion, strategy development in the context of the impending start of operation *Enduring Freedom* suffered from several flaws. The political end state was ill-defined. The concept of GWOT was still in development, but suffered from conceptual challenges. It did not have an exact scope, and it lacked a defined end state. Afghanistan, and later Iraq, could be viewed as fronts in the war on terror, a war that did not have clear boundaries.[28] Formulated differently, it became impossible to define victory. For Afghanistan, this was partially compensated by adding the strategic goals of regime change and *de facto* stabilization operations. The result was that military operations ran the risk of losing meaning in a larger context, and of losing focus during its execution because of unclarity of the desired effects. A citation by Rebecca Grant of the commander of the US Air Force Special Operations Command (AFSOC) is telling. Even when the operation was well underway, and Special Operations Forces were already in theater, the commander of AFSOC had the impression he and his forces were not executing a strategy of any kind, and instead "*everybody was looking for something to try and when we tried this, this was working*".[29] While this paragraph showed that the Bush Administration showed attempts to formulate strategy, it was at least incomplete, making it difficult to determine when the conflict was over. It lacked realistic options for long term consolidation. In the process, the distinction between the strategic levels and the operational level to a certain extent became blurred.

4.3. Plans and Operations: Toppling the Taliban

4.3.1. Initial Planning

Designing a plan following the terrorist attacks on September 11, 2001, was no sinecure. Politicians and military planners soon focused on Afghanistan, as the perpetrators of the terrorist attack had found refuge there. United States Army General Tommy Franks, as commander of Central Command (CENTCOM) was in charge of planning and executing military operations in the area that spanned most of central Asia, including Afghanistan, and parts of Africa (appendix 1.4 shows a map of CENTCOM's area of operations). Franks

26 Martijn W.M. Kitzen, "The Course of Co-Option: Co-option of Local Power-Holders As a Tool for Obtaining Control Over the Population in Counterinsurgency Campaigns in Weblike Societies", (Dissertation, University of Amsterdam, December 14, 2016), 354.

27 Wagemaker, "Afghanistan 2001-2011", 139.

28 Reed, "Why Strategy Matters".

29 Grant, *First 600 Days*, 57.

could not fall back on contingency planning to address Al Qaida and the Taliban in Afghanistan. After the Soviet Union had left Afghanistan in 1989, the United States largely lost interest in the country. As the terrorist threat rose in the late 1990s the US developed several responses. None however specifically addressed a situation as encountered in Afghanistan. As a result, Franks only had some general options, varying from small scale covert operations and cruise missile attacks to land invasion of Army troops.[30] Also, the planning was time constraint. Franks and his operational level staff in Tampa worked in parallel to planning at the strategic level in Washington to provide the Bush Administration and the Joint Chiefs of Staff with workable military options. The final plan involved insertion of the Central Intelligence Agency (CIA) operatives inside Afghanistan to establish links with leaders of Northern Alliance Forces, after which SOF teams augmented with US Air Force Joint Terminal Attack Controllers (JTACs) to advise and assist the Northern Alliance leaders in engaging Taliban and Al Qaida. Preparations were also made to deploy US air assets in the region, using existing bases and aircraft carriers. Besides the CIA and SOF, preparations were also made for deployment of US Army and US Marine Corps ground units.[31] See appendix 1.5 for a map showing major bases used in the opening stages of operation *Enduring Freedom*.

Franks' final operational plan consisted of four phases. First, conditions needed to be set in order to provide operational commanders with flexibility. This involved the necessary preparations for the build up of forces, such as positioning aircraft carriers, receiving permissions for the use of foreign bases in Afghanistan's neighboring countries such as Pakistan, Uzbekistan, and Kyrgyzstan, and overflight rights. Second, the necessary level of control of the Afghan airspace needed to be established in order to enable aircraft that by design were vulnerable to ground fire to operate freely. This would set conditions for follow-on operations. This entailed attacking the rudimentary Taliban Air Defense (AD) network, consisting of air defense radars, guided Surface to Air Missiles (SAMs), unguided Anti Aircraft Artillery (AAA) systems, Mig-21 and Su-22 fighters. Also, other elements of Taliban airpower were scheduled to be attacked, such as Antonov transport aircraft, Mi-24 attack helicopters and Mi-8/17 transport helicopters. Third, and partly simultaneously, direct combat action was to be directed against the Taliban and Al Qaida. This was envisioned to be done with small SOF teams, who had the dual task of linking with the indigenous anti-Taliban forces in Afghanistan, and providing them with the necessary air support to engage the numerically superior Taliban and Al Qaida forces. Finally, a post-conflict arrangement was required. As has been described in the previous paragraph, nation building was not part of the strategy to be executed by US forces. Rather, the US relied on a, yet to be formed, coalition ground force that was able to prevent the Taliban and Al Qaida from re-emerging and facilitate humanitarian relief and reconstruction activities. Concurrently with planning for the operation, operatives of the CIA were to be

30 Franks, *American Soldier*, 250-151, and Lambeth, *Airpower Against Terror*, 49.

31 DeLong, *Inside Centcom*, 17-37, Franks, *American Soldier*, 238-282.

deployed into Afghanistan to muster indigenous anti-Taliban forces, and gather intelligence on Al Qaida elements. The operational plan revealed the airpower role as well. It was to support Franks' operational plan by gaining air superiority, and help operational progress by delivering fire power autonomously or in conjunction with SOF.[32]

4.3.2. Breaking the Stalemate in the North

First to enter Afghanistan were the teams of the CIA, of which the first of seven was flown in by Mi-8/17 "Hip" transport helicopters on September 26, 2001. These helicopters were subsequently used for intra-theater transport, resupply and medical evacuation to Dushanbe.[33] Meanwhile, the Intelligence, Surveillance, and Reconnaissance (ISR) effort was stepped up. The CIA had operated Predator Unmanned Aerial Vehicles in the area for over a year, in search of Osama bin Laden and other leaders of Al Qaida. In addition, reconnaissance missions were flown during the week before the start of the bombing campaign by F-14 "Tomcat" fighter-bombers and EA-6B "Prowler" electronic warfare aircraft to obtain information on targets.[34] Finally, two days before the actual start of the air campaign, the first "Commando Solo" missions were executed. These were EC-130 planes that broadcasted radio transmissions in order to influence both Taliban and Al Qaida and the Afghan population.[35]

Operations commenced on October 7, 2001, with seventeen long range bombers, twenty five carrier-based fighter-bombers and fifty Tomahawk Land Attack Missiles (TLAMs) launched from American and British ships and submarines. The aircraft were accompanied by eighteen fighter sweeps and E-6B "Prowlers" for protection.[36] Also on the first day, C-17 "Globemaster III" transport aircraft flying directly from Ramstein Air Base in Germany dropped the first of many rations for the Afghan population in an effort to relieve the detrimental humanitarian situation.[37] The initial attacks were aimed at Taliban air defense sites, airfields, command and control centers and other strategic targets across Afghanistan

32 Ballard, Lamm, and Wood, *From Kabul to Baghdad and Back*, 36-37, Lambeth, *Airpower Against Terror*, 57-60 and 74-84, Franks, *American Soldier*, 269-272, Ripley, *Air War Afghanistan*, 20-30, and Wright, Bird, Connors, and others, *Different Kind of War*.

33 Camp, *Boots on the Ground*, 294, and Schroen, *First in*, 25, 151-152 and 230.

34 Tony Holmes, *F-14 Tomcat Units of Operation Enduring Freedom*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing Limited, 2008), 20-22.

35 Don Chipman, "Air Power and the Battle for Mazar-e Sharif", *Air Power History* 50, no. 1 (2003): 34-45, 38, Lambeth, *Airpower Against Terror*, 69, and Wright, Bird, Connors, and others, *Different Kind of War*, 65.

36 Rebecca Grant, "The Afghan Air War", (Aerospace Education Foundation, Arlington, VA, September, 2002) http://higherlogicdownload.s3.amazonaws.com/AFA/6379b747-7730-4f82-9b45-a1c80d6c8fdb/UploadedImages/Mitchell%20Publications/The%20Afghan%20Air%20War.pdf (accessed November 14, 2014), 13, Lambeth, *Airpower Against Terror*, 78-80, and Wright, Bird, Connors, and others, *Different Kind of War*, 64.

37 Daniel L. Haulman, "Intertheater Airlift Challenges of Operation Enduring Freedom", (Air Force Historical Research Agency, Maxwell Air Force Base, AL, November 14, 2002) http://www.dtic.mil/dtic/tr/fulltext/u2/a434031.pdf (accessed November 28, 2013), 4, Lambeth, *Airpower Against Terror*, 81, and Wright, Bird, Connors, and others, *Different Kind of War*, 64, 82 and 85-86.

in order to gain uncontested control of Afghan airspace.[38] For a graphic depiction of locations of strikes see appendix 1.6.

This mission was basically completed on the second day, which allowed for aircraft to reduce their altitude and also to fly during daylight hours. This increased the performance of the weapon systems in terms of responsiveness and accuracy. It also allowed for operations of relatively slow aircraft. Stealthy aircraft, such as the long range B-2 bomber who flew its missions directly from its home base in the United States to the area of operations and then to Diego Garcia, could end their missions.[39] The bombing of fixed targets continued for another nine days, however, allegedly because of CENTCOM's strict rules of determining whether a target was effectively neutralized. Intelligence analysts on numerous occasions were unable to verify whether the targets were effectively neutralized, due to strict conditions that had to be met before a target was deemed to be no longer a threat. As a result, it took relatively much time before attention could be shifted to other targets. These so-called Battle Damage Assessment (BDA) rules necessitated re-attack on several targets, as CENTCOM's intelligence analysts officially were not able to determine complete destruction of a specific target. This led to frustration at the Combined Air Operations (CAOC), located on Prince Sultan Air Base in Saudi Arabia. The CAOC had to plan these re-attacks, but did not see the need for attacking the same target multiple times, as they measured effectiveness of this phase of the air campaign not by destruction of targets, but by its effect it had on the ground-to-air threat.[40]

As the campaign entered its third week there were concerns, mostly in the media, about the effectiveness of the campaign. Up and until then, the air operations were the only visible activity of the US military, and some authors criticized the end state and progress of the campaign.[41] To some extent the observation by the critics was correct, but the main reason was delay of an essential part of the plan, namely inserting the Special Operations Forces which had the task of advising the Northern Alliance commanders and coupling their activities with the availability of air support. Due to delays in the process of obtaining diplomatic clearances and bad weather, these Special Operations Forces were not deployed yet, and the Bush Administration, and by extension General Franks and the senior commander in the area of operations, US Army Colonel John Mulholland, were put under pressure to execute this essential element of the operation.[42]

Between October 19 and November 11, the first seven of nine Operational Detachment-Alpha (ODAs) were inserted into the north and the west of Afghanistan to link up with CIA operatives that had established contact with Northern Alliance leaders. ODAs were

38 Grant, "Afghan Air War", 14, and Wright, Bird, Connors, and others, *Different Kind of War*.

39 Lambeth, *Airpower Against Terror*, 86 and 301-301, Ripley, *Air War Afghanistan*, 47-48, and Thomas Withington, *B-2A Spirit Units in Combat*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing, 2006), 48-53. Appendix 1.6 shows maps on locations of initial strikes and provides for reference to more maps.

40 Lambeth, *Airpower Against Terror*, 87, and Ripley, *Air War Afghanistan*, 47-48.

41 Grant, "Afghan Air War", 18-19, and Lambeth, *Airpower Against Terror*, 106-107.

42 Woodward, *Bush at War*, 213-249.

twelve man teams and included US Air Force JTACs (see appendix 1.7 and 1.8 for maps with major ODA locations in North and South Afghanistan).[43] They advised Northern Alliance leaders on operational and tactical matters in the fight against Al Qaida en Taliban. The JTACs on the ground, but also Forward Air Controllers (Airborne) (FAC(A)) in the air[44], were equipped with laser designators, laser range finders, GPS trackers, thermal sights, and satellite communication. They used this equipment to find and mark enemy forces and communicate this information to attack aircraft. This enabled ground forces to neutralize opposing forces within a very short time span and without being in direct contact with them.[45] Consequently, once ODAs were inserted, targeting shifted from fixed to more mobile targets such as troop concentrations and vehicles. JTACs and FAC(A)s were able to call in airstrikes on mobile dispositions of Taliban forces within a matter of minutes, effectively making information age airpower available to Northern Alliance forces.[46] The psychological element of the air campaign was expanded as well. Besides the already mentioned humanitarian airdrops and the "Commando Solo" missions, the psychological element of the air campaign was augmented by leaflet drops as of October 15.[47]

Use of JTACs and FACs led to a rather significant shift of the way targets were acquired and what the mission posture of the aircrew was. While pre-planned targets allowed for extensive planning in both the CAOC and mission planning facilities of individual units, information on enemy positions now had to be obtained in flight due to unavailability of stationary targets. The attack aircraft went to the few pre-planned targets that were left, and remained on station, if need be commuting back and forth to orbiting tanker aircraft, until they were assigned a target from the CAOC by an airborne command and control aircraft.[48]

43 Camp, *Boots on the Ground*, passim, and Wright, Bird, Connors, and others, *Different Kind of War*, 73-75.

44 Several acronyms can be found for personnel that deals with directing air support to ground operations, such as for instance Enlisted Tactical Air Controller (ETAC), Ground Forward Air Controller (GFAC), Forward Air Controller (FAC), Forward Air Controller (Airborne) (FAC-A or FAC (A)). Differences reflect the service of that personnel, position within the system, rank, and education and qualifications. For this study, the official United States dictionary of military and associated term is used. Two types of personnel at the time were operating in Afghanistan. First is the Forward Air Controller (FAC), which is "*An officer (aviator/pilot) member of the tactical air control party who, from a forward ground or airborne position, controls aircraft in close air support of ground troops*". When that officer is an aviator who, in close coordination with ground forces, does the same from an airborne platform, he is called a Forward Air Controller (Airborne) FAC(A). (United States Joint Chiefs of Staff, *Joint Publication 1-02: Department of Defense Dictionary of Military and Associated Terms, 8 November 2010 (As Amended Through October 2015)*, October 15, 2015, http://www.dtic.mil/doctrine/new_pubs/jp1_02.pdf (accessed November 18, 2015), 95, and Ayton Mark, "Cleared Hot!", *Air Forces Monthly*, no. 213 (2005): 78-82). The second is the Joint Terminal Attack Controller (JTAC), who is "*A qualified (certified) Service member who, from a forward position, directs the action of combat aircraft engaged in close air support and other offensive air operations*" (United States Joint Chiefs of Staff, *JP 1-02 (2015)*, 137). The practical difference is that a FAC is allowed to control aircraft and does not necessarily have to be at the front line but can also be located in a command post. A JTAC is at the front line and has the responsibility to direct ordnance on a target, but has limited authority to control aircraft compared with a FAC. A glossary of several command and control agencies across the US Military can be found in doctrine on Close Air Support:United States Joint Chiefs of Staff, *Joint Publication 3-09.3: Close Air Support*, July 8, 2009, http://www.fas.org/irp/doddir/dod/jp3_09_3.pdf (accessed January 29, 2014), II-3.

45 Lambeth, *Airpower Against Terror*, 94-95, and Ripley, *Air War Afghanistan*, 51-56.

46 Lambeth, *Airpower Against Terror*, 110-135, Ripley, *Air War Afghanistan*, 51-56, and Wright, Bird, Connors, and others, *Different Kind of War*, 77 and 86.

47 Wright, Bird, Connors, and others, *Different Kind of War*, 66.

48 Holmes, *F-14 Tomcat Units*, 41-43, Grant, "Afghan Air War",16, and Lambeth, *Carrier Air Power*, 22.

Within this concept, the use of FAC(A)s was very important. A system of engagement zones was helpful for these teams. FAC(A)s in F-14s were able to search for targets in designated engagement zones, and had the authority to engage those targets themselves, or direct other aircraft to them.[49] As these zones were activated and de-activated according to the needs, they opened possibilities for engaging fleeting targets with minimal risk for fratricide on forces nearby the requesting unit.[50]

The Taliban and Al Qaida did not have an adequate answer to American airborne firepower. Part of this was due to the inherent weakness of especially the Taliban, who ran an impoverished failed state. The previous chapter explained that primary function of the solidarity groups was protection of its members. Loyalties of these interest groups could change relatively easy. Such a state stood relative little chance against massive western firepower, as it could diminish support for the Taliban as soon as other interests, most notably survival, prevailed. In addition, the Taliban made the mistake of not reverting to an insurgency immediately, a course of action that would appeal to their strength. In addition, they made the tactical mistake of letting themselves to be caught in the open, where they were vulnerable to air attack. Also, Al Qaida could offer little assistance tactically.[51] On the other hand, and from the perspective of the Northern Alliance, this concentration of information age airborne firepower provided the Northern Alliance leverage over the Taliban and Al Qaida force. The Taliban and Al Qaida forces were subjected to a classical "air-ground dilemma". In order to defend themselves against ground attack, the Taliban had to concentrate themselves, making them vulnerable to air attack. Reversely, dispersal in reaction to the threat coming from the air made them vulnerable to ground attack by the Northern Alliance forces. Availability of airpower to Northern Alliance forces that way tipped their balance with the Taliban and Al Qaida.[52] What the Taliban and Al Qaida could do was exploit the sensitivity to unintended damage. They did so by exaggerating claims of collateral damage and civilian casualties in the media with the goal of influencing public support for the operation, and by positioning military personnel and equipment near residential areas in order to complicate the targeting process.[53]

In northern Afghanistan, several major cities were taken, in some cases after heavy fighting for instance in Mazar-e-Sharif. Mazar-e-Sharif fell on November 10. Northern Alliance Forces captured Herat and Kabul on November 12 and 13. Kunduz in the North

49 Call, *Danger Close*, 111-115, Chipman, "Air Power", 39, Holmes, *F-14 Tomcat Units*, 39-43, Lambeth, *Airpower Against Terror*, 94-96, and Lambeth, *Carrier Air Power*, 14.

50 Lambeth, *Airpower Against Terror*, 94-95.

51 Chin, "Operation 'Enduring Freedom'", 61 and 66-67, and Perry and Kassing, *Toppling*, 62-63.

52 Call, *Danger Close*, 39. See for description of the battle for Mazar-e-Sharif for instance: Perry and Kassing, *Toppling*, 48-57, and Brian Glyn Williams, "General Dostum and the Mazar I Sharif Campaign: New Light on the Role of Northern Alliance Warlords in Operation Enduring Freedom", *Small Wars & Insurgencies* 21, no. 4 (2010): 610-632.

53 Charles J. Wallace, "Airpower Against 'irregular' Adversaries: How Terrorist, Insurgent, and Guerrilla Forces Have Attempted to Negate Airstrikes", (Thesis, Maxwell Air Force Base, Alabama, June, 2006) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWN0ZV9tZWRpYS8zMTQ5Mg==.pdf (accessed June 21, 2013), 70-71.

fell on November 26, shortly after the Pakistani government allegedly was allowed to fly out personnel of their intelligence agency ISI. That agency had maintained a relationship with the Taliban.[54] An exception to the air-ground dilemma was the uprising of several hundred Taliban and Al Qaida prisoners which were held in the Qal-i-Jangi fortress near Mazar-e-Sharif. The uprising resulted in a siege lasting from November 24 to December 1. Despite heavy bombing, eighty six remaining prisoners still occupied the basements. They only surrendered after the basement was flooded with ice-cold well water and burning diesel fuel.[55] Nevertheless, by December 1, 2001, US aided indigenous Afghan forces were in control of most of the east and north of Afghanistan.

4.3.3. Operations in Southern Afghanistan

In South Afghanistan, the situation was different from the north, because there were no or few anti-Taliban forces to cooperate with. This initially required deployment of a large ground force, relative to the few and small teams deployed in the north. The first operation was executed by US forces on the night of October 19 to October 20, the same night the first ODA was inserted in the north. It involved an airdrop of approximately 200 US Army Rangers to seize an airstrip near Kandahar called Objective Rhino, assisted by an AC-130 gunship and B-1 bombers. After five and a half hours, the task force was extracted. Simultaneously, a reinforced special operations force squadron was airlifted by helicopter from the USS *Kitty Hawk* to obtain actionable intelligence from a residential compound near Kandahar that was owned by Mullah Omar, and was codenamed Objective Gecko. They succeeded in taking the compound, but found neither useful intelligence nor Mullah Omar. Both operations primarily had a psychological effect of showing that the US and Coalition forces could strike at will anywhere in Afghanistan.[56]

However, by mid-November 2001 Hamid Karzai, a Pashtu, was able to receive support from several local power holders with the help of money provided by the CIA, and the eighth ODA backed by airpower. As was the case in the northern part of Afghanistan, the combination of indigenous forces and airpower was able to repel Taliban and Al Qaida forces, most notably in the battle of Tarin Kot on November 18, 2001, in the province of Uruzgan.[57] Finally, operations were directed towards the city of Kandahar. The Taliban

54 Camp, *Boots on the Ground*, 294-295, and Wright, Bird, Connors, and others, *Different Kind of War*, 337-338. The event of the extraction of ISI personnel was first mentioned by Berntsen (Berntsen and Pezzullo, *Jawbreaker*, 241), who stated that he heard it as a rumor. He was cited by Grau (Grau, "Coils of Anaconda", 87). Bird and Marshall used Berntsen as well as other sources and state that is it now widely believed to be true (Bird and Marshall, *Afghanistan*, 81-82). So, this information is not confirmed but plausible, especially regarding the historical interest Pakistan had in the country.

55 Perry and Kassing, *Toppling*, 58, Wright, Bird, Connors, and others, *Different Kind of War*, 83-85.

56 Camp, *Boots on the Ground*, 247-251, Nathan S. Lowrey, *From the Sea: US Marines in Afghanistan, 2001-2002*, US Marines in the Global War on Terrorism (Washington, DC: United States Marine Corps History Division, 2011), http://www.mcu.usmc.mil/historydivision/Pages/Publications/Publication%20PDFs/FROM%20THE%20SEA.pdf (accessed February 16, 2015), 59-60, Stewart, "OEF", 14, and Wright, Bird, Connors, and others, *Different Kind of War*, 95-96.

57 Camp, *Boots on the Ground*, 215-233 and 295-296, and Kitzen, "Course of Co-Option", 361-363.

chose not to fight. Most fled, and the remainder surrendered to Karzai. Meanwhile, however, another Pasthu power holder, a political rival of Karzai named Gul Agha Sherzai who was advised by the ninth ODA, actually moved in and occupied the city's main buildings on December 7. This led to tension between Karzai and Sherzai for a short while, until they agreed on political settlement.[58]

So, in the southern part of Afghanistan, indigenous forces played an important role too, although more US ground forces were required than in the north. US Marines executed the final operation in the south. A force consisting of personnel of two Marine Expeditionary Units, called Task Force 58, was airlifted from the USS *Peleliu*. By the initial name of operation *Swift Freedom*, Task Force 58 flew 450 miles through Pakistani airspace on November 25 to the same airstrip the Rangers conducted their raid a month earlier. The move required a stop at Shamsi Airfield in Pakistan and a mid-air refueling of some of the helicopters. They were accompanied by P-3 and E-8C surveillance aircraft, and AV-8B Harriers were standing by on the carriers. However, this time the presence needed to be longer, so the area became known as Forward Operating Base (FOB) Rhino. The operation also brought the first land based aircraft in theater in the form of CH-53 "Stallion" transport helicopters and AH-1 "Cobra" attack helicopters. From FOB Rhino they conducted interdiction missions and raids and in December moved to occupy Kandahar Airfield, at which they succeeded on December 13. First 1,000 and later 1,400 US and Coalition personnel stayed at Camp Rhino until 1 January 2002, when the camp was closed.[59] A map with major movements is provided in appendix 1.9.

4.3.4. Tactical Effectiveness of Airpower

During this phase, the air weapon was very effective in engaging identified Taliban forces. On occasion however, the limits of their capabilities were reached. For instance, despite improvements to technological means of distinguishing own troops from the enemy, it was not always possible to do so. A combination of effective cover and concealment techniques of the opposing forces and the fluid state of the non-linear battlefield on more than one occasion prevented aircrews to quickly identify friend from foe, despite modern identification equipment and sensors.[60] Also, weather and terrain occasionally intervened. Due to the landlocked location of Afghanistan, in combination with the initial inability to use the limited number of airfields in Afghanistan, availability of jet fuel became a problem. It prevented fighter aircraft to be based in theater. As a result, they had to take off from carriers on station in the Arabian Sea or from airfields in Central Asia, which required

58 Camp, *Boots on the Ground*, 235-246, and Wright, Bird, Connors, and others, *Different Kind of War*, 110-112. See appendix 1.8 for map.

59 Camp, *Boots on the Ground*, 257-263 and 274-275, and Lowrey, *From the Sea*, 112-129, 154 and 176-180.

60 Lambeth, *Airpower Against Terror*, 129.

multiple hook ups with refueling aircraft to reach Afghanistan, execute their missions, and return to their carriers or airbases.[61] Also, resupply of forces on the ground was initially done via airdrop, a procedure the army normally regarded as a means of last resort. Even when airstrips became available, support on the ground was minimal, so everything had to be flown in.[62] Sand and dust put increased strain on maintenance of the aircraft. It also influenced especially helicopter operations, when "brown out" conditions hampered visibility upon landing and decreased the effectiveness of night vision equipment. Finally, weather conditions decreased some of the weapons, such as for instance laser guided bombs, which could not be used with low cloud covers common in the Afghan winter time.[63]

4.3.5. Tora Bora and Zhawar Kili

By early December, 2001, the Taliban effectively ceased to exist as a political and military power and, at least for the time being, went into hiding, along with members of Al Qaida. US attention then shifted from ousting the Taliban to finding Osama bin Laden and Al Qaida and Taliban remnants which had fled to the inhospitable mountainous area of Tora Bora in the east of Afghanistan. From December 3 until December 17, Special Operations Forces and indigenous Afghan forces fought elements of the Taliban and Al Qaida, reportedly including Osama bin Laden himself, who had found shelter in as many as 200 cave complexes which had to be addressed one by one.[64] Roughly the same situation existed near the town of Zhawar Kili, albeit without the known presence of Osama bin Laden and with fewer caves. Nevertheless, it took friendly forces the first two weeks of January to defeat enemy forces and take control of the area.[65] The fighting in Tora Bora and Zhawar Kili represented some of the most intense aerial bombing of the war thus far.[66]

This phase of operation *Enduring Freedom* was less successful than the previous phase, as most of Taliban and Al Qaida leadership were able to flee to neighboring Pakistan, especially during the fighting at Tora Bora. Although debated, most reasons for this were the nature of the terrain, which offered possibilities for extracting the area unseen, problematic winter weather, which hampered allied operations, and the less effective combination of US and indigenous forces. As for the last reason, the indigenous forces were

61 Ripley, *Air War Afghanistan*, 73-76.

62 Lambeth, *Airpower Against Terror*, 269-272.

63 Lambeth, *Airpower Against Terror*, 140 and 146.

64 See for an informative study on the caves of Afghanistan, and some of the tactical challenges that fighting in them entailed: Mir Bahmanyar and Ian Palmer, *Afghanistan Cave Complexes 1979-2004: Mountain Strongholds of the Mujahideen, Taliban & Al Qaeda*, Fortress, ed. Marcus Cowper and Nikolai Bogdanivic (Oxford: Osprey Pubishing, 2004).

65 Benjamin Lambeth, "Operation Enduring Freedom 2001", In: *A History of Air Warfare*, ed. John Andreas Olsen (Washington, DC: Potomac Books, 2010), 255-277, 263, Grant, "Afghan Air War", 24-25, and Wright, Bird, Connors, and others, *Different Kind of War*, 115-120.

66 Lambeth, *Airpower Against Terror*, 149-153.

highly motivated to remove the Taliban from power. They were however less inclined to fight Al Qaida and Taliban remnants in Tora Bora, which made them susceptible to bribes from Taliban and Al Qaida. They subsequently let many of Al Qaida and Taliban members leave unhindered.[67] After the battles of Tora Bora and Zhawar Kili, the war downshifted. US and coalition continued to execute relatively small intelligence driven operations against remnants of Al Qaida and the Taliban. The number of sorties dropped, but ISR missions continued.[68]

4.3.6. Initiating Operation Anaconda

As has been described in chapter three, this first phase of operation *Enduring Freedom* resembled conventional operations, albeit within the framework of CT and with indigenous forces providing for most of the boots on the ground. By February 2002 the intensity of operations had decreased significantly and the US retained about 4,000 forces, most of them located at Bagram Airfield. These forces mostly conducted small scale, intelligence driven, raiding operations, which became the norm at the start of 2002. Nation building activities, such as protection of Karzai's interim government, formally were not part of the operation as the US aimed to delegate this task to the international community. However, the US did develop some initiatives in this respect. The US military introduced the Provincial Reconstruction Teams (PRTs) to assist rebuilding activities and training of the Afghan Army. They also became involved in localized internal politics, as the local power holders, previously part of the allied ground forces, now claimed victory towards their solidarity groups. In line with Afghan history, they now desired recognition in the form of influential government positions or other incentives, and, most importantly, competed with each other to get it. Formulated differently, US forces had to devote attention to pacify warlords united as long as there was a common enemy.[69] This common enemy, was not yet defeated completely. The US military leadership learned that a growing number of Al Qaida fighters were assembling and re-equipping themselves in the Shah-i-Kot Valley in eastern Afghanistan, and that they were also living under the impression that the US forces would not pursue them there.[70] Operation *Anaconda* was designed to make an end to that situation, with the use of both conventional ground forces and SOF-assisted indigenous forces. Appendix 1.10 provides for a map of the area of operations for operation *Anaconda*.

67 Collins, "Initial Planning and Execution", 25, Lambeth, *Airpower Against Terror*, 155-156, Perry and Kassing, *Toppling*, 83, and 92-98, Ripley, *Air War Afghanistan*, 70-71, and Wright, Bird, Connors, and others, *Different Kind of War*, 120-125.

68 Grant, "Afghan Air War", 24-25, Richard L. Kugler, Michael Baranick and Hans Binnendijk, "Operation Anaconda: Lessons for Joint Operations", (National Defense University, Center for Technology and National Security Policy, Washington, DC, March, 2009) http://www.dtic.mil/dtic/tr/fulltext/u2/a496469.pdf (accessed November 18, 2014), 1, and Wallace, "Airpower Against 'Irregular' Adversaries", 76-77.

69 Lambeth, *Airpower Against Terror*, 158, Ripley, *Air War Afghanistan*, 76,Wagemaker, "Afghanistan 2001-2011", 144, and Wright, Bird, Connors, and others, *Different Kind of War*, 210.

70 Lambeth, *Airpower Against Terror*, 164-165.

Special Operations Forces initially took control over the planning of operation *Anaconda*. However, SOF staff was not equipped sufficiently to plan and lead operation *Anaconda*, which exceeded the span of control of the Special Operations Forces due to the extensive reliance on conventional forces. The acting commander in the field, Colonel Mulholland, while planning operation *Anaconda*, requested conventional forces to take over both planning and execution.[71] His request was approved and planning of the operation was taken over by US Army Major General Franklin L. Hagenbeck and a staff he brought with him. For *Anaconda*, a task force was set up, called Combined Joint Task Force Mountain (CJTF Mountain). This task force included three special operations task forces (Dagger, K-Bar, and TF 64), and elements of the 10th Mountain Division and the 101st Airborne Division, called Task Force Rakassan.[72]

Hagenbeck had several challenges to deal with. First was the sheer speed in which he needed to take over planning for operation *Anaconda*. He and his headquarters staff had little time to gain experience in the Afghan theater.[73] Second, the unit he was commanding partly was not his own unit, but a hodgepodge of several units that were not used to working together, such as Afghan indigenous forces, coalition forces, and Special Operations Forces. Third, and most importantly, his staff was incomplete and not designed for the task at hand. Hagenbeck initially did not bring air planners to Bagram. Doctrinally, a division staff contained a Tactical Air Control Party (TACP), a small team of US Air Force (USAF) specialists that had the task of planning and advising the commander on the air effort. The unit Hagenbeck commanded initially was tasked to guard Karshi Khanabad airbase, a task for which no TACP was required. In addition, the Department of Defense had imposed a restriction on the number of troops that were allowed to enter Afghanistan. And initially it was assessed that that *Anaconda* did not need much air planning. So, although some claim that Hagenbeck had the possibility to swap another unit for air planners, his CJTF staff consisted of an insufficient number of planners in general, and did not include a TACP.[74]

The initial air planning had to be done by a single Air Liaison Officer, in cooperation with the fire support elements of the Division Headquarters. For the same reasons, the Division's 24 JTACs, the men who actually needed to call in air support, were still in the United States.[75] This unwanted situation was however quickly recognized, and a successful

71 Camp, *Boots on the Ground*, 283.

72 Lester W. Grau and Dodge Billingsley, *Operation Anaconda: America's First Major Battle in Afghanistan* (Lawrence, KS: University Press of Kansas, 2011), 128, Lambeth, *Airpower Against Terror*, 168, Headquarters United States Air Force, "Operation Anaconda: An Air Power Perspective", (Headquarters United States Air Force, February 7, 2005) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA495248 (accessed August 1, 2013), 25-26, and Wright, Bird, Connors, and others, *Different Kind of War*, 127.

73 Grant, *First 600 Days*, 66-67, and Wright, Bird, Connors, and others, *Different Kind of War*, 188-189.

74 Grau, "Coils of Anaconda", 182-183,Sean Naylor, *Not a Good Day to Die: The Untold Story of Operation Anaconda* (New York, NY: Berkley Caliber Books, 2005), 133, and Wright, Bird, Connors, and others, *Different Kind of War*, 132.

75 Grau, "Coils of Anaconda", 209 and 218, and Wright, Bird, Connors, and others, *Different Kind of War*, 133.

effort was made to transport 24 JTACs to Bagram late January.[76] For the headquarters of CJTF Mountain, the situation was more problematic. The task force not only needed the organic air planners of the 10th Mountain Division, operations required a fully manned Air Support Operations Center (ASOC). An ASOC was usually associated with an Army Corps or highest-level ground unit. As Major General Hagenbeck *de facto* operated at that level, an ASOC seemed justified.[77] However, getting the required personnel to Bagram was problematic. Personnel of the 20th Air Support Operations Squadron (ASOS) were already in Bagram, but were supporting operations of SOF headquarters conducting operations in Northern Afghanistan.[78] On February 20, about six airmen were sent from Camp Doha in Kuwait, where the formal land component commander had his headquarters, to Bagram to erect an *ad hoc* ASOC.[79] On February 20, 2002, about a week before the scheduled start of the operation, the ASOC was operational, although some battle rehearsals showed significant deficiencies which needed to be addressed at the last minute.[80] So, in all, Hagenbeck had much to do in little time, and with minimal planning assets and in an command and control environment that was insufficiently codified in doctrine.

The plan for operation *Anaconda* aimed to mount an offensive in a "hammer and anvil" operation through the Shah-i-Kot valley. The "hammer", consisting of SOF units and indigenous forces, would drive Taliban and Al Qaida out of the valley towards the "anvil", conventional forces of the 10th Mountain and 101st Airborne Divisions sealing off the escape routes with blocking positions in the mountains.[81] Operation *Anaconda* was the first conventional ground operation of the conflict, and also one that saw extensive use of helicopters. The units of one of the three task forces were planned to be inserted on or near their blocking position via an air assault operation with twenty four transport helicopters, and most of the fire support was planned to be delivered by the seven AH-64A "Apache" attack helicopters belonging to the 101st Division.[82] Appendix 1.11 shows a visual depiction of the concept of operations.

As for other air assets, planning was problematic, or rather, absent. CENTCOMs senior airman, US Air Force Lieutenant General T. Michael Moseley, was not included in the planning of this operation until a week before the planned execution. This left him little time to execute the necessary preparations. Second, the air component did not have the opportunity to organize an ISR collection effort.[83] In the final plan, Moseley was expected

76 Grau, "Coils of Anaconda", 218, and Lambeth, *Airpower Against Terror*, 164.

77 Headquarters United States Air Force, "Anaconda", 41-44, and Kugler, Baranick, and Binnendijk, "Anaconda", 9.

78 Grau, "Coils of Anaconda", 208 and 210, and Wright, Bird, Connors, and others, *Different Kind of War*, 133.

79 Headquarters United States Air Force, "Anaconda", 52, Kugler, Baranick, and Binnendijk, "Anaconda", 47, and Naylor, *Not a Good Day to Die*, 134.

80 Headquarters United States Air Force, "Anaconda", 52-54 and 58-59, and Lambeth, *Airpower Against Terror*, 170-174.

81 Lambeth, *Airpower Against Terror*, 165-168.

82 Jonathan Bernstein, *AH-64 Apache Units of Operations Enduring Freedom and Iraqi Freedom*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford: Osprey Publishing Limited, 2005), 12, Lambeth, *Airpower Against Terror*, 175, and Perry and Kassing, *Toppling*, 101-102.

83 Headquarters United States Air Force, "Anaconda", 29.

to provide two Close Air Support (CAS) assets available around the clock, partly restricted to that number due to safety concerns.[84] Preparatory airstrikes would be minimal. Hagenbeck and his staff assessed the number of enemy not high enough to require such actions. Other considerations to abstain from these airstrikes involved concerns about the civilian casualties extensive bombing might induce, and the unwanted destruction of intelligence that could be exploited later. Maintaining tactical surprise also was an argument to limit extensive bombing before landing commenced.[85] Finally, the plan envisioned intra-theater airlift for the required logistics to build an Forward Operating Base, and resupply missions.[86]

4.3.7. Anaconda Execution: Ground Forces In Want of Air Support

Operations commenced on March 2, after several weather induced postponements. Almost immediately, the operational plan had to be drastically adjusted. The intelligence estimates proved to be too low. They originally estimated about 1,500 to 2,000 fighters being in the area, but were later downscaled to about 200. The actual number of enemy forces turned out to be probably between 600 and 1,000.[87] They also wrongly assessed that the Taliban and Al Qaida members would try to flee from the valley floor, as they had done during operations in Tora Bora and Zhawar Khili. Instead, they were located higher up in the mountains, nearer to the planned "anvil", and chose to fight to the death.[88] In addition, Taliban and Al Qaida forces were well prepared. Not only were they well camouflaged and dug in, they also had coordinated and prepared a defense of the valley, which included setting up observation posts, well prepared mortar and artillery positions, and integrated air defense at the tactical level.[89] Finally, an AC-130 gunship caused a friendly fire incident when it mistakenly fired on a convoy of Afghan allies. The Afghans retreated and were no longer mission capable, effectively removing a large part of the advancing "hammer" forces

84 Grau, "Coils of Anaconda", 271-272,Grau and Billingsley, *First Major Battle*, 190, Headquarters United States Air Force, "Anaconda", 80, and Kugler, Baranick, and Binnendijk, "Anaconda", 33.

85 Edgar Fleri, Ernest Howard, Jeffrey Hukill and Thomas R. Searle, "Operation Anaconda Case Study", (College of Aerospace Doctrine, Research and Education, Maxwell Air Force Base, AL, November 13, 2003) http://www.au.af.mil/au/aul/school/awc/electives/6543_operationanaconda.pdf (accessed October 28, 2015), 23, Grau and Billingsley, *First Major Battle*, 138-139, Kugler, Baranick, and Binnendijk, "Anaconda", 31, and David J. Lyle, "Operation Anaconda: Lessons Learned, or Lessons Observed?", (Master's Thesis, US Army Command and General Staff College, Fort Leavenworth, KS, 2009) http://www.dtic.mil/get-tr-doc/pdf?AD=ADA502029 (accessed November 5, 2013), 6.

86 Headquarters United States Air Force, "Anaconda", 35 and 80.

87 Richard B. Andres and Jeffrey B. Hukill, "Anaconda: A Flawed Joint Planning Process", *Joint Forces Quarterly*, no. 47 (2007): 135-140, 137, and Richard L. Kugler, "Operation Anaconda in Afghanistan: A Case Study of Adaptation in Battle", (National Defense University, Center for Technology and National Security Policy, Washington, DC, 2007) http://www.dtic.mil/dtic/tr/fulltext/u2/a463075.pdf (accessed July 3, 2013), 6.

88 Headquarters United States Air Force, "Anaconda", 30, Grau, "Coils of Anaconda", 201 and 228, and Kugler, "Anaconda in Afghanistan", 6, Lambeth, *Airpower Against Terror*, 177.

89 Grau and Billingsley, *First Major Battle*, 120-121 and enclosed documentary on DVD, Stewart, "OEF", 44, and Wallace, "Airpower Against 'Irregular' Adversaries", 79.

on the valley floor. The blocking positions on the upper valley were not fully manned either, as not all units could be inserted by helicopter due to bad weather.[90] In short, own forces numbered fewer than expected, enemy forces numbered more than expected, the enemy was not at the expected location, and the enemy did not behave as expected.[91]

After commencement of the operation, US, Coalition and indigenous forces quickly became pinned down in a set of isolated skirmishes. The main effort initially became fighting well prepared Taliban and Al Qaida fighters with isolated units of ground forces in the mountains. As a result, the JTACs that were attached to these units individually were soon in dire need of firepower. This resulted in a quickly mounting number of requests for CAS for which planners were not prepared. Sometimes the actual number of simultaneous CAS missions in execution was six instead of the planned two.[92] In Bagram, the command post of CJTF Mountain quickly became swamped with requests for air support by the thirty seven JTACs in total that were embedded with the units on the ground. At the CAOC, the Special Operations Liaison Element (SOLE) in the earlier stages already had been called by some a "sticky note ASOC", referring to the uncoordinated and chaotic manner the requests were distributed within the air organization.[93] A similar situation arose with the formal ground force liaison element to the senior airman at the CAOC, the Battlefield Coordination Detachment (BCD). Without a proper ASOC functioning in theater, and additional requests pouring in from BCD and SOLE, pressure mounted. The CAOC was at that time insufficiently able to support the multiple CAS requests.[94] In the air, the command and control situation was not much better. What was needed was an airborne platform that was able to handle the requests for ground support. The orbiting AWACS airplanes were not designed and configured to manage air-to-ground coordination. During *Anaconda*, the US Air Force was in the process of phasing out the EC-130E Airborne Battlefield Command and Control Center (ABCCC) aircraft. AWACS and E-8 Joint Surveillance Target Attack Radar System (JSTARS) were in the process to be re-fitted with communications equipment, but this was not finished. So, even though AWACS and JSTARS were in theater, the coordination function of the ABCCC could not be taken over, leaving a gap in this command and control functionality. This left some of the command and control tasks to the JTACs, who had to execute these tasks while under fire.[95]

Initially, the CAS assets that were readily available, seven AH-64 "Apache" attack helicopters, had to handle the situation. These assets were however welcomed by extensive ground fire by small arms, anti aircraft artillery, and rocket Propelled Grenades (RPGs). All Apaches were hit, and five of the seven airframes had to abort the engagement, effectively

90 Lambeth, *Airpower Against Terror*, 179-182, and Ripley, *Air War Afghanistan*, 78-82.

91 Grant, *Battle Tested*, 94-97, and Grau, "Coils of Anaconda", 228.

92 Kugler, Baranick, and Binnendijk, "Anaconda", 33.

93 Call, *Danger Close*, 34.

94 Call, *Danger Close*, 31-36, and Lambeth, *Airpower Against Terror*, 182.

95 Fleri, Howard, Hukill, and Searle, "Anaconda Case Study", 28, Grau, "Coils of Anaconda", 208-210, and Kugler, Baranick, and Binnendijk, "Anaconda", 26.

suspending their involvement in the operation for twenty four hours.[96] The chaotic situation was exacerbated by an incident that took place on day two of the operation, in the early morning hours of March 4, 2002. During an insertion of a US Navy Sea Air Land (SEAL) team on the mountain top of Takur Ghar the MH-47 "Chinook" which transported them was hit, and made an emergency landing down the mountain. In the process of maneuvering, Petty Officer Neil Roberts fell out of the helicopter. The remaining SEALs immediately tried to rescue Roberts using a helicopter that just had inserted a different team on another hilltop. The team managed to land on the Landing Zone (LZ), but immediately came under fire and had to retrograde some 800 meters (2625 feet) down the south side of the mountain. Meanwhile, a Quick Reaction Force (QRF) was launched, of which the main body was formed of US Army Rangers, divided over two helicopters. Unaware of the actual tactical situation, the lead element tried to land at the same spot as the two other helicopters. It was shot down on site, and the Rangers along with the helicopter crew immediately became involved in an intense firefight with well entrenched Al Qaida forces, sustaining casualties. The second helicopter was first diverted for tactical reasons and later inserted the second team of Rangers 610 meters (2,000 feet) below the mountain top. This team of Rangers then climbed up the hill to reinforce the first Ranger team. The SEAL-team was relatively secure, but was not able to assist the Rangers. The Rangers eventually found Roberts, who was killed in action, but heavy fighting continued. They managed to fend off heavy Al Qaida fire and attacks, and held their positions until darkness. They were finally extracted at about 2000 hours, as were the SEALs. The incident cost seven men their lives.[97]

Operationally, the events on Takur Ghar were a footnote. However, due to the spectacular nature of the events they received a lot of media attention, and found their way into secondary publications. In these publications, the role of the air weapon became apparent as well. In sequence of events first an AC-130 reconnoitered the hilltop before insertion of the initial SEAL team, but his electronic sensors did not locate the well entrenched and camouflaged Al Qaida fighters.[98] Second, as soon as the lead element became bogged down in a firefight, the accompanying JTAC tried to call in CAS, in which he eventually succeeded. Two F-15s came overhead, but due to the close distance between friendly troops and the target were not able to drop their bombs. They instead used their

96 Bernstein, *AH-64 Apache Units*, 17, Headquarters United States Air Force, "Anaconda", 66, Lambeth, *Airpower Against Terror*, 181-182, and Ripley, *Air War Afghanistan*, 85.

97 Much has been written on the events on Takur Ghar. For this paragraph, the following sources were used: Briscoe, Kiper, Schroder, and Sepp, *Weapon of Choice*, 299-319, Camp, *Boots on the Ground*, 283-292, Grau, "Coils of Anaconda", 335-395, Grau and Billingsley, *First Major Battle*, 243-275, Headquarters United States Air Force, "Anaconda", Paul L. Hastert, "Operation Anaconda: Perception Meets Reality in the Hills of Afghanistan", *Studies in Conflict & Terrorism* 28, no. 1 (2005): 11-20, Kugler, "Anaconda in Afghanistan",16-17, Lambeth, *Airpower Against Terror*, 186-191, Naylor, *Not a Good Day to Die*, 300-368, Leigh Neville, Johnny Shumate and Alan Gilliland, *Takur Ghar: The SEALs and Rangers on Roberts Ridge, Afghanistan 2002*, Raid (Oxford and New York, NY: Osprey Publishing, 2013), Malcolm MacPherson, *Roberts Ridge: A Story of Courage and Sacrifice on Takur Ghar Mountain, Afghanistan* (New York, NY: Bantam Dell, 2005), Nate Self, *Two Wars: One Hero's Fight on Two Fronts--abroad and Within* (No place of publication: Tyndale House Publishers, 2008), 137-250, and Wright, Bird, Connors, and others, *Different Kind of War*, 157-160.

98 Grau, "Coils of Anaconda", 339.

internal cannon, which was a novelty.[99] They were relieved by F-16s, which dropped two bombs near the target but did not hit it. Eventually, a Predator Unmanned Aerial Vehicle (UAV) was able to destroy a bunker with a Hellfire missile, relieving the pressure on the Rangers somewhat. The use of a Predator in a *de facto* CAS role was a novelty too. During the entire engagement, the air component executed about thirty CAS missions, many of them at very close range to own forces, in order to protect the ground forces on top of Takur Ghar Mountain.[100]

Meanwhile, personnel of the various headquarters worked frantically to muster additional CAS assets to support operation *Anaconda*. By emergency measure, twenty four additional US Army Apache attack helicopters were flown in from the United States to Bagram, as well as US Marine Corps AH-1 "Cobra" attack helicopters from the *USS Bonnehomme Richard*, and US Air Force A-10 fixed wing "tank buster" jets from Al Jaber airbase in Kuwait and later the Pakistani Jacobabad Airfield.[101] Other available assets were directed by the CAOC to support the battle as well.[102] These extra assets however created a problem with airspace management. The area of operations was about seventy square miles in size, and the valley floor, where most engagements took place, only about fifteen square miles.[103] The dozens of aircraft operating above the battle area caused an airspace congestion problem of epic proportions. Several types of aircraft were stacked eight miles above the area in altitude blocks, with Global Hawks and U-2 ISR assets on top. Below them, B-52 long range bombers operated, and all the way down followed by fixed wing command and control and other ISR assets, tankers, B-1 Bombers, fighter jets, electronic warfare aircraft, AC-130 gunships, medium-altitude UAVs such as the Predator and, finally, the helicopters.[104] As a result, aircraft were in danger of becoming involved in mid-air collision and fratricide incidents. To avoid these unwanted situations, everyone involved in air operations needed to work frantically at all levels. The CAOC and CENTCOM staffs, spread

99 Rebecca Grant, "The Airpower of Anaconda", *Air Force Magazine* 85, no. 9 (2002): 60-68, 66-67.

100 Holmes, *F-14 Tomcat Units*, 83.

101 Headquarters United States Air Force, "Anaconda", 66, Grau and Billingsley, *First Major Battle*, 226-227 and 246, Kugler, Baranick, and Binnendijk, "Anaconda", 6, Lambeth, *Airpower Against Terror*, 182, Ripley, *Air War Afghanistan*, 84-85, Gary Wetzel, *A-10 Thunderbolt II Units of Operation Enduring Freedom, 2002-07*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and Long Island City, NY: Osprey Publishing Limited, 2013), 16 and 26-27, and Gary Wetzel, "Everything Went Wrong on the A-10 Warthog's First Mission in the War on Terror", *Website Foxtrot Alpha* (June 6, 2017) http://foxtrotalpha.jalopnik.com/everything-went-wrong-on-the-a-10-warthog-s-first-missi-1795559531 (accessed July 10, 2017).

102 Grau, "Coils of Anaconda", 286.

103 Lambeth, *Airpower Against Terror*, 195 and 213.

104 Headquarters United States Air Force, "Anaconda", 39, and Lambeth, *Airpower Against Terror*, 194-196. Lambeth also mentions a civilian airway running across the battle area, below the operating altitude of the B-52s. However, soon after operations commenced, the CFACC also became the Airspace Control Authority (ACA), meaning that he had the authority to open or close Afghan airspace for civilian air traffic. According to a research paper written by a student of the Air Command and Staff College, the CFACC closed the airspace during the first three months of OEF, after which it was reopened for civilian air traffic. (Michael A. Grogan, "Airspace Control Authority in Stability Operations: The Role of the United States Air Force in Rebuilding Afghanistan's National Airspace System", (Research Report, Air University, Air Command and Staff College, Maxwell Air Force Base, April, 2005) http://www.dtic.mil/dtic/tr/fulltext/u2/a476300.pdf (accessed November 28, 2013)). As the CFACC was also ACA, it is assumed that the Afghan airspace, or at least the airspace above the operational area of *Anaconda*, was closed during the operation itself.

across various time zones, strained their personnel to man sections to correct the mistakes made during the planning and deconflict air operations.[105] At the ASOC of CJTF Mountain in Bagram a similar situation emerged, where a handful of airmen needed to prioritize air requests.[106] The situation was especially stressful for the JTACs, who had to designate targets, call in airstrikes and manage the local air operation while under fire.[107] And finally, pilots flying the aircraft ultimately needed to prevent mid-air collision through a procedure called Visual Flight Rules (VFR), instead of the preferred Instrument Flight Rules (IFR), which in layman's terms means they had to prevent collision through "see and avoid". For a graphic presentation of the airspace above the area of operations, see appendix 1.12.

In addition, sustained hostilities led to an increased need for logistical support. Due to time constraints and constraints with regard to geography, all supplies and manpower needed to be airlifted into theater and into and then out of the area of operations. Especially fuel was in demand, and two C-17 Globemaster transport planes were dedicated to moving fuel.[108] As with CAS, requests for logistical support exceeded planning resources, and it took the logistical planning cell about a week to proactively support the operation, as opposed to reacting to emergency requests.[109]

4.3.8. Anaconda Execution: Turning the Tide

Ultimately, after about two days into the operation, the command and control situation stabilized, indicating craftsmanship, dedication, and the means to adapt. This was reached through the additional use of FAC(A)s operating above the battle area's from A-10s and to a lesser extent F-16s and F-14s.[110] Also, crew configurations of some of the E-8 JSTARS were changed to perform some of the airborne command and control tasks originally executed by the EC-130E ABCCC. Mainly F-16 pilots, SOF personnel and personnel from conventional ground forces were added to the aircrew of JSTARS, to coordinate with both air and ground forces, exploiting the ample communication means of the JSTARS.[111] Other improvements were continuation of manning the ASOC, and making small changes to the tactical command and control structure. With regard to the latter, the system of engagement zones was optimized for the situation in and around the valley.[112] In addition, a procedure called

105 Lambeth, *Airpower Against Terror*, 356.

106 Lambeth, *Airpower Against Terror*, 197.

107 Lambeth, *Airpower Against Terror*, 217.

108 Headquarters United States Air Force, "Anaconda", 57-58, and Stewart, "OEF", 36-37.

109 Headquarters United States Air Force, "Anaconda", 84.

110 Lambeth, *Airpower Against Terror*, 197, James D. Kiras, "T. Michael Moseley: Air Power Warrior", In: *Air Commanders*, ed. John Andreas Olsen (Washington, DC: Potomac Books, 2013), 395-427, 412, Kugler, Baranick, and Binnendijk, "Anaconda", 26, and Wetzel, "Everything ".

111 Grau, "Coils of Anaconda", 319-320 and 326, and Wetzel, *A-10 Units 2002-2007*, 14.

112 Headquarters United States Air Force, "Anaconda", 88-90.

"ple-planned emergency close air support" was put into place, in which pilots had a list of about three thousand pre-planned targets with their coordinates, to strike when no request for air support was made. However, targets which were located outside the engagement zones or which were not on the target list still had to be approved by CENTCOM or the Secretary of Defense, before striking them.[113] Finally, the CFACC adjusted weapon loads to increase flexibility once in the air.[114]

During the week that followed, the air weapon was extensively used to wear down the enemy and neutralize pockets of resistance. Almost by chance, the US and Coalition forces found out why the enemy defended the area so fiercely. As it turned out, Shah-i-Kot valley, and especially the mountain top of Takur Ghar, harbored the largest ammunition storage Al Qaida still had in Afghanistan. On March 6 an American F-16 hit the ammunition storage of Takur Ghar, which resulted in a large explosion.[115] Meanwhile, Afghan militia regrouped and were able to move in on the ground and clear the valley, aided by US Special Operations Forces. Operation *Anaconda* was completed on March 16, 2002.[116] It marked the end of major combat operations. Although sortie rate peaked during operation *Anaconda* the total number of sorties during this phase was actually quite low. According to Rebecca Grant, they numbered half that of operation *Allied Force*, and the number of aerial movements came nowhere near the sortie rate of Operation *Desert Storm*.[117]

Most of the literature available on operation *Anaconda* deals with American operations. While US assets formed the overwhelming majority of assets that operated above the area, other nations were involved as well. At least the Harriers of the Italian aircraft carrier *Garibaldi*, the Super Etendards from the French aircraft carrier *Charles de Gaulle*, and a French Mirage 2000D contingent from Manas actively participated in the operations. They provided overwatch during the final rout of the Taliban from eastern Afghanistan, and the Mirage 2000D was the only non-US aircraft to drop bombs during operation *Anaconda*.[118] After the end of operation *Anaconda*, the French Mirage 2000D detachment was relieved by a combined unit of six Dutch, four Danish, and four Norwegian F-16s.[119] During the opening stages, the first problems of operating in a coalition surfaced as well. It concerned national caveats that the UK imposed when US assets used its support functions. Of note, the UK government demanded to approve all targets that were engaged by aircraft that took off from its soil, i.e. Diego Garcia, or were attacked by aircraft that had refueled at UK tankers. As these additional restrictions were initially not delegated to a red card holder in theater,

113 Headquarters United States Air Force, "Anaconda", 89-91.

114 Headquarters United States Air Force, "Anaconda", 78-80.

115 Grau, "Coils of Anaconda", 429-431.

116 Headquarters United States Air Force, "Anaconda", 110.

117 Grant, "Afghan Air War", 2.

118 Bernard Agnard and Philippe Wodka-Gallien, "The Mirage 2000D in Afghanistan: An After-action Report", *Journal of Electronic Defense* 26, no. 4 (2003): 59-62, and Lambeth, *Airpower Against Terror*, 154 and 286.

119 Lambeth, *Airpower Against Terror*, 287-288.

delays in approvals caused disturbances in drafting the operational order used for air operations, the Air Tasking Order (ATO).[120]

4.3.9. An Impressive Victory with Loose Ends

In conclusion of this paragraph, the operational developments in Afghanistan between the end of 2001 and the spring of 2002 showed a potential shift in the manner operations could be conducted, and the role the air weapon potentially had. The element of coupling a small amount of ground forces, destructive potential of the air weapon, and indigenous forces, proved effective in the sense that the initial goals were achieved relatively quickly. In a matter of weeks, Taliban and Al Qaida no longer constituted a force that was able to rule Afghanistan. This was relatively new. The speed in which the US military was able to conduct effective military operations in a remote and landlocked country was impressive, which not only required increased diplomatic activity, but also an immense logistical effort that was mostly done by air.[121] The relatively low number of sorties might seem paradoxical at first. It could however be regarded as an indication that the principle of mass had changed. As a result of the developments characterizing the information age, the air weapon was able to do more with less. The only thing that was needed to reach operational and strategic effects was a small amount information age SOF personnel, and availability of airpower that could direct effects at time and place of their own choosing. In this scheme, precision weapons and precise target information were key multipliers, which allowed western forces to provide for persistent and precise fire support with a relatively low number of required airframes. This was in essence the argument the proponents of the Afghan Model made later on.[122]

Operation *Anaconda* and other operations in Afghanistan also showed some of the limits of the system. While the operational stance worked relatively well when the area of operations was large, problems with coordination surfaced when a larger amount of ground and air assets operated in a more confined area. In addition, the system worked only when the goals and interests of western forces were aligned with those of the indigenous allies. Critics of the Afghan Model also mentioned the need for skill of the indigenous forces, and the ineptitude of the opposing forces.[123] In all, by mid 2002 there was a general idea that the operational goals of *Enduring Freedom* had been met. The Taliban regime was toppled. Afghanistan could no longer function as a sanctuary for Al Qaida and other terrorist organizations. And conditions were set to enable a new democratic

120 Lambeth, *Airpower Against Terror*, 317.

121 Anonymous, "Operation Enduring Freedom - Operations: The Air War", *Globalsecurity.org* (July 5, 2011) http://www.globalsecurity.org/military/ops/enduring-freedom-ops-air.htm# (accessed March 1, 2015).

122 Andres, Wills, and Griffith, "Winning with Allies", passim, and Biddle, "Allies", passim. See also: Wallace, "Airpower Against 'Irregular' Adversaries", 92.

123 Andres, Wills, and Griffith, "Winning with Allies".

government to establish itself. However, it was difficult to claim victory because of the flaws in the strategy. The Taliban government was overthrown, but is was unclear how it contributed to the GWOT. Al Qaida lost its sanctuary, but it was not completely dismantled because many members escaped to Pakistan, along with members of the Taliban. Several conditions for a development of a stable democratic country were set, but the plans lacked concrete options for nation building in a period where tribal tensions emerged. So, while the plans and operations in general were successful and left the impression that the new and innovative Afghan Model could provide for a recipe for success, loose ends at the strategic level made it difficult to declare victory.

4.4. Doctrine: Using What is Available

4.4.1. The Question of the Right Doctrine

The previous chapter mentioned the existence of two doctrines relating to COIN or irregular warfare, namely the *FM 3-24* of the US Army and US Marine Corps, and the *AFDD 2-3* of the US Air Force. They were however described only in relation to the function they had in the discussions about the proper employment of airpower in irregular warfare. Moreover, the US military developed these doctrines in the period following the period described in this chapter. This paragraph answers the more practical applicability of doctrines that were available to the forces executing the initial phases of operation *Enduring Freedom*.

The paragraph on strategy indicated that the Bush Administration framed the mission in Afghanistan as counterterrorism. Doctrinally, this was part of irregular warfare, a catchall term that basically encompassed all forms of conflict short of general war. Considering the direct cause and the declared context of the American response, terrorism, this is defendable. However, it remains a question to what extent the enemy in Afghanistan showed a terrorist *modus operandi*. On the one hand Taliban and Al Qaida in Afghanistan did not pose a threat in the conventional sense of the word. Their forces were not organized strictly along the lines of regular armies. Many of the Taliban fighters had gained experience waging an insurgency during the Soviet occupation. On the other hand, the Taliban did have some characteristics of a regular army, and had access to left-over Soviet equipment and weaponry, along with Stinger surface-to-air missiles CIA had provided the Mujahideen during the 1980s. So, whereas to some extent conventional doctrine could be applicable, doctrines on irregular warfare were relevant as well. This was due to the framing of the conflict in terms of counterterrorism, the relatively small contribution of US regular forces in the first phase of the conflict, and the relatively large contribution of SOF and indigenous forces. In that sense, the operational environment may be considered unique, one which no doctrine could anticipate.

The questions that will be answered in this paragraph will be as follows: which doctrines were available in the context of irregular warfare at the start of operation *Enduring Freedom*? How well were these doctrines suited to the Afghan operational environment? And how well were they known by the professionals executing the operations? In order to answer these questions, the doctrinal development of irregular warfare up and until 2001 will be discussed, as well as its institutionalization.

4.4.2. US Doctrine on Airpower in Irregular Warfare until 2001

US codification of the contribution of the air weapon in irregular warfare started in the first half of the twentieth century. The US Marines devoted a chapter on the use of airpower in the much-cited *Small Wars Manual* of 1940.[124] It was the first time airpower theory was codified for an insurgency environment.[125] The US Air Force also added the concept of counterinsurgency (COIN) in one of their basic doctrine publications called *Air Force Manual 1-2: USAF Basic Doctrine (AFM 1-2)*, published in 1955. It was succeeded by *Air Force Manual FM 1-1: Basic Aerospace Doctrine of the United States Air Force (AFM 1-1)* of 1964. According to Dennis Barnett, the latter document provided a strong conceptual foundation for airmen to base their operations on.[126] During the deployment in Vietnam, the US Air Force updated its doctrine on unconventional warfare. The *Air Force Manual 2-5: Tactical Operations Special Air Warfare (AFM 2-5)* of 1967 operationalized the various terms related to irregular warfare. It had a similar outlook as the Small Wars Manual, which was conceptually sound. But it implicitly regarded irregular warfare, including counterinsurgency, as a form of special warfare, executed by special forces.[127]

After the end of the United States' involvement in Vietnam, the US military, with the USAF in its wake, conceptually turned away from irregular warfare due to the trauma it had caused. As Dennis Drew stated:

> "After the United States withdrew from Vietnam, bitter memories, confusion about the impact of strategic bombing on the war's end, disagreement over the very nature of the conflict, and the continuing Soviet threat made it all too easy for US airmen to push the unsettled enigma of protracted warfare into the background. Retreating to the familiar

124 United States Marine Corps, *Small Wars Manual (reprint of 1940 Edition)*, April 1, 1987, http://www.dtic.mil/dtic/tr/fulltext/u2/a421035.pdf (accessed January 21, 2015), chapter 9.

125 Robert M. Chavez, "Basic and Operational Doctrine for Airpower in Irregular Warfare", (Monograph, School of Advanced Military Studies, United States Army Command and General Staff College, Fort Leavenworth, KS, 2007) http://www.dtic.mil/dtic/tr/fulltext/u2/a475385.pdf (accessed August 9, 2013), 19.

126 Dennis L. Barnett, "The USAF and Low-Intensity Conflict: Evolution of a Doctrinal Void", (Report, Air University, Air Command and Staff College, Maxwell Air Force Base, AL, April, 1988) http://www.dtic.mil/dtic/tr/fulltext/u2/a192515.pdf (accessed August 7, 2013), 17.

127 Chavez, "Basic and Operational Doctrine", 24-25, and Dennis M. Drew, "Air Theory, Air Force, and Low Intensity Conflict: A Short Journey to Confusion", In: *The Paths of Heaven: The Evolution of Airpower Theory*, ed. Philip S. Meilinger (Maxwell Air Force Base, AL: Air University Press, 1997), 321-355, 339.

problems of strategic nuclear warfare and conventional warfare in Europe seemed much more comfortable."[128]

As a result, the updates of the *AFM 1-1* of 1971, 1975 and 1979 showed a decrease of institutional interest in irregular warfare by the US Air Force, as the role of the USAF in these types of conflict was described in increasingly general terms.[129] Also, the *AFM 1-1* of 1971 introduced a new approach, that of Foreign Internal Defense (FID), which in essence involved counterinsurgency.[130]

During the late 1980s and 1990s the US Air Force showed latent but visible interest in irregular warfare. It manifested itself in official publications and research papers.[131] With US involvement in the Nicaragua and El Salvador conflicts as a background, the US military showed increased attention in theory on irregular warfare.[132] As for the air weapon, this increased attention manifested itself amongst other things in a plethora of theses and reports on the application of airpower in non-conventional conflicts, and some specifically on the use of the air weapon by Soviet Union in Afghanistan. These were written mostly, but not exclusively, by students of the various schools related to the Air University, located at Maxwell Air Force Base, Alabama.[133] Some of the reports and theses were formally published by the Air University Press[134], some air force officers actively got involved in the

128 Drew, "Short Journey to Confusion", 347.

129 Barnett, "USAF and LIC", 17-18, and Drew, "Short Journey to Confusion", 339.

130 Drew, "Short Journey to Confusion", 339.

131 Drew, "Short Journey to Confusion", 340-344.

132 Conrad Crane, "United States", In: *Understanding Counterinsurgency: Doctrine, Operations, and Challenges*, ed. Thomas Rid and Thomas Keany (London, New York: Routledge, 2010), 59-72, 59.

133 See for instance: Barnett, "USAF and LIC", John A. Breed, "The Strategic Bomber and Low-Intensity Conflict", (Research Report, Air University, Air War College, Maxwell Air Force Base, AL, 1990) http://www.dtic.mil/dtic/tr/fulltext/u2/a229938.pdf (accessed August 8, 2013), Raymond O. Knox, "High Speed Jets in a Low Speed War: The Utility of Tactical Airpower in Low-Intensity Conflict", (Monograph, United States Army Command and General Staff College, School of Advanced Military Studies, Fort Leavenworth, KS, April 20, 1989) http://www.dtic.mil/dtic/tr/fulltext/u2/a215765.pdf (accessed August 8, 2013), Michael A. Longoria, "A Historical View of Air Policing Doctrine. Lessons From the British Experience Between the Wars, 1919-39", (Thesis, Air University Press, Maxwell Air Force Base, AL, June, 1993) http://www.dtic.mil/dtic/tr/fulltext/u2/a370087.pdf (accessed July 3, 2013), Richard D. Newton, "Reinventing the Wheel: Structuring Aerospace Forces for Foreign Internal Defense", (School of Advanced Military Studies, United States Army Command and General Staff College, Fort Leavenworth, KS, January 27, 1991) http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA234904 (accessed August 8, 2013), Enrique A. Oti, "The Air Force and Low Intensity Conflict", (Research Report, Air University, Air War College, Maxwell Air Force Base, AL, May, 1992) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA258350 (accessed August 8, 2013), David Willard Parsons, "Toward the Proper Application of Air Power in Low-intensity Conflict", (Master's Thesis, Naval Post Graduate School, Monterey, CA, December, 1993) http://www.dtic.mil/dtic/tr/fulltext/u2/a276734.pdf (accessed August 8, 2013), W. Bruce Rember, "Wings for Peace: Air Power in Peacemaking Operations", (Monograph, School of Advanced Military Studies, United states Command and General Staff College, Fort Leavenworth, KS, December 17, 1992) http://www.dtic.mil/dtic/tr/fulltext/u2/a262711.pdf (accessed August 8, 2013), and Robert A. Sutley, "The Soviet's Use of Airpower in a Counterinsurgency Campaign", (Report, Air University, Air Command and Staff College, Maxwell Air Force Base, AL, 1987) http://www.dtic.mil/dtic/tr/fulltext/u2/a180349.pdf (accessed August 8, 2013). More examples listed by Dennis Drew: Drew, "Short Journey to Confusion", 353-354, notes 66, 71 and 74.

134 For instance: Brooks L. Bash, "The Role of United States Air Power in Peacekeeping", (Thesis, Air University Press, Maxwell Air Force Base, AL, June, 1994) http://aupress.au.af.mil/digital/pdf/paper/t_bash_role_of_us_air_power.pdf (accessed August 8, 2013).

debate on airpower in irregular warfare[135], and currently virtually all theses and reports are made available online by the US military.[136] So, conceptual thinking about the role of the air weapon in irregular conflicts was not absent within the US Air Force, and thoughts and concepts were available for others. It did however not involve formal development of doctrine, and it remains a question to which extent these documents influenced policy makers. However, although additional research is required, it seems plausible that this influence was modest, because it involved a niche topic.

In addition, formal doctrinal development lagged behind. In 1992, the US Air Force published *Air Force Manual 2-11: Foreign Internal Defense Operations*.[137] In the period that followed, several other doctrines relating to irregular warfare were published. In his thesis from the School of Advanced Airpower Studies, major John W. Doucette in 1999 listed twelve doctrines published by the US military that made reference to, or dealt specifically with, one or more forms of irregular warfare. Five of them were written by the US Air Force.[138] As for the last set, the most applicable available doctrine on the eve of the "War on Terror" was the *Air Force Doctrine Document 2-3: Military Operations Other Than War (AFDD 2-3)* of June 1995, which was updated in 2000. This doctrine was linked to a joint doctrine and offered general guidelines for basically every type of military operation short of general war.[139] So, possibly under the influence of the conflicts in Former Yugoslavia, Irregular Warfare during the 1980s and especially and 1990s doctrinally was also known by several loosely defined terms to classify elements of irregular warfare, such as as Low Intensity Conflict (LIC) or Military Operations Other Than War (MOOTW), and it could cover counterterrorism, counterinsurgency, peacekeeping, and other types of conflict that also did not have clear definitions.[140]

As for the mission initially chosen by the US in Afghanistan, combatting terrorism, *AFDD 2-3* made a distinction between defensive operations, called antiterrorism, and

135 Most direct examples being Robert C. Owen, "Aerospace Power and Land Power in Peace Operations", *Airpower Journal* 13, no. 3 (1999): 4-22, and Thomas R. Searle, "Understanding Peace Operations: A Reply to Col Robert C. Owen", *Air & Space Power Journal* 13, no. 3 (1999): 92-101.

136 The Defense Technical Information Center, "DTIC Online", http://www.dtic.mil/dtic/ (accessed August 8, 2013).

137 Drew, "Short Journey to Confusion", 344-345.

138 These doctrine publications were: *Air Force Doctrine Document (AFDD) 1: Air Force Basic Doctrine, September 1997, AFDD 2: Organization and Employment of Aerospace Power, September 1998, AFDD 2-3: Military Operations Other Than War, October 1995, AFDD 2-7.1: Foreign Internal Defense, February 1998, Air Force Manual 1-1, Volume I, Basic Aerospace Doctrine of the United States Air Force, March 1992, Field Manual (FM) 7-98, Operations in a Low-Intensity Conflict, October 1992, FM 31-20: Doctrine for Special Operations Forces Operations, April 1990, FM 31-20-3: Foreign Internal Defense, September 1994, FM 90-8: Counterguerrilla Operations, August 1986, FM 100-5: Operations, June 1993, Fleet Marine Force Manual (FMFM) 8-2: Counterinsurgency Operations, January 1980, Joint Publication (JP) 3-0: Doctrine for Joint Operations, February 1995* and *JP 3-07.1: Joint Tactics, Techniques and Procedures for Foreign Internal Defense, June 1996, I-3.* (John W. Doucette, "US Air Force Lessons in Counterinsurgency: Exposing Voids in Doctrinal Guidance", (Thesis, Air University, School of Advanced Airpower Studies, Maxwell Air Force Base, AL, June, 1999) http://www.dtic.mil/dtic/tr/fulltext/u2/a391818.pdf (accessed July 3, 2013), 92).

139 Doucette, "USAF Lessons in COIN", 92, and United States Air Force, *Air Force Doctrine Document 2-3: Military Operations Other Than War,* June 3, 2000, www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA404753 (accessed October 29, 2013), iii-iv. The joint doctrine was: United States Joint Chiefs of Staff, *Joint Publication 3-07: Joint Doctrine for Military Operations Other Than War,* June 16, 1995, http://cgsc.cdmhost.com/cdm/ref/collection/p4013coll9/id/874 (accessed November 15, 2015).

140 David Fitzgerald, *Learning to Forget: US Army Counterinsurgency Doctrine and Practice From Vietnam to Iraq* (Stanford, CA: Stanford University Press, 2013), 70 and 95.

offensive ones, called counterterrorism. The document stated that every unit of the air force could be called upon to participate in the associated missions, which could range from small scale attacks by SOF to psychological operations and recovery missions.[141] Although a reference was made to *Joint Publication (JP) 3-07.2, Joint Tactics, Techniques, and Procedures for Antiterrorism (JP 3-07.2)*, there was no mentioning of a comparable doctrine on counterterrorism. *Joint Publication 3-07: Joint Doctrine for Military Operations Other Than War* of 1995 described counterterrorism and antiterrorism in the same general way the *AFDD 2-3* did.[142] So, doctrine for counterterrorism remained very generic.

Doctrine on counterinsurgency was more specific. *AFDD 2-3* referred to doctrines of Foreign Internal Defense when one needed guidance on participating in a counterinsurgency.[143] The *Air Force Doctrine Document 2-7.1: Foreign Internal Defense (AFDD 2-7.1)* of February 2,1998, dealt most directly with counterinsurgency.[144] This document focused on training and advising of host nation air assets to help provide security in their home country, within a framework of a Internal Defense and Development (IDAD) strategy.[145] *AFDD 2-7.1* showed remarkable insight of counterinsurgency theory current in the late 1990s. In an appendix, it identified an insurgency as a protracted and possibly violent struggle for legitimacy and political mobilization of the people, which could follow a pattern that resembled the one that Mao described. Counterinsurgency required a protracted inter-service and inter-agency commitment in order to be successful.[146] The envisioned role for the US Air Force was primarily focused on training, advising, assisting, aiding and supporting host nation security forces in their efforts to develop all capabilities and competencies needed to sustain an air force. The ultimate goal was encouraging the host nation to find its own solution to subversion, lawlessness, and insurgency.[147] This support could have three dimensions: indirect support in the form of, for instance, multinational training and exercise programs, direct support not involving combat, such as intelligence sharing, and finally direct support involving combat.[148] Of these, the indirect support was the preferred option. In an implicit reference to the trauma of Vietnam, the doctrine stated that increased involvement, especially direct support involving combat, could lead to the unwanted effect of *"self-generating requirements for increasingly higher levels of US military involvement"*.[149]

141 United States Air Force, *AFDD 2-3 (2000)*, 16-17.

142 United States Joint Chiefs of Staff, *JP 3-07 (1995)*, III-2 - III-3.

143 United States Air Force, *AFDD 2-3 (2000)*, 26-28.

144 Doucette, "USAF Lessons in COIN", 92.

145 United States Air Force, *Air Force Doctrine Document 2-7.1: Foreign Internal Defense,* February 2, 1998, http://www.fas.org/man/dod-101/usaf/docs/afdd/afdd2-7-1.pdf (accessed August 9, 2013), 2.

146 United States Air Force, *AFDD 2-7.1 (1998)*, 65-68.

147 United States Air Force, *AFDD 2-7.1 (1998)*, 2-3 and 21-22.

148 United States Air Force, *AFDD 2-7.1 (1998)*, 25.

149 United States Air Force, *AFDD 2-7.1 (1998)*, 56.

Operationally, the *AFDD 2-7.1* also offered specific guidelines reminiscent of counterinsurgency theory:

> "Air and space power contributes most effectively to security and neutralization when it functions as an integrated, joint component of the overall internal defense effort. It is least effective when employed unilaterally as a substitute for ground maneuver or long-range artillery. In many instances, air support can be exploited to greatest advantage by emphasizing surveillance and logistics mobility over firepower. Insurgents generally possess no air capabilities of their own. They have no heartland, no fixed industrial facilities, and few interdictable LOC (Lines of Communication, RS). At the guerrilla warfare level, their lack of extensive strength and weaponry is offset by tactical mobility, surprise, and deception. Their irregular forces are deployed in small units that find easy concealment in rural terrain and sometimes within civilian society itself. Where insurgents are unwilling to concentrate their forces, they usually present poor targets for air attack. In such cases, air support for security and neutralization should be used primarily to inform, deploy, sustain, and reinforce surface elements of the internal security force. The emphasis on surveillance and mobility also applies to military operations supporting counterdrug activities and to government actions suppressing terrorism and aggravated forms of civil disorder." [150]

Therefore, the doctrine stated that when direct support was involved, primary missions of the air weapon were intelligence collection, airlift, psychological operations, interdiction, and close air support. As for close air support, the document warned against excessive use of air-delivered munitions, out of concern for collateral damage and civilian casualties.[151] Also, *AFDD 2-7.1* offered advise for planning of air operations which, in general, acted as force multiplier for ground operations by increasing effectiveness and survivability of security activities.[152] Notably, it argued that acquiring situational awareness of the area of operations was very important to devise a strategy in which all assets, civilian and military, received their proper role. Second, once the roles were properly determined, the document advised to deploy air and space functions in the earliest stages of the conflict as possible, preferably in the pre-hostilities phase. Chances for success were then the highest and the risk of becoming involved in sustained combat were the lowest. Third, it implied that latest generation airborne platforms were of limited use when countering an internal threat, as these were more expensive and difficult to maintain due to their technological sophistication.[153] In all, the *AFDD 2-7.1* showed remarkable overlap with the ground-centric approach of airpower in irregular conflicts described in chapter two, especially with regard to the supporting missions and the role of technologically advanced assets.

150 United States Air Force, *AFDD 2-7.1 (1998)*, 15.

151 United States Air Force, *AFDD 2-7.1 (1998)*, 16-19.

152 United States Air Force, *AFDD 2-7.1 (1998)*, 31.

153 United States Air Force, *AFDD 2-7.1 (1998)*, 10, 31-32 and 43.

According to several writers on the topic, the published doctrines continued to suffer from a lack of clarity with regard to terminology.[154] The role of airpower in irregular warfare, in all its perceived utterances, was not consistently covered in the various doctrines. When the "War on Terror" started, concepts relating to irregular warfare were described in operational-level doctrines of the various services, and were not sufficiently represented in service basic doctrine or joint doctrine. The consequence was that these operational level doctrines showed mutual differences, and did not penetrate institutional barriers of the service leadership, regardless of the service.[155]

In addition air force doctrine only appealed to a small segment of airmen, notably Special Operations Forces, and in general lacked the detail necessary to guide airpower professionals in devising plans and strategy.[156] US Air Force doctrines on irregular warfare suggest as much. Although the declared scope of the *AFDD 2-7.1* was that it was applicable to all all Air Force personnel, the introduction started with a citation about the role of Special Operations Forces.[157] The overarching doctrine, *AFDD 2-3: Military Operations Other Than War* of 2000 stated that *"although almost all Air Force units can support these operations, Air Force special operations units routinely train to conduct this mission."*[158] Further corroboration can be found in the doctrine of special operations, in which both Foreign Internal Defense and Combatting Terrorism were regarded to be principle missions of the joint Special Operations Forces.[159] Alan Vick and others stated that the USAF did not make COIN an institutional priority, as it either relegated it to SOF, or treated it as a lesser task that needed no special training.[160] Major John Doucette concluded in 1999 that especially the US Air Force doctrine on irregular warfare fell *"woefully short of even providing a point of departure for airmen to construct a comprehensive air strategy"*.[161] While this might be an overstatement, indications were that there was no comprehensive set of doctrines for irregular warfare available, and that the Special Operations Forces were to be the specialists in it. But in general, it impeded the very function doctrine was supposed to perform: guiding airpower professionals in their actions.

154 Chavez, "Basic and Operational Doctrine", 29, and Drew, "Short Journey to Confusion", 346-347.

155 Chavez, "Basic and Operational Doctrine", 29, Drew, "Short Journey to Confusion", 346, and Doucette, "USAF Lessons in COIN", 73.

156 Chavez, "Basic and Operational Doctrine", 29, and Doucette, "USAF Lessons in COIN", 73.

157 United States Air Force, *AFDD 2-7.1 (1998)*, v.

158 United States Air Force, *AFDD 2-3 (2000)*, 27-28.

159 United States Joint Chiefs of Staff, *Joint Publication 3-05: Doctrine for Joint Special Operations*, April 17, 1998, http://www2.gwu.edu/~nsarchiv/NSAEBB/NSAEBB63/doc3.pdf (accessed October 30, 2013), II-4.

160 Alan J. Vick, Adam Grissom, William Rosenau, Beth Grill and Karl P. Mueller, *Air Power in the New Counterinsurgency Era. The Strategic Importance of USAF Advisory and Assistance Missions* (Santa Monica, CA: RAND Corporation, 2006), http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG509.pdf (accessed January 3, 2014), xvii.

161 Doucette, "USAF Lessons in COIN", 85.

4.4.3. Levels of Institutionalization

Within the context of the initial deployment of military advisors to Vietnam, this conceptual foundation coincided with organizational initiatives within the US Air Force to successfully execute counterinsurgency operations. As already hinted upon above, the primary units that were dedicated to perform irregular warfare activities were SOF. The first such was the establishment of the 4400th Combat Crew Training Squadron (CCTS) at Hurlburt Air Force Base, Florida. Shortly thereafter, it was renamed 1st Air Commando Group, and placed under the newly erected Special Air Warfare Center (SAWC) in April 1962.[162] The SAWC had the primary mission of training indigenous air forces in, what was then called, unconventional warfare and counterinsurgency air operations and techniques, which by 1962 meant training the South Vietnamese Air Force. This mission also included writing of doctrine, which it did via so-called Tactical Air Regulations.[163] After the end of the Vietnam War, the USAF turned away from irregular warfare at the institutional level as well. The SAWC was disbanded in 1974, and by the early 1980s, its mission had virtually disappeared from professional military education.[164]

Meanwhile, operations within the realm of non-conventional conflicts increasingly became associated with special operations. Doctrine development, organization, and training for irregular warfare became part of a *de facto* niche performed by Special Operations Forces up to the point where James Corum even stated that the tasks became "*ghettoized*" within the special operations realm.[165] As special operations of all services became centralized in the Special Operations Command (SOCOM) in 1987, no single service felt responsible for writing doctrine on a task which was considered secondary to the conventional task in Europe and Korea.[166] The US Air Force officially did not renounce irregular warfare altogether, nor did it officially relegate it to Special Operations Command. In March 1986 the USAF established a Center for Low Intensity Conflict.[167] In addition, in

162 Drew, "Short Journey to Confusion", 331, Wray R. Johnson, "Whither Aviation Foreign Internal Defense?", *Airpower Journal* 11, no. 1 (1997): 67-85, 70, and Edward B. Westermann, "Relegated to the Backseat: Farm Gate and the Failure of the US Air Advisory Effort in South Vietnam, 1961-1963", In: *Military Advising and Assistance: From Mercenaries to Privatization 1815-2007*, ed. D. Stoker, Cass Military Studies (London and New York, NY: Routledge, 2008), 127-150, 127-128. Darrel Whitcomb provides a description that slightly differs from the one presented here. It concerns mostly dates. Whitcomb also states that although the start of the 4400th CCTS can be determined with relative ease, its end can not due to the many reorganizations in a short period of time. As Whitcomb does not provide any references to support his statements his description can not be verified. See:Darrell Whitcomb, "Farm Gate", *Air Force Magazine: Online Journal of the Air Force Association* 88, no. 12 (2005) http://www.airforcemag.com/MagazineArchive/Pages/2005/December%20 2005/1205farmgate.aspx (accessed October 23, 2013).

163 Kenneth Beebe, "The Air Force's Missing Doctrine: How the US Air Force Ignores Counterinsurgency", *Air & Space Power Journal* 20, no. 1 (2006): 27-34, 32, and David J. Dean, *The Air Force Role in Low-intensity Conflict* (Maxwell Air Force Base, AL: Air University Press, 2001), 91-92.

164 Beebe, "Air Force's Missing Doctrine", 32, and Johnson, "Whither", 73.

165 James S. Corum, "Rethinking US Army Counter-insurgency Doctrine", *Contemporary Security Policy* 28, no. 1 (2007): 127-142, 129.

166 Barnett, "USAF and LIC", 17-18, and Chavez, "Basic and Operational Doctrine", 23-25 and 31.

167 Anonymous, "The Center for Low Intensity Conflict Closes After 10 Years", *Federation of American Scientists website* http://fas.org/irp/news/1996/n19960626_960615.html (accessed November 18, 2015), and Drew, "Short Journey to Confusion", 344,

1994 the USAF established the 6th Special Operations Squadron (6 SOS) for the purpose of conducting Foreign Internal Defense, which exists to this day.[168]

Although several doctrine publications on or referring to irregular warfare were available in 2001, and some of the required organizations were in place, literature reveals that execution was problematic. All initiatives to professionalize the USAF on counterinsurgency issues encountered obstacles that precluded the full use of their potential. The Center for Low Intensity Conflict became a joint venture with the US Army quickly after its establishment. According to Dennis Drew, it was not able to produce much relevant airpower theory on irregular warfare, as the US Army came to dominate the center and its publications. It was closed on 28 June 1996.[169] The USAF 6th Special Operations Squadron suffered from lack of resources, especially aircraft of the type that Foreign Internal Defense could be executed with. Also, FID was a niche capability even within the realm of special operations. In general, within the special forces community FID was considered to be a second-rate task below other tasks that could be useful in conventional conflicts, such as unconventional warfare, direct action, special reconnaissance, and counterterrorism.[170] Alan Vick and others remarked that by 2006, aspiring a position within the squadron was a dead-end career choice due to unfavorable or unclear career paths within the metier of air advising. This situation reflected an indifference of the USAF towards counterinsurgency.[171]

4.4.4. Serendipitous Match With a New Model

The US military had a reputation of ignoring the lessons of irregular warfare after the Vietnam War.[172] The US Air Force in particular was prone to this reputation, as, according to Robert Owen, *"air forces tend to have a genetic code that makes COIN distasteful"*.[173] Within

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and Johnson, "Whither", 73-74.

168 Beebe, "Air Force's Missing Doctrine", 32, Robert E. Kiebler, "USAF Advisory Programs: Evolving to Meet Future Challenges", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2007) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8zNjgoNw==.pdf (accessed July 3, 2013), 14, and Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 116-117.

169 Anonymous, "Center Closes", and Drew, "Short Journey to Confusion", 344 and 355 (note 85).

170 Beebe, "Air Force's Missing Doctrine", 32, Arthur A. Jistel, "The Role of Air Force Special Operations Forces in the Low Intensity Conflict Environment", (Thesis, U.S. Army War College, Carlisle Barracks, PA, 1991) http://www.dtic.mil/dtic/tr/fulltext/u2/a236491.pdf (accessed November 26, 2015), 7-14, Wray R. Johnson, "Ends Versus Means: The 6th Special Operations Squadron and the Icarus Syndrome", *Air and Space Power Chronicles* (January 12, 2000) http://www.airpower.maxwell.af.mil/airchronicles/coj/cc/WJohnson.html (accessed November 25, 2015), and Johnson, "Whither".

171 Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 120 and 144.

172 Beebe, "Air Force's Missing Doctrine", 26 and 32, Crane, "United States", 59, and Drew, "Short Journey to Confusion", 346-347.

173 Robert C. Owen, "Structuring Global Air Forces for Counterinsurgency Operations", In: *No Clear Flight Plan: Counterinsurgency and Aerospace Power*, Silver Dart Canadian Aerospace Studies, ed. James Fergusson and William March (Winnipeg: Centre for Defence and Security Studies, University of Manitoba, September, 2008), 221-236, 233.

this line of reasoning western forces, and especially air forces, allegedly suffered from a conventional mindset, which showed itself in educational curricula, organizational structures, equipment, and doctrine.[174] The US Military, and in its wake the US Air force, suffered from what David Ucko called the "counterinsurgency syndrome": an institutional cyclical tendency to forget lessons of counterinsurgency and re-focus on high intensity warfare.[175] In addition, Drew stated that the Air Force ignored insurgencies as much as possible, and preferred to regard them as a smaller, and therefore easier, version of conventional war.[176] The result was that the US military showed an organizational focus on one possible future regular warfare environment, at the expense of a, more current, irregular warfare environment. As doctrine had a purpose of helping militaries prepare for perceived operational environments, according to these scholars the US Military could not properly prepare for irregular warfare and insurgencies, at least partially as a result of lack of applicable doctrine.[177]

A closer look at the doctrines and the organizations that were supposed to work with these doctrines shows that this was partially true in 2001. On the one hand the body of knowledge was poorly defined and scattered across various doctrinal publications at the operational level. The doctrine on the mission at hand, counterterrorism, was the least well formulated. The doctrine on another element of irregular warfare, counterinsurgency, was more comprehensive, especially for the USAF. The *AFDD 2-7.1* even showed remarkable consistency with the latent scholarly consensus on airpower in irregular conflict that was current at the time. However, this doctrine suffered from declining attention. Organizationally, the missions were relegated to a subsegment of SOF organization, and were left with too little resources to execute their tasks properly. On the other hand, doctrine did not completely vanish. In addition, SOF initially were the primary ground forces in Afghanistan. It can be argued that the ODAs doctrinally performed Foreign Internal Defense, more specifically within the dimension direct support involving combat. One of the novel elements was the addition of JTACs, who made western airpower directly available to indigenous allies. It remains unknown which influence the doctrines exactly had in formulating the initial plan for operation *Enduring Freedom*. Many other forces, such as for instance the limited alternatives, were in play. Nevertheless, developments in the first phase of operation *Enduring Freedom* showed a relatively good match between doctrine and reality in 2001, despite its drawbacks and the framing in a different context than the most applicable doctrine.

174 Beebe, "Air Force's Missing Doctrine", 27, and Owen, "Structuring Global Air Forces", 234.

175 David H. Ucko, *The New Counterinsurgency Era: Transforming the U.S. Military for Modern Wars* (Washington, DC: Georgetown University Press, 2009), 44-45.

176 Dennis M. Drew, "U.S. Airpower Theory and the Insurgent Challenge: A Short Journey to Confusion", *The Journal of Military History* 62, no. 4 (1998): 809-832, 809.

177 Beebe, "Air Force's Missing Doctrine", 28.

4.5. Force Levels and Resources: All Hands on Deck

While the strategy was being developed and an operational plan formulated, the US started to build up their presence in CENTCOM's area of operations. This included behind the scenes logistical preparations, such as recalling aircraft from test programs, emergency orders of ordnance, and movement of fuel stocks.[178] Most importantly, US military started to deploy its air assets as close to Afghanistan as possible. This required diplomatic effort to obtain basing and overflight rights from countries in the region, which took place in parallel with development of the operational plans. Between the attacks on 9/11 and US reaction on October 7, many activities took place to make an attack on landlocked Afghanistan possible. As Lambeth stated in 2005: "*in the space of just a little over three weeks, the US government pulled together an effective international coalition, crafted the beginnings of a serviceable war strategy, moved needed forces and materiel to the region, developed alliances with indigenous anti-Taliban elements in Afghanistan, arranged for regional basing and overflight permission, laid the groundwork for an acceptable target approval process, and prepared to conduct concurrent humanitarian relief operations*"[179].

The Air Order of Battle (AOB) basically consisted of five parts. First, US Air Force, supported by other armed services, moved bombers, fighter aircraft and combat support aircraft to airbases as close to the area of operations as was both operationally desirable and diplomatically feasible. To this end about nine airbases and several dozen assets stationed there as part of operation *Southern Watch*, as well as the CAOC at Prince Sultan Air Base in Saudi Arabia, shifted their attention from Southern Iraq to Afghanistan. However, there were additional airbases needed, and the US presence on the already operational bases needed to be drastically expanded.[180]

Second, the US Navy and US Marine Corps directed carrier groups towards the Arabian Sea. It involved the US Navy Carriers USS *Enterprise*, USS *Carl Vinson*, USS *Theodore Roosevelt*, USS *John C. Stennis*, and the USS *John F. Kennedy*. The *Carl Vinson* was already in theater conducting operations for *Southern Watch*. The *Enterprise* just finished operations and was on its way home, but turned around immediately after the news of the 9/11 attacks reached the ship. Mid-October, while operations had already commenced, the two aircraft carriers were reinforced by the *Theodore Roosevelt*. As the carriers rotated their shifts, there were three aircraft carriers at the peak of operations, later reduced to two.[181] Carrier firepower came from the carrier based fighter-bombers of several types, but they also contained support aircraft and helicopters.[182]

178 Lambeth, *Airpower Against Terror*, 60-64.

179 Lambeth, *Airpower Against Terror*, 59.

180 Lambeth, *Airpower Against Terror*, 43, and Wright, Bird, Connors, and others, *Different Kind of War*, 63.

181 Holmes, *F-14 Tomcat Units*, 8-9, Lambeth, *Carrier Air Power*, 10 and 20, and Wright, Bird, Connors, and others, *Different Kind of War*, 63. For an impression of the assets on an aircraft carrier, see: Ted Carlson, "Give 'Em Hell Harry!", *Air Forces Monthly*, no. 257 (2009): 84-89.

182 See appendix 3.2.

Third, air assets related to various types of specialist units needed to be deployed near the borders of Afghanistan, as they had the task of inserting or extracting these units. It concerned CIA operatives, Special Operations Forces and dedicated Combat Search and Rescue (CSAR) units. CIA operatives used Russian built Mi-8/17 "Hip" transport helicopters either from the Northern Alliance, or helicopters painted in the color scheme of the Northern Alliance, and operated from undisclosed locations. The Special Operations Forces used their helicopters stationed on airbases in countries surrounding Afghanistan, and those on the USS *Kitty Hawk*. This US Navy aircraft carrier was stripped of most of her organic air assets to make room for Special Operations Forces and their helicopters.[183] CSAR-capability was deemed mission-essential in case a surviving pilot of a downed aircraft, or other US or Coalition members on the ground in Afghanistan, had to be extracted in an emergency to avoid capture by Al Qaida or Taliban or to survive injuries. Because this involved more or less visible American forces on foreign ground, and because they had to deploy first, it was for these units that most diplomatic effort was needed.[184]

Fourth, the CIA and US Air Force directed their Unmanned Aerial Vehicles to the skies above Afghanistan. It concerned MQ/RQ-1 Predators/Reapers and an RQ-4 Global Hawk, the latter being under development and not declared operational yet in September 2001.[185]

Finally, behind the scenes several airbridges were established from mid-September onwards to move personnel, equipment, and supplies to the area. The US Air Force erected two air bridges. One came from the west, using Morón Air Base in Spain, Rhein-Main and Ramstein Air Bases in Germany, and Incirlik Airbase in Turkey. The other came from the east, using Anderson Airbase in Guam and an airbase on the British island of Diego Garcia, located in the Indian Ocean.[186] Outlines of these various orders of battle are depicted in appendices 3.1 to 3.4.

Even though *Enduring Freedom* was US-led, and the bulk of the operations was executed by the US, other countries were involved in the operation from the beginning. First assets in this respect were initially five and later seven Airborne Warning and Control System (AWACS) aircraft from NATO. They were deployed to the United States mainland from October 9, 2001, to May 2002 to provide support to its military response for homeland defense, called Operation *Noble Eagle*. The NATO name for the operation was *Eagle Assist*, and

183 Berntsen and Pezzullo, *Jawbreaker*, 50, Holmes, *F-14 Tomcat Units*, 47, Lambeth, *Carrier Air Power*, 10, Forrest L. Marion, "Ten Seconds to Impact: The B-52 Strike at Bagram, Afghanistan, November 12, 2001", *Air Power History* 61, no. 1 (2014): 6-13, 8, Schroen, *First in*, 25, 151-152 and 230, Whitcomb, *Steel Horse*, 505-549, and Wright, Bird, Connors, and others, *Different Kind of War*, 73-75.

184 Whitcomb, *Steel Horse*, 505, Wright, Bird, Connors, and others, *Different Kind of War*, 35, and Woodward, *Bush at War*, passim.

185 Lambeth, *Airpower Against Terror*, 59-60 and 120, Ripley, *Air War Afghanistan*, 32, 39, and 189-195, and Richard Whittle, "Predator's Big Safari", (Mitchell Institute Press, August, 2011) https://higherlogicdownload.s3.amazonaws.com/AFA/6379b747-7730-4f82-9b45-a1c80d6c8fdb/UploadedImages/Mitchell+Publications/Predator's+Big+Safari.pdf (accessed August 6, 2016), passim.

186 Grant, "Afghan Air War", 13, Haulman, "Intertheater Airlift Challenge", 7, Lambeth, *Airpower Against Terror*, 62-65, Whitcomb, *Steel Horse*, 505, and Wright, Bird, Connors, and others, *Different Kind of War*, 85-86.

involved about 360 missions, about a quarter of all AWACS missions in US airspace, and involved 830 crew members from thirteen countries.[187]

In the Central Asian theatre the US, after some reluctance, accepted offers from other countries to help execute operation *Enduring Freedom.* Biggest contributors were the United Kingdom, France, and Italy. The United Kingdom participated with its own operation called *Veritas*, and for that purpose re-tasked fighter-bomber aircraft, airborne command and control aircraft and airborne tankers. These assets were already in theater conducting operations in the context of operation *Southern Watch*, or conducting a large planned exercise in Oman. The Royal Air Force (RAF) was also tasked to participate in operation*Veritas* with several types of intelligence aircraft and transport aircraft, and did so from the start onwards with about twenty airframes in total. The UK also participated with SOF and associated helicopter capabilities.[188] Late 2001, France and Italy participated with an aircraft carrier each, called the *Charles de Gaulle* and the *Garibaldi* respectively. As with the American Carriers, the *Charles de Gaulle* and the *Garibaldi* delivered firepower by means of carrier based fighter-bombers, as well as some support helicopters. France added two photo reconnaissance aircraft in October 2001, and two airborne tankers and six additional fighters in February 2002. They operated from airbases located in countries north of Afghanistan. Four other countries offered additional support of which two were not members of NATO. Canada supported with transport planes and patrol aircraft[189], and South Korea helped re-supply US forces in Diego Garcia.[190] Australian fighters provided air defense of the island, and deployed airborne tankers to Kyrgyzstan.[191] Germany supported the US effort by moving cargo from Ramstein in Germany to Incirlik in Turkey. From there

187 N. Bensahel, *The Counterterror Coalitions: Cooperation with Europe, NATO, and the European Union* (Santa Monica, CA: RAND Corporation, 2003), http://www.rand.org/pubs/monograph_reports/MR1746.html (accessed July 6, 2017), 8-9, Grant, *First 600 Days*, 30, and Lambeth, *Airpower Against Terror*, 23.

188 Anonymous, "Operation Veritas - British Forces", *Website UK National Archives* (April 8, 2010) http://webarchive.nationalarchives.gov.uk/20100408092137/http://www.operations.mod.uk/veritas/forces.htm (accessed October 18, 2018), Anonymous, "Operation Veritas - Summary Reports - April 2002 - June 2002", *Website UK National Archives* (April 8, 2010) http://webarchive.nationalarchives.gov.uk/20100408095957/http://www.operations.mod.uk/veritas/summary_apr-jun02.htm (accessed October 16, 2018), Anonymous, "Operation Veritas - Summary Reports - January 2002 - March 2002", *Website UK National Archives* (April 8, 2010) http://webarchive.nationalarchives.gov.uk/20100408095958/http://www.operations.mod.uk/veritas/summary_jan-mar02.htm (accessed October 16, 2018), Anonymous, "Operation Veritas - Summary Reports - October 2001 to December 2001", *Website UK National Archives* (April 8, 2010) http://webarchive.nationalarchives.gov.uk/20100408095959/http://www.operations.mod.uk/veritas/summary_oct-dec01.htm (accessed October 16, 2018), Holmes, *F-14 Tomcat Units*, 16, and Ripley, *Air War Afghanistan*, 37. See also appendix 3.5.

189 Anonymous, "17 Nations Unite to Combat Terrorism", *Pentagon Brief* (2002): 4-5 http://search.proquest.com/docview/215552163?accountid=35226 (accessed February 20, 2015), and Anonymous, "Canada's Air Force Contributions to the Campaign Against Terrorism to Be Sustained", *Canada NewsWire* (Ottawa: PR Newswire Association LLC, July 8, 2002) http://search.proquest.com/docview/453406316?accountid=35226 (accessed September 24, 2014).

190 Anonymous, "Republic of Korea", *Website US Central Command* http://www.centcom.mil/en/about-centcom-en/coalition-countries-en/republic-of-korea-en (accessed September 24, 2014).

191 Nicole Brangwin, "Australia's Military Involvement in Afghanistan Since 2001: A Chronology", *Website Parliament of Australia* (July 16, 2010) http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/BN/1011/MilitaryInvolvementAfghanistan (accessed July 10, 2014).

the supplies were moved intra-theater by US C-17s.[192] An outline of allied contributions to operation *Enduring Freedom* is provided in appendix 3.5.

Benjamin Lambeth estimated that the total US air order of battle consisted of between 400 and 500 aircraft on the eve of operation *Enduring Freedom*.[193] Opposing this AOB were the Taliban and Al Qaida, possessing unguided RPGs, AAA systems and heavy machine guns to use against coalition aircraft. They had some radar guided systems and a few aircraft in their inventory as well, but serviceability and knowledge to operate it were low. Guided infrared systems, such as the SA-7 and more notably the Stinger, posed the most significant threat. Numbers of available systems and serviceability was largely unknown. It should be stated however that at that moment the US was still building up its forces, which was dependent on diplomatic approval by governments of countries surrounding Afghanistan. In the south, the US received diplomatic approval to use Pakistani airspace and Pakistani air bases relatively quick, despite the domestic sensitivity in Pakistan toward such a permission.[194] In the north the situation was more unruly, as especially the Uzbek government was reluctant to grant permission to base US forces on its soil. When permission was granted, in the case of Uzbekistan only after initial operations had commenced, the clearance was not always communicated down the entire chain of command. This sometimes led to confusion when the US forces actually wanted to arrive.[195] And even then this did not mean that the air bases could be used immediately. Some runways were too short to receive the large C-5 transport planes, and many airfields needed repairs and additional logistical facilities. In addition, these airbases were envisioned to become logistical hubs as well, which resulted in convoluted airspace and ramp space above and on the airfields.[196] Both developments delayed the build up of forces, with the result that this build up was still in progress when the operations started. Possibly for this reason, Anthony Cordesman estimated that by June 2002 the air order of battle consisted of nearly 600 airplanes.[197]

So, the air order of battle during the initial phase was very fluid. Also, not all information is available, and some of the assets relocated during this phase of the conflict.[198] Finally, the number of assets could differ as not all scholars on airpower include

192 Lambeth, *Airpower Against Terror*, 268.

193 Lambeth, *Airpower Against Terror*, 72.

194 Bird and Marshall, *Afghanistan*, 71, and Wright, Bird, Connors, and others, *Different Kind of War*, 58.

195 Bird and Marshall, *Afghanistan*, 72, Haulman, "Intertheater Airlift Challenge", 4, and Woodward, *Bush at War*, passim.

196 Haulman, "Intertheater Airlift Challenge", 3-5, and Wright, Bird, Connors, and others, *Different Kind of War*, 59-61.

197 Anthony H. Cordesman, "The Ongoing Lessons of Afghanistan: Warfighting, Intelligence, Force Transformation, and Nation Building", (Center for Strategic and International Studies, Washington, DC, May 6, 2004) http://csis.org/files/media/csis/pubs/afghanlessons.pdf (accessed November 15, 2014), 100.

198 Cordesman, "Ongoing Lessons", 100. Relocation was for instance the case with the B-1 bombers, that moved from Diego Garcia to Oman in January 2002 (Thomas Withington, *B-1B Lancer Units in Combat*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing, 2006), 49). Another example is stationing of F/A18s on Manas Airbase in Kyrgyzstan, Mid-April 2002 (Anonymous, "Six U.S. F/A-18s Arrived at Manas Air Base in Kyrghyzstan Last Week", *Aviation Week & Space Technology* 156, no. 16 (2002) http://search.proquest.com/docview/206120239?accountid=35226 (accessed February 17, 2015)).

helicopters in the air order of battle.[199] So, the actual air order of battle to a large extent cannot be determined exactly. What makes it even more challenging is that it was not possible to assess beforehand whether the number (and types) of aircraft was sufficient for the task at hand. There was a plan, but the situation in Afghanistan was unique in many ways. Using indigenous forces on this scale and in this manner had not been done before. Therefore, while the numbers of aircraft should not be taken as a given, it can be concluded that the US concentrated a massive amount of airpower around Afghanistan, including several hundred airframes. These airframes belonged to all services and several countries, and comprised the entire spectrum of airpower, from long range bombers to the smallest of helicopters. Of similar interest is the type of airpower the US brought to bear. As explained in chapter two, the US military had been involved in a program of "Transformation" for about a decade. The "asymmetric advantage" the air weapon was developing was suddenly given the opportunity to prove itself. Rumsfeld himself proved to be a believer. He supported Tenet's plan to link small number of ground forces, indigenous forces and ground forces at least partly because it fitted within his frame of reference that favored short and decisive operations with a transformed military.[200] As with strategy, the Air Order of Battle evolved as a result of availability and operational necessity. It would be the first test of information age airpower.

4.6. Command Relationships: Straightforward but Unique

The command relationships that evolved just before the start of operation *Enduring Freedom* made use of existing structures of the United States Military, albeit with a few special twists. The commander of US Central Command, Army General Tommy Franks, was in charge of planning and execution of the operation named *Enduring Freedom*. His headquarters was located in Tampa, Florida.[201] Franks had several component commanders, who were responsible for the execution of operations of the subordinate branches. Central Command Air Forces (CENTAF) was CENTCOM's Air Force Service Component, which was headquartered at Shaw Air Force Base, South Carolina. It was headed by Lieutenant General Charles Wald and from November 2001 Lieutenant General T. Michael Moseley.[202] Operationally, CENTAF provided the so called Component Commander. Generals Wald and Moseley accordingly acted as the Combined Forces Air Component Commander (CFACC), who was in charge of command and control of the air weapon. Moseley and Wald moved to the CAOC, located at Prince Sultan Airbase, Saudi Arabia, to direct air operations from

199 Lambeth does not explicitly include helicopters in his estimation, while Cordesman does.

200 Bird and Marshall, *Afghanistan*, 66, Rumsfeld, "Transforming", and Wright, Bird, Connors, and others, *Different Kind of War*, 318.

201 Franks, *American Soldier*, 238-321.

202 Anonymous, "General T. Michael Moseley", *U.S. Air Force Website* (July, 2008) http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/104651/general-t-michael-moseley.aspx (accessed November 18, 2015).

there.[203] This CAOC was brand new and initially built for operation *Southern Watch* and was regarded to be the most capable and sophisticated command and control system yet available, demonstrating the capacity for Network Centric Warfare.[204]

Initially, the CFACC had no counterpart for ground operations. The highest commander for land forces in theater was US Army Colonel John Mulholland, commander of the 5th Special Operations Forces Group, stationed in Fort Campbell, Kentucky. He was in charge of the Joint Special Operations Task Force North (JSOTF-N), which operated from Karshi Khanabad in Uzbekistan as soon as the diplomatic arrangements with the Uzbek government were finalized. Colonel Mulholland reported to the Combined Forces Special Operations Component Command (CFSOCC) who, in turn reported to commander of CENTCOM and the commander of Special Operations Command (SOCOM). A similar scheme was envisioned for the south of Afghanistan, and plans were made to erect a comparable organization in the southern part of Afghanistan, a JSOTF-S. The envisioned JSOTF-S would be operating from a base near the southern border of Afghanistan, but JSOTF-S was established inside Afghanistan as late as December 2001.[205] See appendix 2.1 for a diagram of these command relationships. Also in theater were some CIA operatives, who had the main task of making initial contact with the Northern Alliance commanders, and lay the ground work for the Special Operations Forces that would follow later. They had their own command line, but due to their tasking were closely related to the JSOTF, as the CIA was not the primary organization that would link the indigenous forces to airpower, although some CIA teams brought with them a qualified Forward Air Controller (FAC) and his equipment.[206]

During the planning of operation *Anaconda* significant changes were made in the command relationships. During the previous months preparations were made to establish a Combined Forces Land Component Commander (CFLCC). Headed by Lieutenant General Paul T. Mikolashek, the US Army erected a CFLCC headquarters at Camp Doha in Kuwait which assumed command on November 20, 2001. There were now four major players in the area: the Combined Forces Land Component Commander, the Combined Forces Air Component Commander, Special Operations Command, and the CIA and others. [207] See appendix 2.2 for a diagram of these changed command relationships. It was Mikolashek who sent Major General Franklin L. Hagenbeck to the Afghan theater to serve as his forward deputy, called CFLCC (Forward). Hagenbeck initially set up his headquarters at Karshi Kanabad (K2) Airfield in Uzbekistan on December 12, 2001, and moved it to Bagram on

203 Lambeth, *Airpower Against Terror*, 58, and Wright, Bird, Connors, and others, *Different Kind of War*, 63.

204 Lambeth, *Airpower Against Terror*, 280.

205 Camp, *Boots on the Ground*, 108, Grau, "Coils of Anaconda", 178-179, Lowrey, *From the Sea*, 42, Stewart, "OEF", 8, and Wright, Bird, Connors, and others, *Different Kind of War*, 75 and 131.

206 Michael W. Kometer, *Command in Air War: Centralized Versus Decentralized Control of Combat Airpower* (Maxwell Air Force Base, AL: Air University Press, 2007), 200-201, Ripley, *Air War Afghanistan*, 51-53, and Schroen, *First in*, 169.

207 Grant, *First 600 Days*, 66-67.

February 12, 2002, to take over operational planning for *Anaconda* from there.[208] Originally Commanding General of the 10th Mountain Division, Hagenbeck was to become the *de facto* CFLCC for Afghanistan, which was a unusual situation.[209]

So, the command relationships with regard to airpower employment that were developed late September consisted of two parts. The first part consisted of relationships focusing on operations that the CFACC could execute on its own. These were all missions related to acquiring air superiority, engaging pre-planned targets, as described in phase two of the strategy. The second part consisted of relationships optimized for supporting ground forces. These ground forces consisted of a combination of CIA operatives, Special Operation Forces and Northern Alliance fighters, who were tasked to defeat Taliban and Al Qaida Forces.[210] To obtain the required airpower when needed, a Joint Terminal Attack Controller (JTAC), co-located with the ground forces, would call the task force's Air Control Element (ACE). This ACE would then forward the request to a detachment of Special Operations Forces at the CAOC, called the Special Operations Liaison Element (SOLE), which in turn distributed the request within the CAOC channels. Some of the ground forces were also able to contact the SOLE directly. The CAOC allocated the assets and forwarded the relevant information to the AWACS, which could direct orbiting aircraft to the original JTAC upon which the air support could be executed.[211] When done properly, and if some environmental conditions were favorable, the whole cycle could take a only few minutes.[212]

The command and control organization was as straightforward as it was unique. In essence, the CFACC could both attack targets directly in support of the military strategy, and deliver support to forces with which his subordinates were in direct contact. There were however some liabilities to this scheme. The first liability related to the dispersion of the related headquarters, which were located several thousands of miles from each other, covering several time zones. The main communication between the commanders of various headquarters took place via Video Tele Conference (VTC), which altered the dynamics amongst them. Several sources suggest that that during VTCs inevitably some information between commanders would be lost due to the dynamics of conferring short and to the point, and without the option of deliberating after the meeting was over.[213] More importantly, not all authority was delegated to the doctrinally obvious headquarters. Out

208 Naylor, *Not a Good Day to Die*, 82-83 and 87, and Wright, Bird, Connors, and others, *Different Kind of War*, 127 and 132.

209 Grau and Billingsley, *First Major Battle*, 128, Lambeth, *Airpower Against Terror*, 168, Headquarters United States Air Force, "Anaconda", 25-26, and Wright, Bird, Connors, and others, *Different Kind of War*, 127.

210 Wright, Bird, Connors, and others, *Different Kind of War*, 63 and 75.

211 Call, *Danger Close*, 31-34, Grant, *Battle Tested*, 59, and Headquarters United States Air Force, "Anaconda", 41-44.

212 Max Boot, *War Made New: Technology, Warfare, and the Course of History, 1500 to Today* (New York, NY: Penguin Group, 2006), 397-398, Kometer, *Command in Air War*, 220, and Frans Osinga, "'Airpower' in Het Postmoderne Tijdperk: Revolutie in De Lucht", ['Airpower' in the Post-modern Era: Revolution in the Air] *Militaire Spectator* 172, no. 6 (2003): 338-357, 352-355.

213 Todd Marzano, "Criticisms Associated with Operation Anaconda: Can Long-Distance Leadership Be Effective?", (Paper, Naval War College, Joint Military Operations Department, Newport. RI, October 23, 2006) http://www.dtic.mil/get-tr-doc/pdf?AD=ADA463654 (accessed December 17, 2014), James A McPherson, "Operation Anaconda: Command and Control Through VTC", (Paper, Naval War College, Newport, RI, February 14, 2005) http://www.dtic.mil/get-tr-doc/pdf?AD=ADA464899 (accessed December 17, 2014), and Perry and Kassing, *Toppling*, 40-41.

of concern of civilian casualties and collateral damage, approval of many targets remained in Tampa or even Washington. This could result in delays of the CAOC's targeting process as result of the imposed requirement to confer with staff officers at higher headquarters.[214]

A second liability was deeply embedded in the system that was chosen, and probably unbeknownst to the key players at the time. The system that was later to be called the "Afghan Model" altered the procedures of deconfliction between air-and ground elements. Traditionally, deconfliction of ground operations and air operations took place via a planning mechanism that evolved around the Fire Support Coordination Line (FSCL), which lay some distance ahead of the front line. On the enemy side of the FSCL, the Air Force was free to engage targets that brought effects at the operational level in a mission type that was called Air Interdiction (AI), such as for instance enemy ground forces on their way to the battlefield. Even further from the battlefield, targets with the potential to generate strategic effect could be targeted in a mission type that was called Strategic Attack (SA).[215] On the friendly side of the FSCL, but still in front of the friendly forces, the risk of fratricide by air attack increased, requiring increased coordination with ground forces via a qualified JTAC. The mission air assets executed was called CAS.[216]

Chapter two mentioned the consensus among airmen, soldiers and marines with regard to mutual responsibilities in this regard up and until the 1980s, and had a relationship with the ability to influence the battle space. In a conventional setting, ground forces had only limited capability to influence the battle space at the strategic level, by which was meant the leadership deep in enemy territory. Air forces did have that ability, so Strategic Attack was a primary airpower task. As for CAS, it was recognized that the air weapon dropped ordnance in direct support of the tactical situation on the ground, and in close proximity to ground forces, requiring a soldier to retain the primary responsibility.[217] Air Interdiction was also executed in relation to ground operations, but only by extension and without the direct threat of hitting friendly ground forces. On the other hand, ground forces sometimes were able to influence this operational level of the battle space, for instance with organic air assets. Hence, a traditional tension existed between air and ground forces about the responsibilities at the operational level.

The problematic element was that the Revolution in Military Affairs (RMA), and the resulting projects of relating to "transformation", blurred the relatively clear distinction between the several types of air-to-ground attack, even in a conventional setting. It challenged the linear concept of "front line" into a more diffuse one, consequently

214 Kometer, *Command in Air War*, 104, and Wright, Bird, Connors, and others, *Different Kind of War*, 63.

215 Jody Jacobs, David E. Johnson, Katherine Comanor, Lewis Jamison, and others, *Enhancing Fires and Maneuver Capability Through Greater Air-ground Joint Interdependence* (Santa Monica, CA: RAND Corporation, 2009), http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA496942&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011), 15-16.

216 Bruce Pirnie, Alan Vick, Adam Grissom, Karl P. Mueller and David T. Orletsky, *Beyond Close Air Support. Forging a New Air-ground Partnership* (Santa Monica, CA: RAND Corporation, 2005), http://www.rand.org/content/dam/rand/pubs/monographs/2005/RAND_MG301.pdf (accessed February 24, 2015), xviii and 8.

217 Philip S. Meilinger (ed), *The Paths of Heaven: The Evolution of Airpower Theory* (Maxwell Air Force Base, AL: Air University Press, 2001), xv-xxvi.

straining the concept of the primary coordination measure of the FCSL, upon which the distinction of several types of attack was based.[218] In the envisioned scheme in Afghanistan, there was no FSCL at all, as there was only a small number of ground forces, who would be widely dispersed. So, the battlefield was non-linear. The risk of fratricide was relatively low, as long as the approximate positions of the Special Operations Forces was known. Use of precise information and Precision Guided Munitions (PGMs) enabled this way of operating without a high risk of fratricide. There was, however, need for procedural deconfliction. In order to achieve this, the CAOC divided Afghanistan into engagement zones soon after operations commenced. These could be opened or closed along the lines of operational need, and served as replacement to the FSCL. Within zones containing friendly forces, coordination with a JTAC was required, and in others not.[219] The problematic element for the system of engagement zones was that the procedures did not adequately describe the situation in which ground forces were not in direct contact with the enemy, but still were able to acquire targets at long range, sometimes up to 10 kilometers (6.2 miles). In short, the distinction between Close Air Support and Air Interdiction became blurred, and new designations such as ground-directed interdiction, became known.[220] This was not a problem as long as the number of ground forces was low, and their geographic separation was high. When more forces would join the fight, and operate closer together, the system was prone to severe confusion. A clear distinction between Strategic Attack, Air Interdiction, and Close Air Support, was lacking. During execution of these different mission types, participants had different tasks and responsibilities, which were codified in Tactics, Techniques and Procedures (TTPs) and operation-specific instructions such as Rules of Engagement (ROEs). When the mission type was not clear, various participants could fall back on different TTPs or use different instructions, leading to confusion.

Third, there were minor issues that could impede the effectiveness of the CAOC. The CFACC did not control all the assets operating above Afghanistan. The CIA executed its own Predator UAV missions over Afghanistan, which were not scheduled in any Air Tasking Order (ATO) drafted by the CAOC.[221] To some extent, the same was true for the AC-130 gunships controlled by Special Operations Forces in a separate command line.[222] In addition, the Saudi Government did not allow the US to execute a surge in manning necessary for operation *Enduring Freedom*, limiting the CAOC's potential.[223] Finally, the

218 David E. Johnson, *Learning Large Lessons: The Evolving Roles of Ground Power and Air Power in the Post-Cold War Era* (Santa Monica, CA: RAND Corporation, 2007), http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA454776&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011), passim, and Pirnie, Vick, Grissom, and others, *Beyond Close Air Support*, passim.

219 Call, *Danger Close*, 111-112, Holmes, *F-14 Tomcat Units*, 47, and Lambeth, *Airpower Against Terror*, 93

220 Stephen Biddle, "Afghanistan and the Future of Warfare: Implications for Army and Defense Policy", (November, 2002) http://library.uoregon.edu/ec/e-asia/read/PUB109.pdf (accessed December 5, 2014), 26-27, Chris Finn, "The Employment of Air Power in Afghanistan and Beyond", *Air Power Review* 5, no. 4 (2002): 1-15, 6 Headquarters United States Air Force, "Anaconda", 41-44,Kugler, Baranick, and Binnendijk, "Anaconda", 10, and Wright, Bird, Connors, and others, *Different Kind of War*, 86.

221 Lambeth, *Airpower Against Terror*, 330-331.

222 Fleri, Howard, Hukill, and Searle, "Anaconda Case Study", 24-25, and Kugler, Baranick, and Binnendijk, "Anaconda", 6.

223 Lambeth, *Airpower Against Terror*, 34-35 and 66-67.

liaison elements related to airpower were undermanned. The ACE consisted of six persons, and the SOLE only of two. Both were designed to bring requests for emergency CAS to the attention of the right persons in the CAOC, but potentially had to prioritize them as well. This function ideally was reserved for an Air Support Operations Center (ASOC), attached to a high level ground forces headquarters. For operation *Enduring Freedom* however, the CAS procedure was used to direct all air requests by Special Operations Forces, who in absence of a proper ASOC turned in their requests unfiltered to the SOLE. In short, the eight personnel who were tasked to prioritize and direct requests for air support to the proper channels ran the risk of being overloaded when requests for CAS increased.[224]

So, command relationships were tailor made for operation *Enduring Freedom*, and were a reflection of the possibilities the information age military had, such managing dispersed forces over long distances, and delivering accurate and timely fire support when required. To some extent the command and control scheme was poorly codified in doctrine, or was a reflection of developments which were not fully crystallized yet. But the operational environment was also unique, to a large extent enforcing this unique set of command relationships. For this phase of the conflict, these improvised and unique set of command relationships reflect an innovative application of modern technologies, enforced by a political and operational environment that required creative thinking. Although operation *Anaconda* showed some limitations in the context of integration of air-and ground forces which will be addressed in the next paragraph, at the start of operation *Enduring Freedom* it was too early to tell whether the potential liabilities would manifest themselves, and if so, how.

4.7. Education, Training, and Lessons Learned: Tactical Focus

4.7.1. Lessons at Various Levels

In general, the stages of operation *Enduring Freedom* described here were afterwards regarded as a stunning success. Even President Bush was impressed by the achievements and the way they were delivered. The combination of real-time intelligence, local allied forces, Special Operations Forces, and air-delivered precision weapons, had never been used before in history, and it delivered victory in a very short period of time.[225] However, the operation also revealed challenges. What remained was the task of identifying the challenges and accomplishments, and incorporating its conclusions into the military in order to improve itself. Secondary literature reveals several levels of insights, along the lines of the levels of military operations.

224 Call, *Danger Close*, 31-36, and Headquarters United States Air Force, "Anaconda", 44-47.

225 Rebecca Grant, "An Air War Like No Other", *Air Force Magazine*. 85, no. 11 (2002): 30-37, 36.

4.7.2. Lessons Observed at the Strategic Level

At the strategic level, attention focused on the new relationship between the military services and the possible ramifications for the US Military and US foreign policy. Operation *Enduring Freedom* up and until mid-2002 seemed to prove that a small ground element equipped with modern communications and target acquisition equipment, and linked with indigenous forces, could achieve political and military goals very effectively and quickly. The question arose to what extent the results of *Enduring Freedom* were repeatable using this Afghan Model. This debate has been covered in chapter two. That the scheme, or variations of it, was repeated in the north of Iraq in 2003 and in Libya in 2011 shows that the US political and military leadership, and NATO, were at least inclined to consider the Afghan Model as an operational concept that could be used in future conflict. However, lessons learned at the strategic level were not yet drawn. This is understandable considering that the strategic outlook that eventually developed lacked a clear end state. It was not possible to declare victory as victory was not defined, and it would take significant time for the negative consequences of this situation to manifest themselves. In the mean time, it could be argued that the not all of the strategic goals of the GWOT were achieved, precluding the drawing of lessons learned at the strategic level in this stage of the conflict.

4.7.3. Lessons Observed at the Operational Level

At the operational level the integration of air operations and ground operations became subject of intense debate. General Hagenbeck himself was one of the instigators of it, by means of an interview in *Field Artillery* of mid-2002. In this interview he was very critical about the role airpower played during *Anaconda*. Specifically, he criticized the US Air Force for its long reaction times. He deemed the thirty-six-hour hour ATO cycle too long and too inflexible to allow for timely response to urgent requests. Hagenbeck also criticized US Air Force's inclination to stay at high altitude, implicitly stating that air assets were not as effective as they could and should have been. Pilots from the US Navy and Marine Corps did not have such an inclination. Using arguments reminiscent of the ground-centric approach to airpower in irregular conflict, Hagenbeck also expressed his preference for low and slow flying aircraft, such as the AH-64, AC-130, and A-10, implying that the faster and higher operating aircraft, like B-52, B-1, and all fighter-bombers, were marginally useful.[226] In the same issue of *Field Artillery*, Hagenbeck's fire coordinator expressed similar criticism.[227] This invoked a reaction from US Air Force circles, who in general found that these statements

226 Robert H. McElroy, "Afghanistan: Fire Support for Operation Anaconda", *Field Artillery* 7, no. 4 (2002): 4-9, 7-8.

227 Christopher F. Bentley, "Afghanistan: Joint and Coalition Fire Support in Operation Anaconda", *Field Artillery* 7, no. 4 (2002): 10-14.

were inaccurate, and that the problems at the tactical level could have been prevented if the staff of CJTF Mountain had informed the air component in a correct and timely fashion.[228]

It is hard to determine who was at fault, because a large part of the appreciation depends on the contexts of air commanders versus ground commanders. Their cooperation, or lack of it, is known as Air-Land Integration (ALI). Relationship between the air-and ground commanders and their staffs planning the operations historically encountered several fundamental obstacles. Philip Meilinger identified several *"factors for discord"* with relation to ALI. First, there were cultural differences between the services. Cultural inclination of seeking strategic effects of airmen were at odds with the more operationally or tactically oriented outlook of marines and soldiers. This was induced by the second factor, differences of perspective. As the air weapon was able to influence a relatively large area of operations relatively fast, the outlook of airmen was geographically wider than those of the soldiers and marines. Third were differing battle rhythms, in which planning cycles moved at different paces, increasing the need for synchronization. Fourth, as a result of the other three factors, airmen differed of opinion with soldiers and marines on the topic of prioritization of air assets. As airmen focus on engaging the enemy as much in advance as possible, they tended to focus on operational and strategic goals. This was at odds with air support for ground forces. Lastly, and most importantly, ALI manifested itself in one of the most dangerous missions, namely CAS. Ground forces, opposing forces, and air assets operated in a confined battlespace while disposing ordnance. In short, traditionally CAS was a dangerous mission with a relatively high risk of fratricide, aircraft loss, or civilian casualties and collateral damage.[229] During the course of airpower history, the intensity of the discord varied greatly, with examples of both excellent and defective cooperation.[230] There was however a dormant risk of mutual distrust between air commanders and commanders on the ground. Ground commanders periodically lamented that air support was not sufficient in terms of timeliness and volume. Airmen in turn could counter-argue that the focus of the ground commanders was too narrow, hampering understanding of the, for airmen, logical priorities.[231]

Anaconda has been described in many journal articles, magazine articles and case studies since then. They mostly focused on the problems that occurred on the tactical level as a result of poor coordination between the several services at the operational level.[232] Also, especially Hagenbeck's interview damaged the relationship between the US Air Force and the US Army and some General Officers involved. Hagenbeck later retracted his initial

228 Headquarters United States Air Force, "Anaconda", 54, Lambeth, *Airpower Against Terror*, 204-221, and Lyle, "Anaconda", 13.

229 Phillip S. Meilinger, "Air-Ground Cooperation Perspectives", *Military Review* 83, no. 6 (2003): 50-58, 50-54.

230 Harvey Smyth, "Air-Land Integration", In: *Routledge Handbook of Air Power*, ed. John Andreas Olsen (London and New York, NY: Routledge, 2018), 155-166, passim.

231 Meilinger, "Air-Ground Cooperation", 50.

232 Lyle, "Anaconda", 3. See for lists of these tactical problems for instance: John M. Jansen, Nicholas Dienna, Todd Bufkin, David I. Oclander, and others, "JCAS in Afghanistan: Fixing the Tower of Babel", *Field Artillery* 8, no. 2 (2003): 22-30, Lyle, "Anaconda", 7-13, and Kugler, Baranick, and Binnendijk, "Anaconda", 48-51.

statements when they were revealed to be inaccurate, but by then the relationship with the US Air Force was already damaged, and publications were already in the making.[233] The focus at the tactical level issues and the personal character of the debate to some extent polarized it, leading to several well-formulated versions of either a "you were too late" versus "you should have informed us" argument, and hampered open-minded inter-service dialogue.[234]

However, throughout secondary literature, statements and arguments can be found that put events into perspective, kept sight of the bigger picture, and focused on the reasons why these events happened. They pointed out that several liabilities with regard to command and control that were in place before the start of *Anaconda* could be responsible for some of the confusion experienced during its execution. First and foremost, the intelligence estimate was far too low. All players agreed on this, but the reasons for the miscalculation remain somewhat obscured. Reasons that can be found were that intelligence reports for Afghanistan were highly unreliable, and that operation *Enduring Freedom* thus far had shown Taliban and Al Qaida retreated in the face of overwhelming US military firepower. In addition, the US intelligence community was stove-piped, so not all intelligence available reached the intelligence officers of CJTF Mountain.[235] Lastly, the enemy CJTF Mountain encountered was very apt to cover and conceal their actions.[236] ISR efforts prior to *Anaconda* revealed nothing that would change the intelligence estimate. Also, ground commanders may have had the impression that airpower was readily available due to a general expectation of being supported, reinforced by the recent experiences in operation *Enduring Freedom*.[237] CJTF Mountain planners, and planners at other headquarters therefore probably genuinely thought that organic Apache attack helicopters and mortars, added with the two planned CAS assets were enough firepower for the operation.[238] What remains subject of debate however is how and why the original intelligence estimate of about 1,500 tot 2,000 enemy fighters was downscaled to about a tenth of that number. Reasons that can be found in literature are related to the Afghan tendency of exaggerate numbers. As most of the intelligence reportedly was based on Human Intelligence (HUMINT), intelligence personnel had a valid reason to adjust their assessments accordingly. However, there was also criticism that Hagenbeck's staff insufficiently used other forms of intelligence gathering, such as Imagery Intelligence (IMINT) and Signals

233 Andres and Hukill, "Anaconda", 135, Rebecca Grant, "The Echoes of Anaconda", *Air Force Magazine* 88, no. 4 (2005): 46-52, 46, Lambeth, *Airpower Against Terror*, 208, and Lyle, "Anaconda", 28-30.

234 Andres and Hukill, "Anaconda".

235 Grau, "Coils of Anaconda", 189 and 503-504.

236 Grau, "Coils of Anaconda", passim, Kugler, "Anaconda in Afghanistan", 19, and Wright, Bird, Connors, and others, *Different Kind of War*, 87.

237 Headquarters United States Air Force, "Anaconda", 118, and Kugler, Baranick, and Binnendijk, "Anaconda", 25.

238 Antony H. Cordesman, "The Lessons of Afghanistan: War Fighting, Intelligence, Force Transformation, Counterproliferation, and Arms Control", (Center for Strategic & International Studies, Washington, DC, August 12, 2002) http://csis.org/images/stories/burke/afghanlessons_exec.pdf (accessed November 20, 2014), 21, Grant, "Airpower of Anaconda", 63, Grau, "Coils of Anaconda", 212, 271-272 and 503-504, Grau and Billingsley, *First Major Battle*, 190, Kugler, "Anaconda in Afghanistan", 6, Kugler, Baranick, and Binnendijk, "Anaconda", 31, and Lyle, "Anaconda", 60.

Intelligence (SIGINT). As these two forms were associated with airpower assets, these arguments also had a role in the debate about the proper use of airpower.[239] Richard Andres argues that the alteration was made for *"reasons that remain controversial"*, albeit without explicating these reasons.[240] While the exact reason probably remains unknown until future declassification of relevant documents reveal the reason for the adjustment, publicly available sources suggest that all of mentioned reasons so far, and added with friction that accompanies every military operation, were responsible for the faulty intelligence assessment.

Second, the integration of the air component in planning of Joint Task Force operations was not well codified. In an extensive study, David Lyle concluded that, doctrinally, Hagenbeck and his staff acted by the book by drafting the operational order first, and then send it to the staff of the air component commander. Also, adequate guidelines to estimate the amount of air support needed for specific operations was lacking in doctrines. The book, in this case several doctrines on planning, did not adequately describe force integration during planning phases of operations.[241] This situation could be exacerbated by lack of CENTCOMs less than resolute actions to establish a clear chain of command.[242] So, traditional challenges related to ALI were exacerbated by insufficient doctrine, which seemed to favor a planning sequence that was not favored by airmen, and by higher headquarters, which developed a set of command relationships that allowed for the discussion to continue.

Third, there were additional insights with regard to the responsiveness of CAS. As for the allocation of assets, a part of the argument was quickly resolved. The thirty six hours the air component needed to plan assets only involved situations where all the planning needed to be done in advance, such as attacks on fixed targets that required specific effects, and therefore specific weapon loads. But there were also missions where this number of planning hours were not required, as intensive planning was not possible. This typically involved engagement of emerging targets, of which the nature and composition could not be foreseen entirely. In those cases a standard weapon load could suffice, and the assets carrying them could be planned relatively quickly. Air assets also could be, and were, re-scheduled in flight to perform several types of missions.[243] Related mission types were CAS, in which the air asset closely coordinated with ground forces, Air Interdiction, in which the air element could operate with relative independence, and Time Sensitive Targeting (TST),

239 Andres and Hukill, "Anaconda", 137, and Fleri, Howard, Hukill, and Searle, "Anaconda Case Study", 21.

240 Andres and Hukill, "Anaconda", 137.

241 Lyle, "Anaconda", 53-64.

242 Naylor, *Not a Good Day to Die*, 270-272.

243 Lambeth, *Airpower Against Terror*, 212, Daniel J. Magruder, "The US Air Force and Irregular Warfare: Success As a Hurdle", *Small Wars Journal Website* (2009) www.smallwarsjournal.com/blog/.../272-magruder.pdf (accessed July 2, 2014), and Kugler, Baranick, and Binnendijk, "Anaconda", 37.

a mission type involving a shortened joint decision cycle that was necessary to respond to a pre-defined, but suddenly emerging High Value Targets (HVT).[244]

While offering a solution to one element of the problem, increased responsiveness of CAS also created other challenges. As mentioned, one of outcomes of the RMA could be that it could obscure distinctions between mission types. It could induce confusion which in turn could be exacerbated when many participants operated in a small area of operations. During operation *Anaconda* this was the case, and confusion centered around the difference between CAS and TST. These types of missions procedurally differed significantly, most notably with regard to authority to deploy kinetic force. Sometimes, the issue had manifested itself while the aircraft was overhead, when both airmen and soldiers and marines had different notions of whether the air asset was executing a CAS mission, interdiction mission, or a TST mission. Crucially, when releasing a weapon during a TST-mission or interdiction mission, the pilot had to have clearance from the CAOC or even CENTCOM in order to avoid fratricide, while a clearance from a FAC or JTAC could suffice in cases of CAS. It also had consequences for the way these missions were planned.[245] During the initial days of *Anaconda*, confusion mounted as a result of the system of engagement zones that replaced the standard Fire Support Coordination Line. The system of engagements zones was not yet fully developed and had blurred the lines between the several mission types. As long as friendly troops were separated over a wide area, this was not a problem and operation *Enduring Freedom* up and until then had shown no major command and control issues.[246] But during *Anaconda*, many JTACs were confined to a very small area, and some JTACs were living under the impression that they were requesting CAS, while some pilots thought they were executing a Time Sensitive Targeting mission.[247] Later studies found that basically all CAS requests were granted by the CFACC, but that confusion with regard to the other missions led to time delays in other mission types.[248]

Fourth and last, the element of time is present in all assessments, albeit sometimes undervalued. There seems to be consensus that the air component was informed of the operations rather late, around February 20, and that General Moseley was briefed on

244 United States Air Force, *Air Force Doctrine Document 3-60: Targeting, 8 June 2006, Incorporating Change 1, 28 July 2011*, July 28, 2011, http://www.fas.org/irp/doddir/usaf/afdd3-60.pdf (accessed October 12, 2012), 8. USAF doctrine on targeting makes a distinction between deliberate targeting, which involved pre-planning, and dynamic targeting, a process in which extensive planning is not possible. TST is a type of dynamic targeting,

245 Kugler, Baranick, and Binnendijk, "Anaconda", 6.

246 Headquarters United States Air Force, "Anaconda", 42-43.

247 Fleri, Howard, Hukill, and Searle, "Anaconda Case Study", 29, Headquarters United States Air Force, "Anaconda", 44-37, David D. Kindley, ""Why Won't You Drop, Damn You!?": An Examination of the Targeting Process in Operation Enduring Freedom and Its Implications", (Paper, Naval War College, Newport, NI, February 2, 2003) http://www.dtic.mil/dtic/tr/fulltext/u2/a422702.pdf (accessed November 28, 2013), 3, Kugler, "Anaconda in Afghanistan", 18, and Matthew D. Neuenswander, "JCAS in Operation Anaconda: It's Not All Bad News", *Field Artillery* 8, no. 3 (2003): 2-6, 2-3. To some extent this is remarkable. Lester Grau states that these two types of missions were coordinated on different frequencies (Grau, "Coils of Anaconda", 391-396). Soldiers, marines and airmen therefore could derive the mission from the list of frequencies that should have been provided. However, there are several references supporting the notion that the distinction was blurred. It could be that this confusion went up to command level, where mission types and associated frequencies were mixed up. Also, it is plausible that JTACs confused frequencies in the heat of battle.

248 Kugler, Baranick, and Binnendijk, "Anaconda", 23-24.

February 25.[249] Most assessments emphasized the speed in which the air component adapted to the new situation by mustering both air assets and planning capacity once the tactical situation became clear. After a few days of the operation, most problems with regard to air support were solved.[250] The element of time with regard to planning of ground operations received less attention. Some authors noted the limited time CJTF staff had to plan operation *Anaconda*, and the consequences it had for the thoroughness of that planning. Very soon after *Anaconda,* Edgar Fleri and others noted that command and control schemes had changed dramatically during the planning phase of an operation that was scheduled to begin soon. Hagenbecks staff did not have much time to adjust to the new situation.[251] Richard Kugler and even the US Air Force reached similar conclusions. Even when the ASOC was established, it initially lacked sufficient manpower and secure communications to perform its functions.[252]

4.7.4. Lessons Observed at the Tactical Level

At the tactical level, the appreciation of the campaign thus far has been much better than at the operational level. Mainly due to the success at the technical level, the integration of US Air Force JTACs and Special Operations Forces is regarded as a great innovation, with positive consequences for success at both operational level and tactical level.[253] The argument runs as follows: even considering the haphazard manner the idea came about, the Afghan Model can be considered the epitome of the New Way of War and the project of Transformation that the US had been implementing for about a decade. The choice of aligning Special Operation Forces with Air Force Tactical Air Controllers could be regarded as a great tactical innovation.[254] To a certain extent, the US was forced to innovate. The decision was influenced by the political desire to maintain a light footprint and the operational and political necessity to act quickly. Hence, the United States to a certain extent was forced to deploy a small amount of dispersed ground forces, supported by readily available airpower, to oust the Taliban. Nevertheless, the operational concept as new. Technological and conceptual innovations of the previous decades made it possible to achieve effects with minimal numbers of ground forces. An umbrella of ISR sensors,

249 Headquarters United States Air Force, "Anaconda", 35-36, Grau, "Coils of Anaconda", 207-208, Kugler, Baranick, and Binnendijk, "Anaconda", 3, Lambeth, *Airpower Against Terror*, 170-172, and Naylor, *Not a Good Day to Die*, 137 and 153-154.

250 Kugler, "Anaconda in Afghanistan", 19-20, and Lambeth, *Airpower Against Terror*, 209-231

251 Fleri, Howard, Hukill, and Searle, "Anaconda Case Study". Unfortunately, the whole report is not published by the USAF Air University. The first twelve pages are missing. The entire argument is therefore not available to the general public. A similar situation might exist with a thesis by Mark Davis. His thesis at the Air University has been cited by some, but is is not released (Mark G. Davis, "Operation Anaconda: Command and Confusion in Joint Warfare", (Thesis, Air University, Not released, 2004)).

252 Headquarters United States Air Force, "Anaconda", 26, 44-47, and 53, and Kugler, Baranick, and Binnendijk, "Anaconda", 24.

253 Lambeth, "OEF 2001", 271.

254 Lambeth, *Airpower Against Terror*, 260.

in combination with global (near) real time connectivity of those sensors, provided an unprecedented situational awareness of the battle space. This information dominance in turn was used to deliver the air support the lightly armed and equipped ground forces needed. Tactical and technological innovations and adaptations provided the possibility of delivering the effects that were needed on the ground. For example, sensor and platform capabilities were greatly enhanced by the RQ-4 Global Hawk, which was still in development on 9/11, the arming of the MQ-1 Predator, enhanced targeting pods with high resolution that were able to target a laser spot, such as the Litening-II, and the Synthetic Aperture Radar of the B-2 bomber, and the use of SOF personnel as ISR sensor, were all technological changes which were tested for the first time during operation *Enduring Freedom*.[255]

According to Ashish Sing, these and other capabilities, were able to partially offset challenges the operational environment brought, especially weather. There were however situations where the contribution of modern equipment was limited, most notably in situations in which the opponent hid in caves.[256] But for the most part, innovations proved to be beneficial to US and Coalition forces. The percentage of guided munitions was higher than ever before, about 47%. Due to updates in software of fire control computers even non-guided weapons were more precise than before. This reduced the risk of fratricide, collateral damage and civilian casualties.[257] The interconnectedness and availability of both sensors and shooters, and the organizational integration of airpower and Special Operations Forces according to some reversed the relative roles of airpower and ground power. In line with that argument, Operation Enduring Freedom to showed that the air weapon delivered the main effort, supported by a small number of ground forces, instead of the other way round. Lambeth stated that it therefore was no longer accurate to classify the air portion in this regard as air strikes in close coordination with a FAC or JTAC close air support, but rather ground-enabled precision strike.[258] This argument in general is not seriously challenged, indicating a certain validity. However, the stance that the air portion can be classified as ground-enabled precision strike has not become commonplace.

Once in the air, operators and planners at the tactical level made adjustments in order to improve the effectiveness even more. In order to be effective against enemy hiding in caves, they used weapons that were not designed for that purpose. They also optimized fusing of other weapons in order to do the same.[259] In addition, operation *Enduring Freedom* gave birth to new tactics or renewed application of older ones. The use of the internal gun of fixed wing fighters in an air-to-ground role, commonplace during World War two but not extensively used for decades, has already been referred to. Other examples include the use

255 Lambeth, *Airpower Against Terror*, 287-291 and 342.

256 Ashish Singh, "Airpower in Mountains", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2012) Personal Collection, 64-67.

257 Call, *Danger Close*, 23, Headquarters United States Air Force, "Anaconda", 99-104, and Lambeth, "OEF 2001", 270-272.

258 Lambeth, *Airpower Against Terror*, 261-262.

259 Cordesman, "Lessons", 33-34, Steve Davies, *F-15E Strike Eagle Units in Combat 1999-2005*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing Limited, 2005), 70, and Lambeth, *Airpower Against Terror*, 287-291.

of the heavy B-1 bomber to execute a low-level, noisy, and therefore intimidating "show of force" missions. Also, capabilities of several assets were mixed to achieve the desired effect on targets.[260] In case of the Apache, the tactic of so-called "running gun" engagements, in which the helicopter did not stop and hover to fire its weapons but instead kept moving, had to be re-learned from the Cobra community. The altitude surrounding the Shah-i-Kot valley prohibited stationary helicopter engagements.[261] Steve Davies stated in a publication that F-15 crews heavily modified their tactics to adapt them to the actual tactical situation at hand.[262] The nature and exact effectiveness however is not described yet. It however can serve as an example that, as part of professional craftsmanship, pilots were constantly aware of possibilities to improve their effectiveness, were part of a culture that promoted these types of innovations, had the education and training that allowed it, and to a certain extent had the freedom to implement them. And it can be assumed that similar processes were in place for other weapon systems as well.

Besides the tactical innovations and adaptations that led to improvements, there were also some problems that needed to be addressed. Most of the lessons identified found in secondary literature pertain to the status of implementation of equipment related to the project of Transformation. Formulated differently, lack or absence of equipment sometimes hampered military effectiveness. The lack of ABCCC aircraft has already been addressed. Another prominent shortcoming was the availability of target designators that were able to help guide GPS or laser guided munitions. Training, procedures and equipment were not standardized across the force, including the coalition partners, and in general there were limited target designators available.[263] The consequence sometimes was a mismatch between capabilities of the JTACs and weapon-systems, such as for instance a situation where an air asset carried state of the art GPS guided ordnance, while the JTAC was equipped with an equally state of the art laser designator, which was optimized for aiding laser guided bombs but could not be used to assist GPS guidance.[264] The result in these cases was that it led to delay of the targeting process, and therefore decreased responsiveness. Both JTACs and pilots had to use maps to locate the target, and the JTAC had to do a visual talk on, meaning that he had to guide the pilots sensors to the target verbally. This procedure also decreased precision.[265] Other equipment that was in short supply were modern targeting pods such as the Litening-II. These systems were not integral part of the airframe, but were attached to the fuselage or wing of the airplane. Ideally, all airplanes were equipped with these targeting pods, so the pilots could find, fix, target, track, and engage targets autonomously. However, as the availability of these pods was

260 Call, *Danger Close*, 51, and Headquarters United States Air Force, "Anaconda", 94.

261 Grau and Billingsley, *First Major Battle*, 213-215.

262 Davies, *F-15E Strike Eagle Units*, 68-69.

263 Call, *Danger Close*, 33-26, Grant, *Battle Tested*, 58, Grau, "Coils of Anaconda", 218-220, Kugler, "Anaconda in Afghanistan", 19, and Kugler, Baranick, and Binnendijk, "Anaconda", 26.

264 Call, *Danger Close*, 36.

265 Kugler, "Anaconda in Afghanistan", 19.

low, not all aircraft or even units were fitted with them. Pilots of several aircraft, and sometimes several units, had to work together closely in the air, to make the capabilities of the targeting pod carried by one available to all. This increased the workload for the aircrews.[266] A similar situation existed with the scarce number of FAC(A) qualified pilots.[267] Although the detrimental effect to a certain extent could be mitigated by planning, it complicated the targeting process. Also, as the scarce equipment was needed operationally, it was often transferred to operational units, hampering education and training with the systems at the unit that were not directly involved in combat.[268] Other assets that were in high demand and low supply were, according to Anthony Cordesman, satellite bandwidth capacity, and the limited number of unmanned systems as examples of scarce assets.[269]

Lastly, tactical mishaps, albeit sometimes with strategic consequences, concerned errors inducing civilian casualties. The Bush Administration wanted as minimal civilian casualties as possible. The US therefore used strict target identification rules, and it made maximum use of precision-guided munitions.[270] Nevertheless, according to Cordesman, there were seventeen incidents that had cost civilians their lives between October 2001 and July 2002.[271] This excluded incidents where the air weapon errantly hit own forces, such as an AC-130 hitting indigenous forces during operation *Anaconda*, and a friendly fire incident where an American F-16 hit a Canadian platoon in April 2002.[272] They were usually not due to technical malfunctions, but sadly enough, rather due to human errors in the targeting cycle. Also, Taliban and Al Qaida deliberately placed civilians near their positions, increasing the risk of civilian casualties.[273]

4.7.5. From Lessons Observed to Lessons Learned

After the identification of many lessons from the opening phases of operation *Enduring Freedom*, the question remains to what extent these lessons were institutionalized. Most of the attention was directed at the lessons of operation *Anaconda*. Directly after the cessation of operations in the Sha-i-Kot valley, General Moseley organized an emergency conference at Al Jaber Air Base in Kuwait. According to Michael Binney, virtually all problems related

266 Cordesman, "Lessons", 67, Holmes, *F-14 Tomcat Units*, 18-22 and 55-56, Lon Nordeen, *AV-8B Harrier II Units of Operation Enduring Freedom*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing Limited, 2014), 19-27, and Wetzel, *A-10 Units 2002-2007*, 29-31.

267 Holmes, *F-14 Tomcat Units*, 42.

268 Cordesman, "Lessons", 68.

269 Cordesman, "Lessons", 46 and 62.

270 Lambeth, *Airpower Against Terror*, 98-99.

271 Cordesman, "Lessons", 29-29.

272 Michael Friscolanti, *Friendly Fire: The Untold Story of the U.S. Bombing That Killed Four Canadian Soldiers in Afghanistan* (Mississauga, Ontario: John Wiley & Sons Canada, 2005), and Naylor, *Not a Good Day to Die*, 199-202. The incident involving the AC-130 features in virtually all descriptions on Anaconda.

273 Cordesman, "Lessons", 26, and Lambeth, *Airpower Against Terror*, 99-103.

to CAS were due to non-adherence to the *Joint Publication 3-09.3: Close Air Support*. The various services had different tactics, training concepts, and radio nets. The result was confusion when personnel of the various services needed to work together in a confined space, as was the case during *Anaconda*. The obvious solution was adherence to joint doctrines and standardized and joint training and command and control systems.[274] These issues quickly became apparent during the conference, and after the conference the aim was to address the immediate problems surrounding command and control, the high target approval levels and centralized execution of the air campaign thus far, and the detrimental effects it had when the system was tested with high-intensity CAS and TST operations. Some of the lessons were immediately implemented via Special Instructions (SPINS) and ATO. The CAOC now fully staffed the already existing CAS-cell. These and other changes needed to find their way into tactics and procedures.[275]

Although this alleviated some of the problems surrounding CAS, it did not address the command and control issues at the operational level. To this end, personal and institutional links between the various components were strengthened. General Officers of the various services tightened their links and started to work together to fix the identified problems. Operationally, component commanders of Central Command did the same.[276] One of the outcomes was review of the training and equipment of the JTACs.[277] More importantly, the component commanders changed the organizational structure. They strengthened the position of the Joint Task Force Commander, and an ASOC was formally added to his staff.[278] Also, a new organizational element was added: the Air Component Coordination Element (ACCE). This was a small team of airmen, headed by a US Air Force General Officer, that was attached to service components that served as primary liaison and personal representative of the air component commander. After *Anaconda*, seven of these ACCEs were established, even though it took until 2007 to have the concept tested, validated, and accepted doctrinally.[279] This was more than a symbolic gesture from the various commanders. It was a representation of a wider development of defining the command relationships more clearly, and give the various commanders the right authorizations to execute their tasks.[280] In other words, it was a step in the quest to find the right "depth" in command relationships mentioned in chapter two.

274 Michael W. Binney, "Joint Close Air Support in the Low Intensity Conflict", (Thesis, US Naval Postgraduate School, Monterey, CA, June, 2003) http://calhoun.nps.edu/bitstream/handle/10945/1022/03Jun_Binney.pdf?sequence=1 (accessed November 16, 2015), 35-66.

275 Headquarters United States Air Force, "Anaconda", 121, Jansen, Dienna, Bufkin, and others, "Tower of Babel", 24-26, Kometer, *Command in Air War*, 232, and Neuenswander, "JCAS", 2.

276 Grant, "Echoes", 52, Kiras, "Moseley", 414, and Lambeth, *Airpower Against Terror*, 227.

277 Grant, "Echoes", 52, and Kometer, *Command in Air War*, 239.

278 Kugler, Baranick, and Binnendijk, "Anaconda", 6.

279 Headquarters United States Air Force, "Anaconda", 121, Kiras, "Moseley", 414-415, Kometer, *Command in Air War*, 141, and Lyle, "Anaconda", 51-52.

280 Kometer, *Command in Air War*, 141.

These changes in general led to improvements, which were visible during operation *Iraqi Freedom* in 2003. Command relationships in general, and the delivery of CAS in particular, were not as problematic as they were in operation *Enduring Freedom*.[281] In that sense, the US Military showed itself to be an effective learning organization. There are however indications that some problems may have been more obstinate than the initial gains suggest. David Lyle suggests that besides the ACCE, not much had changed with regard to operational planning. Also, the US Military was slow to update its doctrines.[282] A report written by the US Congressional Research Service noted that operations in Iraq in 2003 had led to creation of an ACCE too, which functioned properly, but was dissolved after major combat operations ended.[283] Richard Andres had the opinion that cooperation between the services beyond the tactical level improved little after *Anaconda*. Deeply rooted service culture, education and training created an atmosphere in which non-airmen kept relegating the air weapon to a supporting role, and subsequently integrated the air weapon late in their planning processes. When the air planners were invited, they suffered from their small numbers and lower ranks than their counterparts, something that had plagued CENTCOM planning as well, reducing the influence they could have on planning.[284]

4.7.6. Different Levels, Different Results

Concluding this paragraph, the developments of operation *Enduring Freedom* delivered food for thought to many. The traumatic experience of operation *Anaconda* was a powerful "*shock therapy*"[285] with regard to air-land integration that delivered the impulse to make major changes. At the tactical level this seemed to be working well. At the operational level, decisive leadership was required to tighten the relationships between the various component commanders. This level shows mixed results, which might be an indication that the goodwill of the General Officers declined somewhat after they retired and were replaced by conceptually more flexible colleagues. Sources do not reveal large lessons learned at the strategic level.

281 Call, *Danger Close*, 124-128, and Kometer, *Command in Air War*, 141.

282 Lyle, "Anaconda", 63-64.

283 Christopher Bolkcom and Kenneth Katzman, "Military Aviation: Issues and Options for Combating Terrorism and Counterinsurgency", (CRS Report for Congress, January 27, 2006) http://www.au.af.mil/au/awc/awcgate/crs/rl32737.pdf (accessed August 8, 2013),17.

284 Andres and Hukill, "Anaconda", 135-140, and Perry and Kassing, *Toppling*, 35-36.

285 Headquarters United States Air Force, "Anaconda", 121.

4.8. Analysis

The frame of reference derived from the discourse on military innovation and adaptation is useful for offering explanations for several developments observed in the opening stages of operation *Enduring Freedom*. There was a gap between what the US military was designed for and the tasks that were actually at hand, as is for instance witnessed by the decision making process prior to the start of the operation. Analysis of the manner politicians and military professionals handled the gap offers insight of the resilience, or lack thereof, of the US Military, with the air weapon in its wake. In addition, the identified set of driving factors helps to explain the manner in which the military handled the problems identified during operations, especially operation *Anaconda*.

Technology had an enabling influence, which manifested itself on various levels of military operations. At the strategic and operational levels, it made the Afghan Model possible in the first place. Technologies, more specifically the precision guided munitions of the airmen and the mobile target acquisition and communications equipment of the JTACs, allowed for deployment of a small amount of lightly armed and dispersed forces with sufficient confidence that they would successfully complete the mission. As already had been demonstrated during operations above the Balkans, long-distance communications systems also allowed for a command and control architecture that spanned the entire globe. The tactical level showed many small adjustments by the operators in order to align the weapons effects with the tactical situation.

In the background, assessment of the operational environment served as one of the baselines of the military operation. The landlocked situation of Afghanistan greatly influenced the strategic plan of the Bush Administration, but its impediments were initially overcome by airpower's technologies that enabled operations at long-range, such as air-to-air refueling capability. Initially, the combination of modern technology and cunning tactics enabled military forces to oppose most of the challenges of the human environment too. The Taliban and Al Qaida did not have an answer to the air-ground dilemma during the first months of the operation. They however proved themselves to be an adaptable force, and managed to mitigate some of the airpower advantages using cover and concealment techniques during operation *Anaconda*. The US responded with mass, albeit not in the classical sense. Mass was predominantly provided by airpower, that was coupled by SOF to indigenous forces. This combination was able to break the stalemate the indigenous forces had with Taliban and Al Qaida forces. During operation *Anaconda*, massing of kinetic effects delivered by airpower proved to be essential too. Therefore, OEF up and until then was regarded to be successful, despite several backdrops. Although not the initial strategic goal, the operational goals of toppling the Taliban and dismantling Al Qaida were completely or mostly reached, and the desire for quick retaliation of the terrorist attacks on the US mainland was fulfilled. These goals were reached without destabilizing the region, without

giving the Muslim world the impression the West waged a war against its religion, and with relatively low amount of military and civilian casualties.

There was however also criticism directed towards this success, which was related to the translation of the victory at the operational level into strategic success. Strategy showed conceptual shortcomings, in the sense that it was too generally formulated. For national policymakers, this could have an advantage, as it allowed them to redefine the operational success according to their own agendas.[286] However, as the strategy lacked a specific end state it was not possible to determine when success was reached. In addition, even before the insurgency gained momentum, there was criticism on the attention that had been paid to one of the operational goals, coinciding with one phase of the operational plan, namely the post-conflict arrangement. John Ballard, David Lamm, and John Wood could not find evidence that the initial phase of operation *Enduring Freedom* included actual tasks or objectives related to nation building, despite the presence in general operational plans.[287] Anthony Cordesman and Warren Chin suggested in separate publications in 2002 and 2003 respectively that the US, or Coalition, militaries had an over-focus on the application on military power, neglecting the stability task that was necessary after the conflict.[288] So, the operational-level victory could not be exploited to the full, and it potentially contained the seeds of strategic challenges in the future. This can partly be explained by an insufficient assessment of the strategic environment, and the shift of focus towards Iraq by the political leadership shortly after the end of major combat operations.

Alliance politics proved to have a mixed influence. The US showed strong internal consensus for action in Afghanistan. The US entered operation *Enduring Freedom* unilaterally, specifically to prevent slow decision making. When analyzed within the operational context of command relationships, this helped to develop unity of effort and unity of command, both concepts that are highly valued within the military. However, the decision to largely bypass NATO and its members induced friction within the Alliance. This did not cause immediate problems, but had the potential to influence the last phase of the plan, which *de facto* meant that the US relied on allies to execute nation-building. In theater, the political dimension manifested itself in the negotiations about the use of bases as staging areas and overflight rights. Nations in the region were well aware that their endorsement was important to the US and wanted to make sure their interests were served as well. Although the bilateral agreements eventually enabled US and coalition operations, the process of granting clearances from for instance Uzbekistan showed that it could hamper operations. Tactically, cooperation with the Northern Alliance and Pashtu anti-Taliban forces proved valuable and enabling, but only to the point where the goals were mutual. When these goals diverged, such as during the battles of Zhawar Khili and Tora Bora and during operation

286 Reed, "Why Strategy Matters".

287 Ballard, Lamm, and Wood, *From Kabul to Baghdad and Back*, 42.

288 Chin, "Operation 'Enduring Freedom'", 69-73, and Cordesman, "Lessons", 37-38.

Anaconda, the reliability of coalition partners decreased military effectiveness at crucial moments.

The two remaining driving factors of military change, cultural norms and leadership, are the hardest to grasp. As described in paragraph 1.8.3, doctrines can serve as just one possible manifestation of culture. It can be argued that the initial operations fitted within the system of the US to execute small but quick and decisive military operations as described in existing doctrines. The goal was destruction of Al Qaida and Taliban targets, a mindset that was deeply embedded in US military culture.[289] Although the doctrine on counterterrorism probably was not very helpful, other doctrines sufficed. From the perspective of airmen, the doctrine on counter air, which described operations aimed at creating and maintaining freedom of air movement, and the doctrine on CAS, which described direct air support to ground forces, sufficed to execute the first phases of operation *Enduring Freedom*, although lack of adherence to the doctrine of CAS led to confusion with other types of missions, such as Air Interdiction, Strategic Attack, and Time Sensitive Targeting.[290] Furthermore, it can be argued that the US Air Force and Special Operations Forces executed the then current *Air Force Document 1: Air Force Basic Doctrine* and its subdoctrines quite creatively by linking information age airpower to indigenous forces.[291] In that sense, the manner the US military applied available military doctrines could be an indication of an enabling mindset of adaptation, rather than one that preferred strict adherence to doctrines

An inhibiting influence of cultural norms surfaced most visibly during the discussions about command and control. Michael Kometer argued that the physical constraints and capabilities of operating in their dimensions greatly influenced the manner component and service commanders viewed the world in general, resulting in a command and control challenge. Formulated more specifically: because the air weapon could operate at comparatively long ranges, air component commanders have a broader view of the operational environment than ground commanders. Ground commanders for their part rely on maneuver and available firepower to achieve their goals in their areas of operations. They are primarily concerned about assured availability of the effects that are needed.[292] This concern penetrated to the level of the small unit ground commander, who in turn could develop a preference for airpower he could observe in the field, such as delivered by low and slow flying aircraft like the AH-64 or A-10.[293] This is at direct odds with the outlook of part of the airpower community, who could perform these missions from high altitudes and long ranges. In case of GPS-guided munitions, they did not need to see both friendly

289 Ucko, *New Counterinsurgency Era*,1.

290 United States Air Force, *Air Force Doctrine Document 1: Air Force Basic Doctrine*, September, 1997, http://www.globalsecurity.org/military/library/policy/usaf/afdd/1/afdd1.pdf (accessed April 9, 2014), 46-60.

291 AFDD 1 displays a high level codification of the innovations of the Revolution in Military Affairs (RMA): United States Air Force, *AFDD 1 (1997)*.

292 Kometer, *Command in Air War*, 116-119.

293 Singh, "Airpower in Mountains", 56.

forces or the enemy, as long as they obtained an accurate and corroborated coordinate.[294] There is however a more fundamental tension between the two outlooks because the assured availability for one ground commander could lead to a decreased assurance for another ground commander. In addition, supporting ground commanders is only one of the tasks of the air weapon, and inefficient allocation of assets and effects to ground commanders could have a detrimental effect on, for instance, Air Interdiction and strategic missions. However, according to Kometer, these different outlooks have become part of the respective organizational cultures of the services.[295]

During the discussion immediately following operation *Anaconda* various arguments reflected these service cultures. Hagenbeck's staff planned for too little air support at the start of the operations, but when the demand increased dramatically, he initially could not understand why it took the air component so long to reorganize. Reversely, Moseley probably had a hard time understanding why the ground commander expected additional and *ad hoc* support to be available at short notice, while the priority of the ground commander had to compete with other priorities in a wider operational area. At least partially, this is the background of the claim that the Air Force had been neglecting CAS, versus the counterclaim that the Army failed to properly include air operations in its plans.[296] This in turn could be a reflection of deeply rooted institutional and cultural distrust amongst the services in general, which in essence has existed since the early days of manned military flight.[297] *Anaconda* showed that these differences in service cultures hampered operations.

When problems really became apparent, such as the issue of command and control during operation *Anaconda*, leadership became more important. There are indications that not all General Officers involved in the operation had a strong working relationship due to conflicting personalities.[298] The urgency of the command and control problem however indicated it could no longer be ignored. General Moseley initiated actions to develop a more collaborative relationship of trust and respect with General Franks and the successor of General Mikolashek as CFLCC, Lieutenant General McKiernan.[299] Also, the problems were addressed at General Officer level multiple times and some of the proposed solutions, most notably the ACCE, were approved by top levels of various services rather quickly. This in turn led to increased inter-service communication, and consequently probably increased understanding and cooperation. Finally, services were also willing to review their own role in the confusion.[300] Considering the consensus that the situation around air-land integration had improved by the start of operation *Iraqi Freedom* in March 2003, it can be

294 Kometer, *Command in Air War*, 255, and Singh, "Airpower in Mountains", 56

295 Kometer, *Command in Air War*, 118.

296 Andres and Hukill, "Anaconda", Bolkcom and Katzman, "Military Aviation", 10, and Grau, "Coils of Anaconda", 504-507.

297 Johnson, *Learning Large Lessons*, 191 and 197.

298 Naylor, *Not a Good Day to Die*, 135-136.

299 Grant, "Echoes", 52, and Kiras, "Moseley", 414.

300 Headquarters United States Air Force, "Anaconda", 121, and Kiras, "Moseley", 414-416.

stated that the leadership displayed by generals of Army and Air Force had an enabling effect on the process of military adaptation. This probably also had a cultural dimension. The sequence of events shows that inter-service cultural boundaries could be broken in favor of a common goal when operational effectiveness was degraded severely enough, to resurface again when the emergency was over.

4.9. Conclusion

In September 2001, the US was compelled to respond to the terrorist threat posed by Al Qaida. In the operational sense, actions were directed to remove Al Qaida from their safe haven in Afghanistan, and therefore the main operational goal *de facto* became removal of the Taliban regime in Afghanistan, while also focusing on Al Qaida members and their leader, Osama bin Laden. Six months later, most of these goals had been achieved. The Taliban regime was removed from power. Osama bin Laden was not killed or captured, and a large portion of the remnants of Taliban and Al Qaida had fled to Pakistan, but they no longer posed a imminent threat. So, in the immediate political and operational contexts, operation *Enduring Freedom* could be regarded as a success.

A primary success factor was an innovative operational plan, that made use of the "asymmetric advantage" in conventional operations that the US military had strived to obtain during the decades preceding 2001. In this project of Transformation, the air weapon became more effective, and in Afghanistan it would be the primary deliverer of firepower, which it could mass with great speed and flexibility. It thereby proved influential in devising a new operational concept, executing innovative and effective command and control at the operational level, and effectiveness at the tactical level. In addition, the plan had a local twist. Instead of making airpower available directly to a strategic goal, or to US ground forces at the operational or tactical level, it was made available to local power holders. These power holders were in a stalemate with the Taliban, but as far as regime change was concerned, their operational goals coincided with those of the US. Coalition airpower became the leverage that could break the stalemate. There however needed to be an interface between the power holders and airpower. CIA operatives and Special Operations Forces, the latter equipped with modern navigation, target acquisition and communications equipment, proved to be capable of performing the functions of this interface. This, together with the sheer number of available aircraft, was a successful combination.

In the process, this combination was able to overcome several apparent or hidden disadvantages of the scheme. The operational plan did not have a sound strategic foundation, and was heavily dependent on the availability of indigenous forces whose loyalty was sometimes unknown. Doctrine for operations in this environment was virtually non-existent. Due to its landlocked location, inhospitable terrain, and adverse climate,

the physical environment was not benign. Command relationships were not standard, while various commanders were spread across several time zones and the influence of the communications revolution on command relationships strained standardized deconfliction procedures. Most of these disadvantages were overcome by sufficient availability of air assets, perseverance, tactical adaptation, and, in case of restrictive weather conditions, patience. Most severe of the challenges was that of command relationships. This manifested itself mostly when a relative large regular ground force and supporting assets had to operate in a confined geographical area, such was the case during operation *Anaconda*. It revived culturally induced friction between air commanders and ground commanders that periodically had plagued air-land integration from nearly the beginning of military flight. During planning and initial execution of operation *Anaconda*, the non-standard command relationships and the lack of suitable doctrine precluded that commanders could fall back on standard deconfliction procedures. These exacerbated the already existing problems of ALI. When the problems manifested themselves, the operation was already in progress. A shared notion of operational necessity and leadership of senior commanders, in other words military craftsmanship and professionalism, set in motion developments that led to relief of some of the most severe consequences of the suboptimal cooperation between ground and air assets. For the earlier phases of the conflict, in which mostly small contingents of SOF were spread across the country, these problems did not manifest themselves as severely as witnessed during *Anaconda*, although CENTCOMs interference with the targeting process of the CFACC, reminiscent external mingling during air operations over the Balkans, were a nuisance to some airmen.

Some of the larger liabilities were present at the strategic level. Reliance on local power holders was only functional as long as their interests coincided with those of the US. After the political power of the Taliban was broken, their loyalty became less assured. This forced the US to compensate with own forces. But the consequences of the biggest liability had yet to prove themselves. The strategy the Bush Administration chose did not have a clearly defined end state. When major combat operations were finished, there was no clear plan for follow-on action. Meanwhile, some of the operational-level goals had not been met. Remnants of Taliban and Al Qaida found a new safe haven in the border areas in Pakistan. So, while biggest and immediate strategic challenge was countered with a success at the operational level, it remained a question what the durability of the success would be on the long term.

The opposing forces did not have an adequate answer to the "air-ground dilemma" that was presented to them, to the extent that they played a subordinate role in evaluations after larger combat operations in Afghanistan had ended. What little air defenses they had were neutralized by superior airpower. After the battle of Mazar-e Sharif, they no longer were willing or able to conduct operations with large units. The advantages they had left against the air weapon, cover and concealment and physical protection, only were beneficial when this became a tactical goal in itself, such as was the case during the uprising in the Qal-i-

Jangi fortress, and defensive actions in mountainous staging areas like Tora Bora, Zhawar Khili, and Shah-i-Kot Valley. The US was able to counter this with sheer force, and to a lesser extent through tactical an technological adaptations.

When analyzing the role of the air weapon through the lens of the debate on airpower in irregular warfare it is important to first determine whether the operational environment that Afghanistan presented late 2001, early 2002, can be classified as irregular. Only then it is possible to evaluate the role of airpower in it. Taliban-led Afghanistan was not a well-functioning state in the classical sense. It did not have a regular army. It can be argued that in 2001, Afghanistan was in a state of civil war between Taliban on the one hand and the Northern Alliance on the other. At least at the strategic level, the primary enemy for the US was terrorism, or terrorists. This situation at least partly conforms to the definition of irregular warfare described in chapter one, which focuses on violent actions of substate actors that aim to achieve power. Also, civil war and terrorism are two of the five categories or subdenominations of irregular warfare identified in chapter one. Not surprisingly, the US response could also be classified as irregular, at least partially. Even though the classifications were formalized after 2001, this response showed several elements of four of the five activities related to countering irregular threats identified in chapter one. Operation *Enduring Freedom* was framed in terms of counterterrorism. The element of helping indigenous forces in their struggle against the most powerful group can arguably be part of Unconventional Warfare. Advising and assisting the Afghan power brokers falls within the concept of Foreign Internal Defense. Although not well-embedded in the operational plans, some consideration was given to stability operations. So, with the logical exception of counterinsurgency, which was not present, it can be argued that all US conceptual responses were present in the opening stages of operation *Enduring Freedom*. Moreover, the traditional specialists in irregular warfare, Special Operations Forces, formed the main effort on the ground for most of the operation. And they executed doctrines that had links with irregular warfare. It therefore can be argued that both the operational environment and the US-led response to it can indeed be classified as irregular.

However, there are counterarguments as well. One of the strategic goals, that of regime change, suggests a classical conflict between states. Large scale operations ended when the major center of power, the Afghan capital of Kabul, was taken. Moreover, some of the methods show signs of regular warfare. Both Taliban and their opponents had a relatively large amount of armed forces that were more or less organized. Opposing forces were in a situation of stalemate that could be broken with massing of firepower. The conflict also saw employment of regular US forces, most notably during operation *Anaconda*, and CJTF Mountain planned to execute a classical "hammer and anvil" maneuver. So, it can also be argued that this phase of the conflict showed elements of regular warfare, that of conflict between states and their armies.

This combination of regular and irregular elements could form indicators of a new way of war. As described in chapter two, the technology-centric approach to airpower

application in irregular conflict argued that the information age fundamentally altered the way wars were fought, including irregular wars. Chapter one also observed debates about hybrid forms of warfare, and chapter two observed adaptability of of non-state actors. So, the observation that the opening stages of operation *Enduring Freedom* contained elements of both regular and irregular warfare could be an indication that there was a new combination, in which the Afghan Model payed a central role. Chapter two, however, indicated that the role of the Afghan Model is indistinct in the discourse in irregular warfare.

These observations are important for evaluating the role of airpower in this phase of the conflict. As has been described above, the scheme that became known as the Afghan Model, with a key role for airpower, can be regarded as successful. From this follows and increased relevance of the air weapon. However, based on these results, it is not yet possible to draw comprehensive conclusions about a renewed effectiveness about the role of modern airpower in irregular conflict. Although stability operations were part of the considerations, by this stage there were only limited actions to that end, and without a clearly observable role for the air weapon. Afghanistan did not (yet) show signs of an insurgency, so it is impossible to draw conclusions about airpower's role in counterinsurgency based on this phase. Also, one could argue that the Afghan operational environment showed little opportunity to execute most of the activities related to Foreign Internal Defense. Airpower was however highly effective, and even increasingly effective, in the other subcontexts of irregular warfare. The air weapon was increasingly able to find, fix, target, track, and engage terrorists, and assess its effects. So, airpower had an increased role in counterterrorism. Also, one of the concepts of Foreign Internal Defense, namely direct support involving combat, benefitted from increased precision and persistence of information age airpower. Therefore, preliminary conclusion is that, while airpower functions largely remained the same and it can be argued that part of the conflict can be classified as "regular", the opening phase of operation *Enduring Freedom* showed that airpower had become increasingly effective when compared to earlier irregular conflicts, at least in some parts of irregular warfare.

Debates support this conclusion. Chapter two argued that the debate on irregular warfare showed differences of opinion on the role of violence in the conflict, types of missions the air weapon was most suitable to perform, the level of (western) ground forces that were required, command and control philosophy, relationship between air and ground forces, usefulness of certain types of intelligence, the need for specialized aircraft, and the requirement to train indigenous air forces. The character of the conflict up and until this point offered little reason for discussion on most of these elements. The role of violence, the most contentious element within counterinsurgency, was not problematic because the air weapon did not operate in an insurgent environment. The level of own forces was limited due to political considerations, only becoming operational arguments afterwards.

Use of COIN aircraft and training of indigenous forces were not at issue. All types of intelligence and all types of missions were deemed effective.

The only problematic issues were command relationships and by extension air-land integration. Based on the opening stages of operation *Enduring Freedom*, interpreting these challenges in the context of irregular warfare is somewhat problematic. On the one hand the nature and content of the problem, level of desired centralization, and the arguments were old, and were not specifically related to irregular warfare. In addition, the problems surfaced during operation *Anaconda*, when regular forces were involved and operated in a small area of operations. On the other hand, the absence of a fully trained and equipped ASOC was partially due to the composition of the task force that was poorly codified in doctrine. The composition, in turn, was influenced by the assessment of the operational environment. This environment, which partially can be classified as irregular, thus proscribed command and control needs for which the US military initially was not equipped. Commanders responded with a command and control architecture that was ill-suited for the environment, to repair it later. So, the extent to which information age command and control architecture enabled or hampered effectiveness in irregular warfare environments remains indistinct.

Chapter 5

5. Rearranging Deckchairs on the Titanic (2002 - 2008)

5.1. Introduction

After the initial phase of operation *Enduring Freedom* (OEF), with its high reliance on airpower, was finished, policy makers pondered how to proceed. The operational environment had significantly changed. As a result of OEF thus far the Taliban and Al Qaida ceased to pose an immediate threat. What seemed to remain was the necessity to stabilize Afghanistan, so the threat would not re-emerge any time soon. As described in chapter three, the US decided to continue military presence in Afghanistan with a light footprint. OEF did not end, but it changed in character while it was still framed in terms of Counterterrorism (CT). The operational focus were the terrorists. Meanwhile, NATO stepped in to execute a Stabilization and Reconstruction (S&R) mission with the International Security and Assistance Force (ISAF). The operational focus was the new government and Afghan population. So, both missions were executed at the same time and, after expansion of ISAF, to some extent in the same geographical area. This situation was of special interest for the air weapon, as its speed and range made it possible to support both missions at the same time. There were however difficulties merging both operations. Therefore, it becomes of interest how the air weapon adapted to the changing circumstances in Afghanistan.

5.2. Strategy: Serving Multiple Masters

5.2.1. *Overarching Strategy Lacking*

The previous chapter argued that the initial American contribution suffered from a lack of sound strategy, and that the conceptual gaps that were left to some extent had to be filled at the operational level. Operationally, OEF had been a success up and until mid-2002. But one of the tasks following large combat operations, namely nation-building, received minor attention. Chapter three furthermore argued that the Bush Administration chose to keep focusing on CT, but also established Provincial Reconstruction Teams (PRTs). NATO initially did not have a policy at all, for reasons that were linked to national sovereignty of its members. The member states that deployed troops to Afghanistan however operated within the general context of S&R, while the contingent of forces related to OEF retained the context of CT. As a result, individual units that deployed to Afghanistan each formulated a set of roles and responsibilities for themselves that loosely fitted the S&R concept, but more tightly fitted their own national guidelines. Neither CT nor S&R constituted a proper strategy, but rather loosely defined operational concepts. So, the first

challenge for the period directly following the removal of the Taliban from power was formulating an alternative strategy, in which activities of all involved were aligned and directed towards a common goal.

Without clear strategies coming from either Washington or Brussels, it was up to the operational-level or even tactical-level commanders to formulate a strategy that at least showed some unity of effort within the whole endeavor. Lieutenant General David W. Barno, commander of the US Combined Forces Command-Afghanistan (CFC-A) from October 2003 to May 2005, realized that a strategy was needed. Barno assessed that counterterrorism guidelines were too enemy-centric. He deemed the *de facto* emphasis on raids to be an inadequate response to the operational environment, because the activities should focus more on the population instead of on the enemy. Therefore, he issued a comprehensive counterinsurgency strategy for Afghanistan. Besides the tasks of defeating terrorism and deny Taliban and Al Qaida sanctuary in Afghanistan, his strategy also focused on the Afghan security structure, governance, relationships with regional states, and local situational understanding of subordinate American commanders.[1] During his tenure as commander of the American ground forces in Afghanistan, he tried to align military and civilian activities, in very close coordination with the US Ambassador to Afghanistan, Zalmay Khalilzad. However, the strategic change of direction from CT towards another concept initially did not go very smooth. There was discussion whether the character of the conflict constituted an insurgency, requiring a Counterinsurgency (COIN) strategy, with an accompanying focus on the Afghan population. Barno and Khalilzad thought it did. However, the US forces in Afghanistan initially retained an enemy-centric focus on CT. At lower levels, unit commanders were even forbidden to use "counterinsurgency" to describe their operations.[2] This restriction might be an indication of a culturally induced aversion against nation-building, which was part of COIN, but not of CT. Nevertheless, Barno and Khalilzad managed to make some progress during the period 2003 - 2005. In 2005 however, they both left Afghanistan. After that time, replacements effectively turned back the clock, and the US military again focused on the counterterrorism mission, which, again, shows a strong preference for enemy-centric operations on part of the US.[3]

Development of ISAF strategy did not fare any better. As argued in chapter three, ISAF initially was regarded as an interim solution, with a periodically renewed mandate. During the first three rotations within the lead nation concept, strategy development suffered

1 John R. Ballard, David W. Lamm and John K. Wood, From Kabul to Baghdad and Back: The US at War in Afghanistan and Iraq (Annapolis, MD: Naval Institute Press, 2012), 114-119, David W. Barno, "Fighting "The Other War": Counterinsurgency Strategy in Afghanistan, 2003-2005", Military Review 87, no. 5 (2007): 32-44, and Donald P. Wright, James R. Bird, Peter W. Connors, Scott C. Farquhar, and others, A Different Kind of War: The United States Army in Operation Enduring Freedom (OEF), October 2001-September 2005 (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, May, 2010), http://usacac.army.mil/cac2/csi/docs/DifferentKindofWar.pdf (accessed December 8, 2014), 247 and 277.

2 Barno, "Fighting", 34, and Seth G. Jones, In the Graveyard of Empires: America's War in Afghanistan (New York, NY and London: W.W. Norton, 2009), 142.

3 Ballard, Lamm, and Wood, *From Kabul to Baghdad and Back*, 133-134, Barno, "Fighting", 43, and Jones, *Graveyard*, 150.

from personnel turnovers. Personnel and equipment rotated along with the change of the lead nation. The Bonn Agreement of 2001 offered insufficient clarity on the end state. In addition, there was no investment in more permanent overarching capabilities, such as an ISAF-wide command and control infrastructure or an organization to share intelligence.[4] With NATO taking the lead as of 2003, ISAF was at least offered the opportunity to address some of the overarching issues, such as strategy development. However, as has been described in chapter three, until 2008 ISAF did not develop one. There was no strategic concept that described a clear end state, no guidelines on how to achieve that end state, and no indications on the capabilities that were needed to achieve an end state. The primary source to fall back on was the mandate and resolutions of the Security Council, which provided little guidelines.

Therefore, it can be argued that adopting the PRT-formula and expanding that formula to cover the whole country constituted a line of operation largely in lieu of formal strategy, even though it had, often implicit, links with the concept of state-building. Another part consisted of clustering and coordinating various activities in the context of stabilization and reconstruction. This was known as Security Sector Reform (SSR) which strongly focused on rebuilding the Afghan Governmental structures and the security system. SSR clustered the activities in five fields of governance, which subsequently were coordinated using the lead nation concept. The fields of governance were: disarming and demobilizing militias (Japan), training the police (Germany), training the army (US), reforming the judicial system (Italy) and assisting in counter narcotics (UK). The SSR concept, however, suffered from lack of resources resulting from inability or unwillingness of the international community to make the necessary capacities available. Instead, execution of the SSR related activities were partially delegated to the PRTs. These PRTs also suffered from lack of strategic guidelines from Kabul and instead all had - mutually differing - national guidelines.[5] So, in general there was no strategy, but rather "*different coalition and Afghan actors pursuing an ever-expanding range of missions and tasks in an uncoordinated manner*".[6]

4 Steve Beckman, "From Assumption to Expansion: Planning and Executing NATO's First Year in Afghanistan at the Strategic Level", (Report, U.S. Army War College, March 18, 2005) http://www.dtic.mil/cgi-bin/GetTRDoc?Location=U2&doc=GetTRDoc.pdf&AD=ADA431768 (accessed July 20, 2012), 6.

5 Jones, Graveyard, 238-243, M.L. Everett, "Merging the International Security and Assistance Force (ISAF) and Operation Enduring Freedom (OEF): A Strategic Imperative", (Report, U.S. Army War College, Carlisle Barracks, PA, March 15, 2006) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA449812 (accessed July 20, 2012), 3, and Rob Sinterniklaas, "1 (NL) PRT PEK," (Presentation given as member of Netherlands Provincial Reconstruction Team Pol-E Khomri to the Netherlands AH-64 Apache Detachment Kabul, January, 2005) Personal Collection.

6 James D. Kiras, "Modern Irregular Warfare: Afghanistan and Iraq", In: The Practice of Strategy From Alexander the Great to the Present, ed. John Andreas Olsen and Colin S. Gray (Oxford: Oxford University Press, 2011), 260-286, 268.

5.2.2. *Formulating An Air Strategy*

How did this strategic situation influence air strategy? Unsurprisingly, it became problematic. Ground forces to a certain extent could allow themselves to pursue different objectives according to their national guidelines, at least in the short term. National responsibilities largely coincided with well-defined geographical areas, so one could say the different operational approaches did not interfere with each other, save from missions executed by Special Operations Forces (SOF). The air weapon did not have that luxury, as speed and range both allowed and required it to support all ground forces. It did so in an Area of Operations (AO) that was much larger than Afghanistan. Operation *Enduring Freedom* was American, and moreover, it was loosely formulated in the concept of the Global War on Terror (GWOT). Guidelines were formulated by Central Command (CENTCOM), and airpower guidelines by the Combined Forces Air Component Commander (CFACC). They were applicable to CENTCOM's area of operations, which comprised large parts of Central Asia, the Arabian Peninsula, and the Horn of Africa.[7] Therefore, within the strategic outlook of operation *Enduring Freedom*, Afghanistan was one front, and a part that started to receive less attention because of the evolving situation in Iraq.[8] At least from the American perspective, the air weapon had the task of supporting *Enduring Freedom* in its entirety, not just one of the fronts. In addition, due to the existence of several operational concepts, the air weapon potentially had to develop multiple operational postures that had to be executed simultaneously, even in Afghanistan.

First, there were American concepts. Most importantly, this involved counterterrorism, which was aimed at hunting down Al Qaida and remnants of the Taliban. The contribution of the air weapon could be significant, and airpower could have clearly defined roles and tasks. It could indeed be "airpower heavy". Airborne Intelligence, Surveillance, and Reconnaissance (ISR), and kinetic air support would be key ingredients within this concept.[9] But US troops executed other concepts as well. At first, it was the concept of COIN Lieutenant General Barno tried to implement. The airpower posture resembled that of nation-building, with a more restrictive posture toward the use of violence. Counterterrorism could be very "kinetic", but nation-building hardly required kinetic air support. As described in chapter three, the air weapon faced a dilemma, or paradox. On the one hand, it was a critical enabler of dispersed operations of lightly armed ground force.To a large extent, they depended on on airpower for intelligence, airborne transport, and active force protection in the form of Close Air Support (CAS). On the other hand,

7 Benjamin S. Lambeth, *Airpower Against Terror: America's Conduct of Operation Enduring Freedom* (Santa Monica, CA: RAND Corporation, 2005), http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG166-1.pdf (accessed November 13, 2011), 63, and Allen G. Peck, "Airpower: The Theater Perspective", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 19-38, 28.

8 Donald J. Reed, "Why Strategy Matters in the War on Terror", (October, 2006) http://search.proquest.com.nlda.idm.oclc.org/docview/1266211234/791858D83ABD45E5PQ/1?accountid=35226 (accessed April 5, 2017).

9 Peck, "Theater Perspective", 21.

airpower employment could harm the strategic goal of gaining support of the indigenous population when it caused, or was perceived to cause, civilian casualties and collateral damage. Barno, who was familiar with counterinsurgency literature, tried to solve this dilemma by imposing a "*near-ironclad prohibition against using airpower to strike targets not directly engaged in close combat with coalition troops*".[10] Kinetic engagements based solely on intelligence were prohibited. This in theory meant that tactical goals sometimes would need to be sacrificed in order to achieve strategic goals.[11] Although the COIN strategy moved to the background after replacement of Barno, the US still maintained PRTs in the volatile southern and eastern parts of Afghanistan, which developed initiatives to train the Afghan police and army.[12] While training the Afghan Army, these PRTs counted on air support for their protection.[13] So, delivery of Close Air Support (CAS) and supplies to lightly armed and dispersed PRTs became important airpower tasks, albeit without the use of strategic terms such as "nation-building", "stabilization and reconstruction", or "counterinsurgency".

Second, the air weapon supported the operational concepts of ISAF. In this regard, the situation was even more complex. Devising an airpower strategy became virtually impossible without a clearly articulated grand strategy coming from NATO, and without a military strategy coming from the Supreme Headquarters Allied Powers Europe (SHAPE), Joint Force Commander (JFC) Brunssum, or ISAF. As there was no commonly agreed upon strategy for ISAF, airpower did not have one either.[14] Formal strategy was lacking at ISAF HQ. In general, ISAF's air component lacked coherent plans to support the Commander of ISAF (COMISAF) and the JFC.[15] In addition, ISAF did not possess many air assets. As explained in chapter one, strategy is founded on policy objectives, threat perceptions, and available means. One of these pillars in particular, available means, had been problematic from the start. Most airpower needed to be made available from assets operating under the mandate of operation *Enduring Freedom*.[16] More importantly, when OEF assets were available, they acted with their own Rules of Engagement (ROEs) and mindsets. The counterterrorism assignment and the accompanying kinetic mindset of aircrews operating within the OEF-framework could be at direct odds with the stabilization and reconstruction assignment and mindset of ISAF forces. In short, when ISAF ground forces were in need of airpower,

10 Barno, "Fighting", 35.

11 Astri Suhrke, "A Contradictory Mission?: NATO From Stabilization to Combat in Afghanistan", *International Peacekeeping* 15, no. 2 (2008): 214-236, 222.

12 Ahmed Rashid, *Descent Into Chaos: The US and the Failure of Nation Building in Pakistan, Afghanistan, and Central Asia* (New York: Viking, 2008), 198 and 203.

13 Barno, "Fighting", 40.

14 L. Van den Born, Major General, Royal Netherlands Air Force Retired, Interview with the Author, May 30, 2011, Frederik H. Meulman, "From Saint-Mihiel (1918) to Afghanistan", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 69-106, 75, and Jaap Willemse, "Silence Before the Storm", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 3-17, 7-9.

15 Meulman, "Mihiel (1918)", 75.

16 Van den Born, Interview.

made available by OEF, there was increased risk of an overly kinetic response. This could have detrimental strategic consequences.[17]

5.2.3. Becoming a Force Protection Asset

This situation presented the senior air commanders with a problem. It can be argued that aircrews were not able to plan their missions the manner they were used to within the concept of Effects Based Operations (EBO). As argued in chapter three, EBO constituted a disciplined manner to translate well-understood strategy into specific tasks, which were defined in terms of the effects they brought in relation to that strategy. For Afghanistan, a strategy was missing. The consequence was that the senior airman was not able to support a strategy, but *de facto* rather the operational concepts that were executed by ground commanders operating on the various fronts of the GWOT. In general, there were two of these concepts, CT and S&R, but as shown above there could be strong national, and therefore local, differences. These operational concepts, however, could require different responses of the air weapon, without a clear indication of the strategic effects of those responses.

As a consequence, airpower strategy for Afghanistan manifested itself over time through the events that actually took place. At the operational level, the air weapon at best supported the campaigns of the commanders of the five regions Afghanistan was divided into, called Regional Commands (RCs). These regional commanders however each had their own priorities. As several ground commanders were able to communicate with the Combined Air Operations Center (CAOC) directly, a tug of war unfolded between them about allocation of scarce air assets. Consequently, the air weapon supported not necessarily the ground commanders who were in most need of the air assets, but rather those commanders who had the most leverage at the CAOC.[18] Furthermore, the air strategy manifested itself in discussions on the posture of the air weapon in day to day operations at the tactical level. For instance, flying low and fast reduced vulnerability from ground fire, but could also anger or annoy the local population due to the noise involved. Hence the tension between the tactical need for protection, and the strategic need for enhancing support of the population. Airpower professionals were well aware of this context. But because the preferred tactics differed from nation to nation it was very hard, if not outright impossible, to formulate and enforce ISAF directives in this regard.[19] So, the challenges with regard to strategy could become apparent in tactical discussions about noise.

It took until 2008 when ISAF adopted the so-called "clear, hold, build strategy", providing some general guidelines. However, as ISAF lacked the manpower to "hold" an

17 Van den Born, Interview.

18 I.D. Teakle, Air Commodore, Royal Air Force, Interview with the Author, April 23, 2013.

19 Van den Born, Interview.

area this had immediate consequences for the strategic outlook for air planners, regardless of whether they belonged to the CENTCOM or NATO chain of command. As stated, airpower roles and tasks for stabilization and reconstruction were not obvious, because within this framework it was more closely linked to the goals of ground commanders. As ISAF's strategic outlook was composed of the approaches of the nationally led PRTs, Task Forces and Regional Commands, the air weapon was relegated to a passive strategic outlook, in which it provided limited support in the form of air transport, ISR, and CAS to ground forces when they asked for it.[20] When the insurgency gained momentum the response of western military units became one-sided. As ISAF lacked the manpower to "hold" an area for a substantial amount of time, its units were unable to start the "build" phase. The result was repetition of the, relatively violent, first two phases. During these phases, and also during regular patrolling missions, ground forces regularly became engaged firefights, called "Troops in Contact" (TIC). When ground forces were engaged in a TIC, their protection frequently had to be provided the air weapon, which was able to provide tactical leverage over the opponents via CAS. However, as western military units' primary occupation gradually became surviving and winning TIC-situations, airpower's main task necessarily became enabling and supporting that occupation, mostly with CAS missions. Consequently, strategically and operationally enforced one-sided focus of western forces tended to force the air weapon to execute CAS missions. So, airpower effectively became a force protection tool, which many airmen viewed as reduction to an inflexible emergency call.[21] However, this general focus did not result in progress at the strategic and operational levels. Harrier pilot Adrian Orchard formulated the situation in his memoirs in the following manner: "*But, much to my annoyance, I couldn't shake the distinct feeling that we were to some extent just rearranging deckchairs on the Titanic*".[22]

The basic measurement of effectiveness within this approach was how quick the air weapon could respond to a "TIC-situation".[23] As will be shown later, these response times were low, amounting to minutes rather than hours. This was a great improvement compared to periods preceding the Revolution in Military Affairs (RMA). In that sense, the air weapon was very successful. However, to some, the system had reached its limits, at least in this type of operation. Quicker response times helped to achieve tactical gains, but had limited, if any, positive effect on the strategic goals. In addition, the sheer number

20 Willemse, "Silence", 8.

21 G.F.J. Ariëns, Lieutenant Colonel, Royal Netherlands Air Force, Interview with the Author, January 29, 2013, Dag Henriksen, "Introduction", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), xxiii-xxxiii, xxv, William L. Holland, "The U.S.-NATO Military Dichotomy", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 57-68, 65, and Willemse, "Silence", 9.

22 Adrian Orchard and James Barrington, *Joint Force Harrier* (London et al: Penguin Group, 2008). 208.

23 Maurice H. Forsyth, "Airpower As a Second Thought", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, November, 2014), 107-121, 109.

sorties, more than 19,000 CAS sorties alone in 2008[24], made the system increasingly harder to change. Major General Maurice Forsyth, Deputy CFACC (DCFACC) for operation *Enduring Freedom* from June 2007 to June 2008, formulated it as follows:

> "In regard to the possibility of overarching thinking and developing any form of air strategy, it all morphed into a battle rhythm in a manner and scope over which the air component had limited influence. Routines were so ingrained in theater with respect to supporting TICs, how ISR was requested, and how one got other airpower capabilities or other air support missions, that one could not break the rhythm. It went on autopilot."[25]

Justified sensitivity towards civilian casualties further proscribed the strategic outlook of the air weapon. As described in chapter two, the air weapon was heavily scrutinized for inflicting collateral damage and civilian casualties, which obscured the deeper discussion about the role of violence in counterinsurgencies. Within the context of airpower strategy in Afghanistan, this discussion exposed itself in technological solutions to minimize damage, without addressing the necessary link between strategy, operations, and tactics. General Forsyth summarized the strategic outlook of the air weapon around 2007 as follows:

> "Somewhat reluctantly, I have to say that in a counterinsurgency fight such as Afghanistan, I believe we have tweaked the system on the margins in terms of accuracy and our ability to use technology for command and control to get coordinates, positions, and the timely information needed to conduct real-time precision engagements. But in terms of affecting the battlespace and the larger objectives of these wars, from an airman's perspective, I believe we have a way to go. We need to improve on the overall cohesion between political goals, military strategy, operational joint planning, and the tactical execution of airpower."[26]

In short, during this phase of the conflict general lack of force levels and resources, combined with an absence of a feasible strategy, compelled western militaries to execute a series of operations with limited positive effects at the strategic level. For the air weapon, this translated into a battle rhythm in which mostly CAS, but also air transport and ISR, were needed to protect ground forces and to help them achieve tactical leverage over the opponents. To some, this rhythm had the characteristics of an inflexible force protection asset. Airpower professionals were aware of the inherent risks of CAS at the strategic level.

24 Anonymous, "Combined Forces Air Component Commander 2007-2010 Airpower Statistics", *Website Time Magazine* (October 31, 2010) http://timeswampland.files.wordpress.com/2010/11/afd-101030-001.pdf (accessed November 29, 2010).

25 Forsyth, "Second Thought", 113.

26 Forsyth, "Second Thought", 121. A similar conclusion was reached by Paul Smyth: Paul Smyth, "Airpower and Counterinsurgency: Building on a Proper Foundation", *Air & Space Power Journal* 25, no. 2 (2011): 115-126, 116.

Consequently, they were very cautious to deploy destructive firepower, but technology could not completely compensate for the lack of a sound strategy.

5.2.4. Applying Airpower in Strategic Limbo

On balance, politicians and top-level civilian and military planners from both US and NATO failed to formulate a grand strategy or military strategy for airpower to support in Afghanistan. Strategic guidelines were absent, conflicting in terms of the applicable area of operations, or formulated in such a general manner that they were not practicable. In practice, the air weapon ended up supporting two strategic concepts, counterterrorism and stabilization and reconstruction. The former was enemy-centric and offensive, the latter population-centric and reactive. In addition to these differences in outlook, the air weapon was influenced by national differences in outlook, becoming apparent in day-to-day requests from ground commanders.

Consequently, the air weapon did not operate according to any coherent strategy, but airpower strategy rather became the sum of operational and tactical decisions. This in practice meant: protecting and enabling friendly forces at the tactical level while minimizing civilian casualties and collateral damage. From the context of formulating strategy this was the world turned upside down. After all, as is argued in chapter one, actions ideally follow strategy, and strategy follows policy, not the other way round. Moreover, it contradicted the general outlook of airmen, who, at least as part of their focus, preferred to deliver effects in support of the campaign plan, at the operational level. As this was lacking, the air weapon lacked specific measurements of performance at the operational and strategic levels of warfare. Successful air operations thus became those who saved friendly force's lives. Discussions and actions were directed towards this end. As the system was optimized for doing so, it in effect became an inflexible force protection asset.

5.3. Plans and Operations: Race in Adaptability

5.3.1. Airpower Roles and Functions

As a result of a lacking strategy, the effectiveness of airpower, much like the effectiveness of ground power, was evaluated in tactical contexts. After major combat operations in Afghanistan ended, the contours of a new and more permanent operational posture of the air weapon became apparent. There was a variety of missions the air weapon fulfilled during the period in which NATO assumed command of ISAF and started to expand to cover

the whole of Afghanistan by deploying Provincial Reconstruction Teams. The intensity and the roles of these tasks relative to each other however could differ in time and place.

The tasks broadly fell into three categories. First, the air weapon was used for all kinds of airlift to transport personnel and equipment to get to the general theater of operations and supply them afterwards. Especially personnel and sensitive material required transportation by air. Airlift basically was divided in two phases. Phase one entailed transportation of troops, weapons, materiel, and equipment obtained from the homelands from the various nations to the area of operations via inter-theater airlift. Many nations erected air bridges to airfields in countries surrounding Afghanistan, and to Air Ports of Debarkation (APOD) inside Afghanistan. Airfields of Kabul, Bagram, and Kandahar were the biggest of these APODs, but all larger airfields could perform that function. Additional developments in this regard will be described in the paragraph on resources. The next phase consisted of deploying and sustaining the troops that were spread across Afghanistan via intra-theater airlift. Although the function was basically the same as inter-theater transport, this intra-theater transport was done over shorter distances, and with other means due to limited availability of suitable runways and self-protection measures of the aircraft. Tactical fixed-wing aircraft such as the C-130 "Hercules" and transport helicopters were used extensively, flying routine missions to (re-)supply forces deployed at Forward Operating Bases.[27] Less routine missions were inter-and intra-theater missions to extract casualties out of danger zones and, if need be, repatriating them out of Afghanistan.[28]

27 Roger Annett, *Lifeline in Helmand: RAF Battlefield Mobility in Afghanistan* (Barnsley: Pen & Sword Aviation, 2010), 189-192, Antony Loveless, *Blue Sky Warriors: The RAF in Afghanistan in Their Own Words* (Somerset: Haynes Publishing, 2010), 98, Owen, Robert C., *Air Mobility: A Brief History of the American Experience* (Washington, DC: Potomac Books, 2013), 277-285, and Kees Van der Mark, "Dutchies Over Afghanistan", *Air Forces Monthly*, no. 247 (2008): 32-38, 37. Routine missions by transport helicopter were also called "ring helicopters", flying "ring routes" referring to the lack of variation in routes the helicopters were flying: Ron Busch and François Lavertu, "Kandahar Airfield", *The Canadian Air Force Journal* 3, no. 2 (2010): 10-17, 13, O. Eichelsheim, "Operationele Inzet DHC", [Operational Deployment DHC] *Carré*, no. 11 (2009): 34-38, 37, and Anthony Shaffer, *Operation Dark Heart: Spycraft and Special Ops on the Frontlines of Afghanistan and the Path to Victory* (New York, NY: Thomas Dunne Books, St. Martin's Press, 2010), 89.

28 Annett, *Lifeline*, 15-108, 130-136, and 199-204, Alex Duncan and Anthony Loveless, *Sweating the Metal* (London: Hodder & Stoughton, 2011), 52-57, 91 and 104, Loveless, *Blue Sky Warriors*, 122-123, and Christian Moldjord, Fredrik Sunde, Bent Salberg and Jon Christian Laberg, "Stressors and Coping in the Norwegian Aeromedical Detachment in Afghanistan 2008-2010", (Luftkrigsskolen Trondheim, Trondheim, April, 2011) www.dtic.mil/get-tr-doc/pdf?AD=ADA582835 (accessed March 8, 2016), 10-4, Thomas W. Young, *The Speed of Heat: An Airlift Wing at War in Iraq and Afghanistan* (Jefferson, NC and London: McFarland & Company, 2008), 175-191. In principle, this was done with assets that were suited for, or especially configured for, medical evacuation or casualty evacuation. The main difference between medical evacuation (MEDEVAC) and casualty evacuation (CASEVAC) is the presence of medical staff during transport, and the regulations that are related to the formal transport of patients. During medical evacuation, professional medical staff, is present, and and specialized equipment may also be. This is not the case with CASEVAC: (United States Joint Chiefs of Staff, *Joint Publication 1-02: Department of Defense Dictionary of Military and Associated Terms, 8 November 2010 (As Amended Through October 2015)*, October 15, 2015, http://www.dtic.mil/doctrine/new_pubs/jp1_02.pdf (accessed November 18, 2015), 4 and 28). See also: Andrea Lopreiato, "Forward MEDEVAC Challenges: The Italian Army Implementation Programme ", *Journal of the JAPCC*, no. 18 (2013): 11-15 http://www.japcc.org/publications/journal/Journal/2013-09-23-JAPCC_Journal_Ed-18_web.pdf (accessed July 11, 2014). However, sometimes emergency measures were needed as well, as is witnessed by a spectacular extraction of a British Royal Marine lance corporal in Helmand. On January 15, 2007, the lance corporal became inadvertently mortally wounded and isolated during an operation with intense fighting. He was extracted by British Apache attack helicopters. The pilots used an emergency procedure that allowed persons, in this case other Marines, to be strapped on the stub wings of the helicopter. They went to the site, which was still under fire, extracted the lance corporal, and flew him into safety, again strapped to the outside of the helicopter (Damien Lewis, *Apache Dawn. Always Outnumbered, Never Outgunned* (London: Sphere, 2009), 143, Ed Macy, *Apache* (London: Harper Press, 2008), 226-257, Charlotte Madison,

Also, increased attention was paid to GPS-aided precision airdrops with a system called Joint Precision Airdrop System (JPADS), of which the first was executed on August 31, 2006, from a C-130. A combination of JPADS with a system that could steer pallets descending on parachute, called "Screamer", was first used from a C-17 in May 2007. Executed this way, resupply could be done from higher altitudes, reducing the vulnerability of air assets. These air operations were in turn supported by enabling air operations, such as Air-to-Air Refueling (AAR), and airborne command and control.[29] Other experiments included landing of large inter-theater aircraft on unpaved runways, called dirtstrips.[30] Another enabling factor was that deployment of ISAF forces into Afghanistan was accompanied by the construction of twenty airstrips and airfields capable of handling C-130 transport aircraft, alleviating the workload of the transport helicopters.[31]

Second, the air weapon was used for Intelligence, Surveillance, and Reconnaissance (ISR). ISR was needed for providing commanders of all levels with a basic situational awareness to base their plans on, but in addition was essential for finding the insurgents and facilitate actions against them. By their nature, air assets were ideally suited to deliver Signals Intelligence (SIGINT) and Imagery Intelligence (IMINT). When corroborated with intelligence gathered from human sources (HUMINT), it could provide a complete intelligence picture.[32] However, integration of the missions of OEF and ISAF was problematic. Despite a requirement formulated by ISAF, few nations initially deployed airborne ISR assets. That meant that ISAF had to make formal requests for information to the Americans, which generally was denied because the US, who flew the vast majority of airborne ISR assets, had other priorities.[33] In addition, the few ISR units of ISAF operated

Dressed to Kill: The True Story of a Woman Flying Under Fire (London: Headline Publishing Group, 2010), 138-154, David Oliver, "Daring AAC Rescue Attempt in Afghanistan", *Air Forces Monthly*, no. 228 (2007): 4, Tim Ripley, *British Army Aviation in Action: From Kosovo to Libya* (Barnsley: Pen & Sword Books, 2011), and Guy Warner, *From Auster to Apache: The History of 656 Squadron RAF/AAC 1942-2012* (Barnsley: Pen & Sword Aviation, 2013), 262).

29 Annett, *Lifeline*, 224-225, Anthony H. Cordesman, "Air Combat Trends in the Afghan and Iraq Wars," (Presentation, Center for Strategic and International Studies, March 11, 2008) http://csis.org/files/media/csis/pubs/080318_afgh-iraqairbrief.pdf (accessed November 29, 2010), 12-15, Rebecca Grant, *Airpower in Afghanistan. How a Faraway War Is Remaking the Air Force* (Mitchell Institute Press, February, 2009), http://www.afa.org/mitchell/reports/0209airpowerinafghan.pdf (accessed November 13, 2011), 26, Rebecca Grant, "The Afghan Escalation", *Air Force Magazine.* 92, no. 6; (2009): 28-32, 30-32, Loveless, *Blue Sky Warriors*, 99-101, Tim Ripley, *Air War Afghanistan: US and NATO Air Operations From 2001* (Barnsley: Pen & Sword Books Aviation, 2011), 146-149, and Ashish Singh, "Airpower in Mountains", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2012) Personal Collection, 57.

30 Anonymous, "Australian Air Force C-17 Makes First Afghan Dirt Strip Landing", *BBC Monitoring South Asia* (July 14, 2009) http://search.proquest.com/docview/459773630/BBBB608D8DE84F4CPQ/19?accountid=35226 (accessed September 18, 2014).

31 Annett, *Lifeline*, 154-158.

32 William B. Danskine, "Aggressive ISR in the War on Terrorism: Breaking the Cold War Paradigm", (Research Report, Air University, Maxwell Air Force Base, AL, April, 2004) http://www.dtic.mil/dtic/tr/fulltext/u2/a434093.pdf (accessed March 24, 2016), 30, Michael L. Downs, "Rethinking the CFACC's Intelligence, Surveillance, and Reconnaissance Approach to Counterinsurgency", (Paper, Naval War College, Newport, RI, May 10, 2007) http://www.dtic.mil/dtic/tr/fulltext/u2/a470834.pdf (accessed March 24, 2016), 1-8, and David Neil, "Project Noctua: A Model for Enhancing NATO UAV Capability", *Journal of the JAPCC*, no. 13 (2011): 24-27 http://www.japcc.org/publications/journal/Journal/20110414_-_Journal_Ed_13.pdf (accessed July 11, 2014), 26.

33 Marc P. Exterkate, "NATO's ISR Challenge During ISAF VIII", *Journal of the JAPCC*, no. 3 (2006): Additional article http://www.japcc.org/publications/journal/Journal/NATO_s_ISR_challenge_during_ISAF_VIII-ed3.pdf (accessed July 11, 2014),

mostly in support of a specific brigade in Kabul, and not in support of ISAF. There were a few fixed-wing aircraft available for gathering intelligence, most notably the French Mirage F-1CR and British Harrier GR-7. However, they did not have a downlink, delaying the intelligence collection effort because processing of the imagery could commence only after landing. The Harriers were also frequently tasked for other missions, as they had a dual mandate to operate for both OEF and ISAF.[34] So, COMISAF had little assets available, and sharing of information was problematic, even though it encouraged some nations, such as The Netherlands and the United Kingdom, to acquire and deploy ISR equipment.[35] In addition, ISAF suffered from a lack of interoperability of systems, skilled personnel, a functional standing organization, and applicable doctrine.[36] The result was that initially ISAF had to do mostly with the intelligence the Field Humint Teams were delivering. COMISAF was able to task Belgian and Dutch F-16s with reconnaissance missions, using their targeting pods. This however provided only a marginal contribution compared to the requirements. So during the period immediately following ISAF assumption of command, it could not build a reliable and current intelligence picture.[37] Especially Unmanned Aerial Vehicles (UAVs) were in short supply and high demand, because of their long loiter times. This situation improved to a certain extent when ISAF's expansion gained momentum. The US made more assets available, as did other contributing nations, the latter sometimes using contractors. Intelligence sharing between ISAF and CENTCOM improved. Also, ISAF undertook initiatives to build a command and control structure and write additional procedures to improve command and control of these assets.[38] Although these activities alleviated the situation, problems remained during the period between 2002 and 2008.

The third category of tasks was the one that received the most attention, because it involved deployment of weapon systems in support of ground forces. Generally, there

2, and Paolo Valpolini, "ISR in Afghanistan: SR Easier Than I", *Armada International*, no. 2 (2010): 46-50, 46. See for a list of airborne ISR assets the US had available, as well as their unclassified capabilities: Danskine, "Aggressive ISR", 54-62.

34 Exterkate, "NATO's ISR Challenge", 2.

35 Anonymous, "Rafael to Supply Recon Systems for Dutch Air Force Fighters", *Aerospace Daily & Defense Report* 216, no. 46 (2005) http://search.proquest.com/docview/231497628/751492BF632743A5PQ/6?accountid=35226 (accessed October 24, 2014), Anonymous, "Dutch Use New Ability to Transmit Imagery", *Aviation Week & Space Technology* 163, no. 1 (2005) http://search.proquest.com/docview/206151911/F7985FD8723C4423PQ/40?accountid=35226 (accessed October 8, 2014), Douglas Barry, "Tornado Watch: RAF Tornado Given Litening Capability: RAF GR4s Are Being Employed to Keep a 'weather Eye' Out", *Aviation Week & Space Technology* 166, no. 9 (2007) http://search.proquest.com/docview/206161075/26186F1EFD2042FEPQ/43?accountid=35226 (accessed October 2, 2014), and Joris Janssen Lok, "Enhanced Vision Latest RecceLite and Litening AT Versions Should Boost Dutch F-16's ISR Capabilities Over Afghanistan: Dutch OT&E Reveals Potential of New Sensors to Boost F-16 ISTAR Performance", *Aviation Week & Space Technology* 167, no. 18 (2007) http://search.proquest.com/docview/206156739/983757B15BA7414APQ/9?accountid=35226 (accessed October 10, 2014).

36 Exterkate, "NATO's ISR Challenge", Marc P. Exterkate, "Letter to the Editor of the Journal of the JAPCC", *Journal of the JAPCC*, no. 5 (2007): 58 http://www.japcc.org/publications/journal/Journal/JAPCC_Jounal_07_Edition_5.pdf and http://www.japcc.org/publications/journal/Journal/CC_Air_Ramstein_Letter-ed5.pdf (accessed July 11, 2014), and Gerhard W. Back, "International Security Assistance Force Mission in Afghanistan: Air C4ISTAR Lessons Learned", *The Journal of the JAPCC*, no. 5 (2007): 14-16 http://www.japcc.org/wp-content/uploads/JAPCC_Jounal_Edition_5.pdf (accessed June 15, 2017), 15.

37 Exterkate, "NATO's ISR Challenge".

38 Back, "C4ISTAR Lessons Learned", passim, Neil, "Project Noctua", 25, Gloria Westermeyer, *The Impact of Private Actors on Security Governance: An Analysis Based on German ISR Capabilities for ISAF* (Springer, 2013), and Valpolini, "ISR", 46-47.

were three types of situations where airpower could by used in what became called the "kinetic" role.[39] The first was when the air weapon was used as integrated air support of planned ground operations. These missions were called "named operations", "deliberate operations", or "cordon and search operations". They varied in size, scope and duration. They could involve insertion and extraction of ground forces by helicopter, although the ground forces could also move in by ground transport.[40] They were supported by airborne weapon systems and ISR assets of all kinds. The goal was to disrupt activity of opposing forces by finding and neutralizing weapon caches, insurgents and insurgent hideouts.[41] Examples of some of the larger operations are operation *Mountain Lion* in Kunar, *Mountain Thrust* in Uruzgan and Helmand, operation *Mountain Fury* in Paktika, Khowst, Gazni, Paktia and Lowgar, and operation *Medusa* in Kandahar. All of them were executed 2006.[42] Although the operation did not have a separate name, the battle of Chora in Uruzgan province, which took place between 15 to 19 June 2007 can be regarded as a similar operation.[43] Of special note was operation *Eagle Summit*, executed between 28 August and 2 September 2008, which did not involve rooting out Taliban forces, but transporting large pieces of equipment of the Kajaki Dam in Helmand through Taliban heartland via a slow moving convoy. Due to the nature of the target, the Taliban decided to attack. The attack was thwarted with massive use of airpower.[44] In all of these operations, the air weapon was essential for survival of outnumbered ground forces. It provided part of the situational awareness, a large part of the transport via helicopters, and most of the heavy fire support.[45]

In addition, the air weapon could disrupt Al Qaida and Taliban networks by engaging its members or leadership. This could be done with a variety of means and ends, but two

39 Eugene L. McFeely, "Balancing Kinetic Effects of Airpower with Counterinsurgency Objectives in Afghanistan", (Report, U.S. Army War College, Carlisle, PA, March 30, 2009) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA494289 (accessed February 12, 2012).

40 Non-academic literature delivers some lively accounts on some of these operations in which helicopters were involved: Annett, *Lifeline*, 137-149, 165-150, 173-187, and 226-236, David Cenciotti, "First Italian COMAO in Afghanistan", *Website The Aviationist* (January 31, 2009) http://theaviationist.com/2009/01/31/first-italian-comao-in-afghanistan/ (accessed February 8, 2016), Eichelsheim, "DHC", 35 and 37, and Duncan and Loveless, *Sweating the Metal*, 76-90.

41 There were many of these missions, and not all of them are documented. Several sources however mention the tasking for these types of missions: Peter Arts, Major, Royal Netherlands Air Force, Interview with the Author, January 8, 2014, Jonathan Bernstein, *AH-64 Apache Units of Operations Enduring Freedom and Iraqi Freedom*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford: Osprey Publishing Limited, 2005), 11, 21, and 33, Downs, "Rethinking", 7, Michael Franzak, *A Nightmare's Prayer: A Marine Corps Harrier Pilot's War in Afghanistan* (New York, NY: Threshold Editions, 2010), 165, Macy, *Apache*, 163-170, Lon Nordeen, *AV-8B Harrier II Units of Operation Enduring Freedom*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing Limited, 2014), 68, Tim Ripley, "Afghan 2002", *Air Forces Monthly*, no. 8 (2002): 54-56, 56, Bill Roggio and Patrick Megahan, "ISAF Raids Against Al Qaida and Allies in Afghanistan 2007-2013", *The Long War Journal Website* (May 30, 2014) http://www.longwarjournal.org/archives/2014/05/al_qaeda_and_alli...ongWarJournalSiteWide+%28The+Long+War+Journal+%28Site-Wide%29%29 (accessed October 8, 2014), Suhrke, "Contradictory Mission?", 222, Stuart Tootal, *Danger Close* (London: John Murray Publishers, 2009), 60-78, Warner, *From Auster to Apache*, 256-260, Wright, Bird, Connors, and others, *Different Kind of War*, 211-215, 252, 285-287, and 322-323.

42 Ballard, Lamm, and Wood, *From Kabul to Baghdad and Back*, 135-136, Jones, *Graveyard*, 212-219, and Ripley, *Air War Afghanistan*, 107.

43 Ripley, *Air War Afghanistan*, 118-121.

44 Grant, *Airpower in Afghanistan*, 29, and Ripley, *Air War Afghanistan*, 121.

45 J.L.H. Eikelboom, Lieutenant General, Royal Netherlands Air Force Retired, Interview with the Author, April 24, 2013, Grant, *Airpower in Afghanistan*, 29, and Ripley, *Air War Afghanistan*, 104-106 and 112.

variations became more prominent. First, it was a type of mission that involved insertion and extraction of Special Operations Forces in a mission type that was called a "raid".[46] The second type involved a strike mission solely with air assets. This mission became strongly associated with killing insurgents, most notably with UAVs. Also, the US used UAVs in the Federally Administered Tribal Areas (FATA) of Pakistan.[47] This in turn sparked fierce debates around the concept of "leadership targeting or "targeted killing", although there were many different connotations to address the concept.[48] The debates focused on moral, ethical, legal issues and on the subject of operational effectiveness, and continue to this day.[49] However, they are hampered by secrecy on the part of the US Government, because at least a part of the strikes were conducted by the Central Intelligence Agency (CIA), in augmentation of more or less overt operations in Afghanistan.[50] As a result, mostly the debate on operational effectiveness suffered from a dearth of publicly available information. In addition, several factions used the information that was available to suit

46 Geraint Hughes, "Intelligence-gathering, Special Operations and Air Strikes in Modern Counterinsurgency", In: *The Routledge Handbook of Insurgency and Counterinsurgency*, ed. Paul B. Rich and Isabelle Duyvesteyn (London and New York, NY: Routledge, 2012), 109-118, and Roggio and Megahan, "ISAF Raids".

47 Richard Kemp and Jasper Reid, "United States Drone Campaign in Pakistan: FATA, Pakistan 2009-2015", In: *Our Military Force's Struggle Against Lawless, Media Savvy Terrorist Adversaries: A Comparative Study*, 2nd Edition (Friends of Israel Initiative, February, 2016), http://www.high-level-military-group.org/pdf/hlmg-lawless-media-savvy-terrorist-adversaries.pdf (accessed August 3, 2016), 115-132.

48 Nils Melzer, *Targeted Killing in International Law*, Oxford Monographs in International Law (Oxford: Oxford University Press, 2008), 6-8. It should be stated that the concept of "targeting" was not new, or by definition associated with killing. It also did not proscribe the method or effect. Rather, targeting is a process. Ducheine, Schmitt and Osinga defined targeting as "*the deliberate application of capabilities against targets to generate effects in order to achieve specific objectives. It is about application of means (weapons) of warfare to affect addressees (people or objects) using a variety of methods (tactics) that create effects contributing to designated goals. Targeting, accordingly, represents the bridge between ends and means of warfare*." (Paul A.L. Ducheine, Michael N. Schmitt and Frans P.B. Osinga, "Introduction", In: *Targeting: The Challenges of Modern Warfare*, ed. Paul A.L. Ducheine, Michael N. Schmitt and Frans P.B. Osinga (The Hague: Asser Press, 2016), 1-5, 2.). This definition is consistent with the US Air Force doctrine on targeting ((United States Air Force, *Air Force Doctrine Document 3-60: Targeting, 8 June 2006, Incorporating Change 1, 28 July 2011*, July 28, 2011, http://www.fas.org/irp/doddir/usaf/afdd3-60.pdf (accessed October 12, 2012), 1.) Raids and air strikes directed at insurgent leadership were variants of means and methods to achieve the effect of disrupting insurgent networks.

49 S. Carvin, "The Trouble with Targeted Killing", *Security Studies* 21, no. 3 (2012): 529-555, Michael J. Boyle, "The Costs and Consequences of Drone Warfare", *International Affairs* 89, no. 1 (2013): 1-29, Kenneth R. Himes, *Drones and the Ethics of Targeted Killing* (Lanham, MD: Rowman & Littlefield, 2016), P.B. Johnston, "Does Decapitation Work? Assessing the Effectiveness of Leadership Targeting in Counterinsurgency Campaigns", *International Security* 36, no. 4 (2012): 47-79, John Kaag and Sara Kreps, *Drone Warfare* (Cambridge and Malden, MA: Polity Press, 2014), Mark David Maxwell, "Targeted Killing, the Law, and Terrorists. Feeling Safe?", *Joint Forces Quarterly*, no. 64 (2012): 122-130, Nicholas Rostow, "Targeted Killing of Terrorists", *Joint Force Quarterly : JFQ*, no. 74 (2014): 98-101, Frans P.B. Osinga, "Bounding the Debate on Drones: The Paradox of Postmodern Warfare", In: *Moral Responsibility and Military Effectiveness*, ed. Herman Amersfoort, René Moelker, Joseph Soeters and Désirée Verweij (The Hague: T.M.C. Asser Press, 2013), 243-278, Avery Plaw, Matthew S. Fricker and Carlos R. Colon, *The Drone Debate: A Primer on the U.S. Use of Unmanned Aircraft Outside Conventional Battlefields* (Lanham, MD: Rowman & Littlefield, 2016),Brian C. Price, "Targeting Top Terrorists: How Leadership Decapitation Contributes to Counterterrorism", *International Security* 36, no. 4 (2012): 9-46, James Igoe Walsh, *The Effectiveness of Drone Strikes in Counterinsurgency and Counterterrorism Campaigns* (Carlisle Barracks, PA: Strategic Studies Institute and United States War College Press, September, 2013), http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=1167 (accessed November 21, 2013), and Alex S. Wilner, "Targeted Killings in Afghanistan: Measuring Coercion and Deterrence in Counterterrorism and Counterinsurgency", *Studies in Conflict & Terrorism* 33, no. 4 (2010): 307-329. See for a general outline of the many facets of the targeting challenge: Paul A.L. Ducheine, Michael N. Schmidt, and Frans P.B. Osinga (eds), *Targeting: The Challenges of Modern Warfare* (Springer-Verlag, 2016).

50 Rian J. Vogel, "Drone Warfare and the Law of Armed Conflict", *Denver Journal of International Law and Policy* 39, no. 1 (2011): 101-138, 135-136.

their own purpose, i.e. in order to make a point regarding civilian casualties induced by unmanned systems. As verification of statements was problematic, the debate had a qualitative aspect as well.[51] It is beyond the scope of this study to discuss these debates in depth. Also, although it is generally thought that the first strike in Pakistan took place in 2004, and that multiple strikes took place in Afghanistan from 2002 to 2008, the program of targeting individuals was stepped up under the Obama Administration from 2009 onwards.[52] Therefore, this type of operations will be explored further in the next chapter.

Finally, weapons were used in support of troops that were in a firefight. Although the air weapon could, and occasionally did, hunt down opposing forces autonomously in so-called Strike Coordination and Reconnaissance (SCAR) missions[53], most engagements took place within a situation of declared TIC. The support for these TIC-situations was CAS. There are indications that airmen regarded CAS as a secondary task before they were called upon in Afghanistan. But as a result of experiences gained during the conflicts in Afghanistan and Iraq this mission received increased attention.[54] The CAS arrangement and the availability of systems that could execute these missions allowed for ground forces to move more freely, because they did not need to bring all their heavy weapons and ammunition. When the situation required, ground forces could quickly muster necessary firepower by calling in air support. Enhanced precision of both sensors and ammunition, in combination with lower yield weapons allowed for kinetic air support at closer range than in previous eras. As a result, ground forces could deploy in larger areas with the same amount of soldiers, increasing their footprint, and with sufficient confidence that the right air support would be provided without a high risk of fratricide. This in turn was deemed beneficial for the task at hand.[55] In principle, aircrews had a variety of options available in order to achieve a de-escalating effect on a potentially threatening situation. It could start with a mission type that was called "armed overwatch", which required patrolling in an

51 Carvin, "Trouble", 546-547.

52 International Human Rights and Conflict Resolution Clinic, Stanford Law School, and Global Justice Clinic, NYU School of Law, "Living Under Drones: Death, Injury, and Trauma to Civilians From US Drone Practices in Pakistan", (September, 2012) http://livingunderdrones.org/wp-content/uploads/2012/10/Stanford-NYU-LIVING-UNDER-DRONES.pdf (accessed February 26, 2013), 12, Seth G. Jones, *Hunting in the Shadows: The Pursuit of Al Qa'ida Since 9/11* (W.W. Norton & Company: New York, NY and London, 2013), https://www.overdrive.com/search?q=2ABB2C58-7A55-42FF-BC3C-61D4F51BC438, Kemp and Reid, "United States Drone Campaign", 116, Maxwell, "Targeted Killing", Jack McDonald, *Enemies Known and Unknown: Targeted Killings in America's Transnational Wars* (London: Hurst and Company, 2017), Brian Glyn Williams, "The CIA's Covert Predator Drone War in Pakistan, 2004--2010: The History of An Assassination Campaign", *Studies in Conflict & Terrorism* 33, no. 10 (2010): 871-892, 872-876, and Wilner, "Targeted Killing in Afghanistan", 308.

53 Steve Davies, *F-15E Strike Eagle Units in Combat 1999-2005*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing Limited, 2005), 79.

54 Christopher Bolkcom and Kenneth Katzman, "Military Aviation: Issues and Options for Combating Terrorism and Counterinsurgency", (CRS Report for Congress, January 27, 2006) http://www.au.af.mil/au/awc/awcgate/crs/rl32737.pdf (accessed August 8, 2013), 10.

55 Lara M. Dadkhah, "Close Air Support and Civilian Casualties in Afghanistan", *Small Wars Journal Website* (December 30, 2008) http://smallwarsjournal.com/jrnl/art/close-air-support-and-civilian-casualties-in-afghanistan (accessed October 13, 2014).

area and being readily available to deliver support to ground forces.[56] If the situation was tense, but without concrete threat, air assets could execute "show of presence" missions. In essence, It involved relatively low-level air movements to show ground forces, the local population, and the opposing forces, that airpower was available. In the mean time, flight patterns were so benign as not to endanger or scare the local population. "Show of presence" was assumed to have a stabilizing effect on the environment below.[57] When there was a specific threat, which however could be countered without the use of lethal force, pilots could resort to "show of force". While showing the presence in an aggressive manner by flying low and fast, sometimes with after burner and using sonic boom and flares, air assets could intimidate the opposing forces for a short period of time, allowing ground forces freedom of maneuver.[58] When ground forces actually engaged in a firefight, airpower could deliver CAS with both rotary wing and fixed wing aircraft, by using the weapons at their disposal in close coordination with the Joint Terminal Attack Controller (JTAC). Obviously, the goal was to end the engagement in favor of the friendly forces. The concepts of "armed overwatch", "show of force" and "show of presence" were relatively new concepts and doctrinally were not part of CAS.[59] They were however part of the same continuum, which could take place in a single sortie.[60]

5.3.2. Airpower Posture

The postures of the air weapon for ISAF and OEF differed. After the major combat operations of the initial months ended, and the "light footprint" phase began, several missions were executed with regard to operation *Enduring Freedom*. These missions included intelligence driven cordon and search operations, raids on High Value Targets (HVTs), and medical evacuation and regular intra-theater transport missions in support of PRTs.[61] The air weapon had an important role in these missions. It supported ground forces with precision strikes, response to Troops In Contact, show of force, ISR, air mobility, and

56 Eichelsheim, "DHC", 35, Guus De Koster, "Mission Uruzgan: The Use of Air Power in Uruzgan", In: *Collaborating in Multiple Coalitions in Afghanistan*, ed. Robert Beeres, Jan van der Meulen, Joseph Soeters and Ad Vogelaar (Amsterdam: Pallas Publications - Amsterdam University Press, 2012), 119-131, 119, and Thomas Withington, *B-1B Lancer Units in Combat*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing, 2006), 57.

57 Eichelsheim, "DHC", 35, Joseph A Katz, "Afghanistan: The Role of "Show-of-Presence" Aircraft in the First Democratic Elections", *FA Journal*. 10, no. 1 (2005): 15 -17, and Kees Van der Mark, "RNLAF in Afghanistan", *Air Forces Monthly*, no. 203 (2005): 64-68, 66.

58 Paul Grahame and Damien Lewis, *Fire Strike 7/9* (London: Ebury Press, 2010), 15-16, Grant, "Afghan Escalation", 30-32, Nordeen, *AV-8B Units*, 58, Orchard and Barrington, *Joint Force Harrier*, 98-101, S.H.P.M. Pellemans, Colonel, Royal Netherlands Air Force, Interview with the Author, July 8, 2011, Alan Warnes, "RAF Harriers in Afghanistan", *Air Forces Monthly*, no. 212 (2005): 30-35, 32-33, and Withington, *B-1B Lancer Units*, 57.

59 United States Joint Chiefs of Staff, *Joint Publication 3-09.3: Close Air Support*, July 8, 2009, http://www.fas.org/irp/doddir/dod/jp3_09_3.pdf (accessed January 29, 2014), pages III-15 to III-16 and GL-9.

60 Sidney J. Freedberg, "The Afghanistan Air War", *National Journal* (September 24, 2010) http://search.proquest.com.nlda.idm.oclc.org/docview/754723767?OpenUrlRefId=info:xri/sid:wcdiscovery&accountid=35226 (accessed April 16, 2017).

61 Ripley, *Air War Afghanistan*, 86-91.

integrated support for so called "named operations". It also executed smaller missions that are not mentioned thusfar, such as missions to influence the electro magnetic spectrum from the air, known as electronic warfare, and air mobility missions in support of humanitarian relief operations.[62]

During initial deployment, between 2002 and 2004, the missions of ISAF air assets were modest in nature, due to the lack of resources and restrictive caveats. The main aerial firepower that ISAF had consisted of six Dutch AH-64 "Apache" attack helicopters. In addition, there was a combined F-16 detachment in Manas until October 2003. Is was operated by a partnership of European F-16 users Denmark, The Netherlands, and Norway, and was known as the European Participating Air Forces (EPAF). The United Kingdom operated six Harrier fighter jets from Kandahar. Both the F-16s and the Harriers could be tasked for both OEF and ISAF missions. Besides these assets, there was a handful of transport helicopters stationed in Kabul, and several nations operated C-130 transport aircraft for various periods of time to support their national contingents.[63] Appendix 3.6 outlines allied airpower contributions for OEF and ISAF. In the autumn of 2004, the F-16s returned, this time dedicated to ISAF. The F-16s were mostly dedicated for "armed overwatch".[64] In Kabul and later the northern part of Afghanistan, these missions were virtually absent due to the benign security situation. F-16s were also increasingly tasked to perform "show of presence".[65] Show of presence missions were also executed by the Apache helicopters. In addition, the Apaches were tasked for intelligence gathering, escort of transport helicopters and ground convoys, and Quick Reaction Alert (QRA) for emergencies such as a rocket attack. Transport helicopters executed (re-) supply missions.[66]

Sometimes, units had to adapt their Tactics, Techniques, and Procedures (TTPs) while in theater. This was for instance the case with the Close Air Support role for some of the attack helicopters. Although the Dutch Apache crews doctrinally had that task, by 2003 Close Air Support was regarded an emergency measure. Another example is provided by the TTPs relating to the task of extracting friendly personnel stranded in hostile territory, called Personnel Recovery (PR). This task was not well embedded in the ISAF structure. During this period, helicopter crews worked to streamline procedures in this regard.[67] They can be regarded as successful and necessary adaptations under operational circumstances.

62 Forsyth, "Second Thought", 116-117.

63 Netherlands Institute for Military History, "Enduring Freedom", *Website Dutch Ministry of Defense (Dutch)* (March 23, 2010) https://www.defensie.nl/onderwerpen/historische-missies/documenten/brochures/2010/03/23/enduring-freedom-2 (accessed January 27, 2016), Van der Mark, "RNLAF", passim.

64 De Koster, "Mission Uruzgan", 119.

65 Katz, "Afghanistan", and Van der Mark, "RNLAF", 66.

66 Arts, Interview, Netherlands Institute for Military History, "International Security Assistance Force (ISAF)", *Website Dutch Ministry of Defense (Dutch)* (June 7, 2010) https://www.defensie.nl/documenten/brochures/2010/06/07/international-security-assistance-force-isaf (accessed March 8, 2016), Orchard and Barrington, *Joint Force Harrier*, 133-137, Ripley, *British Army Aviation*, 145, and Van der Mark, "RNLAF", 68.

67 Arts, Interview, and Russell Stinger, "Army Aviation: Back to Its Roots", (Report, U.S. Army War College, Carlisle Barracks, PA, March 3, 2009) http://www.dtic.mil/dtic/tr/fulltext/u2/a499370.pdf (accessed November 28, 2013).

Afghan Presidential and Parliamentary elections scheduled in 2004 and 2005 showed increased air activity. As stated, several nations made air assets available, especially for the Presidential elections that were scheduled for October 9, 2004. Transport helicopters were used for transportation of ballots from and to remote areas. But the air weapon was mainly deployed as means of security for ground forces. Both ISAF and OEF scheduled show of force missions. This allowed for the ground forces to move freely with the assurance of availability of kinetic air support, while at the same time sending a message to the local population that western forces were in the country to help them. In essence, the same scheme was repeated during the Parliamentary elections on September 18, 2005. Due to the low level of incidents during these high profile events, the efforts generally were regarded to be successful.[68] There were however some challenges that were still below the radar. Due to command and control problems that will be described in paragraph 5.6, coordination with the ISAF PRTs was suboptimal. The show of force missions of OEF and ISAF were deconflicted, meaning that measures were taken to prevent intrusion ini each other's missions. They were, however, not coordinated in the sense that they served the same, agreed upon, goals and their activities were orchestrated under a single command.[69]

This situation dramatically changed in the period following the elections. The whole range of airpower functions and tasks was severely put to the test during the expansion phase of ISAF. While the ground force was building up, the insurgency gained momentum.[70] In practice, especially in the southern part of Afghanistan, air operations were mostly directed at supporting and sustaining isolated ground units located in so called "platoon houses" and forward operating bases. It delivered close air support by fixed wing and rotary wing air assets, resupply and medical evacuation by helicopter, while ISR assets improved situational awareness. Airborne assets themselves were supported by for instance air-to-air refueling aircraft. Troops related to both ISAF and OEF that were dispersed in forward operating bases and platoon houses became engaged in TIC-situations on a daily basis. So, increased activity from both ground forces and insurgents led to a surge of airpower activity.[71] CAS sorties executed by the US Air Force increased from a few dozen in 2004 to almost 3,000 in 2007. The number of aircraft that received fuel from an AAR aircraft rose by seventy five percent. The tonnage of cargo that were air-dropped increased from about two million pounds in 2005 to more than seven and a half million pounds in 2007. The airlift community broke several records in the same timeframe.[72]

68 Ripley, *Air War Afghanistan*, 92, Van der Mark, "RNLAF", 65, and Willemse, "Silence", 7-8 and 14-16.

69 Katz, "Afghanistan", 16, and Willemse, "Silence", 14-16.

70 See for data and graphic representation of the intensity of the conflict: Anthony H. Cordesman, "The Afghan War: A Campaign Overview", (Center for Strategic & International Studies, June 7, 2010) http://csis.org/files/publication/100607_AfghanCampaignSummary_0.pdf (accessed April 8, 2016).

71 Tim Ripley, "Tacklin' the Taliban", *Air Forces Monthly*, no. 12 (2006): 26-31, 29-30.

72 Data and conclusions are derived from: Cordesman, "Air Combat Trends". The statistics need to be processed with caution however. The data in this source is not complete, as Cordesman himself recognizes. For instance, helicopters are not included, as are CAS executed by 20 or 30mm on board cannon. (Anonymous, "Many U.S. Airstrikes Undisclosed; WASHINGTON -- the Pentagon Has Failed to Disclose Up to Thousands Od Airstrikes the U.S. Military Carried Out Over

Response times for CAS were nevertheless low: about fifteen minutes in 2007.[73] In addition, some 900 MEDEVAC missions were flown in 2007.[74]

When the expansion phase from Kabul and the northern part of Afghanistan to cover the whole country was in full swing, ISAF had to take over some of the missions that were up and until then only executed by assets belonging to operation *Enduring Freedom*. By the end of 2008, ISAF air operations spanned the entire airpower spectrum. ISAF's airpower missions included: aerial MEDEVAC, intra-theater airlift, armed overwatch, Close Air Support, offensive targeting operations, ISR, combat search and rescue, dynamic targeting, and information operations. As overlap increased, the distinction between OEF and ISAF became less helpful.[75] By this time, several national governments and parliaments eased their restrictions on the use of force by their militaries, especially the nations that operated in the volatile south.[76] By 2007, ISAF's air component had clustered its activities into four categories. The first one was Close Air Support, which included Time Sensitive Targeting and Dynamic Targeting. The second category was air transport. The third was ISR. The air component also included activities related to use of space-based assets, such as for instance GPS, into the fourth category, called space.[77] In general, ISAF air operations were essential

Several Years in Iraq, Syria and Afghanistan Against Militants in Those Countries, the Military Times Reported Sunday. [Derived Headline]", *Pittsburgh Tribune* (February 6, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1865432982/193BFBE34175455FPQ?accountid=35226 Pa (accessed February 19, 2017)).The difference between missions flown for operation *Enduring Freedom* and operation *Iraqi Freedom* is not always clear. Although informative, these and other constraints withhold scholars from detailed and reliable conclusions. For plans and operations, these statistics serve only as basis for the argument that airpower activity increased dramatically during the period described in this chapter. Main source are the "airpower statistics" that are published monthly by the US Air Forces Central Command (Anonymous, "Airpower Summaries", *Website United States Air Forces Central Command* http://www.afcent.af.mil/AboutUs/AirpowerSummaries.aspx (accessed March 30, 2016)). AFCENT however recently reorganized its website and removed older statistics. Other sources need to be consulted to find older versions. Examples are: Anonymous, "Airpower Operations in Afghanistan", *Website Air Force Magazine* (March 31, 2010) http://www.airforce-magazine.com/SiteCollectionDocuments/Reports/2010/April%202010/Day22/OEF_AirStats.pdf (accessed March 29, 2010), United States Air Forces Central, Combined Air and Space Operations Center, "2004-2008 Combined Forces Air Component Commander Airpower Statistics", *Website Air Force Association (AFA)* (December 31, 2008) http://www.afa.org/edop/2009/2004-08CFACCstats123108.pdf (accessed November 29, 2010), Anonymous, "CFACC Airpower Statistics 2007-2010", Anthony H. Cordesman and Marissa Allison, "The U.S. Air War in Iraq, Afghanistan, and Pakistan", (Center for Strategic and International Studies, Washington, DC, October 14, 2010) http://csis.org/files/publication/100610_AfPakAir.War.Stats.pdf (accessed April 12, 2013), and Cordesman, Anthony H., "US Airpower in Iraq and Afghanistan: 2004-2007", (Center for Strategic and International Studies, Washington, D.C., December 13, 2007) http://csis.org/files/media/csis/pubs/071213_oif-oef_airpower.pdf. In addition to the airpower statistics, the US Air Force published daily airpower summaries. Some of these are still found on the website, but are hard to find. The following website systematically tracks and logs these and other summaries: Anonymous, "Archive: Surveillance Log", *Website "Surveillance to go Nowhere"* (March 13, 2016) http://www.maroon.dti.ne.jp/klan-klang/archive.html (accessed March 29, 2016). This data has the same constraints as the data from Cordesman.

73 F.H. Meulman, "Experiences As Deputy Commander Air", In: *Complex Operations: Studies on Lebanon (2006) and Afghanistan (2006-present)*, ed. Michiel De Weger, Frans Osinga and Harry Kirkels, NL ARMS. Netherlands Annual Review of Military Studies (Breda: Faculty of Military Sciences of the Netherlands Defence Adacemy (NLDA), 2009), 297-306, 301.

74 Meulman, "Experiences", 301.

75 A.J.H. Van Loon, Lieutenant General, Royal Netherlands Air Force, Interview with the Author, May 28, 2013, and Charles S. Sullivan, "Game-changing Strategies for Counterinsurgency and Complex Joint Operations", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 157-234, 164. Dynamic targeting is a targeting process used for targets that emerge too late, or are too mobile, to use the process that is used for deliberate targeting (United States Air Force, *AFDD 3-60 (2011)*, 8).

76 O. Eichelsheim, Lieutenant Colonel, Royal Netherlands Air Force, Interview with the Author, July 01, 2011.

77 Meulman, "Experiences", 301-304, and Meulman, "Mihiel (1918)", 80.

for sustainment of dispersed and isolated ground forces. In some areas, the dependence on kinetic air support was so severe that several units did not put out patrols outside their compounds without the assurance of available air cover.[78] Anecdotally, in one area personnel preferred to use transport helicopters even for movements of just a few miles.[79]

Although ISAF air operations covered the entire spectrum, this did not mean that all missions were ISAF related. While mission planning could involve consultation, coordination, or release of a minimum amount of information, the US kept some tasks to themselves or in close coordination with trusted allies such as the UK. It concerned most notably special operations, ISR, and counter-narcotics related operations.[80] American, British and Australian units collectively were building Special Forces helicopter units to execute a "decapitation strategy", in which Taliban and al Qaida leadership were actively hunted down.[81] In addition, not all air operations were executed by the military. Besides regular military air movements, there was a whole range of missions executed by civilian companies, known as Private Military and Security Companies (PMSCs).They were hired and used by the Pentagon, CIA and State Department. It usually involved short term contracts, but could be extended longer. Missions varied from CIA-led covert operations, drug eradication, resupply of troops and moving of prisoners.[82]

5.3.3. Opposing Forces' Countermeasures

Meanwhile, the Taliban, Al Qaida and other opposing forces started to adapt. Increased presence of western forces initially brought them off balance. Especially the raids on HVTs put additional pressure on the insurgent commanders.[83] Whereas they initially executed larger scale attacks, they largely refrained from these attacks in the face of overwhelming western firepower. Rapidly concentrated firepower, most effectively done with airpower, prohibited the opposing forces to mass. Instead, they reverted to ambushes, stand-off rocket and mortar attacks, placing of Improvised Explosive Devices (IEDs), suicide attacks, and targeted assassinations. Of note, they all increased in sophistication due to local

78 Tootal, *Danger Close*, 226.

79 Al J. Venter, *Gunship Ace: The Wars of Neall Ellis, Helicopter Pilot and Mercenary* (Havertown, PA and Newbury: Casemate Publishers, 2011), 315.

80 Anonymous, "UK Special Ops Hip", *Air Forces Monthly*, no. 224 (2006): 7, Nathan Hooge, "State Department Flies Mercenary Air Force Over Pakistan", *Website Wired.com* (April 30, 2010) http://www.wired.com/2010/04/state-department-flies-mercenary-air-force-over-pakistan/ (accessed January 16, 2016), and Ian Hope, "Unity of Command in Afghanistan: A Forsaken Principle of War", In: *War in Afghanistan: Strategy, Military Operations, and Congressional Issues*, ed. Easton H. Ussery (New York: Nova Science Publishers, 2010), 33-52, 43.

81 Ripley, *Air War Afghanistan*, 113.

82 Ripley, *Air War Afghanistan*, 151-161, and Venter, *Gunship Ace*, 302-303. More details on PMSC will be detailed in paragraph 5.5.

83 Antonio Giustozzi, "Military Adaptation by the Taliban, 2001-2011", In: *Military Adaptation in Afghanistan*, ed. Theo Farrell, Frans Osinga and James A. Russell, Stanford Securities Studies (Stanford, CA: Stanford University Press, 2013), 242-262, 244.

adaptations and communication with insurgent groups outside Afghanistan. They also increasingly focused on "soft targets", meaning targets that were traditionally considered non-military, such as representatives of international organizations, non-governmental organizations, and Afghan civilians. These attacks aimed to decrease legitimacy of the government of Afghanistan by showing the population that the government was not able to provide for stability by increasing insecurity.[84]

In adapting to the presence of western forces, the opposing forces paid attention to the air weapon as well. As has been described in chapter two, insurgents historically had the following methods to mitigate the effects of the air weapon: engaging the aircraft, early warning of the whereabouts of aircraft, cover and concealment, dispersal to mitigate the effect of air-delivered weapons, physical protection against blasts, and dressing as civilians. Albeit largely anecdotal, mostly non-academic literature reveals that the opposing forces in Afghanistan adopted many of these tactics, often in combination with each other. First, the opposing forces regularly tried to down an aircraft. To this end they had several means and tactics at their disposal. Most threatening to coalition aircraft were guided missiles that were specifically designed to that end. These Man Portable Air Defense Systems (MANPADS) or Surface-to-Air Missiles (SAMs) used to be present in large numbers in the later stages of the Soviet occupation. Although largely expended or old, experiences from the opening stages of operation *Enduring Freedom* showed that there were still a few systems left in the area. Especially aircrews flying helicopters were wary of a coordinated ambush by opposing forces operating these weapons, calling them a "SAMBUSH". During the period described in this timeframe, several authors note the existence of these MANPADs, sometimes suspected of firing on opportunity targets or even downing a coalition aircraft.[85]

However, the threat from MANPADs was low compared to the threat the Soviets encountered in 1979-1989. Serviceability of the Stinger missile systems left over from the Soviet-Afghan conflict had declined due to their age. The opposing forces reportedly did try to obtain newer weapons systems, but lacked the powerful suppliers the Mujahideen had. In addition, they had difficulties training on these systems, leading to a decrease of the effectiveness of already scarce systems.[86] More available were Rocket Propelled Grenades (RPGs), Anti-Aircraft Artillery (AAA) and Heavy Machine Guns (HMGs). RPGs were unguided projectiles, not designed to be launched at aircraft, but they could be effective due to their range, explosive charge, and their self destruct mode. Due to their own propulsion system,

84 Jones, *Graveyard*, 224-230, and 293-295, Thomas H. Johnson, "Taliban Adaptations and Innovations", *Small Wars & Insurgencies* 24, no. 1 (2013): 3-27, passim, Tim Ripley, "Airpower in Iraq and Afghanistan: Part One", *Air International* 74, no. 6 (2008): 42-47, 42, and Wright, Bird, Connors, and others, *Different Kind of War*, 239-240 and 281-282.

85 Macy, *Apache*, 135-137, Ed Macy, *Hellfire* (London: Harper Press, 2010), http://www.harperplus.com/hellfire, 254-255, Orchard and Barrington, *Joint Force Harrier*, 98-101, Ripley, *Air War Afghanistan*, 180, and Gary Wetzel, *A-10 Thunderbolt II Units of Operation Enduring Freedom, 2002-07*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and Long Island City, NY: Osprey Publishing Limited, 2013), 89.

86 Antonio Giustozzi, *Koran, Kalashnikov, and Laptop: The Neo-Taliban Insurgency in Afghanistan* (New York, NY: Columbia University Press, 2008), 150-151.

they were hard to distinguish from MANPADS when fired at aircraft.[87] AAA and HMG were both unguided and differ only in caliber and mount. They both fire unguided projectiles towards the target. Due to their availability they were used extensively, but effectiveness in general was low, although they could pose a serious threat against low and slow flying aircraft such as helicopters.[88] Especially transport helicopters encountered this threat on or near landing zones. They had to approach, land, and take off again, in which time they were very vulnerable.[89]

Besides trying to actively engage coalition air assets, the insurgents tried various tactics in order to mitigate airpower's effect. They placed spotters in the vicinity of airfields, which would report on departing aircraft so insurgent fighters could estimate how much time they had before air support arrived. They also planned their actions with standard reaction times. In order words, they planned their attacks on the absence of airpower.[90] There are several examples of the insurgents ending the engagement when the air weapons arrived on the scene, even though situations where the Taliban stayed and fought in the face of overwhelming aerial bombardments were also reported.[91] Cover and concealment techniques were also used. Insurgents for instance covered their weapons in their garments or in their trucks, being well aware of the Rules of Engagement of air assets, and therefore knowing that they would not be engaged when no weapons were plainly visible. They also hid weapon caches near planned ambush sites, in order to limit their exposure to aerial observation while carrying weapons.[92] And in general, the insurgents became very adept in using the terrain to cover and conceal themselves.[93] In order to blend in with the population, the insurgents often wore civilian clothing. They however went one step further by disguising themselves as women or as members of the Afghan security forces, again with the Rules of Engagement in mind.[94] Yet another tactic the insurgents sometimes used was to provoke fighting at very close range, a couple of dozen meters. Within this close proximity, air delivered ordnance was prone to inducing damage not only to the

87 David Anderson and Douglas Thomson, "Analyzing Helicopter Evasive Maneuver Effectiveness Against Rocket-Propelled Grenades", *Journal of Guidance, Control, and Dynamics* 37, no. 1 (2014): 277-289, passim, Duncan and Loveless, *Sweating the Metal*, 215-225, Lewis, *Apache Dawn*, 195-200, and 287-288, Loveless, *Blue Sky Warriors*, 248-263, Macy, *Apache*, 335-336, Madison, *Dressed to Kill*, 287-295, and Orchard and Barrington, *Joint Force Harrier*, 98-101.

88 Macy, *Apache*, 140, Macy, *Hellfire*, 298-325, Madison, *Dressed to Kill*, 276-277, and 283-287, Orchard and Barrington, *Joint Force Harrier*, 98-101, and Wetzel, *A-10 Units 2002-2007*, 85.

89 Loveless, *Blue Sky Warriors*, 112-115, NLD MOD Media Centre, "Commemorative Book: Presentation of the Military Order of William to Major Roy De Ruiter", (August 31, 2018) Personal Collection, 42, and Tootal, *Danger Close*, 126-135 and 145-151.

90 Franzak, *A Nightmare's Prayer*, 165, Lewis, *Apache Dawn*, 209 and 287-288, Macy, *Apache*, 163, Macy, *Hellfire*, 274, and Tootal, *Danger Close*, 60-78.

91 Grahame and Lewis, *Fire Strike 7/9*, 20-21, 114-115 and 278-280, Giustozzi, *Koran, Kalashnikov, and Laptop*, 153-156, and Lewis, *Apache Dawn*, 165 and 220-239.

92 Arts, Interview, Macy, *Hellfire*, 372, and Wetzel, *A-10 Units 2002-2007*, 85.

93 Arts, Interview, and Macy, *Hellfire*, 180.

94 Anonymous, "U.S. Troops Kill Taliban Commander Clad in Woman's Clothing", *Website Fox News* (November 29, 2008) http://www.foxnews.com/story/2008/11/29/us-troops-kill-taliban-commander-clad-in-woman-clothing.html (accessed March 31, 2016), Downs, "Rethinking", 5, Grahame and Lewis, *Fire Strike 7/9*, 40-41, Ripley, "Tacklin' the Taliban", 26 and 29-30, and Mark Silinsky, *The Taliban: Afghanistan's Most Lethal Insurgents*, PSI Guides to Terrorists, Insurgents, and Armed Groups, ed. James J. Forest (Santa Barbara, CA, Denver, CO, and Oxford: Preager, 2014), 112.

insurgents, but to the friendly forces as well. Precision weapons could mitigate this danger to some extent, but anecdotal indicators suggest that at least in some instances airpower could not deliver CAS due to close proximity of friendly and enemy forces.[95] The final tactic the insurgents used could be regarded as physical protection. They did this not so much by digging in or constructing bunkers, but by placing civilians openly at locations and at times where they knew they were under surveillance and susceptible to air attack, such as for instance gatherings and meetings, and during the placement of IEDs. They effectively used civilians as human shields.[96]

5.3.4. *Counter-Countermeasures*

The weapons and tactics used by the insurgents pose the question to what extent they were effective. With the provision that the same enemy systems and intentions pose different threats for different weapons systems, air operations in general were not hampered by the threat directed towards aircraft, as is witnessed by the low number of aircraft that were shot down.[97] Fixed wing aircraft could operate above the threat envelope of all enemy

95 Orchard and Barrington, *Joint Force Harrier*, 204, and Withington, *B-1B Lancer Units*, 63.

96 Dadkhah, "CAS and CIVCAS", Marc E. Garlasco, "*Troops in Contact": Airstrikes and Civilian Deaths in Afghanistan* (New York, NY: Human Rights Watch, September, 2008), 5 and 32, and Giustozzi, "Military Adaptation by the Taliban", 251.

97 This conclusion is primarily derived from the "attrition" sections of *Air Forces Monthly (AFM)* and Anonymous, "List of Aviation Accidents and Incidents in the War in Afghanistan", *Website Turkish News* (March 18, 2012) http://www.turkishnews.com/en/content/2012/03/18/list-of-aviation-accidents-and-incidents-in-the-war-in-afghanistan/ (accessed October 21, 2014) AFM published all publicly available aircraft related incidents in "accident reports" and "accident report updates". Even though opposing forces in the media sometimes claimed explicit attempts for attacking aircraft (Thomas Harding, "Taliban Planning to Bring Down a British Chinook", *The Daily Telegraph* (May 2, 2009) http://search.proquest.com/docview/321711330/67877FBAD1DE4476PQ/3?accountid=35226), and these forces every now and then managed to hit an airplane or helicopter (see for instance: Mark Couch and Dennis Lindell, "Study on Rotorcraft Safety and Survivability", (2010) http://www.dtic.mil/dtic/tr/fulltext/u2/a547531.pdf (accessed February 28, 2017), Rupert Hamer, "To Heli and Back: Exclusive Brave Pilot Saves Afghan Leader From Taliban Strike ", *Sunday Mirror* (March 8, 2009) http://search.proquest.com/docview/339866729/67877FBAD1DE4476PQ/6?accountid=35226, and Mark Townsend, "RAF Pilot Foils Assassination Bid", *Website The Guardian* (March 8, 2009) http://www.theguardian.com/uk/2009/mar/08/defence-afghanistan-raf (accessed October 10, 2014)), the success rate was low. From late December 2002 to the end of 2009 about 115 incidents with aircraft in Afghanistan or bases outside Afghanistan that were used for operations in that country were reported. Of those, about 16 involved enemy action of some sort. Both of these numbers are lower than those of Iraq during the same time frame. Most incidents were accidents, in which technological malfunction, meteorological conditions, human error, or a combination of those variables, were responsible for damage. It concerned virtually all types of aircraft, and all nations involved. Also, contractors and non-governmental organizations that flew aircraft in Afghanistan occasionally suffered from aircraft losses.(Dave Allport, "Attrition", *Air Forces Monthly*, no. 166-345 (2003-2016)). Deriving conclusions should however be done with great caution. It is plausible not all incidents were made public. Also, circumstances surrounding the incidents were not always clear, especially when enemy action was concerned. The numbers also give no indication of the damage or human suffering. Website *iCasualites.org* maintains a database of coalition fatalities, and provides a general indication of cause of death. During the period 2002 - 2008 the database indicates that there were 136 coalition casualties as a result of aircraft crashes. This did not only include aircrews, but also passengers. Of those 136, 34 were killed in action as result of aircraft being shot down. 102 were die to accidents. This confirms the notion that most casualties and damage were result of conditions not relating to enemy activity (Anonymous, "Operation Enduring Freedom: Fatalities", *iCasualties.org* http://icasualties.org/OEF/Fatalities.aspx (accessed December 30, 2016)). Again, this data should be treated with caution, as the website does not mention its sources, and little detail is given about the conditions on which coalition forces were killed in action. Some incidents caused only minor damage and no casualties. Others were not due to enemy fire, but caused severe human suffering. Examples are the crash of a chartered Ukranian transport plane on 26 May 2003, the crash of a Spanish helicopter on

weapon systems in theater. MANPADS and RPGs could be defeated relatively easy using a combination of an electronic warning system and evasive maneuvering.[98] During times of increased vulnerability, such as take-off and landing, tactical maneuvers, in which speed was key, were executed to make targeting for shooters on the ground hard.[99] Operational planning also helped to mitigate the threat to aircraft. Changing flight patterns could prevent spotters to reliably predict reaction times of the aircraft arriving on a particular location. They also prevented aircraft to become easy targets of opportunity due to repeating routes.[100]

While the aircraft could operate in relative safety, especially in relation to the forces on the ground, the challenge of producing positive effects on the mission was harder to counter. Airpower became an indispensable tool to deploy and sustain ground forces. Aircrews however needed to adapt to a situation where it was hard to find, fix, target, track, and engage enemy forces. The first solution was technological. Several nations increased the number of aircraft that were equipped with precision sensors and weapons. This was done in order to increase precision of engagements, thereby minimizing the risk of

16 August 2005, and a mid-air fire and subsequent crash of a British Nimrod surveillance plane on 2 September 2006. These three crashes collectively caused several dozen casualties, mostly Spanish soldiers. (Dave Allport, "Accident Report Updates", *Air Forces Monthly*, no. 226 (2007): 79, Anonymous, "Fatigue, Bad Weather, Poor Planning Led to Crash", *Air Safety Week* 19, no. 22 (2005) http://search.proquest.com/docview/204676936/AB59C4DC8E9642C9PQ/6?accountid=35226 (accessed April 23, 2016), Tim Ripley, "Afghan Nimrod Crash Tragedy", *Air Forces Monthly*, no. 223 (2006): 4, and Paul Watson and Tracy Wilkinson, "17 Spanish Troops Killed in Afghanistan Crash; NATO Forces Says It Was Probably An Accident, but Officials in Madrid Won't Rule Out An Attack on the Helicopter, Which Went Down Near Herat.: [HOME EDITION]", *Los Angeles Times* (August 17, 2005) http://search.proquest.com/docview/421985548/4F1DA15EA3AB474BPQ/1?accountid=35226 (accessed April 23, 2016)). Finally, not all enemy actions had the same effect. Most damage occurred using unguided munitions directed at flying aircraft, such as heavy machine guns and RPGs (Allport, "Attrition 2003-2009", passim). Sometimes, the aircraft were damaged when on the ground by mortar attack or, such as occurred with a British C-130 Hercules aircraft on 24 May 2006, by an anti-tank mine that was placed on a tactical runway that was not under constant surveillance (Anonymous, "Military: Afghan Rebels Destroy British Harrier Jet: [first Edition]", *The Independent on Sunday* (October 16, 2005) http://search.proquest.com/docview/336947780/B0CAA106D8C448EAPQ/3?accountid=35226 (accessed October 14, 2014), Dave Allport, "Accident Report Updates", *Air Forces Monthly*, no. 234 (2007): 75, Dave Allport, "Accident Report Updates", *Air Forces Monthly*, no. 244 (2008): 97, and Anonymous, "Million Dollar Hercules", *Air Forces Monthly*, no. 226 (2007): 32-35). Although it might have occurred more often, the most dangerous variant of aircraft losses, namely shooting it down with a guided MANPAD system, killing the aircrew and passengers, was reported to have occurred only once, on 30 May 2007. Reportedly, such a system was successfully used on Chinook transport helicopter, flying over Helmand, killing five crew members and two passengers (Dave Allport, "Accident Reports", *Air Forces Monthly*, no. 232 (2007): 92-93, 93, Bill Ardolino, "Inside Afghanistan's Deadly Copter War", *Website Wired.Com* (August 26, 2011) http://www.wired.com/2011/08/afghanistans-copter-war/all/ (accessed March 29, 2016), Lewis, *Apache Dawn*, 195-198 and 200, Madison, *Dressed to Kill*, 183-184, and Wetzel, *A-10 Units 2002-2007*). So, while several aircraft were lost, and probably many aircraft suffered damage as a result of enemy fire, only a few aircraft were lost in the most dramatic manner. However, there remained a residual threat, and coalition forces were wary of the insurgents possessing MANPADS, and acquiring new ones. Overall, the MANPAD threat did not hamper operations, although tactics and self protection systems were updated when weapon caches containing MANPADS were found (David C. Isby, "The SAM Threat in Afghanistan", *Air Forces Monthly*, no. 271 (2010): 54-58, 57-58).

98 Anderson and Thomson, "Analyzing", passim, Michal Fiszer and Jerzy Gruszczynski, "New Self-Protection Suite and Deployment for Dutch Apaches", *Journal of Electronic Defense* 27, no. 4 (2004) http://search.proquest.com/docview/206583522/F7985FD8723C4423PQ/30?accountid=35226 (accessed October 8, 2014), and Orchard and Barrington, *Joint Force Harrier*, 98-101.

99 Orchard and Barrington, *Joint Force Harrier*, 44, 63 and 150, Victor Strîmbeanu, "Airpower in the Asymmetrical Conflict: Case Study: Afghanistan (II)", *Romanian Military Thinking* 1 (2013): 77-86, 83, Al J. Venter, *Mercenaries: Putting the World to Rights with Hired Guns* (Havertown and Oxford, 2014), 306.

100 Macy, *Apache*, 163, Macy, *Hellfire*, 298-325, and Venter, *Mercenaries*, 306.

unintentional damage.[101] A new communication system enhanced communication with the JTAC, as did prepared maps with coded locations on them that were (electronically) available both in the cockpit and on the ground.[102] The increased use of Small Diameter Bombs (SDBs) and GPS guided weapons enhanced precision and reduced the chance of unintended damage.[103]

Aircrews also made some improvements concerning the effectiveness of intelligence gathering. Improved resolution of the sensors allowed aircrews to use targeting pods of aircraft for intelligence purposes. Examples include the latest targeting pods, of which the resolution was high enough not only for targeting purposes, but also for intelligence gathering.[104] As these systems were not designed for intelligence gathering, but had the capabilities to do so, this was known as Non-Traditional Intelligence, Surveillance and Reconnaissance (NTISR), traditional ISR being intelligence gathering with sensors that were specifically designed for the task. The further development of NTISR made traditional weapons systems that were designed for conventional combat increasingly capable of conducting ISR missions, which became in high demand in Afghanistan and Iraq.[105] The NTISR concept was not new, but was stepped up.

Several other technologies were adapted as well. For instance the American Harrier community modified their aircraft in order to make better use of their targeting pod.[106] British Harrier pilots used laser pointers strapped to their fingers to enhance targeting during hours of darkness. During daytime, gyro stabilized binoculars also helped targeting. The helmet mounted cueing system furthermore shortened the sensor-to-shooter loop.[107] Apaches traded ammunition for fuel in order to extend range and loiter time.[108] EA-6

101 Anonymous, "Dutch Pick Litening for F-16s", *C4I News* (2006) http://search.proquest.com/docview/232539306/75149 2BF632743A5PQ/29?accountid=35226 (accessed October 24, 2014), Ayton Mark, "Cleared Hot!", *Air Forces Monthly*, no. 213 (2005): 78-82, 79, Barry, "Tornado Watch", Craig Hoyle, "RAF Harriers to Carry Paveway IV in Afghanistan", *Flight International* 174, no. 5165 (2008) http://search.proquest.com/docview/225102119/26186F1EFD2042FEPQ/254?account id=35226 (accessed October 2, 2014), Janssen Lok, "Enhanced Vision", and Niall O'Keeffe, "Paveway IV in Test Drop From Tornado", *Flight International* 175, no. 5177 (2009) http://search.proquest.com/docview/225096242/26186F1EFD2042FE PQ/61?accountid=35226 (accessed October 2, 2014), Michael Sirak, "Belgium Becomes Fifth Foreign Buyer of Lockheed Martin's Sniper Targeting Pod", *Defense Daily* 233, no. 26 (2007) http://search.proquest.com/docview/234117422/ACD9142 CC9F349C8PQ/22?accountid=35226 (accessed October 9, 2014). It should be stated that these systems were suitable for enhanced precision during the targeting process in general, not specifically in Afghanistan. Already existing procurement processes however could be provided with the additional argument of immediate operational need in Afghanistan.

102 Grahame and Lewis, *Fire Strike 7/9*, 166, Macy, *Hellfire*, and De Koster, "Mission Uruzgan", 128.

103 De Koster, "Mission Uruzgan", 122-123.

104 Anonymous, "Dutch Pick", Barry, "Tornado Watch", Jonathan Creer, "Picking the Bone: The B-1 Bomber As a Platform for Innovation", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2010) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/ L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS80MjEyOA==.pdf (accessed July 5, 2013), Janssen Lok, "Enhanced Vision", and Sirak, "Belgium".

105 Ariëns, Interview, Creer, "Picking the Bone", 97, Jon Lake, "British ISR", *Air Forces Monthly*, no. 237 (2007): 34-37, 37, Tim Ripley, "Airpower in Iraq and Afghanistan: Part Two", *Air International* 75, no. 1 (2008): 38-41, 40, and Warnes, "RAF Harriers", 31.

106 Nordeen, *AV-8B Units*, 63.

107 Orchard and Barrington, *Joint Force Harrier*, 157, 236, and 283-285.

108 Dino Carrara, "All Action Apaches", *Air Forces Monthly*, no. 228 (2007): 60-61, 60, and Bernstein, *AH-64 Apache Units*, 24

"Prowler" electronic warfare aircraft could be used to detonate radio controlled IEDs by transmitting radio signals within a frequency range that was known to be used for detonation by the insurgents, detonating them before they could harm coalition forces.[109]

Airmen adopted tactical and procedural changes in their posture as well. As stated, some restrictions of Rules of Engagement were loosened in 2007, sometimes enabling aircrews to engage insurgent fighters that were not engaged in a firefight but were undoubtedly insurgent fighters.[110] In addition, some task forces adopted tactics in order to let the insurgents expose themselves. One example was flying out of audible range but within range of own or external sensors.[111] Another was to move in with ground forces, provoking a Troops In Contact situation, after which airpower could be called in to end it.[112]

National caveats could sometimes hamper responsive air support, as was witnessed by Paul Grahame and Damien Lewis, who in their non-academic monograph noted an example where French fighters were ordered to engage targets far away because they were not allowed to engage targets closer to own forces. That way, the French fighters would run out of ammunition quickly, after which they could be relieved by aircraft from a nation that would approve the JTAC's initial request.[113]

5.3.5. *Counter-Counter-Countermeasures*

Several authors note however that the opposing forces quickly learned about new capabilities and tactics, and started to adapt again. For instance, the Taliban soon found out what the intent and purpose was of the "show of force missions", and although local variations may have existed, at least in some cases they ceased to be effective because the opposing forces were no longer impressed.[114]

The biggest challenge however was the issue of civilian casualties and collateral damage. The air weapon received a particularly bad reputation for inducing civilian casualties. This was especially the case when errors of judgement were made, resulting in a large number of civilian casualties. These were in turn extensively covered in the media, sometimes resulting in public reactions from Karzai.[115] Critics of airpower could find confirmation on the allegation of excessive use of force by airpower in statistics stating

109 Shaffer, *Operation Dark Heart*, 227.

110 Arts, Interview, and Macy, *Apache*, 95.

111 Grahame and Lewis, *Fire Strike 7/9*, 39 and 267-270, and Matt J. Martin and Charles W. Sasser, *Predator: The Remote-control Air War Over Iraq and Afghanistan: A Pilot's Story* (Minneapolis, MN: Zenith Press, 2010), 62-63 and 165.

112 Major Generals Sullivan and Van den Born and Lieutenant General Van Loon indicated the existence of these actions: Van den Born, Interview, Van Loon, Interview, and Sullivan, "Game-changing Strategies", 213-214. It is also mentioned by Grahame: Grahame and Lewis, *Fire Strike 7/9*, 267-270.

113 Grahame and Lewis, *Fire Strike 7/9*, 278-280.

114 Grahame and Lewis, *Fire Strike 7/9*, 53, Orchard and Barrington, *Joint Force Harrier*, 98-101, and Alan Warnes, "Harrier Homecoming", *Air Forces Monthly*, no. 258 (2009): 40-41, 14.

115 Garlasco, *Troops in Contact*, 33, and Jones, *Graveyard*, 305-306.

airpower was involved in most of the civilian casualties induced by western militaries.[116] However, the reality was more nuanced. The use of kinetic airpower needed to be covered within the wider context of the use of force. Breakdown of incidents relating to civilian casualties showed that most civilian casualties were induced in situations that were not planned but ad hoc, by nature chaotic, and doctrinally closely linked to ground operations, i.c. delivering Close Air Support in Troops In Contact situations.[117] This was exactly the type of airpower that skyrocketed between 2002 and 2008. As described in paragraph 5.2, this was the period in which lack of strategy forged an intimate yet inflexible relationship between air operations and ground operations at the tactical level. As the number of CAS-sorties rose as a result of the increased amount of TICs, the number of airpower-induced civilian casualties rose accordingly, according to Human Rights Watch from one hundred and sixteen to three hundred and twenty one by US strikes alone.[118] The opposing forces were well aware of this and started trying to lure NATO aircraft into creating civilian casualties by firing from populated areas and boasting about large numbers of civilian casualties, whether they were real or not.[119]

Therein lay a paradox with regard to airpower deployment in Afghanistan. Because ground forces were thinly spread across the country, and the opposing forces were actively stepping up their insurgent activities, airpower was called upon more than ever. At the tactical level this was crucial for sustaining and supporting ground forces. Rising number of civilian casualties however created a backlash at the strategic level, as it strained popular support for the mission both within and outside Afghanistan. The air weapon was especially prone to criticism, because the lauded precision made any error unacceptable. Showing too much restraint could have negative consequences as well, because it would allow freedom of movement for the insurgents. So, ground forces, supported by airpower, walked a fine line between winning engagements at the tactical level and being a liability at the operational and strategic levels of conflict.[120]

The paradox was however acknowledged, and military leaders started to take measures to mitigate the backlash across the board, with the airpower in its wake. First, a system of registration was put in place that logged incidents that induced civilian casualties. In the

116 An example of such statistics can be found in: United Nations Assistance Mission to Afghanistan (UNAMA), "Afghanistan: Annual Report on Protection of Civilians in Armed Conflict, 2008", (January, 2009) https://unama.unmissions.org/sites/default/files/unama_09february-annual2oreport_poc202008_final_11feb09.pdf (accessed December 19, 2013), 16.

117 Arts, Interview, Anthony H. Cordesman, "Afghan-Pakistan War: Casualties, the Air War and "Win, Hold, Build", (Center for Strategic & International Studies, May 15, 2009) http://csis.org/files/publication/090515_af_pak_air_war_0.pdf (accessed December 22, 2011), 14, Garlasco, *Troops in Contact*, 3-4 and 15, and William Maley, "Surviving in a War Zone: The Problem of Civilian Casualties in Afghanistan", In: *Protecting Civilians During Violent Conflict: Theoretical and Practical Issues for the 21st Century*, ed. David W. Lovell and Igor Primoratz, Military and Defence Ethics Series, ed. Don Carrick, James Connely, Paul Robinson and George Lucas (Farnham and Burlington, VT: Ashgate, 2012), 231-250, 242.

118 Garlasco, *Troops in Contact*, 2,7 and 13-14.

119 Forsyth, "Second Thought", 120-121, Jones, *Graveyard*, 303-304, and Meulman, "Experiences", 304.

120 Dadkhah, "CAS and CIVCAS", Garlasco, *Troops in Contact*, 3, Frans P.B. Osinga and Mark P. Roorda, "From Douhet to Drones, Air Warfare, and the Evolution of Targeting", In: *Targeting: The Challenges of Modern Warfare*, ed. Paul A.L. Ducheine, Michael N. Schmitt and Frans P.B. Osinga (The Hague: T.M.C. Asser Press, 2016), 27-76, 70-71, Osinga, "Bounding", 271-273, and Suhrke, "Contradictory Mission?", 230.

summer of 2008 the Civilian Casualties Tracking Cell (CCTS) was established within ISAF Headquarters. The CCTS systematically logged incidents that induced civilian casualties, in order to recognize patterns, cross-check information, and use it to inform the public.[121] In 2007 and 2008 COMISAF issued several so-called "tactical-directives", enforcing more restraint in the use of kinetic force than before. This resulted in a decrease in civilian casualties as a result of air operations, despite an increase of the overall tonnage air-delivered ordnance.[122] At the tactical and technical levels, aircrews increased their reliance on technology. The use of Small Diameter Bombs increased, and the use of inert ordnance was considered. The use of precision guided weapon suites increased as well. Together with robust communications systems, these systems aimed to diminish unwanted effects without compromising the desired effects.[123] Also, in some cases the civilian population was warned by means of leaflets. The aim was to influence civilian behavior in such a way that innocent civilians would not be prone to receive fire from western militaries.[124]

Although these measures resulted in positive effects in the form of a decrease of the number of civilian casualties, the issue was not entirely resolved. Notably, the difference between Rules of Engagement of ISAF and OEF was troublesome to some coalition partners and human rights agencies. The ROEs of OEF had a different perception of what the prerequisites were for declaring so called "hostile intent" of insurgents. These were crucial in deciding whether potentially lethal force could be used. The ROEs applicable to OEF were considered to be more lenient than those of ISAF, with a lower threshold for the use of violence.[125] In addition, not all units and agencies were subject to the same scrutiny of inflicting civilian casualties as the conventional forces. Special Forces, Secret Services, and Afghan Security Forces, some of which used air support as well, also inflicted civilian casualties.[126] So, the issue of civilian casualties in its entirety was not resolved during the timeframe described in this chapter. In 2008 Human Rights Watch published a report in which it listed and analyzed civilian suffering as a result of airstrikes. The report argued that airstrikes indeed caused civilian casualties, and in addition resulted in the rise of refugees, called internally displaced persons, negative public opinion and undermined

121 Jennifer Keene, "Civilian Harm Tracking: Analysis of ISAF Efforts in Afghanistan", (Center for Civilians in Conflict, Washington, DC, 2014) http://civiliansinconflict.org/uploads/files/publications/ISAF_Civilian_Harm_Tracking.pdf, 4.

122 Dadkhah, "CAS and CIVCAS", Garlasco, *Troops in Contact*, 6 and 14-15, and United Nations Assistance Mission to Afghanistan (UNAMA), "UNAMA Annual Report 2008", 17.

123 Bolkcom and Katzman, "Military Aviation", 34, Sandra I. Erwin, "Tough Calls: In Today's Wars, Air Strikes Under Fire", *National Defense*. 92, no. 654 (2008): 46-49, 49, Garlasco, *Troops in Contact*,6, James E. Hickey, *Precision-guided Munitions and Human Suffering*, Military and Defense Ethics Series, ed. Don Carrick, James Connelly, Paul Robinson and George Lucas (Farnham and Burlington, VT: Ashgate Publishing Limited and Ashgate Publishing Company, 2012), 223, and Vincent Morelli and Paul Belkin, "NATO in Afghanistan: A Test of the Transatlantic Alliance", In: *War in Afghanistan: Strategy, Military Operations, and Congressional Issues*, ed. Easton H. Ussery (New York: Nova Science Publishers, 2010), 1-32, 20.

124 Dadkhah, "CAS and CIVCAS", and Tom Koenings and Sima Samar, "AIHRC and UNAMA Joint Investigation Into the Civilian Deaths Caused by the ISAF Operation in Response to a Taliban Attack in the Chora District, Uruzgan on 16th June 2007. Final Report." http://docs.liigl.nl/sdu/parlando/blg/20070928/blg13194.pdf (accessed November 21, 2013), 10-11.

125 Garlasco, *Troops in Contact*, 32-33.

126 Keene, "Civilian Harm Tracking", 15-19.

public confidence in the Afghan government and the international coalition.[127] In effect, kinetic use of force resulted in negative popular support which, as has been described in chapters two and three, contributed to support to the insurgency. Deadly force hence contributed to the maintenance of the strategic stalemate that evolved around 2008. The report of Human Rights Watch recognized that other military assets were responsible for inflicting undesirable suffering as well, and airpower's reputation of being responsible for inflicting large numbers of civilian casualties faded a bit due to the efforts of airmen to minimize unwanted death and damage as much as possible. However, the report stated that in 2008, despite these efforts, airpower was still associated with an "*unacceptably*" high number of civilian casualties. This was mainly due to their assessment that western forces could still do more with regard to planning, intelligence preparation, and targeting procedures. Whereas adherence to international laws was unquestioned, Human Rights Watch stated that this was necessary in order to take all feasible steps necessary to prevent civilian casualties.[128]

5.3.6. Airpower's Paradoxical Effects

To conclude this paragraph, the air weapon was the one weapon that could move freely throughout Afghanistan. Aircrews needed to be vigilant for threats, but these threats did not hamper air operations significantly. As a result, ground forces heavily relied on the air weapon for deployment and sustainment. Airpower proved to be vital at all levels of operations. Airpower basically executed all its functions, save air-to-air combat and, depending on the definition used, strategic bombing. In doing so, it saved many lives of coalition forces. Also, technology-enabled precision enabled ground forces to cover larger areas of operation and in adverse meteorological conditions, while remaining confident that fire support would be available when needed. By the standards of effectiveness that developed following the dearth of strategy, airpower was effective in enabling ground forces while minimizing civilian casualties and collateral damage. It was also a higher level of effectiveness when compared to Soviet employment of airpower in the same country.

Largely absent was the build up of the Afghan Air Force. In this regard, ISAF suffered from a lack of assets and resources and difficulties in identifying courses of action on how to proceed. There were some American initiatives that showed attention towards (re-) building the Afghan Air Force. These however were regarded as ad hoc.[129]

The success at the tactical level came at a cost at the strategic level. Deployment of the air weapon to support thinly spread and lightly armed ground forces required a relatively

127 Garlasco, *Troops in Contact*, 3.

128 Garlasco, *Troops in Contact*, 5-6.

129 Daniel J. Magruder, "The US Air Force and Irregular Warfare: Success As a Hurdle", *Small Wars Journal Website* (2009) www.smallwarsjournal.com/blog/.../272-magruder.pdf (accessed July 2, 2014), and Willemse, "Silence", 13.

large role of kinetic air support in the form of CAS. This inevitably led to unwanted human suffering and material damage to the extent that it could threaten the strategic goals of the mission: winning popular support for the legal Afghan Government. Tactical directives and technology that enhanced precision alleviated the problem of civilian casualties, but they did not make it disappear entirely. This potentially allowed the opposing forces to influence the public opinion to the disadvantage of the air weapon, even if civilian casualties were, although regrettable, inflicted while abiding by the law of armed conflict. At the strategic level, this was problematic. As argued in chapter three, western forces faced an enduring stalemate by 2008. The root cause of this problem was a lack of sound strategy, which drove lightly armed and dispersed ground forces to use kinetic force in general to protect themselves. In its wake, it forced the air weapon to conduct its most destructive missions on autopilot in order to protect friendly ground forces. So, kinetic airpower in the form of CAS, like other forms of deadly power, had a positive role in protecting the force, but in doing so necessarily had a negative role in protecting the mission. This was problematic as it became harder to achieve the overall goals.

5.4. Doctrine: Available but Contradicting and Seldom Used

As described in the previous chapter, the US had some doctrine in place at the time of the start of operation *Enduring Freedom*. By 2004, mainly the US military and political leadership saw a need to review the doctrine on counterinsurgency as a result of the problematic progress on the wars in Afghanistan and Iraq. On initiative of the US Army, a new doctrine was written in close cooperation with the US Marine Corps. This resulted in publication of the *Field Manual 3-24 / Marine Corps Warfighting Publication 3-33.5: Counterinsurgency (FM 3-24)* in December 2006.[130] This doctrine promoted a population-centric approach, in which legitimacy of the government and the struggle for control of the support of the population became a central theme.[131] Appendix E described the role of airpower, and in essence was a reflection of the ground-centric approach to airpower to COIN, as described in chapter two. The air weapon essentially was valued as a force multiplier for ground operations. It highlighted supporting roles such as airlift and intelligence gathering. While acknowledging airpower's worth, the airpower appendix of *FM 3-24* advised restraint when using the air weapon in the strike role, due to the risk of collateral damage and civilian

130 James S. Corum, "Rethinking US Army Counter-insurgency Doctrine", *Contemporary Security Policy* 28, no. 1 (2007): 127-142, 127, Conrad Crane, "United States", In: *Understanding Counterinsurgency: Doctrine, Operations, and Challenges*, ed. Thomas Rid and Thomas Keany (London, New York: Routledge, 2010), 59-72, and United States Headquarters, Department of the Army, *FM 3-24 / MCWP 3-33.5: Counterinsurgency,* December 15, 2006, http://www.fas.org/irp/doddir/army/fm3-24.pdf (accessed November 13, 2011).

131 Conrad C. Crane, "Minting COIN: Principles and Imperatives for Combating Insurgency", *Air & Space Power Journal* 21, no. 4 (2007), Frank G. Hoffman, "Neo-Classical Counterinsurgency?", *Parameters* 41, no. 4 (2011), David H. Ucko, *The New Counterinsurgency Era: Transforming the U.S. Military for Modern Wars* (Washington, DC: Georgetown University Press, 2009), 116-117, and United States Headquarters, Department of the Army, *FM 3-24*, 1-28 - 1-29.

casualties. It also mentioned both low-tech and high-tech assets specifically. The doctrine implied that all air operations should be jointly planned at lower echelons, suggesting a decentralized planning and decentralized execution scheme.[132] Lastly, the appendix emphasized the importance of building a host nation air force.[133] A joint doctrine on irregular warfare was not yet available, even though the US Joint Chiefs of Staff published an *Irregular Warfare Joint Operating Concept* in 2007.[134]

Although the US Air Force was in some way involved in the drafting of this doctrine, it was published without intimate involvement of its leadership. The publicly available sources show however contradictory statements. One source mentioned that no senior airman was invited to participate in drafting the field manual.[135] Another source noticed that the US Air Force was invited, but that it refused to collaborate in the venture.[136] According to Conrad Crane, one of the editors of the document, the airpower appendix of the *FM 3-24* was written with inputs from official USAF doctrine writers.[137] Combined, this suggests that, if the USAF was involved in drafting the appendix of the *FM 3-24*, it was done via lower-level airmen, and not via senior USAF leadership. The Air Force leadership in any case became aware of its existence only after its publication, and was not amused with the result, and more in particular, with Appendix E. As discussed in chapter two, the publication invoked sharp criticism, formulated in public mainly by USAF Major General Dunlap. It also sparked an initiative by the Air Force to re-write its own doctrine on Military Operations Other Than War, which was published in August 2007 by the name of *Air Force Doctrine Document 2-3: Irregular Warfare*.[138] Also, the doctrine on Foreign Internal Defense was substantially updated in 2007.[139]

The *Air Force Doctrine Document 2-3: Irregular Warfare (AFDD 2-3)* of 2007 was the peer of the *FM 3-24* in the US hierarchy of doctrine publications and the doctrine above the *Air Force Doctrine Document 2-3.1: Foreign Internal Defense. (AFDD 2-3.1). AFDD 2-3* used an irregular warfare model that focused on key activities and key capabilities. Key activities were counterinsurgency, support to counterinsurgency, support to an insurgency, counterterrorism, and shaping and deterring. The key capabilities were Building Partnership Capacity - by which was meant FID-, unconventional warfare, intelligence and

132 United States Headquarters, Department of the Army, *FM 3-24*, E-1 - E-4.

133 United States Headquarters, Department of the Army, *FM 3-24*, E-5.

134 United States Department of Defense, *Irregular Warfare Joint Operating Concept, Version 1.0*, September 11, 2007, http://www.globalsecurity.org/military/library/policy/dod/iw-joc_v1_2007.pdf (accessed October 17, 2013).

135 General Forsyth noted in *Airpower in Afghanistan 2005-10*: "*...the original doctrine on counterinsurgency (FM 3-24) did not contain a single chapter on airpower. When this was noted, the document was amended to add airpower as an appendix at the end. In fact, to my knowledge, no senior airman was invited to contribute to the process of developing that doctrine.*" (Forsyth, "Second Thought", 115).

136 Adam Roberts, "Doctrine and Reality in Afghanistan", *Survival: Global Politics and Strategy* 51, no. 1 (2009): 29-60, 34.

137 Crane, "United States", 68.

138 Crane, "United States", 68, and United States Air Force, *Air Force Doctrine Document 2-3: Irregular Warfare*, August 1, 2007, www.fas.org/irp/doddir/usaf/afdd2-3.pdf (accessed November 13, 2011).

139 United States Air Force, *Air Force Doctrine Document 2-3.1: Foreign Internal Defense*, September 15, 2007, http://www.globalsecurity.org/jhtml/jframe.html#http://www.globalsecurity.org/military/library/policy/usaf/afdd/2-3-1/afdd2-3-1-2007.pdf|||AFDD%202-3.1:%20Foreign%20Internal%20Defense (accessed October 28, 2013).

counterintelligence operations, agile combat support, precision engagement, command and control, and information operations.[140] The main difference between the *FM 3-24* and *the AFDD 2-3* was their scope and outlook. Whereas the *FM 3-24* focused on counterinsurgency only, the *AFDD 2-3* addressed the entire irregular warfare spectrum. Also, the airpower appendix of the *FM 3-24* described tasks and partly the means to execute those tasks, while the *AFDD 2-3* focused on activities and capabilities.

Air Force Doctrine Document 2-3.1: Foreign Internal Defense (AFDD 2-3.1) was a substantial revision of its predecessors. It presented Foreign Internal Defense as "*a key Air Force contribution to US support for counterinsurgency operations, combating terrorism, and counter-narcotics*"[141]. It was mainly more comprehensive and elaborate than its predecessors, which made it more complete. The "FID continuum" of indirect support, direct support not involving combat, and direct support involving combat, was maintained.[142] The relationship with special operations forces implicitly remained, especially with regard to the Combat Aviation Advisory (CAA) teams, as SOF were able to maintain a high level of independence and self-sufficiency in austere environments. This was however context dependent, and the doctrine took into account that there could be not enough specialized forces available. Therefore, US Air Force General Purpose Forces (GPF), a term used to designate all forces who are not special operations forces, were also needed to be able to prepare for these kinds of missions.[143]

With regard to organizational structures to support doctrine development, the US Air Force made progress too. Late 2006, it established the Air Force Coalition and Irregular Warfare Center of Excellence (CIWC) at Nellis Air Force Base, Nevada.[144] The CIWC consisted of a staff of thirteen and was heavily focused on facilitating development of host nation airpower capabilities and innovative applications of US Air Force airpower in irregular warfare outside the traditional realm of special operations.[145] The USAF also increased the number of personnel of 6th Special Operations Squadron (6 SOS), tasked with conducting Foreign Internal Defense, from 110 to 230.[146]

Whereas the three doctrines show increased knowledge and understanding of irregular warfare and its subdenominations, they were not aligned. Also, some of the obstacles described in the paragraph on doctrine of the previous chapter still were not solved. In his

140 United States Air Force, *AFDD 2-3 (2007)*, 5.

141 United States Air Force, *AFDD 2-3.1 (2007)*, summary of changes, no pagenumber.

142 United States Air Force, *AFDD 2-3.1 (2007)*, 32.

143 United States Air Force, *AFDD 2-3.1 (2007)*, summary of changes, no pagenumber. Some elaboration is found in chapter 5: Employment (pages 54-72).

144 Robert M. Chavez, "Basic and Operational Doctrine for Airpower in Irregular Warfare", (Monograph, School of Advanced Military Studies, United States Army Command and General Staff College, Fort Leavenworth, KS, 2007) http://www.dtic.mil/dtic/tr/fulltext/u2/a475385.pdf (accessed August 9, 2013), 56-57, and Scott Pugmire, "Air Force Coalition and Irregular Warfare Center of Excellence," (Presentation by Director of CIWC, January 27, 2007) Personal Collection

145 Chavez, "Basic and Operational Doctrine", 56-57, and Pugmire, "Air Force"

146 Robert E. Kiebler, "USAF Advisory Programs: Evolving to Meet Future Challenges", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2007) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8zNjgoNw==.pdf (accessed July 3, 2013), 17.

thesis, USAF major Charles Chaves argued that non-aligning several layers of doctrine was a major shortfall in doctrine development. The CIWC could improve this situation, but was not yet able to.[147] Nevertheless, despite its shortfalls, there was doctrine available for the conduct of counterterrorism and counterinsurgency.

Existence of doctrine is however but one prerequisite of successful application of it. The other prerequisite is knowledge of and adherence to it by commanders and policy makers. For the period covered in this chapter, there is no evidence that the Air Force doctrines on irregular warfare had any significant impact on operations in Afghanistan. A comparable situation for the US Army and US Marine Corps was identified by Schmidt, who conducted a survey amongst US Army and Marine Corps officers on the familiarity with available doctrine on irregular warfare prior to the publication of the *FM 3-24*. The majority of officers did not cite available doctrines as references they used prior to their deployments to Iraq or Afghanistan. This was probably due to unawareness of their existence, or the perception that they were not applicable. It also reinforced the idea that counterinsurgency was part of a subculture, maintained mainly by special forces.[148] The US and Coalition Forces thus executed their operation according to other doctrines, such as doctrines on Command and Control, and Targeting, if any at all.

In this phase, these doctrines may have sufficed. In professional literature some authors argued that, although counterinsurgency and conventional types of warfare differed conceptually, the actual tasks of the air weapon did not, thereby implying that there is no need for a separate Air Force doctrine on various variants of irregular warfare.[149] The US Army and Marine Corps however eventually assessed that the next phase, which at least in part involved nation building, stabilization and reconstruction, and counterinsurgency, required a specific doctrine. Hence the publication of the *FM 3-24*, which eventually helped change the cultural aversion towards counterinsurgency.[150] General Forsyth however stated that, as far as airpower was concerned, by 2007 neither the *FM 3-24* or the *AFDD 2-3* had any influence in the theater, which included Iraq.[151] This implies that airpower professionals of the various services worked with at least two conceptions regarding airpower in irregular warfare, namely the conception described in *FM 3-24* and some other conception they had developed during the course of their careers.

More importantly, the described doctrines did not apply to ISAF. All available doctrine was American. NATO as an organization lacked both a discourse and doctrine development on the role of airpower in irregular warfare. But once deployed, ISAF had difficulty adopting

147 Chavez, "Basic and Operational Doctrine", 56-57, 71 and 78-79.

148 Matthew J. Schmidt, "The Influence of Professional Culture on American Military Innovation in Counterinsurgency", (Dissertation, Georgetown University, February 8, 2011) http://search.proquest.com/dissertations/docview/865807908/fulltextPDF/13C813BDCA879CCA51C/9?accountid=35226 (accessed February 27, 2013), 167 and 181.

149 Robert C. Owen, "Structuring Global Air Forces for Counterinsurgency Operations", In: *No Clear Flight Plan: Counterinsurgency and Aerospace Power,* Silver Dart Canadian Aerospace Studies, ed. James Fergusson and William March (Winnipeg: Centre for Defence and Security Studies, University of Manitoba, September, 2008), 221-236, 230-234.

150 Schmidt, "Influence of Professional Culture", 185-189 and 196.

151 Forsyth, "Second Thought", 113.

US doctrine without proper staffing in the NATO organization. Consequently, non-US personnel in ISAF headquarters was not familiar with US doctrine, and/or refused to adhere to it, as it was not NATO doctrine and also was heavily influenced by the Iraq war, and not Afghanistan.[152]

So in short, mainly the US recognized the need for current doctrine on irregular warfare and its subdenominations. There were however serious obstacles to overcome. First, the writing of doctrine intensified the interservice rivalry between the US Air Force and the US Army. They both had a different outlook on what the role of airpower should be in irregular warfare. Second, the military did not adhere to the doctrines yet. This was partly due to the time it would take to familiarize all personnel with the doctrines. However, situation with regard to doctrine was still dire. The USAF did not favor adherence to the *FM 3-24*. The organization did not have to, because the doctrine belonged to other services. In addition, US doctrine was not accepted outright by militaries of other nations. Furthermore, the available doctrines were not known, or deemed to be not applicable due to the perception that it regarded doctrine of another type of war, another war, doctrine of another service or of another coalition. So, in short, the air weapon entered Afghanistan without a doctrine focused on the environment it was operating in.

5.5. Force Levels and Resources: Lacking Essentials

5.5.1. *Too Few Aircraft, And With Many Restrictions*

After major combat operations ended in mid-2002, availability of the air assets to operation *Enduring Freedom* became fluid. With the exception of the United States and the United Kingdom, nations started to withdraw their air assets from operation *Enduring Freedom*, and by the fall of 2002 many had left.[153] Conversely, several nations started to deploy assets to Afghanistan dedicated for ISAF in the winter and spring of 2002. It concerned mostly transport aircraft. In addition, a combined Danish, Dutch, and Norwegian F-16 unit was available for intelligence gathering and Close Air Support. It operated from Manas Air Base in Kyrgyzstan. The number varied from eight to more than a dozen from April to October 2003, after which they were withdrawn.[154] These assets were available to the newly erected ISAF, which operated in Kabul and surrounding areas. At least the Dutch F-16s however also supported operation *Enduring Freedom*.[155] Although the number of air assets was modest, it was considered to be sufficient, because the operational environment was assessed to be benign, and possibly because policy makers and military planners concluded that the

152 Meulman, "Mihiel (1918)", 76.

153 Appendix 3.5.

154 Appendix 3.6.

155 Netherlands Institute for Military History, "Enduring Freedom", 9.

tasks that were following ISAF's mandate to assist the Afghan government did not require extensive use of airpower.[156] Also, there were ample US assets available for "in extremis" support, which allowed ground forces to plan their missions with confidence that air support would be available in emergency situations.[157]

However, the need for dedicated air assets increased when NATO accepted command and control of ISAF and started to plan for expansion, first to the northern part of Afghanistan, in 2003. SHAPE, NATO's strategic-level headquarters, became responsible for strategic military planning and force generation, including air assets. Operational Control (OPCON) was delegated to JFC Brunssum.[158] In order to assume the responsibility of ISAF by NATO, SHAPE organized a force generation conference on 23 May 2003. During this conference, NATO tried to persuade (potential) contributing nations to "fill" a document called the Combined Joint Statement of Requirements (CJSOR), which listed assets and capabilities that were deemed necessary to execute the mission.[159] According to Steve Beckman, the initial force conference seemed a success. The CJSOR was "filled". Beckman stated however that this success obscured NATO's Achilles heel, namely force generation. The CJSOR, mission, and the organizational structure reflected what the nations already offered, instead of what operational reality required. It obscured that there was shortage of essential assets, most notably helicopters, intelligence assets, and medical units. By making the plan fit the assets, instead of the other way round, NATO members laid the foundation for a shortage of assets in the future.[160] The problem almost immediately surfaced when NATO planned to expand to the north of Afghanistan. As an organization, NATO was not able to muster the fourteen helicopters required for ISAF.[161] Especially the number of helicopters for the PRT in Kunduz was problematic. According to Richard Rupp, this led to a "*helicopter odyssey*" in which several failed attempts were made to get nations to deploy helicopters. This led the US to grudgingly deploy three UH-60 Blackhawk transport helicopters to Kunduz.[162]

156 Willemse, "Silence", 7.

157 Van den Born, Interview. By 2004, Anthony Cordesman estimated that the US still had 570 airframes in CENTCOM's area of operations (Anthony H. Cordesman, "The Ongoing Lessons of Afghanistan: Warfighting, Intelligence, Force Transformation, and Nation Building", (Center for Strategic and International Studies, Washington, DC, May 6, 2004) http://csis.org/files/media/csis/pubs/afghanlessons.pdf (accessed November 15, 2014), 100). Isolating Afghanistan is problematic, as the statistics included the entire area. However, Afghanistan was part of CENTCOM's area of operations, and especially fixed wing air support could be requested on short notice in case of the need for "in extremis" support.

158 Beckman, "From Assumption to Expansion", 3. Delegation of OPCON to JFC Brunssum meant that the JFC received authority to execute certain functions relating to organization of forces, assigning tasks, designating objectives, and issuing directives. See for a definition: United States Joint Chiefs of Staff, *JP 1-02 (2015)*, 179.

159 David P. Auerswald and Stephen M. Saideman, *NATO in Afghanistan: Fighting Together, Fighting Alone* (Princeton, NJ, and Oxford: Princeton University Press, 2014), 37.

160 Beckman, "From Assumption to Expansion", 7-10.

161 Anonymous, "Belgium: Fewer Troops to Kosovo, Air Traffic Controllers to Afghanistan", *BBC Monitoring European* (December 2, 2003) http://search.proquest.com/docview/459743470/341EE1A0DABF467CPQ/1?accountid=35226 (accessed September 24, 2014). See also appendix 3.6.

162 Richard E. Rupp, *NATO After 9/11: An Alliance in Continuing Decline* (New York: Palgrave Macmillan, 2006), 163.

This is not to say that NATO was not able to deploy air assets at all. During the first half of 2004 several nations deployed a variety of aircraft in or near Afghanistan. By the end of 2004, The Netherlands had deployed AH-64D "Apache" attack helicopters. Transport helicopters were delivered by Spain, Turkey, and Portugal. Also, several nations deployed C-130 "Hercules" transport aircraft. Other nations delivered air assets as well, albeit for a short period of time.[163] In the autumn of 2004, the UK replaced a US Marine Corps squadron with AV-8B "Harrier" with its own Harrier GR7 squadron on Kandahar Airfield. The Harriers had a dual mandate, which made them available for offensive operations of operation *Enduring Freedom*, and the more restrictive mission of ISAF.[164] In total, air order of battle of air assets dedicated to ISAF consisted of about fourteen fighter-bombers, fourteen transport helicopters, and four intra-theater transport aircraft. Another five transport helicopters and eight intra-theater transport aircraft were stationed at Termez in Uzbekistan.[165] The French aircraft carrier *Charles de Gaulle* occasionally was available too, such as in 2007.[166] The main force was however delivered by the US, who maintained a joint mix of fixed wing and rotary wing air assets, mostly operating in the Southern and Eastern regions of Afghanistan. This included force multipliers such as air-to-air refueling, and electronic warfare. It involved over one hundred airframes, of which about half were helicopters.[167]

If demand temporarily exceeded availability of capabilities, ISAF could request OEF leadership for support. The US and NATO agreed that their respective assets were allowed to provide support for each other in case of life threatening situations, which was collectively labeled as "in extremis" support.[168] ISAF could also request less lethal forms of airpower, such as air-to-air refueling, airborne command and control, and ISR at the CAOC.[169] In the strict sense, there was no shortage of available airpower. Most of the assets were however not deployed within the context of ISAF, but of that of operation *Enduring Freedom*.

During the expansion of ISAF's mandate to cover the whole country, which took place in between late 2004 and 2006, the problem of force generation was addressed repeatedly. Mustering resources for the expansion of the ISAF mission and sustaining the existing force levels proved to be problematic. NATO administered a document designed for tracking the offers nations made to ISAF called the Defense Planning Questionnaires (DPQ). The DPQ did however not have the status of a binding contract, but rather was a list of capabilities nations might be willing to offer, should a request be made. Consequently,

163 Appendix 3.6.

164 Ripley, *Air War Afghanistan*, 92.

165 Visser, Frank, "European Falcons Over Afghanistan", *Air International* 70, no. 1 (2006): 24-28, 26. The Dutch Apaches had left Kabul in March 2005: Netherlands Institute for Military History, "ISAF".

166 Christophe Gasztyche, "Rafale's First Strike", *Air Forces Monthly*, no. 231 (2007): 73.

167 Tim Ripley, "US OPS in Afghanistan", *Air Forces Monthly*, no. 220 (2006): 28-32, 31.

168 Auerswald and Saideman, *NATO in Afghanistan*, 38-41, Beckman, "From Assumption to Expansion", 9 and Morelli and Belkin, "NATO in Afghanistan", 16-17.

169 Peck, "Theater Perspective", 30-32.

SHAPE planners and sometimes even the Deputy Supreme Allied Commander Allied Powers Europe (DSACEUR) in person had to lobby for offers to fill the CJSOR. This situation was somewhat alleviated from November 23, 2004, onwards when NATO stopped organizing force generation conferences for each individual mission, and organized the first of its annual Global Force Generation Conferences (GFGC), in which force generation for all of NATO's missions was discussed.[170] At first glance, the efforts at the political level paid off to a certain extent. During the period 2006 - 2009 more than two dozen countries, of which some were not part of NATO, deployed air assets or supporting functions in Afghanistan or neighboring countries, often in conjunction with their national ground contingents. Together, they covered a large part of the spectrum of air operations. Deployed assets included fighter-bombers, fixed-wing transport aircraft, attack helicopters, transport helicopters, helicopters for medical evacuation, aircraft optimized for intelligence gathering, and UAVs.[171] Also, some nations made assets available at short notice for special events or emergencies, such as Presidential elections of 2004, the Parliamentary elections of 2005, and a large earthquake in Pakistan in 2005.[172] NATO countries did not deploy airborne command and control assets and air-to-air refueling aircraft.[173]

Although the number of aircraft increased, it was generally regarded as insufficient. As analyzed in chapter three, force generation for ISAF was a problem NATO was unable to solve entirely, due to unwillingness or inability of the contributing nations to make the requested assets and capabilities available. Although discussions involved force generation in its entirety, air assets were frequently mentioned as much needed, but reluctantly delivered, assets. Especially helicopters -both attack and transport-, air-to-air refueling capability, and ISR assets were in high demand but in short supply. ISAF also used American space-based supporting functionalities for communications, weather forecasts, and

170 Beckman, "From Assumption to Expansion", 10 and 12.

171 Appendix 3.6.

172 Anonymous, "French Fighters to Leave Tajikistan 7 November", *BBC Monitoring Central Asia* (November 4, 2005) http://search.proquest.com/docview/450444801/4FCF101BB525480CPQ/32?accountid=35226 (accessed October 1, 2014), Anonymous, "France to Base Anti-Taliban Fighter Jets in Tajikistan", *Website Space War* (May 11, 2006) http://www.spacewar.com/2006/060511131103.rhxifci3.html (accessed February 8, 2016), Anonymous, "Portugal to Boost NATO Contingent During Afghan Elections", *BBC Monitoring European* (January 21, 2009) http://search.proquest.com/docview/459287904/B36594BB77B64556PQ/48?accountid=35226 (accessed October 10, 2014), Anonymous, "Portugal Boosts Contingent in Afghanistan", *BBC Monitoring European* (May 8, 2009) http://search.proquest.com/docview/459278906/B36594BB77B64556PQ/28?accountid=35226 (accessed October 10, 2014), Anonymous, "Inzet Luchtmacht Boven Afghanistan", [Deployment Royal Netherlands Air Force Over Afghanistan] *Website Dutch Ministry of Defense* https://www.defensie.nl/onderwerpen/afghanistan/inhoud/inzet-luchtmacht-boven-afghanistan (accessed January 22, 2016), Daniel Brackx, "Defense Minister Flahaut in Afghanistan", *Website Belgian Wings* (August 5, 2008) http://www.belgian-wings.be/Webpages/Navigator/News/Special%20Features/flahaut_kabul_220705/flahaut_afhanistan.htm (accessed November 14, 2013), Dutch Ministry of Defense, "Fact Sheet Air Task Force: 12 Jaar Koninklijke Luchtmacht in Afghanistan", [Factsheet Air Task Force: 12 Year Royal Netherlands Air Force in Afghanistan] *Website Dutch Ministry of Defense* (July 12, 2014) https://www.defensie.nl/documenten/brochures/2014/07/12/factsheet-atf (accessed January 20, 2016), Netherlands Institute for Military History, "ISAF", Firdavs Murtazoyev, "French Mirage-2000 Jetfighters to Land at Dushanbe Airport Today Evening", *Website Asia Plus* (May 19, 2006) http://news.tj/en/news/french-mirage-2000-jetfighters-land-dushanbe-airport-today-evening (accessed February 8, 2016), Lindsay Peacock and Eleanor Keymer, *Jane's World Air Forces: Issue Twenty-eight* (Surrey and Alexandria, VA: Jane's Information Group, 2008), 155, and Visser, Frank, "European Falcons", 27.

173 Appendix 3.6.

navigation. This all led to frustration at the CAOC staff in Qatar where ISAF-related requests for all kinds of support started pouring in.[174] So, in effect and much like other NATO operations like *Allied Force* and *Deliberate Force*, by 2008 ISAF still relied heavily on US assets for air support in general and specialized capabilities in particular.

The shortage of numbers was exacerbated by official and non-official restrictions nations placed on the deployed air assets, decreasing their effectiveness. First of these were the national caveats. National restrictions prevented air commanders to use the full range of technological capabilities these assets had. As stated in chapter three, these caveats could serve a variety of purposes. In general, they were regarded as a nuisance, hampering effective air operations. Sometimes, imposed caveats led to discussions in the home countries, such as for instance Germany. In 2007, Germany decided to send Six Tornado fighter aircraft in support of ISAF. They were however restricted in their "combat role" and were there for intelligence gathering purposes only. In addition, the intelligence were not disseminated to OEF by default. [175] Nevertheless, some officers did not regard the collective set of national caveats to be very problematic. Just as with technological limitations every asset had, it was possible to plan around national caveats.[176] Others accepted them as a fact of life.[177] Also, some tactical workarounds were possible, without actually violating any directive. For instance, some JTACs found the solution of redirecting a specific asset that was not allowed to deliver the required ordnance, and requesting an asset from a different nation that did.[178] Another option for ground commanders was to anticipate air support from nations with restricting caveats by, for instance, adding a small contingent of Afghan

174 Helle C. Dale, "NATO in Afghanistan: A Test Case for Future Missions", *Backgrounder*, no. 1985 (2006) http://blog.dsos.org/wp-content/gallery/stab/nato-afghanistan.pdf (accessed July 20, 2012), 1-5, Forsyth, "Second Thought", 118, Ellen Hallams, *The United States and NATO Since 9/11: The Transatlantic Alliance Renewed* (London and New York: Routledge, 2010), 126, Joris Janssen Lok, "Rotary Imbalance: NATO Accelerates Search for More Helicopters for Afghanistan Operations: NATO Scrambles to Increase Helicopter Availability in Afghanistan", *Aviation Week & Space Technology* 167, no. 21 (2007) http://search.proquest.com/docview/206158026/B1D8CFE5A8AE4EB6PQ/173?accountid=35226 (accessed October 1, 2014), Meulman, "Experiences", 301, Morelli and Belkin, "NATO in Afghanistan", 13, Peck, "Theater Perspective", 30-32, and Rupp, *NATO After 9/11*, 201-202.

175 Anonymous, "Germany: Air Force Pilots to Be Deployed in Afghanistan Said Not to Have Enough Training", *BBC Monitoring European* (February 17, 2007) http://search.proquest.com/docview/459645476/26186F1EFD2042FEPQ/104?accountid=35226 (accessed October 2, 2014), Anonymous, "German MP Says Aircraft Going to Afghanistan on "combat Mission"", *BBC Monitoring European* (February 7, 2007) http://search.proquest.com/docview/459349642/26186F1EFD2042FEPQ/98?accountid=35226 (accessed October 2, 2014), Anonymous, "German General Rules Out Use Od Aircraft in Afghanistan in Direct Combat", *BBC Monitoring European* (January 27, 2007) http://search.proquest.com/docview/459505291/26186F1EFD2042FEPQ/226?accountid=35226 (accessed October 2, 2014), Anonymous, "German Defence Minister Says Afghan Tornado Mission "reconnaissance" Only", *BBC Monitoring European* (February 20, 2007) http://search.proquest.com/docview/459353627/26186F1EFD2042FEPQ/52?accountid=35226 (accessed October 2, 2014), and Judy Dempsey, "Germany to Send 6 Jets to Afghanistan Mission Not Combat but Reconnaissance [1R Edition]", *International Herald Tribune* (February 9, 2007) http://search.proquest.com/docview/318820520/26186F1EFD2042FEPQ/88?accountid=35226 (accessed October 2, 2014).

176 Ariëns, Interview, Eikelboom, Interview, and Jouke L.H. Eikelboom, "Moving Toward Counter Insurgency", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 123-134.

177 Van Loon, Interview.

178 Ariëns, Interview, Eichelsheim, Interview, and Pellemans, Interview.

National Army to western forces, so after the engagement all involved could legitimately claim that the air support was delivered in support of Afghan forces.[179]

However, general appreciation of different rules of engagement and caveats was low. It led to lengthening of planning times, and also to delay of delivering the actual effect, as aircrew and JTAC on many occasions had to discuss the response while delivering the effect. This sometimes led to unsafe situations, for instance when the replacing assets, which could also be artillery, were deployed while the replaced asset had not yet left the engagement area. These undesired effects were subsequently discussed between the task forces and headquarters.[180] Many implicitly disagreed on the practicality of the caveats, due to their sheer number. Although the lists of caveats, and its content, remain classified, the statements by General Officers that caveats were NATO's "*operational cancer*"[181], that the document listing them was "*two inches thick*"[182], or that the CAOC personnel had to "*design specific matrixes describing what each nations force contribution could do and what they could not do*"[183], along with evidence found in the literature discussed in chapter three indicate that, at least American generals found caveats to be operationally limiting.

The second restriction was that the deploying nations retained control over the missions their deployed air assets executed. ISAF could not direct these assets at will, but only request the owning nation to allocate the requested asset for a specific period of time.[184] It involved mainly intra-theater transport, performed by tactical fixed wing aircraft such as C-130, or medium transport helicopters like the CH-47 "Chinook". These assets were in high demand and short supply. Although they formally belonged to in-theater commanders, in practice, national delegations strongly influenced the way their assets were deployed. For instance, Dutch AH 64D "Apache" attack helicopters, like all rotary wing assets in the area, were commanded and controlled by RC South. However, when the Apaches were deployed to the southern part of Afghanistan from 2006 onwards, the Dutch government enforced that half of their available time would serve the needs of the Dutch task force that operated in the province of Uruzgan. Similarly, British helicopter assets flew their missions mainly in support of British ground forces. Due to the national command and control lines, and the national claims VIPs made on them, intra-theater transport

179 P. Grijspaardt, Lieutenant Colonel, Royal Netherlands Air Force, May 11, 2011.

180 Macy, *Hellfire*, 369, Madison, *Dressed to Kill*, 282-283, and Pellemans, Interview.

181 Rashid citing General James Jones in: Rashid, *Descent Into Chaos*, 354.

182 Forsyth, "Second Thought", 110.

183 Peck, "Theater Perspective", 30.

184 Meulman, "Experiences", 301, and Willemse, "Silence", 11. During planning, airmen use a distinction between the terms "apportionment" and "allocation". Apportionment means the distribution of scarce resources for planning purposes, which means prioritization. Allocation is the translation of the apportioned assets into actual number of assets that is used for the execution: United States Joint Chiefs of Staff, *JP 1-02 (2015)*, 5 and 11, and Clint Hinote, *Centralized Control and Decentralized Execution: A Catchphrase in Crisis?*, Air Force Research Institute Papers (Maxwell Air Force Base, AL: Air Force Research Institute, 2009), 11.

was difficult to plan, and occasionally caused friction between national delegations and operational commanders.[185]

5.5.2. *Laying the Foundations for Continuing Dependence on US Air Assets*

There were several options available to alleviate the problem of available air assets. The first option was getting the nations to increase the contribution. This option resided at the political level, and fell within the larger context of the burden sharing debate described in chapter three. As shown above, political pressure alleviated the problem, but did not solve it. A variant of this option was for individual nations to lease capabilities. This could be viable for nations who were willing to make additional investments, but lacked capabilities. Some nations, among which Canada, Germany, Italy, and The Netherlands, leased fixed wing transport aircraft and UAVs for both strategic and tactical sustainment of their ground forces deployed in Afghanistan and intelligence gathering.[186]

The second option was pooling and sharing of national assets in order to share costs and enhance efficiency. Minimizing fragmentation of effort had been on NATO's agenda since 2002, and the nations agreed to increase the efforts by pooling and sharing, along with cooperative acquisition of equipment, and common and multinational funding.[187] However, results were slow to materialize. Therefore, groups of nations within NATO developed their own initiatives, albeit sometimes under auspices of, or in coordination with, NATO. The combined Danish, Dutch and Norwegian F-16 unit in Manas could be regarded as an example of such a cooperation. In 2004 this concept of a deployable international task force was formalized when defense ministers of Belgium, Denmark, The Netherlands, Norway and Portugal signed a memorandum of understanding to formalize the situation. EPAF established the EPAF Expeditionary Air Wing (EEAW), which could be deployed in countries such as Afghanistan.[188] Another example was delivered in relation to strategic airlift, which was essential for sustainment of deployed forces. Participating nations of ISAF had been using leased strategic airlift capability from the beginning, but

185 Sullivan, "Game-changing Strategies", 177-178, and Van Loon, Interview.

186 Anonymous, "DASH7 Vliegt 5555,5 Uren Boven Afghanistan", [Dash7 Flies 5555,5 Hours Over Afghanistan] *De Vliegende Hollander Journaal* 12, no. 07 (2014) http://magazines.defensie.nl/vliegendehollander/2014/07/journaal (accessed September 18, 2014), Anonymous, "ISAF Seeking Additional Transport Aircraft and Helicopters", *Air Forces Monthly*, no. 237 (2007): 29, Antony H. Cordesman, "The Lessons of Afghanistan: War Fighting, Intelligence, Force Transformation, Counterproliferation, and Arms Control", (Center for Strategic & International Studies, Washington, DC, August 12, 2002) http://csis.org/images/stories/burke/afghanlessons_exec.pdf (accessed November 20, 2014), 55, F.J.M. Lijendekkers, Email to the Author, February 11, 2016, Neil, "Project Noctua", and Westermeyer, *Impact*.

187 NATO, "Statement on Capabilities Issued at the Meeting of the North Atlantic Council in Defence Ministers Session" (June 6, 2002) http://www.nato.int/cps/en/natolive/official_texts_19567.htm (accessed June 4, 2012).

188 Nicholas Fiorenza, "Five-nation F-16 Wing European Air Forces Expand Cooperation: [1]", *Armed Forces Journal* (2004) http://search.proquest.com/docview/735717969/B045E77FAE9A46EoPQ/4?accountid=35226 (accessed September 24, 2014).

were also to some extent dependent on American support.[189] Significant progress was made at the Riga Summit of 2006, where nations committed themselves to purchase C-17 and A400M inter-theater airlift aircraft and allow NATO to use them.[190] Pending procurement of these assets by the nations, a consortium of twelve NATO countries from 2006 onwards leased six An-124 aircraft from Russian and Ukrainian companies in a program called Strategic Airlift Interim Solution (SALIS). In another program, called Strategic Airlift Capability (SAC), ten NATO countries and two partner nations purchased three C-17 aircraft. From October onwards, they formed a Heavy Airlift Wing (HAW), located at Pápa Air Base in Hungary. Air movements were coordinated by the SALIS Coordination Cell and Movement Coordination Centre Europe (MCCE), both located at Eindhoven Airbase in the Netherlands. Although these initiatives were not specifically designed for Afghanistan, the Afghan conflict formed a powerful impetus for development, and both SALIS and SAC supported units in Afghanistan regularly.[191]

The third option to increase the number of air assets to the required level was outsourcing. This was mainly done by the US. Since the 1990s the US Military faced Congressionally imposed limits on the number of its military personnel. In order to maintain combat capability in the face of increasingly expeditionary operations, the US Military converted non-warfighting functions to positions for contracted civilians. Over time, and especially within the context of the Global War on Terror, the US military became dependent on contracted civilians, up to a point where George Lovewine argued that it was

189 John Brosky, "U.N. Support Mission in Afghanistan Underscores European Airlift Failings", *Defense News* (April 1, 2002) http://search.proquest.com/docview/442460527/674024F8AB594017PQ/3?accountid=35226 (accessed October 22, 2014). American support was formalized via the US Department of Defense Lift and Sustain Program, which existed to support nations who supported American military and stability operations: Joint Air Power Competence Centre, "NATO Air Transport Capability: An Assessment", (August, 2011) https://www.japcc.org/portfolio/nato-air-transport-capability-an-assessment (accessed May 24, 2016), 21-22.

190 NATO, "Riga Summit Declaration Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Riga on 29 November 2006" (November 29, 2006) http://www.nato.int/cps/en/natolive/official_texts_37920.htm (accessed June 4, 2012), NATO, "Strategic Airlift Capability (SAC) - Initiative Adoption of the NAMO Charter. Note by the Secretary General", *NATO Website* (June 20, 2007) http://www.nato.int/cps/en/natolive/official_texts_56625.htm (accessed June 4, 2012), and Julianne Smith and Michael Williams, "What Lies Beneath: The Future of NATO Through the ISAF Prism", *Center for Strategic & International Studies* (2008): 1-7 http://csis.org/files/media/csis/pubs/080331_nato.pdf (accessed August 20, 2012), 4.

191 Anonymous, "NATO Extends An AN-124 Airlift Contract Until 2015", *Cihan News Agency* (December 25, 2012) http://search.proquest.com/docview/1243265143/674024F8AB594017PQ/45?accountid=35226 (accessed October 22, 2014), Anonymous, "Strategic Airlift: Giving Alliance Forces Global Reach", *Website NATO* (July 11, 2014) http://www.nato.int/cps/en/natohq/topics_50107.htm (accessed February 2, 2016), Anonymous, "Strategic Airlift Capability", *NATO Website* (September 7, 2015) http://www.nato.int/cps/en/natolive/topics_50105.htm (accessed February 24, 2016), Anonymous, "Strategic Airlift Interim Solution (SALIS)", *Website NATO* (September 7, 2015) http://www.nato.int/cps/en/natolive/topics_50106.htm (accessed February 2, 2016), Christian F. Anrig, *The Quest for Relevant Air Power. Continental European Responses to the Air Power Challenges of the Post-Cold War Era* (Maxwell Air Force Base, AL: Air University Press, Air Force Research Institute, 2011), http://www.au.af.mil/au/aupress/digital/pdf/book/b_0125_anrig_quest_relevant_power.pdf (accessed March 17, 2014), 24, Gerard Boink, "How Do We Get There?: Maximizing NATO and EU Airlift", *Journal of the JAPCC*, no. 9 (2009): 38-41 http://www.japcc.org/publications/journal/Journal/JAPCC_Journal_Edition_9.pdf (accessed July 11, 2014), passim, David L. Corrick, "American Airlift: Europe's Strategic Interim Solution", *The Navy Supply Corps Newsletter* 71, no. 4 (2008): 12-13, Joint Air Power Competence Centre, "NATO Air Transport Capability", 4, NATO, "Riga Summit Declaration", Ripley, *Air War Afghanistan*, 143-145, and David Van Oosbree, "Airlifting the Big and Heavy Stuff", *Website Dutch Defense Press* (December 24, 2006) http://www.dutchdefencepress.com/?p=1183 (accessed October 22, 2014).

capable of winning a conflict but potentially was unable to sustain itself without use of contracted civilians.[192] These contracted civilians were employed by companies that broadly fell into two categories. Private Military Companies (PMCs) formed the first category, which delivered logistical support or technical assistance. The second category, Private Security Companies (PSCs), specifically dealt with providing security. Together, they were known as Private Military and Security Companies (PMSCs).[193] Estimations on the number of PMSCs or the number of personnel they employed in Afghanistan differ, partly because of lack of governmental oversight. In a hearing before a subcommittee of the US House of Representatives in 2007, it was estimated that there were sixty security firms operating in Iraq, employing 25,000 personnel. Other estimations however indicated three times as many firms employing two times as much personnel.[194] As for Afghanistan, Moshe Schwartz estimated that about 100,000 persons operating in Afghanistan in September 2009 were contracted civilians, of which seventy five percent were Afghan nationals.[195] Deployment of PMSCs sparked much debate in the press and scholarly journals about oversight and control, their legal status, and their effect on strategic goals, especially when mismanagement or misconduct of contractors were reported in the press.[196] These debates however fall beyond the scope of this study.

The tasks PMSCs performed broadly fell into three categories, namely gathering of intelligence, logistical and reconstruction activities, and security operations.[197] In principle, air assets could be involved in all of these tasks. However, lack of publicly available information prevents one from making accurate estimations of their numbers and exact tasks.[198] Several official documents indicate however that there were helicopters and other aircraft operating in Afghanistan and Iraq.[199] For Afghanistan, the only well

192 George C. Lovewine, *Outsourcing the Global War on Terrorism: Private Military Companies and American Intervention in Iraq and Afghanistan* (New York, NY: Palgrave MacMillan, 2014), 2-11.

193 Lovewine, *Outsourcing*, 1 and 177.

194 Tom Davis (Chairman), "Private Security Firms Standards, Cooperation and Coordination on the Battlefield", (Hearing Before the Subcommittee on National Security, Emerging Threats, and International Relations of the Committee on Government Reform, House of Representatives, One Hundred Ninth Congress, Second Session, June 13, 2006, U.S. Government Printing Office, Washington D.C., 2007) http://psm.du.edu/media/documents/congressional_comm/house_oversight_gov_reform/us_house_oversight_gov_reform_hearing_june_13_2006.pdf (accessed January 13, 2016), 2.

195 Moshe Schwartz, "Department of Defense Contractors in Iraq and Afghanistan: Background and Analysis", In: *Contractors in Iraq and Afghanistan: Background and Issues*, ed. Christopher E. Moore, Defense, Security and Strategies (New York, NY: Nova Science Publishers Inc., 2010), 91-113, 101.

196 Jennifer K. Elsea, "Private Security Contractors in Iraq and Afghanistan: Legal Issues", *Current Politics and Economics of Northern and Western Asia* 20, no. 2 (2011): 359-407, 359, and Lovewine, *Outsourcing*, 21-22.

197 Lovewine, *Outsourcing*, 1.

198 Matthew Walsh, "The Role of PMCs (Private Military Companies) in Counter-insurgency Combat in Afghanistan (2001 to 2010)", (Mini-Dissertation, University of Cape Town, 2012) https://open.uct.ac.za/bitstream/handle/11427/11958/thesis_hum_2012_walsh_m.pdf?sequence=1 (accessed January 14, 2016), passim.

199 Davis (Chairman), "Private Security Firms Standards", 179, Henry A. Waxman (Chairman), "The Crash of Blackwater Flight 61" (Memorandum of Majority Staff, Committee on Oversight and Government Reform, October 2, 2007) http://iraqslogger.powweb.com/downloads/20071002135936.pdf?PHPSESSID=b155c5eb6418ac653ca2ce675e6fb7f8 (accessed February 25, 2016), 2, and Commission on Wartime Contracting in Iraq and Afghanistan, "At What Cost? Contingency Contracting in Iraq and Afghanistan. Interim Report", (June, 2009) http://www.govexec.com/pdfs/061009rb1.pdf (accessed February 24, 2016), 65.

documented air assets were those of Blackwater, as a result of an aircraft crash that occurred on 27 November 2004. Investigations afterwards revealed that Blackwater operated in Afghanistan with two CASA 212 and one SA-227 fixed wing transport aircraft. They flew regularly scheduled transport missions in Afghanistan and to Uzbekistan.[200] Several sources also hinted that Blackwater and other PMSCs might be involved in controversial rendition flights of prisoners out of Afghanistan.[201] In addition to these fixed wing aircraft, PMSCs operated transport helicopters, which were used for general transport tasks. Several sources also suggested that they also conducted counternarcotics operations and special operations.[202]

5.5.3. *Example: Canada*

So, there was a general shortage of air assets. But how severe was that shortage? And what were the processes behind mustering the resources? The answer to these two questions could differ for each nation. Canada however offers an example of what the practical consequences could be, and how they could be handled. Canada is chosen because it shows how several problems were intertwined. Also, the case of Canada is relatively well-documented in publicly available sources.[203]

By 2006 Canada had deployed a sizable ground force in the volatile southern province of Kandahar. Amidst a rising insurgency during 2006 to 2008, casualties mounted. In

200 The crash received a lot of attention because three active service members of the US Military died in the crash, and the relatives tried to hold Blackwater accountable for their death: Jeremy Scahill, *Blackwater: The Rise of the World's Most Powerful Mercenary Army* (New York, NY: Nation Books, 2007), 241-243, Henry A. Waxman (Chairman), "Blackwater USA: Hearing Before the Committee on Oversight and Government Reform, House of Representatives, One Hundred Tenth Congress, First Session, October 2, 2007" (U.S. government Printing Office, Washington, DC, 2008) http://psm.du.edu/media/documents/congressional_comm/house_oversight_gov_reform/us_house_oversight_gov_reform_hearing_oct_2_2007.pdf (accessed January 13, 2016), 53, and Waxman (Chairman), "Crash", 2.

201 Anonymous, "Planes Alleged to Have Been Used for Extraordinary Rendition", *Website SourceWatch* (January 4, 2009) http://www.sourcewatch.org/index.php/Planes_alleged_to_have_been_used_for_extraordinary_rendition (accessed January 13, 2016), Dana Priest, "Jet Is An Open Secret in Terror War", *The Washington Post Website* (December 27, 2004) http://www.washingtonpost.com/wp-dyn/articles/A27826-2004Dec26.html (accessed January 13, 2016), and Scahill, *Blackwater*, 259.

202 Spencer Ackerman, "Pentagon's War on Drugs Goes Mercenary", *Website Wired.com* (November 22, 2011) http://www.wired.com/2011/11/drug-war-mercenary/ (accessed January 13, 2016), Anonymous, "Operator Vertical-T Meets Russian and Afghan Business Communities", *Website Helihub* (February 11, 2011) http://helihub.com/2011/02/11/operator-vertical-t-meets-russian-and-afghan-business-communities/ (accessed February 25, 2016), Anonymous, "Supporting Tough Missions in Challenging Locations", *Website DynCorps International* http://www.dyn-intl.com/what-we-do/case-studies/supporting-tough-missions-in-challenging-locations/ (accessed February 25, 2016), Ben Farmer, "Civilian Helicopter Crashes in Southern Afghanistan", *The Telegraph Website* (January 16, 2012) http://www.telegraph.co.uk/news/worldnews/asia/afghanistan/9018022/Civilian-helicopter-crashes-in-southern-Afghanistan.html (accessed October 22, 2014), Hooge, "State Department", James Risen and Mark Mazetti, "Blackwater Guards Tied to Secret C.I.A. Raids", *The New York Times Website* (December 10, 2009) http://www.nytimes.com/2009/12/11/us/politics/11blackwater.html?_r=0 (accessed October 18, 2016), Sharon Weinberger, "Private Air Service Contractors Face Slowdown in Afghanistan: Afghanistan Could Be Last Hurrah for Airlift Contractors", *Website Aviationweek.com* (May 1, 2012) http://aviationweek.com/awin/private-air-service-contractors-face-slowdown-afghanistan (accessed October 22, 2014), and Don Wetekam, "Civil Aviation's Tactical Role in Uplifting US Military in Dynamic Theaters", *Defense Transportation Journal* 73, no. 4 (2017): 13-16.

203 Albeit less documented, the UK suffered from a lack of helicopters as well: Tim Ripley, "Britain's Ever-shrinking Helicopter Force", *Air Forces Monthly*, no. 250 (2009): 63-66.

Canada, public opinion moved to favor of retaining its scheduled end in 2009, instead of meeting NATO's request for extension. The Canadian government installed a panel to review the situation and make recommendations. The panel published the "Manley Report", named after chairman John Manley, in 2008.[204] Manley c.s. concluded that moving out of Afghanistan would do harm to both Afghan and national interests, and recommended to extend the mission, provided some conditions were met. Among others, Canada requested additional NATO ground forces. The report also advised to secure medium-lift helicopter capability and capability of unmanned aerial vehicles.[205]

So, the Canadian government appealed to NATO members and other countries to share the burden of sending ground forces. For air assets, the situation was a bit more complicated. The threat of IEDs in Afghanistan increased, which could be countered by moving personnel and supplies by helicopter.[206] However, Canada did not own enough transport helicopters that could operate effectively in the hot and high environment of Afghanistan. During the 1990s it had sold its CH-47 Chinooks to the Netherlands. Initially, the Canadian government assumed that helicopter capability would be made available from the British, Dutch, and American Chinooks in the helicopter pool operating in the south of Afghanistan. But in practice this could lead to fear that these nations could not satisfy the additional requests due to national or other priorities. This in turn could lead to the paradoxical sentiments among the allies that the Canadians wanted a free ride on their helicopters, while the Canadians in turn might have the sentiment they had to beg for a ride, partially in the same air frames Canada owned little more than a decade earlier.[207] In response, Canada turned to procurement of its own CH-47, a process that was started mid 2006. For various reasons, the program was delayed, one of which was that the US was unable to sell Chinooks to Canada due to its own operational requirements in Afghanistan and Iraq. Finally, in late 2008, Canada was able to deploy six CH-47 Chinooks to Kandahar, which were bought in-theater from the US, along with eight CH-146 Griffons. Also, Canada leased six civilian flown, Russian built Mi-8 transport helicopters. All helicopters became

204 Anonymous, "Canada's Military Mission in Afghanistan: Training Role to Replace Combat Mission in 2011", *Website CBC News Canada* (February 10, 2009) http://www.cbc.ca/news/canada/canada-s-military-mission-in-afghanistan-1.777386 (accessed February 18, 2016), and John Manley (Chair), Derek H. Burney, Jake Epp, Paul Tellier and Pamela Wallin, "Independent Panel on Canada's Future Role in Afghanistan", (2008) http://publications.gc.ca/collections/collection_2008/dfait-maeci/FR5-20-1-2008E.pdf (accessed January 7, 2016).

205 Anonymous, "Extend Afghan Mission If NATO Sends More Troops: Panel", *Website CBC News Canada* (January 22, 2008) http://www.cbc.ca/news/canada/extend-afghan-mission-if-nato-sends-more-troops-panel-1.720460 (accessed February 18, 2016), and Manley (Chair), Burney, Epp, and others, "Manley Report 2008 Original", 30-38.

206 Diane DeMille and Stephen Priestly, "Canadian Medium-Lift Helicopters in Afghanistan - Five Years Later: Updating Hillier's Hopes for 'Honking Huge' Helicopters for Kandahar", *Website Canadian American Strategic Review* (November, 2010) http://www.casr.ca/ft-helicopters-5-years-on-1.htm (accessed February 5, 2016), and Matthew Fisher, "Canada's Lack of Choppers Heightens Peril of Troops in Afghanistan: [Final Edition] ", *Daily Bulletin* (June 26, 2006) http://search.proquest.com/docview/357378491/B1D8CFE5A8AE4EB6PQ/104?accountid=35226 (accessed October 1, 2014).

207 Diane DeMille and Stephen Priestley, "Hillier's Hopes for the Holidays - Honkin' Huge Helicopters!", *Website Canadian American Strategic Review* (October, 2005) http://www.casr.ca/ft-hillier1.htm (accessed February 26, 2016), and DeMille and Priestly, "Hillier's Hopes".

part of a separate Canadian Air Wing, which became operational early 2009.[208] Canada also bought its own UAVs. In 2003, it already had operated the Sperwer UAV system in Kabul in 2003, but its technology was rapidly aging and it had difficulties operating in the Afghan environment. UAV capabilities however could also be helpful protecting ground forces by delivering timely intelligence. By accelerated procurement measures the Heron system was acquired, which operated from Kandahar Air Field from 2009 onwards.[209]

The developments that led to the procurement of additional Canadian air assets show the intricacy of the problems regarding force levels. At the political level, several nations showed various levels of ability to deploy air assets, depending on willingness to contribute and availability of resources and assets. The debate on burden sharing was applicable to the air weapon as well. This resulted in an absolute shortage of air assets, especially when ISAF expanded its mandate to cover the whole country amidst a developing insurgency. The problem was exacerbated by the existence of national restrictions, amounting to a relative shortage of air assets as well. Not all assets could be used to their maximum technological potential. Some nations picked up the glove and made assets and resources available. Although the various initiatives to alleviate the problem helped, they did not solve the problem. So, ISAF stayed dependent on US assets.

5.5.4. *Sustaining Air Operations in Afghanistan: Five Challenges*

After the opening stages of operation *Enduring Freedom* the character of sustaining air operations and supplying ground forces by air changed somewhat. To some extent, mustering resources was susceptible to the same dynamics as organizing force levels. The content of the challenges however could vary greatly, which had its roots in concept of expeditionary basing. As has been described in chapter two, military operations of western militaries became increasingly expeditionary in nature in order to remain relevant. The air weapon was no exception. Recognizing this, western air forces after the Cold War adopted an increasingly expeditionary posture.[210] While this process was underway in 2001, some processes were accelerated as a result of continuing operations in Afghanistan.

208 DeMille and Priestly, "Hillier's Hopes", Fisher, "Canada's Lack of Choppers", and Bill March, "Impact of a Combat Air Wing: Canadian Air Power in ISAF", *The Journal of the JAPCC*, no. 13 (2011): 15-19 http://www.japcc.org/publications/journal/Journal/20110414_-_Journal_Ed_13.pdf (accessed July 11, 2014), 17-18.

209 Neil, "Project Noctua", 25.

210 Todd J. Flesch, "The Future of USAF Combat Expeditionary Basing", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2004) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS80OTUoMQ==.pdf (accessed July 5, 2013), 2, Daniel L. Haulman, "Intertheater Airlift Challenges of Operation Enduring Freedom", (Air Force Historical Research Agency, Maxwell Air Force Base, AL, November 14, 2002) http://www.dtic.mil/dtic/tr/fulltext/u2/a434031.pdf (accessed November 28, 2013), 9-10, Sabi Sabev, "Developing and Employing Expeditionary Capabilities: Key to Transforming Air Forces of Small Nations", *Information & Security* 25 (2010): 47-56, and Robert D. Sagraves, "Air Base Defense Outside the Wire: Air Support for Defending Expeditionary Airbases on the Nonlinear Battlefield", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2006) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8zNDU2MA==.pdf (accessed July 5, 2013), 1.

The first issue that needed to be addressed was secured access to bases in countries surrounding Afghanistan. These bases were needed for operations over Afghanistan, but mostly to serve as logistical hubs. The geographical situation of Afghanistan necessitated that much of the logistics, especially with regard to personnel and other sensitive items such as weapons and communication equipment, had to be flown in by air.[211] Overflight rights required continued diplomatic effort with governments of the surrounding countries in order to retain permission to use the airfields, which was not always successful. In 2005, Uzbekistan retracted the permits for US assets for use of Karshi Khanabad, effective almost immediately, even though Termez airfield stayed available for other nations.[212] During the timeframe covered in this chapter, relations between the Kyrgyz and US governments were strained, partially influenced by internal political developments in Kyrgyzstan, and in turn made guaranteed permission to use Manas questionable. However, it stayed available for ISAF and operation *Enduring Freedom*.[213] This shows that availability of airports for strategic and tactical airlift for operations relating to Afghanistan could not be taken for granted.

The second issue was securing airfields inside Afghanistan. Operationally, using airfields inside the area of operations resulted in reduction of aircraft response times, increase of aircraft time on-station, and reduction of aerial tanker requirements.[214] Contrary to the airfields outside Afghanistan, and also contrary to what air forces had been used to for decades, air operations to a large extent did not take place from rear areas with significant distance from the battlefield, but within an environment that in Afghanistan became increasingly hostile. This for instance influenced secured supply for certain bulk items such as fuel. These items had to be transported via land, mostly via Pakistan via local trucking companies, requiring arrangements for security of convoys.[215] The expeditionary situation also highlighted the issue of base defense.[216] As during every

211 Beckman, "From Assumption to Expansion", 8, Eikelboom, Interview, Jim Nichol, "Kyrgyzstan and the Status of the U.S. Manas Airbase: Context and Implications ", (CRS Report for Congress, July 1, 2009) https://www.fas.org/sgp/crs/row/R40564.pdf (accessed December 11, 2015), 278, and Ripley, *Air War Afghanistan*, 143-145.

212 Meulman, "Mihiel (1918)", 80, Sabina Nováková, "Manas Air Base and U.S.-Kyrgyz Relations", (Bachelor's Thesis, Charles University, Prague, 2015) https://is.cuni.cz/webapps/zzp/download/130153879 (accessed December 11, 2015), 21, and Aziz Nuritov, "Uzbekistan Rethinks Future of U.S. Air Base", *The Charleston Gazette* (July 8, 2005) http://search.proquest.com/docview/331341260/F1EB589FF0AE4468PQ/21?accountid=35226 (accessed October 1, 2014).

213 Anonymous, "Kyrgyzstan-based Ganci Air Base Decides to Stop Flights to Afghanistan - Agency", *BBC Monitoring Central Asia* (October 2, 2003) http://search.proquest.com/docview/450730008/E6C118E781D6441EPQ/9?accountid=35226 (accessed September 24, 2014), Anonymous, "376th Air Expeditionary Wing", *Website GlobalSecurity.org* (June 4, 2014) http://www.globalsecurity.org/military/agency/usaf/376aew.htm (accessed March 10, 2016), Nichol, "Kyrgyzstan", and Nováková, "Manas", 22-27.

214 Randy G. Bergeron, "Air Power in the Global War on Terror: The Perspective From the Ground", *Air Power History* 55, no. 2 (2008): 21-27, 22.

215 Zahid Anwar, "Pakistan and the Geopolitics of Supply Routes to Afghanistan", *Journal of Political Studies* 20, no. 2 (2013): 105-123, 112, Sydney J. Freedberg, "Supplying the Surge in Afghanistan", *National Journal* (2010): 1-3 http://search.proquest.com.nlda.idm.oclc.org/docview/200297504/fulltext/328262100091486EPQ/1?accountid=35226 (accessed January 13, 2016), 5, and Ripley, *Air War Afghanistan*, 142-143.

216 Andy Ingham, "Airbase Defence in Expeditionary Operations: Who Is Guarding the Back Door?", *Journal of the JAPCC*, no. 3 (2006): 48-51 http://www.japcc.org/publications/journal/Journal/japcc_journal_06_edition3.pdf (accessed July 11, 2014), De Koster, "Mission Uruzgan", 121, Jeremy Parkinson, "The War That NATO Cannot Lose: The Impact of Culture on the Provision of Effective Force Protection for Air", *The Journal of the JAPCC*, no. 12 (2010): 55-59 http://www.japcc.org/

insurgency, counterinsurgent air bases that are operated within the contested area present potentially lucrative targets for insurgents. This was because they were regarded as high value assets, but at the same time were large and static by nature. Air operations could be seriously hampered if aircraft are destroyed or damaged when they are vulnerable, namely on the ground or during take-off or landing. In Afghanistan, executing indirect fire by mortars, rockets or artillery were very attractive options to opposing forces because of the high availability of leftover ordnance from the Soviet occupation, and the relatively low risk to the perpetrators. To a lesser extent the same applied to attacking aircraft during landing or taking off, as there were some systems available that were designed for engaging aircraft, such as SA-7, Stinger Basic, and Blowpipe. The Mujahideen had obtained these systems during the 1980s, and some of these had fallen into the hands of Taliban and Al Qaida. They could try to hamper air operations by reducing the available air assets. Also, insurgents could hope for decreased support for the conflict in the home countries of the counterinsurgent forces when an aircraft was shot down, influencing the insurgent cause at the strategic level.[217] As a side note, operating Information Age Airpower in this regard could be a disadvantage. Their high level of sophistication made the airframes increasingly vulnerable. Damage could quickly lead to non-availability of the assets, and repairs required specialized personnel.[218]

The third challenge that needed to be addressed was the state of the airfields, both inside Afghanistan and in the surrounding countries. While the situation could differ locally, many airfields were just not suitable, whereas others required extensive construction to become operational, especially for heavy transport aircraft and other aircraft that needed long runways.[219] In Afghanistan, some air bases had been damaged by bombing during the opening stages of operation *Enduring Freedom*.[220] Therefore, especially during the early stages of deployment, ad-hoc arrangements had to be made, flight planning needed to be adapted, and sometimes deployments were delayed. Meanwhile, engineers, aided by local contractors, updated air bases both inside and outside

wp-content/uploads/Journal_Ed-12_web.pdf (accessed June 15, 2017), Jez Parkinson, "Indirect Fire: Understanding the Threat", *The Journal of the JAPCC*, no. 14 (2011): 25-28 http://www.japcc.org/publications/journal/Journal/20111014_-_Journal_Ed-14_web.pdf (accessed July 11, 2014), Jez Parkinson, "Indirect Fire: Understanding the Threat (part 2)", *The Journal of the JAPCC*, no. 15 (2012): 20-23 http://www.japcc.org/publications/journal/Journal/2012-03-22_Journal_Ed-15_web.pdf (accessed July 11, 2014), and Sagraves, "Air Base Defense", 3. See for a comprehensive study on air base defense in counterinsurgency operations: Shannon W. Caudill (ed), *Defending Air Bases in An Age of Insurgency* (Maxwell Air Force Base, AL: Air University Press, May, 2014), http://aupress.maxwell.af.mil/digital/pdf/book/b_0133_caudill_defending_air_bases.pdf (accessed June 16, 2014).

217 Ingham, "Airbase Defence", 50, and Sagraves, "Air Base Defense", 21-33.

218 Haulman, "Intertheater Airlift Challenge", 4, and Sagraves, "Air Base Defense", 23.

219 For an overview on the activities of Afghanistan's largest airbase, Kandahar Airfield (KAF), see: J.L. Voetelink, "Kandahar Airfield: Niet Zomaar Een Runway", [Kandahar Airfield: Not Just A Runway] *Militaire Spectator* 180, no. 12 (2011): 548-558.

220 Anonymous, "376 AEW", Haulman, "Intertheater Airlift Challenge", 3, and Frank E. Wendling, "Expeditionary Airfield Operations: Red Horse and the Future Security Environment", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, June, 2006) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlcmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8yNTE5Mg==.pdf (accessed July 5, 2013), 73

Afghanistan.[221] By 2007, Afghanistan had forty six airports in operation. However, only twelve had paved runways, and only four had runways longer than 3,000 meters.[222]

While flying over Afghanistan, a fourth challenge was revealed. It concerned the communications infrastructure that was needed for airspace management, which organizationally is separated from the operational command and control lines. Operational command and control was designed to formulate airpower tasks that could help reach the joint force commander's end state. Formulated differently, it had a central function of formulating operational plans and tasks. That will be addressed in the next paragraph. Airspace management was designed to prevent aircraft from flying into each other. This required a separate command and control line. Besides the command and control challenges that surfaced during operation *Anaconda*, the issue of airspace management was relatively clear during the initial stages of the conflict, from late 2001 to early 2002. The commander of the United States Air Forces, Central Command (COMUSCENTAF), who was also the Combined Forces Air Component Commander (CFACC), was designated as Airspace Control Authority (ACA). The ACA was tasked to *"establish an airspace structure and corresponding command and control architecture to enable the safe employment of airpower"*.[223] Due to the situation that virtually all air assets were initially controlled by the CFACC, and that there was no civilian air traffic due to the closure of the Afghan airspace from September 16, 2001, onwards, airspace management was relatively clear cut. However, this changed during early 2002, as air traffic from assets that were not subject to the American command and control architecture increased significantly. From March 2002 onwards, the Afghan airspace was reopened for commercial overflights. Also, ISAF-related air movements to air bases in and around Afghanistan increased, as did air movements of civil aircraft operators and non-governmental organizations.[224] This increased the

221 Anonymous, "German Troops Want Better Airport, More Protected Vehicles in Northern Afghanistan", *BBC Monitoring European* (January 23, 2007) http://search.proquest.com/docview/459645767/23A9258C8BBD45DCPQ/4?accountid=35226 (accessed October 2, 2014), Haulman, "Intertheater Airlift Challenge",3, Netherlands Institute for Military History, "Enduring Freedom", 9, Nováková, "Manas", 13, and Wendling, "Expeditionary Airfield Operations", 73-76.

222 Freedberg, "Supplying the Surge", and Jeffrey W. Nelson, "Airghanistan: Aviation and Nation-building in Central Asia", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2010) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8yNTIyMg==.pdf (accessed July 3, 2013), 23.

223 Michael A. Grogan, "Airspace Control Authority in Stability Operations: The Role of the United States Air Force in Rebuilding Afghanistan's National Airspace System", (Research Report, Air University, Air Command and Staff College, Maxwell Air Force Base, April, 2005) http://www.dtic.mil/dtic/tr/fulltext/u2/a476300.pdf (accessed November 28, 2013), 6. AFCENT was renamed CENTAF March 2008 (Ripley, "Airpower 1", 45).

224 Anonymous, "Afghanistan Signs Airport Deal with UN", *Airline Industry Information* (May 31, 2002) http://nlda.idm.oclc.org/login?url=http://search.proquest.com.nlda.idm.oclc.org/docview/210513471?accountid=35226 (accessed July 4, 2016), Anonymous, "ICAO to Manage Rebuilding of Afghanistan Airport", *Aviation Daily* 348, no. 45 (2002) http://search.proquest.com/docview/217996027/501BB270C72D4754PQ/33?accountid=35226 (accessed July 11, 2016), Anonymous, "ICAO Signs Agreement with Afghanistan to Rebuild Kabul Airport ", *The Weekly Business of Aviation* 74, no. 24 (2002): 277 http://search.proquest.com.nlda.idm.oclc.org/docview/232012790?pq-origsite=summon (accessed July 4, 2016), Anonymous, "IAP Worldwide Services Devision Develops Afghanistan's Air Traffic Control System", *PR Newswire* (July 26, 2005) http://search.proquest.com/docview/447115344/501BB270C72D4754PQ/3?accountid=35226 (accessed July 11, 2016), and Grogan, "Airspace Control Authority", 9 and 12.

need to deconflict all these air movements, with the additional challenge that military air operations needed to proceed unhindered by civilian air traffic.

The biggest problems were lack of electronic means to monitor air movements and of air traffic controllers that could direct them. Ideally, all pilots, military or civilian, operated within the regime of Instrument Flight Rules (IFR). In layman's terms, this meant that pilots could not decide their headings and altitudes in a specific piece of airspace. Instead, they had to abide by their flight plan and in flight were were directed by an air traffic controller who had oversight of all movements in his designated area, as well as of procedural deconfliction measures.[225] During the opening stages of *Enduring Freedom*, these tasks were performed largely by airborne systems and their crews, who had a direct link with the Control and Reporting Center (CRC) in Kuwait and the CAOC in Qatar, in addition to the JTACs that operated on the ground. This included civilian traffic from early 2002, as the interim Government of Afghanistan had temporarily relegated the airspace control authority to the US Military.[226] However, soon after, many of the US airborne command and control assets were redirected to the Iraqi area of operations.[227] Afghanistan only had a rudimentary air traffic control (ATC) system even before operation *Enduring Freedom*, but it was virtually absent early 2002. The result was that Afghanistan largely consisted of uncontrolled airspace, meaning that pilots operated without direct contact with an Air Traffic Control Center (ATCC). Large bases had their own military ATC operated by western military professionals. They were however only responsible for the air traffic in the immediate vicinity of these airbases.[228] This meant that a large part of Afghan airspace remained uncontrolled. As a result, pilots largely had to fall back to Visual Flight Rules (VFR), which, again in layman's terms, meant that pilots had to closely watch outside the cockpit for other aircraft and adopting standard procedures to prevent mid-air collisions.[229] From a flight safety perspective, this meant increased workload for aircrews, because they had to execute much of the mission without assistance from air traffic controllers, while they at the same time had to have a certain level of freedom of movement to conduct their missions.

The fifth and final challenge that surfaced during this period was the lack of interoperability of various command and control systems. As nations deployed their

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225 Grogan, "Airspace Control Authority", 3.

226 Francisco M. Gallei, "What Is the Role of the Joint Forces Air Component Commander As Airspace Control Authority During Stability Operations", (Master's Thesis, United States Air Force Academy, Fort Leavenworth, KS, 2007) www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA471326 (accessed August 24, 2011), 67, and Grogan, "Airspace Control Authority", 7.

227 Gallei, "What Is the Role", 67.

228 Visser, Frank, "European Falcons", 25.

229 Grogan, "Airspace Control Authority", 3, Eikelboom, Interview, Meulman, "Experiences", 302-303, Meulman, "Mihiel (1918)", 94, and Willemse, "Silence", 10.

own assets, they brought their own communications systems, which were not always interoperable. Some systems were deliberately designed that way, because releasability of nationally collected information proscribed personnel to process it on national systems. However, it slowed down decision making processes and could hamper willingness of coalition partners to participate. This was especially problematic at higher level headquarters, where several systems and nations typically came together, such as in the CAOC. During the timeframe described in this chapter, only rudimental provisions were made to improve communications, such as email exchange.[230] The reasons were the habit of reporting nationally, security concerns, and technological challenges.[231] Overarching systems, such as a NATO-wide classified computer and communication network, were insufficiently available, or were incompatible with other, American, overarching systems. The result was that available information was fragmented, and that communication between units and assets to some extent had to be improvised. This in turn complicated and delayed command and control.[232] That this could lead to difficult tactical dilemmas showed an incident which occurred on February,7, 2006, when the Norwegian-led PRT in Maymaneh became in need of air support when it was attacked by angry Afghans after the news of Danish cartoons depicting the prophet Mohammed reached Afghanistan. HQ ISAF could only communicate via the satellite communication equipment of the Norwegian JTAC, who was also in contact with the two Dutch F-16s that were scrambled from Kabul International Airport (KAIA) to support.[233] As the available communication systems would not allow HQ ISAF to get sufficiently accurate operational situational awareness to make decisions, it had to delegate weapon release authority to both the JTAC and F-16 pilots.[234] HQ ISAF was not in a position to effectively command and control the air support. Another, less dramatic, example was that for a long time, the Deputy Commander for Air (DCOM Air) of ISAF had no secure means of communicating with the DCFACC, hampering decision making at the operational and strategic levels.[235]

230 Eikelboom, "Moving", 131-132, and David C. Isby, "Coalition Airpower", *Air Forces Monthly*, no. 210 (2005): 34-37, 38. See for development of the computer networks in Afghanistan: Chad C. Serena, Isaac R. Porche, Joel B. Predd, Jan Osburg and Bradley Lossing, *Lessons Learned From the Afghan Mission Network: Developing a Coalition Contingency Network* (Santa Monica, CA: RAND Corporation, 2014), https://www.rand.org/pubs/research_reports/RR302.html (accessed July 6, 2017).

231 Serena, Porche, Predd, and others, *Lessons Learned*, 3.

232 Van Loon, Interview, F. H. Meulman, "Challenges of Air Command and Control in Expeditionary Operations - the Afghanistan Experience, a Personal View", *Journal of the JAPCC* 6 (2007): 6-10 http://www.japcc.org/wp-content/uploads/JAPCC_Journal_Edition_6.pdf (accessed June 15, 2017), 8, Meulman, "Mihiel (1918)", 71-72 and 94-95, and Serena, Porche, Predd, and others, *Lessons Learned*, 3.

233 Willemse, "Silence", 3-4.

234 Willemse, "Silence", 4-7.

235 Meulman, "Mihiel (1918)", 89.

5.5.5. *Addressing the Resources Challenge*

The result of the challenges was an absolute shortage of available airfields, in terms of numbers, and a relative shortage in terms of airfields that could be used by all types of airframes. When measured against the issue of mustering the right force levels, this on occasion led to a paradoxical situation. By 2004, the US wanted NATO members to deploy assets to assist ISAF's mission. Some of the assets that were finally offered could not deploy because US assets used all parking spots for their airframes.[236] On the other hand, there were some doubles in resources. For instance, in 2008 Kandahar Airfield had five meteorological offices.[237] Both examples show the prevalence of national preferences over operating in a coalition.

Especially the main airports in Afghanistan, which were designated as Air Port of Debarkation (APOD) became of strategic value, because the whole ISAF operation could come to a standstill when these airports were not available.[238] When NATO took over command of ISAF, KAIA became the first APOD, and Germany was lead nation, providing most of the supporting functions. Finding nations to participate in sustainment was, however, problematic.[239] The same situation occurred in the southern part of Afghanistan, where ISAF designated Kandahar Airfield as its second APOD in August 2005. NATO however needed more time to finalize the financial arrangements, and therefore asked the US to operate Kandahar Airfield (KAF) for an additional twelve months.[240] Also, the British Harriers had to deploy to Kandahar Airfield longer than expected, because improvements of the runway that were required to host Dutch F-16s were delayed.[241] Other airfields, such as Herat in the west, Mazar-e-Sharif in the north, Bagram and Jalalabad in the east, and landing strips on fire support bases, were nationally operated. In addition, the airfields of Termez in Uzbekistan and Dushanbe in Tajikistan, were important logistical hubs for strategic airlift.[242] As a result, several airfields became very crowded. Anecdotally, by 2008 Kandahar Airfield was the temporary home of about 14,000 personnel, 170 airframes of various types, and handled about 10,000 air movements per month.[243]

This situation could have consequences at the operational or even strategic level. Whenever a runway was out of commission, due to repairs or to sandstorms or other meteorological circumstances, this directly influenced air operations. Reaction times

236 Van den Born, Interview, and Richard Norton-Taylor, "G2: Shortcuts: Why Isn't Room for More Helicopters in Afghanistan", *The Guardian* (August 13, 2009) http://search.proquest.com/docview/244428932/26186F1EFD2042FEPQ/96?accountid=35226 (accessed October 2, 2014).

237 Loveless, *Blue Sky Warriors*, 134-136.

238 See Appendix 1.13 for map of Afghan Airfields.

239 Beckman, "From Assumption to Expansion", 8 and Peck, "Theater Perspective", p. 36-37.

240 Peck, "Theater Perspective", 36-37.

241 Ripley, "Tacklin' the Taliban", 27, and Ripley, *Air War Afghanistan*, 99-101.

242 Meulman, "Mihiel (1918)", 80.

243 Loveless, *Blue Sky Warriors*, 132.

increased, because air support for ground forces had to take off from other airfields. Also airborne assets were forced to fly much further to divert to another airfield when a runway was closed. During 2008 some improvements were made to increase flexibility, such as improving the runways of the airfields of Herat and Mazar-e Sharif, and opening additional airfields, such as Camp Bastion in Helmand.[244]

The threat towards airbases forced the coalition forces operating the bases to devote assets and resources to counter it. Airbases needed hardened facilities to protect most important assets, and personnel needed to adopt passive and active defense measures and procedures to mitigate the threat. Incoming rounds could be countered with active systems that could intercept them in flight. Also, ground forces could execute a local population-centric counterinsurgency approach in the areas surrounding the bases.[245] This too was sometimes outsourced.[246] Tethered aerostats, more popularly known as blimps, or other types of technologies, could be used for continuous surveillance of a large area surrounding the base, using high resolution cameras, video feeds, and audio sensors.[247] Finally, coalition forces could deploy air assets reactively, to find the perpetrators of an attack after the fact, or pro-actively, in an intelligence gathering role before the attack took place. Robert Sagraves argued however that this form of airborne base defense was one of the many lessons the USAF had forgotten after the Vietnam War.[248]

Virtually all protection measures came at a cost. It required that resources needed to be made available to implement all these measures. In addition, some measures could have an adverse effect. For instance, to mitigate the threat to air assets taking off from airfields, pilots relied on their technological countermeasures, but also on tactics to leave the dangerous area as soon as possible. The aggressive flight profiles could in turn anger or scare the local population.[249] Also, when active systems engaged incoming projectiles, the operators needed to take into account that many of the projectiles that were fired at the incoming ones did not hit the latter, and landed outside of the airbase, potentially hitting civilians that were in the area.[250] In any case, the threat to airbases did have a limited but adverse effect on air operations.

244 Eikelboom, Interview, and Eikelboom, "Moving", 130-131.

245 Parkinson, "The War That NATO Cannot Lose", Parkinson, "Indirect 1", and Parkinson, "Indirect 2".

246 Carl Levin (Chairman), "Inquiry Into the Role and Oversight of Private Security Contractors in Afghanistan", (Report Together With Additional Views of the Committee on Armed Services, United States Senate, September 28, 2010) http://fas.org/irp/congress/2010_rpt/sasc-psc.pdf (accessed January 13, 2016).

247 Anonymous, "Harris Corporation; Harris Corporation's Falcon Watch Remote Surveillance System Chosen for Royal Netherlands Air Force Program; Contract Awarded by Netherlands Materiel Organization", *Science Letter* (2008) http://search.proquest.com/docview/209078247/F7985FD8723C4423PQ/4?accountid=35226 (accessed October 8, 2014), Anonymous, "Harris Falcon Watch Remote Surveillance System Chosen for Afghan Mission", *UPI Space Daily* (June 17, 2008) http://search.proquest.com/docview/454577108/F7985FD8723C4423PQ/37?accountid=35226 (accessed October 8, 2014), Franzak, *A Nightmare's Prayer*, 179, and Valpolini, "ISR", 48.

248 Sagraves, "Air Base Defense", passim.

249 Van den Born, Interview.

250 Parkinson, "Indirect 2", 21.

The unwanted situation with regard to airspace management and interoperability led to two developments. The first was to provide Afghanistan with a civilian air traffic control system that was able to handle military flights. Directly after the major combat operations had ended, the US military executed the air traffic control tasks in Bagram, Kandahar, Karshi Khanabad, and Manas, but soon set out to outsource it. This process was completed in December 2003. A Regional Air Movement Control Center (RAMCC), co-located with the CAOC in Qatar, helped to schedule fixed wing airlift sorties in order to streamline the number of flights going in and out of the area of operations. In parallel, the US military started to rebuild the Afghan air traffic control system. Although the Afghans were still dependent on USAF controllers, a countrywide area control center was opened in 2005.[251] However, several air traffic control towers were manned by Eastern European citizens, who were not always proficient in the English language.[252] This was creating a safety hazard up to the point that one civilian contractor flying Mi-8 helicopters stated that it resulted in "*more near misses than anybody is prepared to acknowledge*".[253]

As soon as NATO took over command of Afghanistan, it took on the task of expanding an Afghan civilian air traffic control system. ISAF started to build up KAIA. Initiatives for installation of an Instrument Landing System (ILS) and and ATC structure were present, but were short lived. Also, the conditions that had to be met in order for the Afghans to take over were unclear. To some extent the development of civil aviation was rooted in the Afghan National Development Strategy and the Afghanistan Compact of 2006. However, the Afghans lacked expertise on basically every aspect of maintaining a civilian airfield, so progress was slow.[254] Because about ninety percent of the air movements were military, the commander of Joint Forces Command in Brunssum initiated a project to build a so-called multilateration system. Using transponders most aircraft carried, this system was initially envisioned to contain about twenty ground stations spread across Afghanistan that would send signals on locations of aircraft to headquarters. As some NATO members did not regard building an ATC system to be a military task, this initiative did not become a NATO project. The German national bank offered help building the ground stations, a German-led headquarters, and a repeater station. After some discussion with the Afghan Ministry of Transport and Civil Aviation with regard to the maintenance contract, the initial multilateration system was opened early 2009.[255]

251 Grogan, "Airspace Control Authority", 1, 5, and 7-9.

252 Arts, Interview.

253 Venter, *Gunship Ace*, 311.

254 Anonymous, "The Afghanistan Compact: Building on Success. The London Conference on Afghanistan. London 31 January - 1 February 2006", (2006) http://www.nato.int/isaf/docu/epub/pdf/afghanistan_compact.pdf (accessed June 16, 2013), R.M.G Dorenbosch and J.L. Voetelink, "ISAF, Nederland En Het Herstel Van De Afghaanse Civiele Luchtvaartsector", [ISAF, the Netherlands and the Recovery of the Afghan Civil Aviation Sector] *Militaire Spectator* 179, no. 4 (2010): 180-195, Meulman, "Experiences", 305, and Meulman, "Mihiel (1918)", 97-98, Nelson, "Airghanistan", 28, and Willemse, "Silence", 13-14.

255 Richard J. Jr. Bailey, Lieutenant Colonel, United States Air Force, Interview with the Author, June 24, 2013, Jerry Johnson, Holger Neufeldt and Jeff Beyer, "Wide Area Multilateration and ADS-B Proves Resilient in Afghanistan", (Integrated

Although this alleviated the command and control problem for civilian air traffic, it did not for military air operations. For operational reasons, the civil and military types of air traffic could not be handled by civilian air traffic controllers. There were basically no means available for ISAF's air commanders to obtain situational awareness on air movements, or to communicate with aircraft once they were out of range of the radios, or that line of sight was lost due to the obstruction the numerous Afghan mountains presented. At the tactical level, an option was to deploy small teams that could function as air traffic controllers for airstrips or poorly equipped airfields.[256] An Airborne Warning and Control System (AWACS) could provide short term alleviation of the problem. During late 2005, early 2006, ISAF's senior airman, Dutch Major General Willemse, and his staff tried to get NATO to deploy some of its AWACS systems to Afghanistan. The AWACS was by then the only asset truly belonging to NATO, so in theory getting them to Afghanistan could be relatively easy. They however did not succeed due to coalition politics.[257] Therefore, ISAF remained dependent on US airborne command and control assets, which were not always available. As a result, there was less airborne command and control capability available than desired, which sometimes almost led to mid-air collisions.[258] In 2008, the senior airman for ISAF, the Dutch Major General Eikelboom, formulated another requirement for NATO AWACS. Finally, after many deliberations within NATO concerning funding, an AWACS was deployed to Mazar-e Sharif in 2011, which was able to provide two orbits, amounting to about sixteen hours, per day.[259]

5.5.6. Continuing Dependence on The United States

Concluding this paragraph, the developments during the period discussed in this chapter show that the air weapon needed to accelerate execution of the concept of expeditionary operations. Building air bases inside a non-permissive environment was relatively new to airmen. Whereas the air weapon traditionally operated from a safe distance from the battlefield, in which hostile air attacks were the biggest threat, during deployment in Afghanistan airmen had to deal with indirect fires coming from directly outside the

Communications, Navigation and surveillance Conference (ICNS), IEEE, 2012) http://ieeexplore.ieee.org.nlda.idm.oclc.org/stamp/stamp.jsp?tp=&arnumber=6218377 (accessed July 11, 2016), and Sullivan, "Game-changing Strategies", 176.

256 Anonymous, "United Kingdom: Tactical Air Traffic Control Squadron Airborne in Afghanistan", *US Fed News Service, Including US State News* (June 2, 2006) http://search.proquest.com/docview/473256275/501BB270C72D4754PQ/7?accountid=35226 (accessed July 11, 2016), Richardson Doug, "Landing Aids for Bare Bases", *Armada International* 26, no. 3 (2002) ttp://search.proquest.com/docview/197091478/6843FBB9C4634C71PQ/10?accountid=35226 (accessed October 8, 2014), Willemse, "Silence", 10.

257 Willemse, "Silence", 10-11. General Willemse does not provide a reason why AWACS were not deployed.

258 Eikelboom, Interview.

259 Auerswald and Saideman, *NATO in Afghanistan*, 38, and Eikelboom, Interview.

base. This required a different mindset. Building airbases themselves was challenging as well, especially while both ground forces and air forces were in a phase of expansion. In general, airpower professionals adapted to the situation well, with the exception of building an airspace management system. On the military side, this problem was not resolved and, analogous to the situation evolving around the issue of force levels, NATO stayed reliant upon US resources. Despite the availability of information age airpower and communications systems, especially the interoperability issue prevented HQ ISAF to effectively command and control its air assets. For both force levels and resources, ISAF was to a large extent dependent on the US.

5.6. Command Relationships: Constructing the "Spaghetti Diagram"

5.6.1. *Different Missions, Same Area of Operations*

Paragraph 3.3. described the creation of a convoluted set of command relationships, even within the American internal command and control architecture. The arrival of ISAF, and the subsequent inability or unwillingness on part of senior decision makers to completely merge US and NATO command and control architectures led to the situation where they remained separated. This chapter further described that this separation partly reflected two strategic outlooks: stabilization an reconstruction for ISAF, counterterrorism for OEF. As long as these missions operated in different geographical areas, command and control presented pretty much an "either-or situation". This was the case for most land forces. Their areas of operation were relatively small and more static when compared to the air weapon. With the exception of some covert operations performed by special forces or intelligence agencies, OEF personnel and ISAF personnel each operated in their respective areas of operation, so the CT outlook and the S&R outlook were largely separated. For airmen the situation was entirely different. Tenets of height, speed and range of the air weapon both allowed and required aircrews to operate in Afghanistan in its entirety, not just in the OEF or ISAF areas of operations. In addition, as has been described above, airpower became a scarce but essential force protection asset. So, for operational reasons and for reasons of efficiency, the cumulative set of air assets ideally operated as one.

However, devising a command and control architecture that fully adhered to the tenets of unity of command and unity of effort, and of centralized command and decentralized execution, proved problematic. These tenets were highly valued by all airmen, because they help focus actions of scarce assets, and thereby facilitate effective and efficient employment of the air weapon.[260] Command relationships between air-and ground commanders

260 Christopher McInnes, "Command and Control", In: *Routledge Handbook of Air Power*, ed. John Andreas Olsen (London and New York, NY: Routledge, 2018), 130-141, 132-135, United States Joint Chiefs of Staff, *Joint Publication 3-30: Command and Control for Joint Air Operations*, February 10, 2014, http://www.dtic.mil/doctrine/new_pubs/jp3_30.pdf (accessed July 18, 2016), ix-x.

became the centerpiece of much discussion and friction. In order to understand this friction, it is necessary to dissect the problem, and analyze the various contexts that were at interplay with each other. This requires description and analysis of developments of the air command and control architecture and the concept of air-land integration. A friendly fire incident highlighted the problems, but also served as an impetus for improvements. All will be discussed below.

5.6.2. The Problem of Combining OEF and ISAF Air Assets

Command and control for air operations in Afghanistan was relatively straightforward for initial operations due to the fact that it was US-led. As stated in chapter three, the US established CFC-A in October 2003. It was a command that operated at both the strategic and operational levels.[261] Initially, it consisted mainly of a Combined Joint Task Force (CJTF), which operated under different names throughout 2002 to 2006.[262] As of late 2006, the organization was streamlined in anticipation of deployment of ISAF. CFC-A was deactivated early 2007, and two task forces were left in Afghanistan. The first was the CJTF, which would become the US contribution to ISAF. The other task force was called Combined Security Transition Command-Afghanistan (CSTC-A), and remained in Afghanistan as part of operation *Enduring Freedom*.[263] This task force concept was relatively new, and not described in doctrine yet. Even though fully developed doctrine was lacking, supporting those US commanders initially presented little problems for air commanders. As far as the US was concerned, both task forces operated under the mandate of operation *Enduring Freedom*, which was led by CENTCOM. This command ran operation *Enduring Freedom*, which spanned an area covering much of Central Asia and the Horn of Africa. The conflicts in Afghanistan and Iraq were the most tangible conflicts in which the military became involved, although Iraq received most of the attention. The CFACC, initially Lieutenant General Buck Buchanan, and as of February 2006 Lieutenant General Gary North, forwarded his Deputy to the area of operations to manage planning and execute missions. The DCFACC also had the task to act as Airspace Control Authority, Personnel Recovery Coordinator, Space Coordinating Authority, Theater Air Defense Commander and Theater Electronic Warfare Coordinator.[264] In order to fulfill those tasks, the DCFACC had the CAOC at his disposal, which was initially located at Prince Sultan Airbase in Saudi Arabia, but was moved to Al Udeid in Qatar in May 2003.[265]

261 Wright, Bird, Connors, and others, *Different Kind of War*, 237 and 320-321.

262 Wright, Bird, Connors, and others, *Different Kind of War*, 180-302 passim.

263 Catherine Dale, "War in Afghanistan: Strategy, Military Operations, and Issues for Congress", In: *War in Afghanistan: Strategy, Military Operations, and Congressional Issues*, ed. Easton H. Ussery (New York: Nova Science Publishers, 2010), 53-122, 66.

264 Peck, "Theater Perspective", 19.

265 Peck, "Theater Perspective", 28.

For coordination of air operations with tactical ground commanders, the CAOC had a tight link with the Air Support Operations Center (ASOC). The ASOC was a relatively new concept, the development of which was accelerated 2006 as a result of lessons learned from operations *Enduring Freedom* and *Iraqi Freedom*.[266] The ASOC for Afghanistan was located at Bagram Airfield, which had the tasks of collecting and prioritizing request for air support for the ground commander, either via preplanned requests coming from the land forces headquarters or emergency requests from JTACs, and forwarding the requests to the CAOC. The CAOC in turn prioritized these and other requests, allocated assets, and tasked the units.[267]

Air assets from coalition partners that joined operation *Enduring Freedom* were incorporated in this system. During the initial phase of operation *Enduring Freedom*, nations offered their air assets to the US, and were incorporated in the US command and control structure. For instance, Dutch and Danish F-16s operating from Manas were formally part of the American 376th Air Expeditionary Wing.[268] The CFACC could direct non-American air assets at will, as long as the tasking remained within the boundaries of the national caveats. All nations contributing to the operation *Enduring Freedom* and *Iraqi Freedom* had liaisons within the CAOC, and the position of CAOC Director switched between General Officers from the United Kingdom, Australia and the United States.[269]

In practice however, the situation was more complicated. The CAOC had operational control (OPCON) of all USAF assets and coalition assets that were allocated to it, but had only tactical control (TACON) of the assets from other services.[270] Finally, all helicopters that did not belong to the US Air Force were directed by the ground force commander in Afghanistan, who since 2004 had a separate organization, called Task Force Wings. This unit contained all other US helicopters in Afghanistan. This in practice meant that the CAOC could actively task about fifty five percent of the air assets in CENTCOM's theater, while all other assets first had to be made available from the nation, service, or country, that had OPCON over them.[271] Developing a command architecture that adhered to the dictum of

266 Gallei, "What Is the Role", 61.

267 Michael W. Kometer, *Command in Air War: Centralized Versus Decentralized Control of Combat Airpower* (Maxwell Air Force Base, AL: Air University Press, 2007), 59-60, and Ripley, *Air War Afghanistan*, 102-103.

268 Anonymous, "COMUSAFE Awards U.S. Air Medals to Danish F-16 Pilots", *US Fed News Service, Including US State News* (January 4, 2007) http://search.proquest.com/docview/473127412/18DC50A9A01342ADPQ/12?accountid=35226 (accessed September 29, 2014), Anonymous, "376 AEW", and Netherlands Institute for Military History, "Enduring Freedom", 8.

269 Peck, "Theater Perspective", 28, and Wright, Bird, Connors, and others, *Different Kind of War*, 280.

270 Authorities associated with TACON are more restricted than OPCON. As stated above, OPCON involved organization of forces, assigning tasks, designating objectives, and issuing directives. TACON on the other hand was restricted in time, space, and authority to organize forces (United States Joint Chiefs of Staff, *JP 1-02 (2015)*, 238). In layman's terms, a commander that has OPCON over assets was able to organize and direct those assets. With TACON, he was only able to task them for specific missions. From an air commander's perspective, he typically only had TACON over those assets that were not part of his organic organization, i.c. the air force, but were temporarily assigned to him. This was for instance the case with air assets from other services, or from air forces of other nations.

271 Bernstein, *AH-64 Apache Units*, 34, Frank Magni, "JTF Wings Links Ground Forces in OEF", *Website Free Republic* (June 21, 2004) http://www.freerepublic.com/focus/news/1157336/posts (accessed March 16, 2016), Forsyth, "Second Thought", 110, Peck, "Theater Perspective", 19, and Wright, Bird, Connors, and others, *Different Kind of War*, 280.

centralized control and decentralized execution was a challenge even without the presence of ISAF, because prioritization was problematic in situations where the air assets were controlled by different services.

This situation was exacerbated when ISAF entered the stage. When NATO assumed command of ISAF, that mission became part of a command and control structure separate from operation *Enduring Freedom*. Up and until then, air assets operated mainly within the airspace of Kabul and the surrounding areas. So, initially, the modest number of air assets were tasked from an air cell in the headquarters of the Kabul Multinational Brigade (KMNB).[272] With the increased role of what became a superior headquarters to KMNB, namely ISAF, this changed. ISAF Headquarters also assumed the role of air planning. ISAF's command lines ran through JFC Brunssum to SHAPE, located in Mons, and therefore to the Supreme Allied Commander Europe (SACEUR). JFC had its own air component, called Component Command Air, based in Ramstein, Germany (CC Air Ramstein). This meant that air assets associated with ISAF in principle were subjected to CC Air Ramstein. But CC Air did not assume a major role in command and control of ISAF air assets. As long as both the number of those air assets and the size of ISAF's area of operations were limited, as was the case in mid 2003, ISAF was allowed to use the US command and control structure for air operations.

ISAF filed requests for fixed wing air support at the US ASOC in Bagram, which prioritized them and forwarded them to the CAOC in Al Udeid. The CAOC contained an ISAF cell to liaise between OEF and ISAF. There were, however, several challenges. Security arrangements between the US and the several participating nations differed, NATO and US ATO-generating software were not compatible, and there were some legal issues with the Qatari government, relating to Status of Forces Agreement (SOFA) the liaisons in Qatar were subjected to. So therefore, only a limited number of nations manned the ISAF cell at the CAOC.[273] Despite these challenges, this arrangement initially worked reasonably well. The CAOC was able to apportion and allocate the assets. When ISAFs demand exceeded the availability of its own assets, which was in theory only the case in situations when ground forces were in immediate and grave danger, OEF assets could be made available for "in extremis" support. This scheme also had the additional benefit that it allowed air assets from nations that supported both ISAF and operation *Enduring Freedom* to be tasked by a single entity, namely the CAOC. From the perspective of command and control, the only thing needed to make this system work was to stay sharp on the missions that were flown, and not interfere when an asset flew a mission for OEF.[274] In some instances, the distinction was less stringent. This was for instance the case with niche capabilities that were in high demand, clearly aimed to save lives, and had a relatively low risk of political fallout. This was for instance the case with the use of helicopters for medical evacuation, which was

272 Arts, Interview, and Van der Mark, "RNLAF", 68.

273 Van den Born, Interview, Ripley, *Air War Afghanistan*, 102-103, and Willemse, "Silence", 11-12.

274 Willemse, "Silence", 11-12.

regarded a "bridging capability" of OEF and ISAF..[275] This however did not become an insurmountable problem.

During the period that followed however, the situation did become problematic. The number and the variety of air assets that operated increased. They also operated in increasingly expanding areas. When the expansion was completed, OEF and ISAF to a certain extent operated in the same area of operations. This created additional command and control challenges.[276] Furthermore, the number of request for air support increased exponentially. Deployment of ground forces coincided with a mounting insurgency, which resulted in an increased number of Troops In Contact situations. During the period from late 2004 to early 2005, there were about fifty attacks per month on coalition forces, Afghan security forces and government facilities. These situations in turn increasingly needed air support in order to end them, or allow extraction of wounded soldiers.[277] The number of CAS sorties planned by the CAOC rose from 6,495 in 2004 to 7,421 in 2005. In the same period, the number of dropped munitions doubled, from 86 to 176.[278] But, both ISAF an OEF were executing different missions with different mandates, stabilization and reconstruction, and counterterrorism respectively. So, there were two different missions in the same area of operations, with divergent command and control arrangements. The air weapon ran the risk of being artificially divided, which ran counter to the concepts of unity of command and unity of effort, and of centralized control and decentralized execution. In parallel, the pressure to resolve the situation increased. Airpower became relatively more scarce, as the increased availability of air assets lagged behind the increased demand. This, in turn, made prioritization of air assets more difficult.

5.6.3. Textbook Solutions Not Implemented

There was a textbook solution to this problem: making a choice between either the US or NATO architectures for command and control of the air weapon. If the US command and control structure was chosen, this would mean that ISAF's air assets needed to be handed over to the DCFACC in Al Udeid. Within this scheme, ISAF planners would have an ASOC-like staff functionality in Kabul, prioritizing requests for air support, and asking CAOC for the

275 Van Loon, Interview.

276 Michael John Madoc Jenkins, "ISAF Approach to Effective Battlespace Management", *Journal of the JAPCC*, no. 7 (2008): 14-17 www.japcc.org/wp-content/uploads/JAPCC_Journal_Edition_7.pdf (accessed June 15, 2017), 14.

277 Wright, Bird, Connors, and others, *Different Kind of War*, 251 and 281-282.

278 United States Air Forces Central, Combined Air and Space Operations Center, "2004-2008 Airpower Statistics". These numbers were significantly lower than those in Iraq during the same time frame, which were 14,292 to 16,924 for the sorties and 285 to 404 for the number of munitions dropped.

assets. Implicitly, it regarded COMISAF as a tactical ground commander, comparable to the one in Iraq.[279]

This option generally was preferred by the US. The reasons for this stance was that by controlling all air assets in theater, the CAOC would be able to execute the dictum of centralized control, decentralized execution to the maximum extent in CENTCOM's area of operations. Unity of command and unity of effort would be realized, and the air weapon would be deployed in the most efficient manner.[280] This however was not acceptable from a NATO perspective. Several influential nations within NATO feared that the link between OEF and ISAF became too intimate to be politically justifiable in their parliaments. The problem was that national assets ran an increased risk of performing missions in an operation they did not subscribe to, potentially embarrassing national governments.[281] From ISAF's operational perspective, this scheme was deemed less than ideal as well. CENTCOM's priority to Iraq was well-known, and provisions regarding CENTCOM's support to ISAF involved "in extremis" support for Troops In Contact only. US directives until 2007 proscribed that all preplanned missions for ISAF needed to be approved by CENTCOM in Tampa.[282] In short, ISAF staff feared that much needed support, after a slow decision making process on the US side, would be denied due to other priorities.

Choosing the NATO architecture to command and control air assets operating in Afghanistan was the alternative option. It would involve implementing a completely separate chain of command for ISAF air assets. The dictums of unity of command and unity of effort, and of centralized and control and decentralized execution, would be applicable to ISAF. It revolved around the notion that ISAF was a separate mission from operation *Enduring Freedom*, with a different mandate that prescribed separate chain of command.[283] This precluded ISAF air staff to fulfill a subordinate role to CENTCOM, personalized in the DCFACC. When applied in its purest form, the ISAF senior airman would be designated CFACC of ISAF, with its own CAOC. Both command and staff functions would be represented within the ISAF Area of Operations.[284] This in practice implied that the US would permanently allocate air assets to ISAF. An air commander under command of COMISAF would be responsible for drafting a list of required capabilities, called an Air

279 Hope, "Unity of Command in Afghanistan", 44.

280 Peck, "Theater Perspective", 32-33, and Douglas L. Raaberg, "The Shift From Iraq to Afghanistan", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 137-156, 145-146.

281 Hope, "Unity of Command in Afghanistan", 44.

282 Forsyth, "Second Thought", 112-113. In terms of American "boots on the ground", in 2008 Operation *Iraqi Freedom* outnumbered Operation *Enduring Freedom* by a factor five, with roughly 30.000 troops in Afghanistan and more than 150.000 in Iraq:Amy Belasco, "Troop Levels in the Afghan and Iraq Wars, FY 2001-FY 2012: Cost and Other Potential Issues", (Congressional Research Service Report for Congress, DIANE Publishing, July 2, 2009) http://www.fas.org/sgp/crs/natsec/R40682.pdf (accessed February 27, 2013), 9.

283 Meulman, "Mihiel (1918)", 70-71.

284 Stephen L. Hoog, "Airpower Over Afghanistan: Observation and Adaptation for the COIN Fight", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 235-257, 241, Hope, "Unity of Command in Afghanistan", 45-46, Sullivan, "Game-changing Strategies", 163-164.

Estimate, a plan for integrating air operations within the plans of higher echelons, called the Joint Air Operations Plan and a monthly guidance called Air Operations Directive.[285] Implicitly, this scheme regarded COMISAF not as a tactical ground commander, but as a Joint Task Force Commander or even a Joint Force Commander.

This option in turn was cause for some concern to a DCFACC in Al Udeid. From a CENTCOM perspective, it would lead to a break with the principle of unity of command and unity of effort. According to ISAF's mandate, ISAF air assets would not be available for operation *Enduring Freedom* Afghanistan.[286] In addition, there was unwillingness to let US forces be commanded by the very organization that lacked the political will to provide enough assets. US forces were already flying the bulk of the missions over Afghanistan, and it was assessed that, because of the problems with force generation within NATO, the US would keep delivering most of the assets and the command and control structure.[287] Therefore, transferring command and control authority of CAOC assets to ISAF was not an option for the DCFACC.

No agreement was reached on either of the options at the political level, and no decision was made. Consequently, the directives to both CFACC and COMISAF were not clear on this issue.[288] It was left to the senior airmen to devise an architecture that was directed towards cooperation of the two command and control systems, by those of CENTCOM on the one hand, and of JFC Brunssum and ISAF on the other.[289] Two elements put the senior airman belonging to NATO in a position of disadvantage to reach his desired level of unification of command. First, NATO, and therefore ISAF, suffered from a shortage of both air assets and resources. From the ISAF perspective, it seemed logical to have some kind of coordinating command and control element to serve the air support requirements of COMISAF. However, ISAF did not yet have the command and control infrastructure available to perform the associated tasks, which was a reflection of NATO's lack of investment in deployable air command and control assets. Also, it did not have enough airborne assets to support all troops once deployed in the whole of Afghanistan. It needed CENTCOM assets and resources, especially airborne command and control assets, ISR assets, long range bombers, and tankers.[290] According to Ian Hope, force allocation for Afghan airspace therefore had to be done diplomatically, as ISAF did not have any authority over the majority of the air assets.[291] In addition, a loophole in the command and control structure needed to be fixed. The "in extremis" arrangement allowed to plan air support

285 Meulman, "Experiences", 299.

286 Peck, "Theater Perspective", 29-32.

287 Forsyth, "Second Thought" 112, and Allen G. Peck, Lieutenant General, United States Air Force Retired, Interviews with the Author, June 18 and 26, 2014, and Peck, "Theater Perspective", 29-32.

288 Hope, "Unity of Command in Afghanistan", 42.

289 Peck, Interview.

290 Eikelboom, "Moving", passim.

291 Hope, "Unity of Command in Afghanistan", 45-46.

of OEF assets in situations where a Troops In Contact situation was likely.[292] This did not classify as creative improvisation, because in effect became a disguise for pre-planned air support, under the pretext of emergency support.

Second, it was unclear at which level of operations ISAF was operating as a joint and combined unit. Doctrinally, HQ ISAF commanded operations at the tactical level, which in turn was commanded by its operational-level headquarters, JFC Brunssum. SHAPE constituted the strategic level headquarters.[293] However, for command and control of ISAF the situation was blurred. According to Hope, JFC Brunssum was not equipped to effectively enforce operational command, so these functions had to be performed at HQ ISAF.[294] JFC's air component, CC Air Ramstein, in effect kept serving as a supporting unit with which the ISAF staff could communicate directly instead of via Brunssum, providing advise, reach back support and manning. It did however not perform a command and control functionality.[295] As a result of the lack of clear strategic guidance coming from SHAPE and JFC Brunssum, COMISAF and his staff were left to devise a strategy, so therefore ISAF *de facto* operated at the operational or even strategic level, even more so as the regional commands and individual nations seemed to devise their own approaches, which needed to be synchronized and coordinated. This situation, which was not vetted in doctrine, led to confusion on the question at which level various NATO commands were operating.[296] In short, while ISAF was tacitly operating at levels which might legitimize the existence of a CFACC-like functionality, there were no doctrines that could support him in his position to desire one.

5.6.4. ISAF Assumes Command

In the mean time, commanders had to adapt. During the transition phase, ISAF started to take responsibilities that formerly belonged to the ASOC. As of August 2005 COMISAF had a Deputy Commander Air DCOM Air, who, among other things, served as an advisor for air operations to COMISAF. The senior staff member of the DCOM Air was called Director Air Coordination Element (Dir ACE). He had the task of coordinating operations of the eight F-16s, a handful of helicopters, and some other assets that formally belonged to ISAF.[297] Demand for airpower however exceeded the availability. The planning for these missions was not done in the air staff, but initiated at lower levels of the organization under the pretext of "in extremis" support, done by JTACs who could communicate to the CAOC

292 Van den Born, Interview.

293 Beckman, "From Assumption to Expansion", 6, Eikelboom, Interview, and Hope, "Unity of Command in Afghanistan", 43.

294 Hope, "Unity of Command in Afghanistan", 43.

295 Meulman, "Mihiel (1918)", 91-92, and Sullivan, "Game-changing Strategies", 170.

296 Van den Born, Interview, Holland, "US-NATO Dichotomy", 59, Van Loon, Interview, and Meulman, "Mihiel (1918)", 76.

297 Van den Born, Interview, Jenkins, "ISAF Approach", 14, Frederik H. Meulman, Lieutenant General, Royal Netherlands Air Force Retired, Interview with the Author, June 6, 2013, and Willemse, "Silence", 9-10.

directly or via orbiting AWACS. Also, restrictive disclosure arrangements prevented HQ ISAF to be informed of the results of the sorties flown.[298] So, while COMISAF assumed responsibility of his own area of operations, his air staff lacked influence on the tasking of many of the air assets in this area and remained oblivious of the results of the missions. Consequently, these missions were not aligned with ISAF guidelines. The DCOM Air staff was, in other words, unable to execute its command function, because another command line was interfering. Unity of command and unity of effort was lacking.

From an ISAF perspective, changing command relationships could provide for a solution to this problem. In theory, there were two options. The first option was to streamline requests for air support coming from the regional commands. To this end, ISAF air staff early 2006 contemplated on establishing Regional Air Operation Centers (RAOCs) which were attached to the staffs of the commanders of the Regional Commands. Doctrine on this issue was absent, however,,and had to be devised from scratch while executing an operation. The question with regard to RAOCs was whether they performed command functions, with tasking authority, or that is was a staff function, helping the regional commanders plan their operations with air expertise and forwarding air support requests to higher echelons. RAOCs were established mid 2006, but the question with regard to functionality was not clearly resolved. This led to confusion in daily practice, because tasking authority was not clearly defined, and therefore challenged.[299]

The second option was for ISAF to obtain increased influence on air operations directed by the CAOC. This in practice meant increased influence by trying to get NATO officers to fulfill influential positions within the CAOC. This met resistance at CFACC level.[300] Major General Allen Peck, DCFACC from June 2005 to June 2006, proposed to have the DCOM Air fulfill an in-theater position comparable to that of an air base commander, albeit a commander of all Air Ports of Debarkation. This was rejected by NATO staff, who wanted to have more say in command and control of actual air operations. Late 2006, a compromise agreement was reached between the CFACC and JFC Brunssum's air component commander. It involved "dual hatting" of the DCFACC. His position was to become a NATO billet, which was effectuated in May 2007. DCOM Air was to become the senior advisor to COMISAF. Also, a system of liaisons was established, where NATO forwarded an ISAF Detachment CAOC Central (IDCC), consisting of about fourteen airmen, to the CAOC. In 2007, the CFACC sent an Air Component Coordination Element (ACCE) to ISAF headquarters.[301]

298 Meulman, "Mihiel (1918)", 85-86.

299 Holland, "US-NATO Dichotomy" 63, Van Loon, Interview, and Willemse, "Silence", 15-16.

300 Peck, "Theater Perspective", 36.

301 Eikelboom, Interview, Meulman, "Experiences", 300, Meulman, "Mihiel (1918)", 88, Peck, "Theater Perspective", 37, and Kenneth S. Wilsbach and David J. Lyle, "NATO Air Command-Afghanistan: The Continuing Evolution of Airpower Command and Control", *Air & Space Power Journal* 28, no. 1 (2014): 11-25, 12-13. The IDCC was called Air Coordination Element by Peck.

Now the ACCE concept had challenges of its own. As described in the previous chapter, the ACCE concept was developed after operation *Anaconda*, in order to streamline air operations with land and maritime operations. As such, it was primarily designed to enhance air-land integration, which will be discussed in the next section. It however also influenced development of the air command and control architecture in Afghanistan. Capabilities of modern communication systems allowed for the air weapon to influence the operational environment from the strategic to the tactical levels. However American airmen favored to centralize command and control functions at the level of the component commander, i.c. the CFACC. This preference originated from operation *Desert Storm* in 1991, which had shown the benefits of such a centralization, and it became a formal reality in 2006.[302] In parallel however, it raised the question how to communicate with lower-level and peer-level commands. The ACCE would provide the linking pin. Ideally, a CFACC for an area of operations supported the Joint Force Commander, typically an operational-level commander.[303] The ACCE could be deployed to the peer commands of the CFACC in the maritime and land domains, but also to lower level joint commanders, such as Joint Task Force Commanders in Iraq and Afghanistan. Initially, an ACCE and his team would serve as liaisons between the CFACC and other components.[304]

With the deployment of an ACCE to Kabul four problems quickly came together. First, it took some time for the concept to get embedded within the organization. Doctrine on the subject was in its infancy and still evolving. It was not yet was not tested, validated or accepted.[305] So, it is reasonable to assume not all personnel encountering the ACCE was acquainted with the concept. Second, the ACCE construct initially lacked manpower, and especially authority and responsibility.[306] It was unclear whether de ACCE, as personal representative of the CFACC, was a staff officer with advisory tasks, or an extension of a commander, with command authorities. Michael Kometer argued that the distinction between command and staff functionalities could be blurred even within a doctrinal command and control architecture.[307] In the convoluted command and control situation in the Afghan area of operations, this was worse. Although the ACCE formally was designated

302 Jeffrey Hukill and Daniel R. Mortensen, "Developing Flexible Command and Control of Airpower", *Air & Space Power Journal* 25, no. 1 (2011): 54-63, 55, and McInnes, "Command and Control", 132.

303 Hinote, *Centralized*, 11 and 56, and Mike Hostage, "A Seat at the Table: Beyond the Air Component Coordination Element", *Air & Space Power Journal* 24, no. 4 (2010): 18-20, 18-19.

304 James C. Cooper, "The Joint Air Component Coordination Element: Middleman or An Effective Airpower Broker?", (Paper, May 4, 2012) http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA563894 (accessed November 5, 2013), passim, Headquarters United States Air Force, "Operation Anaconda: An Air Power Perspective", (Headquarters United States Air Force, February 7, 2005) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA495248 (accessed August 1, 2013), 121, Hinote, *Centralized*, 23, Hukill and Mortensen, "Developing", passim, David J. Lyle, "Operation Anaconda: Lessons Learned, or Lessons Observed?", (Master's Thesis, US Army Command and General Staff College, Fort Leavenworth, KS, 2009) http://www.dtic.mil/get-tr-doc/pdf?AD=ADA502029 (accessed November 5, 2013), 51-52, James D. Kiras, "T. Michael Moseley: Air Power Warrior", In: *Air Commanders*, ed. John Andreas Olsen (Washington, DC: Potomac Books, 2013), 395-427, 414-415, Teakle, Interview, and Wilsbach and Lyle, "NAC-A", 12-13.

305 Kiras, "Moseley", 415-415.

306 Hostage, "A Seat at the Table", 19.

307 Kometer, *Command in Air War*, 58.

as a liaison officer, and not a forward deployed commander, there are indications that most of the commanders recognized the ACCE as a liaison, but that some commanders thought of the ACCE as a command function. Various Joint Force Commanders treated their ACCEs differently based on circumstances and personalities.[308] Third, whatever the status of the doctrine, it was American, and not NATO. Even if tasks, responsibilities and competencies of the ACCE were clear, it was not vetted through NATO procedures, hampering acceptance by non-Americans. Finally, it could be conceived that ISAF already had an officer that partially could execute ACCE tasks, namely the Director ACE.[309] Therefore, the system could lead to competition. Within the context of the indistinctness of the level of operations ISAF was positioned, which could proscribe the need and composition of the ACCE, it became virtually impossible to disentangle the command and control situation. What was left to make the system work were personal relationships and mutual trust between commanders, elements that several authors deemed very important even without the intricate problem.[310]

However, during 2006 to 2008 personal relationships between General Officers of both commands became strained. Major General Meulman, DCOM Air from January 2007 to February 2008, indicated that the ACCE in the person of a US Major General showed up practically unannounced in mid 2007 and no explanation was given about his tasks and authority, even when asked for via both US and NATO channels. This caused irritation within HQ ISAF staff and strained the relationship between ISAF Director ACE and DCFACC.[311] This anecdote is indicative for more fundamental issues. In the background, there were differences of opinion about how to organize the tenets of unity of effort and unity of command. Due to the difference of command lines of OEF en ISAF, preferred solutions were mutually exclusive. Also, the difference of the role of violence of ISAF's stabilization and reconstruction mission *vis á vis* a OEF's counterterrorism mission caused tension. ISAF was more restrictive than OEF. Mutual fear of the air weapon becoming a strategic liability due to either an overly restrictive or an overly kinetic mindsets lurked. This explained why air commanders deemed the air command and control issue to be so important. The resulting unruly stance may have been exacerbated by conflicting personalities.[312]

Combined, the theme of command relationships continued to be a source of friction between air commanders. During 2006 to 2008 a debate on ownership of air assets ensued between several subsequent DCOMs Air of ISAF and DCFACCs, characterized by one of the

308 Cooper, "Middleman", 7, Hukill and Mortensen, "Developing", passim, and Peck, Interview.

309 The element that did not overlap was a formal link of ISAF's senior airman with the CFACC. ISAF did not have such a link, the US ACCE did (Meulman, Interview).

310 David Ian Hall, *Learning How to Fight Together: The British Experience with Joint Air-Land Warfare*, Air Force Research Institute Papers (Maxwell Air Force Base, AL: Air Force Research Institute, March, 2009), http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA550430, passim, Hukill and Mortensen, "Developing", 57, Kiras, "Moseley", 414, Teakle, Interview, and Wilsbach and Lyle, "NAC-A".

311 Meulman, "Mihiel (1918)", 87-90.

312 Sullivan, "Game-changing Strategies", and Teakle, Interview.

DFCACCs as a *"children debate (on) ownership"*[313], reminiscent of comparable debates of the early days of military aviation.[314] To be fair, part of this discussion dealt with the separate but interrelated issue of integrating air operations with ground operations, which will be analyzed in the next section. However, the discussion evolving around command and control of the air weapon in Afghanistan became very delicate, and relationships between high ranking air commanders of both CAOC and ISAF and between US officers and officers from other nations within HQ ISAF became troubled, sometimes up to a point where relationships became strained at a personal level, and hampering coordination of air support for operations of ground commanders.[315] It is highly unlikely that ground forces in distress were left without air support due to arguments in HQs. The "in extremis" arrangement, combined with the strong notion on the part of all airmen that ground forces were not to be denied their support prevented that. Rather, it complicated and frustrated planning, which decreased efficiency in operational employment. As Heather Hrychuck pointed out: *"Competing priorities and personalities created unwarranted growth in staff, duplicative functions and processes which stymied the completion of tasks, creating unnecessary redundancies and distracting areas of focus"*.[316]

Although relationships improved by late 2008, there were still differences of perception of the tasks of the ACCE, of which the DCFACC could think of as his forward command element, while the ISAF's senior airman regarded it to be an advisory element to ISAF staff on deployment of air assets belonging to the DCFACC.[317]

Improving personal relationships, partly as a result of rotation of the involved officers, however prevailed. The "dual hatting" of the DCFACC provided some alleviation, because both command lines at least met in Al Udeid. In addition, the ACCE and his staff, however small, at least provided some personnel.[318] Although this arrangement alleviated the severity of the problems somewhat, it was not a structural solution, as it was susceptible to various interpretations. After the "dual hatting", the DCFACC *de facto* acted both as air component of a doctrinally superior command (CENTCOM) and as air component subordinate to COMISAF. The organizational chart of the air component became a "spaghetti diagram" in which authorities and responsibilities were very complicated and prone to various interpretations.[319] Depending on the perspective, the CAOC could be

313 Forsyth, "Second Thought", 110.

314 Forsyth, "Second Thought", 110, Meulman, "Mihiel (1918)", and Teakle, Interview.

315 See various contributions in Dag Henriksen (ed), *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives* (Maxwell Air Force Base, AL: Air University Press, 2014). Major General Charles S. Sullivan mentioned the effect of these relationships on operational effectiveness: Sullivan, "Game-changing Strategies", 170.

316 Heather Hrychuk, "Decision Making at the Theatre Strategic Level: ISAF HQ", *Journal of Military and Strategic Studies* 14, no. 3&4 (2012): 1-16 http://www.jmss.org/jmss/index.php/jmss/article/view/493 (accessed January 30, 2014), 7.

317 Sullivan, "Game-changing Strategies", 168-170, Charles S. Sullivan, "Operation Medusa", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 41-56, 50, and Raaberg, "Shift", 143-144.

318 Meulman, "Mihiel (1918)", 87-88, and Teakle, Interview.

319 Peck, "Theater Perspective", 37. See Appendix 2.3 for diagram.

seen as a command function, managing, coordinating and directing air operations. It could also be perceived as an administrative back office, just producing the Air Tasking Order ordered by the DCOM Air.[320] And by extension, the ACCE could be regarded both as a forward representative of the DCFACC, as was intended after operation *Anaconda*, and as a staff element helping COMISAF to plan and manage air support for his operations.[321] It all depended on whether one adopted the perspective of NATO or that of CENTCOM. During the next year and a half, the position of DCOM Air evolved into a staff functionality with four main tasks: acting as COMISAF's deputy, advisor to COMISAF for air related matters, monitor of air operations in the ISAF area of operations, and ISAF's representative with regard to reconstruction and development of Afghan civil aviation.[322] However, the command and control organization of the air weapon became so complicated that it was nearly impossible to understand it without inside information and experience.[323] So, the system became dependent on personal relations to work.

Meanwhile, the internal command and control organization of ISAF changed again. It involved leaving the structure in which there were three Deputy Commanders for ISAF, of which DCOM Air was one, in favor of a functional structure with one Deputy Commander. But first, anticipating the expansion of ISAF to cover the whole country, the position of DCOM Air was elevated from the rank of Brigadier General / Air Commodore to Major General early 2006. And as of November 2007, the position was renamed Director Air Coordination Element (Dir ACE), and one year later Air Component Element (ACE) in order to reduce confusion with the American ACCE.[324] The Dir ACE had two subordinate one-star General Officers, one for plans and one for current operations, and the entire air staff consisted of about 120 personnel.[325] At the same time, a Combined Joint Operations Center (CJOC) was erected within HQ ISAF, with the goal of improving centralized planning and command and control of joint operations. The CJOC also had air staff embedded in them in the form of an Air Operations Center (AOC) that had a direct link with the staff of the Director ACE, potentially simplifying current air operations.[326] The Director ACE provided ISAF's contribution to DCFACC's Joint Air Operations Plan (JAOP), a monthly Air Operations Directive and a weekly Air Prioritization Matrix, which were collectively called "Air Direction and Guidance", and were forwarded to the CAOC for execution. He was the commanding officer of the commanders of Kandahar Airfield (COMKAF) and Kabul International Airport (COMKAIA).[327] The Director ACE had his own staff of about fifty personnel that communicated with the liaison staff at the CAOC and coordinated with the

320 Sullivan, "Game-changing Strategies", 183-184.

321 Sullivan, "Medusa", 50.

322 Eikelboom, "Moving", 128-129, Eikelboom, Interview, Meulman, "Experiences", 298, and Meulman, "Mihiel (1918)", 81.

323 Eikelboom, "Moving", 128-129.

324 Sullivan, "Game-changing Strategies", 163.

325 Meulman, "Experiences", 298, Meulman, "Mihiel (1918)", 91-92, and Sullivan, "Game-changing Strategies", 163-164 and 170.

326 Holland, "US-NATO Dichotomy", 63-64, Meulman, "Mihiel (1918)", 83, and Sullivan, "Game-changing Strategies", 165-166.

327 Meulman, "Mihiel (1918)", 91-92.

now five Regional Air Operations Centers (RAOCs) at the five headquarters of the regional commands, and with the organic air specialists located at the regional command staffs.[328]

In parallel, the US made assets available to streamline air coordination to some extent. Because ISAF air staff increasingly coordinated requests for air support, and the number of American troops operating under operation *Enduring Freedom* decreased, the ASOC in Bagram became obsolete. Combined with the shortage of manpower at the ACE, Major General William L. Holland, DCFACC from June 2006 to June 2007, suggested to move the ASOC from Bagram to Kabul to augment the newly erected CJOC.[329] Once moved, the ASOC proved to be a substantial asset. Coordination with the CAOC improved. It also alleviated the problems with disclosure of information referred to earlier.[330] Although organization and tasking are indicators of a maturing air command and control organization, it did not eliminate the discussion mentioned above. There was still a tug of airpower assets, and discussions remained about tasks, responsibilities and authorities. Adding to the confusion was that command relationships had evolved over time and did not represent a standard of any sort. It helped to shape an environment where different perceptions on the preferred way of commanding the air weapon could collide. The ACE performed both staff and command functions, which was confusing to US personnel at the CAOC.[331]

The same situation existed with regard to the RAOCs.[332] The RAOCs had the task of collecting, prioritizing and forwarding requests for air support in the form of a Joint Tactical Air Request (JTAR). The JTAR was forwarded to HQ ISAF, which in turn executed another prioritization according to type, complexity and anticipated threat. Then, it would redirect it to the CAOC.[333] As stated, tasks and authorities were not clear to everybody. As a result personal initiative was required to make the system work. Some RAOCs could be in direct contact with the CAOC in Qatar, or used other C2 schemes, for instance in relation to special forces assets.[334] On top of that, by 2007 the RAOCs were undermanned, under equipped, and had a poorly defined and executed role in air planning in support of commanders of RCs. This was especially the case in RC-South, where most of the fighting took place.[335] Even the internal communication within the RAOC sometimes left something to be desired, such as communication between the fixed wing cell and the rotary wing cell. Helicopters and fixed wing assets were not tasked in the same manner. Fixed wing aircraft received their orders in the form of an ATO, coming from the CAOC in Qatar. Helicopters were assets over which the regional commands had operational control, and the guidelines

328 Eikelboom, Interview, and Sullivan, "Game-changing Strategies", 165-166. See Appendix 2.4 for diagram.

329 Holland, "US-NATO Dichotomy", 63-64.

330 Meulman, "Mihiel (1918)", 83 and 85-86, and Sullivan, "Game-changing Strategies", 165-166.

331 Raaberg, "Shift", 143-144.

332 Holland, "US-NATO Dichotomy", 63.

333 Eikelboom, Interview, and Meulman, "Mihiel (1918)", 90-91.

334 Rick Newton, "ISAF Needs a SOLE!", *Journal of the JAPCC*, no. 8 (2008): 38-41 http://www.japcc.org/publications/journal/Journal/JAPCC_Journal_Edition_8.pdf (accessed July 11, 2014), 40-41, and Van Loon, Interview.

335 Holland, "US-NATO Dichotomy", 63.

for helicopters were formulated in a very general way. Planning had to be done at the lower levels, and were tasked via a document called "heltask". There were therefore two command and control lines, and capabilities of helicopters were not always clear in the RAOC. Personal relationships on occasion were indispensable for air planning involving helicopters.[336]

5.6.5. *Air-Land Integration*

The previous section analyzed command relationships among air staffs of OEF and ISAF. Implicit in this respect is the notion that most of air operations were executed in support of ground forces. Close integration of air capabilities and land capabilities to achieve joint war fighting effects in accordance with the joint commander's intent is known as air-land integration, or ALI. The chapter on command and control in the *Routledge Handbook of Air Power* identified three tenets with regard to ALI: joint capability development, joint doctrine and training, and a functioning network of inter-component liaisons.[337] However, the previous chapter described that ALI could suffer from cultural differences between air-and ground commanders, from different perspectives, differing battle rhythms, and therefore differing views on prioritization of air assets. Also, these differences tended to manifest themselves in the most dangerous of mission types: CAS. These differences could form the basis of a latent mutual distrust between air commanders and ground commanders, manifesting themselves in complaints about responsiveness directed towards air commanders, and complaints about lack of a theater perspective directed towards the ground commanders.[338]

Some of the related "factors for discord", described in the previous chapter, are deeply rooted and difficult to expose. This is particularly the case with cultural norms. As described in the introduction, discussions could show legitimate differences of opinion about practical issues. At a deeper level, however, arguments could show conflicting views of how the world should ideally work. As they active beneath the surface, friction about the practical issues may surface. As has been analyzed in the previous chapter in relation to operation *Anaconda*, discord could take the form of ground commanders complaining about responsiveness of the air weapon and air commanders complaining about timely incorporation of the air weapon in the planning of the ground scheme of maneuver. There are indications of continuing discussion, extending into the period described in this chapter, although variations existed. Several airmen, regardless of their nationality or affiliation with operation *Enduring Freedom* or ISAF, found that air support to pre-planned

336 Eichelsheim, Interview, and Grijspaardt, Interview.

337 Harvey Smyth, "Air-Land Integration", In: *Routledge Handbook of Air Power*, ed. John Andreas Olsen (London and New York, NY: Routledge, 2018), 155-166, 155-157.

338 Phillip S. Meilinger, "Air-Ground Cooperation Perspectives", *Military Review* 83, no. 6 (2003): 50-58, 50-54.

ground operations was regarded as an afterthought by ground commanders. Ground planning in general was done first, and only then was the question asked how the air weapon could support that particular operation.[339] Variations of complaints could be that ground commanders requested specific assets, while the air commanders preferred to support in terms of effects rather than with associated assets.[340] Ground commanders in return could argue that that the air weapon was not flexible enough in pre-planned operations. There are indications that they regarded air support to be unreliable, as they assessed that airpower priorities could shift - too - easily to their disadvantage. The result was debate on ownership of air assets that was comparable with that between air commanders of OEF and ISAF. [341] And again, conflicting personalities may have been in play.[342]

In short, the missions that were executed in Afghanistan on a daily basis were most dangerous and, possibly also for this very reason, most debated. Developments in Afghanistan show two sets of solutions that could mitigate the risks. The first solution was investing in liaison elements in headquarters of both air-and ground forces. Operation *Anaconda* proved to be informative for the US military. After the end of the operation, the US attempted to improve coordination by establishing a CAS-cell at the CAOC.[343] Following the experiences in Afghanistan and Iraq, the United States military from about 2006 onwards started to expand the number of Air Support Operations Centers and realigning them with Army units, which was scheduled for completion in 2015. The ultimate goal was to develop a Joint Air Ground Integration Cell (JAGIC) integrating all fire support that uses airspace, which included air-and missile defense, ground-based fires, ISR and airborne electronic warfare.[344] A subset of JAGIC, called a Joint Air Support Element (JASE) would be sent forward to lower echelon command posts to integrate ground-and air operations if need be. An ACCE would be attached to a Joint Force Land Component Commander.[345]

The second set of solutions comprised implementation of technologies that fostered precision. These technologies helped to minimize the risk of misidentifying the intended target, and therefore some of the risk of unwanted effects of kinetic airpower.[346] One of

339 Special operations could be a positive exception. Due to their nature, special operations require extensive and detailed planning with a high level of integration of all domains: Eichelsheim, Interview, Hinote, *Centralized*, 24, Iain McNicoll, "Campaigning: An Air Force Perspective", In: *British Generals in Blair's Wars*, ed. Jonathan Bailey, Richard Iron and Hew Strachan, Ashgate Series on Military Strategy and Operational Art, ed. Howard M. Hensel (Farnham and Burlington, VT: Ashgate, 2013), 265-270, 268 Peck, "Theater Perspective", 25-26, Van Loon, Interview, and Willemse, "Silence", 9.

340 Van den Born, Interview, Eichelsheim, Interview, Forsyth, "Second Thought", 110, Kometer, *Command in Air War*, 6 and 58-59, Meulman, Interview, Meulman, "Mihiel (1918)", 81-83, and Willemse, "Silence", 9-11.

341 Forsyth, "Second Thought", 110, Kometer, *Command in Air War*, 6-7 and 58-59, Van Loon, Interview, and Willemse, "Silence", 9-11.

342 Holland, "US-NATO Dichotomy", 64, and Raaberg, "Shift", 146.

343 Headquarters United States Air Force, "Anaconda", 121.

344 Curtis V. Neal, Robert B. Green and Troy Caraway, "Bridging the Gap From Coordination to Integration", *Joint Forces Quarterly*, no. 67 (2012): 97-100, 97-99.

345 Neal, Green, and Caraway, "Bridging", 99.

346 Grant, *Airpower in Afghanistan*, 29-31.

the technological aids that some nations had was the Remotely Operated Video Enhanced Receiver (ROVER). ROVER was a datalink with accompanying software and hardware that enabled the JTAC to receive Full Motion Video of the targeting pod the aircraft was equipped with. Therefore, the JTAC and the pilot looked at the same picture, the pilot through his on board display, and the JTAC through his terminal on the ground. Using ROVER therefore minimized the risk of the pilot and the JTAC talking passed each other when engaging a target. This increased confidence that the right decisions were made. Availability of UAVs that were fitted with a laser a designator and a ROVER module enhanced the technological capabilities to minimize unwanted effects further. It allowed UAV operators to mark a target and provide detailed and real-time information about a target, minimizing risk of misidentification. [347] Also, Small Diameter Bombs (SDBs), bombs with less payload with less destructive range, could be used, decreasing the danger zone of air-delivered weapons.[348]

These solutions encountered their own challenges, however. Implementation was haphazard, and the quality of the liaison elements left something to be desired. Anecdotal evidence suggests that the US military historically had insufficiently invested in assigning liaisons to service-specific headquarters, which extended to the realms of career paths and educational curricula. Formulated differently, it took long before members of a service had to do business with members of another service and when they did they were unfamiliar with each others outlooks and procedures. In addition, the air force was hesitant to deploy large liaison teams to joint headquarters, contrary to the army. This resulted in a situation where joint headquarters tended to be dominated by army personnel. This had as a consequence that traditionally air force liaison elements were undermanned and were placed in positions with insufficient influence on planning of ground operations. With regard to the actual situation in Afghanistan, but also in Iraq, indications are this led to a situation where few airmen with limited influence had to struggle to make their voices heard in joint headquarters. This did not mean that there was no interaction at all. Several sources mention that there were operations that showed a professional air-land integration in the planning phase. These instances however were few and far between.[349] In addition, the challenges may have been obscured to some extent because the scarcity of air assets were not extended to "in extremis" air support. When ground forces were in grave danger, prioritization was not at issue. This could have the consequence that ground commanders made the assumption that abundant airpower was available.[350] Finally, deployment of

347 M. Hofstra, Lieutenant Colonel, Royal Netherlands Army, Interview with the Author, December 11, 2013, Kometer, *Command in Air War*, 231-232, Peck, "Theater Perspective", 26, Ripley, "Airpower 2", 38-40, and Ripley, *Air War Afghanistan*, 103 and 124.

348 Charles J. Dunlap, "Making Revolutionary Change: Airpower in COIN Today", *Parameters* 38, no. 2 (2008): 52-66 http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA490505&Location=U2&doc=GetTRDoc.pdf (accessed November 13, 2011), 52-59, and Hickey, *Precision-Guided*, 222.

349 Hinote, *Centralized*, 32-35, Forsyth, "Second Thought", 114 and 116, Holland, "US-NATO Dichotomy", 64-65, and Peck, "Theater Perspective", 25-26. The anecdotal nature of most of these sources proscribe the need for additional research to validate the assessment described here.

350 Forsyth, "Second Thought", 121, Holland, "US-NATO Dichotomy", 63-64, and Willemse, "Silence", 9.

additional liaison elements in Afghanistan initially was a US-only development that was still in progress when the ISAF command and control structure was devised. So, indications are that that day-to-day ALI by 2006 was not robust enough to clarify misunderstandings that may have existed.

Implementation of the new technologies also left something to be desired. Within ISAF there was a lack of ROVER terminals available to the JTACS and aircrews.[351] The use of SDBs was not commonplace either in 2006, and started being implemented only in 2007.[352] To these challenges, the challenge of training of JTACs was added. On the one hand, implementation of the new technologies increased the workload of the JTACs, as it involved handling of new and additional equipment, responsibilities, and procedures.[353] Also, not all JTACs had properly trained with the unit they were deployed with.[354] On the other hand, the level of proficiency of the JTACs showed differences. Due to the nature of the coalition, aircrews had to work with JTACs from many nations. In theory, all JTACs from countries that were part of NATO, including the US, were certified according to an agreement all NATO nations ratified, called STANAG 3797. However, late 2005, early 2006, differences in standards were noted, especially related to the level of training, interoperability of communications systems, and language skills.[355]

In sum, the actual integration of air and land operations in Afghanistan by 2006 did not fully adhere to the tenets that were identified in the *Routledge Handbook of Air Power.* The network of inter-component liaisons at best was in progress, and mostly applicable to US assets. Development of joint capabilities was visible in the form of technologies, but they were insufficiently available. Joint doctrine and training may have been applicable to US JTACs, but their were qualitative differences between JTACs within the coalition. Although some of the factors of discord with relation to ALI that Meilinger identified are difficult to pinpoint, there are indications that some of them were latently present in Afghanistan early 2006. Leadership was aware of some these challenges, but countering them was problematic.

351 Eikelboom, Interview and Meulman, "Mihiel (1918)", 84. About fourteen countries used ROVER in 2008 (David Clark, "ISR Innovations and UAV Task Force Directorate," (Presentation NDIA Conference, November 4, 2008) http://www.dtic.mil/ndia/2008intell/Clark.pdf (accessed November 28, 2013)). This however is not a reliable indication of how many terminals were actually deployed in Afghanistan.

352 Van Loon, Interview.

353 Kometer, *Command in Air War*, 220 and 225.

354 Mike Benitez, "How Afghanistan Distorted Close Air Support and Why It Matters", *War on the Rocks Website* (June 26, 2016) http://warontherocks.com/2016/06/how-afghanistan-distorted-close-air-support-and-why-it-matters/ (accessed July 8, 2016), J. Ian Chambers, "Command and Control of Airpower in Irregular Warfare", (Monograph, United States Army Command and General Staff College, School of Advanced Military Studies, Fort Leavenworth, KS, 2010) www.dtic.mil/dtic/tr/fulltext/u2/a522723.pdf (accessed August 29, 2011), 21, and Jeffrey Hukill, Larry Carter, Scott Johnson, Jennifer Lizzol, and others, "Air Force Command and Control: The Need for Increased Adaptability", (Air University Press, Maxwell Air Force Base, AL, July, 2012), 67-68.

355 Peck, "Theater Perspective", 26.

5.6.6. Operation Medusa

In this context an incident occurred that would serve as an impulse to improve air-land integration in general and Close Air Support in particular. It occurred during operation *Medusa*, which took place between September 2 and 17, 2006, in the Panjway area, located west of the city of Kandahar.[356] Late August, Taliban forces were massing in the Panjway area to conduct attacks on Kandahar city. Units of Regional Command South had already conducted some operations in the area, but NATO forces were not very successful in clearing the area of Taliban fighters. Operation *Medusa* was planned to clear the area of Taliban and regain control of it. In order to do that, the original plan envisioned a feint attack in order to expose the Taliban fighters, followed by shaping operations by the air weapon that should last for two or three days. After this phase, mainly Canadian forces would move in and regain control of the area. However, the battle plan changed a few hours before the scheduled start. And the new plan did not incorporate the airpower phase involving shaping operations. The reason for this change reportedly were the -belated- assessment that bombardments would have limited effect, last minute requirement to compress the operational time line following consultations with the Afghans, and reported unavailability of US air assets. However, this left the Canadian troops to take over the task the air weapon was supposed to execute. In effect, the Canadian ground forces had to find, fix, target, and engage the enemy, albeit supported with CAS.[357]

Almost immediately after the start of the execution phase, a situation emerged similar to operation *Anaconda* four years earlier. Ground forces quickly became embroiled in many Troops In Contact situations, after which air support was called in. In the air, the command and control was confusing, with a lot of air assets stacked above a tiny battlespace. Airborne Forward Air Controllers (FAC-(A)s) were required in the area to deconflict these many assets. At the CAOC in Qatar, airmen worked frantically to handle all the requests, and the *USS Enterprise* carrier strike group was asked to reposition itself in order to provide augmentation of air assets.[358] After two weeks of fighting, the Canadian ground forces, supported by massive firepower, were able to retake the ground from the Taliban and Al Qaida.[359]

356 Jones, *Graveyard*, 214-218.

357 Especially the reasons for changing the timeline are not clearly described in secondary literature. Canadian Major General David Fraser was commander of RC-South at the time, and in that position commanding general of the operation. General Fraser suggested these reasons in this book on operation *Medusa*, without being really explicit about it. Throughout the book, Fraser is not specific about the role of the air weapon, nor about his role in changing the plan. In chapter 19, Fraser argued that even in hindsight cancelling the shaping phase by airpower was a good decision, as coalition forces found out that the Taliban had covered themselves thoroughly, limiting airpower's effectiveness (David Fraser and Brian Hanington, *Operation Medusa: The Furious Battle That Saved Afghanistan From the Taliban* (Toronto: McClelland & Stewart (eBook), 2018), chapters 12 and 19). Other sources for this section are: Hinote, *Centralized*, 29, Horn, Bernd, *No Lack of Courage: Operation Medusa, Afghanistan* (Toronto: Dundurn Press, 2010), 79-83, Jones, *Graveyard*, 214-218, Ripley, "Tacklin' the Taliban", 31, Singh, "Airpower in Mountains", 54, and Sullivan, "Medusa", 44-48.

358 Hinote, *Centralized*, 29-30, and Wetzel, *A-10 Units 2002-2007*, 73-76.

359 Horn, Bernd, *No Lack of Courage*, 101, Jones, *Graveyard*, 214-218, and Edward Stewart, "Op MEDUSA - A Summary", (October 12, 2012) http://theroyalcanadianregiment.ca/history/1992-present/1rcr_op_medusa_summary.html (accessed October

From day two onwards, artillery and A-10s bombed identified enemy positions during the night and early morning, under the pretext of a Troops In Contact declaration, enabling the Close Air Support procedure. During one of these pre-dawn bombardments on September 4, 2006, an American A-10 pilot mistakingly identified a garbage fire lit by Canadian ground forces for the glowing remnants of a 500 pound bomb dropped a minute before, and engaged a Canadian platoon with his on board 30mm gun, killing one soldier and wounding another thirty.[360]

At first glance, the incident had a clear cause: the pilot made an error of judgement. It however also made plainly visible the structural deficiencies that had been lingering for years. Immediately after operation *Medusa*, several entities deployed teams to Afghanistan to investigate the incident. US CENTAF deployed a Combined Investigation Board (CIB). NATO forwarded the Bi-Strategic Analysis and Lessons Learned Team (BALL-Team). As the positions of DCOM Air and Commander Regional Command South were both filled by Canadians, and because the platoon that was engaged was Canadian, Canada forwarded a team of its own.[361] The written findings of these investigative teams remain classified, but secondary sources provide some clues about what the teams identified as the root causes. The main problem was the existence of differing standards of training and equipment of the various nations. The US had different standards for training and equipment for its JTACs than NATO had for its Forward Air Controllers. In addition, there were differences in the extent nations actually adhered to these standards. Furthermore, knowledge about and experience in proper conduct of air-land integration was lacking at higher echelons and national headquarters. Therefore, recommendations included further standardization and integration of procedures and increased training efforts, as well as increased attention for CAS and ALI within the NATO lessons learned community.[362]

In retrospect, these challenges had roots in times preceding the operations, and made deconfliction and integration of the air assets problematic from the start. Airspace control was not properly planned. As a result, just as was the case with operation *Anaconda* four years earlier, many of the airspace control tasks rested on the shoulders of the Joint Terminal Attack Controllers, who were neither fully equipped or trained to fulfill these

12, 2012).

360 Hinote, *Centralized*, 29, Jones, *Graveyard*, 214-218, Ripley, "Tacklin' the Taliban", 31, Sullivan, "Medusa", 44-48, and Wetzel, *A-10 Units 2002-2007*, 76-78.

361 Sullivan, "Medusa", 41-42.

362 Hofstra, Interview, M. Hofstra, Lieutenant Colonel, Royal Netherlands Army, Email to the Author, December 17, 2013, NATO, *STANAG 3797 (Edition 4)*, April 27, 2009, http://airlandintegration.files.wordpress.com/2013/04/stanag-3797-ed4-27apr09.pdf (accessed April 9, 2014), Joint Air Power Competence Centre, "JAPCC Annual Report 2007", (2007) http://www.japcc.org/publications/report/Report/JAPCC_Annual_Report_2007.pdf (accessed January 15, 2013), 9, Dan Lewandowski, "Training and Standardisation As Means of Avoiding Fratricide in Close Air Support", *Journal of the JAPCC*, no. 6 (2007): 18-21 http://www.japcc.org/publications/journal/Journal/JAPCC_Journal_07_Edition_6.pdf (accessed July 11, 2014), passim, David Pedersen, "Exposing Gaps in NATO's Air and Space Training Environment", *Journal of the JAPCC*, no. 9 (2009): 46-49 http://www.japcc.org/publications/journal/Journal/JAPCC_Journal_Edition_9.pdf (accessed July 11, 2014), 46-47, Sullivan, "Medusa", 48-49.

tasks.[363] Their tasks were further complicated by the fact that the Panjway area was also situated within artillery range. This meant that fixed wing assets, rotary wing assets, and artillery were all using the same airspace. Deconfliction however was not properly covered in procedures and doctrine, so this had to be done using personal contacts, increasing the pressure on planners and JTACs.[364]

The findings of the investigative teams sparked increased activity at various levels. The DCFACC, Major General Holland, speeded up the process of deploying the ACCE to HQ ISAF in Kabul.[365] Also, the relocation of the Air Support Operations Center from Bagram to Kabul was partly inspired by the events of operation *Medusa*.[366] The US Commander of CC Air, now named Air Component Ramstein (AC Ramstein), made additional US ROVER terminals available to NATO JTACs.[367] In the medium term, there was also increased activity to improve air-land integration. NATO nations were made aware of the problem and were urged to deploy only certified and trained JTACs, which led to a reinvigoration of air-land training programs and procurement of equipment.[368] Within HQ ISAF, DCOM Air staff worked closely with CAOC staff to identify shortcomings and remedy them.[369] This involved creating dedicated positions within HQ ISAF to deal with JTAC issues, organizing JTAC conferences, increasing attention to in-theater training, rewriting of standardization documents, creating a dedicated webpage on ISAF's internal network so JTACs were able to communicate with each other and exchange ideas, increasing communication with the Regional Air Operations Centers, presenting introductory briefings for incoming JTACs, publishing of an ISAF *JTAC Handbook*, and permanent evaluation of the CAS missions via the collected mission reports pilots filed after every mission.[370] By early 2009 especially the quality of the JTACs had improved significantly.[371]

It took some time however to improve the situation. According to Major General Holland, ISAF HQ initially did not comprehend the full magnitude of the incident. This impression is reinforced by Major General Meulman, who indicated that the fratricide incident of September 4, 2006, was not part of his inbrief upon his arrival in theater.[372]

363 Grijspaardt, Interview. The United States had created a functionality that separated the tasks of terminal attack control and local air traffic control, without use of airborne command posts. It was called an "Air Warden", who had delegated authority from the JTAC to direct close air support assets to locations where CAS was needed (Nathan Maysonet, "Laughlin Airman Support Warfighters, Submitted for Seven Air Medals", *Website Laughlin Air Force Base* (April 24, 2013) http://www.laughlin.af.mil/News/ArticleDisplay/tabid/767/Article/354622/laughlin-airman-supports-warfighters-submitted-for-seven-air-medals.aspx (accessed January 19, 2017)). There is however very little information available about time of installation, tasks and responsibilities, and organization of the functionality of Air Warden.

364 Grijspaardt, Interview.

365 Sullivan, "Medusa", 50-51.

366 Holland, "US-NATO Dichotomy", 63-64.

367 Meulman, "Mihiel (1918)", 84, and Sullivan, "Medusa", 50-51 and 53-54.

368 McNicoll, "Campaigning", 269, and Sullivan, "Medusa", 50-51.

369 Holland, "US-NATO Dichotomy", 66.

370 Eikelboom, Interview, Grijspaardt, Interview, Hofstra, Interview, and Meulman, "Mihiel (1918)", 84.

371 Eikelboom, Interview.

372 Holland, "US-NATO Dichotomy", 58, and Meulman, "Mihiel (1918)", 71.

Also, there are indications that the US investigative team found that their NATO counterparts should have done the investigations more thoroughly and should have dealt with the lessons learned more in depth than they did.[373] Furthermore, adjusting a failing system which involved many different nations and that was a result of years of neglect took some time.[374] In addition, existing problems within the realm of command and control were not diminished. The troubled relationship between ISAF's DCOM Air and DCFACC that developed over the years influenced the speed of which the initiatives were implemented. The lack of airmindedness within HQ ISAF in its entirety also took some time to improve. Anecdotally, Major General Meulman early 2007 refused to sign off on one of ISAFs orders because it did not include airpower.[375] So, by the beginning of 2008, many issues were addressed, some situations had improved, but not all problems had been solved.[376]

5.6.7. Convolution and Confusion

In conclusion of this paragraph, the period in which NATO assumed command of ISAF and the subsequent expansion to cover the whole country was very confusing from the perspective of building command relationships. The existence of two operations, each with its own command and control architecture, presented major challenges to air commanders. Unwillingness of both NATO and the US to merge these two operations precluded establishment of a clear organizational structure. This was especially problematic for the air weapon which was able to support both missions at the same time. Political considerations however kept them separated, which forced commanders of both command lines to devise an architecture that was directed towards cooperation rather than integration of the two. Prioritization of air assets became the underlying topic of discussions about authority to do so. As command relationships were ambiguous, importance of personal cooperation between senior commanders rose. Personal relationships were not always cordial, and hampered airpower effectiveness in the sense that it complicated operational planning. Personal relationships however improved. The question who was asking for airpower and who was tasking it was not easy to answer, and became a latent source of friction throughout the period described in this chapter.

Relationships between air commanders and ground commanders were not always smooth either. During the initial deployment of ISAF, the problem was deemed not to be severe. During the expansion phase however, the first signs of tension appeared. This revealed itself through mutual complaints that were to some extent similar to the traditional contrasting views of air-and ground commanders. This at least in part led to

373 Sullivan, "Medusa", 51-52.

374 Sullivan, "Medusa", 54.

375 Meulman, Interview, and Meulman, "Mihiel (1918)", 78.

376 Meulman, "Mihiel (1918)", 84.

incomplete adherence to basic tenets of Air-land integration. These issues, combined with lack or strongly differing practical proficiency of JTACs and incomplete implementation of solutions to identified problems, caused systemic challenges. Some if these were noted, but not all of them were addressed.

The fratricide incident of September 4, 2006, eventually made all commanders aware of the problems in relation to air-land integration. Some of these problems were noticed before, but others surprised even the investigative teams. They had been lingering for years, and now the situation arose that the challenges had to be addressed. Especially frustrating was the notion that many of NATO's problems in 2006 resembled those of the US during operation *Anaconda*.[377] The US made the first steps to improve air-land integration, by making additional assets available both in terms of personnel and equipment. With regard to Close Air Support, many NATO nations soon followed by addressing the quality and quantity of the JTACs they deployed to Afghanistan. It also led to increased cooperation between ISAF's air staff and the DCFACC, who addressed the procedural parts of the problem. Consequently, the situation improved. However, it was hampered somewhat by the friction of the previous years, especially with regard to command and control of the air weapon.

The result was that the organizational structure became a convoluted "spaghetti diagram", which to a large extent was incomprehensible and hard to work with. New command and control elements were introduced, which initially were improperly manned and equipped. Tasks and authorities were to a large extent non-doctrinal, and the system was dependent on a relatively large amount of liaison officers to make it work. Although the system cracked, it was not completely dysfunctional. Compromises were reached, and improvements were made, as attested by the relocation of the US ASOC to be collocated at the ISAF CJOC, and the "dual hatting" of the CFACC. To some this scheme, despite its problematic start and continuing complexity, worked remarkably well, due to personal relationships and an overall agreement on the purpose of the air weapon.[378] However, command relationships were characterized as "warcon", "handcon", or "hand shake con", referring to the ad hoc arrangements agreed upon in wartime using local and temporary agreements between commanders, instead of the OPCON which, in theory, was preferred by all.[379]

377 Sullivan, "Medusa", 52-53.

378 Eikelboom, Interview.

379 Van Loon, Interview, and Peck, "Theater Perspective", 37.This could also be interpreted in a positive way, namely as an option to develop workable solutions in a type of conflict that is by itself convoluted. The *FM 3-24* mentions this option specifically: United States Headquarters, Department of the Army, *FM 3-24*, p. 2-3.

5.7. Education, Training, and Lessons Learned: Learning from Incidents

5.7.1. *US Lessons Identified*

As has been described throughout this chapter, many changes were made that could be regarded as direct implementation of lessons learned. Examples are the writing of new doctrines on counterinsurgency and irregular warfare, national decisions to increase the contribution of air assets, and the numerous adaptations airpower professionals made in order to make their weapon systems more effective. The period described in this chapter also shows increased activity with regard to identifying lessons learned, and embedding them within the organizations. There are however contradictory indications on the thoroughness of the lessons learned processes.

Mostly as a result of a mounting insurgency in Iraq, the US Military was the first to show efforts that reflected a refocus on irregular warfare. In 2006, the *Quadrennial Defense Review* mentioned that one of the operational lessons of recent operations was the need to focus more on building partnership capacity.[380] In addition, the US Military installed several knowledge centers that had the primary task of enhancing capability of operating in a counterinsurgency environment. These included United States Marine Corps Center for Irregular Warfare (USMC CIW), and the Center on Terrorism and Irregular Warfare (CTIW) at the Naval Postgraduate School (NPS).[381] The US Air Force also enhanced its general lessons learned capability. Following a restructuring of the top level organization, a directorate of lessons learned, called A9, was established within the Department of the Air Force in 2006.[382] In addition, the US Air Force organized a counterinsurgency symposium in 2007, and irregular warfare became more prominent on the agenda of the US Air Force conferences of its top leadership, called CORONA.[383] Finally, as can be derived from chapter two, scholarly attention with regard to airpower in irregular warfare increased. Besides doctrines of the US Air Force and other service branches, the number of journal articles, reports and theses relating to the subject increased sharply from 2006 onwards. These all are signs of increased institutional attention for irregular warfare.

There are however also indications that institutional culture, and the top leadership that embodied that culture, impeded true institutionalization of the lessons learned.[384] The

380 Timothy W. Childress, "Improving US Air Force Performance in Irregular Conflict: Reestablishing a USAF Special Air Warfare Center", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2007) Personal Collection, 2, and United States Department of Defense, "Quadrennial Defense Review Report", (United States Department of Defense, February 6, 2006) http://archive.defense.gov/pubs/pdfs/QDR20060203.pdf (accessed April 18, 2016), 16-17.

381 Athanasia G. Austin, "Development of US Irregular Warfare Capabilities", *The Journal of the JAPCC* 6 (2007): Additional article http://www.japcc.org/wp-content/uploads/JAPCC_Journal_Edition_6.pdf (accessed June 15, 2017), 2-3.

382 Childress, "Improving", 48.

383 Childress, "Improving", 57, Magruder, "Success As a Hurdle", and Robyn Read, "Irregular Warfare and the US Air Force: The Way Ahead", *Air & Space Power Journal* 21, no. 4 (2007): 42-52, 42.

384 Some publications mention the reluctance of the US military or the US Air Force to adopt new concepts. Despite some of the titles, these publications deal more with incorporation of the achievements of the Revolution in Military Affairs than

Quadrennial Defense Review largely ignored the US Air Force's requirements to actually increase the efforts to execute relevant projects in relation to building partnership capacity, and the US Air Force only started to step up these initiatives after five trainers died in a crash of an Iraqi airplane.[385] David Ucko argued that, despite the efforts to improve, the refocus to irregular warfare needed to be forced upon the Pentagon by the White House, as the top military leadership opposed application of counterinsurgency methods. And even after that, force structures and budgetary allocations within the Department of Defense showed that irregular warfare remained an afterthought within the mindset of the military.[386] During this timeframe several US top military and civilian leaders were removed from their positions by Secretary of Defense Robert Gates. Among those were the Air Force Chief of Staff, General T. Michael Moseley, and Air Force Secretary, Michael W. Wynne, who were forced to resign on June 6, 2008. They were replaced by General Norton A. Schwartz and Michael B. Donley, respectively. Although the immediate reason for their dismissal was related to two errors made in handling nuclear weapons, there were rumors that the underlying reason was long time frustration of the Secretary of Defense with the Air Force's lack of institutional focus on Afghanistan and Iraq. Of note, General Schwartz became the first Chief of Staff of the Air Force who was not a member of the communities of either bomber pilots or fighter pilots.[387]

Timothy Childress in his theses argued that the USAF-led CIWC and A9 had severe flaws. The A9 did not maintain a database on irregular warfare related lessons learned. The CIWC, while focusing on some strategic issues, failed to develop coherent strategy, doctrine, and tactics, did not focus enough on training indigenous forces, did not capture lessons learned

with irregular warfare and its subdenominations: Charles Spencer Abbot, "Flying to Learn: Organizational Learning and the Evolution of U.S. Airpower Doctrine and Practice, 1991-2003", (Dissertation, Fletcher School of Law and Diplomacy, September, 2010) http://search.proquest.com/docview/883387011/EE018ABA96554CCDPQ/1?accountid=35226 (accessed January 30, 2015), David Fitzgerald, *Learning to Forget: US Army Counterinsurgency Doctrine and Practice From Vietnam to Iraq* (Stanford, CA: Stanford University Press, 2013), and F.G. Hoffman, "Complex Irregular Warfare: The Next Revolution in Military Affairs", *Orbis* 50, no. 3 (2006): 395-411.

385 Childress, "Improving", 13 and 55.

386 David Ucko, "Innovation or Inertia: The US Military and the Learning of Counterinsurgency", *Orbis* 52, no. 2 (2008): 290-310, 299 and 302.

387 Julian E. Barnes and Peter Spiegel, "Air Force's Top Leaders Are Ousted", *Website Los Angeles Times* (June 6, 2008) http://articles.latimes.com/2008/jun/06/nation/na-airforce6 (accessed January 27, 2016), Robert M. Gates, *Duty: Memoirs of a Secretary at War* (New York. NY: Albert A. Knopf, 2014), 247-248, John D. Jogerst, "Preparing for Irregular Warfare", *Air & Space Power Journal* 23, no. 4 (2009): 68-79, 69, and Norton A. Schwartz, Suzie Schwartz and Ronald Levinson, *Journey: Memoirs of An Air Force Chief of Staff* (New York, NY: Skyhorse Publishing, 2018), xvii-xviii, 247, 255-256, and 295-298. Schwartz was a member of the special forces community, flying MC-130E "Combat Talon" aircraft. In his memoirs, Gates denies the rumor with regard to his dissatisfaction with the air force, despite the frustration of the US Air Force being, in his opinion, too focused on future projects, such as the F-22, instead of current ones, such as securing sufficient ISR support for Iraq and Afghanistan. He plainly stated that all services, including the Air Force, by 2008 still regarded COIN, such as executed in Afghanistan and Iraq, to be short term aberrations, which they used to legitimize focus on projects suited for conventional warfare. The underlying assumption being in addition that armed forces trained for large scale warfare were also suited to defeat lesser threats: Gates, *Duty*, 118-119, 130-135, 142-144, 148, and 243. This notion is reinforced by Kaplan: Fred Kaplan, *The Insurgents: David Petraeus and the Plot to Change the American Way of War* (New York, NY: Simon and Schuster, 2013), 274-275. It was also by no means limited to the Air Force. Other services had the same inclination, which met with similar criticism of Gates (Bob Woodward, *Obama's Wars* (New York, NY: Simon & Schuster, 2010), 20-22). So, while firings of General Officers were backed by specific incidents, they could fit the profile of Gates trying to get the US military to re-focus on current conflicts.

with regard to irregular warfare, did not actively assist partners with exploitation and integration of military technology, and did not provide a focal point for aviation advisory assistance.[388] So, while there were useful initiatives, and leniency is in order because some of these initiatives needed time to build up, some argued that the US military, with the US Air Force in its wake, embraced the concepts of irregular warfare, and especially counterinsurgency, heels dragging, and that they had a pre-occupation with conventional warfare.[389]

5.7.2. NATO's Lessons Identified

NATO as an organization showed a somewhat different process, which revealed itself at all echelons. First, NATO contained organizational elements that were entrusted with collecting, processing, and institutionalizing lessons learned. These were the Joint Warfare Centre (JWC) in Stavanger Norway, established in 2003, the Joint Analysis and Lessons Learned Centre (JALLC) in Lisbon, Portugal, established in 2002, and the Joint Air Power Competence Centre (JAPCC) in Kalkar, Germany, established in 2005.[390] During the period described in this time frame these institutions showed increased activity relating to incorporating the air weapon in the insurgent environment of Afghanistan. Some members of JAPCC published on the issue.[391] The JALLC in Lisbon conducted analysis projects in support of ISAF, including special projects relating to the air weapon. These however are not made available to the larger public.[392] The JWC conducted pre-deployment rehearsal training for ISAF Headquarters staff.[393] The Annual Reports of the JAPPC show that some attention was paid to the challenges of the air weapon in Afghanistan. Topics included building of the Afghan Army Air Corps, basing of expeditionary operations, a concept of operations for Joint ISR, air-land integration, and the effects of non-kinetic effects such as "show of force" and "show of presence".[394]

388 Childress, "Improving", vi and 48-49.

389 Jogerst, "Preparing", passim, Ucko, "Innovation or Inertia", 304 and 309-310, and Magruder, "Success As a Hurdle".

390 Anonymous, "History", *Website NATO Joint Warfare Centre* http://www.jwc.nato.int/organization/mission/history (accessed April 19, 2014), Anonymous, "About JAPCC", *Website NATO Joint Air Power Competence Centre* https://www.japcc.org/about-japcc/ (accessed April 19, 2016), and Anonymous, "History", *Website NATO Joint Analysis & Lessons Learned Centre* http://www.jallc.nato.int/organization/history.asp (accessed April 19, 2016).

391 See for instance: John Alexander, "Air Power in Countering Irregular Warfare", *Military Technology* 33, no. 6 (2009): 99-106.

392 Anonymous, "JALLC Analysis Reports", *Website NATO Joint Analysis & Lessons Learned Centre* http://www.jallc.nato.int/products/analysis_products.asp#fpaoir (accessed April 19, 2016).

393 Peter Walker, "Preparing the Warfighter: The Work of the Joint Warfare Centre", *The Journal of the JAPCC*, no. 2 (2005): 31-33 http://www.japcc.org/wp-content/uploads/japcc_journal_edition2.pdf (accessed June 15, 2017), 32.

394 Joint Air Power Competence Centre, "JAPCC Annual Report 2007", 6-7, Joint Air Power Competence Centre, "JAPCC Annual Report 2008", (2008) http://www.japcc.org/publications/report/Report/JAPCC_Annual_Report_2008.pdf (accessed October 15, 2013), 7-8, and Joint Air Power Competence Centre, "JAPCC Annual Report 2009", (2009) http://www.japcc.org/publications/report/Report/JAPCC_Annual_Report_2009.pdf (accessed October 15, 2013), passim.

Second, these activities could serve as inputs for training of the staff of ISAF HQ. To some extent, the national sovereignty that was so prominent in the issue of national caveats echoed within the realm of education, training, and lessons learned. NATO had scant tools to enforce recommendations resulting from the lessons learned process. So, until documents were ratified by all NATO members, reports and recommendations could be regarded as a friendly advise. Instead, ISAF had a whole series of local or national lessons learned processes. Personnel of HQ ISAF also reported back to their home countries within their national lines of communication. Although reports were written, these documents received little attention. This was partly due to the lack of interest in the home countries, and partly due to the short rotation times of the personnel. National headquarters had other priorities besides managing deployments. Finally, the short rotation times led to the situation where individuals were not able to make a permanent contribution other than more or less repeating what their predecessor had written.[395]

Third, training of headquarters of Regional Commands was organized in roughly the same manner, with the difference that the composition of these headquarters were a national responsibility. For instance, the nucleus of the RC staff of the Dutch Major General Van Loon consisted of his brigade staff in The Netherlands. He was aware that his command would be very dependent on airpower. His staff also realized that they would need additional expertise to be able to effectively plan the air portion of their mission. Therefore, before deployment, General Van Loon asked Air Component Ramstein for staff support, which was granted. They trained jointly before deployment. The US, UK, Canada and The Netherlands also forwarded liaisons. These were in addition to those liaisons that belonged to the national helicopter detachments that operated in the area and collectively formed a custom made rotary wing cell. They made up the RAOC.[396] As for the airmen, there were some individual deficiencies noted. But this was not a severe problem, as not all staff rotated simultaneously.[397]

Fourth were the training and lessons learned processed of the various air task forces. As with HQ ISAF and headquarters of Regional Commands, evaluation reports were mostly written within the national command structure, which were at best used for refining tactical performance.[398]

Fifth, there was the performance of individual aircrews. At this level, many tactical lessons learned processes took place, and in general these worked well, although in the case of Czech helicopter pilots, some were not comfortable with the level of training they received on new equipment prior to deployment.[399] According to Dutch Air Force Major

395 Van den Born, Interview.

396 Van Loon, Interview.

397 M.C. De Kruif, Lieutenant General, Royal Netherlands Army, Interview with the Author, May 29, 2013.

398 Pellemans, Interview.

399 Anonymous, "Start of Czech Afghan Helicopter Mission Likely to Be Delayed - Press", *BBC Monitoring European* (May 13, 2009) http://search.proquest.com/docview/459553502/B1D8CFE5A8AE4EB6PQ/150?accountid=35226 (accessed October 1, 2014), Anonymous, "Czech Pilots' Departures Endanger Afghan Mission - TV", *BBC Monitoring European* (May 11, 2009)

General Eikelboom, the highly standardized tactics, techniques and procedures of NATO aircrews proved it's worth in this regard. All pilots were educated and trained within the same set of rules and regulations. Therefore, on a tactical level cooperation between pilots of various nations was smooth.[400] Relentless debriefs of pilots after each mission, a process that was also standard across NATO aircrews and was reinforced by the attention paid to civilian casualties and collateral damage, stimulated constant attention of aircrews to tactical effectiveness, while paying attention to mitigation of risks at the tactical level. They also distributed their lessons learned to their home countries, and to their colleagues of other nations.[401]

In general, lessons learned that are publicly available mainly display an interest in the tactical level, rather than the operational level or strategic level. In an article in the *Journal of the JAPCC*, US Air Force Colonel David Pedersen described gaps in NATO's training environment. None of these gaps were situated at the operational of strategic level, but rather involved tactical issues for improvement, such as the ones following operation *Medusa*.[402]

5.7.3. Focus on the Tactical Level

In sum, during the period described in this chapter many activities evolved in order to evaluate airpower's performance take actions to remedy identified shortfalls. There are however some interesting features about the processes underlying them. In the US the conflict in Iraq seemed to have been a more powerful impetus for organizational change

http://search.proquest.com/docview/459556026/B1D8CFE5A8AE4EB6PQ/68?accountid=35226 (accessed October 1, 2014), Anonymous, "Czech General Softens Stance on Training for Afghan Mission", *BBC Monitoring European* (July 31, 2008) http://search.proquest.com/docview/459301505/B1D8CFE5A8AE4EB6PQ/101?accountid=35226 (accessed October 1, 2014), Anonymous, "Czech Helicopter Pilots Train in Israel for Afghan Mission", *BBC Monitoring European* (December 18, 2008) http://search.proquest.com/docview/459523470/B1D8CFE5A8AE4EB6PQ/133?accountid=35226 (accessed October 1, 2014), and Anonymous, "TV Looks at Four Czech Pilots' Refusal to Go to Afghanistan", *BBC Monitoring European* (July 18, 2008) http://search.proquest.com/docview/459303799/B1D8CFE5A8AE4EB6PQ/15?accountid=35226 (accessed October 1, 2014).

400 Eikelboom, Interview.

401 Most striking example of this exchange of information were the USAF annual Weapons and Tactics (WEPTAC) conferences. In these conferences, about 1,000 servicemen discussed current and past experiences, and future challenges (162 Fighter Wing Office of Public Affairs, "WEPTAC Conference October 19-23", *Website 162nd Wing* (October 2, 2009) http://www.162wing.ang.af.mil/news/story.asp?id=123170871 (accessed January 19, 2017), Rachel Loftis, "Warfighters Convene at Nellis for Weapons, Tactics Conference", *Warfighters convene at Nellis for Weapons, Tactics conference* (January 21, 2016), and Christine Rhodes, "31st Annual WEPTAC Conference", *Website Air National Guard* (October 18, 2012) http://www.ang.af.mil/news/story.asp?id=123323164 (accessed January 19, 2017)). Determining the influence of the related seminars on policy using publicly available information is problematic. There are however indications that recommendations found their way into policy papers. See for instance: Unites States Air National Guard, "Air National Guard Weapons Systems Modernization Priorities 2013", http://www.ngaus.org/sites/default/files/2015%20Modbook%20Final.pdf (accessed January 19, 2017), Unites States Air National Guard, "Air National Guard Weapons Systems Modernization Priorities 2015", http://www.ngaus.org/sites/default/files/2015%20Modbook%20Final.pdf (accessed January 19, 2016), and Unites States Air National Guard, "Air National Guard Weapons Systems Modernization Priorities 2016", http://www.ang.af.mil/shared/media/document/AFD-160404-028.pdf (accessed January 19, 2017).

402 Pedersen, "Exposing", passim.

than the conflict in Afghanistan. In addition there are indications that US top military leadership, including the US Air Force, clung to the conventional, target-centric mindset. In the rest of NATO dramatic incidents such as forced resignation of General Officers did not occur, at least not as publicly as in the United States. On the contrary, public discussion on the ideal role of the air weapon was virtually absent. Instead, publicly available sources indicate that airpower professionals within both US and NATO focused on tactical issues that were most pressing, and not on operational and strategic ones. As a result, predominantly tactical improvements were made, with the issue of air-land integration as most prominent topic.

5.8. Analysis

As in the previous chapter, the frame of reference of military innovation and adaptation offers potential explanations of some of the developments described in this chapter. The Taliban and Al Qaida were diminished up to a point where there were only a few fighters left in the southern part of Afghanistan, or so it seemed. The operational posture needed to change as a result of the initial success. After all, the initial objective of ousting the Taliban was reached, and follow-on operations required other goals, other means, and another force posture. In addition, these operations were executed by different actors, namely members of a NATO-led coalition. As many elements changed, it could also reveal driving factors.

Technology featured quite prominently as an enabling factor of air operations in Afghanistan. As with the opening stages of operation *Enduring Freedom*, technologically advanced airpower made operations in Afghanistan by ground forces possible in the first place. Ground forces needed airpower to get to the area of operations, needed resupply, ISR, and fire support. All was delivered by airpower. In general, these functions were not new, but technological advances of the last decades made air operations more effective and more efficient. Response times dropped from hours to a few minutes. According to Rebecca Grant, five developments stood out: increased precision, which included airdrop, development of a non-linear battlespace, increased use of unmanned systems for ISR and attack missions, ISR fusion, and development of cooperative targeting.[403] Despite challenges with regard to interoperability, the sheer distances between various headquarters did not pose any serious challenges or restrictions. These and other developments increased ubiquity of the air weapon, allowing air support of various kinds virtually anywhere and at any time in Afghanistan. This allowed for ground forces to increase their footprint as a result of increased mobility, despite their relatively low number and vast areas of operations. In other words, compared to irregular campaigns in which information age airpower was not present, ground forces could disperse more without the,

403 Grant, *Airpower in Afghanistan*, 29-31, and Grant, "Afghan Escalation" 30-32.

traditionally accompanying, loss of concentration of firepower. Airborne firepower could provide for necessary protection.

However, this phase also showed signs of technological limitations. In order to be effective, the technology must be present. The implementation of ROVER serves as a case in point: the technology existed, and its worth was not contested, but the piecemeal incorporation of the system within ISAF forces forestalled the system to be used to its full potential. Similar complaints were made about the availability of the Thermal Imaging Aircraft Laser Designator (TIALD). While the US did have this capability that enhanced situational awareness and targeting, the British Harriers did not.[404] Only after the US made national systems available to NATO did this situation improve. Also, technology was no panacea. As General Forsyth mentioned, increased precision and less lethal ordnance helped to tweak airpower's performance, but these technological innovations were unable to make up for a lack of sound strategy. This became most prominent while dealing with civilian casualties. Modern technology delivered by airpower contained the seeds of both tactical victory, in the from of leverage to ground troops, and strategic defeat in the form of decreased popular support following perceived inducement of civilian casualties and collateral damage. During the period covered in this chapter, superior technology was unable to compensate for lack of sound strategy and limited resources, both in the air and on the ground.

The statement above also shows the link with the operational environment. Tactically, the operational environment only had limited influence on air operations. Problems posed by environmental circumstances, such as meteorological conditions and elevations, were manageable. With some variations with regard to types of air frames, opposing forces only posed a limited direct threat to air operations. However, adopting an operational posture that was suitable to the threat environment at the operational and strategic levels proved much more difficult. The operational posture of the air weapon was closely linked with operational postures of both OEF and ISAF, and therein lay the initial problem. US forces executing operation *Enduring Freedom* executed a mission that was framed in terms of counterterrorism. Coalition forces of ISAF framed their contribution in terms of stabilization and reconstruction, which in addition was deemed temporary. Meanwhile, what was needed was a long-lasting counterinsurgency effort to counter the mounting insurgency. Initiatives to devise a strategy based on principles of counterinsurgency before 2008 became a dead end. Meanwhile, the military professionals of all services and of all countries had to make due with the limited resources and force levels they had. This resulted in an over-reliance on Close Air Support, which was crucial to protect the force, but could be detrimental to the mission. The opposing forces in turn reacted. As far as the air weapon is concerned, they adapted to the tactical and technological changes aircrews made

404 Alan Warnes, "Danger Close!", *Air Forces Monthly*, no. 228 (2007): 34-37, 37.

to their posture. The air weapon therefore faced a two-pronged challenge, namely adapting to a counterinsurgency posture and adapting to an adapting enemy.

Evidence presented in this chapter suggests that alliance politics had an inhibiting effect on military change. Political sentiments prevented the effective merging of OEF and ISAF, which had a detrimental effect on command and control of the air weapon. In addition, lack of political will of especially European countries led to a reluctance to deploy scarce airpower assets. Consequently, the assets that *were* available were in high demand in Afghanistan. In addition, the numerous caveats hampered effective employment of the air weapon. Commanding officers and their staffs needed to plan around what national assets were allowed to do, instead of what they were technologically able to do. Although appreciation of the caveats differed among General Officers, there seemed to be consensus that they were inhibitors rather than enablers. Alliance politics also had a second order effect: military officers needed to devote attention to mustering the air assets they needed. This should have occurred at the political level, enabling military officers to plan employment of the air assets. Although the exact consequence of this situation is almost impossible to measure, it seems safe to assume that it diverted attention from the most imminent problem ISAF had: strategy development.

Cultural norms figured prominently in the development of the air weapon operating in Afghanistan. First, there was the culture of conventional warfare. This is mostly noticeable in literature with regard to American forces, but is applicable to other forces as well. The "named operations" which aimed at short and decisive operations, or provoking a Troops In Contact could be regarded within this context. The forced resignation of both the Secretary and the Chief of Staff of the US Air Force could also be regarded in this context. There were however some initiatives that showed an incremental change of outlook of western militaries, including air forces, towards counterinsurgency. Although the idea that the conflict in Afghanistan became an insurgency was present, it took time to adapt the conventional mindset to a counterinsurgency one. During the period described here, these ideas were only beginning to take hold.

Another cultural dimension that became visible during this period was the differences of outlook between air commanders and ground commanders with regard to the ideal means of deploying the air weapon. Actual developments and voiced opinions coincide with some of the cultural mindsets Meilinger identified with regard to air-land integration. As with the conventional mindset, it had an inhibiting effect on adaptation, because commanders were clinging to there preferred methods, while accusing each other of ignorance.

A third dimension of the influence of cultural norms can be found at the national level. ISAF consisted of many nations, and there are indications that national cultures influenced the manner the air weapon was used.[405] This was most visible when the US forces that were conducting operations within the counterterrorism framework of *Enduring Freedom* suddenly

405 Meulman, "Mihiel (1918)", 78-79.

had to switch to stabilization and reconstruction and counterinsurgency. The differences of perception and outlook of mainly the US and the rest of ISAF could be visible even within HQ ISAF.[406] These two frameworks had different viewpoints on the role violence played in conflict. It took some time to convince the commander of Regional Command East to be more restrictive with the use of kinetic airpower.[407] In this case, culture seems to be rather inhibiting than enabling military change.

The theme of leadership is especially interesting during the time frame described in this chapter. Political leadership collectively failed to muster the necessary force levels. It also did not formalize the cooperation of OEF and ISAF. Top political and military leadership failed to provide unequivocal guidelines and strategy. Available doctrines were not helpful either. This left operational-level commanders to figure out the details, especially with regard to the relationship between OEF and ISAF and between air commanders and ground commanders. Personal relationships between commanders became very important. But as the nature of the problems were intricate and unique, while the discourse on the topics had a long and emotional history, some of these relationships became strained. The discussion on command relationships demonstrated that differing opinions on airpower deployment could last for years and could hamper effective management at the operational levels. However, personal character and commitment of the same officers that were responsible for the unfruitful discussions managed to find a practical solution to the problem, even though discussion could change in character as tours of protagonists ended.[408] Operational necessity proved to be a powerful impetus for change. While OEF had *Anaconda,* ISAF had *Medusa.* After a mishap took place, there seemed to be more focus and an increasing willingness of senior commanders to cooperate. As this willingness was essential, the topic of leadership is assessed to be both inhibiting and enabling military change, provided that it required a serious risk of operational failure to set the wheels in motion.

5.9. Conclusion

By mid-2002 there was a sense of optimism about the future of Afghanistan. The Taliban had been ousted from power, Al Qaida was partly dismantled, and the Afghans initially viewed western forces as welcome guests. The air weapon was complimented for its contribution to the operational success. Six years later, western forces faced a stalemate in an insurgency. The air weapon faced a paradoxical position in this narrative. It could provide both tactical gains and strategic backlash. Clearly, this phase of the conflict was

406 Meulman, "Mihiel (1918)", 75-76.

407 Holland, "US-NATO Dichotomy", 60 and 66-67, Meulman, "Mihiel (1918)", 84-85, and Teakle, Interview.

408 Meulman, "Mihiel (1918)", 87-88, and Sullivan, "Game-changing Strategies", 168 and 170.

less successful than the previous one. However, the narrative is complicated, and so are the reasons for decreased, or at least less visible, success.

First of all, the operational environment changed dramatically during this phase of the conflict. While outright hostile in 2001-2002, it was relatively benign afterwards. By 2003 it still seemed justified to have a dual focus on terrorism and stabilization and reconstruction. Taliban and Al Qaida proved resilient, however. Soon after the regime change, they started to destabilize the country, eventually launching a full-scale insurgency. This was not immediately apparent to most policy makers and senior military personnel. For political and cultural reasons, they retained the two dominant narratives of counterterrorism for operation *Enduring Freedom* (OEF) and stabilization and reconstruction for the International Security and Assistance Force (ISAF), despite General Barno's attempt to implement a counterinsurgency strategy. The dominant narratives were incompatible with the operational reality as presented by Taliban and Al Qaida. In other words, the assessment of the operational environment was faulty, and consequently western forces at best operated with the wrong strategy.

Western forces themselves changed the operational environment equally dramatic. US forces, with their counterterrorism outlook of OEF, started to scale down without completely withdrawing and partly shifting from OEF to ISAF. They to a large extent were replaced by a collection of nationally led units and task forces that more or less operated in accordance with the stabilization and reconstruction mindset of ISAF. This however revealed weaknesses of alliance warfare, namely devising a coherent strategy. The missions of OEF and ISAF were incompatible, and lacking firm direction coming from Kabul troop contributing nations of ISAF each executed their own plans. In addition, the coalition in its entirety was not able to muster the forces that were asked or required in a counterinsurgency. In short, ISAF lacked a strategy. An end state was not specifically drafted. There were strong differences of opinion between the nations with regard to the ways of achieving an end state. Finally, it soon became apparent that the means were insufficient to provide for basic security for the population, forcing ISAF units to focus on the insurgents rather than the population. This situation was further complicated by self-induced friction on part of the western forces. As OEF and ISAF were separated, so were the command and control lines. Newly arrived ISAF forces encountered challenges with regard to air-land integration that the US forces encountered in March 2002. The learning experience needed to be repeated.

The result of this was deployment of a patchwork of lightly armed and dispersed forces with different tasks and mandates, who were incapable of gaining initiative and became dependent on airpower for their protection. Such was the context of the paradoxical role of airpower in the narrative. From a tactical perspective the air weapon responded very well. Opposing forces still had no answer to the air-ground dilemma. Whenever they concentrated their forces, precision attacks, to a large extent executed by the air weapon, provided leverage. Ground forces were able to claim tactical victories. However, insurgent

forces started to adapt. They initially resorted to traditional countermeasures to mitigate their vulnerability to airpower, but later adapted them to the current situation. Airmen were forced to respond. Tactical, technological, and procedural measures ensured that aircrews were able to execute their tasks and missions relatively unhindered, although actions of opposing forces slightly decreased airpower's effectiveness. This was especially the case within the context of inducing civilian casualties and collateral damage. This became a liability that opposing forces tried to exploit. Airmen mitigated this liability as much as possible, selectively choosing weapons and exercising caution. This however could only partially compensate for the fundamental liabilities at the strategic level, namely faulty strategy and insufficient force levels and resources on the ground.

As far as roles and missions are concerned, the air weapon mostly executed the missions traditionally required most in a counterinsurgency. Airpower performed airlift, ISR, and kinetic support to ground forces. There were however two developments in Afghanistan between 2002 and 2008 that differed from airpower performance in earlier conflicts. First was increased performance at the tactical level, compared to, for instance, Soviet airmen in their struggle against the Mujahideen between 1979 and 1989. Technological achievements associated with the Revolution in Military Affairs allowed for increased precision and better situational awareness. Increased range enabled increased ubiquity, and therefore responsiveness. Formulated differently, the air weapon was able to support more ground forces, faster, at longer ranges, and with decreased risk of unintended damage. This in turn allowed ground forces to increase their footprint without the, traditionally resulting, increase of vulnerability. Second, RMA induced airpower was able to execute missions autonomously that it was hardly able to execute in the past, namely leadership targeting. The air weapon was able to execute these missions in areas where other forces could operate only with great difficulty or high risk. Intelligence fusion, long range communications and precision allowed the air weapon to identify, target, track and engage leadership and assess the engagement. This was truly new, and induced debates on moral, ethical, legal issues and on the subject of effectiveness of leadership targeting at various levels of operation.

These observations allow for an interim conclusion about the role of information age airpower in irregular warfare. During the first phase of the conflict, airpower's role was dominant. The previous chapter argued that the opening stages of the conflict to some extent could be classified as irregular. The conceptual link of the phase of the conflict described in this chapter with irregular warfare is less debatable. Counterterrorism, stabilization and reconstruction, and counterinsurgency were all unequivocally part of irregular warfare. It can be argued that all these concepts were applicable at the same time. The role of the air weapon during this phase was less dominant. However, the ground centric argument that technology has limited usefulness does not hold. It insufficiently acknowledges increased effectiveness of airpower in traditional missions and the emergence of a new type of mission, namely leadership targeting. The reverse

argument advocated by some supporters of the technology-centric approach, namely that the RMA fundamentally altered the ways of conducting war including irregular war, is equally incomplete. The Afghan Model disappeared from the Afghan stage, because the two of the three major players, Special Operations Forces and indigenous forces, were to a large extent replaced by regular forces. In addition, the narrative presented in this chapter indicates that airpower's effectiveness is highly dependent on the strategic context. Focusing on counterterrorism insufficiently acknowledges other contexts that were current. Counterterrorism was most visible while executing leadership targeting missions. However, there were two other contexts current during this timeframe, namely the conceptually formulated stabilization and reconstruction context and the *de facto* insurgency context. Operational reality shows that the air weapon executed both traditional supporting missions, albeit with improved effectiveness, and new missions that up and until the RMA were desired but unfeasible.

This phase of the conflict also highlighted the disagreements on some of the topics related to airpower in irregular warfare. Debate on specialized aircraft was lacking, which can be explained by the fact that the context in which these aircraft were deemed most successful, counterinsurgency, was not acknowledged by virtually all actors involved. Also, availability of, mostly American, air assets sufficed. Building of the Afghan Air Force was not an issue, as forces were to pre-occupied with their own deployment or counterterrorism missions. The types of missions were not big sources of contention, because the requirements at the tactical level were clear. It was a matter of complying to requests. Formulating requirements of force levels and resources in itself were not a problem, but actual maintaining these was a source of contention between the coalition partners. The main problems manifested themselves in the background on the fundamental topic of the role of violence. It also revealed differences of opinion with regard to command relationships, of which the various options were mutually exclusive. Senior leadership in this phase was unable to devise command relationships that were straightforward and adhered to the tenets of unity of command and unity of effort. These had practical causes, such as differing areas of operation and nationality of air assets, although airmen, soldiers, and marines were in a position in which they were forced to work closely together. In such circumstances, it is not surprising that potential "factors for discord" reveal themselves. There may have been commanders that were of the opinion that the irregular environment of Afghanistan proscribed a supporting role of the air weapon by default. However, the arguments used suggest the contention was borne out of a historically developed difference of outlook between airmen on the one hand, and soldiers and marines on the other, rather than out of a fundamental difference on the topic of airpower in irregular environments. Commanders also showed difference of opinion with regard to the need for kinetic air support. The lack of a uniform strategy was the basis for these challenges. So, much of the challenges with regard to the proper application of airpower were self-inflicted, rather than imposed by opposing forces, who only had to exploit this weakness.

Chapter 6

6. COIN (2008 - 2012)

6.1. Introduction

As described in chapter three, NATO became aware of the seriousness of the security situation in Afghanistan during the expansion phase of ISAF. Western forces in Afghanistan faced the possibility of an enduring stalemate. Chapters four and five in turn identified a lack of strategy as the main liability of the campaign. Command and control and air-land integration were two of the prominent operational challenges the air weapon encountered between 2001 and 2008. These challenges were made workable by commanders in the field, but did not provide a fundamental solution to the associated problems. Between 2008 and 2012, many variables changed, mostly due to increased American involvement. The US brought additional forces and resources, and a concept to apply them. The US aspired to implement them within the ISAF construct. This raises the question how successful the changes were, and how they influenced the air weapon.

6.2. Strategy: Increasing Operational Coherence

6.2.1. Adoption of the COIN Concept

By 2008 the lack of strategy for Afghanistan, and the associated challenges, received increased attention at the top-political level of NATO. During the Bucharest Summit of 2008, NATO members adopted a new strategic approach. They agreed to a firm and shared long-term commitment of NATO in Afghanistan, support for enhanced Afghan leadership and Afghan responsibility, to a comprehensive approach bringing together military and civilian efforts, and to increased cooperation with Afghanistan's neighbors.[1] However, due to the general formulation of the terms, this strategic vision provided little foundation on which a military commander could build an operational plan. So, devising a feasible strategy, in which ends and means were coupled with a desired end state, was largely left to the commander of ISAF.[2] As previously had been the case, and also was the case in Iraq, operational art, the thoughtful sequencing of the execution of tactical action in order to

1 NATO, "Bucharest Summit Declaration Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Bucharest on 3 April 2008" (April 3, 2008) http://www.nato.int/cps/en/natolive/official_texts_8443.htm (accessed June 4, 2008), and NATO, "ISAF's Strategic Vision. Declaration by the Heads of State and Government of the Nations Contributing to the UN-mandated NATO-led International Security Assistance Force (ISAF) in Afghanistan" (April 3, 2008) http://www.nato.int/cps/en/natolive/official_texts_8444.htm (accessed June 4, 2012).

2 Catherine Dale, "War in Afghanistan: Strategy, Military Operations, and Issues for Congress", In: *War in Afghanistan: Strategy, Military Operations, and Congressional Issues*, ed. Easton H. Ussery (New York: Nova Science Publishers, 2010), 53-122, 60.

defeat a military opponent, *de facto* had become strategy in Afghanistan.[3] This confusion of levels of policy making and operations became even more severe, as the nature of the conflict proscribed a mixture of military and political and even economical elements of strategy.[4]

Early 2008 US Army General Dan K. McNeill, commander of ISAF (COMISAF), was relieved by US Army General David D. McKiernan in June 2008.[5] A major obstacle for the formulation of strategy was the lack of resources and force levels. McNeill was aware of the strategic stalemate that was developing, but did not have sufficient means to implement a manpower-intensive strategy such as Counterinsurgency (COIN). In addition, national contingents executed various strategies according to their national rather than ISAF guidelines. According to the Deputy Combined Forces Air Component Commander (DCFACC) at the time, Major General Maurice M. Forsyth, all McNeill could do was to stand ground, and prevent the situation from further escalation until the international community decided to give more priority to the war in Afghanistan.[6] General McKiernan faced a similar situation. He requested additional troops several times, but to no avail. The Bush Administration was not inclined to implement a surge of forces, because it was unpopular in the US and because it was already scheduled to be replaced by the Obama Administration. As soon as Barack Obama became President-elect, he and his staff were aware that a change of strategy for Afghanistan was required and started pondering options. They varied from a re-focus on Counterterrorism (CT), which required a modest increase of US forces, to a full scale Counterinsurgency (COIN), which required a significant surge. They recognized that Afghanistan had become a forgotten war. While still executing strategic reviews on how to deal with the situation in Central Asia, Obama in February 2009 partly approved McKiernan's troops request by sending 17,000 additional troops to Afghanistan.[7] With the additional forces, which started coming in during the first half of 2009, General McKiernan was able to give additional attention to the problem of devising a strategy.

During McKiernan's tenure, ISAF's mission was framed in counterinsurgency terms. Operations were to be planned and executed according to the so-called "shape, clear, hold, build" principle, in which ISAF shaped the conditions of the security environment, clear areas of insurgents, hold with the enduring presence of Afghan police and Afghan army,

3 Hew Strachan, "Strategy or Alibi?: Obama, McChrystal and the Operational Level of War", *Survival: Global Politics and Strategy* 52, no. 5 (2010): 157-182, 166 and 177.

4 Strachan, "Strategy or Alibi?", 167.

5 Dag Henriksen (ed), *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives* (Maxwell Air Force Base, AL: Air University Press, 2014), 283.

6 Maurice H. Forsyth, "Airpower As a Second Thought", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, November, 2014), 107-121, 120.

7 Matthew C. Brand, *General McChrystal's Strategic Assessment: Evaluating the Operating Environment in Afghanistan in the Summer of 2009*, Air Force Research Institute Papers (Maxwell Air Force Base, AL: Air University Press, July, 2011), http://aupress.au.af.mil/digital/pdf/paper/ap_brand_mcchrystals_assessment.pdf (accessed April 3, 2013), 10-11, and Bob Woodward, *Obama's Wars* (New York, NY: Simon & Schuster, 2010)

and set the conditions to build through enabling the extension of viable governance en promoting development. Additional forces were mainly required for the "hold" phase, as lack of manpower hitherto had forced ISAF to clear the same areas repeatedly. The surge of forces could break the vicious cycle.[8] But manpower was not the only key. Military personnel needed written strategic guidelines to shape their operations. In order fill the gap, McKiernan issued two operational documents outlining his intent. These documents were the "Tactical Directive" of December 30, 2008, and the "COIN Guidance" of March 18, 2009. In these documents, McKiernan directly labelled the conflict an insurgency, requiring a counterinsurgency, and ordered a comprehensive approach in which all actions of ISAF forces were directed towards enhancing the security of the Afghan population and legitimacy of the Afghan Government. In order to achieve that, ISAF forces were instructed to conduct operations together with Afghan security forces as much as possible, and show extreme caution with the use of force. McKiernan demanded from his subordinate commanders that operational planning involved all of the phases, and not just the "shaping" and "clearing" phases, although he also urged his commanders to adapt their planning to local circumstances.[9]

The documents were a reflection of a significant change of operational outlook, as NATO activities up and until then were still framed in terms of Stabilization and Reconstruction (S&R), and some American units, most notably Special Operations Forces (SOF), operated within the counterterrorism framework.[10] The stabilization and reconstruction mindset of NATO focused too much on the rebuilding, with a certain reservedness towards combat operations. The counterterrorism mindset on the other hand was overly aggressive, enemy-centric, and prone to induce an unacceptable high level of civilian casualties. McKiernan made a renewed attempt to combine both mindsets within the counterinsurgency approach, based on the insurgency environment he assessed it to be.

However, the change of operational concept was overtaken by events during the spring of 2009. McKiernan was relieved from his tenure by Defense Secretary Robert Gates in May. The reasons were not entirely clear, as McKiernan did not malfunction in any way. Within the new Obama Administration, there was however a strong wish for a new impulse with regard to Afghanistan. A change of leadership could provide for this impulse. McKiernan was regarded as too cautious, too passive, not a true believer in counterinsurgency, and too conventionally minded for the renewed impulse the new US President was planning for Afghanistan. He was therefore replaced by General Stanley McChrystal. The move received

8 David D. McKiernan, "Winning in the Islamic Republic of Afghanistan", *Army* 58, no. 10 (2008): 127-134, 128 and 134.

9 David D. McKiernan, "Tactical Directive" (December 30, 2008) http://www.nato.int/isaf/docu/official_texts/Tactical_Directive_090114.pdf (accessed January 15, 2014), Walther Pincus, "General's Paper Sheds Light on Counterinsurgency", *The Washington Post* (April 7, 2009) http://www.washingtonpost.com/wp-dyn/content/article/2009/04/06/AR2009040603934.html (accessed January 15, 2014), and Charles S. Sullivan, "Game-changing Strategies for Counterinsurgency and Complex Joint Operations", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 157-234, 161 and 220.

10 Dale, "War in Afghanistan", 60, and Sullivan, "Game-changing Strategies", 213-214.

much media attention, and reactions from both within and outside the military were divided.[11]

McKiernan's dismissal was part of a complete overhaul of American strategy in Central Asia, executed by the newly installed Obama Administration. Obama recognized that Afghanistan had been neglected for years. And while most European nations for various internally motivated reasons were contemplating withdrawal of their troops, the US felt it had to increase its efforts to enhance security before it was able to retract its forces. That meant a surge of forces, under the premise that there was recognition that a plan for withdrawal was also required.[12] Also, the problem was not confined to Afghanistan. During the previous years, the Pakistani areas bordering Afghanistan known as the Federally Administered Tribal Areas (FATA) and North-West Frontier Province (NWFP) provided save havens for Al Qaida and Taliban. From there, they were able to plan and direct their activities undisturbed. Additional attention to Pakistan was required. Besides diplomatic pressure on the Pakistani government to alter the situation, the Obama Administration also wanted to step up leadership targeting attacks in Pakistan to keep pressure on Al Qaida, which several members of the administration regarded to be the real problem.[13]

In Afghanistan, US Army General Stanley A. McChrystal replaced General McKiernan on June 15, 2009. McChrystal was tasked with conducting an assessment of operations, and with devising a plan to break the stalemate. He brought with him a team of staff officers and civilian specialists of which some members had helped him with implementing the *FM 3-24* in Iraq.[14] Along with the current staffs of ISAF and the US forces in Afghanistan, the assessment team operated in several working groups. McChrystal and the working groups were ordered to report within sixty day's which, when taking various staffing rounds into

11 Hastings, Michael, *The Operators: The Wild and Terrifying Inside Story of America's War in Afghanistan* (New York, NY: Blue Rider Press, 2012), 38, Frank G. Hoffmann and G. Alexander Crowther, "Strategic Assessment and Adaptation: The Surges in Iraq and Afghanistan", In: *Lessons Encountered: Learning From the Long War*, ed. Richard D. Hooker and Joseph J. Collins (Washington, DC: National Defense University Press, 2015), 89-163, 115, Anonymous, "Press Conference with Secretary Gates and Adm. Mullen on Leadership Changes in Afghanistan From the Pentagon, News Transcript", *Website U.S. Department of Defense* (May 11, 2009) http://www.defense.gov/transcripts/transcript.aspx?transcriptid=4424 (accessed January 15, 2014), Tadd Sholtis, "Obama in Afghanistan: Strategy As Critical Discourse in America's Longest War", (Dissertation, Air University, Maxwell Air Force Base, AL, 2011) http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA625706 (accessed May 4, 2016), passim, Sullivan, "Game-changing Strategies", 225-226, Mark Thompson, "Why the Pentagon Axed Its Afghanistan Warlord", *Time* (May 12, 2009) http://content.time.com/time/nation/article/0,8599,1897555,00.html (accessed January 15, 2014), Ann Scott Tyson, "Gen. David McKiernan Ousted As Top U.S. Commander in Afghanistan", *The Washington Post* (May 12, 2009) http://www.washingtonpost.com/wp-dyn/content/article/2009/05/11/AR2009051101864.html (accessed January 15, 2014), and Woodward, *Obama's Wars*, 83-85 and 118-119.

12 Rudra Chaudhuri and Theo Farrell, "Campaign Disconnect: Operational Progress and Obstacles in Afghanistan, 2009-2011", *International Affairs* 87, no. 2 (2011): 271-296, 284-287, Robert P. Lyons, "Afghanistan in the Balance: Air Politik", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2010) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8zMzc5MA==.pdf (accessed July 3, 2013), 58-59, and Woodward, *Obama's Wars*, 77.

13 Chaudhuri and Farrell, "Campaign Disconnect", 284-287, Lyons, "Air Politik", 73, and Woodward, *Obama's Wars*, 3, 25, 52, 325-224 and 371-374.

14 Brand, *McChrystal's Strategic Assessment*, 13-15.

account, came down to thirty days of effective time to write the assessment and provide recommendations.[15]

McChrystal agreed with McKiernan that more resources were required. After conducting his assessment, he requested 40,000 more troops. Obama publicly granted 30,000 additional troops during a speech at West Point on December 1, 2009, in which he announced his strategy on Afghanistan. The accompanying strategic guidelines reflected a mix of both increased counterinsurgency and counterterrorism efforts, and an increased focus on developing Afghan security forces and government functions.[16] The surge was however accompanied by a, vaguely stated, timetable for withdrawal, which was initially set for 2011.[17]

McChrystal was confident that the then current military strategy required fundamental change. On August 30, 2009, he delivered his "Commander's Initial Assessment".[18] According to McChrystal, the then current plans were not so much faulty, but rather incomplete, and the basics of COIN doctrine were not adequately executed.[19] Furthermore, McChrystal sought to streamline US and NATO policies, and to actually execute the counterinsurgency guidelines that hitherto existed only on paper.[20] In the new mindset, the Afghan population was to be put first, which involved an increased effort aimed at curbing their crisis in confidence of the Afghan government and ISAF. Therefore, ISAF should shift its attention to building a solid and trustworthy Afghan government, which included combating weaknesses of the Government of Afghanistan, namely corruption and disruptive influence of local power holders.[21] McChrystal proposed a new strategy that was centered around four pillars: more intensive partnering with Afghan security forces, prioritization of responsive and accountable governance, gain the initiative in the insurgency as the first imperative in a series of temporal stages, and focus on areas where the population was most threatened instead of a focus on areas where the

15 Brand, *McChrystal's Strategic Assessment*, 17.

16 Brand, *McChrystal's Strategic Assessment*, 15-24 and 27.

17 John R. Ballard, David W. Lamm and John K. Wood, *From Kabul to Baghdad and Back: The US at War in Afghanistan and Iraq* (Annapolis, MD: Naval Institute Press, 2012), 246-247, Sholtis, "Obama in Afghanistan", 113, and Woodward, *Obama's Wars*, 371-374.

18 Brand, *McChrystal's Strategic Assessment*, 23. The original document was leaked to Bob Woodward, who, according to himself, after consultation with the Pentagon, received a slightly revised and declassified copy that he subsequently published (Woodward, *Obama's Wars*, 175-182). Possibly due to leaking of the document to the press, and subsequent discussion in the media, unclassified and redacted versions of McChrystal's assessment are publicly available. For instance: Anonymous, "COMISAF Initial Assessment (Unclassified) -- Searchable Document", *The Washington Post Website* (September 21, 2009) http://www.washingtonpost.com/wp-dyn/content/article/2009/09/21/AR2009092100110.html?sid=ST2009092003140 (accessed January 14, 2014), Stanley A. McChrystal, "COMISAF's Initial Assessment" (August 30, 2009) http://media.washingtonpost.com/wp-srv/politics/documents/Assessment_Redacted_092109.pdf (accessed January 14, 2014), Stanley A. McChrystal, *Commander's Assessment, International Security Assistance Force Commander: Recommendation for Achieving Victory in Afghanistan,* September 21, 2009, http://www.amazon.com/dp/B004GXB16Y/ref=rdr_kindle_ext_tmb and as an appendix in Brand, *McChrystal's Strategic Assessment* (p. 55). This study uses McChrystal, "COMISAF's initial assessment", as this is the version Woodward probably received.

19 Chaudhuri and Farrell, "Campaign Disconnect", 273, and McChrystal, "COMISAF's initial assessment", 2-11.

20 Brand, *McChrystal's Strategic Assessment*, 25-28.

21 McChrystal, "COMISAF's initial assessment", p. 2-8 - 2-9.

enemy was located.[22] With regard to the already existing plans, McChrystal assessed McKiernan's "shape, clear, hold, build" approach to be only *"the rudimentary elements of an operational framework"*.[23] According to McChrystal, the plans missed links between the lines of operation and measurable effects or conditions upon which follow-on action could be planned. In addition, and partly as a result, prioritization and synchronization was insufficient, most notably between ISAF Headquarters and the Regional Commands, and between ISAF and Afghan National Security Forces. Therefore, the general guidelines of McKiernan's Operational Plan (OPLAN) could be retained, but subordinate orders were to be significantly revised.[24]

As for ISAF, McChrystal described two desired changes he considered to be fundamental. The first change involved operational culture. It was too much configured for conventional warfare.[25] Besides the insurgents, the human environment consisted of the Afghan population, the Government of Afghanistan, and external actors. Of these, the insurgents and the crisis in confidence of the Afghan population towards ISAF formed the greatest threat.[26] ISAF had to focus more on protecting the Afghan people, on understanding their environment, and on building relationships with them. Up and until then, ISAF as a whole had distanced itself from the local population by their pre-occupation with force protection. This manifested itself in staying within compounds or armored vehicles, and relying on firepower and focusing on close combat. This resulted in collateral damage and civilian casualties, alienating the population. According to McChrystal, ISAF soldiers had to go out and dismount, and build relationships with the local population as a starting point for other developments, even if this meant accepting short-term tactical risks in favor of reaching long term strategic goals.[27] The second change involved improving unity of command and unity of effort. This required changes in the organizational structure.[28] The change of operational culture involved several recommendations, on topics ranging from civil-military cooperation, strategic communications and information operations, prevention of civilian casualties, handling of detainees, and development of the Afghan National Security Forces. According McChrystal and his team, this reflected a truly population-centric counterinsurgency strategy.[29]

McChrystal and his staff encountered some resistance from the then current staff officers in Kabul. The first reason for this situation was the sheer speed with which the change of strategy was implemented. According to US Air Force Colonel Mathew C. Brand, USFOR-A historian during McChrystal's tenure, time constraints necessitated a very direct

22 McChrystal, "COMISAF's initial assessment", p. 2-2.

23 McChrystal, "COMISAF's initial assessment", p. A-2.

24 McChrystal, "COMISAF's initial assessment", p. A-1 - A-5.

25 McChrystal, "COMISAF's initial assessment", p. 1-2 - 1-3.

26 McChrystal, "COMISAF's initial assessment", p. 2-3 - 2-5.

27 McChrystal, "COMISAF's initial assessment", p. 2-11 - 2-14.

28 McChrystal, "COMISAF's initial assessment", p. 2-14.

29 McChrystal, "COMISAF's initial assessment", p. 2-11 - 2-12 and Annexes C through G.

approach of leadership: *"To be frank, it was either jump on board or get out of the way because the train was moving, and it was not going to stop for stragglers".*[30] The second reason was related to the manner which McKiernan had left office, and the ideas McChrystal and his staff were proposing. To some, McChrystal's ideas were not considered to be all that new, and McKiernan for most of his tenure was not able to execute his plan to the full due to lack of manpower. The notion that McChrystal was there to turn the tide in Afghanistan, a notion that became to dominate in the media, was therefore received by some with skepticism. Finally, there were some officers who still favored a counterterrorism approach over the manpower-intensive counterinsurgency approach, even after the National Security Council and the US President rejected the former in favor of the latter.[31] So, McChrystal's approach took some time to root.

However, the situation was again overtaken by events. About a year later, General McChrystal fell from grace shortly after publication of an article in *Rolling Stone Magazine*, in which he and his staff belittled several civilian and military superiors. McChrystal was succeeded by US Army General David H. Petraeus in July 2010.[32] Petraeus reversed some of McKiernan's and McChrystal's measures, while reaffirming and even extending others. According to Petraeus, kinetic force was used in situations were it was not entirely clear that there were no civilians in the area. This had to stop. On the other hand, he was of the opinion that McChrystal's Tactical Directive was implemented too rigidly by subordinate commanders. He found that these commanders issued guidelines to their subordinates which were more restrictive than McChrystal originally intended. This also reflected Petraeus' stance on the use of violence in this conflict, most notably with regard to the use of force and the use of Special Operations Forces. Petraeus wanted to take the insurgents off balance by increasing leadership targeting operations and special operations. In his opinion, COIN and CT complemented each other.[33]

30 Brand, *McChrystal's Strategic Assessment*, 15. Reversely, Major General Charles S. Sullivan, ISAF Director Air Component Element (ACE) from November 2008 to November 2009, mentioned arrival of a "*tsunami of new staff officers*" (Sullivan, "Game-changing Strategies", 226).

31 Brand, *McChrystal's Strategic Assessment*, 11-13, 19 and 22, Jouke L.H. Eikelboom, "Moving Toward Counter Insurgency", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 123-134, 124, Douglas L. Raaberg, "The Shift From Iraq to Afghanistan", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 137-156, 155, and Sullivan, "Game-changing Strategies", passim.

32 Helene Cooper and David E. Sanger, "Obama Says Afghan Policy Won't Change After Dismissal", *New York Times* (June 23, 2010) http://www.nytimes.com/2010/06/24/us/politics/24mcchrystal.html?pagewanted=all (accessed January 22, 2014), Michael Hastings, "The Runaway General", *Rolling Stone* (June 22, 2010) http://www.rollingstone.com/politics/news/the-runaway-general-20100622 (accessed January 22, 2014), Andrew R. Hoehn and Sarah Harting, *Risking NATO: Testing the Limits of the Alliance in Afghanistan* (Santa Monica, CA: RAND Corporation, 2010), https://www.rand.org/pubs/monographs/MG974.html (accessed July 6, 2017), 45-48, Strachan, "Strategy or Alibi?", 157, and Woodward, *Obama's Wars*, 371-374.

33 Paula Broadwell and Vernon Loeb, *All In: The Education of General David Petraeus* (New York, NY: The Penguin Press, 2012), 53-55, Chaudhuri and Farrell, "Campaign Disconnect", 282-283, Brian Glyn Williams, *Counter Jihad: America's Military Experience in Afghanistan, Iraq, and Syria* (Philadalphia, PA: University of Pennsylvania Press, 2017), 238-239, and Woodward, *Obama's Wars*, 190. Petraeus' biographers Broadwell and Loeb do not concur with the assessment on the use of violence. They state that McChrystal and Petraeus mainly differed in communication strategy. Petraeus was more inclined to publicly acknowledge the need of kinetic use of force than McChrystal was: Broadwell and Loeb, *All in*, 136-137.

Petraeus also released a "Counterinsurgency Guidance", dated August 1, 2010, reflecting this position. In it, COMISAF reaffirmed some of the measures of his predecessors, while adjusting others. The document identified Afghan corruption as a problem. It reaffirmed the importance of the population, and the need for keeping civilian casualties to a minimum. Also, Petraeus indicated that no plan to shape and clear an area should begin without making a plan to hold and build that area.[34] Petraeus encouraged soldiers to partner with their Afghan counterparts as much as possible, and execute effective strategic communication.[35] Within this concept, the use of Afghan contractors became an integral part of COIN.[36] However, the guidance also directed all involved to actively pursue the enemy. Petraeus assessed that it was not possible to win with killing and capturing alone, but it was also impossible to settle the conflict without fighting.[37] In an attempt to re-adjust the balance between protecting the force and protecting the mission, Petraeus accompanied the counterinsurgency guidance with a Tactical Directive. In this directive, he amended the idea of "courageous restraint", a variant of the "tactical patience" mentioned earlier.[38] This, among other things, prohibited the use of force in cases where absence of civilian casualties was not certain, save some specified situations in which ISAF or Afghan forces were exposed to grave danger. It also prohibited additional restriction of his guidance without his approval.[39]

6.2.2. Airpower and the Afghan COIN Regime

Especially the US Air Force (USAF) adapted its posture to fit the new approach. Ideally, this was done via a separate airpower strategy. Michael Donley and General Norton Schwartz, the US Air Force Secretary and Chief of Staff who replaced Wynne and Moseley in 2008, signed off on such a document, called "The 21st Century Irregular Warfare

34 David H. Petraeus, *COMISAF's Counterinsurgency Guidance,* August 1, 2010, http://www.isaf.nato.int/images/stories/File/COMISAF-Guidance/COIN%20Guidance%2001%20Aug%2010.pdf (accessed January 15, 2013), 1-3.

35 Petraeus, *COMISAF's COIN Guidance*, 2-3.

36 E.C.G.J. Van Duren, "Money Is Ammunition; Don't Put It in the Wrong Hands: A View on COIN Contracting in Regional Command South", *Militaire Spectator* 179, no. 11 (2010): 564-578, and David H. Petraeus, *COMISAF's Counterinsurgency (COIN) Contracting Guidance,* September 8, 2010, http://www.isaf.nato.int/images/stories/File/COMISAF-Guidance/100908-NUI-COMISAF's%20COIN%20GUIDANCE(1).pdf (accessed January 15, 2014).

37 Petraeus, *COMISAF's COIN Guidance*, 1-2.

38 Sergio Catignani, "'Getting COIN' at the Tactical Level in Afghanistan: Reassessing Counter-Insurgency Adaptation in the British Army", *Journal of Strategic Studies* 35, no. 4 (2012): 513-539, 532.

39 Anonymous, "General Petraeus Issues Updated Tactical Directive: Emphasizes "Disciplined Use of Force"", *Website Operation Resolute Support* (August, 2010) http://www.rs.nato.int/article/isaf-releases/general-petraeus-issues-updated-tactical-directive-emphasizes-disciplined-use-of-force.html (accessed May 10, 2016), Broadwell and Loeb, *All in*, 53-55, and Sidney J. Freedberg, "The Afghanistan Air War", *National Journal* (September 24, 2010) http://search.proquest.com.nlda.idm.oclc.org/docview/754723767?OpenUrlRefId=info:xri/sid:wcdiscovery&accountid=35226 (accessed April 16, 2017).

Strategy" in 2009.[40] As with USAF doctrine, the organizational response was not directed towards counterinsurgency but rather the overarching concept of irregular warfare. The doctrine promoted innovative application of traditional airpower principles in the new environments. Airpower should enhance government legitimacy, project national sovereignty into remote areas of a country, accelerate a nation's overall development, and provide an asymmetric advantage over adversaries. The USAF however had to retain superiority in conventional conflicts as well.[41] The strategy placed a relatively large emphasis on building capacity of partner nations. This required significant alterations of the organization. This required time, and the main effort became visible in the period following 2012. In the short term, the air weapon had to conform to the repeated change of guidelines from COMISAF which, in general, reflected a change to a population-centric COIN approach.

According to Jeffrey Smith, airmen responded with an *ad hoc* strategy to support this approach.[42] In practice, this meant adapting to the changing requirements as outlined by the various commanders in Afghanistan, most notably COMISAF. First of those commanders was McKiernan. Shortly after McKiernan issued his directives and guidelines, one was issued similar by the Director Air Operations from ISAF Headquarters. In this document, airmen were instructed to place emphasis on population-centric operations, with enemy-centric targeting operations in support, which in turn proscribed that airmen had to change their "*kinetically dominated mindset*".[43] Airmen had to increase their understanding of the operational environment. They were expected to think and act in terms of COIN. The employment itself needed to be directed towards enhancing the support of the population, which involved increased attention to medical evacuation and intra-theater transport. When airborne fire power was essential, airmen were required to pay extra attention to the prevention of civilian casualties. And if civilian casualties were to be regretted, solid communication of reasons and circumstances surrounding the incident were of the utmost importance.[44] The issue of airborne application of force was also addressed by a document called "Director ACE Force Application Guidance". This document regulated the way which and the situations in which lethal force could be applied. Most importantly, the use of lethal force was restricted when it was uncertain whether there were civilians in the area, and/or whether the intended targets were indeed hostile insurgents. Ground commanders were to use an escalatory method of force application, in which the use of airborne lethal force was a means of last resort only.[45] Besides being the proper

40 United States Air Force, *The 21st Century Irregular Warfare Strategy,* January, 2009, http://indianstrategicknowledgeonline.com/web/USAF_IW_Strategy.pdf (accessed September 12, 2016).

41 United States Air Force, *21st Century*, 4-5 and 11.

42 Jeffrey J. Smith, "Beyond the Horizon: Developing Future Airpower Strategy", *Strategic Studies Quarterly* 8, no. 2 (2014): 74-95, 84.

43 I.D. Teakle, *COMISAF Counterinsurgency Guidance,* 2009, Personal Collection, 1.

44 Teakle, *COMISAF COIN Guidance*, 1-2.

45 Sullivan, "Game-changing Strategies", 213-315.

procedure in its own right, this could also be a reaction to the Taliban's emerging tactic of deliberately placing civilians on locations where lethal application of force by ISAF forces was likely, thereby deliberately inducing civilian casualties.[46]

The air weapon also had to comply to the new guidelines of McChrystal. During the strategic reviews in Washington, the US Air Force and the US Navy were rather absent in the discussions. Their chiefs of staff indicated that the strategic reorientation in Afghanistan only marginally impacted their forces.[47] While this could be true with regard to preparing and deploying the forces, the primary task of the service chiefs, it was not for the operational posture of the air weapon. McChrystal's assessment implied significant potential consequences for the deployment of the air weapon. First of all, its effect could be felt within the realm of collateral damage and civilian casualties. McChrystal decided that it was one of the first priorities that required attention, and on July 6, well before his assessment was finished, he issued a Tactical Directive which severely restricted the use of force.[48] In it, McChrystal reaffirmed the difference between executing a counterinsurgency and conventional combat. Civilian casualties were to be avoided on legal and moral, but also on operational grounds. The Afghan people could be alienated by extensive use of force, touching on the very heart of the counterinsurgency: gaining and maintaining their support.[49] Use of air-to-ground weapons and indirect fires were only authorized under very limited and proscribed conditions. It did however show the tension between the threat to the mission versus threat to the force. Commanders retained the right to self-defense using these assets, but only as a means of last resort.[50] McChrystal's Tactical Directive differed from McKiernan's version of December 30, 2008, mainly in tone. Whereas McKiernan also made a case of using restraint of the use of force with reference to support of the population, McChrystal mentioned the indirect fires and the use of air-to-ground weapons directly, and prescribed conditions in which these weapons could and could not be used.[51] On August 26, this document was followed by a "Counterinsurgency Guidance".[52] The Counterinsurgency Guidance presented the operations, in fact all actions taken by ISAF or the government of Afghanistan, as an argument to earn the support of the people in which long-term relationships were important. Kinetic operations, although important to keep

46 Sullivan, "Game-changing Strategies", 215. In 2010, this was also acknowledged by the nations contributing to ISAF. In a declaration, the respective nations officially condemned these practices executed by the Taliban: NATO, "Declaration by the Heads of State and Government of the Nations Contributing to the UN-mandated, NATO-led International Security Assistance Force (ISAF) in Afghanistan" (November 20, 2010) http://www.nato.int/cps/en/natolive/news_68722.htm (accessed June 4, 2012).

47 Woodward, *Obama's Wars*, 259.

48 Headquarters International Security Assistance Force, *Tactical Directive, Releasable Portions*, July 6, 2009, http://www.nato.int/isaf/docu/official_texts/Tactical_Directive_090706.pdf (accessed January 13, 2014).

49 Headquarters International Security Assistance Force, *Tactical Directive*.

50 Headquarters International Security Assistance Force, *Tactical Directive*.

51 Compare Headquarters International Security Assistance Force, *Tactical Directive*, and McKiernan, "Tactical Directive".

52 NATO, "ISAF Commander Issues Counterinsurgency Guidance", (August 27, 2009) http://www.nato.int/isaf/docu/pressreleases/2009/08/pr090827-643.html (accessed January 17, 2014).

the insurgents isolated from the population, were regarded to be not necessarily decisive at operational and strategic levels.[53]

While the Tactical Directive and the Counterinsurgency Guidance were distributed, the "Civilian Casualties, Collateral Damage and Escalation of Force Working Group" still worked on their annex of the Initial Assessment. According to the working group, McChrystal's guidelines served only as a starting point. The working group contained members of all services, and was officially headed by a British Air Commodore and a French Air Force Colonel, which might be an indication that there was a perceived link between civilian casualties and air operations.[54] ISAF had established a civilian casualties tracking cell as of August 2008, which the working group regarded as a step forward.[55] In 2009, this Civilian Casualties Tracking Cell (CCTS) was augmented by a Joint Incident Assessment Team (JIAT), which routinely conducted on site fact finding missions that could later be used for investigations, if need be.[56] In 2011, the CCTS evolved into the Civilian Casualties Mitigation Team (CCMT).[57]

The working group set out to address the negative impact of kinetic engagements on the strategic goal of gaining and maintaining support of the population. Its members found that the battle rhythm of kinetic responses described in the previous chapter had resulted into a knee-jerk reaction of ground forces to call in air support for many situations, even when forces were not exchanging fire.[58] This had detrimental consequences for the strategic goals of ISAF, leading up to the strategic stalemate. Backed with additional force levels, which could help counter the threat to the force, the working group wanted address this threat to the mission by restricting the use of deadly force. Initially, the working group focused on Rules of Engagement, but soon found out that that was not the real problem. They were not limiting to the extent that they made air operations impossible, or proscribed the use of lethal force. The problem was their application, which in turn became the focus of scrutiny. Accordingly, the working group advised to conduct on-site evaluations of the situation and devising a suitable response after application of lethal force. McChrystal c.s. found that countering a threatening situation with Close Air Support (CAS) had become too convenient, as air assets in general were available within ten to fifteen minutes after the call. What was needed was a change of culture, in which ground

53 Stanley A. McChrystal, *ISAF Commander's Counterinsurgency Guidance*, 2009, http://www.nato.int/isaf/docu/official_texts/counterinsurgency_guidance.pdf (accessed January 15, 2014), 3-4.

54 Brand, *McChrystal's Strategic Assessment*, 42-43.

55 Jennifer Keene, "Civilian Harm Tracking: Analysis of ISAF Efforts in Afghanistan", (Center for Civilians in Conflict, Washington, DC, 2014) http://civiliansinconflict.org/uploads/files/publications/ISAF_Civilian_Harm_Tracking.pdf, 1-4, and McChrystal, "COMISAF's initial assessment", p. E-1.

56 United Nations Assistance Mission in Afghanistan (UNAMA), "Afghanistan Annual Report 2011: Protection of Civilians in Armed Conflict", (Kabul, February, 2012) http://unama.unmissions.org/Portals/UNAMA/Documents/UNAMA%20POC%202011%20Report_Final_Feb%202012.pdf (accessed December 19, 2013), 42.

57 Joint Analysis & Lessons Centre, "Protection of Civilians: How ISAF Reduced Civilian Casualties: Project Fact Sheet", *Website Joint Analysis & Lessons Learned Centre* (June 1, 2015) http://www.jallc.nato.int/products/docs/factsheet_Protection_of_Civilians_CIVCAS.pdf (accessed December 20, 2016).

58 Brand, *McChrystal's Strategic Assessment*, 44.

commanders would call in Close Air Support as a means of last resort, instead of as a first response. This in turn required tight guidelines, as was ordered by McChrystal, combined with strong follow-on action. The working group also had noticed that McKiernan's directives were not executed to the full.[59] This called for increased supervision.

Increased training was another requirement. Ground commanders needed to be trained and educated in the population-centric approach, and planning of operations could also help cultivate a mind set in which fire support would be used more restrictively.[60] The problem of civilian casualties and collateral damage was however not restricted to the air weapon. It was equally applicable to fire support provided by artillery or mortars. Also, the working group noticed that many of the civilian casualties were caused in situations in which Afghan civilians did not comply to directions of ISAF soldiers, inducing a violent reaction. According to the working group, many of these so called "escalation of force" incidents were due to misunderstanding of the signs by the Afghans, or simply the inability to read written signs. Restraint and cultural patience and sensitivity could solve the increasing amount of this type of incidents.[61]

A problem related to the civilian casualties was that of communication with the local population. According to McChrystal and his staff strategic communication should be an integral part of policy development, planning processes, and execution of operations. Within the context of minimizing civilian casualties and collateral damage, this required increased responsiveness to incidents. In practice, this meant that ISAF had to release available information quickly, even in cases where the information was not complete.[62] This involved the air weapon, because, besides being associated with civilian casualties and collateral damage, it was in the position to provide this information. Therefore, McChrystal recommended to establish a procedure which allowed various nations to release imagery that could be used for Battle Damage Assessment (BDA), which in turn could be used for communicating with the local population.[63]

The change of strategic outlook enforced by General McChrystal did not alter airpower strategy significantly. It still had the primary task of supporting the Joint Force commander or Combined Joint Task Force Commander to reach his strategic goals with airpower functions. These functions did not change. What did change was the weight of these functions relative to each other. This manifested itself mainly at the tactical level, and involved the daily attitude towards civilian casualties. Procedurally, the most important change was systematic evaluation of the destructiveness of the air weapon. Almost immediately after his arrival in theater, McChrystal demanded that every strike was reported to COMISAF within twelve hours after the event, and that a follow-on assessment

59 Brand, *McChrystal's Strategic Assessment*, 11-13 and 42-45, and McChrystal, "COMISAF's initial assessment", p- E-1 - E-4.

60 Brand, *McChrystal's Strategic Assessment*, 44, and McChrystal, "COMISAF's initial assessment", p. E-1 - E-4.

61 McChrystal, "COMISAF's initial assessment", p. E-2.

62 McChrystal, "COMISAF's initial assessment", p. D-1 - D-4.

63 McChrystal, "COMISAF's initial assessment", p. E-3.

took place if there was an allegation of civilian casualties.[64] The Combined Forces Air Component Commander (CFACC), the Air Component Coordination Element (ACCE) and Air Component Element (ACE) hosted weekly video teleconferences with every fixed wing air unit that flew in Afghanistan. In these teleconferences every use of lethal force by these units was evaluated on the possibility of civilian casualties, and especially the root causes for the infliction.[65] From this evaluation, procedural changes were implemented. The strategic requirement to execute a policy of tactical patience, after some initial confusion came down to a small change in weapon release authority procedures. There would be a requirement of an intermediate-level commander's approval before releasing ordnance. Up and until then this requirement was reserved for situations where the desired impact point of the ordnance was so close to ground forces that they had a risk of being exposed to its effects, a situation called "danger close".[66] A small but significant change was McChrystal's decision to let ground forces execute Battle Damage Assessment after the use of lethal force by the air weapon. This was hitherto done by the airmen that had released the ordnance. McChrystal ordered the ground commanders to physically check the effects of the ordnance dropped, provided this could be done without excessive danger to the ground forces.[67] McChrystal put more emphasis on "tactical patience", meaning that the ground commanders assessed all alternative options before resorting to lethal use of force. Also, he held his subordinate commanders accountable for civilian casualties and collateral damage, and wanted to be informed on every weapons release within a very short time span. It was this forceful day-to-day leadership which changed the dynamics within the Headquarters of ISAF.[68]

McChrystal in turn translated these ideas into directions. Especially with regard to low flying helicopters, air crews were directed to change and harmonize their tactics with the counterinsurgency goals in mind. Among other things, this included flying profiles which avoided densely populated areas and locations of religious and cultural significance as much as possible.[69] In practice, this meant for aircrews increased focus on the process of gradual escalation of force. Refraining from the use of weapons by default, there was an increased attention to show of presence and show of force. Actual weapon release was discouraged. Also, there was increased focus on Intelligence, Surveillance and Reconnaissance (ISR) missions.[70]

64 Raaberg, "Shift", 148.

65 Stephen L. Hoog, "Airpower Over Afghanistan: Observation and Adaptation for the COIN Fight", In: *Airpower in Afghanistan 2005-10: The Air Commanders' Perspectives*, ed. Dag Henriksen (Maxwell Air Force Base, AL: Air University Press, 2014), 235-257, 244.

66 Hoog, "Airpower", 246.

67 Hoog, "Airpower", 243-244.

68 Hoog, "Airpower", 242-243, and Raaberg, "Shift", 148.

69 Emile Van Duren (ed), *ISAF HQ RC(S) CJTF6 Tourbook: 1 November 2009 - 2 November 2010* (The Hague: Opmeer, 2011), 189, and E.C.G.J. Van Duren, Air Commodore, Royal Netherlands Air Force, Interview with the Author, July 30, 2011.

70 Freedberg, "Air War", and David Wood, "Holding Fire Afghanistan: Airmen Adapt to the McChrystal Directive", *Air Force Magazine* 93, no. 1 (2010): 28-32.

Implementation of McChrystal's directives was not greeted with enthusiasm by all. Within the airpower community, McChrystal's restrictive enforcement of his guidelines caused some uncertainty and confusion. It raised the question to what extent the aircrews were supposed to comply to requests from ground commanders. According to Major General Douglas L. Raaberg, DCFACC between June 2008 and July 2009, air strikes took place under auspices of the ground commanders who called in the strikes, so the real problem were the ground commanders not adhering to the guidelines. Airmen, according to Raaberg, did not have enough situational awareness to question the decision of the ground commander to call in an airstrike.[71] This touched on tension within the realm of air-land integration. Both Raaberg and his successor, Lieutenant General Stephen L. Hoog, stated that the guideline to use "tactical patience" on the one hand caused feelings of incertitude on the part of the airmen. On the other hand, ground commanders feared that airmen would erroneously question their requests, and refuse or delay the airstrike, thereby needlessly endangering the safety of ground forces.[72] However, this could be prevented when airmen became more of a partner in a team effort, which required them to have situational awareness of the dynamics of counterinsurgency in general, and on the ground commander's plan, called a "scheme of maneuver", in particular. In order to obtain this situational awareness, the number of liaisons was increased. Also, the range of operational topics for which liaisons were installed was increased, such as for instance ISR or Electronic Warfare. Hoog suggested that some of the tension with regard to implementation of McChrystal's guidelines eased after a while, when all parties had been granted some time to get used to the new situation.[73]

A second cause for concern was related to the first one. From the perspective of the ground forces, tactical patience of airmen and soldiers meant increased risk for the latter. All involved concurred with the strategic guideline that the Afghan population deserved the most attention, but there were differences of opinion concerning the question what the correct implementation of the guidelines was with regard to the application of lethal force.[74] Both aircrews and ground forces could become frustrated when they had to show restraint and were forced to take extra time to assess the situation while under fire.[75] Anecdotally, this frustration went as far as one US staff sergeant writing an email to McChrystal directly, inviting him to experience the practical consequences of his directives first hand in the field. McChrystal accepted the invitation.[76] Again, the new directions required some time to settle in. As one reporter from *Air Force Magazine* noted: "*Changing*

71 Raaberg, "Shift", 147-150.

72 Hoog, "Airpower", 246, and Raaberg, "Shift", 155-156.

73 Hoog, "Airpower", 247.

74 Broadwell and Loeb, *All in*, 31.

75 Robert Perkins, "Airpower in Afghanistan: How NATO Changed the Rules, 2008-2014", (Action on Armed Violence, London, December, 2014) http://reliefweb.int/sites/reliefweb.int/files/resources/AOAV-Air-Power-in-Afghanistan.pdf (accessed November 28, 2015), 18, and Wood, "Holding Fire", 31.

76 Hastings, Michael, *The Operators*, 232-234.

tactics, techniques, and procedures has not been easy for crews trained to put maximum firepower on target".[77]

After McChrystal, the air weapon had to adapt to Petraeus' guidelines after McChrystal was relieved from office. Petraeus' guidelines did not provoke the negative reactions that McChrystal's directives had. An explanation could be that both airmen and soldiers became accustomed to more restrictive use of force. Also, the problem could be deemed less severe, as the general feeling was that the rules had been loosened somewhat by Petraeus. This is an indication that the airmen adapted to this new situation without much quarrel. Nevertheless, the issue of civilian casualties remained a field of interest, and the successors of Petraeus and McChrystal issued updated Tactical Directives to address the problem.[78] In addition, some internal procedures were in need of revision, such as narrowing the definition of "self defense", a prerequisite for weapons release, and streamlining the various definitions between ISAF and OEF.[79]

6.2.3. Increased Operational Coherence in Absence of Strategy

The period between 2008 and 2012 showed increased operational coherence in Afghanistan, even in absence of a formal and comprehensive strategy. Primary instigator was the newly installed Obama Administration, which provided part of a strategy. It was a combination of counterinsurgency and counterterrorism in order to prevent Al Qaida and the Taliban to become a terrorist threat once again. It also addressed the means: several thousands of extra troops for Afghanistan, and leadership targeting in Pakistan in coordination with diplomatic initiatives towards Pakistan. The military strategy for NATO troops however was still not devised by the doctrinally proscribed organizational entity, namely a Joint Forces Command. That was done by COMISAF, who doctrinally was a tactical commander. This meant that airpower strategy *de facto* was still subservient to a lower-level commander. The subsequent commanders of ISAF searched for a new balance between restraint in order to gain support of the population on the one hand, and force protection on the other. Even with the differences of the commanders taken into account, that new balance involved more restrictive use of kinetic force by the military in general, with the

77 Wood, "Holding Fire", 31.

78 Joint Analysis & Lessons Centre, "Protection ".

79 Perkins, "Airpower", United Nations Assistance Mission in Afghanistan (UNAMA), "Afghanistan Annual Report 2012: Protection of Civilians in Armed Conflict", (Kabul, February, 2013) http://unama.unmissions.org/LinkClick.aspx?fileticket=zYmVmJCwBe4%3d&tabid=12254&language=en-US (accessed December 19, 2013), 15, and 34, and United States Joint Forces Command, "Reducing and Mitigating Civilian Casualties: Afghanistan and Beyond", (Final Report Joint Civilian Casualty Study, August 31, 2010) http://www.dod.mil/pubs/foi/operation_and_plans/GlobalWarOnTerrorism/Miscellaneous/12-F-0460_doc_01_Reducing_and_Mitigating_Civilian_Casualties_Afghanistan_and_Beyond.pdf (accessed November 15, 2014), 15-17. Different interpretations of relating terminology, such as "hostile act" and "imminent threat", leading to different national caveats, in the past had led to friction between nations: Marc E. Garlasco, *"Troops in Contact": Airstrikes and Civilian Deaths in Afghanistan* (New York, NY: Human Rights Watch, September, 2008), 30-31, and Winston S. Williams, "Multinational Rules of Engagement: Caveats and Friction", *The Army Lawyer* January (2013): 24-28.

air weapon in its wake. The air weapon had to adapt to these changes, and in general did so without fundamental differences of opinion. Its implementation initially did lead to some friction. The change of culture McChrystal wanted to achieve met with some resistance as result of confusion, especially when the lives of soldiers were at stake. Also, the speed of which McChrystal wanted to turn things around, and the notion that he singled out the air weapon as being the sole cause for collateral damage and civilian casualties, caused irritation. This however did not last. In general, the air weapon kept its general strategic outlook but adapted tactics, techniques and procedures to COMISAF's guidelines. It stopped being the inflexible emergency call, and started to focus on missions that had relation to longer term goals, such as leadership targeting and ISR.

6.3. Plans and Operations: Increase of Operations with Decrease of Kinetic Posture

6.3.1. Airlift and ISR

Operationally, the period between 2008 and 2012 was marked by two developments, both instigated by the new strategic outlook. The first was the surge of forces. The second was increased attention to the needs of the population. Both developments had a significant impact on the plans and operations executed by the air weapon. As will be described in the paragraph on resources, activity in the realm of inter-theater and intra-theater airlift rose due to the surge of ground forces and use of distribution routes on the ground. Especially the number of airdrops increased dramatically. General Schwartz estimated in 2011 that between 2006 and 2011 about sixty four million pounds of cargo was airdropped, with over half of that in 2009 as a result of the surge.[80] In addition to this increase of numbers, air planners also developed initiatives to make available airlift capacity more efficient. For instance, in 2009 planners of the Combined Air Operations Center (CAOC) implemented a planning philosophy that made prioritization of airlift easier. It involved separating priority flights, such as medical evacuation, from more routine sorties, such as troop rotations.[81] Another option was to locate transport aircraft near its costumers. This was an experiment that the CAOC conducted in Iraq and was called the "C-130 Direct Support Program".[82] Finally, the Air Mobility Division of the CAOC tried to enhance effectiveness of resupply by scheduling routine missions and perfecting the practice of resupplying multiple Forward Operating Bases in a single C-17 sortie.[83] Technological novelties, such as Joint Precision Airdrop System (JPADS), by 2009 became more widely used resupplying the by now nearly

80 Norton A. Schwartz, "Airpower in Counterinsurgency and Stability Operations", *Prism* 2, no. 2 (2011): 127-134, 129. See also: Bob Fehringer, "Airdrops Break Records in Afghanistan", *U.S. Department of Defense Information / FIND* (July 13, 2010) http://search.proquest.com.nlda.idm.oclc.org/docview/608800982?pq-origsite=summon (accessed July 4, 2016).

81 Hoog, "Airpower", 253.

82 Hoog, "Airpower", 253-254.

83 Hoog, "Airpower", 255.

seventy airfields across Afghanistan and, if need be, individual fire bases.[84] A small but important change was made with regard to intra-theater airlift. As part of the population-centric approach, the restrictions of transport of Afghan nationals by ISAF helicopters were eased significantly. Besides Afghan security forces, Afghan civilians and anecdotally even Taliban were allowed to board ISAF air assets, in particular in cases of medical evacuation.[85]

Between the years 2008 and 2012 leadership at basically all levels increased efforts within the realm of ISR. The main driver was the threat the insurgents posed to the thinly dispersed ground forces. The most pressing problem was that of finding Improvised Explosive Devices (IEDs), although ISR support was also essential for operations like leadership targeting, real-time battlefield situational awareness, and analysis of the operational environment in general.[86] Besides using imagery sensors, interception of radio signals could benefit ground operations. Airborne Signals Intelligence (SIGINT) capacity could be used for listening in on Taliban communications and influencing those communications at a convenient moment, for example via jamming.[87] ISR could also be used for mapping purposes.[88]

As for countering IEDs, the coalition needed ISR support to determine who was planting the IEDs, where they were placed, and when. When found, airborne electronic warfare equipment could also be used to try to pre-detonate radio controlled IEDs ahead of an advancing convoy. The success rate however was low.[89] So therefore, the main airpower role with regard to counter-IED became support to finding the IEDs or their makers. This led to two general types of intelligence activity. First, the threat could be countered by identifying the perpetrators before they had the chance to plant the IEDs. This involved network analysis of the Human Environment. The aim of this analysis was to identify IED-makers via their social connections, most notably their known insurgent connections. Second, ISR could be helpful with determining time and location by identifying the individuals while they were placing the IEDs, or search for IEDs after they were placed.[90] For

84 Rebecca Grant, "The Afghan Escalation", *Air Force Magazine*. 92, no. 6; (2009): 28-32, 31.

85 Charlotte Madison, *Dressed to Kill: The True Story of a Woman Flying Under Fire* (London: Headline Publishing Group, 2010), 301-304.

86 Michael L. Downs, "Rethinking the CFACC's Intelligence, Surveillance, and Reconnaissance Approach to Counterinsurgency", (Paper, Naval War College, Newport, RI, May 10, 2007) http://www.dtic.mil/dtic/tr/fulltext/u2/a470834.pdf (accessed March 24, 2016), 7-8.

87 Hoog, "Airpower", 247, and Sullivan, "Game-changing Strategies", 199-202.

88 Matthew Fisher, "Air Force to Map Afghanistan As Air Commitment Grows", *CanWest News* (April 6, 2009) http://search.proquest.com/docview/460044736/47BE399DFE9242EEPQ/29?accountid=35226 (accessed September 2, 2014).

89 Sullivan, "Game-changing Strategies", 194, and I.D. Teakle, Air Commodore, Royal Air Force, Interview with the Author, April 23, 2013.

90 Dai John, "Countering the IED Threat: Challenges for Air and Space Power", *The Journal of the JAPCC* 11 (2010): 59-63 http://www.japcc.org/wp-content/uploads/JAPCC_Journal_Edition_11.pdf (accessed June 15, 2017), Joint Air Power Competence Centre, "NATO Air and Space Power in Counter-IED Operations: A Primer", (September, 2010) https://www.japcc.org/portfolio/nato-air-and-space-power-in-counter-ied-operations (accessed May 24, 2016), Joint Air Power Competence Centre, "NATO Air and Space Power in Counter-IED Operations: A Primer - Second Edition", (July, 2011) https://www.japcc.org/portfolio/flyer-2 (accessed October 15, 2013), and Tim Ripley, *Air War Afghanistan: US and NATO Air Operations From 2001* (Barnsley: Pen & Sword Books Aviation, 2011), 178-181.

both types of intelligence activity, the air weapon could support the counter-IED effort with persistent airborne surveillance, mostly with unmanned systems. Especially systems that were capable of delivering Full Motion Video (FMV) became high in demand, because FMV was very helpful in establishing patterns of life.[91]

Secretary of Defense Robert Gates recognized the added value of these capabilities. In 2007, he started to speed up and streamline programs relating to the fielding of Predator Unmanned Arial Vehicles (UAVs). This initially met with resistance from the US Air Force, but General Schwartz, armed with a sense of realism about which air force requests had a reasonable chance of success within the current political climate, also recognized the importance of ISR in operational environments such as Afghanistan. Schwartz gave UAV-generated ISR high priority, and the USAF started to invest in the qualitative increase and technological diversification of the systems.[92] For Afghanistan in the immediate run, the number of US ISR assets rose, and the number of ISR-related sorties the CAOC controlled for both Afghanistan and Iraq more than tripled between 2007 and 2012, from slightly over eleven thousand to nearly thirty five thousand.[93] The allies stepped up their ISR related activities as well. Between 2006 and 2010 the rise of number of ISR-related air assets in support of ISAF was sharper than any other type, from only a few to several dozen. Trends of NATO's Air Order of Battle (AOB) are visualized in appendix 3.7.

The variety of assets and their associated technologies rose as well. In 2007, the most prominent asset related to ISR was the Predator, and later its armed version called Reaper, in addition to traditional IMINT and SIGINT assets such as the U-2, RC-135 Rivet Joint, and E-8 JSTARS. After the ISR effort gained traction, the types of assets were much more diverse. They involved for instance other UAVs, from the large and RQ-170 "Sentinel", unmanned helicopters, to micro-UAVs.[94] Experiments with the tethered aerostats continued.[95] As part

91 Anonymous, "NATO General Calls for More Air Support in Afghanistan", *Breakingnews.ie* (July 2, 2008) http://search.proquest.com/docview/755195623/29340749C3944E80PQ/12?accountid=35226 (accessed September 18, 2014), Robert P. Jr. Haffa and Anand Datla, "Joint Intelligence, Surveillance, and Reconnaissance in Contested Airspace", *Air & Space Power Journal* 28, no. 3 (2014): 29-47, 32, and Erik Holmes, "Lawmakers, Experts Discuss How to Fill ISR Gap Manned Aircraft Fitted with Sensors Could Become Short-term Fix", *Air Force Times* (2008) http://search.proquest.com/docview/1010756371/29340749C3944E80PQ/14?accountid=35226 (accessed September 18, 2014).

92 Robert M. Gates, *Duty: Memoirs of a Secretary at War* (New York. NY: Albert A. Knopf, 2014), 129-135, Schwartz, "Airpower", 129-130, and Norton A. Schwartz, Suzie Schwartz and Ronald Levinson, *Journey: Memoirs of An Air Force Chief of Staff* (New York, NY: Skyhorse Publishing, 2018), 255-259 and 295-320.

93 Anonymous, "Combined Forces Air Component Commander 2007-2012 Airpower Statistics", *Website United States Air Forces Central Command* (December 31, 2012) http://www.afcent.af.mil/Portals/82/Users/221/33/733/31%20DECEMBER%202012%20Airpower%20Stats%20Combined%20Operation%20Slidev2.pdf?ver=2016-05-04-025558-210 (accessed August 1, 2016).

94 Anonymous, "Fire Scout Being Armed As Afghan Deployment Extended", *Air Forces Monthly*, no. 286 (2012): 18, Anonymous, "US Navy's Fire Scout Grows Up", *Jane's International Defense Review* 46, no. 12 (2013) http://search.proquest.com/docview/1449884618?accountid=35226 (accessed December 31, 2016), Haffa and Datla, "ISR in Contested Airspace", 32-33, Paolo Valpolini, "ISR in Afghanistan: SR Easier Than I", *Armada International*, no. 2 (2010): 46-50, 48, Appendix 3.7 and Appendix 3.8.

95 Nathan Hodge, "U.S. News: Army Preps Spy Blimp", *The Wall Street Journal* (June 30, 2012) http://search.proquest.com/docview/1022672408/29340749C3944E80PQ/20?accountid=35226 (accessed September 18, 2014), Bruce Ward, "Giant Blimp Has Kandaharis on Edge", *CanWest News* (October 8, 2009) http://nlda.idm.oclc.org/login?url=http://search.proquest.com/docview/459994830?accountid=35226 (accessed March 8, 2016), and Bruce Ward, "Spy Blimp Gives Army, Police An Eye in

of an urgent operational requirement, and partly to function as an interim solution during production of additional unmanned systems, the US fielded the MC-12 "Liberty", a modified turbo-propelled King Air 350 with a diverse set of sensors and communication equipment. Initially developed for operations in Iraq, it made its appearance in Afghanistan in 2010. The system was part of a unit especially installed to counter the IED threat, called Task Force Observe, Detect, Identify, and Neutralize (TF ODIN).[96]

The sensors within the platforms developed too. Increased demand spurred improvement of sensors.[97] New sensors for instance included experiments with multi-spectral sensors, which could sense beyond the traditional spectrums of visible light and infra red. In addition, these sensors were increasingly linked, complementing each other and other types of sensors.[98]

These developments in turn fostered activity in and around intelligence sections and organizations. All these systems and sensors generated massive amounts of data. This increased the demand for communication networks, which were used for transmission of data and GPS signals.[99] Once transmitted, the data had to be stored, requiring additional storage capacity, and made available to intelligence analysts. The latter development was one of the drivers for the creation of a coalition-wide network to which all nations participating in ISAF had access.[100] Finally, technologies had an impact on the analysts. The increased amount of data had to be transformed into actionable intelligence, but the sheer volume of data impeded this process. Therefore, the increased demand on ISR spawned both organizational and technological adaptations. An organizational adaptation could include establishment of a reach back functionality of analysts in the home countries, which could provide for processing and exploitation of data.[101] At the CAOC, several procedural changes were made to streamline ISR-related requests from the various

Sky Over Afghanistan", *CanWest News* (October 11, 2009) http://nlda.idm.oclc.org/login?url=http://search.proquest.com/docview/461114754?accountid=35226 (accessed March 8, 2009).

96 Haffa and Datla, "ISR in Contested Airspace", 30-25, Holmes, "Lawmakers", Michelle Tan, "USAF Sends MC-12s to Afghanistan", *Defense News* (January 4, 2010) http://search.proquest.com/docview/442516770/29340749C3944E80PQ/2?accountid=35226 (accessed September 18, 2014), and Valpolini, "ISR", 48.

97 Anonymous, "Raytheon Company; C4ISR Journal Lauds Raytheon Sensor", *Science Letter* (2008) http://search.proquest.com/docview/209048256/29340749C3944E80PQ/23?accountid=35226 (accessed September 18, 2014), and Roy Braybrook, "Looking Down From a Great Height", *Armada International* 35, no. 6 (2012) http://search.proquest.com/docview/910866466/1411C10A69C547ABPQ/14?accountid=35226 (accessed September 18, 2014)

98 Anonymous, "Sensors, Surveillance, Video and More", *Defense News* (October 26, 2009) http://search.proquest.com/docview/442503494/29340749C3944E80PQ/26?accountid=35226 (accessed September 18, 2014), Haffa and Datla, "ISR in Contested Airspace", 32-33, and Joint Air Power Competence Centre, "NATO Counter-IED 1", 29.

99 Michael Hoffman, "Space Assets Complement UAV Coverage", *Air Force Times* (2008) http://search.proquest.com/docview/1010756770/29340749C3944E80PQ/18?accountid=35226 (accessed September 18, 2014), Sullivan, "Game-changing Strategies", 202-203, and Marcus Weisberger, "USAF to Test Wide-area Networking Hat Could Improve C2 in Afghanistan", *Inside the Pentagon's Inside the Air Force* 21, no. 14 (2010) http://search.proquest.com/docview/968947447/29340749C3944E80PQ/5?accountid=35226 (accessed September 18, 2014).

100 Anonymous, "Sensors", and Julian Hale, "NATO to Improve Intel Sharing in Afghanistan", *Defense News* (July 26, 2010) http://search.proquest.com/docview/740984319/29340749C3944E80PQ/3?accountid=35226 (accessed September 18, 2014). Coalition network was called Afghan Mission Network (AMN). Details are described in paragraph 6.5.2

101 Tim Ripley, "UK Ramps Up Afghan IMINT Analysis", *Jane's Defence Weekly* 48, no. 50 (2011) http://search.proquest.com/docview/907570212/29340749C3944E80PQ/11?accountid=35226 (accessed September 18, 2014).

commanders in the field.[102] Technological adaptations included software that could help manage the data, or software that could help detect changes on the ground such as recent excavations.[103]

As a result of operations in Iraq and Afghanistan Robert Haffa and Anand Datla concluded with regard to ISR developments that demand was high, and targets were time-sensitive. This resulted in an emphasis on airborne platforms that focused on supporting tactical ground commanders, rather than joint force commanders. Sensor systems were tailored to persistent coverage and directed towards a target set of IEDs, moving vehicles, and high value individuals. They regarded the technological and procedural changes to become more effective in a counterinsurgency to be "*exemplary*".[104] In addition, General Schwartz suggested that the ISR efforts in support of all missions, not only counter-IED, were successful.[105] There were however practical problems. Especially in the earlier stages, available bandwidth was scarce, which could preclude execution of Predator missions.[106] As more UAVs were deployed, more of them crashed as a result of various reasons, which, among other things, led to changes in education and training.[107] Also, some workarounds needed to be executed to get the systems to theater quickly.[108] The newly deployed aerostats turned out to be more vulnerable to the harsh meteorological conditions in Afghanistan than was anticipated, and also suffered from design flaws and inadequate training of the crews operating them. This resulted in an unacceptable loss rate that had to be addressed, even though some of the losses were attributed to small arms fire from the insurgents.[109]

102 Jaylan Michael Haley, "An Evolution in Intelligence Doctrine. The Intelligence, Surveillance, and Reconnaissance Mission Type Order", *Air & Space Power Journal* 26, no. 5 (2012): 33-48, and Sullivan, "Game-changing Strategies", 250-252.

103 Anonymous, "General Dynamics Delivers Digital Video Exploitation System to Australian Army for Operations in Afghanistan: System Helps Manage Large Volumes of Full Motion Video and Turns Data Into Real-time Actionable Intelligence for Forward-deployed Forces", *PR Newswire* (December 20, 2012) http://search.proquest.com/docview/1241020562/29340749C3944E80PQ/15?accountid=35226 (accessed September 18, 2014), Anonymous, "Lockheed Martin Delivers Innovative Full-motion Video Intelligence System to USJFCOM: First "Valiant Angel" System Delivered Just 90 Days After Contract Award", *PR Newswire* (March 15, 2010) http://search.proquest.com/docview/450350404/29340749C3944E80PQ/8?accountid=35226 (accessed September 18, 2014), and Menno Steketee, "RNLAF Officials Provide Insight on RecceLite Operations in Afghanistan", *Jane's International Review* 46, no. 8 (2013) http://search.proquest.com/docview/1379628814/C12E00C4CD914B7FPQ/1?accountid=35226 (accessed October 8, 2014).

104 Haffa and Datla, "ISR in Contested Airspace", 35.

105 Schwartz, "Airpower", 130.

106 Christopher J. Russell, "Airspace Command and Control in the Contemporary Operating Environment", (Monograph, United States Army Command and General Staff College, School of Advanced Military Studies, Fort Leavenworth, KS, July 5, 2010) http://www.dtic.mil/dtic/tr/fulltext/u2/a523204.pdf (accessed July 12, 2016), 30, and Sullivan, "Game-changing Strategies", 202-203.

107 James Drew, "Air Force: 96 Predator and Reaper Combat Mishaps Since 2001", *Inside the Pentagon's Inside the Air Force* 25, no. 30 (2014) http://search.proquest.com/docview/1548206135?accountid=35226 (accessed December 30, 2016), Craig Whitlock, "Crashes Point to a Risk for Civilian Use: Military Lost 418 Drones Since 2001, Documents Show", *Chicago Tribune* (June 26, 2014) http://search.proquest.com/docview/1540077699?accountid=35226 (accessed December 30, 2016), and David Zucchino, "War Zone Drone Crashes Add Up", *Website LA Times* (July 6, 2010) http://www.latimes.com/la-fg-drone-crashes-20100706-story.html (accessed February 5, 2016)

108 Murray Brewster, "Canadians Taught Aussies to Fly Drones in Afghanistan, but Faced Turbulence: Canadians Teach Aussies to Fly UAVs", *The Canadian Press* (December 13, 2010) http://search.proquest.com/docview/817772324/BBBB608D8DE84F4CPQ/45?accountid=35226 (accessed September 18, 2014).

109 William Matthews, "Aerostats Lost", *C4ISR* (2013) http://search.proquest.com/docview/1356998777/24D68AF4083C4E41PQ/24?accountid=35226 (accessed September 18, 2014).

While these practical problems did not severely hamper operations, there were some more long term issues as well. Secretary Gates lamented that the US Air Force initially was reluctant to embrace unmanned flight. Once adopted, the unmanned program was unpopular with air force pilots, because it could hamper their careers. Also, various services and agencies were pursuing their own programs, without coordination. This delayed forceful deployment of ISR assets.[110] The most fundamental criticism on the ISR effort in Afghanistan was delivered by McChrystal's senior intelligence officer, US Army Major General Michael T. Flynn. In January 2010, he and two analysts published a report in which they argued that the entire intelligence collection effort was over-focused on the insurgents. Counterinsurgency was directed towards gaining support from the local population. The intelligence collection and the analytical intelligence products resulting from it should support commanders at all levels in making informed decisions to that end. This required significant cultural changes of the intelligence community. That community should focus on other elements of the human environment (the population instead of insurgents), using other intelligence sources (most notably Human Intelligence (HUMINT) and open source intelligence (OSINT) instead of IMINT and SIGINT, and using a different communication philosophy (bottom-up instead of top-down).[111] Within their proposed framework, ISR collection efforts directed at identifying key insurgent figures was necessary, but only as a secondary task.[112] With regard to the counter-IED effort, they stated that: *"A single-minded obsession with IEDs, while understandable, is inexcusable if it causes commanders to fail to outsmart the insurgency and wrest away the initiative"*.[113] Their argument was, in short, the population-centric counterinsurgency framework as proposed by McChrystal, translated into the intelligence domain.

The report was widely read and triggered the US Department of Defense to task the "Advisory Group on Defense Intelligence on Counterinsurgency Intelligence, Surveillance, Reconnaissance Operations" of the Defense Science Board (DSB) to identify the most effective support of COIN operations by the Department of Defense.[114] The Advisory Group reported on April 25, 2011, and it concluded, among other things, that ISR had become too narrowly focused on airborne technical collection capabilities and systems,

110 Gates, *Duty*, 129-135.

111 Michael T. Flynn, Matthew F. Pottinger and Paul D. Batchelor, "Fixing Intel: A Blueprint for Making Intelligence Relevant in Afghanistan", (Center for a New American Security, Washington, DC, 2010) http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA511613 (accessed August 1, 2016), passim. Emile Simpson reached similar conclusions in a monograph he wrote after his operational tour in Helmand province. While not his main argument, he argued that the narrative of the operational environment needs to be verified, and altered if need be, at the tactical level. This can best be done by personnel with the best local situational awareness, Subsequently, intelligence resources should be concentrated at the tactical level, and the derived intelligence needs to move up the chain of command for planning and organizing operations, rather than top down. (Emile Simpson, *War From the Ground Up: Twenty-first Century Combat As Politics* (New York, NY: Columbia University Press, 2012), 104-109 and 148).

112 Flynn, Pottinger, and Batchelor, "Fixing Intel", 23.

113 Flynn, Pottinger, and Batchelor, "Fixing Intel", 24.

114 US Undersecretary of Defense, "Counterinsurgency (COIN) Intelligence, Surveillance, and Reconnaissance (ISR) Operations", (Report of the Defense Science Board Task Force on Defense Intelligence, April 25, 2011) http://www.acq.osd.mil/dsb/reports/ADA543575.pdf (accessed October 12, 2012).

rather than on the wider capabilities that were needed to support a counterinsurgency operation. In addition, the collection effort was pre-occupied with counterterrorism and force protection.[115] It also identified a serious practical problem: "*The insatiable demand for information and emphasis on collection is producing a deluge of data, overwhelming the ability to provide useful, actionable intelligence in a timely manner.*" [116]

Both Flynn and the Advisory Group did not single out the air weapon as the source of the problems. The problem was rather a general lack of understanding of COIN principles by the intelligence community, regardless of service or department. As with operations, the intelligence community was focused on force protection, rather than the broader principles of COIN. However, their conclusions could potentially affect the air weapon, as recent developments put airborne ISR platforms to the forefront. During the period described in this chapter, changes of policy resulting from these inquiries did not change the overall approach towards ISR significantly. This might be an indication that implementation of the new approach into the lower levels of the organization at least needed some time.

6.3.2. Keeping the Population in Mind: Named Operations and CAS

As for the "kinetic" part of the application of airpower, the "named operations" continued during the tenures of McChrystal and Petraeus. They however were executed within the new population-centric counterinsurgency approach, with an adjusted role for the air weapon. Two of these named operations stand out. The first was operation *Moshtarak*, of which the main military phase was executed between February 13 and 25, 2010. It was the biggest military operation in Afghanistan since 2001, involving 15,000 coalition and Afghan troops, and aimed at retaining control of the Nad Ali area and the town of Marjah in Helmand Province. The second operation was called *Hamkari*, and took place with about 12,000 soldiers between June and November in 2010 in the surrounding areas of Kandahar city and within the city itself. These operations differed from the earlier named operations in several respects. The "clear, hold, build" tactic was executed with more assets, using the forces that had entered the country as a result of the surge. In addition, the Afghan civilian and military partners had a larger role in operations than before. And the operations were marked by an imposed restraint on using deadly force. Finally, the operational plans envisioned to consolidate the gains by transferring authority to the Afghan government

115 US Undersecretary of Defense, "Counterinsurgency (COIN) Intelligence, Surveillance, and Reconnaissance (ISR) Operations", (Report of the Defense Science Board Task Force on Defense Intelligence, April 25, 2011) http://www.acq.osd.mil/dsb/reports/ADA543575.pdf (accessed October 12, 2012), vi-x. These were two of the nine deficiencies the Advisory Group identified.

116 US Undersecretary of Defense, "COIN ISR ", ix.

institutions. In general, these operations helped to retain momentum from the insurgents, although long-term success remained subject of debate.[117]

This different operational approach had important consequences for the air weapon. The emphasis on missions shifted from kinetic missions, such as CAS, in favor of less violent missions, such as ISR, transport, and other "non-kinetic" airpower deployment. This manifested itself, for instance, in the absence of the knee-jerk action of preparatory bombing by air strikes or artillery bombardment in the phase before the ground attack.[118] In the case of *Moshtarak*, the air weapon dropped leaflets instead, as part of an information campaign using leaflets and radio broadcasts. ISAF leadership tried to minimize casualties by offering the population to leave the area, and encouraging the insurgents to do so. Due to intimidation of the population by the insurgents, this however had limited effect.[119]

ISR became more important. In both operations, the insurgents had prepared the area of operations with numerous IEDs. The air weapon was used extensively during both the preparation phase and execution phases of these operations to help ground units find, and sometimes also dismantle, the IEDs. They were aided by a new CAOC procedure that enabled more direct request by ground commanders, which helped ground units to minimize casualties, locate insurgents, and keep freedom of movement.[120] Finally, coalition forces, including the Afghans, made increased use of helicopters. Operation *Moshtarak* started with an air assault involving more than sixty helicopters, inserting over 2,000 soldiers in the engagement zone.[121] Operation *Hamkari* also saw insertions, albeit on a

117 Ballard, Lamm, and Wood, *From Kabul to Baghdad and Back*, 252-259, Chaudhuri and Farrell, "Campaign Disconnect", 281-282, Antony H. Cordesman, Adam Mausner and Jason Lemieux, "Afghan National Security Forces: What Will It Take to Implement the ISAF Strategy", (Center for Strategic and International Studies, Washington, DC, November, 2010) https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/101115_Cordesman_AfghanNationalSecurityForces_Web.pdf (accessed August 4, 2016), 198-215, Jeffrey Dressler, "Marjah's Lessons for Kandahar", (Institute for the Study of War (ISW), July 9, 2010) http://www.understandingwar.org/report/marjahs-lessons-kandahar (accessed August 3, 2016), Jeffrey Dressler, "Operation Moshtarak: Taking and Holding Marjah", (Institute for the Study of War (ISW), March 2, 2010) http://www.understandingwar.org/sites/default/files/Operation_Moshtarak_2.pdf (accessed August 4, 2016), Carl Forsberg, "Counterinsurgency in Kandahar: Evaluating the 2010 Hamkari Campaign", (Institute for the Study of War (ISW), December, 2010) http://www.understandingwar.org/sites/default/files/Afghanistan%20Report%207_16Dec.pdf (accessed August 3, 2016), Richard Kemp and Andrew Ehrhardt, "Operation Moshtarak: Helmand Province, Afghanistan 13 - 25 February 2010", In: *Our Military Force's Struggle Against Lawless, Media Savvy Terrorist Adversaries: A Comparative Study*, 2nd Edition, ed. Klaus Dieter Neumann, Vincenzo Camporini, David A. Deptula, José María Terán, and others (Friends of Israel Initiative, February, 2016), http://www.high-level-military-group.org/pdf/hlmg-lawless-media-savvy-terrorist-adversaries.pdf (accessed August 3, 2016), 24-37, Stanley A. McChrystal, *My Share of the Task: A Memoir* (New York, NY: Penguin Group, 2014), 368, Sholtis, "Obama in Afghanistan", 186, Astri Suhrke, *When More Is Less: The International Project in Afghanistan* (London: C. Hurst & Co. Ltd., 2011), 65-66, Van Duren, *ISAF HQ*, 116-167, and Van Duren, Interview.

118 McChrystal, *My Share of the Task*, 368.

119 Kemp and Ehrhardt, "Moshtarak", 31-32,

120 Anonymous, "Air Support to OP MOSHTARAK", *Website Royal Air Force* (July 1, 2010) http://www.raf.mod.uk/news/archive.cfm?storyid=8E2B129A-5056-A318-A83A37A6821119CB (accessed August 3, 2016), Haley, "Evolution", 39-44, and Van Duren, *ISAF HQ*, 127.

121 Cordesman, Mausner, and Lemieux, "Afghan National Security Forces", 203, McChrystal, *My Share of the Task*, 368, Van Duren, *ISAF HQ*, 126-127.

smaller scale, which were directed to clear an area or to take blocking positions to counter fleeing insurgents.[122]

Operations *Moshtarak* and *Hamkari* also were heavily influenced by the new directives with regard to the use of deadly force. More specifically, they restrained use of CAS. Ground forces still worked under an umbrella of air cover, and CAS was still executed.[123] However, as with all use of deadly force, the proscribed circumstances in which CAS was allowed radically changed. Basically, kinetic fires were allowed only if soldiers were positive that there were no civilians present, especially if the contact took place in built-up areas.[124] During *Moshtarak*, this led to a decrease of kinetic air support, in favor of for instance shows of force. But it also led to lengthening of the command and control chain. This was due to the requirement of additional authorizations, which in turn could have the effects of denial of air support requests, hesitance by both soldiers and airmen to request fire support, of arguments while under contact, and of a general increase of vulnerability of ground forces. This in turn caused frustration with airmen and soldiers alike.[125]

As stated in the paragraph on strategy, this restriction of the kinetic response was part of an overall change of strategic outlook. Complaints however did not fall on deaf ears, and Petraeus lifted the restrictions somewhat. But he, and also his successor, US Marine Corps General John R. Allen, enforced more restrictive rules than the commanders before 2008.[126] What remained however was a desire to decrease the number of kinetic engagements and, if these were inevitable, reduce collateral damage and civilian casualties even further. Both technology and procedures could help achieving this goal.

Technologically, the trend of equipping more aircraft with precision hardware and software continued. More assets were equipped with updated sensors, avionics, and weapons, sometimes fielded using the "urgent operational requirement" procedure. By 2009, the use of these weapons systems had become standard.[127] Tweaking of the weapons

122 Forsberg, "Counterinsurgency", 19 and 33, Van Duren, *ISAF HQ*, 162 and 164-165.

123 Forsberg, "Counterinsurgency", 19 and 28.

124 Kemp and Ehrhardt, "Moshtarak", 32, Perkins, "Airpower", 11, Van Duren, *ISAF HQ*, 126.

125 Anonymous, "Troops: Strict War Rules Slow Down Afghan Offensive", *Website NBC News* (February 15, 2010) http://www.nbcnews.com/id/35409150/ns/world_news-south_and_central_asia/t/troops-strict-war-rules-slow-afghan-offensive/#.V6LzpmUz5dk (accessed August 4, 2016), Kemp and Ehrhardt, "Moshtarak", 32-33, and Perkins, "Airpower", 18, and United States Joint Forces Command, "Reducing and Mitigating", 36-38.

126 Perkins, "Airpower", 18-20.

127 Mike Benitez, "How Afghanistan Distorted Close Air Support and Why It Matters", *War on the Rocks Website* (June 26, 2016) http://warontherocks.com/2016/06/how-afghanistan-distorted-close-air-support-and-why-it-matters/ (accessed July 8, 2016), Jonathan Creer, "Picking the Bone: The B-1 Bomber As a Platform for Innovation", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2010) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS80MjEyOA==.pdf (accessed July 5, 2013), 92-97, Guus De Koster, "Mission Uruzgan: The Use of Air Power in Uruzgan", In: *Collaborating in Multiple Coalitions in Afghanistan*, ed. Robert Beeres, Jan van der Meulen, Joseph Soeters and Ad Vogelaar (Amsterdam: Pallas Publications - Amsterdam University Press, 2012), 119-131, 128, Michael J. Gething, "Tornado HMCS Aims to Improve Situational Awareness", *Jane's International Defense Review* 45, no. 5 (2012) http://search.proquest.com/docview/993079566/26186F1EFD2042FEPQ/146?accountid=35226 (accessed October 2, 2014), Gareth Jennings, "UK Rolls Out Tornado HMCS in Afghanistan", *Jane's Defence Weekly* 49, no. 17 (2012) http://search.proquest.com/docview/967579870/26186F1EFD2042FEPQ/3?accountid=35226 (accessed October 2, 2014), Lon Nordeen, *AV-8B Harrier II Units of Operation Enduring Freedom*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing Limited, 2014), 54, and Ripley, *Air War Afghanistan*, 163-173.

systems themselves could also minimize unintended damage, such as for instance smaller and fewer weapons, delayed impact fusing to reduce the effects of the blast, almost exclusive use of precision guided munitions to enhance the chance of hitting the intended target, double checked target coordinate generation, and experimentation with weapon- and sensor configurations.[128] Sometimes, a new technology was used, such as for instance a tablet computer, which allowed aircrews to use operational maps digitally. Before, they used paper maps, which could lead to loss of valuable time, especially when flying in vast area's of operations.[129]

New technologies could have paradoxical consequences. According to Mike Benitez, Joint Terminal Attack Controllers (JTACs) increasingly were located at the command posts instead of in the field, due to the relative shortage following the surge. The JTACs were provided with modern communications equipment, allowing to do their job from distances further away. By placing themselves inside the command posts, these JTACs could still deliver support, provided that they had access to FMV footage of the area. While technology made this possible, it could also hamper integration with ground forces at the tactical level.[130]

The technological developments were accompanied by procedural measures to pay increased attention to civilian casualties. For instance, JTACs and other ground personnel were trained to better manage the escalation procedures.[131] According to General Hoog, an additional authorization was required when dropping ordnance in a Troops In Contact (TIC) situation.[132] Other procedures essentially entailed more thorough assessment of incidents and battle damage assessment in general, and increased communication about them, in order to determine appropriate follow on action.[133] For the aircrews, the main difference was that they had to exercise more diligence before releasing any weapons. This primarily meant displaying more tactical patience, and using their sensors to get increased situational awareness. In addition, airmen stepped up their level of violence more gradually, in cooperation with ground forces. Instead of using the "kinetic" option by default, they increasingly did this only after shows of presence and shows of force did not work.[134]

While increased attention was paid to the avoidance of civilian casualties by the air weapon, the mission routine basically stayed the same. By 2010, airpower deployment from a tactical point of view had become fairly routinized. First, many of airpower's missions still

128 Hoog, "Airpower", 244, and Nordeen, *AV-8B Units*, 62, 67, and 84.

129 Michael Christman, "Disruptive Thinking and How the IPad Changed Close Air Support in Afghanistan", *Disruptive thinking and how the iPad changed Close Air Support in Afghanistan* (May 15, 2012) http://smallwarsjournal.com/blog/disruptive-thinking-and-how-the-ipad-changed-close-air-support-in-afghanistan (accessed October 12, 2012), and De Koster, "Mission Uruzgan", 128.

130 Benitez, "How Afghanistan".

131 Ripley, *Air War Afghanistan*, 163-168.

132 Hoog, "Airpower", 246.

133 Hoog, "Airpower", 243-244, and Raaberg, "Shift", 148.

134 Wood, "Holding Fire".

involved CAS, supporting ground forces in a TIC. By 2009 this had become fairly standard. There were about four to six sorties airborne in Afghanistan, conducting overwatch missions and ready to respond to emergencies. Another four to six fixed wing aircraft were placed on high readiness on the ground. The typical response time of the air weapon to a TIC call was about eight to twelve minutes. Most of the about one hundred assets involved were American.[135] The number of annual CAS sorties directed by the CAOC for Afghanistan fluctuated between twenty seven thousand and thirty five thousands, and the annual number of weapons dropped between four and five thousand.[136]

Airmen continually worked to shorten the time needed to respond to a TIC situation. According to John Schaefer, a combination of increased attention on five lines of effort, executed by officers fairly low in the chain of command, decreased the response times to about eight minutes late 2009. These lines were: building personal relationships within various elements of the command and control chains, flexible day-to-day use of the Air Tasking Order (ATO), active pursuit of improved situational awareness, an action-minded yet responsible mindset when a request for air support reached the headquarters, and relentless debriefing of aircrews.[137] Together, these lines of effort led to a situation where airmen at all levels were able to anticipate on the evolving situation on the ground as a result of increased understanding of the operational environment, and subsequently were able to communicate quickly with counterparts at other levels and task aircraft accordingly.[138] This serves as an example of how command and control arrangements, culture, and technological capabilities were tweaked to improve effectiveness. There was however an implicit change in the manner in which effectiveness was defined. With regard to CAS, airmen still measured effectiveness in terms of response times and accuracy. The new strategic outlook however put prevention of civilian casualties and collateral damage on the forefront to a larger extent than before.

6.3.3. Rise of Leadership Targeting

As stated in the previous chapter, western military leadership increasingly focused on targeting insurgent leadership. There were basically two types of missions in which the air weapon played a prominent role, namely raids executed by Special Operations Forces, and stand-alone air attacks on insurgent leaders.

Raids were mainly conducted in Afghanistan, although there were some reports indicating that raids were also conducted inside Pakistan.[139] Also, not all raids involved

135 Hoog, "Airpower", 237, and Sullivan, "Game-changing Strategies", 193.

136 Anonymous, "CFACC Airpower Statistics 2007-2012".

137 John J. Schaefer, "Responsive Close Air Support", *Joint Force Quarterly*, no. 67 (2012): 91-96.

138 Schaefer, "Responsive CAS".

139 Nicholas Schmidle, "Getting Bin Laden: What Happened That Night in Abbottabad", *Website The New Yorker* (August 8, 2011) http://www.newyorker.com/magazine/2011/08/08/getting-bin-laden (accessed August 5, 2016), and Pir Zubair Shah, Eric

airpower, as the definition of a raid involved every offensive operation that involved entry of a compound.[140] However, many of them did involve the air weapon. Most famous of these raids was conducted on May 2, 2011, when US Special Operations Forces flew to Abbottabad in helicopters, deep inside Pakistani territory, to successfully kill or capture Osama bin Laden, and bringing his body back to Afghanistan.[141] Data obtained from *The Long War Journal* showed that the number of raids directed at various insurgent groups in Afghanistan increased dramatically between 2007 and 2011, from three to ninety respectively, indicating a increased importance of this type of missions. After 2011, the number started to drop.[142] These missions could entail either killing or capturing insurgent leaders, and were executed as part of the counterterrorism concept, which was never completely renounced. But they could also be an integral part of larger operations within the framework of counterinsurgency. During operation *Moshtarak* the number of raids was low, due to concerns over civilian casualties and popular support in general. They were however not absent.[143] Carl Forsberg suggests that during operation *Hamkari*, raids were an integral part of the operation.[144]

The air weapon played important roles in conducting raids in all phases of the operation, from planning via shaping to execution. In the planning phase airborne ISR helped to find and locate the target individuals. Airborne imagery was also particularly

Schmitt and Jane Perlez, "American Forces Attack Militants on Pakistani Soil", *Website New York Times* (September 3, 2008) http://www.nytimes.com/2008/09/04/world/asia/04attack.html?_r=0 (accessed August 9, 2016)

140 Anonymous, "ISAF Issues Guidance on Night Raids in Afghanistan", *Website Resolute Support* (March 5, 2010) Small is Beautiful: The Counterterrorism Option in Afghanistan (accessed August 9, 2016).

141 There are many accounts of this raid and the intelligence effort that revealed his whereabouts, although there are also authors who question these accounts. See for instance: Peter Bergen, *Manhunt: From 9/11 to Abbottabad - the Ten-year Search for Osama Bin Laden* (London: The Bodley Head, 2012), Mark Bowden, "The Hunt for "Geronimo"", *Vanity Fair* 54, no. 11 (2012) http://search.proquest.com/docview/1237878891/DC20324C05D44ADFPQ/1?accountid=35226 (accessed August 8, 2016), Erik J. Dahl, "Finding Bin Laden: Lessons for a New American Way of Intelligence", *Political Science Quarterly* 129, no. 2 (2014): 179-210, Christine C. Fair, "The Schmidle Muddle of the Osama Bin Laden Take Down", *Website Registan* (August 4, 2011) http://registan.net/2011/08/04/the-schmidle-muddle-of-the-osama-bin-laden-take-down/ (accessed August 8, 2016), Mark Follman, "What Really Happened in the Bin Laden Raid?", *Website MotherJones* (August 26, 2011) http://www.motherjones.com/politics/2011/08/osama-bin-laden-killing-media (accessed August 8, 2016), Seth G. Jones, *Hunting in the Shadows: The Pursuit of Al Qa'ida Since 9/11* (W.W. Norton & Company: New York, NY and London, 2013), https://www.overdrive.com/search?q=2ABB2C58-7A55-42FF-BC3C-61D4F51BC438, 414-430, Mark Owen and Kevin Maurer, *No Easy Day: The Autobiography of a Navy SEAL* (New York, NY: The Penguin Group, 2012), 139-279, Aki Peritz and Eric Rosenbach, *Find, Fix, Finish: Inside the Counterterrorism Campaigns That Killed Bin Laden and Devastated Al-Qaeda* (New York, NY: PublicAffairs, 2012), 207-218, David E. Sanger, *Confront and Conceal: Obama's Secret Wars and Surprising Use of American Power* (New York, NY: Crown Publishers, 2012), 68-113, and Schmidle, "Getting Bin Laden".

142 Bill Roggio and Patrick Megahan, "ISAF Raids Against Al Qaida and Allies in Afghanistan 2007-2013", *The Long War Journal Website* (May 30, 2014) http://www.longwarjournal.org/archives/2014/05/al_qaeda_and_alli...ongWarJournalSiteWide+%28The+Long+War+Journal+%28Site-Wide%29%29 (accessed October 8, 2014). Due to their secret nature and possibly issues with regard to defining a raid, the actual numbers differ greatly, and are therefore not reliable. As with other issues of which metrics are involved, such as for instance sortie rates and civilian casualties, metrics for this study are used for identification of trends. See for instance: Gareth Porter, "ISAF Data Show Night Raids Killed Over 1,500 Afghan Civilian Casaulties", *Website Inter Press Service News Agency* (November 2, 2011) http://www.ipsnews.net/2011/11/isaf-data-show-night-raids-killed-over-1500-afghan-civilians/ (accessed August 9, 2016). Porter claims that on the basis of leaked documents there may have been more than 6,000 SOF raids in the period from January to November in 2011.

143 Anonymous, "ISAF Issues", Cordesman, Mausner, and Lemieux, "Afghan National Security Forces", Kemp and Ehrhardt, "Moshtarak", 32-33, and Sholtis, "Obama in Afghanistan", 186.

144 Forsberg does not state this literally. He however frequently mentions the execution of raids before the main forces move in: Forsberg, "Counterinsurgency", 15, 20, 21,33, and 38.

useful for the planning of the operation, providing imagery on the conditions of the terrain and the outline of the target area. While executing the mission, besides the obvious insertion and extraction, the air weapon could provide real-time full motion video footage. This could help commanders to direct the operation. These elements were all prominent features of the raid on Osama bin Laden.[145] Special Operations Forces could be inserted by air from helicopters, but also from fixed wing air assets, using insertions by parachute.[146] The role of the air weapon could differ for each type of mission. Counternarcotics missions were typically supported with Russian built Mi-17 medium transport helicopters.[147] Special Operations Forces relied extensively on specialized airpower capabilities and usually brought their own air assets, such as the AC-130 Gunship, transport helicopters, and Unmanned (Combat) Aerial Vehicles.[148]

The second method of engaging insurgent leadership was by air attack, most notably with UAVs. The primary weapon initially was the RQ-1 Predator. By 2001, this relatively new weapons system was not fitted with any weapons, and therefore was only suitable for reconnaissance purposes. Tests of arming the RQ-1 were however already being conducted, and as of 2002 the armed version, called MQ-1 Predator, was operational in Yemen. From 2009 onwards, the MQ-1 was augmented by the bigger MQ-9 Reaper.[149] These weapon systems were found to be suitable for engaging insurgent leaders inside Afghanistan, who after 2002, and later again after the surge of forces in 2010, had fled Afghanistan to find sanctuary in largely ungoverned areas of Pakistan. The social structure in these areas, the harsh terrain, and the fact that the area formally was part of an allied nation, made infiltration problematic. The Pakistani government was however either unwilling or unable to target insurgent leadership within its borders. As with other areas that were of interest in the Global War on Terror, such as Yemen and Somalia, covert action by air was the most viable option left. Armed UAVs could weaken the terrorist networks, without putting ground forces in danger, and with minimal chance of civilian casualties as a result of the high precision of the weapon system. From 2002 to 2004, Predators flew in Pakistan

145 Dahl, "Finding Bin Laden", 193.

146 M.C. De Kruif, Lieutenant General, Royal Netherlands Army, Interview with the Author, May 29, 2013.

147 Sullivan, "Game-changing Strategies", 209.

148 Roy Braybrook, "Special Air Delivery", *Armada International* 31, no. 6 (2007): 1-14, Nick Davies, "Afghan War Logs: Task Force 373-special Forces Hunting Top Taliban", *The Guardian Website* (July 25, 2010) http://www.theguardian.com/world/2010/jul/25/task-force-373-secret-afghanistan-taliban (accessed August 24, 2014), and Sullivan, "Game-changing Strategies", 206-208.

149 Richard Kemp and Jasper Reid, "United States Drone Campaign in Pakistan: FATA, Pakistan 2009-2015", In: *Our Military Force's Struggle Against Lawless, Media Savvy Terrorist Adversaries: A Comparative Study*, 2nd Edition (Friends of Israel Initiative, February, 2016), http://www.high-level-military-group.org/pdf/hlmg-lawless-media-savvy-terrorist-adversaries.pdf (accessed August 3, 2016), 115-132, 121, Brian Glyn Williams, "The CIA's Covert Predator Drone War in Pakistan, 2004--2010: The History of An Assassination Campaign", *Studies in Conflict & Terrorism* 33, no. 10 (2010): 871-892, 873-877, and Richard Whittle, "Predator's Big Safari", (Mitchell Institute Press, August, 2011) https://higherlogicdownload.s3.amazonaws.com/AFA/6379b747-7730-4f82-9b45-a1c80d6c8fdb/UploadedImages/Mitchell+Publications/Predator's+Big+Safari.pdf (accessed August 6, 2016).

to collect intelligence, and in 2004 the first Predator strike in Pakistan was conducted.[150] Between the first strike in 2004 and the end of 2008, the number of similar strikes was rising but still modest. Reported numbers varied from forty six to sixty eight in total.[151] Primary operator was the United States Air Force, but mostly were under the command and direction of the CIA. From 2006 onwards, the US Joint Special Operations Command (JSOC) also conducted its own campaign. Also, several reports suggested that Blackwater, a civilian contractor, was involved, and that informants helped the targeting process using a marker that was placed on compounds of insurgent leaders.[152] From 2009 onwards, the number of reported strikes rose significantly, with a peak of nearly one hundred in 2010.[153]

This escalation put several problematic issues at the forefront. First, it strained the relationship with Pakistan. The US had ceased informing the Pakistani Government about the strikes in August 2008, for considerations of secrecy. Also, the strikes did cause civilian casualties, despite the lauded precision of the weapon system. Public statements on unwanted infringements of Pakistani sovereign territory and decreased popular support caused strategic blowback.[154] The Pakistani Government however tacitly approved the strikes, and there were even reports that the US used the Pakistani bases of Shamsi and Jacobabad to launch the UAVs.[155] The Pakistani Army also increased its pace of operations in FATA, sometimes with active support from American UAVs.[156] Second, as stated in the previous chapter, the strikes initiated debates on moral, ethical, and legal issues, and on the subject of their effectiveness. The debates continued, especially on the legal issues, but remained largely undecided.[157] However, as virtually all authors recognized, lack of

150 Michael J. Boyle, "The Costs and Consequences of Drone Warfare", *International Affairs* 89, no. 1 (2013): 1-29, 3-4, Hamid Hussain, "Pakistan Army Military Operations: Summary", *Defence Journal* 19, no. 10 (2016): 60-62, 60, Kemp and Reid, "United States Drone Campaign", 116, Ripley, *Air War Afghanistan*, 189-195, and Williams, "CIA's Covert Predator Drone War", 871-872 and 874.

151 As with other metrics, data based on publicly available information is murky, due to the security classification of these operations. Most authors use three sources, namely the Bureau of Investigative Journal, *The Long War Journal*, and the New America Foundation. Kemp and Reid compared all three sources, and the result is used for this thesis:Kemp and Reid, "United States Drone Campaign", 116. Another useful overview is provided by Brookings Institute: Ian S. Livingston and Michael O'Hanlon, "Afghanistan Index", (October 31, 2016) https://www.brookings.edu/wp-content/uploads/2016/07/21csi_20161031_afghanistan_index.pdf (accessed November 11, 2016), 24.

152 Kemp and Reid, "United States Drone Campaign", 115, International Human Rights and Conflict Resolution Clinic, Stanford Law School, and Global Justice Clinic, NYU School of Law, "Living Under Drones: Death, Injury, and Trauma to Civilians From US Drone Practices in Pakistan", (September, 2012) http://livingunderdrones.org/wp-content/uploads/2012/10/Stanford-NYU-LIVING-UNDER-DRONES.pdf (accessed February 26, 2013), 126, and Williams, "CIA's Covert Predator Drone War", 875-877.

153 Kemp and Reid, "United States Drone Campaign", 126.

154 Boyle, "Costs and Consequences", 1-2, S. Carvin, "The Trouble with Targeted Killing", *Security Studies* 21, no. 3 (2012): 529-555, 536-538, Kemp and Reid, "United States Drone Campaign", 123, and Williams, "CIA's Covert Predator Drone War", 875-876 and 887-888.

155 Anonymous, "US Vacates Shamsi Air Base", *Air Forces Monthly*, no. 287 (2012): 27, and Williams, "CIA's Covert Predator Drone War", 882.

156 Hussain, "Pakistan Army", 61, and Ripley, *Air War Afghanistan*, 197-199.

157 As for legal issues, especially the definition and application of clear standards were cause for debate. See for instance Michael Schmitt's review of Nils Melzer's *Targeted Killing in International Law* (Michael N. Schmitt, "Targeted Killing in International Law", *The American Journal of International Law* 103, no. 4 (2009): 813-818). For an overview of other topics, see for instance: Paul A.L. Ducheine, Michael N. Schmidt, and Frans P.B. Osinga (eds), *Targeting: The Challenges of Modern Warfare*

transparency of the US Government on the subjects of available metrics and the targeting process itself hampered the debate. Antagonists suspected the US Government of not only targeting top-level leaders, but also mid-and low-level insurgents and even foot soldiers, using sloppy criteria, and creating an unacceptable amount of civilian casualties in the process.[158] By 2011 however, pressure to release information mounted. US Congress also felt excluded from the information chain, especially after a US citizen, Anwar Al-Awlaki, was killed by a UAV strike in Yemen. Succumbing to this pressure, in 2012 the Obama released additional information on the rules these strikes were based, and again in 2013. Although detailed protocols for targeting individuals remained secret, the target vetting process was not. General information about strict rules, vetting of targets, internal supervision, Congressional oversight (from 2009 onwards), and battle damage assessment procedures and software, reached the general public via interviews of current and former CIA officers.[159] During the same period, the number of strikes decreased, and the Pakistani Army became more active in retaining control over the disputed areas.[160] These developments tempered the debate somewhat, but they did not fade entirely.

UAVs were also used for targeting insurgents inside Afghanistan, and were at least partially commanded from ISAF Headquarters. In-depth analysis is however impossible by use of publicly available information only. MQ-1s and MQ-9s were also used in the CAS role. Scattered evidence suggests that other air assets, such as the AC-130 gunship, attack

(Springer-Verlag, 2016), and Frans P.B. Osinga, "Bounding the Debate on Drones: The Paradox of Postmodern Warfare", In: *Moral Responsibility and Military Effectiveness*, ed. Herman Amersfoort, René Moelker, Joseph Soeters and Désirée Verweij (The Hague: T.M.C. Asser Press, 2013), 243-278.

158 Boyle, "Costs and Consequences", 4-10, International Human Rights and Conflict Resolution Clinic, Stanford Law School, and Global Justice Clinic, NYU School of Law, "Living Under Drones", 12-13, Osinga, "Bounding", 247-248, Alex S. Wilner, "Targeted Killings in Afghanistan: Measuring Coercion and Deterrence in Counterterrorism and Counterinsurgency", *Studies in Conflict & Terrorism* 33, no. 4 (2010): 307-329, 308.

159 Anonymous, "U.N. Official Says U.S. Drone Breach Pakistan's Sovereignty", *The New York Times Website* (March 15, 2013) http://www.nytimes.com/2013/03/16/world/asia/un-official-denounces-us-drone-use-in-pakistan.html (accessed August 22, 2014), Kemp and Reid, "United States Drone Campaign", 122-125, Adam Liptak, "Secrecy of Memo on Drone Killing Is Upheld", *The New York Times Website* (January 2, 2013) http://www.nytimes.com/2013/01/03/us/judge-rules-memo-on-targeted-killing-can-remain-secret.html (accessed August 22, 2014), Mark Mazetti, Charlie Savage and Scott Shane, "How a U.S. Citizen Came to Be in America's Cross Hairs", *The New York Times Website* (February 9, 2013) http://www.nytimes.com/2013/03/10/world/middleeast/anwar-al-awlaki-a-us-citizen-in-americas-cross-hairs.html?_r=0 (accessed August 22, 2014), Greg Miller, "Senators Demand Secret Memos on Targeted Killing", *The Washington Post Website* (February 4, 2013) https://www.washingtonpost.com/world/national-security/senators-demand-secret-memos-on-targeted-killing/2013/02/04/be3d1652-6f16-11e2-8b8d-e0b59a1b8e2a_story.html (accessed August 24, 2014), Gred Miller, Ellen Nakashima and Karen DeYoung, "CIA Drone Strikes Will Get Pass in Counterterrorism 'playbook', Officials Say", *The Washington Post Website* (January 19, 2013) http://www.washingtonpost.com/world/national-security/cia-drone-s...1/19/ca169a20-618d-11e2-9940-6fc488f3fecd_story.html?tid=wp_ipad (accessed August 24, 2014), Charlie Savage, "Court Orders the C.I.A. To Disclose Drone Data", *The New York Times Website* (March 15, 2013) http://www.nytimes.com/2013/03/16/us/court-says-cia-must-yield-some-data-on-drones.html (accessed August 22, 2014), Scott Shane, "Election Spurred to Move to Codify U.S. Drone Policy", *The New York Times Website* (November 24, 2012) http://www.nytimes.com/2012/11/25/world/white-house-presses-for-drone-rule-book.html (accessed August 22, 2014), Scott Shane, "Report on Targeted Killing Whets Appetite for Less Secrecy", *The New York Times Website* (February 5, 2013) http://www.nytimes.com/2013/02/06/us/politics/obama-slow-to-reveal-secrets-on-targeted-killings.html (accessed August 22, 2014), and Michael D. Shear, "Congress to See Memo Backing Drone Attacks on Americans", *The New York Times Website* (February 6, 2013) http://www.nytimes.com/2013/02/07/us/politics/obama-orders-release-of-drone-memos-to-lawmakers.html (accessed August 22, 2013).

160 Hussain, "Pakistan Army", 61, and Kemp and Reid, "United States Drone Campaign", 126.

helicopters, and High Mobility Artillery Rocket System (HIMARS), were also used for targeting of insurgent leaders.[161] Finally, the US Air Force published data on UAV operation only for a short period of time, namely between November 2012 to January 2013. Probably influenced by the public debate on the UAV strikes, it removed the data because the debate on air support became disproportionally focused on UAV operations.[162] This makes quantification and analysis of the targeting of leadership inside Afghanistan extremely difficult. This study therefore concludes that during 2008 and 2012 insurgent leadership were targeted with a variety of assets, including UAVs, and that the number of these missions probably rose due to the increased focus on leadership targeting in general.

6.3.4. Re-addressing the Civilian Casualties Issue

While the guidelines for employment of kinetic firepower became more strict, they were no guarantee for total absence of civilian casualties or collateral damage. First, mishaps could still take place. The most dramatic incident occurred on September 4, 2009, in Kunduz in the North of Afghanistan. On request of the German commander of the Provincial Reconstruction Team (PRT) in Kunduz, two US F-15E strike aircraft bombed two fuel trucks that had reportedly been seized by the Taliban. During the strike a combination of Taliban and local population was tapping fuel from the truck. After several confirmation calls by the F-15 crews, who assessed a high risk of civilian casualties, the ground commander, who was following the events with full motion video and considered the Taliban actions a threat, still ordered the strike. Besides the wanted destruction of the two trucks, the attack resulted in the death of a about seventy persons, of which about forty turned out to be civilians. The incident instigated several investigations and a lot of media attention. Some of the investigations found the strike unjustified, and several members of the German Government were forced to resign as result of suspicion of a cover up. However,

161 De Kruif, Interview, Forsberg, "Counterinsurgency", 33, Paul Grahame and Damien Lewis, *Fire Strike 7/9* (London: Ebury Press, 2010), 60-63, Madison, *Dressed to Kill*, 262-267, and Ripley, *Air War Afghanistan*, 107.

162 Anonymous, "U.S. Air Force Stops Reporting Data on Afghan Drone Strikes", *Website Reuters* (March 10, 2013) http://uk.reuters.com/article/2013/03/10/us-usa-afghanistan-drones-idUSBRE92903520130310 (accessed September 18, 2014), and Alice K. Ross, "Erased US Data Shows 1 in 4 Missiles in Afghan Airstrikes Now Fired by Drones", *Website Bureau of Investigative Journalism* (March 12, 2013) https://www.thebureauinvestigates.com/2013/03/12/erased-us-data-shows-1-in-4-missiles-in-afghan-airstrikes-now-fired-by-drone/ (accessed March 30, 2016).

the key players in the strike itself were not tried.[163] Also, there were several incidents during operation *Moshtarak*, all of which were investigated afterwards.[164]

Second, collateral damage and civilian casualties was sometimes unavoidable, especially during large scale operations. An example of this situation is presented by the bombing on October 6, 2010, of three villages in the Arghandab district of Kandahar province, a known Taliban hotspot, which resulted in their complete destruction by nearly 50,000 pounds of air-delivered ordnance for each village. The reason for this decision was that the villages were infested with IEDs to such an extent that moving in with ground forces provided an unacceptable threat to these forces. Although the commander claimed that there were no civilians in the area, population representatives were consulted before the attacks, and ISAF immediately afterwards commenced with rebuilding of the villages, this incident too received much media attention.[165]

However, in general, the new strategy had a positive influence on the actual number of civilian casualties as a result of air operations. While the number of civilian deaths inflicted by the Taliban continuously rose, those of the western militaries generally dropped, with the exception of 2011.[166] The numbers of civilian casualties that were due to air operations showed the same trend, with 552 attributed civilian deaths in 2008 to 126 in 2012. Moreover, the percentage of civilians deaths accredited to air operations compared to other pro government forces dropped, from sixty four in 2008 to nineteen in 2013.[167] In

163 Whitlock Craig, "In Germany, Political Turmoil Over Ordering of Airstrike", *The Washington Post* (September 8, 2009) http://search.proquest.com/docview/410314420/1919DBF6F6274515PQ/5?accountid=35226 (accessed October 8, 2014), Yochi J. Dreazen, "World News: NATO Says U.S. Airstrike in Kunduz Killed 30 Civilians", *Wall Street Journal, Eastern Edition* (September 17, 2009) http://search.proquest.com/docview/399116425/1919DBF6F6274515PQ/1?accountid=35226 (accessed October 8, 2014), European Center for Constitutional and Human Rights (ECCHR), "German Air Strike Near Kunduz - A Year After: Evaluation of Judicial Reactions and Further Information", (Berlin, August 30, 2010) http://www.geneva-academy.ch/RULAC/pdf_state/ECCHR-Kunduz-A-Year-After.pdf (accessed March 20, 2014), J. Meyer and J. Reichelt, "Kunduz Afghanistan: Das Video Der Tankwagen-Bombardierung. Hat Minister Jung Die Warheit Verschwiegen?", [Kunduz Afghanistan: The Video of the Tank Truck-bombing. Did Minister Jung Hold Back the Truth?] *Bild* (November 26, 2009) http://www.bild.de/politik/2009/wahrheit/verschwieg-minister-jung-die-wahrheit-ueber-diebombardierung-10583034.bild.html (accessed March 20, 2014), Ripley, *Air War Afghanistan*, 182-183, Henk Van Rijssen, "Der Fall Kundus, 4 September 2009: Praktijkcase Van Het Targetingproces Met Vergaande Politieke Gevolgen", [The Fall of Kunduz: A Case of the Targeting Process with Far-reaching Political Consequences] *Sinte Barbara* 62, no. 5 (2010): 5.11-5.17, and Teakle, Interview.

164 Kemp and Ehrhardt, "Moshtarak", 33-34.

165 Spencer Ackerman, "Why I Flattened Three Afghan Villages", *Website Wired.com* (February 1, 2011) http://www.wired.com/dangerroom/2011/02/i-flattened-afghan-villages/ (accessed October 24, 2012).

166 Joint Analysis & Lessons Centre, "Protection ", and United Nations Assistance Mission in Afghanistan (UNAMA), "Afghanistan Annual Report 2013: Protection of Civilians in Armed Conflict", (Kabul, February, 2014) http://unama.unmissions.org/sites/default/files/old_dnn/UNAMA/human%20rights/Feb_8_2014_PoC-report_2013-Full-report-ENG.pdf (accessed August 10, 2016), 7. In their final report on the year 2011, the United Nations Assistance Mission in Afghanistan (UNAMA) calculated a small decline in civilian deaths by Pro Government Forces (United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2011", 2). This study uses the latest metrics.

167 Perkins, "Airpower", 18, United Nations Assistance Mission to Afghanistan (UNAMA), "Afghanistan: Annual Report on Protection of Civilians in Armed Conflict, 2008", (January, 2009) https://unama.unmissions.org/sites/default/files/unama_09february-annual2oreport_poc202008_final_11feb09.pdf (accessed December 19, 2013), 16, United Nations Assistance Mission in Afghanistan (UNAMA), "Afghanistan: Annual Report on Protection of Civilians in Armed Conflict, 2009", (Kabul, January, 2010) http://unama.unmissions.org/Portals/UNAMA/human%20rights/Protection%200f%20Civilian%202009%20report%20English.pdf (accessed December 19, 2013), 16, United Nations Assistance Mission in Afghanistan (UNAMA), "Afghanistan Annual Report 2010: Protection of Civilians in Armed Conflict", (Kabul, March, 2011)

contrast, the intensity of air movements rose between 2009 and 2011. This is witnessed by an increase of sorties (from nearly 28,000 to more than 34,000), of sorties with weapon release (from 1,733 to 1,983), and of the number of weapon releases (from about 4,100 to nearly 5,500). They first started to decline in 2012.[168] So, the air activity increased between 2008 and 2011, while the numbers of civilian deaths caused by the air weapon dropped. The United Nations Assistance Mission in Afghanistan (UNAMA) attributed the spike in 2011 to the increased focus on areas in Eastern Afghanistan that previously had been left by ISAF. Increased operations in these areas led to more armed clashes, therefore to more air activity, and consequently more civilian casualties.[169] A declassified report by the US Joint Forces Command linked the decrease of this percentage to the directives of COMISAF. This was especially the case for fixed wing aircraft in CAS-situations. The report stated that the mindset of ground forces had changed as to consider CAS a means of last resort.[170]

The issue of civilian casualties was more problematic in the context of targeting insurgent leaders. From 2012 onwards, UNAMA reported an increasing number of civilian deaths as a result of kinetic engagements by UAVs inside Afghanistan, as well as an increased percentage when compared to other weapon systems. While they acknowledged that some of these incidents were due to targeting errors, they urged ISAF to review the thoroughness of targeting procedures related to UAV operations.[171] Casualties in Pakistan as a result of UAV strikes initially rose as well. But, following the pattern of strikes themselves, they started to decrease after 2010.[172]

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http://unama.unmissions.org/Portals/UNAMA/human%20rights/March%20PoC%20Annual%20Report%20Final.pdf (accessed December 19, 2013), 21 and 23, United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2011", 24, United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2012", 34, and United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2013", 7 and 46. Perkins calculated different percentages, namely 28% in 2008 and 4% in 2013 (Perkins, "Airpower", 23). They however show the same trend.

168 Anonymous, "CFACC Airpower Statistics 2007-2012". In May 2012, the CAOC did a recalculation on the metrics. (see note in: Anonymous, "Combined Forces Air Component Commander 2007-2012 Airpower Statistics", *Website United States Air Forces Central Command* (May 31, 2012) http://www.afcent.af.mil/Portals/82/Users/221/33/733/31%20May%202012%20Airpower%20Stats%20Combined%20Operation%20Slide.pdf?ver=2016-05-04-025558-053 (accessed August 12, 2016)). This resulted in an upwards adjustment of the numbers of sorties, sorties with weapon releases, and weapons dropped. Researchers using the data from before May 2012, such as for instance the UNAMA in their annual report on civilian casualties on the year 2011, could conclude that the numbers dropped when compared to 2010 (United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2011", 17 and 24). UNAMA also updated its own metrics. In the annual report on the year 2011 they calculated that overall numbers of civilian deaths induced by pro government forces decreased in 2011 (United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2011", 2). In their report over the year 2013, they presented a table over the years 2009-2013, which shows a small rise of civilian deaths in the year 2011 (United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2013", 7). In 2011, this led UNAMA to conclude that civilian deaths as a result of air attacks rose in 2011, despite a general decline of civilian deaths caused by pro government forces (United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2011", 17). They in other words implied that the air weapon lagged behind in their efforts to reduce civilian casualties. This conclusion does not hold in the context of the updated metrics by both UNAMA and CAOC. As is assumed that the updated metrics are more accurate, this study uses these.

169 United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2011", 24-25.

170 United States Joint Forces Command, "Reducing and Mitigating", 9, 12, 55, and 74. UNAMA also arrived at the conclusion that decrease of airpower induced civilian deaths also were the direct result of the tactical directives: United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2009", 17.

171 United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2012", 33, and United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2013", 46-48.

172 Kemp and Reid, "United States Drone Campaign", 126-129.

The number of civilian casualties as a result of raids is hard to assess because of the high level of security classification of these missions, and the many types of units that were involved.[173] The Joint Forces Command report indicated raids were responsible for about half of the US inflicted civilian casualties during the period between 2007 and 2009.[174] By 2010 and 2011, UNAMA reported a strong decrease of casualties as a result of raids.[175] Due to the lack of publicly available information, it is impossible to assess the airpower portion in these raids. The decrease of the civilian casualties as a result of raids however suggests that the airpower portion decreased as well.

6.3.5. Adaptation of Airpower versus Adaptation of Opposing Forces

The last question to be answered with regard to operations is how the operational environment influenced air operations. As for the physical environment, this remained the same. Several nations had their helicopters undergo special programs to adapt them to the Afghan environment. This could involve increasing the power of engines in order to make them perform better in hot and high environments, and protection for the fine dust by using filters, or treatment of rotor blades with protective varnish.[176]

Opposing forces reacted to the surge and the new strategic outlook. As both elements were widely debated and published by western media, it is assumed that the insurgents knew what was about to happen. In reaction, they increasingly resorted to IEDs and intimidation of the population, especially when in anticipation of larger operations such as *Moshtarak* and *Hamkari*.[177] In general, they were well aware of the Rules of Engagement the air weapon was subjected to, and tried to counter it by using tactics to make themselves indistinguishable from the population. This first meant that the population had to be present, so they actively tried to prevent the population from leaving. While operations were executed, they deliberately used the civilian population as human shields. Other tactics involved establishing weapon cashes, and moving between them. That way, they could fire from one position, move unarmed to the next position, and fire again.[178] Another tactic could involve simply not being present. Alex Wilner observed that, as a

173 Porter, "ISAF Data", United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2011", 25, and United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2012", 35.

174 United States Joint Forces Command, "Reducing and Mitigating", 10. The metrics supporting this statement have been removed in the declassified version.

175 United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2011", 25, and United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2012", 35.

176 Anonymous, "UH-60M Crews Training for Afghanistan", *Air Forces Monthly*, no. 293 (2012): 14, and Victor Strîmbeanu, "Airpower in the Asymmetrical Conflict: Case Study: Afghanistan (II)", *Romanian Military Thinking* 1 (2013): 77-86, 80.

177 Kemp and Ehrhardt, "Moshtarak", 28.

178 Kemp and Ehrhardt, "Moshtarak", 29-32, United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2009", and United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2010", vi. The UNAMA reports of 2011, 2012, and 2013 do not mention the use of human shields, which might be an indication that the insurgents refrained from this practice.

result of leadership targeting efforts inside Afghanistan, the Taliban top leadership stayed in Pakistan, directing the campaign at operational and strategic levels, leaving the actual fighting to the lower level commanders.[179] The insurgents also tried to develop a more robust communication system.[180]

In Pakistan, the insurgents pondered ways to counter UAV-strikes, witnessing a document dated in 2011, but found in 2013, in which Al Qaida leadership distributed a list of tactics that could be used to counter attacks by UAVs. The advise involved basically all tactics that can be used, varying from actively engaging UAVs by using laser or jamming equipment, to dispersal, deception tactics, cover and concealment, and entrenchments. Of note were the informants that helped the US targeting process. The advise was to establish special anti-spy teams exposing the informants, and deterring others from becoming informants by public hanging of the unmasked informants.[181] Brian Williams noted that insurgents inside Pakistan were wary of informants, the possible existence of which created distrust. Williams also noted dispersal.[182]

Finally, the insurgents continued to search for options to actively fight air assets. There are indications that the insurgents used flying western air assets for target training purposes, taking aim but not firing on the aircraft.[183] The obvious aim of this exercise would be to make the actual engagement more effective. Other methods could entail setting up specific ambushes with the aim of engaging medical evacuation (MEDEVAC) helicopters. The goal was to lure them into predictable situations in which they were vulnerable. One of the tactics that can be found in literature is attempts to blind pilots using laser pointers. Another tactic was misleading pilots to wrong landing sites.[184] More dramatic options included creation of a fake TIC, or inducing casualties among ground forces, both with the explicit aim of attracting MEDEVAC helicopters. When planned correctly, the helicopters could provide a predictable target, and be vulnerable to attack, for instance via an ambush or a mortar attack on de landing site. Although the evidence is anecdotal, several indications can be found that support the existence of this tactic. Sometimes, they were successful.[185] As will be described in paragraph 6.5, the insurgents also increased their efforts to destroy airbases on the ground, such as for instance during

179 Wilner, "Targeted Killing in Afghanistan" 322-324.

180 Strîmbeanu, "Afghanistan II", 81-84.

181 Anonymous, "The Al-Qaida Papers - Drones", *Website Associated Press* (February 21, 2011) http://hosted.ap.org/specials/interactives/_international/_pdfs/al-qaida-papers-drones.pdf (accessed August 11, 2016), and Anonymous, "Al-Qaeda's 22 Tips for Dodging Drone Attacks: The List in Full", *The Telegraph* (February 21, 2013) http://www.telegraph.co.uk/news/worldnews/al-qaeda/9886673/Al-Qaedas-22-tips-for-dodging-drone-attacks-the-list-in-full.html (accessed February 26, 2013). The authenticity of this document can not be confirmed. Nevertheless, its advise could still be used by insurgents.

182 Williams, "CIA's Covert Predator Drone War", 878-879.

183 Strîmbeanu, "Afghanistan II", 81-84.

184 Strîmbeanu, "Afghanistan II", 81-84.

185 Mary Jennings Hegar, *Shoot Like a Girl: One Woman's Dramatic Fight in Afghanistan and on the Home Front* (New York, NY: Berkley, 2017), 233, and Victor Strîmbeanu, "Airpower in the Asymmetrical Conflict: Case Study: Afghanistan (I)", *Romanian Military Thinking* 4 (2012): 41-48, 45.

an attack on Camp Bastion in 2012. The threat to flying aircraft remained the same. The number of aircraft that were actually shot down remained low, with no aircraft being downed by guided systems.[186]

6.3.6. Refining the Airpower Posture

In conclusion of this paragraph, the period between 2008 and 2012 saw many changes with regard to the deployment of the air weapon. It was marked by four distinctive features, namely enabling the surge by airlift, increased attention for ISR, reducing civilian casualties when executing kinetic operations, and increased targeting of insurgent leadership.
The developments show mixed results. The increased airlift effort did not create much friction or problems. The decrease of airpower-induced civilian deaths, while executing an increased amount of sorties, is a reflection of successful application of restraint by western forces, both on the ground and in the air. Implementation of technology to enhance precision or speed up the targeting process could help in this respect. The problematic element of the debate on civilian casualties shifted from CAS to leadership targeting, which showed the same dynamic as the debate on CAS in the preceding period: proponents pointed at military effectiveness, antagonists at the strategic blowback as a result of knee-jerk application of violence. Nevertheless, the insurgents did not have an adequate response to the application of airpower.

186 During the period between January 2009 and December 2012, *Air Forces Monthly* reported about 170 aviation incidents in Afghanistan. Of those, little over ten were reported to involve insurgent activity. Compared to the previous period, this is an increase of incidents, while the number or incidents that also reported insurgent activity remained roughly the same. This could be an indication of decrease of insurgent effectiveness or activity. But it could also be related to the increased number of accidents with UAVs. (Dave Allport, "Attrition", *Air Forces Monthly*, no. 166-345 (2003-2016). See also: Anonymous, "List of Aviation Accidents and Incidents in the War in Afghanistan", *Website Turkish News* (March 18, 2012) http://www.turkishnews.com/en/content/2012/03/18/list-of-aviation-accidents-and-incidents-in-the-war-in-afghanistan/ (accessed October 21, 2014)). Primary threat still consisted of Heavy Machine Guns (HMGs), Small Arms (SMARMS) and Rocket Propelled Grenades (RPGs). As with the preceding period, most incidents caused minor damage, and some incidents caused large damage but a few casualties. Only one incident caused both, on August 6, 2011, in which an RPG downed a CH-47 Chinook helicopter, killing 30 Americans and 7 Afghans (Anonymous, "Chinook Crash in Afghanistan Kills 37", *Air Forces Monthly*, no. 283 (2011): 94). Also, it showed that every now and then the insurgents could fire a lucky indirect fire shot on an airbase. On August 21, 2012, two rockets fired at Bagram Airbase damaged a C-17 intra-theater airlift aircraft, which was used by the Chairman of the US Joint Chiefs of Staff, as well as two helicopters. Two US maintenance personnel were lightly wounded (Dave Allport, "Accident Reports", *Air Forces Montly*, no. 295 (2012): 35). In terms of human suffering by coalition forces, the balance seems less favorable than in the previous time frame. *iCasualties.org* reported a total of 80 fatalities of coalition forces, of which 38 were due enemy engagements of aircraft (Anonymous, "Operation Enduring Freedom: Fatalities", *iCasualties.org* http://icasualties.org/OEF/Fatalities.aspx (accessed December 30, 2016)). It should be stated however that the majority of those casualties were inflicted in a single incident, that of August 6, 2011.

6.4. Doctrine: Adjusting to Operational Realities

6.4.1. American Doctrines

During the timeframe described in this chapter, the influence of the *FM 3-24* started to increase in the US Army. As described in the previous chapters, the publication of this doctrine provoked a negative reaction from circles within the US Air Force. Outside the USAF however, the *FM 3-24* was popular. It was both published by the University of Chicago press and made available online. The book was sold and downloaded many times, indicating an interest by the general public. The book became extensively used in the military, and led to publication of the joint doctrine on COIN.[187] As a result, the *FM 3-24* generated much internal discussion and debate. Stephen Biddle noted in a book review on its publication that the debates focused on the relative roles of coercion and violence in counterinsurgencies, the relative involvement of conventional versus specialized forces to conduct such a counterinsurgency campaign, the relative roles of engaging the insurgents versus protecting the population, the role of civilian agencies, the capability and willingness of contributors of a coalition to sustain counterinsurgency operations, and, as has been described in chapter two, the proper use of airpower.[188]

It is beyond the scope of this study to discuss the general critiques on the *FM 3-24* in depth. What is imperative, however, is that there was current doctrine on counterinsurgency available. In addition, one of the main driving forces behind the publication of the document, General Petraeus, became COMISAF and was therefore in the position to implement it. Between 2005 and 2007, Petraeus was commanding general of the US Army's Combined Arms Center (CAC), which was responsible for the publication of doctrines and most of the education of the leadership of the army. He became commander of the US forces in Iraq in 2007, and he implemented the manual there via direct leadership, but also via a network of innovative officers who had access to the President and officers who, after being formed at the CAC, were present in Iraq at the time. This implementation was present to the extent that subordinate officers that adhered to traditional doctrines were bypassed when Petraeus created new structures such as the Joint Strategic Assessment Team.[189] To Gian Gentile, this implementation even went too far and the *FM 3-24* had become the only tool for the US Army to handle any kind of counterinsurgency.[190] Karl Eikenberry, both former commander of US forces in Afghanistan and former US

187 Conrad Crane, "United States", In: *Understanding Counterinsurgency: Doctrine, Operations, and Challenges*, ed. Thomas Rid and Thomas Keany (London, New York: Routledge, 2010), 59-72, 68-70, and Jeffrey C. Isaac, Stephen Biddle, Stathis N. Kalyvas, Wendy Brown and Douglas A. Ollivant, "The New US Army/Marine Corps Counterinsurgency Field Manual As Political Science and Political Practice", *Perspectives on Politics* 6, no. 02 (2008): 347-360, 347, 354 and 357.

188 Isaac, Biddle, Kalyvas, and others, "New Field Manual", 347-348.

189 Joseph Roger Clark, "Innovation Under Fire: Politics, Learning, and US Army Doctrine", (Dissertation, The George Washington University, January 31, 2011) https://search.proquest.com/openview/caac7d6d37922cc519919e63d4726131/1?pq-origsite=gscholar&cbl=18750&diss=y (accessed October 27, 2018), 190-195.

190 Gian P. Gentile, "A Strategy of Tactics: Population-centric COIN and the Army", *Parameters* 41, no. 4 (2011): 1-12.

Ambassador to Afghanistan, even warned against intellectual arrogance and cognitive rigidity on the part of senior commanders when it concerned implementation of the COIN approach.[191]

As has been described in the previous paragraph, the population-centric approach described in the field manual also became a central theme of ISAF's strategic outlook. Despite the critiques, the document at least offered an operational framework. And in Iraq, US military leaders were implementing it, albeit with varying enthusiasm.[192] As for ISAF, the formal adoption of the population-centric counterinsurgency approach signaled acceptance of the tenets of the *FM 3-24*, at least by US senior military leadership. The tactical directives by Generals McKiernan, McChrystal, and Petraeus show that they made efforts to align the various national approaches according to these tenets. A thesis by Matthew Schmidt also shows that the majority of lower ranking American officers in both Iraq and Afghanistan became familiar with the contents of *FM 3-24*, and found that its existence bureaucratically supported the cultural shift towards counterinsurgency that was taking place.[193] Eikenberry even argued that the approach was implemented too zealously.[194] So, in effect it can be argued that the *FM 3-24* was implemented in Afghanistan during the time frame covered in this chapter. As the directives of McChrystal and his successor were instrumental in this implementation, this took place from 2010 - 2011 onwards. With the implementation of the *FM 3-24*, the ground-centric approach to irregular warfare was implemented as well.

The US Army subsequently rewrote many doctrines of both higher and lower echelons. It issued a new *FM 3-0: Operations* in February 2008. It was followed by *FM 3-07: Stability Operations* in October of that same year. And a US Army capstone document called *Operational Adaptability* was published on December 21, 2009. According to John Nagl, these documents reflected the Army's new way of thinking about future conflicts, in which stability and civil support operations received more attention then before.[195] The *FM 3-24.2: Tactics in Counterinsurgency (FM 3-24.2)*, published in April 2009, further elaborated on the counterinsurgency principles at the tactical level.[196] For assistance the US Army published

191 Karl W. Eikenberry, "The Limits of Counterinsurgency Doctrine in Afghanistan: The Other Side of the COIN", *Foreign Affairs* 92, no. 5 (2013) https://search-proquest-com.nlda.idm.oclc.org/docview/1428163502 (accessed September 12, 2018).

192 Isaac, Biddle, Kalyvas, and others, "New Field Manual", 347, N. Lobé, "Alles Voor De Lokale Bevolking: Een Onderzoek Naar De Invloed Van De *FM 3-24* Op Militaire Operaties in Irak En Afghanistan ", (Bachelor's Thesis, Netherlands Defense Academy, Breda, April, 2013) http://defbib.kma.nl/art2/pdf/ada/Alles%20voor%20de%20lokale%20 bevolking.pdf (accessed October 7, 2013), and James W. Vizzard and Timothy A. Capron, "Exporting General Petraeus's Counterinsurgency Doctrine: An Assessment of the Adequacy of Field Manual 3-24 and the U.S. Government's Implementation", *Public Administration Review* 70, no. 3 (2010): 485-493, 485.

193 Matthew J. Schmidt, "The Influence of Professional Culture on American Military Innovation in Counterinsurgency", (Dissertation, Georgetown University, February 8, 2011) http://search.proquest.com/dissertations/docview/865807908/fulltextPDF/13C813BDCA879CCA51C/9?accountid=35226 (accessed February 27, 2013), 196.

194 Eikenberry, "Limits".

195 John A. Nagl, "Constructing the Legacy of Field Manual 3-24", *Joint Force Quarterly*, no. 58 (2010): 118-120, 119.

196 United States Headquarters Department of the Army, *FM 3-24.2: Tactics in Counterinsurgency*, April 21, 2009, https://www.fas.org/irp/doddir/army/fm3-24-2.pdf (accessed February 18, 2013).

a field manual called *Foreign Internal Defense* in 2011.[197] So, the US Army endeavored to codify the counterinsurgency insights in its organization.

The US Air Force also updated its doctrines. In order to align the naming of Air Force doctrine publications with joint doctrine, the *Air Force Doctrine Document 2-3: Irregular Warfare* was renamed *Air Force Doctrine Document 3-24: Irregular Warfare* in 2011. The *AFDD 3-24* was an interim doctrine, and besides renaming the *AFDD 2-3* to *AFDD 3-24*, the contents of the US Air Force doctrine on irregular warfare remained unchanged.[198] A similar situation existed with regard to the doctrine on Foreign Internal Defense: the *Air Force Doctrine Document 2-3.1: Foreign Internal* Defense was renamed *Air Force Doctrine Document 3-22: Foreign Internal Defense* in 2011, while its contents remained unchanged.[199]

So, basically, the main document applicable in theater was the *Air Force Doctrine Document 2-3: Irregular Warfare* of 2007. As has been described in previous chapters, this document functioned as a reaction to the *FM 3-24* and in that capacity had a function in the discourse on airpower in irregular warfare. Up and until 2007 the influence of the document remained limited. By 2008 however, the *AFDD 2-3* and later the *AFDD 3-24* can be considered to be institutionalized reflections of US Air Force thinking on irregular warfare. This document did not focus on counterinsurgency, but on the entire spectrum of irregular warfare. This spectrum encompassed the key activities counterinsurgency, support to counterinsurgency, support to insurgency, counterterrorism, and shaping and deterring. It also denominated key capabilities, which where framed within a framework of information operations: building partnership capacity, unconventional warfare, intelligence and counterintelligence operations, mobility, agile combat support, precision engagement, and command and control.[200] The US Air Force could, according to the *AFDD 2-3*, provide valuable and unique capabilities, which provided flexible and persistent options for operating in austere and remote environments, and by using a less intrusive and quickly deployable force.[201] With regard to counterinsurgency, these options included providing security, alleviating root causes of the insurgency by transporting partner nation government officials and executing information operations, limiting the insurgents flexibility with ubiquitous airpower, disrupting insurgent movements, targeting insurgent leaders, and executing effective air-to-ground coordination.[202]

197 United States Headquarters, Department of the Army, *FM 3-05.2 (FM 3-05.135/FM 3-05.202): Foreign Internal Defense,* September, 2011, https://info.publicintelligence.net/USArmy-ForeignInternalDefense.pdf (accessed September 26, 2016).

198 United States Air Force, *Air Force Doctrine Document 3-24: Irregular Warfare, 1 August 2007, Incorporating Change 1, 28 July 2011,* July 28, 2011, http://www.fas.org/irp/doddir/usaf/afdd3-24.pdf (accessed October 12, 2012), title page and summery of changes. No page number.

199 United States Air Force, *Air Force Doctrine Document 3-22: Foreign Internal Defense. 15 September 2007, Interim Change 2 (Last Review),* November 1, 2011, https://www.fas.org/irp/doddir/usaf/afdd3-22.pdf (accessed October 28, 2013), summary of changes. No page number.

200 United States Air Force, *Air Force Doctrine Document 2-3: Irregular Warfare,* August 1, 2007, www.fas.org/irp/doddir/usaf/afdd2-3.pdf (accessed November 13, 2011), 5.

201 United States Air Force, *AFDD 2-3 (2007),* 14.

202 United States Air Force, *AFDD 2-3 (2007),* 19-25.

As stated in chapter five, *AFDD 2-3* and other documents differed mainly in scope and outlook. The *FM 3-24* described tasks. The *AFDD 2-3* mainly described capabilities. Another difference is noticeable with regard to command and control. *FM 3-24* of 2006 and *JP 3-24* of 2009 favored decentralized planning and execution, while the *AFDD 2-3* proscribed centralized control and decentralized execution.[203] While some authors found this difference disturbing[204], a closer look reveals mainly a difference in emphasis. As stated, *JP 3-24 and FM 3-24* both acknowledged the need for a flexible command structure, despite the observation that most of the planning was done at the lower levels of the military command structure. The *AFDD 2-3* on the other hand reaffirmed the airpower dictum of centralized control and decentralized execution. It however also acknowledged the need for flexibility. The CFACC had the option of delegating some functions lower in the chain of command, while using the robust command and control architecture of the Theater Air Control System (TACS), in order to enable effective communication with ground forces while retaining flexibility in planning of scarce air assets. The actual command and control scheme could also differ with each conflict or operation. Therefore, an adaptive mindset, as well as a flexible command and control structure, was key to success.[205]

The Air Force doctrine on irregular warfare showed increased consideration with the population. The USAF named "counterinsurgency truths" for airmen, of which the first stated that popular support of a legitimate host nation government, often a function of maintaining security, is critical in counterinsurgency operations.[206] It made Building Partnership Capacity a function for all airmen, loosening the link between counterinsurgency and special operations.[207] As for other airpower functions, these did not differ that much from regular warfare. *AFDD 2-3* however did state that, especially in counterinsurgency, effective deployment required airmen to adopt a different mindset to "*exploit these capabilities in innovative ways*"[208], thereby acknowledging that, while some capabilities might be similar to those in regular warfare, the mode of application might differ. Another "truth" stated that the "*struggle for legitimacy and influence over a relevant population is the primary focus of operations, not the coercion of key political leaders or defeat of their military capability*".[209] The document ended with a short appendix on the nature of insurgencies, and further reinforced the acknowledgement of the role of the population in counterinsurgencies.[210] Among the suggested readings were *FM 3-24* and *Airpower in Small Wars: Fighting Insurgents and Terrorists* by James Corum and Wray Johnson. As described

203 United States Air Force, *AFDD 2-3 (2007)*, 9, 66, and 70.

204 See for instance: Paul Darling, "Joint Targeting and Air Support in Counterinsurgency: How to Move to Mission Command", *Air & Space Power Journal* 6, no. 5 (2012): 49-64.

205 United States Air Force, *AFDD 2-3 (2007)*, 9, 45-46 and 66-68.

206 United States Air Force, *AFDD 2-3 (2007)*, 10.

207 United States Air Force, *AFDD 2-3 (2007)*, 27-28.

208 United States Air Force, *AFDD 2-3 (2007)*, 5.

209 United States Air Force, *AFDD 2-3 (2007)*, 8.

210 United States Air Force, *AFDD 2-3 (2007)*, 79-88.

throughout this study, both of these publications had a very ground-centric orientation.[211] By expanding the range of units that could be engaged in Foreign Internal Defense (FID), the emphasis on the population, and the references to documents that were widely accepted outside the air force show that the USAF acknowledged the role of the population within irregular warfare and counterinsurgency and therefore at least in part adopted insights from counterinsurgency literature and other doctrine.

The situation at the joint and interagency levels was less clear. The sequence of publications of doctrine was non-standard. The service doctrines on counterinsurgency or irregular warfare were published before their superior joint and interagency doctrines. Nevertheless, there was increased activity at these levels as well. At interagency level, the US Secretary of State and the US Agency for International Development issued the *U.S. Government Counterinsurgency Guide* on January 13, 2009. It was an attempt to align counterinsurgency activities of military and non-military government organizations. As can be expected for a document on an interagency level, the role of the military was modest. The document described the role of the military in counterinsurgencies only briefly, and referred mainly to the *FM 3-24* for further details.[212] In addition, Raphael Cohen argued that the *Counterinsurgency Guide* was less influential than the *FM 3-24*. He argued that this could be due to a intricate mix of necessity of a doctrine among civil servants, timing of its publication (the end of Bush's Administration) and bureaucratic culture.[213]

There was increased activity on writing joint doctrine as well. Between 2008 and 2011, the US military re-wrote many of existing doctrines, such as for instance, *Joint Publication 3-0: Operations (JP 3-0)*, *Joint Publication 3-24: Counterinsurgency Operations (JP 3-24)*, *Joint Publication 3-22: Foreign Internal Defense (JP 3-22)*, *Joint Publication 3-05: Special Operations (JP 3-05)*, and *Joint Publication 3-07: Stability Operations (JP 3-07)*.[214] But many other documents were updated as well. Retired US Marine Corps Colonel Jerome Lynes, in 2009 Chief of the joint education and doctrine division, mentioned the existence of 255 joint doctrines that addressed the subject of irregular warfare, which in addition were regularly updated. Also, he argued that these documents were appreciated and applied in practice.[215] Conceptually, counterinsurgency was part of joint operations from the beginning. *JP 3-0* of 2001 already

211 United States Air Force, *AFDD 2-3 (2007)*, 77-78.

212 United States Government Counterinsurgency Initiative, *U.S. Government Counterinsurgency Guide*, January 13, 2009, http://www.state.gov/documents/organization/119629.pdf (accessed May 13, 2016), 52.

213 Raphael S. Cohen, "A Tale of Two Manuals", *PRISM* 2, no. 1 (2010): 87-99.

214 United States Joint Chiefs of Staff, *Joint Publication 3-0: Joint Operations*, August 11, 2011, http://www.dtic.mil/doctrine/new_pubs/jp3_0.pdf (accessed February 27, 2014), United States Joint Chiefs of Staff, *Joint Publication 3-0: Joint Operations. 17 September 2006, Incorporating Change 1*, February 13, 2008, http://www.dtic.mil/doctrine/docnet/courses/operations/jfcon/jp3_0.pdf (accessed February 27, 2014), United States Joint Chiefs of Staff, *Joint Publication 3-05: Special Operations*, April 18, 2011, http://www.fas.org/irp/doddir/dod/jp3-05.pdf (accessed October 30, 2013), United States Joint Chiefs of Staff, *Joint Publication 3-07: Stability Operations*, September 29, 2011, www.dtic.mil/doctrine/new_pubs/jp3_07.pdf, United States Joint Chiefs of Staff, *Joint Publication 3-22: Foreign Internal Defense*, June 12, 2010, http://www.dtic.mil/doctrine/new_pubs/jp3_22.pdf (accessed November 18, 2013), and United States Joint Chiefs of Staff, *Joint Publication 3-24: Counterinsurgency Operations*, October 5, 2009, http://www.dtic.mil/doctrine/new_pubs/jp3_24.pdf (accessed November 18, 2013).

215 Jerome M. Lynes, "Joint Doctrine and Irregular Warfare", *Joint Forces Quarterly*, no. 54 (2009): 142-143.

referred to it.[216] After revisions in 2006, 2008 and 2011, this document did not change substantially with regard to irregular warfare. The term "Military Operations Other Than War", was abandoned in 2006.[217] As for the references made on counterinsurgency, it did not change substantially between 2001 and 2008. The documents refer to providing support to a friendly government in defeating an insurgency. From 2011 onwards however, the role of the population and legitimacy of both government and counterinsurgents was stressed.[218] This is an indication of adoption of the population-centric approach as found in the *FM 3-24* in joint doctrine. The more fundamental conceptual changes were elaborated at the lower-level doctrines linked to the *JP 3-0*, recognizable by the two-digit number at the end. The joint doctrine on special operations showed that the link between special forces and counterinsurgency was still current in 2011.[219] The joint doctrine on stability operations, which was issued in 2011, described this type of operations as the "build" phase of the "clear, hold, build" process.[220] In these documents, the conceptual foundations largely were unrelated to activities of the services and there were no references made to the specific relationships between the various components. There was only one reference indicating that stability operations were largely executed by land forces, suggesting that these land forces commonly were the supported units. [221]

The most fundamental change was the publication of joint doctrine which dealt directly with counterinsurgency. In 2007, the Department of Defense issued the *Irregular Warfare Operating Concept*, which was updated in 2010.[222] The version of 2010 was one of the first documents that made the distinction between five subdenominations of the irregular warfare domain. It did not call them types of warfare or types of conflict, but types of activities that the military could employ in countering irregular threats. They were: Counterterrorism (CT), Unconventional Warfare (UW), Foreign Internal Defense (FID), Counterinsurgency (COIN), and Stability Operations (SO). These types of activities were not to be regarded as part of a continuum in conflict, but rather as a set of options that could be used in conjunction with each other, as the operational situation required.[223]

216 United States Joint Chiefs of Staff, *Joint Publication 3-0: Doctrine for Joint Operations,* September 10, 2001, http://www.fs.fed.us/fire/doctrine/genesis_and_evolution/source_materials/dod_joint_ops_doctrine.pdf (accessed February 27, 2014), p. V-13.

217 United States Joint Chiefs of Staff, *Joint Publication 3-0: Joint Operations,* September 17, 2006, http://www.globalsecurity.org/military/library/policy/dod/joint/jp3_0_2006.pdf (accessed February 27, 2014), p. iii, and United States Joint Chiefs of Staff, *JP 3-0 (2008)*, p. iii.

218 United States Joint Chiefs of Staff, *JP 3-0 (2001)*, p. V-13, United States Joint Chiefs of Staff, *JP 3-0 (2006)*, p. V-9 - V-10, United States Joint Chiefs of Staff, *JP 3-0 (2008)*, p. V-9, and United States Joint Chiefs of Staff, *JP 3-05 (2011)*, p. V-17.

219 United States Joint Chiefs of Staff, *JP 3-05 (2011)*, p. x, I-1, II-6, and II-13.

220 United States Joint Chiefs of Staff, *JP 3-07 (2011)*, p. viii.

221 United States Joint Chiefs of Staff, *JP 3-07 (2011)*, p. xiii.

222 United States Department of Defense, *Irregular Warfare Joint Operating Concept, Version 1.0,* September 11, 2007, http://www.globalsecurity.org/military/library/policy/dod/iw-joc_v1_2007.pdf (accessed October 17, 2013), and United States Department of Defense, *Irregular Warfare: Countering Irregular Threats. Joint Operating Concept, Version 2.0,* May 17, 2010, http://www.dtic.mil/doctrine/concepts/joint_concepts/joc_iw_v2.pdf (accessed March 18, 2016).

223 United States Department of Defense, *IWJOC Version 2.0*, 5. Version 1.0 only listed them as only examples of activities, among other activities (United States Department of Defense, *IWJOC Version 1.0*, 9-10). Version 2.0 structures all activities

Version one was extensively re-written, but the main difference was that version two was more elaborate and more structured. Both documents reflect progress of the US military in finding the most productive response to irregular threats, with a decreased attention for kinetic operations, and increased attention for the local population and building of host nation security structures.

Official joint doctrine on counterinsurgency was written as well. It was called *Joint Publication 3-24: Counterinsurgency (JP 3-24)* of 2009. Like the *Field Manual 3-24*, this document reflected a population-centric approach to counterinsurgency: primary objective was to foster development of effective governance by a legitimate government. It needed to be a comprehensive approach, in which killing or capturing, while sometimes necessary, could be less effective than isolating insurgents from the population and their resources. The use of force had to be legitimate, and with the desired effect in mind to keep collateral damage and the number of civilian casualties to a minimum.[224] Like the *FM 3-24*, the *JP 3-24* emphasized that an effective counterinsurgency force was a force that represented an adaptive learning organization in order to counter any insurgent change in tactics.[225]

Besides reflecting the population-centric approach to counterinsurgency, the *JP 3-24* also addressed issues which also appeared in the discourse on the role of airpower in irregular warfare. The roles of airpower in this doctrine mentioned included close air support, precision strikes, armed overwatch, personnel recovery, air interdiction, ISR, communications, EW, combat support, and air mobility. According to the document, airpower capabilities provided a considerable asymmetric advantage by restricting the insurgent's freedom of movement. It however stated that Combat Search and Rescue, part of Personnel Recovery, played the largest role in COIN, as it dramatically enhanced the willingness of both own forces and host nation forces to engage in operations.[226] *JP 3-24* also addressed the command and control issue. Echoing the *FM 3-24*, it encouraged a flexible command and control scheme, taking into account the multinational character of most counterinsurgency operations.[227] While most of the planning would be done at lower echelons, it recognized that air planning involved all echelons, which involved a high level of informal coordination. Which component should be supporting or supported could also differ. It explicitly stated that the air component could be the supported component when it executed operations outside operational areas of land or maritime components.[228] Finally, *JP 3-24* addressed the training of host nation air forces, also referring to army and air force doctrines relating to the subject. With regard to this range of activities, the document

within the five sets of activities.

224 United States Joint Chiefs of Staff, *JP 3-24 (2009)*, p. xiv-xvi and p. VII-7.

225 United States Joint Chiefs of Staff, *JP 3-24 (2009)*, p. xvi.

226 United States Joint Chiefs of Staff, *JP 3-24 (2009)*, p. VII-4.

227 United States Joint Chiefs of Staff, *JP 3-24 (2009)*, p. VII-4, and United States Headquarters, Department of the Army, *FM 3-24 / MCWP 3-33.5: Counterinsurgency*, December 15, 2006, http://www.fas.org/irp/doddir/army/fm3-24.pdf (accessed November 13, 2011), p. E-4.

228 United States Joint Chiefs of Staff, *JP 3-24 (2009)*, p. VII-4.

stated that building host nation airpower capabilities should commence as early in the conflict as possible, due to the long time it would take to build these capacities, and should be tailored to the host nation's needs.[229]

6.4.2. NATO Doctrines

As with the previous timeframes, the dominant developments with regard to doctrine were mostly American. By 2009, NATO as an organization still lacked both a discourse and a doctrine on irregular warfare. Between 2009 and 2013 NATO overhauled the entire system of doctrines.[230] Possibly influenced by the publication of the *FM 3-24*, NATO published its first doctrine on counterinsurgency, called *AJP 3.4.4: Allied Joint Doctrine for Counterinsurgency (COIN)* in February 2011.[231] Although *AJP 3.4.4* had a different document structure than its American counterpart, the tenets of counterinsurgency echo those found in American doctrine. Support of the host nation by the local population was deemed critical to a successful counterinsurgency operation. In order to achieve success, an intimate understanding of the environment was critical, proscribing a prominent role of intelligence. As for the execution, the *AJP 3.4.4* proscribed a comprehensive approach, built around the "clear-hold-build" principle.[232] Like American doctrines, NATO doctrine on counterinsurgency emphasized the need to adapt and the need to have a robust lessons learned program in place. The course of the insurgency was characterized by "competitive learning", in which both insurgents and counterinsurgents were trying to out-adapt each other. In order to be successful, the counterinsurgents required a flexible command and control structure, the ability to alter capabilities and tactics quickly, and disseminate lessons learned quickly throughout the force.[233]

AJP 3.4.4 imputed a vital role for the air weapon. It was:

> "...especially capable of countering different types of insurgency members, and of gathering information. Air contributions include CAS, including precision strikes, air interdiction (AI); airborne intelligence, surveillance and reconnaissance (ISR); communication; combat support; and air mobility. Air, (sic!) efforts in coordination with space forces and capabilities can provide considerable asymmetric advantages to counterinsurgents. If insurgents assemble a conventional force, air assets can respond quickly with joint precision fires or the ability to airlift ground security forces to remote locations to track down and eliminate

229 United States Joint Chiefs of Staff, *JP 3-24 (2009)*, p. VII-7.

230 Anonymous, "Allied Joint Doctrine Architecture (AJDA)", *Website Civil-Military Centre of Excellence* (March 20, 2012) http://www.cimic-coe.org/wp-content/uploads/2014/06/allied-joint-doctrine-architecture.jpg (accessed March 15, 2015).

231 Crane, "United States", 68, and NATO, *AJP-3.4.4: Allied Joint Doctrine for Counterinsurgency (COIN)*, February 4, 2011, http://publicintelligence.net/nato-allied-joint-doctrine-for-counterinsurgency/ (accessed October 12, 2012).

232 NATO, *AJP 3.4.4.*, p. 1-4 - 1-6, p. 3-18, and p. 5-13.

233 NATO, *AJP 3.4.4.*, p. 3-26 - 3-27, and p. 5-7 - 5-8.

insurgents. Air power enables counterinsurgents to operate in rough and remote terrain, areas that insurgents traditionally have used as safe havens".[234]

As for command and control of the air weapon, *AJP 3.4.4* advised devising a structure that balanced responsiveness and effectiveness. The air component could be the supported element when it engaged targets outside the land-or maritime components' areas of operation.[235] But, due to the assessment that in counterinsurgency most planning occurred at lower echelons and using the wrong weapon could have detrimental effects on the counterinsurgency effort, intimate coordination with mainly ground forces was essential. It proscribed building in fail-safes, acknowledging this would hamper responsiveness, and some degree of informal coordination and integration of airmen and soldiers.[236] Finally, as the goal of the counterinsurgency force was building a viable host nation government, the doctrine advised the air component to deploy teams of air advisors, in order to build a host nation air component.[237]

Within NATO air forces, the doctrinal evolution was less tailored to irregular warfare. In 2009, *AJP 3.3 (A): Allied Joint Doctrine for Air and Space Operations* was issued. There was no reference to irregular warfare, counterinsurgency, and only one reference to post-conflict reconstruction, within the context of a restricted target list.[238] The *AJP 3.4.4* contained an airpower section, and it can be assumed that there were airmen present among the reviewers that had to ratify the document. NATO's center of expertise with regard to air operations, the Joint Air Power Competence Centre (JAPCC), was not directly involved in writing the document. It was however involved in writing of studies on topics that were current in Afghanistan, such as counter-IED, air-land integration, personnel recovery, ISR, helicopter capabilities, and hybrid warfare.[239] Consequently, it was up to the contributing nations to formulate their own airpower doctrine on irregular warfare, such as Australia. Like the USAF, Royal Australian Air Force (RAAF) published a doctrine in irregular warfare rather than counterinsurgency. It did however pay significant attention to gaining support of the population, and described the roles of all airpower missions, including strategic attack, in an irregular warfare context.[240] The Royal Air Force (RAF) incorporated irregular warfare in its basic airpower doctrine of 2009. Due to its basic nature, descriptions of

234 NATO, *AJP 3.4.4.*, p. 5-29.

235 NATO, *AJP 3.4.4.*, p. 5-29.

236 NATO, *AJP 3.4.4.*, p. 4-11.

237 NATO, *AJP 3.4.4.*, p. 3-19, and p. 5-32.

238 NATO, *AJP-3.3(A): Allied Joint Doctrine for Air and Space Operations*, November, 2009, http://www.scribd.com/doc/92437242/a-Allied-Joint-Doctrine-for-Air-and-Space-Operations-05NOV09#scribd (accessed March 15, 2016).

239 Joint Air Power Competence Centre, "JAPCC Annual Report 2011", (2011) http://www.japcc.org/publications/report/Report/2012-02-19_Annual_Report_2011.pdf (accessed October 15, 2013), and Joint Air Power Competence Centre, "JAPCC Annual Report 2012", (2012) http://www.japcc.org/publications/report/Report/Annual_Report_2012.pdf (accessed October 15, 2013).

240 Royal Australian Air Force, *Australian Air Publication AAP 1001.2: The Air Force Approach to Irregular Warfare*, November, 2011, www.airpower.airforce.gov.au/airpower/list/36/RAAF-doctrine.aspx (accessed December 22, 2011).

specific operating environment, and airpower's role in them, are not comprehensive. This doctrine, however, made some references to the importance of the population, indicating a slight shift of attention.[241]

6.4.3. COIN Codification

Concluding this paragraph, the US military completely overhauled its doctrines which dealt with irregular warfare. The conceptual shift from Military Operations Other Than War towards Irregular Warfare and defined subdenominations, of which counterinsurgency was one, is a clear indication. Loosening of the link with Special Operations Forces, focus on legitimacy of the population, and the decreased role of kinetic force in these conflicts are other telling signs. This was true for all military services involved. Especially the inclusion of all forces in the concepts that traditionally were the prerogative of SOF was significant. This required a large conceptual and cultural shift of focus. The process of writing doctrine was however not standard. The US Army and US Marine Corps drafted their doctrine first, in 2006. The US Air Force, partly as a reaction, followed in 2007. The joint doctrine on counterinsurgency was published in 2009. Normally, it would work the other way round: joint doctrine first, followed by those of the services. It is an indication of bottom-up adaptation, enforced by powerful leadership. This in theory allowed for discrepancies between several doctrines to remain. In practice, all doctrines, including NATO's, conceptually moved towards increased attention towards COIN, up to a point where the first complaints of becoming a dogma surfaced. Discrepancies remained in categorization of activities, and with regard to command and control.

6.5. Force Levels and Resources: Re-Americanization of the War Effort

6.5.1. Force Levels: Two Opposing Developments

The US took over the main effort of maintaining the air order of battle between 2008 and 2012. Bob Woodward suggests in *Obama's Wars* that, while conducting the strategic review prior to the decision to increase the force levels, several members of Obama's team figured that the war could be fully Americanized in two years. They suggested that NATO allies could focus on providing financial resources and military trainers, while the US could execute all the other tasks related to the war. For NATO, this had the additional benefit of a division of tasks between the US on the one hand, and the allies on the other, which could

241 Royal Air Force, *AP 3000: British Air and Space Power Doctrine*, 2009, http://www.raf.mod.uk/rafcms/mediafiles/9E435312_5056_A318_A88F14CF6F4FC6CE.pdf (accessed May 16, 2016).

potentially decrease friction.[242] In addition, the discussion of the required troop levels was mostly a ground-centric one. As stated in relation to the strategic reorientation, the service chiefs of the US Navy and the US Air Force had the opinion that this did not impact their services much. Most of the burden fell on the US Marines and the US Army.[243]

As of mid 2008, with the war in Iraq winding down, the US started to divert air assets to the Afghan theater of operations. This involved first and foremost moving the carrier strike group from the Persian Gulf to the Arabian Sea.[244] This meant increased availability of the air assets this carrier strike group had to offer. In addition, ground forces started pouring in. It involved the 82nd Combat Aviation Brigade, which arrived at Kandahar Airfield in spring 2009.[245] Also, a Marine Expeditionary Unit of about 7,000 personnel arrived in theater. These units brought with them organic air assets, such as AV-8B Harrier and, AH-64D "Apache" and AH-1 "Cobra" Attack helicopters, and CH-53E and CH-46E transport helicopters. Also, A-10 fighter-bomber aircraft, HH-60H rescue helicopters and a whole array of unmanned areal vehicles entered the Afghan area of operations.[246] The American surge, together with additional contributions of some nations, alleviated the main problem, shortage of assets. In all, the available airpower for Afghanistan doubled.[247] By late 2009, there was no shortage of assets that could provide Close Air Support, and sometimes there was even an abundance. In RC-South, the area that became the operational center of gravity of ISAF during McChrystal's tenure, this was also the case with regard to ISR assets.[248] The problem of fixed wing and rotary wing tactical airlift to a large extent was lifted by assets of the US Marine Corps and the Combat Aviation Brigade of the deploying 82nd Airborne Division.[249] According to Commander of Regional Command South from November 2008 to November 2009, Dutch Army Major General De Kruif, the deployment of nearly 150 transport helicopters, in combination with the additional ground forces, allowed him to take the initiative from the Taliban. It allowed ISAF forces to execute unpredictable air assaults lasting twenty four to forty eight hours on locations hitherto untouched by ISAF.[250]

242 Woodward, *Obama's Wars*, 151.

243 Matthew C. Brand, "Resourcing General McChrystal's Counterinsurgency Campaign: The 2009 "Troop-to-Task" Planning Effort to Determine the Right Force Package Necessary to Defeat the Insurgency in Afghanistan", (Air University Press, Maxwell Air Force Base, AL, July, 2013) http://www.au.af.mil/au/aupress/digital/pdf/paper/ap_1301_brand_resourcing_mcchrystal_counterinsurgency.pdf (accessed February 27, 2014). This monograph describes how McChrystal and his team calculated the number of troops required for the strategic reorientation. The air weapon did not figure in this calculation.

244 Sullivan, "Game-changing Strategies", 164.

245 Sullivan, "Game-changing Strategies", 193.

246 Raaberg, "Shift", 142, Ripley, *Air War Afghanistan*, 174-177, and Sullivan, "Game-changing Strategies", 166-167. See also appendices 3.8 and 3.9.

247 Matthew Fisher, "NATO Air Power Doubling in Afghanistan; Added Support Aims to Increase Effectiveness of U.S. Deployment of Ground Troops", *Edmonton Journal* (April 19, 2009) http://search.proquest.com/docview/250718163/47BE399DFE9242EEPQ/28?accountid=35226 (accessed September 24, 2014).

248 De Kruif, Interview.

249 De Kruif, Interview.

250 De Kruif, Interview, and Teakle, Interview.

Nevertheless, the problems with the availability of specialized assets remained. It especially involved helicopters for medical evacuation. McKiernan ordered that every soldier, NATO or Afghan, who became wounded had to be evacuated to a hospital capable of performing operations within sixty minutes, the so-called "Golden Hour". The number of helicopters capable of medical evacuation rose from twenty eight to forty five in 2009, which was still about sixty airframes short of the requirement. By then, twenty to thirty MEDEVAC missions a day were common. About half of these were flown for Afghan civilians, which sent a very positive message to the Afghan population.[251] Availability of ISR assets also remained a bottleneck, even within the situation of increased availability of assets in absolute terms. Willingness of NATO members to deploy their scarce airborne ISR assets was low.[252] In addition, the requirements changed. This was due to McKiernan's and especially McChrystal's increased attention on controlling civilian casualties and collateral damage. As situational awareness was critical for assessing the impact of deadly force, the need for ISR, and especially Full Motion Video, increased dramatically.[253] The increased demand for ISR assets exceeded the increased availability of these assets. Also, other specialized air assets, such as AC-130 "Spectre" Gunship for Special Operations, and EA-18Gs and EA-6 "Prowlers" for electronic warfare, remained scarce.[254]

In addition, contributions of the other allies decreased in the same time frame. By 2010, more allied air assets were leaving the country than were coming in, and consequently the number of allied air assets that were in country started to decrease.[255] This was a reflection of a decreased popularity of the war among the allied constituencies, in a time that was plagued by economic recession. Within the context of NATO's Smart Defense concept, initiatives were stepped up to improve pooling and sharing. An example was the European Air Transport Command (EATC), which was erected on Eindhoven Airbase in the Netherlands in 2010, conveniently located near the NATO Allied Movement Coordination Centre (AMCC) and the Multinational Coordination Centre Europe (MCCE).[256] This in turn spawned initiatives to increase mutual training and standardization within the European military transport community.[257] Also, there were initiatives for pooling and sharing of

251 Sullivan, "Game-changing Strategies", 189-191.

252 Gates, *Duty*, 129-135 and 304-305, David Neil, "Project Noctua: A Model for Enhancing NATO UAV Capability", *Journal of the JAPCC*, no. 13 (2011): 24-27 http://www.japcc.org/publications/journal/Journal/20110414_-_Journal_Ed_13.pdf (accessed July 11, 2014), 26, and Raaberg, "Shift", 151-152.

253 Richard J. Jr. Bailey, Lieutenant Colonel, United States Air Force, Interview with the Author, June 24, 2013, Hoog, "Airpower", 237, and Raaberg, "Shift", 151.

254 Sullivan, "Game-changing Strategies", 194.

255 Appendices 3.6 and 3.7.

256 Anonymous, "The European Air Transport Command: A Successful Example for Pooling and Sharing. Interview with Major General Jochen Both, First Commander of the EATC 2010-2012", *Journal of the JAPCC*, no. 16 (2012): 34-28 http://www.japcc.org/publications/journal/Journal/2012-09-24-Ed-16_web.pdf (accessed July 11, 2014), and Pieter Bastiaans, "EATC's Growing Pains", *Air Forces Monthly*, no. 312 (2014): 12-13, and Joint Air Power Competence Centre, "NATO/EU Air Transport Training Exercises and Interoperability", (The Joint Air Power Competence Centre, November, 2016) https://www.japcc.org/wp-content/uploads/NATO_EU_AT_Training_Exercises_Interoperability_web.pdf (accessed January 18, 2017), 8.

257 Joint Air Power Competence Centre, "Air Transport Training Exercises", passim.

helicopter capabilities. An example was the Multinational Helicopter Initiative (MHI), which initially was focused on raising the number of transport helicopters for Afghanistan. The MHI supported the Hip Helicopter Task Force (HTF) that assisted the deployment of Czech Mi-17 "Hip" helicopters to Afghanistan in 2010 - 2011. The program however suffered some setbacks due to financial restraints and issues with airworthiness of the Russian airframes. Support could also entail provision of pre-deployment training, command and control capabilities, base support, and financial aid.[258] Other indications for initiatives towards pooling and sharing were studies by NATO's JAPCC, which aimed to streamline the many differences within NATO's militaries with regard to equipment, standard operating procedures, and training. These studies frequently mentioned the shortage of assets in ISAF as one of the impulses for change, in an attempt to enhance efficiency, and therefore effectiveness, of the air weapon. However, they took time to materialize on the battlefield, if adopted by the nations at all. So these studies did not alleviate the problem of the shortage of assets, and NATO remained dependent on the US, for instance via the US Department of Defense Lift and Sustain Program.[259] Also, it forced nations that decided to stay in Afghanistan to make additional procurements, such as for instance Canada. In 2010, Canada leased and operated four Russian Mi-17V-5 HIP transport helicopters, dubbed CH-178 by the Canadians, which caused a stir in Canada because it was uncommon to buy non-western equipment. Instead of leasing foreign helicopters and crews that could fly missions for western forces, these helicopters were flown by Canadian pilots, and were fitted with Canadian markings.[260]

258 Joint Air Power Competence Centre, "Enhancing NATO's Operational Helicopter Capabilities: The Need for International Standardization", (Joint Airpower Competence Centre, August, 2012) https://www.japcc.org/portfolio/enhancing-natos-operational-helicopter-capability/ (accessed May 24, 2016), 10, Joint Air Power Competence Centre, "Improving NATO Support to Future Air Advisor Operations", (April, 2014) http://www.japcc.org/publications/report/Report/JAPCC_Air_Advisor.pdf (accessed May 23, 2014), 26, and Bernard Willi, "The Multinational Aviation Training Centre (MATC): Sharing Expert Capabilities and Experience", *Journal of the JAPCC*, no. 20 (2015): 67-70 https://www.japcc.org/wp-content/uploads/JAPCC_Journal_Edtion-20.pdf (accessed December 16, 2016), 67-68. The MHI started as a bilateral agreement between France and the UK. The participants of the HTF were: Albania, the Czech Republic, Hungary, Italy, Norway, Poland, Slovakia, Spain, the UK and the USA.

259 Wido Gerdsen, "Enhancing NATO's Operational Helicopter Capabilities: The Need for International Standardisation", *The Journal of the JAPCC*, no. 16 (2013): 19-23 http://www.japcc.org/wp-content/uploads/Journal_Ed-16_web.pdf (accessed June 15, 2017), Joint Air Power Competence Centre, "NATO Air Transport Capability: An Assessment", (August, 2011) https://www.japcc.org/portfolio/nato-air-transport-capability-an-assessment (accessed May 24, 2016), 9 and 22, Joint Air Power Competence Centre, "Personnel Recovery: That Others May Live to Return with Honour. A Primer", (January, 2011) https://www.japcc.org/portfolio/personnel-recovery-that-others-may-live-to-return-with-honour (accessed May 24, 2016), 8 and 22, Joint Air Power Competence Centre, "Helicopter Capabilities", and Joint Air Power Competence Centre, "Regional Fighter Partnership: Options for Cooperation and Cost Sharing", (March, 2012) https://www.japcc.org/portfolio/regional-fighter-partnership-options-for-cooperation-and-cost-sharing (accessed May 24, 2016).

260 Anonymous, "Tories Mum on Russian Choppers Lease", *Website CBC News* (November 24, 2010) http://www.cbc.ca/news/canada/tories-mum-on-russian-choppers-lease-1.906209 (accessed February 4, 2016), Anonymous, "Posts Tagged Mi-17: Canadian Using Russian Helicopters in FATA?", *Website Wandering Raven* (December 15, 2010) https://wanderingraven.wordpress.com/tag/mi-17/ (accessed February 4, 2016), Anonymous, "CH-178", *Website Helis.com* http://www.helis.com/database/model/1444/ (accessed February 4, 2016), Anonymous, "DND 101 Archive: CF Medium-Heavy Lift Helicopter – Mil CH-178", *Website Canadian American Strategic Review* http://www.casr.ca/101-af-ch178-mil.htm (accessed February 5, 2016), and Anonymous, "CH-178 in Canadian Armed Forces", *Website Helis.com* http://www.helis.com/database/modelorg/3037/ (accessed February 4, 2016).

Finally, the decreased availability of air assets as result of national priorities in theater remained an issue, although actions were taken to alleviate the problem. For intra-theater transport aircraft, such as C-27 "Spartan", C-160 "Transall" and C-130 "Hercules", some nations that owned them were notorious for prioritizing their assets for national taskings, while not meeting their promised commitment to ISAF.[261] The challenge of national caveats was to a large extent solved with regard to the fixed wing air assets, that were directed by the CAOC in Al Udeid. Some nations eased their restrictions.[262] But for helicopters, differences of regulations between the nations remained. It concerned regulations with regard to use of weapons remained, "go-no go criteria" in relation to threat levels, support to Afghan nationals, support to OEF, crossing areas of operations of Regional Commands, and illumination criteria.[263] Late 2009, initiatives were taken to streamline the deployment of capabilities of the various air assets, and derive a plan to work around the various national caveats.[264]

In sum, the period between late 2009 and mid 2012 showed two opposing developments, both with political backgrounds. The newly installed Obama Administration felt it could not leave Afghanistan without a sense of completing the mission. It therefore made additional air assets available, mostly much needed helicopter capability. Scarce assets remained in the area of operations to support the counterinsurgency effort as well. Conversely, many allies, wary of the operation and faced with budget cuts, started to withdraw their assets, in effect re-Americanizing the effort. As a result of the increased American involvement, many problems were alleviated or solved. The exceptions were scarce assets relating to ISR and MEDEVAC. This was however at least partially induced by changing requirements that resulted from a shift in strategy.

6.5.2. Resources: Requiring Continuing Attention

The previous chapter described five challenges western airpower encountered during the deployment and expansion phase of ISAF. These challenges were: secured access to airbases in countries surrounding Afghanistan, secured access to airfields inside Afghanistan, the physical state of airbases, Air Traffic Control, and interoperability. During the timeframe described in this chapter, most of the problems lingered, some were alleviated, and some were exacerbated.

The challenge of secured access to bases surrounding Afghanistan increased in complexity.

261 Sullivan, "Game-changing Strategies", 191-192.

262 Anonymous, "Italian Fighter Bombers Deployed Against Taleban in Afghanistan - Paper", *BBC Monitoring Europe* (July 8, 2012) http://search.proquest.com/docview/1023982120/26186F1EFD2042FEPQ/127?accountid=35226 (accessed October 2, 2014).

263 Van Duren, *ISAF HQ*, 189.

264 Van Duren, *ISAF HQ*, 188-190, and Van Duren, Interview.

After the close of Karshi Khanabad in 2005, the supply route from Europe to Afghanistan through Central Asia, known as the Northern Distribution Network (NDN) largely fell into disuse.[265] From 2005 to 2008, NATO and the US largely relied on the Southern Distribution Network (SDN), which ran on the ground from Karachi through Pakistan to Afghanistan. However, the US wanted to decrease reliance on the SDN. The route became increasingly dangerous due to insurgent activity like as attacks on convoys and trucks, pilferage, and kidnapping.[266] Second, the US wanted to increase flexibility in the supply chain in the context of the surge of troops, which would increase logistical demands.[267] Third, the relationship between the United States and Pakistan became strained as a result of what the Pakistani Government considered to be infringements on their national sovereignty. It mainly concerned strikes with UAVs in Pakistan's tribal areas, but also the raid on the compound of Osama bin Laden on May 2, 2011. On November 26, 2011 NATO helicopters mistakenly killed twenty four Pakistani soldiers in the Pakistani border area of Salala, wounding another thirteen. This incident served as an inducement for the Pakistani Government to close SDN on the same day, only to reopen it after the US Secretary of State formally apologized on July 3, 2012.[268] For these reasons, the Obama Administration set out to reinvigorate the NDN from 2008 onwards.[269] This meant that transit agreements through countries such as Azerbaijan, Georgia, Latvia, Kazakhstan, Kyrgyzstan, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan had to be re-negotiated. The resulting increased leverage of these countries changed the regional, and to a certain extent even global, balance of power.[270]

It is beyond the scope of this study to analyze this political balance of power in depth. In addition, it should be noted that the NDN was mainly a supply line by road or train. Supplying the surge by strategic airlift was too costly and demand was exceeding the capabilities of the western fleet of strategic airlifters. Also, transport by air was much more expensive than transport via ground routes.[271] But the increased importance of the NDN nevertheless influenced the air weapon within the realms of overflight rights and basing. Starting with the latter, the availability of Manas became of increased importance, because

265 Roger N. McDermott, "Vigilant Eagle: Kazakhstan's Assistance to ISAF in Afghanistan", *Connections: The Quarterly Journal* 10, no. 3 (2011): 81-115, 91.

266 Sabah Aslam, "The Afghan War: U.S. Transit Reliance on Pakistan and Its Search for Alternatives", *Strategic Studies* XXXI, no. 3 (2011): 153-169, 158, Sabina Nováková, "Manas Air Base and U.S.-Kyrgyz Relations", (Bachelor's Thesis, Charles University, Prague, 2015) https://is.cuni.cz/webapps/zzp/download/130153879 (accessed December 11, 2015), 27, and John F. Tierney, "Warlord, Inc.: Extortion and Corruption Along the U.S. Supply Chain in Afghanistan", (Report of the Majority Staff, U.S. House of Representatives, June, 2010) http://www.cbsnews.com/htdocs/pdf/HNT_Report.pdf (accessed August 27, 2014).

267 Aslam, "Afghan War", 153.

268 Anonymous, "Pakistan Outrage After 'NATO Attack Kills Soldiers'", *BBC Website* (November 26, 2011) http://www.bbc.com/news/world-asia-15901363 (accessed July 20, 2016), Zahid Anwar, "Pakistan and the Geopolitics of Supply Routes to Afghanistan", *Journal of Political Studies* 20, no. 2 (2013): 105-123, 115, Aslam, "Afghan War", 153, and Nováková, "Manas", 35.

269 McDermott, "Vigilant Eagle", 91, Nováková, "Manas", 27.

270 Anwar, "Pakistan", Aslam, "Afghan War", McDermott, "Vigilant Eagle", and Nováková, "Manas". Influence on global politics due to the crucial role of Russia. Global, because Russia is a crucial player (McDermott, "Vigilant Eagle", 93).

271 Aslam, "Afghan War", 159.

it was the central air mobility hub for the entire region.[272] The relationship between the US and Kyrgyz Governments remained tense however, and Kyrgyzstan threatened to close the base in 2009. Increased diplomatic effort kept the base open, albeit under different preconditions than before. The base was renamed from "Manas Airbase" to "Manas Transit Center", reflecting the Kyrgyz' desire to allow only non-lethal cargo to pass through the country. Also, the US paid higher rents and pledged investment in the airport's infrastructure development.[273]

As for overflight rights, cooperation with Russia was crucial. Besides continued approval for Western military movements in what Russia regarded as her sphere of influence, Russia's permission for military cargo to move through the country or its airspace was required to let the NDN function properly. To this end, the US and Russia signed an agreement in the summer of 2009, allowing non-lethal cargo to cross its soil, and both personnel and lethal and non-lethal equipment to traverse its airspace. The first flight under this scheme was conducted on October 7, 2009. The agreement allowed for 4,500 flights per year, but probably due to bureaucratic obstacles the actual number of flights was less. Reportedly, there were about 1,500 flights in total by the end of 2011. Nevertheless, taking the political sensitivities into account, the fact that there was a air corridor through Russian airspace was considered a diplomatic success.[274] The agreement was also extended.

272 Mickaël Aubout, "The Air Base Network Serving French and Coalition Operations in Afghanistan", *Air & Space Power Journal* 23, no. 1 (2009): 52-54, and Nováková, "Manas", 28.

273 Anonymous, "Electronic Systems Center Works to Enhance Air Traffic Control for Kyrgyzstan", *US Fed News Service, Including US State News* (June 18, 2010) http://search.proquest.com/docview/502240218/2D4FF1BAE4B14F42PQ/71?accountid=35226 (accessed July 11, 2016), Anonymous, "Kyrgyzstan: U.S. Intent to Render Aid to Kyrgyzstan Won't Change Bishkek's Air Base Plans - Official", *Interfax: Russia & Presidential Bulletin* (May 13, 2009) http://search.proquest.com/docview/4440849 11/2D4FF1BAE4B14F42PQ/159?accountid=35226 (accessed July 11, 2016), Aslam, "Afghan War", 162 and 164, Nováková, "Manas", 26-31, and Martin Scharenborg and Ramon Wenink, "Manas: Main Gate to Afghanistan", *Air Forces Monthly*, no. 291 (2012): 44-48, 45.

274 Anonymous, "U.S. Prepares to Begin Transit to Afghanistan to Russia - Gordon", *Daily News Bulletin* (September 12, 2009) http://search.proquest.com/docview/456155604/A7FA3E9A2CAD41CDPQ/28?accountid=35226 (accessed October 22, 2014), Anonymous, "U.S. Air Transit to Afghanistan Over Russia to Become Regular", *Daily News Bulletin, English [Moscow]* (October 15, 2009) http://search.proquest.com/docview/456183885/A7FA3E9A2CAD41CDPQ/33?accountid=35226 (accessed October 22, 2014), Anonymous, "Russia Already Transiting Military Cargo to Afghanistan - U.S. Ambassador", *Interfax: Russia & CIS Diplomatic Panorama* (October 9, 2009) http://search.proquest.com/docview/443430921/A7FA3E 9A2CAD41CDPQ/101?accountid=35226 (accessed October 22, 2014), Anonymous, "U.S. Welcomes Cargo Transit to Afghanistan Via Russia (Part 2)", *Interfax: Russia & CIS General News Wire* (March 17, 2010) http://search.proquest.com/ docview/443697388/A7FA3E9A2CAD41CDPQ/108?accountid=35226 (accessed October 22, 2014), Anonymous, "Russia Becomes Active Partner in Operations in Afghanistan - U.S. Diplomat", *Interfax: Russia & CIS Military Newswire [Moscow]* (April 23, 2010) http://search.proquest.com/docview/443844481/A7FA3E9A2CAD41CDPQ/92?accountid=35226 (accessed October 22, 2014), Anonymous, "Russia Will Transit NATO Cargo to Afghanistan Only by Air - Rogozin", *Daily News Bulletin* (February 22, 2011) http://search.proquest.com/docview/853259891/A7FA3E9A2CAD41CDPQ/7?accountid=35226 (accessed October 22, 2014), Anonymous, "Pundit Hails Russia for Allowing NATO to Supply Its Forces in Afghanistan", *BBC Monitoring South Asia* (July 1, 2012) http://search.proquest.com/docview/1022748329/A7FA3E9A2CAD41CDPQ/96?acc ountid=35226 (accessed October 22, 2014), Aslam, "Afghan War", 161, Peter Baker, "Deal Yet to Take Wing for U.S. Supply Route: Red Tape Delays Opening of Russian Air Corridor to Bases in Afghanistan", *International Herald Tribune* (November 16, 2009) http://search.proquest.com/docview/319014845/2D4FF1BAE4B14F42PQ/77?accountid=35226 (accessed July 11, 2016), Vladimir Isachenkov, "Russia Green-lights U.S. Supply Route; Move to Allow Access to Afghanistan Comes As Kyrgyzstan Affirms Plans to Shut Down American Base", *Toronto Star* (February 7, 2009) http://search.proquest.com/ docview/439558102/A7FA3E9A2CAD41CDPQ/91?accountid=35226 (accessed October 22, 2014), and Dos S. Zakheim and Paul J. Saunders, "Can Russia Help Us Withdraw for Afghanistan?: [Op-Ed]", *New York Times, Late Edition (East Coast)* (December 2, 2011) http://search.proquest.com/docview/907127725/A7FA3E9A2CAD41CDPQ/19?accountid=35226.

From mid June in 2011, it was possible to reach Afghanistan through a route that ran via the Arctic, Russia and Kazakhstan. The reduced flight time in turn reduced the cost of delivering fuel by air significantly.[275]

Other nations in Central Asia also extended and expanded their permissions for transit of US military goods trough their country, such as Azerbaijan, Georgia, Latvia, Kazakhstan,Turkmenistan and Ukraine. While agreements could differ with each country, this could include refueling rights at designated airfields in country.[276] Even Uzbekistan, which basically had expelled US forces from the country in 2005, resumed cooperation. In 2009, Uzbekistan allowed cargo to pass through the country. This could also mean the use of the airport of Navoi, albeit with the use of South Korea as intermediary.[277]

These agreements mostly were bilateral, between the US and the countries in Central Asia. Although Russia signed a framework agreement with NATO, each individual country had to negotiate deals with these countries as well. Nations that are documented in publicly available sources are France, Spain, and Italy, all of which had relatively large contingents in Afghanistan, requiring relatively large amounts of logistical movements. That these agreements could be precarious proved Georgia, which in 2009 banned Swedish military flights.[278] Nevertheless, the coalition in general managed to increase the supply via the NDN significantly. When in full swing in 2011, the NDN accounted for fifty two percent of all cargo going into Afghanistan.[279]

There were also developments with regard to base defense inside Afghanistan. At first glance, several elements remained the same. Indirect Fire (IDF), mortars or rockets fired from outside into the bases, constituted a constant threat to all of the 180 installations NATO and US forces maintained. Threats to air frames flying also remained.[280] There were some additional experiments to increase the security of the bases, most notably from the RAF Regiment. The RAF Regiment had the task of protecting the Kandahar airbase, which

275 McDermott, "Vigilant Eagle", 95.

276 Anwar, "Pakistan", 112-113, Aslam, "Afghan War", 161-162, and McDermott, "Vigilant Eagle", 96-96.

277 Aslam, "Afghan War", 161-162, and Deidre Tynan, "Uzbekistan: Karimov Gives Washington the Air Base It Needs for Afghan Operations", *Website Eurasianet.org* (May 10, 2009) http://www.eurasianet.org/departments/insightb/articles/eav051109a.shtml (accessed October 24, 2014).

278 Anonymous, "Corridors of Power; Georgia Closes Air Corridor to Planes Delivering Supplies to Swedish Contingent in Afghanistan", *Interfax: Russia 7 CIS Military Daily* (May 6, 2009) http://search.proquest.com/docview/443762078/A66C167A01274E6CPQ/6?accountid=35226 (accessed October 15, 2014), Anonymous, "NATO States Pay Russia for Afghan Transit - Diplomat", *Interfax: Russia & CIS General Newswire* (December 10, 2010) http://search.proquest.com/docview/817098184/2D4FF1BAE4B14F42PQ/18?accountid=35226 (accessed July 11, 2016), Anonymous, "Russia, Italy Agree on Air Transit to Afghanistan", *Interfax: Russia & CIS Military Newswire* (February 17, 2011) http://search.proquest.com/docview/852544732/A7FA3E9A2CAD41CDPQ/25?accountid=35226 (accessed October 22, 2014), and Isachenkov, "Russia".

279 Anwar, "Pakistan", 112, and Zakheim and Saunders, "Can Russia Help".

280 Anonymous, "Rocket Attacks Fact of Life on Kandahar Base: Strikes Serve As Annoying, Deadly Reminder of Threat to NATO Forces", *Website NBC News* (January 29, 2010) http://www.nbcnews.com/id/35149406/ns/world_news-south_and_central_asia/t/rocket-attacks-fact-life-kandahar-base/#.V43Gulcz5dl (accessed September 10, 2014), Shannon W. Caudill and Benjamin R. Jacobson, "Nowhere to Hide: The Growing Threat to Air Bases", *Air & Space Power Journal* 27, no. 3 (2013): 30-47, and Sydney J. Freedberg, "Supplying the Surge in Afghanistan", *National Journal* (2010): 1-3 http://search.proquest.com.nlda.idm.oclc.org/docview/200297504/fulltext/328262100091486EPQ/1?accountid=35226 (accessed January 13, 2016).

they did using helicopters, UAVs, artillery-detection radars, mortars, snipers and patrols. In contrast to their predecessors of other countries, they also actively communicated with the population living nearby Kandahar Airfield, to address the problem of rocket attacks at its roots. This combination of measures was effective, and rocket attacks ceased, at least during the period that this policy was actively executed.[281]

There were however two threats that deserved additional attention because they laid bare a weakness in base security. The first threat was direct attack on the base in order to destroy airframes while on the ground. This threat was not new, and the insurgents had executed direct attacks occasionally in the past.[282] The reason why it deserved additional attention was that one of them was successful. On September 14, 2012, fifteen suicide attackers executed a complex attack on Camp Bastion in Helmand Province, in which six US Marine Corps AV-8B "Harrier" attack aircraft were destroyed, and other aircraft and installations were severely damaged. After the firefight that lasted for four hours, fourteen insurgents were killed, as well as two ISAF soldiers. One insurgent was captured.[283]

The second threat consisted of attacks that were executed by indigenous forces. Part of the counterinsurgency effort was partnering with Afghan security forces. By the very nature of the task, western military personnel came in frequent contact with their Afghan counterparts. For various individual reasons, members of the Afghan security forces could attack western military personnel. They usually fired their personal weapons, trying to inflict as many casualties as possible, upon which they were killed by return fire. Hence these attacks were called "insider attacks". These attacks were not new either, but there was a sharp rise after 2010, which became problematic in 2012. In this year, forty six of those attacks were executed, claiming the lives of sixty western soldiers.[284] One known incident involved airpower. On April 27, 2011, a colonel of the Afghan Air Force killed eight airmen of NATO and one contractor in a shooting spree in the headquarters building of the Afghan Air Force at Kabul International Airport.[285] Both types of threats influenced the air weapon,

281 Sullivan, "Game-changing Strategies", 178-179.

282 Bill Roggio, "Jihadists Launch Complex Assault on Camp Bastion in Helmand", *Website Long War Journal* (September 14, 2012) http://www.longwarjournal.org/archives/2012/09/taliban_launch_compl_1.php (accessed July 5, 2016), and Van Duren, *ISAF HQ*, 200.

283 Dick Camp, "The Taliban Attack on Camp Bastion", *Leatherneck* 100, no. 3 (2017): 18-23, Caudill and Jacobson, "Nowhere to Hide", 30, Nordeen, *AV-8B Units*, 79, Tim Ripley, "The Last Bastion", *Air Forces Monthly*, no. 311 (2014): 50-53, Roggio, "Jihadists", and Bill Roggio, "6 Harrier Jets Destroyed, 2 Damaged in Taliban Assault on Camp Bastion", *Website Long War Journal* (September 16, 2012) http://www.longwarjournal.org/archives/2012/09/6_harrier_jets_destr.php (accessed August 22, 2014).

284 Caudill and Jacobson, "Nowhere to Hide", 37, Matthew J. Nasuti, "Mullah Omar Strikes Back at Camp Leatherneck", *Kabul Press* (September 21, 2012) http://search.proquest.com/docview/1048581159/4D94CE364EA642D1PQ/3?accountid=35226, Samanthi Dissanayake, "What Lies Beneath Afghanistan's Insider Attacks?", *BBC Website* (March 11, 2013) http://www.bbc.com/news/world-asia-19633418 (accessed July 5, 2016), Eric Jardine, "Green-On-Blue Attacks: Why "Insider" Violence Has Risen in Afghanistan", *Joint Forces Quarterly*, no. 71 (2013): 79-82, Austin Long, "'Green on Blue': Insider Attacks in Afghanistan", *Survival* 55, no. 3 (2013): 167-182, and Bill Roggio and Lisa Lundquist, "Green-On-Blue Attacks in Afghanistan: The Data", *Website Long War Journal* (May 7, 2016) http://www.longwarjournal.org/archives/2012/08/green-on-blue_attack.php (accessed July 5, 2016).

285 Forrest L. Marion, U.S. Air Force Oral History Interview with Major Melissa Moon-Brown, USAF Retired, Conducted by Dr. Forrest L. Marion, AFHRA Oral Historian, 25 Apr 2013, K239.0512-2692, Caudill and Jacobson, "Nowhere to Hide", Forrest

especially the attack on Camp Bastion. The loss of aircraft decreased the number that was left available for missions, although the operational effect was debated.[286] In general, the threats increased the pressure on base defense, and the resources that had to be made available, and had marginal but adverse effect it had on operations.

One of the biggest challenges relating to resources was building airbases in the face of the surge of US and NATO troops. The number of US forces rose from 30,000 personnel in 2008 to about 100,000 at the end of 2009. The number of NATO troops rose from a little more than 31,000 to nearly 39,000 in the same time frame.[287] All this personnel coming in, partly with their own air assets, exacerbated a number of already existing problems.

First of all, it stretched logistical lines. The large number of additional forces required transportation to their bases, and subsequently needed supplies. The air forces were unable to comply to the increased demand because of capacity and the limited numbers of suitable airfields that could be used for inter-theater and intra-theater transport by air. The result was increased use of ground lines of communication, mainly from the north, increased reliance on contractors for both inter-and intra theater air transport, and increased use of airdrops as method of supply.[288]

Nevertheless, the number of air movements surged along with the influx of ground forces. Synchronizing the deployment of these units to their respective areas of operations presented a significant challenge for air planners. During late 2008, early 2009, the sheer volume of personnel and equipment that was about to enter Afghanistan required intensive planning by the staff of the Director Air Component Element (Dir ACE). Hundreds of strategic airlift flights were planned to enter and leave Afghanistan, followed by several hundreds of follow-on intra-theater shuttle flights to get all personnel and equipment to their Forward Operating Bases.[289] During the hight of the surge, about twenty six C-17 and eight C-5 heavy transport aircraft landed on Kandahar Airfield every day, along with many chartered civilian transport aircraft.[290] All these air movements had to be deconflicted. In order to do so, the ACE drafted a new Airspace Control Plan which was designed to manage, coordinate and synchronize all flying activities in order to prevent mid-air collisions.[291] This was a tall order, as Afghanistan still mostly consisted of uncontrolled airspace. This

L. Marion, *Flight Risk: The Coalition's Air Advisory Mission in Afghanistan, 2005-2015*, The History of Military Aviation, ed. Paul J. Springer (Annapolis, MD: Naval Institute Press, 2018), 85-121, and Roggio and Lundquist, "Green-On-Blue".

286 Roggio, "6 Harrier Jets Destroyed".

287 Freedberg, "Supplying the Surge".

288 Freedberg, "Supplying the Surge". See also: Fehringer, "Airdrops".

289 De Kruif, Interview and Sullivan, "Game-changing Strategies", 173-174. The official statistics released by US Combined Air and Space Operations Center do not completely support the conclusion that the number of air movements in Afghanistan rose sharply, even though the number of US Air Force sorties peaked in 2009. The number rose from 1,177,533 in 2007 to 1,301,740 in 2009. The tonnage of supplies that were dropped by air in support of operation *Enduring Freedom* rose much more, from 8,182,066 in 2007 to nearly 80,000,000 in 2011 (Anonymous, "CFACC Airpower Statistics 2007-2012"). These statistics could reflect the increased reliance on airdrop and air movements by contractors, the latter of which is not represented in the statistics.

290 De Kruif, Interview.

291 Sullivan, "Game-changing Strategies", 176.

put increased pressure on the planners drafting the Airspace Control Plan, but also on the crews of the AWACS that occasionally orbited Afghanistan.[292] Also, the stress of the crews of the helicopters that executed the intra-theater airlift missions increased due to the many missions they were tasked for, even though the US experimented with support by unmanned helicopters.[293]

This was a Herculean task by itself, but the associated challenges were exacerbated by various nations acting independently. Major General Charles S. Sullivan, Director ACE from November 2008 to November 2009, recalled that some nations acted with little regard for ISAF guidelines, and only reacted to the directions coming from the headquarters of their national militaries, especially when VIPs visited the country. This occasionally led to dangerous and confusing situations both in the air and on the ground, because some of the deployed aircraft were not safe, or activities were not coordinated with the various ISAF related headquarters.[294] General Sullivan regarded this to be leadership issues, which were hard to address because of national sensitivities. However, due to the system of rotations, dysfunctional commanders eventually left the country, which could solve the problem, and the dangerous and confusing situations remained of an incidental nature. It did however on occasion complicate the already strained organization and leadership challenge.[295]

While the airspace was crowded, this was even more the case on the bases. This especially involved Kandahar Airfield, which was scheduled to process the bulk of the surge activities. After this surge, this single-runway base was required to permanently host more than 28,000 personnel and 310 aircraft, in addition to personnel and aircraft that were passing through on their way to their destinations.[296] This resulted in a shortage of parking space for aircraft and lodging and other facilities for personnel that resided on airfields either permanently or in transit. The surge meant that these facilities had to be constructed by engineers before the assets could arrive. In some cases, planned rotations had to be postponed.[297] When all personnel arrived, not all knew how to behave on an operational

292 Sullivan, "Game-changing Strategies", 176.

293 Anonymous, "K-MAX to Deploy to Afghanistan", *Air Forces Monthly*, no. 285 (2011): 31, Anonymous, "Aerospace and Defense Companies; Lockheed Martin's Unmanned K-Max Cargo Helicopter Team Returns From Deployment with U.S. Marine Corps in Afghanistan", *Defense & Aerospace Week* (2014) http://search.proquest.com/docview/1549474321/fulltext/973010EA524A444DPQ/1?accountid=35226 (accessed October 18, 2016), Freedberg, "Supplying the Surge", Lee Hudson, "Marine Corps Renews Contract for K-MAX Unmanned Aerial System", *Inside the Pentagon's Inside the Navy* 26, no. 51 (2013) http://search.proquest.com.nlda.idm.oclc.org/docview/1470405139/6E283A167D21498BPQ/1?accountid=35226 (accessed October 18, 2016), Dan Lamothe, "Robotic Helicopter Completes Afghanistan Mission, Back in U.S", *Washington Post - Blogs* (July 25, 2014) http://search.proquest.com.nlda.idm.oclc.org/docview/1548661101/377D8C11417C4617PQ/1?accountid=35226 (accessed October 18, 2016), Beth Stevenson, "USMC Lauds Performance of K-Max in Afghanistan", *Flight International* 186, no. 5451 (2014) http://search.proquest.com/docview/1555991230/9FF728260B4949D1PQ?accountid=35226 (accessed August 21, 2014), Strîmbeanu, "Afghanistan II", 79, and Huw Williams, "K-MAX Sustainment Set to Continue", *Jane's International Defense Review* 48, no. 8 (2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1697933737/4CC2C10D70047C7PQ?accountid=35226 (accessed July 26, 2016).

294 Sullivan, "Game-changing Strategies", 177-180 and 187-189.

295 Sullivan, "Game-changing Strategies", 177-180.

296 Sullivan, "Game-changing Strategies", 173-174.

297 Freedberg, "Supplying the Surge", Fisher, "NATO Air Power", and Sullivan, "Game-changing Strategies", 173-174, Alan Warnes, "Harrier Homecoming", *Air Forces Monthly*, no. 258 (2009): 40-41, 28, and Gary Wetzel, *A-10 Thunderbolt II Units of*

airfield. Kandahar Airfield became crowded, and the runway supported thousands of take-offs and landings, unintended incursions on the runway became a safety hazard to air operations. In order to keep the runway clear of vehicles and pedestrians crossing the runway, the commander of Kandahar Airfield drastically reduced the number of access points, and increased efforts to enforce existing rules and regulations.[298]

The situation of Air Traffic Control (ATC) remained roughly the same as the preceding period. With international support, Afghanistan tried to develop institutions, upgrade infrastructure, improve airport security, and develop human capacity, in order to erect a functional ATC system.[299] However, due to widespread corruption within its government institutions, little progress was made. Afghanistan was by no means able to execute airspace management functions, or functions related to managing airports. Afghanistan especially lacked competent and reliable air traffic controllers.[300]

This situation had three consequences. First, the CFACC remained Airspace Control Authority, and civilian air traffic control was done by western military units or contractors. This could have the advantage that military and commercial flights could be more easily integrated, but this was not a viable long term solution. Second, these units had to bring their own equipment, such as radars and communication equipment, to fill the gap. Sometimes, emergency procurements were required to bring in all equipment. Third, western militaries started to build more permanent structures, which could handle the increased number of aerial movements, and could later be taken over by the Afghans.[301]

Operation Enduring Freedom 2008-14 (Osprey Publishing Limited, 2015), Electronic Publication, chapter three.

298 Freedberg, "Supplying the Surge", and Sullivan, "Game-changing Strategies", 187-188.

299 Anonymous, "US Department of Transport: Remarks for the Honorable Mary Peters Secretary of Transportation Kabul International Airport Tour Kabul, Afghanistan June 3, 2008 3:45 PM", *M2 Presswire* (June 3, 2008) http://search.proquest.com/docview/446169801/501BB270C72D4754PQ/63?accountid=35226 (accessed July 11, 2016), Anonymous, "Harris Corporation; Harris Corporation Equips Busy NATO Air Base with New Air Traffic Control Communications System", *Defense & Aerospace Week* (2010) http://search.proquest.com.nlda.idm.oclc.org/docview/199661388?OpenUrlRefId=info:xri/sid:summon&accountid=35226 (accessed July 8, 2016), Anonymous, "Air Traffic Communications System for Kandahar Air Base Delivered by Northrop Grumman", *Airline Industry Information* (March 29, 2012) http://search.proquest.com/docview/954346817/2D4FF1BAE4B14F42PQ/163?accountid=35226 (accessed July 11, 2016), Independent Joint Anti-Corruption Monitoring & Evaluation Committee, "Transitioning Control of Afghanistan's Air Space to the Afghanistan Civil Aviation Authority" (June 14, 2016) http://www.mec.af/files/2016_06_14_ACAA_Paper_(English).pdf (accessed July 11, 2016), 10, and Jerry Johnson, Holger Neufeldt and Jeff Beyer, "Wide Area Multilateration and ADS-B Proves Resilient in Afghanistan", (Integrated Communications, Navigation and surveillance Conference (ICNS), IEEE, 2012) http://ieeexplore.ieee.org.nlda.idm.oclc.org/stamp/stamp.jsp?tp=&arnumber=6218377 (accessed July 11, 2016).

300 Anonymous, "Afghans to Take Control of Airspace: Transport Minister", *Asia Pulse* (January 20, 2011) http://search.proquest.com/docview/852674448/2D4FF1BAE4B14F42PQ/150?accountid=35226 (accessed July 11, 2016), and Independent Joint Anti-Corruption Monitoring & Evaluation Committee, "Transitioning Control", 1.

301 Anonymous, "Aerospace/Defense Products & Services; Northrop Grumman to Supply Radio Communications System for UK MoD's Camp Bastion Airfield, Afghanistan", *Information Technology News Weekly* (2010) http://search.proquest.com/docview/757583488/501BB270C72D4754PQ/21?accountid=35226 (accessed July 11, 2016), Anonymous, "New Air Traffic Control Tower Opens at Afghanistan's Busiest Airport", *US Fed News Service, Including US State News* (April 16, 2010) http://search.proquest.com.nlda.idm.oclc.org/docview/473066743?pq-origsite=summon (accessed July 4, 2016), Anonymous, "Smyrna Battalion Responsible for Afghanistan Busiest Airports", *The Daily News Journal* (August 9, 2011) http://search.proquest.com/docview/882082182/501BB270C72D4754PQ/22?accountid=35226 (accessed July 11, 2016), Anonymous, "New Control Tower for Bastion [...]: News in Brief", *The Times* (June 18, 2011) http://search.proquest.com/docview/872356152/2D4FF1BAE4B14F42PQ/47?accountid=35226 (accessed July 11, 2016), Anonymous, "Marines Control Air in Southwestern Afghanistan", *Targeted News Service* (January 5, 2012) http://search.proquest.com/docview/914288018/47BE399DFE9242EEPQ/40?accountid=35226 (accessed September 24, 2014), Anonymous, "'Ravens' Keep Air Traffic Flowing in Northern

By and large, the area of uncontrolled airspace became smaller, but a residue remained. In addition, the problem with air traffic control of Unmanned Areal Vehicles emerged. From an ATC perspective, UAVs had the disadvantage that there was no pilot on board to anticipate on dangerous situations in the air. In addition, the limited size of many types was an impediment. They were hard to acquire visually or even by radar. Some of these systems also were unable to carry transponders, which could send their flight information to a ground station electronically. The increase use of UAVs exacerbated the ATC challenge.[302] With the general number of air movements rising, and the increased importance of UAVs, the number of incidents rose, reportedly up to one near miss a week during 2009 to 2012 for the Iraqi and Afghan theaters combined. In 2011, there was an actual midair collision in the Afghan skies of an UAV with a C-130 "Hercules" that was landing.[303] After mishaps took place, technological and procedural improvements had to be implemented in order to integrate unmanned systems into controlled airspace safely.[304]

ISAF's top leadership addressed the final challenge with regard to resources, that of interoperability of systems. The existence of a plethora of incompatible national systems and networks led to a general insufficient level of situational awareness and differences of levels of situational awareness between the nations. The resulting lack of unity of effort had a detrimental effect on operational effectiveness. Incidental cross-domain solutions

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Afghanistan", *Targeted News Service* (March 19, 2012) http://search.proquest.com.nlda.idm.oclc.org/docview/930883285/81A17E69FEEA4027PQ/12?accountid=35226 (accessed July 8, 2016), Anonymous, "Mobile Air Traffic Control Marines Stand Watch Over Afghan Skies", *Targeted News Service* (December 5, 2012) http://search.proquest.com/docview/1011436285/501BB270C72D4754PQ/25?accountid=35226 (accessed July 11, 2016), Samantha H. Arrington, "New Commander Takes Helm of Marine Air Command, Control Group in Afghanistan", *U.S. Department of Defense Information / FIND* (September 6, 2011) http://search.proquest.com.nlda.idm.oclc.org/docview/887668765?pq-origsite=summon (accessed July 4, 2016), Corey Dickstein, "Hunter Aviation Unit to Use New Communications Technology in Afghanistan", *McClatchy - Tribune Business News* (October 26, 2012) http://search.proquest.com/docview/1115567345/2D4FF1BAE4B14F42PQ/9?accountid=35226 (accessed July 11, 2016), International Civil Aviation Organization, "The First Meeting of the Ad Hoc Afghanistan Contingency Group Meeting (AHACG/1), Kuala Lumpur, Malaysia, 11-12 September 2015" (September, 2015) http://www.icao.int/APAC/Meetings/2014%20AHACG1/WP03%20Status%20of%20Military%20Transition%20in%20Afghanistan.pdf (accessed July 11, 2016), 2-3, Thorn Shanker, "G.I.'s to Fill Civilian Gap to Rebuild Afghanistan: [Foreign Desk]", *New York Times, Late Edition (East Coast)* (April 23, 2009) http://search.proquest.com/docview/434068848/501BB270C72D4754PQ/34?accountid=35226 (accessed July 11, 2016), and Marcus Weisberger, "Air Force Looking to Buy 19 Deployable Air Traffic Control Radar Systems", *Inside the Pentagon's Inside the Air Force* 21, no. 43 (2010) http://search.proquest.com/docview/965534069/2D4FF1BAE4B14F42PQ/23?accountid=35226 (accessed July 11, 2016).

302 Russell, "Airspace Command and Control", 28-30.

303 Jason Bowers, "C2 Integration for the UAS: Integration of Commercial Off-the-shelf Transponder Systems", *Marine Corps Gazette* 97, no. 10 (2013): 54-56, 55, Gareth Jennings, "Raytheon, USAF Trial Ground-Based Sense-And-Avoid Systems to UAV's", *Jane's International Defense Review* 45, no. 12 (2012) http://search.proquest.com/docview/1155921968/2D4FF1BAE4B14F42PQ/162?accountid=35226 (accessed July 11, 2016), and Caitlin Harrington Lee and Daniel Wasserbly, "AUSVI 2011: RQ-7 Lost in Collision with C-130 Over Afghanistan", *Jane's Defense Weekly* 48, no. 35 (2011) http://search.proquest.com/docview/885968186/6717BFBFB5E741FCPQ/3?accountid=35226 (accessed July 12, 2016).

304 Adrian Gerold, "Manned and Unmanned Aircraft: Can They Coexist?", *Avionics Magazine* 30, no. 11 (2006) http://search.proquest.com/docview/224675051/abstract/6717BFBFB5E741FCPQ/9?accountid=35226 (accessed July 12, 2016), Jennings, "Raytheon", Gayle S. Putrich, "Unmanned and Dangerous: How UAV-Plane Collisions Are Changing U.S. Air Control", *Defense News* (June 11, 2007) http://search.proquest.com/docview/442486034/6717BFBFB5E741FCPQ/7?accountid=35226 (accessed July 12, 2016), and Tim Ripley, "UK Air Safety Authority Criticises Army UAV Operations", *Jane's Defense Weekly* 49, no. 43 (2012) http://search.proquest.com/docview/1082378544/2D4FF1BAE4B14F42PQ/62?accountid=35226 (accessed July 11, 2016).

did not help the overall information flow.[305] Therefore, between 2005 and 2010 top military and civilian leaderships, most notably General McChrystal, developed several initiatives towards a generic and permanent solution. This led in 2010 to the creation of a NATO-funded coalition network, called Afghan Mission Network (AMN). Contributing nations could plug their national networks, or parts of those networks, into this AMN, making it a federated network in which all participants planned with the same level of situational awareness. The AMN became the primary mission planning tool within ISAF, to which more than forty nations contributed. This required a shift of culture with regard to information sharing. Whereas militaries were used to share information on the principle of "need-to-know", the principle now became "need-to-share".[306] The creation of the AMN was regarded to be a success. It made incidents like the one described in the previous chapter, in which the ISAFs senior airman could not communicate with one of the subordinate units, less likely.

However, the AMN was created for better communication between units of ISAF. The air weapon continued to have a tight relationship with the CAOC, which planned air operations for the entire area of operations of CENTCOM. So, the AMN may have had limited effect on efficiency of air operations. In addition, there were still seams of communication lines between the US service branches. According to Christopher Russell, in 2010 there was still no common operating picture of all airspace users. This was partly due to incompatible equipment and stove-piped lines of communications of the various services. Airmen of all services therefore still relied on the cross-domain solutions, such as email, chat programs, telephone and radios.[307] The US searched for a technological solution, such as the Battlefield Airborne Communications Node (BACN). This system consisted of a small number of manned an unmanned systems that relayed communications streams from the area of operations towards higher headquarters. As of 2010, the first system was operational above Afghanistan.[308] The USAF investigated another technological solution, namely the creation of a network application that could integrate other network functionalities and use superior situational awareness to automatize air planning. The US Air Force Research Laboratory investigated such a network, called Joint Airspace Management and Deconfliction (JASMAD), later known

305 Chad C. Serena, Isaac R. Porche, Joel B. Predd, Jan Osburg and Bradley Lossing, *Lessons Learned From the Afghan Mission Network: Developing a Coalition Contingency Network* (Santa Monica, CA: RAND Corporation, 2014), https://www.rand.org/pubs/research_reports/RR302.html (accessed July 6, 2017), 4, Van Duren, *ISAF HQ*, 173-175, and David R. Wills, "Mission Networks: An Evolution in Information Sharing", (Report, U.S. Army War College, Carlisle, PA, March 20, 2012) www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA562132 (accessed July 13, 2016), 10.

306 Serena, Porche, Predd, and others, *Lessons Learned*, xi, and Wills, "Mission Networks", 15-16.

307 Russell, "Airspace Command and Control", 2-3, 30-31, and 35. See also: Bud Jones, "MultiNational Information Sharing (MNIS). Session 5, Track 1: "Enabling the Joint, Coalition Counter-Insurgency Campaign"," (Presentation, August 11, 2011) http://www.afcea.org/events/pastevents/documents/LWN11_Track_1_Session_5.pdf (accessed July 13, 2016).

308 Anonymous, "Combat Runs on Battlefield Airborne Communications Node", *US Fed News Service, Including US State news* (February 10, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1866983221/60AB4C6F3C264D21PQ/1?accountid=35226 (accessed February 19, 2017).

as airspace management application.[309] The application was envisioned not to be able to cooperate with coalition partners by default, as the compositions of the coalitions would vary. Instead, the developers of JASMAD tried to enhance interoperability by publishing certain standards that might enable coalition partners to use the application relatively easily, and separate programs to integrate coalition airspace users.[310] This project stayed in the experimental phase, judging from the situation that neither JASMAD or airspace management application found their way into joint doctrine on command and control of joint air operations.[311] The third option was old school procedural deconfliction. For instance, the CAOC was forced to maintain a coordinating altitude, separating rotary wing from fixed wing assets, due to lack of real-time situational awareness of all the assets.[312] This could lead to situations that fixed wing aircraft and rotary wing aircraft used the same airspace, albeit at different altitudes, with limited capability to communicate with each other, while trying to influence the same area on the surface of the earth.[313] So, while the interoperability issue within ISAF was largely solved, stove-piped communications between the services remained.

On balance, some of the problems were solved (availability of resources in general and interoperability), some problems remained the same (ATC), and some problems were exacerbated (availability of air bases inside and outside Afghanistan). These developments were mostly related to surge of resources that were required to facilitate the surge in assets.

6.5.3. Increased American Activity

In sum, the period between 2008 and 2012 was marked by a significant increase of activities, mostly on American initiative, relating to the surge of forces. This effectively led to a re-americanization of the US military effort, and by extension of the air effort. The

309 Francis A. Jr. DiLego, John Hitchings, Chad Salisbury, Henry X. Simmons, and others, "Joint Airspace Management and Deconfliction (JASMAD)", (AFRL-R-RS-TR-2009-13, Air Force Research Laboratory, Information Directorate, Tome Research Site, Rome, NY, January, 2009) http://www.dtic.mil/dtic/tr/fulltext/u2/a493585.pdf (accessed July 13, 2016), Michael Seifert, Tony DiLego, John Hitchings, Josh Sterling, and others, "Joint Airspace Management and Deconfliction (JASMAD): Meeting Current and Future Combat Airspace Requirements", (AFRL-IF-RS-TP-2006-3, Air Force Research Laboratory, Information Directorate, Tome Research Site, Rome, NY, June, 2006) http://www.dtic.mil/get-tr-doc/pdf?AD=ADA451880 (accessed July 13, 2016), Rich Roberts, Al Shafer and Patrick Pope, "Coordination Measures", *Air Land Sea Bulletin*, no. 2012-2 (2012): 4-8 http://www.dtic.mil/dtic/tr/fulltext/u2/a563878.pdf (accessed July 13, 2016), 4, and Alex Wathen, "Joint Airspace Management and Deconfliction: A Chance to Trade in a Stovepipe for Network-Centric Warfare", *Air & Space Power Journal* 20, no. 3 (2006): 26-34.

310 The separate programs were called Coalition Airspace Management and Deconfliction (CASMAD) and Coalition Airspace Information Sharing (CAIS): David Griffith, Geoffrey K. Wilson-Smith, Mark Ohmer, Michael Seifert, and others, "Coalition Airspace Management and Deconfliction", (AFRL-RI-RS-TP-2008-1, Air Force Research Laboratory, Information Directorate, Tome Research Site, Rome, NY, January, 2008) http://www.dtic.mil/dtic/tr/fulltext/u2/a477492.pdf (accessed July 13, 2016), 12.

311 United States Joint Chiefs of Staff, *Joint Publication 3-30: Command and Control for Joint Air Operations,* February 10, 2014, http://www.dtic.mil/doctrine/new_pubs/jp3_30.pdf (accessed July 18, 2016).

312 Russell, "Airspace Command and Control", 23.

313 Benitez, "How Afghanistan".

US tackled the challenges of basing and overflights, and of interoperability within ISAF. The challenges of the threat to airbases, physical state of the airbases, and ATC largely remained, albeit for different reasons. The threat remained due to increased and adaptive activity from the insurgents. The infrastructure problem on airbases, mostly the larger ones such as Kandahar and Kabul, increased in complexity due to the influx of personnel and air movements. A dysfunctional indigenous government was accountable for the obstinacy of the ATC problem.

6.6. Command Relationships: Making the "Spaghetti Diagram" Work

6.6.1. American Adaptations

The previous chapter identified the main problematic question the senior military leadership was forced to answer with regard to air operations in Afghanistan: who was asking for air assets, and who was tasking them? As described, this question had three main dimensions. First, it highlighted the position the air weapon had, or was supposed to have, in relation to the strategic and operational commanders, personified in the Joint Force Commander and Joint Task Force Commanders. Second, the practical command and control scheme in Afghanistan was convoluted. Operation *Enduring Freedom* and ISAF were executed in the same area of operations, with different command relationships, leading to tensions between the senior airmen of both operations. Third, the topic of air-land integration became current. Between 2008 and 2012, these interrelated dimensions were addressed under American leadership. The discussion on the relationship between the air weapon and joint commanders did not end, but entered a new phase. It focused on authorities and responsibilities of the JFACC, CAOC, and the relatively new ACCE.

Both within and outside the US Air Force there was an increased awareness that the command relationships that were current in 2008 were performing suboptimal with regard to air-land integration. In larger conflicts, the combatant commander or Joint Force Commander, in this case commander of CENTCOM, had subordinate commanders that represented all operational dimensions: air, land, maritime, and special operations. These component commanders could handle operations in their respective domains autonomously, except for certain, doctrinally described, circumstances. For command and control of smaller operations, the US military increasingly relied on the concept of Joint Task Forces (JTFs). A JTF could be formed for a specific operation, and lead services could vary. In practice however, during the previous decades the US Army had been lead service for the majority of the JTFs that commanded American operations.[314] Formation of

314 Michael Spirtas, Thomas-Durell Young and S. Rebecca Zimmerman, *What It Takes: Air Force Command of Joint Operations* (Santa Monica, CA: RAND Corporation, 2009), http://www.rand.org/content/dam/rand/pubs/monographs/2009/RAND_MG777.pdf (accessed July 27, 2016), 7-11.

these JTFs presented several challenges. A Rand Study noted in 2009 that JTFs, historically, had a tendency to be formed on an *ad hoc* basis, but subsequently were inclined to persist longer than planned. In addition, JTFs suffered from a lack of manning due to the absence of a standing organization or a permanent manning arrangement. To complicate matters further, the tasks and compositions of these JTFs could vary greatly.[315] The sheer number of JTFs could also present a problem. It was generally assumed that there were two main JTF constructs in CENTCOMs area of operations, one for Afghanistan, and one for Iraq. The Rand study however listed about thirty JTFs that operated or had operated in that area between 2001 and 2009.[316] To be fair, this number included small JTFs that obviously did not need air support, such as for instance the JTFs that were formed for the handling of detainees. The crux was that an organizational structure had to be devised every time a JTF was erected, and that getting commanders of all services to agree on that structure was a major challenge.[317]

As has been described throughout this study, operations on the ground in Afghanistan were not led by one of the Component Commanders, but by Combined JTFs that were formed on an *ad hoc* basis and persisted longer than planned. To communicate with the various commanders in the field, the air component forwarded liaisons from the CAOC in Qatar. The most recent type of liaison was the ACCE, a liaison with special though informal authority to command the air weapon, which was designed after the command and control challenges that became apparent after the operations *Anaconda* in 2002 and *Medusa* in 2006. By 2010 the ACCE-construct was embedded in doctrine by the name of Joint ACCE (JACCE). Joint doctrine however only suggested that a JACCE could be attached to a JTF, and did not prescribe it. The reason was that JTFs could have many different tasks, and have varying sizes and compositions. When it was obvious that a JTF did not require an air component, such as for instance a JTF for detainee handling, a JACCE was not required. The downside of this scheme was that every establishment of a JTF would require negotiations of attachment of a JACCE. In addition, the ACCE officially remained a liaison with the task of coordination, but without command authority.[318] By 2009 it was recognized both within and outside the US Air Force that the command relationships in support of operations in Afghanistan and Iraq were in need of revision.

The first reason was that the command relationships caused confusion. In January 2008, a joint Air Force and Marine Corps "Tiger Team" travelled through CENTCOMs area of operations to evaluate these command relationships. One of the team's major findings was that many of the local commanders simply did not know who the Joint Force

315 Spirtas, Young, and Zimmerman, *What It Takes*, 11-14.

316 Spirtas, Young, and Zimmerman, *What It Takes*, 93-98.

317 Jeffrey Hukill, Larry Carter, Scott Johnson, Jennifer Lizzol, and others, "Air Force Command and Control: The Need for Increased Adaptability", (Air University Press, Maxwell Air Force Base, AL, July, 2012), 31.

318 United States Joint Chiefs of Staff, *Joint Publication 3-30: Command and Control for Joint Air Operations*, January 12, 2010, http://www.dtic.mil/doctrine/new_pubs/jp3_30.pdf (accessed July 22, 2013), p. II-18, and United States Joint Chiefs of Staff, *JP 3-30 (2014)*, p. II-15 and G-1 - G-5.

Commander and the supported commanders were.[319] But there were other deficiencies as well. The general feeling was that the US Air Force went too far with centralizing command relationships at the CAOC. Despite recent changes in command relationships and doctrine which favored day-to-day communications with ground commanders and air liaisons, the USAF kept relying on a robust communications architecture to command and control the air weapons from a central headquarters far away from the Afghan area of operations. The USAF concentrated all personnel with command authority at the CAOC, at the expense of the command posts of lower-level or peer-level commanders. This hampered day-to-day communication with local joint commanders, influenced air-land integration in a negative way, and therefore impeded military effectiveness.[320] It also created distrust and friction between personnel of the services.[321] The Tiger Team noted in 2008 that some officers in the CAOC deleted the words "supporting" and "supported" from their documents, or that ACCE personnel were perceived to be "traitors" by the CAOC and as "spies" by the personnel of the JTF they were assigned to.[322] Within this construct, the ACCE was dysfunctional, because it was placed too high up in the chain of command, and because it lacked real command authority.[323] Other elements were deficiencies in education and training of air force personnel to successfully interact with their counterparts from other services.[324]

Although the USAF top leadership recognized that communication with lower-level commanders needed to improve, the question of the ideal support to subtheater commanders still remained. It was an improvement that the problem was recognized.[325] In the mean time, US Air Force leadership set out to remedy the most pressing challenges in Afghanistan. First, Major General Stephen P. Mueller, Director of the US ACCE in Kabul from June 2009 to June 2010, requested and received additional manpower that could act as liaisons between various air-related planning cells in various headquarters.[326] More

319 Russell, "Airspace Command and Control", 8-9. The evaluation team was called Air Force and Marine Corps Tiger Team (AFMCTT). Its report is not available to the general public, but some of its contents is cited by a number of students attending various US military colleges: Timothy B. Missler, "The Theater JFACC Construct: Creating Disunity of Command in the CENTCOM AOR", (Research Report, Air University, Air Command and Staff College, Maxwell Air Force Base, AL, April, 2009) http://www.dtic.mil/dtic/tr/fulltext/u2/a539663.pdf (accessed July 22, 2016), 21 and, 24, Russell, "Airspace Command and Control", 8-9 and 18.

320 J. Ian Chambers, "Command and Control of Airpower in Irregular Warfare", (Monograph, United States Army Command and General Staff College, School of Advanced Military Studies, Fort Leavenworth, KS, 2010) www.dtic.mil/dtic/tr/fulltext/u2/a522723.pdf (accessed August 29, 2011), James C. Cooper, "The Joint Air Component Coordination Element: Middleman or An Effective Airpower Broker?", (Paper, May 4, 2012) http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA563894 (accessed November 5, 2013), Hukill, Carter, Johnson, and others, "Air Force Command and Control", 30-32, Missler, "Theater JFACC Construct", Russell, "Airspace Command and Control", 18, and Eric Theriault, "Empowered Commanders: The Cornerstone to Agile, Flexible Command and Control", *Air & Space Power Journal* 29, no. 1 (2015): 99-111, 10.

321 Hukill, Carter, Johnson, and others, "Air Force Command and Control", passim.

322 Missler, "Theater JFACC Construct", 21 and, 24, Russell, "Airspace Command and Control", 8-9 and 18.

323 Chambers, "Command and Control", 36, Cooper, "Middleman", 7, Hukill, Carter, Johnson, and others, "Air Force Command and Control", 63, and Missler, "Theater JFACC Construct", 24.

324 Hukill, Carter, Johnson, and others, "Air Force Command and Control", 67-68.

325 Hukill, Carter, Johnson, and others, "Air Force Command and Control", 56.

326 Charles Lyon and Andrew Stone, "Right-Sizing Airpower Command and Control for the Afghanistan Counterinsurgency", *Air & Space Power Journal* 25, no. 2 (2011): 5-11, 5, and Anonymous, "Lieutenant General Stephen P. Mueller", *U.S. Air Force*

structural changes were initiated by the commander of United States Air Forces Central Command, Lieutenant General Gilmary Michael Hostage III. General Hostage recognized the several shortfalls within the ACCE-concept that had evolved from 2003 onwards. Airmen still were insufficiently able to support the Joint Force Commander. It was not feasible to erect Combined Air Operations Centers at every Joint Force Headquarters. Also, scarce assets related to ISR, air-to-air refueling and airlift, continued to be required in both Afghan and Iraqi areas of operations. Therefore, the CFACC delegated the ACCE additional authority to task air assets, responsibility to manage the assets, and personnel to support the various staff functions.[327] In accordance with these identified needs, General Hostage empowered the ACCE in November 2009 to provide administrative control over the Air Force forces operating in Afghanistan. The ACCE was, as of then, authorized to organize forces, recommend courses of action, and provide authoritative direction to air expeditionary wings placed under its command.[328] Formally, the tactical control of the air assets still lay with the CFACC, and his Combined Air Operations Center, but General Hostage stated that "*I will cash any check my ACCE writes*".[329] The additional *de facto* command authority, which was also accompanied by a directive defining the relationship between supporting and supported commanders, solved the main problem in the short term.[330]

The empowerment of the ACCE was accompanied by changes in the organizational structure of US Air Force personnel operating in Iraq and Afghanistan. It involved installation of expeditionary task forces to manage not so much air operations, but the airmen operating in the various areas of operations.[331] On November 3, 2010, the 9th Air and Space Expeditionary Task Force (AETF), was established. This unit consisted of subunits deployed in Afghanistan (9 AETF-A) and Iraq (9 AETF-I). 9 AETF-A had the main task of maintenance of combat ready air force personnel, and their weapons and equipment. Operationally these would be made available to the Joint Force Commander to reach his goals. In the case of Afghanistan, the JFC was the dual-hatted commander of the US Forces in Afghanistan (COMUSFOR-A) / commander of ISAF (COMISAF).[332]

At a more detailed level, the AETF had several tasks. First, the unit was tasked to manage combat support and combat service support functions performed by air force personnel, which included strategic and operational planning and manning the ACCE.

Website (May, 2012) http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/104973/lieutenant-general-stephen-p-mueller.aspx (accessed January 28, 2014).

327 Mike Hostage, "A Seat at the Table: Beyond the Air Component Coordination Element", *Air & Space Power Journal* 24, no. 4 (2010): 18-20, 18-19, Anonymous, "General Gilmary Michael Hostage III", *U.S. Air Force Website* (July, 2012) http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/104754/general-gilmary-michael-hostage-iii.aspx (accessed January 28, 2014), and Raaberg, "Shift", 155-156.

328 Hostage, "A Seat at the Table", 19, and Hukill, Carter, Johnson, and others, "Air Force Command and Control", 64.

329 Lyon and Stone, "Right-Sizing Air Power", 5.

330 Cooper, "Middleman", and Hukill, Carter, Johnson, and others, "Air Force Command and Control", 64.

331 Jake Polumbo and Wesley Long, "Joint Force Multipliers: America's Airmen Transition to the Resolute Support Mission", *Air & Space Power Journal* 28, no. 2 (2014): 11-21.

332 Hostage, "A Seat at the Table", 19, and Lyon and Stone, "Right-Sizing Air Power", 5.

The second task was to support COMUSFOR-A / COMISAF with achieving the goals related to the population-centric counterinsurgency approach, using airpower. Third, the AETF had to accept the authority of the CFACC for execution of operations, so the ACCE formally remained in the position of advisor to the commander and liaison with the CAOC. However, as the fourth task, the AETF had to be able to erect the capability of an Air Operations Center (AOC), in case communications broke down and the CAOC was not able to task air assets.[333] Finally, the CFACC, which was USAF Lieutenant General David L. Goldfein at the time, moved its permanent headquarters from Shaw Air Force Base in South Carolina to Al Udeid, so there was no longer a dislocation spanning several timezones of the CFACC and his deputy.[334]

So, from late 2010 on there was an in-theater organizational structure in place for managing of about 10,000 American Air Force personnel operating in Afghanistan (9 AETF-A) and for command and control of American air assets (ACCE). The most senior American airman, serving in the rank of Major General, held three positions: commander of 9 AETF-A, director of the Air Component Coordination Element-Afghanistan (ACCE-A), and deputy commander for air, US Forces-Afghanistan (USFOR-A).[335] Effectively, CENTAF had created an extra command and control echelon for two subtheaters of Central Command, namely Afghanistan and Iraq. This had left some commentators to conclude that the USAF did not adhere to the tenets of unity of effort and unity of command to the extent that Billy Mitchell, founding father of the USAF, would be "*rolling over in his grave*".[336] However, the scheme did achieve that by mid 2011 high ranking airmen were involved in every American planning effort at strategic and operational levels in Afghanistan. It allowed senior military leaders to deepen personal and professional relationships, and it eased continuous dialogue and coordination between air commanders and the commander of USFOR-A.[337]

6.6.2. Incorporating ISAF

Under American leadership, the command relationships between units in Afghanistan changed as well. At first, the changes were modest. Under leadership of General McKiernan, ISAFs most senior airman was appointed as Deputy Director of Joint Operations for ISAF. This allowed ISAF HQ to achieve an unprecedented level of "jointness", in which the air weapon ceased to be an afterthought.[338] Under McChrystal, the command relationships

333 Lyon and Stone, "Right-Sizing Air Power", 6-9.

334 Teakle, Interview.

335 Tod D. Wolters and Joseph L. Campo, "Team Building: The Next Chapter of Airpower Command and Control in Afghanistan", *Air & Space Power Journal* 26, no. 3 (2012): 4-15, 6.

336 Lyon and Stone, "Right-Sizing Air Power", 11.

337 Wolters and Campo, "Team Building", 6.

338 Sullivan, "Game-changing Strategies", 180-186. This notion is confirmed by Air Commodore Teakle, who fulfilled the position of Director Air Operations in Kabul at the time: Teakle, Interview.

were altered to enhance unity of command and unity of effort and to establish a functional distinction between the strategic level and the operational level of military activity. The "Command and Control and Command Relationships Working Group" of McChrystal's assessment team aimed at concentrating as much activities as possible under the same command and control structure. Backed by the US Secretary of Defense, all American forces were placed under McChrystal's command.[339] Within Afghanistan, the ISAF Joint Command (IJC) was established linking the Regional Commands, led by Major Generals, and COMISAF, a full General. The commander of the IJC was to be a US Lieutenant General, as this would allow the US assets to become an integral part of the ISAF command and control structure. It was a "dual hatted" functionality. The IJC had to become fully operational capable by November 12, 2009. McChrystal also incorporated training plans for the standup of the IJC within his assessment.[340] The rationale behind the creation of the IJC was that COMISAF and his staff could focus on strategic issues. The IJC, which was called an intermediate level operational command, could focus on commanding forces in the field.[341]

However, the organizational structure was still incomplete, because the air weapon was not properly incorporated, even though the ACCE was located in the Combined Joint Operations Center (CJOC) of ISAF Headquarters.[342] As a whole, command and control of the air weapon was still split between operation *Enduring Freedom* and ISAF. The two command and control lines met only at the top, above the position of ISAFs senior airman, who's position was called Deputy Chief of Staff Air for the IJC (IJC DCOS AIR). The American commander of the ACCE was also deputy commander of the US Forces in Afghanistan, but did not have a formal relationship with his colleague within the NATO chain of command. This caused friction and time delays when there was disagreement between US and NATO leadership, as there was no commander who could authoritatively enforce decisions.[343] This situation changed in 2011. At the time, Major General Tod D. Wolters filled the triple-hatted position of commander ACCE, Commander of the 9 AETF, and Deputy commander of US Forces in Afghanistan. According to him, an opportunity arose to merge the two command and control lines, when the position of IJC DCOS AIR became vacant.[344] Both command and control lines could be merged by adding the function of IJC DCOS AIR to the already triple hatted US senior airmen early 2012, who became quadruple hatted. So from 2012 onwards,

339 Gates, *Duty*, 478.

340 Brand, *McChrystal's Strategic Assessment*, 33-36, Heather Hrychuk, "Decision Making at the Theatre Strategic Level: ISAF HQ", *Journal of Military and Strategic Studies* 14, no. 3&4 (2012): 1-16 http://www.jmss.org/jmss/index.php/jmss/article/view/493 (accessed January 30, 2014), 4, and McChrystal, "COMISAF's initial assessment", p. B-1 - B-2

341 Ballard, Lamm, and Wood, *From Kabul to Baghdad and Back*, 231 and 236, Brand, *McChrystal's Strategic Assessment*, 33-34, Chaudhuri and Farrell, "Campaign Disconnect", 276, Teakle, Interview, and Niels Klingenberg Vistisen, "The Missing Operational Level: COIN, Afghanistan, and IJC", *Small Wars Journal Website* (February 7, 2012) http://smallwarsjournal.com/jrnl/art/the-missing-operational-level (accessed February 6, 2014)

342 Eikelboom, "Moving", 129.

343 Wolters and Campo, "Team Building", 10.

344 Wolters and Campo, "Team Building", 9, and Anonymous, "Lieutenant General Tod D. Wolters", *U.S. Air Force Website* (January, 2014) http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/107979/major-general-tod-d-wolters.aspx (accessed January 28, 2014).

although there formally still were separate command and control lines between the US assets and NATO assets, they were commanded by the same person.[345] This accelerated decision making and reduced friction between AFCENT and NATO chains of command.

Finally, supporting functions of air operations, such as air traffic control and airfield maintenance, were clustered under an organizational element called Combined Aviation Development Directorate, and brought under control of the IJC DCOS AIR. So, by 2012 command relationships within Afghanistan evolved into a more coherent structure. Command and control lines of both operations formally were still separated, but were more comprehensible. All air operations, at least theoretically, were the responsibility of one airman, even though it involved multi-hatting.[346] A diagram depicting command relationships during this period is provided for n appendix 2.5.

Within command relationships, the change in outlook was plainly visible. For instance, the definition of airpower's effectiveness changed. As the empowered ACCE and the AETF constructs took hold, the measurements of the performance of the air weapon no longer were numbers of sorties or hours flown, but the percentage of joint tactical air strike requests that were filled via the ATO. In addition, the AETF also measured the weapons performance according to the effects the Joint Forces Commander needed.[347] The changes of command relationships in general were regarded to be improvements, as they were another step towards unity of command and unity of effort, allowed for increased communication, and made a distinction between strategic and operational levels. Although this was welcomed by most commanders, there could have been some initial opposition on both American and NATO sides as well. For instance, the ACCE initially was not warmly welcomed in Kabul due to sensitivities between NATO and OEF.[348]

6.6.3. Increased Integration of Airpower Into Afghan Planning

As more assets were diverted to Afghanistan from 2010 - 2011 onwards, and ISAF's strategic outlook shifted from strict stabilization and reconstruction towards counterinsurgency, ISAF started to demand more control over the air weapon in the offensive role. This sometimes led to debate between commanders of OEF and ISAF, as perceptions of airmen with regard to roles and functions of various command elements differed. The most serious problem evolved around the issue of Dynamic Targeting, a targeting process in which certain types of, mostly elusive, targets could be engaged with a shortened targeting cycle. This process involved a highly specialized and networked command element, which was able to collect, process and disseminate huge amounts of intelligence in a short period of

345 Wolters and Campo, "Team Building", 9-10.

346 Wolters and Campo, "Team Building", 8-11.

347 Lyon and Stone, "Right-Sizing Air Power", 6, and Raaberg, "Shift", 153.

348 Missler, "Theater JFACC Construct", 24.

time, and was able to direct required assets to the target on short notice. However, NATO did not make enough resources available for these operations, so ISAF by itself was not able to execute these missions and had to rely on American support. Like the discussion about authority to control air assets in general of the previous time frame, the DCFACC was reluctant to grant ISAF - and therefore NATO - authority to command and control assets it was unable to muster itself.[349] The consequence was that planning was redone, as commands did not acknowledge each other's authority. Targeting was initially planned at ISAF HQ. The CAOC re-planned. And sometimes CENTCOM HQ in Tampa re-planned it again.[350] This resulted in delay of the targeting process, while the nature of the mission required swift action.

In addition, several headquarters and nations used different standards of estimating collateral damage, for which no doctrine was available. The situation was further exacerbated by the influence of national red card holders, who had to check whether the intended mission conformed to the national restrictions of the nation the assigned asset belonged to. These delays led to targeting cycles that lasted well over an hour, instead of the desired fifteen minutes, occasionally leaving the targets unengaged.[351] This was in essence the same problem as before. However the main difference was that it did not focus on the command and control architecture in general, but on a more narrow set of missions.

Early 2009, ISAF staff took initiatives to speed up the targeting cycle. NATO eventually adopted the US standard for estimating collateral damage. This speeded the targeting process up somewhat. The real improvement in efficiency was due to enhanced coordination. ISAF staff helped to create a process that enabled the targeting cells of the involved headquarters to plan simultaneously. This shortened the targeting cycle significantly, which on several occasions lasted twenty minutes.[352] A newly erected organizational element, called a Dynamic Targeting Operations Center (DTOC) further streamlined this targeting process. By mid 2009, the DTOC supported about twenty five missions per week, of which Special Forces Operations formed the bulk.[353] This diminished frustrations on command and control of Dynamic Targeting.

In general, the link between ground operations and air operations was tightened. This allowed for the air weapon to become more integrated with ground operations, which in turn enabled the air weapon to use more of its capabilities than just the kinetic ones. To be more specific, the focus shifted from combat air patrols which were waiting for a TIC situation to ISR related operations as preparation for ground operations. A kinetic

349 Raaberg, "Shift", 143-146. For doctrinal description of Dynamic Targeting see: United States Air Force, *Air Force Doctrine Document 3-60: Targeting, 8 June 2006, Incorporating Change 1, 28 July 2011*, July 28, 2011, http://www.fas.org/irp/doddir/usaf/afdd3-60.pdf (accessed October 12, 2012), 8.

350 Bailey, Interview.

351 Bailey, Interview.

352 Bailey, Interview.

353 Sullivan, "Game-changing Strategies", 182-183 and 204-205.

response could then serve as a back-up.[354] Communication with several headquarters also paid off. In Kabul, thanks to a combination of co-location and increased clarity in command and control structures, planning improved. It allowed the senior airmen to effectively communicate both formally and informally.[355] A residual problem remained at the lower echelons of the command and control structure. McChrystal strove to render the commanders of the regional commands increased influence of all operations that were executed in their respective areas of operation. This included the air weapon. Not all personnel of the Regional Air Operations Centers (RAOCs) or the national operations centers fully comprehended the need for truly integrated planning of air and land assets, although some of the problems could be contributed to the increased workload as a result of the surge of forces. Persuasion, and minor changes in personnel and organization, were needed to correct this.[356] Also, there were some growing pains introducing a new regional command in the southern part of Afghanistan. In 2010, Regional Command South (RC-S) was split up in RC-S and Regional Command Southwest (RC-SW), the latter to be manned by US Marines. This meant that the relationship with the ASOC in Kabul and the Marine Air Command and Control System (MACCS) had to be re-established.[357]

So, in short, after several years of frustration about the proper integration of air operations in the larger scheme of maneuver, and about the convolution of command relationships, airpower by 2012 ceased to be an afterthought. This change was brought about mainly by American senior leadership. While the process was somewhat delayed by the Air Force's preoccupation with the dictum of centralized control and decentralized execution, new leadership effectively enforced change that largely solved the problem of command relationships. The situation was not ideal, but at least workable. It had a positive effect on planning. This also meant alleviation of the system deficiencies relating to Close Air Support, which were so paramount during operations *Anaconda* and *Medusa*. The immediate problems with JTACs were largely dealt with in the period preceding 2008. The lack of integration of air operations with ground operations was one of the more important observations made by several evaluation teams. During the period 2008 - 2012 this problem was addressed, and major accidents did no longer occur, even though the debate on Close Air Support in environments with dispersed ground forces remained and fratricide incidents occasionally still occurred.[358]

The command and control organization showed an increased integration of air assets and land forces. In order to achieve this, the various commanders had to be positioned properly. This was first done by reaching an agreement on the idea that COMISAF was a

354 Teakle, Interview.

355 These command posts were: Combined Joint Operations Center (CJOC), the Air Operations Command Center (AOCC), Dynamic Targeting Operations Center (DTOC) and the Air Support Operations Center. (Sullivan, "Game-changing Strategies", 180-182).

356 De Kruif, Interview, Sullivan, "Game-changing Strategies", 180-186, and Van Duren, Interview.

357 Ballard, Lamm, and Wood, *From Kabul to Baghdad and Back*, 236-237, and Schaefer, "Responsive CAS", 93.

358 Benitez, "How Afghanistan", and Schaefer, "Responsive CAS".

strategic-level commander. A new functionality, COMIJC, functioned at the operational level.[359] COMISAF, who also commanded USFOR-A therefore *de facto* became a Joint Force Commander.[360] As the roles of these commanders became more clear, so became the discussion of the positioning of the air arm. Doctrinally, a Joint Force Commander required a Joint Force Air Component Commander (JFACC). However, from the US perspective, Afghanistan was a *sub*theater, requiring an other solution, one which was poorly defined in doctrine. Hence the empowerment of the Air Component Coordination Element, which officially remained a coordinator and liaison between an operational ground force commander and the official CFACC. However, during this timeframe a change of outlook is discernible among airmen. Since the adjustments made by General Hostage, the idea became accepted that airmen had to have a seat at the table of the ground force commanders. Consequently, these airmen became able to plan air support in an effective and efficient manner. Second, air commanders were aware of the special development the organizational structure had. The dictum of centralized control and decentralized execution did not provide the necessary flexibility. It was informally replaced by the dictum of centralized command, distributed control, and decentralized execution.[361] This meant that some of the command and control activities were delegated to an intermediate level - the ACCE - to adjust airpower's contribution to current needs of the Joint Task Force commander. It adapted to the special counterinsurgency environment fought with a special coalition. Senior military leaders seemed to have become aware of the idea that there was no cookie cutter solution towards air command and control, and that change was the only constant.[362]

Notably absent from the list of contentious issues was the challenge of air-land integration at the tactical level. In 2009, there were about 300 JTACs in theater.[363] Major General Raaberg noted that, although there still were some variations on the quality of the JTACs, and some lost their qualification as a JTAC due to proven incompetence, the overall competence level of the JTACs was adequate.[364] This did not mean that all problems were solved. The US Army, in cooperation with the US Air Force, was still perfecting the

359 Hrychuk, "Descision Making", 2-9.

360 Wolters and Campo, "Team Building", notes 2 and 3.

361 Hoog, "Airpower", 256.

362 Lyon and Stone, "Right-Sizing Air Power", 8, Kenneth S. Wilsbach and David J. Lyle, "NATO Air Command-Afghanistan: The Continuing Evolution of Airpower Command and Control", *Air & Space Power Journal* 28, no. 1 (2014): 11-25, 23, and Wolters and Campo, "Team Building", 11-12. Major Generals Lyon, Wilsbach and Wolters all fulfilled the position of senior airmen in Afghanistan within the various organizational structures. Additional information is found on the concise biographies at the end of the cited publications and on the United States Air Force website: Anonymous, "Major General Charles W. Lyon", *U.S. Air Force Website* (March, 2013) http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/107941/major-general-charles-w-lyon.aspx (accessed January 28, 2014), Anonymous, "Major General Kenneth A. Wilsbach", *U.S. Air Force Website* (May, 2013) http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/108478/major-general-kenneth-s-wilsbach.aspx (accessed January 28, 2014), and Anonymous, "Wolters".

363 Sullivan, "Game-changing Strategies", 198.

364 Raaberg, "Shift", 150.

systematic integration of air assets and land forces in a highly networked environment.[365] According to Raaberg's successor as DCFACC, the later Lieutenant General Stephen L. Hoog, the residual problems were due to the traditional and conventional outlook many airmen still had. Airmen had to become more integrally involved in the planning process of the various ground force commanders in order to advise them properly about the most effective application of airpower. Although this took time, airmen learned how to fight the war they were in, which differed from the war they had been training for during their careers. This was visible for instance with the addition of ISR and electronic warfare specialists to the air force liaison teams attached to various Army units, and the fielding of joint fires observers.[366] The initial problems to a large extent were also alleviated by sufficient availability of the air weapon.

6.6.4. Streamlining Command Relationships

In conclusion, the three problems of command and control of the air weapon, namely confusion on who was the supported commander, separation of the missions of OEF and ISAF, and air-land integration, were solved for the time being under American leadership. The first problem was solved by *de facto* designating the commander of ISAF as a commander of a Combined Joint Task Force, that required his own air component for the duration of the mission. As the CAOC supported another CJTF in Iraq, the US Air Force formally did not permanently apportion air assets to the JTFs, but streamlined the air request process by empowering the ACCE. The second problem was solved by dual hatting the senior airmen in Afghanistan. As for the third problem, air-land integration improved mostly as a result of a combination of these reorganizations and solutions that were adopted in the preceding period.

6.7. Education, Training, and Lessons Learned: NATO Lagging Behind

To a large extent, the developments on strategy, doctrine, force levels, resources, command relationships and the resulting plans and operations were a reflection of lessons learned from the preceding period. Also, some evaluations, such as the "Tiger Team" were executed while operations were ongoing. In general, NATO's entire effort was directed towards adopting a COIN approach, although American leadership stands out. The question remains to what extent the lessons were incorporated within the various organizations, and what the lessons were.

365 Curtis V. Neal, Robert B. Green and Troy Caraway, "Bridging the Gap From Coordination to Integration", *Joint Forces Quarterly*, no. 67 (2012): 97-100.

366 Hoog, "Airpower", 246-248.

The United States showed several initiatives to perpetuate the lessons learned from the preceding period. This manifested itself in formal evaluations and recommendations that were distributed across the US Military. One of the larger projects in this respect was done by the Joint and Coalition Operational Analysis (JCOA) division of the joint staff. In 2012 and 2013 JCOA published several reports, in which lessons from Iraq and Afghanistan were compiled. In one of these reports JCOA stated that, among other things, the US military had been slow to correctly assess the operational environment.[367] The report did not state that the US military had been stuck too long in the conventional warfare paradigm, but, as part of a separate lesson, recognized that conventional warfare differed from unconventional warfare in for instance the use of kinetic force and the use of ISR.[368] In a separate report on civilian casualties, JCOA recommended that initiatives taken in Afghanistan should be sustained.[369] The US Air Force developed initiatives to incorporate lessons learned into the organization, especially with regard to civilian casualties, and reviewed tactics, updated doctrine, pre-deployment training of airmen, and educational curricula.[370] The US Air Force reinvigorated the Coalition and Irregular Warfare Center of Excellence (CIWC). Informally started in 2006, the CIWC opened its doors at Nellis Air Force Base on April 6, 2009. It had the tasks of developing innovating applications of airpower in an irregular warfare environment, teach irregular warfare theory and practices related to irregular warfare, maintain relationships with other organizations that specialized in irregular warfare, and serve as a repository for lessons learned. The initial focus was to train General Purpose Forces (GPF) on these issues, which serves as an indication of an attempt to broaden the types of troops that were charged with irregular warfare.[371] Due to allegations of misappropriation of funds, the CIWC was reportedly closed in December, 2010, however. It functions were taken over by the US Air Force Warfare Center.[372]

Developments within the rest of NATO are less clear. As stated in the previous chapter, the Joint Analysis and Lessons Learned Centre (JALLC) in Lisbon executed the lessons learned process at NATO level, but did not make its reports available to the general public. There is some circumstantial evidence that suggests that NATO as an organization increased its attention to Afghanistan and attempted to institutionalize

367 Joint and Coalition Operational Analysis (JCOA), "Decade of War, Volume 1: Enduring Lessons From the Past Decade of Operations", (June 15, 2012) http://cgsc.contentdm.oclc.org/cdm/singleitem/collection/p4013coll11/id/2035/rec/2 (accessed February 16, 2016), 3.

368 Joint and Coalition Operational Analysis (JCOA), "Decade of War Volume 1", 7-9.

369 Joint and Coalition Operational Analysis (JCOA), "Reducing and Mitigating Civilian Casualties: Enduring Lessons", (April 12, 2013) https://publicintelligence.net/jcoa-reducing-civcas/ (accessed February 16, 2016), 9.

370 United States Joint Forces Command, "Reducing and Mitigating", 146-151.

371 Timothy W. Childress, "Improving US Air Force Performance in Irregular Conflict: Reestablishing a USAF Special Air Warfare Center", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2007) Personal Collection, 7, Nellis Public Affairs Office, "Irregular Warfare Center Opens", *Website Nellis Air Force Base, US Air Force* (April 16, 2009) http://www.nellis.af.mil/news/story.asp?id=123144726 (accessed February 16, 2016), and David Ucko, "Innovation or Inertia: The US Military and the Learning of Counterinsurgency", *Orbis* 52, no. 2 (2008): 290-310, 295.

372 Keith Rogers, "Coalition and Irregular Warfare Center Shows Little for $42 Million Effort", *Las Vegas Review-Journal Online* (October 12, 2013) http://www.reviewjournal.com/news/coalition-and-irregular-warfare-center-shows-little-42-million-effort (accessed February 16, 2016).

insights relating to deployment of its military to that country. This evidence includes NATO-wide publications on relating topics. The project of the JAPCC on airpower and irregular warfare in 2008 can be put into this context. In 2010 JAPCC published its thoughts on guidance on the Comprehensive Approach. Such a guidance did not exist up and until then.[373] Also, publication of the NATO doctrine on counterinsurgency in 2011 indicates that some renewed insights have been institutionalized within NATO.[374] Other publications are research projects and publications on subjects that were current in Afghanistan, such as development of UAVs, air-land integration, pooling and sharing of scarce assets, and personnel recovery.[375]

These publications are, however, poor indications for actual institutionalization of the lessons learned within NATO or its airpower community. On the one hand, developments within - non-controversial and long standing - projects were appreciated. For instance, NATO defense ministers expressed their intention to expand on the achievements of a common communication framework following successful implementation of the Afghan Mission Network.[376] Publications and intentions provide, however, inconclusive evidence about thorough incorporation of lessons identified coming from Afghanistan. Scarce evidence indicates otherwise. For instance, JCOA noticed that not all US lessons learned effectively reached NATO.[377] In addition, it could be that most lessons learned found their way through the organization through developments at lower levels of the organization. Indication for this situation is use of drafts of doctrine in anticipation of formal ratification by all members states, and pushing lessons learned directly from headquarters in Afghanistan towards staffs of training centers.[378] This all leads to a scattered picture of

373 Joint Air Power Competence Centre, "Three Air Power Considerations Within a Comprehensive Approach", (September, 2010)http://www.japcc.org/publications/report/Report/101026_Three_Air_Power_Considerations_within_a_Comprehensive_Approach.pdf (accessed October 15, 2013).

374 Joint Air Power Competence Centre, "JAPCC Annual Report 2008", (2008) http://www.japcc.org/publications/report/Report/JAPCC_Annual_Report_2008.pdf (accessed October 15, 2013), 5. The report on airpower in irregular warfare is not available. The insights however are published: John Alexander, "Air Power in Countering Irregular Warfare", *Military Technology* 33, no. 6 (2009): 99-106

375 Gerdsen, "Enhancing", Joint Air Power Competence Centre, "JAPCC Annual Report 2008", Joint Air Power Competence Centre, "JAPCC Annual Report 2009", (2009) http://www.japcc.org/publications/report/Report/JAPCC_Annual_Report_2009.pdf (accessed October 15, 2013), Joint Air Power Competence Centre, "JAPCC Annual Report 2010", (2010) http://www.japcc.org/publications/report/Report/20110323_-_Annual_Report_2010.pdf (accessed October 15, 2013), Joint Air Power Competence Centre, "JAPCC Annual Report 2011", Joint Air Power Competence Centre, "Regional Fighter Partnership", Joint Air Power Competence Centre, "Helicopter Capabilities", Neil, "Project Noctua", and Metello Pilati, "Air-Land Integration: A Challenge for NATO", *The Journal of the JAPCC*, no. 13 (2011): 33-36 http://www.japcc.org/wp-content/uploads/Journal_Ed-13_web.pdf (accessed June 15, 2017).

376 Anonymous, "NATO Defense Ministers Pledge Steps to Improve Capabilities, Interoperability", *RTT News* (February 22, 2013) http://search.proquest.com.nlda.idm.oclc.org/docview/1291877965/4088D15860C647F0PQ/13?accountid=35226 (accessed July 12, 2016), Jean-Paul Paloméros, "Enhancing Interoperability: The Foundation for Effective NATO Operations", *NATO Website* (September 25, 2013) http://www.nato.int/docu/Review/2015/Also-in-2015/enhancing-interoperability-the-foundation-for-effective-nato-operations/EN/ (accessed July 12, 2016), and Brooks Tigner, "NATO Allies Need to Hold Onto Hard-won Interoperability, Says SACEUR", *Jane's Defence Weekly* 50, no. 35 (2013) http://search.proquest.com.nlda.idm.oclc.org/docview/1417109645/4088D15860C647F0PQ/12?accountid=35226 (accessed July 12, 2016).

377 Joint and Coalition Operational Analysis (JCOA), "Reducing and Mitigating", 3-4.

378 Bailey, Interview.

lessons learned at NATO level until the formal reports of JALLC and their influence on the organization become publicly available.

The notion that NATO's lessons learned were incorporated at lower level echelons is reinforced by training activities of ISAF staffs. NATO exercised increased influence on training of personnel dedicated to fill positions at ISAF staffs since ISAF's span of control covered the whole of Afghanistan. This was the case especially for the personnel of the headquarters of the Regional Commands. Up and until 2009, preparation and training was organized by the lead nation, which, especially in RC South, rotated between nations.[379] The Joint Warfare Centre (JWC) in Stavanger, Norway, and other NATO training elements increased their efforts in training contingents of staffs and individuals from HQ ISAF down to headquarters of Regional Commands. This was especially the case since the installation of the ISAF Joint Command in 2009. Consequently, the JWC initiated steps to conduct mission rehearsal exercises in coordination with the US. This in 2011 led to exercises with up to 6,000 personnel.[380] To which extent the air weapon was incorporated in those exercises is not entirely clear. The commander of Regional Command South from November 2008 to November 2009, Major General De Kruif, indicated that his team did not receive specific training with regard to air operations. This was not a problem, because personnel rotated individually. This prevented a temporary dip in effectiveness that could accompany rotations of large contingents at the same time. Therefore, personnel, especially commanders, during this period started to participate in a headquarters that already had their procedures in place, and was functioning accordingly. So, incidental lack of training of individuals was not a structural problem and did not effect operational effectiveness.[381]

By 2012 the air portion seems to have been part of the mission rehearsal exercises of the JWC. In at least one of those exercises, the 505th Command and Control Wing, part of the US Air Force Air Warfare Center and responsible for training American airmen, participated in a mission rehearsal exercise for ISAF headquarters.[382] A final indication of lessons learned within ISAF was a civilian casualties conference, held in Kabul on January 17, 2012.[383]

These indicators show progress of ISAF's and by extension NATO's lessons learned processes. Especially the publication of doctrine on counterinsurgency can be regarded as a step forward. However, it also shows that the organization was relatively slow to

379 For a description of the pre deployment training for RC South headquarters staff for deployment between November 2009 and November 2010 see: Van Duren, *ISAF HQ*, 86-100.

380 Anonymous, "Joint Force Training Centre: At the Heart of NATO's Preoccupations", *Website Permanent Delegation of the Republic of Poland to NATO* http://brusselsnato.mfa.gov.pl/resource/7317c505-ddc0-4015-b2a7-9ba176f47aaa (accessed August 13, 2016), and Melvin Pound, Christopher Robinson, Richard Woodward and Inci Kucukaksoy, "The Evolution of ISAF Training", *The Three Swords Magazine*, no. 25 (2013): 30-34.

381 De Kruif, Interview.

382 Anonymous, *Website 505th Command and Control Wing* http://www.505ccw.acc.af.mil/Home/505CommandandControlWing.aspx (accessed August 13, 2016), and Pound, Robinson, Woodward, and Kucukaksoy, "Evolution", 33.

383 David Olson, "ISAF Conducts Aviation Civilian Casualty Conference", *NATO Website* (January 19, 2012) http://www.rs.nato.int/article/news/isaf-conducts-aviation-civilian-casualty-conference.html (accessed July 28, 2016).

adopt overall doctrine when compared to the US. Possibly, it took a relatively long time to get all the member states to initiate, and ratify doctrine. This has been the case since the foundation of NATO. The difference with earlier periods was, however, that there was an relatively urgent operational need for a doctrine for immediate implementation in Afghanistan, but that not all coalition partners on the other hand gave the same priority to Afghanistan. ISAF was a NATO-led, rather than a NATO mission. Combined with with the nature of the coalition that proscribed consensus of all member states, this situation might have contributed to the constellation in which relatively much activity in the context of lessons learned and training took place at the levels just below top-level, and that formal adoption of procedures took a relatively long time. However, additional research is required to reach definite conclusions on this topic and its consequences for NATOs effectiveness as an organization.

As during the previous time frame, various task forces reported in their national chains of command. This meant that every nation had its own lessons learned process. It is beyond the scope of this study to review lessons learned processes of all these nations, but two examples can suffice to illustrate the existence of national processes. The first example is the already mentioned publication of doctrine on irregular warfare by the Australian Air Force. The Netherlands provides the second example. The Dutch government periodically reported to parliament during the deployment of the largest contingent of forces between 2006 and 2010 in the Afghan province of Uruzgan. In 2011 it issued a final report. These reports show that the challenges of the Dutch contingent followed the same pattern as that from ISAF as a whole, such as for instance with regard to civilian casualties.[384] However, the time covered in the reports is shorter than the periods the Netherlands deployed forces. Army, marine, and especially the air force served longer or in other time frames than were the focus of the reports. Also, the Dutch air component was not incorporated into the final report.[385] So, while the two examples show the existence of national lessons learned processes, the Dutch example also indicates these might not be comprehensive. Additional research is required with regard to these lessons learned processes of troop contributing nations of ISAF.

Finally, the air task forces had their own lessons learned cycles. As stated in the previous chapter, the high level of standardization among airmen secured distribution of tactical lessons learned, for instance with regard to Rules of Engagement. This fitted in a pattern that was noticed by others in relation to ground forces, in which lessons learned tended to focus on improvement of Tactics, Techniques and Procedures (TTPs), without conceptualizing new ways of warfare.[386] There were however concerns about the level of training on mission types that were not regularly executed in Afghanistan. Airmen had

384 Anonymous, "Eindevaluatie Nederlandse Bijdrage Aan ISAF, 2006 - 2010", (September 23, 2011)[Final Evaluation Dutch Contribution to ISAF, 2006-2010] http://www.rijksoverheid.nl/documenten-en-publicaties/rapporten/2011/09/28/eindevaluatie-nederlandse-bijdrage-aan-isaf-2006-2010.html (accessed November 21, 2013).

385 See Appendix 3.6 for the contribution of the Royal Netherlands Air Force.

386 Catignani, "'Getting COIN'", 536.

become very proficient in CAS and ISR, and the manner in which it was executed tended to become the norm. This could lead to distortion of doctrinally proscribed missions, and to a decline in proficiency of airmen on missions that were not regularly executed in Afghanistan, such as missions related to defense of airspace.[387] So, while air units became firmly adapted to the operational environment of Afghanistan, the first indication of negative consequences began to become apparent.

All considered, the period between 2008 and 2012 saw an increase of activities with regard to education, training and lessons learned. Especially the US devoted resources to embed the lessons learned into its organizations. NATO followed, somewhat belatedly but nevertheless noticeable. Also, there are indications that the lessons learned processes are more prominent at the lower levels, both operationally and nationally, than at the level of NATO. At this level, political sensitivities were less prominent than in Brussels. However, additional research is required on the implementation of NATO's lessons learned with regard to Afghanistan, and on the national lessons learned processes.

6.8. Analysis

During the period between 2008 and 2012 many changes took place with regard to air operations in Afghanistan. The question is to which extent the identified drivers of military change influenced these developments. As during the preceding period, technologies had an enabling effect on change at various levels. At the strategic level and operational level, the new communication architecture, embodied in the AMN and JASMAD, allowed for more coordination between the various organizational elements, and therefore helped to achieve the desired unity of command and unity of effort. At the tactical level, increased capacity with regard to sensors, storage capacity, and data analysis software optimized existing intelligence processes, even though it brought challenges of its own. Other technologies further refined the targeting process. These technological developments had both qualitative and quantitative aspects. New technologies alleviated some tasks, such as finding IEDs using change detection software. But they were most effective when they were present in theater in sufficient numbers. Contrary to the preceding period, helpful technologies, such as SDBs and ROVER terminals, were now available in sufficient numbers in order to make a difference.[388] Additionally, airmen continued to experiment with new applications of technology, such as for instance with tablet computers. One technological

387 Benitez, "How Afghanistan", David A. Ferguson, "Adverse Effects of the Change of the Military's Core Mission in Afghanistan and Iraq", (A Research Report Submitted to the Faculty in Partial Fulfillment of the Graduation Requirements, Air University, Air Command and Staff College, Maxwell Air Force Base, AL, April, 2010) Personal Collection, De Koster, "Mission Uruzgan", 123, and Warnes, "Harrier Homecoming ", 29-30.

388 The British Joint Force Harrier (JFH) will serve as an example. JFH was active from Kandahar between 2004 and 2009, and it as noted that the Harriers by 2009 were much more capable than in 2004. This was due to new avionics, weapons, and sensors, of which at least a part was obtained via the procedure of urgent operational requirement (Warnes, "Harrier Homecoming ", 40, and Alan Warnes, "Herrick Harriers", *Air Forces Monthly*, no. Editorial Special (2010)).

element was most prominent, namely the use of armed UAVs. Coupled with a new strategic outlook, it saw widespread application in an attempt to disrupt insurgent networks in a volatile environment. Although it can be argued that MQ-1 and MQ-9 were effective at the tactical and operational levels[389], they also created a backlash at the strategic level, leading to decreased support inside Afghanistan and home countries. It thereby negatively balanced the gains that were made within the realm of CAS. As has been described in relation to ISR, over-reliance on technologies could also foster losing sight of the strategic picture. So, technological innovations and adaptations had two-sided effects.

The new strategic outlook had its roots in assessments of the operational environment. It was acknowledged that a population-centric approach was required to turn the tide, and by 2010 - 2011 the new outlook was effectuated in both in theory and in practice. While the air weapon enjoyed freedom of movement in the Afghan skies, occasionally annoyed but not really affected by the opposing forces, it had to change its operational outlook following actions of own forces. In general, there was an enforced shift of largely kinetic to a largely non-kinetic force posture, but ideally without unacceptable increase of vulnerability of ISAF ground forces or their Afghan allies. The assessment and the resulting change of operational outlook concurrently led to new operational plans. In addition, one difference with the preceding period was that ISAF now had enough resources to break the deadlock that had plagued western forces since 2006. For airmen, this had the primary consequence of using lethal force as a means of last resort, which they did with success in executing CAS missions. To a certain extent, the insurgents were able to exploit NATO's vulnerability to civilian casualties to their advantage, now mostly in the context of leadership targeting. Possibly, there were alternatives for western forces for operations inside Afghanistan. For Pakistan however, the situation was different. Until the Pakistani government was willing and able to regain control in the contested border regions, targeting the insurgents with UAVs was basically the only option. This element too shows that the operational environment had a profound effect on air operations.

Although the assessment of the operational environment provided for a powerful impetus for changes from the strategic level down to the tactical level, the links between them were inconsistent. Incorporation of all activities into a single grand strategy was still not present. So, there still was not a coherent strategy, but there was increased operational cohesion of military operations in Afghanistan. Yet, strategy could still be a source of confusion. For instance, counterinsurgency was framed as both a strategy and an operational approach.[390] The paragraph on doctrine of this chapter indicated that several doctrines regarded counterinsurgency as a set of activities. While these frames do not have to be mutually exclusive, they could be prone to misinterpretation. In addition, the lack of grand strategy still formed a conceptual gap. This meant that the foundation

389 Osinga, "Bounding", 268-269.

390 See for instance: David W. Barno, "Fighting "The Other War": Counterinsurgency Strategy in Afghanistan, 2003-2005", *Military Review* 87, no. 5 (2007): 32-44, Brand, *McChrystal's Strategic Assessment*, and McKiernan, "Winning in Afghanistan".

of military strategy and operations in theory was lacking. This problem was however less severe compared to the period preceding 2008. The operational level effectively filled the gap the strategic level had left. From a conceptual standpoint, this was completely wrong, because it effectively put the burden of formulating end states on the shoulders of military commanders. This was also the case with developing ways and means related to the new strategy, which also extended the military ones. However, despite the liabilities flowing from the conceptual hiatus, military decision makers at the operational level at least made it workable.

Alliance politics also played a significant role for the air weapon, in the sense that the US took the leading role. As with the preceding period, NATO collectively was unable to develop a coherent strategy, and muster the required resources. This led to re-Americanization of the effort in Afghanistan. While the US executed a surge, the first indications of other nations withdrawing were showing, straining relationships within the alliance. The period described in this timeframe also saw diplomatic developments in other areas. The surge and strategic outlook led to a new phase of diplomatic activity with Pakistan, and with the Central Asian countries North of Afghanistan.

It can be argued that from 2008 to 2012, NATO was at least partially successful in challenging the culturally induced preference for conventional, kinetic, operations. This was not only visible in strategy and operational plans. Developments in the realms of doctrine, and education, training and lessons learned also showed that the US military, at least in the short term, was able to shift from a conventional mindset towards one that allowed counterinsurgency operations. Although there was some initial hesitance or hostility towards the new strategic outlook, this did not last. Other nations within the alliance supported the new outlook, and NATO too in general showed little or no resistance. Eventually, NATO too codified counterinsurgency insights into its doctrine and mission rehearsal exercises. Other cultural inhibitions, such as for instance with regard to caveats and air-land integration, do not seem to have had a profound effect on developments. They were either solved, as was the case with air-land integration, or were accepted as a fact of life, which was the case with caveats.

Leadership was probably the most influential driver in enforcing these changes. The introduction had already taken place in the preceding period, in which Secretary of Defense Robert M. Gates had replaced commanders, among which the Secretary and the Chief of Staff of the Air Force. Although not stated explicitly, it was no secret Gates wanted the US military to focus on the wars they were actually fighting. This manifested itself in for instance increased attention for ISR. The newly appointed commanders then set out to enforce the change within several organizations. Within ISAF, the United States stepped in and took over. This was partly due to the lack of willingness or ability of the European NATO members to deliver the needed assets. As the US was reluctant to relinquish command and control authority of their assets to non-Americans, and because the European NATO members were already loosing their interest in Afghanistan, the US

effectively claimed influence on the course of events in Afghanistan. To a large extent, the challenges relating to operating in a coalition were alleviated, as US General Officers held key positions, commanding both US and NATO assets. It was however not an ideal situation, since command relationships lines were, at least on paper, still divided between a US and a NATO line. On the other hand, successive American generals were able to convince their NATO counterparts who were still in theater to adopt the new strategic outlook, which in effect was implemented without much friction. Within the military, influential leaders like Generals Schwartz and Hostage were able to address the pressing problem of air-land integration. Not all change was implemented "top down". To some extent some were initiated "bottom up" and later implemented "top down". Indicators for this are the embedding of the field manual in the system of US doctrine, which showed an unusual process, and the influence lower ranking officers had on developments in the field of intelligence.

6.9. Conclusion

By 2008, the collective of western military units was in dire straits. There was no strategy, no applied doctrine, and a lack of resources. While the air weapon mitigated risk to own forces significantly, over-reliance on force protection had led the air weapon to focus on Close Air Support, with detrimental effect on strategic goals, and highlighting a deeply rooted tension between airmen and soldiers. By the end of 2012, much of these problems no longer existed or were less severe. ISAF had an approach that focused on the population and had regained momentum on the insurgents. In this narrative, airpower had a more modest, but also a more successful role than in the preceding time frame. The primary factor of success was the assessment of the operational environment, although the USAF to some extent required some additional convincing. Senior American leadership rightfully acknowledged the operational environment to be an insurgency, requiring a counterinsurgency response. This increase of effectiveness partly manifested itself in an operational shift of focus towards ISR and airlift missions, mostly at the expense of CAS. These missions were regarded to be essential in counterinsurgencies.

In addition, the air weapon increased its attention on terrorist leaders. Leadership targeting missions invoked many discussions, and part of the debates focused on the effectiveness, or lack of it. However, the increase of this type of missions at least meant an end to the knee-jerk reaction of calling in airstrikes and contributed to the more selective use of deadly violence. Other success factors included availability of air assets, and streamlining command relationships between American and NATO airmen and between airmen and soldiers and marines. To some extent, this process was accompanied with institutionalization of the insights of counterinsurgency, witnessing the - at least partial - codification of the insights in doctrines and the embedding some of the lessons learned in

the educational curricula. Whether wholeheartedly or not, by 2012 airmen had adapted to the new outlook, and to a large extent had made a successful shift towards supporting joint commanders with ISR, airlift, and leadership targeting, while optimizing CAS.

It was, however, still too early to claim success. First of all, these developments painfully highlighted NATO's dependence on American leadership in terms of force levels and resources, new assessments and required operations. Although some frustration arose in theater about detailed arrangement about, for instance, command relationships, NATO as an organization was unable to provide for the means that had to accompany the new strategic outlook. On the contrary: some of the nations started packing as soon as the US stepped up its effort. In addition, formulation of a strategy was still a liability of the campaign in the sense that the conditions for the end of the conflict were not defined. ISAF had regained the initiative on the Taliban and Al Qaida, logically the primary short term focus of attention. However, the building of the Afghan security forces, and especially the air force, and other government institutions only had secondary roles. This meant that the conditions upon which it could be claimed that ISAF had finished its job had not been met. In other words, the strategic end state was lacking, even though investing in building partnership capacity became more prominent in strategic and doctrinal documents between 2008 and 2012. Operational goals of ground forces incorporated active partnering with Afghan security forces. Strategic assessments, tactical directives, and doctrines showed increased attention for incorporating indigenous forces into the campaign. However, western forces could not leave without a plan for transfer of the airpower functions. By regaining momentum, ISAF only had created the conditions for the next phase: building the Afghan Air Force.

It can be argued that the "joint" case for airpower in irregular warfare became stronger between 2008 and 2012. As outlined in chapter two, this approach promulgated a non-dogmatic standpoint towards the application of airpower in contexts such as Afghanistan. The air weapon adopted a supporting posture in the context of an outspoken counterinsurgency strategic outlook. This outlook was institutionalized in the ground-centric American *FM 3-24* and its NATO counterpart. As many of airpower's missions could be placed in this context, it can initially be argued that the air weapon supported the ground-centric approach. However, it also supported leadership targeting missions, and was also able to execute these missions autonomously. This missions could be viewed in the context of a different counterterrorism strategy, but especially during Petraeus' tenure, these counterterrorism missions could also be placed in the context of counterinsurgency. In other words, counterterrorism conceptually could be part of counterinsurgency. In addition, while the air weapon partially supported a ground-centric approach, it can be argued that the air weapon did not support a tactical ground commander but a *de facto* joint force commander. Even though doctrinally there were two joint force commanders (the NATO commander of JFC Brunssum, and the American commander of CENTCOM), COMISAF operated at the operational of even strategic level, which to some extent was formalized

with the creation of the IJC. So, despite the fact that convoluted command relationships could be confusing, the air weapon in effect supported a multidimensional strategy executed by a JFC, consisting of both COIN and CT.

The nature of the discussions that were conducted in this context reinforces this notion. In theater, a new equilibrium established itself after initial uneasiness about the restrictions on the use of lethal force and after small adaptations to these restrictions were made. The nature of the debate did not change, but the topic became leadership targeting rather than CAS. Also, the debate was conducted between politicians or between focus groups and politicians, rather than between component commanders. The same was true for the number and type of troops that would be required to execute the new strategy. The equilibrium extended to the types of missions, which in itself were not sources of contention. Discussions about air-land integration were largely absent as a result of increased focus on coordinating measures following the friendly fire incident of operation *Medusa*. One of the problematic topics that remained, or rather emerged, was the use of certain types of intelligence. Critique of General Flynn c.s. about the overly technological and top-down approach of intelligence gathering was reminiscent of the ground-centric approach to airpower in irregular warfare. On the other hand, technologically gathered intelligence, most importantly FMV, was very much appreciated. In effect, Flynn argued for a more balanced and comprehensive manner of gathering and processing intelligence, much like is promulgated in the joint approach to airpower in irregular warfare.

The problem that was not solved was that of command relationships. The division between ISAF and OEF remained artificial and defied the tenets of unity of command and unity of effort. However, the process of "dual hatting" American generals that started before 2006 was repeated in 2009. This made the system not ideal, but at least workable, to some extent muting the discussions. The topics of specialized aircraft and the requirement of training indigenous air forces were hardly at issue. This was most likely due to a combination of the operational focus of the time, which required focus on more pressing issues, and ample availability of airpower, muting the need for specialized aircraft. So, the problem possibly existed, but was not topical. This would change in the period following 2012.

Chapter 7

7. The Afghan Air Force: Building an Airplane While Flying It (2005 - 2016)

7.1. Introduction

Up and until now, one major element of the deployment of airpower has been underexposed in this study, namely the (re-) building of the Afghan Air Force (AAF). It can be argued that the research on the Afghan Air Force should be integrated in earlier chapters. As will be outlined below, initiatives to improve and rebuild the AAF started as early as 2002. In addition, capabilities of the Afghan Air Force could be integrated in the collective set of air operations conducted by ISAF contributing nations. Subsequently, a legitimate research question could be to what extent the posture of Afghan airpower, once significantly developed, showed differences or similarities when compared to other countries that deployed the air weapon in Afghanistan. In short, this approach would amount to viewing the Afghan Air Force as one more coalition partner that delivered airpower in Afghanistan.

There are, however, several reasons to retain the operational level context of NATO, and devote a chapter on the build up of the Afghan Air Force, rather than its operations, and with a time frame that overlaps other chapters. First, the Afghan Air Force is special because it was the one that was supposed to take over the effort from the rest. And, as will be shown below, building it was linked to a COIN approach executed by NATO. Whereas the rest of the coalition *sent* its airpower, Afghan airpower had to be *built*. Therefore, building the Afghan Air Force could be regarded as an operation executed by NATO. Second, this viewpoint is consistent with the central research question of this study, namely the development of the air weapon during operations in Afghanistan. Airpower in this case is not so much delivered by airborne assets, but by air advisors.[1] By analyzing the organizational adaptation in relation to the task of advising, this study retains the link with the frame of reference outlined in the introduction. Third, equipping, training, and advising are activities of a vastly different nature than operations executed by aircraft. There was indeed much to adapt to, requiring a separate chapter. Fourth and finally, it took considerable time for the build up of the Afghan Air Force to gain traction. Building Afghan security and defense forces, the Afghan Air Force among them, became ISAF's center of gravity only after the operational stalemate was broken, and all actions of ISAF were directed towards setting conditions for redeployment. From about 2012, building Afghan National Defense and Security Forces (ANDSF) became NATO's center of gravity.[2] Operation *Resolute Support*,

1 The term "air advisor" could have various connotations. This study adopts a following definition: "*NATO Air Advisors are personnel who participate in the NATO Mission that provide assistance to local forces and their associated institutions to generate and organize, train, enable, advise, and mentor foreign security forces and their supporting institutions to improve their airpower capabilities*" (Joint Air Power Competence Centre, "Improving NATO Support to Future Air Advisor Operations", (April, 2014) http://www.japcc.org/publications/report/Report/JAPCC_Air_Advisor.pdf (accessed May 23, 2014), 9).

2 See for an overview of the buildup of the Afghan Army: Adam Grissom, "Shoulder-to-Shoulder Fighting Different Wars: NATO Advisors and Military Adaptation in the Afghan National Army, 2001-2011", In: *Military Adaptation in Afghanistan*, ed.

the successor of ISAF that started on January 1, 2015, had the sole purpose of training the Afghan Security Forces, and continues at the time of writing. On that same day, operation *Enduring Freedom* ended, and became operation *Freedom's Sentinel*.[3]

So, in short, because the topic of this study is NATO airpower in Afghanistan, the topic for this chapter is how NATO's airmen and their organization adapted to the relatively new mission of assessing, training, advising, and assisting the Afghan Air Force. It will be regarded as a NATO operation, which became the main effort from 2012 onwards. This context has profound impact on the conceptual focus of this chapter in general, and the specific topics in particular. NATO remains the focus of the frame of reference. This means that the air advising effort will be observed and analyzed from the context of NATO's strategy, and not an Afghan strategy, although both may overlap significantly. The distinction between Afghan and NATO efforts can not be made clearly with regard to plans and operations. Increasingly, it were the Afghans who were required to execute the air operations. Therefore, the paragraph on plans and operations will focus on to what extent the training effort was successful, and how effectively the Afghan Air Force took over the tasks that formally were executed by NATO by partnering with NATO advisors. With regard to doctrine, the documents that codify military assistance and the related activities become subject of analysis, not the eventual COIN doctrine of the Afghan Air Force. The paragraph on force levels and resources will focus on how NATO equipped the Afghan Air Force while scaling down its own operations, and how this influenced the standard and new resource challenges. With regard to command relationships, focus of research will be the adaptations aimed to suit the tasks of assisting the Afghan airmen, rather than focusing on the organizational structure of the Afghan Air Force. Finally, the manifestation of education, training, and lessons learned focuses on the training effort of NATO trainers.

7.2. Strategy: The Longest Mile is the Last Mile Home

As has been described in chapter two, the building of host nation air forces was one of the topics of contention in the discourse of airpower in irregular conflict. The ground-centric approach was in favor of this type of activity, while the technology-centric approach was not. The joint approach positioned itself in the middle. So, concepts like Foreign Internal Defense (FID) or Building Partnership Capacity (BPC) were not new, but within the debate they were the only concepts that were solely placed within the context of irregular conflict. Up and until 2005, western militaries had not given building host nation air forces much

Theo Farrell, Frans Osinga and James A. Russell, Stanford Securities Studies (Stanford, CA: Stanford University Press, 2013), 263-287.

3 Anonymous, "A New Chapter in NATO-Afghanistan Relations", *NATO Website* (May, 2015) http://nato.int/nato_static_fl2014/assets/pdf/pdf_2016_05/20160518_1605-backgrounder-afghanistan-en.pdf (accessed September 19, 2016), and Lead Inspector General for Overseas Contingency Operations, "Operation Freedom's Sentinel; Quarterly Report to the United States Congress, April 1, 2015-June 30, 2015", (2015) http://www.globalsecurity.org/military/library/report/2015/lig_oco_ofs_08032015.pdf (accessed October 18, 2016), foreword. No page number.

attention. In 2006, RAND Corporation published a study on training and advising of foreign air forces as part of its ongoing "Project Air Force". The authors stated that, if and when the United States government decided to intervene in an insurgency environment, the preferred mode of operation was early intervention with a mix of military and non-military advisors. They called this an indirect approach using a precautionary and remedial strategy. Within this approach, advising, training and equipping partner nation air forces was a key component, due to the valuable contribution of the air weapon in counterinsurgencies.[4] The study advised the US Air Force to make counterinsurgency (COIN) an institutional priority, create organizations that could oversee counterinsurgency activities, develop and nurture counterinsurgency expertise throughout the service, create a wing-level organization on air advising, and enhance its combat capability for counterinsurgency.[5] It was a comprehensive study, in which military, non-military elements, and technological, organizational, and conceptual elements of counterinsurgency were intertwined. In 2010, and on request of the US Air Force, RAND published another report. This report addressed irregular warfare capabilities in general, of which air advising was a large part. Their findings coincided with the earlier report, but also took the global demands for air advising into account.[6] Similar views were expressed outside RAND.[7] In short, these reports argued to incorporate air advising into irregular warfare strategies.

With regard to Afghanistan, building the Afghan Air Force became part of the US and NATO strategic outlook from 2005 onwards. The issue of building partner capabilities made its way into the *National Defense Strategy of the United States of America* of 2005 and the *Quadrennial Defense Review (QDR)* documents of 2006 and 2010.[8] It was not so much a separate strategy,

4 Alan J. Vick, Adam Grissom, William Rosenau, Beth Grill and Karl P. Mueller, *Air Power in the New Counterinsurgency Era. The Strategic Importance of USAF Advisory and Assistance Missions* (Santa Monica, CA: RAND Corporation, 2006), http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG509.pdf (accessed January 3, 2014), xvi 4-5, 37-42, 46-47, 70-71, 82-93, and 109-114. Chapter two associated this publication with the ground-centric approach to airpower in irregular conflict, partly because of this emphasis on air advising.

5 Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, xvii and 133-147.

6 Richard Mesic, David E. Thaler, David Ochmanek and Leon Goodson, *Courses of Action for Enhancing US Air Force "Irregular Warfare" Capabilities. A Functional Solutions Analysis* (Santa Monica, CA: RAND Corporation, 2010), http://www.rand.org/content/dam/rand/pubs/monographs/2010/RAND_MG913.pdf (accessed December 20, 2016).

7 For instance: Thomas D. McCarthy, "National Security for the 21st Century: The Air Force and Foreign Internal Defense", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2004) Personal collection, and George M. Monroe, "The Rebirth of the Outback Air Force", *Armed Forces Journal* (2008) http://search.proquest.com/docview/200739289/fulltext/C21B296C8D104182PQ/1?accountid=35226 (accessed September 8, 2016). It should be stated that the air weapon was not singled out in this development. Other services faced similar challenges. See for instance: John A. Nagl, "Institutionalizing Adaptation: It's Time for An Army Advisor Command-Institutionalizing and Professionalizing the Manning and Training of Combat Advisors Is An American Strategic Necessity", *Military Review* 88, no. 5 (2008): 21-26.

8 Thomas K. Livingston, "Building the Capacity of Partner States Through Security Force Assistance", (CRS Report for Congress, Congressional Research Service, May 5, 2011) https://www.fas.org/sgp/crs/natsec/R41817.pdf (accessed October 5, 2016), 11-13, Jennifer D.P. Moroney, Kim Cragin, Eric Gons, Beth Grill, and others, *International Cooperation with Partner Air Forces* (Santa Monica, CA: RAND Corporation, 2009), http://www.rand.org/content/dam/rand/pubs/monographs/2009/RAND_MG790.pdf (accessed September 12, 2016), xiii, Kevin C. Therrien, "Building Partnerships by Design or by Default?", (Paper, National Defense University, Joint Forces Staff College, Joint Advanced Warfighting School, Norfolk, VA, May 24, 2012) http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA562388 (accessed October 5, 2016), 23-24, United States Department of Defense, "Quadrennial Defense Review Report", (United States Department of Defense, February 6, 2006) http://archive.defense.gov/pubs/pdfs/QDR20060203.

but rather, as USAF's "The 21st Century Irregular Warfare Strategy" put it, employment of advisors as part of a counterinsurgency effort.[9] The goal of the related activities became transferring the COIN effort to the ANDSF.[10] That meant that the counterinsurgency outlook still applied, but elements were added to the ends and means of the strategy. Transferring the COIN effort to the ANDSF became an additional end, and air advisors became additional means. As stated in chapter five, ISAF initially tried to execute a series of projects collectively called Security Sector Reform (SSR), which was largely ineffective. The US National Defense Strategy of 2005 and the Afghanistan Compact of 2006 also paid some attention to building of the ANDSF.[11] But it did not become an integral part of strategy. According to Antony Cordesman, Adam Mausner, and Jason Lemieux, the US strategists and policymakers until 2009 made serious strategic mistakes. These in essence entailed failure to properly include sustained efforts of armed nation building into the plans. This resulted in the delay of the build-up of the Afghan armed forces, and created conditions for the resurgence of the Taliban. They argued that initiatives of commanders in the field could not compensate for this gap in strategic planning, and the resulting lack of institutional priority to nation building.[12]

The United States Government undertook initiatives to change this situation. The *Quadrennial Defense Review* of 2006 first articulated the need for increased activity in the field of building foreign security forces in order to enhance own security by helping partners to provide for their own. This first articulation was later refined in the QDR of 2010 and several other documents, and eventually found its way into the Department of Defense strategic guidance of 2012.[13] Backed by strategic guidance, McChrystal incorporated training of the

pdf (accessed April 18, 2016), vii, 2, and 17-18, and United States Department of Defense, "Quadrennial Defense Review Report", (United States Department of Defense, February 1, 2010) http://archive.defense.gov/qdr/QDR%20as%20of%2029JAN10%201600.pdf (accessed February 28, 2019), viii, 26-30.

9 United States Air Force, *The 21st Century Irregular Warfare Strategy,* January, 2009, http://indianstrategicknowledgeonline.com/web/USAF_IW_Strategy.pdf (accessed September 12, 2016), 10.

10 Antony H. Cordesman, Adam Mausner and Jason Lemieux, "Afghan National Security Forces: What Will It Take to Implement the ISAF Strategy", (Center for Strategic and International Studies, Washington, DC, November, 2010) https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/101115_Cordesman_AfghanNationalSecurityForces_Web.pdf (accessed August 4, 2016), xv. The abbreviation ANSF (Afghan National Security Forces) is also found. This study uses the abbreviation that became most commonly used.

11 Anonymous, "The Afghanistan Compact: Building on Success. The London Conference on Afghanistan. London 31 January - 1 February 2006", (2006) http://www.nato.int/isaf/docu/epub/pdf/afghanistan_compact.pdf (accessed June 16, 2013), 6, Jeffrey W. Nelson, "Airghanistan: Aviation and Nation-building in Central Asia", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2010) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8yNTIyMg==.pdf (accessed July 3, 2013), 28-30, Forrest L. Marion, "The Destruction and Rebuilding of the Afghan Air Force, 1989-2009", *Air Power History* 57, no. 2 (2010): 22-31, 27, and Moroney, Cragin, Gons, and others, *International Cooperation*, xiii.

12 Cordesman, Mausner, and Lemieux, "Afghan National Security Forces", xi-xiii.

13 Timothy W. Childress, "Improving US Air Force Performance in Irregular Conflict: Reestablishing a USAF Special Air Warfare Center", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2007) Personal Collection, 2 and 13, Richard L. Ingrum, "Aviation Security Force Assistance: A 21st Century Imperative", (Report, United States Army War College, Carlisle, PA, March 22, 2012) http://www.dtic.mil/docs/citations/ADA561351 (accessed October 5, 2016), 2 and 6-7, Derek C. Jenkins, "Distinguishing Between Security Force Assistance & Foreign Internal Defense: Determining a Doctrine Road Ahead", *Website Small Wars Journal Website* (December 10, 2008) http://smallwarsjournal.com/jrnl/art/distinguishing-between-sfa-and-fid (accessed September 29, 2016), Robert E. Kiebler,

Afghan forces into his plans. In his assessment, he wrote on the first page that the new counterinsurgency strategy had to be credible to, and sustainable by, the Afghans. In order to execute this strategy, among other elements, the effectiveness of the ANDSF needed to be improved.[14] President Obama adopted this assessment in his speech of December 1, 2009, in which he announced his strategy for Afghanistan. By adding a prerequisite that the additional forces were scheduled to withdraw from mid-July 2011, he made withdrawal of US forces dependent on the build-up of the ANDSF, as well as the build up of other government functions.[15] The counterterrorism (CT) mission however, remained.[16]

This had a number of important consequences. ISAF had the task of first stabilizing the mounting insurgency from 2010 to the end of 2011. Then, this stabilized situation had to be maintained with fewer ISAF forces, but with additional and newly trained ANDSF forces. Subsequently, the Afghans needed to take over, creating the conditions for the withdrawal of ISAF. This process had to be finished on December 31, 2014.[17] In other words, the ISAF forces gained an additional task of partnering and mentoring with Afghan forces in order to prepare them for all the functions they had executed before, and this additional task was to become the main focus from 2012 to the end of 2014.

This scheme was part of a larger US effort to help foreign militaries and maintaining partnerships with them. The rationale was the realization that US interests could be served by helping to enable foreign militaries to provide for their own internal security, with relatively few costs. To this end, the US Department of Defense published several strategic documents that highlighted the importance of development of partner nation's security forces in the context of developing global partnerships.[18] Within that context, the US Air Force incorporated training foreign air forces in its "Irregular Warfare Strategy", first published in 2009 under Donley and Schwartz and updated in 2013, and the Global Partnership Strategy, first published in 2008 and updated in 2011. Both documents reflect

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"USAF Advisory Programs: Evolving to Meet Future Challenges", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2007) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8zNjgoNw==.pdf (accessed July 3, 2013), 28-29, Livingston, "Building Capacity", 11-13, Therrien, "Building Partnerships", 20 and 23, United States Department of Defense, "Sustaining U.S. Global Leadership: Priorities for 21st Century Defense", (January 3, 2012) http://archive.defense.gov/news/defense_strategic_guidance.pdf (accessed February 28, 2019), 3, United States Department of Defense, "QDR 2010", 26-30, and Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 5.

14 Stanley A. McChrystal, "COMISAF's Initial Assessment" (August 30, 2009) http://media.washingtonpost.com/wp-srv/politics/documents/Assessment_Redacted_092109.pdf (accessed January 14, 2014), 1-1.

15 Cordesman, Mausner, and Lemieux, "Afghan National Security Forces", ix, and 1-3, Jamie Lynn De Coster, "Negotiating the Great Game: Ending the US Intervention in Afghanistan", *Fletcher Forum of World Affairs* 38, no. 2 (2014): 73-100, 76 and 83, T.X. Hammes, "Raising and Mentoring Security Forces in Afghanistan and Iraq", In: *Lessons Encountered: Learning From the Long War*, ed. Richard Hooker and Joseph J. Collins (Washington, DC: National Defense University Press, 2015), 277-344, 277, Livingston, "Building Capacity", 17, and M.J. Williams, "State-building and the Armed Forces in Modern Afghanistan: A Structural Analysis", *International Politics* 52, no. 3 (2015): 305-334, 306.

16 De Coster, "Negotiating", 77, and Richard W. Weitz, "Transition in Afghanistan", *Parameters* 43, no. 3 (2013): 29-41, 30-31.

17 De Coster, "Negotiating", 83.

18 United States Air Force, *Irregular Warfare Strategy 2013*, 2013, https://fas.org/irp/doddir/usaf/iw-strategy.pdf (accessed April 17, 2016), 7-9, and United States Department of the Air Force, *US Air Force Global Partnership Strategy*, 2011, http://culture.af.mil/assets/usafgps_2011.pdf (accessed January 19, 2017).

the recognition of the urgent reality of irregular warfare. Indirect application of airpower, such as training and advising, should be regarded as a necessary addition to the more direct forms of application.[19] Also, Schwartz installed an "Irregular Warfare Tiger Team", that had the purpose of assessing the services' capabilities against the backdrop of the threat environment. The Tiger Team placed emphasis on development of indigenous aviation capabilities.[20]

The documents and the Tiger Team also revealed the shift in means required to execute the strategy. As has been described throughout this study, the tasks of assessing, training, advising and assisting foreign air forces historically was delegated to the various units belonging to the Special Operations Forces (SOF). The shift of strategic focus had the potential to outstrip the capacity of SOF personnel suited for these tasks.[21] Also, the main SOF training unit of the US Air Force, the 6th Special Operations Squadron (6 SOS), was optimized for advising of and training in airpower employment, sustainment, and force integration, and in an irregular operational environment which contained an already existing indigenous air force. It did not have the capacity or capability to do the same for basic functions, such as basic pilot training.[22] The same was true for advise at the operational and strategic levels of operations.[23] Therefore, the US Air Force strategies highlighted the need to increase versatility of General Purpose Forces (GPF), in order to make them available for FID missions.[24]

NATO also incorporated the concept of building indigenous capabilities in its strategic outlook. The Strategic Concept of 2010 specifically mentioned the need to enhance the capacity to help train foreign forces to fight terrorism. It was however not a major part of the strategic outlook. Strategic partnerships with EU, UN and Russia were more important.[25] A political guidance on stabilization and reconstruction written by NATO in 2011 also described the need for training host nation forces, but did so only in very

19 United States Air Force, *21st Century*, and United States Air Force, *Irregular Warfare Strategy 2013*.

20 Chris Wachter, "Air-mindedness: The Core of Successful Air Enterprise Development", *Air & Space Power Journal* 26, no. 1 (2012): 50-59, 53-54.

21 Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 99.

22 Christopher Bolkcom and Kenneth Katzman, "Military Aviation: Issues and Options for Combating Terrorism and Counterinsurgency", (CRS Report for Congress, January 27, 2006) http://www.au.af.mil/au/awc/awcgate/crs/rl32737.pdf (accessed August 8, 2013), 8-9, Nicole S. Finch and Peter A. Garretson, "Air Advising: A Critical Component of Joint Engagement", *Joint Forces Quarterly*, no. 70 (2013): 34-39, Robert M. Gates, "Helping Others Defend Themselves", *Foreign Affairs* 89, no. 3 (2010) http://search.proquest.com.nlda.idm.oclc.org/docview/214287629?OpenUrlRefId=info:xri/sid:wcdiscovery&accountid=35226 (accessed October 5, 2016), George H. Hock, "Closing the Irregular Warfare Air Capability Gap. The Missing Puzzle Piece: Rugged Utility Aircraft and Personnel", *Air & Space Power Journal* 24, no. 4 (2010): 57-68, 60, Paul J. Scott, "Aviation Security Force Assistance: Joint General Purpose Forces As Air Advisors", (Paper, National Defense University, Joint Forces Staff College, Joint Advanced Warfighting School, March 11, 2013) http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA581314 (accessed October 5, 2016), 44, and Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 117, 115, 137, and 125.

23 Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 139.

24 United States Air Force, *21st Century*, 9-10, and United States Air Force, *Irregular Warfare Strategy 2013*, 16.

25 NATO, "Active Engagement, Modern Defense. Strategic Concept for the Defense and Security of the Members of the North Atlantic Treaty Organization" (November 20, 2010) http://www.nato.int/nato_static/assets/pdf/pdf_publications/20120214_strategic-concept-2010-eng.pdf (accessed June 6, 2012), 17.

general terms. It did not mention training directly, but argued that, within the context of the Comprehensive Approach, the aim was to ultimately transfer authorities to the host nation.[26] A year later, training, advising and assistance received a more prominent position on NATO's agenda. At the Chicago Summit of 2012, NATO pledged support to Afghanistan with the transfer of authorities to Afghanistan, and acknowledged that this would require training Afghan forces.[27] This support in practice would entail training, advising, and assisting Afghan security forces. This was reaffirmed during the Wales Summit of 2014 and the Warsaw Summit of 2016.[28] So, whereas the US put the endeavor of training and advising foreign forces in the context of its security policy, NATO did so within the context of Afghanistan only, and years later than the US.

On the surface, strategy development had made great strides, as ends, ways and means became more clear. The ends were self-sufficient Afghan armed forces, and by extension a self-sufficient air force, which was able to support the security needs of the Afghan government. The new ways were training, advising, and assisting Afghan national security forces. The new means were a new type of resources, namely air advisors. This new mission set was incorporated in the overall COIN strategy. The United States framed this in a global strategic context, not so much the Afghan or Iraqi context. NATO subscribed to the project of partnering with the Afghans, however, without reference to a global strategic context.

This strategy, however, had a weak point, which initially did not surface. The strategies failed to include quantification of the end state. Formulated differently, it failed to define what an Afghan professional, capable, and sustainable air force looked like. Initially, the Afghan Air Force did not receive any special attention when formulating the strategic outlooks. When it first appeared in 2005, the US acknowledged the need for an Afghan air force, but neglected a plan to build it. As Forrest Marion observed in a monograph on the air advising effort in Afghanistan: *"Apparently undeterred by the lack of a detailed air plan on how to "get there from here, (sic)", the Pentagon projected full operational capability for the Afghan air corps*

26 NATO, "Political Guidance on Ways to Improve NATO's Involvement in Stabilisation and Reconstruction" (November 23, 2011) http://www.nato.int/cps/en/natolive/official_texts_78314.htm (accessed June 4, 2012).

27 NATO, "Chicago Summit Declaration on Afghanistan Issued by the Heads of State and Government of Afghanistan and Nations Contributing to the NATO-led International Security and Assistance Force (ISAF)" (May 21, 2012) http://www.nato.int/cps/en/natolive/official_texts_87595.htm? (accessed June 4, 2012).

28 NATO, "Joint Statement by the Islamic Republic of Afghanistan, NATO and Resolute Support Operational Partners", *NATO Website* (December 2, 2014) http://www.nato.int/cps/en/natohq/official_texts_115587.htm?selectedLocale=en (accessed September 22, 2016), NATO, "Wales Summit Declaration Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Wales", *NATO Website* (September 5, 2014) http://www.nato.int/cps/en/natohq/official_texts_112964.htm?selectedLocale=en (accessed September 22, 2016), NATO, "Wales Summit Declaration on Afghanistan Issued by Heads of State and Government of Allies and Their International Security Assistance Force (ISAF) Troop Contributing Partners", *NATO Website* (September 4, 2014) http://www.nato.int/cps/en/natohq/news_112517.htm?selectedLocale=en (accessed September 22, 2016), NATO, "Warsaw Summit Declaration on Afghanistan Issued by the Heads of State and Government of Afghanistan and Allies and Their Resolute Support Operational Partners", *NATO Website* (July 9, 2016) http://www.nato.int/cps/en/natohq/official_texts_133171.htm?selectedLocale=en (accessed March 19, 2017), and NATO, "Warsaw Summit Communiqué Issued by the Heads of State and Government Participating in the Meeting of the North Atlantic Council in Warsaw 8-9 July 2016", *NATO Website* (July 9, 2016) http://www.nato.int/cps/en/natohq/official_texts_133169.htm?selectedLocale=en#top (accessed September 22, 2016).

by September 2009".[29] In 2012, the situation was better. An American Department of Defense assessment report of 2012 did not note systemic strategic deficiencies of US or NATO with regard to building the Afghan Air Force.[30] A comparable assessment of 2018 was however more critical. It observed that the terms of a professional, capable, and sustainable Afghan Air Force were not defined and quantified. In addition, the report noted that the plans were insufficiently aligned with strategic guidelines of *Resolute Support*. Several plans were made, but insufficiently communicated to the lower echelons. It recommended to the air advising organization to complete a strategic plan for build up of the Afghan Air Force, and increase coordination with other sections of *Resolute Support* headquarters.[31] This report argued that lack of coordination could result in insufficient and ineffective use of coalition assets, and potentially prevent transfer of functions from the coalition to Afghan control.[32] Formulated in strategic terms, the report argued that ways and means were not aligned to a unified end state. So, in 2018, strategy development still required attention.

7.3. Plans and Operations: Additional Tasks and Missions

7.3.1. Tasks and Missions

During the period described in this chapter, the United States took the lead in implementing many reorganizations that had the goal of building the Afghan Air Force. One reason was that the, often implicit, realization that Afghan self-sufficiency was a precondition for ending the Western involvement in the conflict. Therefore, the ability of Afghan security forces to provide for a basic level of internal security unaided were the strategic and operational prerequisites for re-deployment of Western forces. This ability included airpower. This is not to say that there were no initiatives prior to 2005. After major combat operations in Afghanistan had ended in 2002, virtually all aircraft of the Afghan inventory were destroyed. 6 SOS conducted a site survey in 2002, and investigated the condition of the remaining aircraft. By 2006, some of the recommendations were found to have been implemented, but in general, the few aircraft that remained were in poor condition.[33] Meanwhile, the Afghan Government made a feeble attempt to re-acquire

29 Forrest L. Marion, *Flight Risk: The Coalition's Air Advisory Mission in Afghanistan, 2005-2015*, The History of Military Aviation, ed. Paul J. Springer (Annapolis, MD: Naval Institute Press, 2018), 47.

30 United States Department of Defense, Inspector General, "Assessment of U.S. Government and Coalition Plans to Train, Equip, and Field the Afghan Air Force", (Report No. DODIG-2012-141 (Declassified Version), September 28, 2012) https://media.defense.gov/2018/Jul/24/2001946365/-1/-1/1/DODIG-2012-141.PDF (accessed February 25, 2019).

31 United States Department of Defense, Inspector General, "Progress of U.S. And Coalition Efforts to Train, Advise, and Assist the Afghan Air Force", (Report No. DODIG-2018-058 (Declassified Version), January 4, 2018) https://media.defense.gov/2018/Jan/29/2001870851/-1/-1/1/DODIG-2018-058-REDACTED.PDF (accessed February 22, 2019), 11-15.

32 United States Department of Defense, Inspector General, "Progress", 11.

33 Marion, "Destruction and Rebuilding", 27, Forrest L. Marion, "Training Afghan Air Force Pilots, 2006-2011", *Air Power History* 63, no. 1 (2016): 22-31, 24, and United States Air Forces Central Command, *Afghan National Army Air Corps (ANAAC) Concept of Operations - Draft*, November 16, 2006,, 122-132.

aircraft that were flown out of the country during the Soviet occupation in the 1980s. Also, a few helicopters were refurbished by Russia in 2004.[34]

Rebuilding efforts were required. The first initiative towards this end was executed by Donald Rumsfeld in 2005, when he attempted to re-establish Afghan presidential airlift capability. In 2006 a more comprehensive plan was drafted to rebuild the Afghan National Army Air Corps (ANAAC), which was envisioned to consist of about 200 aircraft and 7,000 personnel, and was scheduled to become self-sustaining in 2012.[35] The plans were directed towards building an organization that consisted of three wings: two operational wings based in Kabul and Kandahar, and a training wing and training center based in Shindand in Herat Province. The operational wings furthermore had detachments spread across the country.[36] In order to achieve this, the US formalized efforts to build the ANAAC in 2007, later augmented with NATO counterparts. US and NATO started rebuilding activities along four focus areas, namely building an airworthy fleet of aircraft ("Aircraft Build"), training capable ANAAC personnel ("Airmen Build"), improve the necessary infrastructure ("Infrastructure Build"), and increase the operational capabilities of the ANAAC ("Operational Capability").[37] The roles and missions that the ANAAC was supposed to perform at that time were presidential airlift, medical evacuation and casualty evacuation, tactical airlift, ISR, light attack, and training.[38]

While making progress, several changes were made. The ANAAC became a separate branch of the army on June 16, 2010, and it was renamed Afghan Air Force (AAF).[39] In parallel, there were changes of organizational elements that were not part of the air force, but did deliver airpower. The most notable example was the Air Interdiction Unit (AIU), which reported to the Ministry of the Interior (MoI) directly. This unit existed since 2006 and had the primary task of executing counternarcotics missions. This unit evolved into a special operations capability. To this end, the Special Mission Wing (SMW) was created on July 18, 2012, which replaced the AIU, and consisted of four squadrons.[40] In addition, in

34 Anonymous, "Afghanistan Seeks Return of Warplanes", *Air Forces Monthly*, no. 204 (2005): 18.

35 Marion, "Destruction and Rebuilding", 27, Marion, "Training", 24, and United States Air Forces Central Command, *ANAAC CONOPS*, 7.

36 Michael R. Boera and Paul Birch, "The Role of the Combined Air Power Transition Force (CAPTF) in Building Partner Capacity for Afghanistan", (October 1, 2010) http://www.afa.org/edop/2010/USAF_BPC_CAPTF.pdf (accessed January 28, 2013), 7, Adrian Hill, "Advance of the Afghan Air Force", *The Journal of the JAPCC*, no. 13 (2011): 10-14 http://www.japcc.org/publications/journal/Journal/20110414_-_Journal_Ed_13.pdf (accessed July 11, 2014), NATO Training Mission Afghanistan, "NATO Air Training Command - Afghanistan (NATC-A): Embedded Partnership," (Presentation, July 23, 2011) Personal Collection, and United States Department of Defense, Inspector General, "Assessment", 2.

37 Boera and Birch, "CAPTF", 2, and Marion, "Destruction and Rebuilding", 27.

38 Boera and Birch, "CAPTF", and United States Air Forces Central Command, *ANAAC CONOPS*, 9.

39 Hill, "Advance", 14, Marion, *Flight Risk*, 71, United States Department of Defense, Inspector General, "Assessment", 2, and Bernie Willi, "The Importance of Airpower in Supporting Irregular Warfare in Afghanistan", *Air & Space Power Journal* 26, no. 4 (2012): 103-117, 108. The organizational link between the Afghan Army and the Air Force remained in place. Possibly for this reason, the name Afghan National Army Air Force (ANAAF) is also found. See for instance: Robert Leese, "Afghan National Army Air Corps Now Afghan National Air Force", *U.S. Air Forces Central Command website* (June 14, 2010) http://www.afcent.af.mil/news/story.asp?id=123209135 (accessed March 27, 2014).

40 Anonymous, "The Afghan Air Force Today", *Vayau Aerospace and Defence Review*, no. 3 (2016): 104-105, 105, Hill, "Advance", 11, Michael A. Keltz, "Getting Our Partners Airborne: Training Air Advisors and Their Impact In-theater", *Air & Space Power*

June 2013 the Afghan Ministry of Defense per decree shifted operational control of the AAF helicopters to the army, splitting Afghan airpower between multiple organizations.[41]

This build up, and the advising effort that assisted it, was executed simultaneously with actual operations performed by the ANAAC/AAF, and continuing coalition air operations. Especially developing the ANAAC/AAF in a period where it was also required to execute operations has been characterized as "*building the airplane while flying it*".[42]

Due to the new task at hand, the nature of NATO plans and operations changed significantly. First, the Afghan airmen needed to acquire basic flying skills, and subsequently had to be advised on and trained in tactical operations. From a coalition perspective, the nature of the effort therefore became educating, assessing, training, advising, and assisting the Afghan Air Force. Second, the Afghan Air Force had to take over airpower tasks that were until then performed by coalition airpower. Third, and in parallel, the Coalition scaled down its own operations with the ultimate aim of redeploying all its air assets. As will be shown below, each process encountered specific challenges.

7.3.2. Air Advising: Dealing with Obstacles

Formally, the Afghan Air Force had never ceased to exist. It was however *de facto* destroyed during the early phases of operation *Enduring Freedom*. Only a hand full of helicopters were left. So, training, advising, assisting and building a new Afghan Air Force had been part of Operation *Enduring Freedom* from the start. Between 2001 and 2004, 6 SOS deployed teams to several countries, including Afghanistan. This was the start of an overall trend. Alan Vick et.al. however noticed that from 2001 onwards, locations 6 SOS deployed to changed, mostly from South America and The Pacific to European and CENTCOMs areas of operations. In addition, the nature of the support had changed, from assisting to training. As a result of both trends, the missions increased in volume and duration. Size of the teams increased, and the average length of the missions increased from about two weeks to almost a month.[43] The foundation of these missions, high-level tactical training, did not change yet however, and did not contribute much to the buildup of the Afghan Air Force. The US started additional initiatives from 2005 onwards, first focusing solely on presidential airlift capability. In 2006, some *ad hoc* training and advising activities

Journal 28, no. 3 (2014): 5-28, 23, Special Inspector General for Afghanistan Reconstruction, "Afghan Special Mission Wing: DOD Moving Forward with $771.8 Million Purchase of Aircraft That the Afghans Cannot Operate and Maintain", (Arlington, VA, June, 2013) https://www.sigar.mil/pdf/audits/2013-05-27-audit-13-13.pdf (accessed October 17, 2016), 2-3, and United States Department of Defense, Inspector General, "Assessment", 97.

41 Marion, *Flight Risk*, 156.

42 Michael R. Boera, "The Combined Air Power Transition Force: Building Airpower for Afghanistan", *Air & Space Power Journal* 24, no. 1 (2010): 16-26, 22, Boera and Birch, "CAPTF", 5, Cordesman, Mausner, and Lemieux, "Afghan National Security Forces", xiv, Matthew A. Douglas and Jonathan Ritschel, "Air Advising in Afghanistan: Building An Organization in Flight", *Air & Space Power Journal* 32, no. 3 (2018): 85-91, and Hill, "Advance", 14.

43 Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 121-126.

were conducted with Mi-17 helicopters. These early efforts for Afghanistan were however not sufficient. The air advising effort began in earnest in 2007, after the installation of a dedicated organization called Combined Air Power Transition Force (CAPTF).[44]

Despite earlier efforts, the advising activities in Afghanistan had to be built from the ground up. With regard to the effort in Iraq in 2004 - 2005, Timothy Childress remarked that the Air Cell of the Coalition Military Assistance Training Team (CMATT), responsible for rebuilding the Iraqi Air Force, consisted of *"four Lt Colonels in a closet"*.[45] The Air Cell lacked manpower, but also specific guidelines, indicating that training of the Iraqi air force was an afterthought to the training of the Iraqi security forces in general.[46] Only after a an accident had taken place on May 30, 2005, in which four US military personnel and an Iraqi airman died, did the US step up its coordinated efforts to rebuild the the Iraqi Air Force.[47]

The situation for the Afghan Air Force may have been worse, although the accident in Iraq could also have increased the focus on the Afghan Air Force. Marion argued the state of Afghan airpower reached its lowest point in 2005. In the previous years, the US had been sluggish in formulating and implementing a comprehensive plan for the Afghan Air Force, making its development lag behind compared to Iraq. Marion suggested several reasons for this situation: American pre-occupation with Iraq in general, the geostrategic importance of that country and its natural resources, higher literacy rate of the Iraqis compared to the Afghans, and a western perception of Afghan primitiveness.[48] This was in addition to the late start of building air forces compared to ground forces. According to George Cully, to the army dominated headquarters in Iraq building Iraqi airpower was an afterthought. The USAF itself in addition had an institutional reluctance to engage in building foreign air forces. Proper attention was given only after the mishap of May 30, 2005.[49] So, it is not surprising that the then Brigadier General Givhan, between September 2008 and September 2009 commander of CAPTF, stated that for the most part "*it's been left to us to figure out how to do this*".[50]

Once resources were in place, the air advisors worked on developing training programs to work on the "airmen build" part of the FID effort in Afghanistan. This was an extensive task, because education and training programs were required for basically every function within the Afghan Air Force. In April 2014, the commander of NATO's air training organization, called NATO Air Training Command -Afghanistan (NATC-A), stated

44 Marion, "Destruction and Rebuilding", 27, and Marion, "Training", 24.

45 Childress, "Improving", 44. "Lt Colonel" is short for "Lieutenant Colonel".

46 Childress, "Improving", 43-49.

47 George W. Cully, *Adapt or Fail: The USAF's Role in Reconstituting the Iraqi Air Force, 2004-2007* (Maxwell Air Force Base, AL: Air University Press, Air Force Research Institute, 2017), passim. See also: Robert R. Allardice and Kyle Head, "The Coalition Air Force Transition Team: Rebuilding Iraq's Air Force", *Air & Space Power Journal* 21, no. 4 (2007): 5-14

48 Marion, *Flight Risk*, 45-46.

49 Cully, *Adapt or Fail*, 142.

50 As cited by Forrest Marion: Marion, "Destruction and Rebuilding", 30. Details about the names of of the training missions, and their developments, will be outlined in paragraph 7.6.

that the Afghan Air Force had about one hundred and sixty specialties.[51] In 2011, British Group Captain Adrian Hill remarked in the *Journal of the JAPCC* that NATC-A was developing approximately one hundred courses for the Afghan Air Force. This did not include basic training. About twenty five of the courses were directly related to aviation. The other courses involved maintenance, professional military education and mission support, the latter including force protection, intelligence, personnel support, ground engineering, finance, logistics, and fire and emergency systems.[52] All these functions were necessary to get the air force to function as a whole. Hill was not specific whether these courses included "train the trainer" courses, but these deserve a specific mention. In order to function autonomously for an extended period of time, the Afghan Air Force not only needed educated and trained personnel, but also trainers, and trainers who could train these trainers. What was also not specific was the fact that these courses could also influence the Afghan Army. Especially in case of kinetic air support, the Army needed specialists who were able to direct air support to intended targets. Therefore, the courses included education and training of Afghan JTACs.[53] Moreover, programs became time constraint. Between 2012 and 2014, it was not clear how many advisors were allowed to stay after the ISAF mission had ended, and senior leadership took into account that the air advisor mission could end on January 1, 2015. Therefore, a reorganization plan, called Interim Success Strategy 2014 (ISS 2014), or the 400 Day Plan, was executed to meet at least minimal requirements. Among other things, it entailed centralizing the air advisor effort on a few locations, and lowering some requirements, most notably English, for the Afghans.[54]

Initially, educating and training Afghan airmen was arduous, and several challenges hampered the creation of a suitable workforce. This started with recruitment. Many Afghan senior leaders were inclined to send their best and brightest to the army rather than to the air force.[55] Not all accepted and trained personnel actually showed up, although there are indications that attendance levels increased once it became publicly known that ISAF was scheduled to leave.[56] There were continuing reports on so called "ghost soldiers" of the Afghan National Defense and Security Forces, referring to the gap between the assigned force strength and the number of personnel actually serving. Although this problem was severe for the Afghan Army and Police Forces, this was not the case for the Afghan Air Force. The AAF did suffer from airmen not showing up for work, but this organization seemed to

51 Anonymous, "US Airmen Advise Afghan Air Force", *Targeted News Service* (April 23, 2014) http://search.proquest.com.nlda.idm.oclc.org/docview/1518781727/CB28730DACB24A98PQ/7?accountid=35226 (accessed November 11, 2016).

52 Hill, "Advance", 13.

53 Boera and Birch, "CAPTF", 13, and Rupert Pengelley, "ATACs Start Afghans Down the Air-ground Integration Road", *Jane's International Defense Review* 47, no. 11 (2014) http://search.proquest.com/docview/1615672455/3D4CB788CF194021PQ?accountid=35226# (accessed October 27, 2014).

54 Marion, *Flight Risk*, 158-165.

55 Marion, *Flight Risk*, 64.

56 Forrest L. Marion, Interview with Colonel Michael R. Outlaw, USAF, and Colonel Daniel E. Blake, USAF, Conducted by Dr. Forrest L. Marion, AFHRA Oral Historian, 24 September 2013, K239.0512-2707, 5-6, and Anonymous, "Afghan Air Force Concern Over Withdrawal", *Air Forces Monthly*, no. 293 (2012): 30.

have highest retention rates and lowest attrition rates of the ANDSF.[57] Nevertheless, not all airmen attended and in a larger perspective, it revealed a potential problem of poor leadership within the Afghan Air Force.[58]

Personnel that did arrive were deeply rooted in the tribal culture of Afghanistan. This could mean that these candidates were not selected on their merits but by their tribal affiliations. This went as far as some warlords being suspected of trying to build their forces in preparation of a renewed civil war which they expected would flare up again as soon as the western forces had left.[59] These candidates personally had no incentive to leave the service, as they only received pay as long as they were employed. Therefore, their presence, performance, and most importantly the air advisor's assessment of that performance, became politicized. Friction could not only develop between the Afghan pilot candidates and the western air advisors, but also between generations within the Afghan community itself. This required cultural awareness and sensitivity on part of the air advisors, who were not in a position to relieve candidates from their positions on the basis of attendance, performance, physical condition, or age.[60] In general, the answer to this problem was to make due, while "elite" units, such as the presidential unit, received the best personnel.[61]

A second problem was more widespread and severe, namely that of language proficiency. Many Afghans were illiterate, and so was personnel already in the military.[62] This meant that pilot candidates either had to learn to read and write first, or that extra recruitment efforts were required to muster the right type of personnel. In both cases, it slowed down recruitment. Next, the candidates had to become proficient on English because it was widely regarded as the language of the international aviation community.[63] This was a great challenge, as many Afghans did not speak English. Initially, they were sent to the US to attend English courses, but several students deserted and left for Canada. Therefore, the US decided to perform these classes closer to or in Afghanistan. Some

57 Marion, *Flight Risk*, 186-194, Special Inspector General for Afghanistan Reconstruction, "SIGAR-16-50-SP Inquiry Letter: DOD Efforts to Eliminate Ghost Personnel From ANDSF Systems ", (August 5, 2016) https://www.sigar.mil/pdf/special%20 projects/SIGAR-16-50-SP.pdf (accessed December 8, 2016), and United States Department of Defense, "Enhancing Security and Stability in Afghanistan", (June, 2016) http://www.defense.gov/Portals/1/Documents/Enhancing_Security_ and_Stability_in_Afghanistan-June_2016.pdf (accessed October 30, 2016), 60. Reason for this differing retention is unknown.

58 Boera and Birch, "CAPTF", 15.

59 Marion, *Flight Risk*, 149.

60 Marion, *Flight Risk*, 57 and 140, and United States Department of Defense, Inspector General, "Assessment", 71. The requirement of age at first glance might seem a bit odd. However, in the early years of the twenty-first century, the average age of the Afghan pilot was 44,7 years, which was approximately the same as the general life expectancy for Afghan males. (Nelson, "Airghanistan", 24). Therefore, younger pilots were in high demand, as it would lead to a higher return on investment.

61 Marion, "Training", 24, and 27-28, and Bernard M. Willi, Colonel, United States Air Force, Interview with the Author, January 29, 2013.

62 Anonymous, "Afghan Air Force", *Website Afghan War News* http://www.afghanwarnews.info/air/afghanairforce.htm (accessed October 1, 2014), Marion, Interview Outlaw, 3, and Richard Sisk, "Afghan Air Force Waits on Light Attack Aircraft", *Website DefenseTech* (April 23, 2013) http://www.defensetech.org/2013/04/23/afghan-air-force-waits-on-light-attack-aircraft/ (accessed November 30, 2016).

63 Marion, "Training", 27-28.

students were educated in the United Arab Emirates, but from 2010 onwards, these classes took place inside Afghanistan, in an English-immersion project called "Thunder Lab".[64] While this helped combat desertion rates for the English courses, there were many other courses that required Afghan personnel to travel abroad. And desertion remained a source for concern, because of the severity of the act, and because it had a negative effect on trust of the coalition forces placed on the Afghans.[65]

The third problem was the qualification of Afghan pilots on the aircraft they were scheduled to be flying. This initial qualification training took place on several locations inside the US, Afghanistan, and other countries like the United Arab Emirates and the Czech Republic.[66] After this training, they were ready to report to their units, were air advisors would perform theater qualification training, and training in multi-ship, multi-type, joint, and combined operations. In order to do so, air advisors organized themselves as kinds of shadow units. At every echelon of the Afghan Air Force organization, there was a coalition equivalent.[67] As flying was concerned, the initial crews were mixed, combining Afghan aircrew with NATO advisors. Later, when the crews were qualified, packages of several airplanes could be mixed.[68] The ultimate goal was that all missions were done by the Afghans via three levels of advising activity. Level one represented the closest level of partnering on a continuous, embedded basis. At level three, advisors visited their Afghan counterparts only periodically.[69]

The challenge of this training and advising was to let the Afghans figure out which system worked best for them, instead of strictly imposing a western system.[70] This required cultural awareness and sensitivity on the part of the air advisors. The Afghans and western advisors had to develop relationships built on mutual trust and rapport. There are indications that mutual trust was sometimes less than ideal. For instance, air advisors

64 Forrest L. Marion, U.S. Air Force Oral History Interview with Lieutenant Colonel Frank D. Bryant, USAF, Conducted by Forrest L. Marion, 438 AEW Historian, 22 Apr 2011, K239.0512-2681, 18, Forrest L. Marion, U.S. Air Force Oral History Interview with Major General Walter D. Givhan, USAF, Conducted by Forrest L. Marion, AFHRA Oral Historian, 21 October 2013, K239.0512-2708, 6, Forrest L. Marion, U.S. Air Force Oral History Interview with Major Melissa Moon-Brown, USAF Retired, Conducted by Dr. Forrest L. Marion, AFHRA Oral Historian, 25 Apr 2013, K239.0512-2692, 4, Hill, "Advance", 13, Marion, "Training", 27-28.

65 Dan Lamothe, "Dozens of Afghan Soldiers Have Gone AWOL in the U.S. In the Past Two Years", *Washington Post - Blogs* (October 6, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1826393570/24AFB726265B4A5BPQ?accountid=35226 (accessed October 10, 2016), and Mujib Mashal, "Desertions in U.S. Slow Training of Afghans: Military Officials Hope to Curb Problem That Threatens Young Air Force", *International New York Times* (December 19, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1750056825/2BF885F7ADDF44CFPQ?accountid=35226 (accessed January 3, 2016).

66 Marion, "Training", 25 and 28. Information on the complete project is scarce and fragmented. The information on the countries is obtained from: United States Department of Defense, "Enhancing June 2016", 60. In this report, it is mentioned that both pilots and maintenance personnel is trained in the countries mentioned.

67 Willi, Interview.

68 Willi, Interview.

69 United States Department of Defense, "Enhancing Security and Stability in Afghanistan", (December, 2015) http://www.defense.gov/Portals/1/Documents/pubs/1225_Report_Dec_2015_-_Final_20151210.pdf (accessed October 30, 2016), 9.

70 Boera, "Combined Airpower Transition Force", 22-24, and Aaron Tucker and Aimal Pacha Sayedi, "Advising the Afghan Air Force", *Joint Forces Quarterly*, no. 80 (2016): 17-24, 20.

found out that several members of the Afghan Air Force preferred the Russian way of operating, in which some older Afghan pilots and maintainers were schooled and which was in general less strict and regulated than the western way. They kept this Russian system "on the side", with the intention to implement it when western advisors had left.[71] A reverse example can be found in the insider attack of April 27, 2011, described in the previous chapter. This incident led the coalition forces to tighten security measures. It in turn hampered communication with the Afghan airmen, and reduced availability of advisors and trainers.[72]

In all, it took significant time to get Afghan airmen to have an effect on the organization and the mission. This phenomenon was known as lead time. In 2015, a representative of the coalition air advisory organization mentioned to the press that it would take about three years to train and educate an Afghan pilot, and five to seven to do the same with maintainers.[73] Maintenance and logistics became a bottleneck in education and training and AAF and SMW remained dependent on US contractor support to maintain its airframes.[74] According to David Kunick, a reason for this was that the US military did not properly incorporate operational sustainment issues in their plans.[75] Specifically for the SMW, this problem was so severe that the Special Inspector General for Afghanistan Reconstruction (SIGAR) in 2013 recommended to suspend all activities to acquire new aircraft until administrative deficiencies were worked out, and a clear plan was laid out to provide the SMW with enough maintenance and logistics personnel.[76]

As time progressed, and transfer was in progress, a fourth problem was highlighted. The handover included funding of future requirements. Initial batches of aircraft, spare parts, equipment and supplies were handed over directly, mostly by the US. After transfer of tasks and authorities to the Afghans, the AAF had to go though the Afghan channels and budgets. As the AAF was not a separate service, it did not have proper seat at the table of procurement and resource allocation projects. The AAF was in a disadvantage to ventilate its priorities. In addition, the division of funds was susceptible to corruption that penetrated many aspects of the Afghan government. In short, the more tasks and responsibilities were handed over to the AAF, the harder it became for this organization

71 Douglas and Ritschel, "Air Advising", 86, Marion, *Flight Risk*, 56, and Marion, "Training", 24 and 27-28.

72 Marion, *Flight Risk*, 121-127, Marion, "Training", 28, Marion, Interview Givhan, 10, and Marion, Interview Outlaw, 12 and 15.

73 Leigh Giangraco, "USAF Relying on European Partners for Near-term Mi-17 Sustainment", *Inside the Pentagon's Inside the Air Force* (November 13, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1732772221/29ACCC8BC085484EPQ?accountid=35226 (accessed November 17, 2015).

74 United States Department of Defense, "Progress Toward Security and Stability in Afghanistan", (October, 2014) http://www.defense.gov/Portals/1/Documents/pubs/Oct2014_Report_Final.pdf (accessed October 30, 2016), 27, United States Department of Defense, "Enhancing December 2015", 56-68, and United States Department of Defense, Inspector General, "Assessment", 39.

75 David D. Kunick, "Building Partner Air Power: The Operational Sustainment Imparity", (Paper, Naval War College, Newport, RI, May 4, 2011) http://www.dtic.mil/dtic/tr/fulltext/u2/a546342.pdf (accessed September 15, 2016).

76 Special Inspector General for Afghanistan Reconstruction, "Special Mission Wing", 15-16.

to obtain the necessary materiel and equipment. This exacerbated the already existing maintenance and sustainment issues even further.[77]

Despite these challenges, the build up of the Afghan Air Force made progress. Recruitment of ANAAC/AAF personnel saw an upward trend, from nearly three thousand in 2009 to more than six thousand in 2013. This was on schedule to reach the goal of eight thousand airmen in 2016, even though availability of manpower lagged behind due to low literacy levels, lack of proficiency on English, and the capacity of the schools.[78] But it was also hampered by inadequate education and literacy levels of the airmen.[79] In the years that followed, recruitment of eligible young airmen remained a challenge. Periodical reports of the US Department of Defense to US Congress confirmed this assessment. A report of 2012 also acknowledged that the AAF was established more recent than other institutions of the ANDSF, which accounted for part of the reason that the AAF lagged behind in development. This was especially the case for maintenance personnel for which the goal of self sustainment in case of the Special Mission Wing was extended to the year 2020.[80] In addition to these problems, the air advising effort was hampered by other challenges, such as shortage of instructor pilots[81], Afghan inability to maintain infrastructure[82], and tension between training and combat demands[83]. So, the general trend with regard to "airmen build" was upward, but showed several structural problems. In 2013, it could therefore be that while one air advisor observed a noticeable improvement in English proficiency, it could also be that an entire class of a specific course was sent home due to their inability to read or write.[84]

77 Jonathan D. Ritschel and Tamiko L. Ritschel, "Improving Resource Management in the Afghan Air Force", *Air and Space Power Journal* 31, no. 2 (2017): 4-16.

78 Cordesman, Mausner, and Lemieux, "Afghan National Security Forces", 119, Hill, "Advance", 11, Keltz, "Getting Our Partners Airborne", and Willi, "Importance", 108.

79 United States Department of Defense, "Report on Progress Toward Security and Stability in Afghanistan", (December, 2012) http://www.defense.gov/Portals/1/Documents/pubs/1230_Report_final.pdf (accessed October 30, 2016), 64. The reports on the progress of Afghan Government institutions were written on a quarterly basis. For this study progress of these institutions in the years 2012 to 2016 is derived from the following issues: United States Department of Defense, "Report on Progress December 2012", United States Department of Defense, "Report on Progress Toward Security and Stability in Afghanistan", (November, 2013) http://www.defense.gov/Portals/1/Documents/pubs/October_1230_Report_Master_Nov7.pdf (accessed October 30, 2016), United States Department of Defense, "Progress October 2014", United States Department of Defense, "Enhancing December 2015", and United States Department of Defense, "Enhancing June 2016".

80 United States Department of Defense, "Report on Progress November 2013", 56 and 58, United States Department of Defense, "Progress October 2014", 50, United States Department of Defense, "Enhancing December 2015", 56 and 61, and United States Department of Defense, "Enhancing June 2016", 60 and 67 Remark extending the goal of self-sustainment of the maintenance organization of the SMW was derived from: United States Department of Defense, "Enhancing December 2015", 61.

81 United States Department of Defense, "Progress October 2014", 49.

82 United States Department of Defense, "Enhancing December 2015", 56-57.

83 United States Department of Defense, "Enhancing December 2015", 57, and United States Department of Defense, "Enhancing June 2016", 68.

84 Forrest L. Marion, U.S. Air Force Oral History Interview with Major Antanas "Tony" Matutis, Lithuanian Air Force, Conducted by Dr. Forrest L. Marion, AFHRA Oral Historian, 28 Jul 2015, K239.0512-2737, 10, and Sisk, "Afghan Air Force".

7.3.3. Afghan Air Operations: In Need of Assistance Rather Than Advise

All these activities had to be combined and expanded in the focus area "operational capability". NATC-A's mission statement was "*to build an Afghan Air Force that is professional, fully independent and operationally capable*".[85] This was also formally agreed with the Afghan Government.[86] The extent to which the Afghan Air Force was conducting operations independently, and their operational effectiveness, are indications of progress in this focus area. In operational terms, the goal was to build an Afghan Air Force that was able to independently execute missions relating to presidential airlift, medical evacuation and casualty evacuation, tactical airlift, ISR, light attack, and training.[87]

The progress in this regard showed mixed results. Of course, initial operations were modest. By 2008, the Presidential Airlift Squadron had become operational, and had flown President Karzai several times above and around Kabul and on one occasion to the vicinity of the city of Khowst in the East of Afghanistan. Also in that year, the Afghan National Army Air Corps flew its first transport missions with Mi-17 transport helicopters in support of Afghan ground forces and ISAF.[88] In the two years that followed, airlift missions by helicopter were the most prominent. These missions had the advantage that they could be executed in direct support of the population, which could have a positive impact on popular support, and in turn legitimacy of the Afghan Government. Examples included rescue operations after deadly avalanches near the Salang Pass in February, 2010, and a two-day rescue operation after floods in the Northwestern area of Afghanistan on July 28 and 29 of that year. Other missions included humanitarian support operations, election support, and cash deliveries in support of building the banking system.[89] Also, transport of human remains by air could be viewed in this context. Doing so in accordance with Muslim cultural requirements was given a higher priority than casualty evacuation. This enhanced trust in the Afghan security forces with the population, but also with the Afghan soldiers and airmen, who could be confident that they would receive proper burial regardless of the location they might die in combat.[90]

However, the range of missions had to expand, and also the Afghans had to become independent. By 2010, many Afghan helicopters flew with mixed crews of ISAF advisors and Afghan pilots and other crew members.[91] In this regard, the build up made progress as well. According to Hill, in 2011 the Afghan Air Force achieved full operational capability in

85 Hill, "Advance", 10.

86 Anonymous, "Afghan AF, NATO Air Training Command Sign Joint Strategic Flightplan", *Targeted News Service* (December 10, 2012) http://search.proquest.com.nlda.idm.oclc.org/docview/1229937861/CB28730DACB24A98PQ/4?accountid=35226 (accessed November 11, 2016).

87 Boera and Birch, "CAPTF", 5, and United States Air Forces Central Command, *ANAAC CONOPS*, 9.

88 Marion, "Destruction and Rebuilding", 28.

89 Hill, "Advance", 11, Forrest L. Marion and Gregory A. Roberts, "The Other Face of Air Power: "Afghan Rescue 705 Flight," July 28-29, 2010", *Air Power History* 59, no. 1 (2012): 20-33, and Willi, "Importance", 109-115.

90 Marion, *Flight Risk*, 83-84, and 153-155.

91 Willi, "Importance", 24.

humanitarian assistance, disaster relief, and non-combatant evacuation operations. Also, progress was made with various skills relating to intra-theater airlift, such as flying with underslung loads. Least developed were the complicated and difficult tasks, such as CAS, air assaults, and flying with night vision equipment. Finally, training of Afghans by Afghans had to start.[92]

By then, ISAF had developed a plan to let the Afghans gradually transition the responsibility for security to the Afghan Government, and throughout 2011 to 2013 the Afghan National Security forces began taking the lead in operations.[93] The Afghan Air Force was part of this development as well, and in June 2013 organically planned and led its first combined arms operation in which airlift and air support were conducted in close coordination with Afghan ground forces.[94] In 2015, the AAF formally took over air security tasks of Afghanistan and in that year flew nearly 4,000 aerial fire missions. This was a sharp increase compared to the previous year, in which it conducted less than a hundred.[95] According to Reuters press agency, the number of missions flown by the Afghans doubled between 2014 and 2015, from 10,060 to 22,260. Between January and May 2016, the Afghans flew 6,930 missions.[96] By 2016, according to the US Department of Defense, the AAF was able to *"independently plan for and provide air assets for logistics, resupply, humanitarian relief efforts, human remains return, CASEVAC, non-traditional ISR, air interdiction, armed overwatch, and aerial escort mission sets"*.[97] It also reported that the SMW by 2016 was able to fly more than eighty percent of its missions unilaterally without coalition advisor or enabler support.[98]

Yet despite these indications of development towards a self-sustaining Afghan Air Force and independent Special Mission Wing of the MoI, this development was hampered and slowed down by a plethora of challenges. Shortage of pilots and other personnel kept plaguing the Afghan Air Force, despite all training efforts.[99] More structural problems were related to the progress of training efforts, availability of assets, and currency of specialized skills. The shortage manifested itself especially in the realm of maintenance and logistics. In addition, there were shortages in personnel with enough skills to operate in situations that required reliance on flight instruments, such as low illumination or adverse weather

92 Hill, "Advance", 12, and United States Department of Defense, Inspector General, "Progress", 5-6.

93 Weitz, "Transition in Afghanistan", 39-31.

94 Anonymous, "Afghan AF Launches Largest Air Operation in 30 Years", *Air Forces Monthly*, no. 207 (2013): 27, Jonathan Schroden, Patricio Asfura-Heim, Catherine Norman and Jerry Meyerle, "Were the Afghan National Security Forces Successful in 2013?", (CNA, January, 2014) https://www.cna.org/CNA_files/PDF/DOP-2014-U-006817-Final.pdf (accessed December 6, 2016), 3, 7-8, and United States Department of Defense, "Report on Progress November 2013", 56-57.

95 Anonymous, "Air Security Responsibility Handed Over to Afghan Security Forces", *Bakhtar News Agency* (January 11, 2015) http://search.proquest.com/docview/1644393625/2CAD1F6927E944FBPQ?accountid=35226 (accessed January 19, 2015), and United States Department of Defense, "Enhancing December 2015", 57.

96 Josh Smith and Mirwais Harooni, "Afghan Air Force Needs More Pilots, As Well As More Planes", *Website Reuters* (August 16, 2016) http://www.reuters.com/article/us-afghanistan-airforce-idUSKCN10RoQD (accessed November 17, 2016).

97 United States Department of Defense, "Enhancing June 2016", 59.

98 United States Department of Defense, "Enhancing June 2016", 75.

99 Smith and Harooni, "Afghan Air Force".

conditions.[100] In addition, by 2014, the AAF only had a rudimentary capability for operations relating to planning for and processing of imagery from ISR missions.[101] By 2016, effectiveness of MEDEVAC missions, despite the increasing numbers, was hampered due to lack of skilled medical aircrews.[102] English proficiency had improved, but especially with regard to Air Traffic Control (ATC), additional language courses were still needed.[103] In one case, specific skills needed improvement, such as refueling training of helicopters in a deployed Forward Arming and Refueling Point (FARP).[104] In 2016, the Afghan C-130 community suffered from a lack of qualified flight engineers and loadmasters.[105]

Kinetic air support was another skill set that was slow to develop. This was partly due to the delays of the delivery of the a new type of aircraft, A-29 Super Tucano light attack aircraft.[106] The AAF filled the temporary gap with armed helicopters. The maiden flight with the Super Tucano took place on January 31, 2016, and flew its first operational strike mission on April 14 of that year. But is was assessed in 2016 that the AAF would reach full operational capability with regard to aerial fire missions no earlier than 2019, well beyond the formal mandate of ISAF. It could also induce shortage of pilots, and consequently the operational capability, of other aircraft, as pilots needed to be re-assigned from that type to the Super Tucano.[107] So, in short, the proficiency of the Afghan Air Force on conducting operations independently showed an upward trend, but had not yet led to a complete functioning air force as a result of shortages of personnel and equipment.

In 2012, there were reports that the Afghan Air Force was infiltrated by criminal networks, and that some missions were not flown in support of the COIN effort but in support of nefarious objectives.[108] This had a relationship with a more structural and

100 Special Inspector General for Afghanistan Reconstruction, "Special Mission Wing", 9, and United States Department of Defense, "Report on Progress November 2013", 54.

101 United States Department of Defense, "Progress October 2014", 48, and United States Department of Defense, "Enhancing December 2015", 2.

102 United States Department of Defense, "Enhancing June 2016", 69

103 Marion, Interview Matutis,7, and Anonymous, "Air Advisors Reduce Mid-air Risks", *US Fed News Service, Including US State News* (March 28, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1667126083/B56EC6A5C44946DDPQ/11?accountid=35226.

104 Lanea J. Sudweeks, David G. Jenkins and John P. Sullivan, "Afghan Air Force Refuel Training", *Army Sustainment* 47, no. 3 (2015): 26-29.

105 United States Department of Defense, "Enhancing June 2016", 62-63.

106 Details on delivery of the Super Tucano will be outlined in paragraph 7.5

107 Keltz, "Getting Our Partners Airborne", 19, Smith and Harooni, "Afghan Air Force", Sopko, John F., Special Inspector General for Afghanistan Reconstruction, "Testimony Before the Subcommittee on Oversight and Investigations, Committee on Armed Services U.S. House of Representatives: Assessing the Capabilities and Effectiveness of the Afghan National Defense and Security Forces", (February 12, 2016) https://www.sigar.mil/pdf/testimony/SIGAR-16-17-TY.pdf (accessed December 10, 2016), 13-14, United States Department of Defense, "Progress October 2014", 27 and 49, United States Department of Defense, "Enhancing December 2015", 34, and 49-55, and United States Department of Defense, "Enhancing June 2016", 20, and 62-68.

108 Maria Abi-Habib, "Afghan Air Force Probed in Drug Running", *Website The Wall Street Journal* (March 10, 2012) http://www.wsj.com/articles/SB10001424052970204276304577263032415519426 (accessed November 17, 2016), Michael Georgy, "U.S. Probes Allegations Afghan Air Force Involved in Drug Running", *Website Reuters* (March 8, 2012) http://www.reuters.com/article/us-afghanistan-airforce-narcotics-idUSBRE8270DU20120308 (accessed November 17, 2016), Marion, "Training", 29-30, and United States Department of Defense, "Report on Progress December 2012", 64.

culturally induced challenge, that of command and control of the Afghan assets. Formally, command and control authority rested at the Air Command and Control Center (ACCC) in Kabul.[109] This ensured proper air support at the right time and location, and also monitored the balance between operations and training missions. In practice, however, planning of air assets was subject to strong influence by local ground commanders. The Afghan social structure, which strongly rested on personal relationships and had the characteristic of fierce individual independence, allowed for ground commanders to use the air assets to suit their personal goals rather than those of the air force or the Afghan Government. Generally, they preferred to show off their ability to command assets with clout, called *wasta* in Arabic. Typically, the Mi-17 "Hip" transport helicopter were popular to this end. And commanders used their telephones to task the air assets directly, rather than the ACCC, not reporting to anyone, and lying about it afterwards. In the process, they crossed maintenance schedules, operational requirements, and training requirements. This did not fundamentally change during the entire air advising endeavor.[110] Formulated concisely: in Afghanistan "*relationships trumped tactics*".[111] It in effect led to a situation where Afghan airpower to a certain extent served criminal or tribal interests, or interests of other solidarity groups.

One other measure of effectiveness was the extent to which the AAF and SMW were able to meet the demands for air support of the other elements of the ANDSF. Several reports indicate that, while the AAF and SMW made progress, they were not able to produce enough air support to meet all requirements, especially with regard to intra-theater airlift by helicopters.[112] In all, sources indicate that the buildup of the Afghan airpower component proceeded slower than anticipated, and slower than the buildup of the other elements of the ANDSF. As a result, the drawdown process of coalition airpower was slower than that of coalition ground forces, and required air advisors longer than anticipated. Also, certain airpower functions were transferred to the Afghan ground forces. For instance, NATO provided the ANDSF with artillery to partly compensate for the lack of CAS assets.[113] Early 2016, the SIGAR stated that the Afghan Air Force was "*still far from fully capable, let alone self-sustaining*".[114] Other sources indicated it would take the AAF up and until 2020 to become fully operational capable.[115]

109 United States Department of Defense, Inspector General, "Assessment", 18.

110 Marion, *Flight Risk*, passim.

111 Marion, *Flight Risk*, 208, and United States Department of Defense, Inspector General, "Progress", 29-34. This element was endemic within the Afghan National Army in general: Grissom, "Shoulder-to-Shoulder", 276-279.

112 United States Department of Defense, "Progress October 2014", 47, United States Department of Defense, "Enhancing December 2015", 52, United States Department of Defense, "Enhancing June 2016", 69, and Weitz, "Transition in Afghanistan", 33.

113 Joseph Anderson and Matthew M. McCreary, "International Security Assistance Force Joint Command 2014: The Year of Change", *Military Review* 95, no. 1 (2015): 16-25, 21, Keltz, "Getting Our Partners Airborne", 8, and Weitz, "Transition in Afghanistan", 34-35.

114 Sopko, John F., Special Inspector General for Afghanistan Reconstruction, "Assessing", 13.

115 Carla Babb, "Afghan Air Force Not Ready Until 2020, Top US General Says", *Voice of America / FIND* (March 11, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1773008096/9BD4ADB9F9C4454DPQ?accountid=35226 (accessed March 21, 2016).

It is difficult to assess the actual state of the Afghan Air Force at any given time. There are many media reports that outline the individual achievements of part of the Afghan Air Force or the general progress.[116] There are however sources that contradict these statements. In media reports in 2013 it can be found that the coalition was exaggerating the actual capabilities of the Afghan Air Force, and that this could obscure the reality that most of the Afghan aircraft were flown by US instructor pilots, and almost exclusively maintained by US Defense contractors.[117] Also in 2013, Cordesman noted that the coalition used the wrong metrics to measure progress of the ANDSF in general. These metrics were focused on the transition of authorities, and not the actual capabilities of the ANDSF.[118] The SIGAR testified in 2016 that the tools the coalition used to measure and assess capabilities and effectiveness of the ANDSF had continuously changed, hampering an comprehensive assessment, and that the assessments increasingly lacked sufficient detail. He however did not propose a explanation.[119]

These three statements could lead one to conclude that the coalition was reasoning towards a goal, namely transfer of authorities, and was adapting reports accordingly. However, it could also be that the magnitude and the nature of the task in Afghanistan prohibited detailed and reliable reporting. For instance, this could be the case with regard to language proficiency of ATC personnel. The source that mentioned the improvement of ATC was referring to Kandahar, while the source indicating lack of English proficiency was referring to Jalalabad.[120] Major General (select) Michael R. Boera, commanding general of CAPTF, and Lieutenant Colonel Paul Birch, staff officer of CAPTF, in 2010 offered a more systemic analysis. They suggested that the system that partnered Afghan personnel with coalition advisors was prone to complacency. They compared the system with a parallel "ladder" structure, in which the Afghan system represented one pole, the coalition advisors the other pole, and the advising and assisting activities the links between the two. According to Boera and Finch, a break in one link of the functioning system might not become immediately obvious, as the parallel structure could compensate. Formulated differently, they stated that the ISAF support structure could have a tendency to adapt to

116 For instance: Anonymous, "US Airmen". Between 2005 and the end of 2016, *Air Forces Monthly* published about eighty articles on the ANAAC of AAF.

117 Gary Owen, "Another Post-2014 Capability Gap: Spin and Reality of the Afghan Air Force's Readiness", *Website Afghanistan Analysts Network* (July 11, 2013) http://www.afghanistan-analysts.org/another-post-2014-capability-gap-spin-and-reality-of-the-afghan-air-forces-readiness/ (accessed November 17, 2016), and Mark Young, "Rethink Afghan Air Force", *Defense News* (March 25, 2013) http://search.proquest.com/docview/1324402419/B1D8CFE5A8AE4EB6PQ/108?accountid=35226 (accessed October 1, 2014).

118 Anthony H. Cordesman, "Failing Transition: The New 1230 Report on Progress Towards Security and Stability in Afghanistan", (Center for Strategic & International Studies, August 5, 2013) https://csis-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/publication/130805_failingtransition_afghanistan.pdf (accessed November 11, 2016), passim.

119 Sopko, John F., Special Inspector General for Afghanistan Reconstruction, "Assessing", 9-10. SIGAR had noticed problems with regard to assessing the actual state of the ANDSF before: Office of the Special Inspector General for Afghanistan Reconstruction, "Actions Needed to Improve the Reliability of Afghan Security Force Assessments", (SIGAR Audit-10-11 Security/ANSF Capability Ratings, June 29, 2010) https://www.sigar.mil/pdf/audits/2010-06-29audit-10-11.pdf (accessed April 22, 2017).

120 On Kandahar: Marion, Interview Matutis, 7. On Jalalabad: Anonymous, "Air Advisors".

a broken Afghan structure. Dysfunctional reporting on the progress was one of the five deleterious effects they identified.[121] Formulated this way, dysfunctional reporting was not so much a representation of purposefully over-reporting of the achievements, but rather a systemic and culturally induced underreporting of the problems. In variance to this argument, some authors suggested that the system insufficiently allowed Afghans to fail as part of their learning process, resulting in a situation of over-dependence on the air advisors. The advisor's postures relied too much on assisting, rather than advising.[122]

7.3.4. Coalition Air Operations: Yo-Yo of Deployments and Operations

Increased activity of the ANDSF coincided with a decrease in military activity from the coalition, although the coalition would not pull out immediately and completely. On May 2, 2012, the US and Afghanistan signed a Strategic Partnership Agreement, in which the US pledged support in the fields of economy, security, and diplomatic assistance until 2014.[123] Accordingly, restrictions were placed on situations where coalition airpower could support Afghan forces. Coalition air operations decreased as the activity of the Afghan Air Force increased, but did not stop altogether.[124] The number of annual sorties controlled by US Air Forces Central (AFCENT) decreased from 21,900 to 4,846 between January 2013 and December 2016. Some types of missions dropped to zero or nearly zero, such as airdrops and casualty evacuation missions. In 2016, the number of ISR missions were half that of 2011. Paradoxically, this revealed a relative increase of the importance of ISR in the new setting relative to kinetic sorties, because the latter sorties decreased at a faster pace than the former.[125] This reflected a change of mindset, in which activities were transferred to the Afghans. Tactics, techniques, and procedures that had changed since the tactical directives of McChrystal and his successors were largely left unchanged, but direct support to the Afghans was no longer available by default, but only in extreme circumstances. In order to receive NATO airpower, in principle there also had to be NATO forces embedded within the ground unit. From a coalition airpower perspective, there was a return to a regional

121 Boera and Birch, "CAPTF", 14-15. This situation resembled that of the Afghan National Army as well: Grissom, "Shoulder-to-Shoulder", 275-276.

122 Douglas and Ritschel, "Air Advising", 87, and Tucker and Pacha Sayedi, "Advising", 20.

123 Weitz, "Transition in Afghanistan", 31.

124 Jim Michaels, "U.S. Places Task of Fighting Taliban on Afghan Shoulders: Commanders Deny Calls for Airstrikes", *USA Today* (December 30, 2014) http://search.proquest.com/docview/1640898183/18CF1CD0CD3245EDPQ?accountid=35226 (accessed January 3, 2015), and Gary Wetzel, *A-10 Thunderbolt II Units of Operation Enduring Freedom 2008-14* (Osprey Publishing Limited, 2015), Electronic Publication, chapter 5.

125 Anonymous, "Combined Forces Air Component Commander 2011-2016 Airpower Statistics", *Website US Air Forces Central Command* (November 30, 2016) http://www.afcent.af.mil/Portals/82/Airpower%20Summary%20-%20November%202016.pdf?ver=2016-12-07-034624-573 (accessed December 12, 2016). Major General Polumbo, commander of 9 AETF-Afghanistan from May 2012 to May 2013, stated that the focus of the air war would shift towards ISR: Anonymous, "Major General H.D. Polumbo Jr", *U.S. Air Force Website* (May, 2013) http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/107981/major-general-h-d-polumbo-jr.aspx (accessed November 28, 2013), and Sisk, "Afghan Air Force".

outlook with Troops in Contact (TIC) responses as the main focus. The TIC response times were still below ten minutes.[126] Another change was that coalition airpower was no longer primarily stationed inside Afghanistan. This increasingly came from US carriers in the Gulf, and semi-permanent bases in the Gulf region.[127] The developments described above were reflected in the number of aircraft losses. It showed a sharp decrease in relation to coalition air operations. As the AAF increased its activity, the incidents with Afghan airframes increased as of 2013. The overall threat towards aircraft did not change.[128]

Nevertheless, there were some noteworthy incidents. On October 11, 2015, a British Mk2 Puma helicopter reportedly struck a monitoring balloon or its tethering cable on Kabul International Airport[129]. During the period described in this time frame, the Taliban reportedly in three separate occasions managed to take hostage passengers and crews of aircraft that had crashed. Although it did not involve coalition military aircraft, this was new to Afghanistan.[130] Also relatively new were reports about a fixed wing fighter, and

126 Anderson and McCreary, "Year of Change", 17 and 21, Keltz, "Getting Our Partners Airborne", 17, and I.D. Teakle, Air Commodore, Royal Air Force, Interview with the Author, April 23, 2013.

127 Anonymous, "US Marine Corps Prowlers Move From Afghanistan to Qatar", *Air Forces Monthly*, no. 313 (2014): 17, and Sisk, "Afghan Air Force".

128 Attacks on AAF airframes, especially helicopters became a regular occurrence by 2014 (Marion, *Flight Risk*, 177-180). For the years 2013 - 2016, *Air Forces Monthly* reported 65 aircraft incidents, of which only 4 were due to enemy activity. In 2016, there were only 7 incident, none of which involved enemy activity. It should be stated that many reports of early 2013 referred to UAV-incidents that took place in 2011 - 2012, thus confirming the picture drawn in the previous chapter. After 2012, the frequency of these incidents in Afghanistan decreased, even though media sources reported that the overall problem increased (Dave Allport, "Attrition", *Air Forces Monthly*, no. 166-345 (2003-2016) and Craig Whitlock, "More Air Force Drones Are Crashing Than Ever As New Problems Emerge", *Washington Post - Blogs* (January 20, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1758079434/2A8AF6D90E0E4843PQ?accountid=35226 (accessed January 27, 2016)). In terms of human losses, there were some incidents that inflicted a significant number of coalition forces killed in action. Examples include crashing of an US transport helicopter in December 2013, a crash of an Afghan Mi-17 transport helicopter, and crash of a C-130 transport aircraft in September 2015. These incidents claimed 6, 17, and 11 lives, respectively (Ehsanullah Amiri and Margherita Stancati, "Afghan Air Force Helicopter Crashes, Killing 15 Soldiers, Two Crew; Afghan Defense Officials Say Crash Caused by a 'technical Flaw'", *Wall Street Journal (Online)* (August 6, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1701890286/F8F8D07A1E224BD7PQ?accountid=35226 (accessed August 10, 2015), Gareth Jennings, "Afghan 'Hip' Transport Helo Crashed", *Jane's Defence Weekly* 52, no. 38 (2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1702042809/F8F8D07A1E224BD7PQ?accountid=35226 (accessed August 10, 2015), Theodore Schleifer, "11 Killed When U.S. C-130 Plane Crashed in Eastern Afghanistan", *CNN Wire Service* (October 1, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1718241066/994EF78D17C5456DPQ?accountid=35226 (accessed October 13, 2015), and Cid Standifer and Jon Harper, "Helicopter Crash Kills 6 US Troops in Afghanistan", *McClatchy - Tribune Business News* (December 17, 2013) http://search.proquest.com/docview/1468684066?accountid=35226 (accessed December 30, 2016)). *iCasualties.org* reported 80 aircraft related fatalities between 2012 and the end of 2016, of which 15 were directly or indirectly were inflicted by opposing forces. According to the website, the total number of fatalities was 327 of 3528 coalition fatalities for the period 2001 - 2016. Of those 327, 90 were directly or indirectly inflicted by activity of enemy action, and 237 were due to other circumstances. (Anonymous, "Operation Enduring Freedom: Fatalities", *iCasualties.org* http://icasualties.org/OEF/Fatalities.aspx (accessed December 30, 2016)). Although the reliability of the absolute numbers is low due to the lack of detail of information and omission of Afghan casualties, they confirm the notion that most incidents were accidents induced by technological malfunction, meteorological conditions, human error, or a combination of those variables.

129 Marion, *Flight Risk*, 210.

130 Anonymous, "Afghanistan Says Negotiating Release of Helicopter Hostages - Russian Website", *BBC Monitoring Former Soviet Union* (April 24, 2013), Anonymous, "Taleban Claim Responsibility for Shooting Down Chopper in Afghan North", *BBC Monitoring Newsfile* (November 25, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1735810985/E9B80B7191E54674PQ?accountid=35226 (accessed November 30, 215), Anonymous, "Mi-17 Helicopter Crash", *The Financial Daily* (August 9, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1810071058/71AC100FD20B4426PQ?accountid=35226 (accessed September 6, 2016), Nathan Hodge and Emre Peker, "World News: Helicopter Passengers, Crew Held by Taliban", *Wall Street Journal, Eastern Edition* (April 23, 2013) http://search.proquest.com/docview/1335008583/61524

F-16 were effectively engaged by small arms fire by the Taliban.[131] Also, the first report of downing coalition aircraft by a new insurgent group, known as Islamic State-Khorasan (IS-K), was found in the media.[132] On July 2, 2014, a suicide bomber managed to kill eight Afghan Air Force officers in a suicide attack on a bus carrying them though the city of Kabul.[133] In another noteworthy incident one Afghan MD530 was destroyed when it landed on an IED that was placed on a hilltop near Shindand Airbase. Many details were left unreported, but *AFM* mentioned that the incident took place during a routine training mission. The aircraft was lost. The crews survived, but sustained severe injuries.[134] This type of incident was very rare. It might be that the insurgents were aware of the routine patterns that were possibly flown from Shindand, and that they subsequently assessed that placing an IED on that hilltop would provide a high probability of success. On the other hand, it might be just coincidence. In all, the threat towards flying aircraft stayed the same. The biggest temporary aircraft loss during a single event was caused by meteorological conditions. On April 23, 2013, a freak hailstorm at Kandahar Airfield, that lasted about thirty minutes and reportedly contained hailstones the size of golf balls, caused damage to dozens of aircraft that were parked in the open.[135]

However, there was increased activity in some areas as well. Logically, strategic airlift remained important. Redeployment of ground troops increased the need for strategic airlift, leading the US Air Force to employ C-5M "Galaxy" strategic airlifters in a tactical role to unburden the C-17 fleet. Also, some troops remained. Therefore, airlift missions

A5ACED84048PQ/11?accountid=35226 (accessed October 21, 2014), and Josh Smith, "Taliban Take Afghan Captives After Chopper Makes Emergency Landing", *Stars and Stripes* (November 24, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1735800384/F1B96C8A328B4E91PQ?accountid=35226 (accessed November 30, 2015)).

131 Thomas Gibbons-Neff, "In Rare Attack, U.S. F-16 Hit with Small Arms Fire Over Afghanistan", *Washington Post - Blogs* (October 19, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1723458886/937B4F045A474870PQ?accountid=35226 (accessed October 26, 2015), and Josh Smith, "F-16 Damaged by Taliban-claimed Fire in Afghanistan", *Stars and Stripes* (October 19, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1723289292/937B4F045A474870PQ?accountid=35226 (accessed October 26, 2015).

132 Anonymous, "US Chopper Reportedly Shot Down by ISIL in Central Afghanistan", *FARS News Agency* (November 14, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1838752108/5957B8F5907246EDPQ?accountid=35226 (accessed November 23, 2016).

133 Ahmed Azam and Jawad Sukhanyar, "8 Afghan Air Force Officers Killed in Suicide Bombing: [foreign Desk]", *New York Times, Late Edition (East Coast)* (July 3, 2014) http://search.proquest.com/docview/1542267124?accountid=35226 (accessed December 30, 2016), and Sayed Salahuddin, "Suicide Bomber Kills 8 Members of Afghan Air Force", *The Washington Post* (July 3, 2014) http://search.proquest.com/docview/1542266291?accountid=35226 (accessed December 30, 2016).

134 Dave Allport, "Accident Reports", *Air Forces Monthly*, no. 308 (2013): 27.

135 Dave Allport, "Accident Reports", *Air Forces Monthly*, no. 303 (2013): 25, Anonymous, "Afghanistan Hailstone Storm Kills Three and Grounds British Aircraft", *Telegraphh.co.uk* (April 25, 2013) http://search.proquest.com/docview/1346027360/26186F1EFD2042FEPQ/396?accountid=35226 (accessed October 2, 2014), Emma Graham-Harrison, "Afghanistan: Freak Hail Storm Ravaged 80 NATO Helicopters", *The Guardian* (June 28, 2013) http://search.proquest.com/docview/1372124614/962E29134C5405DPQ/9?accountid=35226 (accessed December 29, 2016), Craig Hoyle, "Afghan Hailstorm Leaves UK with £10 Million Repair Bill", *Flight International* 185, no. 5424 (2014) http://search.proquest.com/docview/1498454279?accountid=35226 (accessed December 30, 2016), Gareth Jennings, "UK Still Assessing Cost of Afghan Hail Damage", *Jane's Defence Weekly* 51, no. 1 (2013) http://search.proquest.com/docview/1462477908/4960D49A4C944CD4PQ/3?accountid=35226 (accessed December 29, 2016), Gareth Jennings, "Cessna to Repair Hail Damaged AAF Aircraft", *Jane's Defence Weekly* 50, no. 45 (2013) http://search.proquest.com/docview/1440604733/4960D49A4C944CD4PQ/11?accountid=35226 (accessed December 29, 2014), and Jen Judson, "April Hail Storm in Afghanistan Caused $60 Million in Damage to Army Aircraft", *InsideDefense.com's Sitrep* (January 8, 2014) http://search.proquest.com/docview/1475112993/4960D49A4C944CD4PQ/14?accountid=35226 (accessed December 29, 2016).

to resupply the advisors remained important after the formal end of ISAF and OEF.[136] Some missions were influenced by developments in Pakistan as well. Mid-2014, Pakistan launched a joint military operation in the Federally Administered Tribal Areas (FATA) after negotiations with opposing groups in that area had failed. It was a long term operation, involving 30,000 soldiers and accompanying kinetic air support and airborne ISR, aimed at regaining control of the area, in which it arguably succeeded.[137] As a result, coalition ISR operations in the border region with Afghanistan and Pakistan were stepped up, in order to deal with the anticipated second-order effects of militants fleeing from FATA into Afghanistan.[138]

But most importantly, the number of kinetic engagements rose again as a result of the deteriorating security situation. After years of decrease, the numbers of sorties with at least one weapon release and the number of weapon releases increased in 2016.[139] Insurgent groups increased their activities initially in rural areas, but later also to the cities. Most notably, the Taliban was able to seize the city of Kunduz late September, early October 2015. Although Afghan transport aircraft were said to provide a valuable contribution, the ANDSF were unable to retake the city without coalition (American) air support. In other cases too the ANDSF still relied on outside airpower. With the exception of Kunduz, it was able to maintain a reasonable level of security in the major population centers, but in the rural areas it was only able to gain temporary ascendancy of the insurgents. In addition, the new insurgent group emerged in Afghanistan, namely a regional branch of Islamic State, called Islamic State-Khorasan (IS-K). Emergence of Islamic State in the Middle East gave cause to a new operation in Iraq and Syria from late 2014 onwards, called *Inherent Resolve*. Although

136 Courtney Albon, "Air Mobility Command Utilizing C-5M for Tactical Retrograde Mission", *InsideDefense.com's SitRep* (November 7, 2014) http://search.proquest.com/docview/1621139849/9B380C1ECBD8426DPQ?accountid=35226 (accessed November 9, 2014), Anonymous, "C-17 Missions Still Continue Into Afghanistan", *US Fed News Service, Including US State News* (October 13, 2016), and Anonymous, "18th Air Force Goes Big on Retrograde Operations", *US Fed News Service, Including US State News* (October 25, 2014) http://search.proquest.com/docview/1616054003/5DF4C3FF36594DADPQ?accountid=35226 (accessed November 2, 2014).

137 Hamid Hussain, "Pakistan Army Military Operations: Summary", *Defence Journal* 19, no. 10 (2016): 60-62, 61-62, Umbrain Javaid, "Operation Zarb-e-Azb: A Successful Initiative to Curtail Terrorism", *South Asian Studies* 30, no. 2 (2015): 43-58, and Umbreen Javaid, "Zarb-e-Azb and the State of Security in Pakistan", *Journal of the Research Society of Pakistan* 53, no. 1 (2016): 159-170, 65-69.

138 Anonymous, "US Hikes Surveillance on Pak-Afghan Border", *Financial Post* (June 18, 2014) http://search.proquest.com/docview/1536614094?accountid=35226 (accessed December 31, 2016). Media reports suggest that the ISR effort in Afghanistan in general could have become strained due to the decreasing number of bases the UAVs could operate from as a result of the US drawdown (David E. Sanger and Eric Schmitt, "Afghanistan Exit Imperils Drone Mission: U.S. Fears Losing Ability to Strike Al Qaeda and Monitor Pakistan's Arms", *International New York Times* (January 28, 2014) http://search.proquest.com/docview/1491804566?accountid=35226 (accessed December 31, 2016)). It was also reported that the US had to cut down on UAS missions as a result of a manpower shortage (Christopher Drew and Dave Philipps, "As Stress Drives Off Drone Operators, Air Force Must Cut Flights", *The New York Times Website* (June 16, 2015) http://www.nytimes.com/2015/06/17/us/as-stress-drives-off-drone-operators-air-force-must-cut-flights.html?_r=0 (accessed November 12, 2015)). Finally, *The New York Times* reported that the US increasingly had to rely on contractors to compensate for the dearth of military UAS operators (Michael S. Schmidt, "Air Force, Short of Drone Pilots, Uses Contractors to Fight Terror: [Foreign Desk]", *New York Times, Late Edition (east Coast)* (September 6, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1816797366/F1AC063CE9FE47AoPQ?accountid=35226 (accessed September 20, 2016)). Although these reports suggest that the ISR effort may have become strained, the presented evidence is not solid enough to support such a statement. Further scrutiny is required.

139 Anonymous, "CFACC Airpower Statistics 2007-2010".

IS-K was not dominant in Afghanistan, and posed a threat to other insurgent groups as well, the emergence of IS-K in Afghanistan led the US to expand targeting authorities for offensive operations. This in turn led to increased involvement of western SOF units and to an increase of airstrikes from the coalition in Afghanistan.[140] From mid-2016 onwards, reports emerged that the direct support could include actions directed towards the Taliban as well. This indicated a conceptual step back, from supporting indigenous forces engaging opposing forces to engaging the opposing forces directly. And it was also reported that additional ground forces not belonging to SOF were deployed to Afghanistan. The planned drawdown from 9,800 to 8,400 by the end of 2016 was slowed down, and additional 2,300 additional forces were scheduled to move in. This included an 800 man strong combat aviation brigade containing attack helicopters and transport helicopters. These forces did not deploy immediately, but were scheduled to do so in the winter of 2016 - 2017, about a year after the previous aviation unit had departed.[141]

140 Anonymous, "800 Aviation Troops Deploying to Afghanistan", *TOLONews* (July 27, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1807049006/3CBC1338D0914F36PQ?accountid=35226 (accessed August 8, 2016), Anonymous, "U.S. Forces Providing Air Support to Afghan Soldiers During Special Operations", *TOLONews* (October 20, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1830633070/741C5E2664C140C0PQ?accountid=35226 (accessed October 24, 2016), Ahmed Azam and Joseph Goldstein, "Taliban Gains Pull U.S. Units Back Into Fight: [Foreign Desk]", *The New York Times* (April 30, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1676529121/24114E728E22483FPQ?accountid=35226 (accessed May 15, 2015), Carla Babb, "Airstrikes, Injuries Underscore Greater US Involvement in Afghan Fight", *Voice of America News* (July 28, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1807614168/88FD5CBEBDE4CE5PQ?accountid=35226 (accessed August 8, 2016), David Jolly and Taimoor Shah, "Afghan Province Draws in Extra U.S. Forces: Air Raids and Elite Troops Said to Be Helping Save Helmand From Taliban", *International New York Times* (December 15, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1748594908/BD58BDE69CA140D6PQ?accountid=35226 (accessed January 3, 2016), Jessica Donati and Habib Khan Totakhil, "U.S. Adds Forces in Afghanistan to Fight Islamic State; Move Aimed at Rolling Back the Group's Gains in Eastern Areas", *Wall Street Journal (Online)* (July 27, 2016) http://search.proquest.com/docview/1807132218/D5CB27E296B743C6PQ/4?accountid=35226 (accessed December 13, 2016), Antonio Giustozzi and Silab Mangal, "An Assessment of the 2016 Fighting Season of the Taliban", *IHS Jane's Terrorism and Insurgency Monitor* 16, no. 10 (2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1830806689/71F7D2F6A8734DB5PQ?accountid=35226 (accessed October 24, 2016), Joseph Goldstein, "U.S. Increases Airstrikes in Afghanistan on Taliban and Its New Rival, ISIS: [Foreign Desk]", *The New York Times* (July 16, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1696635658/7A1A5D305ABB497APQ?accountid=35226 (accessed July 12, 2015), Gary Owens, "Afghanistan Never Really Banned Night Raids in the First Place", *Website Vice News* (November 24, 2014) https://news.vice.com/article/afghanistan-never-really-banned-night-raids-in-the-first-place (accessed August 9, 2016), Michael S. Schmidt, "U.S. Steps Up Airstrikes Against ISIS After Group Makes Gains in Afghanistan: [Foreign Desk]", *New York Times, Late Edition (East coast)* (March 19, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1774288397/9BD4ADB9F9C4454DPQ?accountid=35226 (accessed March 21, 2016), Michael S. Schmidt and Eric Schmitt, "U.S. Broadens Fight Against ISIS with Attacks in Afghanistan", *The New York Times Website* (January 31, 2016) http://www.nytimes.com/2016/02/01/us/politics/us-broadens-fight-against-isis-with-attacks-in-afghanistan.html (accessed February 17, 2016), Josh Smith, "Afghan Aircraft Form Lifeline to Besieged Cities", *Stars and Stripes* (October 14, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1722023111/699962CA89FC4D29PQ?accountid=35226 (accessed October 20, 2015), Sopko, John F., Special Inspector General for Afghanistan Reconstruction, "Assessing", 3 and 13, United States Department of Defense, "Enhancing December 2015", 1-2, and 16, United States Department of Defense, "Enhancing June 2016", 2 and 25-27, and Brian Glyn Williams, *Counter Jihad: America's Military Experience in Afghanistan, Iraq, and Syria* (Philadalphia, PA: University of Pennsylvania Press, 2017), 251-257.

141 Anonymous, "Combat Aviation 'Demon' Brigade Prepares to Return From Afghanistan", *TCA Regional News* (April 8, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1885079741/5871EC561A5E462CPQ/1?accountid=35226 (accessed April 10, 2017), Anonymous, "First US Raids Target Afghan Taliban Since Obama Order", *TCA Regional News* (June 25, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1799372490/E62180C7109C4DBCPQ?accountid=35226 (accessed June 27, 2016), Anonymous, "First US Airstrikes Hit Afghan Taliban", *The Financial Express* (June 25, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1799378195/E62180C7109C4DBCPQ?accountid=35226 (accessed June 27, 2016), Anonymous, "U.S. Adds Force in Afghanistan to Fight Daesh", *TOLONews* (July 28, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1807248851/1638E2F51CFA4E01PQ?accountid=35226 (accessed August 8, 2916), Anonymous, "US Army Choppers Head Home From Afghanistan", *Air Forces Monthly*, no. 328 (2015): 30, Anonymous, "US Army to Send

The new operational reality had its effect on civilian casualties and collateral damage. Developments with regard to civilian casualties, and those inflicted by the air weapon, reflected the developments of the security situation in general. In their annual report on civilian casualties of 2014, the United Nations Assistance Mission in Afghanistan (UNAMA) reported a decrease in civilian casualties cause by aerial fires. It stated "*the decrease in civilian casualties may be attributed to the reduced frequency of aerial operations conducted by ISAF and an on-going commitment from international forces to mitigate civilian harm during their operations*".[142] It also observed that:

> "the advanced surveillance technology, equipment and extensive intelligence networks used by international military forces, combined with a policy framework and operational guidance oriented toward reducing harm, are sufficiently robust to provide the degree and kind of care that prevents, if not eliminates, targeting errors that may result in civilian casualties".[143]

However, a year later UNAMA reported a rise in civilian casualties due to the deteriorating security situation and the increased number of air operations executed by the AAF. The percentage of aerial-inflicted civilian casualties was still low, about three percent, but the number rose. This was mostly due to the increased fighting, such as around Kunduz in 2015. The coalition accounted for slightly over half the number of the casualties (57%). But UNAMA acknowledged that this percentage included one fatal attack on a hospital of *Médecins Sans Frontières* in Kunduz on October 3, 2015. In this strike, a US gunship inflicted 85 civilian casualties, 42 deaths and 43 injured. The total number, both from coalition and Afghan air operations, was 296 (149 deaths and 147 injured).[144] As a result of the rise of

800-member Aviation Unit to Afghanistan", *The Hindustan Times* (July 27, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1807103511/3CBC1338D0914F36PQ?accountid=35226 (accessed August 8, 2016), Anonymous, "US Expands Air Strikes on Taliban in 2016: Survey", *TOLONews* (June 17, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1797580147/BE5AF0A0B7F340D6PQ?accountid=35226 (accessed June 24, 2016), Anonymous, "800 Aviation Troops", David Jolly and Taimoor Shah, "U.S. Secretly Steps Up Role Against Taliban in Afghanistan", *International New York Times* (December 14, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1748418167/2BF885F7ADDF44CFPQ?accountid=35226 (accessed January 3, 2016), Alex Horton, "2,300 US Soldiers Headed to Afghanistan This Winter", *TCA Regional News* (December 8, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1847074228/D5F907191ADE4764PQ?accountid=3522 (accessed December 12, 2016), Gordon Lubold, Adam Entous and Julian E. Barnes, "Military Seeks More Airstrikes on Taliban", *Wall Street Journal, Eastern Edition* (May 24, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1790561258/8FBFF5B6BABE4296PQ?accountid=35226 (accessed June 1, 2916), and Tom Vanden Brook, "U.S. Launches First Attacks on Taliban Under New Rules", *USA Today* (June 23, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1799254151/E62180C7109C4DBCPQ?accountid=35226 (accessed June 27, 2016).

142 United Nations Assistance Mission in Afghanistan (UNAMA), "Afghanistan Annual Report 2014: Protection of Civilians in Armed Conflict", (Kabul, February, 2015) http://unama.unmissions.org/sites/default/files/old_dnn/UNAMA/human%20rights/2015/2014-Annual-Report-on-Protection-of-Civilians-Final.pdf (accessed August 10, 2016), 93.

143 United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2014", 94-95.

144 United Nations Assistance Mission in Afghanistan (UNAMA), "Afghanistan Annual Report 2015: Protection of Civilians in Armed Conflict", (Kabul, February 2, 2016) http://unama.unmissions.org/sites/default/files/poc_annual_report_2015_final_14_feb_2016.pdf (accessed December 20, 2016), 20 and 59-60. The incident with the hospital was widely publicized and criticized, inducing an internal investigation by the US. About a six month after the event, disciplinary action was taken against 16 personnel involved, although all were absolved from facing criminal charges (Spencer Ackerman and Sunne Engel Rasmussen, "Kunduz Hospital Attack: MSF's Questions Remain As US Military Seeks No Charges", *The*

civilian casualties, the tensions between the US and the Afghan Government remained. And the general increase of civilian casualties continued into 2016.[145] In that year, UNAMA recorded 590 civilian casualties (250 deaths and 340 injured) inflicted by the air weapon. This number nearly doubled the casualty rate of 2015, and was the highest number since 2009.[146] This number amounted to about five percent of the total number of civilian casualties, and twenty two percent of civilian casualties inflicted by pro government forces. Most casualties were still induced by the insurgents, or were induced by ground engagements.[147]

New in this dynamic was that part of the number of civilian casualties was inflicted by the Afghan Air Force. For 2016, UNAMA estimated that forty three percent of the airpower-induced civilian casualties were inflicted by the AAF, and forty percent by coalition airpower. For seventeen percent of the airpower-induced casualties, UNAMA was unable to identify who inflicted them. UNAMA welcomed the development of training of the 130 Afghan Tactical Air Controllers (ATACs), the Afghan variants of JTAC, which could improve air-ground integration and minimizing civilian casualties.[148] Involvement of the AAF was not surprising, as the ANDSF assumed the leading role for more operations than before. Therefore, this meant that the challenge of civilian casualties increasingly became an internal Afghan matter, although the application of force by western airpower was still possible. From 2013 onwards however, Tactical Directives and Rules of Engagement

Guardian (April 29, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1785400958/E431A538649745B4PQ?accountid=35226 (accessed May 4, 2016), Anonymous, "Pentagon Disciplines 16 for Deadly Attack on Doctors Without Borders Hospital in Afghanistan", *Bakhtar News Agency* (April 30, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1785463936/E431A538649745B4PQ?accountid=35226 (accessed May 4, 2016), Anonymous, "Afghan Government Hails US Findings on Konduz Hospital Bombing", *BBC Monitoring Newsfile* (April 30, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1785489164/E431A538649745B4PQ?accountid=35226 (accessed May 4, 2016), W.J. Hennigan, "U.S. Punishes 16 for Deadly Raid: No Criminal Charges From Oct. 3 Attack", *Chicago Tribune* (April 29, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1785174230/A0AD77DEE0BE46B8PQ?accountid=35226 (accessed May 4, 2016), Terri Moon Cronk, "Mistaken Kunduz Airstrike Results in Greater Focus, Official Says", *U.S. Department of Defense Information / FIND* (December 2, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1845418975/6B9C4CBC45374904PQ?accountid=35226 (accessed December 8, 2016), and Paul Sonne, "Military Disciplines 16 for Errors Leading to 2015 Attack on Afghan Hospital; Rights Groups Decry Lack of 'full Justice', Demand Independent Prosecutor", *Wall Street Journal (Online)* (April 29, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1785308048/E431A538649745B4PQ?accountid=35226 (accessed May 4, 2016)).

145 Ahmed Azam, "Tensions Between Afghanistan and U.S. Increase As Airstrike Kills Civilians: [foreign Desk]", *The New York Times, Late Edition (East Coast)* (January 16, 2014) http://search.proquest.com/docview/1477773025?accountid=35226 (accessed December 31, 2016), and United Nations Assistance Mission in Afghanistan (UNAMA), "UN Chief in Afghanistan Renews Call for Parties to Protect Civilians: UNAMA Releases Civilian Casualty Data for Third Quarter of 2016", (October 19, 2016) http://unama.unmissions.org/sites/default/files/19_october_2016_-_un_chief_in_afghanistan_renews_call_for_parties_to_protect_civilians_english.pdf (accessed December 20, 2016).

146 United Nations Assistance Mission in Afghanistan (UNAMA), "Afghanistan Annual Report 2016: Protection of Civilians in Armed Conflict", (Kabul, February, 2017) protection_of_civilians_in_armed_conflict_annual_report_2016_final280317.pdf (accessed April 25, 2017), 83.

147 United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2016", 5-6, and 82.

148 United Nations Assistance Mission in Afghanistan (UNAMA), "UNAMA Annual Report 2016", 84-85, and United States Department of Defense, Inspector General, "Progress", 9

had to be in line with the wishes of the Afghan President, in addition to all other considerations.[149]

This touched upon another contentious issue, that of leadership targeting operations, especially those executed by unmanned systems. In a speech delivered at the American National Defense University on May 23, 2013, President Obama announced to curtail the use of lethal attacks by unmanned systems in Pakistan as part of a realignment of the CT strategy. Obama wanted to end the state of seeming perpetual conflict with terrorists he assessed the United States were involved in. Due to earlier operations, perpetuity was no longer necessary. According to Obama, the nature of the terrorist threat had changed. Al Qaida still existed, but was weakened to the extent that is was no longer able to conduct high profile attacks like those in 2001. Instead, regionally operating affiliates of Al Qaida became the primary threat. These could still subjected to leadership targeting strikes, which Obama found proportional, legal and just under the right circumstances. These strikes were just not necessary in the same amount as before. He however acknowledged room for improvement. Lack of oversight accompanied by a sense of secrecy could lead to misuse of the system and public distrust. He therefore announced that he ordered improvement of guidelines, oversight and accountability related to leadership targeting. He also announced to inspire additional public confidence in the process by releasing more information. [150] Target criteria about leadership targeting indeed were more strictly imposed afterwards. The Obama administration also relaxed some restrictions on releasability of data regarding these strikes. But the strikes did not cease. And much of the secrecy surrounding the strikes remained, and so did claims of inducement of civilian casualties.[151] So, the fundamental problem did not diminish.

149 Robert Perkins, "Airpower in Afghanistan: How NATO Changed the Rules, 2008-2014", (Action on Armed Violence, London, December, 2014) http://reliefweb.int/sites/reliefweb.int/files/resources/AOAV-Air-Power-in-Afghanistan.pdf (accessed November 28, 2015), 21-22.

150 Peter Baker, "Pivoting From a War Footing, Obama Acts to Curtail Drones", *The New York Times Website* (May 23, 2013) http://www.nytimes.com/2013/05/24/us/politics/pivoting-from-a-war-footing-obama-acts-to-curtail-drones.html (accessed January 1, 2017), and Washington Post Staff, "Text of President Obama's May 23 Speech on National Security (full Transcript)", *The Washington Post Website* (May 23, 2013) https://www.washingtonpost.com/politics/president-obamas-may-23-speech-on-national-security-as-prepared-for-delivery/2013/05/23/02c35e30-c3b8-11e2-9fe2-6ee52d0eb7c1_story.html?utm_term=.5f0b538c63b4 (accessed May 23, 2013).

151 Helene Cooper, "U.S. Drone Strike Targets Taliban Leader", *New York Times (Online)* (May 21, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1790199119/70BE1440F0AB4A1BPQ?accountid=35226 (accessed May 24, 2016), Geoff Dyer and Farhan Bokhari, "Obama Confirms Death of Taliban Leader After US Strike", *FT.com* (May 23, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1798919771/59EAABD461B54A31PQ?accountid=35226 (accessed June 27, 2016), W.J. Hennigan and Shashank Bengali, "U.S. Drone Strike Targets Taliban Leader; Early Evidence Suggests Mullah Mansour Was Killed in Pakistan, the U.S. Says", *Los Angeles Times* (May 22, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1790226338/70BE1440F0AB4A1BPQ?accountid=35226 (accessed May 24, 2016), Ken Dilanian, "THE WORLD; Fewer U.S. Drone Strikes Seen; Obama Tightening of Targeting Guidelines Has Helped Limit the Frequency of Attacks", *Los Angeles Times* (November 17, 2013) http://search.proquest.com/docview/1458846078?accountid=35226 (accessed December 21, 2016), Omer Farooq Khan, "Drone War Resumes in Pakistan [Rest of World]", *The Times of India (Online)* (June 15, 2014) http://search.proquest.com/docview/1535662096?accountid=35226 (accessed December 31, 2016), Ian S. Livingston and Michael O'Hanlon, "Afghanistan Index", (October 31, 2016) https://www.brookings.edu/wp-content/uploads/2016/07/21csi_20161031_afghanistan_index.pdf (accessed November 11, 2016), 24, Gordon Lubold, "Taliban Leader Mansour Likely Killed in U.S. Airstrike, Officials Say; U.S. Drone Targeted Mullah Mansour Along Pakistan-Afghanistan Border", *Wall Street Journal (Online)* (May 21, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1790198947/235ABF574C1943CFPQ?accountid=35226 (accessed May 24, 2016), Richard Kemp and Jasper Reid,

7.3.5. Interconnected Vessels

In sum, with regard to plans and operations there were three general overlapping and mutually influencing processes. First, the Afghan Air Force needed to be built. Second, the AAF was supposed to executed its own missions, albeit with initial western support. Third, coalition air operations were to be scaled down and, ultimately, ended. This paragraph showed that progress was made on all processes, provided timelines were lagging behind. This can partly be explained by the late start. Another partial explanation is the sheer volume and interconnectedness of the tasks. In order to function properly, as in any other air force, the AAF needed all skills, which were very interconnected. Shortage of one skill led to decreased operational capacity across the board. Confronted with practical challenges and challenges related to the Afghan social structure, the environment proved unruly. One source challenged the system of advising itself, arguing that it made it hard for the air advisors to strictly advise, and instead kept assisting, which in turn induced over-dependence and delayed progress. Nevertheless, the progress was obvious, and the Afghans took over many missions. However, in conjunction with other elements of the ANDSF, they were unable to improve the security situation. And by late 2016, early 2017, as suggested in chapter three, Afghan government forces, backed by the international coalition, and the insurgents, again were embroiled in a stalemate. Increased commitment of the US in the form of airpower sorties and a deployed aviation unit was still needed.

"United States Drone Campaign in Pakistan: FATA, Pakistan 2009-2015", In: *Our Military Force's Struggle Against Lawless, Media Savvy Terrorist Adversaries: A Comparative Study*, 2nd Edition (Friends of Israel Initiative, February, 2016), http://www.high-level-military-group.org/pdf/hlmg-lawless-media-savvy-terrorist-adversaries.pdf (accessed August 3, 2016), 115-132, 128, Mark Mazetti, "Analysis of Key Points From Obama's Speech on Drones", *The New York Times Website* (May 23, 2013) http://thecaucus.blogs.nytimes.com/2013/05/23/live-analysis-of-obamas-speech-on-drone-policy/?_php=true&_type=blogs&_r=0 (accessed August 22, 2014), Mark Mazetti and Mark Landler, "Despite Administration Promises, Few Signs of Change in Drone Wars", *The New York Times Website* (August 2, 2013) http://www.nytimes.com/2013/08/03/us/politics/drone-war-rages-on-even-as-administration-talks-about-ending-it.html (accessed August 22, 2014), Maggie Michael, "Al Qaeda Confirms Death of #2 Leader", *The Huffington Post* (June 16, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1688769137/C3A3DE9BE8504BD7PQ?accountid=35226 (accessed July 26, 2015), Rod Nordland, "Recent Drone Strikes Strain U.S. Ties with Afghanistan and Pakistan", *The New York Times Website* (November 29, 2013) http://www.nytimes.com/2013/11/30/world/asia/drone-strike-pakistan.html (accessed August 22, 2014), Bill Roggio, "Al Qaeda Commander Reported Killed in Drone Strike in Pakistan", *The Long War Journal Website* (December 8, 2014) http://www.longwarjournal.org/archives/2014/12/al_qaeda_commander_r_2.php (accessed December 9, 2014), Alice K. Ross, "Drone Strikes in Pakistan: Leaked Official Document Records 330 Drone Strikes in Pakistan", *The Bureau of Investigative Journalism Website* (January 29, 2014) https://www.thebureauinvestigates.com/2014/01/29/leaked-official-document-records-330-drone-strikes-in-pakistan/ (accessed August 22, 2014), Charlie Savage and Shane Scott, "U.S. Reveals Death Toll From Airstrikes: Estimated 64 to 116 Civilians Killed Outside War Zones", *Dayton Daily News* (July 2, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1800893849/F9854C2C76D64D49PQ?accountid=35226 (accessed July 5, 2016), Scott Shane, "Debate Aside, Number of Drone Strikes Drops Sharply", *The New York Times Website* (May 21, 2013) http://www.nytimes.com/2013/05/22/us/debate-aside-drone-strikes-drop-sharply.html (accessed August 22, 2014), and United Nations Assistance Mission in Afghanistan (UNAMA), "Afghanistan Annual Report 2013: Protection of Civilians in Armed Conflict", (Kabul, February, 2014) http://unama.unmissions.org/sites/default/files/old_dnn/UNAMA/human%20rights/Feb_8_2014_PoC-report_2013-Full-report-ENG.pdf (accessed August 10, 2016), 46-48. In 2014, Al Qaida released a video that outlined camouflage techniques to avoid detection by UASs. This showed that these systems were still a concern to the opposing forces (Oren Adaki, "AQAP Releases Video on Avoiding Detection by Drones", *The Long War Journal Website* (December 22, 2014) http://www.longwarjournal.org/archives/2014/12/aqap.php (accessed December 31, 2016)).

7.4. Doctrine: Conceptual and Practical Expansion

As with strategy, the developments with regard to doctrine overlap with the previous time frames, which have been described in detail in the previous chapters. In short, the doctrinal situation in early 2012 was roughly as follows: the United States had recognized that operations in Afghanistan were part of irregular warfare, and had broken it down into five types of activities: Counter Terrorism (CT), Unconventional Warfare (UW), Foreign Internal Defense (FID), Counterinsurgency (COIN), and Stability Operations (SO).[152] During the opening stages of the conflict in Afghanistan, the US executed CT, which had never abandoned completely. Operational developments in Iraq and Afghanistan highlighted the need for doctrine on COIN, which was not properly codified. This resulted in the publication of the *FM-3-24* by the US Army and US Marine Corps in 2006. This had spawned doctrine publications on COIN at other levels and within other services. Among them was the US Air Force, which published separate doctrine on irregular warfare in 2007 and 2011.[153] The description in the previous chapters has demonstrated that, although the doctrine on COIN at various levels and organizational elements still showed some seams, the population centric approach was generally accepted by the US. NATO followed somewhat belatedly with its doctrine on COIN in 2011.[154] Many of the documents recognized that training indigenous forces should be an integral part of the COIN effort.[155] This was framed in the concept of FID, for with the US had separate doctrine available. The US Air Force also had FID doctrine in place during the entire period of employment in Afghanistan.[156]

So, by 2012 the USAF had two main service doctrines and Joint Doctrine in place that codified conceptual thinking on operating in environments such as Afghanistan.[157] They were the *Air Force Doctrine Document 3-24: Irregular Warfare (AFDD 3-24)*, and *Air Force Doctrine*

152 United States Department of Defense, *Irregular Warfare: Countering Irregular Threats. Joint Operating Concept, Version 2.0,* May 17, 2010, http://www.dtic.mil/doctrine/concepts/joint_concepts/joc_iw_v2.pdf (accessed March 18, 2016), 5.

153 United States Air Force, *Air Force Doctrine Document 2-3: Irregular Warfare,* August 1, 2007, www.fas.org/irp/doddir/usaf/afdd2-3.pdf (accessed November 13, 2011), and United States Air Force, *Air Force Doctrine Document 3-24: Irregular Warfare, 1 August 2007, Incorporating Change 1, 28 July 2011,* July 28, 2011, http://www.fas.org/irp/doddir/usaf/afdd3-24.pdf (accessed October 12, 2012).

154 NATO, *AJP-3.4.4: Allied Joint Doctrine for Counterinsurgency (COIN),* February 4, 2011, http://publicintelligence.net/nato-allied-joint-doctrine-for-counterinsurgency/ (accessed October 12, 2012).

155 NATO, *AJP 3.4.4.*, p. 3-19, and p. 5-32, United States Air Force, *AFDD 2-3 (2007)*, 5, 28-29, United States Air Force, *AFDD 3-24 (2011)*, 6, and United States Headquarters, Department of the Army, *FM 3-24 / MCWP 3-33.5: Counterinsurgency,* December 15, 2006, http://www.fas.org/irp/doddir/army/fm3-24.pdf (accessed November 13, 2011), E-5.

156 United States Air Force, *Air Force Doctrine Document 2-7.1: Foreign Internal Defense,* February 2, 1998, http://www.fas.org/man/dod-101/usaf/docs/afdd/afdd2-7-1.pdf (accessed August 9, 2013), United States Air Force, *Air Force Doctrine Document 2-3.1: Foreign Internal Defense,* September 15, 2007, http://www.globalsecurity.org/jhtml/jframe.html#http://www.globalsecurity.org/military/library/policy/usaf/afdd/2-3-1/afdd2-3-1-2007.pdf||AFDD%202-3.1:%20Foreign%20Internal%20Defense (accessed October 28, 2013), and United States Air Force, *Air Force Doctrine Document 3-22: Foreign Internal Defense. 15 September 2007, Interim Change 2 (Last Review),* November 1, 2011, https://www.fas.org/irp/doddir/usaf/afdd3-22.pdf (accessed October 28, 2013).

157 The American joint publication on COIN was updated in 2013. With regard to airpower, this document did not show significant changes with its predecessor of 2009: United States Joint Chiefs of Staff, *Joint Publication 3-24: Counterinsurgency,* November 22, 2013, http://www.dtic.mil/doctrine/new_pubs/jp3_24.pdf (accessed May 16, 2016).

Document 3-22: Foreign Internal Defense (AFDD 3-22). Both were published in 2011.[158] The period after 2012 also saw several doctrinal updates with regard to irregular warfare. A substantial revision of the USAF doctrine on irregular warfare followed in 2013, because previous doctrine was regarded to be too much focused on counterinsurgency, instead of on the overarching concept of irregular warfare. The document was called *Air Force Doctrine Document 3-2: Irregular Warfare (AFDD 3-2)*.[159] The revised document explicitly clustered all forms of non-traditional warfare under the denominator of Irregular Warfare, which was defined as:

> "a violent struggle among state and non-state actors for legitimacy and influence over the relevant population(s). IW favors indirect and asymmetric approaches, though it may employ the full range of military and other capacities, in order to erode an adversary's power, influence, and will".[160]

The document adopted the overarching principle of IW, which included the five activities of CT, UW, FID, COIN and SO.[161] It also addressed the confusion with related types of operations, especially with regard to counterinsurgency. According to *AFDD 3-2*, counterinsurgency was a specific subset of irregular warfare, which involved the military and civilian efforts to defeat an insurgency and address core grievances.[162]

These developments show a desire to conceptualize irregular warfare in general. However, especially *AFDD 3-2* showed increased precision when it came to the nature and consequences of irregular warfare and the operational consequences like building partnership capacity. It addressed FID as one of the tasks of Irregular Warfare.[163] Whereas *AFDD 2-3* and *AFDD 3-24* only mentioned the existence of an end state, probably formulated by some higher echelon, *AFDD 3-2* described it directly: "*a self-sufficient partner with a supportive population. This partner is able to sustain its self-defense capabilities and is a trusted partner in regional security structures which support both HN* (RS: Host Nation) *and US national interests*".[164] The document abandoned the relationship between air advising tasks and their standard executors, Special Operations Forces.[165] The *AFDD 3-2* in general placed a higher emphasis on the needs and grievances of the population than its predecessors. The *AFDD*

158 United States Air Force, *AFDD 3-22 (2011)*, and United States Air Force, *AFDD 3-24 (2011)*.

159 United States Air Force, *Air Force Doctrine Document 3-2: Irregular Warfare,* March 15, 2013, https://www.fas.org/irp/doddir/usaf/afdd3-2.pdf (accessed June 18, 2013), summary of changes. No page number. As a side-note, ground-centric literature, such as *Airpower in Small Wars* and *FM 3-24* were no longer part of the list of suggested readings. Compare: United States Air Force, *AFDD 3-24 (2011)*, 77-78 and United States Air Force, *AFDD 3-2 (2013)*, 49.

160 United States Air Force, *AFDD 3-2 (2013)*, 2-3.

161 United States Air Force, *AFDD 3-2 (2013)*, summary of changes. No page number.

162 United States Air Force, *AFDD 3-2 (2013)*, 3.

163 United States Air Force, *AFDD 3-2 (2013)*, 33-40. The other tasks were: ISR, Information Operations, Air Mobility, Combat Support, and Cyberspace Operations.

164 United States Air Force, *AFDD 3-2 (2013)*, 12.

165 United States Air Force, *AFDD 3-2 (2013)*, 19-20 and 40.

3-2 reaffirmed, and somewhat expanded on, the flexibility of command arrangements. It stressed the need for presence of Air Force liaisons at the echelons were the actual planning took place.[166] In short, direction of USAF doctrinal developments showed a direction towards a joint approach to airpower in irregular conflicts. It incorporated elements that are associated with the ground-centric approach. But the USAF did not want to focus on counterinsurgencies, retaining the desire to view the associated tasks in the context of the overarching concept of irregular warfare.

For administrative reasons, the USAF overhauled its entire doctrine structure after 2013. After the change, USAF doctrine consisted of three basic volumes, called *Basic Doctrine, Leadership,* and *Command*. Doctrines on separate tactics became annexes to the basic doctrine. Doctrine on Irregular warfare hence became called *Annex 3-2: Irregular Warfare*.[167] Although the structure of *Annex 3-2* was different from *AFDD 3-2*, both documents were very similar conceptually and highlighted the role of the partner nation. A small change was noticeable with regard to the use of Special Operations Forces. *AFDD 3-2* mentioned with regard to air advising that GPF were "*more frequently used*"[168] than in the past. *Annex 3-2* stated on the same topic that irregular warfare was no longer a SOF-only or even SOF-predominant arena. It did make a distinction between tasks: conventional forces delivered air advisors, SOF delivered Combat Aviation Advisors (CAA). The difference was that combat aviation advisors would assist partner nation Special Operations Forces.[169]

The USAF also updated its doctrine on FID. In 1998, the doctrine claimed that it was applicable to all airmen, but nevertheless highlighted the role of the Special Operations Forces.[170] The basic objectives were to train, advise, assist, assess, and aid host nation forces, and, if need be, provide direct support.[171] The means at hand were divided into three categories, namely indirect support, direct support not involving combat, and combat operations.[172] What stands out is that military education and training was mentioned as part of indirect support. These developments however took place within the context of the larger security assistance program, which involved all kinds of logistical and financial support to the host nation. Other elements of support had the character of improving already existing structures, for instance with international exercises and exchange

166 United States Air Force, *AFDD 3-2 (2013)*, 14.

167 United States Air Force, *Annex 3-2: Irregular Warfare,* July 12, 2016, https://doctrine.af.mil/download.jsp?filename=3-2-Annex-IRREGULAR-WARFARE.pdf (accessed September 26, 2016). It is mainly a difference in tone. For instance, *AFDD 3-24* reserves about ten pages for the direct application of airpower, while also highlighting the need for supporting a partner nation. *AFDD 3-2* does not have separate paragraphs on the direct application, but it does not exclude the option: United States Air Force, *AFDD 3-24 (2011)*, 18-27, and United States Air Force, *AFDD 3-2 (2013)*, passim.

168 United States Air Force, *AFDD 3-2 (2013)*, 19.

169 United States Air Force, *Annex 3-2: Irregular Warfare (2016)*, 28 and 38. *AFDD 3-24* mentions combat aviation advisors, without making a distinction between SOF and other forces. (United States Air Force, *AFDD 3-24 (2011)*, 29). *AFDD 3-2* does mention the distinction between air advisors and combat aviation advisors, but does not explain the difference in tasks (United States Air Force, *AFDD 3-2 (2013)*, 40).

170 United States Air Force, *AFDD 2-7.1 (1998)*, v.

171 United States Air Force, *AFDD 2-7.1 (1998)*, 1-3.

172 United States Air Force, *AFDD 2-7.1 (1998)*, 25.

programs. Direct support that did not include combat were aimed at improving operational capabilities with US assets or expertise. Combat operations in essence involved taking over or augmenting parts of the combat capability of the host nation.[173] While not stated literally, and with the tasks of the 6 SOS in mind, this doctrine was written with the aim of improving already existing capabilities, such as with central and south American air forces, rather than building air forces from scratch, which became current in Afghanistan and Iraq. The structure of the doctrines on FID of 2007 and 2011, which were essentially the same, did not deviate much from the version of 1998. However, increased attention was paid to training, advising, and assisting, and equipping partner air forces that are faced with internal threats. This is witnessed by reference to a study performed by RAND, advising to this end, and by extra guidelines for forming training teams.[174] These documents also stated that training could be used to

> "close specific gaps in foreign aviation skills and raise the level of competency where they can be advised on the proper employment of acquired capabilities. Training assistance in the aviation support and sustainment areas includes aircraft maintenance, logistics, life support, medical, air base defense, personal survival, personnel recovery, munitions, ground safety, and other functions supporting combat air operations".[175]

In the USAF doctrine publication that followed in 2015, these basic concepts remained unaltered.[176]

Besides the doctrines on IW and FID, the USAF also published several lower-level doctrines. These deal mostly with the process of air advising itself.[177]

The US Air Force was by no means the only institution that updated its doctrines. Other services and branches did so as well.[178] The *FM 3-24* was updated in 2014. As with the doctrine of the US Air Force, the *FM 3-24* of 2014 marked a shift in operational approach

173 United States Air Force, *AFDD 2-7.1 (1998)*, 23-29.

174 United States Air Force, *AFDD 2-3.1 (2007)*, 1, and 35-36, United States Air Force, *AFDD 3-22 (2011)*, 1, and 35-36. The RAND study that is cited was: Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*.

175 United States Air Force, *AFDD 2-3.1 (2007)*, 7, and United States Air Force, *AFDD 3-2 (2013)*, 7.

176 United States Air Force, *Annex 3-22: Foreign Internal Defense,* July 10, 2015, https://doctrine.af.mil/download.jsp?filename=3-22-Annex-FID.pdf (accessed September 26, 2016), 6-7.

177 Ingrum, "Aviation Security Force Assistance", 8, Finch and Garretson, "Air Advising", 38, United States Air Force, *Annex 3-2: Irregular Warfare (2016)*, 38, and Coalition and Irregular Warfare Center of Excellence, *Air Advisor Handbook,* April 27, 2009,.

178 Examples are: United States Headquarters, Department of the Army, *FM 3-05.2 (FM 3-05.135/FM 3-05.202): Foreign Internal Defense,* September, 2011, https://info.publicintelligence.net/USArmy-ForeignInternalDefense.pdf (accessed September 26, 2016), United States Headquarters, Department of the Army, *FM 3-07.1: Security Force Assistance,* May, 2009, http://fas.org/irp/doddir/army/fm3-07-1.pdf (accessed September 26, 2016), United States Joint Chiefs of Staff, *Joint Publication 3-22: Foreign Internal Defense,* June 12, 2010, http://www.dtic.mil/doctrine/new_pubs/jp3_22.pdf (accessed November 18, 2013), and United States Joint Chiefs of Staff, *Joint Doctrine Note 1-13: Security Force Assistance,* April 28, 2013, http://www.dtic.mil/doctrine/notes/jdn1_13.pdf (accessed September 26, 2016). See also the reference list of the US Army doctrine on FID: United States Headquarters, Department of the Army, *ATP 3-05.2: Foreign Internal Defense,* August, 2015, https://fas.org/irp/doddir/army/atp3-05-2.pdf (accessed September 26, 2016), References-1 to References-6.

from executing COIN towards helping a partner nation to do so.[179] The new field manual did not have an appendix on airpower. In the references within the main body however, the *FM 3-24* of 2014 still reflected a ground-centric approach.[180]

Unlike the doctrine on counterinsurgency, the unofficial doctrinal attitude revealed in theses, reports and journal articles, did not uncover any fundamental debate on training and advising foreign air forces. In 2006, Robert Cassidy argued that the US military suffered from a cultural tendency to circumvent COIN, and that this concept "*conveniently transmogrified*" into Foreign Internal Defense.[181] In 2007, Robert Kiebler noted that doctrine developments showed increased emphasis on FID. Also, doctrines shifted focus, from training at the tactical level to highlighting the strategic benefits of FID programs.[182] Criticism, if there was any, was focused on the lack of integration with other elements of irregular warfare doctrine, such as COIN or UW.[183] There was however criticism on how the US military, including the USAF, had delegated the role of training and advising to SOF. Together with a lack of resources, this resulted in a decrease of the USAF's ability to train foreign forces.[184] Until 2006, several authors published on the usefulness of FID in irregular warfare, for which extra resources were needed, and how to properly organize for FID missions. They however did not fundamentally question FID doctrine.[185] To a certain extent,

179 Walter Ladwig, "The New FM 3-24: What Happens When the Host Nation Is the Problem?", *Website Council on Foreign Relations* (June 10, 2014) http://blogs.cfr.org/davidson/2014/06/10/the-new-fm-3-24-what-happens-when-the-host-nation-is-the-problem/ (accessed September 30, 2016), and United States Headquarters, Department of the Army, *FM 3-24 / MCWP 3-33.5: Insurgencies and Countering Insurgencies*, April, 2014, http://www.fas.org/irp/doddir/army/fm3-24.pdf (accessed September 30, 2016).

180 United States Headquarters, Department of the Army, *FM 3-24 2014*, 1-15 and 9-12.

181 Robert M. Cassidy, *Counterinsurgency and the Global War on Terror: Military Culture and Irregular War* (Westport, CT and London: Praeger Security International, 2006), 100.

182 Kiebler, "USAF Advisory Programs", 28-29.

183 See for instance: Kenneth Beebe, "The Air Force's Missing Doctrine: How the US Air Force Ignores Counterinsurgency", *Air & Space Power Journal* 20, no. 1 (2006): 27-34, John W. Doucette, "US Air Force Lessons in Counterinsurgency: Exposing Voids in Doctrinal Guidance", (Thesis, Air University, School of Advanced Airpower Studies, Maxwell Air Force Base, AL, June, 1999) http://www.dtic.mil/dtic/tr/fulltext/u2/a391818.pdf (accessed July 3, 2013), Derek Jones, "Ending the Debate: Unconventional Warfare, Foreign Internal Defense, and Why Words Matter", (Master's Thesis, US Army Command and General Staff College, Fort Leavenworth, KS, 2006) http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA451259 (accessed October 30, 2016), and Robert D. Sagraves, "The Indirect Approach: The Role of Aviation Foreign Internal Defense in Combating Terrorism in Weak and Failing States", (Research Report, Air University Press, Maxwell Air Force Base, AL, April, 2005) www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA476253 (accessed September 7, 2016), 25-26.

184 Norman J. Brozenick, "Another Way to Fight: Combat Aviation Advisory Operations", (Research Report, Air University, Air Force Fellows Program, Maxwell Air Force Base, AL, June, 2002) http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA420700 (accessed October 15, 2013), 46, Michael C. Koster, "Foreign Internal Defense. Does Air Force Special Operations Have What It Takes?", (Research Report No. AU-ARI-92-2, Air University Press, Maxwell Air Force Base, AL, 1993) http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA275382 (accessed October 6, 2016), 74, and Richard D. Newton, "Reinventing the Wheel: Structuring Air Forces for Foreign Internal Defense", (CADRE Report No. AU-ARI-CPSS-91-1, Air University Press, Maxwell Air Force Base, AL, August, 1991) http://www.dtic.mil/dtic/tr/fulltext/u2/a272302.pdf (accessed November 13, 2011), 5-7.

185 Steven M. Boatright, "Building Partnership Capacity by Leveraging the Air National Guard", (Research Report, Air University, Air Force Fellows, Maxwell Air Force Base, AL, 2009) http://www.dtic.mil/dtic/tr/fulltext/u2/a540362.pdf (accessed April 22, 2017), Bolkcom and Katzman, "Military Aviation", August G. Jannarone and Ray E. Stratton, "Building a Practical United States Air Force Capability for Foreign Internal Defense (FID)", *The DISAM Journal* 13, no. 4 (1991): 80-91, Arthur A. Jistel, "The Role of Air Force Special Operations Forces in the Low Intensity Conflict Environment", (Thesis, U.S. Army War College, Carlisle Barracks, PA, 1991) http://www.dtic.mil/dtic/tr/fulltext/u2/a236491.pdf (accessed November

the same was true for publications after 2007. The main difference was that incorporation of GPF into the equation found their way in these publications.[186]

One problematic issue these authors did note was the confusion resulting from a myriad of terms that were associated with assisting foreign nations. There were several of these terms, besides FID.[187] According to Mort Rolleston, Ric Trimillos and Tom Gill, these partially overlapping terms reflected different combinations of the following parameters: "*who offers the assistance, its purpose or desired outcome, and/or the authority or law under which it is provided*".[188] It is beyond the scope of this study to unravel all these terms and concepts and their mutual relationships and clarify the reasons for their differences because they also involve non-military assistance. It could be, however, that the multifaceted nature of the concepts induced stove-piping. In addition, the observations of Rolleston, Trimillos and Gill had as a consequence that development of unequivocal policy or strategy became nearly impossible, because it hampered formulation of a desired end state and the determination of the required means. As for the development of doctrine, there were two noteworthy developments. First, the term FID increasingly became replaced with the term Security Force Assistance (SFA). As for the airpower contribution, the notion of Aviation FID (AvFID) concurrently became increasingly replaced by the term Aviation SFA (AvSFA). This development originated at the Secretary of Defense, Donald Rumsfeld, who in 2006 created the Joint Center for International Security Force Assistance (JCISFA), which became the focal point for SFA. The main difference between FID and SFA was that FID focused

26, 2015), Koster, "Foreign Internal Defense", John R. Moulton, "Role of Air Force Special Operations in Foreign Internal Defense", (Air University Press, Maxwell Air Force Base, AL, 1991) http://www.dtic.mil/dtic/tr/fulltext/u2/a271991.pdf (accessed October 6, 2016), McCarthy, "Air Force and Foreign Internal Defence", Newton, "Reinventing the Wheel", Sagraves, "Indirect Approach", and Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*.

186 Eric M. Carrano, "Making a Difference with Aviation Foreign Internal Defense", (Thesis, Naval Post Graduate School, Monterey, CA, December, 2012) https://www.hsdl.org/?view&did=732087 (accessed March 6, 2014), Childress, "Improving", Patrick Daley, "Exporting Airpower: The Challenges of Building Partner Nation Air Capacity for Irregular War", (Thesis, Air University, School of Advanced Air and Space Studies, Maxwell Air Force Base, AL, June, 2008) http://dtlweb.au.af.mil///exlibris/dtl/d3_1/apache_media/L2V4bGlicmlzL2RobC9kM18xL2FwYWNoZV9tZWRpYS8zNzAyOA==.pdf (accessed July 3, 2013), Finch and Garretson, "Air Advising", Ingrum, "Aviation Security Force Assistance", Jenkins, "Distinguishing", Kiebler, "USAF Advisory Programs", Livingston, "Building Capacity", Thomas R. Matelski, "Developing Security Force Assistance: Lessons From Foreign Internal Defense", (Monograph, United States Army Command and General Staff College, School of Advanced Military Studies, Fort Leavenworth, KS, November 18, 2008) http://www.dtic.mil/dtic/tr/fulltext/u2/a495486.pdf (accessed October 30, 2016), Mort Rolleston, Ric Trimillos and Tom Gill, "Aviation Security Cooperation: Advancing Global Vigilance, Global Reach, and Global Power in a Dynamic World", *Air & Space Power Journal* 28, no. 5 (2014): 92-117, Scott, "Aviation Security Force Assistance", Therrien, "Building Partnerships", and Timothy M. Zadalis, "The Air Advisor: The Face of US Air Force Engagement", *Air & Space Power Journal* 27, no. 4 (2013): 4-11.

187 Taylor White distinguished the following terms: Security Cooperation (SC), Security Assistance (SA), Security Force Assistance (SFA), Foreign Internal Defense (FID), and Foreign Assistance (Taylor P. White, "Security Cooperation: How It All Fits", *Joint Forces Quarterly*, no. 72 (2014): 106-108). Thomas Livingston also noted the existence of Building Partnerships (BP), Building Partnership Capacity (BPC), and Train, Advise, and Assist (TAA)(Livingston, "Building Capacity", 11.) Virtually all authors dedicated phrases on terminology, explaining the difference between several terms and/or mentioning the confusion surrounding them (Carrano, "Making a Difference", 5, Daley, "Exporting Airpower", 2, Ingrum, "Aviation Security Force Assistance", 3-4, Jenkins, "Distinguishing", Matelski, "Developing", 1, 7, 9, and 15, Scott, "Aviation Security Force Assistance", passim, Therrien, "Building Partnerships", 47, 49 and 75-77, and Zadalis, "The Air Advisor", 10).

188 Rolleston, Trimillos, and Gill, "Aviation Security Cooperation", 93.

on internal threats, whereas SFA also took external threats into account.[189] However, actual activities performed by the military at the tactical level remained the same, namely assessing, training, advising, and assisting foreign air forces, which were to be executed by air advisors.[190] Second, the range of activities of the air advisors was expanded with yet another term, namely Aviation Enterprise Development (AED). Formulated in an "Air Advisor Operating Concept" and other documents at the tactical level, AED widened the scope from tactical deployment of the air weapon to all activities related to building and maintaining aviation capability. This included support functions, and functions that could be used for civilian components. This however was regarded as operationalization of the AvSFA concept.[191] So, in short, terminology with regard to building foreign air forces was confusing. But the practical consequence of deploying air advisors did not change much, even though they had an expanded tasking.

As with other doctrine developments, NATO lacked a public discourse on doctrine regarding training indigenous forces, and lagged behind in writing doctrine when compared to the US. The Joint Air Power Competence Centre (JAPCC) was asked to conduct a review of doctrine and practice of the air advising effort in Afghanistan as early as 2008. And the *Allied Joint Publication-3.4.4: Allied Joint Doctrine for Counterinsurgency (COIN) (A.J.P.-3.4.4)* of 2011 mentioned the imperative to strive towards host nation self-sustainability and to deploy air advisors. John Andreas Olson and Frans Osinga, however, argued in 2014 that NATO did not have suitable doctrine that described the proper role of airpower in COIN. In addition, they argued that the preferred approach of out of area operations should be advising and supporting host nations.[192] Somewhat belatedly, NATO released doctrine on SFA in 2016. It showed the same approach as the American joint doctrines.[193] In addition to this NATO-wide doctrine, several lower-level echelons wrote their own doctrine on

189 Ingrum, "Aviation Security Force Assistance", 3, Jenkins, "Distinguishing", Matelski, "Developing", 7 and 15, Scott, "Aviation Security Force Assistance", 22-23, and Therrien, "Building Partnerships", 49. JCISFA published a handbook for SFA: Joint Center for International Force Assistance, *Commander's Handbook for Security Force Assistance,* July 14, 2008, http://www.dtic.mil/docs/citations/ADA500747 (accessed January 17, 2017).

190 Jenkins, "Distinguishing", Therrien, "Building Partnerships", 50, and Zadalis, "The Air Advisor",10.

191 Finch and Garretson, "Air Advising", 38, and Ingrum, "Aviation Security Force Assistance", 18-23.

192 John Andreas Olsen and Frans Osinga, "Air and Space Power in Counter Insurgency Operations", In: *Air & Space Power in NATO: Future Vector Part II*, ed. Joint Air Power Competence Centre (Kalkar: Joint Air Power Competence Centre, October, 2014), http://www.japcc.org/wp-content/uploads/JAPCC_FV_III_web.pdf (accessed September 8, 2016), 129-152, 134-135.

193 Joint Air Power Competence Centre, "JAPCC Annual Report 2008", (2008) http://www.japcc.org/publications/report/Report/JAPCC_Annual_Report_2008.pdf (accessed October 15, 2013), 7-8, NATO, *AJP 3.4.4.*, 3-19 and 5-32, and NATO Standardization Office (NSO), *AJP-3.16: Allied Joint Doctrine for Security Force Assistance (SFA) Edition A Version 1,* May, 2016, https://www.gov.uk/government/publications/allied-joint-doctrine-for-security-force-assistance-sfa-ajp-316a (accessed October 28, 2018). A draft of of a NATO concept for SFA was available from late 2013 onwards (Joint Air Power Competence Centre, "Improving "). NATO also published doctrine on the military contribution to security and reconstruction: NATO Standardization Office (NSO), *Allied Joint Publication-3.4.5.: Allied Joint Doctrine for the Military Contribution to Stabilization and Reconstruction. Edition A Version 1,* December, 2015, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/625763/doctrine_nato_stabilization_reconstruction_ajp_3_4_5.pdf (accessed February 26, 2019). Canadian reservation on the *AJP-3.4.5.* and the US reservation on the *AJP-3.16* indicate that nations could differ about how different concepts were related to each other, which definitions were ought to be used. (NATO Standardization Office (NSO), *AJP-3.4.5 (2015)*, v, and NATO Standardization Office (NSO), *AJP-3.16 (2016)*, v). The similarity in approach extended to the conceptual confusion already described in relation to the US concepts.

SFA. Examples include, NATO's SOF community and the ISAF organization.[194] As part of an overall effort of NATO to codify training missions, the JAPCC conducted a study on how to improve the segment of aviation, AvSFA, for NATO. The report was published in 2014.[195] In general, the themes described in NATO doctrine were the same as those of the US military, such as the use of GPF in relation to SOF, although the confusion with regard to terminology was less severe. NATO adopted the SFA construct. The JAPCC study however noted some disadvantages of working with coalitions. These were: insufficient English proficiency of the host nation, convoluted chains of command, national caveats, different perspectives of nations in general, and lack of common qualification standards.[196] As with doctrine on airpower in irregular warfare or airpower in counterinsurgency, it could also be that air advising was incorporated in airpower doctrines of contributing nations. For example, the Royal Australian Air Force (RAAF) incorporated a chapter on support to partner nation aviation forces in its "*Australian Air Publication AAP 1001.2: The Air Force Approach To Irregular Warfare*". This included air advising.[197]

Concluding this section, incorporation of doctrine on air advising faced some specific difficulties, although there were little serious challenges. As far as content is concerned, the US already had some doctrine in place. The challenge was twofold. First, the tasks described in the doctrine expanded from improving a host nation air force to building one. Secondly, and concurrently, the audience of the doctrines expanded from SOF to include GPF. As these doctrines were multifaceted, and applicable to many environments, many institutions were involved in the process, hampering clarity of the concepts and related terminology. However, as the wars in Iraq and Afghanistan provided immediacy to the problem, the development of doctrine followed the development of operations quite closely. For NATO, the task of air advising was new, and a doctrine on air advising was lacking completely, and development of the doctrine lagged behind. This had as a consequence that NATO air advisors for a long time had to execute their tasks without NATO doctrine, and had to fall back on American ones until NATO doctrine, which largely followed the American example, was available.

194 ISAF, *ISAF Security Force Assistance Guide,* https://info.publicintelligence.net/ISAF-SecurityForceAssistance.pdf (accessed September 26, 2016), and NATO Special Operations Headquarters, *NATO Special Operations Forces Military Assistance Handbook, 1st Study Draft,* July, 2014, http://www.istc-sof.org/documents/MAHandbook.pdf (accessed September 26, 2016).

195 Joint Air Power Competence Centre, "JAPCC Annual Report 2012", (2012) http://www.japcc.org/publications/report/Report/Annual_Report_2012.pdf (accessed October 15, 2013), 14, Joint Air Power Competence Centre, "JAPCC Annual Report 2013", (2013) http://www.japcc.org/wp-content/uploads/Annual_Report_2013_web.pdf (accessed October 12, 2016), 12, and Joint Air Power Competence Centre, "Improving ".

196 Joint Air Power Competence Centre, "Improving ", 17-20.

197 Royal Australian Air Force, *Australian Air Publication AAP 1001.2: The Air Force Approach to Irregular Warfare,* November, 2011, www.airpower.airforce.gov.au/airpower/list/36/RAAF-doctrine.aspx (accessed December 22, 2011), chapter 5.

7.5. Force Levels and Resources: Very Different Dynamics

7.5.1. Coalition Force Levels: Scaling Down

The American surge was planned to be temporary, and in June 2011 the Obama Government announced that the 33,000 additional forces would start to withdraw. By September 2012, the level of American forces was back at pre-surge levels. Other coalition members started to redeploy their troops as well. After that, drawdown continued, ultimately with a planned US presence of little under 10,000.[198] The number of available aircraft in the Afghan theater of operations decreased as well. The number of coalition aircraft decreased sharply from 2012 onwards. Only a few countries left some air assets until late 2014. By December 2014 virtually all coalition air assets had been redeployed to their home countries.[199] The US retained some assets in Bagram, Kandahar and Jalalabad, but downsized the number of aircraft.[200] Appendices 3.8 to 3.10 show the general development of American Air Order of Battle between 2009 and the end of 2014.

However, the decrease in absolute numbers obscures that some nations increased their effort and fielded additional assets and new types of airframes. Germany and Spain fielded their Tigre Attack Helicopters right after they were adopted by their militaries in 2013. The same was done with regard to the NH-90 transport helicopters of Germany and Italy, who deployed these assets in 2012 and 2013 respectively.[201] The United Kingdom deployed the Watchkeeper Unmanned Aerial System to Kandahar in November 2014.[202] Experiments with ISR continued, even though the MC-12 unit ended operations in Afghanistan, witnessing the presence of the "Gorgon Stare" wide area surveillance system, mounted on the MQ-9 Reaper UAS.[203] Aircraft modifications, such as Link 16 communication systems for British Tornado fighter aircraft, continued.[204] In the meantime, experiments with the goal to enhance efficiency and effectiveness of the air weapon continued. The K-MAX unmanned helicopter is already mentioned. Another example is the use of flares to illuminate the

198 De Coster, "Negotiating", 76 and 83-85, and Weitz, "Transition in Afghanistan", 32.

199 Appendix 3.6 and Appendix 3.7.

200 Anonymous, "U.S. Airpower in Afghanistan", *Air Force Times* (2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1693626563/AF1FE3ADB9764BD2PQ?accountid=35226 (accessed July 26, 2016), and Gert Kromhout, "Coalition Against ISIS", *Air Forces Monthly*, no. 326 (2015): 54-59, 56.

201 Appendix 3.6. For description of the fielding process, see: Francesco Persichetti, "The Operational Debut of the NH-90 Helicopter: Challenges and Lessons Learned", *Journal of the JAPCC* 17 (2013): 28-32 http://www.japcc.org/wp-content/uploads/Journal_Ed-17_web.pdf (accessed June 15, 2017).

202 Anonymous, "British Army's Watchkeeper Deployed to Afghanistan", *Air Forces Monthly*, no. 320 (2014): 8.

203 Anonymous, "Gorgon Stare Increment 2 Operational on MQ-9 in Afghanistan", *Air Forces Monthly*, no. 320 (2014): 28, Anonymous, "USAF Ends Afghan MC-12W Unit Operations", *Air Forces Monthly*, no. 321 (2014): 29, Colin Gordon, "USAF 361st ERS MC-12 MC-12Ws End Mission in Afghanistan", *Air Forces Monthly*, no. 320 (2014): 29, Gareth Jennings, "USAF Image Appears to Show Gorgon Stare Increment II in Afghanistan", *Jane's International Defense Review* 47, no. 10 (2014) http://search.proquest.com/docview/1561195707/55539C896E54386PQ?accountid=35226 (accessed September 17, 2014), and Marina Malenic, "USAF Declares Gorgon Stare Follow-on Operationally Deployable", *Jane's Defence Weekly* 51, no. 32 (2014) http://search.proquest.com/docview/1542264781?accountid=35226 (accessed December 31, 2016)

204 Tim Ripley, "Operation Herrick Tornados", *Air Forces Monthly*, no. 323 (2015): 50-55, 55.

battlefield at critical times.[205] Other experiments involved augmentation or improvements of already existing capabilities.[206]

There has not been much discussion about the availability of airframes after 2012, although the shortage of helicopters resonated for some time.[207] What is noteworthy though is that the issue of using contractors received increased attention, suggesting that troop withdrawal was partly compensated by increased use of contractors.[208] In addition, US air assets that were based in other countries in Central Asia were still available. This became increasingly important after IS-K entered the stage. Started in Iraq and Syria late 2014, they surfaced in Afghanistan in the first half of 2015, decreasing stability in the country. Air movements directed from the Combined Air Operations Center in Qatar increased accordingly. Eventually, the US deployed additional attack helicopters and transport helicopters to Afghanistan in mid-2016.[209]

205 Johnson Frances, "VMGR-352 Lights Up Sky with Battlefield Illumination", *Leatherneck* 97, no. 9 (2014): 13-14.

206 See for examples: Courtney Albon, "Lockheed Refining Wind Detection Technology for Precision Airdrop", *Inside the Pentagon's Inside the Air Force* (July 4, 2014) http://search.proquest.com/docview/1542372649?accountid=35226 (accessed December 31, 2016), Anonymous, "USAF Replaces AN/TPS-75 Radar System in Afghanistan", *Progressive Digital Media Defence (incl, Airforce, Army, Navy and Homeland Security) News* (May 2, 2014) http://search.proquest.com/docview/1544879639?accountid=35226 (accessed December 31, 2016), Neil Dunridge, "Harvest Hawk", *Air Forces Monthly*, no. 302 (2013): 44-45, Jean Grace, "US Marine Corps Prepare to Deploy RQ-21A Blackjack with Expeditionary Units at Sea", *Jane's International Defense Review* 47, no. 11 (2014) http://search.proquest.com/docview/1618013886/5DF4C3FF36594DADPQ?accountid=35226 (accessed November 2, 2014), Robert P. Jr. Haffa and Anand Datla, "Joint Intelligence, Surveillance, and Reconnaissance in Contested Airspace", *Air & Space Power Journal* 28, no. 3 (2014): 29-47, 33, and Lee Hudson, "RQ-21A Deploys in Support of OEF, Achieves Early Operational Capability", *InsideDefense.com's SitRep* (June 3, 2014) http://search.proquest.com/docview/1531467601?accountid=35226 (accessed December 31, 2016).

207 Defense Industry Daily Staff, "Allies Absent in Afghanistan - Helicopters Hires", *Website Defense Industry Daily* (November 4, 2013) http://www.defenseindustrydaily.com/allies-absent-in-afghanistan-helicopters-hired-05366/ (accessed February 8, 2016).

208 Spencer Ackerman, "Pentagon Wants to Keep Running Its Afghan Drug War From Blackwater's HQ", *Website Wired.com* (November 21, 2012) http://www.wired.com/2012/11/cntpo/ (accessed January 13, 2016), Spencer Ackerman, "U.S. Commando's New Landlord in Afghanistan: Blackwater", *Website Wired.com* (May 12, 2012) http://www.wired.com/2012/12/academi-special-operations/ (accessed January 13, 2016), Anonymous, "Blackwater Becomes New Landlord in Afghanistan for US Special Forces", *RT Website* (December 6, 2012) https://www.rt.com/usa/blackwater-afghanistan-us-academi-374/ (accessed January 13, 2016), Tom Bowman, "When Most U.S. Forces Leave Afghanistan, Contractors May Stay", *Website KUOW.org* (November 28, 2014) http://kuow.org/post/when-most-us-forces-leave-afghanistan-contractors-may-stay (accessed October 22, 2014), and Dale Wood, "AAR Flight Operations Contract in Afghanistan Extended: AAR Airlift Group to Continue Rotary Wing Services", *PR Newswire* (May 23, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1790491794/8FBFF5B6BABE4296PQ?accountid=35226 (accessed June 1, 2016). The long term use of contractors requires additional academic attention. Their deployment is hardly documented in publicly available sources. The few publications that are available suggest that contractors to some extent fall outside the military realm. Incidents with contractors may highlight individual cases. However, focus on incidents downplays support that was helpful to the coalition effort, and also does not address the day-to day challenges of contractors. See for instance: Don Wetekam, "Civil Aviation's Tactical Role in Uplifting US Military in Dynamic Theaters", *Defense Transportation Journal* 73, no. 4 (2017): 13-16. Further research on this topic is required.

209 Anonymous, "US Army", Anonymous, "U.S. Adds Forces", Anonymous, "800 Aviation Troops", Babb, "Airstrikes", Goldstein, "U.S. Increases Airstrikes", and Tom Roeder, "Peterson Air Force Base Wing Headed to Middle East", *McClatchy - Tribune Business News* (January 12, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1755912068/930FEAABoD0E421FPQ?accountid=35226 (accessed January 18, 2016).

7.5.2. *Afghan Force Levels: Scaling Up*

Meanwhile, the coalition started to equip the Afghan Air Force as part of the "aircraft build" focus area. The first question that needed to be answered was which types of airframes were suitable. A first variable for determining this was which capabilities the Afghan Air Force needed to support national objectives. In 2006, US leadership assessed that these capabilities should include presidential airlift, battlefield mobility, Casualty Evacuation (CASEVAC), Medical Evacuation (MEDEVAC), ISR, and light attack.[210] A second variable was the Afghan ability to absorb the airframes that were donated. It was clear from the start that the Afghan Air Force was not able to incorporate the highly sophisticated, technologically advanced, western airframes. It would take too long to train and equip. In addition, other airframes could deliver the capabilities that were assessed to be needed. The US Department of Defense used the term "right tech" to indicate that the airframes used for AvSFA had to be transferable, affordable, modular, and interoperable in order for the Afghans to be able to absorb the donations.[211] The US initially expanded the existing inventory that was available in Afghanistan, which meant increasing the number of Russian-made aircraft the Afghan airmen were accustomed to. An additional argument was that these types of aircraft were very suitable for operating in the Afghan environment, especially the high altitudes.[212] The types in theater however did not cover all needed capabilities. Therefore, a draft concept of operations for the ANAAC in 2006 mentioned only the Mi-17 "Hip" transport helicopter, Mi-35 "Hind" attack helicopter, and the An-26 and An-32 fixed wing transport aircraft by type, while leaving the other types open.[213]

The second question that required answering was how many airframes were needed. The original plan called for an Afghan Air Force of about two hundred aircraft, after which it modestly grew thanks to donations.[214] In 2007, the ANAAC had about twenty-two airframes in its inventory. After donations by coalition partners, most notably the Czech Republic and the United Arab Emirates, this number rose to thirty-one by mid 2008. By then the ANAAC consisted of eighteen Mi-17 medium transport helicopters, three Mi-35 attack helicopters, six An-32 and two An-26 fixed wing transport aircraft, and two L-39 training aircraft.[215] After 2008, most donations were done by or through the United States, although offers

210 United States Air Forces Central Command, *ANAAC CONOPS*, 18-19.

211 Livingston, "Building Capacity", 44-45.

212 Boera, "Combined Airpower Transition Force", 20, and Willi, Interview.

213 United States Air Forces Central Command, *ANAAC CONOPS*, 15

214 Marion, "Destruction and Rebuilding", 27.

215 Marion, "Destruction and Rebuilding", 27-28. Very early on in the conflict, there were reports that Russia would donate Mi-17 helicopters as well. But this did not materialize (Anonymous, "Russia Refutes Reports on Deliver of Military Helicopters", *BBC Monitoring South Asia - Political* (October 14, 2003) http://search.proquest.com/docview/452156297/338DE5CCA1344B3PQ/37?accountid=35226 (accessed October 21, 2014), and Anonymous, "Russia to Give Helicopters to Afghanistan", *BBC Monitoring South Asia - Political* (July 12, 2003) http://search.proquest.com/docview/452089470/338DE5CCA1344B3PQ/31?accountid=35226 (accessed October 21, 2014)).

were made for Italian AMX and Czech L-159 light aircraft.[216] By early 2016, the inventory of the AAF consisted of forty-nine Mi-17s, one Mi-35, ten MD530F light attack helicopters, three HAL Cheetal light utility helicopters, four C-130H fixed wing transport planes, and six Cessna T182T Turbo Skylane light aircraft. These numbered ninety-one in total. Scheduled acquisitions included two Cessna 208B light transport planes, twenty A-29B Super Tucano Light Attack/Armed Reconnaissance (LAAR) aircraft, seven additional Mi-17s, eighteen MD530F, and eight Scan Eagle Unmanned Arial Vehicles.[217] In addition, the Air Interdiction Unit had seven Mi-17s in 2010, whereas its successor, the Special Mission Wing, had an inventory of twenty-seven Mi17s and seventeen Pilatus PC-12 intelligence aircraft in 2016.[218]

These numbers indicate a successful donation program of aircraft for the Afghan Air Force, although few countries besides the US seemed to be willing to provide Afghanistan with aircraft on a scale that was required.[219] Periodical reports of the US Department of Defense did not report structural problems as a result of late delivery of aircraft.[220] Cordesman, Mausner, and Lemieux stated, in relation to specific programs, that equipment donations even outpace even the recruitment of personnel.[221] However, behind the scenes frustration sometimes lurked. This was for instance the case with the procurement program of the C-27 "Spartan" light transport aircraft. This type of aircraft was a modified Italian Alenia G222, of which twenty were scheduled to enter the ANAAC from 2009 onwards. The goal was to replace the aging An-26 and An-32. About sixteen C-27s made it to Afghanistan, but due to a conflict with the Italian manufacturer delivery of spare parts lagged behind, resulting in a very low number of mission capable aircraft. This, and the inclination of some Afghan commanders to use these airframes for logistical purposes of themselves or their interest group rather than for training, led the US to terminate the program in 2012. Most of the airframes were scrapped.[222] In the mean time, the delivery

216 Anonymous, "AMX Fighter Proposal Faces Competition From Czech L-159", *Flight International* 175, no. 5209 (2009): 18.

217 Anonymous, "Afghan Air Force Today", Anonymous, "Afghan Forces to Deploy Unmanned Drone Aircraft", *BBC Monitoring Newsfile* (February 19, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1766912086/5E952F881D8C424APQ?accountid=35226#center (accessed October 28, 2016), and Marina Malenic, "Afghan to Get ScanEagle UASs", *Jane's Defense Weekly* 53, no. 4 (2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1738671960/90BCFDEB2BEA4BDAPQ?accountid=35226 (accessed December 7, 2015). Several other authors mention the then current state of the AAF's inventory for moments between 2008 and 2016: Cordesman, Mausner, and Lemieux, "Afghan National Security Forces", 119-120, Hill, "Advance", 11, Keltz, "Getting Our Partners Airborne", 11, Franz J. Marty, "Afghan Air Force: Phoenix Rising From the Ashes?", *Jane's Defence Weekly* 53, no. 44 (2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1817482768/F7D10D1066DF4FF9PQ?accountid=35226 (accessed September 19, 2016), and Nelson, "Airghanistan", 62.

218 Hill, "Advance", 11, and Anonymous, "Afghan Air Force Today", 105.

219 Marty, "Afghan Air Force".

220 The US Department of Defense reported to Congress on a quarterly bases. This statement is based on the following sections: United States Department of Defense, "Report on Progress December 2012", 64-68, United States Department of Defense, "Report on Progress November 2013", 54-58, United States Department of Defense, "Progress October 2014", 47-52, United States Department of Defense, "Enhancing December 2015", 47-62, and United States Department of Defense, "Enhancing June 2016", 59-75. Only one report mentioned challenges of fielding aircraft and associated equipment. This was however in the context of the extra time it took to field an air force, compared to the army (United States Department of Defense, "Report on Progress November 2013", 55).

221 Cordesman, Mausner, and Lemieux, "Afghan National Security Forces", 119.

222 Boera and Birch, "CAPTF", 10, Cordesman, Mausner, and Lemieux, "Afghan National Security Forces", 119, Hath Druzin and Zubair Babakarhail, "US Scraps Entire Fleet of Afghan Cargo Planes", *Website Stars and Stripes* (December 28, 2012)

of the C-130s was halted for a short period of time, because high-level commanders in Afghanistan questioned the Afghan capability to incorporate the airframes and also questioned the operational need for such a system. The C-208 "Caravan", which was supposed to be an interim solution between the C-27 and the C-130, was much better suited for its duties, even better than the Mi-17 "Hip" transport helicopter. Also, it was cheap to operate. Consequently, the C-130 airframes present in Afghanistan were under-utilized.[223]

Delivery of helicopters also had specific challenges, which were mostly related to their origin. Initially, the decision to buy Russian helicopters raised some bureaucratic obstacles, but a workable solution was devised. As for transport helicopters, the US coordinated aircraft purchases through the Non-Standard Rotary Wing Program Office in Huntsville, Alabama. This office contracted the purchase of airframes from a civilian contractor who bought the airframes from the manufacturer. The airframes were then shipped to the United Arab Emirates, where they were modified to suit Afghan needs. Such modifications were self-protection suites, western radios, armor plating, and night vision equipment.[224] Deteriorating diplomatic relationships between the US and Russia from 2014 onwards as a result of the crises in Syria and Ukraine, however, strained the delivery of especially the Mi-17s and their spare parts.[225] Even though the first sixty three airframes were delivered

http://www.stripes.com/news/us-scraps-entire-fleet-of-afghan-cargo-planes-1.202220 (accessed October 20, 2016), Marion, Interview Givhan, 5-6, Marion, *Flight Risk*, 69-70, Marion, "Training", 29-30, Ethan Rosenkranz, "C-27A Shining Example of Billions Wasted in Afghanistan", *Website Project on Government Oversight (POGO)* (July 2, 2014) http://www.pogo.org/blog/2014/07/c-27a-shining-example-of-the-billions-wasted-in-afghanistan.html (accessed October 20, 2016), Travis J. Tritten, "US-funded Afghan C-27s Scrapped for 6 Cents Per Pound", *McClatchy - Tribune Business News* (October 9, 2014) http://search.proquest.com/docview/1609395509/B9D0CA5042624DF3PQ?accountid=35226 (accessed October 12, 2014), United States Department of Defense, Inspector General, "Assessment", ii-iv, and 53, and Alan Warnes, "Beyond Belief! ", *Air Forces Monthly*, no. 319 (2014): 76-78.

223 Nathan Hodge, "U.S. Watchdog Urges Delaying Delivery of More Cargo Aircraft to Afghan Military; Letter Questions Whether Country's Air Force Is Making Full Use of Existing Planes", *Wall Street Journal (Online)* (July 15, 2014) http://search.proquest.com/docview/1545081478?accountid=35226 (accessed July 21, 2014), Gareth Jennings, "Afghanistan Receives Full Complement of C-130 Airlifters", *Website IHS Jane's Defense Weekly* 52, no. 32 (2015) http://search.proquest.com/docview/1690574662/2D375C0FE2D84191PQ/1?accountid=35226 (accessed October 30, 2016), and Marion, *Flight Risk*, 131-135, 171.

224 Boera, "Combined Airpower Transition Force", and Ellen Mitchell, "Army Awards Lockheed $268.9M to Support Afghan Military's Mi-17 Helos", *Inside the Pentagon's Inside the Army* 26, no. 36 (2014) http://search.proquest.com/docview/1560559467/55539C896E54386PQ?accountid=35226 (accessed September 17, 2014)

225 Anonymous, "Deal for Russian Copters Astonishing", *Standard - Speaker* (December 21, 2013) http://search.proquest.com/docview/1470095193?accountid=35226 (accessed December 30, 2013), Anonymous, "NATO Wants to Expand Cooperation with Russia on Servicing Helicopters in Afghanistan - Rasmussen", *Interfax Central Asia General Newswire* (December 2, 2013), Anonymous, "No Impact on Russia's Helicopter Supplies to Afghanistan", *The Philippines News Agency (PNA)* (June 19, 2014) http://search.proquest.com/docview/1537452299/A7FA3E9A2CAD41CDPQ/6?accountid=35226 (accessed October 22, 2014), Anonymous, "Russia Not Selling Mi-17 Helicopters to Iraq, Afghanistan - State Arms Exporter", *BBC Monitoring Former Soviet Union* (June 15, 2009) http://search.proquest.com/docview/460259946/338DE5CCA1344B3PQ/34?accountid=35226 (accessed October 21, 2014), Cordesman, Mausner, and Lemieux, "Afghan National Security Forces", 120, Gary Owen, "Flying After 2014: Which Aircraft for the Afghan Air Force?", *Website Afghanistan Analysts Network* (March 2, 2014) http://www.afghanistan-analysts.org/flying-after-2014-which-aircraft-for-the-afghan-air-force/ (accessed July 19, 2014), Michael M. Phillips, "U.S. Struggles to Replace Afghan Helicopters; Ban on Buying From Russia Makes It Hard for the Pentagon to Bolster Kabul's Fleet", *Wall Street Journal (Online)* (June 22, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1798895535/2424BDE15E834444PQ?accountid=35226 (accessed June 27, 2016), and Willi, Interview. As during the beginning of the conflict, there were reports in the media that indicated that Russia might deliver systems directly to the Afghans. However, it remains unclear to what extent this support actually materialized: Anonymous, "Russia Ready to Supply Weapons to Afghanistan but Does Not Plan Air Support", *BBC Monitoring Former Soviet Union* (December 23, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1751298534/3E707A92DBF74C45PQ?accountid=35226 (accessed December 31, 2015), and Michael Birnbaum, "Afghan Forces to Receive Russian Arms As Moscow

by the Russian manufacturer as agreed under contract, the Obama Administration found it increasingly difficult to order additional aircraft and spare parts due to self-imposed constrictions on trade with Russian companies.

Late 2016, reports started to circulate in the media that the US wanted to replace the entire Afghan Mi-17 fleet with US made Black Hawk helicopters, part of them armed. This would be executed within two years of formal government approval. The idea had supporters in Congress, who had disagreed with the procurement of Russian airframes in the first place. However, the decision was not made, due to the scheduled inauguration of President Trump in January 2017. Nevertheless, the reports in the media illustrated that geopolitical dynamics could have a profound effect on the operational capability of the AAF and SMW.[226]

From a different order were the problems with regard to the Mi-35 "Hind" attack helicopter. The Czech Republic had donated six refurbished Hinds to Afghanistan in 2008, but due to maintenance problems, only one remained serviceable. This posed severe problems with regard to availability of Close Air Support (CAS) for ground forces. India subsequently donated four Hinds late 2015, which was remarkable due to the possible political tensions it could cause with Pakistan.[227] However, there was still a need for additional CAS platforms, even though the MD530F and some Mi-17s were outfitted with guns and rocket pods.[228]

For fixed wing assets, the problem was even more severe. Delivery of a Light Air Support (LAS) aircraft to the Afghan Air Force was delayed for years due to litigation in the United States. In 2011, the US Air Force awarded a contract for delivery of twenty A-29 Super Tucano aircraft for the Afghan Air Force, manufactured by the Brazilian-based Embraer Sierra Nevada Corporation. This decision was challenged twice by Hawker Beechcraft, the manufacturer of the competing AT-6 Texan II, to no avail. However, the company

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Seeks Expanded Role (Posted 2016-01-13 12:07:00): The Russian Move Comes As U.S. Troops Scale Down Their Afghan Mission", *The Washington Post* (January 13, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1756392168/BB18E5EFB5B54BBAPQ?accountid=35226 (accessed January 18, 2016).

226 Gareth Jennings, "Afghan Air Force to Field Black Hawk Helos in Place of M-17s", *Jane's Defense Weekly* 54, no. 4 (2016) http://search.proquest.com/docview/1841950790/BBE79BE12B3C45FAPQ/1?accountid=35226, Ahmad Shah Katawazai, "US to Replace Russian Mi-17s with Black Hawk Helicopters in Afghanistan", *Website The Diplomat* (December 1, 2016) http://thediplomat.com/2016/12/us-to-replace-russian-mi-17s-with-black-hawk-helicopters-in-afghanistan/ (accessed December 22, 2016), and Josh Smith, "Under U.S. Plan, Afghans May Get Black Hawks to Replace Russian Aircraft", *Website Reuters* (November 29, 2016) http://www.reuters.com/article/us-afghanistan-usa-helicopters-idUSKBN13N2FO (accessed December 22, 2016).

227 Anonymous, "Afghanistan to Receive Military Aircraft Form USA, India", *BBC Monitoring South Asia* (December 20, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1750316951/2BF885F7ADDF44CFPQ?accountid=35226 (accessed January 13, 2016), Owen, "Flying After 2014", and Angad Singh, "Hinds of the Hindu Kush: The Mi-25/35 in Afghanistan", *Vayau Aerospace and Defence Review*, no. 3 (2016): 106-110, 109-110. There were also several reports that Afghanistan would buy M-35s from Russia directly, but actual delivery has not been confirmed (Anonymous, "Russia Will Provide Afghanistan with Attack Helicopters", *BBC Monitoring South Asia* (October 13, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1721593020/699962CA89FC4D29PQ?accountid=35226 (accessed October 20, 2015), and Anonymous, "Afghanistan Considers Mi-35 Helicopter Purchase From Russia", *Progressive digital media (incl, Airforce, Army, Navy and Homeland Security) News* (April 13, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1676561613/84AC7756E5A454DPQ?accountid=35226 (accessed May 15, 2015)).

228 Anonymous, "Afghan Air Force Today", 105.

eventually managed to file the case in Congress. With fierceness that could be related to the dire financial situation of the company, Hawker Beechcraft argued that it found it *"deeply distressing that the Air Force selected a more expensive, less capable, foreign-manufactured airplane with weapons and systems unfamiliar to, and outside the control of, the U.S. military"*.[229] It was, in essence, an argument to buy American aircraft, an argument that had supporters in Congress, even though Embraer pledged to manufacture the airframes in the US. Congressmen and Congresswoman took into consideration the industrial base of the States they were representing. This resulted in a convoluted conflict that was characterized by journalist Sidney Freedberg as follows:

> "So the Light Air Support contract has been a rolling, multi-year disaster, a microcosm of everything that's wrong with the military acquisitions system: meddling by politicians, incompetence by bureaucrats, and legal wrangling by the contractors. (Sierra Nevada filed suit itself at one point). Meanwhile US troops and their Afghan allies are without a lightweight, low-altitude air support plane that commanders first said was necessary in August 2009. Even without any further delay, the first planes — whichever plane is chosen — won't arrive in Afghanistan until after most US forces have withdrawn".[230]

In the mean time, the USAF however remained in favor of the Super Tucano, which was, contrary to the AT-6, combat proven and could be bought "off the shelf". Hawker Beechcraft eventually lost the contract for Afghanistan, but the delivery of the A-29 was severely delayed, which was one of the reasons for accelerated procurement of armed helicopters. The first A-29 Super Tucanos were delivered late 2015, with combat ready crews.[231] Full operational capability of the twenty airframes, thirty pilots, and ninety maintenance

229 Amy Butler, "Spurned on LAS by GAO, Beechcraft Goes to Congress", *Website AviationWeek.com* (June 13, 2013) http://aviationweek.com/defense/spurned-las-gao-beechcraft-goes-congress (accessed October 20, 2016).

230 Sidney J. Jr. Freedberg, "Beechcraft Protests Light Air Support Awards; Kansas Lawmakers on Warpath", *Website BreakingDefense* (March 8, 2013) http://breakingdefense.com/2013/03/beechcraft-protests-super-tucano-las-award-kansas-delegation-on/ (accessed October 20, 2016).

231 Anonymous, "Afghan Air Force Receives First Four A-29 Attack Aircraft ", *Targeted News Service* (January 18, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1758057107/9D699D90824E4CADPQ?accountid=35226 (accessed October 28, 2016), and Anonymous, "Combat Aircraft Donated by US to Afghan Forces Arrive in Kabul", *BBC Monitoring South Asia* (January 15, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1756954765/BB18E5EFB5B54BBAPQ?accountid=35226 (accessed October 28, 2016).

personnel was expected to be reached by the end of 2018.[232] The result was that the armed MD 530Fs needed to be rushed into service.[233]

Finally, there was the question to what extent the Afghans themselves were content with the donated assets. Indications are that the Afghan leadership, at least during some periods, expected the coalition to build a technologically advanced air force comparable to the air forces of the coalition. A US Department of Defense report of 2012 listed differing expectations between the coalition and the Afghan Air Force officials as one of the systemic challenges of building the Afghan Air Force.[234] In 2014, Afghan media reported that Afghanistan would request modern equipment at the NATO Wales Summit.[235] Also, this attitude manifested itself in criticism on the airframes that were delivered, such as the MD530 helicopter and the Cessna 208 light transport plane, and an outspoken desire to acquire status-enhancing airframes such as the F-16 or C-130 Hercules.[236] This was however unrealistic. The problem was not addressed in the follow-on report of 2018.[237] So, it is therefore assumed that Afghan senior officials tried to mirror modern air forces for reasons of prestige, but eventually acquiesced themselves in the set of airframes they were donated.

232 Anonymous, "Afghan Air Force Today", Anonymous, "Sierra Nevada Corporation Corrects the Record on U.S. Air Force Light Support Program", *PR Newswire* (February 2, 2012) http://search.proquest.com.nlda.idm.oclc.org/docview/919446187/5AE8FFC2BC84C4CPQ/2?accountid=35226 (accessed October 20, 2016), Butler, "Spurned", Robert F. Dorr, "Light Air Support (LAS) Contest Between AT-6 Texan II, Super Tucano Continues", *Website DefenseMediaNetwork* (July 16, 2011) http://www.defensemedianetwork.com/stories/light-air-support-las-contest-between-at-6-texan-ii-super-tucano-continues/ (accessed October 20, 2016), Freedberg, "Beechcraft Protests", Nathan Hodge, "U.S. Builds Afghan Air Base, but Where Are the Planes?", *Wall Street Journal (Online)* (July 25, 2012) http://search.proquest.com.nlda.idm.oclc.org/docview/1027619200/5AE8FFC2BC84C4CPQ/7?accountid=35226 (accessed October 20, 2016), Gareth Jennings, "Super Tucano Deliveries to Afghanistan Delayed Until Early 2016", *Jane's Defense Weekly* 52, no. 45 (2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1715817616/5AE8FFC2BC84C4CPQ/14?accountid=35226 (accessed October 20, 2016), and Aaron Mehta, "Beechcraft Moves Plane Contract Fight to Court", *Defense News* (March 25, 2013) http://search.proquest.com.nlda.idm.oclc.org/docview/1324402423/5AE8FFC2BC84C4CPQ/36?accountid=35226 (accessed October 20, 2016).

233 Jennings, "Super Tucano Deliveries".

234 United States Department of Defense, Inspector General, "Assessment", 13-16.

235 Anonymous, "Afghan Government to Ask for Equipping of Air Force at Wales Summit", *BBA Monitoring South Asia* (September 4, 2014) http://search.proquest.com/docview/1559955287/55CC5879BFF04F02PQ?accountid=35226 (accessed September 9, 2014).

236 Anonymous, "Afghan Air Force Commander Asks for Modern Aircraft, Equipment", *BBC Monitoring South Asia* (August 30, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1708055133/135040DAA91745CDPQ?accountid=35226 (accessed September 10, 2015), Anonymous, "Military Expert Says USA, West Have Let Down Afghan Air Force", *BBC Monitoring South Asia* (September 14, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1819085458/19F03BDC3F07403DPQ?accountid=35226 (accessed September 19, 2016), Gareth Jennings, "Afghan MD 530F Lost to Accident, Air Force Criticises Helicopter's Performance", *Jane's Defence Weekly* 52, no. 46 (2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1717152151/994EF78D17C5456DPQ?accountid=35226 (accessed October 13, 2015), Dan Lamothe, "As US Air War Over Afghanistan Shrinks, a Tug-of-war for Afghan Aircraft", *Wesbite Stars and Stripes* (December 2, 2015) http://www.stripes.com/news/us/as-us-air-war-over-afghanistan-shrinks-a-tug-of-war-for-afghan-aircraft-1.381601 (accessed September 12, 2016), and Dan Lamothe, "As U.S. Air War Over Afghanistan Shrinks, a Tug-of-war for Afghan Aircraft", *Washington Post - Blogs* (December 2, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1738678713/90BCFDEB2BEA4BDAPQ?accountid=35226 (accessed December 7, 2015), Marion, Interview Givhan, 10-11, and Marion, *Flight Risk*, 131-135.

237 United States Department of Defense, Inspector General, "Progress".

7.5.3. Intermezzo: The Question of Light Attack Aircraft

On the background, some other discussions may have been in play concerning the developments surrounding the Super Tucano. Identifying the right tech could be relatively easy. The follow-on question however was which function these systems had *within* the US military, and subsequently to what extent the US military should keep them in their own inventory. The first option was to transfer aircraft and prepare air advisors on a case-by-case basis, such as was the case for Afghanistan. The second option was to keep a fleet of commonly used aircraft in the inventory of 6 SOS, in order to maintain a permanently trained cadre and have the option to expand the number of countries that could be eligible for building partnerships with. The third option was to expand the inventory to the General Purpose Forces, and even become part of the joint force in order to support American forces. The discussion therefore touched on the topic of force structure of especially the USAF, and by extension on the topic of the role of light attack and light transport aircraft in modern conflict.[238]

Historically, the USAF had a bad reputation with regard to incorporating of perceived "low tech" aircraft for irregular warfare into its organization. US professionals on AvSFA had favored systems that were inexpensive, rugged, reliable, easy to maintain, and capable of short take-off and landing performance. However, according for some, the US Air Force had a cultural bias towards technologically advanced aircraft. This hampered acquisition of these systems, and made the USAF subject of accusations of inducing the "COIN syndrome".[239] Actual events and discussions show a mixed result with regard to later

238 These options are not identified but derived. Monroe argued that the US military had a tendency to erect what he called an "Outback Air Force" for specific purposes, only to disband it after the conflict had finished. He added that the US Air Force had the difficult dilemma of whether to grow and institutionalize the efforts in Afghanistan and Iraq to make it more permanent (Monroe, "Rebirth"). Basically the same argument is provided by Hock (Hock, "Closing", 59-60). This *de facto* entails options one and two. Johnson identified in 1997 that initiatives for, what was then called, FID were dogged by the issues of jointness of the unit and the question whether the US military used aircraft it owned and operated itself (Wray R. Johnson, "Whither Aviation Foreign Internal Defense?", *Airpower Journal* 11, no. 1 (1997): 67-85, 75). The question of expansion beyond SOF is ventilated by Livingston. He put down the question whether COIN aircraft and their associated personnel should be restricted to air advising missions, or could be used for support of US forces (Livingston, "Building Capacity", 49). A hybrid argument was made by USAF major Tittel. In his thesis of the US Army Command and Staff College, he argued that legacy aircraft, by which he meant traditional fighter-bomber aircraft, were not suited for COIN operations, mainly because their operating costs. Also, these systems wore down faster because of the many flight hours. And the missions these missions were detrimental to the training on missions these aircraft were designed for. He proposed to buy a limited amount of light attack aircraft for COIN operations and low intensity conflicts. As for the own forces, he stated that the light attack aircraft were suitable for JTAC training (Steven J. Tittel, "Cost, Capability, and the Hunt for a Lightweight Ground Attack Aircraft", (Master's Thesis, U.S. Army Command and General Staff College, Fort Leavenworth, KS, 2009) www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA510947 (accessed September 15, 2016). His propositions are found on page 71). Finally, retired USAF Colonel John Jogerst argued that modern day aircraft, designed for technologically adept enemies, were constituted a waste of resources in a COIN environment, because they used a fraction of their capabilities. In addition, they did not contribute to building a partner nation's air forces. Therefore, dedicated assets were needed for the latter task (John D. Jogerst, "Preparing for Irregular Warfare", *Air & Space Power Journal* 23, no. 4 (2009): 68-79, 77).

239 Bolkcom and Katzman, "Military Aviation", 41-42, Daley, "Exporting Airpower", 110-111, Remi Hajjar, "What Lessons Did We Learn (or Re-Learn) About Military Advising After 9/11?", *Military Review* 94, no. 6 (2014): 63-75, Wray R. Johnson, "Ends Versus Means: The 6th Special Operations Squadron and the Icarus Syndrome", *Air and Space Power Chronicles* (January 12, 2000) http://www.airpower.maxwell.af.mil/airchronicles/coj/cc/WJohnson.html (accessed November 25, 2015), and Monroe, "Rebirth".

periods. As stated, the US Air Force did acquire the A-29 for Afghanistan. The *Quadrennial Defense Review* of 2010 also stated that the US Air Force should expand fielding of light attack aircraft and light mobility aircraft to General Purpose Forces in order to increase the capacity to train, advise, and assist foreign air forces.[240] In addition, US Congress authorized the growth of 6 SOS twice between 2006 and 2010, enabling enlargement from little more than one hundred to five hundred personnel, and with additional air assets.[241] However, some of these initiatives were short-lived. With regard to light aircraft, General Schwartz stated the Light Mobility Aircraft (LiMA) and Light Attack/Armed Reconnaissance (LAAR) projects were partially designed for use by General Purpose Forces. Budget constraints forced the USAF to cancel this program, although General Schwartz also stated that there was no need for these aircraft within the GPF, especially regarding LAAR. CAS missions could be executed with the existing inventory of F-15, F-16, and A-10.[242] The 6 SOS, while enlarged, similarly suffered from budget cuts.[243]

In parallel, other services were experimenting with light aircraft as well. First was the US Navy, which in 2007 started a program called "Imminent Fury". This program entailed experimental fielding of A-29s to Afghanistan. Later, cooperation was sought and found with USAF and US Special Operations Command (USSOCOM). Congress however objected to this program, which preferred the AT-6. The program was terminated in 2010, but reinvigorated under the program name "Combat Dragon II". Goals were similar to that of Imminent Fury, this time however involving the AT-6 and and another aircraft type, the OV-10. Again, funding was denied by Congress, with the argument of lack of operational need. This program was terminated too.[244]

240 Ingrum, "Aviation Security Force Assistance", 15.

241 Finch and Garretson, "Air Advising", 36, Hock, "Closing", 60, Ingrum, "Aviation Security Force Assistance", 14-15, Kiebler, "USAF Advisory Programs", 17, and Livingston, "Building Capacity", 36.

242 David Axe, "Air Force Stalled for Years on New 'Light' Fighter", *Website Wired.com* (August 18, 2009) http://www.wired.com/2009/08/air-force-stalled-for-years-on-new-light-fighter/ (accessed January 13, 2016), Dorr, "LAS", Greg Grant, "Schwartz Shoots Down COIN Plane", *DoD Buzz: Online Defense and acquisition journal* (May 6, 2010) http://www.dodbuzz.com/2010/05/06/schwartz-shoots-down-light-fighter/ (accessed October 26, 2016), Ingrum, "Aviation Security Force Assistance", 14-18, and Jennings, "Super Tucano Deliveries".

243 Ingrum, "Aviation Security Force Assistance", 14-18.

244 Anonymous, "Imminent Fury / Combat Dragon II", *Website GlobalSecurity.org* (October 7, 2013) http://www.globalsecurity.org/military/systems/aircraft/imminent-fury.htm (accessed October 28, 2016), Robert F. Dorr, "Combat Dragon II Demonstrates OV-10G+ Bronco Capabilities", *Website DefenseMEdiaNetwork* (June 13, 2013) http://www.defensemedianetwork.com/stories/combat-dragon-ii-demonstrates-ov-10g-bronco-capabilities/ (accessed October 28, 2016), Sidney J. Freedberg, "The Afghanistan Air War", *National Journal* (September 24, 2010) http://search.proquest.com.nlda.idm.oclc.org/docview/754723767?OpenUrlRefId=info:xri/sid:wcdiscovery&accountid=35226 (accessed April 16, 2017), Carlo Munoz, "Light-Attack Plane Seeks New Life in Navy", *Website Breaking Defense* (November 20, 2011) http://breakingdefense.com/2011/09/light-attack-plane-seeks-new-life-in-navy/ (accessed October 28, 2016), Dan Taylor, "Congress' Denial of Reprogramming for Combat Dragon Stall Effort", *Inside the Pentagon's Inside the Navy* 24, no. 47 (2011) http://search.proquest.com.nlda.idm.oclc.org/docview/913058130/B3EA4065168A4C4DPQ/11?accountid=35226 (accessed October 28, 2016), Marcus Weisberger, "USAF to Garner Imminent Fury TTPs for Follow-on Light Attack Programs", *Inside the Pentagon's Inside the Air Force* 21, no. 17 (2010) http://search.proquest.com.nlda.idm.oclc.org/docview/968947422/B3EA4065168A4C4DPQ/2?accountid=35226 (accessed October 28, 2016), and Marcus Weisberger, "CENTCOM Contemplating Light-attack Plane Demo in Afghanistan", *Inside the Pentagon's Inside the Air Force* 21, no. 51 (2010) http://search.proquest.com.nlda.idm.oclc.org/docview/965576402/B3EA4065168A4C4DPQ/1?accountid=35226 (accessed October 28, 2016).

The LiMA/LAAR topic then re-emerged in a different context, namely of the replacement of the A-10. To meet budget demands, the USAF tried to retire a part of its A-10 inventory in 2013, and again in 2015, arguing that the role of CAS would be diverted to other platforms, while making funds available for the F-35 project. This was met with resistance in Congress and outside supporters, because of the positive track record of the A-10 with regard to CAS. The USAF nevertheless planned to retire a part of the A-10 fleet, possibly leaving a CAS capability gap. To fill the gap, the Super Tucano and the AT-6 again came into the picture, as part of a program called "OA-X". This was to be an interim solution, until a new aircraft was developed that was better able to survive in a high threat environment. This program was called "A-X2". This in turn spurred debates on which platform was best at CAS, and which combination of aircraft types was best to fulfill all airpower tasks.[245] In the end, the A-10 was not retired, mainly due to the need for the airframes in Syria, Iraq and other areas. Research on replacement of the A-10 continued.[246]

7.5.4. Familiar Resources Challenges

The challenges with regard to resources described in the previous chapters diminished or changed in character significantly from 2012 to 2016. First, the challenge of secured access to bases surrounding Afghanistan and overflight rights initially exacerbated.

245 Anonymous, "Cutting Airmen, Keeping the A-10", *Air Force Times* (December 23, 2013) http://search.proquest.com/docview/1474188499?accountid=35226 (accessed October 28, 2016), Mike Benitez, "OA-X: More Than Just Light Attack", *Website War on the Rocks* (August 16, 2016) http://warontherocks.com/2016/08/oa-x-more-than-just-light-attack/ (accessed October 28, 2016), Ryan Browne, "Air Force Looking to Replace A-10 Warthog", *CNN Wire Service* (April 8, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1779662662/DF50E5ACFF2C40DDPQ/1?accountid=35226 (accessed October 28, 2016), Christian Davenport, "Air Force Plan to Get Rid of A-10s Runs Into Opposition (Posted 2014-04011 03:038:28): Supporters Say the Aircraft Saved Lives in Iraq and Afghanistan and Can't Be Replaced", *The Washington Post* (April 11, 2014) http://search.proquest.com/docview/1514641598?accountid=35226 (accessed October 28, 2016), Brian Everstine, "Air Force: A-10 Cuts Would Save $5.5 Billion", *Air Force Times* (2013) http://search.proquest.com/docview/1449789940?accountid=35226 (accessed October 27, 2016), Leigh Giangreco, "USAF Seeks Two New Close-air Support Aircraft", *Website FlightGlobal* (July 24, 2016) https://www.flightglobal.com/news/articles/usaf-seeks-two-new-close-air-support-aircraft-427769/ (accessed October 28, 2016), Jon Harper, "Air Force Contemplating New Close-Air Support Platforms", *National Defense* 101, no. 754 (2016): 30-32, Valerie Insinna, "Air Force Faces Rocky Road for Replacing the A-10", *Defense News* (July 11, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1804853532/1C73DF863EE94F6BPQ/1?accountid=35226 (accessed October 28, 2016), Kamal J. Kaaoush, "The Best Aircraft for Close Air Support in the Twenty-First Century", *Air & Space Power Journal* 30, no. 3 (2016): 39-53, Jacqueline Klimas, "Air Force Leader Says A-10 Retirement May Be Delayed", *The Examiner* (November 10, 2015) http://nlda.idm.oclc.org/login?url=http://search.proquest.com.nlda.idm.oclc.org/docview/1733029843?accountid=35226 (accessed November 17, 2015), Stew Magnuson, "Fight to Keep A-10 Warthog in Air Force Inventory Reaches End Game", *National Defense* 98, no. 718 (2013) http://search.proquest.com/docview/1441429393?accountid=35226 (accessed October 27, 201), Michael W. Pietrucha, "The Comanche and the Albatross: About Our Neck Was Hung", *Air & Space Power Journal* 28, no. 3 (2014): 133-156, Phillip Swarts, "Top Officer Takes Heat Over the A-10", *Air Force Times* (March 21, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1776084169/F24D9167A4B44858PQ/1?accountid=35226 (accessed October 28, 2016), and David Wichner, "Retirement of A-10 Thunderbolt II Pushed Back to 2022", *TCA Regional News* (February 3, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1761974290/594DBA1759BA4287PQ/1?accountid=35226.

246 Anonymous, "Close Air Support to Evolve As Air Defences Proliferate", *Jane's International Defense Review* 48, no. 8 (2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1800887344/abstract/348C937EDEA644FCPQ/1?accountid=35226 (accessed July 5, 2016), David Axe, "How An Ugly, Brutally Effective Warplane Won the Battle for Its Future", *Website Reuters* (November 24, 2015) http://blogs.reuters.com/great-debate/2015/11/24/how-an-ugly-brutally-effective-warplane-won-the-battle-for-its-future/ (accessed July 29, 2016), and Klimas, "Air Force Leader".

Due to diplomatic tensions between the US and Kyrgyzstan, the Kyrgyz government decided to terminate the agreements for the use of Manas Transit Center as of July 2014. This was problematic for the coalition, as the drawdown was scheduled to be finished in December of that year. Therefore, the US gradually transited activities from Manas to Mihail Kogălniceanu Air Base in Romania from February 2014 onwards. Air-to-air refueling operations were diverted to other bases in Central Asia. Manas Transit Center was formally closed on June 3, 2014, before the redeployment was complete.[247] The US explored use of other air bases in the area as well, and there were rumors that Kharsi Khanabad in Uzbekistan could be used again by the US. This however did not materialize, although Germany was allowed continued use of the Uzbek airbase of Termez.[248]

The dynamic of the second challenge, that of base defense, changed in nature between 2012 and 2016. As coalition troops withdrew, many bases were dismantled or handed over to the Afghan security forces. In parallel, the insurgents became more audacious in their attacks. This became manifest in several highly reported incidents. In July 2014, the Taliban executed an attack on a bus of the Afghan Air Force in Kabul, a rocket attack on Kabul International Airport, damaging one of President Karzai's helicopters, and a ground attack on the airport itself.[249] Another well-published incident was the attack on Kandahar Airfield on December 8, 2015, still about 2,000 coalition forces were present. During this attack, nine members of the Taliban managed to enter the outer perimeter of

247 Chris Carol, "DOD to Shift Air Transit From Manas to Romania", *McClatchy - Tribune Business News* (October 18, 2013) http://search.proquest.com/docview/1442848704/80F7CE2A8E7944FFPQ/2?accountid=35226 (accessed October 10, 2014), Max Despain, "The End of An Era: 376th Air Expeditionary Wing Inactivation Ceremony", *Website U.S Air Force* (June 4, 2014) http://www.af.mil/News/ArticleDisplay/tabid/223/Article/485254/the-...d-of-an-era-376th-air-expeditionary-wing-inactivation-ceremony.aspx (accessed October 14, 2014), Matt Millham, "U.S. Transit Hub in Romania Fully Operational", *McClatchy - Tribune Business News* (March 1, 2014) http://search.proquest.com/docview/1503287371/80F7CE2A8E7944FFPQ/6?accountid=35226 (accessed October 10, 2014), Sabina Nováková, "Manas Air Base and U.S.-Kyrgyz Relations", (Bachelor's Thesis, Charles University, Prague, 2015) https://is.cuni.cz/webapps/zzp/download/130153879 (accessed December 11, 2015), 37-38.

248 Anonymous, "Uzbekistan May Provide Khanabad Airfield to U.S. To Replace Kyrgyzstan's Manas", *AKI Press News Agency* (June 24, 2014) http://search.proquest.com/docview/1539565352?accountid=35226 (accessed June 30, 2014), {Anonymous 2014 US Base Deployment Rumours, Anonymous, "Uzbekistan Not to Allow Foreign Military Base Deployment in Its Territory", *McClatchy - Tribune Business News* (August 5, 2014) http://search.proquest.com/docview/1551142928?accountid=35226 (accessed August 12, 2014), and Anonymous, "Germany, Uzbekistan: GERMANY and UZBEKISTAN Strike New Air Base Deal", *MENA Report* (November 7, 2014) http://search.proquest.com/docview/1621679247/6954407C3C694B32PQ?accountid=35226 (accessed November 15, 2014).

249 Anonymous, "Spicejet Flight Escapes Kabul Rocket Attack", *The Hindustan Times* (July 4, 2014) http://search.proquest.com/docview/1542544387?accountid=35226 (accessed July 8, 2014), Anonymous, "Taliban Claim Responsibility for Kabul Airport Attack", *Kashmir Monitor* (July 18, 2014) http://search.proquest.com/docview/1545631946?accountid=35226 (accessed July 21, 2014), Anonymous, "Taliban Rocket Attack Destroys Afghan Military Helicopters", *Progressive Digital Media Defense (incl, Airforce, Army, Navy and Homeland Security) News* (July 4, 2014) http://search.proquest.com/docview/1544866134?accountid=35226 (accessed July 21, 2014), Nathan Hodge and Ehsanullah Amiri, "Taliban Militants Attack Kabul Airport; Afghan Security Forces Thwart Strike, Kill Five Militants", *Wall Street Journal (Online)* (July 17, 2014) http://search.proquest.com/docview/1545383067?accountid=35226 (accessed July 21, 2014), Habib Khan Totakhil and Margherita Stancati, "Taliban Fire Rockets at Kabul Airport", *Wall Street Journal, Europe* (July 4, 2014) http://search.proquest.com/docview/1543303169?accountid=35226 (accessed July 13, 2014), and Habib Khan Totakhil and Margherita Stancati, "Taliban Rocket Attack on Kabul Airport Damages Military Aircraft; Helicopter of President Hamid Karzai Was Destroyed, Official Says", *Wall Street Journal (Online)* (July 3, 2014) http://search.proquest.com/docview/1542383663?accountid=35226 (accessed July 8, 2014).

the airbase and conduct an attack, temporarily closing the base for air traffic.[250] The threat from insider attacks was lowered, but did not disappear, as several incidents indicate. It compelled continuing resilience on security, hampering communication with the Afghans, and consequently hampering the air advising effort.[251] The reasons for success of these attacks could be manifold, such as competence of the insurgency, incompetence of Afghan or coalitions forces, or budget constraints. One other reason that can be found is that reduction of forces coerced commanders to triage, leaving security gaps.[252]

The next challenge was that of building activities. When the surge was completed, and western militaries started to redeploy to their home countries, the goals of building activities changed character. First, many bases, including those with airstrips, were dismantled as coalition forces left. This could lead to the paradoxical situation that temporary operational facilities, such as a deployable Forward Arming and Refueling Point (FARP) increased, as several semi-permanent facilities were dismantled.[253] The top-drawer facilities were handed over to the Afghan Government.[254] Second, some of the airfields

250 Anonymous, "Afghan Taleban Release Detailed Report About Attack on Kandahar Airport", *BBC Monitoring South Asia* (December 11, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1747534180/F88F57A099194F0BPQ?accountid=35226 (accessed December 15, 2015), Jessica Donati and Ghousuddin Frotan, "Afghan Forces Regain Control of Kandahar Airport From Taliban; Militants Stormed the Sprawling Base and Killed at Least Nine Soldiers", *Wall Street Journal (Online)* (December 9, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1746845673/322B14D5AE3D4AC5PQ?accountid=35226 (accessed December 15, 2015), David Jolly and Taimoor Shah, "Taliban Insurgents Kill 9 at Kandahar Base: [Foreign Desk]", *The New York Times, Late Edition (East Coast)* (December 9, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1746795384/322B14D5AE3D4AC5PQ?accountid=35226 (accessed December 15, 2015), Franz J. Marty, "Taliban Suicide Squad Attacks Kandahar Airfield", *Jane's Defense Weekly* 53, no. 5 (2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1748076848/322B14D5AE3D4AC5PQ?accountid=35226 (accessed December 12, 2015), and Sayed Salahuddin, "Afghan Airport Remains Closed After Taliban Launches Daring Attack: The Insurgent Assault on Kandahar's Airport Has Killed a Reported 50 People Since Tuesday, Officials Said", *The Washington Post* (December 9, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1747233555/F88F57A099194F0BPQ?accountid=35226 (accessed December 15, 2015).

251 Anonymous, "Afghanistan Insider Attacks Stir 'uncertainty'", *Marine Corps Times* (August 18, 2014) http://search.proquest.com/docview/1558506601/55CC5879BFF04F02PQ?accountid=35226 (accessed September 9, 2014), Nathan Hodge, Dion Nissenbaum and Margherita Stancati, "Afghanistan Base Shooting: U.S. Major General Killed in Kabul; Person in Afghan Army Uniform Shoots Maj. Gen. Harold Greene and 14 Other Foreign Soldiers, Including German", *Wall Street Journal (Online)* (August 5, 2014) http://search.proquest.com/docview/1551141564?accountid=35226 (accessed December 30, 2016), Marion, *Flight Risk*, 173-177, Mattew Rosenberg and Helene Cooper, "Killing of General a Grim Sign of NATO Challenges: Insider Attacks Persist, Despite Efforts to Vet Afghan Security Forces", *International New York Times* (August 7, 2014) http://search.proquest.com/docview/1551484085?accountid=35226 (accessed December 30, 2016), Margherita Stancati and Nathan Hodge, "U.S. Says Attack on General Won't Change Security Plans for Afghanistan; NATO Official Says Officer's Death Has 'Strengthened Resolve'", *Wall Street Journal (Online)* (August 6, 2014) http://search.proquest.com/docview/1551495699?accountid=35226 (accessed December 30, 2016), and Joanna Wright, "US General Killed in 'green on Blue' Shooting in Kabul", *Jane's Defense Weekly* 51, no. 37 (2014) http://search.proquest.com/docview/1551556705?accountid=35226 (accessed December 30, 2016).

252 This suggestion was found in the aftermath of the attack on Camp Bastion in 2012, in which several Harrier aircraft were destroyed after a ground attack. This incident induced investigations which became reported afterwards: Rajiv Chandrasekaran, "2 Generals Fired for Security Lapses in Afghanistan", *New Haven Register* (October 1, 2013) http://search.proquest.com/docview/1461376866?accountid=35226 (accessed December 2, 2013), Jonathan Owen, "British Officer Rejects Blame for Camp Bastion Attack", *The Independent* (December 18, 2013) http://search.proquest.com/docview/1468727604?accountid=35226 (accessed December 30, 2013), and Jonathan Owen, "Revealed: How Defence Cuts Helped Taliban Devastate Camp Bastion", *The Independent* (October 5, 2013) http://search.proquest.com/docview/1439444151?accountid=35226 (accessed November 25, 2013).

253 Daniel Bolon, "Jump FARP Operations in Afghanistan", *Army Sustainment* 46, no. 5 (2014): 43-45.

254 Anonymous, "Afghanistan: Afghan Airfields Built for War Seen As Economic Hubs", *Asia News Monitor* (September 3, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1708957622/135040DAA91745CDPQ?accountid=35226

were reconstructed to make them suitable for a more permanent presence of western forces. The initial plan entailed complete withdrawal, leading the US to seek alternative bases for their operations with Unmanned Aerial Vehicles (UAVs). As the need for more permanent presence became apparent, and was approved by the Afghan Government, the US started to reconstruct bases in areas where the coalition remained, such as Bagram.[255] Third, and most importantly, the Afghan Air Force needed infrastructure to operate from. The US assessed in 2006 that the ANAAC lacked basic infrastructure, and what remained after decades of conflict was in poor condition.[256] As part of the "infrastructure build" ISAF constructed facilities for the Afghan Air Force on existing air bases for the main operating bases Kabul, Kandahar, Shindand, and air detachments in Mazar-e-Sharif, Herat, Gardez and Jalalabad.[257] The North Kabul International Airport cantonment area was opened early 2009. This area contained the Kabul Air Corps Training Center.[258] While it can be argued that these developments started rather late, basically from 2010 onwards, by mid 2015 some Afghan officials claimed that most of the infrastructural problems of the AAF had been solved.[259]

The challenge of Air Traffic Control (ATC), the fourth challenge, remained. As described in the previous chapter, military and civilian developments overlapped on the question of ATC, as most airfields could support both military and civilian air traffic. The US, coalition, or contractors hired by the coalition, had handled both since 2001. As redeployment gained traction, it was expected the Afghans would take over ATC issues as well. However, development of an Air Traffic Management System showed severe deficiencies from the start.[260] By 2015, the US decided that the contract with the Afghan Government, in which

(accessed September 10, 2015), and Jess Stauffenberg, "Camp Bastion: Eerie Footage Shows Abandoned Former British Base in Afghanistan", *The Independent (Online)* (August 1, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1807965873/C49639765A114274PQ?accountid=35226 (accessed August 8, 2016).

255 Anonymous, "Airmen Repair Runway in Afghanistan", *U.S. Department of Defense Information / FIND* (June 20, 2014) http://search.proquest.com/docview/1539285876?accountid=35226 (accessed June 30, 2014), Ken Dilanian and David S. Cloud, "THE WORLD; U.S. Seeks New Bases for Drones; If All American Forces Leave Afghanistan, Alternative Sites Will Be Needed for Strikes on Pakistan Targets", *Los Angeles Times* (February 16, 2014) http://search.proquest.com/docview/1498255558?accountid=35226 (accessed February 17, 2014), Kayla Newman, "Bagram Runway Opens, First F-16s Arrive", *U.S. Department of Defense Information / FIND* (December 19, 2013) http://search.proquest.com/docview/1469705879?accountid=35226 (accessed December 30, 2013), Josh Smith, "Bagram Tears Down Old Structures As It Builds Up Long-term Mission", *McClatchy - Tribune Business News* (October 4, 2014) http://search.proquest.com/docview/1585894419/B9D0CA5042624DF3PQ?accountid=35226 (accessed October 12, 2014), and Ben Vogel, "USAF Sets Up Second Runway at Bagram", *Jane's Airport Review* 27, no. 7 (2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1685673633/1214A60691344FB6PQ?accountid=35226 (accessed August 8, 2015).

256 United States Air Forces Central Command, *ANAAC CONOPS*, 146-169.

257 Hill, "Advance", 12, and NATO Training Mission Afghanistan, "NATC-A".

258 Marion, "Destruction and Rebuilding", 28.

259 Anonymous, "Afghan Air Force's Infrastructure Needs Met by 90 Per Cent - Report", *BBC Monitoring South Asia* (June 14, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1687872947/C3A3DE9BE8504BD7PQ?accountid=35226 (accessed July 26, 2015).

260 The deficiencies involved, amongst other things, incompetence of government staff, outdated legislation, and a deficient salary system (Nelson, "Airghanistan", 39). It might also include technological aids to help guide aircraft. By 2014 the multilateration system that the coalition tried to build in the preceding period still needed improvement, even on the major airfields. Derived from: Anonymous, "Thales Helps to Secure Air Traffic in Afghanistan", *Website Thales* (September 30, 2014) https://www.thalesgroup.com/sites/default/files/asset/document/140930_afghanistan_

the US paid for the expenses, would not be extended beyond June 2015. Afghanistan however did not have enough qualified air traffic controllers, despite efforts to train them, and was not able to muster enough money to hire contractors. The US thereupon extended the contract to September. Negotiations were started with India and Japan to provide funding until the end of 2015.[261] Nevertheless, corruption and abuse of contracting processes on the side of the Afghans led to an insufficiently functioning ATC system.[262] This was a challenge because military and civilian air traffic could both be integrated at an airfield, and its functions could not be handed over to the Afghans. This remained a challenge for some time. In the summer of 2015, a letter of agreement was signed by all stakeholders to procedurally deconflict civilian and military air movements.[263] Afghanistan remained dependent on outside support on the field of ATC.

The fifth challenge, that of interoperability, did not change much during the period described in this chapter. As mentioned in the previous chapter, the Afghan Mission Network (AMN) enabled ISAF partners to communicate with each other, and initiatives with regard to command and control of the air weapon proved to be improvements, and the system worked. Nevertheless, both US and NATO continued to develop initiatives to improve interoperability. From 2013 onwards the US started to bring communications networks together under the umbrella of the Joint Aerial Layer Network (JALN). In 2015 NATO started a program called Air Command and Control System (ACCS), which basically did the same thing. Both programs had the goal of enhancing situational awareness

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contracts_en_final_1.pdf (accessed July 13, 2016). Airfield services had been provided by the coalition forces, augmented with contractors (International Civil Aviation Organization, "The First Meeting of the Ad Hoc Afghanistan Contingency Group Meeting (AHACG/1), Kuala Lumpur, Malaysia, 11-12 September 2015" (September, 2015) http://www.icao.int/APAC/Meetings/2014%20AHACG1/WP03%20Status%20of%20Military%20Transition%20in%20Afghanistan.pdf (accessed July 11, 2016)).

261 Anonymous, "Afghanistan Civil Aviation Authority (ACAA) Trainees Commence on Job Training (OJT at Herat FSB", *Website NATO Support and Procurement Agency* (August 22, 2016) http://www.nspa.nato.int/en/news/news-20160822-6.htm (accessed November 31, 2016), Anonymous, "Afghanistan: Afghan Airfields", Anonymous, "Afghanistan May Become No-fly Zone Unless Contract Extended - Paper", *BBC Monitoring South Asia* (June 16, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1681047246/2306DA60BE5C4CAEPQ?accountid=35226 (accessed June 8, 2016), Anonymous, "U.S. Due to Stop Managing Afghan Airspace by End of June", *AKI Press News Agency* (May 6, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1678955828/943D5634AC3044FoPQ?accountid=35226, Brianna Ehley, "US Invests $560M in Afghan Civil Aviation That Can't Get Off the Ground", *Website The Fiscal Times* (May 15, 2015) http://www.thefiscaltimes.com/2015/05/15/US-Invests-560-M-Afghan-Civil-Aviation-Can-t-Get-Ground (accessed November 3, 2016), Nathan Hodge and Margherita Stancati, "Airlines' Access to Afghan Airspace in Jeopardy, Air-Traffic-Control Contract Needed by Oct.15", *Wall Street Journal (Online)* (September 28, 2014) http://search.proquest.com/docview/1566022820/501BB270C72D4754PQ/8?accountid=35226 (accessed July 11, 2016), Akhtar M. Nikzad, "US to Manage Afghan Airspace Till Mid-September", *Website Afghanistan Times* (June 25, 2015) http://afghanistantimes.af/us-to-manage-afghan-airspace-till-mid-september/ Page (accessed November 3, 2016), Saurabh Sinha, "Airports Authority of India Willing to Manage Afghanistan's Air Traffic Control [Airlines / Aviation]", *The Economic Times (Online)* (May 21, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1682036551?pq-origsite=summon (accessed July 4, 2016), and Josh Smith, "Afghan Air Control Struggling to Run on Its Own", *McClatchy - Tribune Buniness News* (May 15, 2015) http://search.proquest.com.nlda.idm.oclc.org/docview/1681022880/2306DA60BE5C4CAEPQ?accountid=35226 (accessed June 8, 2016).

262 Independent Joint Anti-Corruption Monitoring & Evaluation Committee, "Transitioning Control of Afghanistan's Air Space to the Afghanistan Civil Aviation Authority" (June 14, 2016) http://www.mec.af/files/2016_06_14_ACAA_Paper_(English).pdf (accessed July 11, 2016), 1.

263 Anonymous, "Afghanistan Enhances Airspace Management Capacity", *Website Resolute Support* (September 12, 2015) http://www.rs.nato.int/article/press-releases/afghanistan-enhances-airspace-management-capacity.html (accessed July 18, 2016).

by bringing several communications networks together under a single program.[264] Effectiveness of the AMN could have provided some inspiration for these programs. A direct link with operations in Afghanistan was however absent. In addition, JALN and ACCS fit within the larger context of networked warfare, and therefore will not be discussed in depth. An extra dimension with regard to interoperability was incorporated within the concept of SFA. Historically, NATO countries were highly interoperable at a procedural level. Formulated another way, standardized documents ensured that every members worked with the same procedures. In 2014, NATO's JAPCC advised to do the same with the, for NATO relatively new, concept of SFA.[265] As will be outlined in the paragraph on education, training, and lessons learned, at least some of these recommendations were implemented. In addition, US and NATO programs took into account that new airframes and procedures not only had to be absorbable by the Afghans, but also were interoperable the western forces.[266] In other words, the "right tech" mentioned earlier not only had to be suitable for the indigenous air force, but it also had to bridge the gap between highly developed western forces, and sometimes lesser developed indigenous air forces. So, while the developments with regard to interoperability in general became largely removed from the Afghan context, western forces' new task of air advising also extended to the question of operability, and with a different consideration was the case within the coalition.

7.5.5. *New Challenges: The Air Advisors*

In addition to resources that were needed in Afghanistan from the start of the conflict, the new mission required a new type of resources, namely air advisors. Initially, the primary organizational element that was tasked to provide for air advisors was 6 SOS of the US Air Force. This unit historically suffered from lack of institutional priority with regard to resources, due to culturally induced institutional preference for conventional operations. This problem manifested itself on different subtopics. For instance, 6 SOS faced difficulty

264 Anonymous, "Air Force Aerial-Layer Networking Concept to Enhance Connectivity", *C4I News* (April 7, 2011) http://search.proquest.com/docview/860727174/85373CE2FFDB4416PQ/6?accountid=35226 (accessed November 3, 2011), Anonymous, "NATO Air Command and Control System (ACCS)", *NATO Website* (September 24, 2015) http://www.nato.int/cps/en/natohq/topics_8203.htm (accessed November 3, 2016), Anonymous, "NATO Welcomes Activation of New Air Command and Control System", *NATO Website* (May 3, 2015) http://www.nato.int/cps/en/natohq/news_121623.htm?selectedLocale=en (accessed November 3, 2016), David Salanitri, "Aerial Networks Enable Joint Forces Communication Through Air, Ground, Sea", *Website United States Air Force* (December 16, 2013) http://www.af.mil/News/ArticleDisplay/tabid/223/Article/467749/ae...ks-enable-joint-forces-communication-through-air-ground-sea.aspx (accessed November 3, 2016), George I. Seffers, "Joint Aerial Layer Network Vision Moves Toward Reality", *Website Signal* (June 1, 2013) http://www.afcea.org/content/?q=joint-aerial-layer-network-vision-moves-toward-reality (accessed November 3, 2016), and United States Joint Chiefs of Staff, *Joint Concept for Command and Control of the Joint Aerial Layer Network*, March 20, 2015, http://www.dtic.mil/doctrine/concepts/joint_concepts/joint_concept_aerial_layer_network.pdf (accessed November 3, 2016).

265 Joint Air Power Competence Centre, "Improving ", 24-25, and 31-32.

266 Finch and Garretson, "Air Advising", 35, Livingston, "Building Capacity", 44-46, and Zadalis, "The Air Advisor", 10.

incorporating the aircraft they thought were needed for the SFA mission.[267] Also, there were indications that becoming an air advisor was detrimental to one's career.[268] In addition, the organizational structure and available resources were not equipped to execute advisory missions on the scale that was required in Afghanistan and Iraq. The unit consisted of only a few hundred personnel, and was tasked to execute advisory missions all over the world. It was equipped to enhance the capabilities of an existing partner air force, as was common in the Cold War era, rather than building one from scratch. This manifested itself in the tasks it had: it did not train on basic flying skills, but rather airpower employment, sustainment, and force integration. Finally, 6 SOS lacked helicopters. Between 2005 and 2010 it had scaled down its helicopter training capability in favor of fixed wing aircraft and as of 2012 did not have any helicopters at all. Therefore, the US Army filled this gap of training helicopter Mobile Training Teams (MTT).[269] In short, the organizational structure of the US Air Force, and the US military in general, was not equipped to perform advisory and assistance missions on this scale.[270]

The solution was to make advising partner nations an institutional priority, which should manifest itself in a visible commitment of senior leadership, in embedding the air advising mission in a comprehensive strategy, and in increased force levels and resources for the units that were tasked to perform air advising missions. Under Secretary of Defense Gates, Secretary of the Air Force Donley, and the US Air Force Chief of Staff Schwartz, the US Air Force made the first changes to the existing conventional paradigm.[271] As already mentioned, the manning of 6 SOS increased, but this was insufficient. General Purpose Forces needed to be added to the available resources. Initially, in 2005 - 2006, the air advising effort in Afghanistan consisted of about two dozen American advisors, raising to

267 Bolkcom and Katzman, "Military Aviation", 41-42, Lee G. Gentile, "Persistent Airpower for Unconventional Warfare: Revamping AFCENT's Operational Design", (Paper, Naval War College, Newport, RI, May 14, 2009) http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA502979 (accessed September 7, 2016), 6, Hock, "Closing", 57-60, Johnson, "6th SOS", and Johnson, "Whither", 80-82.

268 Daley, "Exporting Airpower", 111-112, Jason Dempsey, "Adopt New Strategy for Afghanistan: After 15 Years of Fighting, Military Leaders", *Buffalo News* (November 20, 2016) http://search.proquest.com.nlda.idm.oclc.org/docview/1841580327/1DA776770F84719PQ?accountid=35226 (accessed November 29, 2016), Robert M. Gates, "A Balanced Strategy: Reprogramming the Pentagon for a New Age", *Foreign Affairs* 88, no. 1 (2009) http://search.proquest.com.nlda.idm.oclc.org/docview/21428484 1?OpenUrlRefId=info:xri/sid:wcdiscovery&accountid=35226 (accessed April 5, 2017), Gates, "Helping", Hajjar, "Lessons", 71, Mesic, Thaler, Ochmanek, and Goodson, *Courses of Action*, 18-19, and Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 144.

269 Greg L. Davis, "Out of the Shadows", *Air Forces Monthly*, no. 262 (2010): 94-97, 97, Ingrum, "Aviation Security Force Assistance", 17-18, and Scott, "Aviation Security Force Assistance", 46.

270 Bolkcom and Katzman, "Military Aviation", 8-9, Finch and Garretson, "Air Advising", Gates, "Helping", Hock, "Closing", 60, Scott, "Aviation Security Force Assistance", 44, and Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 117, 115, 137, and 125.

271 Gates, "A Balanced Strategy", Gates, "Helping", Hock, "Closing", 61-62 and 66, James R. Macklin, "Air Power and Counterinsurgency: A Strategic Study in Efficiency", (Report, U.S. Army War College, Carlisle Barracks, PA, February 2, 2010) http://www.dtic.mil/get-tr-doc/pdf?AD=ADA518133 (accessed June 15, 2017), 29, and Norton A. Schwartz, "Airpower in Counterinsurgency and Stability Operations", *Prism* 2, no. 2 (2011): 127-134. It should be stated that, while the US Air Force may have lagged behind in altering its conventional paradigm, it could be ahead on other fronts. Gates acknowledged that, in contrast to the other services, the USAF had incorporated the processes relating to air advising mission well in its organization (Gates, "Helping").

about 130 in 2008 with no own budget or supply system.[272] Standard tours of only about a few months prevented good accommodation to the Afghan environment.[273] And finally, the air advisor mission initially was done by the US Army. In 2007, the USAF took over the lead.[274] Subsequently, the US Air Force established Air Expeditionary Wings (AEWs) in Afghanistan and Iraq, which were dedicated to air advising for the duration of the conflicts. The expeditionary wing for Afghanistan was numbered 438 AEW, and was installed in 2008. It in turn was made up of three Air Expeditionary Advisory Groups (AEAG) consisting of a varying number of Air Expeditionary Advisory Squadrons (AEASs). As the war in Iraq wound down, the US was able to man 438 AEW properly. By mid 2012, the American contribution to the air advising endeavor in Afghanistan consisted of about 900 personnel.[275] In addition, the US Air Force developed initiatives to make personnel available to the air advising mission. In April 2010 General Schwarz signed a concept of employment document that allowed Contingency Response Groups (CRG) to expand their activities. These units had the purpose of opening and operating air bases during emergencies, but could now be deployed for activities relating to building partnerships. Within the CRGs the USAF established two Mobility Support Advisory Squadrons (MSASs) in 2011. These squadrons had the purpose of providing air mobility advise and training assistance on the fields of maintenance, air traffic control, and airfield operations.[276] It should be stated that the developments with regard to the CRGs and MSASs were not specifically related to Afghanistan or Iraq.[277] The areas of operation in Afghanistan and Iraq had their respective AEWs to provide for air advisors. It does however indicate that the USAF from 2008 onwards developed initiatives to make additional resources in terms of personnel available to the air advising tasks.

These initiatives could both have solved and created problems. The main problem, personnel availability, was solved. On the background it might have solved some others as well. Evidence for this is scarce and scattered, but there are some indications that support this statement. For instance, the creation of the 438 AEW could enhance careers of some individuals. Brigadier General Walter D. Givhan, Commanding General of the NATO air advising effort from September 2008 to September 2009, suggested that a formal unit, with a familiar command and control structure, offered formal command positions,

272 Marion, *Flight Risk*, 48-51.

273 Marion, *Flight Risk*, 48.

274 Marion, *Flight Risk*, 51.

275 Anonymous, "Units", *The Official Web Site of the 438th Air Expeditionary Wing* http://www.438aew.afcent.af.mil/units/index.asp (accessed March 27, 2014), Ingrum, "Aviation Security Force Assistance", 16, Marion, Interview Givhan, 1-2, Marion, "Destruction and Rebuilding", 28-29, NATO Training Mission Afghanistan, "NATC-A", Rolleston, Trimillos, and Gill, "Aviation Security Cooperation", 97-100, and Scott, "Aviation Security Force Assistance", 39-40.

276 Scott, "Aviation Security Force Assistance", 47-48.

277 Finch and Garretson, "Air Advising", 36, Ingrum, "Aviation Security Force Assistance", Rolleston, Trimillos, and Gill, "Aviation Security Cooperation", 99, Scott, "Aviation Security Force Assistance", 48.

and therefore attracted qualified personnel.[278] In addition, air advisors could come from different operational backgrounds, and therefore could have been accustomed to different procedures. A formal unit could be able to streamline activities by issuing its own procedures.[279] Combined with effort of training the trainers, which will be addressed later in this chapter, the leadership of the AEW and the subordinate squadrons were in the position to harmonize the activities of personnel coming from different backgrounds.

Formalization could however also pose challenges. First, not all air advisors were airmen, because the US Air Force had a shortage of personnel with regard to some types of assets. This was especially true for helicopters, as the USAF had the least number of helicopters of all the services. This could lead to a shortage of trainers, but also could negatively affect the manning of the units the advisors were drawn from.[280] On the other hand, the Afghan Air Force was highly dependent on helicopters. Other services operated aircraft and thus were proficient on aircraft operations, maintenance and support. But only the Air Force had an organization in place for AvSFA.[281] So, the air advising effort remained led by the US Air Force, but the US Navy augmented the advisory units with maintenance personnel and helicopter expertise. Also, links were tied with Army Aviation units in theater. Later, members of US Army, US Navy, and US Marine Corps could serve a tour in the air advising organization.[282]

In addition, creation of formal structures could also have negatively influenced the quality of the advisors. Increased formalization could mean decreased voluntarism. This in turn could lead to reduced quality of the personnel in terms of experience. After the surge was completed, there were some cuts in number of US trainers as well.[283] There could however have been a more structural problem. In an article in *Military Review*, US Army Lieutenant Colonel Remi Hajjar criticized what he called a "second-tier military advising syndrome" of the US Army. By this, Hajjar meant that the US Army suffered from a capricious policy towards the advising mission, caused by a strong preference of a part of the Army's leadership for conventional operations, coupled with the wrongful assumption that advising was easy and could be done by anyone. According to Hajjar, this led to inconsistent selection processes, where sometimes no regard for motivation or competencies was displayed, and to unpopularity of the advisory mission with the

278 Marion, Interview Givhan, and Anonymous, "Major General Walter D. Givhan", *U.S. Air Force Website* (November, 2013) http://www.af.mil/AboutUs/Biographies/Display/tabid/225/Article/108176/major-general-walter-d-givhan.aspx (accessed November 9, 2016).

279 Willi, Interview.

280 Ingrum, "Aviation Security Force Assistance", 16.

281 Scott, "Aviation Security Force Assistance", 46-52. Livingston did acknowledge the existence of the Special Purpose Marine Air Ground Task Force - Security Cooperation (SPMAGTF-Security Cooperation) of the US Marine Corps. (Scott, "Aviation Security Force Assistance", 51-52). Relationships to AvSFA are however not made. Another source provides the same sort of information (Livingston, "Building Capacity", 43). It is therefore assumed that the SPMAGTF-Security Cooperation could be involved in air advising, but that it was not common.

282 Marion, Interview Outlaw, 9, Scott, "Aviation Security Force Assistance", 47, and Willi, "Importance", 107.

283 Marion, Interview Outlaw, 2 and 7.

potential advisors, due to the still uncertain consequences for their professional careers.[284] This view is confirmed for advising in general by major Luján, a US Army special forces officer with experience as advisor, who stated that "*adviser positions are generally stigmatized and relegated to subpar performers, and the centralized mechanisms to fill billets are talent-blind and based only on rank and specialty*".[285] He also quoted a USAF F-16 pilot who stated in the context of an experimental program called "AfPak Hands" that:

> "Some of the most talented people in the Air Force are the fighter pilots. Now, you try asking one of them if he wants to stop flying, learn to speak Pashto, and spend the next three to five years away from his family in a high-risk mission, after which he won't be promoted because he's off his career track? Not many volunteer for that. So sometimes you end up with people that just didn't have any better options".[286]

Admittedly, none of these indications refer to building AvSFA directly, and the drawing of conclusions in the context of air advising therefore is speculative to some extent. Specifically with regard to aviation SFA, USAF Lieutenant Colonel Richard L. Ingrum wrote that "*development of aviation security force assistance capability and capacity within DoD has been met with steadfast resistance by some Services while tepidly accepted by others*".[287] Although this can serve as an argument to indicate that a "second-tier military advising syndrome" could be present in the US Air Force as well, it provides no link with either the USAF or capricious policies. In an article in *Air & Space Power Journal*, Rolleston, Trimillos, and Gill noted opportunities for improvement with regard to recruitment of airmen for these missions, but did not mention inconsistent policy. It was rather an incomplete one.[288] What is more prominent in literature is that activities related to aviation SFA were cut as soon as USAF top leadership was forced to cut budgets, of which the effects added to the capricious nature of the policy.[289] This could be an indication that the tasks were still considered to have a lower priority than tasks that were related to conventional warfare.

Finally, the air advising effort was not solely American. It was still NATO-led, and the total number of air advisors in 2013 was about one thousand.[290] Within the coalition there

284 Hajjar, "Lessons", 70-71.

285 Fernando M. Luján, "Light Footprints: The Future of American Military Interventions", (Center for a New American Security, Washington, DC, March, 2013) https://s3.amazonaws.com/files.cnas.org/documents/CNAS_LightFootprint_VoicesFromTheField_Lujan.pdf?mtime=20160906081332 (accessed March 11, 2019), 28.

286 Lieutenant Colonel Bryant, as cited by Luján: Luján, "Light Footprints", 26. AfPak Hands involved long term immersion of advisors within various segments of the Afghan Government.

287 Ingrum, "Aviation Security Force Assistance", 7.

288 Rolleston, Trimillos, and Gill, "Aviation Security Cooperation", 99-102.

289 Daley, "Exporting Airpower", 111-11, Ingrum, "Aviation Security Force Assistance", 14-18, and Therrien, "Building Partnerships", 47-48.

290 NATO Training Mission Afghanistan, "NATC-A", Scott, "Aviation Security Force Assistance", 39-40, and Alan Warnes, "Starting From Scratch", *Air Forces Montly*, no. 299 (2013): 80-86, 81. Other numbers are also found in literature. Hill mentioned 500 (Hill, "Advance", 10), McCLuney 450 (Christen N. McCluney, "Transition Force Creates Air Power in Afghanistan", *U.S. Air Force Website* (June 11, 2010) http://www.af.mil/news/story.asp?id=123208904 (accessed February

were nations that, like the Afghan Air Force, also operated with Russian-manufactured airframes such as nations that formerly were part of the Warsaw Pact. This was for instance the case with the Mi-17. In addition, some of the pilots operating them were schooled and trained in Soviet environments, as were some Afghan pilots. As these pilots from the former Warsaw Pact were also schooled and trained in the western environment, they had the unique opportunity to bridge gaps between the two.[291] However, NATO did not have a structure in place to muster air advisors.[292] As with flying assets, NATO formulated personnel requirements for the mission in Afghanistan in a Combined Joint Statement of Requirements (CJSOR), to which a few nations responded. Besides the United States, other countries deployed advisors as well. These were: Belgium, Canada, Columbia, Croatia, Czech Republic, El Salvador, Greece, Hungary, Italy, Jordan, Latvia, Lithuania, Mongolia, Portugal, Spain, United Kingdom, and Ukraine.[293] Challenges related to "filling" the CJSOR with regard to advisors echo those of the air assets. In 2011, Group Captain Adrian Hill, deputy commander of the training and advising mission, observed that sixty five of the 222 "must fill" positions described in the CJSOR were not filled.[294] Other sources also indicate that the training mission in Afghanistan in general had a shortage of advisors, air advisors included, although the severity of the problem decreased somewhat as more troops withdrew.[295] As with the air assets, personnel that did deploy were sometimes bound by national caveats. A study by the JAPCC named examples which included caveats that restricted mixing crews from various nations, caveats that restricted the allowed operational range when flying, and caveats that restricted staying overnight at other bases than the deployment base.[296] This had a detrimental effect on the mission, as not enough trainers were available, increasing the burden of the advisors. The JAPCC in addition mentioned that the caveats could lead to embarrassing situations, as the Afghan counterparts could not comprehend the restrictions.[297]

11, 2013)), and Willi 700 (Willi, "Importance", 107). Three elements may account for the discrepancies. First, there may have been a gap between the number of air advisor billets and the number of personnel actually serving. Second, the number of personnel could have increased during 2010 and 2013. Third, not all sources are entirely clear on whether the mentioned number included all advisors, or just the American or NATO contribution. For this study, the number is used that is corroborated by different sources.

291 Marion, Interview Outlaw, 8-9, Marion, "Training", 26, and Nelson, "Airghanistan", 61.

292 Joint Air Power Competence Centre, "Improving ", passim.

293 Hill, "Advance", 11 and 14, Joint Air Power Competence Centre, "Improving ", 18, Scott, "Aviation Security Force Assistance", 39-40, Warnes, "Starting From Scratch", 81, United States Department of Defense, Inspector General, "Assessment", 2, and Willi, "Importance", 107.

294 Hill, "Advance", 14.

295 Livingston, "Building Capacity", 19, United States Department of Defense, "Report on Progress December 2012", 50-53, United States Department of Defense, "Report on Progress November 2013", and United States Department of Defense, "Progress October 2014".

296 Joint Air Power Competence Centre, "Improving ", 19.

297 Joint Air Power Competence Centre, "Improving ", 19.

7.5.6. Late Start and Differing Dynamics

Challenges with regard to force levels were of a different nature than those described in the previous chapters. This was partly due to the nature of the support: from direct coalition support by coalition airpower, to enabling the Afghan partners by donating aircraft and air advising. It was the US that took the lead. There are two elements that put this statement in perspective. First, the whole endeavor of equipping the Afghan air force started late. T.X. Hammes concluded that the US military in general was not prepared for the tasks when they were presented to it in Iraq and Afghanistan. And consequently, first initiatives were *ad hoc*, and easily overtaken by events.[298] According to Daniel Magruder, this was also the case for air advising.[299] But the problem may have been worse. In 2008, RAND corporation argued the importance of building the Afghan Air Corps, implying that it had received insufficient attention up and until then.[300] Cordesman, Mausner, and Lemieux indicated in 2010 that the build up of the Afghan Air Force got a late start, and lagged behind compared to other elements of the Afghan National Security Forces.[301] Michael Keltz noted in 2014 that the Afghan Air Force was still dependent on US and coalition capabilities on the fields of airlift, special missions support, Intelligence, Surveillance, and Reconnaissance (ISR), and fixed wing weapons employment.[302] Second, political sensitivities in the US in a period of budget constraints prevented deployment of assets that the military considered a requirement. This had an adverse effect on the delivery of aircraft to the Afghans. Especially the developments with regard to light fixed wing aircraft showed a capricious course, with several types of airframes not deployed to Afghanistan.

The result of these two developments was that the Afghan Air Force was equipped slower than anticipated, and urgent alternative programs had to be developed. Richard Weitz argued that, while ANDSF in general grew rapidly between 2009 and 2012, there was still a shortage of aviation assets, most notably with regard to casualty evacuation. In addition, Weitz indicated that analysts believed that the Afghan air component would not be able to operate without substantial foreign assistance before 2017.[303] It should be stated that part of the delay may be due to other factors, such as training, recruitment, and the building of infrastructure. Nevertheless, the developments surrounding the C-27 and the A-29 delayed the build up, and therefore, delivery of capacity could partially account for the relatively late development of the Afghan Air Force. Afghan ability to absorb airframes

298 Hammes, "Raising", 335.

299 Daniel J. Magruder, "The US Air Force and Irregular Warfare: Success As a Hurdle", *Small Wars Journal Website* (2009) www.smallwarsjournal.com/blog/.../272-magruder.pdf (accessed July 2, 2014).

300 David E. Thaler, Theodore W. Karasik, Dalia Dassa Kaye, Jennifer D.P. Moroney, and others, *Future U.S. Security Relationships with Iraq and Afghanistan: U.S. Air Force Roles* (Santa Monica, CA: RAND Corporation, 2008), http://www.rand.org/content/dam/rand/pubs/monographs/2008/RAND_MG681.pdf (accessed April 23, 2017), 102-105.

301 Cordesman, Mausner, and Lemieux, "Afghan National Security Forces"

302 Keltz, "Getting Our Partners Airborne", 18.

303 Weitz, "Transition in Afghanistan", 33-34.

account for some of the delay as well. The technological sophistication and complexity of airframes relative to weaponry and equipment of Afghan ground forces, and the inability to reform already existing organizational structures like militias into an air force, compelled longer lead times for development of Afghan airpower than for Afghan ground power. This was the case even when "right tech" was chosen. Consequentially, the ground forces, who developed quicker than the air force, ran the risk of being in want of airpower support, or had to rely on external support.

The new task changed the dynamics on the field of resources significantly. The challenges that were encountered in the previous timeframes changed in intensity or character, although the challenge of ATC remained, and the challenge of interoperability seemed to have been solved in the previous time frame. The new task also required new resources, namely advisors. Developments with regard to getting the right number of advisors into theater show remarkable similarities with the challenges of force levels in the previous time frames. Most of the burden was borne by the US. NATO as an organization had difficulties mustering a sufficient number of advisors, and once in theater, the advisors were subjected to their national restrictions. What stands out further is that the US put the activities in Afghanistan, and in Iraq, in a larger perspective. Some developments of the US Air Force were not related to Afghanistan, but rather anticipated on SFA activities elsewhere in the world.

7.6. Command Relationships: Embedding the Air Advisors

As described in the previous chapter, adaptations in the command relationships of the air weapon largely solved the three main challenges that plagued command and control of the air weapon, namely confusion about who was the supported commander, separation of OEF and ISAF, and air-land integration. Over time, these organizational changes created positive effects of increased efficiency and effectiveness of both the air weapon and ground forces, even though efficient integration of all assets into a single plan remained challenging.[304] As airmen and soldiers personally communicated with each other, both formally and informally, airmen were allowed the proper time to plan especially large scale operations. And they were able to do so in the optimum manner possible, as airmen knew which effect was required on the ground. Meanwhile, the air weapon retained its flexibility as, formally, it was still directed from the Combined Air Operations Center (CAOC) in Al Udeid under auspices of the Deputy Combined Forces Air Component Commander (DCFACC).[305]

In parallel, senior leadership enforced organizational changes in order to properly embed the air advisors in the command and control architecture. By 2005, it became

304 Matt Gaetke, "Crossing the Streams: Integrating Stovepipes with Command and Control", *Air & Space Power Journal* 28, no. 4 (2014): 151-156.

305 Kenneth S. Wilsbach and David J. Lyle, "NATO Air Command-Afghanistan: The Continuing Evolution of Airpower Command and Control", *Air & Space Power Journal* 28, no. 1 (2014): 11-25, 11-19.

clear that 6 SOS was not equipped to perform air advising missions on the scale that was required, and as a result, it had to turn down most of the requests.[306] Instead, the US delegated the task of rebuilding the ANAAC to the Air Division of the Combined Forces Command-Afghanistan (CFC-A). As this organizational element was disbanded in 2007, a new organization was installed, called the Combined Air Power Transition Force (CAPTF). Simultaneously, installation of the CAPTF marked the transition of the air advising effort from the US Army to the US Air Force.[307] The CAPTF resided under the Combined Security Transition Command-Afghanistan (CSTC-A).[308] The superior echelon, that of AFCENT, increased its attention to the new mission as well. From 2006 onwards, AFCENT had an Air Advisory Division.[309] As of 2008 CAPTF was manned by personnel belonging to 438 AEW.[310] Shortly thereafter, late 2009, NATO installed its own organizational element tasked with training and advising, called NATO Training Mission-Afghanistan (NTM-A). NTM-A and CSTC-A did not merge, but had the same, dual-hatted, American commander. The organizational relationship between the air advisors became more intertwined. In July 2010, NTM-A erected its own air advising organization, called NATO Air Training Command-Afghanistan (NATC-A). In September of that year, the American CAPTF was deactivated and its personnel organizationally moved to NATC-A, which was commanded by an American Brigadier General. Positions of NATC-A were not all NATO billets. American personnel remained part of the 438 AEW, the American unit that had the sole purpose of air advising, and, depending on perspective, was the American contribution to NATC-A.[311]

This arrangement made command and control of the air advising effort workable much in the same way as had been the case several years earlier with regard to coalition air operations. The NATO effort and US efforts were not merged but coordinated. However, unity of command was suboptimal within the ISAF command and control architecture as well. Up and until 2012 training of the Afghan Air Force and air operations were the

306 Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 123-125.

307 Marion, *Flight Risk*, 51, and United States Department of Defense, Inspector General, "Assessment", i.

308 Boera and Birch, "CAPTF", 2, NATO Training Mission Afghanistan, "NATC-A", 7, Marion, "Destruction and Rebuilding", 27, and Willi, Interview.

309 Cully, *Adapt or Fail*, 100-102.

310 Boera and Birch, "CAPTF".

311 John R. Ballard, David W. Lamm and John K. Wood, *From Kabul to Baghdad and Back: The US at War in Afghanistan and Iraq* (Annapolis, MD: Naval Institute Press, 2012), 236-237, McChrystal, "COMISAF's initial assessment", p. B-1 and p. G-3 - G-5, Hammes, "Raising", 285, Marion, *Flight Risk*, 72, and 256-257. Actual level of integration is not exactly clear. Some sources mention that CAPTF was renamed NATC-A (Hill, "Advance", 10, and David Quillen, "NATO Air Training Command: More Countries, More Experience, More Solutions", *Website U.S. Air Forces Central Command* (September 17, 2010) https://www.afcent.af.mil/Units/438th-Air-Expeditionary-Wing/News/Display/Article/460399/nato-air-training-command-more-countries-more-experience-more-solutions/ (accessed July 23, 2019)). Forrest Marion mentions that the capabilities, not literally the organizations, merged into NATC-A, but also indicated in the footnote that "*officially, both CAPTF and NATC-A continued after Sept. 2010 in order to include those non-NATO contributors to the train-advise mission of the Afghan Air Force*" (Marion, *Flight Risk*, 257). Other sources suggest that the organizational separation between US and NATO was achieved through the separation of NATC-A and the American contribution to it, the 438 AEW (NATO Training Mission Afghanistan, "NATC-A", Willi, "Importance", 107, and Wilsbach and Lyle, "NAC-A", 22). Finally, the most official source consulted, a declassified report of the Inspector General of the US Department of Defense indicated that de commander of the 438 AEW and his staff had dual responsibilities, "*also serving as the NATO Air Training Command - Afghanistan*" (United States Department of Defense, Inspector General, "Assessment").

responsibility of two separate commands, namely the ISAF Joint Command (IJC) for operations and aviation development, and the combination of NATC-A and 438 AEW for air advising. On the long term, this was not workable. As of mid-2013, the Afghan security forces took over responsibility for the security in Afghanistan. That implied a significant shift in responsibilities. Air Advising and training became the primary responsibility of the coalition, while the AAF had to focus on air operations. In 2013, the coalition adapted the command and control architecture to the extent that it reflected these responsibilities. In order to align all activities that were associated with building the Afghan Air Force, a new command was erected in 2013, called NATO Air Command Afghanistan (NAC-A).[312] NATC-A and the 438 AEW became part of NAC-A, which was in turn subordinate directly to COMISAF. So, the development of the Afghan Air Force was executed by NATC-A and 438 AEW, and led by a senior airman who was American, and who in effect became quintuple hatted.[313] A diagram of these command relationships can be found in appendix 2.6.

This situation existed only for a short period of time, as the coalition was disbanding organizational elements that were directly linked to operations. The Regional Commands were disbanded, and the tasks initially became centralized at the IJC. In parallel, the IJC erected organizational elements that focused on training and advising, called Train, Advise, Assist Commands (TAACs). These had a regional focus, but there was one that was dedicated to the air weapon as well: TAAC-Air, which became effective as of mid-January 2015. The concept of operations of TAAC-Air was slightly different from its predecessor. Prior, air advisors were based permanently with their Afghan counterparts, sometimes on remote locations. In the new situation, air advisors were stationed only on a few large bases like Kabul International Airport and Kandahar International Airport, and periodically visited the Afghan units for short periods in time, sometimes a day, in so called Mobile Training Teams (MTT).[314] After many tactical and operational functions were concentrated at the IJC, the coalition downscaled direct support to the ANDSF. It subsequently handed them over to the staff of operation *Resolute Support*. The IJC was disbanded in December 2014, and subsequently, NATC-A was renamed TAAC-Air in January 2015.[315] Other organizational elements, such as NAC-A, Air Component Coordination Element (ACCE), and 438 AEW remained in theater.[316]

312 United States Department of Defense, Inspector General, "Assessment", 27, and Wilsbach and Lyle, "NAC-A", 20-21.

313 Wilsbach and Lyle, "NAC-A", 20-22. In Iraq the size and scope of the task of building the Iraqi air force required a commander that could dedicate his attention to air advising. The "dual hatted" situation was ended. (Cully, *Adapt or Fail*, 103-104). This is in marked contrast to the Afghan situation, where tasks and responsibilities were concentrated at the senior commander. Presumably, the existence of two missions, one US and one NATO influenced this situation.

314 Marion, *Flight Risk*, 196-197, United States Department of Defense, "Enhancing December 2015", 34.

315 Anderson and McCreary, "Year of Change", passim, Anonymous, "ISAF Joint Command in Afghanistan Formally Ceases Operations", *Website U.S. Department of Defense* (December 8, 2014) http://www.defense.gov/News-Article-View/Article/603777/isaf-joint-command-in-afghanistan-formally-ceases-operations (accessed January 29, 2016), and Jeff M. Nagan, "TAAC-Air Speaks of Mission in Its New Name", *U.S. Department of Defense Information / FIND* (January 16, 2015) http://search.proquest.com/docview/1646464913/68773F3B15DC4734PQ?accountid=35226 (accessed January 26, 2015).

316 By the fall of 2015, publicly available sources mention the existence of these organizational elements: Anonymous, "Afghanistan Enhances", and Tyrona Lawson, "New Leader Takes Command of 438th AEW", *Website US Air Forces Central*

As has been described in the previous chapters, changes in command relationships could be accompanied by deep routed differences of insight with regard to the ideal construct, and could result in frustration between air and ground commanders, and between air commanders themselves. With regard to incorporating the advising and training mission into the organizational structure such friction, if there was any, was not prominent. Below the surface individual frustration may have arisen, as not all of the problems were solved systematically. On paper, the command relationships were still convoluted due to the formal separation of US and NATO command lines. However, by this time, all participants may have grown accustomed to the multi-hatting of American General Officers. There was also less at stake, because the new mission was not a combat mission. Whereas in the past, air commanders' interest was getting the right amount and the right type of airpower available to ground forces in distress, by 2013 it was getting the right number and the right kind of trainers in theater. While additional research is required to confirm these statements, it might explain the lack of friction with regard of adapting command relationships to the new tasks.

7.7. Education, Training, and Lessons Learned: Institutionalization

As with other elements of the air advising effort, the start in relation to education, training, and lessons learned was rather slow. In 2007, Childress lamented that all lessons of historical air advising missions were lost and had to be relearned. General Moseley shortly before had established a centralized lessons learned office for the US Air Force, but up and until then had refrained from incorporating information on advisory efforts in Iraq into its database. Rather, it focused on USAF air operations at the tactical level.[317] Considering that the rebuilding of the Iraqi air force started before that of the AAF, it is reasonable to assume that by then there was no data on Afghanistan either. This situation changed however, as General Schwartz aimed to capture and institutionalize the lessons learned from Iraq and Afghanistan with regard to air advising.[318]

A more clear development is visible in the realm of pre-deployment training and education. The coalition faced a big challenge, namely preparing future air advisors for duties inside Afghanistan and Iraq. This challenge had two dimensions. First, the system of air advising that was current at the start of operation *Enduring Freedom* partially was not designed for the tasks airmen had to execute in Iraq and Afghanistan. As has been described in the previous paragraphs, this system provided for enhancement of airpower employment for already existing air forces. Although this type of advising was eventually

Command (June 11, 2016) http://www.afcent.af.mil/Units/438thAirExpeditionaryWing/News/D...5467/Article/797140/new-leader-takes-command-of-438th-aew.aspx (accessed November 16, 2016).

317 Childress, "Improving", 48-49.

318 As derived by Zadalis from preamble to the USAF Air Advisor Academy's charter: Zadalis, "The Air Advisor", 11.

needed, the training needs in Afghanistan and Iraq were much more broad, as it involved rebuilding a diminished air force. Therefore, advisors were needed in basically every career field present in a modern air force.[319] Second, the scale that was required was much larger than what the system was equipped to serve. Recognizing this, the coalition called upon the GPF to augment the SOF air advisors. This however required the GPF to partially be educated and trained more extensively in fields that until then were the prerogatives of SOF. Air advising missions traditionally had been executed in remote, austere, and potentially hostile environments, which was one of the reasons the task of air advising was delegated to 6 SOS. As personnel not belonging to 6 SOS became more involved in the SFA effort, they too could need training on aircraft their own service did not have in its inventory, and specialized training relating to language, culture, combat skills, and advisor-specific activities.[320] In short, the educational system of coalition airpower had to be adapted to provide for specific tasks, in a specific environment, and on a larger scale.

The US Air Force acknowledged the need for additional education and training. In April 2006, USAF created the Air Force Culture and Language Center, located at Maxwell Air Force Base, Alabama. The birth of this institution was not designed specifically for Iraq and Afghanistan, but rather these two conflicts accelerated its installation.[321] More specifically in the context of irregular warfare, General Moseley directed the Air Education and Training Command (AETC) of the US Air Force to establish a detachment that had the task of preparing air advisors in 2007. This detachment first developed an Air Advisor Course (AAC), which saw its first class in 2008. The following years, it developed into the Air Advisor Academy (AAA), based at Joint Base McGuire-Dix-Lakehurst in New Jersey. The AAA was established in May 2012, and the institution became fully operational in January 2013. It had an annual capacity of 1,500 students. Besides the Air Advisor Course, the Air Advisor Academy offered various other courses, depending on the requirements coming from the commanders. It was open to airmen, but from 2013 onwards to personnel from other services as well. They focused on core advising and fieldcraft skills, and education in language, culture and regional studies. They did not include training on indigenous types of aircraft, such as the Mi-17, which was part of a separate training that could be outsourced.[322] The AAA existed as an independent educational facility until July 2015,

319 Keltz, "Getting Our Partners Airborne", 7.

320 Boera and Birch, "CAPTF", 9, Fernando M. Luján, "Wanted: Ph.D.s Who Can Win a Bar Fight: How to Reform the Pentagon for "Light Footprint" Interventions", *Website Foreign Policy* (March 8, 2013) http://foreignpolicy.com/2013/03/08/wanted-ph-d-s-who-can-win-a-bar-fight/ (accessed May 9, 2017), and Willi, Interview.

321 Will Selber, "The Other Side of the COIN", *Air & Space Power Journal* 32, no. 3 (2018): 72-84, 74.

322 Anonymous, "US Army Hip Training Regiment", *Air Forces Monthly*, no. 258 (2009): 22, Boera and Birch, "CAPTF", 9, Antonia Greene-Edwards, "Army Partners with Air Force, Soldiers Train at Air Advisor Academy", *Website US Army* (May 17, 2013) https://www.army.mil/article/103598/Army_partners_with_Air_Force__Soldiers_train_at_Air_Advisor_Academy (accessed December 14, 2016), Finch and Garretson, "Air Advising", 36, Keltz, "Getting Our Partners Airborne", 6-7 and 11, Marion, Interview Givhan, 8, Scott, "Aviation Security Force Assistance", 48, Selber, "Other Side of the COIN", 73-74, United States Department of Defense, Inspector General, "Progress", 35, Tucker and Pacha Sayedi, "Advising", 18, and Zadalis, "The Air Advisor", 4-6. Training on other types of aircraft could be outsourced as well. See for instance: Spencer Ackerman, "'Unsatisfactory' Mega-contractor Re-ups on Another Big Military Deal", *Website Wired.com* (February 11, 2012) http://www.wired.com/2012/11/dyncorp/ (accessed January 13, 2016)

when it was deactivated. The courses however continued to exist, but since then have been provided by the USAF Expeditionary Operations School of the USAF Expeditionary Center.[323]

The AAA did not train air advisors solely for the then current missions in Afghanistan and Iraq. It had the goal of establishing a permanent capability of airmen that could perform their air advising duties during missions across the globe. In order to do so, the AAA created the ability to generate mobile training teams, which could be sent abroad to train future advisors on site. It also expanded its scope. Initially, it had the purpose of providing specific, irregular warfare related, air advisory skills for Afghanistan and Iraq. Later, it changed into an effort to support global requirements for air advisors.[324] This fitted neatly into the strategic shift towards partnering with friendly nations. The US attempted to build a *"global community of airmen"*.[325] The goal was to train the air forces of partner nations, in line with US national interests.[326]

As for NATO, there are indications that SFA elements were incorporated in studies relating to the lessons learned process. The Joint Analysis and Lessons Learned Centre (JALLC) published a report on ISAF lessons learned at the strategic level in 2015, in which it stated that ISAF clearly showed the need for NATO to establish an appropriate SFA capability.[327] The JAPCC did the same in 2014, specifically for air advising.[328]

With regard to pre-deployment training and education, NATO followed a somewhat different path when compared to the US. It did not establish a training center dedicated to train and educate future air advisors. Instead, this function became part of the development of pooling and sharing of capabilities within NATO's framework of Smart Defense. From 2012 onwards, the Czech Republic, Croatia and Hungary organized an Air Advisor Team PreDeployment Training (AATPDT) course program in order to streamline preparation of helicopter aircrews and maintenance personnel supporting NATO's contribution to the AvSFA effort. Together with other initiatives, such as the Multinational Helicopter Initiative (MHI), the task of pre-deployment training, and standardization of this training, was taken over by the Multinational Aviation Training Centre (MATC), which was established on initiative of the Czech Republic in 2011. As of 2013, the participants were

323 Laurie A. Arellano, "Air Advisor Academy Consolidates Expertise and Training Under the Expeditionary Center", *Website U.S. Air Force Expeditionary Center* (July 23, 2015) http://www.expeditionarycenter.af.mil/News/Article-Display/Article/787938/air-advisor-academy-consolidates-expertise-and-training-under-the-expeditionary/ (accessed December 14, 2016).

324 Finch and Garretson, "Air Advising", 36, Keltz, "Getting Our Partners Airborne", 7, Scott, "Aviation Security Force Assistance", 53, and Zadalis, "The Air Advisor", 6 and 10.

325 Marion, Interview Givhan, 7, and McCluney, "Transition Force".

326 Zadalis, "The Air Advisor", 10.

327 Joint Analysis and Lessons Learned Centre, "Comprehensive Study on the Strategic Lessons Learned From ISAF", *Website JALLC* (October 9, 2015) http://www.jallc.nato.int/products/docs/20160603_Comprehensive_Study_on_the_Strategic_Lessons_Learned_from_ISAF.pdf (accessed December 15, 2015).

328 Joint Air Power Competence Centre, "Improving ".

the Czech Republic, Croatia, Slovakia, Hungary, and the USA, and from September 2016 onwards, the curricula were offered to NATO.[329]

In short, the coalition showed increased attention for institutionalization of the AvSFA effort through education, training, and lessons learned programs. While much information is not publicly available, there are indications that both US and NATO did incorporate at least some lessons in their studies. It is however too early to conclude that these lessons were firmly incorporated in the respective organizations. As in earlier periods, NATO followed the US somewhat belatedly, and gave it its own twist. There seems to be little debate about these developments, even though sometimes the quality of the curricula was questioned.[330] Also, the cooperation between the services left room for improvement.[331] The most fundamental critique was provided by the Department of Defense Inspector General in 2018. A report stated that pre-deployment training focused too much on generic air advising tasks and competencies. Mission specific information was largely lacking. This meant that air advisors were ill-prepared to function in the Afghan-specific contexts.[332] What remained largely left untouched were the lessons learned relating to the transition process itself. Joseph Anderson and Matthew McCreary pointed out that this could have a dynamic of its own, requiring guidance. They recommended that western militaries write doctrine on transitions and how to manage them, train on the transition process, and encourage research on the effect transitions have on conflict termination and the achievement of strategic objectives.[333] It is however too early to reach definite conclusions on this topic, as the developments are still ongoing at the time of writing.

329 Anonymous, "History", *Website Multinational Aviation Training Centre* http://matc.vavyskov.cz/index.php/history (accessed December 16, 2016), Joint Air Power Competence Centre, "Improving ", 25, Tomislav Mesarić, "Finger on the Trigger", *Air Forces Monthly*, no. 314 (2014): 66-70, Bernie Willi, "Shoulder to Shoulder: The Need to Cultivate An Air Advisor Capability Within NATO", *The Journal of the JAPCC*, no. 17 (2013): 10-14 http://www.japcc.org/publications/journal/Journal/2013-04-10-Journal_Ed-17_web.pdf (accessed July 11, 2014), 13, and Bernard Willi, "The Multinational Aviation Training Centre (MATC): Sharing Expert Capabilities and Experience", *Journal of the JAPCC*, no. 20 (2015): 67-70 https://www.japcc.org/wp-content/uploads/JAPCC_Journal_Edtion-20.pdf (accessed December 16, 2016). Mesarić called the training course Air Advisory Pre-deployment Training Course (AATPTC).

330 Rolleston, Trimillos and Gill for instance argued that the airmen that were involved in Security Cooperation efforts were inadequately trained in various areas of expertise, despite the courses of the AAA and other SC-related projects: Rolleston, Trimillos, and Gill, "Aviation Security Cooperation", 104-105. A thesis for the US Air Command and Staff College by West pointed out that in 2009 the curricula of the courses for personnel deploying to Iraq were especially insufficient with regard to cultural knowledge, foreign language, and task specific skills. Interviewees especially pointed at the "one size fits all" setup (James L. West, "Building the Culturally Aware Combat Airman: How Effective Is Pre-Deployment Training for Air Force Air Advisors?", (Thesis, Air University, Air Command and Staff College, Maxwell Air Force Base, August 23, 2009) http://www.dtic.mil/dtic/tr/fulltext/u2/a540176.pdf (accessed September 30, 2016), 28.). The study relates to Iraq, and not Afghanistan, and also was written before the installation of the Air Advisor Academy. The situation for Afghanistan may be different, and may have changed soon after 2009.

331 Scott, "Aviation Security Force Assistance", 54.

332 United States Department of Defense, Inspector General, "Progress", 35-39.

333 Anderson and McCreary, "Year of Change", 24-25.

7.8. Analysis

The task of delivering airpower in direct support to coalition and Afghan ground forces vastly differed from the tasks associated with assessing, training, advising and assisting the Afghan Air Force. This is noticeable when the developments are mirrored against the frame of reference. Technology seems to have a latent but significant influence on the developments. However, the dynamics of this influence were markedly different for building the Afghan Air Force than was the case with direct support. For its own operations the coalition was on a quest on how to incorporate the latest technology in the COIN-setting. For the Afghan Air Force, this was not realistic. It was simply not feasible to donate modern, state of the art, weapon systems, such as F-18, F-16, A-10, AH-64, CH-47, and other systems to the Afghans, and get them proficient within an acceptable time frame. Airmen searched for the "right tech" platforms to donate. It had to be advanced enough to be effective in modern conflict. It also had to be absorbable by the Afghan system. The coalition ended the quest with a mix of aircraft that was familiar to many Afghan airmen, relatively simple to operate, and especially designed to operate in a COIN setting. However, this situation had as a consequence that the coalition had to figure out how to deal with weapon systems that it partially did not have in its own inventory. In order to be able to train foreign forces on these systems, it had to become proficient on them as well. This required a certain level of institutionalization. Also, it touched on economical interests of the defense industry. As is shown above, the quest for the "right tech" could spawn debates on foreign military sales, and could revive old discussions, such as discussions on COIN aircraft and the right CAS platforms. These debates in turn could lead to real consequences in Afghanistan, which is best illustrated by the belated implementation of the Super Tucano.

The operational environment also had a profound influence on developments inside Afghanistan. During the redeployment phase of the coalition, the insurgents saw a chance to increase their activities. They thereby challenged the strategic goals of the coalition, which was building a self-sustaining, well functioning ANDSF that was able to deal with the Afghan security situation. In addition, a new threat emerged in the form of Islamic State-Khorasan. Due to the severe threat it posed in other parts of Central Asia, the Middle East, and Africa, the coalition saw the need to combat IS in Afghanistan as well. These two developments were the inducement to broaden the mandate of the military, and coalition airpower, to deliver direct support to Afghan forces, despite the formal handover of authorities.

Alliance politics did not have a profound influence on the developments with regard to rebuilding the Afghan Air Force. The European countries were reluctant to send many advisors to Afghanistan. The brunt of the burden of deploying advisors rested on the shoulders of the US, much like it was the case with deploying air task forces. The challenges of mustering enough advisors showed marked similarities with that of raising the right

number of aircraft. As the COIN effort in Afghanistan increasingly became an American effort, and command and control lines of NATO and US were converged at multi-hatted American General Officers, this did not lead to the same kind of discussions as around 2008. The dynamic however was the same. The search for "right tech" airpower for the Afghan Air Force however did show a different dynamic. It could lead to internal bickering in parliaments of donating countries. Also, it could pose a problem when air assets first had to be procured in countries with governments that had a bad relationship with the country that produced them.

The cultural dimension of the developments was markedly different from other periods, and probably the most problematic one. The Afghan airmen spoke a different language, were part of different social and political structures, and sometimes were educated in a different airpower philosophy than their advisors. This manifested itself in multiple ways. The inclination of older Afghan pilots to retain a Soviet system, and the tendency of senior commanders to use helicopters for their own use are already mentioned. In addition, the Afghan culture of leadership favored individual rather than group effectiveness, and also was influenced by a sense of manliness. This, for instance, could have the consequence that Afghan pilots insufficiently considered organizational goals or safety in air operations.[334] These elements became problematic in conjunction with other elements, such as a high level of illiteracy, limited education, language barriers, and other socio-political factors, leading to a situation some US officials reportedly called the *"Afghan condition"*.[335] This mindset met that of the air advising organization. The United States, and by extension NATO, had embarked on an ambitious program. It envisioned an Afghan air force that was built on the basis of merit, accountability, efficiency, and effectiveness. According to Forrest Marion, the Afghan and western mindsets differed to the point were they constituted a chasm. The coalition acknowledged this, but did not fully understand the differences.[336] This was problematic because the goal of the whole AvSFA endeavor was to let the Afghans figure out which system worked best for them within a set timeframe. This required skill, empathy, tact, and patience on the part of the advisors. Inevitably, this induced frustration on both sides.

In the background, leadership played a largely enabling role for the process of building the Afghan Air Force. Richard Mesic et.al. noticed in 2010 a broad-based bottom-up support for change from the tactical level, but remained there due to weak leadership support. Despite several steps in the right direction, leadership was still required to maneuver through several communities of interest in an age of fiscal constraints.[337] Paraphrased, leadership was required to facilitate a cultural change.

334 Marion, *Flight Risk*, 198, 208-209, and 214-215.

335 Joseph Trevithick, "Pentagon Watchdog Slams U.S.-backed Efforts to Expand the Afghan Air Force", *Website "The War Zone"* (January 5, 2018) http://www.thedrive.com/the-war-zone/17409/pentagon-watchdog-slams-u-s-backed-efforts-to-expand-the-afghan-air-force (accessed January 24, 2018).

336 Marion, *Flight Risk*, 199-200 and 214-216.

337 Mesic, Thaler, Ochmanek, and Goodson, *Courses of Action*, 37-38 and 41.

Hock made this statement directly by stating that:

> "the Air Force must resist the inclination to solve the IW problem by pursuing a purely technological and kinetic solution that developing partner nations cannot sustain. It should set a goal of creating a standing IW force equipped and trained to provide credible and appropriate support to partner air forces on a significant scale, consistent with US policy. The Air Force can remedy the situation with a more robust IW force, but we need a long-term commitment from leadership to ensure its viability".[338]

Johnson was even more direct: "*USAF, USSOCOM, and AFSOC leadership are constrained by their respective institutional cultures to think in terms of unique, one-of-a-kind weapon systems that fit into their particular worldview*".[339]

Indications are that, despite maybe a slow start[340], the Air Force leadership at least in part adopted the recommendations. Senior political and military leadership made partnering with indigenous air forces an institutional priority. This manifested itself in a new strategic outlook, organizational changes, building of new institutions, and, mainly for the US, delivering the required force levels and resources. Leadership may have been detrimental to the AvSFA effort at the tactical level, where coalition leadership met with Afghan leadership. The only indications that leadership hampered the build up of the Afghan Air Force were expressed by western military personnel and scholars, and were directed towards the Afghan leadership. The importance of a well functioning indigenous leadership can hardly be overestimated. A functioning system of AvSFA without endorsement of indigenous leadership becomes dysfunctioning. There are indications that Afghan leadership did not embrace the system that was provided by the coalition.

To some extent, the build up of the Afghan Afghan air force differed from its contemporary, the air force of Iraq. A recent publication observed that the acceptance of advise and assistance by the Afghans was generally lower than that by the Iraqis. The publication concluded that, while the nature of the challenges was the same, they tended to be more problematic in Afghanistan, which was less literate and generally less accessible for westerners than Iraq. This concerned especially leadership challenges, manifesting itself in for instance the inclination Afghan leaders to use helicopters for their own personal purposes.[341] The publication acknowledged that, as both conflicts were not finished at the time of writing, conclusions would be preliminary. Comparison with the other irregular war the US fought, that in Vietnam, showed similarities with Iraq and

338 Hock, "Closing", 66.

339 Johnson, "6th SOS".

340 In 2013, USAF major Murphy argued in the *Air & Space Power Journal* that USAF General Purpose Forces would have little involvement in air advising and BPC unless leadership forces a shift of mindset (Timothy B. Murphy, "A New Chief of Staff, a Golden Opportunity: Building the Right Force Over the Next Decade", *Air & Space Power Journal* 27, no. 1 (2013): 143-157, 146-147).

341 Forrest L. Marion, "Comparing and Contrasting USAFCENT's Air Advising Mission in Iraq and Afghanistan", *Airpower History* 66, no. 2 (2019): 15-30.

Afghanistan. For instance, some authors assessed that the western inclination to use its own format on other cultures was deemed counterproductive.[342] Although western forces made an effort to make their system fit the Afghan one, the build up of the AAF showed that this was a tall order. In other respects, the western air advisory effort could be regarded more effective than that of Vietnam. As has been described in chapter four, the units that were responsible for training Vietnamese airmen were disbanded, to the detriment of the air advising effort early in the conflict. Also, these units focused on direct support rather than training and advising.[343] Activities in Afghanistan showed another path, that of initial neglect, but of subsequent official incorporation in an overall counterinsurgency effort. In general, this project showed progress, but also highlighted the importance of indigenous acceptance of the western system.

7.9. Conclusion

From 2005 onwards, NATO's airmen embarked on a mission that it was not accustomed to, namely building an indigenous Afghan air force basically from scratch. As an organization, NATO was neither equipped nor prepared to execute such a mission. As a result of historical developments, the United States had some doctrine in place that could address the issue, as well as a small contingent of special operators that were specialized in air advising. While this was useful, it was not sufficient. Doctrine and special operators were optimized for enhancing performance of otherwise reasonably well-functioning air forces. The task at hand was incorporation basic airmanship in both doctrine and practice, and expanding the reservoir of potential air advisors. About a decade later, when training of the ANDS was the main mission of *Resolute Support*, mainly the USAF had implemented an extensive set of reorganizations that optimized the organization for the air advising mission. Among the the most visible were incorporation of the air advisors in the overarching command and control architecture, installation of the Air Advisor Academy, and doctrinal revisions. On a much smaller scale, the rest of NATO showed a similar development.

Moreover, the activities seem to bear fruit. In 2005, Afghan airpower was virtually non-existent. Basically all air operations were performed by the coalition. At the end of 2016, the Afghan Air Force was formally reinstated, consisted of several thousands of qualified airmen, formally had the lead in operations, and was able to conduct a large number and a big variety of missions. This is an important indicator of a successful enterprise to rebuild the Afghan Air Force. Yet, one major goal was not met. The Afghan Air Force was not self-sufficient, and was not able to comply to all requests for air support. This highlighted one of the most tenacious challenges of the whole endeavor in Afghanistan: development of

342 Nathan A. White, "Aviation Foreign Internal Defense (AFID) in Vietnam", (Research Report, Air, University, Air Command and Staff College, Maxwell Air Force Base, AL, 2009) https://apps.dtic.mil/dtic/tr/fulltext/u2/a510778.pdf, vi.

343 Carrano, "Making a Difference", 29-32.

strategy. While the situation in which the air advisors' job was done was obvious to some observers, the inability to define and quantify exactly when the state of self-sufficiently was reached prevented formulation of an end state. In other words, it was still unknown when success could be claimed. This plagued the air advising endeavor from beginning to end. The Afghan Air Force made progress across the entire spectrum of air operations. Afghan culture proved to be very persistent and undermined progress as measured by western standards. Hence, the Afghan Air Force did not reach self-sufficiency, especially not in the face of a deteriorating security situation. To a certain extent, reverting to direct support was a step back from the perspective of air advising.

Another contributing factor was a sense of urgency, which developed only after a few years into the conflict. The notion that the AvSFA effort started late offers an explanation for not achieving all goals. Several authors mention this, but little explanation is given. Vick et. al. suggested in 2006 that, historically, the US training and advising efforts focused on ground forces and neglected air and naval forces because the recipient nations lacked an air force or a navy, or because they were limited in their capabilities.[344] This statement was valid when considering that the system of AvSFA that was current at the time provided for enhancing already existing indigenous structures. However, there could be more to the story. As witnessed by a scholar in relation to the rebuilding effort of the Iraqi Air Force in 2004 - 2005, airpower seemed to be an afterthought. As shown in earlier chapters, airpower *in general* ceased to be an afterthought in operational planning of ISAF from 2009 - 2010 onwards. This coincided with refocused attention of the US towards Afghanistan, the surge, and adoption of the COIN approach in which building the Afghan Air Force was an integral part, and mustering GPF to execute air advisor missions. Therefore, it can be argued that the rebuilding of the Afghan Air Force partially started late because airpower was considered an afterthought. This could not only mean that the actual process of the rebuilding of the AAF started late, but also education and training of the advisors. This in turn could slow down the already slow process. What is not paramount in the sources, but nevertheless noticeable, is that policymakers may have underestimated the complexity of building an air force. The very act of flying is a dangerous endeavor, requiring a team of highly educated personnel to work as a team. When part of this team is not qualified, this has a detrimental effect on the overall operational capacity. To make it more explicit, there are indications that the dearth of qualified maintenance and logistics personnel hampered operational capability, even though pilots and airframes were present. Finally, external factors could slow the process down severely, as was the case with the Super Tucano and the C-27.

On the other end of the spectrum, time was short. Politically motivated timelines dictated that all activities were directed to formal handover of authorities and responsibilities of the Afghan Air Force by January 1, 2015. In practice, this meant that it was not possible to build the Afghan Air Force first, hand over responsibilities, and then

344 Vick, Grissom, Rosenau, and others, *Air Power in the New Counterinsurgency Era*, 98.

redeploy. All processes took place at the same time. To some extent, the same was true for building other elements of the ANDSF, such as army and police. Together, they were not able to counter the revived insurgency. This had as a consequence that the relative importance of coalition airpower increased. Afghan forces, and by extension the Afghan government, remained dependent on western airpower and, to a lesser extent, western SOF.

So, the US and NATO suffered from the self-induced problems of a late start, an early exit, and unclear definition of the end state. This was somewhat exacerbated by some "traditional" setbacks associated with coalition warfare, such as is witnessed by for instance slow development of NATO doctrine, national caveats, and nationally differing contributions. This should not obscure, however, that developing an Afghan air force showed influential local peculiarities with strong regional dimensions. This was in contrast to, for instance, rebuilding the Iraqi air force. Personal relationships of the airmen with persons within their interest groups, being it tribal, criminal, or other, at least had a significant impact on the tactical choices they made. And these choices very regularly were not in line with the official goal of the Afghan Air Force. The Afghan Air Force was indeed a tough one to build.

This makes drawing conclusions about the effectiveness of air advising based on solely this Afghan experience arduous. There were drawbacks, which should receive attention. However, it should also be acknowledged that there were many positive developments that show links with the discourse on airpower in irregular conflict. Much of the internal discussions were muted during the period described in this chapter. Many of the challenges, like the proper role of violence, types of missions, number of boots on the ground, command relationships, air-land integration, types of intelligence, or even the need to train the indigenous air force, do not seem to have invoke much discussion. In addition, many of the recommendations made by both the ground-centric and the technology-centric approaches to airpower in irregular conflicts were implemented. Examples include retaining leadership targeting as a mission type, favored by the technology-centric approach, and the standing air advisor organization, favored by the ground-centric approach. Some of the more historically contentious issues, such as command relationships, were solved in periods described in earlier chapters. Also, acquiescence among senior leaders may have been in play, as the coalition was drawing down its efforts. The only topic of contention left was the requirement for specialized counterinsurgency aircraft. This topic showed that some of the aversion towards irregular warfare was still latently present. But, the dynamics were very specific, overlapped with other service interests, and was heavily influenced by American national and regional economic interests. Nevertheless, the developments described and analyzed in this chapter show yet another step in the direction of the *de facto* "joint" approach of airpower in irregular warfare.

Chapter 8

8. Conclusion

8.1. Research Question

The central research question of this study is: what was the role of the air weapon during the conflict in Afghanistan between 2001 and 2016, how did this role evolve, and how can this evolving role be explained? It addressed three main subquestions: what was the theoretical context of airpower deployment in irregular conflicts? What was the operational context of airpower application in Afghanistan? And what were the developments of airpower application in Afghanistan? The discourse of military innovation and adaptation provided a frame of reference that allows scholars to focus research on a comprehensive set of operational indicators, called manifestations. The frame of reference further provided suggestions about the potential sources for changes in the manifestations, called driving factors. The frame of reference thus provided the opportunity to describe and explain the historical developments of airpower application in Afghanistan between 2001 and 2016. The frame of reference also offered two other potential applications, namely enhancing an organization's innovative capability and adaptability, and building theory on military innovation and adaptation. The findings of this study can be used as data for future research on military innovation, including theory building. This is, however, not the primary goal of this study, which remains describing and explaining the historical development of airpower application in Afghanistan between 2001 and 2016. The epilogue of this study formulates some observations in relation to airpower innovation.

8.2. Conceptual and Operational Contexts

Chapter two showed that applying airpower in Afghanistan to a large extent took place in conceptual limbo. Traditionally, airmen tended to ignore irregular warfare, which during the Cold War regularly was seen as a distraction from more current and urgent regular warfare. This was also the type of warfare in which the air weapon could flourish, providing quick and decisive results at the operational and strategic levels. From an airpower perspective the Revolution in Military Affairs (RMA) reinforced this notion, as airpower's increased effectiveness seemed to alter the traditional balance between ground power and airpower, in favor of airpower, and allowed for strategic success without the use of nuclear weapons. To many, operation *Desert Storm* in 1991 provided a spectacular example of the effectiveness of the RMA, and the new balance it had induced. Subsequent operations such as operations *Deliberate Force* in 1995 and *Allied Force* in 1999, and *Iraqi Freedom* in 2003, confirmed the usefulness of these increased capabilities.

However, it had as a consequence that a mature debate about the proper role of airpower in irregular conflict was lacking, and that a ground-centric approach towards application of airpower in irregular conflict dominated. Major characteristics of this approach were that the air weapon supported forces on the ground with the least amount of deadly violence as possible. Initially, the RMA did not penetrate this approach, as the many case studies that were used to derive conclusions from, varying from the British experience in Iraq in the 1920s to the Soviet experience in Afghanistan in the 1980s, pre-dated the RMA. The emergence of several forms of irregular warfare after the Cold War showed an increase in publications on airpower in irregular warfare. However, the predominance of the ground-centric approach to airpower in irregular conflict persisted until 2006. In this year, the US Army (USA) and the US Marines Corps (USMC) jointly published a doctrine on counterinsurgency (COIN) that codified this ground-centric approach. It was written in an American political and military operational context that provided urgency to the matter, i.e. the political desire to favorably end the arduous irregular conflicts in Iraq and Afghanistan. This combination induced a revival of publication activity on the theme of airpower in irregular conflict.

Initial opposition to the insights of the joint doctrine came from the US Air Force (USAF), but later authors from other backgrounds joined. Their technology-centric approach added the RMA into the discussion, and also to the USAF doctrine on irregular warfare. The argument of authors associated with the technology-centric approach was that the RMA changed the role of airpower in warfare, including irregular warfare. Still, a mature debate did not materialize between the ground-centric and the technology-centric approaches. Rather, several authors formulated different opinions on subtopics. Therefore, the approaches did not become schools of thought. The topics of contention were: the role of violence in the conflict, types of missions the air weapon was most suitable to perform, the level of (western) ground forces that were required, command and control philosophy, relationship between air and ground forces, usefulness of certain types of intelligence, the need for specialized aircraft, and the requirement to train indigenous air forces.

Analysis of the collective set of publications showed that there was only one fundamental difference of opinion, namely about the proper role of violence in irregular conflict. The technology-centric approach argued that, especially, improved precision of airpower increased its ability to find, fix, target, track, and engage insurgents, and take that into account when assessing airpower's effectiveness. The ground-centric approach argued that all violence was detrimental, especially in counterinsurgency, and that improved capabilities did not fundamentally change airpower's role in it. Analysis of the literature also showed that the viewpoints were mutually exclusive only in relation to command relationships. The technology-centric approach favored centralized command and control, the ground-centric approach a decentralized one. A fundamental solution was not reached, however, even after the prudent emergence of a third approach, the joint approach. This joint approach refrained from dogmatic standpoints, and implicitly argued that the ideal

approach to airpower in irregular warfare was context dependent. However, although the publications over time showed rapprochement on some topics, the approaches never reached the status of a mature debate between various schools of thought. The short polemic that did occur between 2006 and about 2008 had the characteristic of culturally induced interservice friction that manifested itself in bickering about subtopics. Consequently, the conceptual basis of airpower application in irregular warfare showed differences between armed services. In the case of NATO, for a long time a conceptual foundation for airpower application in irregular conflict was lacking altogether.

This conceptual limbo was the theoretical background of airpower application in the human and physical environments of Afghanistan. Britain's and especially Soviet Russia's experiences in Afghanistan showed that its application could be fraught with danger. The physical environment presented by Afghan geography and climate was one of the worst to operate aircraft in. Aircraft performance decreased significantly at locations that were "hot and high", locations Afghanistan had plenty of. Mountainous areas presented a targeting challenge due to the many valleys and opportunities for cover and concealment by airpower's opponents. Furthermore, the situation could change within a very short time frame, as geographic situations were diverse and sudden weather changes were notorious. However, this did not necessarily restrict air operations, although it increased the workload of the aircrews. Ground forces were affected by the unruly Afghan environment as well, so the relative advantage of airpower's height, speed, and range remained intact, and air operations were indispensable for mobility, protection, and resupply of ground forces during the Soviet involvement in Afghanistan between 1979 and 1989. However, although Soviet airpower was able to operate in the Afghan physical environment, it did suffer from well-motivated insurgents who knew how to exploit the physical and human terrain and in addition were increasingly well armed. Especially the Stinger Man Portable Air Defense System (MANPADS) forced Soviet airpower to alter its tactics, providing the Mujahideen the strategically important freedom of movement. This allowed them to successfully fight the Soviet ground forces and the Afghan government.

Little over a decade later, American and coalition military airplanes roamed the Afghan skies. The strategic, operational, and tactical situation seemed vastly different for the Americans than for the Soviets in the 1980s. The strategic context was the Global War On Terror (GWOT), not maintaining political influence in Central Asia. The operational goals, although not clearly stated, was toppling the Taliban-dominated Afghan regime and dismantling a terrorist organization, not supporting a friendly regime that faced an insurgency. But most importantly, the American air weapon that entered Afghan airspace in 2001 was more modern than its Soviet predecessors. Stealth, and especially precision and information technologies mitigated much of the limitations that hampered airpower up and until the end of the Cold War. This allowed for new operational approaches. However, the information revolution influenced irregular warriors and their concepts as well. When having access to modern means of communication, actors conducting irregular warfare

increasingly became able to influence larger areas of operations, and allowed them to operate in networked organizations. The blurring of traditional boundaries between political and military activities that characterized irregular warfare increased. Yet, especially the human environment in Afghanistan showed strong continuities as well. The Afghan population showed continued influence of various interest groups, most notably those based on ethnic or tribal affiliations. So, to some extent, the development of the air weapon in Afghanistan between 2001 and 2016 was one of information age airpower in information age irregular warfare, although the Afghan environment also showed strong traditions.

8.3. Development of the Air Campaign (2001 - 2016)

The development of the air campaign in Afghanistan between 2001 and 2016 reflected a combination of continuity and change, and was also influenced by contextual particularities. Directly after the terrorist attack on September 11, 2001, the Bush Administration felt pressured to formulate a reaction towards Taliban-led Afghanistan. Organizational changes of the previous decades, known as "Transformation", enabled the US military to project power quickly to remote areas. The Bush Administration chose to react for political and operational reasons and consequently was compelled to do so with as few American "boots on the ground" as possible. Time constraints, coupled with the remote and landlocked location of Afghanistan and a wish not to be seen as invaders, limited the options for action. During deliberations in the weeks between the attacks and the American response in October 2001, an operational plan evolved in which American airpower was coupled to local power holders with the same operational goal as the US, toppling the Taliban. Operatives of the Central Intelligence Agency (CIA) and Special Operations Forces (SOF), equipped with modern communications and target designation equipment, became the linking pin between US airpower and the local power holders. This concept has become known as the Afghan Model. In order to retain operational flexibility, the NATO command structure was bypassed, and the US only accepted contributions of individual nations in the "coalition of the willing". The air weapon had the main task of providing leverage of the friendly indigenous forces over the Taliban. It did so by first gaining control of the Afghan airspace, attacking the few strategic targets the Taliban had, interdiction of Taliban forces, and Close Air Support (CAS). The mission was supported by Intelligence, Surveillance, and Reconnaissance (ISR) and inter- and intra theater airlift. Within a very short time frame, a few weeks, one of the major operational goals, regime change in Afghanistan, had been achieved.

Another goal, dismantling Al Qaida and remnants of the Taliban, was harder to achieve. This was mainly due to the circumstance that not all indigenous allies subscribed to this American goal. A second reason was that decisive action against remnants of the Taliban

and Al Qaida was complicated by the nature of the geographical environment they had fled to, i.c. the mountainous area bordering Pakistan that contained many opportunities for physical protection and cover and concealment. Operations with larger contingents of American and coalition ground forces were required to force them out. Concurrently, the focus of the air weapon became delivering support to these ground forces. In case of weapons deployment, this was mostly done with CAS. Despite some setbacks, much of the second task was accomplished by March 2002.

The coalition did not encounter serious problems at the operational and tactical levels. Challenges were mostly related to command and control of the air weapon. The US military executed an operation without clear front lines. As a result, standard deconfliction procedures were no longer valid. A new system was devised, which functioned relatively well until the situation arose where many small units of regular ground forces requested CAS at the same time and in the same battle space. Problems that arose during operation *Anaconda* revived the already existing discussions about air-land integration. After a temporary deterioration in air-land relationships revolving around the proper coordination of planning processes, senior leadership eventually put aside their, partially culturally induced, prejudices and worked towards a system of liaisons that provided the right "depth" in command relationships. So in general, operation *Enduring Freedom* (OEF) was regarded a victory. So much so that several scholars and airpower proponents argued that the operational concept could serve as a blueprint for the conduct of irregular warfare. In their view, the RMA, which lay at the base of the Transformation program, changed the principle of mass in favor of the air weapon, both in regular or conventional conflict, and in irregular or unconventional conflict.

The plan contained a liability, however, which became apparent right after the phase of major combat operations in Afghanistan ended. Operation *Enduring Freedom* lacked a strategic foundation in the sense that it insufficiently took the post-conflict situation into account. During planning and initial operations, this was not apparent, as the coalition at least had operational goals. However, translating victory at the operational level into strategic success was problematic, because the strategic rationale, GWOT, was directed against a tactic rather than an enemy and did not provide for a clear end state. Formulated differently, it was impossible to determine when the job was finished, because it was not completely clear what the goal was in the first place. Therefore, the US remained in Afghanistan with a residual counterterrorism task, which theoretically could last indefinitely. Meanwhile, the task of state-(or nation-) building, which had been part of the original plan, received only minor attention while the US started focusing on Iraq. Nation building, mandated by the United Nations, became the primary task for NATO, the alliance that had been anxious to join the operation while it was in the midst of the process of redefining its *raison d'être*. NATO could fall back on foundations of the concept of state-building, a complex concept aimed at enabling populations of failed states enduring economic and physical security by rebuilding its governmental en economical functions.

NATO had gained experience in this regard in the form of peacekeeping missions. However, there was no consensus within the alliance on the nature of modern risks, the suitable way of responding to those risks, and the force levels and resources that were required. This had led to diverging pathways of incorporation of the Transformation process the US was implementing in their military, and generally formulated strategic guidelines that reflected issues the alliance reached consensus on. Consensus on how to approach the operational environment in Afghanistan was lacking. As a result, western forces that entered or remained in Afghanistan had to plan and execute their operations without clear strategic guidelines.

This situation influenced the developments within Afghanistan. Partly influenced by an assessment of the operational environment that initially seemed to require Stabilization and Reconstruction (S&R), the alliance as a whole deployed too little forces, with too many national caveats, without a sound strategy, and without a doctrinal focus for the task. So, while the International Security and Assistance Force (ISAF) implemented an operational approach of S&R in Afghanistan, the US executed a Counterterrorism (CT) approach in which Afghanistan was a front. Although not immediately clear, it soon became apparent that both approaches were insufficiently suited to operate in a *de facto* insurgency environment. The actual strategy that was executed was the sum of what the provincially or regionally focused approaches of the various national contingents turned out to be. Consequently, operational goals, and especially the stance on the use of violence, showed remarkable differences. This manifested itself in a general difference between OEF and ISAF and in nationally enforced caveats. Meanwhile, the opposing forces altered the operational environment in one that required a counterinsurgency approach. There was, however, no consensus on the assessment or the correct response, and a commonly accepted strategy was still lacking.

This situation in turn had profound consequences for the airpower posture at the operational and tactical levels, and was cause for severe confusion and friction between 2002 and 2008. For air commanders, lack of an overarching strategy was problematic. The air weapon was tasked to support the entire campaign, and as neither ISAF nor OEF had a clearly defined strategy, air commanders could not formulate one either. The Afghan Model was no longer applicable, because the indigenous militia were absent, and SOF shifted focus towards leadership targeting. Due to its range and speed, airpower in principle was able to influence the entire area of operations, crossing conceptual and geographical boundaries of ground forces or joint force commanders. The direct result was that airpower application to a large extent became strongly related to immediate requests from commanders on the ground. This took place in an operational environment in which there were in general too few forces available to provide execute the so-called “clear, hold, build” approach in the face of a mounting insurgency. Western military units were forced to repeat the first phases as there were insufficient forces available to “hold” an area to provide for long term security. In addition, western ground forces increasingly became

subject of attack in the form of ambushes and attacks with Improvised Explosive Devices (IEDs), leading to an increased number of Troops In Contact (TICs). By 2008, state-building was by necessity almost solely focused on providing a basic level of security for own forces and Afghan population, without prospect of structural improvement. The coalition faced an enduring stalemate or even defeat at operational and strategic levels.

In this context, airpower's main role gradually became support of the ground forces with the mission types inter-and intra theater airlift, ISR support, and most importantly, CAS. Achievements of the RMA had increased tactical effectiveness of these missions. In general, it allowed for their increased freedom of movement and decreased risk, which in term translated into decreased likelihood of casualties. These achievements were appreciated by ground forces. However, requests for air support did not show any coherence at the strategic level in the sense that it served a clear end state. Worse, collateral damage and civilian casualties that were inflicted in the process, or the perception that they were inflicted, could have negative effects on a strategic goal, namely gaining support of the Afghan population. Hence, the air weapon had paradoxical effects, in which it was effective at the tactical level, but could have detrimental effects at the strategic level. Moreover, the sequence of requests for air support gained its own momentum during the developing insurgency, a momentum which became increasingly harder to change. Several hundreds of, mostly American, air assets executed tens of thousands of sorties of all kinds annually. Gradually, airpower became an essential tactical tool for survival of dispersed ground forces. In the process, the main focus collectively showed a development towards mission sets that traditionally were associated with counterinsurgency.

This development revived old and sometimes emotional discussions. The first discussion was related to unity of command and unity of effort. In theory, all commanders favored these military tenets. However, the air weapon served multiple operational approaches that were executed by multiple commanders serving several organizations. The largest difference between commanders was between those of NATO and those of the US. On the one hand, the tenets could be applicable to ISAF, with Afghanistan as area of operations, a command line to the Supreme Allied Commander Europe (SACEUR) in Mons, Belgium, and with an S&R approach. On the other hand, it could be applicable to OEF, which was part of a larger area of operations commanded by US Central Command (CENTCOM) in Tampa, Florida, and which executed a CT mission. NATO was not capable of mustering a separate air component for ISAF, so it had to fall back on support from CENTCOMs air component, the Combined Forces Air Component Commander (CFACC). Due to the separate operational approaches of ISAF and OEF, it was politically unfeasible to merge them into a single campaign. Consequently, there was no consensus on the context upon which the foundations of unity of command and unity of effort could be based. This problem was not unique for the air weapon. Unity of command and unity of effort was lacking for the ground forces as well. However, OEF and ISAF forces to a large extent were geographically separated, but airpower's tenets of range and speed allowed

the air weapon to cross these geographical and conceptual boundaries within a single sortie. The air component was the only component which had to cope with this issue to a very problematic extent, as the air weapon was required to support both missions at the same time. Therefore, the challenge of unity of command and unity of effort was more urgent than for the ground forces. Gaining influence on how the air weapon was applied in Afghanistan became topic of discussion between air commanders from the several organizations. It highlighted the traditional challenge of coalition warfare.

A second discussion was implicitly related to the ideal application of airpower in irregular warfare. Trained and educated to deliver effects at all levels of military operations, preferably in support of a strategy designed by a Joint Force Commander (JFC), airmen now seemed to be called upon only at the tactical level. It downplayed the missions that could have an effect at the operational and strategic levels, and also were made possible by the achievements of the RMA, such as leadership targeting. In addition, some air commanders felt that airpower was an afterthought in what they considered to be joint planning. To them, air operations evolved in an inflexible emergency call, and airpower into a force protection asset. This was due to a combination of lack of strategy, too few ground forces, and increased activity on the part of the opposing forces. This compelled ground forces to resort to air support in TIC situations, without positive effect at the strategic and operational levels. In addition, some airmen felt that it was insufficiently acknowledged that the RMA increased airpower's effectiveness in relation to the traditional missions. Airpower was able to transport and resupply more troops, to and at more remote locations, and provide them with more scalable and precise fire support than before. In addition, it could do so in worse meteorological and atmospherical conditions than before. In short, increased capability of airpower enabled increased effectiveness of ground forces. To some, this legitimized the need for acknowledgement of a larger contribution of the air weapon, even in traditional missions.

However, the paradoxical effects of the air weapon did not diminish. The situation remained in which the air weapon was celebrated for its life-saving support to ground forces, but also reviled for inducing collateral damage, despite the fact that increased precision decreased this problem too. Especially ground commanders could have different views. In accordance with the ground-centric approach that had penetrated US Army and Marine Corps doctrine, information age airpower had only improved its performance, and did not fundamentally alter warfare. To the commanders that supported this view, airpower application was supposed to be supporting ground commanders. Although individual commanders showed great variation in their opinions, and although the discussions addressed individual topics rather than the concepts, to some extent it was the contrast of the technology-centric and ground-centric approaches to airpower in irregular conflict manifested in practice.

These discussions were not addressed at the levels of policy, grand strategy or military strategy, but at the operational or tactical levels. Formulated differently, regional or local

commanders initially had to figure out the details for themselves. As guidelines coming from the top political and military leaderships of NATO and the US did not provide for solutions to the problems, it was left to the operational-level air commanders to deal with the challenges. These challenges eventually revolved around the practical issue of defining command relationships. Initially, this led to friction between air commanders. NATO and US air commanders, mutually tried to gain influence on their respective command and control schemes. An interim solution was reached by "dual hatting" of the Deputy Combined Forces Air Component Commander (DCFACC) as senior airman for both OEF and ISAF. This solved the immediate problem, as command and control lines at least met, but also laid the foundation of a convoluted command and control structure which became known as a proverbial spaghetti diagram. Also, it did not solve the challenge of proper incorporation of the air weapon in joint planning. This challenge was only properly addressed after the friendly fire incident during operation *Medusa* in 2006, which was in many respects NATO's repetition of some troubling elements of the American operation *Anaconda* four years earlier. Designing a solution to the problem, however, was complicated by non-standard arrangement in Afghanistan. Due to the organization of the ground forces in *de facto* Joint Task Forces (JTFs), there was confusion about who the JFC was. Consequently, doctrine that could proscribe the ideal organization of the air component was lacking. The US Air Force had acknowledged this problem earlier, and partially had solved it by creating Air Component Coordination Elements (ACCEs). The ACCE was however not yet firmly embedded in US organization, and was not accepted by NATO. So, there was conceptual space for both the arguments that the Commander of ISAF (COMISAF) was both an operational and a tactical commander, a JFC and a commander of a JTF respectively.

So, between 2002 and 2008 airpower was mainly delivered and evaluated at the tactical level, in general without an overarching concept on how to exploit airpower's strengths to the full. Command architectures of OEF and ISAF were not merged, but mutual air support was delivered "in extremis". The main measure of effectiveness became responsiveness of CAS in terms of the time between an emergency request and the actual delivery of air support. Although the response times were low, routinely less then 15 minutes, and air commanders regarded this as an achievement, many military professionals, regardless of service affiliation, found this situation unsatisfactory. CAS was a mission with paradoxical consequences. On the one hand, it was essential for protection of the ground forces, as it in many cases was the only form of heavy firepower they had access to. On the other hand, it was a strategic liability due to the risk of civilian casualties. Opposing forces were well aware of this dynamic and tried to exploit it to the best of their abilities. Without strategic guidelines that properly addressed this paradox, or a sound command and control architecture that allowed air planning to become part of joint planning, the problem lingered. The airpower community did try to mitigate the risk by introducing new or additional technologies and by streamlining processes, but it was only able to tweak the system. It could not make up for a lack of sound strategy.

This situation remained until 2008, when the United States assumed the lead in the two most pressing issues: devising a strategy and mustering enough force levels and resources. This led to a re-Americanization of the effort. Therefore, the story of airpower in Afghanistan to a large extent only formally was one of NATO airpower. It *de facto* was insufficiently able to provide for the necessary force levels and resources, and the necessary conceptual consensus on strategy. It therefore remained highly dependent on the prime member who initially executed a separate mission, the United States, and to a lesser extent on non-NATO members. American leadership was noticeable at various levels. A surge of American forces alleviated the problem of force levels and resources, although several other nations increased their contributions as well. With regard to strategy, the situation is less clear cut. Senior US leadership, most notably Secretary of Defense Gates, became convinced that the operational environment in Afghanistan required a counterinsurgency approach. He partially had to convince US senior military leadership as well. Reportedly, this did not go as Gates desired, upon which he dismissed several high officials, including the Secretary of the Air Force, the Chief of Staff of the Air Force, and the commander of ISAF. Partially in parallel, all coalition forces needed to focus on creation of a basic level of enduring security, upon which other elements of state-building could be applied. In practice, this meant that American units had to change their outlook from CT to counterinsurgency (COIN) and NATO members from S&R to COIN. Armed with a relatively new doctrine for counterinsurgency, a new population-centric strategic outlook, and a surge of ground forces, Generals McKiernan, McChrystal and Petraeus, three consecutive commanders of ISAF, altered the playing field for the airmen. They severely tightened the rules upon which aircrews were allowed to use lethal force, while simultaneously and systematically scrutinizing airpower performance for the unwanted effects of civilian casualties and collateral damage.

To a large extent, they officially implemented the ground-centric approach to airpower application in irregular warfare, codified in the now implemented *FM 3-24*. This doctrine allocated airpower a role supporting to ground commanders. The fierce tone of the public discussion on the *FM 3-24*, the reluctance of some air commanders to accept the new strategy, and also some of the discussions about "ownership" of air assets between air- and ground commanders, showed that this new role was not welcomed within mainly the air force communities. Air commanders eventually reconciled themselves into an altered role. Part of the increased caution to use kinetic force, regardless of who resorted to it, was exactly knowing who or what to hit. Therefore, the air weapon further specialized in missions related to ISR. Also, other supporting missions, such as troop transport, medical evacuation and ISR evolved further and became critical enablers of operations of ground forces. However, leadership targeting became one of the core tasks, which was either executed or heavily supported by airpower. While the discussion about civilian casualties and collateral damage shifted focus from CAS to leadership targeting, availability of relatively new and technologically advanced air assets such as the MQ-9 Reaper Unmanned

Aerial System (UAS) made it possible to execute these missions in large quantities. These missions were in direct support of a JFC, in line with education and training of airmen.

So, by 2010, ISAF's and OEF's outlooks were directed towards counterinsurgency. This was still not a proper strategy, but at least the military operations in Afghanistan showed increased cohesion. In combination with the right amount of force levels and resources, this allowed coalition forces to break the stalemate they were confronted with. The air weapon followed suit. The mission types the air weapon executed did not change much, but their importance relative to each other did. The importance of CAS missions decreased, in favor of leadership targeting, ISR, and air transport. Together with additional resources and force levels, this alleviated existing problems. Subsequent alterations of the command relationships streamlined command and control of the air weapon further, although it formally remained convoluted. The American contribution and the NATO contribution on paper were strictly separated, but by "multi-hatting" American General Officers, up to the point where the American senior airman became "quintuple hatted", the problems were less severe. By 2012, under American leadership, the problems of force levels and resources were solved, and other problems were alleviated.

There was however one task that had to be fulfilled before the conflict could be brought to a conclusion, and that was rebuilding of the Afghan Air Force. This was essential, as it was this air force that had to take over the airpower functions western air forces had executed before. The new measure of effectiveness of the air weapon became the extent to which air advisors were able to ultimately build Afghan operational capacity. This was challenging, as neither the US or NATO were equipped to execute these tasks, at least not on the scale that was required in Afghanistan. Moreover, a clear strategy was still lacking, even though it was more specific than ever before. Finally, tasks relating to air advising were vastly different from delivering direct air support to coalition forces. Under American leadership, many activities were deployed to train the right amount of air advisors, provide the Afghan Air Force with enough and the right kind of airpower, and build the operational capacity for the Afghan Air Force. Some of the developments showed the same dynamics as before, such as for instance mustering the right amount of force levels from NATO, and the national caveats NATO trainers brought with them. But this did not lead to tension within the alliance to the extent that was the case a few years earlier with regard to airpower deployment in general. Other dynamics were markedly different, such as for instance the influence manufacturers of aircraft could have on the delivery of airframes to the Afghan Air Force. Also, the cultural differences between Afghan and western airmen were new and significantly influenced developments. In general, the endeavor to build the Afghan Air Force showed an upward trend. However, the initial timelines were not met due to the late start, complexity and scale of the operation, cultural chasm between NATO trainers and Afghan airmen, and the deteriorating security situation in Afghanistan after the drawdown of ground forces. Consequently, requirement of direct western air support to Afghan ground forces remained.

8.4. The Air Campaign and the Discourse on Airpower in Irregular Conflict

8.4.1. Air Campaign Follows Strategy

The question remains how these developments relate to the discourse on airpower in irregular conflicts. First, it is important to acknowledge that the operational environment in Afghanistan between 2001 and 2016 could be classified as irregular. Chapters four to seven argued that this was indeed the case. Second, the situation with the subdenominations of irregular warfare is less clear. As stated in chapters one and two, the definitions of irregular warfare could be source of confusion. Irregular Warfare (IW) and its subdenominations - Counterterrorism (CT), Unconventional Warfare (UW), Foreign Internal Defense (FID), Counterinsurgency (COIN), and Stability Operations (SO) - could easily be intermixed. Also, it could leave unnoticed that roles of airpower could vary strongly along the chosen subdenomination. In effect, the proper role of "airpower in irregular conflict" could strongly depend on the commander's assessment of the operational environment, and the doctrinal action to counter irregular threats that he chose. In effect, it depended on the chosen strategy. Third, development of airpower in Afghanistan between 2001 and 2016 showed that the roles indeed shifted with the change of actions to counter irregular threats, mostly formulated in terms of strategic approaches. During the opening stages, the coalition executed CT or UW. It was followed by a phase where SO and CT coexisted. COIN replaced those, although it also incorporated elements of the former phase. Finally, the coalition's center of gravity became a FID mission, without completely ending activities that were mainly associated with other conceptual approaches. It can be argued that, in general, airpower changed its main focus from the Afghan Model, via the supporting functions, to air advising respectively. In doctrinal terms: focus shifted from CT and later S&R to COIN and finally FID. Activities were, however, accompanied by those that doctrinally were associated with other concepts than those of associated with the main focus. Airpower's roles and missions, like those of ground forces, changed with the adoption of several strategic approaches, and with various combinations of the subdenominations within irregular warfare acting simultaneously.

8.4.2. The Air Campaign and the Topics of Contention

There is another way of addressing airpower's role in irregular conflict. Chapter two identified several topics of contention. The concluding paragraphs of chapters four to seven collectively show a clear development in relation to these topics. During the course of the conflict, ever more elements of irregular warfare imposed themselves. This was reflected in the problematic issues that surfaced over time.

During the first phase, the only problematic issue was that of command relationships, and mostly in the context of air-land integration. This was the only topic within the debate on airpower in irregular conflict of which the standpoints were mutually exclusive. After all, it was impossible to execute centralized command, as favored by airmen, and decentralized command, as favored by ground commanders, at the same time. During operations in late 2001, integration between air and SOF worked remarkably well. Contention arose when larger numbers of regular forces entered the area of operations, initially during operation *Anaconda*, but later with regular forces from OEF and ISAF as well. Contention that arose can be explained by a traditional contrast between airmen and soldiers/marines with regard to command and control of the air weapon. Poorly codified organizational structures and lack of conceptual consensus about the relationship within doctrine and the discourse on airpower in irregular conflict exacerbated this problem in the Afghan area of operations. During the phases that followed, the problematic combination of command relationships and air-land integration resurfaced and for some time caused severe frustration among airmen within the coalition and between airmen and ground commanders. A direct link between command relationships and air-land integration with the body of knowledge on airpower and irregular warfare is not obvious. As for air-land integration, a historically developed difference of outlook between airmen on the one hand and soldiers and marines on the other was more influential than a fundamental difference with regard to airpower application in irregular warfare. It was, however, not surprising that these issues surfaced, as soldiers, marines, and airmen were forced to work closely together in Afghanistan.

With regard to command relationships, the discord was strongly influenced by the organizational structure that was poorly codified in doctrine and enforced by simultaneous existence of two command lines in the same area of operations. In this scheme two coalitions executed different strategies in the same area of operations, and based on different assessments of the operational environment. This convoluted command arrangements, which were exacerbated by the situation in which one of those coalitions, ISAF, was unable to muster the required force levels and resources. These problems remained unresolved until a scheme was implemented in which both command and control lines converged in a multi-hatted, American commander, the senior airman in the area of operations forwarded an empowered representative to Afghanistan, and the United States made additional force levels and resources available. What stands out is that the discord continued until the operational environment proscribed forceful action, for instance in the situation of an enduring stalemate or a friendly fire incident. The solutions for the most part were not fundamental but made the problem of separate command lines workable. Over time, the discussion faded.

The role of violence in irregular conflict, the most fundamental theoretical source of disagreement, surfaced mainly during the period before and during the implementation of the COIN approach in 2009. This topic *did* have a clear relationship with the discourse on airpower in irregular conflict. Airmen, but also various ground commanders, initially

found the restrictions on the use of violence in this context problematic for two reasons. The first reason was that it hampered engagement of terrorist leaders. Second, it increased vulnerability of ground forces. As long as the number of ground forces were insufficient to break the stalemate, this was only a theoretical issue: ground forces were dependent on airpower for survival. But as soon as the surge was executed, the discussion started. It was however short-lived. Some of the restrictions were lifted, leadership targeting was stepped up, and commanders acclimatized themselves to the new situation. A new equilibrium set in and discussions about the topic faded too.

During the course of the conflict, all other topics of contention surfaced. However, they did not cause much friction. The balance of mission types changed during the course of the conflict, but none of the missions that airpower could perform were point of discussion among military professionals. Soon after the coalition realized that it was embroiled in a stalemate, the number of boots on the ground were no longer a point of discussion. All types of intelligence were valued. And even the requirement to train the Afghan air force was not a serious point of contention. The need for specialized aircraft did become a source of friction to some extent, but not so much in the direct context of airpower in irregular conflicts. Although some military professionals preferred aircraft that were heavily armed and could fly low and slow, like the A-10 fixed wing aircraft and the AH-64 and AH-1 attack helicopters, it generally became accepted that other platforms could provide CAS at least in a satisfactory manner. This too was a merit of the RMA, which enhanced this capability for aircraft that traditionally were not designed for this task. Specialized COIN aircraft mostly surfaced in the context of absorbency of the system by the Afghan Air Force. Discussions with regard to the Super Tucano were more related to American internal economical interest than to effectiveness in irregular warfare. It should, however, also be taken into account that Secretary of Defense Robert Gates pushed the military establishment to focus on the current conflicts in Iraq and Afghanistan. Gates did not shun firing senior officials, and he did so with the Secretary and the Chief of Staff of the USAF in 2008. Part of the lack of discussion could be explained by forceful leadership, executed by Gates himself, and demanded by him from his subordinates, which muted discussion.

8.4.3. Effectiveness of Information Age Airpower in Afghanistan

Chapter two argued that the viewpoints of the authors that are associated with the body of literature about airpower in irregular conflict coincided with their most likely attitude towards the achievements of the RMA. The discourse did not address this question directly, however. Insights outlined in this study allow for drawing of conclusions about the effectiveness of information age airpower in Afghanistan between 2001 and 2016. This can be done via comparison with Russia's experience in the same region between 1979 and 1989, because that conflict period predates the information age.

What stands out is that some elements are highly similar, but dynamics could differ significantly. Some of the differences are indicators of the influence of the information age. As for the similarities, it stands out that the phases the Soviet airpower professionals went through roughly were the same as their western colleagues two decades later. Both conflicts started with an ISR campaign. Operational goals of the initial phases, most notably change in regime, showed similarities and were reached relatively swift in both instances. Both conflicts got bogged down in an insurgency. During these phases, the air weapon of both militaries flew similar missions types. All airpower professionals experimented with new tactics and weapons in order to adapt to the situation. In both instances nonindigenous forces attempted to (re-) build the Afghan Air Force, but ran into similar problems related to cultural composition of Afghanistan.

The differences were striking as well. Whereas the physical environment, and partly even the human environment, was the same, operating in it differed between the Soviets in 1979 and the US in 2001 due to distance. The Soviet Union bordered Afghanistan, allowing a land offensive and the use of personnel that partly had the same ethnic background as some Afghans. The US did not enjoy that luxury in 2001, which was part of the reason for development of the Afghan Model. The political situation differed significantly too. The Soviet Union tried to influence a country that was still a socialist ally, the US faced an outright hostile terrorist regime. This made conducting operations in Afghanistan harder for the US than for Soviet Russia during their respective initial phases.

There were also some differences that worked in favor of OEF and later ISAF. At the strategic level, the Soviets made the mistake of deliberately terrorizing the population, actively fueling the insurgency. OEF and ISAF did not make that mistake, leading to more freedom to conduct state-building activities, provided that enough forces were present. This left a relatively more benign human environment right after major combat operations ended, even though the situation slowly deteriorated as a result of lack of manpower and the resulting kinetic stance of western forces. In addition, the coalition made building the Afghan Air Force a priority, and remained committed to the day of writing. This too was a sensible decision at the strategic level and differed with the Soviets in the sense that the commitment of the latter was less.

At the tactical level, major difference was the technology that was applied. During the late 1980s the insurgents obtained sophisticated Man Portable Air Defense Systems (MANPADS), most notably the STINGER, from western donors. Effectiveness of these weapon systems against Russian aircraft compelled Russian airmen to adjust their tactics to the point that it impeded airpower's effectiveness due to the forced stand-off distance the airmen had to exert. This in turn allowed for increased mobility for the insurgents, improving their effectiveness. In the twenty first century stand-off ranges were no longer an impediment. Increased precision of sensors and weapons systems, together with other achievements of the RMA, to a large extent negated traditional limitations of the air weapon, most notably range and precision. By then, most of the MANPADS

that had entered Afghanistan in 1980s were either fired, sold, or kept as a status symbol. The remaining systems were technologically outdated or worn out due to long storage. Although they could still pose a significant threat to, especially, helicopters, the ground to-air threat for ISAF and OEF was significantly lower than for the Russians. Air operations of OEF and ISAF were not seriously affected by the opposing forces. The consequence was that options for active engagement of western airpower were limited for the insurgents. All they could do was negate some of airpower's effects, most notably by dispersal and camouflage, and start an information campaign in order to discredit the air weapon. The combination of increased capabilities of western airpower and decreased capabilities of the opposing forces allowed for deployment of airpower's increased capabilities almost with impunity.

So, what does this all mean in the context of information age airpower in irregular warfare?

First, the effectiveness of information age airpower during opening phase of operation *Enduring Freedom* can hardly be overestimated. The Afghan Model was both innovative and effective, and allowed the US and the coalition to achieve nearly all of its operational goals with maximum efficiency and minimum casualties, and against important odds such as those posed by distance. Without the information revolution, the opening stages of *Enduring Freedom* and the Afghan Model would have been impossible.

The predominance of information age airpower in the phases that followed is less straightforward. The use of armed UASs was not possible without the RMA. It allowed leadership targeting missions in remote and inhospitable terrain, and from thousands of miles of distance. In other words, it could disrupt insurgent networks at locations at on times the insurgents themselves felt safe and secure. Deployment of the armed UASs meant availability of a new tool with, according to various scholars, strategically beneficial effects. It was a useful addition to, or option for combination with, the traditional methods of leadership targeting that made use of special operations forces or intelligence agencies. However, the effects were also debated and led to additional debates about moral, ethical, and legal issues.

During the mounting insurgency and the subsequent counterinsurgency airpower's effectiveness in other missions was higher than before the implementation of the technological and conceptual innovations associated with the RMA. Ubiquity of precision airpower, being it precision munitions, the use of video links, detailed intelligence, or precision airdrop, allowed ground forces increased mobility and increased security. In short, they could conduct their operations in smaller teams, at greater distances, and with less risk. In addition, opposing forces had even less answers to airpower deployment than before. For instance, increased airborne intelligence capabilities hampered the opportunity to hide. Also, opposing forces in the past could use the tactic of quickly closing in to ground forces in an attempt to operate within the safety ranges of air weapons. The goal was preventing weapon release due to fear of fratricide. With increased precision and decreased lethal radius of weapons systems, this tactic became virtually impracticable. These effects

are beneficial to counterinsurgency operations. Yet, like earlier insurgencies, the airpower missions CAS, ISR, and intra-theater airlift were mostly beneficial at the tactical level. The enhanced mobility, situational awareness, and tactical leverage over the opponents airpower provided was undisputed. However, the air weapon was less suited to address a fundamental topic in COIN, gaining the support of the indigenous population. Some airpower missions, such as for instance intra-theater airlift in the context of humanitarian relief operations, could provide some goodwill among the population.But the information revolution had a marginal influence on these missions. In addition, especially the use of deadly force could hamper popular support for the operation due to real or perceived infliction of civilian casualties or collateral damage. Airpower's precision inflicted relatively less civilian casualties than before due to increased precision, but while the severity of the paradoxical effects was less than before, it remained dormant.

During the last phase, that of building the Afghan Air Force, the role of information age airpower is indistinct. In theory, impact of the information revolution on Afghan airpower could be the same as for western forces. However, the operational dynamics were different. Absorbability of western systems was low. If anything, modern and sophisticated airpower highlighted the gap between mainly the the benefactors and the beneficiaries, i.c. the US and the Afghans. Although evidence is scarce, there are some indications that the Afghan military leadership demanded systems of a higher technological sophistication than the Afghan Air Force could absorb for reasons of prestige rather than operational effectiveness. It that sense, new technologies could hamper operations in the context of FID, although it must be acknowledged that this was not a main challenge.

All considered, the RMA in general had a positive effect on the conduct of operations in Afghanistan, compared with earlier comparable conflict. The level of disruptiveness of the innovations on traditional ways of conducting irregular warfare and airpower's its effectiveness at the various levels of operations differed, however. It was high all across the board during the opening stages. It was also high with the specific mission type of leadership targeting, which played a large role during all phases that followed. Disruptiveness at other missions was lower, although its effects for the most part were positive. During the last phase, disruptiveness was virtually absent, and some details could even have a hampering effect on operational goals. These were, however, manageable.

8.4.4. The Air Campaign and the Three Approaches to Airpower in Irregular Conflict

A final way of addressing the relationship with the discourse on airpower in irregular conflict is through the lenses of the three approaches: ground-centric, technology-centric, and joint. It can be argued that the first phase of the conflict displayed a close relationship with the technology-centric approach, embodied in the Afghan Model. This model allowed for exploitation of airpower's strong points, and the reversal of roles of

airpower and ground power initially was successful. As far as this phase of the conflict could be called irregular, the technology-centric approach provided a good match of concept and environment. However, the Afghan Model was not well suited for the phases that followed. After a period of confusion and discord, the US cut the Gordian knot and deployed a commander of ISAF that was armed with tens of thousands of additional ground forces and an outspoken ground-centric doctrine. Implementation of this doctrine initially caused some frustration, but some of the most severe restrictions of the air weapon were eased. And in addition, one of the missions favored by the technology-centric approach, leadership targeting by unmanned aerial systems, was stepped up. It could therefore be argued that the ground-centric approach was not implemented completely. It was, however, not a return to the technology-centric approach. Rather, it was a continuing search for the most effective and efficient *modus operandi*, which was favored by the joint approach. This was most prominent in the final phase of ISAF and OEF, in which the Afghan Air Force was built. In the end, non-dogmatic standpoints seemed to work best, making a strong case for prevalence of the joint approach to airpower in irregular conflict. It is the only approach that does justice to the reality as it presented itself in Afghanistan.

8.5. The Air Campaign and the Lasting Effects

There is a question that falls outside the main argument, but is of interest nonetheless. It is the question of how lasting the whole endeavor was. It is divided into two subquestions. The first subquestion is whether airpower application in Afghanistan had a lasting positive effect. The answer to that question depends on how the end state is valued. The air weapon made positive contributions during all phases, but it suffered from the lack of a clear end state, just like the partners on the ground did. At the time of writing operations *Resolute Support* and *Freedom's Sentinel* are still ongoing. Indications are that the security situation is malign, and the Afghan Air Force at least to some extent is still dependent on direct external support. This is witnessed by an increase of weapon releases by US air assets. This included release of one of the largest non-nuclear weapons in the US arsenal, a GBU-43/B Massive Ordnance Air Blast bomb (MOAB), on a heavily mined cave complex in Eastern Afghanistan containing fighters of Islamic State on April 13, 2017.[1] Also, there are

1 Anonymous, "U.S. Bombs, Destroys Khorasan Group Stronghold in Afghanistan", *U.S. Department of Defense Information / FIND* (April 13, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1887147787/6154C5B4F4B4C59PQ/2?accountid=35226 (accessed April 21, 2017), Helene Cooper and Mujib Mashal, "A Giant U.S. Bomb Strikes ISIS Caves in Afghanistan: [Foreign Desk]", *New York Times, Late Edition (East Coast)* (April 14, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1887288385/211701BF17FE423EPQ/1?accountid=35226 (accessed April 21, 2017), Jessica Donati and Habib Khan Totakhil, "U.S., Afghan Forces Begin Cleanup After Massive Bomb Blast; U.S. National Security Adviser McMaster in Kabul for 'Important Talks', Afghan Defense Minister Says", *Wall Street Journal (Online)* (April 15, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1888243463/1B5FE2AB9E6D4422PQ/1?accountid=35226 (accessed April 21, 2017), Jessica Donati, Ben Kesling and Dion Nissenbaum, "U.S. Drops 'Mother of All Bombs' on ISIS Tunnels in Afghanistan; Pentagon Says Plane Dropped One of the Largest Nonnuclear Bombs in Its Arsenal on Tunnel-and-Cave Complex", *Wall Street Journal (Online)* (April 13, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1887087824/71F20E7B526F41D3PQ/1?accountid=35226 (accessed April 21, 2017), and Barbara Starr and Ryan Browne, "First on CNN: US Drops Largest Non-nuclear

indications that the Afghan National Security and Defense Forces (ANDS) remain dependent on direct US or coalition air support.[2] This is a step back from the intended goal, handing over security functions to the Afghan government. So, the answer to this subquestion is that airpower application did have a lasting and positive effect, but it remains a question whether it was sufficient.

The next subquestion is to what extent the western lessons learned have become rooted in the respective organizations. Or formulated differently, whether western airpower professionals suffer from a "COIN syndrome" or "phoenix cycle". As operations are still ongoing, deriving definite conclusions is impossible. There are, however, several recent developments that fit within the description of such a cycle with regard to airpower application in irregular conflicts. For instance, the adoption of COIN was not accepted outright by the US military, by the US Air Force, and NATO. External pressure, in the form of dismissal of key personnel by the Secretary of Defense, is another example. The USAF had to re-write the doctrine on irregular warfare, and only did so after the US Marines and the US Army published a doctrine in which the role of the air weapon was, at least to the opinion of senior airmen, not properly incorporated. As is described throughout this study, airpower developments of both US and NATO increasingly showed a search for the most effective match between airpower application and its environment. Yet, several authors suggest that the USAF treats the conflicts in Iraq and Afghanistan as aberrations, tending to forget the lessons of those conflicts, and conceptually and materially refocuses on peer or near-peer adversaries like Russia and China, discarding lessons learned from the years of application in irregular environments.[3] There are some indications that they might be right. The Air Force Future Operating Concept of 2015 does not regard training indigenous air forces to be a core function of the USAF, instead again designating Air Force SOF to be the specialists in Building Partnership Capacity.[4] As for NATO, a study of the Joint Air Power Competence Centre (JAPCC) on airpower's future suggested that European airpower's

Bomb in Afghanistan", *CNN Wire Service* (April 13, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1887058837/386F257244034E89PQ/2?accountid=35226 (accessed April 21, 2017). This weapon was also nicknamed "Mother of All Bombs".

2 Hill Hamrick and Roger B. Turner Jr., "Back to Helmand: Maneuver Warfare with An Afghan MAGTF", *Marine Corps Gazette* 102, no. 9 (2018): 73-76.

3 H. Mark Clawson, "Break the Paradigm: Prepare Airpower for Enemies' "Most Likely Course of Action"", *Air and Space Power Journal* 31, no. 2 (2017): 39-51, 40, John D. Jogerst, "Preparing for Irregular Warfare", *Air & Space Power Journal* 23, no. 4 (2009): 68-79, 69, Fernando M. Luján, "Light Footprints: The Future of American Military Interventions", (Center for a New American Security, Washington, DC, March, 2013) https://s3.amazonaws.com/files.cnas.org/documents/CNAS_LightFootprint_VoicesFromTheField_Lujan.pdf?mtime=20160906081332 (accessed March 11, 2019), 33, Magnus Nordenman, "NATO Beyond Afghanistan: A US View on the ISAF Mission and the Future of the Alliance", *The Polish Quarterly of International Affairs*, no. 2 (2014): 13-25, 15, Mort Rolleston, Ric Trimillos and Tom Gill, "Aviation Security Cooperation: Advancing Global Vigilance, Global Reach, and Global Power in a Dynamic World", *Air & Space Power Journal* 28, no. 5 (2014): 92-117, 92-93, Will Selber, "The Other Side of the COIN", *Air & Space Power Journal* 32, no. 3 (2018): 72-84, 72, and Jon C. Wilkinson and Andrew Hill, "Airpower Against the Taliban: Systems of Denial", *Air & Space Power Journal* 31, no. 3 (2017): 44-59, 45.

4 United States Air Force, "Air Force Future Operating Concept: A View of the Air Force in 2035", (September, 2015) http://www.af.mil/Portals/1/images/airpower/AFFOC.pdf (accessed October 10, 2016), 10 and 33.

capacity to operate in an insurgent environment needs improvement.[5] On the other hand, doctrines on Irregular Warfare and its subdenominations are still current, and several organizational structures are still in place. JAPCC did incorporate a chapter on COIN in its future vision. In this sense, it is still too early to determine whether Afghanistan's lessons in airpower application are actually learned, or just identified.

8.6. Conclusion

On balance, the air component was essential in the general scheme of operations in Afghanistan and in all stages of the operation, but its role changed markedly with each phase. During the opening stages, air interdiction and CAS provided leverage of indigenous forces over the opponents, and therefore influenced the operational level directly. During the deployment and subsequent expansion of ISAF, the air weapon was a critical enabler, albeit mostly at the tactical level, providing airlift in various forms and CAS. In the context of COIN, it continued to be a critical enabler, now more focused on ISR and transport, but with the additional focus at the operational level in the form of leadership targeting. It also helped to set the preconditions for responsible exit by training and equipping the Afghan Air Force. Within the context of building a global community of airmen, this could be regarded as a new way of delivering strategic effects, albeit not in the classical sense of strategic bombing.

As airpower's roles changed during the course of the conflict, so did the driving factors. The Afghan Model had strong roots in the RMA that preceded the conflict, but its application was strongly influenced by considerations of political and operational nature. During the phase that followed, the unwillingness or inability of NATO to provide for a sound strategy and the right type and right amount of force levels and resources forced the air weapon to adopt a certain posture, which had positive effects at the tactical level but was detrimental at the strategic level due to the perception of extensive infliction of civilian casualties and collateral damage. This in turn was partially based on faulty assessments of the operational environment. These assessments focused either on nation building or combating terrorism, while the operational environment quickly evolved into an insurgency. It took some time to realize this, and it took American leadership to enforce action and improve the situation. When the situation eventually did improve, the way was clear to execute the final task, building the Afghan Air Force. This shift was less problematic than the previous one. The US was already leading the endeavor, building of the host nation air force fitted within the strategic approach already chosen, and the concept of air advising was already embedded in doctrine and partly even in the organization. Mainly cultural differences showed their impeding influence during this last phase.

5 Joint Air Power Competence Centre (ed), *Air & Space Power in NATO: Future Vector Part II* (JAPCC, October, 2014), http://www.japcc.org/wp-content/uploads/JAPCC_FV_III_web.pdf (accessed March 20, 2019).

The changing roles proscribe a nuanced assessment of the application of airpower in Afghanistan within the context of the debate about airpower in irregular conflict. All three approaches manifested themselves during the course of the conflict. The situation for the opening stages of the conflict, between late 2001 and early 2002, the Afghan Model was prominent. To some extent, this phase was unique, containing a mix of regular and irregular elements for both the Taliban and Al Qaida on the one hand, and indigenous and coalition forces on the other. As far as this situation can be classified as irregular, it showed the pre-eminence of the technology-centric approach to it. In this phase airpower was able to adopt a leading role, and missions with effect at the operational level, such as interdiction, were important.

For the periods that followed, opposing forces posed clear irregular threats, and the reaction of coalition forces and the Afghan indigenous forces can be classified as actions to counter irregular threats. After a period of conceptual confusion, between 2002 and 2008, both OEF and ISAF from 2008 onwards adopted an official COIN approach which to a large extend reflected the ground-centric approach to airpower application in irregular warfare. Indeed, to some extent, airpower's tasks during this phase were the same as during classical counterinsurgencies, namely airlift, ISR, and CAS in support of ground forces. And its positive effects were mostly felt at the tactical levels. It was however augmented with elements that found support with the proponents of the technology-centric approach. It could therefore be argued that, even though the strategic approach officially was named COIN, it in effect reflected implementation of a more joint approach to airpower application in irregular warfare between 2008 and 2012. This extended into the last phase, from 2012 to 2016, in which the transition was made from direct support of ground forces and Afghan forces towards building the Afghan Air Force. By now, all forms of airpower application had found some sort of equilibrium, and most discussions were muted. Without much friction, air advising was added to the arsenal of airpower's effects. So, in effect, airpower application in Afghanistan between 2001 and 2016 reflects a development that mostly coincides with the joint approach to airpower in irregular conflict, which allows for pre-eminence of one form of power in one phase, and another form of power in a different phase, depending on the operational demands.

During all phases the influence of the RMA was felt, albeit more visible and more influential in some phases than in others. In the first phase, its influence was most obvious. It was the central theme of the technology-centric approach. In the two phases that followed, the dynamics of the traditional missions in Afghanistan between 2001 and 2016 to some extent differed from earlier insurgencies, like the Afghan insurgency against the Soviets of 1979 - 1989. New technologies allowed for more accurate and scalable effects than before, leading to increased effectiveness and efficiency in traditional missions, which in turn allowed ground forces to operate more dispersed and lightly armed. While the general mission set remained the same, there are indications that the RMA altered the balance of these missions as a result of increased effectiveness. Modern airpower had a greater

positive impact on the overall goals of the mission compared to older counterinsurgencies in the area of operations. Especially persistence and precision, both boosted by the RMA, made the air weapon operating in Afghanistan more capable compared to airpower in earlier conflicts. Consequently, it was called upon more often. And from the perspective of the Joint Force Commander, the joint force was able to do more with less. It also became more capable of delivering effects without direct involvement of forces operating in other dimensions of warfare. Whereas the mission of interdiction was not new, and neither was the concept of leadership targeting, unmanned systems provided new tools that enhanced practicability of these missions in remote and inhospitable areas, increasing their political significance in certain irregular contexts.

During the last phase, the RMA had a modest influence, revealing itself in the search for "right-tech" for the Afghan Air Force. The background was different than the debate on airpower in irregular warfare suggested. Initially, aircraft flying low and slow equalled increased ubiquity and endurance, something modern aircraft allegedly lacked. The conflict in Afghanistan showed that information age airpower did not suffer from these disadvantages. So the debate about COIN-aircraft to a large extent was muted in the context of airpower in irregular warfare. That it resurfaced in the context of air advising was primarily in relation to the absorbency of modern technologies by an indigenous air force.

So, save for the first phase, changes that were made neither constituted a continuation of old developments, nor a fundamental paradigm shift. As with the airpower functions relative to each other, the more lasting change was more subtle, touching upon the altered relationship between the air weapon and the joint force. The air weapon was able to perform relevant missions autonomously, could substitute for several functions due to increased precision and persistence, and remained supporting in several other functions. Although the RMA-induced developments did not fundamentally change traditional tasks and missions, it did alter the underlying dynamics. The crux was to determine in which cases several forms of military power could be fully exploited in a joint context.

Epilogue

Epilogue: Airpower Innovation in Afghanistan (2001 - 2016)

Introduction

This study used the discourse on military innovation and adaptation primarily as a frame of reference for description and explanation of historical events. In this case, it concerned airpower application in Afghanistan between 2001 and 2016. Chapter one also identified another application of the discourse on military innovation and adaptation, namely using it for enhancement of an organization's innovative capability. Finally, it indicated that this research could be used as building block for the third application of the discourse: theory building. This study contains links with the theory of military innovation because it uses the manifestations and driving factors that are associated with the discourse for description and explanation of events and developments. It provides insufficient evidence for validation of a theory of military innovation. However, analysis of the developments of airpower in Afghanistan allow for conclusions about how driving factors influenced manifestations of this particular case study. When combined with other (case)studies, this dissertation can still contribute to development of theory about military innovation. This epilogue offers some observations about the processes and outcomes of innovation and adaptation of the air weapon.

A recent analysis of the discourse on military innovation highlights four main explanatory models for military innovation. The first approach focuses on external influences for innovative processes, and is called the "outside-in" approach. It is augmented with the "inside-out" approach, which focuses on innovative developments within military organizations. The third approach argues that innovative developments are implemented from the "top down". Finally, the "bottom up" approach focuses on innovative processes that are initiated and implemented from lower levels of the military organization upwards. Besides these main approaches, there are other approaches as well. All approaches augment rather than oppose each other. In addition, the discourse increasingly acknowledges that military innovation can be very context dependent.[1] Furthermore, chapter one indicated that, while the frame of reference that is deducted from the discourse is comprehensive, it still is theoretically possible that the lists of drivers and manifestations are incomplete.

Chapter one also offered a few hints on how airpower potentially innovates, deriving insights from two studies. Some insights about airpower innovation in irregular warfare are provided in a study about airpower in South Vietnam. It suggested that lack of agreement on the nature of the operational environment, preconceived perceptions on the use of force, and interservice rivalry, impeded forceful innovation and adaptation of the air weapon, and led to compromise agreements and absorption of innovations into tasks

1 Rob Sinterniklaas, "Military Innovation: Cutting the Gordian Knot", (Research Paper 116, Netherlands Defence Academy, Faculty of Military Sciences, Breda, October, 2018), 7-16.

beyond their intended origin.[2] The second study concluded that air forces in general tend to innovate with a higher level of decentralization, and with a smaller role for doctrine than the discourse in military innovation suggests. This second study however did not incorporate irregular wars in the research.[3] These studies do not provide for solid theory. They however suggest that especially leadership and organizational culture are important inhibitors of airpower innovation in an irregular context, while innovations are mostly implemented "bottom up".

This epilogue offers observations on the question of how the driving factors of military innovation influenced related manifestations, all in the context of airpower application in Afghanistan between 2001 and 2016. In order to do so, the next paragraphs address each driving factor separately, after which conclusions will be drawn for this particular case study.

Technology

Technology figured prominently in the development of the air weapon in Afghanistan. This was most visible during the opening stages of operation *Enduring Freedom* (OEF). The project of "Transformation", which mainly the US had been executing during the decades before September 11, 2001, allowed for design of an innovative plan in which a small number of ground forces, equipped with modern communications and target designation equipment, could link modern airpower to indigenous forces. This combination was successful to the extent that some military professionals and scholars proposed that this model could be applied in other conflicts as well, including the entire spectrum of irregular warfare, or that at least the paradigm of the western way of war had been altered. This partially proved to be the case. The airpower community implemented many innovations and adaptations at the tactical level in support of Stabilization and Reconstruction (S&R) and Counterinsurgency (COIN) operations. Examples include Remotely Operated Video Enhanced Receiver (ROVER) terminals, the use of delayed fusing, Small Diameter Bombs (SDBs), GPS guided munitions, increased precision of weapons and sensors in general, airborne command and control, and air-to-air refueling. From 2002 onwards, some initial improvements could be made by deploying more technologies, or, formulated differently, speeding up the Transformation process to improve effectiveness. Later, new technologies such as multispectral sensors, tethered aerostats, and unmanned transport helicopters found their way into the Air Order of Battle (AOB), However, these technological innovations and adaptations were only

2 Donald J. Mrozek, *Air Power and the Ground War in Vietnam. Ideas and Actions* (Maxwell Air Force Base, AL: Air University Press, January, 1988). The chapter on innovation was a revised version of an article published four years earlier in the *Air University Review*: Donald J. Mrozek, "The Limits of Innovation: Aspects of Air Power in Vietnam", *Air University Review* January-February (1985) http://www.au.af.mil/au/afri/aspj/airchronicles/aureview/1985/jan-feb/mrozek.html (accessed January 12, 2017).

3 Adam R. Grissom, Caitlin Lee and Karl P. Mueller, *Innovation and the United States Air Force: Evidence From Six Cases* (Santa Monica, CA: RAND Corporation, 2016), vii-ix, and 3.

able to tweak the system, not revolutionize it. So when it came to targeting insurgents, technology had a positive but marginal effect on manifestations of military innovations. It mostly influenced plans and operations.

This is not to say that nothing had changed. In general, the air weapon was able to overcome obstacles the operational environment in Afghanistan presented to a larger extent than before. Modern technologies in Afghanistan mitigated or removed some of the traditional limits of airpower operating in an insurgent environment. Larger areas could be searched, more insurgents found, engagements resulted in less civilian casualties and collateral damage, and the influence of enemy ground fire was lessened. In addition, technologies enabled ground forces to extend their range. Their burden of carrying heavy weapons or staying within range of their artillery was lifted by readily available aerial firepower. This enabled them to extend their range even further, because without the burdensome heavy weaponry they were able to get into transport helicopters and exploit airpower's strengths of speed, range and flexibility. In theory, ground forces were able to reach out to a higher percentage of the population, a development that was appreciated in an insurgency environment. The ground forces subsequently could be confident that they would be resupplied by air, partly using newly developed precision airdrop, or be extracted when needed. These developments did not alter traditional roles the air weapon had in S&R and COIN missions, but the air weapon was more effective. In addition, there was a type of mission in which new technologies did alter operational dynamics significantly, namely leadership targeting. Especially in Pakistan, unmanned arial systems, relatively new weapon systems that were an offspring of the Revolution in Military Affairs (RMA), showed their worth, even though the effectiveness of the effort was debated.

The influence of technology during the last phase, that of building the Afghan Air Force, was markedly different from the previous periods. The question surrounding technology changed from which technologies could best support the counterinsurgency effort to which technologies could be successfully transferred to the fledgling Afghan Air Force. This invoked different dynamics than before. But these developments were related to procurement processes and internal political and economical dynamics in the United States rather than the appreciation of technologies.

An element of technological innovations that received relatively minor attention is the influence of the revolution in communications technologies on command relationships. Traditionally, this influence surfaced when commanders at the operational level or tactical level encountered unwanted interference from higher echelons, made possible by a global network of communications. This was for instance displayed by the discussions about Battle Damage Assessments (BDA) during the opening stages of OEF. It however also had an enabling effect. Potentially, the global communications network also enabled the possibility to devise an adaptable command architecture, in which airmen received a proper seat at the table of the staffs of joint and ground commanders, while retaining the tenet of centralized command and decentralized execution. Increased effectiveness of the

air weapon could legitimize such a seat even more than during earlier periods. The most influential innovation was using the Air Component Coordination Element (ACCE) outside its doctrinally proscribed position in the organization, rather than new weapons systems. However, much of the limited literature focused on narrow subjects, such as the command authority.

So, in general, technological developments had a positive effect, mainly on plans and operations and on command relationships. Its influence differed per phase of the conflict. To some extent, its effects were under-appreciated in the sense that new missions and increased effectiveness on traditional missions and command relationships were sometimes insufficiently acknowledged.

Operational Environment

The operational environment posed several challenges for air operations. Physically, Afghanistan presented some of the harshest conditions the air weapon could be operating in. Climatological circumstances increased wear and tear on the airframes, and sometimes made air operations impossible. For some assets, Afghan elevations posed serious if not insurmountable obstacles, especially during the summer months when the combination of high temperatures and high elevations decreased performance of engines, wings, and rotorblades. These obstacles to a large extent could be overcome by improvements in other areas, such as technological developments and sound planning. Physical and climatological obstacles are part of every military asset and military unit, and smart use of the capabilities and limitations separates military science from military art. So, they are a fact of life for every soldier, seaman, marine and airman. As for airpower, it can be argued that these obstacles have been overcome to a larger extent than ever before. Availability of AWACS, air-to-air refueling capability, satellites, unmanned aerial vehicles, increased communication and navigation capabilities, and increased precision of sensors made the influence of the physical environment, even if that environment is Afghanistan, less of a factor than ever before. Persistence had increased significantly.

The human environment, in the context of opposing forces, on the other hand posed challenges for the air weapon, although they differed between the levels of military operations. At the tactical level, opposing forces mostly were a nuisance for airmen. Direct engagements on flying aircraft were rarely fatal. With one notable exception in 2012, ground attacks on airbases were ineffective. Both airmen and opposing forces tactically adapted to each other, but the insurgents were not able to solve the classical air-ground dilemma. Besides the ineffective direct attacks, the insurgents largely resorted to traditional measures to mitigate airpower's effects, such as dispersal and cover and concealment. Therefore, the air weapon was able to execute most of its missions relatively unhindered, although airmen needed to devote some attention and some resources to

execution of defensive tactics. However, opposing forces became aware of the restrictions the air weapon was operating under. While organizing an insurgency, they adopted additional forms of countermeasures, camouflage in the form of dressing up as civilians. In addition, they used civilians, most notably women and children, as human shields. They knew this would restrict the use of kinetic air attacks. Tactically, the influence of this tactic was marginal. Modern sensors allowed airmen increased opportunity to distinguish insurgents from civilians, and weapons with relatively little destructive power could be used to minimize the chance of collateral damage and civilian casualties. And airmen applied both options, as they understood the need to do so. However, mistakes, misdirected fires, and the fog of war inevitably led to suffering by civilians. Opposing forces used this as propaganda. Therefore, opposing forces were able exploit the strategic Achilles Heel of the air weapon: civilians.

Part of this paradoxical effect of airpower was due to the assessment of the operational environment. With the benefit of hindsight, both the US and NATO misinterpreted the operational situation until 2008. Generally, and without a formal written strategy, the US and NATO were *de facto* still executing a CT and a S&R operational approach respectively. It took time to realize that the operational environment had the characteristics of a civil war or an insurgency, requiring a COIN approach. This approach required additional ground forces and a different approach towards the application of deadly force. With the exception of leadership targeting the air weapon was forced to adopt a defensive and reactive stance which defied the traditional preference for quick and decisive results. It took a strategic redirection to turn the tide in favor of the coalition. What made the US President and some allies moving was a profound perception that operational developments were moving in the wrong direction. In this respect, the influence of the operational environment was profound.

In all, the operational environment influenced airpower developments significantly. Tactically, airmen successfully adapted to the challenges the operational environment posed. However, as in all conflicts, airpower was only as effective as the strategy it was trying to support. It required adaptation at the strategic level to increase its effectiveness.

Alliance Politics

Political developments and alliance politics were very influential for airpower application in Afghanistan. Chapter three concluded that developments in this area influenced the manifestations of force levels and resources, plans and operations, and command relationships with regard to ground operations. It also hypothesized that they could influence the air weapon on these manifestations as well.

The following chapters showed they did. In 2001, the political decision to act fast and with a minimum of human resources enabled the air weapon to play a dominant role in

the innovative "Afghan Model", which the information age military made possible. Soon after, however, the alliance politics frustrated operational progress for years, for airpower and ground power alike. During the entire endeavor in Afghanistan there was no coherent political strategy to base a military strategy on. Therefore, airpower's vulnerability at the strategic level described in the previous paragraph to a large extent was induced by the inability of the coalition to formulate a suitable strategy. It therefore negatively influenced development of an airpower strategy as well as airpower's plans and operations.

The alliance also was not able to provide for enough force levels and resources. For the air weapon, this manifested itself on at least two levels. First, the alliance was not able to provide for the right amount of ground forces. As they initially were dispersed, these ground forces depended on the air weapon for survival. It was one of the factors that contributed to the situation in which the air weapon became an inflexible force protection asset. It also had as a consequence that airpower's response was necessarily kinetic, with a high risk of inducing civilian casualties and collateral damage. It contributed to the paradoxical situation in which the air weapon was celebrated for life-saving support to ground forces at the tactical level, while becoming a liability at the strategic level. In addition, it frustrated operational planning. National political outlooks influenced local and regional operational realities by imposing caveats on their militaries operating in Afghanistan. By delivering only a few of the forces and resources that were required, the commander of the International Security and Assistance Force (COMISAF) until 2008 was forced to do what he could, instead of what he must. It even went as far that some local "red card holders" or local commanders in the field refused to be part of certain types of operations or certain operations *in anticipation of* a political backlash. Different national positions led to several tiers within the coalition, based on willingness to execute kinetic operations. Airmen faced the same problems, but with the difference that they could face them within a single mission.

Second, the European members of the alliance were unable to muster the right amount of air assets. This had continuing dependency on the United States as a direct effect. As the International Security and Assistance Force (ISAF) was not able to muster a complete air component of its own, it had to fall back on US air assets. These assets, however, were also executing another mission, namely the CT mission of operation *Enduring Freedom*. Subsequent political inability or unwillingness to merge OEF and ISAF lay at the basis of development of the convoluted command relationships, characterized by the proverbial "spaghetti diagram". This situation influenced the air weapon to a larger extent than the ground forces, as airpower's tenets allowed for support of several missions, at several locations, within a single sortie.

On the other hand, it was a political decision that enforced a breakthrough, albeit it was an unilateral decision by the United States. The decision by the US President to step up to the plate was critical in turning the stalemate ISAF faced in 2008. So, in general, influence of alliance politics on operational progress was both inhibiting and enabling

military innovation. It should be added however that the enabling political entity was mainly the United States, while the inhibiting entity was the rest of NATO. Individual nations could have valid reasons for the courses of action they chose, and these could partly have been a reaction to the US "with us or without us" stance the Bush administration adopted. US and NATO air operations in Afghanistan showed both the possibilities and the limits of coalition warfare.

Cultural Norms

Harder to grasp is the influence of cultural norms on innovation and adaptation. Chapter one described that cultural norms apply to what is commonly agreed upon by the members of a cultural entity. Cultural influence mainly surfaces when there is friction with alternative options that fall outside the cultural norms and when an obvious solution to a problem is neglected. Also, a robust lessons learned process could be indicative of the extent a social group is willing to think out of the box. Research suggests that some of the sources of friction were indeed culturally induced.

The first source of friction was that of devising a viable command and control structure. The notion of unity of command and unity of effort with regard to the air weapon became the focal point of this problematic issue. However, it is unlikely that this friction was culturally induced, as all airmen favored this principle, but differed on the command and control line it was applicable to.

The second source of friction was that of air-land integration. Several indications suggest that this source of friction had a strong cultural component. Indicators for this are references to century-old discussions about ownership of air assets, and accusations of airpower being an afterthought. They highlight stubborn adherence to certain preferences of airpower application. Also, the grimness that characterized some publications within the body of knowledge about airpower application in irregular conflict suggest collision of cultural systems. This reflected the strong desire for most ground commanders to command and control the supporting air assets directly, thereby infringing airpower's deeply ingrained tenet of centralized control and decentralized execution. While the sharp edges were removed during the course of the deployment in Afghanistan, and while some authors within the discourse on airpower in irregular warfare cautiously mooted the suggestion to operate truly joint, this service-induced dichotomy was not solved. Although it is hard to prove and virtually impossible to quantify, the resulting stiff communication between air commanders and ground commanders probably had an adverse effect on effectiveness of the air weapon. The most notable examples being discussions surrounding operations *Anaconda* and *Medusa*. Although problems in this regard were known before these operations started, it took severe incidents to set the wheels of change in motion.

A third source of friction surfaced during the last phase of the conflict, in which the Afghan Air Force was built. The nature of the cultural differences was different than in the previous phases. Whereas earlier cultural differences were present within the coalition or within a country, the cultural differences of the last phase concerned those between western forces and a very specific Central Asian culture with strong regional and local differences. A recent study classified these cultural differences between western and Afghan airmen as an unbridgeable chasm. This hampered development of a process that matched the operational requirements.

With regard to neglect of an obvious solution to a problem, the frequently mentioned conventional mindset of western forces suggests that this cultural manifestation also had an impeding effect on military innovation, more specifically on the manifestations of strategy and doctrine. Initially, this was the case for all western forces operating in Afghanistan. By 2006 however, the US Marines and the US Army started to make the change towards the population-centric approach to counterinsurgency. The US Air Force initially did not follow suit, witnessing the critique on the *FM 3-24*, and the forced resignation of key leadership of the US Air Force. It seems that the airpower community, most notably the US Air Force, had a harder time than other services changing to the population-centric option counterinsurgency specialists were proclaiming for decades. Nevertheless, the US Air Force, and coalition partners, eventually accepted the tenets of COIN.

This all supports the notion that culture has an inhibiting influence on military innovation. This is partly true. Discussions were the fiercest on the topic where several options largely were mutually exclusive, namely command relationships. Also, there were some noticeable differences about the proper role of violence. These differences manifested themselves mostly at the strategic and operational levels of war. Another indication of culture is an organization's willingness to learn In this context, both US and NATO also showed signs of existence of a lessons learned process. This was mostly visible in the developments that actually took place after problems were identified, rather than formal processes. Conclusions in this regard are hazardous, because many formal lessons learned are not available to the general public. Scattered evidence suggest that, at least for a short period of time, lessons learned were implemented mostly at the tactical level. Notable exceptions were situations where it was very clear that something was wrong, such as during operations *Anaconda* and *Medusa*. Both operations exposed severe deficiencies concerning integration of the land and air component. After both operations, the developments were scrutinized for structural deficiencies, and lessons learned were implemented almost immediately. This situation supports the notion that changes are initiated when the organization fails or nearly fails. The same situation is applicable on the operational and strategic levels. The population-centric counterinsurgency was finally adopted in 2009 when the coalition was facing an enduring stalemate or even defeat. However, publication of doctrine on COIN or irregular warfare and the air advisor

handbook, and installation of the Air Advisor Academy and NATO's equivalents show that the airpower community was willing and able to change its stance towards the new tasks.

So, in all, it can be concluded that culture had both enabling and inhibiting influences, which manifested itself mostly on the manifestations of strategy, plans and operations, doctrine, and education, training and lessons learned.

Leadership

Operations also showed the importance of the final driving factor of military innovation and adaptation, namely leadership. First and foremost, this concerned American leadership. As NATO was not able to muster the right amount of force levels and resources, the United states had to take over. Second, it required leadership to implement the COIN outlook, both internally within the US military, which required dismissal of several high ranking officials, and within ISAF. Operationally, senior leadership could exert relatively much influence on the course of events, as there was no strategy. With no strategy or doctrine to fall back on, personal relationships became more important to make the system work. This could hamper progress, as was shown during the process of designing a command architecture for the air weapon. But it was also an enabler, as all leadership acknowledged that operational necessity proscribed a workable solution. Commanders and staff officers manning the headquarters, regardless of their background, had a sense of reality that precluded a complete deadlock of the various discussions and follow on actions. In the end, operational reality and a common sense of direction, sometimes imposed from above, made it possible to execute the necessary changes.

So, in short, leadership had an enabling effect on military innovation and adaptation. The exact influence is hard to measure. It was most prominent at the strategic and operational levels, but also influenced the tactical level. It influenced all manifestations. Finally, NATO showed that fragmentation opinions hampered forceful leadership, leading to inertia.

Conclusion

It is concluded that the frame of reference that is constructed is functional in the sense that the set of driving factors and manifestations seems complete. There are no indications that the frame overlooked other driving factors and other manifestations than the ones identified in the introduction. This conclusion requires caution because, as stated in the introduction, the study focused on what falls within the frame of reference, rather than what falls outside it. So, although future research might reveal that the frame of reference needs to be updated with additional driving factors or manifestations, this study on

airpower application in Afghanistan between 2001 and 2016 does not provide reason to question the framework.

Innovation and adaptation of airpower during deployment in Afghanistan is more omnifarious than the distinctions of "outside-in", "inside-out", "top down", and "bottom up" suggest. It rather was a kaleidoscopic set of processes, of which perspective is important for the conclusions about the process. Many individual units implemented changes. They also communicated with other units. When adopting the perspective of a senior air commander, development of the "Afghan Model" was initiated by political masters, but developed by the military. The strategic outlook of COIN was first developed by operational-level ground commanders, and reached the air commanders via political leadership. Strategy development showed an unusual, and unwanted, "bottom up" process. Tactical and technological innovations were developed low in the chain of command, and subsequently found their way up. Improvements within the realm of air-land integration were developed at the operational level, and subsequently imposed down the chain of command. Reasons for change could also differ, although operational progress seems to be the decisive factor. Also, the role of alliance politics was less unequivocal than most other driving factors. The coalition consisting of many nations that was endorsed by a resolution of the United Nations provided legitimacy and support from the international community. But in general, lack of consensus among the members about the most basic issues had a hampering influence on virtually all manifestations.

In addition, the processes of innovation and adaptation differ between the phases. Many technological and conceptual innovations made the major innovation of the conflict, the Afghan Model, possible. It fitted within the norm of cultural preference for quick and decisive action. Also, American political and military leadership made implementation of this innovation possible, although it was also influenced by accidental circumstances like time constraints and the landlocked situation of Afghanistan. The same leadership that made the innovation of the Afghan Model possible hampered forceful adaptation of the strategic outlook in the next phase. The most adequate response did not fit neatly within the dominant culture. It required a strategic stalemate, initiatives of lower-level commanders, and in some cases early relieve from duty of key leadership, to adapt at the strategic level. Technological innovations and adaptations in general had a positive effect, but its impact was more modest than in the previous phase. Nevertheless, once the US re-assessed the situation, forceful leadership again enabled adaptation required to improve the operational situation, despite some cultural obstacles. Meanwhile, airmen at all levels labored to improve the effectiveness of the air weapon, leading to numerous technological, doctrinal, conceptual, and organizational changes with varying impacts. Consequently, most driving factors had different influences on different manifestations, depending on the phase of the conflict.

All considered, it is concluded that, while the framework can be useful for building theory about military innovation and adaptation, changing airpower application in

Afghanistan between 2001 and 2016 shows a multifaceted set of processes, rather than a unilateral development towards a clear end.

Acronyms

Acronyms

AAA	Air Advisor Academy
AAA	Anti-Aircraft Artillery
AAC	Air Advisor Course
AAF	Afghan Air Force
AAR	Air-to-Air Refueling
AAT-PDT	Air Advisor Team PreDeployment Training
AATPTC	Air Advisory Pre-deployment Training Course
ABCCC	Airborne Battlefield Command and Control Center
ACA	Airspace Control Authority
ACAA	Afghanistan Civil Aviation Authority
ACC	Air Combat Command
ACCE	Air Component Coordination Element
ACCS	Air Command and Control System
ACE	Air Control Element (US)
ACE	Air Coordination Element / Air Component Element (ISAF)
ACT	Allied Command Transformation
AD	Air Defense
AEAG	Air Expeditionary Advisory Group
AEAS	Air Expeditionary Advisory Squadron
AED	Aviation Enterprise Development
AETC	Air Education and Training Command
AETF	Air and Space Expeditionary Task Force
AEW	Air Expeditionary Wing
AFCENT	US Air Forces, Central Command
AFHRA	Air Force Historical Research Agency
AFMCTT	Air Force and Marine Corps Tiger Team
AFSOC	Air Force Special Operations Command
AI	Air Interdiction
AIU	Air Interdiction Unit
ALI	Air-Land Integration
AMC	Air Mobility Command
AMCC	Allied Movement Coordination Centre
AMN	Afghan Mission Network
ANA	Afghan National Army
ANAAC	Afghan National Army Air Corps
ANAAF	Afghan National Army Air Force
ANDS	Afghan National Development Strategy

ANDSF	Afghan National Defense and Security Forces
ANP	Afghan National Police
ANSF	Afghan National Security Forces
AO	Area of Operations
AOB	Air Order of Battle
AOC	Air Operations Center
AOCC	Air Operations Command Center
APOD	Air Port of Debarkation
ARCENT	US Army Forces, Central Command
ASOC	Air Support Operations Center
ASOS	Air Support Operations Squadron
ATAC	Afghan Tactical Air Controller
ATC	Air Traffic Control
ATCC	Air Traffic Control Center
ATO	Air Tasking Order
AvFID	Aviation FID
AvSFA	Aviation SFA
AWACS	Airborne Warning and Control Systems
BACN	Battlefield Airborne Communications Node
BALL-Team	Bi-Strategic Analysis and Lessons Learned Team
BCD	Battlefield Coordination Detachment
BDA	Battle Damage Assessment
BP	Building Partnerships
BPC	Building Partnership Capacity
C2	Command and Control
CA	Comprehensive Approach
CAA	Combat Aviation Advisory
CAC	Combined Arms Center
CAIS	Coalition Airspace Information Sharing
CAOC	Combined Air Operation Center
CAPTF	Combined Air Power Transition Force
CAS	Close Air Support
CASEVAC	Casualty Evacuation
CASMAD	Coalition Airspace Management and Deconfliction
CC Air	Component Command Air
C4ISR	Command, Control, Communications Computers, Intelligence, Surveillance and Reconnaissance
CCMT	Civilian Casualties Mitigation Team
CCTS	Civilian Casualties Tracking Cell
CCTS	Combat Crew Training Squadron

CENTAF	Central Command Air Forces
CENTCOM	Central Command
CFACC	Combined Forces Air Component Command
CFC-A	Combined Forces Command-Afghanistan
CFLCC	Combined Forces Land Component Command
CFMCC	Combined Forces Maritime Component Command
CFSOC	Combined Forces Special Operations Command
CIA	Central Intelligence Agency
CIB	Combined Investigation Board
CIWC	Coalition and Irregular Warfare Center of Excellence
CJOC	Combined Joint Operations Center
CJSOR	Combined Joint Statement of Requirements
CJSOTF	Combined Joint Special Operations Task Force
CJTF	Combined Joint Task Force
CMATT	Coalition Military Assistance Training Team
COIN	Counterinsurgency
COMISAF	Commander of ISAF
COMKAF	Commander of KAF
COMKAIA	Commander of KAIA
COMUSCENTAF	Commander of the United States Air Forces, Central Command
COMUSCENTCOM	Commander United States Forces, Central Command
COMUSFOR	Commander US Forces
COMUSFOR-A	Commander USFOR-A
CRC	Control and Reporting Center
CRG	Contingency Response Group
CSAR	Combat Search and Rescue
CSPMP	Comprehensive Strategic Political Military Plan
CSTC-A	Combined Security Transition Command-Afghanistan
CT	Counterterrorism
CTIW	Center on Terrorism and Irregular Warfare
DCFACC	Deputy CFACC
DCI	Defense Capabilities Initiative
DCOM Air	Deputy Commander Air
Dir ACE	Director ACE (ISAF)
DOD	Department of Defense
DPQ	Defense Planning Questionnaire
DRAAF	Democratic Republic of Afghanistan Air Force
DSACEUR	Deputy SACEUR
DSB	Defense Science Board
DTIC	Defense Technical Information Center

DTOC	Dynamic Targeting Operations Center
EATC	European Air Transport Command
EBAO	Effects Based Approach to Operations
EBO	Effects Based Operations
EEAW	EPAF Expeditionary Air Wing
EPAF	European Participating Air Forces
ETAC	Enlisted Tactical Air Controller
EU	European Union
EUCOM	European Command
EW	Electronic Warfare
FAC	Forward Air Controller
FAC-A / FAC(A)	Forward Air Controller (Airborne)
FARP	Forward Arming and Refueling Point
FATA	Federally Administered Tribal Areas
FATA	Federally Administered Tribal Areas (Pakistan)
FID	Foreign Internal Defense
FMV	Full Motion Video
FOB	Forward Operating Base
FSCL	Fire Support Coordination Line
FW	Fixed Wing
GBAD	Ground Based Air Defense
GFAC	Ground Forward Air Controller
GFGC	Global Force Generation Conference
GPF	General Purpose Forces
GWOT	Global War on Terrorism
HAW	Heavy Airlift Wing
HIMARS	High Mobility Artillery Rocket System
HMG	Heavy Machine Gun
HTF	Helicopter Task Force
HUMINT	Human Intelligence
HVT	High Value Target
IDCC	ISAF Detachment CAOC Central
IDF	Indirect Fire
IED	Improvised Explosive Devices
IFR	Instrument Flight Rules
IJC	ISAF Joint Command
ILS	Instrument Landing System
IMINT	Imagery Intelligence
IS	Islamic State
IS-K	Islamic State-Khorasan

ISAF	International Security and Assistance Force
ISR	Intelligence, Surveillance, and Reconnaissance
ITAS	Intra Theater Airlift System
JACCE	Joint ACCE
JACE	Joint Air Support Element
JAGIC	Joint Air Ground Integration Cell
JALLC	Joint Analysis and Lessons Learned Centre
JALN	Joint Aerial Layer Network
JAOP	Joint Air Operations Plan
JAPCC	Joint Air Power Competence Centre
JASMAD	Joint Airspace Management and Deconfliction
JCISFA	Joint Center for International Security Force Assistance
JCOA	Joint and Coalition Operational Analysis
JCS	Joint Chiefs of Staff
JDAM	Joint Direct Attack Munition
JFC	Joint Force Commander
JFH	Joint Force Harrier
JIAT	Joint Incident Assessment Team
JPADS	Joint Precision Airdrop System
JSOC	Joint Special Operations Command
JSOTF	Joint Special Operations Task Force
JSOTF-N	Joint Special Operations Command - North
JSOTF-S	Joint Special Operations Command - South
JSTARS	Joint Surveillance Target Attack Radar System
JTAC	Joint Terminal Attack Controller
JTAR	Joint Tactical Air Request
JTF	Joint Task Force
JWC	Joint Warfare Centre
KAF	Kandahar Air Field
KAIA	Kabul International Airport
KMNB	Kabul Multinational Brigade
KTO	Kuwaiti Theater of Operations
LAAR	Light Attack/Armed Reconnaissance
LAS	Light Air Support
LGB	Laser Guided Bomb
LIC	Low Intensity Conflict
LiMA	Light Mobility Aircraft
LOC	Lines of Communication
LZ	Landing Zone
MAC	Military Airlift Command

MACCS	Marine Air Command and Control System
MANPADs	Man Portable Air Defense Systems
MARCENT	US Marine Corps, Central Command
MATC	Multinational Aviation Training Centre
MC	Military Committee
MCCE	Movement Coordination Centre Europe
MCG	Military Capabilities Gap
MEDEVAC	Medical Evacuation
MEU	Marine Expeditionary Unit
MHI	Multinational Helicopter Initiative
MOAB	Massive Ordnance Air Blast Bomb
MoI	Ministry of the Interior
MOOTW	Military Operations Other Than War
MSAS	Mobility Support Advisory Squadron
MTT	Mobile Training Teams
NAC	North Atlantic Council
NAC-A	NATO Air Command Afghanistan
NATC-A	NATO Air Training Command-Afghanistan
NATO	North Atlantic Treaty Organization
NAVCENT	US Navy Forces, Central Command
NCW	Network Centric Warfare
NDN	Northern Distribution Network
NEC	Network Enabled Capabilities
NGO	Non-Governmental Organization
NPS	Naval Postgraduate School
NRF	NATO Response Force
NSC	National Security Council
NSWG	Naval Special Warfare Group
NTISR	Non-Traditional Intelligence, Surveillance and Reconnaissance
NTM-A	NATO Training Mission-Afghanistan
NWFP	North-West Frontier Province
ODA	Operational Detachment Alpha
OEF	Operation Enduring Freedom
OMLT	Observer, Mentor, Liaison Teams
OODA	Observation, Orientation, Decision and Action
OPCON	Operational Control
OPLAN	Operational Plan
OSINT	Open Source Intelligence
PGM	Precision Guided Munition
PMC	Private Military Company

PMSC	Private Military and Security Company
POTUS	President of the United States
PR	Personnel Recovery
PRT	Provincial Reconstruction Team
PSC	Private Military Company
QDR	Quadrennial Defense Review
QRA	Quick Reaction Alert
QRF	Quick Reaction Force
RAAF	Royal Australian Air Force
RAF	Royal Air Force
RAMCC	Regional Air Movement Control Center
RAOC	Regional Air Operation Center
RC	Regional Command
RC-C	Regional Command-Central
RC-E	Regional Command-East
RC-N	Regional Command-North
RC-S	Regional Command-South
RC-SW	Regional Command-Southwest
RC-W	Regional Command -West
RMA	Revolution in Military Affairs
ROEs	Rules of Engagement
ROVER	Remotely Operated Video Enhanced Receiver
RPG	Rocket Propelled Grenade
RW	Rotary Wing
S&R	Stabilization and Reconstruction
SA	Security Assistance
SA	Strategic Attack
SAC	Strategic Air Command (US)
SAC	Strategic Airlift Capability (NATO)
SACEUR	Supreme Allied Commander Europe
SALIS	Strategic Airlift Interim Solution
SAM	Surface-to-Air Missile
SAWC	Special Air Warfare Center
SC	Security Cooperation
SCAR	Strike Coordination and Reconnaissance
SDB	Small Diameter Bomb
SDN	Southern Distribution Network
SEAL	Sea Air Land
SFA	Security Force Assistance
SFG	Special Forces Group

SHAPE	Supreme Headquarters Allied Powers Europe
SIGAR	Special Inspector General for Afghanistan Reconstruction
SIGINT	Signals Intelligence
SMARMS	Small Arms
SMW	Special Mission Wing
SO	Stability Operations
SOAR	Special Operations Aviation Regiment
SOCCENT	Special Operations Command Central
SOCOM	Special Operations Command
SOF	Special Operations Forces
SOFA	Status of Forces Agreement
SOLE	Special Operations Liaison Element
SOP	Standard Operating Procedure
SOS	Special Operations Squadron
SOW	Special Operations Wing
SPINS	Special Instructions
SPMAGTF	Special Purpose Marine Air Ground Task Force
SSR	Security Sector Reform
TAA	Train, Advice, and Assist
TAAC	Train, Advise, Assist Command
TAC	Tactical Air Command
TACON	Tactical Control
TACP	Tactical Air Control Party
TACS	Theater Air Control System
TF	Task Force
TF ODIN	Task Force Observe, Detect, Identify, and Neutralize
TIALD	Thermal Imaging Aircraft Laser Designator
TIC	Troops in Contact
TLAM	Tomahawk Land Attack Missile
TST	Time Sensitive Targeting
TTPs	Tactics, Techniques and Procedures
UAS	Unmanned Aerial System
UAV	Unmanned Aerial Vehicles
UCAV	Unmanned Combat Aerial Vehicles
UN	United Nations
UNAMA	United Nations Assistance Mission in Afghanistan
UNSCR	United Nations Security Council Resolution
USA	United States Army
USAF	United States Air Force
USFOR-A	United States Forces-Afghanistan

USJFCOM	United States US Joint Forces Command
USMC	United States Marine Corps
USMC CIW	United States Marine Corps Center for Irregular Warfare
USSOCOM	United States Special Operations Command
UW	Unconventional Warfare
VFR	Visual Flight Rules
VTC	Video Tele Conference
WEPTAC	Weapons and Tactics
WMD	Weapons of Mass Destruction

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Appendices

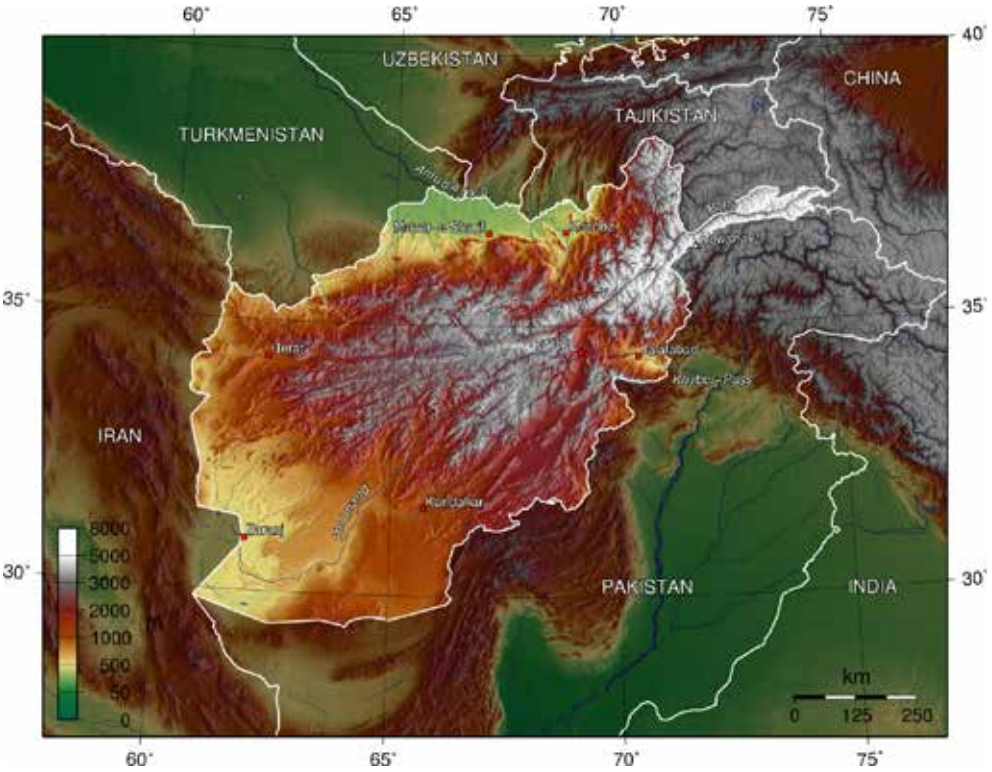
Appendices

Appendix 1: Maps

1.1. Political map of Afghanistan[1]

1 Copied from: Anonymous, "Perry-Castañeda Library, Map Collection, Afghanistan Maps", *Website University of Texas* (2018) https://legacy.lib.utexas.edu/maps/afghanistan.html (accessed August 22, 2018).

1.2. Topographic Map of Afghanistan[2]

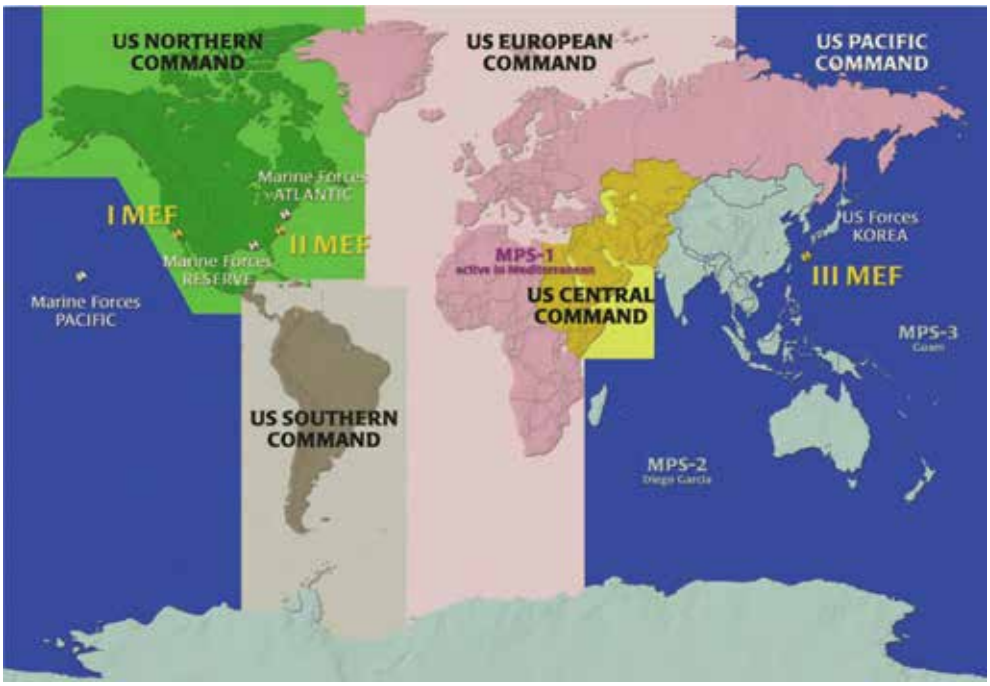


2 Copied from: Anonymous, "Afghanistan Maps", *Website Mappery.com* http://www.mappery.com/maps-Afghanistan (accessed August 22, 2018).

1.3. Afghanistan and Pakistan Ethnic Groups[3]

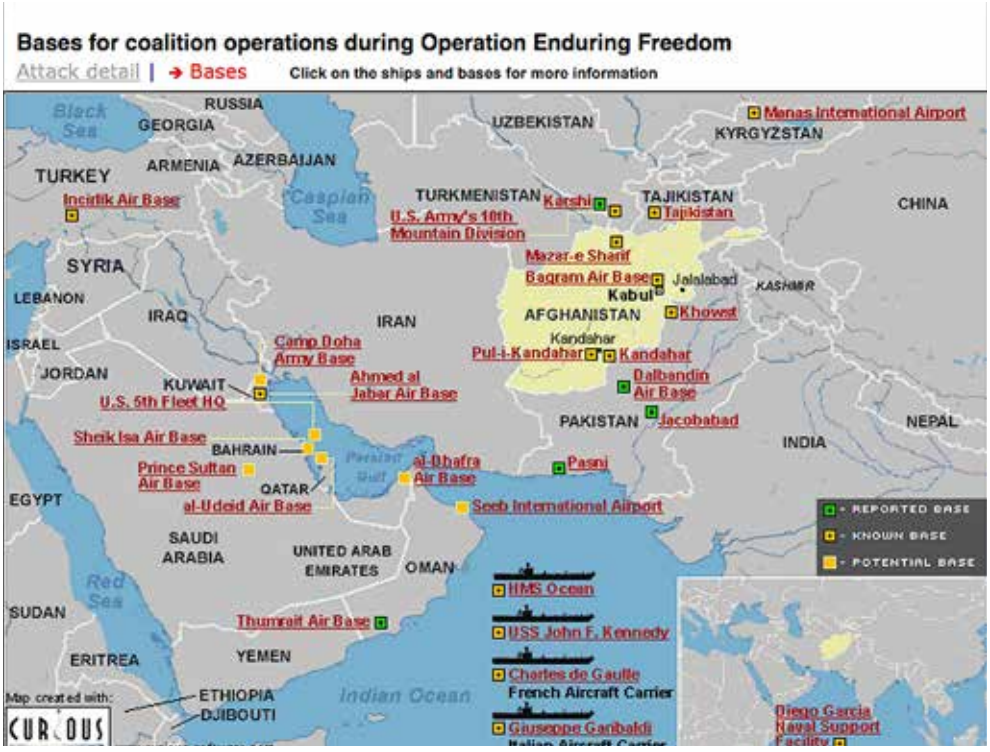
3 Copied from: Anonymous, "Afghanistan and Pakistan Ethnic Groups: Language and Culture Span Across Political Boundaries in Afghanistan and Pakistan", *Website National Geographic* https://www.nationalgeographic.org/maps/afghanistan-and-pakistan-ethnic-groups/ (accessed August 22, 2018).

1.4. CENTCOM Area of Operations[4]



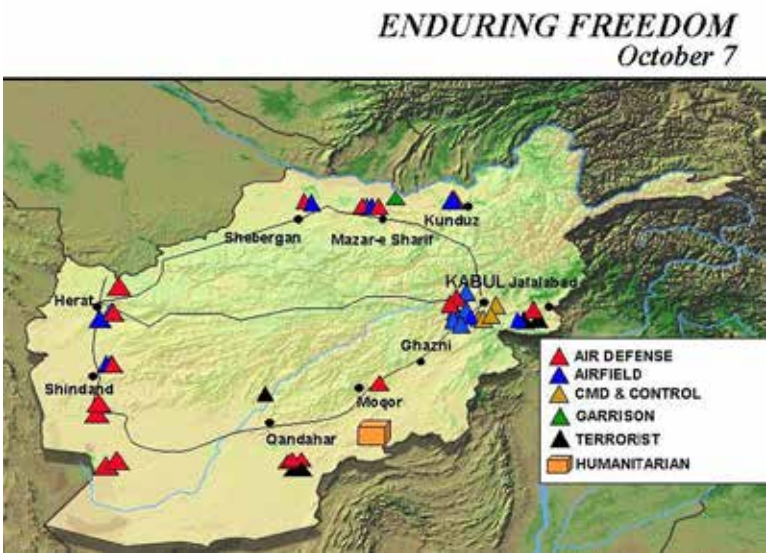
4 Copied from Nathan S. Lowrey, *From the Sea: US Marines in Afghanistan, 2001-2002*, US Marines in the Global War on Terrorism (Washington, DC: United States Marine Corps History Division, 2011), http://www.mcu.usmc.mil/historydivision/Pages/Publications/Publication%20PDFs/FROM%20THE%20SEA.pdf (accessed February 16, 2015).

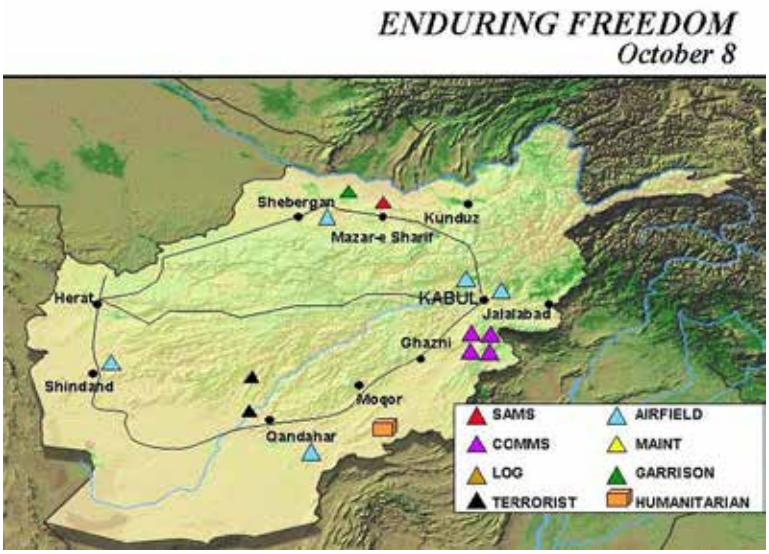
1.5. Military bases Operation Enduring Freedom 2001[5]



5 Copied from: Anonymous, "CNN Special Report: War Against Terror", *Website CNN* http://edition.cnn.com/SPECIALS/2001/trade.center/military.map.html (accessed October 13, 2018).

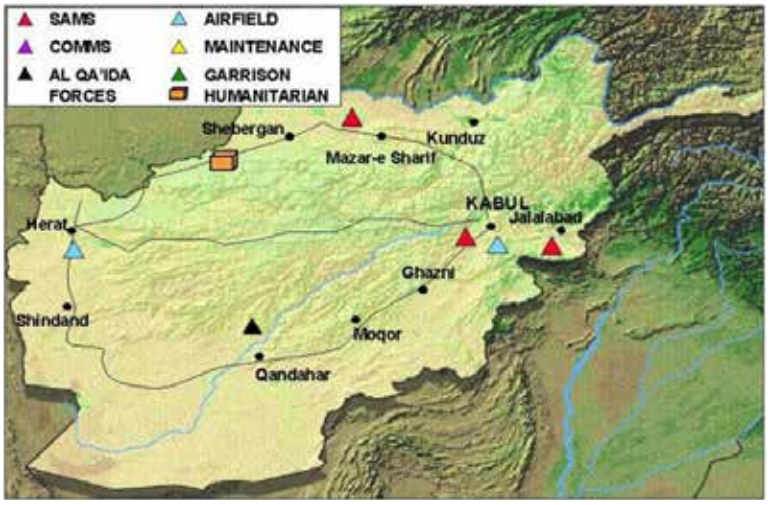
1.6 . Initial Airstrikes Operation Enduring Freedom[6]



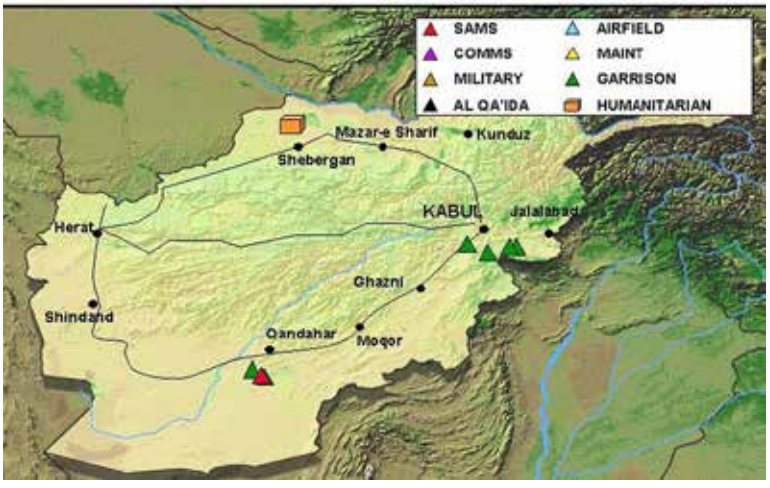


6 Copied from: Anonymous, "Operation Enduring Freedom - Maps", *GlobalSecurity.org* (July 5, 2011) https://www.globalsecurity.org/military/ops/enduring-freedom-maps.htm (accessed October 12, 2018). This website also provides maps of daily airstrikes up and until December 5, 2001.

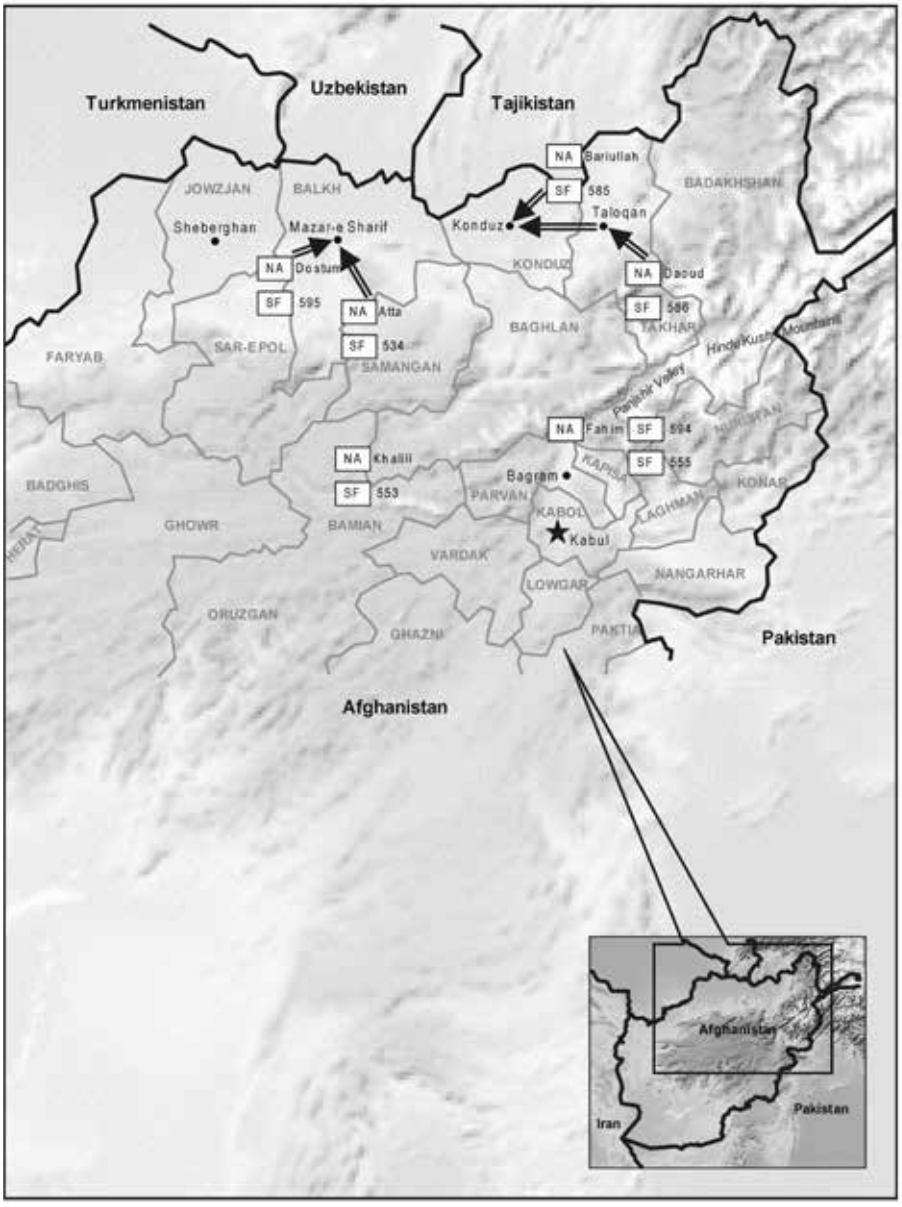
ENDURING FREEDOM
October 9



ENDURING FREEDOM
October 10



1.7. Insertion and Operations ODAs North Afghanistan 2001[7]

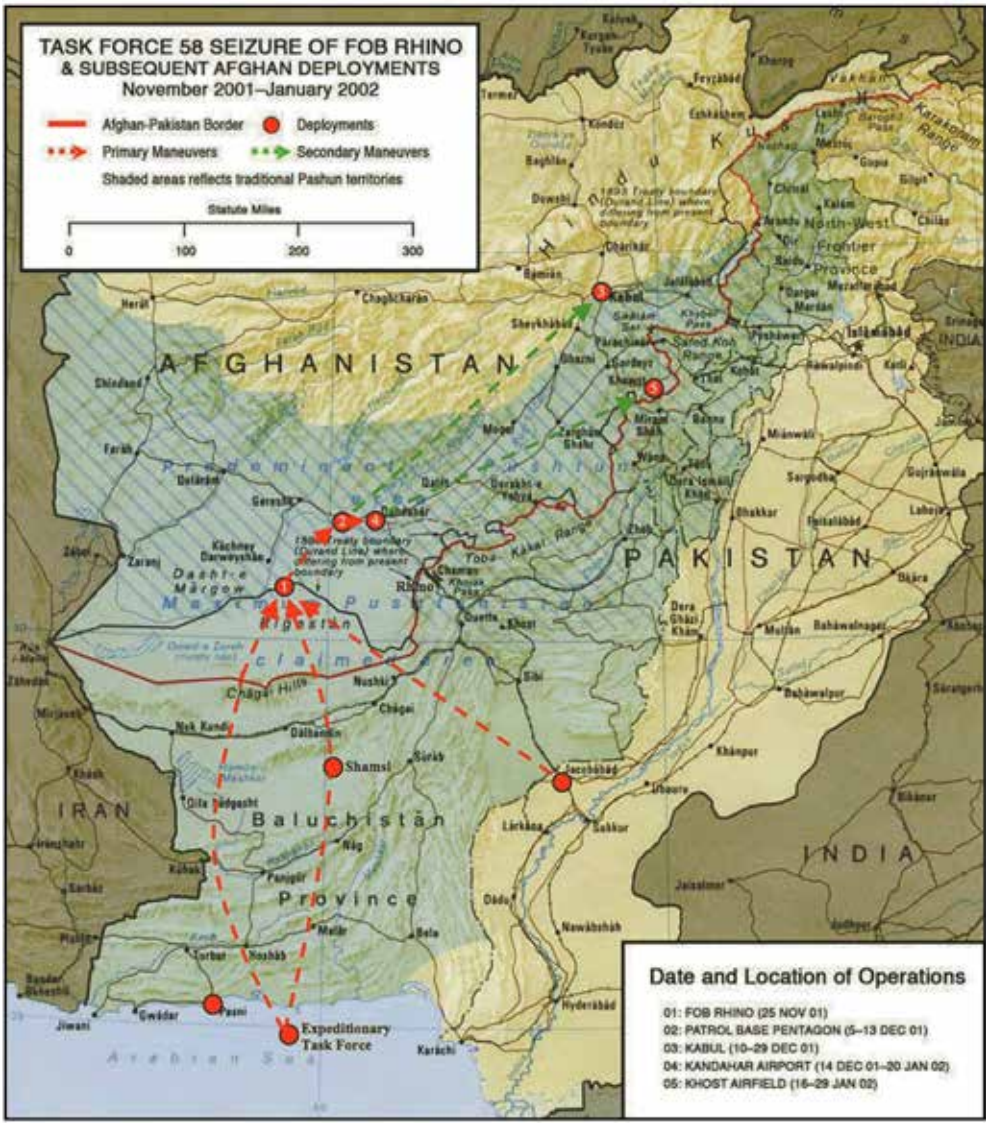


7 Copied from: Donald P. Wright, James R. Bird, Peter W. Connors, Scott C. Farquhar, and others, *A Different Kind of War: The United States Army in Operation Enduring Freedom (OEF), October 2001-September 2005* (Fort Leavenworth, KS: Combat Studies Institute Press, US Army Combined Arms Center, May, 2010), http://usacac.army.mil/cac2/csi/docs/DifferentKindofWar.pdf (accessed December 8, 2014), 75. Numbers besides the "SF" icon represent the ODA number.

1.8. Insertion and Operations ODAs South Afghanistan 2001[8]

8 Copied from: Wright, Bird, Connors, and others, *Different Kind of War*, 102. Numbers besides the "SF" icon represent the ODA number.

1.9 . Seizure of FOB Rhino and subsequent operations[9]

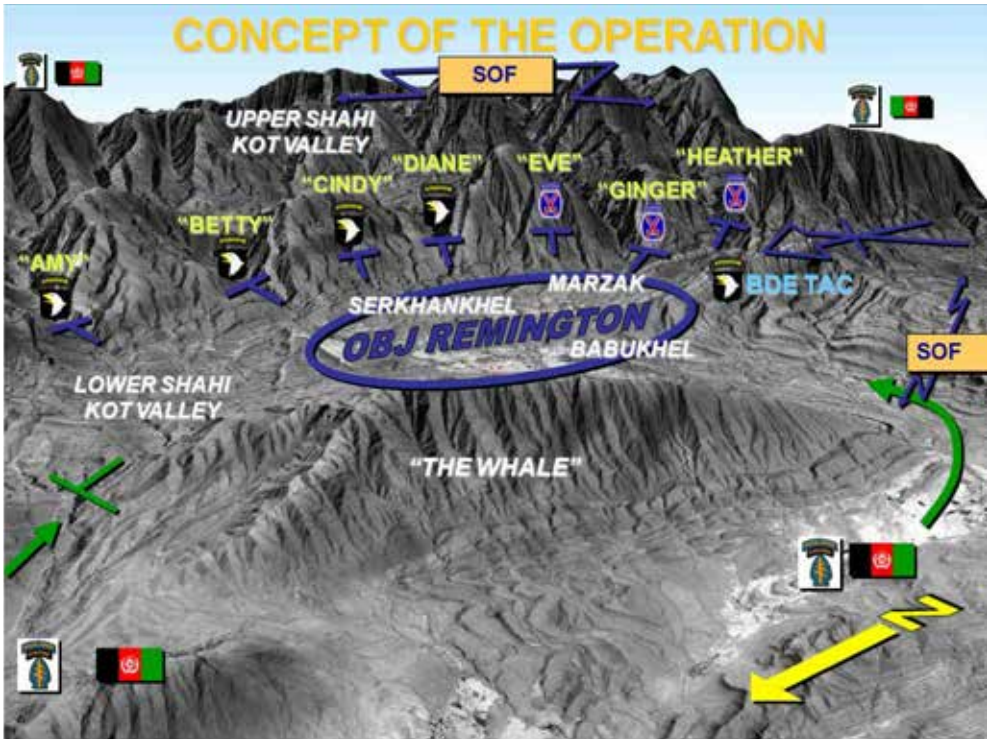


9 Copied from: Lowrey, *From the Sea*, 112.

1.10. Operation Anaconda Area of Operations[10]

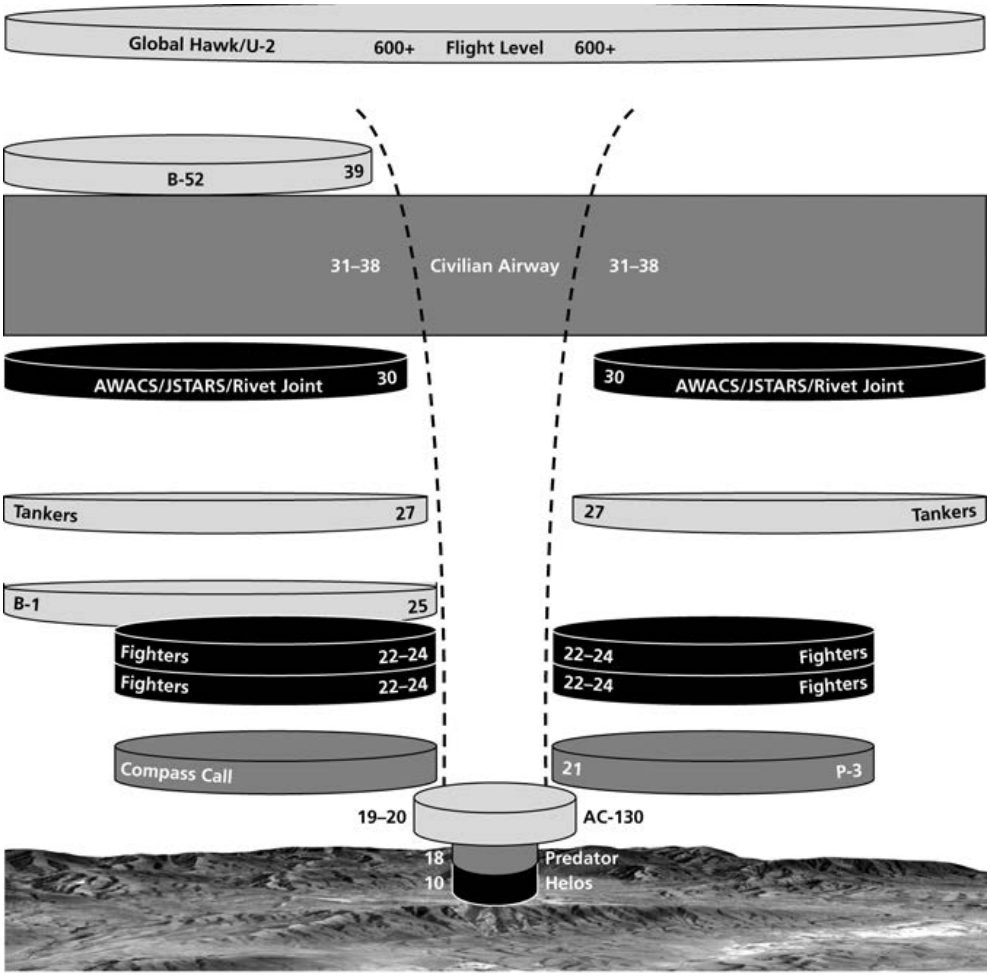
10 Copied from: Anonymous, "Afghanistan War: Timeline", *Website AfghanWar* https://afghanwar2014.weebly.com/timeline.html (accessed October 15, 2018).

1.11. Anaconda Concept of Operations[11]



11 Copied from: Lester W. Grau, "The Coils of the Anaconda: America's First Conventional Battle in Afghanistan", (Dissertation, No place of publication, April 27, 2009) http://search.proquest.com.nlda.idm.oclc.org/docview/304910650/7ABD8CD5FD404645PQ/1?accountid=35226 (accessed October 19, 2015), 241.

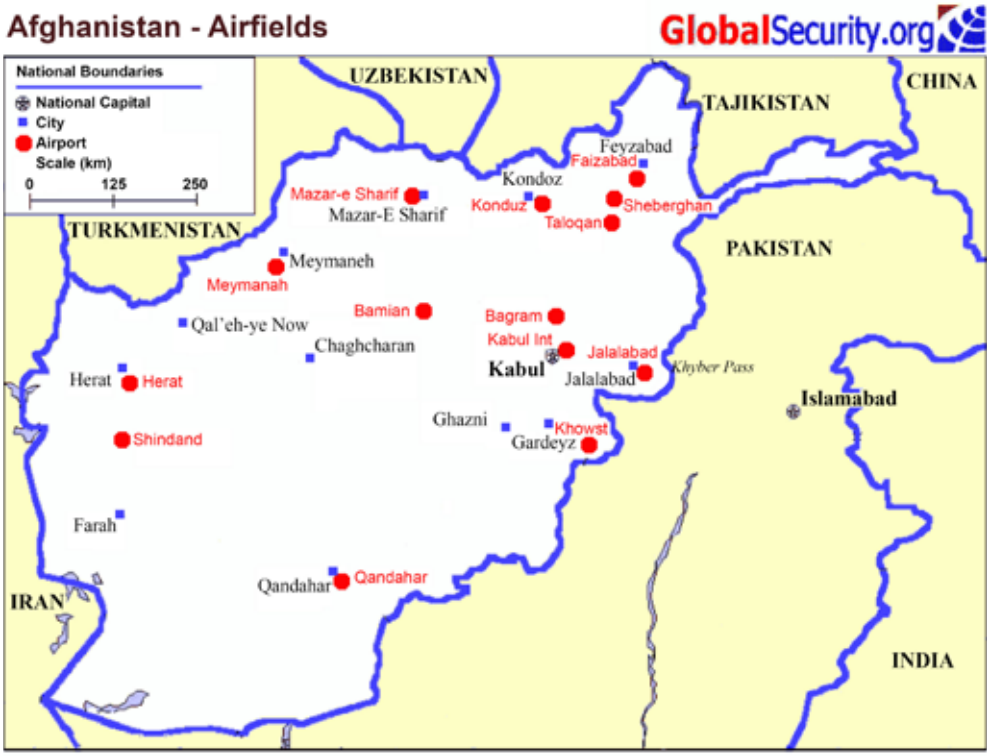
1.12. Operation Anaconda Aircraft Stack[12]



SOURCE: AF/XOL.
NOTE: Altitudes are in thousands of feet.

12 Copied from: Benjamin S. Lambeth, *Airpower Against Terror: America's Conduct of Operation Enduring Freedom* (Santa Monica, CA: RAND Corporation, 2005), http://www.rand.org/content/dam/rand/pubs/monographs/2006/RAND_MG166-1.pdf (accessed November 13, 2011), 196.

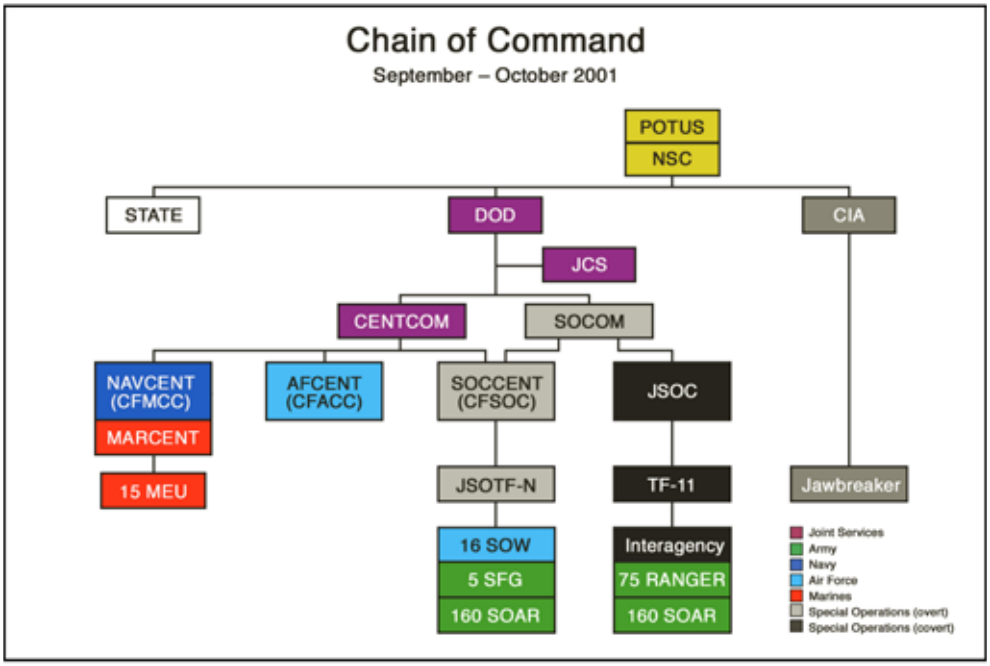
1.13. Major US Air Force Bases In Afghanistan[13]



13 Copied from: Anonymous, "Map of US Air Force Bases in Afghanistan Images", *Website GlobalSecurity.org* (March 31, 2018) http://getmelisted.net/map-of-us-air-force-bases-in-afghanistan/6398/ (accessed January 24, 2019).

Appendix 2: Command Relationships

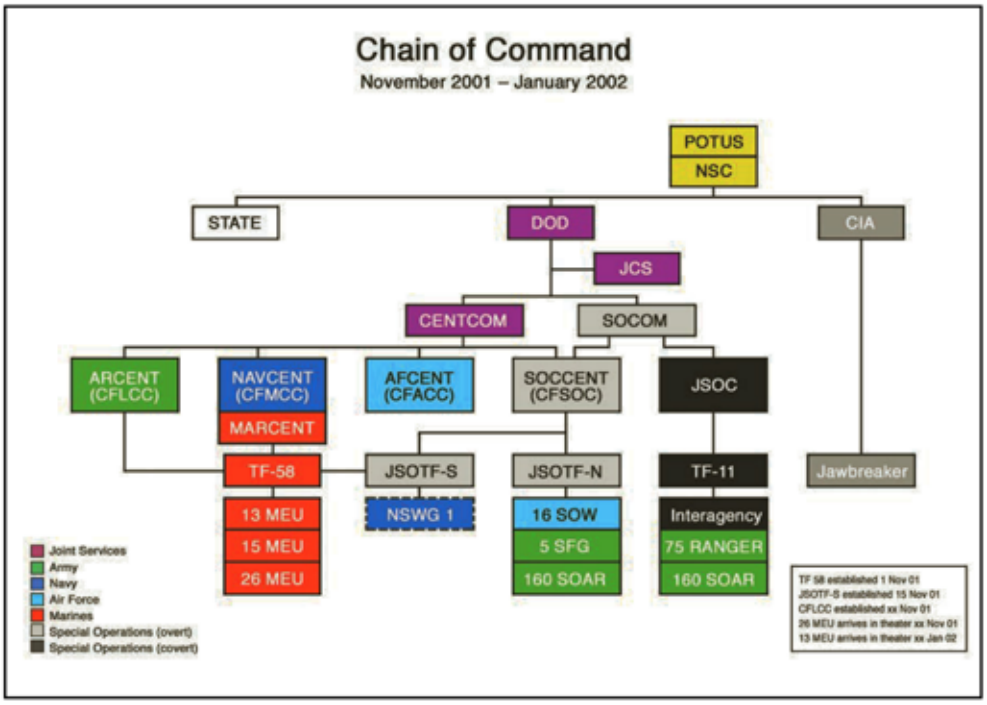
2.1. Command Relationships September 2001 - October 2001[14]



AFCENT	Air Forces Central Command
CENTCOM	Central Command
CFACC	Combined Forces Air Component Command
CFMCC	Combined Forces Maritime Component Command
CFSOC	Combined Forces Special Operations Command
CIA	Central Intelligence Agency
DOD	Department of Defense
JCS	Joint Chiefs of Staff
JSOC	Joint Special Operations Command
JSOTF-N	Joint Special Operations Command - North
MARCENT	US Marine Corps, Central Commmand
MEU	Marine Expeditionary Unit
NAVCENT	Navy Forces Central Command
NSC	National Security Council
POTUS	President of the United States
SOAR	Special Operations Aviation Regiment
SOCCENT	Special Operations Command Central
SOCOM	Special Operations Command
TF	Task Force

14 Copied from: Lowrey, *From the Sea*, 39. Note that the main text uses the acronym CFSOCC (Combined Forces Special Operations Component Command).

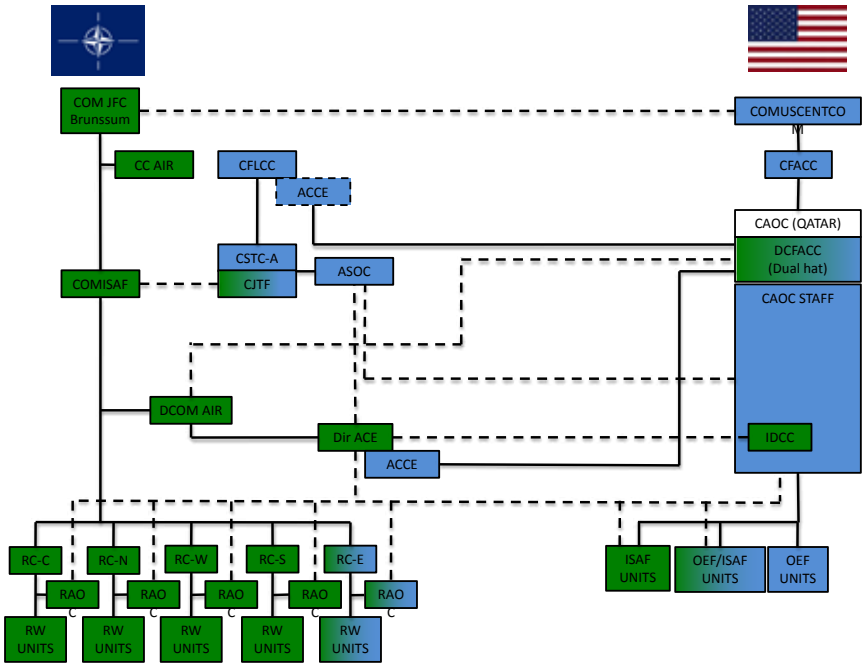
2.2. Command Relationships November 2001 - January 2002[15]



AFCENT	US Air Forces, Central Command
ARCENT	US Army Forces, US Central Command
CENTCOM	Central Command
CFACC	Combined Forces Air Component Command
CFLCC	Combined Forces Land Component Command
CFMCC	Combined Forces Maritime Component Command
CIA	Central Intelligence Agency
DOD	Department of Defense
JCS	Joint Chiefs of Staff
JSOC	Joint Special Operations Command
JSOTF-N	Joint Special Operations Command - North
JSOTF-S	Joint Special Operations Command - South
MARCENT	US Marine Corps, Central Commmand
MEU	Marine Expeditionary Unit
NAVCENT	US Navy Forces, Central Command
NSC	National Security Council
NSWG	Naval Special Warfare Group
POTUS	President of the United States
SFG	Special Forces Group
SOAR	Special Operations Aviation Regiment
SOCCENT	Special Operations Command Central
SOCOM	Special Operations Command
SOW	Special Operations Wing
TF	Task Force

15 Copied from: Lowrey, *From the Sea*, 91.

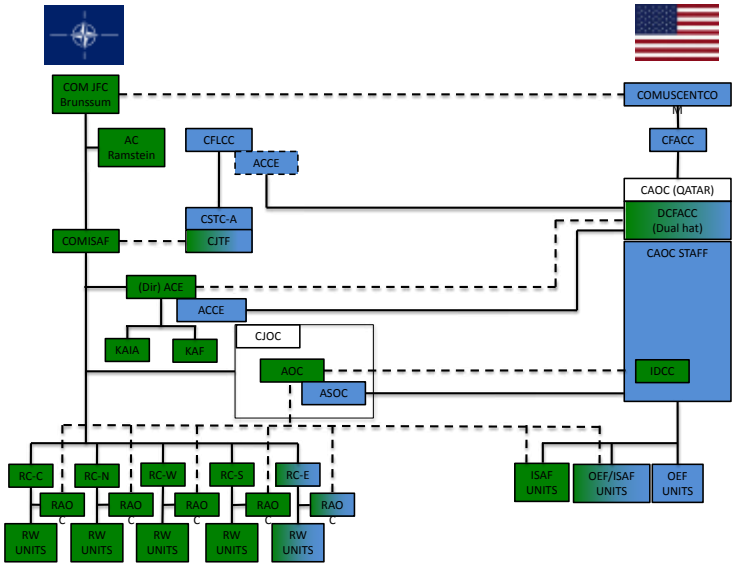
2.3. Command Relationships 2004 - 2007[16]



ACCE	Air Component Coordination Element
ACE	Air Component Element
ASOC	Air Support Operations Center
CAOC	Combined Air Operation Center
CC Air	Component Command Air
CFACC	Combined Forces Air Component Command
CFLCC	Combined Forces Land Component Command
CJTF	Combined Joint Task Force
COM JFC	Commander Joint Forces Command
COMISAF	Commander of ISAF
COMUSCENTCOM	Commander United States Forces, Central Command
CSTC-A	Combined Security Transition Command-Afghanistan
DCFACC	Deputy Combined Forces Air Component Commander
DCOM AIR	Deputy Commander Air
Dir ACE	Director ACE (ISAF)
IDCC	ISAF Detachment CAOC Central
ISAF	International Security and Assistance Force
OEF	Operation Enduring Freedom
RAOC	Regional Air Operation Center
RC-C	Regional Command-Central
RC-E	Regional Command-East
RC-N	Regional Command-North
RC-S	Regional Command-South
RC-W	Regional Command-West
RW	Rotary Wing

16 Illustration by author. Lines represent some form of command and/or control authority. Dotted lines represent a need for coordination or actual coordination. The ACCE attached to the CFLCC is doctrinally opted. If it existed, it did not have an active role in the discussions regarding airpower application in Afghanistan.

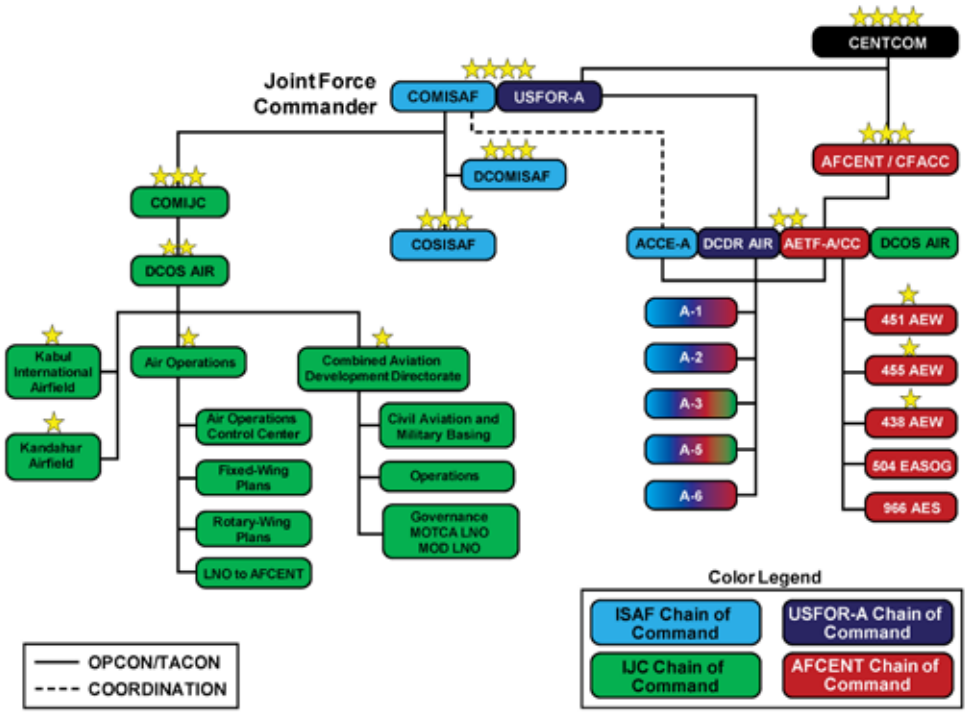
2.4. Command Relationships 2007 - 2010[17]



ACCE	Air Component Coordination Element
ACE	Air Coordination Element
AOC	Air Operations Center
ASOC	Air Support Operations Center
CAOC	Combined Air Operation Center
AC Ramstein	Air Component Ramstein
CFACC	Combined Forces Air Component Command
CFLCC	Combined Forces Land Component Command
CJOC	Combined Joint Operations Center
CJTF	Combined Joint Task Force
COM JFC	Commander Joint Forces Command
COMISAF	Commander of ISAF
COMUSCENTCOM	Commander United States Forces, Central Command
CSTC-A	Combined Security Transition Command-Afghanistan
DCFACC	Deputy Combined Forces Air Component Commander
Dir ACE	Director ACE (ISAF)
IDCC	ISAF Detachment CAOC Central
ISAF	International Security and Assistance Force
KAIA	Kabul International Airport
KAF	Kandahar Airfield
OEF	Operation Enduring Freedom
RAOC	Regional Air Operation Center
RC-C	Regional Command-Central
RC-E	Regional Command-East
RC-N	Regional Command-North
RC-S	Regional Command-South
RC-W	Regional Command-West
RW	Rotary Wing

17 Illustration by author. Lines represent some form of command and/or control authority. Dotted lines represent a need for coordination or actual coordination. The ACCE attached to the CFLCC is doctrinally opted. If it existed, it did not have an active role in the discussions regarding airpower application in Afghanistan.

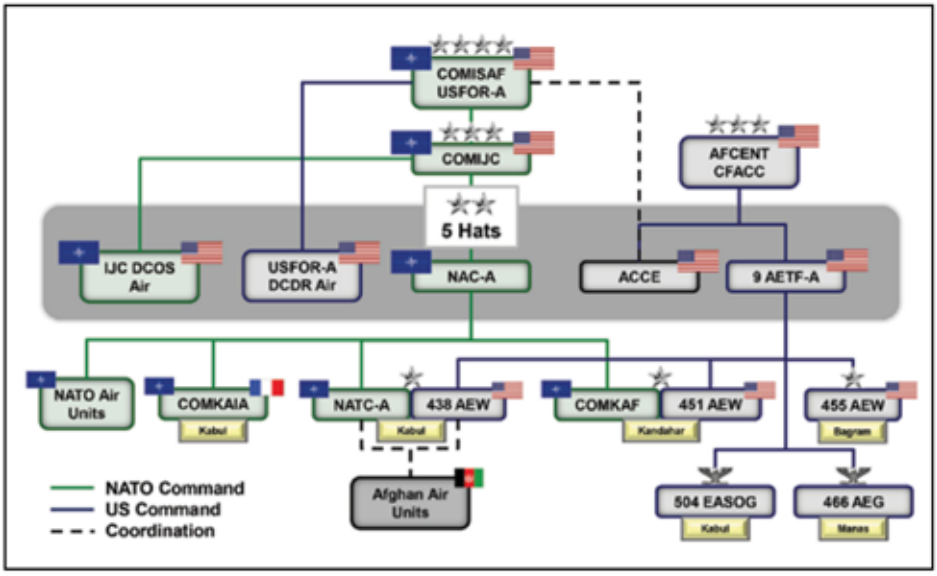
2.5. Command Relationships 2010 - 2013[18]



A-1 – Personnel Directorate
A-2 – Intelligence Directorate
A-3 – Operations Directorate
A-5 – Plans Directorate
A-6 – Communications Directorate
ACCE-A – Air Component Coordination Element–Afghanistan
AES – Air Expeditionary Squadron
AETF-A/CC – Commander, Air and Space Expeditionary Task Force–Afghanistan
AEW – Air Expeditionary Wing
AFCENT – US Air Forces Central
CENTCOM – US Central Command
CFACC – Combined Force Air Component Commander
COMIJC – Commander, International Security Assistance Force Joint Command
COMISAF – Commander, International Security Assistance Force
COSISAF – Chief of Staff, International Security Assistance Force
DCDR AIR – Deputy Commander for Air
DCOMISAF – Deputy Commander, International Security Assistance Force
DCOS AIR – Deputy Chief of Staff for Air
EASOG – Expeditionary Air Support Operations Group
IJC – International Security Assistance Force Joint Command
ISAF – International Security Assistance Force
LNO – Liaison Officer
MOD – Ministry of Defense
MOTCA – Ministry of Transport and Civil Aviation
OPCON – Operational Control
TACON – Tactical Control
USFOR-A – US Forces–Afghanistan

18 Copied from: Tod D. Wolters and Joseph L. Campo, "Team Building: The Next Chapter of Airpower Command and Control in Afghanistan", *Air & Space Power Journal* 26, no. 3 (2012): 4-15, 8.

2.6. Command Relationships 2013 - 2015[19]



9 AETF-A – 9th Air Expeditionary Task Force–Afghanistan
ACCE – Air Component Coordination Element
AEG – Air Expeditionary Group
AEW – Air Expeditionary Wing
AFCENT – US Air Forces Central
CFACC – Combined Force Air Component Commander
COMIJC - Commander, International Security Assistance Force Joint Command
COMISAF – Commander, International Security Assistance Force
COMKAF – Commander, Kandahar Airfield
COMKAIA – Commander, Kabul International Airport
DCDR – Deputy Commander
DCOS - Deputy Chief of Staff
EASOG – Expeditionary Air Support Operations Group
IJC - ISAF Joint Command
ISAF – International Security Assistance Force
KAIA – Kabul International Airport
NAC-A – NATO Air Command–Afghanistan
NATC-A – NATO Air Training Command–Afghanistan
USFOR-A – US Forces–Afghanistan

Figure. Commander, NAC-A "Five Hat" construct

19 Copied from: Kenneth S. Wilsbach and David J. Lyle, "NATO Air Command-Afghanistan: The Continuing Evolution of Airpower Command and Control", *Air & Space Power Journal* 28, no. 1 (2014): 11-25, 22.

Appendix 3: Order of Battle

3.1. 2001 - 2002 US Air Force Air Order of Battle, augmented by US Navy and US Marine Corps[20]

Location	Aircraft	Function
Al Dhafra (United Arab Emirates)	• KC-10 • U-2	• Air-to-Air Refueling • Reconnaissance
Al Jaber Airbase (Kuwait)	• F-15 • A-10* • F-16 • F/A-18 (USMC)	• Fighter-bomber • Close Air Support • Fighter-bomber • Fighter-bomber
Al Udeid Airbase (Qatar)	• KC-10 • KC-135R • E-8 JSTARS	• Air-to-Air Refueling • Air-to-Air Refueling • Air-to-Ground Surveillance
Burgas Airport (Bulgaria)	• KC-135	• Air-to-Air Refueling
Diego Garcia	• B-52 • KC-135 • KC-10 • P-3C****** (USN)	• Long Range Bomber • Air-to-Air Refueling • Air-to-Air Refueling • Naval Patrol
Manas (Ganci Air Base) Kyrgysztan	• KC-135	• Air-to-Air Refueling
Jacobabad (Pakistan)	• KC-130 (USMC)	• Air-to-Air Refueling
Muharraq (Bahrain)	• P-3C (USN) • EP-3****** (USN)	• Naval Patrol • Electronic Warfare
Prince Sultan Airbase (Saudi Arabia)	• F-15 • E-3 AWACS • E-8 JSTARS • RC-135 • KC-135 • U-2 • UH-60	• Fighter-bomber • Airborne Command and Control • Air-to-Ground Surveillance • Electronic Warfare • Air-to-Air Refueling • Reconnaissance • Medical Evacuation Helicopter
Seeb Air Base (Oman)	• U-2	• Reconnaissance
Sheik Isa Air Base (Bahrain)	• KC-130 (USMC)	• Air-to-Air Refueling
Thumrait Airbase (Oman)	• B-1B*** • E-3 AWACS • RC-135 • KC-135	• Long Range Bomber • Airborne Command and Control • Electronic Warfare • Air-to-Air Refueling

20 Sources for this appendix are: Anonymous, "Operation Enduring Freedom - Order of Battle", *GlobalSecurity.org* http://www.globalsecurity.org/military/ops/enduring-freedom_orbat-02.htm (accessed February 13, 2015), and Tim Ripley, *Air War Afghanistan: US and NATO Air Operations From 2001* (Barnsley: Pen & Sword Books Aviation, 2011), 29-35 and appendix 2, unless indicated otherwise.

Location	Aircraft	Function
Whiteman Air Force Base (US)	• B-2*****	• Long Range Bomber
Masirah Air Base (Oman)	• P-3C****** (USN)	• Patrol
Incirlik Air Base (Turkey)	• C-17	• Inter-theater airlift
Ramstein (Germany)	• C-17	• Inter-theater airlift

* A-10s were already deployed for operation *Southern Watch*. They initially were not scheduled to participate in operation *Enduring Freedom*, but proved important later.[21]

*** Moved from Diego Garcia in December 2001.[22]

**** As of June 2002

***** The B-2s operated from their home base.[23]

****** USN EP-3 left the area December 2001[24]

21 Gary Wetzel, *A-10 Thunderbolt II Units of Operation Enduring Freedom, 2002-07*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and Long Island City, NY: Osprey Publishing Limited, 2013), 11.

22 Thomas Withington, *B-1B Lancer Units in Combat*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing, 2006), 49.

23 Thomas Withington, *B-2A Spirit Units in Combat*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing, 2006), 48.

24 David Reade, "P-3 Operations in the War on Terrorism", *Wings of Gold* 27, no. 2 (2002): 70-72, 72.

3.2. 2001 - 2002 US Navy and US Marine Corps Air Order of Battle[25]

Vessel/Location	Aircraft	Function
Pasni (Pakistan)	• SH-3 • CH-53 • C-2	• Air-to-Air Refueling* • Transport Helicopter • Logistics
USS Bataan (USMC)	• CH-46 • CH-53 • UH-1 • AH-1 • AV-8B	• Transport Helicopter • Transport Helicopter • Light Utility Helicopter • Attack Helicopter • Fighter-bomber
USS Carl Vinson (USN)	• F-14 • F/A-18** • EA-6B • S-3 • E-2 • SH-60B • HH-60 • C-2	• Fighter-bomber • Fighter-bomber • Electronic Warfare • Air-to-Air Refueling* • Airborne Early Warning • Anti-submarine helicopter • Combat Search and Rescue Helicopter • Logistics
USS Enterprise (USN)	• F-14 • F/A-18 • EA-6B • S-3 • E-2 • SH-60B • HH-60 • C-2	• Fighter-bomber • Fighter-bomber • Electronic Warfare • Air-to-Air Refueling* • Airborne Early Warning • Anti-submarine helicopter • Combat Search and Rescue Helicopter • Logistics
USS John C. Stennis (USN)	• F-14 • F/A-18** • EA-6B • S-3 • E-2 • SH-60B • HH-60 • C-2	• Fighter-bomber • Fighter-bomber • Electronic Warfare • Air-to-Air Refueling* • Airborne Early Warning • Anti-submarine helicopter • Combat Search and Rescue Helicopter • Logistics
USS Peleliu (USMC)	• CH-46 • CH-53 • UH-1 • AH-1 • AV-8B	• Transport Helicopter • Transport Helicopter • Light Utility Helicopter • Attack Helicopter • Fighter-bomber

25 Sources for this appendix are Ripley, *Air War Afghanistan*, appendix 3, Anonymous, "OEF Order of Battle", and Anonymous, "Carrier Air Wing Deployments", *Website GO!NAVY* http://www.gonavy.jp/CVWf.html (accessed February 13, 2015) unless indicated otherwise.

Vessel/Location	Aircraft	Function
USS Theodore Roosevelt (USN)	• F-14 • F/A-18** • EA-6B • S-3 • E-2 • SH-60B • HH-60 • C-2	• Fighter-bomber • Fighter-bomber • Electronic Warfare • Air-to-Air Refueling* • Airborne Early Warning • Anti-submarine helicopter • Combat Search and Rescue Helicopter • Logistics

* Various types of S-3 were originally designed for anti-subarine warfare. Due to shortage of tankers, and lack of anti-submarine tasks, the S-3 was used for air-to-air refueling.[26]

** 1 Squadron flown by USMC.

26 Tony Holmes, *F-14 Tomcat Units of Operation Enduring Freedom*, Osprey Combat Aircraft, ed. Tony Holmes (Oxford and New York, NY: Osprey Publishing Limited, 2008), 20-22 and Benjamin S. Lambeth, *American Carrier Air Power at the Dawn of a New Century* (Santa Monica, CA: RAND Corporation, 2005), http://www.dtic.mil/dtic/tr/fulltext/u2/a440448.pdf (accessed November 28, 2013), 12.

3.3. 2001 - 2002 US Special Operations Forces and Combat Search and Rescue Order of Battle[27]

Location	Aircraft	Function
Dalbandin (Pakistan)	• UH-60	• Combat Search and Rescue Helicopter
Incirlik Air Base (Turkey)	• MC-130	• SOF Support
Karshi-Kanabad (K2) (Uzbekistan)	• MC-130 • AC-130 • EC-130 • MH-47 • MH-60	• SOF Support • Gunship • Electronic Warfare • Transport Helicopter • Transport Helicopter
Masirah Air Base (Oman)	• AC-130 • MC-130 • MH-53	• Gunship • SOF support • Combat Search and Rescue Helicopter
Quetta (Pakistan)	• UH-60	• Combat Search and Rescue Helicopter
Shahbaz Air Base** (Jacobabad - Pakistan)	• MH-53 • MH-47 • MH-6 • MH-60 • AC-130 • MC-130	• Combat Search and Rescue Helicopter • Transport Helicopter • Light Utility Helicopter (SOF) • Transport Helicopter • Gunship • SOF Support
USS Kitty Hawk (USN)**	• (F-14) • F/A-18 • SH-60 • HH-60 • S-3 • C2 • MH-47 • MH-60 • MH-53	• Fighter-bomber • Fighter-bomber • Anti-submarine helicopter • Combat Search and Rescue Helicopter • Air-to-Air Refueling* • Logistics • SOF Transport Helicopter • SOF Transport Helicopter • Combat Search and Rescue Helicopter

* Various types of S-3 were originally designed for anti-subarine warfare. Due to shortage of tankers, and lack of anti-submarine tasks, the S-3 was used for air-to-air refueling.[28]

** The *USS Kitty Hawk* was virtually stripped of its organic air assets, to serve as a floating helicopter base. Globalsecurity.org

27 Sources for this appendix are Ripley, *Air War Afghanistan*, appendix 2 and Anonymous, "OEF Order of Battle", unless indicated otherwise.

28 Holmes, *F-14 Tomcat Units*, 20-22 and Lambeth, *Carrier Air Power*, 12.

indicates presence of 4 F-14s and 4 F/A-18s. Ripley mentions a presence of 12 F/A-18s, while Lambeth mentions only 8 of them. The *GO! Navy Website* also mentions only the F/A-18s without giving a number. So, it is assumed that only F/A -18s were on board of the USS *Kitty Hawk*. During the initial phase of operation *Enduring Freedom*, Special Operations Forces brought their own MH-60, MH-47 and MH-53 helicopters, which to a large extend were deployed forward to Jacobabad. So, to some extend, the assets on the USS *Kitty Hawk* and based on Jacobabad are the same.[29]

29 Antony H. Cordesman, "The Lessons of Afghanistan: War Fighting, Intelligence, Force Transformation, Counterproliferation, and Arms Control", (Center for Strategic & International Studies, Washington, DC, August 12, 2002) http://csis.org/images/stories/burke/afghanlessons_exec.pdf (accessed November 20, 2014), 84, Lambeth, *Carrier Air Power*, 10, Ripley, *Air War Afghanistan*, appendix 3, Anonymous, "OEF Order of Battle", and Anonymous, "CVW-5 / CV-63 Kitty Hawk (Aug. 1998 - Present)", *Website GO! Navy* http://www.gonavy.jp/CVW-NF4f.html (accessed February 13, 2015)

3.4. 2001 - 2002 US Unmanned Aerial Vehicles[30]

Location	Type	Owner
Al Dafra (United Arab Emirates)	RQ-4 (Global Hawk)	USAF
Jacobabad (Pakistan)	RQ/MQ-1 (Predator/Reaper)	USAF
Karshi Kanabad (K2) (Uzbekistan)	RQ/MQ-1 (Predator/Reaper)	CIA

30 Sources for this appendix are Ripley, *Air War Afghanistan*, appendix 2 and Anonymous, "OEF Order of Battle", unless otherwise indicated.

3.5. Allied Air Power Contributions to Operation Enduring Freedom[31]

Nation	Location	Country	Type	Function	#	From	Until
Australia			AP-3C	Surveillance	2	10-2001	
Australia	Diego Garcia		F/A-18	Fighter-Bomber	4	11-2001	05-2002
Australia	Ganci Air Base (Manas)	Kyrgyzstan	KB-707	Air-to-Air Refueling	2	03-2002	09-2002
Canada	Camp Mirage	UAE	CC-150 (A-310)	Strategic Airlift	1	11-2001	05-2002
Canada	Camp Mirage	UAE	CP-140	Long range patrol / Search and Rescue	2	12-2001	06-2003
Canada	Camp Mirage	UAE	CC-130	Tactical Airlift	3	01-2002	08-2002
Canada	Masirah Air Base	Oman	P-3C	Patrol			
France	Al Dhafra	UAE	Mirage IV P	Photo-reconnaissance	2	10-2001	02-2002
France	Charles de Gaulle	Carrier	Super Etendard	Fighter-bomber	16	12-2001	05-2002
France	Charles de Gaulle	Carrier	Rafale M	Fighter-Bomber		12-2001	05-2002
France	Charles de Gaulle	Carrier	E-2C Hawkeye	Airborne Command and Control		12-2001	05-2002
France	Charles de Gaulle	Carrier	Dauphin	Anti-submarine helicopter		12-2001	05-2002
France	Charles de Gaulle	Carrier	AS 565	Maritime helicopter		12-2001	05-2002
France	Ganci Air Base (Manas)	Kyrgyzstan	Mirage 2000D	Fighter-Bomber	6	02-2002	09-2002
France	Ganci Air Base (Manas)	Kyrgyzstan	C-135FR	Air-to-Air Refueling	2	02-2002	10-2002
France			Atlantique II	Patrol			

31 Sources for this table are outlined in the bibliography section. Reference breakdown available at the author.

Nation	Location	Country	Type	Function	#	From	Until
Germany	Ramstein	Germany	C-160	Transport to Incirlik			
Germany				Patrol			
Greece			C-130	Inter-Theater Transport	1		
Italy	Garibaldi	Carrier	Harrier	Fighter-bomber		11-2001	03-2002
Korea	Seoul	Korea	C-130	Transport to Diego Garcia	4	12-2001	
NATO		United States	E-3	Airborne Command and Control	5 to 7	10-2001	05-2002
New Zeeland		Afghanistan	C-130	Intra-Theater airlift	1	In 2002	
Spain			C-130	Transport	5	In 2001	
Spain			CN-235	Transport	8	In 2001	
Sweden			C-130	Transport			
United Kingdom	Thumrait Air Base	Oman	C-130	SOF Support	2		
United Kingdom	Seeb Air Base	Oman	Canberra PR9	Photo-reconnaissance	1		
United Kingdom	Thumrait Air Base	Oman	E-3D	Airborne Command and Control	2		
United Kingdom			Harrier GR7				
United Kingdom	Seeb Air Base	Oman	Nimrod MR2	Patrol	2		
United Kingdom	Thumrait Air Base	Oman	Nimrod R1	Signals Intelligence	1		
United Kingdom			Tornado F1				
United Kingdom	Prince Sultan Air Base	Saudi Arabia	Tornado F3		4		
United Kingdom	Muharraq	Bahrein	Tristar	Air-to-Air Refueling			03-2002
United Kingdom	Muharraq	Bahrein	VC-10	Air-to-Air Refueling			03-2002

Nation	Location	Country	Type	Function	#	From	Until
United Kingdom			CH-47	Transport			
United Kingdom	Diego Garcia		Nimrod	Surveillance			
United Kingdom			Globemaster				

3.6. Allied Air Power Contributions to OEF and ISAF[32]

Country	Location	Country	Type	Function	#	From	Until
Australia	Al-Minhad	UAE	AP-3C	Patrol	2	01-2003	10-2012
Australia	Al Udeid	Qatar	C-130	Transport	3	03-2003	11-2009
Australia	Kandahar	Afghanistan	CH-47	Transport Helicopter / SOF / MEDEVAC	2	03-2006	04-2007
Australia	Kandahar	Afghanistan	114 Mobile Control and Reporting Unit (114 MCRU)	Command CRC		08-2007	07-2009
Australia	Kandahar	Afghanistan	CH-47	Transport Helicopter / SOF / MEDEVAC	2	02-2008	11-2008
Australia			C-17	Strategic Arilift		10-2008	
Australia	Kandahar	Afghanistan	CH-47	Transport Helicopter / SOF / MEDEVAC	2	03-2009	09-2013
Australia	Tarin Kowt / Kandahar	Afghanistan	Heron	ISR	3	11-2009	11-2014
Australia	Al-Minhad	Dubai	C-130	Transport	3	11-2009	
Australia	Tarin Kowt	Afghanistan	Mi-26 HALO	Heavy Transport Helicopter		03-2011	
Australia	Tarin Kowt	Afghanistan	Shadow	ISR		01-2012	
Australia	Tarin Kowt	Afghanistan	Scan Eagle	ISR			
Belgium	Karachi	Pakistan	C-130	Intra-theater airlift	1	04-2002	08-2002

32 Sources for this table are outlined in the bibliography section. Reference breakdown available at the author. This table is necessarily incomplete due to the fluid nature of the Air Order of Battle, releasability of the information, and language barriers. Therefore, the following restrictions are applicable:

1. Numbers may not reflect the number of aircraft actually flying, as units usually kept some aircraft in reserve;
2. Dates are murky. They sometimes are not mentioned. Some of them reflect government approval, others reflect arrival in theater, Full Operational Capability, or flying or first missions in theater;
3. Deployments of mini-UAVs are not systematically investigated;
4. Inter-theater transports are not included, except for some chartered planes;
5. Shifts in national commands of the various airbases, unless they bring their own radar, are not included. Exception is when roles are clearly defined.
6. Some of the contributions were within the context of OEF;
7. Roles of the aircraft reflect the mission they had in Afghanistan, not necessarily the configuration of the type. This is especially applicable to MEDEVAC helicopters.
8. The table does not include individual flights, especially relevant for intra-and inter-theater airlift;
9. The table not take into account upgrades on types which could be implemented during time of deployment;
10. The table does not take into account short relocations due to build-up and redeployment.

Country	Location	Country	Type	Function	#	From	Until
Belgium	KAIA	Afghanistan	F-16	fighter-bomber	4	07-2005	01-2006
Belgium	KAIA	Afghanistan	C-130H	Intra-theater airlift	1	08-2005	01-2006
Belgium	KAIA	Afghanistan	Personnel	COMKAIA		10-2007	04-2008
Belgium	Kandahar	Afghanistan	F-16	Fighter-bomber / Reconnaissance	4	09-2008	10-2014
Belgium			Trainers	Air Advisory team	4	02-2011	
Belgium			A-310	Inter-Theater Airlift			
Belgium			C-130	Intra-theater airlift			
Belgium	Dushanbe	Tajikistan	C-130	Intra-Theater Airlift			
Bulgaria	KAIA	Afghanistan	Personnel	COMKAIA	70	08-2006	12-2006
Canada			CC-177 Globemaster III	Inter-theater airlift	1	04-2007	03-2014
Canada	Kandahar	Afghanistan	CC-130	Intra-theater airlift	3	12-2008	12-2011
Canada	Kandahar	Afghanistan	Mi-8T	Medium Transport Helicopter	6	12-2008	08-2011
Canada	Kandahar	Afghanistan	CH-146 Griffon	Transport Helicopter	8	12-2008	07-2011
Canada	Kandahar	Afghanistan	CH-147 Chinook	Transport Helicopter	6	12-2008	12-2011
Canada	Kandahar	Afghanistan	CU-170 Heron	ISR		12-2008	12-2011
Canada	Kandahar	Afghanistan	CH-178 (Mi-17)	Transport Helicopter	6	05-2010	12-2011
Canada	KAIA	Afghanistan	Sperwer	ISR		In 2003	
Croatia		Afghanistan	M-17	Transport Helicopter	Trainers	01-2009	
Czech Republic	KAIA	Afghanistan	Personnel	COMKAIA		12-2006	04-2007

Country	Location	Country	Type	Function	#	From	Until
Czech Republic	KAIA	Afghanistan	M-17 - M-24 Trainers	Transport Helicopter	30 pax	01-2009	
Czech Republic	Sharana Base, Paktika Povince	Afghanistan	Mi-171Sh	Transport Helicopter	3	01-2010	End 2011
Czech Republic			C-295M	Transport		02-2011	
Czech Republic			L-159	Light attack		10-2012	
Czech Republic	Bagram	Afghanistan	Scan Eagle	ISR	1	02-2015	
Denmark	Camp Shorabak	Afghanistan	Mentors	Operative Mentor and liaison Team	10 pax	01-2001	07-2012
Denmark	Ganci Air Base (Manas)	Kyrgyzstan	C-130H	Intra-theater airlift	1	02-2002	11-2002
Denmark	Ganci Air Base (Manas)	Kyrgyzstan	Personnel/ K-Lift and handling	Air Movement Control Element	28 pax	02-2002	11-2002
Denmark	Ganci Air Base (Manas)	Kyrgyzstan	F-16	Fighter-bomber	2+2	10-2002	10-2003
Denmark		Afghanistan	C-130J	Intra-theater airlift	1	02-2005	08-2005
Denmark	Kabul	Afghanistan	DARIS	ATC	1	08-2005	11-2009
Denmark			C-130J	Inter-theater airlift	1	10-2005	10-2005
Denmark	Kandahar	Afghanistan	Force Protection	Base Defense	45 pax	08-2007	03-2009
Denmark	Camp Bastion, Helmand Province	Afghanistan	AS550C2 Fennec	Observation Helicopter	2+1	05-2008	11-2008
Denmark	Kabul	Afghanistan	C-130J	Inter-theater airlift	1	08-2009	12-2009
Denmark	Kabul	Afghanistan	C-130J	Inter-theater airlift	1	01-2010	05-2010
Denmark	Kabul	Afghanistan	C-130J	Inter-theater airlift	1	08-2010	12-2010

Country	Location	Country	Type	Function	#	From	Until
Denmark	Kabul	Afghanistan	C-130J	Inter-theater airlift	1	01-2011	06-2011
Denmark	Kabul	Afghanistan	C-130J	Inter-theater airlift	1	08-2011	12-2011
Denmark	Mazar-e-Sharif	Afghanistan	TPS-77	Mobile Air Operations Center	1	01-2012	05-2013
Denmark	Kabul	Afghanistan	RDAF SSA	(support for strategic Airbases)	25 pax	03-2013	12-2014
Denmark	Kabul	Afghanistan	MAPO	Mentor Aerial Port Operations	2 pax	05-2014	continuing
Denmark	Mazar-e-Sharif	Afghanistan	EH-101 Merlin	Transport Helicopter	2+1	08-2014	10-2015
France	KAIA	Afghanistan	AS-532 Cougar	Intra-theater airlift	2	10-2009	03-2013
France	Ganci Air Base (Manas)	Kyrgyzstan	C-135	Air-to-air refueling	2		
France	Al Dhafra	UAE	C-135F	Air-to-Air Refueling	1		
France	Dushanbe	Tajikistan	C-160 Transall	Intra-Theater transport	2		
France	Charles de Gaulle	Carrier	E-2C	Airborne C2		11-2010	01-2011
France	KAIA	Afghanistan	EC 725R2 Caracal	SAR	3	11-2006	03-2013
France	KAIA	Afghanistan	EC725 Caracal	CSAR Helicopter	3	12-2006	09-2007
France	KAIA	Afghanistan	Gazelle	Light Utility Helicopter	5	11-2006	10-2012
France	Bagram	Afghanistan	Harfang	ISR	2	02-2009	
France	Dushanbe	Tajikistan	Mirage 2000	fighter-bomber	6	08-2005	11-2005
France	Dushanbe	Tajikistan	Mirage 2000D	fighter-bomber	3	05-2006	09-2007
France	Kandahar	Afghanistan	Mirage 2000D	fighter-bomber	3	07-2011	07-2012
France	Kandahar	Afghanistan	Mirage F-1CR	Reconnaisance	3	10-2007	07-2011
France	Dushanbe	Tajikistan	Mirage F1	fighter-bomber	6	08-2005	11-2005

Country	Location	Country	Type	Function	#	From	Until
France	Dushanbe	Tajikistan	Mirage F1	fighter-bomber	3	07-2006	09-2007
France	KAIA	Afghanistan	Personnel	COMKAIA			12-2014
France	Dushanbe	Tajikistan	Rafale	fighter-bomber		03-2007	07-2007
France	Kandahar	Afghanistan	Rafale	fighter-bomber	3	03-2008	06-2008
France	Charles de Gaulle	Carrier	Rafale	fighter-bomber		11-2010	01-2011
France	Charles de Gaulle	Carrier	Super Etendard	fighter-bomber		11-2010	01-2011
France	KAIA	Afghanistan	Tigre	Attack Helicopter	3	07-2009	03-2013
France	Kabul	Afghanistan	Sperwer	ISR		10-2008	To 2012
France	Jalalabad / Kabul	Afghanistan	AS 532Cougar	CSAR Helicopter	2	11-2006	03-2013
France	Kandahar	Afghanistan	Super Etendard	fighter-bomber	3	06-2008	
Germany	KAIA	Afghanistan	CH-53	Transport Helicopter / MEDEVAC	3	04-2002	06-2004
Germany	KAIA	Afghanistan	Personnel	COMKAIA		02-2003	05-2004
Germany	Termez	Uzbekistan	CH-53	Transport Helicopter / MEDEVAC	5 to 7	02-2004	11-2007
Germany	Termez	Uzbekistan	C-160 Transall	Intra-theater airlift	6 to 8	08-2005	08-2008
Germany	Mazar-e-Sharif	Afghanistan	Tornado	Reconnaissance	6-8	04-2007	12-2010
Germany	Mazar-e-Sharif	Afghanistan	CH-53	Transport Helicopter / MEDEVAC	3	11-2007	
Germany	Mazar-e-Sharif	Afghanistan	Surveillance Radar	ATC	1	12-2007	04-2014
Germany	Mazar-e-Sharif	Afghanistan	C-160 Transall	Intra-theater airlift	4 to 8	08-2008	11-2014
Germany			Personnel	AWACS	300 pax	07-2009	
Germany	Mazar-e-Sharif	Afghanistan	AN-124	Intra Theater Transport	1	01-2010	

Country	Location	Country	Type	Function	#	From	Until
Germany	Mazar-e-Sharif	Afghanistan	Heron	ISR	3	02-2010	
Germany	Mazar-e-Sharif	Afghanistan	Tigre	Attack Helicopter	3	02-2013	
Germany	Mazar-e-Sharif	Afghanistan	NH-90	Transport Helicopter / MEDEVAC	2	06-2013	08-2014
Greece	Karachi	Pakistan	C-130	Intra-theater airlift	2	02-2002	11-2012
Greece	KAIA	Afghanistan	Personnel	COMKAIA		12-2005	03-2006
Greece	KAIA	Afghanistan	Personnel	COMKAIA		04-2010	10-2010
Greece			Trainers	BPC			
Greece		UAE	C-130	Intra-theater airlift			
Hungary	KAIA	Afghanistan	Personnel	COMKAIA	65 pax	10-2008	04-2009
Hungary	KAIA	Afghanistan	Personnel	COMKAIA			04-2011
Iceland	KAIA	Afghanistan	Personnel	COMKAIA		05-2004	01-2005
Italy	Herat	Afghanistan	A-129 Mangusta	Attack Helicopter	5	04-2007	06-2014
Italy	Herat	Afghanistan	AB 205	Light Utiliy Helicopter	6	07-2010	09-2012
Italy	KAIA	Afghanistan	AB212	MEDEVAC		04-2006	08-2006
Italy	Herat	Afghanistan	AB212	MEDEVAC		05-2007	12-2007
Italy	Kabul	Afghanistan	AB412	Transport Helicopter		In 2003	
Italy	Herat	Afghanistan	AMX	Light attack / Reconnaissance	4	11-2009	06-2014
Italy			An-124	Inter-Theater Airlift	1	In 2002	
Italy	Herat	Afghanistan	AW101	MEDEVAC	3	10-2010	12-2011

Country	Location	Country	Type	Function	#	From	Until
Italy		Abu Dhabi	B-707	Inter-Theater Airlift	1	In 2002	
Italy	Ganci Air Base (Manas)	Kyrgyzstan	C-130	Intra-theater airlift	2	10-2002	09-2003
Italy	Khowst	Afghanistan	C-130J	Intra-theater airlift		04-2002	04-2003
Italy	Al Bateen	UAE	C-130J	Intra-theater airlift	2	09-2002	In 2011
Italy	Herat	Afghanistan	C-130J	Intra-theater airlift	1	07-2007	03-2015
Italy	Herat	Afghanistan	C-27J	Intra-theater airlift	2	09-2008	01-2009
Italy	Kabul	Afghanistan	CH-47	Transport Helicopter		In 2003	
Italy	Herat	Afghanistan	CH-47 Chinook	Medium Transport Helicopter	6	11-2007	08-2014
Italy	Herat	Afghanistan	EH-101	Transport Helicopter	3	10-2010	10-2011
Italy			Il-76	Inter-Theater Airlift	1	In 2002	
Italy	Herat	Afghanistan	KC-767A	AAR	1	07-2011	
Italy	Herat	Afghanistan	MQ-1 Predator	ISR	3	07-2007	12-2014
Italy	Herat	Afghanistan	NH-90	Medium Transport Helicopter	4	09-2012	
Italy	Herat	Afghanistan	SH-3D	MEDEVAC	2	12-2007	12-2008
Italy	Mazar-e-Sharif	Afghanistan	Tornado IDS	Reconnaissance	4	11-2008	11-2009
Latvia		Afghanistan	Personnel	Trainers Mi-17	9	08-2011	09-2014
Lithuania		Afghanistan	C-27 Spartan		1	In 2007	
NATO			An-124-100		6	01-2006	
NATO	Pápa Air Base	Hungary	C-17	Inter-Theater Airlift	3	09-2009	
NATO	Mazar-e-Sharif	Afghanistan	AWACS	Airborne C2	3 or 4	01-2011	09-2014

Country	Location	Country	Type	Function	#	From	Until
Netherlands	Al Udeid	Qatar	KDC-10	Air-to-Air Refueling	1	04-2002	06-2002
Netherlands	Ganci Air Base (Manas)	Kyrgyzstan	C-130	Intra-Theater Transport	1	04-2002	09-2002
Netherlands	Minhad	UAE	P-3 Orion	ISR	1	06-2002	06-2003
Netherlands	Ganci Air Base (Manas)	Kyrgyzstan	F-16	Fighter-bomber / Reconnaissance	6 to 4	09-2002	10-2003
Netherlands	Ganci Air Base (Manas)	Kyrgyzstan	KDC-10	Air-to-air Refueling	1	10-2002	04-2003
Netherlands	KAIA	Afghanistan	AH-64	Attack Helicopter	6	04-2004	04-2005
Netherlands	Termez	Uzbekistan	C-130	Intra Theater Transport	1	08-2004	10-2004
Netherlands	Ganci Air Base (Manas)	Kyrgyzstan	F-16	fighter-bomber and recce	5	09-2004	11-2004
Netherlands	Ganci Air Base (Manas)	Kyrgyzstan	An-124	Inter-Theater Airlift	1	09-2004	12-2004
Netherlands	Ganci Air Base (Manas)	Kyrgyzstan	KDC-10	Air-to-Air Refueling	1	09-2004	11-2004
Netherlands	Kandahar	Afghanistan	CH-47 Chinook	Medium Transport Helicopter	5	02-2005	04-2006
Netherlands	KAIA	Afghanistan	F-16	Fighter-bomber / Reconnaissance	4 to 8	05-2005	11-2006
Netherlands	Mazar-e-Sharif	Afghanistan	CH-47 Chinook	Medium Transport Helicopter / MEDEVAC	1	08-2005	11-2005
Netherlands	KAIA	Afghanistan	C-130	Intra-theater airlift	1	10-2005	10-2006
Netherlands	Kandahar	Afghanistan	Ch-47 Chinook / AS532 Cougar	Medium Transport Helicopter	3 to 5	04-2006	10-2010
Netherlands	Kandahar	Afghanistan	AH-64	Attack Helicopter	6	04-2006	10-2006
Netherlands	Tarin Kot	Afghanistan	AH-64	Attack Helicopter	4 to 6	10-2006	11-2010

Country	Location	Country	Type	Function	#	From	Until
Netherlands	Kandahar	Afghanistan	F-16	Fighter-bomber / Reconnaissance	4 to 8	11-2006	10-2011
Netherlands	Kandahar	Afghanistan	C-130	Intra Theater Transport	1	03-2007	04-2007
Netherlands	Minhad	UAE	C-130	Intra-theater airlift	1	01-2008	12-2010
Netherlands	Mazar-e-Sharif	Afghanistan	F-16	Fighter-bomber / Reconnaissance	4	10-2011	07-2014
Netherlands	Mazar-e-Sharif	Afghanistan	Dash7	Intra-Theater transport	1	End 2011	12-2014
Netherlands	Kandahar	Afghanistan	Dash7	Intra-Theater transport	1	In 2007	End 2011
Netherlands		Afghanistan	L-100-30	Intra-theater Transport	1	In 2009	
Netherlands		Afghanistan	Mi-26T	Heavy Transport Helicopter	1	In 2009	
New Zealand	Ganci Air Base (Manas)	Kyrgyzstan	C-130	Intra-theater airlift	1	02-2003	04-2013
New Zealand			P-3 Orion	ISR	1	02-2003	08-2003
New Zealand	Tarin Kowt / Kandahar	Afghanistan	Heron	ISR	3	11-2009	12-2014
New Zealand	Middle East		C-130	Intra Theater Transport	1	06-2016	
Norway	Ganci Air Base (Manas)	Kyrgyzstan	F-16	Fighter-bomber	6	10-2002	04-2003
Norway	KAIA	Afghanistan	F-16	Fighter-bomber	4	02-2006	05-2006
Norway	KAIA	Afghanistan	Personnel	COMKAIA	50	04-2007	10-2007
Norway	Maymaneh	Afghanistan	Bell 412SP	MEDEVAC	3	04-2008	oct-2010
Norway	Ganci Air Base (Manas)	Kyrgyzstan	C-130	Inter-Theater Airlift	1	In 2002	
Poland	Bagram	Afghanistan	Mi-24V	Attack Helicopter	4 to 6	10-2008	01-2009
Poland	Gazni	Afghanistan	Mi-24V	Attack Helicopter	4 to 6	01-2009	In 2013
Poland	Gazni	Afghanistan	Mi-17	Transport Helicopter	4 to 5	10-2008	04-2014

Country	Location	Country	Type	Function	#	From	Until
Poland	KAIA	Afghanistan	Personnel	COMKAIA	70	04-2009	10-2009
Poland	Gazni	Afghanistan	C295M	Transport plane	1 to 2	04-2010	04-2014
Poland	Gazni Province	Afghanistan	Aerostar	ISR			04-2014
Poland	Gazni Province	Afghanistan	Orbiter	ISR			04-2014
Poland	Gazni Province	Afghanistan	Scan Eagle	ISR			04-2014
Portugal	Karachi	Pakistan	C-130	Intra-theater airlift	1	04-2002	07-2002
Portugal	KAIA	Afghanistan	C-130	Intra-theater airlift	1	05-2004	11-2004
Portugal	KAIA	Afghanistan	Personnel	COMKAIA	23 pax	08-2005	11-2005
Portugal	KAIA	Afghanistan	C-130	Intra-theater airlift	1	09-2008	12-2008
Portugal	KAIA	Afghanistan	C-130	Intra-theater airlift	1	07-2009	10-2009
Republic of Korea	Ali Al Salem	Kuwait	C-130	Intra-Theater Airlift	4	10-2004	12-2008
Republic of Korea	Bagram	Afghanistan	UH-60P	Intra-theater airlift	2	07-2010	
Romania		Afghanistan	C-130		2	03-2002	10-2002
Romania	KAIA	Afghanistan	Personnel	COMKAIA	39 pax	03-2006	08-2006
Romania	KAIA	Afghanistan	Personnel	COMKAIA		04-2011	04-2012
Singapore	Tarin Kowt	Afghanistan	Searcher II	ISR	2	08-2010	12-2010
Singapore	Gulf Region		KC-135	Air-to-Air Refueling	1	In 2003	In 2008
Singapore	Gulf Region		C-130	Intra-Theater Transport	1	In 2003	In 2003
Spain	Ganci Air Base (Manas)	Kyrgyzstan	C-130	Intra-Theater Airlift	1	02-2002	06-2003
Spain	Ganci Air Base (Manas)	Kyrgyzstan	AS-332 Super Puma	MEDEVAC		02-2002	06-2003

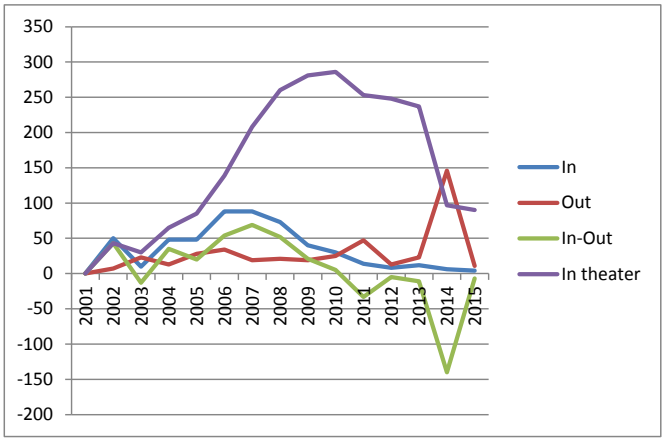
Country	Location	Country	Type	Function	#	From	Until
Spain		Kuwait	C-130	Intra-Theater Airlift	1	06-2003	08-2004
Spain	Mazar-e-Sharif	Afghanistan	AS-532	Medium Transport Helicopter	4	07-2004	05-2005
Spain	Ganci Air Base (Manas)	Kyrgyzstan	C-130	Intra-theater airlift	1 to 2	08-2004	10-2009
Spain	KAIA	Afghanistan	AS-532	Medium Transport Helicopter	2	09-2004	05-2005
Spain	Herat	Afghanistan	AS-532	Medium Transport Helicopter	3	05-2005	11-2013
Spain	Herat	Afghanistan	AS 332 Super Puma	MEDEVAC	3	06-2005	11-2013
Spain	Herat	Afghanistan	Searcher-II	ISR	2	04-2008	08-2014
Spain	KAIA	Afghanistan	Personnel	COMKAIA		10-2009	04-2010
Spain	Herat	Afghanistan	Tigre	Attack Helicopter	2	04-2013	11-2013
Spain	Herat	Afghanistan	CH-47 Chinook	Medium Transport Helicopter	3	In 2012	11-2013
Spain	Herat	Afghanistan	C-130	Intra-theater airlift	1	In 2009	End 2014
Spain		Afghanistan	RQ-11 Raven	ISR		02-2010	
Spain	Qala I Naw, Bagdis Province	Afghanistan	Scan Eagle	ISR		12-2012	11-2013
Sweden	Termez	Uzbekistan	C-130	Intra-theater airlift	1	08-2005	11-2005
Sweden	Mazar-e-Sharif	Afghanistan	Hkp 10 (AS 332)	MEDEVAC	2	04-2011	04-2013
Sweden	Mazar-e-Sharif	Afghanistan	Hkp 16 Black Hawk)	MEDEVAC/Transport	4	04-2013	05-2014
Sweden	Termez	Uzbekistan	C-130	Intra-theater airlift	1	In 2004	
Turkey	KAIA	Afghanistan	Personnel	COMKAIA		07-2002	02-2003
Turkey	KAIA	Afghanistan	S-70A Blackhawk	Transport Helicopter	3	06-2004	

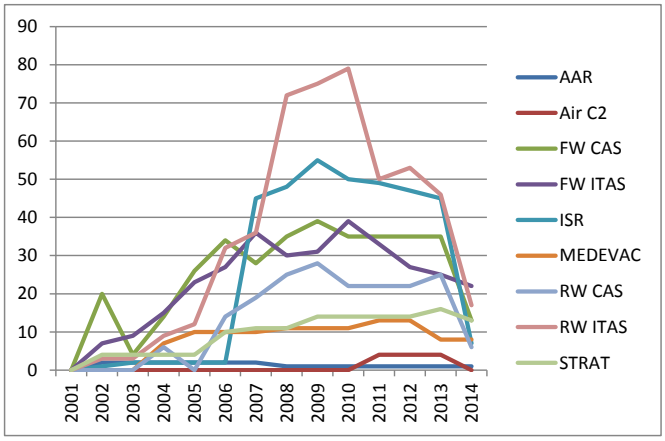
Country	Location	Country	Type	Function	#	From	Until
Turkey	KAIA	Afghanistan	Personnel	COMKAIA		02-2005	07-2005
Turkey	KAIA	Afghanistan	Personnel	COMKAIA		12-2014	
Turkey	KAIA	Afghanistan	C-130E	Intra-theater airlift	1		
Ukraine		Afghanistan	Trainers	Intra-theater airlift			
United Arab Emirates	"Different Locations"	Afghanistan	Hermes 450	ISR		In 2009	
United Arab Emirates		Afghanistan	Seeker	ISR		In 2010	
United Kingdom	Muharraq Airfield	Bahrein	L-1011 Tristar	Air-to-air refueling	1	In 2002	
United Kingdom			VC-10	Air-to-Air Refueling			
United Kingdom	Al Udeid	Qatar	E-3D Sentry	ATC	2	12-2009	02-2010
United Kingdom	Kandahar	Afghanistan	Type-101 Radar	ATC			
United Kingdom	Camp Bastion, Helmand Province	Afghanistan	AH.1 Apache	Attack Helicopter	8	05-2006	11-2014
United Kingdom	KAIA	Afghanistan	Personnel	COMKAIA		12-2001	07-2002
United Kingdom	Kandahar	Afghanistan	Harrier GR Mk 7A / Mk9	fighter-bomber	6 to 10	09-2004	06-2009
United Kingdom	Ali Al Salem air Base	Kuwait	Tornado GR4	fighter-bomber	6	In 2002	In 2006
United Kingdom	Prince Sultan Air Base	Saudi Arabia	Tornado F3	fighter-bomber	4	In 2002	
United Kingdom	Al Udeid	Qatar	Tornado GR4	fighter-bomber	6	In 2006	
United Kingdom	Kandahar	Afghanistan	Tornado GR4	Fighter-bomber / Reconnaissance	8 to 10	06-2009	11-2014
United Kingdom	Kandahar	Afghanistan	BAE 146	Inter-theater airlift	2	Spring 2013	11-2014

Country	Location	Country	Type	Function	#	From	Until
United Kingdom			HS 125	Inter-theater airlift			
United Kingdom	Bagram	Afghanistan	C-130	Intra-theater airlift			
United Kingdom	Kandahar	Afghanistan	C-130	Intra-Theater Transport	4	04-2006	05-2015
United Kingdom	Seeb Air Base	Oman	Canberra PR9	ISR	2	02-2006	06-2006
United Kingdom	Helmand Province	Afghanistan	Desert Hawk	ISR	239	05-2006	11-2014
United Kingdom			Nimrod R1	ISR	1	07-2006	03-2011
United Kingdom		Afghanistan	Hermes 450	ISR	20	05-2007	11-2014
United Kingdom	Kandahar	Afghanistan	MQ-9 Reaper	ISR	5 to 10	10-2007	11-2014
United Kingdom	Kandahar	Afghanistan	ASTOR	ISR	1	02-2009	
United Kingdom	Camp Bastion, Helmand Province	Afghanistan	Sea King ASaC7	ISR	2	05-2009	07-2014
United Kingdom			Shadow R1	ISR	4	07-2009	
United Kingdom	Camp Bastion, Helmand Province		WK450 Watchkeeper	ISR		10-2014	10-2014
United Kingdom			Dynamics PD 100 Black Hornet	ISR	64	In 2013	
United Kingdom			RC-135	ISR			
United Kingdom			Sentinel R. Mk 1	ISR			
United Kingdom		Afghanistan	AH.7 / AH.9 / AH.9A Lynx	Light Utility Helicopter	4	05-2006	03-2013
United Kingdom	Thumrait Air Base	Oman	Nimrod MR2	Maritime Patrol / Intelligence		In 2002	

Country	Location	Country	Type	Function	#	From	Until
United Kingdom	Kandahar	Afghanistan	CH-47 Chinook	Medium Transport Helicopter	6 to 11	05-2006	11-2014
United Kingdom	KAIA	Afghanistan	CH-47 Chinook	Medium Transport Helicopter	3	11-2014	03-2015
United Kingdom	KAIA	Afghanistan	Puma HC Mk2	Medium Transport Helicopter	3	03-2015	
United Kingdom		Afghanistan	CH-47 Chinook	Medium Transport Helicopter		In 2002	07-2002
United Kingdom	Helmand Province	Afghanistan	Sea King	SOF	6	11-2007	
United Kingdom	Camp Bastion, Helmand Province	Afghanistan	Merlin HC.3/3A	Transport Helicopter		12-2009	06-2013
United Kingdom		Afghanistan	RQ-16A Tarantula	ISR	18		

3.7. NATO Air Order of Battle Trends[33]





AAR	Air-to-Air Refueling
Air C2	Airborne Command and Control
CAS	Close Air Support
FW	Fixed Wing
ISR	Intelligence, Surveillance, and Reconnaissance
ITAS	Intra-Theater Airlift System
MEDEVAC	Medical Evacuation
RW	Rotary Wing
STRAT	Strategic Airlift

33 Illustrations by the author. They are derived from the table presented in Appendix 3.6.

3.8. US Air Order of Battle January 2009[34]

Location	Country	Type	Function
Al Udeid	Qatar	KC-135R	Air-to Air Refueling
Al Udeid	Qatar	B-1B	Bomber
Al Udeid	Qatar	RC-135 V/W	Airborne Intelligence
Bagram	Afghanistan	C-130	Intra-Theater airlift
Bagram	Afghanistan	EC-130H	Electronic Warfare
Bagram	Afghanistan	A-10	CAS
Bagram	Afghanistan	F-15E	Fighter-Bomber
Bagram	Afghanistan	HH-60G	CSAR
Bagram	Afghanistan	EA-6B	Electronic Warfare
Bagram	Afghanistan	UH-60	Medium Tansport Helicopter
Ganci Air Base (Manas)	Kyrgyzstan	KC-135R	Air-to Air Refueling
Jacobabad	Pakistan		
Kandahar	Afghanistan	MQ-9	MALE UAV
Kandahar	Afghanistan	MQ-1	MALE UAV
Kandahar	Afghanistan	HH-60G	CSAR
Kandahar	Afghanistan	UH-60L	Medium Tansport Helicopter
Kandahar	Afghanistan	OH-58D	Light Uitility Helicopter
Kandahar	Afghanistan	CH-47	Medium Tansport Helicopter
Pasni	Pakistan		
Tarin Kowt, Uruzgan Province	Afghanistan	OH-58D	Light Uitility Helicopter
Zabul Province	Afghanistan	UH-60L	Light Uitility Helicopter
		AH-64D	Attack Helicopter
		AH-1W	Attack Helicopter
		UH-1L	Light Uitility Helicopter

34 Sources: Anonymous, "International Security Assistance Force, 1 October 2009", *GlobalSecurity.org* http://www.globalsecurity.org/military/ops/oef_orbat_isaf_091000.htm (accessed November 6, 2014), Anonymous, "US Forces Order of Battle - January 2009: Ground Forces", *GlobalSecurity.org* (July 5, 2011) http://www.globalsecurity.org/military/ops/oef_orbat_toe_090100.htm (accessed November 6, 2014), and Anonymous, "US Forces Order of Battle - January 2009: Land Based Aircraft", *GlobalSecurity.org* (July 5, 2011) http://www.globalsecurity.org/military/ops/oef_orbat_air_090100.htm (accessed November 6, 2014). Numbers of aircraft are not given. However, whole task forces and squadrons were deployed, amounting to multiple dozens of aircraft.

3.9. US Air Order of Battle September 2011[35]

Location	Country	Type	Function
Al Udeid	Qatar	B-1B	Bomber
Al Udeid	Qatar	C-130	Intra-Theater Airlift
Al Udeid	Qatar	KC-135	Air-to-Air Refueling
Al Udeid	Qatar	RC-135	Airborne Intelligence
Bagram	Afghanistan	AH-64D	Attack Helicopter
Bagram	Afghanistan	C-130	Intra-Theater Airlift
Bagram	Afghanistan	CH-47	Medium Transport Helicopter
Bagram	Afghanistan	EA6B	Electronic Warfare
Bagram	Afghanistan	EC-130	Electronic Warfare
Bagram	Afghanistan	F-15E	Fighter-bomber
Bagram	Afghanistan	F-16C	Fighter-bomber
Bagram	Afghanistan	HH-60G	CSAR
Bagram	Afghanistan	MC-12W	ISR
Bagram	Afghanistan	OH-58D	Light Utility Helicopter
Bagram	Afghanistan	UH-60	Light Utility Helicopter
Kandahar	Afghanistan	A10C	CAS
Kandahar	Afghanistan	AH-64D	Attack Helicopter
Kandahar	Afghanistan	C-130	Intra-Theater Airlift
Kandahar	Afghanistan	C-27	Intra-Theater Airlift
Kandahar	Afghanistan	CH-47	Medium Transport Helicopter
Kandahar	Afghanistan	HH-60	CSAR
Kandahar	Afghanistan	MQ-1B	UAV
Kandahar	Afghanistan	MQ-9	UAV
Kandahar	Afghanistan	OH-58	Light Utility Helicopter

35 Sources:Anonymous, "Combat Runs on Battlefield Airborne Communications Node", *US Fed News Service, Including US State news* (February 10, 2017) http://search.proquest.com.nlda.idm.oclc.org/docview/1866983221/60AB4C6F3C264D21PQ/1?accountid=35226 (accessed February 19, 2017), Anonymous, "International Security Assistance Force - ISAF Order of Battle, September 2011", *GlobalSecurity.org* http://www.globalsecurity.org/military/ops/oef_orbat_isaf.htm (accessed November 6, 2014), and Anonymous, "United States Forces - Afghanistan Order of Battle, 30 September 2011: Land Based Aircraft", *GlobalSecurity.org* (November 21, 2011) http://www.globalsecurity.org/military/ops/oef_orbat_air.htm (accessed November 6, 2014).

Location	Country	Type	Function
Kandahar	Afghanistan	UH-60	Light Utility Helicopter
Mazar-e-Sharif	Afghanistan	AH-64D	Attack Helicopter
Mazar-e-Sharif	Afghanistan	CH-47	Medium Transport Helicopter
Mazar-e-Sharif	Afghanistan	F-16	Fighter-bomber
Mazar-e-Sharif	Afghanistan	UH-60	Light Utility Helicopter
Unknown	Afghanistan	E-11A Bombardier	BACN
Unknown	Afghanistan	EQ-4B Global Hawk	BACN

3.10. US Air Order of Battle December 2014[36]

Location	Country	Type	Function
Bagram	Afghanistan	Several Helicopters	SOF Support
Bagram	Afghanistan	C-130	Intra-Theater Airlift
Bagram	Afghanistan	MQ-1 / MQ-9	UAV
Bagram	Afghanistan	HH-60	CSAR
Bagram	Afghanistan	F-16	Fighter-Bomber
Bagram	Afghanistan	UH-60L	Medium Transport Helicopter
Bagram	Afghanistan	CH-47	Medium Transport Helicopter
Bagram	Afghanistan	HH-60	CSAR
Bagram	Afghanistan	King Air 300	Reconnaissance
Bagram	Afghanistan	MQ-12	UAV
Bagram	Afghanistan	MC-12	Reconnaissance
Jalalabad	Pakistan	MQ-1 / MQ-9	UAV
Jalalabad	Pakistan	AH-64D	Attack Helicopter
Kandahar	Afghanistan	MQ-9	UAV
Kandahar	Afghanistan	MQ-1	UAV
Kandahar	Afghanistan	E-11	Airborne C2
Kandahar	Afghanistan	MQ-1 / MQ-9	UAV
Kandahar	Afghanistan	UH-60L	Medium Transport Helicopter
Kandahar	Afghanistan	OH-58D	Light Utility Helicopter
Kandahar	Afghanistan	UH-60	Medium Transport Helicopter

36 Sources: Anonymous, "Task Force ODIN Afghanistan", *Website Afghan War News* http://www.afghanwarnews.info/units/taskforceodinafghanistan.htm (accessed February 8, 2016), Anonymous, "82nd Combat Aviation Brigade Today", *Website 82nd Aviation Association* http://www.82ndavn.org/ourpresent.html (accessed February 8, 2016), Anonymous, "1-230th Cavalry Regiment "Desperados"", *Website National Commission on the Future of the Army* http://www.ncfa.ncr.gov/sites/default/files/1-230%20ACS%20TNARNG%20Unit%20History%20Slideshow.pdf (accessed February 9, 2016), Anonymous, "Task Force Thor Afghanistan", *Website Afghan War News* http://www.afghanwarnews.info/units/task-force-thor-afghanistan.htm (accessed February 9, 2016), and Wesley Morgan, "Afghanistan Order of Battle, December 2014", *Website Institute for the Study of War* http://www.understandingwar.org/sites/default/files/AfghanistanOrbat_December2014.pdf (accessed February 9, 2016).

Summary

Summary

Information Age Airpower in Afghanistan

Development of the air campaign in Afghanistan and how it supported strategic and operational goals of civil and military policy makers between 2001 and 2016

During the decades preceding the terrorist attacks on September 11, 2001, the US Government, and to a lesser extent the North Atlantic Treaty Organization (NATO), had modernized their militaries to incorporate the promising possibilities of the information age, which is also known as the Revolution in Military Affairs (RMA). The RMA had a specially positive effect on the effectiveness of airpower. It made possible the scalable effects at locations and times that previously were prohibiting, such as mountainous or urban areas and during periods of darkness and/or adverse weather conditions. Operation *Desert Storm* of 1991 provided an example of airpower's increased effectiveness in the context of regular conflict, one that is characterized by a clash of more or less equal, large, mechanized, state directed armed forces. A handful of information age weapons systems had an impact out of proportion to their numbers. However, airpower's effectiveness in conflicts in which such a clash is absent, known by the catchall phrase of irregular warfare, is less clear. After the attacks of September 11, the United States and the coalition it led started operation *Enduring Freedom* (OEF). OEF lasted until January 1, 2015, when it was changed into operation *Freedom's Sentinel*. NATO participated between December 2001 and January 2015 with the International Security and Assistance Force (ISAF), which was turned into operation *Resolute Support*. During this period, a conflict existed that can be classified as irregular. Therefore, the conflict in Afghanistan between 2001 and 2016 offers an opportunity to evaluate the role of modern airpower in modern irregular warfare.

This evaluation fills distinct knowledge gaps. The discourse on irregular warfare largely ignores airpower application. Historiography about the Afghan conflict does not properly incorporate the air weapon. Reversely, the discourse of airpower application largely ignores irregular warfare. The consequence is that knowledge about irregular warfare and about the Afghan conflict is overly land-centric, while knowledge about airpower lacks proper incorporation of irregular warfare. Therefore, the central research question of this study is: what was the role of airpower during the conflict in Afghanistan during the period between 2001 and 2016, how did this role evolve, and how can this evolving role be explained? By investigating airpower application from the context of senior-level military commanders, this study effectively describes and explains the development of the air campaign that senior airmen planned and executed in Afghanistan in support of the strategic and operational goals that were formulated by senior civilian and military policy makers. The study poses three subquestions. The first subquestion is what the conceptual foundation of

airpower application in irregular environments was. The second subquestion is what the operational context of airpower application in Afghanistan was. Third subquestion is how airpower application changed between 2001 and 2016.

A frame of reference focuses the research. This frame is deducted from the discourse on military innovation and adaptation. This discourse overlaps with the discourse on irregular warfare and the historiography of the conflict in Afghanistan. Like those two bodies of knowledge, the discourse on military innovation and adaptation has a land-centric focus. Yet, this study is not primarily an investigation on airpower innovation, or of military innovation in general. Analysis of the discourse of military innovation and adaptation shows that it serves three purposes. First, the discourse is used to describe and explain historical developments. Second, the discourse attempts to validate generally applicable theory about military innovation. Third, it offers recommendations to enhance an organization's innovative capability. This study refrains from this last purpose. The research presented could be used for the second purpose, that of theory building, but only in conjunction with other research. This leaves the primary goal to be description and explanation of historical developments, in this case the roles of airpower during its application between 2001 and 2016 in Afghanistan. The benefit of this approach is that the discourse offers a set of driving factors that potentially explain developments of a set of manifestations. The manifestations in turn encompass most elements of the military métier senior leadership deems important when optimizing the performance of the military organization. Thus, the frame of reference consists of a set of manifestations that can be investigated on its changes and a set of drivers that offers potential explanations for these changes. It allows for research on broad topics covering long periods of time, such as airpower development in Afghanistan between 2001 and 2016, while retaining explanatory value. Inherent risks, such as a certain superficiality with regard to the manifestations and the risk of losing sight of elements that fall outside the frame of reference, are inevitable but acceptable, also considering the situation that many of the potential sources remain classified for the immediate future.

With these considerations in mind, the frame of reference of this study is operationalized with a focus on the following manifestations: strategy, plans and operations, doctrine, force levels and resources, command relationships, and education, training and lessons learned. Of those, strategy and plans and operations provide for the backbone of airpower development. For the explanations of their developments, this study investigates the following driving factors: technology, the operational environment, alliance politics, cultural norms, and leadership. Combined, these developments are placed in the context of the debate on airpower in irregular warfare.

Primarily, this research thus describes and explains airpower application in the context of its effectiveness in irregular conflicts. Combination of these elements lead to the following chapter outline: chapter one, the introduction, outlines the developments summarized above. Chapter two answers the first subquestion, that of the conceptual

foundation of airpower application in irregular environments, using the, largely submerged, debate about this topic. Chapter three outlines the operational context, which is a mix of analysis of the country of Afghanistan, historical application of airpower in this country, and of the conflict between 2001 and 2016. If and where applicable, chapters two and three also highlight relevant developments of manifestations and driving factors. Chapters four to seven describe and explain actual airpower application in Afghanistan between 2001 and 2016. The structure of these chapters is the same: a systematic description of developments of each of the identified manifestations, followed by an analysis using the identified driving factors, after which each chapter ends with a conclusion. Chapter eight provides the conclusion of the study.

Secondarily, some of the insights about the driving factors could provide a building block for development of theory on military innovation. An epilogue offers reflections about the process of innovation.

Chapter two showed that the body of knowledge about airpower application in irregular conflict for a long time showed a strong ground-centric approach, characterized by a supporting role of the air weapon which in addition was as non-lethal as possible. It was not really a debate. Reason for this was an institutional lack of interest on the part of the airmen on the topic of irregular conflict on the one hand, and scholarly consensus on the preferred method of airpower employment on the other. This changed under the influence of the publication of a doctrine about counterinsurgency (COIN) that the US Army and the US Marines published jointly in 2006. This *FM 3-24* codified the ground-centric approach. In addition, it did so in a time that the operational background, arduous irregular conflicts in Iraq and Afghanistan, provided a sense of urgency to the matter. Publication of the *FM 3-24* invoked opposition to the ground-centric approach. Initial opposition came from the US Air Force, which published an alternate doctrine about irregular warfare in 2007, but also from others who were of the opinion that the achievements of the RMA should have been incorporated in the codification. This study labeled this alternate approach the technology-centric approach, due to the focus on the new technologies. Relating publications collectively argued that the RMA promoted a much larger role for airpower in modern conflict, including in irregular conflict. A third approach, called the joint approach, refrained from dogmatic standpoints, and argued that airpower application in irregular conflict was dependent on context.

However, the collective body of publications did not develop into a mature debate between two or more opposing schools of thought, reaching mainstream literature. Rather, the stances of the authors were reflected in their positions about subtopics related to the application of airpower in irregular conflict, which in turn became topics of contention. These topics were: the role of violence in the conflict, types of missions the air weapon was most suitable to perform, the level of (western) ground forces that were required, command and control philosophy, relationship between air and ground

forces, usefulness of certain types of intelligence, the need for specialized aircraft, and the requirement to train indigenous air forces.

Analysis showed that the stances of the authors in relation to these topics correlated with their most likely stances about the influence of the RMA on airpower application in irregular conflict. The ground-centric approach acknowledged increased effectiveness as a result of the RMA, but refused to conclude that this fundamentally altered the way irregular wars needed to be fought. The RMA did not deliver fundamentally new capabilities, only improved ones. Those authors who were associated with the technology-centric approach argued otherwise. Technology could replace manpower. The joint approach acknowledged both and were possible integrated both standpoints.

Subsequent discussions evolved around subtopics rather than fundamental theories. The notion that technology could replace manpower implied that airpower could replace ground power. As this in turn could imply that air force could replace army and marines, discussions about the subtopics became influenced by inter-service friction. While these discussions sometimes became grim, close analysis of the contentious issues shows that the number of fundamental problems was limited to just one: the role of violence in irregular war. On this issue, the debate on irregular warfare and the debate on the RMA show signs of rapprochement. While application of airpower in irregular conflict, with its large influence of the population on strategic issues, should be very prudent in order to prevent unintended suffering of the civilian population and destruction of civilian infrastructure, lethal force was sometimes necessary. In addition, examination of the subtopics revealed that most alternative options on the contentious issues were not mutually exclusive, except for the command and control philosophy and the relationship between airpower and ground power. Exactly this element, relating to age-old problem of air-land integration, was susceptible to inter-service bickering, while the RMA provided for a solution to this problem in the form of the option to alter command relationships at short notice and over long distances.

So, a proper debate never developed, although discussions were sometimes grim. As a result, some fundamental topics, such as for instance the role of violence, remained unaddressed. In addition, many of the discussions took place while (air) operations in Afghanistan and Iraq were ongoing. As a fundamental solution was not reached, and part of the US military did not subscribe to the ground-centric views of the *FM 3-24*, various approaches were influencing conceptual foundations of airpower deployment in irregular warfare at the same time. All the while, the discussions showed that airpower application was influenced by the drivers of technology and culture, in this case service culture.

Chapter three argued that Afghanistan is a malign environment to conduct air operations in. The physical environment in general has a negative influence on aircraft performance. This does not render air operations impossible. It does however increase the workload of aircrews. Historically, the human environment also posed challenges for aircrews. The Mujahideen showed between 1979 and 1989 that they could significantly

hamper air operations performed by a technologically advanced air force like those of the Soviet Union. However, the development of western airpower continued, while those of the Afghans largely stalled after the end of the Afghan war of 1979 - 1989. This signified a relative decrease of Taliban effectiveness against western airpower. Nevertheless, the Taliban and Al Qaida could still influence air operations to some extent. Again, it increased the workload of the aircrews, although sound planning could mitigate some of the problems. Actions of opposing forces however did not lead to a decrease of air operations. Ground forces were also affected by these conditions, so the relative advantage of airpower's height, speed, and range remained.

Furthermore, analysis of the political developments within NATO and of the developments on the ground showed that the conflict could be divided into four phases:

- A phase with a center of gravity on large scale operations in a Counterterrorism (CT) context (2001 - 2002);
- A phase that mainly contained both CT and Stabilization and Reconstruction (S&R) operations (2002 - 2008);
- A phase in which the requirement for counterinsurgency (COIN) was recognized and actions were taken accordingly (2008 - 2012);
- A phase in which the main focus of effort was building and advising Afghan security forces (2012 - 2016).

Finally, chapter three showed the inhibiting influence of alliance politics on researched manifestations in Afghanistan. Lack of consensus about NATO's *raison d'être* led to differing national responses to requests for troop contributions in Afghanistan, varying from compliance to complete dismissal, and variations in between. Once arrived, these troops served with various degrees of restrictions, called national caveats. Both developments led to an absolute and relative shortage of force levels and resources in Afghanistan. It also complicated other operational elements, such as development of command relationships.

These elements influenced development of the air campaign, although it did not become apparent immediately in the period between late 2001 and early 2002. This period is covered in chapter four. On October 7, 2001, a coalition led by the United States commenced operation *Enduring Freedom*. Within the context of the Global War on Terror (GWOT), this operation was directed towards the terrorist organization Al Qaida and the Taliban-led government of Afghanistan that harbored them. The operational plan was innovative. After preparatory work was done by operators of the Central Intelligence Agency (CIA), a small number of special forces linked up with indigenous forces inside Afghanistan that opposed Taliban rule and were collectively known as the Northern Alliance. Amongst the special operators were airpower specialists, called Joint Terminal Attack Controllers (JTACs), who were trained and equipped to guide high-resolution sensors and high-precision ordnance from airplanes and satellites flying overhead to targets they

had identified in collaboration with the Northern Alliance fighters and their American colleagues manning headquarters outside the country. This availability of airpower was an exponent of the RMA that western militaries were implementing. The effects of implementation of stealth, precision, and information technologies allowed for various types of airpower application "on call" anywhere in Afghanistan within minutes, and at times and locations of own choosing. Thus, while the special forces helped the Northern Alliance in their tactical planning and execution, the JTACs among them could call in precision airstrikes within minutes when the Northern Alliance ran into resistance from Taliban and Al Qaida.

This broke the stalemate between Taliban and Al Qaida on the one hand, and the Northern Alliance on the other, while the latter helped the United States in the GWOT. Formulated differently, this "Afghan Model", as it became known, made information age airpower available to indigenous fighters in Afghanistan, and with positive effect. Within weeks, the Taliban was ousted from power, and Afghanistan was no longer a safe haven for Al Qaida. Even though the development of the plan that would become the blueprint of the Afghan Model was influenced by the landlocked position of Afghanistan, the coming winter, the political landscape of several Central-Asian countries, and last but not least, the availability of indigenous allies, this first phase showed that new technologies had profoundly influenced the manner western forces could fight. As far as the operational environment could be classified as "irregular", and this was at least partially the case, it could be argued that the RMA influenced the manner western militaries could counter irregular threats in much the same way it could conduct regular warfare. In this phase, the proponents of the technology-centric approach towards airpower in irregular warfare had a point.

However, the strategy that the Afghan Model supported contained a fundamental flaw: it lacked a clearly defined end state, and insufficiently addressed the post-conflict situation. Chapter five addresses the period between 2002 and 2008, in which the post-conflict situation became problematic. For Afghanistan, the strategic context of the GWOT had been translated into operational goals of regime change and dismantling of Al Qaida. While regime change was both feasible and measurable, it was unclear how the end state supported the GWOT. With regard to dismantling Al Qaida, it was not clear exactly when this organization was dismantled enough to determine when this goal was reached. In short, it was impossible to determine when victory could be declared. Yet, both within and outside the United States a general sense of victory dominated, and senior civilian and military policy makers assessed that OEF could continue with a smaller profile. The goal remained hunting remnants of Al Qaida and other terrorist groups in the context of Counterterrorism (CT). Meanwhile, NATO, from September 2001 onwards eager to join the endeavor but up and until then largely kept at bay by US policy makers in order to evade the need for decision making by consensus, was called upon by he international community

to conduct a mission in the context of Stabilization and Reconstruction (S&R). This was the primary mission of ISAF.

While this assessment of the operational environment initially could correspond with the actual situation, the latter soon changed. Popular support for Afghan government and the western forces decreased under the influence of remnants of the Taliban, Al Qaida, other terrorist groups, and the many other local and regional interest groups in Afghanistan. What seemed a clear situation that required a combination of nation building and hunting of terrorists evolved into an insurgency. This required a COIN response, but this requirement was not immediately recognized or acknowledged as such. OEF remained focused on the terrorists, and ISAF on nation-building. Because the US by then had started focusing on Iraq, and because NATO as an organization was unwilling or unable to muster the required force levels, these tasks were executed with relatively few forces. A new strategy was lacking, and the approaches of CT and S&R became a poor match with the environment, in which COIN was required. The result was that small contingents of western ground forces were scattered throughout Afghanistan and encountered an increasingly hostile and overwhelming environment in which both a target-centric counterterrorist approach low-profile S&R approach were inappropriate responses. The ground forces increasingly encountered ambushes, Improvised Explosive Devices (IEDs) and other tactics that are typically associated with an insurgency. By 2008, western forces faced an enduring operational stalemate.

In this phase, the role of airpower was markedly different from the previous one. Ground forces increasingly became dependent on airpower for their survival. This became visible in increase of intra-theater airlift, because troop transport and resupply by air was safer than via ground convoy. Also, airpower could support the effort on the ground by providing useful intelligence. Furthermore, the air weapon could support ground forces who were engaged in a Troops in Contact (TIC) situation directly with a mission type called Close Air Support (CAS). The RMA had increased performance of all these applications of airpower, and consequently, the air weapon was called upon more often than before. Yet, especially "kinetic" airpower application, i.c. CAS, contained a paradox. While precision air support saved lives of coalition ground forces, unintended damage and suffering further decreased popular support for the coalition. Formulated differently, tactical gains could invoke strategic backlash.

All concerned were well aware of this, but due to a lack of a sound strategy and absence of required force levels, both in the air and on the ground, the air weapon was one of the few assets that could provide leverage to troops in distress. Consequently, it was required to respond to immediate requests from ground forces, without many other options but with potential negative effects at the strategic level. To many, airpower became an inflexible emergency call. This situation was aggravated by the fact that two operations, OEF and ISAF, had two completely different command and control architectures but operated in the same area of operations. Combined with the fact that NATO was not able to deploy an

air component, ISAF was strongly dependent on US air assets, which had a different task and partly a different area of operations than ISAF. Consequently, a tug of airpower assets ensued between senior airmen of OEF and ISAF and between air commanders and ground commanders. All wanted to influence the manner in which airpower was applied in their sphere of influence. Or, formulated differently, they all wanted to mitigate airpower's negative effects according to their contexts. Between 2002 and 2008 a fundamental solution to the problem was not devised. A friendly fire incident induced effective but incremental changes. Command relationships became convoluted, as activities of OEF and ISAF increasingly were coordinated but not merged. In the mean time, airmen of all echelons labored to improve air support, mostly with technological adaptations to improve precision and coordination. While this was successful, these improvements could not compensate for a lack of sound strategy and the resulting lack of force levels. So, during this phase airpower was forced to conduct operations that strongly resembled those of traditional counterinsurgencies. These fitted within the ground-centric approach of airpower application in irregular warfare, although nobody was satisfied with the situation.

This situation changed between 2008 and 2012, which is covered in chapter six. From 2008 onwards, the United States took the lead in addressing the problem of the Afghan insurgency. This was immediately visible in practice. President Obama drastically increased the number of ground forces. Also, command relationships were streamlined further by positioning American generals on positions with dual authority, namely within ISAF and OEF command architectures. This "multi-hatting" of American commanders eased the problem of command relationships, including those of the air weapon, although both missions were still not formally merged. Most importantly, the surge of troops were part of a COIN approach that the US military adopted in Afghanistan. This was the overly land-centric approach as codified in the *FM 3-24*. So, the ground-centric approach towards airpower application in irregular warfare was implemented, but this time by design.

This resulted in a severe tightening of the Rules of Engagement (ROEs), and scrutiny of all incidents that invoked civilian casualties and collateral damage. The required transition by the military required external pressure by political masters, as was witnessed by the early dismissal of several senior civilian and military personnel. Among them were the Secretary and the Chief of Staff of the US Air Force, and the commander of ISAF. For the air weapon, the change of focus initially encompassed shift of most prominent missions from CAS towards less kinetic forms of airpower application, namely airlift and Intelligence, Surveillance and Reconnaissance (ISR). However, the ROEs were loosened a bit after it became clear they were too restrictive. It was a continuing search for balance between acceptable threat to the mission versus and acceptable threat to the force. In addition, another type of mission that already existed was stepped up, namely targeting of insurgent and terrorist leaders. This could be done with special operations, which were heavily supported by airpower. They could also be executed autonomously by the air weapon, including with the use of armed Unmanned Aerial Systems (UASs) like the MQ-9

Reaper. These systems were closely linked with the achievements of the RMA. While it can be argued that leadership targeting missions took place in a continuing CT context, they also could be part of the COIN approach. Hence, the ground-centric approach to airpower application in irregular conflict was not implemented in its pure form. Rather, it marked a shift towards a joint approach, in which the kinetic, target-oriented, and airpower-heavy orientation of the technology-centric approach co-existed with the non-kinetic, population-oriented, and ground power heavy orientation of the ground-centric approach co-existed side by side.

By 2012, the stalemate had been broken, and western forces had regained operational initiative. This set the conditions for the last phase, the rebuilding of the Afghan National Security Forces (ANSF), which in turn would create the preconditions for exit of western forces. Chapter seven describes this phase, which it could be argued, lasted until January 1, 2015, when the missions of ISAF and OEF ended. However, the actual developments did not adhere to this milestone, and analysis is extended into 2016. For the air weapon, the new phase encompassed a shift of focus from direct support to coalition and Afghan forces towards assessing, training, advising and assisting the fledgling Afghan Air Force (AAF), also more briefly known as air advising. Associated activities fell within the concepts of Foreign Internal Defense (FID) or Aviation Security Force Assistance (AvSFA), which, like CT, S&R, and COIN, fell within the overarching concept of irregular warfare. By now, most of the pressing problems of coalition forces had been solved, or at least made manageable. The mission gradually evolved into a training mission, in which all airpower application in the end needed to be executed by the Afghan air weapon. From an American perspective, it required expansion of existing procedures and structures. Air advising historically was a task of special forces, who conducted short and small missions to austere countries to improve operational effectiveness of already existing airpower organizations. In Afghanistan, this did not suffice. In terms of manpower, the demand exceeded the supply. Therefore General Purpose Forces (GPF) were required to execute these missions. In addition, the Afghan Air Force needed to built from scratch. This required conceptual expansion to include basic education on all of airpower's main and supporting functions. In short, what was required were relatively large units of regular military personnel who were trained and educated to perform air advising missions in a country that effectively did not have an air force.

Problems of the coalition during this timeframe were related to the operational results: while the Afghan Air Force made progress, and in the end was able to perform certain missions autonomously, in general it was unable to take over the tasks the coalition had executed before. Afghan culture, which was based on religion and loyalty to focus groups rather than to a state authority, undermined progress as measured by western standards. Hence, the Afghan Air Force did not reach self-sufficiency. This was partly induced by the coalition. The build-up of the Afghan Air Force was initiated relatively late, and schedules were tight. Moreover, the coalition still suffered from its main challenge, devising a

workable strategy. While each strategic adjustment resulted in increasingly specific guidelines, a lack of a clearly defined end state still prevented determination of the time which the mission could be considered accomplished. For the AAF, this meant that it was not defined exactly when it was self-sufficient enough. Meanwhile, the security situation again deteriorated after most western ground forces had left, the Taliban resurfaced, and the country had to deal with a new enemy by the name of Islamic State (IS). Hence, the need for direct air support by coalition air assets towards Afghan ground forces remained and even increased.

Paradoxically, from a western standpoint, the transition to a large extent was successful at the operational level. The United States erected units and educational institutions, updated doctrine, and deployed a large amount of air advisors. NATO belatedly followed on all accounts, although it in general participated with less fervor than the US. While self-sufficiency of the Afghan Air Force was not reached, the air advising organization was able to create a rudimentary Afghan air force that was able to conduct certain missions on its own. In this sense western military successfully adopted another element of the ground-centric approach to airpower application in irregular warfare, namely the requirement to build indigenous security forces. As elements of the technology-centric approach were firmly embedded into the plans and operations, this study considers this a step in the direction of the joint approach.

This study concludes in chapter eight that the role of the air weapon in Afghanistan was essential in all phases of the conflict between 2001 and 2016, but that its role changed markedly with each phase. It alternately supported the operational, tactical and strategic levels. As the roles changed, so did the driving factors. Technology was important during the first phase, political inability to formulate a coherent strategy and deliver the necessary force levels were dominant in the second. Leadership proved dominant in the third phase, and a cultural chasm between western and Afghan forces mostly influenced the last phase. Changing roles and drivers are powerful indications of pre-eminence of the joint approach of airpower application in irregular warfare. Contrary to the other two approaches, this approach allows for differing roles during different phases, depending on the operational situation. This coincides with the role the RMA had in developments in Afghanistan. The influence of the RMA in general was positive, but the visibility and impact varied with the phases. The RMA showed the most prominent influence in the context of the Afghan Model. Afterwards, it added new options in the form of leadership targeting with UASs. As for the traditional tasks and missions, the information age to some extent altered their dynamics, but did not fundamentally alter them. During the air advising phase the RMA was least visible.

Finally, the epilogue of this study provides some reflections about the process of military innovation and adaptation. It argues that, while the frame of reference can be useful for building theory about military innovation and adaptation, changing airpower application in Afghanistan between 2001 and 2016 shows a multifaceted set of processes,

rather than a unilateral development towards a clear end state that the current theories seem to suggest.

Samenvatting

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Information Age Airpower in Afghanistan

Ontwikkeling van de luchtcampagne in Afghanistan en hoe deze de strategische en operationele doelstellingen van civiele en militaire beleidsmakers ondersteunde tussen 2001 en 2016

Gedurende de decennia voorafgaande aan de terroristische aanslagen op 11 september 2001 hadden de Amerikaanse regering en in mindere mate de Noord-Atlantische Verdragsorganisatie (NAVO) hun krijgsmachten gemoderniseerd om de veelbelovende mogelijkheden van het informatietijdperk te incorporeren. Dit staat ook wel bekend als de *Revolution in Military Affairs (RMA)*. De RMA had een bijzonder positief effect op de effectiviteit van het luchtwapen. Het maakte schaalbare effecten mogelijk op locaties en tijden die voorheen onmogelijk waren, zoals bergachtige of stedelijke gebieden en in perioden van duisternis en/of ongunstige weersomstandigheden. Operatie *Desert Storm* in 1991 gaf een voorbeeld van de toegenomen effectiviteit van het luchtwapen in het kader van reguliere conflicten, conflicten die worden gekenmerkt door strijd tussen min of meer gelijke, grote, gemechaniseerde, en door een staat geleide strijdkrachten. Een handvol *information age* wapensystemen had een impact die niet in verhouding stond tot hun aantal. De effectiviteit van *airpower* in conflicten waarin een dergelijke botsing afwezig is, bekend door de verzamelnaam irreguliere oorlogvoering, is echter minder duidelijk. Na de aanslagen van 11 september begonnen de Verenigde Staten en de coalitie die zij leidde de operatie *Enduring Freedom (OEF)*. OEF duurde tot 1 januari 2015, toen het werd omgezet in operatie *Freedom's Sentinel*. De NAVO nam tussen december 2001 en januari 2015 deel aan de *International Security and Assistance Force (ISAF)*, die werd omgevormd tot operatie *Resolute Support*. Tijdens deze periode bestond er een conflict dat als irregulier kan worden geclassificeerd. Daarom biedt het conflict in Afghanistan tussen 2001 en 2016 een mogelijkheid om de rol van moderne *airpower* in moderne irreguliere oorlogvoering te evalueren.

Deze evaluatie vult verschillende kennislacunes. Het discours over irreguliere oorlogvoering negeert grotendeels de toepassing van *airpower*. De historiografie over het Afghaanse conflict negeert het luchtwapen grotendeels. Omgekeerd negeert het discours over *airpower* grotendeels irreguliere oorlogvoering. Het gevolg is dat kennis over irreguliere oorlogvoering en over het Afghaanse conflict gericht is op grondoptreden, terwijl kennis over *airpower* de juiste integratie van irreguliere oorlogvoering mist. Daarom is de centrale onderzoeksvraag van deze studie: wat was de rol van *airpower* tijdens het conflict in Afghanistan in de periode tussen 2001 en 2016, hoe evolueerde deze rol en hoe kan deze evoluerende rol worden verklaard? Door deze rol te onderzoeken vanuit de context van militaire commandanten op het operationele niveau beschrijft en verklaart deze studie de ontwikkeling van de luchtcampagne die door hoge commandanten gepland

en uitgevoerd werd in Afghanistan ter ondersteuning van de strategische en operationele doelen die werden geformuleerd door civiele en militaire beleidsmakers. De studie stelt drie deelvragen. De eerste deelvraag is wat de conceptuele basis was van *airpower*-toepassing in irreguliere omgevingen. De tweede deelvraag is wat de operationele context van *airpower*-toepassing in Afghanistan was. De derde deelvraag is hoe de het gebruik van het luchtwapen is veranderd tussen 2001 en 2016.

Een referentiekader stuurt het onderzoek. Dit kader is afgeleid van het discours over militaire innovatie en adaptatie. Dit discours overlapt met het discours over irreguliere oorlogvoering en de historiografie van het conflict in Afghanistan. Net als die discoursen, heeft het discours over militaire innovatie en adaptatie een focus op grondoptreden. Toch is deze studie niet in de eerste plaats een onderzoek naar innovatie van *airpower,* of van militaire innovatie in het algemeen. Een analyse van het discours over militaire innovatie en adaptatie laat zien dat het drie doelen kan dienen. Ten eerste wordt het discours gebruikt om historische ontwikkelingen te beschrijven en te verklaren. Ten tweede probeert het discours een algemeen toepasbare theorie over militaire innovatie te valideren. Ten derde biedt het aanbevelingen om het innovatief vermogen van een organisatie te verbeteren. Deze studie onthoudt zich van dit laatste doel. Het gepresenteerde onderzoek kan worden gebruikt voor het tweede doel, dat van theorievorming, maar alleen in combinatie met ander onderzoek. Het doel van de studie is derhalve beschrijving en verklaring van historische ontwikkelingen, in dit geval de rollen van *airpower,* tijdens de toepassing ervan tussen 2001 en 2016 in Afghanistan. Het voordeel van deze benadering is dat het discours een aantal verklarende factoren biedt voor ontwikkelingen van een reeks potentiële manifestaties. De manifestaties omvatten op hun beurt de meeste elementen van het militaire ambacht die het militaire management belangrijk vindt bij het optimaliseren van de prestaties van de militaire organisatie. Het referentiekader bestaat dus uit een reeks manifestaties die kunnen worden onderzocht op de wijzigingen en een reeks factoren die mogelijke verklaringen voor deze wijzigingen bieden. Het maakt onderzoek mogelijk naar brede onderwerpen over langere perioden, zoals de ontwikkeling van *airpower* in Afghanistan tussen 2001 en 2016, met behoud van de verklarende waarde. Inherente risico's, zoals een zekere oppervlakkigheid met betrekking tot de manifestaties en het risico om elementen buiten het referentiekader uit het oog te verliezen, zijn onvermijdelijk maar aanvaardbaar, ook gezien de situatie dat veel van de potentiële bronnen geclassificeerd blijven voor de nabije toekomst.

Met deze overwegingen in gedachten wordt het referentiekader van de studie geoperationaliseerd met een focus op de volgende manifestaties: strategie, plannen en operaties, doctrine, beschikbare eenheden en middelen, bevelsverhoudingen, en onderwijs, training en *lessons learned*. Daarvan vormen de strategie en de plannen en operaties de ruggengraat van de ontwikkeling van *airpower.* Voor de uitleg van hun ontwikkelingen onderzoekt de studie de volgende verklarende factoren: technologie, de operationele omgeving, alliantiepolitiek, culturele normen en leiderschap. Gecombineerd

worden deze ontwikkelingen geplaatst in de context van het debat over *airpower* in irreguliere oorlogvoering.

Primair beschrijft en verklaart dit onderzoek zodoende de toepassing van *airpower* in de context van de effectiviteit ervan in irreguliere conflicten. Combinatie van deze elementen leidt tot het volgende hoofdstukoverzicht: hoofdstuk één, de inleiding, schetst de hierboven samengevatte ontwikkelingen. Hoofdstuk twee beantwoordt de eerste subvraag, die van de conceptuele basis van *airpower*-toepassing in irreguliere omgevingen, met behulp van het, grotendeels verborgen, debat over dit onderwerp. Hoofdstuk drie schetst de operationele context, die een mix is van analyse van het land Afghanistan, de historische toepassing van *airpower* in dit land, en van het conflict tussen 2001 en 2016. Indien van toepassing belichten hoofdstuk twee en drie ook relevante ontwikkelingen van manifestaties en verklarende factoren. De hoofdstukken vier tot en met zeven beschrijven en verklaren de daadwerkelijke toepassing van *airpower* in Afghanistan tussen 2001 en 2016. De structuur van deze hoofdstukken is dezelfde: een systematische beschrijving van de ontwikkelingen van elk van de geïdentificeerde manifestaties, gevolgd door een analyse met behulp van de geïdentificeerde factoren, waarna elk hoofdstuk eindigt met een conclusie.

Secundair kunnen sommige inzichten over de verklarende factoren een bouwsteen vormen voor de ontwikkeling van theorieën over militaire innovatie. Een epiloog biedt reflecties over het proces van innovatie.

Hoofdstuk twee laat zien dat de hoeveelheid kennis over het toepassen van *airpower* in irreguliere conflicten lange tijd een sterke grondgerichte benadering vertoonde, gekenmerkt door een ondersteunende rol van het luchtwapen dat zich bovendien zo restrictief als mogelijk opstelde met betrekking tot het aanwenden van geweld. Het was niet echt een debat. Reden hiervoor was een institutioneel gebrek aan belangstelling van de kant van de *airmen* voor het onderwerp van irreguliere conflicten enerzijds, en wetenschappelijke consensus over de geprefereerde toepassing van *airpower* anderzijds. Dit veranderde onder invloed van de publicatie van een doctrine over *counterinsurgency (COIN)* die de Amerikaanse landmacht en de Amerikaanse mariniers gezamenlijk publiceerden in 2006. Deze *FM 3-24* codificeerde de grondgerichte aanpak. Bovendien deed het dat in een tijd dat de operationele achtergrond, de moeizame irreguliere conflicten in Irak en Afghanistan, een gevoel van urgentie aan de zaak gaven. Publicatie van de *FM 3-24* initieerde verzet tegen de grondgerichte benadering. De eerste oppositie kwam van de Amerikaanse luchtmacht, die in 2007 een alternatieve doctrine publiceerde over irreguliere oorlogvoering, maar ook van anderen die van mening waren dat de verwezenlijkingen van de RMA in de codificatie had moeten worden opgenomen. Deze studie noemde deze alternatieve aanpak de technologie-gerichte benadering, vanwege de focus op de nieuwe technologieën. Publicaties die worden geassocieerd met deze benadering stelden dat de RMA een veel grotere rol voor *airpower* bij moderne conflicten bevorderde, ook bij irreguliere conflicten. Een derde benadering, de gezamenlijke of *joint* aanpak genoemd, zag

af van dogmatische standpunten en voerde aan dat de toepassing van *airpower* bij irreguliere conflicten afhankelijk was van de context.

Het verzamelde geheel van publicaties ontwikkelde zich echter niet tot een volwassen debat tussen twee of meer tegengestelde stromingen in gerenommeerde literatuur. Integendeel, de standpunten van de auteurs werden weerspiegeld in hun standpunten over subonderwerpen met betrekking tot de toepassing van *airpower* in irreguliere conflicten, die op hun beurt onderwerp van conflicten werden. Deze onderwerpen waren: de rol van geweld in het conflict, soorten missies waarvoor het luchtwapen het meest geschikt was om uit te voeren, de hoeveelheid (westerse) grondtroepen die nodig was, filosofie van commandovoering, de relatie tussen lucht-en grondtroepen, de bruikbaarheid van bepaalde soorten inlichtingen, de behoefte aan gespecialiseerde vliegtuigen en de vereiste om inheemse luchtstrijdkrachten te trainen.

Analyse toonde aan dat de standpunten van de auteurs met betrekking tot deze onderwerpen correleerden met hun meest waarschijnlijke standpunten over de invloed van de RMA op *airpower*-toepassing in irreguliere conflicten. De grondgerichte benadering erkende een verhoogde effectiviteit als gevolg van de RMA, maar weigerde te concluderen dat dit de manier waarop irreguliere oorlogen moesten worden gevoerd fundamenteel veranderde. De RMA leverde geen fundamenteel nieuwe mogelijkheden, alleen verbeterde mogelijkheden. De auteurs die in verband werden gebracht met de technologie-gerichte benadering redeneerden anders. Technologie kan mankracht vervangen. De *joint* aanpak erkende en integreerde waar mogelijk beide standpunten.

Latere discussies evolueerden rondom deze onderwerpen in plaats van over fundamentele theorieën. Het idee dat technologie mankracht zou kunnen vervangen impliceerde dat *airpower "ground" power* zou kunnen vervangen. Omdat dit op zijn beurt kon betekenen dat een luchtmacht leger en mariniers kon vervangen, werden de discussies over deze onderwerpen beïnvloed door wrijvingen tussen de krijgsmachtdelen. Hoewel deze discussies soms grimmig werden, toont een nauwkeurige analyse van de controversiële kwesties aan dat het aantal fundamentele problemen beperkt was tot slechts één: de rol van geweld in een irregulier conflict. Wat dit punt betreft vertonen het debat over irreguliere oorlogvoering en het debat over de RMA tekenen van toenadering. Hoewel de toepassing van *airpower* in irreguliere conflicten, met zijn grote invloed van de bevolking op strategische ontwikkelingen, zeer voorzichtig moet zijn om onbedoelde schade en lijden van de burgerbevolking te voorkomen, was aanwending van dodelijk geweld soms nodig. Bovendien bleek uit onderzoek van de onderwerpen dat de meeste alternatieve opties inzake de controversiële kwesties elkaar niet uitsluiten, behalve voor de commandovoeringfilosofie en de relatie tussen luchtmacht en grondmacht. Precies dit element, gerelateerd aan een eeuwenoud probleem van integratie van lucht en land, was gevoelig voor onderlinge ruzies tussen de krijgsmachtdelen, terwijl de RMA een oplossing voor dit probleem bood in de vorm van de mogelijkheid om bevelsverhoudingen op korte termijn, en over lange afstanden, aan te passen.

Er is dus nooit een goed debat ontstaan, hoewel de discussies soms grimmig waren. Als gevolg hiervan bleef een aantal fundamentele onderwerpen ongeaddresseerd, waaronder bijvoorbeeld de rol van geweld. Bovendien vonden veel van de discussies plaats terwijl de (lucht) operaties in Afghanistan en Irak aan de gang waren. Omdat een fundamentele oplossing niet werd bereikt en een deel van de Amerikaanse krijgsmacht de grondgerichte benadering van de *FM 3-24* niet onderschreef, waren verschillende benaderingen tegelijkertijd van invloed op de conceptuele grondslagen van inzet van het luchtwapen in irreguliere conflicten. Ondertussen toonden de discussies aan dat de toepassing van *airpower* werd beïnvloed door de verklarende factoren van technologie en cultuur, in dit geval de technologie van de RMA en de culturen van de respectievelijke krijgsmachtdelen.

Hoofdstuk drie betoogt dat Afghanistan een kwaadaardige omgeving is om luchtoperaties uit te voeren. De fysieke omgeving heeft in het algemeen een negatieve invloed op de prestaties van vliegtuigen. Dit maakt luchtoperaties niet onmogelijk. Het verhoogt echter de werklast van vliegtuigbemanningen. Historisch gezien vormde de Afghaanse menselijke omgeving ook uitdagingen voor *airpower.* De Mujahideen toonden tussen 1979 en 1989 dat ze de luchtoperaties van een technologisch geavanceerde luchtmacht, zoals die van de Sovjet-Unie, aanzienlijk konden belemmeren. Echter, de ontwikkeling van het westerse luchtwapen ging door, terwijl die van de Afghanen grotendeels vastliepen na het einde van de Afghaanse oorlog van 1979 - 1989. Dit gaf een relatieve achteruitgang weer van de effectiviteit van de Taliban tegen westerse *airpower.* Desalniettemin konden de Taliban en Al Qaida de luchtoperaties nog steeds beïnvloeden. Dit verhoogde de werklast van de vliegtuigbemanningen eveneens, hoewel een goede planning sommige van de problemen kon verzachten. Acties van de tegenstanders hebben echter niet geleid tot een afname van luchtoperaties. Grondtroepen werden ook beïnvloed door deze omstandigheden, dus het relatieve voordeel van de hoogte, snelheid en het bereik van *airpower* bleef.

Analyse van de politieke ontwikkelingen binnen de NAVO en van de ontwikkelingen ter plaatse heeft bovendien aangetoond dat het conflict in vier fasen kan worden verdeeld:

- Een fase met een zwaartepunt bij grootschalige operaties in een context van *Counterterrorism (CT)* (2001 - 2002);
- Een fase die voornamelijk zowel CT- als *Stabilization and Reconstruction (S&R)* bevatte (2002 - 2008);
- Een fase waarin de vereiste voor *Counterinsurgency (COIN)* werd erkend en dienovereenkomstig actie werd ondernomen (2008 - 2012);
- Een fase waarin de aandacht vooral uitging naar het opbouwen van adviseren van Afghaanse veiligheidstroepen (2012 - 2016).

Tot slot toonde hoofdstuk drie de remmende invloed van de alliantiepolitiek op de onderzochte manifestaties in Afghanistan. Gebrek aan consensus over de *raison d'être* van

de NAVO leidde tot verschillende nationale reacties op verzoeken om troepenbijdragen in Afghanistan, variërend van medewerking tot volledige afwijzing, en variaties daartussenin. Eenmaal aangekomen, opereerden deze troepen met verschillende gradaties van beperkingen, *national caveats* genoemd. Beide ontwikkelingen leidden tot een absoluut en relatief tekort aan eenheden en middelen in Afghanistan. Het compliceerde ook andere operationele elementen, zoals de ontwikkeling van bevelsrelaties.

Deze elementen hebben invloed gehad op de ontwikkeling van de luchtcampagne, hoewel dit niet meteen duidelijk werd in de periode tussen eind 2001 en begin 2002. Deze periode wordt behandeld in hoofdstuk vier. Op 7 oktober 2001 begon een coalitie onder leiding van de Verenigde Staten operatie *Enduring Freedom*. In het kader van de *Global War on Terror (GWOT)* was deze operatie gericht tegen de terroristische organisatie Al Qaida en de door de Taliban geleide regering van Afghanistan die haar bescherming bood. Het operationele plan was innovatief. Nadat voorbereidende werkzaamheden waren verricht door leden van de *Central Intelligence Agency (CIA)*, maakte een klein aantal speciale eenheden contact met een verband van inheemse strijders tegen de Taliban, die gezamenlijk bekend stond als de Noordelijke Alliantie. Onder de speciale troepen bevonden zich *airpower*-specialisten, *Joint Terminal Attack Controllers (JTACs)* genaamd, die waren getraind en uitgerust om hoge-resolutie sensoren en uiterst precieze wapens te geleiden van vliegtuigen en satellieten die boven het operatiegebied vlogen naar doelen die zij in samenwerking met de Noordelijke Alliantie hadden geïdentificeerd, of die waren geïdentificeerd door hun collega's die hoofdkwartieren buiten Afghanistan bemanden. Deze beschikbaarheid van *airpower* was een exponent van de RMA die westerse krijgsmachten hadden geïmplementeerd. De effecten van de implementatie van stealth-, precisie- en informatietechnologieën maakten het mogelijk om overal in Afghanistan binnen enkele minuten verschillende soorten *airpower*-applicaties "op afroep" te gebruiken op zelf gekozen tijdstippen en locaties. Terwijl de speciale troepen de Noordelijke Alliantie hielpen bij hun tactische planning en uitvoering, konden de JTACs onder hen binnen enkele minuten precisie bombardementen aanvragen op momenten dat de Noordelijke Alliantie tegenstand ontmoette van Taliban en Al Qaida.

Dit brak de patstelling tussen Taliban en Al Qaida aan de ene kant, en de Noordelijke Alliantie aan de andere kant, terwijl de laatste de VS hielp in de GWOT. Anders geformuleerd, maakte dit "Afghaanse Model", zoals het bekend werd, de *information age airpower* beschikbaar voor inheemse strijders in Afghanistan, en met een positief effect. Binnen enkele weken werd de Taliban uit de macht ontzet en was Afghanistan niet langer een veilige haven voor Al Qaida. Hoewel de ontwikkeling van het plan dat de blauwdruk van het Afghaanse model zou worden, werd beïnvloed door de geografisch geïsoleerde positie van Afghanistan, de aankomende winter, het politieke landschap van verschillende Centraal-Aziatische landen en niet te vergeten de beschikbaarheid van inheemse bondgenoten, toonde deze eerste fase aan dat nieuwe technologieën de manier waarop westerse krijgsmachten konden oorlogvoeren diepgaand hadden beïnvloed. Voor zover de

operationele omgeving als "irregulier" kon worden geclassificeerd, en dit was op zijn minst gedeeltelijk het geval, wordt gesteld dat de RMA de manier beïnvloedde waarop westerse militairen irreguliere bedreigingen konden bestrijden, en wel op dezelfde manier waarop zij reguliere oorlogvoering konden uitvoeren. In deze fase hadden de voorstanders van de technologie-gerichte benadering van *airpower* in irreguliere oorlogvoering het gelijk aan hun zijde.

De strategie die het Afghaanse Model ondersteunde bevatte echter een fundamentele tekortkoming: het ontbrak aan een duidelijk gedefinieerde eindtoestand en de strategie had onvoldoende aandacht voor de situatie na afloop van het conflict. Hoofdstuk vijf behandelt de periode tussen 2002 en 2008, waarin deze post-conflictsituatie problematisch werd. Voor Afghanistan was de strategische context van de GWOT vertaald in operationele doelen van *regime change* en ontmanteling van Al Qaida. Hoewel *regime change* zowel haalbaar als meetbaar was, bleek het onduidelijk hoe de eindtoestand de GWOT ondersteunde. Met betrekking tot de ontmanteling van Al Qaida was het niet precies duidelijk wanneer deze organisatie voldoende was ontmanteld om te bepalen wanneer dit doel was bereikt. Kortom, het was onmogelijk om te bepalen wanneer de overwinning kon worden uitgeroepen. Toch domineerde zowel binnen als buiten de Verenigde Staten een algemeen gevoel van overwinning en beoordeelden senior civiele en militaire beleidsmakers dat OEF met een kleiner profiel kon worden voortgezet. Het doel bleef het jagen op restanten van Al Qaida en andere terroristische groeperingen in het kader van CT. Ondertussen was de NAVO, reeds vanaf september 2001 enthousiast om mee te doen maar tot dan toe grotendeels afgehouden door Amerikaanse beleidsmakers om de behoefte aan besluitvorming door middel van consensus te omzeilen, door de internationale gemeenschap opgeroepen om een missie uit te voeren in de context van S&R. Dit was de primaire missie van ISAF.

Hoewel deze beoordeling van de operationele omgeving aanvankelijk kon overeenkomen met de feitelijke situatie veranderde de laatste snel. Steun van de bevolking voor de Afghaanse regering en de westerse strijdkrachten verminderde onder invloed van restanten van de Taliban, Al Qaida, andere terroristische groeperingen en de vele andere lokale en regionale belangengroepen in Afghanistan. Wat een duidelijke situatie leek waarin een combinatie van natievorming en jacht op terroristen noodzakelijk was, evolueerde tot een opstand. Dit vereiste een COIN-antwoord, maar deze behoefte werd niet onmiddellijk als zodanig herkend of erkend. OEF bleef gericht op de terroristen, en ISAF op natievorming. Omdat de VS zich inmiddels op Irak hadden gericht en omdat de NAVO als organisatie niet bereid of in staat was om de vereiste troepen te verzamelen, werden deze taken met relatief weinig troepen uitgevoerd. Er ontbrak een nieuwe strategie en de benaderingen van CT en S&R pasten niet in een omgeving waarin COIN nodig was. Het resultaat was dat kleine contingenten van westerse grondtroepen verspreid over Afghanistan waren en een steeds vijandiger en overweldigender omgeving tegenkwamen waarin zowel een *target-centric* contraterrorisme-aanpak als een *low-profile* S&R-aanpak geen

oplossing boden. De grondtroepen kwamen steeds meer in aanraking met hinderlagen, geïmproviseerde explosieven (IEDs) en andere tactieken die typisch worden geassocieerd met een opstand. Tegen 2008 stonden de westerse strijdkrachten voor een langdurige operationele impasse.

In deze fase was de rol van *airpower* aanzienlijk verschillend van de vorige. Grondtroepen werden steeds afhankelijker van *airpower* voor hun overleving. Dit werd zichtbaar in de toename van luchttransport binnen Afghanistan, omdat troepentransport en bevoorrading door de lucht veiliger waren dan via grondkonvooi. Ook zou *airpower* de inspanning op de grond kunnen ondersteunen door inlichtingen te verschaffen. Bovendien kon het luchtwapen grondtroepen die betrokken waren bij een *Troops in Contact (TIC)*-situatie direct ondersteunen met een missie-type met de naam *Close Air Support (CAS)*. De RMA had de prestaties van al deze toepassingen van *airpower* verbeterd en daarom werd het luchtwapen vaker dan vroeger ingeschakeld. In het bijzonder de "kinetische" *airpower*-toepassing, i.c. CAS, bevatte echter een paradox. Terwijl precisieondersteuning levens redde van grondtroepen van de coalitie, verminderde nevenschade de steun van de bevolking voor de coalitie verder. Anders geformuleerd, winst op tactisch niveau konden verlies betekenen op strategisch niveau.

Alle betrokkenen waren zich hiervan goed bewust, maar door een gebrek aan een goede strategie en afwezigheid van de vereiste troepenmacht, zowel in de lucht als op de grond, was het luchtwapen een van de weinige troeven die troepen in nood konden gebruiken. Het luchtwapen was zodoende gedwongen te reageren op onmiddellijke verzoeken van grondtroepen, zonder veel alternatieve opties maar met potentiële negatieve effecten op strategisch niveau. Voor velen werd *airpower* een "inflexibele noodoproep". Deze situatie werd verergerd door het feit dat twee operaties, OEF en ISAF, twee volledig verschillende bevelslijnen hadden maar in hetzelfde operatiegebied opereerden. Gecombineerd met het feit dat de NAVO geen luchtcomponent kon mobiliseren, was ISAF sterk afhankelijk van Amerikaanse *airpower*, die een andere taak had en deels opereerde in een ander operatiegebied dan die van ISAF. Als gevolg hiervan ontstond een strijd om invloed op het luchtwapen tussen luchtcommandanten van OEF en ISAF en tussen grondcommandanten en luchtcommandanten. Allen wilden de manier waarop *airpower* werd toegepast in hun invloedssfeer beïnvloeden. Of, anders geformuleerd, ze wilden allemaal de negatieve effecten van *airpower* verminderen in overeenstemming met hun context. Tussen 2002 en 2008 is er geen fundamentele oplossing voor het probleem ontwikkeld. Een *friendly fire* incident leidde tot effectieve maar incrementele veranderingen. Bevelslijnen werden gecompliceerd, omdat activiteiten van OEF en ISAF in toenemende mate gecoördineerd werden maar niet werden samengevoegd. In de tussentijd werkten *airmen* op alle echelons aan het verbeteren van de luchtsteun, meestal met technologische aanpassingen om de precisie en coördinatie te verbeteren. Hoewel dit succesvol was, konden deze verbeteringen een gebrek aan een goede strategie en het daaruit voortvloeiende gebrek aan troepen en middelen niet compenseren. Dus tijdens

deze fase werd *airpower* gedwongen operaties uit te voeren die sterk op die van traditionele *counterinsurgencies* leken. Deze pasten binnen de grondgerichte benadering van *airpower*-toepassing in irreguliere oorlogvoering, hoewel niemand tevreden was met de situatie.

Deze situatie veranderde tussen 2008 en 2012, welke wordt behandeld in hoofdstuk zes. Vanaf 2008 nam de Verenigde Staten het voortouw bij het aanpakken van het probleem van de Afghaanse opstand. Dit was meteen zichtbaar in de praktijk. President Obama verhoogde het aantal grondtroepen drastisch. Ook werden bevelsverhoudingen verder gestroomlijnd door Amerikaanse generaals op posities met dubbele autoriteit te plaatsen, namelijk binnen zowel ISAF- als OEF-bevelslijnen. Deze "*multi-hatting*" van Amerikaanse commandanten verzachtte het probleem van commandoverhoudingen, inclusief die van het luchtwapen, hoewel beide missies nog steeds niet formeel samengevoegd waren. Het belangrijkste was dat de *surge* van troepen deel uitmaakte van een COIN-aanpak die de Amerikaanse krijgsmacht in Afghanistan aannam. Dit was de grondgerichte aanpak zoals gecodificeerd in de *FM 3-24*. De grondgerichte benadering van *airpower*-toepassing in irreguliere oorlogvoering werd dus geïmplementeerd, maar dit keer met opzet.

Dit resulteerde in een sterke aanscherping van de *Rules of Engagement (ROEs)* en gericht onderzoek naar alle incidenten die burgerslachtoffers en nevenschade hadden veroorzaakt. Deze transitie door de krijgsmacht vereiste externe druk van politieke superieuren, getuige het vroegtijdige ontslag van verschillende senior civiele en militaire beleidsmakers. Onder hen waren de secretaris en de stafchef van de Amerikaanse luchtmacht en de commandant van ISAF. Voor het luchtwapen behelsde de verandering van focus initieel een beweging van meest prominente missies van CAS naar minder kinetische vormen van *airpower* toepassing, zoals luchttransport en *Intelligence Surveillance, and Reconnaissance (ISR)*. De ROEs werden echter iets versoepeld nadat duidelijk werd dat ze te restrictief waren. Het was een voortdurende zoektocht naar evenwicht tussen een aanvaardbare bedreiging van de missie versus een aanvaardbare bedreiging van de troepenmacht. Bovendien werd een ander type missie dat al bestond uitgebreid, namelijk het aangrijpen van leiders van terroristische organisaties. Dit kon worden gedaan met speciale operaties, die zwaar werden ondersteund door *airpower*. Ze konden ook autonoom worden uitgevoerd door het luchtwapen, inclusief met gebruikmaking van bewapende onbemande systemen zoals de MQ-9 *Reaper*. Deze systemen waren nauw verbonden met de verworvenheden van de RMA. Hoewel kan worden beargumenteerd dat missies gericht op terroristisch leiderschap plaatsvonden in een doorlopende CT-context, kunnen ze ook onderdeel zijn van de COIN-aanpak. Vandaar dat de grondgerichte benadering van het toepassen van *airpower* in irreguliere conflicten niet in zijn pure vorm werd geïmplementeerd. Het betekende veeleer een verschuiving naar een *joint* aanpak, waarbij de kinetische, doelgerichte en airpower-zware oriëntatie van de technologie-gecentreerde benadering bestond naast de niet-kinetische, op de bevolking georiënteerde en grondtroepen-zware oriëntatie van de grondgerichte benadering.

Tegen 2012 was de patstelling verbroken en hadden de westerse strijdkrachten opnieuw operationeel initiatief verkregen. Dit schiep de voorwaarden voor de laatste fase,

de wederopbouw van de Afghaanse nationale veiligheidstroepen, die op hun beurt de voorwaarden dienden te scheppen voor terugtrekking van de westerse troepen. Hoofdstuk zeven beschrijft deze fase die, zo zou kunnen worden beargumenteerd, duurde tot 1 januari 2015, toen de missies van ISAF en OEF eindigden. De feitelijke ontwikkelingen hielden zich echter niet aan deze mijlpaal en de analyse wordt uitgebreid tot 2016. Voor het luchtwapen omvatte de nieuwe fase een verschuiving van de focus van directe luchtsteun voor coalitie en Afghaanse troepen naar het beoordelen, trainen, adviseren en assisteren van de jonge *Afghan Air Force (AAF)*, ook wel bekend als *air advising*. Verwante activiteiten vielen binnen de concepten van *Foreign Internal Defense (FID)* of *Aviation Security Force Assistance (AvSFA)*, die net als CT, S&R en COIN binnen het overkoepelende concept van irreguliere oorlogvoering vielen. Inmiddels waren de meeste prangende problemen van de bondgenootschappelijke samenwerking opgelost, of op zijn minst beheersbaar gemaakt. De operatie evolueerde geleidelijk naar een trainingsmissie, waarbij uiteindelijk alle luchtoperaties door het Afghaanse luchtwapen moesten worden uitgevoerd. Vanuit een Amerikaans perspectief vereiste dit uitbreiding van bestaande procedures en structuren. *Air advising* was historisch gezien een taak van speciale troepen, die korte en kleine missies naar afgelegen landen voerden om de operationele effectiviteit van reeds bestaande luchtmachtorganisaties te verbeteren. In Afghanistan was dit niet voldoende. Op het gebied van mankracht overschreed de vraag het aanbod. Daarom waren er *General Purpose Forces (GPF)* nodig om deze missies uit te voeren. Bovendien moest de Afghaanse luchtmacht vanaf nul opgebouwd worden. Dit vereiste conceptuele uitbreiding om basisonderwijs op alle hoofd- en ondersteunende functies van *airpower* op te nemen. Kort gezegd, wat nodig was waren relatief grote eenheden van regulier militair personeel dat was opgeleid en getraind om opleidings-en trainingsmissies uit te voeren in een land dat feitelijk geen luchtmacht had.

Problemen van de coalitie tijdens deze periode hadden betrekking op de operationele resultaten: terwijl de Afghaanse luchtmacht vooruitgang boekte en uiteindelijk in staat was om bepaalde missies autonoom uit te voeren was deze over het algemeen niet in staat om de taken over te nemen die de coalitie eerder had uitgevoerd. De Afghaanse cultuur, die gebaseerd was op religie en loyaliteit aan belangengroepen in plaats van aan staatsgezag, ondermijnde de vooruitgang gemeten naar westerse maatstaven. Daarom bereikte de Afghaanse luchtmacht geen situatie van zelfredzaamheid. Dit werd gedeeltelijk veroorzaakt door de coalitie zelf. De opbouw van de Afghaanse luchtmacht werd relatief laat ingezet en de tijdschema's waren krap. Bovendien leed de coalitie nog immer aan haar grootste euvel, het uitwerken van een werkbare strategie. Hoewel elke strategische aanpassing resulteerde in steeds specifiekere richtlijnen, belette een gebrek aan een duidelijk gedefinieerde eindtoestand nog steeds de bepaling van het moment waarop de missie als geslaagd kon worden beschouwd. Voor de AAF betekende dit dat het niet precies was gedefinieerd in welke situatie deze als zelfvoorzienend genoeg kon worden beschouwd. Ondertussen verslechterde de veiligheidssituatie opnieuw, nadat de meeste westerse grondtroepen waren vertrokken, de Taliban weer opdook en het land te maken kreeg met een nieuwe

vijand in de vorm van Islamitische Staat (IS). Het gevolg was dat de behoefte aan directe luchtsteun door *air assets* van de coalitie aan Afghaanse grondtroepen bleef en zelfs toenam.

Paradoxaal genoeg was de overgang vanuit een westers standpunt in grote mate succesvol op operationeel niveau. De Verenigde Staten heeft eenheden en onderwijsinstellingen opgericht, doctrines herschreven, en een groot aantal *air advisors* ingezet. De NAVO volgde op alle fronten, hoewel deze laat en in het algemeen minder begeesterd deelnam dan de VS. Hoewel de onafhankelijkheid van de Afghaanse luchtmacht niet werd bereikt, was de *air advising organization* in staat om een rudimentaire Afghaanse luchtmacht te creëren die in staat was bepaalde missies zelfstandig uit te voeren. In die zin namen de westerse krijgsmachten met succes een ander element over van de grondgerichte benadering van de toepassing van *airpower* in irreguliere oorlogvoering, namelijk de eis om inheemse veiligheidstroepen op te bouwen. Omdat elementen van de technologie-gerichte benadering ook stevig verankerd waren in de plannen en operaties, beschouwt deze studie dit als een stap in de richting van de *joint* aanpak.

Deze studie concludeert dat de rol van het luchtwapen in Afghanistan essentieel was in alle fasen van het conflict tussen 2001 en 2016, maar dat de rol ervan in elke fase opvallend veranderde. Het ondersteunde afwisselend de operationele, tactische en strategische niveaus. Naarmate de rollen veranderden, veranderden tevens de factoren van invloed. Technologie was belangrijk tijdens de eerste fase, politiek onvermogen om een coherente strategie te formuleren en de noodzakelijke troepenmacht te leveren waren dominant in de tweede fase. Leiderschap bleek dominant in de derde fase en een culturele kloof tussen westerse en Afghaanse troepen beïnvloedde vooral de laatste fase. Veranderende rollen en factoren van invloed zijn krachtige aanwijzingen van het op de voorgrond treden van de *joint* benadering van *airpower*-toepassing in irreguliere oorlogvoering. In tegenstelling tot de andere twee benaderingen biedt deze aanpak mogelijkheid tot verschillende rollen in verschillende fasen, afhankelijk van de operationele situatie. Dit valt samen met de rol die de RMA had in de ontwikkelingen in Afghanistan. De invloed van de RMA was over het algemeen positief, maar de zichtbaarheid en impact verschilden per fase. De RMA toonde de meest prominente invloed in de context van het Afghaanse model. Daarna heeft het nieuwe opties toegevoegd in de vorm van *leadership targeting* met onbemande systemen. Wat de traditionele taken en missies betreft, veranderde de RMA in zekere mate hun dynamiek, zonder ze fundamenteel te veranderen. Tijdens de trainingsmissie was de RMA het minst zichtbaar.

Tot slot biedt de epiloog enkele beschouwingen over het proces van militaire innovatie en adaptatie. Het betoogt dat, hoewel het referentiekader nuttig kan zijn voor het bouwen van theorie over militaire innovatie en adaptatie, een veranderende toepassing van *airpower* in Afghanistan tussen 2001 en 2016 een veelzijdige set van processen vertoont, in plaats van een ondubbelzinnige ontwikkeling naar een duidelijke eindtoestand. Dit is in tegenstelling tot wat de huidige theorieën lijken te suggereren.

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Science and military practice have been two of my interests that came to accompany me during my entire adult life thus far. Right after high school I was drafted into the Dutch army as a crewmember of a main battle tank. Although the draft initiated my interest in military affairs, it did not lead to my aspiration to become a military professional yet. I wanted to sharpen my scientific skills first. This I did by studying history at the University of Amsterdam. Luckily, I was able to incorporate my military interest into my studies. Military history was receiving increased attention at the time, with Herman Amersfoort as the first professor in the field at the University of Amsterdam. He guided me through the latter part of the study and supervised my master's thesis. So did Wim Klinkert, who then was docent of military history at the Royal Military Academy in Breda, and in that position also supervised my internship there. Almost exactly two decades ago, in December 1999, I earned my master's degree in contemporary history, with virtually all electives chosen within the realm of military history.

During the two decades that followed I first attended the Royal Military Academy as a cadet in order to become an officer of the Royal Netherlands Air Force (RNLAF). Having studied military history, the realization that my personal interest in the military transcended the strictly practical elements of the military métier came as no surprise to me. However, I also came to realize that scientific knowledge about how militaries function in their environment could benefit from hands-on experience. This translated into a military career path in which I alternated between positions with a practical or operational approach, including three operational deployments, and positions that involved instruction, teaching, and knowledge development. The latest of these assignments was that of docent, teaching airpower theory and application at the Faculty of Military Sciences (FMS) of the Netherlands Defense Academy (NLDA), under auspices of the chief of the cluster War Studies, Frans Osinga.

In the process, my personal interests turned into a solid conviction that the combination of scientific knowledge and knowledge of military operational best practices can have the potential to enhance the ability of military leaderships to make wise decisions, especially in political and operational environments that are becoming increasingly complex and dynamic. Therefore, this study is the fruit of what evolved into my ambition to be an "officer-scholar": a scientifically educated practitioner of the military métier.

As an airpower professional in an era in which the RNLAF for the most part was engaged in operations in Afghanistan, for me it was only logical to choose air operations in Afghanistan as the topic for a dissertation. Luckily, Frans Osinga was of the same opinion, and already had processed the bureaucracy of the NLDA in preparation of the arrival of a Ph.D. candidate. As Herman Amersfoort would become promoter of this project, our

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When I started the project, it was not commonplace (yet) for the Dutch defense organization to remove military officers from their primary occupation, and allow them to spend years writing a study with a primary scientific goal rather than a policy goal or an operational goal. This became problematic when the Dutch defense organization faced massive budget cuts. For me, it resulted in diversion of attention to other activities than strictly scientific ones, with inevitable delay of the research as a result. Still, the organization was able to allow me sufficient time to finish my manuscript. Of course, I am grateful to the Dutch Ministry of Defense and the RNLAF, the organizations that allowed me the time and resources to finish the project. But, organizations do not make these decisions, people in them do. Benevolence and patience of many commanders and colleagues within these organizations allowed me the time and freedom of maneuver to continue and ultimately finish my project, despite delays. Therefore, I'm indebted to the following colleagues, who, in alphabetical order, give face to the impersonal terms "Ministry of Defense" and "RNLAF", and worked with me and for me in order to make bureaucracy do something it was not tailored to do, especially not in times of austerity: Robert Adang, Jan-Paul Apon, Peter de Boer, Marc Exterkate, Erica Hendriks, Paul Mulder, Vincent Lengkeek, Wilbert Ligtenberg, Marcel Scholten, Roel Schut, Andre Steur, Daan Storm van Leeuwen, Ton Tieland, Bertil van Geel, Emile van Duren, Sybren van Klaarbergen, and Erik van de Ven.

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This study examines the effects of the Revolution in Military Affairs (RMA) on the effectiveness of airpower in irregular environments, focusing on the Afghan campaign (between 2001 and 2016) as a case study.

During regular conflicts, which are typically fought between state-led armies, the RMA has greatly enhanced airpower's ability to pursue desired effects. Although the extent of airpower's effectiveness is still subject of debate, the positive influence of the RMA is relatively undisputed. This is, however, not the case in irregular conflicts, which are characterized by the fight against elusive enemies that do not operate as regular, state-led armies. Pundits with various backgrounds have differing opinions about the way the RMA has influenced airpower's effectiveness in such conflicts. Consequently, there is an ongoing debate on the preferred role of airpower in irregular war.

This study concludes that in Afghanistan, airpower's effectiveness increased across the board as a result of the RMA. However, the extent of this increase and the extent to which air warfare contributed to disruption of irregular actors differed strongly between the various phases of the conflict. Whereas spectacular results could be discerned in the "counterterrorist" phase, the "counterinsurgency" and "air advising" phases yielded less increase in air power effectiveness. Therefore, the conclusion emphasizes an approach that acknowledges different airpower roles in different phases of irregular conflict.

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