

## Institutt for forsvarsstudier (IFS)

Tollbugt. 10, 0152 Oslo, Norge

*Institutt for forsvarsstudier* er en faglig uavhengig institusjon som forvaltningsmessig er underlagt Forsvarets skolesenter (FSS), og som står under tilsyn av Rådet for forsvarsstudier med representasjon fra Forsvarets overkommando, Forsvarsdepartementet, Forsvarets høyskole og Universitetet i Oslo. Instituttet driver forskning innenfor tre områder: Militærteori og strategiske studier, norsk sikkerhetspolitikk, forsvarpolitikk og forsvarskonsept, og internasjonale konflikt- og samarbeidsmønstre.

*Direktør: Professor Rolf Tamnes*

*Forsvarsstudier* tar sikte på å være et forum for forskningsarbeider innenfor institusjonens arbeidsområder. De synspunkt som kommer til uttrykk i publikasjonen, står for forfatterens egen regning. Hel eller delvis gjengivelse av innholdet kan bare skje med samtykke fra forfatteren.

*Redaktør: Tom Kristiansen*

## Norwegian Institute for Defence Studies (IFS)

Tollbugt. 10, N-0152 Oslo, Norway

*Institutt for forsvarsstudier - Norwegian Institute for Defence Studies* is an independent institute administratively attached to the Norwegian Defence Education Centre. Its activities are supervised by the Council for Defence Studies, composed of representatives from the Defence Command, the Ministry of Defence, the National Defence College, and the University of Oslo. The Institute conducts independent research on military theory and strategic studies, on Norwegian defence and security issues, and on international patterns of conflict and cooperation.

*Director: Professor Rolf Tamnes*

*Forsvarsstudier - Defence Studies* - aims to provide a forum for research papers within the field of activities of the Norwegian Institute for Defence Studies. The viewpoints expressed are those of the authors. The author's permission is required for any reproduction, wholly or in part, of the contents.

*Editor: Tom Kristiansen*

Trykk: Hamtrykk A/S

ISSN 0333-3981

# Air Power 2000

## Review Essays on Contemporary Air Power Thought

John A. Olsen

## Table of contents

Preface .....	3
The Importance of Review Essays .....	7
<i>Tom Clancy with General Chuck Horner: Every Man a Tiger: The Gulf War Air Campaign</i> .....	11
The Legacy of Vietnam .....	11
Preparing for the Next Battle .....	14
The Air Campaign .....	18
Overall Assessment.....	21
<i>Benjamin S. Lambeth: The Transformation of American Air Power</i> .....	24
From Rolling Thunder to Desert Storm.....	24
Operation Desert Storm and the Post-Cold War Era .....	27
Operation Allied Force and Beyond .....	31
Air Power Transformed and the Future.....	33
Overall Assessment.....	34
<i>Shaun Clarke: Strategy, Air Strike and Small Nations</i> .....	37
The Current Air Power Debate .....	37
A Discussion of Strategy, Air Strike and Small Nations .....	40
Overall Assessment.....	47

<i>Peter W. Gray (ed.): Air Power 21: Challenges for the New Century</i> .....	50
The Icarus Syndrome .....	50
A Synopsis of Air Power 21.....	52
Overall Assessment .....	61

<i>John A. Warden III &amp; Leland A. Russell: Winning in FastTime: Harness the Competitive Advantage of Prometheus in Business and Life</i> .....	64
The Genesis of Winning in FastTime.....	64
A Synopsis of Winning in FastTime.....	68
Imperative One: Design the Future.....	70
Imperative Two: Target for Success.....	71
Imperative Three: Campaigning to Win.....	72
Imperative Four: Finish with Finesse .....	73
An Assessment of Winning in FastTime.....	74

## Preface

These review essays were written throughout 2001, and subsequently published in *The Royal Air Force Air Power Review*. They are attempts to suggest and evaluate books that will deepen and widen our understanding of air power as a military and political concept. The books were selected because they approach the subject from different angles, at the same time as they bring out all-important questions that should be addressed by officers and civilians alike.

I am very grateful to the Air Power Review editorial board, particularly the Chairman, Group Captain Peter W. Gray, and the Head of the Historical Branch (RAF), Seb Cox, for allowing this reprint. I would also like to thank my colleagues at the Royal Norwegian Air Force Academy who have contributed to these essays. I would particularly like to mention Dr Nils Naastad, Mr Øistein Espenes, Mrs Patricia Aresvik, Mrs Anne-Marie Gorset, Lieutenant Colonel Ole Jørgen Maaø and Major Morten Karlsen. Additionally, Dr H.P. Willmott and Dr Alan Stephens have provided both motivation and insight to the observations expressed in these essays.

*General (ret.) Charles Albert Horner* embodies a considerable amount of air power history. He was awarded pilot wings in 1959, spent two tours flying combat missions in Vietnam, was in charge of the American-led air campaign in Operation Desert Storm and ended his military career as commander-in-chief of the unified US Space Command (CINCSpace) in 1994. He was consequently in charge of perhaps the most successful air campaign ever fought, and allegedly his assignment as commander of the Space Command proved to be a "seminal event" with respect to bringing the space and fighter communities closer

together. Although Horner has given numerous interviews, appeared before Congress on several occasions and participated in conferences world-wide, one appreciates finding his personal experiences collected in one volume. He explores together with Tom Clancy the origin, evolution and execution of the air campaign against Iraq with reflections and perspectives on the maturity of the United States Air Force (USAF) and the art of air power on the strategic, operational and tactical levels of warfare.

In *The Transformation of American Air Power* RAND-analyst Benjamin S. Lambeth argues that the United States has witnessed, over the last two or three decades, a non-linear growth in air power's ability to contribute to the outcome of joint operations. Although many factors have played their part in this development, the author emphasises that air power's increased leverage is a result of "stealth", precision and "stand-off" capabilities combined with the expanded battle space awareness made possible by recent developments in C4ISR (Command, Control, Communications and Computers - combined with Information, Surveillance and Reconnaissance). Lambeth advances his thesis by taking us on an excursion from the failures of Rolling Thunder to the mixed performances of Deliberate Force and Allied Force, via the epitome of Desert Storm. He does not, however, argue that air power can win wars single-handedly, or that air power is universally applicable, but that recent developments have increased the *relative* combat potential of air power considerably *in comparison to* that of other force elements. The work is as such a timely and comprehensive survey that merits attention by those interested in the utility of contemporary aerospace power and the larger debate on defence investments. Lambeth's scholarly work goes neatly together with the personal experiences of General Horner's *Every Man A Tiger* narrative.

In *Strategy, Air Strike and Small Nations* Wing Commander Shaun Clarke examines the fundamentals of air power strategy

and explores the potential of offensive air power in the context of small-to-medium-sized defence forces. The approach is refreshing on at least two accounts: it provides a framework that goes deeply into air power theory on the one hand, and it accounts for a plausible strategy outside the American setting on the other hand. This review essay presents the current air power debate on strategic thought, discusses Shaun Clarke's thesis, and finally provides a brief assessment of the author's contribution to the existing literature. In essence, the author suggests three propositions that partly change the terms of reference on the traditional perception of strategic air power applicability. First, "in limited war, small nations need not aspire to unconditional surrender or the collapse of the enemy regime". Second, "the ultimate subject of war is the supreme decision-making body". Finally, "The large nation issue of air power primacy is a distraction to the true root of air power success - joint strategy". Deriving from these propositions, Clarke arrives at his own strategy, "SPOT bombing", which focuses on persuasion and high-impact rather than the traditional concept of overwhelming force intending to paralyse the belligerent state.

Group Captain Peter W. Gray, former Director of Defence Studies in the Royal Air Force, is the editor of *Air Power 21*, where distinguished British analysts examine air power challenges for the new century. The book is about re-evaluating air power strategy, accepting that overwhelming force is not the only viable option; it is about realising that air forces must collaborate more intimately with surface forces and strengthen the combined arm; it is about moving beyond military "mirror-imaging" and accounting for the enemy deceptions and perceptions; and it is about developing a profound understanding of the political sensitivities that are always associated with air operations, and the command and control challenges therein. Gray et al. is about political and military acumen, accepting that things have changed and a restructuring is required since the days of the Cold War, where unity of purpose and effort could

be taken for granted. This review essay identifies these recurring themes, discusses the contributions and provides a brief assessment of the book as a whole.

Colonel (ret.) John A. Warden III and Leland A. Russell have co-authored *Winning in Fast Time*, where they translate Warden's ideas on air power strategy into the world of business. Although based on a recipe for succeeding in the commercial world, the work is really more about a mindset and an orientation to problem solving, and the importance of "Time", than it is a checklist. It is about how to think strategically rather than tactically, it is about how to deal with the problem rather than the symptoms, and it is about thinking positively rather than complaining about self-imposed restrictions. In essence Warden suggests four imperatives that should guide one's planning to win, whatever the business is: Design the Future; Target for Success; Campaign to Win; and Finish with Finesse. Additionally, Warden and Russell develop steps that have to be taken within each imperative, and finally they offer twelve Cardinal Rules that will help you succeed. This review essay traces the genesis of Warden's ideas, develops a synopsis of the presented thesis, and finally provides a brief assessment of the book.

*John A. Olsen*  
Trondheim, October 2002

## Introduction: The Importance of Review Essays

Øistein Espenes

Encyclopaedia Britannica defines an essay as "a literary composition of moderate length, dealing in an easy, cursory way with a single subject, usually representing the writer's personal experience and outlook". The presented essays in no respect deal with their subjects in an easy or cursory way, and contemporary air power theory can hardly be regarded as a single subject given its complexities. Still, this book is a collection of essays, or to be more precise, *review essays*, and as such they differ from traditional *book reviews*. Book reviews only rarely go into the thrust of the subject, seldom put the book in a wider perspective and have a tendency to serve as little more than a summary. A review essay gives a more thorough examination of the publication, compares it to a larger extent with existing literature, and thus becomes a method for dealing with the wider debate of the subject at hand. It becomes a tool for scrutinising literature. These review essays, therefore, allow for a scholarly founded analysis of recent publications on military theory generally and air power theory specifically. Such a systematic approach to this kind of literature is necessary for several reasons.

The Anglo-American sphere dominates current writing on modern air power theory. Britain, Australia and New Zealand provide several interesting analyses, but the Americans dominate the field. Although quite a few American contributions in the field should be acknowledged, the American dominance reveals certain problems. Given the fact that all writing, and interpretation of history, is culturally founded and contextual, there is a danger in allowing one nation to

dominate the literature to such an extent as is the case here. The American culture is one, which tends to seek formulas for success, and therein lies the fundamental belief that military action is a scientific action that can largely be scripted. The Western world in general tends to treat military strategy, theory and doctrine as something that has a normative function. The last decades' military thinkers, often with the Vietnam War as a point of reference, have praised Clausewitz for regarding prescriptions as secondary to analysis, but the Western literature seems, nevertheless, to have a desire to fulfil Jomini's vision of a universal and simple guide to the conduct of war. One should not blame officers for such inclinations, because the yearning to overcome the uncertainty in wars is understandable. Academics, on the other hand, however painful it may be, have a duty to create acceptance for the fact that there probably is no such thing as a general recipe for conducting war and employing air power. Niklas Zetterling, a Swedish author, provides a revealing dissection of John A. Warden's *The Air Campaign* – one of the most influential books on air power in the late 1980s and early 1990s. Zetterling reveals both analytical and empirical mistakes to such a degree that his conclusion questions Warden's academic integrity. One may speculate that Warden's book became so popular simply because it dealt with air power theory in such an "easy, cursory way": he wrote what airmen wanted to hear, and most readers did not take the time to research the matter more closely. The Zetterling case reveals an interconnected problem: he wrote his review essay in Swedish rather than in English and thus reached only a limited audience. It does not reduce the importance of the essay, but in order to enter the wider debate one needs to communicate in the language that dominates the field.

Another reason for appreciating Major Olsen's collection of review essays is that they give room for a discussion on the selected authors' positions along broader lines within the debate on air power. A large-meshed categorisation has been to examine whether an author belongs to the Douhetian tradition of strategic bombing or the Guderian and Wever tradition of integrating land- and air power. Or, more generally, is

the author advocating an "air power alone" solution, or promoting "joint" operations? In the current debate one seems to focus on the theories of *strategic paralysis* – attack the enemy leader directly, or *denial* – target the opponent's military forces. Thus, the current debate on how best to apply air power has a bipolar foundation that is rather extreme, and as a consequence much research in the field is artificially canalised along these lines. Moreover, both these categories for strategy require means beyond small air power nation capabilities. Although one should be careful when generalising, the dominating views are not easily applicable to all countries. Such categorisation can seem rather simplistic, but an attempt to reveal the authors' basic beliefs allows us to discuss the deeper socio-political outlook on which the various air power theories are based.

Review essays give busy (not to say lazy) readers the chance to keep up with the latest extensive production of air power literature, and they keep readers updated on the current debates within the field. The very nature of review essays does of course have disadvantages: you place your trust in the essay writer and his interpretation. Consequently, misconceptions rather than enlightenment may be the result. Review essays cannot, therefore, serve as a substitute for the books they seek to comment on – they are first and foremost supplements.

One final point to be made is that air power as a phenomenon has often been associated with aircraft, and thus of interest mostly to pilots and engineers. Air power as a military partner then became something that was primarily discussed within the defence community. It is only relatively recently that air power has reached such a wide audience and become an academic discipline at some universities. This is of course a consequence of the fact that air power has become the favourite military tool for the USA and NATO. But with the changing nature of warfare that seems to be in the making, one can only hope that officers, academics and politicians alike gain a more balanced and informed picture of what air power can and cannot do. To such an end, review essays play an important part in probing and understanding current lit-

erature that may in turn be the basis on which the politicians make their decisions. This publication by Major John Olsen is a valuable contribution.

### *Chapter I*

## **Tom Clancy with General Chuck Horner: *Every Man a Tiger: The Gulf War Air Cam- paign* (1999)**

### **The Legacy of Vietnam**

The Vietnam War remains a distressing memory for Chuck Horner, and in "The Big Lie" he provides severe criticism of the operations in which he participated.<sup>1</sup> He argues that the Washington administration did not have a clear objective of what it wanted to achieve with air power, and that the chosen Graduated Pressure strategy essentially asked the military to fight with its hands tied. The pilots were given politically selected targets, the rules of engagement prevented them from hitting the enemy where it hurt, they were not allowed to take initiatives on their own, and combined with target exclusion zones air power was prohibited from being used in an effective manner. Numbers of sorties and bombs dropped were hopeless measures of merit and the critical airfields north of Hanoi were off-limit for political reasons, thereby allowing MiGs and critical surface-to-air missile (SAM) sites sanctuaries. Although Horner accepts that there are always legitimate higher priorities than your master air campaign plan, and that the military strat-

<sup>1</sup>This review is a reprint of John Andreas Olsen, *The Royal Air Force Air Power Review*, Volume 4, Number Three, Autumn 2001, pp. 82-89.

egy had to be devised in order not to provoke the Soviet Union and China into war, he argues that it was mere stupidity not to attack the SA-2s that were overtly brought in by train from China and ships from the Soviet Union. The Americans were not allowed to attack SA-2s that were being set up, or MiGs that prepared for take-off, unless they were fired at first. Horner also faults the generals for having conducted the war inadequately and for not having stood up to their political masters.

On the lower levels of war he argues that there were unhealthy rivalry between commands and services, where one of the consequences was the Route Package system wherein no single commander had the overall responsibility for air assets. The US forces were consequently not mutually supportive, much of the tactics did not make sense and "the enemy could easily take advantage of the split in U.S. forces".<sup>2</sup> To cite one example on failed tactics, Horner argues that there was a belief in 1965 that SAMs were 100% effective. Consequently they had to avoid the radar detection zone, but the Strategic Air Command's doctrine subscribed that the large numbers of jets had to fly in trail over the target – "bomber stream tactics". The result was that the anti-aircraft artillery (AAA) proved far more lethal to low-level flying than the SAMs did in the first place. Additionally, as long as the Americans had to follow a scripted plan they were not only predictable to the North Vietnamese, but easy targets – "ducks in a row". Only when tactics were changed and the combined effect of the Wild Weasel and Electronic Counter Measure (ECM) Pods were introduced during his second tour to Vietnam did the SAM threat become manageable.

Horner uses strong words in describing his hatred for the generals, admirals and politicians who were responsible for the loss of some 58,000 American lives in a conflict that resulted in several million being killed:

If I had to be a killer, I wanted to know why I was killing; and the facts didn't match the rhetoric coming out of Washington [...] They just did not know what they wanted to do

<sup>2</sup>Tom Clancy with General Chuck Horner, *Every Man a Tiger*, (G. P. Putnam's Sons: New York, 1999), p. 88.

[...] they came up with strategies almost on a day-to-day basis [...] Our generals were bad news [...] I hated my own generals because they covered up their own gutless inability to stand up to the political masters in Washington [...] We taught our enemy to endure air attacks, we taught our enemy how to best defend against the world's greatest air power, and we taught our enemy how to defeat us in the end [...] I lied [...] I stripped myself of integrity [...] I learned that you cannot trust America [...] The result was that we were living a lie and had lost our pride [...] The policy of Vietnamization was a sham [...] We had become a Communist nation within the very organization that was to protect our nation from the threat of communism.<sup>3</sup>

Although some of these lessons have become compulsory reading in air power courses they are important as they shaped the mindset and focus that Horner brought with him when he prepared and led the air campaign in 1991. The first part of the book shows how the concepts of air power developed in Horner's mind.

In the aftermath of Vietnam the US military went through several reforms in order to improve their training, technology and concepts of operations. Horner shows his disgust for the so-called "Management Computation System" and praise for the exercise programmes that aimed at training the way you planned to fight. By the mid 1970s the USAF started to focus on the enemy actions and on "time" as war-winning factors, rather than scripted combat orders and procedures. Both "Aggressor Training" and "Red Flag" were exercises in dealing with Soviet tactics and doctrine that derived from the so-called "Fighter Mafia", a party to which Horner belonged. The group believed that the Cold War paradigm of air power solely as a bomber force with nuclear weapons did not account for what air power could do as a *war-fighting* and *war-supporting* instrument. This period witnessed the introduction of the F-15 and the lighter and more manoeuvrable F-16 - Horner's favourite aircraft.

Although these initiatives were important in reforming the USAF and bringing it out of the doctrinal doldrums of the

<sup>3</sup>Ibid, pp. 96-98 and 156.



Vietnam era, Horner stresses that motivation and sound leadership represents the cradle of productivity and success. He argues that the growing discipline, pride and belief in one's own profession came with individuals such as Generals Bill Kirk (Ninth Air Force Commander) and Wilber Creech. With the latter appointed commander of the Tactical Air Command (TAC) in 1978 truth, honesty and operational efficiency came together and gradually the air power dictum of "centralised control and decentralised execution" was implemented. The implications of the authors' observations are that the USAF witnessed the redemption from the Vietnam mistakes as it systematically sought to mitigate its shortcomings. When dedicated generalship was combined with the huge investments in military assets during the Carter and Reagan administrations the USAF came of age with the liberation of Kuwait. Horner argues that they "had to learn how to be an Air Force all over again", and in that process the two elements – the intellectual and the material – were part and parcel.

### Preparing for the Next Battle

In the second part of the book Horner takes the reader into the personalities and intricacies of the US military command during the Iraqi occupation of Kuwait. As commander of the Ninth Air Force and Central Command Air Force (CENTAF) he was General Schwarzkopf's air component commander in the Gulf region. While much has already been written about the early days of the crisis, Horner argues that there are two aspects that are imperative to understand the success of the air campaign. The first is personal relations and trust between commanders. Horner had gone to the National War College together with General Colin Powell, the Chairman of the Joint Chiefs of Staff, and Lieutenant General John Yeosack, CENTCOM's ground component commander, from August 1975 to June 1976. Additionally, the co-operation with the other component commanders during the crisis over Kuwait, Major General Walter Boomer and Vice Admiral Stan Arthur, worked superbly: "Unless you understand our relationships, then you really won't understand what went on in Desert Storm, all the good and bad

– and there was plenty of each".<sup>4</sup> Horner also managed to get good working relationships with several Arab military leaders, such as the commander of the Saudi Arabian Air Force, General Ahmed Behery, throughout the three years he had been assigned to the region.

The second imperative in understanding the success of the 1991 air campaign according to the authors is the concepts of operations that Horner introduced to Schwarzkopf in April 1990 in preparation for Exercise Internal Look - a mock war against "Country Orange" (Iraq). The air campaign planning did as such start well over a year before 2 August 1990, when Powell and Schwarzkopf acknowledged that the Americans were no longer fighting the Russians and that they had to plan for regional contingency in which Iraq was perceived as the main aggressor. In his briefing to Schwarzkopf Horner emphasised what he thought was important in order for air power to be effective. Firstly, he stressed that there should be a single air component commander so that all air assets were integrated into an overall war plan rather than operating with separate areas of responsibilities for the different services, as had been the case with "Rout Packs" in Vietnam. Secondly, Horner argued that it was unnecessary to build a new air defence system in the region since the Saudi Arabian Air Force solution was adequate. The challenge was rather how to integrate American forces with the existing infrastructure and pre-positioned material. Thirdly, Horner talked about defence against the Scuds, and together with Yeosack he argued that the Patriot was a suitable counter measure. Fourthly, Horner explained how he thought air power could support the Army in a fluid manoeuvre battle, and herein he introduced the concept of Push Close Air Support (Push CAS).<sup>5</sup> Finally, in the event of a chemical threat Horner suggested that several targets deep inside the Iraqi homeland should be attacked either to prevent him from using chemical weapons

<sup>4</sup>"Ten years after", *United States Naval Institute, Proceedings*, January 2001.

<sup>5</sup>Push CAS: "aircraft would be designated for CAS, but where, how, and when they would be used would be determined "on the run" by events in the field". Clancy with Horner (1999), p. 21.

or in retaliation to prevent further use. Horner's idea was that such an offensive would not be executed if Saddam Hussein was forced to keep his "chemicals in the barn".<sup>6</sup> The April briefing was important in several respects, but first and foremost Schwarzkopf came to trust Horner. Although the posture of Internal Look was much more defensive than the actual combat would be, there were several organisational, administrative and logistical matters that were dealt with or tested in July 1990. This would bear fruit a few months later during the real crisis since the main military commanders had the opportunity to work with each other. As history would have it Iraq invaded Kuwait before the new contingency plan (OPLAN 1002-90) was finished, and Schwarzkopf turned to Horner when the CENTCOM joint planning staff (J-3) proved incompetent in briefing an air option to the President at Camp David. Schwarzkopf admitted that he was no expert on air power, but he showed Horner full confidence. As it turned out he would arguably have a better relationship with Schwarzkopf than the Chief-in-Command (CINC) would have with many of his own Army commanders. Schwarzkopf chose in the end, as Eisenhower and MacArthur had done before him, to use air power to its fullest, even if he had the traditional view that wars are really decided on the ground.<sup>7</sup>

One of the qualities of Chuck Horner is his ability to be pragmatic: to network and provide his leadership with what it needs. He is also impressively observant and known for accepting new ideas as long as he is convinced that it is for the better of the cause. Against this background there has been much speculation to why he did not accept Colonel John A. Warden as part of his team. As it happened, since Horner was busy managing the bed-down in Saudi Arabia in early-mid August 1990, and Schwarzkopf did not trust his own staff in developing an air option, he approached the Air Staff. The response, Instant Thunder, which sought to impose strategic paralysis on Iraq,

<sup>6</sup>Lieutenant General Charles A. Horner, interview with Lieutenant Colonels Suzanne Gehri and Richard Reynolds, "The Desert Story Collection", 2 December 1991, p. 6.

<sup>7</sup>Richard P. Hallion, correspondence with author, 23 February 2001.

was developed by Warden's team in "Checkmate" and presented to Powell, Schwarzkopf and Horner. The former two found it attractive but Horner rejected it summarily. Horner found that Warden was "very intelligent", "a brilliant targeteer" and even a "genius" on some aspects of air power theory, but he found that he was "difficult to reason with" and that the briefing was flawed in several respects.<sup>8</sup>

In order to understand the dispute one must realise that at the time Horner was faced with 27 Iraqi divisions on the Kuwaiti border of Saudi Arabia and without any ground forces in defence. The stated mission was to defend Saudi Arabia and Horner's major concern was to develop a defensive air campaign plan that could deal with the imminent Iraqi threat. Warden, for his part, believed that if they went directly for key targets in Baghdad the Iraqi ground forces would prove irrelevant. Horner found Warden one-dimensional in his focus on leadership targets in Baghdad and did not find that he could rely on an offensive air campaign alone in coercing the Iraqi leadership to withdraw from Kuwait. Moreover, Horner found that opening the air campaign with a substantial attack on a major Arab capital without having fully tested the new technology of stealth and precision was partly a gamble, because if the precision-guided missiles did not perform well it could jeopardise American-Arab relations for decades to come. Horner also felt that Warden went too far in his suggestion of degrading Iraqi air bases and its command-and-control structure. In essence the air commander concluded that Warden was too academic, optimistic and broad in his approach to what air power could do rather than consider operational details and account for the non-linear and unscientific reality of air operations. Finally, Horner did not disagree with Warden that it was preferable to have Saddam Hussein overthrown, but he was not ready to commit to such intent without having the political acumen of conducting the actual replacement. In the end Horner chose to keep some of the ideas, as he decided to establish a strategic planning cell with the mandate of developing an executable offensive option. On bal-

<sup>8</sup>See also Tom Clancy, *Fighter Wing: A Guided Tour of an Air Force Combat Wing*, (New York: Berkley Books, 1995), pp. 35-60.

ance Warden's effort was the genesis of what became the strategic air campaign, Phase I of Operation Desert Storm, which was subsequently developed by a team led by Lieutenant Colonel David Deptula who became the key air campaign planner in the "Black Hole". Deptula made sure that the essence of the strategic focus envisioned in Instant Thunder was upheld throughout the planning, while at the same time incorporating Horner's larger concerns into building the actual attack plans.

### The Air Campaign

One of the air power questions that have taken centre stage in the debate after Operation Desert Storm is whether "strategic bombardment works".<sup>9</sup> Although there is little consensus on what the term implies, the concept of operations has departed significantly from the images of Dresden and Tokyo during the Second World War. The "Checkmate" and "Black Hole" air planners believed that the leadership of Saddam Hussein was the true centre of gravity, and thus all efforts should be brought to bear against his regime through the combination of stealth and precision. Horner argues that the precision attacks against the Iraqi command, control and communication targets in Baghdad were a huge success as far as the military strategy of gaining air supremacy was concerned, but that they failed miserably in disrupting the Iraqi leadership. Horner argues that Americans did not know how to use military power in order to overthrow the regime, and that they failed to understand that the Baath Party and Saddam Hussein could not be considered as one entity. He argues that that because they assumed "mirror imaging" they failed to understand the nature of a regime governed through fear:

The American planners failed to change the government of Iraq, because they did not understand how the government operated, and therefore how to attack it. They did not understand that Saddam stayed in power by creating an aura of cri-

<sup>9</sup>For an account arguing that strategic bombing does not work, see for example Robert A. Pape, *Bombing to Win: Air Power and Coercion in War*, (Ithaca: Cornell University Press, 1996).

sis that caused his people to need him more than they needed change. The fear that motivated the average Iraqi citizen's loyalty to Saddam was beyond their comprehension, because they had never experienced life under a repressive regime. They did not understand that they needed to target the fear, and that they did not have either the smarts or the intelligence analysis to destroy the hold of fear on the Iraqi people. They did not understand that the bombing of Iraq ensured that hold was increased and not decreased.<sup>10</sup>

Although many of these observations are valid one has to take issue with Horner's condemnation of this aspect of the strategic air campaign. It was never a declared objective to overthrow the Iraqi regime, and although a number of air planners hoped that the Iraqi leader would get killed, there was never a targeting focus that amounted to a "hunt for Saddam Hussein". The objective was to incapacitate rather than decapitate, and to state that one aspect of an overall effort "failed miserably" for not having achieved an objective that was not declared is seemingly unfair. Moreover, as it turned out, a significant number of Iraqis deserted and defected, and an unprecedented uprising against the Iraqi regime took place in the immediate aftermath. What part of the war actually triggered this mass movement is not easy to define, but there is no reason to conclude that the bombing of the Iraqi leadership had nothing to do with this. A considerable number of Iraqis chose to leave Baghdad at the beginning of the bombing, and as these were mainly middle- and upper class citizens it is reasonable to suggest that menace and uncertainty reduced the efficiency of the Iraqi state apparatus. The strategic air campaign ensured fog and friction on the strategic level of war, as Saddam Hussein was forced to operate from second- and third-rate command and control centres in the outskirts of Baghdad. He had to operate in an "underground" fashion, and some of the Iraqi accounts indicate that the uprising and defection was partly a result of them not knowing whether Saddam Hussein was dead or alive. The Iraqi leader and the Baath Party's lack of presence combined with the fact

<sup>10</sup>Clancy with Horner (1999), p. 374.

that any target in Baghdad could be bombed at will may have presented a vulnerability to the Iraqi people that gave them confidence enough to conclude that if they rebelled they would be on the winning side. To argue that the disruption of the command, control and communication system was reasonably successful while the bombing of government buildings proved ineffective could be contested, since leadership and command, control and communication can be considered as one entity. Furthermore, there is a good chance of a lucky strike when one goes for the core of an enemy's instruments of power, and as long as the leadership targets were visited by only a few per cent of the overall bombing tonnage one might suggest that it was worthwhile. Indeed, one might argue that not bombing regime targets could be perceived as lacking resolve. Finally, interviews with Iraqis indicate that Saddam Hussein has never been as weak as he was during the *Intifada* of March and April 1991, and thus only marginal efforts would have been required by the Coalition to overthrow the Iraqi leader at the time.<sup>11</sup> It is immensely difficult to assess the effectiveness of the strategic air campaign, but there is good reason to believe that Phase I contributed to the Iraqi regime being incapable of functioning as a strategic entity and consequently the Iraqi strategy was undermined.

Horner can to a much larger degree identify with Phase III of Operation Desert Storm, the unprecedented offensive air campaign against Iraqi troops occupying Kuwait. The objective was to prepare and partly destroy the battlefield so the Coalition ground forces would meet as little resistance as possible in their endeavour. The campaign was a huge success by most standards of measure, and as Horner goes into the actual execution one can derive several tactical imperatives that had operational significance. The A-10 is much praised for its role in deep-interdiction and reconnaissance, but Horner argues that it took so many hits from the Republican Guard forces that it had to concentrate on the less capable Iraqi troops on the front line.

<sup>11</sup>Captain John Andreas Olsen, "Operation Desert Storm: An Examination of the Strategic Air Campaign", Ph.D. submitted to De Montfort University, March 2000.

Secondly, much praise was given to the F-16 killer scout operations, the Push CAS system and F-111s and F-15Es ability to hit tanks at will – the so-called "tank plinking". Additionally, the "shelter-busting" proved successful, and so did the use of cockpit videotape as a source of intelligence. Combat Search and Rescue is, however, a role that Horner finds inadequately handled and urges future commanders to consider seriously. Horner also provides a brief account of the ground battle and air power's support of the ground commander's scheme of manoeuvre. Although Horner secretly hoped that Saddam Hussein would surrender without a ground battle he showed 100 per cent commitment in supporting the army endeavour. After the successful conclusion he would of course use every opportunity to refer to the ground war as the 10 per cent war since it amounted to only 100 hours of battle as opposed to 1,000 hours of air operations.

### Overall Assessment

General Horner would have been fully capable of writing this book on his own, but he chose to write it together with Tom Clancy. The style does naturally reflect this, at the expense of being more scholarly or academically narrated, but Horner's choice was considered closely: "I wanted to tell the story about air power, but I didn't want to lecture people. Let the story come out of the anecdotes. The other thing I wanted to do was create some romance, some passion about things that go on in the military. So it goes well beyond airplanes and bombs and strategy and national policy".<sup>12</sup> With this purpose in mind the objective of the book has been achieved and the partnership with Clancy makes sense. There is, however, much more about the history of air power that Horner could have contributed to as a primary and authoritative source, but which is only dealt with in brevity. An obvious point here would be the running battles between him and the army corps commanders on whether one should target deep or at the front. Another would

<sup>12</sup>Interview with Jamie Allen, CNN Interactive Senior Writer, "Tom Clancy, General Chuck Horner return to Desert Storm", [www.cnn.com/books/news/9905/12/clancy.horner/~hsindex.html](http://www.cnn.com/books/news/9905/12/clancy.horner/~hsindex.html)

be the air-ground bickering which resulted in the Republican Guard being allowed to escape to Basra partly because of the restrictive Fire Support Co-ordination Line (FSCL) at the end of the war. As it stands one has to go through a novel-style story telling, and although that is great in some respects, one has to search harder to get to the real heart of Horner's messages. Other than where Horner is directly speaking in his own words it is difficult to know whether we are getting Clancy's or Horner's opinion. While the effect of the Clancy partnership is that the informative discussions reach a wider audience than one would normally find for a book on air power, a point that should not be missed, it also lessens the value of the study as a contribution to historical records and academic research.

One might disagree with some of the authors' conclusions, and one might speculate that Horner exaggerates certain points in order to provoke and force people to think. On balance the book is both interesting and perceptive as it takes the reader through the debacles of Vietnam and the planning, development and implementation of the air campaign, with added assessment of what went well and not so well. The book provides several interesting aspects of the operational art of air power and how, when politics, parochialism and cultural sensitivities are considered, it becomes the art of the possible. The sophisticated and complex world of technology, weaponry and tactics is easily explained, and we get useful insight into the difficulty of running a coalition. The account traces the organisational, technological and doctrinal improvements of the USAF, as air power rose from the misfortune of South East Asia to the victory over Iraq two decades later. It is therefore rather comprehensive as it deals with the implications of that experience, the Goldwater-Nichols Act of 1986 and the conception of the Rapid Deployment Joint Task Force that resulted in the command system of the 1990s. The book touches upon issues like the problem of rotating personnel, the air tasking order and the challenges in battle damage assessment, in addition to thoughts on how Desert Storm was not a revolution in military affairs, but rather a vindication of the changes that had occurred in technology prior to and during the Reagan administration. We also get to see the human and emotional side of the air

commander. We are told that he is deeply religious, that he experienced near death in 1962, how he helped a Vietnamese family settle in the United States and how he felt personal responsibility for pilots who died under his command. He talks about the importance of family and friends, and these serious considerations are further entwined with humorous anecdotes, sharp critique and praise of colleagues, insight into the Arab culture, and perceptive thoughts on tactical and operational issues. Horner tells us about his daily concerns during his command and how he managed chaos, and importantly one gets a picture of how important logistics and organisation matters are in succeeding with air power. Although as a fighter pilot he could have maintained a focus on the sharp end of combat he chooses to provide a rather exhaustive view of what air power is in its widest sense. The way Horner contextualises air power from first hand experience is an important contribution to the available literature on both air power and the Gulf War. Horner is blunt and honest in his conclusions on what air power can and cannot do, and some readers will certainly disagree with the Airman's view, but Horner would not want it any other way as he does not claim to have all the answers.

## Chapter II

## Benjamin S. Lambeth: *The Transformation of American Air Power* (2000)

### From Rolling Thunder to Desert Storm

Rather than perceive air power as synonymous with bombs, Lambeth stresses that "in its totality, air power is a complex amalgam of hardware and less tangible but equally important ingredients bearing on its effectiveness, such as employment doctrine, concepts of operations, training, tactics, proficiency, leadership, adaptability, and practical experience".<sup>13</sup> With this definition in mind, the author's point of departure is that air power failed miserably in Vietnam, but that it is insufficient to accept the classic air power advocate argument that the misuse should be attributed to the limits *on* air power rather than limits *of* air power. Although the micro-management of Lyndon B. Johnson and Robert McNamara had a degrading effect on the application of air power, the author argues that there were organisational problems within the military force that did not allow it to be effective, and that there were considerable shortcomings in equipment, training, doctrine and operational proficiency that have to be accounted for in the overall assessment.

<sup>13</sup>Benjamin S. Lambeth, *The Transformation of American Air Power*, (Ithaca: Cornell University Press, 2000), p. 9. This review is a reprint of John Andreas Olsen, *The Royal Air Force Air Power Review*, Volume 4, Number Four, Winter 2001, pp. 150-157.

The air weapon was largely ill-suited in the proxy-fed war of insurgency in South Vietnam and the Rolling Thunder campaign was ineffective partly as a result of self-deceiving measures of effectiveness and needlessly self-imposed operational restrictions that hampered aerial combat and exposed aircraft to the North Vietnamese surface-to-air missile threat. Lambeth argues that the military commanders have to share the responsibility for the outcome as there was an unhealthy inter-service rivalry that among other things resulted in fragmented command and control arrangements. Moreover, through "mirror-imaging" the politicians, generals and admirals misinterpreted not only the determination of the enemy, but also the whole nature of the war at hand.<sup>14</sup> Lambeth provides an interesting account of the Vietnam experience, and most importantly he demonstrates its influence on the 1991 campaign: "It put all four services on a vector to perfect their air assets during the two decades that spanned Vietnam and Desert Storm".<sup>15</sup> Indeed, several improvements that were to be the hallmark in 1991 originated with the Linebacker campaigns: Laser-guided precision bombs (LGB) were tested, the "tank-plinking" idea was conceived, improvements in electronic warfare were found, the Vietnamese air defence system was largely suppressed, and finally, an integrated air offensive based on a plausible strategy and reasonable rules of engagements (ROE) was largely executed with an acceptable operational outcome.

The Vietnam experience, combined with the results of the Yom Kippur War of 1973, where Israel lost one-third of its air force in the combined Arab attack, and the increased mobilisation of Soviet forces during the "Second Cold War", led to a period of reform in the American military. Lambeth discusses how the United States improved its air posture over the subsequent years by describing the changes in USAF training and education, the modernisation of aircraft and equipment inventory, and the refining of American doctrine and concepts of operations. All these three elements played an important role in

<sup>14</sup>See particularly Mark A. Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam*, (New York: Free Press, 1989).

<sup>15</sup>Lambeth (2000), p. 53.

forming the air power capabilities witnessed in the 1990s and according to Lambeth the incorporation of leading-edge technology made for a quantum leap in operational efficiency. The author discusses the introduction of new aircraft, pays attention to the partnership between the USAF Tactical Air Command (TAC) and the US Army Training and Doctrine (TRADOC) centre, and assesses the utility of the Air-Land Forces Application (ALFA), AirLand Battle Doctrine and the Follow-On Force Attack (FOFA) plan. Although these concepts in theory gave the Army and the Air Force a common basis for planning through the "31 Initiatives",<sup>16</sup> the author identifies a substantial lack of understanding between the two parties.

Lambeth discusses how the USAF improved its inventory and concepts of operations throughout the 1970s and 1980s, but the author does not deal with the "Fighter Mafia" and the "Military Reform Movement" explicitly. The development of the technologically sophisticated F-15 and the more manoeuvrable F-16, combined with Colonel John R. Boyd's role therein, deserves consideration. One side argues that the Movement was critical of the very technology that makes air power and thus largely irrelevant in the wider defence debate, while the other side argues that John Boyd, William S. Lind, Norman Polmar, Pierre Sprey and others strongly influenced the military thinking that eventually prevailed during "Desert Storm".<sup>17</sup> According to Colin Gray, "John Boyd deserves at least an honourable mention for his discovery of the 'OODA [Observation-Oriented-Decision-Action] loop' [...] The OODA loop may appear too humble to merit categorisation as grand theory, but that is what it is. It has an elegant simplicity, an extensive domain of applicability, and contains a high quality of insight about strategic essentials".<sup>18</sup> In discussing John Boyd one is reminded of Martin van Creveld's comment on Machiavelli in his survey of military

<sup>16</sup>Richard G. Davis, *The 31 Initiatives: A Study of Air Force-Army Cooperation*, (Washington D.C.: Office of USAF History, 1987).

<sup>17</sup>See for example Grant T. Hammond, *The Mind of War: John Boyd and American Security*, (Washington D.C.: Smithsonian Institution Press, 2001).

<sup>18</sup>Colin Gray, *Modern Strategy*, (Oxford: Oxford University Press, 1991), pp. 90-91.

theorists: "The reason for including him in these pages is principally because he is *there* and because in other respects he is a commanding intellectual figure. Like a major general standing in the middle of the road, one must salute him whether one wants or not".<sup>19</sup>

Although Lambeth is predominantly concerned with American air power, he demonstrates both breadth and depth by including a discussion on how pertinent technology developed in the late 1970s was first tested with great success in the Israeli air operation against Syrian SA-6 and MiGs over the Bekaa Valley in June 1982. Operation Peace for Galilee is often forgotten when air campaigns of the 20<sup>th</sup> century are considered, but the campaign was important on several accounts.<sup>20</sup> Israeli supremacy in the field of electronic warfare meant that Syrian forces that sought to give battle were blinded and consequently collectively destroyed. The Israeli Air Force, having used drones to read Syrian radar signatures, used four Hawkeye AWACS/ESM and four E-3 ECM/ELINT aircraft both to jam Syrian radar and communications, and to direct strike aircraft into battle with great success. Moreover, secured voice and data links improved command and control considerably. Lessons from the Lebanon experience in mastering the highly developed air defence system, including the low-altitude environment, combined with Operation Eldorado Canyon, the limited air attack against Libya in 1986, gave the USAF confidence in the fact that it had managed to move beyond the bedraggled state of which it found itself in South East Asia a couple of decades earlier.

## Operation Desert Storm and the Post-Cold War Era

In his chapter titled "Desert Storm Revisited" Lambeth provides an informative and analytical review of the 1991 air campaign

<sup>19</sup>Martin van Creveld, *The Art of War: War and Military Thought*, (London: Cassell & Co, 2000), p. 73.

<sup>20</sup>See H.P. Willmott, "When Men Lost Faith in Reason", draft, 1999, chapter V, pp. 14-15.

against Iraq. Rather than dwell on basic facts he discusses the meaning and implications of those events. The author discusses how the air campaign was conceived, and in the process it becomes apparent that it did not resemble the Cold War inspired contingency plans for the region or the existing military doctrine.

Lambeth argues that the strategic attacks against Baghdad contributed to create friction, disorientation and confusion to the degree that Iraq's capacity for collective action was severely reduced, but he disagrees with the advocates of strategic bombing that the attacks on regime targets themselves had any significant effect on the Iraqi leadership's decision-making process. Rather, the author argues, the significance of the bombing resided firstly in the gaining of air control through negating the Iraqi air defence system and neutralising Iraqi air power, and thus depriving the Iraqis of any defence or situation awareness, and secondly, by enabling an attack on an enemy army wholesale with virtual impunity.<sup>21</sup> Lambeth maintains that air power's degradation of Iraqi ground forces in the Kuwaiti Theatre of Operations (KTO), including the Republican Guard, was far more influential in achieving the national objectives than the so-called strategic air campaign against regime targets in Baghdad.

Lambeth's analysis is roughly in consonance with General Horner's view, but there are several observations that might strengthen the case for "independent" air operations against leadership targets. Many elements of Saddam Hussein's leadership were forced to relocate and shift to back-up communications, the Iraqi leader's ability to communicate with his own population and military forces was considerably reduced, and the Baath Party's grip on power was temporarily loosened. As mentioned elsewhere, the Baath Party was not able to prevent an unprecedented level of desertion, ordinary Iraqis were suddenly willing to criticise their leader openly, and there was a bloody Civil War following the end of the Gulf War. The bombing of regime targets, although limited, left large parts of Baghdad in a vacuum, as parts of the security and intelligence network for the moment focused on their own survival rather

<sup>21</sup>Lambeth (2000), p. 117.

than the protection of the regime. The concurrent operations against leadership targets provided a factor of uncertainty and element of resolve that is difficult to account for, but the confusion and disorder certainly undermined the effectiveness of the Iraqi leadership. Although the 850 strikes against leadership and C<sup>3</sup> targets were not comprehensive enough to ultimately change the Iraqi leadership, it is fair to argue that bombing of strategic targets made a worthwhile contribution to Desert Storm's ultimate outcome. It was of course, in the end, the combination of attacks on the Iraqi war-making and war-fighting capabilities that gave the Coalition its unique leverage in arms.

Nonetheless, Lambeth provides a comprehensive explanation of the importance of Suppression of Enemy Air Defence (SEAD) operations on the one hand and the significance of combining JSTARS with precision engagements on the other.<sup>22</sup> That combination enabled an impressive "tank plinking" operation, and together with Push CAS and other tactical and operational procedures the Iraqi defeat was inevitable prior to the one hundred hour ground battle.<sup>23</sup>

Although Desert Storm was a watershed in modern American military history, the author argues that there were several important problems in terms of air tasking, air-ground co-ordination specifically and joint operations generally. Although all the US services accepted in principle the need for a single air commander there was continuous strife over allocations. The corps commanders preferred assets for their own area of responsibility rather than the second and third echelons of Iraqi forces that General Schwarzkopf considered most important. An extension of such disagreements resulted in "arm-wrestling" over the proper placement of the Forward Support Control Line (FSCL), and consequently the argument is put forward

<sup>22</sup>JSTARS is short for Joint Surveillance Target Attack Radar System. It identifies tanks, artillery and movement on the battlefield. It does for the ground picture what AWACS does for the air picture.

<sup>23</sup>Push CAS is, according to General Charles A. Horner, "that aircraft would be designated for [Close Air Support] CAS, but where, how, and when they would be used would be determined "on the run" by events in the field". See Tom Clancy with General Chuck Horner (Ret.), *Every Man a Tiger*, (New York: G. P. Putnam's Sons, 1999), p. 22.



that the Army's obsession with extending the line prohibited the USAF from conducting strikes that would possibly have prevented the Republican Guard's escape. The author provides different sides of that story and other disputes, and concludes the chapter with emphasising how air power came of age in 1991 although there are many caveats and qualifications that have to be considered carefully before one generalises about the overall utility of air power. One possible caveat for the future would be to believe that Saddam Hussein's actions and reactions represent future adversaries. The Iraqis were for example not able to take advantage of the fact that the large ground organisation of a modern air force is its Achilles' heel, and arguably Saddam Hussein made several military/strategic decisions during the battles that favoured the Coalition.

While technological progress was vindicated in 1991 the author next discusses the operational impact of stealth throughout the decade, including the advent of B-2. Lambeth explores a new generation of munitions, allowing for accurate through-the-weather ground-attack capabilities, and discusses the formal shift from a nuclear to a conventional bomber force that took place with the disestablishment of the Strategic Air Command (SAC) and the Tactical Air Command (TAC) in June 1992. The author demonstrates the improvements found in technology, which have been part of shaping the operational concepts for the Post-Cold War era, and as American bases world-wide are being severely reduced he speculates that the future might bring more attention to an Air Expeditionary Force (AEF). In evaluating operations in Bosnia, the author states that "Deny Flight" was a near disaster and "little more than a costly exercise in converting jet fuel into noise",<sup>24</sup> while Deliberate Force was a clear success and a good example of coercive diplomacy working with air power. As with the Israeli surprise attack on the Iraqi nuclear reactor in June 1981, it provided a clear case where air power was used not to win a war, but rather to achieve limited objectives. The combination of increased artillery fire, the credible threat of a ground attack and the diplomatic pressure played important parts in driving the Bosnian

<sup>24</sup>Lambeth (2000), p. 179.

Serb leadership to the negotiation table, but as Richard Holbrooke stated in his book, the air campaign made a "huge difference" in helping bring about the Dayton accord. The interaction between diplomacy and bombing is still under-researched, but one might speculate that it was in fact Milosevic's concessions in 1995 that persuaded large parts of the US political leadership in 1999 into believing that Milosevic would give up Kosovo after only three days of bombing.

### Operation Allied Force and Beyond

Lambeth discusses the three phases of Operation "Allied Force" by looking into what worked and what caused problems. The first phase intended to soften the Yugoslav integrated air defence system, but although the B-2 and other aircraft performed superbly, the Yugoslavs were highly professional as far as surface-to-air missiles and anti-aircraft-artillery operations were concerned. They did not disclose their positions easily and although NATO managed to gain air superiority there remained a certain threat to the pilots throughout the campaign. The Serbs were extremely good at imitating tanks and artillery with milk carton material and wood-burning stoves, and to this day the Serbs' ability to disperse and hide equipment is not known. The author presents theories on how the F-117 was shot down and he makes the pertinent point that when no friendly casualties becomes accepted as a goal of strategy, then one is judged by unreachable standards in this human endeavour of fog and friction called war. One becomes a victim of one's own success and at best it makes for an inefficient air campaign, as one operates in an environment where civilians and soldiers are mixed.<sup>25</sup>

The second phase envisaged attacks against military targets below the 44<sup>th</sup> parallel. Despite the escalation the intensity of effort averaged merely fifty strike-sorties a night throughout the first week. Without a ground threat, however, the Serbs

<sup>25</sup>According to General Short there was no defined Fire Support Coordination Line (FSCL) in the war over Kosovo. See Lieutenant General Michael C. Short, "An Airman's Lessons from Kosovo", in John Andreas Olsen (ed.), *From Manoeuvre Warfare to Kosovo?*, (Trondheim: The Royal Norwegian Air Force Academy, 2001), p. 264.

could disperse their ground forces in Kosovo, and with shortcomings in the intelligence cycle time combined with escalation on ethnic cleansing the Alliance came under severe criticism. The Apache fiasco is discussed, as are the collateral damage incidents that dominated the news, and thus influenced the choice of strategy.

The third phase included attacks directly on Belgrade. This was kept as a last resort for political reasons, and when it finally found acceptance it was halted by the unfortunate destruction of the Chinese Embassy. As with the al-Firdos incident in 1991, which was also an intelligence error, the strategic air campaign was halted for a period of time and the much-needed momentum was lost. The larger point which the author makes is that "tactical mistakes" may have "strategic implications", and with war being a continuation of politics by other means the larger geopolitical issues will and should always prevail. The author adheres to the view of Philip Meilinger and Tony Mason that airmen have to accept that air campaigns originate in a political situation, and thus the political considerations will always govern the choice of strategy. Lambeth furthermore discusses why Milosevic chose to give up in the end, the problems of interoperability, the problems of decision-making in such a diverse alliance and the dispute over strategy that occurred between Lieutenant General Michael C. Short and General Wesley Clark.<sup>26</sup> In essence Short argues that because of all the compromises that had to be made in both planning and executing the air campaign it was in the end a "victory by happenstance rather than a victory by design".<sup>27</sup>

The debate on "centres of gravity" has to a large extent focused on whether it is the political leadership commanding war, or the military forces occupying territory. In 1991 Colonel Warden was the strongest advocate of the former, and in 1999 Lieutenant General Short continued that line of argument. In an

<sup>26</sup>Dana Priest, "Air Chief Faults Kosovo Strategy", *The Washington Post*, 22 October 1999. See also John A. Tirpak, "Washington Watch: Short's View of the Air Campaign", *The Air Force Magazine*, 82, vol. 9, September 1999, pp. 43-49.

<sup>27</sup>Lieutenant General Michael C. Short, "An Airman's Lessons from Kosovo", p. 258.

attempt to "untangle" the air power debate Lambeth argues that those who focus on whether strategic bombing works, or whether air power can win wars single-handedly, are in reality approaching straw-men that will not provide useful answers in providing a vector for the future. Moreover, the battle over resources and doctrine is so linked to parochialism that no service is really capable of moving beyond their own concepts of operations and terms of reference. The author is certainly right in arguing that "the most enlightening view is the eclectic one that argues for avoiding formulaic, single-recipe solutions to the exclusion of all others".<sup>28</sup>

### Air Power Transformed and the Future

Lambeth provides an informative discussion on the possible synergy of air and space power in the near future. He argues that they are still considered as two separate professions with different cultures and that there is a lack of understanding between the two parties, but integration between the two has proved ever more successful after 1991. The spectrum of space missions includes space support, force enhancement, space control and force application, but the doctrinal work in the sphere is often seen as unrealistically visionary within the air power environment. There were, nevertheless, several space contributions to the Gulf War that are often forgotten or taken for granted. The Navstar global positioning system (GPS) came of age in Desert Storm, satellites were crucial in enabling the command, control and communication network that was used, and the space surveillance system proved important in dealing with the Scuds.

In the last chapter Lambeth concludes that improved battle space awareness, heightened aircraft survivability, increased weapons accuracy and improved understanding of concepts of operation witnessed today have made it possible for air power to achieve strategic effects without having to mass numbers. If, however, the promise of air and space power outlined in this book is to be realised in the future force posture, the author

<sup>28</sup>Lambeth (2000), p. 298.

suggests several recommendations that must be adhered to. First, air power proponents must candidly acknowledge what air power cannot do, and moreover, "to argue for an aerospace-centric U.S. defence strategy for all occasions is possibly the single most self-destructive error that air power proponents can make".<sup>29</sup> Second, airmen must accept that achieving and maintaining air superiority is a means to an end and that it does not amount to achieving a military victory. Third, airmen must unburden themselves with the belief that urban-industrial bombing can undermine the enemy's will to fight to the degree that bombing alone can win the war. Fourth, air power theories must be developed for attacking ground forces, rather than relying on a reductionist attrition approach of destroying as many tanks and artillery pieces as can be seen. Fifth, airmen should convince their military colleagues what air power can do for them. Sixth, one has to redefine or specify what the terms "winning" and "victory" actually mean: "This canonical image of victory entails defeating an enemy's ground forces in detail, occupying his territory, and controlling his population on an open-ended basis. Yet the latter two of these objectives are rarely likely to be goals of any U.S. joint operation".<sup>30</sup> Finally, in order to maintain the leverage of the air weapons one must continue to explore the mixture of advancing equipment, operational insight and theoretical foundations for operations. One might also add that doctrine consists of theory, history, technology and culture, and that the latter has essentially been neglected in the design of air power strategies throughout the century.<sup>31</sup>

### Overall Assessment

Lambeth's thesis is that the exploration of stealth, precision and the increased use of space, such as global positioning system, amounts to a "transformation" in US air power. There is no doubt that there has been a transformation in *combat* effectiveness, and that air power has become the first choice for policy

<sup>29</sup>Lambeth (2000), p. 307.

<sup>30</sup>Ibid., p. 312.

<sup>31</sup>Ian MacFarling, *Air Power Terminology*, second edition, (Canberra: Aerospace Centre, 2001), p. 34.

makers. One should, however, take note of the fact that precise targeting does not equal precise military or political effects, and the author does well in stressing that air power is ultimately but one part of an overall joint-operation package. There are interestingly two sides of the coin, as observed by Mark Clodfelter: The implication might well be that the changes in American air power have altered the way a future adversary will fight, so that air power's capabilities are minimised.<sup>32</sup> Be that as it may, at the end of the day, warfare is after all a land-based problem.

Lambeth's main argument nevertheless stands scrutiny: American air power has been transformed over the past two-three decades to a point where it has become strategically realisable outside the Cold War paradigm. Air power has a relative advantage in its relationship to the other elements of military force in the sense that it can influence the outcome in part because of stealth, precision and information dominance on the one hand and speed, range and flexibility on the other. Still, Lambeth does well in not arguing that the technological changes have amounted to a revolution in military affairs (RMA). Indeed, the author does not use that term RMA, or "information warfare", but nevertheless illustrates how technological improvements have altered the conduct of war and improved the effectiveness of air operations on the tactical, operational and strategic levels of command. Lambeth's work is a highly recommended survey for better understanding of how air power can provide other elements of force with cost-effective leverage that subsequently increases the chance for successful outcomes in contemporary conventional conflicts.

One could of course criticise the author for not having accounted for the technological improvements of the other services, but it may well be that technology has not increased the real preponderance of land power and sea power. Armies in the future will have flanks, but whether they will be able to add depth is quite another matter, and navies seem often to be subordinate to armies in waging and winning wars. In conclusion it seems as though the traditional combined-arms ground offensive

<sup>32</sup>Mark Clodfelter, Book Review: "The Transformation of American Air Power", *Joint Force Quarterly* (JFQ), 22 March 2001.

has witnessed a paradigm shift, where the organic army assets of tanks and attack helicopters play a more subordinate part to fixed-wing aircraft and unmanned vehicles than previously. The Pentagon's research on futuristic "space bombers" that could destroy targets on the other side of the world in thirty minutes strengthens Lambeth's conclusion.<sup>33</sup>

"The Transformation of American Air Power" is primarily written for policy-makers who require a greater appreciation of the technical and doctrinal issues involved in the application of air power, and secondly for the general audience who is interested in air power and defence matters. It is based on secondary sources rather than archival documentation and provides in summary a comprehensive, well-articulated and perceptive survey. The case studies and cogent explanations are of high scholarly quality with substantial footnotes and interesting anecdotes, and the author's ability to use history, technological data and conceptual insight when drawing the big picture is nothing less than praiseworthy.

<sup>33</sup>See for example "U.S. Looking At Spacecraft As Bomber", *Los Angeles Times*, 28 July, 2001, p. 1. For a different perspective, see for example Barry R. McCaffrey, "Cutting Ground Forces is Dangerous", *Commentary*, 1 August 2001.

### Chapter III

## Shaun Clarke: *Strategy, Air Strike and Small Nations* (1999)

### The Current Air Power Debate

Air power has in the last decade increasingly become the preferred instrument of choice for American and European policy-makers in dealing with recalcitrant regimes.<sup>34</sup> It was the principal means of military force in Operation Desert Storm (1991) and the only one in Deliberate Force (1995), Desert Fox (1998) and Allied Force (1999).<sup>35</sup> Russia used air power extensively

<sup>34</sup>This review is a reprint of John Andreas Olsen, *The Royal Air Force Air Power Review*, Volume 4, Number One, Winter 2001, pp. 127-133.

<sup>35</sup>"Deliberate Force" was a 42 day air campaign conducted by NATO against the Bosnian Serb Army between 30 August and 20 September 1995, involving 3,500 sorties against 56 target complexes, particularly supply dumps, with the result that the Serbs returned to the negotiation table (Dayton Peace Accords); "Desert Fox" was a 70 hour air campaign against the Iraqi regime between 15 and 18 December 1998 encompassing 650 sorties against 99 targets with the mission to strike military and security targets in Iraq that contribute to Iraq's ability to produce, store, maintain and deliver weapons of mass destruction; and "Allied Force" was a 78 day air campaign conducted by the 19-member NATO Alliance against Yugoslavian President Slobodan Milosevic's forces occupying Kosovo and Serbia proper between 24 March and 10 June 1999 with the objectives of stopping the Serb offensive in Kosovo; forcing a withdrawal of Serb troops from Kosovo; establishing democratic self-government in Kosovo; allowing a NATO-led international peacekeeping force into Kosovo; and allowing the

against Chechnya (1994-1996) and no-fly zones have been implemented against Bosnia and Iraq throughout the 1990s.<sup>36</sup> Political leaders and military commanders around the world seem to find air power an unusually tempting instrument of force, as "it appears to offer the pleasures of gratification without the burdens of commitment".<sup>37</sup> Air power seems not only to offer the prospect of decisive action without accompanying risk of unacceptably heavy casualties, but also has the additional attraction of being relatively easy to control in terms of application and degree of intensity. As a result, political and military commanders now consider air power as a central component to complex international problems. Despite air power's augmented role in crisis management, its employment has been shrouded in controversy and certain analysts contend that air power is not widely understood even among professional military officers.<sup>38</sup> The remoteness associated with air power may be one factor, but the difficulty in measuring the erosion of an adversary's political resolve seems to discourage qualitative diversity within the air power debate.

The current debate is, nevertheless, in reasonable shape, as two contemporary air power theorists define their concepts in clear terms.<sup>39</sup> Colonel John Ashley Warden III had the unique

---

safe and peaceful return of Kosovar Albanian refugees. On *Allied Force*, see particularly General Wesley K. Clark, "The United States and NATO: The Way Ahead", *Parameters* XXIX, No. 4, (Winter 1999-2000), pp. 2-14, and on objectives particularly, see William Clinton, "Statement of Objectives", 24 March 1999, quoted in *Air Force Magazine* 82, No. 8, (August 1999), p. 66.

<sup>36</sup>Benjamin S. Lambeth, *Russia's Air Power In Crisis*, (Washington DC: Smithsonian Institution, 1999), pp. 117-144.

<sup>37</sup>Thomas A. Keaney and Eliot A. Cohen, *Revolution in Warfare? Air Power in the Persian Gulf*, (Annapolis, Maryland: Naval Institute Press, 1995), p. 213.

<sup>38</sup>Colonel Phillip S. Meilinger (ed.), *The Paths of Heaven: The Evolution of Airpower Theory*, (Maxwell Air Force Base, Alabama: Air University Press, 1997), p. ix. See also Eliot A. Cohen, "The Mystique of US Air Power", *Foreign Affairs* 73, No. 1, (January/February 1994), pp. 108-123; and Colin S. Gray, *Explorations in Strategy*, (Westport, Connecticut: Greenwood Press, 1996), pp. 55-82.

<sup>39</sup>See Robert A. Pape, "The Limits of Precision-Guided Air Power", *Security Studies* 7, No. 2, (Winter 1997/98), pp. 93-114; Barry D. Watts, "Ignoring

opportunity of articulating an air power concept that witnessed execution. He was the main architect of the strategic air campaign against Iraq in 1991, and through subsequent articles he argues consistently that air power is best applied directly against the enemy regime's political leadership. Warden argues that one should attempt to paralyse the enemy's ability to wage war by concentrating attacks on key targets vital to the regime's survival. Robert Anthony Pape has seriously challenged the whole notion of strategic attacks, favouring short-range theatre air attacks that seek to thwart the enemy's military strategy in the theatre of operations. He argues that interdicting supplies to, disrupting the movement and communication of, and destroying forces in the field rather than attacking an opponent's political centres is the key to winning wars.

While Warden argues that incapacitating the political leadership is essential in an air campaign, Pape argues that one should focus on the enemy's ground forces on the battlefield. Both use Desert Storm to argue their case, since that campaign included both a strategic and a tactical dimension. These two views are extremes on a clearly defined spectrum, and they tend to be the starting point for discussions on whether air power can or cannot do the job alone. While that question may well be relevant for the United States, it is not necessarily so for the rest of the world. The Americans can confidently expect to possess relatively large and technologically sophisticated forces in the near future, but for most of the world there are restraints, commitments and vulnerabilities that have to be taken into consideration. Importantly, as one moves from war to conflict, or from "High Intensity Conflict" to "Low Intensity Conflict",

---

Reality: Problems of Theory and Evidence in Security Studies", *Security Studies* 7, No. 2, (Winter 1997/98), pp. 115-171; Colonel (ret.) John A. Warden, "Success in Modern War: A Response to Robert Pape's *Bombing to Win*", *Security Studies* 7, No. 2, (Winter 1997/98), pp. 172-190; Karl Mueller, "Strategic Coercion: Denial, Punishment, and the Future of Air Power", *Security Studies* 7, No. 3, (Spring 1998), pp. 182-238; and Benjamin S. Lambeth, "Bounding the Air Power Debate", *Strategic Review* 25, No. 4, (Winter 1997), pp. 42-55.

the very nature of the confrontation itself may change.<sup>40</sup> As such, it is hardly possible to simply adopt a miniature version of an American strategy. Thus, smaller nations have to look for solutions outside the American context, and moreover, no single air power strategy is feasible in all circumstances. Although discussions on air power theory, strategy and doctrine for small nations do take place in seminars at air power centres all over the world, it is still rare to find comprehensive analyses. Wing Commander Shaun Clarke is one such exception with his timely study *Strategy, Air Strike and Small Nations*.<sup>41</sup> This review essay aims at presenting his ideas, and discussing them in the wider context of the current air power debate dominated by Warden and Pape.

### A Discussion of Strategy, Air Strike and Small Nations

Clarke argues that nations with relatively small air forces, that is air forces with less than approximately one hundred strike aircraft, should consider strategic air operations as one of their functions.<sup>42</sup> His thesis is founded on a discussion of the nature of strategic air strike, using samples from history to verify his point, and defining the concept of strategic bombing beyond the traditional terms of reference. The refined concept is applied to a discussion on coercion, resulting in a paradigm for small nation air strike strategy termed "Strategic Persuasion Oriented Targeting (SPOT)". Thus, in extracting maximum value from modest means, "small nation strategic strike", he argues, may not be the oxymoron it first appears to be.<sup>43</sup> The author contends that strategic air strike is not defined by aircraft, weapons, mass or scale, or by the distance covered, or necessarily by the nature of the target, but by the objective of the mission. As such,

it is better defined by its effect at the strategic level of war, but more accurately he argues that one should define strategic air strike by the intended outcome. Strategic air strike is defined as "the direct pursuit of primary or ultimate political objectives through air power", and therein "high strategic order" focuses on the resolve of the enemy's supreme decision-making body, while "low strategic order" settles for more immediate military prospects confined to the battlefield. Clarke has a point when he argues that strategic effects can occur on different levels of war and, as such, "intention" is a better criterion for planning than "effect", but at the end of a successful day "intentions" and "effects" are two sides of the same coin. The difficulty resides in the problem of transferring physical destruction into the aspired political endgame, but detaching strategic air strike from the correlation of mass and scale is valid. In providing a synopsis of several campaigns throughout the century that includes strategic operations, three stand out as qualified within the means of small nations. Operation Babylon, the Israeli attack against an Iraqi nuclear reactor in Baghdad in June 1981; Operation Eldorado Canyon, the combined American attack on Colonel Muammar al-Qaddafi in April 1986; and Operation Deliberate Force, the NATO attack on the Bosnian Serb Army in the autumn of 1995. Nevertheless, the validity of strategic coercion for small nations does not reside in these historical examples, but in our way of thinking. Clarke suggests three propositions that partly change the terms of reference on the traditional perception of strategic air power applicability.

The first proposition states that "In limited war, small nations need not aspire to unconditional surrender or the collapse of the enemy regime". Clarke acknowledges that wars have limited utility, or as Carl von Clausewitz states, "in war the result is never final".<sup>44</sup> Studies of the many wars since the Napoleonic era of "decisive battle" suggest that military victories do not themselves determine the outcome of wars, they merely provide political opportunities, and even those opportunities are severely limited by political constraints and

<sup>40</sup>See Martin van Creveld, *The Transformation of War*, (New York: The Free Press, 1991).

<sup>41</sup>Shaun Clarke, *Strategy, Air Strike and Small Nations*, (Fairbairn, Canberra: Air Power Studies Centre, 1999).

<sup>42</sup>Shaun Clarke provides an appendix listing the air strike capability of 129 nations. The list only accounts for aircraft, not missiles.

<sup>43</sup>Clarke (1999), p. 2.

<sup>44</sup>Carl von Clausewitz, *On War*, (London: Everyman's Library, 1993), p. 89.

restraints.<sup>45</sup> Not even in Desert Storm and Allied Force did the Coalitions declare unconditional surrender or the collapse of the enemy regime as their objective. Annihilation, capitulation or strategic paralysis is then, according to Clarke, not a prerequisite for conducting strategic air strikes. Rather than disrupting the enemy leadership's means, one should persuade him to make concessions. As such, Clarke brings in the coercive element to a larger extent than Warden does. Rather than incapacitate or isolate the enemy leadership with the intention of a coup or revolt that will in turn overthrow the leader, Clarke argues that one should be less ambitious, and offer the belligerent state a way out of the predicament. Thus, Clarke is in favour of a dialogue with the enemy, while Warden would prefer that the outcome did not rely on the enemy's will. Warden argues that one cannot plan military operations that are dependent on the enemy leader's resolve, but according to Clarke small nations cannot aspire to strategic paralysis whether they prefer to or not. "Strategic Paralysis" is about removing the actual capability of maintaining the offending policy, and as such it is just as much "brute force" as it is "coercion". Small nations, Clarke argues, have to seek the art of the possible, they have to look less ideally and more practically at the challenge, and as such it is about influencing the enemy and at best removing his resolve. In essence Clarke offers a model where hesitation/reduction and concessions/negotiations are the desired outcomes, and therein strategic air strike will give the politicians the diplomatic leverage necessary to achieve the objectives. While strategic bombing has been used to destroy or "paralyse" the enemy leadership in the past, Clarke argues that one should "persuade" by allowing for less ambitious incentives.

The second proposition states that "The ultimate subject of war is the supreme decision-making body". The argument is that the Iraqi troops occupying Kuwait, or the Serb forces stationed in Kosovo, were the manifestation, or the symptom, of

<sup>45</sup>Michael Howard, "When Are Wars Decisive?", *Survival*, Vol. 41, No. 1, (Spring 1999), pp. 126-135. See also Brian Bond, *The Pursuit of Victory: From Napoleon to Saddam Hussein*, (Oxford: Oxford University Press, 1996).

the real problem, namely the Iraqi and Serbian political leaderships. It is at the end of the day the politicians who decide if and when to start and end a war. The political leadership is therefore the nucleus of a conflict, and although cultural and historical legacies complicate such simplicity, the war-making decisions rest with the selected few. One may take the logic one step further: if the enemy regime represents the national resolve, then it might not be a question of breaking it's resolve, but merely making it irrelevant. In either case, all efforts should be directed against the enemy leadership. Although Pape agrees that war is about coercing the decision-making apparatus, he argues that only when regimes are convinced of the certainty of defeat on the battlefield will they comply with the demands made of them. Pape categorically states that no strategic bombing campaign has ever yielded decisive results, nor were any significant opportunities missed.<sup>46</sup> Although one aspect of that debate is whether air power's utility lies in the tactical or strategic realm, there is a more philosophical aspect to it. Warden suggests victory on the battlefield is irrelevant to winning the peace for which the war is waged, while Pape argues victory on the battlefield is a condition for victory and the necessary means to fulfil national security objectives. Warden's thesis is therefore diametrically opposed to Pape's only as far as "means" are concerned, and not the ultimate "objective". Clarke does not go into this debate, but settles for the fact that all military operations should be directed to have the maximum impact on the decision-making apparatus.

The third proposition states that "The large nation issue of air power primacy is a distraction to the true root of air power success – joint strategy". One of the problems of strategic bombing is that advocates have often argued that air power can do the job alone. While seductive in its own right, it may easily confuse a "war" for a "campaign", and ultimately, by excluding a comprehensive and integrated military campaign, it cannot guarantee victory. Professors William S. Lind and Robert A. Pape argue that the problem with strategic air operations is that

<sup>46</sup>Robert A. Pape, *Bombing to Win: Air Power and Coercion in War*, (Ithaca: Cornell University Press, 1996), pp. 314-331.

they are executed separately from ground engagements, and thus, even though the enemy finds himself partly paralysed or in shock for a short period of time, he will soon adapt to the new circumstances.<sup>47</sup> Consequently, only by going after the enemy ground forces in the occupied land can one prevail. While one has sympathy for Warden's argument, that strategic air campaigns have always been compromised for parochial and political reasons, and thus never really been given the chance to show their full potential, Clarke makes a strong case when he suggests that strategic air strikes add to a range of pressures that should be applied simultaneously against the enemy. It is, ultimately, the accumulated product of pressures on the supreme decision-making body that results in change of policy. While joint strategy is normally associated with combining all military services, there is something to be said for combining the military aspect with diplomacy. Strategic air strikes, more than any other air power mission, provide direct diplomatic leverage. The combination of "bullets and words" is often underestimated in the actual execution of an air campaign: the diplomatic game does not end when military action starts, as seen recently in Deliberate Force and Allied Force.<sup>48</sup> Moreover, the very existence of a strategic air fleet may well have a deterrent effect on the opponent. As a "force in being", strategic air power capability has a role both in preventing war and in the conduct of operations. While "war is a continuation of politics by other means", many air power advocates would seem to strip the concept of strategic bombing of its political context. The unprecedented accuracy and destructiveness of air power today means that every bomb is a potential political bomb, and therefore air power needs to be considered in terms of both political and diplomatic perspectives. While Warden argues that air power can be decisive when applied in the strategic realm, and Pape

<sup>47</sup>William S. Lind, presentation at the RNoAF Academy, 22 September 2000; and Robert A. Pape, presentation at the RNoAF Academy 20 September 2000.

<sup>48</sup>Richard Holbrooke, *To End a War*, (New York: Random House, 1998), p. 94-111; and Jamie Shea, "Modern conflicts, the media and public opinion: The Kosovo example", Presentation at the Royal Norwegian Military Academy, 18 September 2000.

argues that all such applications have proved irrelevant in the past, Clarke argues that strategic air power should at least be an option.

Having established these three propositions, Clarke next discusses the strategic air strike methodology in its relation to small nations, by building on Pape's taxonomy of four coercive strategies. Clarke discusses whether small nations should adopt a "punishment" or "risk" strategy, which tries to push a society beyond its economic and psychological comprehension, a "decapitation" strategy, which neutralises or isolates an adversary's leadership, national communications, or other high value centres, or a "denial" strategy, which attempts to neutralise an adversary's military ability to wage war. Pape essentially argues that coercive mechanisms provide a better basis upon which to categorise air strategies than targets do,<sup>49</sup> but as the argument develops Pape starts to equate each category with a common set of targets. Moreover, as his deductive reasoning progresses he excludes one option after the other, concluding that there is strong evidence in support of "denial" applied at the tactical level as the superior coercive strategy. Clarke considers all four mechanisms at the three levels of war, but in the context of small nations, and without suggesting that one is always preferable. He acknowledges that the four coercive strategies are easily distinguished on paper for analytical purposes, but that in reality they overlap. By stressing that leadership-centred rather than military-centred approaches provide small nations with new leverage, he merges the strategic focus of Warden with the coercive focus of Pape. After a discussion of various targeting theories and the caveats therein, Clarke explores the possibilities of a paradigm termed "SPOT bombing". It emphasises targeting the belligerent leadership, but it does not aspire to overwhelm, paralyse or even generate dominant tempo, as that is beyond the means of small nations. It is about persuasion and "high impact", that is, discrete operations optimising the combination of shock, visibility and damage.<sup>50</sup> The author offers an orientation,

<sup>49</sup>Karl Mueller, "Strategic Coercion: Denial, Punishment, and the Future of Air Power", p. 187.

<sup>50</sup>Clarke (1999), p. 140.



or mentality, rather than a force structure, and since it merely adds a new dimension to air power options, Clarke argues that his thesis can be implemented without substantial changes in the current structure of most air force organisations.

Clarke has developed a convincing and comprehensive argument for small nations to consider strategic operations as a central part of their military doctrine. There are, nevertheless, a few issues that deserve further attention. First, for small nations to buy bombers in addition to fighters is expensive, and it might well be difficult within the allocated budgets, but "swing"- and "multi" role functions might bridge that gap. Second, air strikes against high-value targets are likely to provoke retaliation, and thus an unintended escalation may well be the result. The whole of the argument pre-supposes that the state in question can control the terms of reference, set the agenda and act in exactly the way it wants. If a small nation is fighting a large nation it may not have the means to follow-up such attacks, and the whole endeavour might be counterproductive. In this context it would also be interesting to explore ones own vulnerability to the described operation. Or, just as importantly, discuss how small nations can contribute to Coalition warfare: how likely is it to have circumstances in which a state with less than one hundred strike-aircraft might seek to act offensively alone? Third, there are problems within international law when it comes to non-military targets, and one has to assume that future belligerents will mix high-value targets with sensitive elements of the overall society. Fourth, any given country has to assess its likely enemy. If it is a revolutionary guerrilla movement, a civil war scenario or a country without considerable high-value targets, then the utility of strategic air operations decreases. Moreover, sometimes one does not want to negotiate with the enemy; one needs to eliminate his means of threat. This is often the case with nuclear, biological and chemical production centres, and herein Clarke provides an opening by acknowledging that "fait accompli" has its role in modern conflicts. Finally, even if it is a "classical war", would it be politically acceptable to execute a strategic offensive? Lieutenant General Michael C. Short was

prevented from using air power in the suggested fashion for political rather than military reasons in 1999.<sup>51</sup> Still, Clarke's thesis might be more acceptable for politicians than going "for the head of the snake [Milosevic] on the first night".<sup>52</sup> These reservations are fair, but Clarke does not argue that one is obliged to use the strategic air strike option. Indeed, if the risk assessment concludes that the chance for retaliation is huge, that it might breach international law or that it is not politically acceptable, then strategic air strikes should not be preferred over the "traditional" air power roles. Clarke makes his case about the feasibility and implications of a "SPOT bombing" approach based on deductive reasoning combined with a solid theoretical framework, and as such it adds to the list of air power options that could be included in military doctrines. "SPOT bombing" is an important tool as the erosion of leadership resolve is based on influence rather than elimination, but it does not do away with the problem of assessing the enemy's political power structure and the traditional difficulties related to human intelligence.

### Overall Assessment

In conclusion with reference to the Warden-Pape air power paradigm, Clarke sides with Warden in the fundamental belief that strategic air power can make a difference. But by accounting for small-scale operations, he differs from Warden in that he does not believe strategic air power can make the whole difference. Clarke sides with Pape on his analysis of the rationale and mechanisms behind aerial coercion, but he differs from Pape in believing that there is not a sole strategy with universal applicability. Clarke argues that one might search in vain if looking for a single-handed decisiveness in air power, as it is really about improving probabilities of gaining some concessions. While Pape seeks a single solution within the choices of coercive

<sup>51</sup>Lieutenant General Michael C. Short, correspondence with author, 21 October 2000.

<sup>52</sup>Dana Priest, "Air Chief Faults Kosovo Strategy", *The Washington Post*, 22 October 1999. See also John A. Tirpak, "Washington Watch: Short's View of the Air Campaign", *Air Force Magazine* 82, Vol. 9, (September 1999), pp. 43-49.

strategies (denial) and Warden seeks a selection of prioritised target-sets (the Five Rings), Clarke concludes that at the end of the day the only sure thing is that "every man has his price". Thus, one needs to understand the cost-benefit calculus of the enemy, subsequently search for what actually constitutes his "price", and determine whether one is willing to exceed that price by using military power. If there is political commitment to such a task, then strategic air power will add significantly to the required leverage. Strategy is all about creating the circumstances in which the enemy leader will change his behaviour, and as such removing the enemy leader from power is not as important as having him comply with declared objectives. There is importantly no aspiration to paralyse the enemy in "SPOT bombing", only irritate, cause personal sacrifice and ultimately weaken the leadership's resolve for offensive action.<sup>53</sup>

*Strategy, Air Strike and Small Nations* is overall an important book on air power doctrine, strategy and theory within the context of small nations, as it examines the essence of strategic bombing. It is not an exhaustive analysis of air power or doctrine, as it only deals with one aspect within a range of air power functions, but it is an essential contribution to strategic acumen, professional mastery and the overall defence debate. In brief, Clarke argues that the key to "high strategic order" air strike lies in understanding the mechanism of coercing the political leadership, the advantages of joint strategy, and acknowledging that limited wars are fought for limited objectives. Herein one must sensitively comprehend cause and effect rela-

<sup>53</sup>The implications of Clarke's thesis can be lifted to the grand strategic level of war. Take Scandinavia as an example. Norway and Denmark envision the defence of their territory as part of a NATO operation. Sweden relies on marginal defence: it assumes that it can only be attacked in the context of a larger conflict, and in such a case only a limited amount of force will be directed towards the Swedish homeland. Sweden sizes its armed forces in the context of that calculation. Finland uses a third model. It holds the opinion that there is a limit to what an adversary would be willing to "pay" for conquering parts of its country, and applied an armed force structure that is able to exceed that price. Clarke's thesis is aligned with the "Finnish model": a small nation that cannot depend on an alliance needs to define the price the enemy is willing to pay, and make sure that the perceived cost is contested. (I am grateful to Nils Naastad for this comparison).

tionships in a field of the non-linear and intangible, which necessitates intelligence that accounts for cultural, social and psychological aspects combined with the art of military strategy. In the end, the utility of air power has more to do with imaginative and innovative thinking than with high technology and aircraft, and countries like Norway, Denmark and the Netherlands, all involved in revising their air power doctrines, would therefore do well in thinking through Clarke's findings - in terms of both offence and defence. Rather than suggest one strategy that is most likely to work in all cases, Clarke suggests a coherent and holistic view within the reality of small nations. His thoughts are aligned with Warden's, in focusing directly on the political realm of war, but there is a big difference between targeting for paralysis and targeting for persuasion. The logical and deductive thesis is, in conclusion, educational as it encourages lateral, creative and independent thinking, and one can only agree with Colonel Phillip S. Meilinger that it is currently "one of the freshest and most original books on airpower theory".<sup>54</sup>

<sup>54</sup>Phillip S. Meilinger, *Aerospace Journal*, Vol. 24, No. 3, (Fall 2000), pp. 119-120.

## Chapter IV

## Peter W. Gray (ed.): *Air Power 21: Challenges for the New Century* (2000)

### The Icarus Syndrome

In seeking to understand the present state of air power thought, and the related question of where it comes from, there are a number of problems that confound ready explanation.<sup>55</sup> According to Carl Builder, air power theory was a pertinent factor in the establishment of the USAF as an independent military service, but the subsequent abandonment of air power theory in the face of competitive *means*, such as missiles and nuclear devices, and *ends*, such as deterrence and a tactical orientation to warfare, separated the USAF from those commitments that had ensured its creation in the first place.<sup>56</sup> In the 1950s and 1960s the USAF apparently shifted its focus from the conceptual thinking of winning wars to the business of procuring bigger and faster aircraft on the one hand and merely

<sup>55</sup>This review of Peter W. Gray (ed.), *Air Power 21: Challenges for the New Century*, Her Majesty's Stationary Office, London 2000 is a reprint of John Andreas Olsen, *The Royal Air Force Air Power Review*, Volume 4, Number Two, Summer 2001, pp. 98-106.

<sup>56</sup>Carl H. Builder, *The Icarus Syndrome: The Role of Air Power Theory in the Evolution and Fate of the U.S. Air Force*, 4<sup>th</sup> ed., (London: Transaction Publishers, 1998).

supporting the ground commander's scheme of manoeuvre on the other.

Those decades produced some of the same problems for the RAF. One hypothesis is that the British adherence to the concepts of deterrence, gradual escalation and flexible response weakened the position of the RAF as a *war-winning* service, and when it chose to abandon combat helicopters following such limited engagements as the Malayan Insurgency it also weakened its position as a *war-fighting* service.<sup>57</sup> When the RAF lost its nuclear capability to the Royal Navy's submarine force, because of technological imperatives, it next fell out of the first-team category and found itself in a doctrinal and theoretical void. Although this explanation is too simplistic, one fact seems to have manifested itself: the military threat was changing rapidly, and both the RAF and the USAF had to keep pace with the changes, but in the process a conceptual understanding of air power was undermined.

Military events in the 1990s have reintroduced the importance of understanding air power in a wider context, but there are dangers in adhering too strongly to formalised concepts, because theory and doctrine can easily become straightjackets. Indeed, faith may lend single-mindedness where doctrine becomes dogma and one situates the appreciation rather than appreciates the situation. Sir Michael Howard's observation on this theme is important:

I am tempted indeed to declare dogmatically that whatever doctrine the armed forces are working on now, they have got it wrong. I am also tempted to declare that it does not matter that they have got it wrong. What does matter is their capacity to get it right quickly when the moment arrives.<sup>58</sup>

<sup>57</sup>Philip Anthony Towle, *Pilots and Rebels: The Use of Aircraft in Unconventional Warfare 1918-1988*, (London: Brassey's, 1989).

<sup>58</sup>Sir Michael Howard, cited in Lt. Col. William F. Andrews, *Airpower Against an Army: Challenge and Response in CENTAF's Duel with the Republican Guard*, (Maxwell Air Force Base, Alabama: Air University Press, 1998), p. 3.

It is important to continue the quest for a holistic and comprehensive air power theory, and to formalise a concept for war-fighting doctrine, but it is a long, ambitious and cumbersome process. The prerequisite is to have reasonable insight into the environment in which air power is applied, and therein lies the foundation for adaptability, creativity and improvisation, even though it does not amount to a holistic theory in its own right. One approach to enhancing such understanding is to establish workshops where academia and military experts meet to discuss and write about current and future challenges.

The Director of Defence Studies (RAF) is such an attempt where a series of air power workshops have been held since 1994. The first book deriving from this process, *The Dynamics of Air Power*, discussed the evolving theory and air power's role in peace support operations, and the second publication, *Perspectives on Air Power*, focused on air power in a political, technological and military context.<sup>59</sup> The latest contribution in the series is *Air Power 21*, where professors Michael Clarke, Tony Mason and Philip Sabin contribute for the third time. Together with David Gates they provide a broad and cross-cutting context, while the others contribute to the current debate on air power by exploring specific topics in some depth.<sup>60</sup> The analytical standard of the essays makes them worthy of consideration, as the peacetime airman's principle task is to prepare effectively for the next conflict.

### A Synopsis of *Air Power 21*

There are several recurring themes in this collection of essays, and the most profound are the importance of being able to operate both jointly and combined, acknowledging that political considerations will always prevail in the making of strategy, be there a revolution in military affairs or not, and that one still

<sup>59</sup>Andrew Lambert and Arthur C. Williamson (eds.), *The Dynamics of Air Power*, (Bracknell, Berkshire: HMSO, 1996); and Stuart Peach (ed.), *Perspectives On Air Power: Air Power In Its Wider Context*, (London: HMSO, 1998).

<sup>60</sup>Gray (ed.) (2000).

does not know how to translate military success into the desired political end state.

Michael Clarke discusses the greater political volatility in which modern high-technological air power operates. He argues convincingly that one is increasingly witnessing military conflicts in which national survival is not directly at stake, as one enters conflicts for indirect national interests, such as humanitarian operations, and consequently the political objectives of any given coalition will be multiple. The perceptions, values and cost-benefit analysis will depend on the vast numbers of non-governmental institutions, public opinion, local actors with economic and political agendas and each government's international and domestic interests in any specific situation. Clarke warns that in the process of policy-making the decisions for engagement become *intuitive* rather than *analytical*, and whenever operational and political considerations do not coincide the latter will prevail. Clarke argues that modern air power can be applied as a coercive tool on both the operational and grand strategic level of peace enforcement and war, but again it must be within the political framework, which is "dominated by instinctive political imperatives that render other carefully calibrated cost/benefit projections essentially irrelevant".<sup>61</sup> While air power often has been a military instrument of the last resort, the instinctive calculus by political leaders in the future might suggest that air power should be used in situations that do not amount to war. There is a huge dilemma herein that air power becomes an *ordinary* extension of politics by other means rather than an *extraordinary* instrument that is only applied within strictly defined legitimate cases. Moreover, in that process of opportunism there is the danger of air power being misapplied.

David Gates takes this aspect further from a different perspective and argues that now that air power appears to be the instrument of choice it can easily become a weakness, since it undermines the synergy of joint operations that might be required to defeat future adversaries. He warns against airmen's enthusiasm for seeking the panacea, because for "all its technical sophistication" there remain "insurmountable constraints on its

<sup>61</sup>Michael Clarke in Gray (ed.) (2000), p. 8.

application".<sup>62</sup> Thus, air power must collaborate more closely with surface forces on the one hand and aircraft, helicopters and missile options must be integrated on the other, in order to provide politicians with optimal military leverage. Gates observes that the USAF is moving in the right direction as far as harmonisation of air power doctrine is concerned, as it stresses generic capabilities and competencies such as power projection, air and space control, precision engagement and the exploitation of information, rather than roles, missions and organisations.<sup>63</sup> One point that receives surprisingly little attention in the current debate on air power is whether NATO members should specialise in order to complement each other. Gates touches upon these issues, and warns that although some air forces might be tempted to develop a niche capacity there are larger problems associated with such developments that have to be looked into. He further makes a case for missiles, as they do not put airmen's lives in danger and are politically attractive instruments for showing determination in low-intensity crises. Moreover, he agrees with Philip Sabin that aerodynamic missiles may be the preferred choice for inferior powers challenging the West. Air power is importantly presented first and foremost as a "force enabler", rather than an instrument capable of solving such a complex phenomenon as war on its own. It is immensely difficult to translate even precise targeting into the desired political objective, and in this process it is pivotal to realise that air power is an enabler for surface operations and diplomacy.

David Caddick offers some sceptical perspectives on the role of air power in the RMA, by examining the concept from a historical perspective, and exploring how air power fits into that notion. He argues that technological improvements witnessed in the last decade do not amount to a revolution in military affairs, as such an achievement requires doctrinal and organisational changes of huge proportions that have not yet materialised. Caddick argues that although air power is an essential component of the technological developments in speed, precision and

<sup>62</sup>David Gates in Peter W. Gray (ed.) (2000), p. 23.

<sup>63</sup>United States Air Force, *Air Force Basic Doctrine: Air Force Doctrine Document*, September 1997.

lethality, it is only the USAF that has partly managed to implement the larger conceptual aspects. However, to believe that technological improvements will ever result in an orderly war would be an illusion. While one might prefer to bridge the gap between the USAF and the rest of the world,<sup>64</sup> he warns that "an over-emphasis on technology can unreasonably raise expectations about the tragic but inevitable destructive impact of military force".<sup>65</sup> The thesis has interesting implications, as one tends to focus on the uniqueness of each service, in order to sell one's own product, and technology is a facilitator therein, but one also tends to forget the overarching factor of how "power" in the form of "violence" can be used to achieve the political end state. There is indeed much to explore on the linkage between technological improvements such as stealth, precision and stand-off weapons in their relationship to information warfare and the whole significance of battle space awareness therein. Although the ending of the Cold War has created opportunities for air power as a "force enabler" there arise, nevertheless, just as many restraints and constraints, and air power remains the art of what is politically possible rather than technologically achievable. Finally, one should acknowledge that every want is a weakness, and an adversary may well take advantage of the asymmetric warfare that the technological superiority of information-age forces lends.

Philip Sabin identifies how underdogs have challenged their opponents in the past, examines whether these "techniques" can be synthesised into a coherent counter-strategy and discusses the implications for Western planners. The techniques to counter the effects of enemy air superiority are categorised into "limiting vulnerability", "fostering restraint", "striking back" and "contesting information dominance". In examining the ultimate challenge, namely to translate tactical and operational advantages into an integrated overall strategy that can secure victory, he assesses asymmetry versus flexibility in the

<sup>64</sup>Note that precision strike, stealth and stand-off weapons are in many ways the three capabilities that have driven the RMA, and they are more or less solely resident in US aerospace forces.

<sup>65</sup>David Caddick in Peter W. Gray (ed.) (2000), p. 66.

structuring of forces, deterrence versus provocation in devising a coercive strategy and activity versus endurance in the underdog's conduct of military operations. Based on a range of historical examples Sabin warns that although these paradoxes often prevent tactical triumph from amounting into strategic relevance, it would be dangerous for the Western powers to continue mirror-imaging the enemy as a passive opponent. It is rare to find western analysts attempting to go beyond mere "red-team" hypotheses and his structured and well-articulated essay is an excellent starting point for an exhaustive study. It would be interesting to study, for example, Norwegian or other small Western nations' thinking concerning the classic potential threat from the East, and in that process acknowledge that an underdog can be technologically advanced. Finally, Sabin mutually supports Gates' argument that integrated air defence systems are likely responses to superior air power in the future.

Timothy Garden provides some interesting thoughts on air power in a European perspective. He argues that although Europe has roughly the same resources as the United States it spends only half as much on defence, but more importantly, it is "currently trying to support far too large a number of regular forces, conscripts and reserves on too few funds".<sup>66</sup> Garden argues that European nations must work together at reorganising their military force from the present Cold War structure, where air power assets are designated for defensive and supportive roles in a short high-intensity conflict, in order to match and complement the United States. Using Operation Allied Force as a benchmark for likely future scenarios, where humanitarian aspects are at the centre, Garden suggests that each nation should specialise rather than generalise their air forces, and next generate these assets into a European "pooling system". The NATO AWACS force is one such example, and high dividends may be paid if one extends that model to include airlift, air transport, air-to-air refuelling, reconnaissance and search and rescue operations. These are roles that are expensive in terms of equipment and training, but since they do not involve combat aircraft one's sovereignty is not compromised and thus it would

<sup>66</sup>Timothy Garden in Peter W. Gray (ed.), (2000), p. 103.

to a larger degree be politically acceptable. The operational problems to such an integration are manageable, and by accounting for a European Union defence capability and suggesting near, medium and long term approaches to meet the new political challenges, Garden emphasises that these steps are not only politically feasible but necessary. The thesis is plausible as the 1990s bare witness to the fact that every nation found a niche within which it could contribute something important to the air campaigns in which it chose to participate. Moreover, the size of force contribution is only one factor in coalition operations, and not necessarily as important as the mere commitment of the participating nations.<sup>67</sup> The Europeans do not have the advantage of single-nation purchasing, and none of the Europeans can afford proper ECM investment, but an arrangement whereby each of the European nations contributed a number of ECM aircraft would mean that real capability was attained. There is, nevertheless, a danger that some European countries choose not to fight in certain coalitions, and those countries may well have niche capabilities on which the overall alliance depends.

Stuart Peach, in providing a brief overview of air power history from the perspective of command and control, is not convinced that there will be a smooth transition in meeting future challenges. He questions contemporary understanding of command and control, arguing that although doctrines emphasise "centralised command and decentralised execution", the air commanders of Operations Deliberate Force and Allied Force found themselves at tactical levels, facing the danger of focusing on target-lists and process rather than strategy, which is the true realm of generalship. Allied Force was not in accordance with the principles of "manoeuvre warfare", as the campaign was rigorously controlled and highly scripted.<sup>68</sup> Peach warns that the current concern with providing definition labels is at the expense

<sup>67</sup>Richard P. Hallion, "Critical Aerospace Capabilities for Coalition Operations", paper presented at the Royal Norwegian Air Force Academy, Trondheim, 7 February 2001.

<sup>68</sup>William S. Lind, "The Origins of Maneuver Warfare and its Implications for Air Power", paper presented at the Royal Norwegian Air Force Academy, Trondheim, 22 September 2000.

of the true profession of arms that is so critical to enabling successful air operations. Moreover, as one deals with wars of "choice", rather than wars of "necessity", with all the historical, ethnical and religious complexities that often characterise a multinational operation, Peach argues that it will be increasingly difficult to allow other nations to accept either command or control of own forces on all levels of war. This might be the biggest challenge to Garden's thesis of an integrated European force, and when one adds Clarke's argument of multiple political objectives in future conflicts the consequences of not contemplating a wider understanding of operational decision-making becomes immense. Furthermore, in order to ensure optimal decision-making at the strategic level one has to think jointly, where cultural differences apply, and finally the wrap-time nature of information age warfare requires ever better situational awareness and judgement from the operational commanders. Such a focus requires insight into the nature of command in which the human function cannot be substituted by computers and procedures, and Peach suggests "air forward" commanders who deal with day-to-day targeting and tasking, while the strategic command function would be carried out in remote multinational headquarters.

While Garden looks at combined air power challenges, Mungo Melvin looks at the first part of the joint perspective, by considering underlying institutional, parochial and cultural problems that have limited air-land co-operation in the past. On the operational level he argues that there is an inherent lack of common approach to the planning and conduct of war, particularly because of conceptual differences in the command and control of the respective forces, that next serve as a source of discord at the strategic level. Melvin argues that air power has become the preferred military instrument, as politicians are reluctant to commit ground forces to the battlefield, and since the modern battlefield is a mixture of combatants and non-combatants, villages and cities. Thus, it becomes difficult to argue the case for ground forces when vital national interests are not at stake. Consequently, close air support takes second place to distinct air operations, but in accordance with the Gates-thesis, Melvin suggests that it would be a profound mistake to ne-

glect air-land co-operation, because one must be prepared to "mount all types of air operations in a given 'threat' environment".<sup>69</sup> In the quest for force synergy, one must move beyond the narrow notion of tactical air support to land forces and approach the challenge at an operational and strategic level where it is about support for each other in facilitating tempo. In this context the airmen's task would actually be to convince their army and navy counterparts that they need air power in order to do a better job: It is about joint training and mutual understanding with an emphasis on how air power can shape the battle space environment.

In accounting for the air-sea component of joint operations, Christina Goulter argues that there is a general failure to fully appreciate the role of air power in naval expeditionary warfare, by which she defines operations launched from the sea. She demonstrates through a number of historical examples the problems and advantages in each of the main phases of expeditionary warfare: "Transit to the littoral; fighting from the sea; and breakout from the beach-head".<sup>70</sup> She emphasises the versatility of air power's contribution to shaping operations and argues that potential adversaries, such as India, Russia and China, will have a major advantage over an expeditionary force through their dedication to anti-shipping squadrons. Goulter warns that Britain's decision to rely heavily on stand-off anti-surface warfare may prove to be a serious mistake, because such a capacity is just as important in the future as it was in the Cold War. While air power is but one element of an expeditionary operation, it plays a critical role in all three phases and thus, in order not to compromise the effect of the operations, one cannot afford to cut specific capabilities such as anti-surface warfare and anti-submarine warfare. She warns that the cost-reduction often associated with expeditionary forces, as an alternative to massive ground forces, is highly questionable as preparation requirements have increased. It would be interesting to combine some of these observations with Sabin's underdog-thesis, because expeditionary forces by nature are extremely vulnerable,

<sup>69</sup>Mungo Melvin in Gray (ed.) (2000), p. 181.

<sup>70</sup>Christina Goulter in Gray (ed.) (2000), p. 183.

within the enemy's reach and even old low-technology diesel submarines can cause substantial damage. While airmen often associate the third dimension with space, an adversary might find great opportunities in exploring under-water weaponry, and it would be worthwhile to consider expeditionary warfare beyond the naval framework.

In the final chapter Tony Mason suggests that the 20<sup>th</sup> Century ended, militarily, with the Gulf War, and as the 1990s witnessed new international circumstances in which air power operated, he argues convincingly that the differences and similarities in previous wars require a re-evaluation of underlying air power concepts and ideas. He offers interesting reflections on the experience from Iraq, Bosnia and Kosovo, and on the latter he considers both the strategy and the political sensitivities. He argues that "gradualism" should be reconsidered as part of a coherent strategy, as it provides diplomatic leverage towards the ends for which the campaign is waged. Moreover, it strengthens the flexibility of air power options that are required to meet expectations of the complex political environment likely to dominate future conflicts. Thus, overwhelming force "will not always be possible, desirable or acceptable" because of the larger political considerations that must be allowed to dominate the choice of strategy.<sup>71</sup> Mason argues that air power contributes to the resolution of conflict through shaping the environment, distinct operations and supporting surface forces, and as one should emphasise effects rather than roles, he questions the functionality of distinguishing between tactical and strategic air power. To some extent the last paragraph summarises air power's challenges for the new century:

There can be no single template for the successful application of air power. The versatility of air power application is as wide as the spectrum of conflict itself and the range of political objectives being pursued. There is now the need and opportunity to revisit some well worn ideas and construct a conceptual paradigm appropriate to many different scenarios,

<sup>71</sup>Tony Mason in Gray (ed.) (2000), p. 222.

in which air power can sustain coercive diplomacy and become a primary instrument reinforcing the ongoing political dialogue. Thereby, it may sometimes act distinctly and directly, with overwhelming strength or more gradually, against an opponent's will to resist. On other occasions it may shape an environment for others to exploit. Elsewhere, it may protect and enhance other forces.<sup>72</sup>

## Overall Assessment

To summarise the messages in *Air Power 21*: It is about re-evaluating air power strategy, accepting that overwhelming force is not the only viable option; it is about realising that air forces must collaborate more intimately with surface forces and strengthen the combined arm; it is about moving beyond military "mirror-imaging" and accounting for the enemy deceptions and perceptions; and it is about developing a profound understanding of the political sensitivities that are always associated with air operations, and the command and control challenges therein. The book is about political and military acumen, accepting that things have changed and a restructuring is required since the days of the Cold War, where unity of purpose and effort could be taken for granted.

The essays offer apparently little contradiction and provocation, but rather reinforce each other's conclusion. Although some "professional disagreement" would have been welcome - accepting that "truth has many faces" - the book provides genuine and perceptive air power insight, and as such encourages further studies of the consequences associated with air power as an instrument of choice. For example, air forces might suggest a substantial restructuring in order to become "leaner and meaner" within any given budget, but the consequence would be closing existing air bases and other infrastructure throughout the country. Regional and local politicians would next find their income base substantially reduced and again the political agenda, intuitive or analytical, would dominate at the expense of operational cost-effectiveness. Short-term expedients would prevail over any long-term or abstract

<sup>72</sup>Ibid., p. 236.



consideration, and as air power is viewed as an instrument that can be used in "low-intensity-conflicts" it becomes the airmen's task to convince the politicians what air power *cannot do*. Airmen may complain that they were not allowed to exercise the preferred air strategy in Operation Allied Force for political reasons, but it is partly a self-inflicted wound, as airmen have traditionally oversold their case.<sup>73</sup> After all, air power has limited influence on ground activities, as witnessed in Somalia and Kosovo; limited operational sustainability in the crisis area; limited night/all weather capability; and air power is vulnerable to enemy fire. Indeed, technological superiority does not win wars, as witnessed in Vietnam, and air power has an inherent lack of stamina, which has hardly been touched upon in these essays. Although missiles and integrated defence systems are mentioned as future problem areas for Western powers in several essays, none of the authors pay lengthy attention to them, and estimates are that twenty-one countries will possess the most advanced "double digit" SAMs, such as the SA-10/12 and -20, by 2005.<sup>74</sup> Non-western countries may not bother with the traditional manned air power platform approach, but concentrate fully on defensive and offensive missile systems. Small western states should also seriously examine such an option, and its consequences for air power force structuring, as missiles are becoming increasingly more capable.

Some chapters are inevitably more clearly articulated than others, but overall the analytical standard is impressive, and collectively *Air Power 21* is worthy of attention. The book is useful in the process of developing a comprehensive military theory, as the fallacy of suggesting one-dimensional solutions to all future challenges has been avoided. If Icarus is to be fully saved, however, one might suggest an increased focus on the social mechanisms related to the use and nature of force, violence and power. As one moves into a new century, where low-

<sup>73</sup>Lieutenant General Michael C. Short, "An Airman's Lessons from Kosovo", paper presented at the Royal Norwegian Air Force Academy, Trondheim, 28 February 2001.

<sup>74</sup>Richard P. Hallion, "Critical Aerospace Capabilities for Coalition Operations", paper presented at the Royal Norwegian Air Force Academy, Trondheim, 7 February 2001.

intensity crisis may dominate and the United States may reduce its commitment to Europe, one can only hope that exploring the underlying nature of air power becomes the focal point in strategic thought, and not the aircraft, be it manned or not. In that process it is imperative to contextualise air power, which is to consider it in its proper political realm with all the economic, social, psychological, public and diplomatic aspects that follow. As many air forces witness current institutional problems, the challenge is to enhance air power understanding at the strategic level, by focusing on vision and commitment to the true profession of arms.

## Chapter V

## John A. Warden III & Leland A. Russell: *Winning in FastTime: Harness the Competitive Advantage of Prometheus in Business and Life* (2002)

### The Genesis of Winning in FastTime

In response to the Iraqi invasion of Kuwait on 2 August 1990, a small group of air power advocates in the Pentagon, the so-called "Checkmate" office, proposed a conventional strategic air campaign to liberate Kuwait.<sup>75</sup> The group, which was under the direction of Colonel John Ashley Warden III, had one clear purpose in mind: to force Iraq's army out of Kuwait by applying air power in a strategic offensive directly against the sources of Iraqi national power. The stated objectives were to "isolate Saddam; eliminate Iraq's offensive and defensive capability; incapacitate the national leadership; reduce the threat to friendly nations; and minimize the damage to enhance rebuilding".<sup>76</sup>

<sup>75</sup>This review of J.A. Warden III & L.A. Russel, *Winning in FastTime: Harness the Competitive Advantage of Prometheus in Business and Life* (Montgomery, Ala., Venturist Publishing, 2002) is a reprint of John Andreas Olsen, *The Royal Air Force Air Power Review*, Volume 4, Number One, Spring 2001, pp. 120-126.

<sup>76</sup>Colonel John A. Warden, briefing to General Norman Schwarzkopf, 17 August 1990, «Iraq Air Campaign Instant Thunder», p. 5.

Warden termed the concept "Instant Thunder", and as he suggested that air power through stealth and precision could be a distinct war winning instrument, which if successful would relegate armies and navies to secondary roles, it could be nothing other than controversial both within and outside the American military establishments. "Instant Thunder", as presented to the United States' military and political leadership between 9 and 20 August 1990, was bold, imaginative and innovative, but not in accord with then current military doctrine and what was politically acceptable. Despite bureaucratic obstacles and conceptual opposition the "Checkmate" team prevailed through personal and collective dedication to the task, and an unrelenting persistence to see through a change of focus in military planning. Rather than accepting that air power should be a subordinate of the ground commander's "scheme of manoeuvre", as suggested in the "AirLand Battle" doctrine at the time, Warden's team developed an offensive option where air power was envisioned to have a decisive political effect short of engaging ground forces. Whether the concept was operationally attainable as it stood in early August 1990 is highly questionable, but it changed the overall direction of planning. It met the requirements of an overall grand strategy, an underlying strategy for a set of operations, and importantly, a system approach to war was chosen. Together with then Lieutenant Colonel David A. Deptula and Brigadier General Buster C. Glosson, both of whom were in charge of the implementation, the "Instant Thunder" concept remained at the heart of what became the strategic air campaign - phase one - of Operation Desert Storm. The concept provided the American leadership with an offensive alternative that did not exist at the time, it gave the overall planning a strategic orientation and both Generals Norman Schwarzkopf and Colin Powell have credited Warden as the architect of the strategic part of the 1991 air campaign.<sup>77</sup>

<sup>77</sup>Colin Powell with Joseph E. Persico, *My American Journey*, (New York: Ballantine Books, 1995), pp. 459-460; General H. Norman Schwarzkopf with Peter Petre, *It Doesn't Take a Hero*, (New York: Bantam Books, 1992), pp. 369-371. On the evolution of the air campaign, see for example Diane T. Putney, «From Instant Thunder to Desert Storm: Developing the Gulf War Air Campaign's Phases», *Air Power History* 41, No. 3, (Fall

The strategy was, however, not the result of an instant flash of brilliance. Warden had developed many of these ideas in his book, *The Air Campaign: Planning for Combat*, which was published in 1988.<sup>78</sup> The work is a philosophical and theoretical framework for conceptualising, planning and executing an air campaign. It is about how one should go about winning an air campaign, focusing on the importance of air superiority and anti-surface operations on the one hand, and how to orchestrate an air force on the operational level of war by developing a strategic mindset on the other. According to Professor Dennis Drew, *The Air Campaign* was "hailed as the most significant theoretical work on airpower since the days of Billy Mitchell", and Professor Richard P. Hallion argues that the book "had profound impact on the American defence establishment".<sup>79</sup> Although few dispute that ideas on modern air power are elegantly expressed in the book, Warden has also been extensively criticized for being an air power zealot, for not using historical examples correctly in illustrating his conclusions and for not including alternatives to conventional inter-state warfare scenarios.<sup>80</sup> Be that as it may, by early 1990 Warden extended his thesis to include the "Five Rings Model".<sup>81</sup> In brief, Warden argues that one could analyse the enemy as a system by identifying the state's "centres of gravity" - the leverage points within the system - consisting of five concentric circles: isolate the leadership (decision making organ); degrade key production (oil and

1994), pp. 39-50; and Richard G. Davis, *Decisive Force: Strategic Air Power in Desert Storm*, (Washington D.C.: Air Force History and Museums Program, 1996).

<sup>78</sup>Colonel John A. Warden, *The Air Campaign: Planning for Combat*, (Washington D.C.: Pergamon-Brassey's, 1988).

<sup>79</sup>Richard P. Hallion, *Storm over Iraq: Air Power and the Gulf War*, (Washington D.C.: Smithsonian Institute Press, 1992), pp. 115-116; and Dennis Drew, "Vietnam, 'Wars of the Third Kind' and Air Force Doctrine", p. 15 (<http://www.ttu.edu/~vietnam/96papers/vietsymp.htm>).

<sup>80</sup>For a condemnation of *The Air Campaign*, see Niklas Zetterling, "John Warden, The Air Campaign - en kritisk granskning", *Kungl krigsvetenskapsakademiens handlingar ock tidsskrift*, No. 1, 1998, pp. 107-130. (The text is in Swedish).

<sup>81</sup>Colonel John A. Warden III, "Centers of Gravity: the Key to Success in War", unpublished memorandum, March 1990.

electricity); disrupt the infrastructure (railroads and bridges); "turn" the population and troops against the regime; and destroy offensive and defensive military forces.<sup>82</sup> As technology allowed for parallel attacks, that is, multiple centres of gravity could be attacked simultaneously, Warden argued that by focusing on desired political effect, rather than physical destruction, one could achieve a rapid victory at minimal cost. As such, *The Air Campaign*, the evolving "Five Rings" and the overall conviction that the enemy should be treated as a system, was the genesis of what became "Instant Thunder", and Warden had the rare opportunity of articulating an air power concept that by and large was put into effect. Although shrouded in controversy, his stature as an authority on air power theory has grown significantly in the 1990s, and he remains at the centre of the current air power debate.<sup>83</sup> He developed a new curricula through his position as Commandant at the USAF's Air Command and Staff College after the war, and his thinking has influenced air power doctrines all over the world.<sup>84</sup>

<sup>82</sup>Colonel John A. Warden III, "The Enemy As a System", *Airpower Journal*, Spring 1995, pp. 40-55.

<sup>83</sup>On the controversy of John A. Warden, see for example Colonel Richard T. Reynolds, *Heart of the Storm: The Genesis of the Air Campaign Against Iraq*, (Maxwell Air Force Base, Alabama: Air University Press, 1995); and Colonel Edward C. Mann, *Thunder and Lightning: Desert Storm and the Airpower Debates* (Maxwell Air Force Base, Alabama: Air University Press, 1995). On the current air power debate, see for example See Robert A. Pape, "The Limits of Precision-Guided Air Power", *Security Studies* 7, No. 2, (Winter 1997/98), pp. 93-114; Barry D. Watts, "Ignoring Reality: Problems of Theory and Evidence in Security Studies", *Security Studies* 7, No. 2, (Winter 1997/98), pp. 115-171; Colonel (ret.) John A. Warden, "Success in Modern War: A Response to Robert Pape's *Bombing to Win*", *Security Studies* 7, No. 2, (Winter 1997/98), pp. 172-190; Karl Mueller, "Strategic Coercion: Denial, Punishment, and the Future of Air Power", *Security Studies* 7, No. 3, (Spring 1998), pp. 182-238; and Benjamin S. Lambeth, "Bounding the Air Power Debate", *Strategic Review* 25, No. 4, (Winter 1997), pp. 42-55.

<sup>84</sup>Warden's thinking has influenced air power doctrines all over the Western world - for example the American, Australian, British and Norwegian. More specifically, Denmark has explicitly endorsed Warden's five air superiority cases and the Five Rings Model.

## A Synopsis of Winning in FastTime

Since his retirement from the USAF in 1995 he has applied the ideas of *The Air Campaign*, "Centres of Gravity", "the Five Rings Model", "Parallel Warfare", "Targeting for Effect" and "Instant Thunder" to the commercial world. Warden argues that at the grand strategic level, the strategies of war and business have much in common, and through his new book, *Winning in FastTime*, he sets out to explain a mindset and a method of rapid and decisive strategic action. Drawing on examples from the planning and execution of Operation Desert Storm, vied with stories of companies that have already adopted the so-called "Prometheus Process", Warden and Leland A. Russell provide a new approach to business strategy in today's world that is worth consideration. The authors discuss principles and concepts that they believe are the key to successful operations in any kind of competitive environment, and the fundamental assumption is that one cannot merely react to change, or adjust through incremental improvements: one needs to act offensively and decisively by creating the future through outthinking the competitors. "Instant Thunder" is Warden's basic formula for winning: "think strategically, focus sharply and move quickly". The following paragraphs will take a closer look at the core of *Winning in FastTime*.

The key to success, according to the authors, is to think like a winner. For such a mindset to materialise, they suggest basic principles – the so-called "Prometheus Touchstones": create a vision and implement it systematically:

In today's warp-speed world, a new approach that accelerates strategic thinking and action is essential. To win, you must decide what you want your tomorrow to be, and then make it happen faster than the rate of change in your competitive environment. This is winning in FastTime. The Prometheus Process is a systematic and proven method for designing winning strategies that is simple enough for everyone to grasp, yet sophisticated enough to plan, execute and complete projects of any scope and complexity. Prometheus includes a common strategic vocabulary that is shared across the organization. It

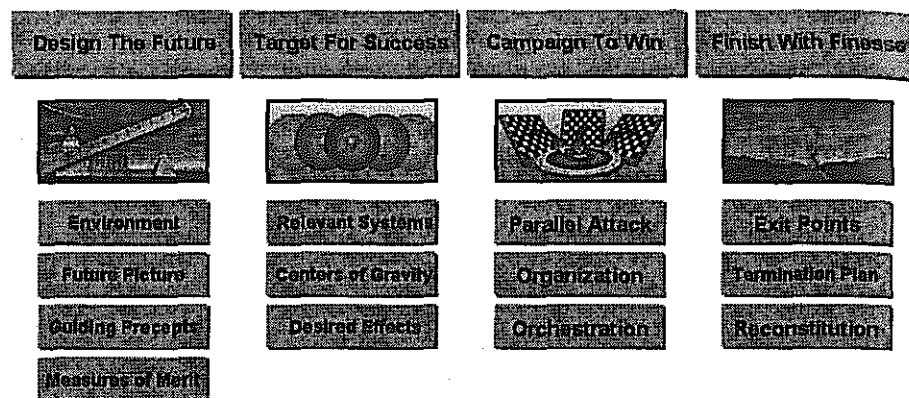
is also fractal, which means that the same process pattern can be repeated over and over at an ever-smaller scale.

The approach is clearly derived from "Instant Thunder": what was "fast, precise and parallel operations" in the military world is translated into "think strategically, focus sharply and move quickly" in the world of business. This will next enable a *change of game*, that is, one has to create one's own rules with a winning mentality, as the strategy, organisation and force structure of yesterday may not apply. In order to change the terms of references one needs a comprehensive understanding of the environment in which one is working, and therefore one must think of competitors and customers as strategic entities, or systems. It is a question of getting the upper hand, and in that process one needs to focus on the system's centres of gravity and next act on them rapidly and decisively. In order to change the overall system to your own advantage the authors have developed the Promethic Laws:

Every action affects the future; Specific actions create a specific future; Everything and every action happens in a system; All systems have inertia and resist to change; All systems have Centres of Gravity; Systems change when their Centers of Gravity change; The extent and probability of system change is directly proportional to the number of centers of gravity affected and the speed of which they are affected; All known systems and things have a beginning and an end; and Specific actions produce specific ends.

This is the theoretical linchpin from which the four imperatives derive: *Design the Future, Target for Success, Campaign to Win and Finish with Finesse*.<sup>85</sup>

<sup>85</sup>The figure is from Colonel John A. Warden, "Modern Competitiveness Theory", in John Andreas Olsen (ed.), *Asymmetric Warfare*, (RNOAF Academy: Trondheim, 2002), p. 217.



### Imperative One: Design the Future

The first imperative, *design the future*, depends on four steps. First one needs to assess the environment in which one is operating, that is, one needs to understand the broad technological, economic and political context of the market. The authors use the term “scoping the environment”: although one cannot predict the future, one can identify the direction of change, question dubious assumptions, and therein acknowledge the opportunities and potential obstacles. It is about developing strategic awareness in order to be able to exploit the opportunities of chance, friction and fog, rather than being passive and defensive about inevitable changes. Having scoped the environment, the next step is to paint the *future picture*, that is, a clear and compelling description of where one wants to be at some point in the future. The future position should be a “constant beacon toward which everyone in the organization can steer”, and as such it is the most important step in planning the grand strategy. The authors stress that an “architectural” rather than a “brick-layer’s” view is an important point of departure. Based on “Key Descriptors”, every company is advised to develop brief statements about the prospects of the future, emphasising high-level outcomes in an optimistic, creative and specific way. “Open planning” is recommended since the key to steering in the right direction is that as many as possible feel that they are part of

defining the strategy, that is, they get the perception of purpose through active participation and ownership. When the destination is identified the third step is to engrave the *guidance precepts*. These are “behavioural touchstones”, that is, short statements about permissible behaviour as employees work at meeting the firm’s stated objectives. On the one hand issues of philosophical and operational importance should be stated, and on the other differentiation should be sought. The authors distinguish between prime directives and rules of engagement. The former is of a higher order, while the latter are to a large degree subject to change over time and new circumstances. The fourth and final step within the first imperative of the “Prometheus Process” is establishing *measures of merit*. While measures for tactical success may be easy to identify, the key is to measure the less tangible strategic effect. To win a battle or a campaign is one thing, to win the actual war is another, and finally to win the peace for which the war is fought is yet another challenge. The authors use the term “Go to Rome”, reflecting on the fact that while Hannibal was quite successful at the “Battle of Cannae”, he never exploited the advantage of that success and marched to Rome, something which would have given him the ultimate victory. The suggested approach to measure merits is to evaluate the results against the ends as defined by the “Key Descriptors” identified in the second step. Creating an integrated measuring system is part of the motivation for having a strategy, and it links the day-to-day performance to the Big Picture.

### Imperative Two: Target for Success

The theoretical foundation for “Instant Thunder” is the “Five Rings”. The model is founded on the belief that the enemy can be treated as a system, and within that system there are several key targets (“centres of gravity”). By identifying these, one can either remove or add energy to the system in order to maximise the desired effect. In bombing a building one reduces the energy level by applying *negative energy*, while maintaining a Coalition is referred to as *positive energy*. As one attacks selected “centres of gravity” one can manipulate the situation, and in this process

the "Five Rings" is a convenient planning tool. The model is a simplification of the real world that helps provide an overall impression of what needs to be affected in order to arrive at the future previously defined. By looking at the competitors and customers as a whole, as a system, one acknowledges that interrelationships, rather than linear cause-effect chains, have practical utility, and one must consider the process of change rather than static snap-shots of the situation. Systems have enormous resilience, but by exceeding the system's "elastic limits" one can achieve permanent change. The significance of such an exercise resides in the fact that if one does not get the strategic targets right it becomes difficult to alter the system. It is not so much about doing "things right" as doing the "right things". Having identified the centres of gravity, the task is to determine "which action will result in the greatest probability of having a real effect". Having understood the concept of effect-based targeting, the next step is to develop an action plan for each centre of gravity, ensuring the strategic linkage, that is, the connection between desired effects and the realisation of the *future picture*. The authors recommend six steps in creating this plan: define the desired effect, clarify the measure of merit, decide the timeframe, gather meaningful and reliable information, develop high-level directions and estimate the resource requirements.

#### *Imperative Three: Campaigning to Win*

Having defined the desired effects and developed an action plan, the next challenge is to apply resources as effectively as possible to achieve them. Rather than approach the targets serially, the authors suggest *parallel campaigns*, that is, multiple centres of gravity should be attacked through multiple and simultaneous operations. It is not about relying on one decisive blow, it is about approaching several avenues that may lead to the desired change, and as such one does not depend on any single success, but the degradation of the overall system. It is essential that one accounts for the "time value of action", that is, the impact on those "centres of gravity" depend on the "velocity" of operations, where "velocity" is defined as "speed in the right direc-

tion". In such a context the management needs only concern itself with orchestrating the campaign and timing, as opposed to the tactical and technical details. In order to ensure commitment throughout the organisation the authors recommend the "Three-Echelon Rule": have three organisational echelons present during planning. It reduces confusion and strengthens morale. Through multiplicity and simultaneity the orchestrator must focus on momentum, as the overall orientation is strategic, and as such he would need to take instant decisions without reference to higher authority. In order not to let enthusiasm overtake objective judgement, the authors recommend a "Red Team", that is, a team tasked with contesting the firm's assumptions and raising potential problems in advance. Another challenge in this context is the overall organisational structure. According to the authors one has to *organise for success*. New situations require new structures, and in order to maintain strategic flexibility one needs a dynamic organisation that accounts for new technologies. It is about being able to exploit the information faster than the competitors, and therein three pieces of advice are provided: "have an open attitude about information, if the hierarchy slows you down, go around it; and avoid serial information dissemination".

#### *Imperative Four: Finish with Finesse*

While most firms and organisations stop the planning-loop at the stage of having implemented an idea or a strategy successfully, the "Prometheus Process" argues that one needs to consider termination, the *end game*. In accepting that every campaign, project or product must end at some point, the authors suggest that one does it properly and orderly – one should finish with finesse rather than leaving it to chance. It is about exiting on top with style, and as such one needs to define "exit points". The following criteria are suggested: maximise (and retain) financial gains; minimise losses by "failing fast"; and end the game while strong.

## An Assessment of Winning in FastTime

*Winning in FastTime* culminates with the twelve *Cardinal Rules* of "Prometheus": Think Like an Architect, Execute Good Enough Plans, Be on the Offensive, Impose Your Plan, Do Not Underestimate What It Takes to Win, Choose Enemies and Friends, Use an Indirect Approach, Stay out of the Balkans, Exploit Your Key Force, Maintain and Use Reserves, Focus on the Future and Bypass Obstacles. These rules are quite symptomatic for the book, which provides the reader with a set of guidelines and procedures for the road to success. It is seductive in its simplicity and it is elegantly written. It is in many ways Jominian, as is Warden's previous work, in the sense that it provides a recipe for success. *Winning in FastTime* will surely be criticised on that basis, as one can argue that there are few universal truths on how to succeed in war and business. But one should be careful not to dismiss it on such a basis, as the work is really more about a mindset and an orientation to problem solving than it is a checklist. It is about how to think strategically rather than tactically, it is about how to deal with the problem rather than the symptoms, and it is about thinking positively rather than complain about self-imposed restrictions. The challenge is to ensure that guidelines do not become straightjackets, and when entwined with creativity and foresight they are surely worthwhile having. Models simplify the real world, and in that process one might well lose some important aspects, but if used sensibly they enable you to think clearly, they provide a common basis for discussing important issues, and in the end they provide a tool that encourages further studies. The "enemy as a system" is an interesting perspective that invites two final comments. While some firms tend to focus on its "competitors" as the "enemy", the Warden-Leland suggestion is to look beyond that and use the customers and their future requirements as measurement criteria for progress. Importantly, when the firm starts to focus solely on the "competitors" it might already be losing. Moreover, if the bureaucratic system within a firm has problems complying with "FastTime", one may be able to work around the system initially, but in a wider sense, this might be the right time to "exit": it is an indication of

necessary change on both the individual and organisational level.

Woven into the "Prometheus Process" is a rather comprehensive lexicon for communicating strategic issues throughout the organisation. "Open Planning", "Scoping the Environment", "Go to Rome", "Stay Out of the Balkans", "Velocity", "Centres of Gravity", "Instant Thunder" and "the Five Rings" are useful terms as they have explanatory value. *Winning in FastTime* is motivating reading and impressively coherent: the deductive logic is progressively applied throughout the work. The reader does not lose track of the strategic concept, as the book is well structured and consistent. As such the "Prometheus Process" contributes to strategic awareness and strategic thought at a conceptual level, and next the common language and concrete action plans are sufficient for implementation. It is a business philosophy worth consideration, and as it accounts for the complete planning cycle it is rather comprehensive and holistic. It does not provide all the answers when it comes down to implementation, but it does ask many of the right questions. The defence establishment in Britain, Norway and other nations have applied a manoeuvre approach to warfare on the operational level of war. Such a philosophy needs a strategic orientation, and the "Prometheus Process" might very well contribute in providing the required framework.