ARMY CO-OPERATION COMMAND AND TACTICAL AIR POWER DEVELOPMENT IN BRITAIN, 1940-1943: THE ROLE OF ARMY CO-OPERATION COMMAND IN ARMY AIR SUPPORT

By

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ABSTRACT

This thesis examines the impact of the developments made during the First World War and the inter-war period in tactical air support. Further to this, it will analyse how these developments led to the creation of Army Co-operation Command and affected the role it played developing army air support in Britain. Army Co-operation Command has been neglected in the literature on the Royal Air Force during the Second World War and this thesis addresses this neglect by adding to the extant knowledge on the development of tactical air support and fills a larger gap that exists in the literature on Royal Air Force Commands. Army Co-operation Command was created at the behest of the army in the wake of the Battle of France. A key area of development was the communications system to enable troops to request air support in the field. The Command was also involved in developing the Air Observation Post Squadron. Air Observation Post aircraft were used to direct the fire of artillery batteries from the air. In 1943, an operational tactical air force replaced Army Co-operation Command. This study highlights inter-service difficulties over the provision of air support.

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CONTENTS

ABBREVIATIONS

AASC	Army Air Support Control
A Air SC	Army Air Support Control
AASF	Advanced Air Striking Force
AC	Army Co-operation
ACAB	Allied Central Air Bureau
ACAS	Assistant Chief of the Air Staff
AFV	Armoured Fighting Vehicle
AHB	Air Historical Branch
Air OP	Air Observation Post
ALO	Air Liaison Officer
AOC	Air Officer Commanding
AOC-in-C	Air Officer Commanding-in-Chief
AOT	Air Officer Training
ASSU	Air Support Signals Unit
BAFF	British Air Forces in France
BEF	British Expeditionary Force
C^2	Command and Control
C^3	Command, Control and Communication
CAS	Chief of the Air Staff
CID	Committee of Imperial Defence
C-in-C	Commander-in-Chief
CIGS	Chief of the Imperial General Staff
COS	Chiefs of Staff
CSBC	Close Support Bomber Control
DCAS	Deputy Chief of the Air Staff
DCIGS	Deputy Chief of the Imperial General Staff
DMC	Directorate of Military Co-operation
GOC	General Officer Commanding
GOC-in-C	General Officer Commanding-in-Chief
GHQ	General Headquarters
HQ	Headquarters
IF	Independent Force
IWM	Imperial War Museum (London)
JRUSI	Journal of the Royal United Services Institute
LHCMA	Liddell Hart Centre for Military Archives (King's College London)
MORU	Mobile Operations Room Units
OTU	Operational Training Unit
PRG	Photographic Reconnaissance Group
RAF	Royal Air Force
RAF Hendon	Royal Air Force Museum, Hendon
RFC	Royal Flying Corps
RHA	Royal Horse Artillery
RNAS	Royal Naval Air Service
R/T	Radio Telegraphy
SASO	Senior Air Staff Officer
TAF	Tactical Air Force
TNA	The National Archives (PRO, UK)
US	United States

VCAS	Vice Chief of the Air Staff
WDAF	Western Desert Air Force
WO	War Office
W/T	Wireless Telegraphy
ZOAN	Zone d'Opérations Aériennes Nord

Chapter One

INTRODUCTION

With the creation of an independent air force towards the end of the First World War, the dispute over the role that air power would play in future conflagrations was almost inevitable. Between 1914 and 1918, air power had been used in all the roles it fulfilled in later years. It was partly the possibility that the stalemate and mass casualties of the First World War may be prevented through the use of air power that led the Royal Air Force (RAF) to take the decisions to develop air power the way it did. Aircraft were no longer for the sole use of the army, their use stretched to targeting areas deep behind enemy lines and establish independent operations of their own. The rise of independent thinking about the application of air power caused great tension between the British army and the RAF. Even after its creation, the RAF was mainly involved in army co-operation work on the Western Front, so it is easy to see how the independence of the new service made the War Office (WO) feel uncomfortable at the potential loss of its aircraft.

The inter-war years, and indeed the beginning of the Second World War, saw no signs of these concerns abating. The relations that existed between the WO and British Army on the one hand, and the Air Ministry and RAF on the other, as well as the success of an RAF Command in Britain set up for improving those relations, will form the major part of this thesis. One area that was to cause the relations between the WO and the Air Ministry to deteriorate was the difference in their respective expectations of the use of aircraft on the battlefield. The fundamental difference between the two forces is that land forces believe that air support should be available on the battlefield as and when requested. As Sebastian Cox has noted '... the soldiers' philosophical outlook is predicated in the need or desire to

have organic air on call when and where he thinks he needs it'.[1] The airmen felt that air power, employed in the tactical role, was more efficient when used to first gain air superiority over the battlefield, and then used in 'battlefield air interdiction' operations.[2] This divergence in doctrinal development was at the heart of the battle between the Services in the development of tactical air power.

Doctrine is an aspect of military history that few academics are comfortable dealing with, even those involved with its development within the armed Services. For the purposes of this study, close air support will be defined as 'any air operation that theoretically could and would be done by ground forces on their own, if sufficient troops or artillery were available'.[3] Further to this, it 'require[s] [the] detailed integration of each mission with the fire and movement of these forces to reduce the casualties that may be caused by friendly fire'. [4] Actions taken by aircraft beyond the battlefield, such as attacking ammunition and fuel dumps behind the lines should be defined as interdiction operations and both close air support and battlefield air interdiction make up the majority of, if not all, tactical air support operations. This can take the form of aircraft acting as advanced flying artillery in order to force enemy troops to protect themselves prior to and during an infantry attack. They can also influence the battlefield situation by providing ranging for artillery guns as they support an infantry attack.

[1] Sebastian Cox, 'The Air/Land relationship – an historical perspective 1918-1991', *Air Power Review*, 11: 2 (Summer, 2000), p.1.
[2] Ian Gooderson, 'Doctrine from the crucible – The British air-land experience in the Second World War', *Air Power Review*, 9: 2 (Autumn, 2006), p.3.
[3] John A. Warden III, *The Air Campaign: Planning For Combat*, (Excel Press: San Jose, New York, Lincoln and Shanghai, 2000), p.87.
[4] Jamie Belich, 'Air support, close', in Richard Holmes (ed.), *The Oxford Companion to Military History* (Oxford University Press: New York, 2001), p.14. Belich completed a D.Phil degree at Nuffield College, The University of Oxford. He is Professor of History at Victoria University.

Phillip Meilinger has succinctly noted 'Theory and doctrine deal with the realm of ideas, not operations ...'[5] This lack of practical application can cause great problems in development. James Corum has argued that 'a fascination with aircraft technology and with the adventurous nature of flying has become a historical end in itself', as an explanation for the general neglect of doctrine by air power scholars.[6] Many theories can be put forward, especially if there is little historical experience on which to fall back on, as occurred with regards to air power both during and after the First World War. As Meilinger has noted, 'In the interwar period ... those charged with formulating air doctrine were operating in an evidential vacuum. The experiences of air power were limited and the lessons obscure'.[7] The development of tactical air power doctrine, the disagreements, and problems involved in its implementation, is a recurring theme of this thesis. Doctrine is essential in almost all aspects of military preparation. It will dictate the type of equipment required, how forces are organised and trained, and what roles are prioritised in the event of conflict. This is subject to the caveat that doctrine has to be applied in the correct manner and the document created is not left on shelves unread. As Michael Forget has noted, 'doctrines are only as good as the way in which they are applied'.[8] Doctrine faces influence from several factors, one of these factors is the geo-political position that a nation finds itself in. Geo-politics defines how a nation's armed forces can and should be used to best effect in relation to threats that states are likely to face and the nature that these threats may take. Air Commodore (ret'd) Neville Parton has argued that the Royal Flying Corps (RFC) '... produced doctrine – or at least

[5] Phillip S. Meilinger, 'The Historiography of Airpower: Theory and Doctrine', *The Journal of Military History*, 64: 2 (April, 2000), p.467. Meilinger is a retired Colonel in the United States Air Force and was Dean of the School of Advanced Airpower Studies at the United States Air Force's Air University.
[6] James S. Corum, 'From Biplanes to Blitzkrieg: The Development of German Air Doctrine between the Wars', *War in History*, 3: 1 (January, 1996), p.85. Corum is a retired Lieutenant Colonel in the United States Army Reserve. He has written extensively on air power history, specialising in the developments made, and the operations conducted by the *Luftwaffe*.
[7] Philip S. Meilinger, *Airwar: Theory and Practice* (Frank Cass: London and Portland, Oregon, 2003), pp.37-8.
[8] Michael Forget, 'Co-operation between Air Force and Army in the French and German Air Forces during the Second World War', in Horst Boog (ed.), *The Conduct of the Air War in the Second World War: An International Comparison* (Berg Publishers: New York and Oxford, 1992), p.431.

material that was genuinely doctrinal in nature ...'[9] Whilst the term doctrine may not have been in widespread use, particularly during the First World War, the importance of the concept was certainly recognised by the RAF throughout the inter-war period. This was not the case within the army during the First World War and the inter-war period. As Shelford Bidwell and Dominick Graham have noted:

> General Langlois, the French artilleryman, observed that although the British manuals in 1914 were excellent lack of doctrine made them useless ... The doctrine to which Langlois referred was the body of ideas that guided the parts of the system. The only guides that he could discern in the British Army was pragmatism and obstinate empiricism.[10]

A threat, or offensive strategy, based primarily on the use of land forces will require a different doctrine to that based primarily on naval or air forces. This is particularly true for doctrine to control the use of air forces in conflict.[11] Air power is inherently flexible and its use can be either as an independent force or in conjunction with land or naval forces.[12] This presents a problem unique to air power theorists and practitioners when developing a workable doctrine. The application of air power was one problem that the RAF faced during the inter-war period and this will be subject to detailed analysis in subsequent chapters. The RAF also faced the problem of increasing technological change that rendered many ideas and developments already in progress obsolete before their completion. This provided many obstacles when it came to fielding a strategic air force in a credible deterrence posture with the re-emergence of German power on the European continent.

The economic situation during the inter-war period put huge pressure on each individual service of the armed forces and led to a great deal of division and in-fighting, in order to gain sufficient funds to put into practice doctrinal ideas that had been previously developed.

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[9] Neville Parton, *The Evolution and Impact of Royal Air Force Doctrine: 1919-1939* unpublished PhD Thesis, University of Cambridge, Great Britain, 2009, p.53.
[10] Shelford Bidwell and Dominick Graham, *Fire-Power: The British Army Weapons and Theories of War 1904-1945* (Pen and Sword Military Classics: Barnsely, 2004 [George Allen and Unwin: 1982]), p.15. The inter-war period is also subject to analysis in this work pp.167-84.
[11] Williamson Murray, 'British and German Air Doctrine between the Wars', *Air University Review*, XXX: 3 (March/April, 1980). Available at http://www,airpower.au.af.mil/airchronicles/aureview/1980/mar-apr/murray.html. Accessed 18 May 2009.
[12] Philip A.G. Sabin, 'Air Power in Joint Warfare', in Stuart Peach (ed.), *Perspectives On Air Power: Air Power in its Wider Context* (The Stationary Office: London, 1998), p. 245.

These ideas were then subject to modification in the light of what the Services were able to afford and politically was possible to achieve. Economic circumstances also further highlighted the pace of technological change, as the RAF was unable to keep up with developments as quickly as developments were emerging. One major reason why this caused concern for those responsible for protecting Britain and her population was that the premium now being placed on being and remaining a 'first-rate air power had increased dramatically'.[13] Despite the RAF's codification of air power's fundamental principles that would act as a guide as to what air power could achieve, and the lessons from the First World War being identified, the newly formed RAF felt itself to be deeply under threat of disbandment as its sister Services emphasised the supporting role aircraft had had in the previous conflict.[14] These independent roles were further emphasised in doctrinal thinking in the late 1930s.[15]

All three armed Services faced similar problems, especially in the years immediately after the First World War, in that there was very little, if any chance, of a European conflict against a first class power against which strategic or defensive policy could be developed rationally. There were, however, tensions between the British and French governments between 1921 and 1925 and, as a result, the French Air Force was seen as a major threat to Britain.[16] The Empire had expanded due to the territorial settlements of the Treaty of Versailles. This expansion added to existing Imperial security threats.[17] This situation coupled with the massive de-mobilisation of armed forces that was inevitable after the massive expansion that had occurred in order to fight a total war such as the First World War. H. Montgomery Hyde

[13] John Buckley, *Air Power in the Age of Total War* (University College London Press: London, 1999), p.99.
[14] RAF Hendon, Trenchard Papers MFC 76/1/357, Lecture VIII Principles of War.
[15] John Ferris, 'Fighter Defence before Fighter Command: The Rise of Strategic Air Defence in Great Britain, 1917-1934', *Journal of Military History*, 63: 4 (October, 1999), p.847.
[16] John Ferris, 'The Theory of the French Air Menace: Anglo-French Relations and the British Home Defence Air Programmes of 1921-1925', *The Journal of Strategic Studies*, 10: 1 (March 1987), pp.62-83.
[17] For more information on British security issues of the inter-war period see Michael Howard, *The Continental Commitment: The Dilemma of British Defence Policy in the Era of Two World Wars* (Pelican Books: Harmondsworth, Middlesex, 1974[Temple Smith, 1972]). Brian Bond, *British Military Policy between the Two World Wars* (Clarendon Press: Oxford, 1980).

has written 'the exigencies of a peacetime economy had reduced this immense force [188 squadrons] to a mere 33 squadrons of which 8 were in the process of formation'.[18] The British found themselves in an almost unique position amongst the victorious powers in 1918. As Michael Howard has noted,'[A]s a result of the First World War the British Empire reached its greatest total territorial extent, and the peak of its influence on world politics', it was, however, financially unable to undertake these new responsibilities with any great ease. To this may be further added that, 'Less than ever were the Dominions now prepared to allow their foreign or defence policy to be laid down in London, or to envisage their armed forces in any future conflict coming under the control of British commanders'.[19] British defence policy had to have take into consideration not only the more traditional concepts such as the balance of power in Europe but also the new more independent attitude of the Empire.

The European balance of power had been a pillar of British defence thinking since the Elizabethan era.[20] Added to this were new Imperial territories, such as Palestine, that proved to be difficult and costly to control throughout the inter-war period.[21] This was to place a greater burden on defence costs and thinking. Due to cutbacks and an extended Empire, the armed forces of Britain found themselves in the position of only being able to justify themselves and their re-armament policies by demonstrating their utility in the new strategic situation. This situation suited some of the armed forces better than others. It also, however, meant that the three Services were keener to curry favour with politicians in the short term in order to keep their position rather than develop doctrinal ideas beyond the 'Ten-Year Rule' period. One of the best examples of this is in the flagship policy of the RAF during the inter-war period: strategic bombing. So little thought had been given to this idea, especially during

[18] H. Montgomery Hyde, *British Air Policy Between the Wars 1918-1939* (Heinemann: London, 1976), p.49.
[19] Howard, *The Continental Commitment* p.72, 75.
[20] Gary Sheffield, *Forgotten Victory: The First World War Myths and Realities* (Review: London, 2002 [Headline Book Publishing, 2001]), pp.40-1.
[21] Keith Jeffrey, *The British army and the crisis of empire 1918-22* (Manchester University Press: Manchester, 1984), p.12. See also Anthony Clayton, *The British Empire as a Superpower, 1919-39* (Macmillan: London, 1986).

the early to mid 1930s when very real threats were developing on the continent, that no studies had been carried out to ascertain how exactly this policy was to be carried out.[22]

Tactical air power had shown its importance during the First World War. The first use of aircraft was in a reconnaissance role. As the accuracy of aircraft reports were verified they were relied upon more and more in this role, and in spotting for artillery.[23] Air power was employed in both tactical and strategic roles by both the British and the German air forces by the end of conflict.[24] One of the first major uses of tactical air power during the First World War had been the interdiction operations conducted by Second and Third Wings Royal Flying Corps (RFC) on 10 March 1915 at Neuve Chappelle. During this operation, the German reserves moving around the Lille-Menin-Courtai area were bombed as they made their way up to the front line area.[25] The first operational orders for the use of close air support to be co-ordinated with troop movements were at the Battle of Arras in April 1917.[26] A major use of aircraft in the close air support role came on 11 May 1917 at Arras. The aircraft of the RFC were detailed to attack 'obstacles in the path of the advancing infantry'.[27] The opening of the Third Battle of Ypres saw further refinement of close air support from the attacks made at Arras. Peter Simkins writes that '... RFC single-seater squadrons were detailed to give direct help to the infantry by making low-level attacks on German positions and troop concentrations with machine guns and 25lb Cooper bombs'.[28]

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[22] Howard, *The Continental Commitment* p.113.
[23] Michael Armitage, *The Royal Air Force: An Illustrated History* (Arms and Armour Press: London, 1993), p.14. See also Robin Higham, *Air Power: A Concise History* (St. Martin's Press: New York, 1972).
[24] Williamson Murray, 'The Influence of Pre-war Anglo-American Doctrine on the Air Campaigns of the Second World War', in Horst Boog (ed.), *The Conduct of the Air War in the Second World War: An International Comparison* (Berg Publishers: New York and Oxford, 1992), p.237.
[25] Hilary St. George Saunders, *Per Ardua: The Rise of British Air Power 1911-1939* (Oxford University Press: London, New York and Toronto, 1944), p.54.
[26] David Jordan, 'War in the air: the fighter pilot', in John Bourne, Peter Liddle and Ian Whitehouse (eds), *The Great World War 1914-45 Vol. I: Lightening Strikes Twice* (Harpers Collins: London, 2000), p.87.
[27] Lee Kennett, 'Developments to 1939', in Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Office of Air Force History, United States Air Force: Washington, D.C., 1990), p.18.
[28] Peter Simkins, *Air Fighting 1914-18: The Struggle for Air Superiority over the Western Front* (Imperial War Museum: London, 1978), p.62.

When investigating the impact of aircraft on the battlefield in support of Third Army in the last 100 days of the First World War, Jonathan Boff, states that 'news brought by contact patrols ... was generally only 24 minutes out of date'. Of more interest to a study of this nature is the conclusion he puts forward that 'no single doctrine applied [to air support controls and procedures] across all the British armies'.[29] This conclusion can have a significant impact on the interpretation of events of the inter-war period, especially when taken against the counter-arguments put forward by David Jordan. 'By the end of the First World War, the BEF [British Expeditionary Force] and the RAF had developed an extremely high degree of cooperation [*sic*] that added considerably to the potency of the BEF as the war drew to a close'.[30] Jordan has further enforced Richard Hallion's views on the doctrine applied by the RFC in the First World War. This included different aircraft being employed in different roles on the battlefield such as the use Sopwith Camels 'operating at medium altitudes for protection of reconnaissance, liaison, artillery spotting, and ground-attack flights ...'[31] As can be seen the issue as to whether or not the RAF had a single unified doctrine for the support of ground troops by aircraft is still subject to much intense debate. The question as to whether the writings of the RFC and RAF can actually be considered doctrine is also subject to debate. Historians such as Hallion, Jordan, Boff and Parton are in agreement that the writings of the RFC and RAF can be seen as doctrinal in nature.[32] David Hall, however, sees the writings of these organisations as tactical fighting instructions that cannot be seen as

[29] Jonathan Boff, 'Air/Land Integration in the 100 days: The Case of Third Army', *Air Power Review*, 12: 2 (Autumn, 2009), pp.82-3.
[30] David Jordan, 'The Royal Air Force and Air/Land integration in the 100 days, August-November 1918', *Air Power Review*, 11: 2 (Summer, 2008), p.28. Cf. David Jordan, *The Army Co-operation Missions of The Royal Flying Corps/Royal Air Force 1914-1918*, unpublished PhD Thesis, University of Birmingham, Great Britain, 1997.
[31] Richard P. Hallion, *Strike from the Sky: The History of Battlefield Air Attack, 1911-1945* (Smithsonian Institute Press: Washington and London, 1989), p23.
[32] Cf. Jordan, 'The Royal Air Force', and *The Army Co-operation Missions*. Hallion, *Strike from the Sky*. Boff, 'Air/Land Integration'. Parton, *The Evolution*. David Ian Hall, *Strategy for Victory: The Development of British Tactical Air Power, 1919-1943* (Praeger Security International: London and Westport, Connecticut, 2008), pp.xi-xiii.

doctrine. He argued that doctrine was not developed by the RAF until the first principles of air warfare had been codified.[33]

The Literature

There has been much written on the RAF since its inception in 1918 as well as on its predecessors the RFC and the Royal Naval Air Service (RNAS). These works cover almost all aspects of the work undertaken by these organisations. Those works that focus on the development of tactical air power both in theory and in practice, particularly during the inter-war period and the Second World War will form the literature review for this thesis.

The development of interest in tactical air power, both in theory and in practice, has increased at an unprecedented level over the past two decades. This interest has led to an increase of knowledge within the academic community as well as an increase in the reasons put forward to explain the development, or in certain cases the lack of development, of tactical air power doctrine. As Richard Overy has stated 'The history of air warfare has steadily moved away from focus on air combat to explore the wider context in which air power was generated'.[34] The development of tactical air power doctrine, within the RAF, both before, but also during the Second World War, holds much of interest to the air power historian. The RAF's focus during this period centred on the debate between the offensive and defending Britain, in particular London. Firstly, Fighter Command, especially after defeat on the Continent in 1940 with the subsequent threat of invasion and of course the Battle of Britain. Secondly, the problems faced by Bomber Command and the strategic bomber offensive that it undertook against the German economy, industry and the morale of the German workers.[35] The development of a tactical air support doctrine was never a major

[33] Hall, *Strategy for* p.xii.
[34] Richard J. Overy, 'Air Power and Warfare: A Historical Overview', in Mark K. Wells (ed.), *Air Power: Promise and Reality* (Imprint Publications: Chicago, 2000), p.1.
[35] Charles Webster and Noble Frankland, *The Strategic Air Offensive against Germany, 1939-1945 Vol. 1, Preparation* (Her Majesty's Stationery Office: London, 1961). N.H. Gibbs, *Grand Strategy Vol. 1, Rearmament Policy* (Her Majesty's Stationery Office: London, 1976). Peter W. Gray, *The Strategic Leadership and*

priority for the RAF in Britain after the end of the First World War and the reasons for this will be looked at in more detail below.[36] A lack of a coherent and practised doctrine made itself felt when the British Expeditionary Force (BEF) fought alongside French in France in 1940. There was little agreement between the RAF and army over the type of army co-operation missions that would be conducted and the aircraft that conducted these missions were obsolete. The original reason for the RAF to be in France was to prosecute a strategic campaign against targets in Germany. Whilst the RAF conducted these missions, the French *Armée de l'Air* were designated to conduct support missions. The RAF were not able to provide effective support due to poor communications systems, obsolete aircraft and the Allied forces being thrown off balance by the new operational speed seen in France in 1940.

Tactical air power development

Developments in tactical air support had been made both by Army Co-operation Command in Britain and by Air Marshal Sir Arthur Coningham and the Western Desert Air Force (WDAF) in the Western Desert, North Africa and the Mediterranean after the Battle of France. One of the major debates between academics of this area is the where the major developments in tactical air support were made during the Second World War.[37] This debate

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Direction of the Royal Air Force Strategic Air Offensive against Germany from Inception to 1945, unpublished PhD Thesis, University of Birmingham, Great Britain, 2010. Gray's thesis has subsequently been published. Cf. *The Leadership, direction and legitimacy of the RAF bomber offensive from inception to 1945* (Continum: London, 2012). Chaz Bowyer, *Fighter Command 1936-1968* (J.M. Dent & Sons Ltd: London, Toronto and Melbourne, 1980). Max Hastings, *Bomber Command* (Pan Books: London, 1981). See also John Ferris, 'Fighter Defence Before Fighter Command: The Rise of Strategic Air Defence in Great Britain, 1917-1934', *Journal of Military History*, 63: 4 (October, 1999), pp.845-884.

[36] Malcolm Smith, '"A Matter of Faith": British Strategic Air Doctrine before 1939', *Journal of Contemporary History*, 15: 3 (July, 1980), p.424.

[37] Hall, *Strategy Victory*. Brad William Gladman, *Intelligence and Anglo-American Air Support in World War Two: The Western Desert and Tunisia, 1940-43* (Palgrave Macmillan: Basingstoke and New York, 2009). Brad Gladman, 'The Development of Tactical Air Doctrine in North Africa', in Sebastian Cox and Peter W. Gray (eds), *Air Power History: Turning Points from Kitty Hawk to Kosovo* (Frank Cass: London and Portland , Oregon, 2002). Hallion, *Strike from the Sky*. Ian Gooderson, *Airpower at the Battlefront: Allied Close Air Support in Europe 1943-45* (Frank Cass: Portland, Oregon and London, 1998). Richard P. Hallion, 'The Second World War as a Turning Point in Air Power', in Sebastian Cox and Peter Gray (eds), *Air Power History: Turning Points from Kitty Hawk to Kosovo* (Frank Cass: London and Portland, Oregon, 2002). Gooderson, 'Doctrine from the crucible'. David Syrett, 'The Tunisian Campaign, 1942-43', in Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Office of Air Force History United States Air Force: Washington D.C., 1990). Daniel R. Mortensen (ed.), *Airpower and Ground Armies: Essays on the Evolution of Anglo-American Air Doctrine, 1940-43* (University Press of the Pacific: Honolulu, Hawaii, 2005).

has been skewed somewhat as there has been no major contemporary academic investigation into the work done by Army Co-operation Command. The agreements and disagreements of these academics will be highlighted when the individual works are reviewed. The major aspect for these commentators is how effective each of these two organisations – Army Co-operation Command and the Western Desert Air Force (WDAF) - were in the development of a workable concise and coherent close air support doctrine. Their question can be expanded to look at how far the ideas of Army Co-operation Command and the WDAF were combined to form a coherent, concise and workable doctrine. It was this doctrine, developed in theory by Army Co-operation Command and in practise in the Western Desert, which allowed the RAF to support the land actions of Allied troops during their battles across Italy, France and Germany between 1943 and 1945. The effectiveness of Army Co-operation Command as an organisation has also been subject to heated debate in works that have looked at tactical air power development in several theatres, such as in the Western Desert. The only work that specifically focuses upon Army Co-operation Command as a standalone Command, and not in direct comparison to theatres such as the Western Desert is T. Stanhope Sprigg's *Wings of the Army*, written in 1942. Sprigg was a squadron leader in the RAF at the time of the publication of this book. This work, however, has several drawbacks. It was written whilst the Command still existed and so it could not draw upon the vast documentary evidence of its

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W.A. Jacobs, 'Air Support for the British Army, 1939-1943', *Military Affairs*, 46: 4 (December, 1982), pp.174-182. A.D. Harvey. 'The Royal Air Force and Close Support', *War In History*, 15: 4 (November, 2008), pp.462-486. For more details of the developments made by other air forces see Vincent Orange, 'World War II: Air Support for Surface Forces', in Alan Stephens (ed.), *The War in the Air 1914-1994* (American Edition), (Air University Press: Maxwell Air Force Base, Alabama, 2001). B. Michael Bechtold, 'A Question of Success: Tactical Air Doctrine and Practise in North Africa, 1942-43', *Journal of Military History*, 68: 3 (July, 2004), pp.821-851. Brereton Greenhous, 'Evolution of a Close-Ground-Support Role for Aircraft in World War I', *Military Affairs*, 39: 1 (February, 1975), pp.22-28. Thomas Alexander Hughes, 'Air Lines: Anglo-American Tactical Air Operations in World War II', *Air and Space Power Journal*, XVIII: 4, (Winter, 2004), pp.34-49. Available at http://www.airpower.maxwell.af.mil/airchronicles/apj/apj04/win04/hughes.html. Accessed 14 April 2010. Charles Carrington, *Soldier at Bomber Command* (Leo Cooper: London, 1987). Peter W. Gray, 'Air Power and Joint Doctrine: An RAF Perspective', *Air Power Review*, 3: 4 (Winter, 2000), pp.1-14. Richard P. Hallion, 'Battlefield Air Support: A Retrospective Assessment', *Air Power Journal*, (Spring, 1990). Available at http://www.airpower.au.af.mil/airchronicles/apj/apj90/spr90/2spr90.htm. Accessed 2 December 2011. John Terraine, *The Right of The Line: The Royal Air Force in the European War 1939-1945* (Sceptre: London, 1988 [Hodder and Stoughton: London, 1985]). Carrington's private papers are held at the Imperial War Museum.

work that is now available in The National Archives.[38] With its publication in 1942, the work of Army Co-operation Command in 1942 and 1943 also does not form part of Sprigg's work. Its size is also a limitation, and indicates that he did not have access to the Army Co-operation Command and other RAF Command files. At only thirty-two pages long, it covered all aspects of the Command's work from how the squadrons worked through to reconnaissance and paratroop training and roles so there is little space for detailed analysis and information.[39] The benefits in this work are a study of the work conducted by Army Co-operation Command such as the training of paratroops, the use of Army Co-operation Squadrons in the field for reconnaissance duties and the aircraft that were available for the Command's use. It also does not assess the full role played by Army Co-operation Command in the development of tactical air power thinking in Britain during the Second World War.

A detailed study with its focus on Army Co-operation Command is of interest to those who study air power topics but also has a wider reach. A new command such as Army Co-operation Command faced problems, some of which are still relevant to the modern day world. The Command was unwillingly set up by the RAF and received very little support during its existence. It came under increasing pressure from the army, the organisation that it was created to work with, to resolve the problems that close air support presented. One of the major problems encountered by those working within Army Co-operation Command was the lack of interest shown in its work by other RAF commands such as Bomber and Fighter Commands. Army Co-operation Command was seen by contemporaries as a necessary evil that had to be endured, but not supported. It is interesting to note that a cursory look through the index of the second volume of Air Marshal Sir W. Sholto Douglas' autobiography there is no mention of Army Co-operation Command.[40] This is not due to an error in the indexing, as

[38] The files for Army Co-operation Command are located in The National Archives (TNA) PRO AIR 39.
[39] These thirty-two pages are spread over seven chapters with nine plates covering half a page each and one plate covering a full page see T. Stanhope Sprigg, *Wings of the Army* (Collins: London and Glasgow, 1942).
[40] W. Sholto Douglas, *Years of Command* (Collins: London, 1966).

there is no mention of the Command within the text, despite Douglas playing a major role in the re-organisation of army air support. During the first few months of Army Co-operation Command's existence, these other commands were facing major problems within their own organisation and so were unable or unwilling to lend the support necessary to allow Army Co-operation Command to function effectively.

The debate on the impact of Army Co-operation Command has been furthered with the publication of the memoir of Charles Carrington. Carrington was an army officer serving with Bomber Command during the Second World War and was able to see first hand the developments made in tactical air support in Britain during the period covered by this study.[41] Carrington had previously written his memoir of his time in the army during the First World War under the pseudonym Charles Edmonds.[42] His memoir from the First World War had a different emphasis to those published around the same time. Carrington looked to portray the sacrifice endured by his contemporaries and to reverse the contemporary feeling of 'disenchantment' with the Great War.[43] A study of this nature, whilst being carefully analysed and not necessarily accepted as fact, is highly useful to this thesis as it provides a first-hand account of the atmosphere, working conditions and freedoms given to Army Co-operation Command. Carrington's memoir from the Second World War is based around his time at Bomber Command, however, and so the extent of Army Co-operation Command's role is not fully developed and there are many gaps in this work that this thesis will fill. Carrington asserts that the major developments in air support doctrine were made in Britain and not in the Western Desert and North Africa where only small refinements were made in the light of battle experience. John Terraine comments upon this in his introduction to Carrington's work stating, 'He [Carrington] roundly asserts that the reorganisation of Army Cooperation "took place in Britain, *not* in Africa', as is generally supposed' [emphasis in

[41] Carrington, *Soldier at.*
[42] Charles Edmonds, *A Subaltern's War* (Anthony Mott: London, 1984).
[43] Brian Bond, *Survivors of a Kind: Memoirs of the Western Front* (Continuum: London, 2008), p.xiv.

original]. There was a major conflict of opinion between Carrington and Terraine. In his own major work on the RAF in the Second World War: *The Right of The Line: The Royal Air Force in the European War 1939-1945*, Terraine has also stated that Air Marshal Sir Arthur 'Ugly' Barratt had no operational control over the aircraft allotted to Army Co-operation Command. He furthers the argument made in the introduction to Carrington's memoir that the major advances in close air support were made in North Africa by stating that

> The most important difference between England and Egypt at this stage [1941-2] was that the third principle [that of using the whole of the available air resources in army co-operation], though perceived in England, was not acted upon; in Egypt, under stress of war it *was* acted upon [emphasis in original]. .[44]

Brian Bond puts forward a possible explanation for Terraine writing the foreword for Carrington's memoirs of his time working with Bomber Command, even though he fundamentally disagreed with the book's main thesis. He claims 'Among contemporary military historians he [Carrington] felt that Terraine was almost alone in being on the right track in defending [General Sir Douglas] Haig's reputation and the record of the British Army'.[45] Carrington argues further about the role played by Air Chief Marshal (ACM) Sir Arthur Tedder and his role in the re-organisation of Army Co-operation in North Africa.[46] More information is provided on the situation and freedom to work of Army Co-operation Commands commander Air Chief Marshal Sir Arthur 'Ugly' Barratt. Sebastian Cox has claimed Carrington had not been offered the role of official historian for the strategic bombing campaign. He further explains why this happened, '... a senior BBC figure ... told Sir Ian Jacob that he did not handle people taking issue with his views well, and that 'ructions' might follow if the Air Force took exception to the book'.[47]

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[44] Terraine, *The Right of the Line* pp.350-2.
[45] Bond, *Survivors of a Kind* p.13. Cf. Hew Strachan, 'The British Way in Warfare Revisited', *The Historical Journal*, 26: 2 (June, 1983), p.454. Strachan himself quotes from John Terraine, *To Win a War: 1918 the year of victory* (Sidgwick and Jackson: London, 1978), pp.13-4.
[46] Carrington, *Soldier at* pp. ix-x.
[47] Sebastian Cox, 'Setting the Historical Agenda: Webster and Frankland and the Debate over the Strategic Bombing Offensive against Germany, 1939-1945', in Jeffrey Grey (ed.), *The Last Word?: Essays on Official History in the United States and British Commonwealth* (Praeger: Westport, Connecticut and London, 2003),

The works on the development of tactical air power doctrine have become more wide ranging in recent years and have covered its development and implementation since its first major use during the First World War.[48] Further to the general studies that are available, the works on tactical air power development have focused upon specific conflicts such as the Second World War. Different air forces, such as the RAF, the United States Army Air Force and the *Luftwaffe,* who played a major role in the development and use of tactical air power, have also been subject to detailed analysis.[49]

One of the most wide-ranging of these studies on tactical air support is Hallion's work.[50] Hallion's study emphasises four significant areas that must be investigated when studying battlefield air support and these are '*doctrine, command and control procedures, operational circumstances, and aircraft technology*' [emphasis in original].[51] Hallion further emphasises the work conducted in the Western Desert as the key to the development of a successful close air support doctrine. There is little emphasis on the work done by Army Co-operation Command.[52] This is due to Army Co-operation Command conducting no operations against the enemy in the development of tactical air power. There is also an emphasis on the developments made by both the British and Americans in a joint context.

Much work has concentrated upon the RAF and the struggles they had in developing a workable doctrine whilst fighting the Luftwaffe. These works have focused upon the system worked out in the Western Desert, as well as the problems encountered after the United States began to fight alongside the British in this theatre. One such academic who has tackled this

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pp.151-2. See also Christina Goulter, 'British Official Histories of the Air War', in Jeffrey Grey (ed.), *The Last Word?: Essays on Official Histories in the United States and British Commonwealth* (Praeger: Westport, Connecticut, 2003).

[48] H.A Jones, *The War in the Air: being the part played in the Great War by the Royal Air Force Vol. IV* (Imperial War Museum: London 1998 [Oxford, 1934]), chapters 7 and 8 pp.260-484. For more information on the role of the Royal Flying Corps (RFC) during the First World War, see Ralph Barker, *A Brief History of The Royal Flying Corps in World War I* (Constable and Co.: London [Constable and Robinson: London, 1995], 2002).

[49] Mortensen, *Airpower and Ground Armies*.

[50] Hallion, *Strike from the Sky*.

[51] *Ibid*., p.3.

[52] *Ibid*., pp.149-158.

subject is Gladman, who has written extensively on the topic.[53] Gladman's major work focuses upon the use of intelligence in the Western Desert in relation to the development and use of close air support. Other historians who have broached this area include Syrett, Morentsen and Vincent Orange.[54] The major consensus between the authors noted above is their insistence that the Western Desert was the breeding ground for a concise and workable doctrine in tactical air support. This doctrine, it is argued, was eventually modified and used by the Allied armies during the campaigns across Italy, France and Germany between 1943 and 1945. Orange in particular provides a glowing account of Coningham's work in the Western Desert.

Benjamin Franklin Cooling was editor of a work that has used case studies of close air support use to highlight developments made in this area. There are areas of this work that are not relevant to this study. These are where the case studies are of the use of air support by Soviet forces in the Second World War, the developments made by the United States (US) in the Pacific theatre, close air support in Sicily from 1943 and in France in 1944.[55] This work also details how close air support was used in conflicts after the Second World War.[56] However, several chapters are highly relevant to this thesis. The first of these was written by Lee Kennett and looks at the development of close air support to 1939. Kennett identifies

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[53] Gladman, *Intelligence and Anglo-American Air Support* and 'The Development of Tactical Air Doctrine'.
[54] Syrett, 'The Tunisian Campaign', Vincent Orange, *Coningham: A Biography of Air Marshal Sir Arthur Coningham* (Centre for Air Force History: Washington D.C., 1992 [Meuthen: London, 1990]; *Tedder: Quietly In Command* (Frank Cass: Oxon, 2004), and Mortensen, *Airpower and Ground Armies*.
[55] Kenneth R. Whiting, 'Soviet Air-Ground Coordination, 1941-1945', Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Office of Air Force History, United States Air Force: Washington, D.C., 1990). Alan F Wilt, 'Allied Cooperation in Sicily and Italy, 1943-1945', in Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Office of Air Force History, United States Air Force: Washington, D.C., 1990). Will A. Jacobs, 'The Battle for France, 1944', in Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Office of Air Force History, United States Air Force: Washington, D.C., 1990). Joe Gray Taylor, 'American Experience in the Southwest Pacific', in Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Office of Air Force History, United States Air Force: Washington, D.C., 1990).
[56] Allan R. Millett, 'Korea, 1950-1953', in Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Office of Air Force History, United States Air Force: Washington, D.C., 1990). John J. Sbrega, 'Southeast Asia', in Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Office of Air Force History, United States Air Force: Washington, D.C., 1990). Brereton Greenhous, 'The Israeli Experience', in Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Office of Air Force History, United States Air Force: Washington, D.C., 1990).

how close air support was used during the First World War and demonstrates that the close air support 'gained official sanction at the Battle of the Somme'. The psychological impact of close air support on defending infantry is a theme that runs through the analysis of its use in the First World War. It is also noted that despite the advances made in this area many of the same problems would be encountered again in the Second World War. In looking at how close air support was developed in the inter-war period, Kennett identifies the problems that existed between the RAF and army with regards confusion over the use of terminology.[57] This confusion over terms will be looked at in the terminology section of this chapter. The tactics used are also subject to analysis in this work. There was a move away from using the machine-gun to developing bombs that could be used in a close support role in future warfare.[58] Kennet also highlights one of the major problems that plagued the RAF and army during the early operations of the Second World War. The 'doctrine, planes, and pilots' were 'untested in battle'.[59]

Williamson Murray contributed an essay to Cooling's work that looks at the *Luftwaffe*'s experience of conducting air support during the Second World War. One of the major arguments that is put forward in this work is that 'between May 13-14, 1940 close air support contributed enormously to the German success'.[60] This is a somewhat a debated point as modern scholarship argues that the impact of close air support on the German offensive on the River Meuse was not as great as Murray suggests.[61] This will be analysed in detail in this thesis in the chapter that focuses on the Battle of France in 1940. In investigating the history of close air support development in Germany, Murray argues that it was evolutionary instead

[57] Kennet, 'Developments to 1939', pp.17-28.
[58] *Ibid*., pp.34-5.
[59] *Ibid*., p.57.
[60] Williamson Murray, 'The Luftwaffe Experience, 1939-1941', in Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support* (Office of Air Force History, United States Air Force: Washington, D.C., 1990), p.71.
[61] Cf. John Buckley, 'The Air War in France', Brian Bond and Michael D. Taylor (eds), *The Battle of France and Flanders 1940: Sixty Years On* (Leo Cooper: Barnsley, 2001).

of revolutionary. 'The effort of May 13, as with the close air support of the German offensive in March 1918, involved the use of aircraft to support infantry that were attacking prepared defensive positions'. Murray further highlights the importance of air superiority over the battlefield to allow air forces the freedom to conduct close air support and, in his view, was as important as the doctrine applied.[62] A chapter such as this is of great interest to a thesis that is investigating the development of tactical air support in Britain, as the experience gained helped to shape the development of tactical air support in Britain.

The final chapter of Cooling's work that is of use to this thesis is Syrrett's investigation into the use of close air support during operations conducted in Tunisia between 1942 and 1943. In order to provide the context for this study, Syrett also looks at certain developments being made in Britain after the Battle of France in 1940. Certain arguments made in this chapter are now superseded due to modern scholarship and it is argued that the creation of Army Co-operation Command was 'almost ... an afterthought'. The work done by the likes of Hall and Gooderson, in recent years, has expanded our knowledge not only of the work done by Army Co-operation Command, but also the intentions of the RAF in creating the Command. Further to this, Syrett has highlighted the status of Army Co-operation Command stating that it 'was an unwanted stepchild of the RAF', this was due to 'the RAF's concept of how the war should be fought'. The status of Army Co-operation Command within the RAF will be developed further in this thesis. The army's intentions with regards Army Co-operation Command is also subject to analysis in this work. The argument is put forward that the army in Britain wanted to make Army Co-operation Command subordinate 'to the ground forces commander'. This is another area that the work done on the development of tactical air support has added more nuance to. It will also be subject to a great degree of analysis in

[62] Murray, 'The Luftwaffe Experience', p.92.

this thesis. The transfer of ideas from Britain to the Western Desert is also subject to analysis and Syrett argues that

> ... due to poor communications between staff and field units in Great Britain and between the Western Desert Air Force and Air Ministry, RAF units in the United Kingdom had little or no knowledge of the evolving methods. The result was that RAF sent units to Tunisia supposedly versed in Western Desert Air Force doctrine, but nobody really understood how that doctrine worked.[63]

This argument does not take into account the evidence put forward on the transfer of ideas on conducting impromptu air support through a unit trained under the Army Co-operation Command system noted by Gooderson.[64] Further to this, recent scholarship has identified that the commander of Army Co-operation Command, Barratt, visited the Middle East to observe the system being employed in this theatre in action under battle conditions.[65]

The opinion put forward by Gladman, *et. al*. is also favoured by other writers who have investigated the development of tactical air support doctrine from the perspective of the RAF as a whole. Hall has looked at the development of tactical air power in the RAF between 1919 and 1939. The focus of this study is how operational principles were developed in the Second World War from the theoretical base that had been developed during the First World War.[66] Whilst there is discussion of the debates held between the Air Ministry and WO regarding the creation of Army Co-operation Command, there is very little attention paid to the work of the Command in the years after its establishment in December 1940 and the role undertaken by the Command. Hall also covers the debates had at the WO Air Ministry level in Britain during 1942 with regards the re-organisation of forces in Britain to conduct air support. Hall argues that the major developments made in the area of tactical air support during the Second World War was made during the operations conducted against German forces in the Western Desert from 1942 onwards.

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[63] Syrett, 'The Tunisian Campaign', pp.158-9.
[64] Gooderson, *Air Power at the Battlefront* pp.24-5.
[65] Hall, *Strategy for* p.139.
[66] Hall, *Strategy for*.

Gooderson, although less extreme, puts a similar viewpoint forward arguing that the doctrines of Army Co-operation Command and what was to become the WDAF developed in parallel, but the basic structure of the doctrine came from Britain.[67] He further argues that the ideas developed in Britain were transferred abroad when an Army Air Support Tentacle (No. 2 AASC) was sent to the Western Desert in order to gain operational experience.[68] Gooderson's thesis, however, focuses mainly upon how close air support was used during the Allied invasions and subsequent drives across Italy and France, as well as its effectiveness during these campaigns and so does not form a major part of this thesis. Despite the focus of this book being similar to that of the chapters in Cooling's work on Sicily and Italy and France, the opening chapter of Gooderson's work is on the developments and work that took place both in Britain and overseas by the RAF and so has a large amount of relevance to this thesis.

Several unpublished Ph.D. theses have also focused upon various aspects of the inter-war period especially from an RAF viewpoint. Derek Waldie analyses the relations between the RAF and Army between 1918 and 1939 and provides a valuable insight into this topic in a thesis presented to King's College London in 1980.[69] Also of major interest is the thesis presented to Cambridge University in 2009 by Neville Parton that looks at the development and impact of RAF doctrine between 1919 and 1939.[70] This is important to a thesis of this nature as the official thinking of the RAF dictated how they would look to fight in any future conflict and provided the starting point from which Army Co-operation Command would build in further developing tactical air support.

[67] Gooderson, *Air Power at the Battlefront*.
[68] *Ibid*., pp.25-6.
[69] Derek J.P. Waldie, *Relations between the Army and Royal Air Force 1918-1939*, unpublished PhD Thesis, Kings College London, Great Britain, 1980.
[70] Parton, *The Evolution and Impact of Royal Air Force Doctrine*.

Terminology

Doctrine is a difficult concept to define. A basic dictionary definition is 'that which is taught'.[71] This definition is, however, very simplistic and cannot be applied to the term for its use within military circles as it does not take into account how what is taught is developed based upon historical experience, political necessity and technological capability.[72] The current British military definition of doctrine is to act as 'a guide [to] the single Services and provide the necessary familiarity and broad basis of understanding for joint and component commanders, formations and units to operate effectively across environmental boundaries'.[73] Daniel Moran provides a more comprehensive definition. He states that doctrine is 'An approved set of principles and methods, intended to provide large military organisations with a common outlook and uniform basis for action'.[74] I.B. Holley has defined doctrine as

> what is being taught, i.e. rules or procedures drawn by [a] competent authority. Doctrines are precepts, guides to action, and suggested methods for solving problems or attaining desired results

however, it is also pointed out that

> Because there are so many variables and imponderables in any military situation, doctrines must never be regarded as absolutes. Perhaps the best definition holds doctrine as that mode of approach which repeated experience has shown *usually* works best.[75]

Barry Watts and James Hale question the requirement for doctrine during wartime asking

> Is doctrine preeminently [*sic*] a peacetime tool for developing force structure? Or does it also have an important, perhaps even crucial role to play in battle?[76]

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[71] Oxford English Dictionary, http://www.oed.com/view/Entry/56322?rskey=hpHSWZ&result=1&isAdvanced=false# Accessed 21 Dec 2010.

[72] Dennis M. Drew, 'Informal Doctrine and the Doctrinal Process: A Response', *Air University Review*, (September- October 1984). Available at http://www.airpower.maxwell.af.mil/airchronicles/aureview/1984/sep-oct/drew.html. Accessed 14 March 2011.

[73] *AP 3000, British Air and Space Power Doctrine*, (Fourth Edition, Directorate of the Air Staff, MoD, 2009).

[74] Daniel, Moran, 'Doctrine, military', in Richard Holmes (ed.), *The Oxford Companion to Military History* (Oxford University Press: New York, 2001), p.262.

[75] I.B. Holley, 'Concepts, Doctrines, Principles: Are You Sure You Understand These Terms?', *Air University Review*, (July/August, 1984). Available at http://www.airpower.maxwell.af.mil/airchronicles.aureview/1984/jul-aug/holley.html. Accessed 22 February 2011. See also Raymond S Blunt., and Thomas O. Cason, 'Realistic Doctrine: Basic Thinking Today', *Air University Review*, (May – June 1973). Available at http://www.airpower.au.af.mil/airchronichles/aureview/1973/may-jun/blunt.html. Accessed 14 March 2011.

[76] Barry D. Watts and James O. Hale, 'Doctrine: Mere Words or a Key to War-Fighting Competence?', *Air University Review*, (September/October, 1984). Available at

Looking at doctrine from a more contemporary viewpoint it is further claimed that 'Since 1947, the notion of military doctrine generally accepted within the Department of Defense has centred around the allocations of roles and missions among the various Services'.[77] According to John Pauly,

> The essence of doctrine lies in its purpose: to teach, to endow a body of people with a common set of broad assumptions, ideas, values, and attitudes as a guide to future actions. Rather than a one-time revelation from on high to be taken as dogma, doctrine is the product of continuing effort to join theory and practice – one of the most difficult of all enterprises. Theory without the leavening of experience, lacks substance and foundation; experience without theory lacks an adequate frame of reference to accommodate future changes that will surely come. Meaningful ... doctrine, suitable for all the complexities and forms modern ... warfare, is the synthesis of theory *and* experience.[78]

Barry Posen has written on the development of military doctrine at the highest level. This study looks at doctrinal development in Britain, France and Germany in the inter-war period. For the purposes of this thesis, the definition of doctrine put forward by Posen is at too high a level, that of grand strategy. Doctrine in Posen's study is based upon the interaction of states within the international system and national security and not in the ideas of individual armed forces, which he describes as tactics. Despite this, Posen's work, with its slightly flawed definition of doctrine, still holds valuable information for this study. Posen looks at how grand strategy and defence policy are inextricably linked. Grand strategy must identify a state's security threats. Doctrine is then devised in order to counter these threats. As Posen states,

> Military doctrine is important for two reasons. First, the doctrines held by the states within a system affect the quality of international political life. By their *offensive*, *defensive*, or *deterrent* character, doctrines affect the probability and intensity of arms races and of wars. Second, by both the political and military appropriateness of the means employed, a military doctrine affects the security of the states that holds it [emphasis in original].[79]

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http://www.airpower.maxwell.af.mil/aichronicles/aureveiw/1984/sep-oct/watts.html. Accessed 22 February 2011.

[77] Watts and Hale, 'Doctrine: Mere Words or a Key to War-Fighting'.

[78] John W. Pauly, 'The Thread of Doctrine', *Air University Review*, (May-June, 1976). Available at http://www.airpower.maxwell.af.mil/airchronichles/aureview/1976/may-jun/pauly.html. Accessed 10 March 2011.

[79] Barry R. Posen, *The Sources of Military Doctrine: France, Britain, and Germany Between the World Wars* (Cornell University Press: Ithaca, New York and London, 1984), pp.14-6.

Posen's definition of doctrine is more usually known as defensive policy. It looks at the requirements and abilities of an armed force in general and how it plans to handle itself within the realm on international politics. Posen's study seeks to examine the inter-relationship that exists between grand strategic ideas and the world of international politics.

Overy has presented an historical analysis of the development of doctrine from the viewpoint of the RAF in the inter-war period. In this work, Overy highlights some of the pitfalls that a service can come across when establishing doctrine. His work identifies some of the problems that can be faced when doctrinal thinking stalls, and becomes dogma, or when doctrinal thinking overtakes the technology available and becomes unworkable as operational concepts. He sees doctrine as a largely twentieth century idea, and defines it as '... a set of formal, written guidelines on the organization and function of armed service in pursuit of certain stated strategic objectives ...'[80] Whilst this definition is a better one than others that have been put forward above, the emphasis upon the guidelines being written down is still a flaw. Scot Robertson has argued that the theory that underpins doctrine can also become dogmatic in nature and does not always take into account the experiences of an organisation. This can lead to the doctrinal process becoming unrealistic, especially if the theory cannot be put into practice.

> If the development of the doctrine, strategy, and tactics suggested by the theory begins to neglect whatever historical experience is available, the entire process may begin to lose touch with reality – reality being those universal truths that Clausewitz considered the bedrock of theory ... Theory and practice are inextricably interwoven. Theory, if it is to be of practical value must be based on experie$nce, while strategy, doctrine, and tactics must relate back to and be consistent with, the general nature of theory.[81]

Doctrine does not necessarily have to be written in order to be learned or to be effective. A caveat to the last statement is that while unwritten doctrine can be effective, in the large and dispersed forces that have emerged in the twentieth and twenty-first centuries, it is very difficult to train troops to act uniformly without a doctrinal document from which to work.

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[80] Richard Overy, 'Doctrine Not Dogma: Lessons from the Past', *Air Power Review*, 3: 1 (Spring, 2000), p.33.
[81] W. Scot Robertson, *The Development of Strategic Bombing Doctrine, 1919-1939* (Praeger: London and Westport, Connecticut, 1995), pp.9-10.

The end of the First World War gave the RAF the opportunity to use the experience gained to provide guidance for the future development of air power.[82] These lessons were to provide 'principles for the future conduct of air warfare'.[83] These principles were to provide the RAF with the intellectual context, and wartime experience, on which they would base their development of doctrine throughout the inter-war period. This thinking emphasised air power's inherent flexibility on the battlefield. As a result of this, and the need to maintain a 'clear strategic direction and unity of effort', 'air forces [should be] controlled by one central authority'.[84]

Further in his work, Overy investigates how doctrine was used by the RAF as a tool with which to secure its independence and gain scarce financial resources, as has been previously noted.[85] He further notes the difficulties faced when a doctrine is not capable of being supported in the field by the available technology, which the RAF's Bomber Command were to find when they began embarking upon their first raids in 1939 and 1940. There are also warnings regarding doctrine becoming rooted in time. This means that doctrine is then prevented from developing along organic lines and the problems encountered when faced with a new and unexpected development in the international arena as well as attempting to explain why such things can be allowed to happen. Tony Mason has gone as far as to claim that the 'influence of doctrine became so pervasive [in Britain] that alternative interpretation of facts, or facts which did not fit the doctrine, were either seriously undervalued or overlooked'.

> The temptation is to take doctrine at a fixed point and to keep it that way to maintain some semblance of intellectual certainty. Doctrine can then turn into dogma. It no longer encourages

[82] TNA (PRO) AIR 8/13, Command Paper 100: Synopsis of British Air Effort During the War, 1919. Hall, *Strategy for* pp.14-5.
[83] Hall, *Strategy for* p.14.
[84] The Royal Air Force Museum, Hendon (RAF Hendon) Trenchard Papers, MFC 76/1/357 – Lecture VII Air Strategy. Lecture VIII – Principles of War. Lecture XII – The Value of a Centralised Air Force. Cf. TNA AIR 5/299, RAF Operations Manual CD 22 (AP882) and J.C. Slessor, *Air Power and Armies* (University of Alabama Press: Tuscaloosa, Alabama, 2009 [Oxford University Press: London, 1936]), pp.195-6.
[85] Overy, 'Doctrine not Dogma', p.37.

> creative thinking about the function or nature of military activity, but forces that activity into a particular mould, which may be more or less suitable for the current situation.[86]

Close air support is also a difficult term to define and was to be one of the major obstacles which Army Co-operation Command would have to overcome as the army and the RAF had different conceptual ideas as to what form close air support should take. The army felt that air support should take the form of standing umbrellas of aircraft patrolling the front lines and protecting ground forces from direct enemy attack. There was also the further belief that offensive air support should be available on call when and where it was required on the battlefront.[87] The RAF, however, felt that the most effective use of air power in support of ground forces after the gaining of air superiority was in battlefield air interdiction operations in order to isolate the battlefield. They felt that the army's ideas regarding standing patrols was a waste of air powers' inherent flexibility and that the use of aircraft in support of ground troops should only be carried out in the most extreme of emergencies and should not be a regular occurrence.

Commentators and contemporaries, some involved in its development, have attempted to explain the concepts of both tactical and close air support, have put many definitions forward. A simple definition of tactical air support is 'the intervention of air forces on the battlefield'.[88] The most pressing problem with this definition is that it does not take into account the problems that are involved in close air support both when it is used in a pre-planned role, and when impromptu operations are required when strong points are encountered during combat. It also does not distinguish between operations that occur on the battlefield but do not provide direct support for troops, such as the targeting of ammunition or fuel dumps. A contemporary definition such as this does not differentiate between RAF's

[86] Tony Mason, *Air Power: A Centennial Appraisal* (Revised Edition) (Brasseys: London, 2002 [Brassey's: London, 1994]), pp.38-9, 33.
[87] Cox, 'The Air/Land Relationship', p.1.
[88] Liddell-Hart Centre for Military Archives (LHCMA), Laycock 3/18, Notes on the Employment of Aircraft when used in a Close Support Role, undated.

own definitions of direct support and close support. Direct support was the use of air forces to isolate the battlefield and close support was the use of air forces in a close air support role.[89] These detailed definitions were agreed by the RAF and army in 1940, however, the developments made for the application of air support necessitated further refinement. The simple definition caused the army and RAF problems in achieving air-land tactical co-operation as there would be confusion over what type of air support (direct or close) was to be used in operations or was being developed in theory and potential for mistakes in the heat of battle increased greatly. Kennett has highlighted that this confusion existed prior to the creation of Army Co-operation 'An RAF officer reported that during maneuvers, his army counterparts "thought that close support meant ground strafing of front-line trenches ... and even asked to have forward batteries put out of action"'.[90] Jamie Belich has defined close air support as 'actions against enemy forces which are in close proximity to friendly units thus requiring close integration and careful planning to avoid errors'.[91]

Thesis Content

Out of the various themes in the literature on the development of tactical air power in the Second World War, one in particular needs to be emphasised as it features throughout the thesis. That is the role of Army Co-operation Command in the development of tactical air power thinking. Army Co-operation Command was created to develop this thinking in Britain. Beyond this, the position of Army Co-operation Command within the RAF Command structure and its relationship with other RAF Commands is critically important as it highlights the difficulties the Command faced in carrying out its role. Its relationship with the army, particularly Home Forces, is vital to fully understand where Army Co-operation Command sits within the wider historical context of tactical air power development. The

[89] TNA (PRO) WO 106/5162, Army Air Requirements, Summary of Decisions made at a meeting Held at the Air Ministry, 2 August 1940. Kennett, 'Developments to 1939', p.28.
[90] TNA WO 106/5162, Letter from Air Vice Marshal N.D.K. McEwen to Air Commodore R.P. Willoch, 9 December 1939. Kennet, 'Developments to 1939', p.28.
[91] Belich, 'Air support, close', p.14.

work of the Command and its wider relationships will form the basis of the last three substantive chapters. Due to its status as a non-operational Command, much of the work done was on a theoretical basis and was not tested by the Command in an operational context.

This thesis will answer the following substantial question: What impact did tactical air support developments during the First World War, inter-war and the Battle of France in 1940 have on the creation of Army Co-operation Command and its abilities to develop tactical air support between 1940 and 1943? Further to this, the thesis will also answer the following subsidiary questions: In what areas of tactical air support, in both theory and practice did Army Co-operation Command make developments? How did contemporaries, both in the RAF and army, view Army Co-operation Command during its existence? How did the creation and work of Army Co-operation Command affect upon the relations between the RAF and army in Britain between 1940 and 1943?

In addition to answering these questions, the thesis will argue that the developments made prior to the Battle of France in 1940 greatly affected Army Co-operation Command. The impact of the Battle of France was perhaps the greatest because it was as a result of this campaign that Army Co-operation Command was created. The Command was involved in the codification of signals experiments conducted in Northern Ireland in October 1940 and in the development of a pre-Second World War concept to improve the accuracy of artillery batteries using aircraft. Army Co-operation Command enjoyed relatively good relations with the army in Britain. Poor relations at the high command level, however, still caused difficulties for the Air Staff, particularly with the development of the composite group concept and whether it should be placed within Army Co-operation or Fighter Command. Army Co-operation Command was viewed by the Air Staff as necessary evil that had to be suffered in an attempt to prevent the creation of an army air arm. A similar view was taken by the other RAF Commands with regards to the existence and work of Army Co-operation

Command. The fundamental argument that will be put forward in this thesis is that Army Co-operation Command aided the development of tactical air support to a greater extent than has previously been recognised by historians in this field. Army Co-operation Command was helped in this success through the work of staff officers who had experienced the difficulties of conducting air support in France in 1940. This experience highlighted the key problems in how to conduct impromptu air support and guided Army Co-operation Command's thinking in this area. The Command also fostered good relations between RAF and army officers at the lower command levels. These good relations allowed trials and experimentation to be conducted between Army Co-operation Command and certain parts of the army in areas such as the School of Artillery. This was further helped by the fact that the commander of Army Co-operation Command, Barratt, was a former artillery officer. The thesis will be laid out as follows:

Chapter two will explore the development of close air support in Britain during the inter-war period from the doctrinal base left at the end of the First World War. It will start with analysis of the work done by both the RAF and army together in furthering the intellectual basis through training exercises conducted in Britain. The annual reports of these training exercises will be used to demonstrate the state and development of thinking in this area. The problems faced by the RAF in this period between the world wars will further highlight the reasoning for the relative neglect of tactical air power. The role of the RAF in policing the empire will form the final section in this chapter. The contemporary reports of the use of air power around the empire will be used to demonstrate how the RAF operated in these areas both independently and with ground forces.

Chapter three will look at how the doctrine that had been created during the inter-war period was applied during the first major operation of the Second World War in France and Belgium in 1940. This chapter will also look at how the formations created to conduct this

support were formed and then re-formed in various guises prior to being engaged on active operations. One aspect of these formations was the Air Observation Post (Air OP) Squadron and the beginnings of its development will form an aspect of this chapter as it provides the context required when its further development is analysed. The development of the Air OP Squadron will be a recurring theme in the following chapters. Finally, the chapter will look at the reports sent by the Lord Gort and Air Marshal Barratt who commanded the army and the RAF respectively in the immediate aftermath of the fighting in France in order to begin to set out the context and atmosphere in which Army Co-operation was created.

Chapter four will examine the investigations launched in Britain after the fighting in France. From the army's investigations particularly, extreme pressure was applied to the RAF to change their attitude towards army co-operation. The work done on improving the RAF's ability to conduct air support in the field, work that was continued by Army Co-operation Command, will be looked at prior to the section that examines the creation of Army Co-operation Command in order to keep the chronological nature of the thesis. This analysis combined with the last section of the previous chapter will provide the full context for the final section of this chapter: the creation of Army Co-operation Command. This section will look at how the Command was created and the RAF's motivations behind creating the Command as they did.

Chapter five will examine how Army Co-operation Command went about fulfilling its role through 1941. It will look at the changes made by the Commands' commander Barratt, to allow the Command to function as efficiently and effectively as possible. The position of the commander, as well as his relationships with others in the RAF will also form this section as it further highlights the position of the Command. This is an aspect of Army Co-operation Command that has not been subject to analysis in the literature that is currently available on tactical air power development in Britain during the Second World War. A section will also

look at the role of Army Co-operation Command working with the army in developing the Air OP Squadron as it highlights what the Command was capable of when allowed a freer reign in its role. The exercises held throughout the year in order to prepare both the army and RAF to conduct air support operations will also be subject to analysis. The steps taken in preparation to conduct anti-invasion operations in order to highlight the strategic context within which Army Co-operation Command was working will be highlighted. The aircraft requirements for conducting both the exercises and anti-invasion measures will form the final part of the chapter. The major events of the Middle East in 1941 will also form a small part of the chapter to highlight the setbacks and developments taking place overseas in active operations against the *Wehrmacht*.

Chapter six will continue the examination of the work done by Army Co-operation Command through 1942. The major battles in the Middle East and Barratt's visit to the theatre will be analysed. The development of the idea to use fighters, and as a result, Fighter Command, in tactical air support operations when the army returned to the continent will be examined. From this, the separate ideas put forward by Air Commodore Henry Thorold and Air Vice-Marshal John Slessor working in isolation regarding what form an army air support organisation should take to support operations against the continent will be examined. These proposals led to formal discussions taking place regarding these ideas and there was great debate between the army and RAF over where this new formation was to be placed within the RAF's Command structure.

Chapter seven will examine the work of Army Co-operation Command up until its disbandment in the middle of 1943. The development of the communications system used by land forces to call for air support will be examined in this chapter. The role played by the commander during the exercise that tested the army air support group idea will also be examined, as well the developments that occurred in the thinking regarding the conduct of

army air support as a result. Finally, the chapter will examine both the disbandment of Army Co-operation Command and the subsequent creation of 2nd Tactical Air Force.

The final chapter will conclude by examining the role played by Army Co-operation Command in the development of army air support in Britain between 1940 and 1943. This chapter will highlight the difficulties faced by the Command from the way in which it was created to complete the chronology. The attitude of the RAF towards this aspect of air power will be highlighted through this analysis.

Chapter Two

ARMY CO-OPERATION AT HOME AND ABROAD, 1918-1939

With the end of the First World War, the RAF was in the position that it had to formulate thinking on air power without full-scale operations against a first-class enemy, from which to learn and develop operational, communication and tactical ideas. Compared with other employment of aircraft, army co-operation was never a high priority for the Air Staff in Britain.[1] That is not to say that lessons from the First World War were not learnt and used to further the development of air power in Britain. These lessons were codified shortly after the conclusion of the conflict, and used as the basis for developing all aspects of air power during the inter-war period.[2] The RAF faced huge pressure from the army and Royal Navy over its very existence, and due to this pressure, certain aspects of air power found favour over others.[3] These demands intensified when the economic situation that faced the British Government meant that all three armed services had massive budget cuts imposed upon them. This restricted the research and development of tactics and equipment, training, and from exploring every possible avenue to the use of aircraft in particular.[4]

This is not to say, however, that army-co-operation training was not conducted, and it was this training that would frame the role of Army Co-operation Command during the Second World War. Annual army co-operation exercises were conducted between the RAF and army during the late 1920s and early 1930s. The conclusions reached and ideas developed in previous exercises were used to guide future exercises and were codified into an operational instruction manual in the late 1930s. This training meant that capabilities advanced from the stage reached at the end of the First World War. Many of these developments were to take

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[1] Gladman, *Intelligence and Anglo-American Air Support* p.20. For more detail on the development of strategic thinking in the RAF during the inter-war period see Malcolm Smith, *British Air Strategy Between the Wars* (Clarendon Press: Oxford, 1984).
[2] For more details on the codification of these lessons see Hall, *Strategy for* p.14.
[3] Carrington, *Soldier at* p.ix.
[4] Hyde, *British Air Policy* p.57, 67.

place around the British Empire where the RAF was entrusted with keeping law and order, sometimes in conjunction with forces of the army or its own armoured car units.[5] The work conducted by the RAF throughout the Empire at this time was not seen as applicable to any future conflict that may breakout between first-rate European nations. In conducting the role of imperial policing the RAF worked in close co-operation with land forces garrisoned throughout the empire. Conflicts involving minor and major European states, and the impact that army co-operation work had on them, was also seen as having little relevance in war between major nations and, as a result, the lessons of the conflicts were interpreted in such a way as to confirm general Air Staff thinking.[6]

This chapter will analyse the development of army co-operation doctrinal thinking, training, and development that the RAF undertook during the inter-war period, in both Britain and the Empire. It will argue that the army co-operation exercises held in Britain gave the RAF a greater understanding of some of the major problems, such as communicating between RAF and army headquarters, involved in conducting tactical air support. This argument goes against the majority of the literature on the topic that argues that the RAF made no real developments in this area and simply forgot how to support the army after the end of the First World War.[7] Further to this, it will also argue that greater developments in air support were made throughout the empire, but were seen as having little relevance to any conflict against a first-class enemy.[8] This analysis means it will be possible to gauge the position the units responsible for conducting tactical air support were held in by the RAF in 1939 when the services first found themselves deployed to the France. Through this, it will show the ability of these forces to conduct the work expected of them in combat based on the doctrinal

[5] Sebastian Ritchie, *The RAF, Small Wars and Insurgencies in the Middle East, 1919-1939* (Air Historical Branch: London, 2011), pp.3-83.
[6] Harvey, 'The Royal Air Force', p.476. See also Donald Cameron Watt, *Too Serious a Business: European Armed Forces and the Approach to the Second World War* (University of California Press: Berkeley, California and Los Angeles, 1975).
[7] Cf. Brian Bond, *British Military Policy* pp.321-26. Waldie, *Relations between* pp.289-92.
[8] Waldie, Relations between p.301.

publications and the extent to which meaningful training was conducted in this area. It will also look to build upon the work done previously in the literature available in order to attempt to explain what factors influenced the prioritisation of certain applications of air power over others. In order to set the context for the analysis noted above it will be necessary to explore on a small scale the work done in the First World War with regards army co-operation and the position of army co-operation thinking was in at the end of this conflict. Tactical air support, such as battlefield air interdiction and close air support, as they are now known, will also be included in this analysis.

Army Co-operation up to 1918

Army co-operation techniques had reached a relatively sophisticated stage when the primitive technology that developed in the preceding four years is taken into consideration. This was the base that would form the ideas that would be developed during the inter-war period and the Second World War.[9] The pilots involved, combined with their commanding officers and those responsible for the developing of doctrine and tactical methodology of the employment of aircraft in this role, were well versed in the impact aircraft could have. The RAF had gained experience of using aircraft in both static trench warfare and the more mobile operations conducted from the summer of 1918 until the armistice.[10]

Army co-operation work, in all its forms, was the major operational work of the RFC and it was set up with this in mind. Aircraft designed by the RFC was constructed with army co-operation in mind.[11] At the outbreak of war in 1914, the newly created RFC and the reconnaissance information it could provide, was not held in high regard by the army

[9] For more details on the state of army co-operation at the end of the First World War see Hallion, *Strike from the Sky* pp.37-45. Jordan, *The Army Co-operation Missions* and 'The Royal Air Force'.
[10] Cf. Boff, 'Air/Land Integration', pp.77-88. Jordan, *The Army Co-operation Missions*, Chapters 9, 10 and 11.
[11] Jordan, *The Army Co-operation Missions*, p.14. See also Malcolm Cooper, *The Birth of Independent Air Power: British Air Policy in the First World War* (Allen & Unwin: London, 1986).

authorities who were to control their missions.[12] Aircraft, however, were to prove their use in the very first campaigns of the First World War. They were able to provide 'invaluable sources of intelligence from as early as 19 August [1914]' and were able to detect the famous gap between the German First and Second Armies in to which the BEF attacked and halted the German advance.[13] This was confirmed by further air reconnaissance that 'revealed that von Kluck's [the German Second Army Commander] change of plan had left his right flank exposed, an opportunity presented itself for counter-attack'.[14] This counter-attack manifested itself in the 'Miracle of the Marne'. Hyde has described the priorities assigned to the RFC as 'first[ly] reconnaissance and secondly fighting ...'[15] As the First World War became mired in trench warfare, the RFC was able to conduct observation and reconnaissance missions over static front lines. This new situation provided the relatively inexperienced RFC with the opportunity to organise more effective reconnaissance missions.[16] The role the RFC was expected to play also increased as the conditions of static warfare allowed greater accuracy for the spotting of artillery shots.[17] This role in particular was to teach the RFC (and subsequently the RAF) the importance of denying the enemy the freedom to conduct similar reconnaissance and artillery roles themselves. This prevented the German air force from discovering troop concentrations prior to an attack and from conducting effective reconnaissance for their own offensive actions.[18]

In developing successful tactical techniques, the RFC were able to develop communication techniques in order to correct the fall of shot whilst aircraft were still in the

[12] Barker, *A Brief History* p.35. There has been a recent revision of the opinion that the RFC was not held in high regard by the army. Cf. Andrew Whitmarsh, 'British Army Manoeuvres and the Development of British Military Aviation, 1910-1913', *War In History*, 14: 3 (July, 2007), p.325.
[13] Armitage, *The Royal Air Force* p.14. Buckley, *Air Power* p.48.
[14] Barker, *A Brief History* p.45.
[15] Hyde, *British Air Policy* p.23.
[16] Jordan, *The Army Co-operation Missions*, p.90.
[17] Buckley, *Air Power* p.47.
[18] Boff, 'Air/Land Integration', p.81.

air.[19] One of these communication techniques was the Central Wireless Station being 'established in late 1916 as part of the efforts to improve the standard air-artillery co-operation. These provided a logical solution to the problem of directing attack aircraft against targets encountered by corps machines'.[20] Observation was of vital importance to higher commands who found themselves out of touch with the tactical situation of battles, which they were responsible for conducting. 'The senior RFC officer in the field would be expected to have a headquarters [HQ] close to that of the general headquarters [GHQ]' in order to provide the commander-in-chief with timely tactical information.[21] Aerial reconnaissance had improved to such an extent that 'by the end of 1917, photographic reconnaissance was in the need of only small refinement, mainly in the field of producing more efficient and effective cameras'.[22] The use of aircraft eventually expanded to include the tactical support of troops on the ground. One of the first instances of tactical air support conducted by the RFC was at the Battle of Neuve Chapplle. During combat on 10 March 1915, one of the first examples of battlefield air interdiction was conducted. The RFC were to isolate the battlefield around the Lille-Menin-Courtai district and delay the arrival of enemy reserve troops by bombing them on their way to the battlefield. This was the first such action conducted according to a pre-arranged plan.[23]

As more tactical air support operations were conducted, more experience was gained. This experience was gained and assimilated within the RFC quickly, when it is considered that no official thinking or guidelines existed for pilots tasked with ground support operations.[24] Despite this lack of official doctrine, the ground attack role had gathered pace during 1916 and when compared to the German air force, the support provided was

[19] Simkins, *Air Fighting 1914-18* p.13.
[20] Jordan, *The Army Co-operation Missions*, p.315.
[21] Parton, *The Evolution and Impact of Royal Air Force Doctrine*, p.6.
[22] Jordan, *The Army Co-operation Missions*, p.134. Cf. Jones, *The War in the Air Vol. IV* chapters 7 and 8.
[23] Saunders, *Per Ardua* p.54.
[24] Hall, *Strategy for* p.2.

'generally effective, not least in terms of delivery of fire-power in lieu of artillery'.[25] Aircraft from 21 Squadron were used in both interdiction and close air support roles during the opening phase of the Somme offensive in 1916.[26] Jordan has further argued that this form of support lacked any real effectiveness, aside from comparisons against the German Air Force, until 1917 – 'when ground attack missions involved the delivery of bombs in a manner far different from the speculative raids that had been carried out previously'.[27] Further to this, Jordan claims that due to a lack of appropriate technology the Germans found these raids were a 'source of inconvenience ... rather than providing a devastating blow'.[28] Close air support operations, due to their nature of attacking at a low altitude against ground troops firing back, as well as the close co-operation required with friendly ground troops, meant that the results obtained 'were disappointing when compared with the losses sustained'.[29] The high proportion of losses taken whilst conducting army co-operation missions in the First World War was to be a major factor hampering its development during the inter-war period.

Even with the formation of the RAF as an independent air force, there was little change in the focus of operations, although there was a public outcry for air attacks to be conducted against German territory after air raids over Britain in 1917.[30] The use of aircraft to attack the British civilian population by the German Air Force shattered the illusion the British public had about the immunity they took for granted.[31] An Independent Force (IF), headed by the future Chief of the Air Staff, Sir Hugh Trenchard was created to fulfil this role. At this

[25] Jordan, 'The Royal Air Force', pp.17-8.
[26] Jordan, *The Army Co-operation Missions*, p.220.
[27] *Ibid*. p.216.
[28] *Ibid*., p.222-3.
[29] TNA, AIR 10/5547, AHB Narrative: Air Support, (1955).
[30] This public outcry was responsible in itself for the creation on an independent RAF, as the British public had never been threatened on this scale previously. R.A Mason, 'The British Dimension' in Mark K. Wells (ed.), *Air Power: Promise and Reality* (Imprint Publications: Chicago, 2000), p.12. Cf. Alfred M Gollin, 'England is No Longer an Island: The Phantom Airship Scare of 1909', *Albion: A Quarterly Journal Concerned with British Studies*, 13: 1 (Spring, 1981), p.43. Alfred Gollin, *The Impact of British Air Power on the British People and their Government, 1909-1914* (Stanford University Press: Stanford, California, 1989).
[31] Tami Davis Biddle. *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914-1945* (Princeton University Press: Princeton, New Jersey, 2002), p.24.

time, Trenchard was more in favour of aircraft conducting a tactical rather than a more independent strategic role. With the end of the First World War, and the independence of the RAF at stake, Trenchard saw the benefits an independently led and organised air force could bring.[32] He also saw the potential impact that aircraft could have when used in a strategic capacity.[33]

The RAF in 1918 was a force equipped to conduct a variety of army co-operation missions with a reasonable degree of success although the casualty rates for missions such as close support were still restrictively high with losses running up to thirty per cent.[34] Between July 1916 and 11 November 1918 the RAF, including the IF, 'destroyed or brought down 7,054 enemy aircraft, dropped 6,942 tons of bombs, flew over 900,000 hours (nearly 103 years), and fired over 10 ½ million rounds at ground targets'.[35] They were experienced in close air support missions in both an offensive and defensive situation.[36] Interdiction roles had been widely developed and seen to be highly effective in preventing the flow of matériel and reinforcements along enemy supply routes. It was in this role that the RAF was to be most effective during the last major offensives launched by the German army in the spring of 1918.[37] An article published by the *Journal of the Royal United Services Institute* (*JRUSI*) in 1934 went as far as to argue that the strategical [*sic*] operations conducted had been of 'high

[32] David Jordan and Gary Sheffield, 'The British Army and Air Power' in Peter W. Gray (ed.), *British Air Power* (The Stationery Office: London, 2003), p.71. See also R.A. Mason, *Air Power: An Overview of Roles*, (Brassey's: London, 1987).
[33] Phillip S. Meilinger, 'Trenchard, Slessor, and Royal Air Force Doctrine before World War II' in Phillip S. Meilinger (ed.), *The Paths of Heaven: The Evolution of Air Power Theory* (Air University Press: Maxwell Alabama, 1997), p.41.
[34] Jordan, 'The Royal Air Force', p.15. Peter C. Smith, *Close Air Support: An Illustrated History, 1914 to the Present* (Orion Books: New York, 1990), p.8.
[35] TNA AIR 8/13, British Air Effort during the War, Chapter 2 Co-operation with the Army, 1 January 1919.
[36] Cf. Malcolm Cooper, 'Blueprint for Confusion: The Administrative Background to the Formation of the Royal Air Force', *Journal of Contemporary History*, 22: 3 (July, 1987), p.441. Part of the argument of this paper is that even after it became an independent force the RAF remained overwhelmingly committed to army co-operation work 'functioning as the RFC before it as a tactical ancillary of the service from which it had sprung'.
[37] Jordan, *The Army Co-operation Missions*, pp.281, 283-4

value'.[38] The war, however, had not continued long enough after the formation of the IF for these strategic bombing missions to have any real and noticeable effect.[39] A platform had been set from which it would be possible to build in future years to improve the RAF's ability to support the army in the field in areas from tactical air support to artillery spotting. Throughout the conflict there were several aspects of this new form of warfare that were vital to any air force, independent or not, and therefore had to be viewed as pre-requisites before other operations could be conducted. The RAF's analysis of the First World War, which was conducted soon after the end of the conflict, found that there were four main lessons or 'principles'.[40] These principles were offensive initiative, air superiority, concentration of force and centralised command and control of aircraft.[41]

Army Co-operation in Britain, 1919-1939

The development of army co-operation thinking was hindered in Britain for a variety of reasons. These reasons will be explored in more detail below; it, however, did not prevent army co-operation being discussed and ideas being developed. Carrington has argued, however, that those involved in army-co-operation work 'did not win favour or reward' in the inter-war period.[42] As an independent air force after the First World War, the RAF was to face unique challenges to its independence from the established Services.[43] The economic circumstances prevalent for a majority of the inter-war period only added to these pressures. The RAF stressed the ability of aircraft to fulfil an independent strategic role outside of the sphere of army and naval operations.[44] This brought them into direct conflict with their sister Services who argued that the RAF should become ancillary forces under the direct control of

[38] Oliver Stewart, 'Air Forces in the Great War: Some Strategical Lessons', *JRUSI*, 79 (February/November, 1934), p.293.
[39] Maurice Dean, *The Royal Air Force and Two World Wars* (Cassell: London, 1979), pp.3-4.
[40] Hall, *Strategy for* p.14.
[41] RAF Hendon, Trenchard Papers, MFC 76/1/357 – Lecture VIII Air Strategy.
[42] Carrington, *Soldier at* p.viii.
[43] Smith, *British Air Strategy* p.1.
[44] Waldie, *Relations Between*, p.14.

the army and navy as they had been during the majority of the First World War.[45] Demonstrations of the work being conducted in army co-operation during minor conflicts in Europe would also show the Air Staff the possibilities of aircraft operating in this role.

The majority of army co-operation development during the inter-war period centred on the inter-Brigade and inter-Divisional exercises conducted. Discussions about the status of the newly created RAF in relation to the army and navy began almost as soon as the war was over. Both services were to argue that with the RAF concentrating its efforts on independent operations they would be placed at a serious disadvantage when compared to other nations. In response to Arthur Balfour's memorandum to the Committee for Imperial Defence (CID) regarding the status of the RAF, the Chief of the Imperial General Staff (CIGS) Sir Henry Wilson was to argue

> Mr Balfour's ... suggestion that unless the Royal Air Force be kept completely separate and independent of the Army and the Navy we shall be at a serious disadvantage compared with foreign nations I am quite unable to understand. Neither France, America [*sic*] nor Japan, to quote only the greatest Naval and Military Powers, have adopted such a policy ...[46]

The Air Staff responded to this argument by arguing that the British military organisation should 'conform to the requirements of British imperial strategy, not to the methods adopted by Foreign Powers whose circumstances are entirely different to our own'.[47] The problems accorded to army co-operation training, given the soured relations between the two services, were discussed in a conference held in February 1923. The army claimed that there was a great deal of ignorance of army co-operation matters during the Staff Exercises that had previously been held.[48] This matter was to form the basis of the conference. The War Office (WO) argued that the RAF did not regard army co-operation as a 'specialised branch of Air

[45] Dean, *The Royal Air Force*, p.34.
[46] TNA AIR 9/5, The Air Force in relation to the Army and Navy, Note by the Chief of Imperial General Staff on Mr Balfour's Memorandum CID 149-C, 26 July 1921. Balfour's memorandum can be found at AIR 9/5, 15 September 1921.
[47] TNA AIR 9/5, Comments by the Air Staff on General Staff Papers Nos. 40, 49, 50 and 52, II ND 40, undated, c. September 1921.
[48] TNA AIR 5/280, Agenda for Conference of CIGS and CAS, The Combined Training of the Two Services, January, 1923.

Force work'.[49] The RAF responded to this accusation by highlighting the efforts that were being made to 'train all young officers in the Air Force regarding the formations and organisations of the sister services whether or not the duties of co-operation will fall to these officers' in an effort to show how seriously they took the matter of co-operation work.[50]

The conclusions reached at this conference meant that the RAF would have, on the surface at least, to pay more attention to the WO's demands for more emphasis upon army co-operation. However, they did show some of the difficulties that they would face in implementation. In response to the army's request that two squadrons be attached to the army's Aldershot Command for training purposes, the RAF claimed this would not be possible until after 1925, and only if the RAF were increased in size. The RAF refuted the claim that they had not taken their co-operation responsibilities seriously by pointing out that officers for Army Co-operation Squadrons were being trained at a specialist RAF school. However, many of these officers were not being sent to the appropriate squadrons on completion of their training.[51] At a further conference in the February of 1923, the Air Staff suggested a further point for discussion. This was regarding what training the RAF were to provide for co-operation work.

> What war are the General Staff and the Air Staff going to train for? How can that training be co-ordinated so as to be able to meet any war that we have to consider as probable ... If it is decided that the war is in the nature of a European war, what broadly speaking, are the views of the Staffs as to how that war would develop?[52]

The problem of how to train squadrons in co-operation work was hampered by the fact that the army was never sure of the type of major war that would be fought, where in the world it would be fought, and to what extent ground forces would be involved, if at all.[53]

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[49] TNA AIR 5/280, Army Requirements for Peace Training, January 1923.
[50] TNA AIR 5/280, Draft notes for Agenda for Conference between CIGS and CAS, January 1923.
[51] TNA AIR 5/280, Draft Conclusions of a Conference, 5 February 1923.
[52] TNA AIR 5/280, Minutes and Conclusions of a Conference between War Office and Air Ministry, 12 February 1923.
[53] There is insufficient space in a work such as this to go into any depth over the problems that the British Army faced throughout the inter-war period with regards the role they would play in any potential continental conflict, the lack of funding received, or the national revulsion at the prospect of another costly ground campaign. Cf.

Neither the WO nor the Air Staff were particularly enthused over the development of co-operation procedures and tactics. The inter-Brigade and inter-Divisional exercises, noted above, however, allowed experience to be gained in this field.[54] The results of these training exercises were published in Army Co-operation Reports at the end of each training year. The conclusions from these reports was combined with other thinking on the subject and codified into operations instructions such as the *Royal Air Force Manual of Army Co-operation* (AP 1176) or the *Royal Air Force War Manual Part One – Operations* (AP1300).[55] Through these exercises, certain lessons were learnt in peacetime. Many of these lessons concerned the organisation and command of air forces co-operating with ground forces. RAF officers were advised in the 1927 Army Co-operation Report that 'RAF commanders should point out to commanders of formations under whose orders they are working the importance of their selecting their headquarters in relation to possible landing grounds'. They were further advised that should keep in closest touch with the formations with which they are co-operating in order to know fully the requirements of those formations. The report does not, however, state where the Air HQs were placed near airfields or army HQs.[56] The problem of

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David French, *Raising Churchill's Army: The British Army and the War against Germany 1919-1945* (Oxford University Press: New York, 2000). Howard, *The Continental Commitment*. Robert H. Larson, *The British Army and the Theory of Armored Warfare, 1918-1940* (University of Delaware Press: Newark, New York, 1984). Bond, *British Military Policy*. Brian Bond, 'The Army Between the Two World Wars', in David G. Chandler (ed.), *The Oxford History of the British Army* (Oxford University Press: New York, 1994). J.F.C. Fuller, *Tanks in the Great War* (John Murray: London, 1920) and *The Foundations of the Science of War* (Hutchinson: London, 1925). B.H. Liddell Hart, *Strategy: The Indirect Approach* (4th Edition) (Faber and Faber Ltd: London, 1967). Alex Danchev, 'Liddell Hart and the Indirect Approach', *Journal of Military History*, 63: 2 (April. 1999), pp.313-337. J.P. Harris, 'British Armour 1918-40: Doctrine and Development', in J.P. Harris and F.H. Toase (eds), *Armoured Warfare* (B.T. Batsford Ltd: London, 1990). For more information in the development of German armoured warfare see W. Heinemann, 'The Development of German Armoured Forces 1918-40', in J.P. Harris and F.H. Toase (eds), *Armoured Warfare* (B.T. Batsford Ltd: London, 1990). Manfred Messerschmidt, 'German Military Effectiveness between 1919 and 1939', in Allan R. Millett and Williamson Murray (eds), *Military Effectiveness Vol. II: The Interwar Period* (New Edition) (Cambridge University Press: New York, 2010). R.L. DiNardo, 'German Armour Doctrine: Correcting the Myths', *War In History*, 3: 4 (November, 1996), pp.384-397.

[54] Hall, *Strategy for* p.23.

[55] RAF doctrinal manuals are in the TNA AIR 10 Series at The National Archives. The 1935 edition of the War Manual can be found at TNA AIR 10/1911 for example.

[56] TNA AIR 10/1708, Army Co-operation Report 1927.

issuing separate orders to squadrons based upon the orders issued by army commanders was also tackled and the advantage of having headquarters located as close as possible.

> In the event of late arrival of army operation orders, it is possible that it may prove difficult to issue a squadron operation order in writing early enough before operations take place. In such a case it is probable that the RAF commander will have attended a meeting at divisional or other headquarters. If this had occurred, he should have received sufficient instruction to enable him to hold a conference of his subordinate commanders and to issue verbal orders and instructions, supplemented, if necessary, by a table of work for the following day.[57]

The use of fighter aircraft in a close co-operation role was also an issue tackled in this report and the conclusion reached was that pilots

> generally did not understand the principle of attacking troops on the ground. [This was] due to the small amount of practice which has been afforded them.[58]

In the 1928 report, the problem of high staff turnover within army co-operation squadrons was highlighted as 'affecting the training of squadrons'. The report also contains an update from the previous year's report regarding the employment of fighters in close co-operation and their further use in the 1928 training exercises. The squadrons had not learnt the lessons from the previous report. Fighters were also being employed against 'unshaken troops'. The report advised that 'The use of fighter squadrons should ... be directed towards harassing a retirement or carrying on a pursuit after the exhaustion of the pursuing troops. Low flying attacks should never be launched unless information points to the existence of a definite and suitable objective ...'[59]

The problems highlighted in the 1928 report of the turnover of personnel in army co-operations squadrons had not yet been resolved by the time of the 1929 exercises.[60] This lack of resolution shows that those officers in army co-operation squadrons looking for a career within the air force would not find it in army co-operation squadrons due to the perception

[57] *Ibid.*
[58] *Ibid.*
[59] TNA AIR 10/1759, Army Co-operation Report 1928, Part II – The Year's Work.
[60] TNA AIR 10/1777, Army Co-operation Report 1929, Part II.

these squadrons were held in by those who held sway over promotions.[61] The RAF were also keen to highlight their hard won independent status within this and the previous years report.

> It is most essential that sufficient attention should be devoted to purely RAF training. Requests from the army for demonstrations or co-operation with formations smaller than a brigade should be carefully reviewed.[62]

The 1930 report highlights an issue that was to cause the RAF much consternation with regards co-operation with ground forces during the Second World War: the location of air and ground forces headquarters. The report states that '... it should be an established principle that where possible, corps and, possibly, divisional commanders should site their headquarters in close proximity to land suitable for the squadron aerodrome'.[63] That this lesson had to be re-learnt on several occasions throughout the Second World War calls into question how well these training reports were read and assimilated into learned doctrine. This is particularly the case in terms of the army and the interest that was shown in these publications particularly in places such as staff colleges where the officers who would be implementing this doctrine were being trained. Surprisingly this point was re-iterated and expanded upon in the 1931 report where it states

> The following notes with regards to the use and nature of advanced landing grounds are issued for guidance:-
> (i) Squadron aerodromes should usually be located near corps' headquarters and should move with it.
> (ii) The ideal situation for such an advanced landing ground is within a mile or so of divisional headquarters ...[64]

The difficulties with conducting low flying attacks, as close air support was then called by the RAF, were brought to a head in the 1934 army co-operation report. There had been an increase in demands from army commanders for aircraft to act as targets for small arms anti-aircraft defence training. The RAF imposed certain restrictions upon when and how squadrons would conduct low flying attacks. These included its use with only regular troops,

[61] Jordan and Sheffield, 'The British Army and Air Power', p.73.
[62] TNA AIR 10/1759, Army Co-operation Report 1928, Part II – The Year's Work.. TNA, Air 10/1777, Army Co-operation Report 1929 – Part II. Parton, 'The Evolution and Impact of Royal Air Force Doctrine', pp.98-9.
[63] TNA AIR 10/1794, Army Co-operation Report 1930, Part I.
[64] TNA AIR 10/1827, Army Co-operation Report 1931, Part II.

requests should be kept to a minimum and attacks would be confined to straight dives only.[65] Whilst the safety of pilots conducting low flying attacks must have been a consideration for the Air Staff, their reluctance can also be partly explained by the RAF's reluctance to become involved in air support operations. By becoming overly proficient in co-operation missions, there would be more pressure in the time of conflict to conduct these operations at the expense of independent strategic missions.

Doctrine

The first *Manual of Combined Naval, Military and Air Operations* published in 1925, re-iterated that the RAF's primary function was to be the gaining and retention of air superiority over the zone of operations. Without air superiority, the manual continues, an operation may fail before the ground troops had been able to influence the operation.[66] The manual, however, does concede that squadrons subordinated to army commanders could not be used to gain air superiority without the concurrence of the commander concerned. The manual also highlights what has previously been noted above: that in order to ensure the maximum efficiency 'It is only by the closest liaison between the staffs of the three commanders that the RAF units can be used to the best advantage and with a minimum of interference and wasted effort'.[67] The next major doctrinal publication by the RAF was their war manual published in 1928. Again there was a chapter that dealt with army co-operation matters, and the first point to be made was that the first task of aircraft was to gain and retain air superiority and the denial of freedom of action to the enemy.[68]

The RAF also continued to argue for what they perceived to be the correct use of aircraft in a tactical support role: interdiction operations, especially on targets that were outside of the range of artillery. The manual conceded that aircraft may have, during certain emergency

[65] TNA AIR 10/1914, Army Co-operation Report 1934, Part I.
[66] TNA AIR 10/1206, Manual of Combined Naval, Military and Air Operations, Chapter X, Air Co-operation with the Navy and Army, General Remarks, 1925. Slessor, *Air Power and Armies* p.10.
[67] TNA AIR 10/1206, Manual of Combined Naval, Military and Air Operations.
[68] TNA AIR 10/1910, Royal Air Force War Manual Part I – Operations, Chapter XII, 1928.

situations, to be used to support troops on the front line in 'low-flying attacks'. It recommended that a fast single-seater fighter possesses the qualities required of an aircraft for these types of operations. It is further argued that two-seater fighters should only be used when the target is of such importance that it requires the diversion of these aircraft from their usual duties. They further point out that the use of aircraft in these roles should be limited due to their cost and the exhaustion caused to pilots. Potential casualties, when compared against the results that could be achieved, were also a factor to be considered when carrying out these types of attacks against well-entrenched enemies.[69] The second edition of this war manual published in 1935 made no real alterations to how army co-operation operations were to be conducted.[70]

The RAF published its *Manual of Army Co-operation* (second edition) in 1937. This was the final major doctrinal publication published by the RAF before the Second World War and it is surprising given the status that army co-operation was held by the RAF. That this was the case is most cogently explained through it be being the last major aspect of air power that had not been codified into doctrine as well as being subjected to many annual exercises. One major point that was raised by this particular manual was that the composition of the force would depend upon the type of operation the army was to conduct.[71] As the army was unsure as to the role it could expect to play in any future war the RAF could not prepare to support it. The role of the army was not finalised until 1937 and, as a result, this left the RAF little time to alter both its production priorities or to embark on an overhaul of their thinking on army co-operation. The manual goes on to detail communication procedures and how aircraft were to be used in the approach phase of an operation, as well as with a mobile force. The Air Staff looked to cover as many roles as it possibly could be called upon to conduct. The

[69] *Ibid.*
[70] TNA AIR 10/1911, Royal Air Force War Manual Part I, 1935.
[71] TNA AIR 10/1889, Royal Air Force Manual of Army Co-operation (2nd Edition), The Royal Air Force Component with the Army in the Field, Strength and Composition, 1937.

manual detailed that in order to provide the necessary intelligence to conduct support operations Air Liaison Officers would be required to keep army co-operation squadrons up to date with artillery arrangements and give directions to squadrons already in the air.[72]

The RAF in Britain worked to gain a basic knowledge of army co-operation through inter-Brigade and inter-Divisional exercises conducted from 1925 through to 1935. Most of this work was done in artillery spotting and reconnaissance.[73] The development of artillery spotting techniques was to be an area of great development for Army Co-operation Command. It has been noted, however, that in 1924 there was a training exercise conducted with the British Army of the Rhine where army co-operation aircraft fired tennis balls upon a brigade before a shot could be fired back.[74] Despite this example, the use of aircraft in a tactical support role was somewhat neglected, less it diminish from the oft-repeated argument over the need for an independent strategic role for the RAF that would ensure its survival as an independent force.[75] Trenchard, and indeed the entire Air Staff saw an independent force, as essential to fighting and winning a future conflict against a first-class enemy.

Relations with the Army

In order to try to consolidate its position and preserve its independence, the RAF had to find a role that was unique to air power capabilities. This prioritisation was to continue throughout the Second World War, to the detriment of Army Co-operation Command. They were further hampered in this fight by the first of several budgetary constraints imposed upon them by the Treasury. The first of these constraints, which it has been argued had the most impact, was the Ten Year Rule.[76] Ferris has changed the face of the debate about the Ten Year Rule and the control the Treasury had over Service policies and argues against the

[72] TNA AIR 10/1889, RAF Manual of Army Co-operation, Chapter VIII, 1937.
[73] Waldie, 'Relations Between' p.108.
[74] *Ibid*., p.124.
[75] Robertson, *The Development of RAF Strategic Bombing Doctrine* p.41.
[76] John Ferris, 'Treasury Control, the Ten Year Rule and British Service Policies, 1919-1924', *The Historical Journal*, 30: 4 (December, 1987), p.861. K. Booth, 'The Ten Year Rule: An Unifinished Debate', *JRUSI*, 116, (March, 1971), p.45.

traditional viewpoint that the rule had real restrictions for the plans of the British Armed Forces.[77] He further argues that authors such as Peter Silverman are incorrect when they claim 'The results of the Ten Year Rule reverberated far beyond the immediate impact upon the new Services'. Whether it can be proven that the Treasury policy had little influence over military policy or not, the Services felt that they did and so it therefore had an impact.[78] More has been written on this topic and aside from the short analysis above the majority of the work falls outside the scope of this thesis. It has been argued that when it was first instigated, it was based on valid assessments of the global situation when it was claimed there would be no major war involving British forces for the next ten years.[79]

The reduction in funds for all three Services had a major impact upon their relations, especially where army and naval co-operation with the air force was concerned. Before the RAF's creation in 1918, the army and navy argued that an independent air force would leave them without sufficient aircraft and no control over their use.[80] This argument was made almost continually throughout the early 1920s. The major problem faced by the RAF was a lack of manpower. This was exacerbated by a 'lack of established tradition within the defence establishment and by the increasingly economic and political climate ...'[81] Paul Kennedy has argued that '... the treasury was perfectly right in its appeal to preserve financial stability and the Chiefs of Staff also were perfectly right to urge the need for further armaments'.[82]

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[77] Cf. John Ferris, *The Evolution of British Strategic Policy, 1919-1926* (Macmillan Press: London, 1989).
[78] Booth, 'The Ten Year Rule', p.61.
[79] Booth, 'The Ten Year Rule'pp.58-62. Bond and Murray, 'The British Armed Forces', p.98. The official history of grand strategy argues that 'The Rule [The Ten Year Rule] had been originally established in 1919 as a brief general guide to the formulation of Service Estimates and not as a set of detailed instructions'. Gibbs, *Grand Strategy Vol. I* p.44.
[80] Saunders, *Per Ardua* pp.256-7.
[81] Hall, *Strategy for* p.16.
[82] Paul Kennedy, *Strategy and Diplomacy 1870-1945: Eight Studies* (George Allen and Uniwin: London, Boston and Sydney, 1983), p.105.

As a result of the cutbacks being imposed the number of squadrons was reduced from 188 to 33, 8 of these squadrons were in the process of formation.[83] These drastic reductions meant many able officers left the Service due to the lack of promotion prospects.[84] One of the biggest attempts at the abolition of the RAF came in the aftermath of the Geddes Committee Report on expenditure. The report 'referred to serious overlapping and duplication within the three services'.[85] The WO seized upon this and made an all out bid to have the military functions of the RAF transferred to the WO.[86] Sir Eric Geddes recommended, however, that the RAF should take less of the cuts and that any cuts in the RAF should be at the expense of the army and naval co-operation squadrons. The report went further than this and stressed that the return of any components to their sister services would not result in any substantial savings and that the RAF should look to take over further responsibilities abroad.[87] Trenchard used this opportunity to lay the foundations of the RAF in Britain to allow strength to be built upon them in a time of crisis.[88] Using the implications of the Ten Year Rule, the Air Staff argued for a period of transition in which the RAF could assume certain responsibilities. Savings could be made if the older services were to relinquish these roles thus avoiding overlapping.[89]

From 1922, and caused mainly by the fear exacerbated by the RAF over French aerial build up, and the deterioration of relations between London and Paris, combined with a worsening situation on the continent, an air expansion scheme was launched. This scheme called for a further twenty-three home defence squadrons to be created, this figure was

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[83] Hyde, *British Air Policy* p.49.
[84] Waldie, *Relations Between* p.18.
[85] TNA PRO CAB 24/131, 24/132, Interim Report of the Committee on National Expenditure, December 1921.
[86] TNA CAB 5/4, CID Paper 141-C, May 1921.
[87]CAB 24/131, 24/132 Interim Report of the Committee of National Expenditure, December 1921. Barry D. Powers, *Strategy Without Slide-Rule: British Air Strategy 1914-1939* (Croom Helm: London, 1976), p.183.
[88] Mason, *Air Power* p.43.
[89] TNA CAB 2/3, Committee of Imperial Defence and Standing Defence Sub-committee meetings Minutes of 137th meeting of the Committee of Imperial Defence, 6 May 1921. Cf. TNA, CAB 2/3, Appendix by the Chief of the Air Staff to statement made at 137th meeting, May 1921.

subsequently revised upwards to fifty-two.[90] That the RAF were able to gain such an expansion to their force at a time of economic stringency, it has been argued, was due to the fears raised by the Air Staff over the possible impact a bombing campaign conducted over Britain could have on the country and her population.[91] The crisis raised over the 'French menace' was to shape the 'Air Staff's views on operational requirements' for aircraft as well as how they were to be used.[92] How aircraft were to be used was also influenced by the geo-political position occupied by Britain. Geo-politics also explains how nations on the European continent came to different ideas about the use of aircraft in battle. Williamson Murray argues that this was the most important factor in the development of air power doctrine.

> The British living on an island and possessing the largest navy in Europe, could afford to think in terms of strategic bombing ... German strategic problems however, were the exact opposite. Germany was not an island power; she was a continental power in any conceivable conflict that would involve the military forces of the German Reich, Germany would face the probability of land operations at the outset of hostilities.[93]

The British could afford to develop the doctrine of strategic bombing, as they would have the luxury of time for it to take effect, whereas if the Germans were to employ a similar military strategy, they may find themselves decisively defeated before the effects of a strategic bombing campaign could make themselves felt.[94]

The independence from land and naval operations was the biggest factor behind the Air Ministry's doctrine of an independent force fulfilling a strategic role. The survival of the

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[90] Powers, *Strategy Without* p.186.
[91] Hyde, *British Air Policy* pp.134-5. Phillip S Meilinger, 'Trenchard and "Morale Bombing", p.254. Cf. TNA AIR 14/2/38 'Air Policy and Strategy "Staff College Lecture by Air Vice Marshal A.S. Barratt', 14 February 1938.
[92] Colin Sydney Sinnott, *RAF Operational Requirements 1923-39*, unpublished PhD Thesis, King's College London, Great Britain, p.37. Cf. Ferris, *The Evolution of British Strategic Policy*. Sinnott's thesis has also been published, *The RAF and Aircraft Design: Air Staff Operational Requirements 1929-1939* (Frank Cass: London and Portland, Oregon, 2001). See also Malcolm Cooper. 'The Royal Air Force, Air Power and British Foreign Policy, 1932-37', *Journal of Contemporary History*, 12: 1 (January, 1977), pp.153-174. John Ferris, ''Far Too Dangerous a Gamble?' British Intelligence and policy during the Chanak crisis, September-October 1922', *Diplomacy and Statecraft*, 14: 2 (2003), pp.139-184.
[93] Murray, 'British and German Air Doctrine'.
[94] One of the major proponents of the strategic bombing theory in Europe was Giulio Douhet, *Command of the Air*, (Natraj Publishers: Dehradun, India, 2003).

RAF as an independent force was essential to British security policy as it could conduct a strategic role in the event of a European conflict. This was a major part of British defence policy from the end of the 1930s and into the Second World War. The funding allocated would also be increased at the expense of the other Services. Having relied upon the sea for protection for so long, attack from the air came as an abrupt shock to the British people in 1916-17. This only served to better the position the RAF found itself in as the inter-war years progressed. Whilst it laid the foundations for an independent RAF, it was faced with a choice between strategic bombing and support for the army and Royal Navy. This choice was forced upon the RAF due to the strategic situation faced by Britain, the budget cuts faced by all three services and the political disputes of the inter-war period.[95]

The RAF and Industry

The British aircraft industry faced a substantial lack of orders with the end of the First World War and the economic policies followed by the governments of the period. The Ten Year Rule put serious restrictions on the buying power of the RAF with regards new aircraft and engines and the Air Ministry were happy to run down war stocks in both aircraft and parts for repair.[96] In order to keep the capacity, and even the existence, of the firms involved in aircraft manufacture the Air Ministry 'adopted a policy of rationing design contracts between fourteen different airframe firms, eleven of which were wholly or predominantly dependent on the Air Ministry for their survival'.[97] In fact for the whole of the 1920s no

[95] Hugh Trenchard, 'Aspects of Service Aviation', *The Army Quarterly*, 2: 1 (April, 1921), pp.19-21.
[96] Robin Higham, 'Government, Companies and National Defense: British Aeronautical Experience, 1918-1945 as the Basis for a Broad Hypothesis', *The Business History Review*, 39: 3 (Autumn, 1965), p.325. G.C. Peden, *Arms, Economics and British Strategy: From Dreadnoughts to Hydrogen Bombs* (Cambridge University Press: New York, 2007), p.98. Peter Fearon, 'The Formative Years of the British Aircraft Industry, 1913-1924', *The Business History Review*, 43: 4 (Winter, 1969), pp.479-80. See also G.C. Peden, *British Rearmament and the Treasury* (Scottish Academic Press: Edinburgh, 1979) and Robert Shay Jr., *British Rearmament in the Thirties: Politics and Profits* (Princeton University Press: Princeton, New Jersey, 1977).
[97] P. Fearon, 'Aircraft Manufacturing', in Neil K. Buxton and Derek H. Aldcroft (eds), *British industry between the wars: Instability and industrial development 1919*-1939 (Scholar Press: London, 1979), p.222. Sebastian Ritchie, *Industry and Air Power: The Expansion of British Aircraft Production, 1935-1941* (Frank Cass: London and Portland, Oregon, 1997), p.7. M.M. Postan, *British War Production* (Her Majesty's Stationary Office: London, 1952), p.5.

government felt politically strong enough, or to have sufficient control of the economic situation, to keep Britain as the premier air power of the world'.[98] With the RAF having no major first-class enemy to consider this industrial policy was one that the Governments of the 1920s could afford to employ.[99]

This policy was to face serious problems with the advancement of the technology in aircraft manufacturing. The technological advancement of all-metal monoplanes instead of wooden-framed bi-planes meant that more sophisticated production techniques were required at more expense. Peter Fearon has argued that the Ten Year Rule put Britain in a better position for the rearmament drive that was to take place in the mid- to late-1930s. Further, this led the Air Ministry to have to consider aspects such as available labour, the ability of suppliers to supply tooling and jigs for manufacture. Sebastian Ritchie claims that these technical changes caused the aircraft manufacturing industry as a whole to miss the targets set for the delivery of aircraft. The technological changes improved the operational capabilities of the front-line aircraft commissioned for RAF's expansion schemes of the 1930s but were 'an obstacle which was impossible to avoid'.[100] The financial considerations that had ruled Service policies for the majority of the 1920s were soon forgotten, as the Government of the day was unwilling to interfere in business and industry.[101] By not to resorting to controls of industry, the Government tacitly agreed to RAF rearmament being carried out at a slower pace than desired by the Air Ministry and the schemes submitted to the Treasury. Robert Shay has claimed that this decision had as much impact upon rearmament in the 1930s as the Treasury's insistence that financial orthodoxy be maintained for its financing.[102] Money was

[98] Peter Fearon, 'The British Airframe Industry and the State, 1918-1935', *The Economic History Review*, 27: 2 (May, 1974), p.236. Robin Higham, 'Quantity vs. Quality: The Impact of Changing Demand on the British Aircraft Industry, 1900-1960', *The Business History Review*, 42: 4 (Winter, 1968), p.450.
[99] Cf. G.R. Simonson, 'The Demand for Aircraft and the Aircraft Industry, 1907-1958', *The Journal of Economic History*, 20: 3 (September, 1960), pp.361-382.
[100] Ritchie, *Industry and Air Power* p.76, 79.
[101] Peden, *Arms, Economics* p.137.
[102] Shay Jr., *British Rearmamen*t p.133.

not the deciding factor affecting the pace of rearmament from the mid-1930s onwards. The impact of the relations between the RAF and industry are important to a thesis of this nature as they demonstrate some of the problems faced in the development of air power in general and, as a result, the development of tactical air power. It also highlights the difficulties and time-span involved in designing and a manufacturing aircraft from scratch. The design and manufacture of new aircraft specifically to conduct air support for the army was a major factor in the development of tactical air support after the Battle of France, 1940.

The Geneva Disarmament Conference, 1932-34

The general revulsion within the ruling classes of Europe at the bloody cost of the First World War led to efforts to reduce both the number and the effects of conflicts. The most high profile of these attempts to regulate global conflagration was the Geneva Disarmament Conference. The Geneva Disarmament Conference provides the historical context of the problems faced in developing air power during the inter-war period and its impact upon how the RAF viewed strategic and tactical air power. Further, the impact of international politics, over which the RAF had little, if any control, could impact on its ability to develop air power for independent operations. It also demonstrates that the potential impact of the relatively new weapon of war was still unknown to a certain degree, and inter-war politicians, particularly in Britain, were fearful of the possible impact on their own population. At this conference, the British Government's main political aim was the restriction of aerial warfare.[103] There was, however, a proviso to this aim: the use of aircraft in the bombing of rebels in imperial lands was still to be permitted. Bombing would only be restricted between major nations. Meilinger has argued that, due to the RAF using its strategic bombing role in order to preserve its status it faced just as big a threat to its survival as it had in the early 1920s when it was a fledgling force fighting for recognition and the retention of its

[103] Phillip S. Meilinger, 'Clipping the Bomber's Wings: The Geneva Disarmament Conference and the Royal Air Force, 1932-1934', *War In History*, 6: 3 (July, 1999), pp.317-8.

independence. He further argues that the rising aggression of Hitler and the Japanese in the 1930s saved the RAF as it gave it an enemy on which to focus. It also provided a position from which politicians could defend its status.[104]

One of the major factors behind the British delegation's focus upon the use of strategic bombing between major European nations was to a certain extent, one that the RAF had created. The RAF used the threat of the impact of strategic bombing upon a city such as London to preserve its status as an independent force. This caused an increased fear amongst politicians and led to calls for restrictions upon how bombers should be used between 'civilised' nations in war. 'Fear of a knock-out blow was nowhere more acute than in Britain itself'.[105] The RAF almost caused its own destruction through the policy put forward by the politicians at the Conference of an 'all round reduction in armaments' particularly in air power.[106] The Air Staff also pointed out that the abolition of all military aircraft was impossible as civil aircraft could be used for military means.[107] A differing explanation has suggested that the British delegation put forward policies that had very little chance of being accepted, and went against the British national interests as the Government wished to avoid the blame for the failure of the Conference.[108] Other ideas considered at the Conference were that of an international air force working under the mandate of the League of Nations. This international force held certain advantages for Britain, according to Brett Holman. Military spending in each nation that was willing to contribute to the force would be reduced. This

[104] TNA AIR 20/32, Review of Air Defence Policy, The Armaments Truce and Disarmament Conference, undated. This review covers the years 1924-1935.
[105] Brett Holman, 'World Police for World Peace: British Internationalism and the Threat of a Knock-out Blow from the Air, 1919-1945', *War In History*, 17: 3 (July, 2010), p.314.
[106] Phillip S. Meilinger, 'Trenchard and "Moral Bombing": The Evolution of Royal Air Force Doctrine Before World War II', *Journal of Military History*, 60: 2 (April, 1996), pp. 261-2; 'Clipping the Bomber's', p.308. Peter W. Gray, 'The Gloves Will Have to Come Off: A Reappraisal of the Legitimacy of the RAF Bomber Offensive Against Germany', *Air Power Review*, 13: 3 (Autumn/Winter, 2010), p.20.
[107] TNA AIR, 20/32, Review of Air Defence Policy, undated.
[108] Dick Richardson and Carolyn Kitching, 'Britain and the World Disarmament Conference', in Peter Catterall and C.J. Morris (eds), *Britain and the Threat to Stability in Europe, 1918-45* (Leicester University Press: London, 1993), p.44.

major problem dogged the RAF for nearly the whole of the inter-war period.[109] It would also allow the Air Staff to build upon their doctrinal ideas within a larger intellectual framework and with air forces that had differing strategic priorities to their own. The Conference, however, fell apart when in 1933 the Germans permanently withdrew and began, in secret, to build up their armed forces. The RAF had survived yet another attack on its very existence.

The Spanish Civil War

The Spanish Civil War was the only major conflict of the inter-war period in which major European nations were involved and in which major developments could be made in the use of aircraft in battle. Lessons on the use of the aircraft to provide support to troops were available to the RAF. These lessons, however, were neglected by the Air Staff due to the conflict being fought by a second-class nation being supported by first-class nations such as Germany.[110] Any use of aircraft in this conflict, therefore, would not be relevant to any clash between major nations. The *Luftwaffe*, however, took this opportunity to develop and enhance close air support techniques.[111] This lack of interest in the Spanish Civil War is demonstrated by the fact that the RAF's major publication *RAF Quarterly* paid little attention to the conflict.[112] The timing of the conflict was ideal for the *Luftwaffe* to develop its techniques based upon written doctrine. The technique of attacking in waves of massed aircraft, placing the enemy under constant air attack was practised.[113] This technique was the 'shuttle attack'. The *Luftwaffe* also discovered the major problem in conducting close air support operations: co-ordinating air action with ground commanders operations. In order to

[109] Holman, 'World Police', p.320.
[110] Cf.TNA AIR 9/137, Air Attack in Direct Support of Field Forces, 1939. The report discusses the use of aircraft during the Spanish Civil War and reaches the conclusion that close support of troops is seldom justified despite the impact it had during the conflict.
[111] James S. Corum, 'The *Luftwaffe* and Lessons Learned in the Spanish Civil War' in Sebastian Cox and Peter Gray (eds), *Air Power History: Turning Points From Kitty Hawk to Kosovo* (Frank Cass: London and Portland, Oregon, 2002), p.66.
[112] James S. Corum, 'The Spanish Civil War: Lessons Learned and Not Learned by the Great Powers', *Journal of Military History*, 62: 2 (April, 1998), pp.315-8.
[113] James S. Corum, 'The Luftwaffe's Army Support Doctrine, 1918-1941', *Journal of Military History*, 59: 1 (January, 1995), p.67.

resolve these problems, especially at the lower levels of command, liaison and communication teams were assigned to formations on the ground to improve co-ordination. As Corum has described 'With more attention paid to communication , the co-ordination of the air and ground forces improved markedly ...' The Germans also enhanced their ability to conduct these types of operations by placing their airfields close to the front, this allowed them to operate a high number of sorties per day which acted as a force multiplier.[114] As a result of this experience the *Luftwaffe* possessed 'a comprehensive military doctrine that made joint operations the focus of their operation planning and training'.[115]

The Air Staff, whilst not seeking to look at the Spanish Civil War to change or confirm its thinking, was able to substantiate certain doctrinal ideas. This analysis allowed the Air Staff to relegate the importance of army co-operation operations below the strategic use of air power, which would continue even with the creation of Army Co-operation Command. The idea that the first aspect of any air operation should be to gain and maintain air superiority before any other operation could be effectively conducted was to be confirmed.[116] Citing the air superiority gained by the rebel forces, they then had the 'freedom of action in the employment of their military forces and enabled them to combine air attacks with artillery action'.[117] They also argued that there was a lack of hostile anti-aircraft and that if adequate artillery had been available aircraft would not have been employed.[118] The Air Staff were willing to use examples to support their doctrinal ideas, but ignored those that did not. Other aspects of air attack were also considered. Bombing attacks upon urban areas was seen as having a high degree of success, despite the dropping of warning pamphlets and that '...

[114] Corum, 'The *Luftwaffe* and Lessons Learned', pp.75-7.
[115] James S. Corum, 'The Luftwaffe and the Coalition Air War in Spain, 1936-1939', in John Gooch, (ed.), *Airpower Theory and Practice* (Frank Cass: London, 1995), p.83.
[116] TNA AIR 9/137, Army Co-operation – Air Attack in Direct Support of the Field Force – The Attack of Land Forces – Close Support, 1939.
[117] TNA AIR 40/219, Notes on Air Employment in the Spanish Civil War, 1 October 1936.
[118] TNA WO 193/685, Aircraft for the Field Force – RAF provision for army requirements – support by low flying attack, June 1938.

attacks have been carried out with fair accuracy and have been directed against aerodromes and factories'.[119]

Ground attack was also the focus of a certain degree of analysis. This analysis was interpreted in the light of established doctrinal ideas that at the time were not questioned. A paper specifically focused upon 'Low Flying Attack' was written and should have, in the opinion of Armstrong, 'indicated that ground attack was now a vital element in warfare'.[120] Low-flying attacks were more effective than attacks conducted from a higher level using either machine-guns or bombs. A combination of air superiority and sustained ground attacks had a moral effect that was out of all proportion to the force deployed for the operations.[121] In the 1920s, Trenchard claimed that moral was to the physical as ten to one. This had been expanded from Napoleon's dictum of three to one, and on one occasion, Trenchard expanded it further to twenty to one.[122] Armstrong has further argued that reports such as this called into question the whole of the RAF's army support policy and that the traditional argument that senior officers were ignorant of Spain is not correct. It is claimed that 'A study of Air Staff decision-making [between] 1936-1939 reveals that influential officers *were well informed* about Spain and made key decisions in the light of the Spanish Civil War' [emphasis in original].[123] One of these officers was the then Director of Plans Group Captain John Slessor who was ideally placed to influence policy and had written extensively on tactical air power.[124] One factor that may account for the RAF's reluctance to alter their army co-operation thinking was the fact that in unindustrialised Spain ground forces were the

[119] Cf.TNA AIR 9/137 Army Co-operation – Air Attack in Direct Support of the Field Force – The Attack of Land Forces – Close Support, 1939.
[120]Brian Armstrong, 'Through a Glass Darkly: The Royal Air Force and the Lessons of the Spanish Civil War 1936-1939', *Air Power Review*, 12: 1 (Spring 2009), p.40. See also Enrique Moardiellos, 'Appeasement and Non-Intervention: British policy during the Spanish Civil War', in Peter Catterall with C.J. Morris (eds), *Britain and the Threat to Stability in Europe, 1918-45* (Leicester University Press: London, 1993).
[121] TNA CAB 53/33, JIC 624, 29 September 1937.
[122] Gray, *The Strategic Leadership* pp.73-4. In his thesis, Gray highlights that Trenchard has been described as the master of the unfounded statistic.
[123] Armstrong, 'Through a Glass', p.47.
[124] Armstrong, 'Through a Glass', p.50. Cf. AIR 2/2190, Committee of Imperial Defence Joint Intelligence Sub-Committee: Report on Air Warfare in Spain, 8 December 1938. Slessor, *Air Power and Armies*.

only worthwhile targets available and, that troops from major military nations would stand up to ground attack better.[125]

Army Co-operation across the Empire

The RAF were provided with the perfect testing ground for the development of both independent and co-operation techniques with the work conducted throughout the British Empire, which had been expanded after the First World War with little extra money for the new territories.[126] It has been argued, that the established colonial territories, and newly acquired territories proved troublesome in the post-war years. The newly acquired territories proved to be more troublesome.[127] As well as providing an opportunity for the RAF to show how it could conduct independent operations, it also provided the governments of the 1920s the political expediency to continue to rule over the empire at a reduced cost.[128] The work done by the RAF across the Empire demonstrates the developments made in the field of tactical air power during the inter-war period and the potential these ideas could have had if a cross-fertilisation of ideas between Britain and the Empire happened. The CID highlighted the problems that the British faced with regards the need not to compromise their security but to find areas where expenditure could be reduced.

> The financial exhaustion consequent on the war renders it essential that expenditure be reduced without delay to the minimum consistent with national security. At the same time, our responsibilities have been greatly increased; and we are faced with the necessity of paying all our fighting personnel on a much higher scale than was the case before the war.[129]

The Air Staff were to exploit this in order to establish themselves as an independent force in Britain.[130] The major areas of the empire where the RAF was to play a part were

[125] TNA AIR 9/137, Air Attack in Direct Support of Field Forces, 28 June 1939.
[126] Howard, *The Continental Commitment* p.72.
[127] David Killingray, ''A Swift Agent of Government': Air Power in Colonial Africa', *Journal of African History*, 25: 4 (1984), p.431.
[128] Hall, *Strategy for* p.21.
[129] TNA CAB 5/4, Committee of Imperial Defence: Colonial Defence Memoranda (C Series), The Part of the Air Force of the Future in Imperial Defence, March 1921.
[130] David Ian Hall, 'Ruling the Empire out of the Central Blue: The Royal Air Force and Counter-Insurgency (COIN) Operations in the Inter-War Period', *Air Power Review*, 10: 2 (Summer, 2007), p.69.

Somaliland, Mesopotamia and India, particularly the north-west frontier of India.[131] It was through this work that the RAF was to learn most of its more sophisticated army co-operation techniques. These techniques, however, were seen by the Air Staff to have little relevance to European warfare as operations were being conducted against what were seen at the time to be 'non- or semi-civilised people' who reacted differently under air attack to those from a civilised nation.[132] More money was allocated to the direct defence of Britain, than to imperial territories due to the safety of Britain being paramount.[133]

Somaliland

The first use of aircraft in what would be termed the 'imperial policing' role was shortly after the end of the First World War in 1919. In this role the RAF were tasked to put down a rebellion that had been ongoing since the middle of the First World War led by the 'Mad Mullah'. The RAF worked in conjunction with the Somaliland land forces in putting down the rebellion. During this campaign it was noted in a report on one particular operation that communication techniques practised between the land and air forces allowed them to co-ordinate their movements and pass information on the enemy between them with relative ease. This technique was to locate the troops and advise the Commanding Officer of this location through message drops and 'conveying despatches between the commanders of the two forces and the headquarters of the Somaliland Field Force ...'[134] Corum has argued that the Air Staff, especially Trenchard, exaggerated the scale of both the rebellion and the impact

[131] W. Michael Ryan, 'The Influence of the Imperial Frontier on British Doctrines of Mechanized Warfare', *Albion: A Quarterly Journal Concerned with British Studies*, 15: 2 (Summer, 1983), p.135. For more information on the use of the RAF in Ireland after the First World War see Michael O'Malley, *Military Aviation in Ireland 1921-45* (University College Dublin Press: Dublin, 2010) and William Sheehan, *A Hard Local War: The British Army and the Guerrilla War in Cork 1919-1921* (The History Press: Stroud, 2011).
[132] TNA AIR 10/1911 Royal Air Force War Manual, Part I (AP1300), 1935.
[133] TNA AIR 10/1911, Royal Air Force War Manual Part I (AP1300), 1935. G.C.Peden, 'The Burden of Imperial Defence and the Continental Commitment Reconsidered', *The Historical Journal*, 27: 2, (1984), p.406. See also Williamson Murray, 'The Collapse of Empire: British Strategy, 1919-1945', in Williamson Murray, MacGregor Knox and Alvin Bernstein (eds), *The Making of Strategy: Rulers, states and war*, Cambridge University Press: Cambridge, New York and Melbourne, 1994. John Darwin, 'Imperialism in Decline? Tendencies in British Imperial Policy between the Wars', *The Historical Journal*, 23: 3 (September, 1980), pp.657-679.
[134] TNA AIR 5/846, RAF Operations, Somaliland: Reports and Despatches, Extract from the 2nd Supplement to the London Gazzette, 8 November 1920'.

of aircraft in subduing it.[135] Whether this is a true interpretation of how the Air Staff saw their role in Somaliland or not, their successful operations had shown what aircraft were capable of when employed in this role. Further developments were to be made in other areas of the empire.

Mesopotamia

Mesopotamia was a newly created territory in the Middle East. The Middle East was strategically important to the British as it was through a domination of this area that the British were able protect the trade routes to and from the most important imperial possession of all: India. [136] The fall of the Ottoman Empire and the rise of nationalism led to instability in the region and the threat to these trade routes.[137] Mesopotamia was essential in the British mind for the protection of the empire. It was in this region that the RAF were able to demonstrate the cost savings of using the air force to keep order rather than garrisons of troops and prevent the break up that was a very real possibility when aircraft were first employed in Mesopotamia.[138] These garrisons were not only a huge drain on Treasury funds, but they also proved to be of very little use when required to put down full-scale revolt in 1920.[139] Trenchard was quick to exploit both the lack of ability of the ground forces and the savings that it was possible to make by substituting aircraft for land forces. This occurred in 1922, and was a cause of much friction between the WO and the Air Staff in Britain and

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[135] James S. Corum, 'The Myths of Air Control: reassessing the History', *Aerospace Power Journal*, (Winter, 2000). Available at http://www.aipower.au.af.mil/airchronicles/apj/apj00/win00/corum.pdf. Accessed 17 February 2011.
[136] TNA AIR 8/6, Memorandum by the Chief of the Air Staff on Air Power Requirements of the Empire, Air Ministry 9 December 1918. David Omissi, 'The Mediterranean and the Middle East in British Global Strategy, 1935-1939', in Michael J. Cohen and Martin Kolinsky (eds), *Britain and the Middle East in the 1930s: security problems* (St Martins Press: New York, 1992). p.3.
[137] Peter W. Gray, 'The Myths of Air Control and the realities of Imperial Policing', *Air Power Review*, 10: 2 (Summer, 2000), p.42.
[138] David Omissi, *Air Power and Colonial Control: The Royal Air Force 1919-1939* (Manchester University Press: Manchester and New York, 1990), p.37.
[139] Paul Horne, 'The RAF in Command: The Policing of Mesopotamia from the Air', *Air Power Review*, 13: 2 (Summer 2010), p.34.

would never fully get resolved.[140] The RAF would take full advantage of the opportunity afforded them to develop a new and independent role for themselves.[141]

It was also through working in this region that co-operation between land and air forces was learned. This was the first region of the empire that would see the use of bombardment on a large-scale and the first attempt to develop a theory behind the use of aircraft independently.[142] Aircraft were able to arrive at areas of disturbances quicker than ground-based forces and conduct action against that aspect of the population with more efficiency. The army was to argue, at many points during the inter-war period, that the use of bombs to subdue disturbances was an inhumane way of keeping the peace. The army's expeditions, however, routinely burned crops and food stores and so they cannot take the moral high ground in missions conducted against native populations.[143] This is further highlighted when an air attack on a native village in Waziristan, India, was suggested by an army officer. Slessor pointed out that this was against government policy and the officer stated 'Oh come on, that will be all right, we'll say we shelled it!'[144]

A report sent to the Air headquarters in Baghdad describes how aircraft were used in the mid 1920s. Aircraft were not employed in action on their own. They worked in conjunction with land forces and political officers. The use of aircraft in this role acted as a force multiplier for the ground forces as they were able to engage independent forces outside of the range of ground troops but also work in close co-operation with them to assist them in achieving their objectives.[145] This co-operation between air and land forces in overseas theatres would continue throughout the Second World War. The major impact that the RAF

[140] TNA AIR 10/1367, Air Staff Memorandum No. 48 – Notes in the History of the Employment of Air Power, September 1922.
[141] Horne, 'The RAF in Command', p.34.
[142] Priya Satia, 'The Defense of Inhumanity: Air Control and the British Idea of Arabia', *The American Historical Review*, 111: 1 (February, 2006), p.16.
[143] Corum, 'The Myths of Air Control'.
[144] John Slessor, *The Central Blue* (Cassell: London, 1956), p.66, 132.
[145] TNA AIR 23/542, Letter from Air Headquarters British Forces in Iraq Baghdad to the Air Ministry, 3 April 1924. Horne, 'The RAF in Command', p.35.

had in Mesopotamia was that they showed the government were willing to inflict heavy retribution on tribes who transgressed and were able to do so on a daily basis and at very little risk to aircrew.[146] The use of aircraft in this role in the early 1920s, it has been argued, was crucial for the survival of the RAF whilst the Salisbury Committee was receiving evidence and was the 'most significant defence task for all three services'.[147]

India and the North-West Frontier

The RAF experienced similar results in Waziristan between 1919-20. It was not only the physical impact that air bombardment had, but the psychological impact of bombardment that led the RAF to develop this form of air attack.[148] It was from these operations that the work of the RAF became confined to close support of land troops.[149] With regards the development of air support techniques it was not until the late 1930s that methods were worked out and codified. A training exercise was conducted in Kahisora in 1936 with No. 3 (Indian) Wing of the RAF. The first aspect that the report deals with is the use of aircraft in close support with friendly troops in contact with enemy forces. The use of bombing from 3,000 feet and above against troops not in contact with friendly forces was not possible according to the report unless the area had been 'proscribed as hostile'. If support was required by troops engaged with enemy forces, a higher degree of accuracy would naturally be required and so any bombing would have to be from a much lower height. Low-flying attacks, however, were advised against due to the heavy casualties that it was possible to sustain.[150]

[146] Horne, 'The RAF in Command', p.36.
[147] Gray, 'The Myth of Air Control', pp.44-5.
[148] Andrew Roe, 'Friends in High Places: air power on the North-West Frontier of India', *Air Power Review*, 11: 2 (Summer, 2008), p.32. See also Pardeep Barua, 'Strategies and Doctrines of Imperial Defence: Britain and India, 1919-45', *The Journal of Imperial and Commonwealth History*, 25: 2 (May, 1997), pp.240-266.
[149] Omissi, *Air Power* p.12.
[150] TNA AIR 75/31, Official Papers of Marshal of the Royal Air Force Sir John Slessor, Folder V, North-West Frontier pre-1939, Tactics Training Air Support Khaisora, 1936.

Communications between ground and air forces also formed a significant aspect of the training conducted. The major method for front-line troops to communicate with aircraft overhead was through the Panel and Strip Code. The problems associated with using this type of communication device were well highlighted: only a certain amount of information could be conveyed through this method. In order to allow for the fullest information for pilots, the training report suggests that pilots should either be fully briefed as to the situation and the overall intentions of the commander. If this information was not available when pilots were required to take-off, all information should be passed on to them via Radio Telegraphy (R/T) or Wireless Telegraphy (W/T). If air support operations were being planned for the following day, the report suggests that a full written order should be produced. If support was requested at short notice, aircraft should be in the air within twenty minutes and given a short situation report. The order should then be passed on by W/T. It was a communications system similar to this that was used during the Battle of France and would be subject to great change in its aftermath. The use of formation bombing was not to be used for air support operations, each aircraft was to attack the target singularly and then re-form once the last aircraft had completed their attack.[151]

A report on air co-operation training between 2 (Rawlpindi) Infantry Brigade and 3 (Indian) Wing, RAF in late 1936 was designed to 'gain practical experience in ... and to evolve tactical methods for close air support in mountain warfare'. The report begins by stating that success in close air support was dependent upon good communications. Communications, the report states, can be divided into two areas: 'between Column HQ and the advanced landing ground' and 'Between Column HQ and aircraft in the air'. The report details how communications are to be conducted. Advanced landing grounds should be as close as possible to scene of operations. Not only from a communications point of view, but

[151] *Ibid.*

also to reduce the time that aircraft would take for conducting support operations. The method of communications that was advised should be used is the landline telephone. ‘

> These resources are admittedly not available normally in Bde [Brigade] or even Divisional Signals. But we think it hardly an exaggeration to say that a land line is essential if full value is to be gained either from close support or reconnaissance in this form of warfare.[152]

W/T was also recommended as a reserve means of communication. For communications between the air and ground, it was found that the Panel and Strip method was satisfactory and easily understood by pilots in the air. The recommendations of the report are that reliable W/T and R/T sets should be made available as a priority and that the ‘Popham Panel, though reliable and a useful reserve, is too slow for regular use’.[153]

Command and control (C^2) methods were also subject to analysis during this period of training. One major point that has already been noted from the army co-operation training in Britain was the need for an ‘Air Force Commander at Column HQ, if full value is to be had out of AC [Army Co-operation] squadrons in mountain warfare’. The air force commander should accompany the column commander at all times, as ‘close air support will usually be required quickly’.[154] The exploitation of combined headquarters was a recurring theme in the development of army co-operation doctrine in Britain and overseas theatres.

A report that was based upon operations conducted by No.3 (Indian) Wing between November 1936 and January 1937 reached certain conclusions with regards the use of aircraft in both a reconnaissance and support roles. The roles should be combined so that one aircraft would conduct both roles. This would allow the aircraft to report movement whilst also conducting attacks against it. This system was adopted in January 1937. With regards close support tactics, the report confirms that the tactics laid down in chapter VII of the new manual were generally sound. There were, however, certain exceptions to this. The

[152] TNA AIR 75/31, Combined Report on Air Co-operation Training 2 (Rawlpindi) Infantry Brigade and 3 (Indian) Wing, RAF Khanpur Area, 17-25 November 1936.
[153] *Ibid.*
[154] *Ibid.*

continued use of bombardment was seen as both unnecessary and undesirable as 'once the enemy had felt the effect of air action – the mere presence of aircraft overhead has an equivalent effect'. The simultaneous action of multiple close support aircraft was seen to be impracticable as the area where such operations would take place would likely be small and aircraft would simply get in each others way'.[155] The operations conducted also confirmed the conclusions previously reached that air force commanders should be located with the column commander.

In a draft of the 'Grey Book', that was to direct operations conducted by aircraft working throughout the empire, aircraft were to respond to retaliate to threats from the ground only if they can discern those responsible.[156] This was an attempt to restrict innocent casualties as a result of air action and increase the legitimacy of the government. According to the RAF at this time, there was still a distinction to be drawn between close air support and 'low flying attack'. Close air support was seen as an interdiction role and should be prearranged and laid down in orders. Low flying attack, however, should be avoided unless an emergency requires the use of aircraft to be used in this way. In conducting this action and due to its use being 'reserved for an emergency, or to avert an emergency', it cannot be prearranged and orders will have to be passed on by R/T or visual means.[157] Pilots were advised to use their own initiative if during reconnaissance operations they saw a situation that may be a threat to friendly forces. They were, however, not advised to attack in such a situation, the Book instructs them to pass this information to the nearest body of friendly troops. This again shows the dominant RAF attitude to aircraft conducting ground support operations as demonstrated above through the reluctance to sanction aircraft in this role on a regular basis.

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[155] TNA AIR 75/31, Operations in Waziristan, 24 November 1936 to 15 January 1937.
[156] TNA AIR 75/29, Official Papers of Marshal of the Royal Air Force Sir John Slessor, folder V (b), India, Pakistan Frontier Operations pre 1939, *Draft of Grey Book Direct Air Action in Close So-operation with Land Forces*.
[157] TNA AIR 75/29, Official Papers of Marshal of the Royal Air Force Sir John Slessor, folder V (b), India, Pakistan Frontier Operations pre 1939, *Draft of Grey Book Direct Air Action in Close So-operation with Land Forces*.

The issue of terminology to describe how aircraft are to be used in conjunction with land forces appears to have been subject to much confusion. Air Commodore R.H. Peck received a letter from the headquarters of No.2 (Indian) Wing Cheklala, which argued that the use of the terms 'close air support' and 'low flying attack' lead to a confusion between commanders. The letter suggested that this is possibly because 'close support is not the best expression, and is too all embracing'.[158]

The State of Army Co-operation in 1939

Aircraft changed the nature of warfare during the First World War and the RFC and RAF were at the forefront of this fundamental change. One of the major changes that occurred was the impact that aircraft could have on land operations. Another area where air power had the potential to heavily influence warfare was through the use of aircraft in independent operations. Both of these applications were not able to fulfil their potential before the war ended in 1918. Many ideas were tested in theory and could not be used in operations with any confidence.[159] Due to this, many exaggerated claims were made, especially about the potential that the bombardment of strategic targets could have, as well as its impact upon morale. The major reasons behind this have been detailed above. This was found in two distinctly separate roles, one was the air defence of Britain and the other was in its imperial policing role. Aircraft used in this role were seen as a 'primary weapon in wild unadministered [*sic*] country, and as a secondary weapon in co-operation wherever a strong

[158] TNA AIR 75/29, Letter from HQ No.2 (Indian) Wing, RAF Cheklala to Air Commodore R.H. Peck, HQ RAF India, New Delhi, 10 April 1936.
[159] For more detail on the ideas that were being debated Cf. M. Everett, 'Fire Support from the Air', *JRUSI*, 83 (February/November, 1938), pp.587-591. W.F. MacNeece Foster, 'Air Power and its Application', *JRUSI*, 73 (February/November, 1928), pp.247-261. E.L. Gossage, 'Air Co-operation with the Army', *JRUSI*, 72 (February/November, 1927), pp.561-579. T.L. Leigh-Mallory, 'Air Co-operation with Mechanized Forces', *JRUSI*, 75 (February/November, 1930), pp.565-577. F.A. Pile, 'The Army's Air Needs', *JRUSI*, 71 (February/November, 1926), pp.725-727. C.R. Samson, 'Aeroplanes and Armies', *JRUSI*, 75 (February/November, 1930), pp.676-680. Stewart, Oliver, 'Air Forces in the Great War: Some Strategical Lessons', *JRUSI*, 79 (February/November, 1934), pp.289-293.

and settled administration exists'.[160] The author of the above article, (the then Air Commodore) Charles Portal, was to become CAS for the majority of the Second World War.

Many developments in army co-operation were made during the inter-war years both in Britain and throughout the empire. Developments in Britain, however, were greatly hampered by the relations that existed between the army and RAF. The RAF consistently put forward the idea that aircraft involved in support of ground troops were better used to firstly gain air superiority and then isolate the battlefield and not attacking objectives in close proximity to friendly ground forces.[161] The army argued that for effective support to be conducted aircraft should be under the command of the army. Not only would the aircraft involved in this force be under the army's command but would be designed specifically for close co-operation work with the pilots also suitably trained. This army air arm would be on call for the army's needs only and would provide support in what the RAF termed the 'close support zone'.[162]

One of the major problems that hampered the formation of army co-operation squadrons, whether under RAF or army control, was that the size and role of the expeditionary force was undecided until shortly before war broke out in September 1939.[163] With the competing demands of fighter and bomber construction on British industry, there was no possibility that a force could be made available to conduct these operations in the time-scale available.[164] The decision to involve the army in a continental role was not made until September 1938.[165] This also meant that army co-operation preparations were also hampered and it was from that that Army Co-operation Command would have to work.

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[160] C.F.A. Portal, 'Air Force Co-operation in Policing the Empire', *JRUSI*, 82, (February/November, 1937), p.344.
[161] TNA AIR 9/137, Army Co-operation, Air Attack in Direct Support of the Field Force, 1939.
[162] TNA WO 193/678, Air Requirements of the Army – Memorandum of the Deputy Chief of the Imperial General Staff, 22 September 1939.
[163] Bond, *British Military* Policy p.312. Jacobs, 'Air Support', p.174.
[164] TNA WO 193/678, Statement [on air requirements for the army] unsigned and undated c. December, 1939. Peden, *Arms, Economics* p.137.
[165] TNA CAB 66/3/12, Air Requirements of the Army, memorandum by the Secretary of State for Air, 3 November 1939. Shay Jr., *British Rearmament* p.235.

The work done in co-operation with land troops throughout the empire was far more advanced than in Britain. Both services had to rely more upon each other for successful operations than the training exercises held in Britain and so co-operation was more fluid. The ideas developed against 'non-civilised' people, however, were seen as not applicable to European warfare in much the same way as the potential lessons that could be learned from the Spanish Civil War. Cox has written that '... the lessons regarding C^2, integrated planning and efficient communications proved remarkably difficult to transfer between theatres'.[166] With increasing tensions in Europe leading up to 1939, the RAF felt confident that their army co-operation doctrine was sound. This is despite there being no joint doctrinal foundation on which to base it upon, and a lack of understanding about how the army was planning to conduct their operations and an almost deliberate misunderstanding of what the army expected from co-operation missions.[167]

It is not surprising that a recently retired Major General would make the assertion that the RAF deliberately misunderstood what the army expected with regards air support prior to the Second World War. The biggest point of contention with this statement is that the RAF deliberately misunderstood and mislead the army with regards the type of air support they would receive. Hall has highlighted that there was confusion between the Air Ministry and WO with regards the type of air support that would be conducted during the opening campaigns of the Second World War.[168] There is very little, if any, evidence to suggest that there was any malicious intent on the part of either the RAF or WO to mislead the other but rather was a failure in communications between the two organisations. This doctrine was

[166] Cox, 'The Air/Land relationship', p.4.
[167] Mungo Melvin, 'The Land/Air Interface: An Historical Perspective', in Peter W. Gray (ed.), *Air Power 21: Challenges for the New Century* (The Stationery Office: Norwich, 2000), p.159.
[168] Hall, *Strategy for* pp.38-40.

based almost entirely on the army co-operation exercises conducted. The focus of these exercises was on reconnaissance and artillery spotting, not ground attack or interdiction.[169]

There were still many areas that the Air Staff and WO had identified as being in need of development. One of these was the communications system that would be used to call for bomber support from bomber squadrons stationed in Britain. It is noted that 'alternative channels in different circumstances [will be] dependent on several liaison links, some of which have to communicate over great distances'. The problems that may have arisen using this system were also noted and deemed that they may prove unreliable under the stresses of war. It should be noted that the WO was happy to accept this form of communication system as it was 'the best expedient under [the] present system of control of bomber aircraft. [170] The WO detailed the targets that would take priority in the event of war with Germany and it is clear that interdiction would be the focus of support operations in a conflict against Germany. The priorities were to delay leading armoured columns, disorganise the movements of reinforcements for the columns and interfere with mobilization arrangements.[171] This was a similar use of air power as detailed by the Air Staff in 1939.[172] Whilst accepting this use of aircraft on the battlefield, the army still felt the best use of aircraft could be gained through direct support. Throughout the inter-war period, the army had given very little direction in the development of doctrine that would be used to attack these targets, or in the use of aircraft in any other support role except to keep arguing for a separate army air arm. Complaints made when the system failed, or did not produce the results expected, should be read and assessed with this in mind.

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[169] *Ibid*., p.22.
[170] TNA WO 106/1597, Air Components BEF, France; composition – Notes by CIGS on CAS's Memorandum on Arrangements for Bomber Support for the Allied Army in France, November 1939.
[171] TNA WO 190/435, Military Air Targets of an Army Nature, 18 May 1936.
[172] TNA AIR 9/137, Memorandum on Air Attack in Direct Support of the Field Force, unsigned and undated, c. July 1939.

The formation of the air forces that would be sent to France on the outbreak of war, the missions with which they were tasked during the Battle of France in 1940, and how they conducted them, as well as an overview of the battle in general, will be subject to analysis in the next chapter. The reaction and arguments of both the army and RAF after the battle will also be looked at in depth.

Chapter Three

ARMY CO-OPERATION AND THE BATTLE OF FRANCE, 1940

The RAF found itself in an unexpected position when the BEF moved to the continent. A force that had been designed primarily to operate in a strategic role against industrial targets in Germany was now faced with acting as a component of an expeditionary force operating away from home air bases.[1] There had, however, been a major shift in policy in the years prior to the Second World War. There had been an increase in the ratio of fighter to bomber aircraft, which were responsible for the defence of Britain.[2]

During the 'phoney war', the elements of the RAF that had been sent to France at the outbreak of war were to undergo major changes in the role that they were expected to fulfil. This was because of the inability of the aircraft that formed part of the force to carry out the long-range strategic operations that were expected of it. This was especially relevant for the aircraft of the Advanced Air Striking Force (AASF). During the conduct of operations against the Germans, the RAF as well as the BEF and the French forces found that their pre-war planning and the pace at which they expected operations to be conducted was deeply flawed. The Allied forces were thrown off balance by the speed of the German break-in and subsequent break out around the Sedan area.[3] As the German advance through France continued at a pace that would have been unthinkable during the First World War, the Allied forces found themselves cut-off in northern France and Belgium. The retreat conducted by the BEF ended in the 'miracle' of Operation DYNAMO, the evacuation of almost all the BEF

[1] Alistair Byford, 'False Start: the Enduring Air Power Lessons the Royal Air Force's Campaign in Norway, April-June 1940', *Air Power Review*, 13: 3 (Autumn/Winter, 2011), p.122. Byford is a former RAF pilot who has written the RAF doctrinal manual *AP 3000 –British Air and Space Doctrine*. He has attended the Royal College of Defence Studies and is a former RAF Director of Defence Studies.
[2] Vincent Orange, *Dowding of Fighter Command: Victor of the Battle of Britain* (Grub Street: London, 2008), pp.110-21.
[3] The problem of how to turn a break-in into a break-through during the First World War was the focus of the Kirke Report on the Lessons of the First World War. TNA WO 33/1297, Report of the Committee on the Lessons of the Great War, October, 1932. John Ellis, *Brute Force: Allied Strategy and Tactics in the Second World War* (Andre Deutsch: London, 1990), p.6.

and many French troops from the beaches of Dunkirk.[4] This chapter will argue that this campaign had a profound impact on relations between the RAF and army and ultimately the creation of Army Co-operation Command. This was due partly to the army not receiving the support they had expected from the RAF during the operation and a misreading of the abilities of the *Luftwaffe* to conduct impromptu close air support missions. One of the major roles of Army Co-operation Command was to develop the RAF's ability to conduct this sort of close support mission and it can be directly traced back to the fighting in France and the Low Countries in 1940 and fallout that occurred after it. In order to support these arguments, this chapter will highlight these issues through a detailed analysis of the structure of the RAF in France and the changes that were adopted whilst the RAF were in France. The battle itself, especially the role played by the RAF, will then be investigated. Through this investigation, the operations conducted by the *Luftwaffe* will form a part of this chapter. This will demonstrate how the army saw the impact of air support on the Battle of France and how it affected its perceptions of the work of Army Co-operation Command.

There have been several myths that are now associated with the fighting in the Battle of France. One of the biggest myths is the role that the Ju-87 'Stuka' played during the battle, especially during the crossing of the River Meuse.[5] The army in Britain emphasised the dive-bomber when their requirements for future operations were discussed. Army Co-operation Command found themselves at the heart of the discussion over suitable types of aircraft for supporting the army in future operations on the continent. Currently the historiography and popular opinion of the role of the 'Stuka' is that it had an overly influential role in the

[4] For more information on Operation DYNAMO see John Masefield, *The nine days wonder: (Operation Dynamo)* (Heinemann: London, 1941). Patrick Oddone, *Dunkirk 1940: French ashes, British deliverance: the story of Operation Dynamo* (Tempus Publishing: Stroud, 2000). W.J.R. Gardner (ed.), *The evacuation from Dunkirk: Operation Dynamo, 26 May - 4 June 1940* (Cass: London, 2000).

[5] Alfred Price has looked in detail at the Ju-87 aircraft and its performance throughout the whole of the Second World War. 'The Rise and Demise of the Stuka', *Air Power Review*, 3: 4 (Winter, 2000), pp.39-54. See also Peter C. Smith, *Dive Bomber: Aircraft, Technology, and Tactics in WWII* (Stackpole Books: Mechanicsburg, Pennsylvania, 2008).

outcome of the battle when combined with the new German use of tanks.[6] There has been a great deal of debate regarding the development of Blitzkrieg and whether it was a revolutionary method of conducting war or a development of ideas first seen during the First World War.[7] The tide of historiography, especially works that have looked at this topic over the past twenty years, has started to reverse the argument that the Allied forces were vastly outnumbered, both quantitatively and qualitatively, in terms of armour, infantry and air forces.[8] Ernest R. May has claimed that

> Overall, France and its allies turn out to have been better equipped for war than Germany, with more trained men, more guns, more and better tanks, more bombers and fighters. On the whole, they did not even lag in thinking about the use of tanks and airplanes.[9]

There is still much argument amongst historians as to the effectiveness of the RAF in its conduct of army co-operation operations, especially in light of the problems faced by air forces operating on a fluid, fast moving battlefield. The use of air power, especially by the *Luftwaffe*, during this battle, especially at the tactical level, was not as influential as has been argued. It is possible that the impact of the dive-bomber was emphasised by the army in order to provide an excuse for their failings in battle. The change in the pace of warfare, combined with a slow and cumbersome command, control and communications (C^3) system and military planning which looked to sit on the defensive were more responsible for the

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[6] John Buckley, 'The Air War in France', in Brian Bond and Michael D. Taylor (eds), *The Battle for France and Flanders 1940: Sixty Years On* (LeoCooper: Barnsley, 2001), p.111.

[7] Cf. James S. Corum, *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform* (University Press of Kansas: Kansas, 1992). Robert M. Citino, *Quest for Decisive Victory: From Stalemate to Blitzkrieg in Europe, 1899-1940* (University Press of Kansas: Kansas, 2002). Robert M. Citino, *The Path to Blitzkrieg: Doctrine and Training in the German Army, 1920-1939* (Lynne Reinner Publishers: Boulder, Colorado and London, 1999). John Mosier, *The Blitzkrieg Myth: How Hitler and the Allies Misread the Strategic Realities of World War II* (Harper Collins: New York, 2003). J.P. Harris, 'The Myth of Blitzkrieg', *War In History*, 2: 3 (November, 1995), pp.335-352. Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (Frank Cass: London and Portland, Oregon, 1997). Azar Gat, 'British Influence and the Evolution of the Panzer Arm: Myth or Reality? Part I', *War In History*, 4: 2 (April, 1997), pp.150-173. Azar Gat, 'British Influence and the Evolution of the Panzer Arm: Myth or Reality? Part II', *War In History* 4: 3, (July, 1997), pp.316-338. Hew Strachan, *European Armies and the Conduct of War* (Routledge: London and New York), 1983. G.D. Sheffield, '*Blitzkrieg* and Attrition: Land Operations in Europe 1914-45', in Colin McInnes and G.D. Sheffield, *Warfare in the Twentieth Century: Theory and Practise* (Unwin Hyman: London, 1988).

[8] Buckley, *Air Power* p.128.

[9] Ernest R. May, *Strange Victory: Hitler's Conquest of France* (I.B. Tauris: London and New York, 2000), pp.5-6.

defeat suffered by the Allies. John Buckley has commented that 'the RAF attempted to intervene and influence the campaign as best it could, in the only way it knew how'.[10] The battle also highlighted the differences in opinion that existed between the RAF and the army as to what constituted army co-operation missions and the most effective way of providing this co-operation.

> In support of the land battle, the RAF regarded the interdiction of enemy reserves as the principal contribution of bomber aircraft, and further, generally to create disorganisation and confusion behind the enemy front while the ground forces achieved their objectives.[11]

Much good work had been conducted in this area during the inter-war period, but many fundamental issues concerning air support had not been settled prior to the BEF and RAF being dispatched to the continent.

The Royal Air Force in France 1939-40

The Advanced Air Striking Force

The RAF was able to conduct single-role campaigns due to its mono-role command structure. As Alistair Byford explains:

> This created a framework that was ideal for managing single-role campaigns fought from well-found, permanent bases in the metropolitan homeland, where little inter-command cooperation was required ... the single-role command model did not provide a structure that could be readily used to deploy and support an expeditionary air component in the field.[12]

This command structure allowed it to grow with relative ease during the expansion programme of the late 1930s.[13] This mono-role command structure, however, meant that the force would always struggle in a multi-role capacity where it would be required to provide support for land based forces. As has been noted above, this role had never been envisaged for the RAF during the expansion programme and the planning had taken place when the governments of the day were following the policy of Limited Liability.[14] The force that the

[10] Buckley, 'The Air War', pp.111, 117.
[11] Melvin, 'The Land/Air Interface', p.161.
[12] *Ibid*., p.122.
[13] Alistair Byford, 'Fair Stood the Wind for France? The Royal Air Force's experience in 1940 as a case study of the relationship between policy, strategy and doctrine', *Air Power Review*, 14: 3 (Autumn/Winter, 2011), p.41.
[14] Byford, 'False Start', pp.122-3.

RAF sent to France when hostilities broke out with Germany was divided into two sub-forces: the AASF and the RAF Component of the Field Force.[15] Both of these forces were designed to fulfil polar opposite roles. They were to be commanded by RAF officers much to the disagreement of the WO who were still pushing for a separate air force under the command and control of the army.[16] This was to be a continual theme throughout the history of Army Co-operation Command. As early as October 1939, the Secretary of State for War, Leslie Hore-Belisha argued that the 'Spasmodic allocation [of aircraft] on request will not work. These aircraft must be permanently at the disposal of the Army'.[17]

The Headquarters of the AASF was opened on 1 September 1939 at Reims. This area was chosen as a base as it was felt that this was to be an easier place from which to attack strategic targets deep in Germany.[18] This original location for the AASF shows how the RAF felt that such a force should be employed on the outbreak of hostilities. The RAF planned to conduct independent operations against targets in Germany from bases in France, as the light bombers did not have the range to conduct operations from bases in Britain.[19] Bond has argued that 'The Advanced Air Striking Force of medium bombers, though stationed in France, was given an independent bombing role and remained under the direction of the Air Staff'.[20] Buckley has further claimed '... the RAF's deployment in France of the Advanced Air Striking Force was not to support the army as much as to allow its short-ranged light bombers – Fairey Battles and Bristol Blenheims – to be able to reach Germany itself'.[21] The CAS, Air Chief Marshal Sir Cyril Newall argued at the War Cabinet that as German aircraft

[15] The AASF was formed from aircraft of No.1 Group. TNA AIR 24/679, Order of Battle Advanced Air Striking Force c. March 1940.
[16] TNA CAB 66/3/10, Air Requirements for the Army, memorandum by the Lord Privy Seal, 2 November 1939.
[17] TNA CAB 92/111, Air Requirements for the Army, memorandum by the Secretary of State for War, 21 October 1939. Alistair Byford, 'The Battle of France, May 1940: enduring, combined and joint lessons', *Air Power Review*, 11: 2 (Summer, 2008), p.64.
[18] Kate Caffrey, *Combat Report: The RAF and the Fall of France* (The Crowood Press: Swindon, 1990), p.17.
[19] TNA CAB 66/3/18, War Cabinet Air Policy, Report by the Chief of Staff Committee, 11 November 1939.
[20] Brian Bond, *Britain, France and Belgium 1939-1940* (Second Edition) (Brassey's (UK): London, 1990 [First Edition 1975]), pp.14-5. George Forty and John Duncan, *The Fall of France: Disaster in the West 1939-1940* (Guild Publishing: London, 1990), p.85.
[21] Buckley, 'The Air War', p.121.

had attacked interdiction targets, he would be happy for the AASF to attack similar targets if the French were to make a 'determined effort on land'.[22]

There is evidence to suggest, however, that even as early as September 1939 plans were made to use the AASF in support of an offensive undertaken in the Saar region by the French. Further to this, the CAS had been pressed by General Mouchard, Commander of the North Eastern Air Army to use the AASF in this way.[23] The CAS was opposed to using the force in this way when the French Air Force was not undertaking active operations. A lack of active operations would further hamper the role of Army Co-operation Command throughout its existence. The plan was to use ten Battle squadrons based at Reims, even though these squadrons were estimated to be at sixty per cent efficiency. The aircraft would attack targets such as fuel and weapons dumps, aerodromes, troop columns and transport traffic in the area Saarlauten-Neunkirchen-Zeibruchen-Pirmassens.[24] This was agreed with the French at a meeting between Mouchard and the Chiefs of Nos. 1 and 2 Missions, Air Officer Commanding-in-Chief (AOC-in-C) AASF, Group Captain Collier and Wing Commander Baker.[25] In addition, the Chiefs of Staff felt that the medium bombers of the AASF would be

> suitable for undertaking operations against the enemy's Army, including communications and installations in its immediate rear. This part of the Striking Force [is] suitable therefore, for undertaking that direct action against the advancing German Army which is advocated by General Gamelin ...[26]

Richard Muller has argued that the RAF's 'close support doctrine had made only miniscule progress from summer and fall 1918'.[27] This argument may only be partly true, as

[22] TNA CAB 66/3, War Cabinet WM (39), Conclusion, 14 September 1939.
[23] TNA AIR 14/170, Note on the Employment of the AASF in Support of a Limited Offensive by the French Army in the Saar area, 7 September 1939.
[24] TNA CAB 65/1/2, Conclusions of a Meeting of the War Cabinet, 4 September 1939.
[25] TNA CAB 65/1/2, Conclusion of a meeting between General Mouchard commanding North Eastern Air Army, the Chiefs of Nos. 1 and 2 Missions, AOC-in-C AASF, Group Captain Collier and Wing Commander Baker, 1 September 1939.
[26] TNA CAB 66/3/18, paragraph 9, 1 November 1939.
[27] Richard R. Muller, 'Close air support: The German, British and American Experiences: 1918-1941', in Williamson Murray and Alan R. Millett (eds), *Military Innovation in the Interwar Period* (Cambridge University Press: New York, 1996), p.170.

much work had been done throughout the inter-war period, especially throughout the empire that developed close support thinking.[28]

The role eventually envisaged for the AASF, as set out above, still saw tactical air forces acting in an interdiction, rather than a close support role, as the army had argued for the whole of the inter-war period and continued to argue for prior to the German invasion of France, Belgium, Luxembourg and the Netherlands.[29] It was not until January 1940 that a specific department was created with the WO to develop the army's thinking with regards air support. The conclusions reached by this organisation, under Lieutenant-Colonel F.W. Festing, after the Battle of France, 1940 have been described by Hall 'as [neither] enlightening or even as a surprise.[30] These conclusions will be looked at in more detail in the section of this chapter that looks at the immediate aftermath of the fighting in France in order to maintain the chronological nature of the thesis. A lack of a defined close support role for the AASF combined with a lack of enthusiasm from those at the top of the Air Ministry, such as the CAS, in the plans noted above does not mean that its sole focus was on the strategic role that it had originally been designed to fulfil. This lack of enthusiasm for air support can be seen in the way Army Co-operation Command was created. The recommendations put forward by the Chiefs of Staff Committee (COS) in the event of a German invasion of Belgium was that 'Immediate action should be taken by those portions of the French and British Air Forces which are particularly suitable for the purpose, to attack the advancing German Army ...'[31] It was agreed, however, that

> In certain circumstances all of the units of the AASF, including the fighter squadrons attached to the AASF may be called upon to co-operate with the other groups of Bomber Command, with the Air Component of the Field Force and with the French Air Force in holding up an advance in great strength by the German armies.[32]

[28] Cf. Army Co-operation Reports 1927-1935, TNA AIR 10/1708, AIR 10/1759, AIR 10/1827, AIR 10/1777, AIR 10/1794, AIR 10/1913, AIR 10/1914, AIR 10/1915 and AIR 10/1911, RAF War Manual Part I – Operations, AP 1300, AIR 10/1889, RAF Manual of Army Co-operation 2nd Edition, AP 1176.
[29] Hall, *Strategy for* pp.43-8.
[30] *Ibid*., p.53.
[31] TNA CAB 66/3/18, paragraph 21, 11 November 1939.
[32] TNA AIR 14/107, Headquarters AASF Operation Instruction No 3, 11 November 1939.

In response to further moves by the WO to create an Army Air Arm, the Air Ministry proposed allotting squadrons from the AASF 'in such proportions as may be necessary'. In order to further the use of the AASF, the Secretary of State for Air stated that the 'Air Ministry are arranging for a proportion of the bomber force to receive special training with the Army'.[33] The renewed attempt by the army to have their own air arm was based on their conclusions of German operations in Poland.[34] There were also claims that the 'Allocation of aircraft for support of specific land operations NOT (repeat NOT) good enough'.[35] Proposals were put forward for an aircraft 'of simple construction on mass-produced lines, which could probably be provided from capacity not required by the Air Ministry.[36] They further expressed the hope that the new aircraft could be produced in quantity for the spring campaign of 1940, and be brought into operation therein as a surprise to the enemy'.[37] Where this spare construction capacity was to be found in a force that was still undergoing a major expansion programme as well as the technical difficulties of producing an aircraft capable of meeting the army's requirements must call into question the thinking of the army over this projected production plan.[38] There was a certain degree of wishful thinking in this proposal, as such an aircraft could not be designed, tested and built in meaningful numbers at such short notice.

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[33] TNA CAB 66/3/12, Air Requirements for the Army, memorandum by the Secretary of State for Air, 3 November 1939.
[34] TNA CAB 66/1/33, The Possible Future Course of the War, appreciation by the Chiefs of Staff, 18 September 1939. Jordan and Sheffield, 'The British Army and Air Power', p.76.
[35] TNA WO 106/1597, Memorandum from War Office to Brassard, 17 October 1939.
[36] The aircraft that could possibly have been built to fulfil the army's demands can be deduced from the specifications put forward after the Battle of France. Cf. TNA AIR 39/139, Draft Air Staff Requirements for a Light Bomber for Close Support Duties with the Army, 19 August 1940. Operational Requirements Committee, Minutes of a Meeting to Discuss Operational Requirements for an Aircraft for Close Support Bombing and Tactical Reconnaissance Duties, 9 September 1940. Army Air Requirements (COS (41) 39 (0)), Appendix I Technical Considerations Affecting the Army Air Requirements – Specifications, 8 June 1940.
[37] TNA CAB 66/3/10, Air Requirements for the Army, memorandum by the Lord Privy Seal, 2 November 1939. A.D. Harvey, *Collision of Empires: Britain in Three World Wars 1793-1945* (Phoenix: London, 1994 [Hambeldon Press; London, 1992]), p.645.
[38] TNA CAB 92/111, (LF 39), Air Requirements for the Army, Comments by the Secretary of State for Air on the memorandum by the Secretary of State for War, 24 October 1939. TNA AIR 10/5547 AHB Narrative, Air Support (AP 3235), 1955.

In response to this move by the WO, the Air Ministry stated that no new aircraft could be produced for eighteen months 'due to current production demands'. Production problems, both in Britain and the United States (US), would prevent Army Co-operation Command fulfilling the role assigned to it to a greater extent. In order to resolve the problem associated with aircraft supporting the army it was proposed that 'The General Staff and the Air Ministry should reach an agreement on the proportion of the Advanced Air Striking Force ... allocated to army work and the training required'. Ten Battle squadrons of the AASF and six Blenheim squadrons in England were to receive training in co-operation with the Army.[39] The ten Battle squadrons were organised into five wings when stationed in France.[40] The alteration of the role that the AASF, from that of a strategic bomber force operating from bases in France, to an air support role was due mainly to the inability of the RAF's light bomber force to conduct the operations originally envisaged for it. 'During the first months of the war ... it became apparent that the slow and obsolescent aircraft of the AASF could not penetrate over enemy territory by day, and from this time onwards there was very little doubt that their main employment could be tactical'.[41] There were also fears of retaliation on French troops and industrial centres if such attacks were conducted.[42]

The Air Component of the British Expeditionary Force

The RAF Component of the BEF was designed to be the aspect of the RAF that would provide the support the BEF felt would be required in modern warfare. Advanced parties of this force began to move to France by mid-September 1939.[43] The movement of the force,

[39] TNA CAB 65/2, War Cabinet 75 (39), 8 November 1939. A decision as to who should control the AASF was postponed by the War Cabinet on this occasion.
[40] TNA AIR 41/21. The Campaign in France and the Low Countries September 1939-June 1940, I The Move to France.
[41] TNA WO 277/34, Historical Monograph Army Air Support and Photographic Interpretation, 1939-1945, Chapter II Air Support in the Battle of France, 1939-1940: The BEF and its Air Support.
[42] May, *Strange Victory* p.311.
[43] TNA CAB 66/1/35, Air Operations and Intelligence Second Weekly Report by the Secretary of State for Air, 18 September 1939.

barring one squadron, was completed by mid-October.[44] Originally, this force was placed under the operational control of the General Officer Commanding-in-Chief, BEF (GOC-in-C). This was General Lord Gort, who had previously been involved in the debates regarding army co-operation as CIGS from 1937 until he became commander of the BEF. Air Vice-Marshal C.H.R. Blount was the Air Officer Commanding (AOC).[45] It has been stated that this force was to be commanded according to accepted doctrine. The monograph detailing the history of army air support and photographic interpretation does not state if that doctrine was to be that of the army or RAF. One suspects that with the work done by the RAF, the doctrine developed by them would be used in these circumstances.[46] This force consisted of four Lysander squadrons for short-range and four Blenheim squadrons for long-range reconnaissance, with four Hurricane squadrons for protection.[47] Carrington has said that this force was 'no better equipped than any other limb of our military effort'.[48]

The air component was, in theory, to provide all the air support that could be required for the BEF. If, however, further support was required, a request had to be made through the WO who would pass the request on to the Air Ministry who would then either accept or deny this request. The Air Staff would then be responsible for passing on the support request to the independently commanded bomber forces in France, which formed part of the AASF.[49] The army felt that the arrangement for the provision of additional air support above that provided by the air component was 'dangerously inadequate both in resources and organization'.[50] The re-organisation of communications would be the first major task undertaken by Army Co-operation Command. The army were concerned that 'no part of our

[44] TNA CAB 66/2/38, Weekly Resume No. 6 of the Naval Military and Air Situation, 12 Noon, 5th October to 12 Noon, 12 October 1939.
[45] Dean, *The Royal Air Force* pp.119-20.
[46] TNA WO 277/34, Historical Monograph Army Air Support and Photographic Interpretation, 1939-1945, Chapter II Air Support in the Battle of France, 1939-40.
[47] Byford, 'Fair Stood', p.45.
[48] C.E. Carrington, 'Army/Air Co-operation, 1939-1943', *JRUSI*, 115 (December, 1970), pp.37-8.
[49] Hall, *Strategy for* pp.48-9. Jacobs, 'Air Support', p.174. Victor Bingham, *Blitzed: The Battle of France May-June 1940* (Air Research Publications: New Malden, Surrey, 1990), p.25.
[50] TNA WO 193/678, Note by CIGS, 27 September 1939. Jacobs, 'Air Support', p.174.

bomber force [is] permanently under command of the commander fighting the battle on land'.[51] After much discussion over the state of the communications for additional air support, combined with a change in the role of the AASF a new organisation was formed to control the air forces based in France. The army still felt that only a large air component of specially designed aircraft, under the direct control of the army commander alone, could ensure the British army received the support they required. The Air Component was also able to apply to 'the AASF for the temporary use of a maximum of two bomber squadrons in the event of a "fleeting opportunity" target'.[52] This had not been exercised and would cause friction due to the huge administrative problems under the pressure of operations against targets that needed to be attacked quickly to have any effect.

Even though the letter goes on to state that squadrons must be standing by in the event of their being called upon, it must be questioned how quickly these squadrons could be brought to bear on a "fleeting opportunity" target.[53] This point was remarked upon further in a memorandum sent to Headquarters, Air Component, to the HQ of AASF discussing the channels of control for the forces. The discussion raises the point that AASF squadrons 'will probably be called up to bomb fleeting opportunity targets and it will be extremely difficult to get information as to targets through sufficiently quickly if the aircraft are right outside our area ...'[54]

British Air Forces in France

The poor state of communications between the forces in the field, with regards to additional air support for land forces by the air component combined with a new role for the

[51] TNA WO 106/1597, Notes by CIGS on CAS's Memorandum on Arrangements for Bomber Support for the Allied Army in France, November 1939.
[52] TNA AIR 14/170, Letter from Headquarters AASF to Headquarters RAF Component Field Force, 9 November 1939.
[53] *Ibid*.
[54] TNA AIR 14/170, Memorandum from Headquarters RAF Component to Headquarters AASF, Channels of Control of the Advanced Air Striking Force and Relations between the Field Force, the Air Component of the Field Force and the Advanced Air Striking Force, 1 November 1939.

AASF led to a radical rethinking of policy and command structure.[55] During the discussions for the formation of this new command structure, Gort and the WO were still demanding outright control of an army air support force.[56] The desire for a change in command structure came from several different areas. Barratt, who was AOC-in-C, No. 1 Mission, RAF, was aware of the weaknesses of the current command organisation.[57] The AOC-in-C Bomber Command, Air Chief Marshal E.R. Ludlow-Hewitt was of the opinion that the headquarters 'was needed "to button up the divergent or convergent requirements of the French and British forces, the Air Component, the AASF and Bomber Command"'.[58] A new command that was responsible for all air support to be conducted within France, which now included the use of the AASF, and to support any part of the Allied line, not just the British sector was created.[59] In order to form this command, the squadrons of the AASF, which were previously under the nominal command of Bomber Command, were detached and placed under the command of the new formation. This new formation came into existence on 15 January 1940 and was called British Air Forces in France (BAFF).[60] Centralising army support was one of the main factors for the creation of Army Co-operation Command.

The position of the new commander was stated as being 'similar to that of the C-in-C, BEF, except that he will not be under any French Commander'. The relationship of the command was based upon the relationship that existed between the Royal Navy and Coastal Command. The AASF still held a slightly anomalous role. If the force was to be used in a strategic operation in conjunction with Bomber Command, the command of the force would

[55] Terraine, *The Right of the Line* p.122.
[56] Jordan and Sheffield, 'The British Army and Air Power', p.76.
[57] TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-June 1940, The Formation of the British Air Forces in France. J.R.M. Butler, *Grand Strategy Vol. II: September 1939-June 1941* (Her Majesty's Stationery Office: London, 1957), pp.153-4.
[58] TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-June 1940, The Formation of the British Air Forces in France.
[59]TNA AIR 24/681, Minutes of a Conference held at GHQ on 17 January, 1940 to discuss certain aspects in connection with the reorganisation of the Royal Air Force in France and the Appointment of an Air Officer Commanding-in-Chief, the British Air Forces in France. Dean, *The Royal Air Force* p.120.
[60] TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-June 1940, The Formation of the British Air Forces in France. TNA AIR 24/679, Order of Battle of the AASF, undated, c. 1939.

pass to the AOC-in-C, Bomber Command. In this scenario, the operational orders would be issued directly to the AOC, AASF by the Chiefs of Staff Committee, with the sanction of the War Cabinet.[61] This was a highly complex way of conducting operations placing great strain on both the wired and wireless communications available. Orders issued directly to the AOC, AASF, meant that a link that had previously existed where orders would first be passed to Bomber Command and then to AASF was removed.[62] Barratt was further charged with ensuring that the GOC-in-C BEF had 'full assurances regarding' the provisions of 'air support'.[63]

Barratt's selection as AOC-in-C of BAFF was confirmed in a letter from the Air Ministry at the end of December, 1939.[64] The creation of BAFF was seen as assisting in a 'general settlement between the WO and the Air Ministry of army claims to bombing support'.[65] The army, whilst happier at the new support arrangements, still felt that the assurances were inadequate with regards the timing of the support and still contended that the RAF did not possess the aircraft required to conduct such support.[66] BAFF was able to co-ordinate air support arrangements more easily with the French Army, Air Force and General Headquarters (GHQ). Barratt's position was unusual, as he had no responsibility for administration except at the higher level of administrative policy. Barratt found himself in a similar position as AOC-in-C Army Co-operation Command. The reasons for this were two-fold: to 'avoid swamping an operational commander with administrative detail; and secondly,

[61] TNA CAB 66/3/27, Air Requirements for the Army in France, memorandum by the Minister for the Co-ordination of Defence Part I, 2 December 1939.
[62] TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-June 1940, Chapter I: The Formation of British Air Forces in France.
[63] TNA WO 106/1596, British Air Forces in France (Report), c. December 1939.
[64] TNA WO 106/1596, Letter from A.W. Street, Air Ministry to Air Marshal Barratt, 31 December 1939.
[65] TNA WO 277/34, Historical Monograph Army Air Support and Photographic Interpretation, 1939-1945, Chapter II: British Air Forces in France.
[66] TNA AIR 10/5547, AHB Narrative, Air Support.

since a working system of administration, under the AASF and the Air Component, was already in existence'.[67]

Much work was done between BAFF, the AASF and Bomber Command with regards how communications would function if the links between Advanced Headquarters, BAFF and the AASF and Bomber Command were interrupted. The orders communicated were to specify how many squadrons were to be kept in reserve for 'Special Opportunity Targets'. It was also noted that at times it may be 'more appropriate for Advanced Headquarters BAFF, to allot *tasks* rather than *targets*, and when AASF and Bomber Command will best be judges in the light of results which they were obtaining, as to the exact targets to be attacked' [author's emphasis].[68] By emphasising tasks rather than targets, aircraft could be used in a more efficient way. If a specified target could no longer be engaged, the aircraft specified to attack it would have a wasted mission. By setting the aircraft tasks they would be able to engage any targets spotted that would fulfil the mission. Another area that became a focus of BAFF was the night flying capabilities of Battle crews. As has already been noted, the Battles had been expected to perform a day-bombing role on strategic targets in Germany. It was, however, unable to perform this satisfactorily due mainly to its obsolescence.[69] The Battles would now carry out interdiction and close support attacks by day or night. In order to be able to conduct the night-flying role, the crews would require extensive training. The facilities for this training were very restricted and could not be enlarged on a scale that was practicable. This was partly due to a lack of over ground space but mainly due to the restrictions on crossing the French border between the French lines and the German border imposed by the French High Command. In order to facilitate this training the French

[67]TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-June 1940, Chapter I: The Formation of British Air Forces in France.
[68] TNA AIR 24/684, Methods of Controlling Air Bombardment from Advanced Headquarters, c. April 1940
[69] Cf. TNA WO 277/34, Army Air Support.

authorities agreed that night-flying training could be conducted from an aerodrome at Perpignan.[70]

A limited re-organisation of personnel also took place with the creation of BAFF. In a conference held in mid-January 1940 discussing the re-organisation of the RAF in France

> It was pointed out that any decision as to the strength and allocation of bombing effort was, in essence, a military problem. Only a limited amount of bombing effort was available, and if "the demand exceeded supply" it would ultimately be for General Georges to decide where this effort was to be expended. It was therefore suggested that to meet any difficulties that might arise, a Staff Officer from General George's Headquarters should be at the Headquarters of the AOC-in-C in order to represent or obtain General George's decisions when necessary.[71]

The attitude of BAFF, as well as the RAF as a whole, with regards to the use of aircraft in what they termed the 'close support role', were similar to that which had prevailed throughout the inter-war period, and which Army Co-operation Command would have to work hard to alter.

> [O]perational instructions issued by BAFF and Bomber Command ... stated that "Bomber aircraft had proved extremely useful *in support* of an advancing army, especially against weak anti-aircraft resistance, but it is not clear that a bomber force used *against* an advancing army, well supported by all forms of anti-aircraft defence and a large force of fighter aircraft will be economically effective. For this reason it is intended that the scale of our bomber effort shall depend on the gravity of the situation" [emphasis in original].[72]

Hall has gone as far as to claim that 'BAFF was what three years later would be called a Tactical Air Force, affiliated with an Army Group in a designated theatre of operations'.[73] Stuart Peach has described Barratt's job at BAFF attempting to 'bring a semblance of coherence to his command ...'[74] The work of BAFF in the lead up to and fighting during May and June 1940 will be looked at in depth later in this chapter.

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[70] TNA AIR 24/681, Letter from Headquarters BAFF to Headquarters AASF, 22 January 1940.
[71] TNA AIR 24/681, Minutes of Conference held at GHQ to discuss certain aspects in connection with the reorganisation of the Royal Air Force in France, and the Appointment of an Air Officer Commanding-in-Chief, British Air Forces in France, 17 January 1940.
[72] TNA AIR 14/107, Operation Instruction No. 3, 11 November 1939. Denis Richards, *Royal Air Force 1939-1945 Vol. 1:The Fight At Odds* (Her Majesty's Stationery Office: London, 1953), p.110.
[73] Hall, *Strategy for* p.50.
[74] Stuart W. Peach, 'A Neglected Turning Point in Air Power History: Air Power and the Fall of France', in Sebastian Cox and Peter W. Gray (eds), *Air Power History: Turning Points from Kitty Hawk to Kosovo* (Frank Cass: London and Portland, Oregon, 2002), p.150.

The Allied Central Air Bureau

It was in the field of close support communications where BAFF made a huge break-through in communications in the field. It was this break-through that was used to further the communications required to conduct ad hoc air support in the field. The Allied Central Air Bureau (ACAB) was set up in November 1939 and an army officer was to represent Gort at this new organisation, which was based at Chauny. This officer was Lieutenant-Colonel J.D. Woodall, and his work in close support communications was to form the basis for future RAF work in this area.[75] His later work will be looked at in more detail in the subsequent chapter. Originally, the bureau was a signal organisation 'built on a series of landlines with ciphered Wireless [Telegraphy] back up'.[76] This would improve the response time against time-sensitive targets. The function of the bureau fell into three areas. The first was to sort the information that was being received from air reconnaissance. From this information, the bureau would then be able to send out requests for further reconnaissance and allot bombing tasks based on the reports received.[77] The ACAB was also 'entrusted with the task not only of maintaining close liaison with General d'Astier on all points which concerned the two Air Forces in his Zone, but also of studying the whole problem of air action in the event of operations in Belgium and Holland; the plans for which were being prepared by the French High Command'.[78] The ACAB also utilised another organisation that had been created whilst the RAF was in France. This was 'Phantom', 'a specialised ground reconnaissance unit, composed of a joint army/air' unit.[79]

Gort was less than enthusiastic about this new system of communication, and the allotting of bombing tasks by the ACAB. He stated vigorously in a letter to CIGS that

[75] TNA WO 106/1597, Letter from Gort to CIGS, 27 November 1939.
[76] Hall, *Strategy for* p.44.
[77] TNA WO 106/1597, Letter from Gort to CIGS, 27 November 1939.
[78] TNA AIR 35/354, BAFF Barratt's Despatch, Establishment of Allied Central Air Bureau, July, 1940.
[79] Hall, *Strategy for* p.50.

> On paper this Bureau makes the best of a somewhat confused air situation. I am doubtful if it will work in war, if only because of its reliance on long communications.[80]

That this argument was again put forward is not surprising when the army's attitude towards the control of army support aircraft being controlled by an independent force is taken into consideration. Later in this letter, however, Gort identifies a problem that was to hamper the RAF in its attempts to conduct close support operations on a fast, fluid and mobile battlefield where information received at headquarters would very soon be out of date. The resolution of the time lag between the request for support and that attack being conducted was the key to providing close support for field forces.

> Last week the board carried out a two-day practice scheme which worked pretty well, but it brought out the delays which would now occur between a reconnaissance aircraft sighting a suitable target and the bombers leaving the ground to engage it, delays which must be overcome.[81]

Despite the hesitation that C-in-C BEF had about this new organisation, it grew and developed new ideas with regards that transferral of information from reconnaissance aircraft to the aircraft tasked with conducting close support. The ACAB had an operations room with a Signals organisation 'which was progressively developed to permit it to have continuous contact with [the] Air Ministry, Bomber Command, the BEF and the Advanced Air Striking Force'.[82] Barratt notes in his despatch on the work of BAFF written after the force had been evacuated from the continent that 'Full Scale Exercises were held to test out the organization of the ACAB in relation to the probable task of knitting together air reconnaissance and information generally with the selection of objectives for air bombardment'.[83]

> It became clear from [the] signals exercise the special provision was required for getting back directly to ACAB at Chauny up-to-the-minute information about the ground situation and requirements for air action. For this purpose a special ground reconnaissance unit comprising a joint air/army mission but best known by its code name of "Phantom", was set up under command of [an] RAF officer with an army officer borrowed from GHQ as his second in command and head of the army element. The task of "Phantom" was to get rapid information back to BAFF at

[80] TNA WO 106/1597, Letter from Gort to CIGS, 27 November 1939.
[81] Gort was still arguing for an army support force commanded and controlled by the army in late November 1939. Cf. TNA WO 193/678, Letter from Gort to CIGS, 27 November 1939.
[82] TNA AIR 35/354, BAFF Barratt's Despatch, Establishment of Allied Central Air Bureau, July 1940
[83] *Ibid*. A report on a Staff and Inter-Communication Exercise conducted in early April 1940 can be found at TNA AIR 24/681, ACAB (Northern Zone) Staff and Inter-Communication Exercise No. 3 conducted 5 April 1940. This is followed by a conference held on the Exercise 10 April 1940.

> all costs and for the purpose it was provided with mobile wireless stations or "tentacles" to be sent out to forward positions from which the course of the battle could be observed and reported. This unit – a measure of whose value can be gained by the fact that when the battle began BAFF usually had information thirty-hours sooner than the French Army and was in fact the origin on the one hand of the Air Support Signals Unit (AASU) ...[84]

Writing his despatches on the fighting in France, after the BEF had been evacuated from the continent, Gort's opinion of the ACAB had changed drastically. 'The development of the ACAB and of its communication to the headquarters of higher formation in France and to the Royal Air Force at home, was likewise to prove its worth in the days to come as an organisation for co-ordinating information and requests for air action'.[85] The ACAB has been described as '... one of the very few positive developments to come out of the fighting against the Germans the following spring'.[86]

The Air Observation Post

Artillery co-operation, which was the major function of ground observation posts, was enhanced during the First World War using aircraft to assist artillery batteries in correcting the 'fall of shot' of the guns. Barratt, as a former artillery officer, was able to use his experience in this area to work closely with the School of Artillery and the officers of the Royal Artillery. Although not termed Air Observation Posts (Air OP) this was the role that aircraft played in this form of army co-operation. Corrections to the 'fall of shot' were carried out using the 'clock code' system. Donald Lewis and Baron James pioneered this system in the early stages of the First World War. Through this system, an artillery co-operation pilot would correct the fall of shot by indicating to the battery commander how far and in which direction the shot of the artillery guns had missed the target. Using the idea of a clock face the pilot would indicate which direction the shot had fallen. A shot to the east of the target would be indicated by using the number three; the number six would indicate a shot

[84] TNA WO 277/34, Historical Monograph Army Air Support and Photographic Interpretation, 1939-1945, Chapter II Air Support and the Battle of France, 1939-1940: The BEF and its Air Support.
[85] TNA CAB 106/246, Despatches of the Operations of the British Expeditionary Force, 3 September 1939-19 June 1940. Written by C-in-C, BEF, Lord Gort 25 July 1940.
[86] Hall, *Strategy for* p.44. Cf. Imperial War Museum (IWM), Evill Papers AC 74/8, Operations in France, September 1939 to June 1940. WO 277/34, Army Air Support.

that had fallen short.[87] The WO and RAF interpreted tests conducted at the behest of the WO in 1938 in almost polar opposite ways.[88] Further trials used aircraft more suited to the role than the 'fast and heavy Audax and Lysander that had been used previously'. These trials

> showed reasonably conclusively that effective fire [control] could be reached considerably quicker than with the existing [artillery control] procedure, and that this fire could be observed [from] up to some 8,000 yards. A trial [using] Spitfires ... showed that a light aeroplane, even without previous warnings, had quite a good chance of dodging the fire of the modern fast fighter.[89]

The first Air OP was established in February, 1940, although they were originally termed Flying Observation Posts. This force, consisting of Taylorcraft Plus and Stinson Voyager aircraft, was moved to France on 19 April, 1940.[90] Trials were conducted when the Air OP was first established in order to gain practical experience under war conditions to determine the type of aircraft and the organisation that would be most suited to conduct this role.[91]

One of these trials was a test conducted 'in the French Army area' and was to 'include shoots done ... against actual German targets'.[92] The newly formed Air OP force arrived in France for a three-week period to carry out intensive training. Events were, however, to prevent this force from engaging in the role for which they had been trained. The final phase of the training was to be the engagement of German targets in the Saar sector.[93] Majors A.G. Matthews and H.C. Bazeley of A/E Battery, Royal Horse Artillery (RHA), were at the Saar front to conduct preliminary reconnaissance of the area. The following day the artillery that were to take part in this exercise were ordered to join their formations after the Germans had

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[87] Barker, *A Brief History of* pp.62-4.
[88] H.J. Parham and E.M.G. Belfield, *Unarmed Into Battle: The Story of the Air Observation Post* (2nd Edition) (Picton Publishing: Chippenham, Wiltshire, 1986 [The Wykeham Press: London, 1953]), p.14. Peter Mead, *The Eye in the Air: History of Air Observation and Reconnaissance for the Army 1785-1945* (Her Majesty's Stationery Office: London, 1983), p.154.
[89] Parham and Belfield, *Unarmed Into Battle* p.14.
[90] TNA AIR 35/113, Letter from Festing, MO 7 (WO) to DMC (AM), 20 January 1940. Parham and Belfield, *Unarmed Into Battle*, pp.15-6.
[91] TNA AIR 35/111, Letter from Wing Commander J. Blackford to AOC Air Component, Blount, 26 January 1940. Parham and Belfield, *Unarmed Into Battle* p.15.
[92] Parham and Belfield, *Unarmed Into Battle* p.15. TNA AIR 35/113, Letter from Brigadier J Swayne to Royal Artillery, 11 February 1940.
[93] TNA AIR 35/111, Letter from Blackford toBlount, 26 January 1940.

launched their offensive.[94] The RAF flight (D Flight) that was to conduct the trials was stationed at Mailly 'in the hope that the campaign would stabilize enough for them to be able to continue the last vital phase of the tests'.[95] The trials were planned too late to have any impact on the battle but the ideas developed in Britain were not to be forgotten after the expulsion of British forces from the continent.

Fighting in France

Where the operations of the RAF and *Luftwaffe* and *Wehrmacht* overlap they will be dealt with in the first instance possible. Before analysing any aspect of the battle, it is necessary to see how the RAF was planning to utilise their aircraft to support the BEF in the field. The role of the *Luftwaffe* around Sedan will then be analysed, as this is where the main close support operations were conducted and formed the basis of the analysis in the reports written by the army after the campaign. The limited effect of the close support during this operation had a great impact on how the WO saw Army Co-operation Command and its work developing after it had been created.

Much planning had been done by the RAF in the build up to the German attack on how the aircraft allotted to support the BEF in the field were to fulfil this role. There were around three hundred front line aircraft in twenty-five squadrons available.[96] Four squadrons of Lysander aircraft would be available for tactical reconnaissance, whilst four squadrons of Blenheims were to conduct strategic and special reconnaissance of bombing objectives. Six squadrons of fighters (four Hurricanes and two Gladiators) would protect the tactical reconnaissance aircraft and provide 'general security of the BEF Area and Lines of

[94] Parham and Belfield, *Unarmed Into Battle* p.16.
[95] Parham and Belfield, *Unarmed Into Battle* p.16. Mead, *The Eye in the Air*, p.158. TNA AIR 35/113, Instructions for Trials of the Flying OP in France, February 1940, Letter from Chief of the General Staff to The French Military Mission at GHQ regarding D Flight, 22 March 1940.
[96] Dean, *The Royal Air Force*, p.126.

Communication'.[97] The French aircraft would be limited to night bombing and were to be used during the day if the situation became critical.[98] Air Component fighters were tasked 'to maintain air superiority, to defend important points, such as Headquarters, aerodromes, and lines of communication, to protect the BEF in its advance to the Dyle, and to protect reconnaissance aircraft operating in the British tactical reconnaissance area'.[99] It was advised that 'Aircraft were to be placed in direct support of the army when they are directed against targets whose destruction will immediately contribute to the success of the land battle'. In order to facilitate direct support, outside of the unusual circumstances detailed above, aircraft would be employed in an interdiction role in order

> to isolate the battlefield from reinforcements and supply; to block or delay the movement of reserves; to create disorganisation and confusion behind the enemy concerned by bombing his communications, headquarters and supply services; in attack- by holding off enemy reserves to prevent hostile counter-attack and eventually turn the "break-in" into a "break-through"; in defence- to stop the enemy reinforcing his first attacking wave and to prevent the continuation of the attack and the possibility of his exploiting any partial success.[100]

The fighting that occurred in France began with a German advance through Belgium and Luxembourg. The Belgian military attaché in Berlin had informed his government of the German intention to attack on 10 May.[101] When the *Armée de l'Air* was tasked with operations on the Western Front, they found themselves greatly outnumbered in terms of numbers of aircraft available to use in operations.[102] The RAF would find themselves having to conduct more operations due to this and this affected their ability to provide support across

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[97] TNA AIR 24/681, Employment of Bombers in the Event of an Enemy Attack on the Western Front, British Air Forces Available, Air Component, 6 March 1940.
[98] TNA AIR 24/681, Employment of Bombers in the Event of an Enemy Attack on the Western Front, 6 March 1940. Martin S. Alexander, '"Fighting to the last Frenchman?" Reflections on the BEF Deployment to France and the Strains in Franco-British Alliance, 1939-1940', in Joel Blatt (ed.), *The French Defeat of 1940: Reassessments* (Berghan Books: Providence, Rhode Island and Oxford, 1998), p.298.
[99] TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-June 1940, Chapter XII Plans for Battle: The Air Plan.
[100] TNA AIR 20/323, Memorandum of the Employment of Air Forces in Direct Support of the Army, c. April, 1940.
[101] Richard K. Betts, 'Despite Warning: Why Sudden Attacks Succeed', *Political Science Quarterly*, 95: 4 (Winter, 1980-1981), p.553.
[102] Faris R. Kirkland, 'The French Air Force in 1940: Was it Defeated by the Luftwaffe or by Politics?', *Air University Review*, XXXVI: 6 (September/October, 1985). Available at http://www.airpower.au.af.mil/airchronicles/aureview/1985/sep-oct/kirkland.html. Accessed 2 December 2011. Martin S. Alexander, 'The Fall of France', in John Gooch (ed.), *Decisive Campaigns of the Second World War* (Frank Cass: London and Portland, Oregon, 1990), p.33.

the whole front. This provided a great pretext for the army to raise the profile of army co-operation in Britain and resulted in the creation of Army Co-operation Command. The Germans, however, did not have material superiority in other areas.[103] The *Scherwpunkt* is a German operational concept in which decisive numbers and materiel superiority are brought to bear at what the attacker wishes to be the decisive point of operations.[104]

The Allied forces began to put their plan into action as soon as it was confirmed that an attack was underway. Some of the first operations to be undertaken was reconnaissance of the operational area of the BEF.[105] This area was on and around the Dyle River to which the forces were moving in order to take up positions to assist the Belgian Army in their defence of Belgium and northern France.[106] This movement was based upon the anticipation that the Germans would advance through Belgium and into northern France as they had done in 1914.[107] The Allied forces came under very little serious attack whilst completing their manoeuvres.[108] During this phase of the offensive, the *Luftwaffe* was more interested in dealing with airfields and attacking aircraft on the ground, as they had done in Poland. They

[103] Alexander, 'The Fall of France', p.33

[104] Karl-Heinz Freiser, *The Blitzkrieg Legend: The 1940 Campaign in the West*, trans. John T. Greenwood (Naval Institute Press: Annapolis, Maryland, 2005), pp.156-7. Cf. Heinz Guderian, *Panzer Leader* (Penguin Books: London, 2000 [Michael Joseph: London, 1952]), pp.18-46.

[105] Brian Cull and Bruce Lander with Heinrich Weiss, *Twelve Days in May: The Air Battle for Northern France and the Low Countries, 10-21 May, As Seen Through the Eyes of the Fighter Pilots Involved* (Grub Street: London, 1995), p.51.

[106] Gerhard L. Weinberg, *A World At Arms: A Global History of World War II* (2nd Edition) (Cambridge University Press: New York, 2005 [1994]), pp.123-4.

[107] The planning and preparation to meet the German threat cannot be accommodated in a thesis of this nature. More information in this area can be found in the following: Robert A. Doughty, 'The Illusion of Security: France, 1919-1940' in Williamson Murray, MacGregor Knox and Alvin Bernstein (eds), *The Making of Strategy: Rulers States and War* (Cambridge University Press: Cambridge, New York and Melbourne, 1994). Robert J. Young, 'The Strategic Dream: French Air Doctrine in the Inter-War Period, 1919-1939', *Journal of Contemporary History*, 9: 4 (October, 1974), pp.37-76. Robert Allan Doughty, *The Seeds of Disaster: The Development of French Army Doctrine 1919-1939* (Archon Books: Connecticut, 1985). A.D. Harvey, 'The French Armée de l'Air in May –June 1940: A Failure of Conception', *Journal of Contemporary History*, 25: 4 (October, 1990), pp.447-465. Martin S. Alexander, 'In Defence of the Maginot Line: security, policy, domestic politics and the economic depression in France', in Robert Boyce (ed.), *French Foreign and Defence Policy, 1918-1940* (Routledge: London, 1998). Eugenia C. Kiesling, 'If It Ain't Broke Don't Fix It: French Military Doctrine Between the World Wars', *War In History*, 3: 2 (April, 1996), pp.208-223.

[108] Forty and Duncan, *The Fall of France* p.151. Karl-Heinz Frieser has noted that '...ironically, the French would become the victims of the Schlieffen plan, not in 1914, but in 1940'. *The Blitzkrieg Legend* p.93.

also conducted interdiction operations to seal off the battle area.[109] The *Luftwaffe* conducted attacks on 11 May on Allied centres of communication. The result of this attack was the paralysis of operations in a 'vital area; and on Allied troops advancing or deployed for battle'.[110] Paul Deichmann has noted that the flexibility given to junior *Wehrmacht* officers was also given to those responsible for conducting air support operations. 'Wehrmacht High Command Directives ordering air support for the Army did not specify whether this should take the form of attacks to seal off the battle area or direct support over the battlefield, or a combination of both'.[111] This is a classic example of the German military concept of *Auftragstaktik* or mission command, where only the objective is specified and the junior commander is left to decide how to accomplish the mission.

Whilst this was being undertaken, the *Wehrmacht* were assembling themselves for an attack through the Ardennes Forest.[112] This part of the Allied line, which will be studied in more depth below, was poorly defended and was not subject to extensive reconnaissance operations. The reason behind this was the French claims that the Ardennes Forest was impassable to tanks and mechanised and motorised vehicles. Alistair Horne has noted

> Even allowing for the distortions of hindsight, after one has actually explored the terrain, it is hard to comprehend how anyone (except perhaps a *Duexieme Bureau* officer who had never set foot outside the *Crillon Bar*) could possibly have deemed the Ardennes 'impenetrable' for a modern army. It becomes still more extraordinary when one learns that, in 1938, manoeuvres were actually conducted under General *Pretélat* (then commander designate of the Second Army) which *exactly* paralleled the German attack of May 1940 [emphasis in original].[113]

Sedan and the German Break out

The area where close support from the air had its biggest impact upon the Battle of France was at Sedan around the Meuse River. Due to this, it was used as evidence against the RAF

[109] Paul Deichmann, *Spearhead for Blitzkrieg: Luftwaffe Operations in Support of the Army, 1939-1945* (Greenhill Books: London, 1996), p.106. Smith, *Dive Bomber* pp.185-6. Ellis, *Brute Force* p.12.
[110] TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-June 1940, Military Summary, German Air Attack, 11 May 1940.
[111] Deichmann, *Spearhead for Blitzkrieg* p.124.
[112] William L. Shirer, *The Collapse of the Third Republic: An Inquiry into the Fall of France in 1940* (2nd Edition) (The Literary Guild: London, 1970 [1st Edition 1969]), p.610.
[113] Alistair Horne, *To Lose a Battle: France 1940* (Macmillan: London, 1990 [1969]), pp.243-4.

that they had not conducted the correct type or enough air support for the BEF, and led directly to the creation of Army Co-operation Command. It was here that the Germans planned to form their *Schwerpunkt*. Using this concept, Lieutenant-General Heinz Guderian 'squeezed his three Panzer divisions into a combat sector barely ten kilometres wide ...'[114] There had been a build up of troops around the Sedan area since the Germans launched their attack on Belgium and The Netherlands. This build up of troops and motorised and mechanised transport was the ideal target for a force that was looking to conduct interdiction operations.[115] The focus of BAFF at this time was on fulfilling its role to provide reconnaissance and protection to the BEF in line with the ideas expressed above during the BEF's move to the Dyle. Very little reconnaissance was conducted around the Ardennes area and that which was carried out was ignored, as it did not fit in with official French doctrinal thinking. 'The French High Command, was still clinging to its refusal to consider the passage of the Ardennes as practical despite warnings from French airmen who had seen signs of the massive troop-concentrations ...'[116] The reconnaissance reports showed the build up of troops and Barratt was enthusiastic to attack this force. General Gamelin, however, rejected this, for fear of the reprisals that may have been faced by Allied forces and civilians, as the tailback stretched into Germany.[117]

The *Wehrmacht* began their attack on the defences across the Meuse River on 12 May.[118] The *Luftwaffe* had been able to gain air superiority over the Meuse area at Sedan through the advance of the *Wehrmacht*'s Army Group B to draw the Allied forces into Belgium and northern France. With air superiority attained, the *Luftwaffe* was able to conduct close support operations and proceeded to attack the French defences on the opposite bank of the

[114] *Ibid*., p.157.
[115] Freiser, *The Blitzkrieg Legend* p.142.
[116] Caffrey, *Combat Report* p.39.
[117] TNA AIR 35/354, BAFF' Barratt's Despatch, Part III: Work of BAFF Prior to Land Battle, July 1940. Bingham, *Blitzed* p.49. Ronald E. Powaski, *Lightning War: Blitzkrieg in the West, 1940* (Castle Books: Edison, New Jersey, 2006 [John Wiley & Sons Hoboken, New Jersey, 2003), p.87.
[118] Nigel Cawthorne, *Steel Fist: Tank Warfare 1939-1945* (Arcturus Publishing: London, 2003), p.69.

Meuse. A decision was also taken by Guderian that the support given by the *Luftwaffe* would be continuous rather than 'a massive one-shot attack'.[119] Byford has commented on how important air superiority was and how little this was understood by ground forces.

> What had achieved success for the Germans was primarily indirect air support – isolating the battlefield and cutting communications – following the achievement of air superiority, but both of these effects were invisible to the soldier on the battlefield and consequently, not well understood.[120]

In order to ensure smooth co-operation between the *Luftwaffe* and *Wehrmacht* the headquarters of the land and air forces were co-located as had also been stated in RAF doctrine.[121] The doctrine of the RAF mirrored that of the *Luftwaffe*. The defensive positions that were occupied by the French were incomplete and manned by third-rate forces unused to combat, poorly trained and ill disciplined. They also lacked the full support of the artillery, as it was felt by the French that this support for the formations on the Meuse would not be necessary, as an attack would not be forthcoming in this area.[122] What artillery there was came under attack from the Ju-87 'Stuka' dive-bombers on the evening of 12 May.[123]

The next day the French forces tasked to defend the Sedan area came under the full weight of attack from the *Luftwaffe* and the mechanised units of the *Wehrmacht*, who they were supporting. That these attacks were pre-planned was not known to the BEF and this misinterpretation of how the *Luftwaffe* conducted air support in battle would provided the impetus for the RAF and Army Co-operation Command in particular to be able to conduct air support in the field on an ad hoc, unplanned basis. The material effect of the bombardment was negligible; the impact on the morale of French soldiers, and their ability to counter the German offensive was, however, to prove to be decisive. With the support of the *Luftwaffe*,

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[119] Williamson Murray, *Luftwaffe: Strategy for Defeat* (The Nautical and Aviation Publishing Company of America: Baltimore, Maryland, 1985), p4.1.
[120] Byford, 'The Battle', p.68.
[121] James S. Corum, *The Luftwaffe: Creating the Operational Air War, 1918-1940* (University Press of Kansas: Kansas, 1997), pp.276-7.
[122] May, *Strange Victory* p.405. Powaski, *Lightning War* pp.109-10.
[123] Guderian, *Panzer Leader* p.106. Freiser, *The Blitzkrieg Legend* pp.153-7.

the *Wehrmacht* was able to ford a crossing over the river in the face of little resistance. Robert Citino has described the Luftwaffe attack.

> These ungainly craft [Ju-87 Stukas] hurtling out of the sky in near vertical dives with their screeching sirens, dropping their bombs with pinpoint precision, systematically destroyed the French defences, wrecking artillery batteries and reducing the French reservists to a state of numb resignation.[124]

The danger that the attack and subsequent break out at Sedan posed to the Allied forces who had reached their defensive positions on the Dyle River was not realised immediately and little was done to counter the thrust made.[125] If the opportunity had been taken in the

> ... hours after the German crossing of the Meuse they would have found a force of infantry with very little in the way of tank and artillery support and could have contained the attack on the banks of the Meuse. By the end of 13 May, each Panzer Corps had been able to establish a bridgehead on the far bank of the Meuse.[126]

This was the only action in which close support had a decisive impact.[127] Other crossings of the Meuse were achieved without the intervention of close support aircraft.[128] This was not how the WO interpreted events and exploited this to further develop army co-operation in Britain. 'Every available plane [sic] was being committed to support Guderian that day [12 May], the tactical air strikes on Major General Erwin Rommel's front had been strictly limited, and they could at most have been partly responsible for the chaos which was to exert so disastrous an influence in the mounting of the French counter-attacks'.[129] Tanks and artillery guns only supported the attack by Rommel around Dinant.

In order to spur his troops on, Rommel led the first wave of attacks across the Meuse personally. By the afternoon of 13 May, Rommel's forces had been able to gain a foothold across the Meuse but this success was in danger of being reversed due to French armour. This threat was neutralised by German infantry, and tanks were moving across the pontoon bridges by the evening. Confusion in the French forces also helped Rommel achieve his

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[124] Citino, *Quest for Decisive Victory* p.269.
[125] Philip Warner, *The Battle of France, 1940* (Cassell Military Paperbacks: London, 1990), p.62.
[126] John Delany, *The Blitzkrieg Campaigns: Germany's 'Lightning War' Strategy in Action* (Caxton Editions: London, 2000 [1996]), p.90.
[127] Murray, 'The Luftwaffe Experience', p.92, 94. See also Murray, *Luftwaffe: Strategy for Defeat*.
[128] Murray, 'The Luftwaffe Experience', p.92.
[129] Horne, *To Lose* p.330.

success. The French were in the process of replacing the 1st Cavalry Division, who were retreating from the Ardennes, with the 18th Infantry Division. This unit had only just taken up their positions and found themselves without artillery support or anti-tank guns.[130] Air support was not a necessary pre-requisite for the success of the *Wehrmacht*, and the image of Stuka aircraft conducting raids on troops has become burned, to a certain degree, on the collective conscience of the army at the time and subsequently the public. The possible reasons for this will be investigated in the next chapter. After the attacks at Sedan, the *Luftwaffe* would never again have a mass of troops, already contained within a small area against which to conduct such attacks.[131] The French cavalry, which had been fighting around the Belgian plain suddenly found themselves without air support as the majority of the aircraft involved in the fighting there had been ordered to the Sedan region to stem the tide of the German attack.[132]

After consolidating the bridgehead at the Meuse, the Germans who had affected the break-in now looked to turn it into a break out as quickly as possible whilst the Allied forces were still off balance and concentrating on their own plans.[133] This manoeuvre would see the Allies pinned up against the Maginot Line and would cause huge problems for the relations between the French and the British as they were soon to be put into real danger of being cut off from the Channel ports. The drive to the Channel raised the fears in the *Wehrmacht* High Command that their right flank would be exposed. This fear, brought about largely from the experience during the Battle of the Marne, went all the way to Adolf Hitler himself, and resulted in several stop orders being sent to Guderian who promptly ignored them.[134] At one

[130] Williamson Murray and Allan R. Millett, *A War to be Won: Fighting the Second World War* (The Belknap Press of Harvard University Press: Cambridge Massachusetts and London, 2000), p.71.
[131] Hallion, *Strike from the Sky* p.145.
[132] Jeffrey A. Gunsburg, 'The Battle of the Belgian Plain, 12-14 May 1940: The First Great Tank Battle', *Journal of Military History*, 56:2 (April, 1992), p.222.
[133] Guderian, *Panzer Leader* pp.105-9.
[134] *Ibid*., pp114-7.

point, he offered his resignation due to not being able to advance as quickly as he wanted.[135] The *Luftwaffe* was then tasked to act as flank cover for the advancing German Panzer, mechanised and motorised divisions.[136] This was how the RAF felt air support should be conducted and they found themselves having to unwillingly look at how to provide close support from the air. The breakout caused significant disruption in the French rear. Rommel noted that 'A chaos of guns, tanks, military vehicles of all kinds, inextricably entangled with horse-drawn refugee carts, covered the roads and verges'.[137] The German *Henschel* 126 observation aircraft were able to act as forward reconnaissance reporting the movements of Allied troops, which assisted the Panzer divisions to advance at speed.[138]

The RAF and the Response to Sedan

The RAF had been ably conducting its army support role during the advance to the Dyle as it had encountered very little in the way of opposition aircraft looking to contest air superiority or to disrupt the movement of the Allied forces.[139] Hall has described the German response to the Allied move as their being too 'astute and polite enough to hinder the enemy when he was making a fatal mistake'.[140] In line with the doctrine laid out in the *Manual of Combined Naval, Military and Air Operations* the advanced headquarters of BAFF was located in close touch with the French Commander of Zone d'Opérations Aériennes Nord (ZOAN), at Chauny.[141] Neither the main, nor advanced, headquarters were located near BEF headquarters as was also detailed in the same publication, which were located at Arras.[142]

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[135] Guderian, *Panzer Leader* pp.109-10. Charles Messenger, *The Art of Blitzkrieg* (Ian Allan: London, 1976), p.148.
[136] Guderian, *Panzer Leader* pp.112-3. Deichmann, *Spearhead for Blitzkrieg* p.143.
[137] Murray and Millett, *A War to be Won* p.71. Terraine, *The Right of the Line* p.130.
[138] Robert Jackson, *Air War over France 1939-1940* (Ian Allan: London, 1974), p.112.
[139] TNA AIR 10/5547, AHB Narrative Air Support, Chapter II: The Campaign in France, 1940. TNA CAB 106/246, Despatches of the Operations of the British Expeditionary Force, 3 September 1939-19 June 1940.
[140] Hall, *Strategy for* p.51.
[141] TNA AIR 35/354, BAFF Barratt's Despatch, Appendix N Summary of Dispositions and Operations of BAFF during Various Phases of the Land Battle, First Phase 10-15 May 1940, Dispositions of BAFF, HQ BAFF, July 1940.
[142] TNA WO 106/1763, The Work of the Air Component during May 1940, Lessons, c. May 1940. Hall, *Strategy for* pp.42-3.

The first operations conducted by BAFF against the advancing Germans were 'low flying bombing raids against enemy columns in Luxembourg.[143] The failure of these attacks as a whole put great pressure on the RAF to improve its air support capabilities. Reports on the activities of the enemy's crossing of the frontiers of Belgium and Luxembourg were received by BAFF as early as 09:10 hours 10 May. As the junior partner in the alliance, the orders to bomb the advancing German troops had to be given by the French and this permission was not given. Barratt ordered BAFF to be sent to attack the troop build up on his own initiative.[144] Even at this early stage of the battle, the pilots were reporting severe problems in conducting offensive operations. Many of the army's requests for support, however, were still not met due to insufficient resources.[145] Refugees on the roads made picking out military targets difficult. The major problem that was to plague the RAF for the entirety of its operations in France was that 'Even at this early stage of the operations, the difficulties of operating against fleeting targets became evident'.[146] The columns against which raids had been despatched proved to have dispersed or to have moved elsewhere by the time the raid reached the area of operation.[147] The German attacks conducted the following day followed a similar pattern to those of the previous day.[148]

It was not until 12 May that reconnaissance was conducted on enemy troop movements and not just over the area of operations of the BEF.[149] The result of this reconnaissance was the realisation of the direction of the German offensive. Blenheims of the AASF conducted bombing operations against columns advancing around the Maastricht region. The result of these operations was disappointing, however, with the Blenheims taking severe losses. Of

[143] TNA AIR 24/679, Advanced Air Striking Force, RAF Component and British Air Forces in France, c. July 1940.
[144] TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-June 1940, Military Summary 10 May. Bingham, *Blitzed*, p.49.
[145] Hall, *Strategy for* p.51.
[146] Hanna Diamond, *Fleeing Hitler: France 1940* (Oxford University Press: New York, 2007), p.30.
[147] TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-June 1940, Military Summary 10 May.
[148] TNA AIR 41/21, Military Summary, 11 May 1940.
[149] TNA AIR 41/21, Military Summary Reconnaissance, 12 May 1940.

the nine aircraft that were to conduct this operation, only two returned.[150] Attacks in the afternoon of 12 May were directed around the Sedan area.[151] A section of Battles was directed against a pontoon bridge that was crossing the Meuse. Advancing German columns also came under attack.[152]

It was on 14 May, two full days after the Germans had begun their attack, and with one day to establish anti-aircraft defences around the area, that full-scale Allied air attacks were conducted against the Sedan area. The Germans had prepared a 'protective umbrella of Messerschmitts' around the battle area.[153] It had been agreed by Generals Gamelin and Georges late on 13 May that an attack the following day would be conducted first by British and then by French bombers.[154] This attack highlighted just how much work had to be done by Army Co-operation Command in air support. The attack would consist of four waves of bombers at approximately three hours interval, with fighter escort.[155] The objective of the attack was to destroy the pontoon bridges, which had been built in order to allow the quick passing of tanks, and motorised vehicles to sustain the momentum of the attack. Four bridges crossing the Meuse were designated as targets and one crossing the Cheirs River was also an objective. Only one hit was claimed from all of the aircraft who took part in the operations of the morning.[156] The problems in attacking bridges, permanent or temporary, had been the subject of discussion as early as November 1939. Bridges were seen as causing more disruption to potential enemy advances. 'The penetration [to destroy them must] be obtained

[150] TNA AIR 41/21, Military Summary, Bombing Operations near Maastricht, 12 May 1940. Kate Caffrey disputes the losses sustained in this attack claiming that only one Blenheim returned. *Combat Report* p.40.
[151] J.E. Kauffmann and H.W. Kaufmann, *Hitler's Blitzkrieg Campaigns: The Invasion and Defeat of Western Europe. 1939-1940* (Combined Books: Pennsylvania, 1993), p.211.
[152] TNA AIR 41/21, Bombing Operations in the Ardennes, 12 May 1940.
[153] Bryan Perett, *A History of Blitzkrieg* (Stein & Day: New York, 1983), p.94.
[154] L.F. Ellis, *The War in France and Flanders* (The Naval and Military Press: Uckfield East Sussex, 2004 [Her Majesty's Stationery Office: London, 1953]), p.55.
[155] Cull and Larder with Weiss, *Twelve Days* p.121.
[156] TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-1940, Military Summary, Bombing Operations near Sedan, 14 May. Cull and Larder with Weiss, *Twelve Days* pp.122-3.

by high or medium altitude bombing' as their small size and the anti-aircraft defences that would surround them required greater accuracy.[157]

The attacks of the afternoon have been described as a 'modern day charge into the valley of death for the bomber crews'.[158] The troops and pilots that had been designated with protecting the bridges around Sedan were now on full alert after the attack conducted at first light.[159] The Allied air forces that were detailed to conduct this attack had no real chance of success. Barratt was aware of the suicidal nature of this mission and asked for volunteers to carry it out.[160] All of the crews who were on duty for that afternoon volunteered.

> Even if not said in so many words, the sacrifices were made to prevent any further invasion and to save Allied forces. Barratt knew it when he committed his BAFF forces, but he had little option. It has been said it almost broke him.[161]

When the volunteer forces reached the Sedan area,

> they were set upon by hordes of Messerschmitts and many were destroyed. Others fell to flak and, and many more were shot out of the sky on the way home; only thirty-one [of seventy-one that were conducting the attack] returned. Five days of daylight operations had cost about half the RAF's bomber strength in France, and some squadrons had been taken out of the line.[162]

Whilst the losses sustained in that afternoons attack were heavy, they were not unusual, as the AASF had been sustaining similar loss rates during the previous days. The RAF, especially Barratt, soon became aware of the obsolescence of the light bombers being sent to conduct close support missions. The lack of suitable aircraft was to be an almost continual concern for Barratt. As early as 12 May, Barratt had received a message from the Air Staff, which said that the losses incurred could not be allowed to continue.[163] Even though the vulnerability of the Battle aircraft was well known, there could be no fighter escort for these

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[157] TNA AIR 14/107, Notes on the Attack of Armoured Fighting Vehicles (AFVs) and Mechanical Transport on roads and the attack of railways, 1 November 1939.
[158] Cull and Larder with Weiss, *Twelve Days* p.126.
[159] Perett, *A History* p.94.
[160] Jackson, *Air War* p.54.
[161] Bingham, *Blitzed* p.64.
[162] J.E. Johnson, *Full Circle: The Story of Air Fighting* (Cassell Military Paperbacks: London, 2001 [Chatto & Windus: London, 1964]), p.116.
[163] Caffrey, *Combat Report*, pp.44-5.

aircraft owing to a lack of aircraft available.[164] After this instruction had been sent to Barratt, the French government appealed to the new Prime Minister, Winston Churchill, for more fighter squadrons to be sent to France to aid them in continuing their defence against the German onslaught. This request was refused by the Air Staff as it was considered necessary to preserve as many fighter squadrons as necessary in order to provide the forces required in any upcoming battle against the *Luftwaffe*.[165] Dowding saw this as vital to Britain and on 15 May put his view to the War Cabinet and further pushed this view in a letter written the day after. This letter has been described by Orange as 'the most famous written by any airman at any time ...'[166]

After Sedan

The fighting in France continued for several weeks after the German attack at Sedan, although the Allied forces were never able to recover from the initial shock and speed of the German break out from Sedan. A major factor in this inability to recover from the initial shock was the fact that Allied forces 'suffered because security consciousness limited their use of radios and forced them to depend on couriers, who were slower'.[167] The air forces, particularly the air forces of BAFF concentrated on attacking the extending German lines of communication and supply.[168] Whilst these attacks caused disruption to the advancing forces, it was not enough to prevent the Panzer divisions rolling along through the French countryside. The German advance meant that Allied forces found themselves cut off from direct communication with BAFF and 'Phantom'.[169] In order to continue to support the BEF

[164] Richards, *Royal Air Force Vol. I* p.114.
[165] TNA AIR 2/4474, Letter from Sholto Douglas to Bomber Command, 4 June 1940.
[166] Orange, *Dowding* p.159.
[167] May, *Strange Victory* p.449.
[168] Warner, *The Battle* p.79.
[169] TNA WO 277/34, Historical Monograph Army Air Support and Photographic Interpretation, 1939-1945, Operations of the BEF and Air Component during the Battle of France. Hall, *Strategy for* p.52.

the Air Component relied upon communicating with RAF Hawkinge to co-ordinate support.[170]

The almost continual withdrawal of the BEF led to the loss of aerodromes and advanced airfields used by the Air Component.[171] The Air Component abandoned Poix and moved to Abbeville, whilst the bulk of the AASF moved from Rheims to central France.[172] Due to the German advance on Abbeville the Air Component were forced to move again the following evening.[173] The Air Component was forced to withdraw to Britain between 19 and 21 May.[174] It had been decided on 19 May that medium bombers should no longer operate in daylight due to the heavy losses they had sustained.[175] After BAFF had been withdrawn to Britain, it found air support an easier task to conduct than it had on the continent. By utilising the French trunk cable system and its own W/T system, BAFF was able to maintain 'almost continuous contact with its airfields, the French High Command, army formations [who had not been] cut off by the German dash to the coast and the Air Ministry'.[176] That BAFF was able to conduct support operations with relative ease after their withdrawal from the continent highlights the army's misgivings over the ability of the communications system before the battle had begun and the importance of its development for future operations.

The Search for Responsibility: The Commanders in France

The defeat of the BEF in France came as a huge shock to all involved. The fact that defeat had been inflicted upon them was hard enough to swallow and was only made worse by its speed, manner and completeness. Both Gort and Barratt wrote despatches on the operations

[170] TNA CAB 106/246, Despatches of the Operations of the British Expeditionary Force 3 September 1939-19 June 1940. Hall, *Strategy for* p.52.
[171] Hall, *Strategy for* p.52.
[172] TNA AIR10/5547, AHB Narrative Air Support, Chapter II: The Campaign in France, 1940. Hall, *Strategy for* p.52.
[173] TNA AIR 10/5547, AHB Narrative Air Support Chapter II: The Campaign in France, 1940. Hall, *Strategy for* p.51.
[174] TNA AIR 35/354, BAFF Barratt's Despatch, July 1940, 2nd Period – 15 to 22 May, 1940, Dispositions of BAFF.
[175] TNA AIR 41/21, The Campaign in France and the Low Countries September1939-June 1940, Bombing Operations Near Arras, 16 May 1940.
[176] Hall, *Strategy for* p.52.

of their forces and both are very different in tone and analysis. Further investigations would be conducted in Britain and the reports and their impact will be looked at in depth in the next chapter. Both despatches have been consulted in the analysis above and it is clear where the lines had previously been drawn, and where they would continue to be drawn as the search for responsibility continued over the summer of 1940.

Barratt's despatch is a large report detailing the operations of BAFF and its subordinate formations.[177] Hall has noted that the tone of report is not that of a recently defeated commander. Barratt offered suggestions to improve the air support system, but in his opinion the model upon which the support was based was theoretically sound.[178] It was this model that would be developed to provide better communications for conducting air support. He recommended having one commander of all forces in a theatre with that commander having supreme operational and administrative control. This had only partly happened with the formation of BAFF with Gort retaining operational control of the Air Component. Control of this force could be delegated where formations were to co-operate with land forces but an air force officer would remain in overall operational command.[179]

The work of the ACAB was commended. All information and requests for support from French, Belgian and British Commanders could be 'collected and assessed, and the necessary bomber and fighter operations ordered ...' It also ensured that operations were not launched against friendly targets.[180] The close touch between ZOAN and North BAFF Operations Room also allowed British fighters to escort French bombers and French fighters to support British bombers. Barratt recognised that the centralised control afforded to him through BAFF allowed him see the broader picture and select targets that would be worthwhile whilst trying to preserve his bomber force. Whilst looking at the flaws in a centralised control

[177] TNA AIR 35/354, BAFF Barratt's Despatch, July 1940.
[178] Hall, *Strategy for* p.53.
[179] TNA AIR 35/354, BAFF Barratt's Despatch, July 1940, Part V – Conclusions and Recommendations, Command.
[180] *Ibid*.

system it is noted that there must not be an over-reliance on landline communications. With the speed and range shown by the Germans in the operations against the British, a Centralised Operations Room was the only 'organisation, particularly on the defensive [that] can cope with the speed and range of modern warfare or permit of the economical and efficient use of all available forces.[181]

Gort's despatch on the other hand reflected the army's attitude towards air support, it was this attitude that Army Co-operation Command would have to work to change. The blame for the BEF's defeat was laid squarely on the shoulders of BAFF and the RAF. The Air Staff believed that Barratt's report was the correct interpretation on the RAF's conduct during the battle. They felt that the army 'had failed to recognise the new approach being taken [with regards war] on land' and that was the major reason behind their defeat.[182]

In Gort's opinion, there was a lack of aircraft detailed for the support of the army and what aircraft there were did not provide the proper support required. This form of support was a protective umbrella of fighters over the BEF area to prevent attack on ground forces. Gort offered very little in the way of improving the air support system aside from a re-organisation of air support based upon the German model they had been on the receiving end of.[183]

The Battle of France had shown serious shortcomings in the RAF's air support ideas and the resources dedicated to it. Some basic concepts, however, had come out of the battle. The ASSU would be developed further, and the communications system would be overhauled to improve its efficiency and ability to provide timely support in order to attack impromptu battlefield targets. These developments would have to be made with the WO still pushing for a separate air arm under its control as they had done since the end of the First World War in

[181] *Ibid.*
[182] Hall, *Strategy for* p.53.
[183] TNA CAB 106/246, Despatches of the Operations of the British Expeditionary Force, 3 September 1939-19 June 1940. Written by C-in-C, BEF, Lord Gort 25 July 1940.

order to gain the air support it felt it required when the army was to invade the continent. The Battle of France proved to be the catalyst for changing the general attitude towards army co-operation in Britain. The result of this change was the creation of Army Co-operation Command, it would, however, be created in an atmosphere of mistrust and by an RAF that found itself in a difficult political position after the Battle of France and the subsequent investigations into it conducted by the army at home.

Chapter Five

THE WORK OF ARMY CO-OPERATION COMMAND, 1941

As with any newly created organisation, Army Co-operation Command faced teething problems as it got to grips with its new role and responsibilities. The position of the Command both as a whole and with regards to other non-RAF organisations required modification. The roles and responsibilities of the commanders who were subordinate to Barratt, who was the AOC-in-C, would also require changes. These were found to be cumbersome with certain commanders having their headquarters based in different locations. Further problems were experienced with regards to relations between the Air Ministry and WO over the communications the WO were to receive from Army Co-operation Command. This allowed the RAF the opportunity to restrict further the potential abilities of the Command. Despite these initial problems, the Command was able to confront some of the army co-operation issues that had plagued the joint aspects of operations of the army and RAF during the initial phases of the war.

The strategic outlook of 1941 also impacted on the focus of the RAF. Although the fear of invasion was not as strong as it had been, there were still no plans for a landing on the continent, and the only way to continue to attack Germany was through the air and through naval blockade.[1] The most fruitful of these developments was the work in the development of artillery reconnaissance and spotting first started prior to, and continued during the Battle of France. The work in this area is a prime example of the abilities of the Command and help to highlight the potential the organisation had for experiment and development. It further highlights the restrictions that prevented it from casting its net further in the field of army co-operation, particularly in terms of refining tactical activity at this level of war.[2] This was mainly due to the way in which it had been created by the Air Staff. Army Co-operation

[1] Butler, *Grand Strategy Vol. II* pp.342-53. Potsan, *British War Production* pp.119-22.
[2] This argument is furthered in Carrington, *Soldier at* chapter 3. Cf. Peach, 'A Neglected Turning Point', p.150, p.167. Henry A Probert, 'The Determination of RAF Policy', p.684.

Command sat in between the tactical and operational levels of warfare. Whilst its major focus was on the refinement of tactics with regards the application of air support the major impact of these refinements would be felt at the operational level of war.

As a result of the conclusions of the Bartholomew Committee, further exercises were held throughout 1941 in order to improve both the army and RAF's understanding of army co-operation, and the tactics, communications and command structures required to conduct this efficiently and effectively. Army Co-operation Command was heavily involved in supervising and directing these exercises.[3] There was, however, considerable tension between the WO and Air Ministry, especially over the release of aircraft from active operations for these exercises; Army Co-operation Command was at the heart of the controversy. Strategic aerial operations were the only way for British forces to attack the German homeland, although operations were being conducted in theatres overseas such as the Middle East by land forces, where army co-operation ideas were also being trialled. As the directing body of this training in Britain, Army Co-operation Command, and its ability to call for resources, was at the heart of these tensions.[4] Despite the success of Fighter Command during the Battle of Britain, the fear of invasion was still very real, and much work was done in improving the co-ordination of army support in the event of a German invasion of Britain during the summer of 1941. Army Co-operation Command was largely sidelined during these discussions due to its non-operational nature.

The development of army co-operation continued in discussions between the CAS and CIGS throughout this period. One of the major discussions surrounded the aircraft requirements that would be required to support an expeditionary force facing the *Wehrmacht* on the European continent. The involvement of Barratt and his Command in this process will be highlighted. This will provide further evidence to the status that Army Co-operation

[3] Murray and Millet, *A War to be Won* pp.304-5.
[4] Carrington, *Soldier at* p.43.

Command held with regards both the RAF and the army. From this analysis, it will show that the Command was effectively sidelined in the calls for aircraft, equipment and personnel. Further to this, Barratt found himself excluded from discussions regarding areas such as 'the employment of bomber squadrons in close support of Home Forces'.[5] The head of Home Forces, General Sir Alan Brooke, was still pushing the argument for squadrons to be specially formed for supporting land forces.[6] The major events in the Western Desert, notably operations BREVITY and BATTLEAXE will form a small section to provide the wider context of problems and developments in that theatre.

Re-organisation of Army Co-operation Command

The first major issues with regards the command structure and the relations between the Command and the WO, particularly with regards the communications between the two, were raised just two months after its creation. Barratt's role, as head of Army Co-operation Command, was to implement a training policy for the development of army co-operation with Home Forces. His subordinate commander at No. 71 (Operations) Group was to act as the adviser on matters regarding co-operation, such as in the anti-invasion measures being developed at the time.[7] As soon as the Command had been established, Barratt was advised of certain difficulties in making the command structure work effectively.[8] One of the major issues that existed between the Air Ministry and Army Co-operation Command was the lack of real interest shown by the RAF in this area. In the area of tactical developments in army co-operation, the Air Ministry saw Army Co-operation Command as the place for the WO and GHQ, Home Forces to address their concerns. When it came to higher-level policy

[5] TNA AIR 10/5547, AHB Narrative Close Support.
[6] LHCMA, Alanbrooke Papers 11/15. Alex Danchev and Daniel Todman (eds), *War Diaries 1939-1945: Field Marshal Lord Alanbrooke* (Phoenix: London, 2002 [Weidenfeld and Nicolson: London, 2001]), p.258. The entry quoted above is dated 18 May 1941. Cf. Arthur Bryant, *The Turn of the Tide 1939-1945* (Collins: London, 1957), p.237.
[7] TNA AIR 10/5547, AHB Narrative Close Support.
[8] TNA AIR 39/28, Letter from Headquarters No. 71 Group to AOC-in-C Army Co-operation Command, 22 December 1940.

decisions, however, these discussions took place without Army Co-operation Command being consulted. The expectations of the WO and GHQ, Home Forces also caused problems for the relations between the Air Ministry and WO. The WO expected more from Army Co-operation Command than the RAF were willing to give. Whilst it is debatable if the WO saw Army Co-operation Command as a possible way to create an army air arm, they were expecting the status of the Command to rise as the possibility of a return to the continent increased.

The first major issue raised by Barratt in a letter to the Under-Secretary of State for Air regarded the location of the commander of No. 71 Group when combined with his role as adviser to GHQ, Home Forces. Due to how these issues were resolved, which will be detailed below, and the implications they have with regards the status the Command was held in by the RAF, Barratt's concerns deserves to be quoted at length.

> The AOC [Air Officer Commanding] 71 Group, has in his role of the Home Forces Air Component the dual function of commanding his Group and acting as air adviser to the C-in-C [Home Forces]. To permit him to fulfil the latter function, his own office and that of the Air Branch of his Staff is located at GHQ, while the remainder of his Staff remains at his rear Headquarters at Sunningdale.
> A very great number of questions affecting air matters, many of which have no direct bearing on the component, arise daily at GHQ, and since the Air Branch of No. 71 Group Staff has in effect become the air section of the General Staff at GHQ these problems are invariably passed to it to deal with.
> Arising from this, the AOC, 71 Group, finds both himself and his Air Staff officers tied to GHQ and unable to exercise the necessary supervision over his widely dispersed Command. To relieve this situation I propose that AOC, 71 Group, and his Air Branch should regard Sunningdale as their main Headquarters, and that a liaison staff from my Headquarters should take their place at GHQ.
> The C-in-C Home Forces, has previously discussed with me the defects of the organisation by which 71 Group was saddled with too many tasks outside its providence.
> In addition, I am convinced that a Liaison Section of my Headquarters at GHQ, Home Forces, is essential to permit me to perform fully ... my Directive which charges me with the responsibility for the supervision of all air training in co-operation with the Army and with the development of the tactics and techniques of Army co-operation including close support.[9]

This view was confirmed by GHQ Home Forces, who stated that after Exercise VICTOR it was necessary to make changes 'in the existing methods of liaison between GHQ and RAF

[9] TNA AIR 39/20, Letter from AOC-in-C Army Co-operation Command to the Under Secretary of State for Air regarding the Adjustment of Duties between Headquarters, Army Co-operation Command and Headquarters No. 71 Group in relation to General Headquarters, Home Forces, 5 February 1941. Exercise *Victor* was a series of army-air exercises to test communications and signals methods. Cf. TNA PRO PREM 3/496/1, 3/496/2, 3/496/4.

Commands'. The GOC-in-C Home Forces further stated that the Commander of No. 71 Group could not 'act as the Senior Air Staff Officer [SASO] at GHQ Home Forces before or after 'Action Stations' and at the same time carry out his duties as Group Commander'. This was due to the workload and focus that would be required in either role if the call of action stations was ever made. It was partly due to a lack of personnel to fulfil both roles but also roles that were not fully thought out in terms of responsibilities. This is demonstrated through the speed in which the Command had been created. Part of this speed was the desperation of the WO to have an organisation within the RAF that focused on army co-operation. In order to resolve the situation the General Officer Commanding-in Chief proposed the following.

> The AOC-in-C, Army Co-operation Command to be available to act as my RAF adviser, assisted by: A RAF liaison Staff of one Group Captain and a permanently located at GHQ. A RAF map room staff to maintain 24 hours watch in the combined Navy – Army – RAF Map Room. The Liaison Staff will: (i) receive information from all RAF sources and pass it to GHQ branches, combined map room and any RAF Headquarters concerned; (ii) Transmit naval and military information from all sources to [the] RAF Headquarters concerned; (iii) Transmit any requests for support to AOC-in-C, RAF Commands; (iv) Transmit any requests for support to AOC-in-C, RAF Commands.[10]

In response to the letter from Barratt, the DMC, Air Commodore R.V. Goddard was required to negotiate with GHQ to 'find out how best their requirements can be met ...'[11] In a draft letter to Barratt from the Vice Chief of the Air Staff (VCAS) Air Chief Marshal (ACM) Sir Wilfred Freeman, but which had actually been written by Goddard stated that

> It was realised when your Command was created, that it could not be quite like other Commands, and that its activities must be fairly rigidly confined. It was for that reason that a carefully thought-out directive was given to you, in the hope that some of the difficulties which have since cropped-up might be avoided. I'm afraid it won't do to have an Air Marshal alongside C-in-C, Home Forces, it might interfere with his direct contact with other operational C-in-C's or with DCAS [Deputy Chief of the Air Staff]. That is why your relations with C-in-C, Home Forces were limited to co-operation on matters of training, tactics and technique ... It was feared when we agreed to form the Army Co-operation Command that the WO and Home Forces might be inclined to expect more from you than we agreed upon. The WO knows very well that it is not entitled to ask your advice on Army Co-operation matters. The same applies to GHQ, except on matters defined in your directive. I have discussed with CAS the difficulties which have arisen and he considers that it would be inadvisable to modify your responsibilities. If the associations you already had with GHQ make it difficult to retract without something

[10] TNA AIR 39/20, Memorandum by GOC-in-C regarding Liaison between GHQ, Home Forces and RAF Commands, 13 February 1941.
[11] TNA AIR 39/20, Letter from DMC to AOC-in-C Army Co-operation Command, 20 February1941.

> being said by CAS to the CIGS or to C-in-C Home Forces, perhaps you will let me know what you would like done to clarify your position.[12]

In order to resolve the issue raised by Barratt originally, and allow Army Co-operation Command to fulfil its role, changes were made to the organisation of the Command with the agreement of GHQ, Home Forces. The staff of No. 71 Group was moved from GHQ, Home Forces to the headquarters of the Group. In order to fulfil the role assigned to No. 71 Group an air staff officer of the Group would remain at GHQ. The advice given by No. 71 Group to GHQ on air matters could now no longer be given, and further decisions on this would be required.[13] Barratt was to be adviser to the GOC-in-C, Home Forces 'on Army Co-operation policy in its narrowest sense' except 'the operational employment of the Army Co-operation Units [*sic*] of 71 Group'.[14] A SASO with the rank of either Air Commodore or Group Captain was to be appointed to GHQ as an air liaison officer. He was responsible 'to the C-in-C for advice in air matters; consequently the responsibility of the AOC 71 Group to the C-in-C, Home Forces, will no longer be that of an AOC Air Component as defined in Air Publication 1300 ...'[15] The SASO, Air Commodore J L Vachell began his duties on 19 March.[16] For a newly created Command to experience teething troubles is not unusual, however, the proposed resolution of this problem reflects how Army Co-operation Command was viewed within the RAF as a whole. Barratt found himself sidelined in resolving the issue, continually having to refer the matter to Goddard. Putting this to the Under-Secretary of State for the Air, Barratt went into depth as to the major problem as he saw it

> I agree that there should be a representative of my Headquarters and of Headquarters of 71 Group located at GHQ Home Forces, and I have already, after consultation with GHQ, agreed to leave Major C C Oxborrow, MC to act in that capacity. I suggest that as AOC-in-C, the Army Co-operation Command, *this matter of representation is one for mutual arrangement between myself and the C-in-C, Home Forces*, should circumstances require any subsequent adjustments in the

[12] TNA AIR 39/20, Draft Letter written by DMC on behalf of VCAS, c. February 1941. As this is in response to the communications from AOC-in-C Army Co-operation Command and CIGS, the letter dates after 20 February 1941.
[13] TNA AIR 39/20, Letter from Headquarters, No. 71 Group and GHQ, Home Forces to Army Co-operation Command, 11 March 1941.
[14] TNA AIR 39/20, Memorandum on organisation of RAF Staff, GHQ Home Forces, 11 March 1941.
[15] TNA AIR 39/20, Letter from DMC to AOC-in-C Army Co-operation Command, 16 March1941
[16] TNA AIR 39/20, Letter from I R Hardman to AOC-in-C Army Co-operation Command, 19 March 1941.

> question, I am convinced that the interposition of such an intermediary organisation, owning no responsibility to me, between the Army in this country and the RAF Command set up expressly to co-operate with it, can only lead to friction, delay, uncertainty of council and inefficiency.[17] [Author's emphasis]

71 Group was disbanded in August and in its place, six Army Co-operation Wing Headquarters were to be established and placed at the various Army Command Headquarters. Each wing would be commanded by an RAF officer and 'The officer commanding the Wing Headquarters will have executive control under the army commander of all army co-operation squadrons within the command ...' The RAF officer would also 'act as air adviser to the army commander'.[18]

The WO was also displeased with the restrictions that were imposed upon Army Co-operation Command by the RAF. In a meeting between the CAS and CIGS in February 1941, the subject of the relations between the WO and Army Co-operation Command was discussed. The CIGS aired the WO's frustrations:

> Under the present arrangement the Army Co-operation Command sends reports, advice and opinions on all matters only to the Air Ministry. The War Office suggests that that they should have full access to Army Co-operation Command's opinion ... The WO feels itself greatly handicapped by this restriction ... The Command works for the good of both Services. It is fully understood that the resultant policy is a matter purely for the Air Ministry and War Office to decide. But it is difficult for the War Office to help towards forming a joint policy when it is not in possession of all the facts. The War Office may agree or disagree with the Command's opinion but it would at least like to know what that opinion is. It is suggested, therefore, that the War Office should have full access to Army Co-operation Command's opinion, written or verbal, copies of written matter being sent direct to the War Office at the same time the originals go to the Air Ministry. A considerable speeding up of business will result, and better co-operation between the two Ministries will be possible.[19]

The Air Staff had previously rejected the suggestion put forward by the General Staff.[20] The minutes of the meeting show the true intentions of the proposal put forward by the WO: they wished to 'establish personal contact with AOC-in-C, and the Air Staff at Army Co-

[17] TNA AIR 39/20., Letter from AOC-in-C Army Co-operation Command to Under-Secretary of State for Air, 23 March 1941.
[18] TNA AIR 20/327, Memorandum on Disbanding of No. 71 Group and the Formation of Six Army Co-operation Headquarters, 9 August 1941.
[19] TNA AIR 20/2812, Meeting between CIGS and CAS on Army Co-operation Matters, 19 February 1941. TNA AIR 2/7336, Letter from the War Office to DMC on relations between the War Office and Army Co-operation Command, 18 February 1941.
[20] TNA AIR 20/2812, Notes on the Agenda for a meeting between CIGS and CAS, c. February, 1941.

operation Command ...'[21] Barratt was against the idea of sending all papers to the WO, but was willing to do so if he was given full discretion over what was to be sent.[22] The WO felt that without access to the papers of Army Co-operation Command, they would not be kept up to date on any debates or developments that were being made. Their disagreement with the Air Ministry is justifiable in this case, especially given their experiences in France.

Barratt also felt that the establishment of the DMC placed his Command in a difficult position as regards fostering a spirit of co-operation between his Command and the WO. It further highlights just how hamstrung Army Co-operation Command was in attempting to fulfil its role. Barratt argued that 'there seemed no need for a DMC, since Director of Plans is responsible for planning for Army requirements and the [AO]C-in-C Army Co-operation Command is responsible for advising the Air Ministry of Army Co-operation requirements'.[23] Goddard regarded Barratt's feelings on this subject to be

> ... that he does not wish his activities to be limited by his existing directive. All the difficulties which have arisen have related to matters of future policy or future arrangements, in which he has either gone ahead of Air Ministry authority, or acted upon what he believed to be Air Ministry policy before it has been communicated to him.[24]

The moves by Barratt in this area are open to wide-ranging interpretation. Barratt may have been deliberately trying to usurp the position of Goddard and his Directorate just to create difficulties for the Air Staff, as was well known.[25] Given the position that he was in, combined with his experience in army co-operation matters, his drive and personality, however, lend weight to the argument that Barratt felt that his Command, as originally constituted, could never hope to succeed in achieving what it had been created to deal with. By increasing his responsibilities, and possibly transforming Army Co-operation Command into an operational Command, he had more chance of success in this role. Barratt saw this

[21] TNA AIR 20/2812, Minutes of meeting held to consider Army Co-operation matters, 19 February1941.
[22] TNA AIR 2/7336, Minutes of a meeting to discuss Army Co-operation matters, 19 February 1941. TNA AIR 20/5840, Minutes of a meeting to discuss Army Co-operation matters, 19 February 1941.
[23] TNA AIR 39/28, Letter from DMC to AOC-in-C Army Co-operation Command, 29 January 1941.
[24] TNA AIR 2/7359, Minute from DMC to CAS, 29 January 1941.
[25] IWM Carrington Papers 81/11/6.

new Command as an excellent way to further the field of army co-operation within Britain and as a result, he was not always willing to follow the Air Staff line.

There were further moves from above to alter the make-up of Army Co-operation Command later in 1941. Churchill wrote to both the Secretary of State for Air and CAS regarding certain appointments within the RAF. A vacancy within the US ferry service had arisen and the person originally put forward for it, Sir Hugh Dowding, was deemed unsuitable. Churchill felt that 'the best arrangement would be to send Air Marshal Barratt there, and replace him with Sir Hugh Dowding who will give confidence to the Army that they will have their interests fully represented'.[26] Barratt's position was defended by both the Secretary of State and CAS:

> Neither I nor the Chief of the Air Staff would be prepared to recommend the changes suggested in your minute. Air Marshal Barratt was appointed to the Army Co-operation Command only 6 [*sic*] months ago at the suggestion of the War Office and knows more about Army Co-operation than any other officer of his rank in the RAF. He has done his work very well and his knowledge and experience would be wasted in charge of the Ferry Organisation for which he has no special qualifications.[27]

Churchill held Dowding in great regard and this can be seen as an attempt by Churchill to rehabilitate Dowding after the Battle of Britain. John Ray has argued that he 'still held Dowding in high esteem and did not want a man of such great achievements and undoubted, although sometimes individual abilities, to be dropped'. Further to this, it has been noted that when the first calls for Dowding's removal from Fighter Command were made, Churchill left the matter for over two weeks.[28] The question must be raised, however, why Dowding was not at least put forward for the command of Army Co-operation Command by Churchill when it was first created.

Even if this was the case, both the Air Ministry and WO felt that Barratt was the right man for the job at this time, given his vast experience in army co-operation matters. Dowding's

[26] TNA AIR 19/562, Minute from Prime Minster to Secretary of State for Air and CAS, 2 Jun 1941.
[27] TNA AIR 19/562, Minute from Secretary of State for Air to Prime Minister, 1 Jan 1941.
[28] John Ray, *The Battle of Britain: Dowding and the First Victory, 1940* (Cassell Military Paperbacks: London, 2000 [Arms and Armour Press: London, 1994]), p.166, 160.

appointment to Army Co-operation Command would have caused great problems in the development of army support doctrine. Dowding would have to retire in April 1942 and the appointment of a new commander would cause great disruption, his experience was also in supply and research and not in army co-operation.[29] The literature available on Dowding and the aftermath of the Battle of Britain does not have any analysis of Churchill's move to make Dowding the AOC-in-C of Army Co-operation Command.[30] Many of the works that look at the fate of Dowding after the Battle of Britain did so before the works that look at the development of tactical air power were published. It is fair to say that without the importance of the work being done in the development of tactical air power being highlighted, Army Co-operation Command was seen as a peripheral issue. In a strange turn of events, six months later the Secretary of State for Air sent a minute to the Prime Minister regarding the current expansion of the RAF. In this, he recommended replacing Barratt with Air Marshal Richard Peirse at Army Co-operation Command.

> For some time I have been contemplating a change in that Command and I have discussed it with Portal ... I with Brooke ... mentioned Barratt, and Brooke seemed to prefer it. Barratt does not possess the wide experience of Peirse, nor is he as strong a personality. He is, however, extremely hard-working and is a good commander.[31]

It is necessary at this point to leave the chronological basis of the thesis as a whole, in order to place fully the changes that were attempting to be made with regards Army Co-operation Command in their proper context. The Secretary of State for Air sent a minute to the Prime Minister stating that he wished to move Barratt from his position as AOC-in-C Army Co-operation Command to become Inspector-General of the Royal Air Force and move Air Marshal Sir Alfred Garrod to Army Co-operation Command. The Prime Minister discussed the proposal with both the CIGS and GOC-in-C Home Forces. Both felt that

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[29] Orange, *Dowding* pp. 238-9.
[30] Jack Dixon, *Dowding and Churchill: The Dark Side of the Battle of Britain* (Pen and Sword: Barnsley, 2008), p.147. Martin Gilbert has noted how Churchill wanted to 'give Dowding command of Army Co-operation Command in Britain'. This is made in a footnote and there is no greater analysis of move. *Winston S. Churchill vol. IV: Finest Hour, 1939-1941*(London: Heinemann, 1983), p.1040, fn. three.
[31] TNA AIR 19/562, Letter from Secretary of State for Air to Prime Minister, 20 December 1941.

Barratt should retain his position at Army Co-operation Command. The Secretary of State replied that

> Sir Arthur Barratt is an officer of great ability and long experience. That is why I refused the request of the Secretary of State for War to move him last summer and why I want him as Inspector-General now. On the other hand now is the time to make a fresh start in Army Co-operation Command. The C-in-C should be of unusual energy and imagination who will make the most of the Command's new equipment and vigorously press its claims on the Air Ministry and the Army [*sic*]. Barratt is not, in my judgement, the right man for this job.

The Prime Minister replied:

> I find on enquiry that both the CIGS and C-in-C Home Forces, would very much regret the departure of Air Marshal Barratt. In view of the complaints that are made that the Army [*sic*] has been treated by the Air Ministry in respect of co-operation, and that they have now got an officer whom they like and trust ... Let me see the papers on which you base your statement that the Secretary of State for War requested you to move Air Marshal Barratt last year. My own recollection is that the military opinion was very much in his favour and that was why the move was not made.[32]

The Secretary of State for Air was forced to admit that the papers to which he had referred to above did not exist. The attitude emanating from the Air Ministry regarding Army Co-operation Command, and as a direct result its Commander must again be called into question, as within fourteen months of its existence both the Prime Minister, and the head of the political and military aspects of the RAF attempted to remove Barratt from his position. The final move at attempting to change the man at the head of Army Co-operation Command occurred just after the Secretary of State for Air had been forced to announce to the House of Commons that Army Co-operation Command was in no way inferior to any other RAF Command, despite its non-operational status. This non-operational status reflected how highly the RAF viewed the role of Army Co-operation Command. It also partly reflected the differences that still existed between the RAF and army in terms of the nature and role of tactical air support in land operations. These differences, however, existed prior to the creation of Army Co-operation Command and so cannot be seen as an over riding reason for the attempted removal of Barratt as AOC-in-C, Army Co-operation Command. This embarrassing statement had to be made whilst announcing the 1942 Air Estimates to the

[32] TNA CAB 101/136, Army Air Co-operation Part III, undated.

House.[33] The feelings of the Air Staff regarding Army Co-operation Command can be seen in a letter from Freeman to AOC No 5. Bomber Group, Air Vice-Marshal Slessor.[34]

> I was lunching with Boom [Lord Trenchard] the other day and he raised the question of the present arrangements for army co-operation. I am afraid that I had not thought about it much recently, but I have a feeling that the present system is not right and that the present Army Co-operation Command, which we organised in rather a hurry last autumn, largely in order to satisfy the army's inferiority complex, is not the right answer.[35]

This quote above highlights the feelings of ambivalence held by the Air Ministry regarding air support, and as a result Army Co-operation Command, had changed very little and that the organisation of Army Co-operation Command would be problematic for its Commander. The result of this was the changes detailed above, as well as Barratt pushing to gain greater powers for his Command. Further to this, with several attempts to change the senior make-up of the Command, the stability with which it was able to conduct its work must also be considered. The re-organisation of Army Co-operation was primarily done by the RAF in-house, whilst the WO were consulted on certain aspects of this re-organisation the major decisions were made by the RAF as they were the organisation responsible for the Command.

Events in the Middle East, 1941

After the success achieved in the Mediterranean and Middle East against the Italians in 1940, 1941 was possibly the year that saw army co-operation fall to its lowest ebb in the Western Desert.[36] In May and June of that year, two separate operations were launched to

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[33] Cf.TNA AIR 19/562, Letter from Prime Minster to Secretary of State for Air and CAS, 2 June 1941. Hansard HC Deb 4 March 1942, vol. 378, cols 656-749. Available at http://hansard.millbanksystems.com/commons/1942/mar/04/sir-archibald-sinclairs-statement. Accessed 24 November 2012. TNA CAB 101/36, Draft of Grand Strategy Narratives unpublished, undated. IWM Carrington papers, 8/11/6, Formation of Army Co-operation Command.

[34] Slessor's rank at this time was temporary and would not become permanent until April 1942. Cf. Vincent Orange, *Slessor: Bomber Champion: The Life of Marshal of the RAF Sir John Slessor* (Grub Street: London, 2006), pp.80, 90.

[35] TNA AIR 20/4446, Letter from Air Chief Marshal Sir Wilfred Freeman to John Slessor, 27 July 1941.

[36] For more detail regarding the fighting in the Middle East Cf. I.S.O. Playfair, *The Mediterranean and Middle East Vols. I-IV* (Her Majesty's Stationery Office: London, 1954-1966). Philip Guedalla, *Middle East 1940-1942: A Study in Air Power* (Hodder and Stoughton: London, 1944). See also P. G. Griffith, 'British Armoured Warfare in the Western Desert', in J.P Harris and F.H. Toase (eds), *Armoured Warfare* (B.T. Batsford Ltd:

relieve the German siege of Tobruk: BREVITY and BATTLEAXE.[37] The relief of Tobruk was a strategic necessity as if it continued to be occupied by German forces they would be 'able to advance into Egypt ... opening both the land route along the coast and the harbor for supplies, and also ... concentrate his forces on one push'.[38] Egypt was a vital strategic stronghold for Britain as it controlled the Suez Canal, whilst Britain still had control of Egypt they would still be able to communicate with and draw upon the vast strength of its empire. If the Canal fell into enemy hands then Britain would find themselves in a difficult position strategically and its ability to harness and project the power of the empire. The failure of the Germans to occupy, or at least knock the small, but strategically important island of Malta out of the war made their strategic position, particularly in terms of logistics and supply that more difficult.[39] These operations were unmitigated disasters, particularly in regards to air support, which had completely broken down. There were arguments between the RAF and army commanders over the correct use of aircraft when conducting support.[40] The attitude of the army in the Western Desert was similar to that of the army in Britain; the failure of these operations was due mainly to a lack of air support and it not being conducted in the correct way. During BATTLEAXE, the WDAF performed two roles. The fighters were to act as a protective umbrella that covered the British forces, the bombers were to be prepared to answer any calls made for close support. Changes had been made for operation BATTLEAXE in June and a system whereby 'a prearranged signals communication between air and ground forces' was established. This system, however, was only used once when 'British troops were in contact with the enemy'. The AOC-in-C of the WDAF Air Marshal Sir Arthur Tedder, felt that the British army in the Western Desert did not fully comprehend

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London, 1990). Kent Feorowich, 'Axis prisoners as sources of British military intelligence', *Intelligence and National Security*, 14: 2 (1999), pp.156-178.

[37] Hallion, *Strike from the Sky* p.153. Gladman, *Intelligence and Anglo-American Air Support* pp.59, 76.

[38] Weinberg, *A World At Arms* p.223.

[39] *Ibid*., p.349.

[40] For further details on these arguments see Hall, *Strategy for* pp.82-3. Gladman, *Intelligence and Anglo-American Air Support* p.59

the essential character of air support.[41] In addition to this, the WDAF 'was too weak to matter' during BATTLEAXE.[42] Further training and experience was also required from the aircrews conducting the support. As in Britain after the Battle of France, the army's response to the defeat suffered focused upon gaining a separate army air component. They also believed that 'German troops, when they were in difficulty, immediately summoned the Luftwaffe to deal with ground opposition.[43] Unlike Army Co-operation Command, this training would be developed from experience in operations, a situation that was not available in Britain.

Air Observation Post Development 1941

In January, Barratt embarked upon co-operation with the army on a large scale. In a letter to the Under-Secretary of State for Air regarding artillery reconnaissance, he stated that 'it is desirable to set out the problem as the Army sees it ...'[44] Artillery reconnaissance development began during the Battle of France and this fell in the middle of the new Command's remit. If a new system was to be developed it was to be based on simplicity of training.[45] Fighter Command became responsible for the operational work of D Flight, and as noted by Darrell Knight the

> Advocates of the Air Observation Post were faced with the greatest challenges ... The most pressing question being asked was, "how much risk was too much for an airborne OP pilot to survive while flying at low level in the face of enemy ground formation, or in a sky filled with enemy fighters?"[46]

There had been serious problems with the use of slow and obsolescent Lysander aircraft to fulfil that role during the fighting in France. The few attempts that had been made to conduct artillery shoots from the air resulted in the destruction of the aircraft; where aircraft were not

[41] *Ibid*., p.83-4.
[42] Gladman, *Intelligence and Anglo-American Air Support* p.59.
[43] Hall, *Strategy for* pp.83-4.
[44] TNA AIR 39/47, Letter from AOC-in-C Army Co-operation Command to the Under-Secretary of State for Air regarding air force co-operation with the Royal Artillery, 29 January 1941.
[45]TNA AIR 39/47, Memorandum regarding Artillery/Air Co-operation, 6 February 1941.
[46] Darrell Knight, *Artillery Flyers at War: A History of the 664, 665 and 666 'Air Observation Post' Squadrons of the Canadian Air Force* (Merriam Press: Bennington, Vermont, 2010), p.32.

destroyed they were driven off by enemy fighters.[47] The Air Staff were of the opinion that it would 'be disinclined to recommend the creation of special air units for artillery observation or artillery reconnaissance, unless it can be shown that there is an urgent requirement for such units ...'[48] Trials were held in March, under Army Co-operation Command and the School of Artillery, in order to 'find out if there was any difficulty in positioning a low-wing monoplane while making the observations – there was none'. Slight modifications were also used during the trial. The procedure differed from the usual one used in that 'the initial call for fire were answered by two salvos instead of three, since it was considered to be too difficult to make three observations during one run over the target ...'[49] Further trials were held with Lysander aircraft where shoots were conducted with an RAF officer correcting rather than observing the fall of shot from the artillery batteries.[50]

In a conference held at Army Co-operation Command to discuss and further develop the procedure for artillery co-operation it was suggested that all shoots should be conducted through the procedure used by the gunners of the Royal Artillery based on the ground rather than the clock-code system. It was claimed that using this procedure the required volume of fire could be produced more quickly and the pilot could judge the importance of the target. Barratt, however, felt that the pilot would have a greater burden placed on them than previously.[51] Using the gunner procedure a pilot who had no other training could conduct an impromptu shoot using two-way R/T.[52]

Barratt was sceptical of these trials and their results. He argued that he did 'not consider from the nature of the trials conducted there is any justification for the recommendation that the Artillery method of correcting fire should be introduced in place of the Clock Code

[47] Parham and Belfield, *Unarmed Into Battle* p.17.
[48] TNA AIR 39/47, Letter from DMC to AOC-in-C Army Co-operation Command, 12 February 1941.
[49] TNA AIR 39/47, Artillery Reconnaissance in a Single Seater Fighter Type, c. March, 1941.
[50] TNA AIR 39/47, Letter from Under-Secretary of State for Air to AOC-in-C Army Co-operation Command, 5 Apr 1941.
[51] TNA AIR 39/47, Conference held at Army Co-operation Command on Artillery Reconnaissance, 9 Apr 1941.
[52] TNA AIR 39/47, Artillery Co-operation Trials – Part I, April. 1941.

System'.[53] This viewpoint was reinforced with the visit of the senior artillery officer of Eastern Command, Brigadier Duncan. Duncan was of the opinion that the Air OP had a useful function supplementing the information gained through normal artillery reconnaissance, including the Land Observation Post.[54] Barratt was willing to concede, however, that with highly trained pilots it had always been possible for aircraft to conduct a shoot from the air using the artillery method. Barratt's belief in the 'clock code' system stemmed more from the fear of false conclusions being drawn from brief experiments than from any sense of conservatism about changing the system used for artillery reconnaissance.[55]

Further trials were conducted between Army Co-operation Command and the School of Artillery using the artillery method during April 1941 and the conclusions reached were similar to those seen previously. These were that the 'artillery methods of ranging by corrections to line and range are simpler, quicker, and more efficient than any method based on the 'clock code'. 'They lend themselves more readily to observation from a low altitude behind our own lines, and are more in accordance with the realties of modern air fighting and AA [anti-aircraft] defence'.[56] Further to this, those conducting the trials felt that by adopting these methods 'for air observation [would] result in a simplification of training problems for both to the R[oyal] A[rtillery] and RAF'.[57] After these trials there were still concerns regarding the adoption of a procedure that had been modified prematurely. This concern was felt as high up as the Air Ministry and they were reluctant to see the existing procedure

[53] TNA AIR 39/47, Letter from AOC-in-C Army Co-operation Command to Headquarters No. 70 Group, 12 Apr 1941.
[54] TNA AIR 39/47, Note for Commander-in-Chief on Brigadier Duncan's visit, 14 Apr 1941.
[55] TNA AIR 39/47, Letter from AOC-in-C Army Co-operation Command to Headquarters No. 70 Group, 12 Apr 1941.
[56] TNA AIR 39/47, Artillery Co-operation Tests – Part II, April 1941.
[57] TNA AIR 39/47, Report from Headquarters No. 70 Group to Army Co-operation Command, 15 Apr 1941.

modified until exhaustive trials had been conducted.[58] The factors that account for this reluctance are detailed below.

The failures of the 'clock code' system in France combined with further problems faced in the fighting in Libya led to a loss of confidence in the system in the army.[59] Barratt's response was that the 'clock code' system was not at fault in these operations but that the aircraft employed in it were operating in the face of intense enemy opposition. He was concerned that the trials had been too few and were skewed in favour of a positive result by the School of Artillery. These concerns may be interpreted as simply blocking a new development that had been shown to work in order to preserve the autonomy of the RAF whilst conducting army co-operation work. Barratt also had the luxury of not having active operations to consider when looking at the development of the Air OP and so was able to thoroughly trial the techniques being tested so that they were, not only fully robust, but were suitable to be employed in operations in different theatres. The evidence of co-operation between Army Co-operation Command and the School of Artillery, shown above, leads more to the conclusion that Barratt felt that the procedure could not be successfully carried out, and wished to see more trials conducted before it would receive his approval. He also felt that Army Co-operation pilots did not have the ability to conduct an artillery shoot from the air and that this would be further hampered by enemy opposition, with pilots being concerned for their own safety in the air.[60] Barratt's scepticism regarding the new procedure was only altered when further trials were conducted. With the success of these extended trials, Barratt was then convinced that pilots were able to conduct a shoot and that training in this new method could be done quickly. The new procedure was to be effective from 15 June 1941.[61]

[58] TNA AIR 39/47, Letter from Air Ministry to J D Woodall, 26 Apr 1941.
[59] TNA AIR 39/47, Letter from Major General Otto Lund, GHQ Home Forces to AOC-in-C Army Co-operation Command on Artillery Reconnaissance, 5 April 1941.
[60] TNA AIR 39/47, Letter from AOC-in-C Army Co-operation Command to Major-General Otto Lund, GHQ Home Forces, in response from letter from CGS on Artillery Reconnaissance, 10 May 1941.
[61] TNA AIR 39/47, Minutes of Meetings held at the School of Artillery, Larkhill, 2 June 1941.

The work for Barratt in developing this area was not finished with the adoption of the new procedure. In order to allow the new procedure to work at maximum efficiency it had been agreed that a two-way R/T communication system was to be used. This system was to use two different types of radios sets, one on the ground and another in the air. The ground set was the Army No. 11 Set and in the Tomahawk Army Co-operation aircraft was an Army No. 19 Set. Barratt later argued in a letter to the Under-Secretary of State for Air that the major problem in attempting to use the sets noted above was in the allotment of frequencies for batteries. It was felt that 'this promising suggestion should not be turned down because of the frequency difficulty but that the War Office should be pressed to review the allotment of frequencies so as to permit its adoption.[62] The Director of Telecommunications wrote to Barratt assuring him that the WO saw no difficulty in 'allotting suitable frequencies to Squadrons for Artillery Co-operation'.[63]

Army-Air Support Training Exercises

Throughout 1941 a series of exercises was conducted with two major goals in mind. The first was to increase the number of squadrons, including the appropriate signals and control staffs that were able to provide the support required.[64] The second was to show the ground troops the limits of support that was available to the air and again ensure they were fully versed in the procedure set down to call for support on an ad hoc basis. By achieving these aims, and achieving them as quickly as possible, a more effective and efficient air support system would be developed. This would improve the effectiveness of any force assembled to invade the continent and advance to Germany. A further advantage was that a critical mass would be trained, not only in how to conduct air support, but also how best to further develop

[62] TNA AIR 39/48, Letter from AOC-in-C Army Co-operation Command to the Under-Secretary of State for Air regarding Artillery Co-operation, 15 Aug 1941.
[63] TNA AIR 39/48, Letter from the Director of Telecommunications to AOC-in-C Army Co-operation Command, 9 Oct 1941.
[64] TNA AIR 20/4446, Remarks on Close Support Bombing and other Air activities in Anti-invasion operations by DMC, prepared for use at final conference at GHQ Home Forces, Exercise Dragon, 5-8 Jan 1941.

these techniques for future operations in the European and North African theatres. The biggest of these exercises, BUMPER, was conducted during the traditional army exercise period of July and August. Smaller scale exercises were conducted throughout 1941. The issue of the release of aircraft, particularly the medium bomber squadrons of Bomber Command, which were equipped with Blenheims, did little to reduce the tensions that existed between the army and RAF.[65] It was also made clear by the C-in-C of Bomber Command that the exercises being undertaken were not to be taken as anti-invasion training as it was felt that close support would be unsuitable against an amphibious landing.[66]

The first of the exercises, DRAGON, took place in January. The most striking remark made in the report based upon the exercise was that the tactics involved had previously been 'evolved and practiced ... for joint operations in Palestine and in Air Control operations elsewhere'.[67] The Air Ministry were at pains to point out in early 1941 what they perceived to be the correct use of medium bomber aircraft when employed in the close support role. Goddard argued that

> Owing to the nature of these exercises it may be possible that misconceptions have arisen as to the role of medium bomber squadrons against invasion. In their anti-invasion role the medium bomber squadrons form part of the flexible organisation of Bomber Command and it would be uneconomical to keep them unemployed waiting to support the Army when a role could be found for them within the task of the Bomber Command.[68]

The idea for training all medium bomber squadrons came from a meeting held in October 1940, where Pierse, suggested using the two medium bomber squadrons based in Northern Ireland for training that had previously been used to develop the communications system codified by Army Co-operation Command. The then Director of Plans, Slessor, argued that

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[65] Jacobs, 'Air Support', p.176.
[66] TNA AIR 2/7410, Letter from C-in-C Bomber Command to Under Secretary of State for Air, 14 February 1941.
[67] TNA AIR 20/5840, Remarks on Close Support Bombing and other Air activities in Anti-invasion Co-operation, prepared for use at final conference at GHQ Home Forces, Exercise *Dragon*, 5-8 January 1941.
[68] TNA AIR 2/5224, DMC's draft of Air Staff Memorandum on the use of Close Support against invasion, 23 February 1941.

> ... all medium bomber squadrons would be trained for close support. VCAS said that medium bomber squadrons earmarked for the close support role and he undertook that these would be made available whenever operations against Germany permitted training with the army.[69]

The staff that made these decisions with regards the training of medium bomber squadrons were changed shortly after the decision was made. The officers who filled these positions had, according to Barratt, a different opinion with regards the importance of the training exercises proposed and close support in general.[70] The DMC responded to this charge from Barratt by suggesting that 'it is most improper to suggest that the then DCAS Air Vice Marshal (AVM) Douglas, agreed to the close support doctrine because he was anxious to *appease* the War Office' [emphasis in original].[71] In a further paper written by the Air Ministry, reviewing the potential needs of the army with regards bomber support stated that 'the principal aim of bomber support for the army is to isolate the battlefield ... i.e. direct support'.[72] The WO found that the pace of the training, especially with regards training with the medium bomber squadrons, was not moving as quickly as they felt was necessary. Despite the fact that the overall strategic situation of the Second World War made the prospect of launching offensive operations from bases in Britain unlikely preparations for such an event were at the forefront of the General Staff and Brooke argued that

> Close Support of the Army is not only *not* the primary role of medium bomber squadrons, it is a role which they hardly consider or practice. Out of the proposed trial of 500 sorties of medium bombers for training, only 45 took place ...[73]

He further argued that

> ... he was not satisfied with the amount of support he was receiving from the Royal Air Force. He had always been opposed to the formation of an Army Air Arm, but his experiences in recent months had driven him to the conclusion that some form of this, that is, some RAF resources under the direct control of the Army was essential.[74]

[69] TNA AIR 39/16, Memorandum by AOC-in-C Army Co-operation Command on Close Support Development, c. May 1941.
[70] *Ibid*.
[71] TNA AIR 39/16, Letter from DMC to AOC-in-C Army Co-operation Command, 22 May 1941.
[72] TNA AIR 20/4446, The Employment of Bomber Aircraft in Support of Land Operations, 1 April 1941.
[73] TNA PRO WO 32/9836, Memorandum by CIGS, on co-operation between Army and RAF 3 May 1941.
[74] TNA AIR 39/16, Minutes of a Conference held at the War Office to discuss certain proposals for improving Army-Royal Air Force Co-ordination, 12 May 1941.

That the medium bomber squadrons had not been conducting the training exercises as often or with as great a determination that the WO felt was required was due to their being also used in active operations against Germany. Due to the army's inactivity with regards operations against the enemy the Air Ministry were easily able to counter the claims made above.

In discussing the problem with Portal, Barratt, who had previously discussed the situation with Brooke, stated that ' in his letter to me, [it was] emphasised that the matter did not arise out of any failure in co-operation between myself or my Command but was a matter of policy ...' Barratt went on to explain that '... it appeared to be clearly both difficult and, in fact, impossible at this stage to set aside any large proportion of air forces for the exclusive support of an Army which was not actually engaged in a land campaign'.[75] The same would apply with regards to training exercises. The major problem encountered with regards training exercises in 1941 was that they focused upon the anti-invasion role, as this was the priority for training at this time given the strategic situation faced. The lack of operations for the army hampered the advancement of Army Co-operation Command, as they were unable to put their ideas into practice against the enemy. With this changing environment, British thinking moving from the defensive to the offensive, the priority for training would shift from anti-invasion operations to co-operation with land forces in an invasion and break out capacity.

Another issue with regards training, conducted with squadrons of aircraft also undertaking active operations, highlighted by Barratt was 'that no substantial advantage would result in continuing the training of bomber crews in close support operations at the present time owing to the rapid changes and wastage which take place in Bomber Command'.[76] The training of squadrons of No. 2 Group was to be directed and controlled by Barratt, despite the

[75] TNA AIR 39/16, Letter from AOC-in-C Army Co-operation Command to CAS, 13 May 1941.
[76] *Ibid*.

squadrons involved being under the operational control of Bomber Command.[77] The exercises conducted during this preliminary training period highlighted two major conclusions that could be further developed in future exercises. These were firstly that 'The highly trained medium bomber squadrons ... were capable of adapting to this form of support given a short period of extensive training'. The second was that 'such training lies more in ground organisation, rapid briefing, correct interrogation, quick get-away and turn around, and knowledge of the system ...'[78] This preliminary training only involved certain sections of the army air support organisation. Air Commodore J. W. Baker, the Director of Bomber Operations, argued that 'It remains ... to test the army air support organisation as a whole, and for this purpose it will be necessary for a number of 2 Group Stations to be exercised simultaneously'.[79]

The last major exercise, before the summer exercise season took place was held during March due to the medium bomber squadrons being required for operations over Germany. The next major exercise did not take place until September. The need to release the squadrons of No. 2 Group from their operational responsibilities carrying the combined bomber offensive to the German homeland, as well as despatching training crews to the Middle East, to train the crews who would be conducting operations in this theatre, caused a rise in the tensions between the Air and General Staffs. The principal object that the training looked to achieve was 'to perfect the organisation for the provision of air support, including the method of control' and 'To train the RAF in army support, and incidentally the army in the widest use of this support'. Further to these objectives this preliminary training exercise was to 'investigate the amount of ground training required, gauge the type and extent of the exercises which were subsequently to be conducted by the other stations in No. 2 Group and

[77] TNA AIR 23/1762, Training of Squadrons of 2 Group in Army Air Support – Report on preliminary period by AOC-in-C Army Co-operation Command, 4 July 1941.
[78] TNA AIR 23/1762, Training of Squadrons of 2 Group in Army Air Support – Second Report by AOC-in-C Army Co-operation Command, 4 Jul 1941
[79] TNA AIR 20/5840, Letter from J.W. Baker to AOC-in-C Bomber Command, 20 Aug 1941.

study the organisation for army air support in general.' With the emphasis being placed on developing a workable air support system, the time taken in its full development would be a major factor in the timing of offensive operations overseas; the timing of these operations would also be based upon the prevailing strategic situation. This would be dictated fundamentally by events on the Eastern Front. Further exercises that were to build upon the work done previously were to be directed by Barratt.[80] The ability of No. 2 Group to conduct air support for the army, when involved in operations overseas and not an anti-invasion role, was to be of the necessary standard by 1 September.[81] The Air Ministry saw the training conducted by No. 2 Group as 'an unqualified success'. When discussing the preconceptions of the army with regards the RAF's ability to conduct air support the Deputy DMC felt that these doubts had been disproved.

> The army have always doubted the ability of bomber squadrons, firstly to find battlefield targets, and secondly to get off the ground quickly. Last week's exercises have certainly proved these doubts to be unfounded.[82]

The first major exercise of the summer was conducted with squadrons of No. 2 Group in July 1941. Prior to this, the CSBCs, which had been designed through the Wann-Woodall experiments in 1940, found their role slightly modified. The use and development of the CSBCs had stalled due to the terminology being used. The WO felt that the role played by the CSBCs should 'operate offensive action by both fighter reconnaissance squadrons and bomber reconnaissance squadrons when these are employed in the attack of targets on the ground in Army Air Support'.[83] There was great confusion over the use of the terms 'close' and 'direct' support 'as no clear line of demarcation is possible'.[84] Barratt agreed that the

[80] TNA AIR 2/5224, Minutes of a meeting to discuss the training of the squadrons of No. 2 Group in Army Air Support, 2 Jul 1941.
[81] TNA AIR 8/580, Letter from Director of Plans to CAS, 1 Jul 1941.
[82] TNA AIR 20/2173, Letter from Deputy DMC to CAS, 20 Jul 1941. The letter is not signed by the Deputy DMC to identify this person.
[83] TNA AIR 39/95, Letter from AOC-in-C Army Co-operation Command to Officers Commanding Nos. 32-37 Wings, 21 Aug 1941.
[84] TNA AIR 2/5224, Memorandum by CIGS, to Under Secretary of State for War, 19 May 1941.

terms were not clearly understood and stated in further detail that this was partly due to the bombing tasks that were to be conducted by the CSBCs. It was due to a

> misconstruing [of the term] close support [which is] far too narrow, and in regarding the CSBC as exclusively the instrument for arranging the attack of targets pointed out by forward formations, and not as it should be, the advanced headquarters of the Royal Air Force formation providing intimate support for the land battle.[85]

In order to resolve the situation regarding terminology, Brooke suggested that the terms causing the confusion 'should be abolished and that all bombing carried out by aircraft under the control of army authorities should be known by one name such as "Army Support."[86] The term for the support organisation previously called the CSBC fell into line with the new term used for all support provided for land forces, army air support, and were renamed AASCs.[87] This development had originated from the trials conducted by Army Co-operation Command.

The majority of this training was to be achieved through a major land-air exercise held in September and October.[88] The exercise code-named BUMPER was the largest joint exercise conducted. Its aims, as far as the air aspect was concerned, were to 'study the employment of aircraft in army air support of large formations in offensive operations', as well as the 'employment of army co-operation squadrons in their reconnaissance role when working with Corps and Armoured Divisions'. The newly formed AASCs also found themselves involved in providing communications. No. 1 AASC allotted to Southern Army placed rear links at the aerodromes of aircraft designated to provide air support. No. 2 AASC, which, during the exercise, was allotted to the forces acting as the German IV Army, was tasked with using a slightly different communications system. Rear links were placed at the aerodromes of all

[85] TNA AIR 2/5224, Essence of comments by AOC-in-C Army Co-operation Command on GHQ Draft paper on Air Support, c. May 1941.
[86] TNA AIR 2/5224, Memorandum by CIGS, to Under Secretary of State for War, 19 May 1941.
[87] TNA WO 32/9836, Letter from GHQ Home Forces to Under Secretary of State for War, 7 June 1941.
[88] TNA AIR 20/5840, Letter from DMC to AOC-in-C Army Co-operation Command, 6 Sep 1941.

bomber squadrons but an additional link was also placed at the Headquarters of No. 2 Bomber Group, which was to be in communication with it aerodromes.[89]

The exercises were also to test the ideas that had previously been suggested, and discounted through the Wann-Woodall experiments, that support aircraft should be allotted to formations on the ground. Barratt's report on the air aspect of the exercise as a whole describes this as similar to

> ... the control of any other supporting arm. Squadrons are each equipped with their own "means" and are allotted in support of forward formations in the same way as long range artillery might be allotted. The "means" transmits the forward commands demands direct to the squadron. The army command and RAF command can re-allot squadrons, and allot the reserves, to formations using the normal communications.[90]

Both the advantages and disadvantages of this system were weighed up by Barratt, despite this having been done previously. This system was seen as being the quickest available and the simplest to set up; training would become simplified. The local commander would be able to advise the forward formation what forces were available to support them, and the pilot would benefit from knowing the area he would be called upon to operate in.[91]

Further to this, and given time, the pilots could develop a good working relationship with the ground commanders, as they had done when conducting reconnaissance and artillery spotting during the First World War. BUMPER had provided certain conclusions regarding and, more importantly, enacting developments that would increase the efficiency of the AASC.

> The broad principles on which we have been working have survived the tests of training to which they have been submitted remarkably well. For further progress we need two things – aircraft of the right type in the requisite numbers, and available for the tasks of army air support as a first priority – and secondly, experience in actual operations.[92]

The report quoted above was written by the WO and further highlighted one of the biggest issues that affected relations between the WO and Air Ministry, namely the allocation, design

[89] TNA AIR 39/80, Report by the AOC-in-C Army Co-operation Command on the Air Aspect of BUMPER Exercise, 28 Oct 1941.
[90] *Ibid*.
[91] *Ibid*.
[92] TNA WO 32/10403, Report on Army Air Controls, 16 Oct 1941.

and delivery of aircraft to fulfil the air support role. This was to be a continual problem faced by Army Co-operation Command, especially when the demands from the Western Desert increased as that theatre featured larger in the Allied plans as a base from which to launch operations against Italy.[93] The lack of suitable aircraft will form a later section of this chapter. Further to this, the COS Committee were furnished with the average timings for aircraft to become airborne after targets had been received at the aerodrome. For the No. 2 Group bomber exercise, this was nine minutes and nine seconds.[94] During Exercise BUMPER, the average time was fifteen minutes. Despite this not being under operational conditions against the enemy, these times were a huge improvement on the times taken for aircraft to become airborne during the Battle of France, and the Wann-Woodall experiments. This had been partly due to lack of communications to call for air support during the campaign in France, and showed vast improvements from the end of 1940.

BUMPER had also shown that the AASC had two main functions. First, they were 'to act as a clearing-house for calls for air support initiated by forward army elements'. Second, 'to despatch air support sorties against targets selected as a result of information received from tactical reconnaissance and other sources of intelligence available at army headquarters'.[95] The scale of allotment of the AASC, and how the army commander was to use it, was also clarified during these exercises. 'The scale of one AASC per army means that the control will normally be held at army headquarters until such time as the army commander is in possession of information sufficient to enable him to decide with which of his lower formations he intends to strike the decisive blow'.[96]

[93] For more details on the land and air campaigns that culminated in the German defeat in Tunisia Cf. Syrett, 'The Tunisian Campaign' and Citno, *The Wehrmacht Retreats*.
[94] TNA AIR 8/986, Army Air Requirements, (COS (41) 206 (0)), 5 November 1941. The codename of the exercise of the bombers of No. 2 Group is not noted in the report cited.
[95] TNA AIR 2/5224, Memorandum on Army Air Support Controls, c. October 1941.
[96] TNA WO 32/10403, Report on Army Air Controls, 16 October 1941.

The use of squadrons of No. 2 Group for an extended period of training caused tensions between the Air Ministry and the Prime Minister. Churchill, at this time was anxious that the fighting should be carried to Germany in whatever way possible. After being expelled from the continent, the only way this was possible was through the strategic bombing campaign of the RAF. That substantial numbers of squadrons were prevented from taking part in active operations was of great concern to Churchill.[97] The COS had agreed the removal of these squadrons. Bad weather also prevented the squadrons from conducting operations after the exercises had been completed.[98]

Anti-Invasion Measures

The threat of invasion had not disappeared with Fighter Command's victory in the Battle of Britain. There was a great deal of work done in the preparation of air resources to defend against invasion. The communications and tactics that were to be used in the event of invasion were to add to the already heightened tensions between the Air Ministry and WO. Army Co-operation Command, due to its non-operational nature was effectively sidelined as far as resources and influence was concerned. The importance of the development of anti-invasion measures to this thesis is, however, to highlight other areas of air support development that were taking place, and to further show the status of Army Co-operation Command within this framework. The resources that would be dedicated to repelling a potential invasion, which could have been another aspect that caused tensions to mount was resolved with relative ease.

> There can ... be no possible conflict of aims between the army and the air force and the army will be fully and directly served by all classes of aircraft. It will in fact, be supported by the whole of the Bomber and Fighter Commands.[99]

[97] TNA PREM 3/80, Minute from CAS to Prime Minister, 11 November 1941. Carrington has argued that the fact that '... Army Co-op Command persuaded Bomber Command to take nine squadrons of Blenheims off real operations ... [was] a triumph for Army Co-op and a defeat for Bomber Command. *Soldier at* p.43.
[98] TNA PREM 3/80, Minute from CAS to Prime Minister, 11 November 1941.
[99] TNA AIR 20/950, Army Air Requirements by the CIGS, 4 June 1941.

The Air Ministry argued that as all the resources of the RAF available would be used in the event of an invasion, specialist squadrons formed for the task would not be necessary. It was also argued that, as the army could only be involved in one of two types of operation, namely defensive or counter-attack, the correct role for the air force would be 'the prevention of the arrival of enemy reinforcements and not the direct attack of his forward troops'.[100] The DMC went further when writing of the Air Ministry's opinion.

> The Air Ministry is strongly of the opinion that, in the event of invasion, the opportunities for *direct* support action by bombers will be so great and advantageous that it is likely to be uneconomical to employ bomber squadrons in close support ...'[emphasis in original].[101]

This again shows that the thinking of the RAF with regards air support had changed little since the Battle of France. The commander of No. 71 Group, Army Co-operation commenting on a memorandum on bomber support for the army stated that '... in the event of invasion all bomber aircraft shall remain under the control of C-in-C Bomber Command'. The army were agreeable to this but raised several concerns due to the centralised control of dispersed squadrons. These were 'that [any] success was dependent upon the maintenance of landline communications' and further that 'The average time factor involved will not allow the reasonable possibility of effective attack on close support targets, and in fact is such as to reduce all air bombardment to direct support'.[102] The RAF's expectations of supporting anti-invasion are detailed above and this is further evidence of their thinking.

Barratt's opinion was sought with regards to army requirements during an anti-invasion operation and what Commands the forces were to come from. He argued that '... given an adequate scale of army co-operation squadrons, the fighter and bomber requirements of the army should be capable of being met ... by Fighter and Bomber Commands'. In order to allow Bomber Command to meet the requirements Barratt suggested '... that it will be

[100] *Ibid.*
[101] TNA AIR 20/4446, Remarks on Close Support Bombing and other Air Activities in Anti-Invasion Operations by DMC, 8 January 1941.
[102] TNA AIR 39/140, Comments on Bomber Support for the Army by C-in-C No. 71 Group, 1 February 1941.

necessary to make immediately detailed arrangements for both direct and close support to be put into operation in the event of the enemy securing penetration into this country'.[103]

Army-Air Aircraft Requirements

In 1941, the RAF was ill equipped to conduct air support measures. The army, pushed for Army Co-operation Command to be re-equipped with specialist aircraft for conducting air support. These calls were not limited to air support aircraft; they also pushed for a specialist dive-bomber. This, according to the Air Ministry was based upon the army's false readings of the Battle of France and can trace its roots to the misreading of the battle as shown in the Bartholomew Report.[104] The Air Ministry, due to the pressure placed upon it since the Bartholomew Report, acknowledged that there had been a lack of resources dedicated to those types of operations.[105] Army Co-operation Command was in an almost impossible position with regards to the calls for more resources. As a non-operational Command, it would find itself down the order in the priority for aircraft above it would naturally be Bomber, Fighter and Coastal Commands.[106] The operations conducted by these Commands helped to shape the strategic picture in which Army Co-operation Command developed the theoretical basis of air support. Without the pressure being exerted by the *Kriegsmarine* on British shipping being relieved, operations in continental Europe could not be considered. It had been agreed that the army co-operation squadrons of Army Co-operation Command should be re-equipped with either Brewster or Vultee aircraft.

The Deputy Director of Plans at the Air Ministry, ACM Sir Ronald Ivelaw-Chapman, wrote to Barratt to explain that

[103] TNA AIR 39/16, Notes by AOC-in-C Army Co-operation Command on agenda on air co-operation with the army to be discussed, 27 May 1941.
[104] TNA AIR 39/16, Memorandum by VCAS Slessor, 6 May 1941. TNA AIR 39/139, Draft of Air Co-operation with the Army – Policy – Notes for CAS prior to discussion with CIGS, c. January 1941.
[105] TNA AIR 20/950, Army Air Requirements by the CIGS, 4 June 1941.
[106] TNA AIR 20/4301, Letter from Group Captain J.D.I Hardman to Air Vice-Marshal H. Edwards, AOC-in-C RCAF Overseas, c. May 1942.

> In view of the shortage of pilots and the necessity for concentrating on all economies possible to permit the expansion of the bomber effort, I am aware that it is now not possible to carry out the expansion of army co-operation by the forecasted date, that is to say, May.[107]

Bomber Command was the most important part of the RAF as far as re-equipment and resources was concerned. Army Co-operation Command would only ever receive the scraps form the table of the operational commands. The demands for resources made by the WO with regards air support aircraft were also unrealistic in both the scale of aircraft required, and the timeframe for them to be available for operations.[108] It was also unrealistic to believe that operations involving these squadrons could be launched at this stage of the war. The RAF had committed to, and provided, eleven medium bomber squadrons specifically for close support work by February 1941.[109] This agreement was met with a certain degree of satisfaction from Eden.[110] In a letter, he claimed 'It is particularly satisfactory to me to find that the Air Staff agree to the necessity of providing close support aircraft for the army'.[111] A statement such as this shows just how deep the experience of France had been for the army, and exactly where they continued to lay the blame, partly to shirk the responsibility for the defeat in France. At the end of 1940, the Air Staff were actively considering the specifications of a twin-engine bomber 'with diving qualities'.[112]

The General Staff proposed that the air support requirements for reconnaissance, bomber and fighter support would be fifty-four squadrons. They felt, as was almost inevitable with the directive issued, that these squadrons 'should be allotted to Army Co-operation Command, and trained primarily for army support work'. The Air Staff argued that if the General Staff's proposals were accepted it would make the fifty-four squadrons created

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[107] TNA AIR 2/7336, Letter from Deputy Director of Plans to AOC-in-C Army Co-operation Command, 5 February 1941.
[108] Denis Richards, *Portal of Hungerford* (Heinemann: London, 1977), pp.205-6.
[109] TNA WO 32/9836, Memorandum by C-in-C Home Forces, on Co-operation between the army and RAF, 3 May 1941.
[110] David Ian Hall, *Learning How to Fight Together: The British Experience with Joint Air-Land Warfare* (Air Force Research Institute: Maxwell Air Force Base, Alabama, 2009), p.13
[111] TNA AIR 2/7336, Letter from Secretary of State for Air to Secretary of State for War, c. August 1940.
[112] TNA AIR 2/7336, Note for the Secretary of State for War on the Close Support Bomber situation, c. December, 1940.

'much less efficient as fighters and bombers (which would doubtless be their actual role in conjunction with land operations) than they would be if their primary role was in Fighter and Bomber Commands'. They further claimed that, if they were allotted to Army Co-operation Command for training, their time would 'be taken up in learning tactical reconnaissance detail not essential to close bomber and fighter support'. The time old argument of the ability of the RAF to conduct independent strategic operations would, in the Air Ministry's opinion, be seriously weakened.[113]

As a counter to the fifty-four squadron proposal of the General Staff, the Air Ministry proposed that six new squadrons should be created from scratch and allotted to the army 'for tactical bomber and fighter reconnaissance roles' this would make a total of twenty squadrons available for this role.[114] A further twenty-four squadrons of Bomber and Fighter Commands 'should be trained and exercised to provide bomber and low attack support in the battlefield areas'. The WO's expectations of Army Co-operation Command were dashed at this point. It is arguable that they saw Army Co-operation Command as the potential army air arm, which they had argued and fought for, for so long.[115] With the Air Ministry's blocking of their proposal to advance this idea it became clearer that Army Co-operation Command was created as a tactical measure merely to relieve some of the pressure placed on the RAF in the aftermath of France and Bartholomew. Army Co-operation Command's real power and ability to effect change was seriously curtailed by Air Ministry. It was moves such as this, plus the years of argument and stalling that lead Brooke to claim, with regards the development of effective air support, 'The situation is hopeless and I see no solution besides the provision of an army air arm.'[116] With regards the aircraft that would form the new army co-operation squadrons, whether placed under the control of Army Co-operation or Bomber

[113] TNA AIR 8/986, War Cabinet Chiefs of Staff Committee – Army Air Requirements COS (41), c. July 1941.
[114] *Ibid.*
[115] TNA AIR 39/16, Minutes of a Conference to discuss certain proposals for improving army –RAF co-ordination, 12 May 1941.
[116] Danchev and Todman , *War Diaries 1939-1945* p.258. The entry quoted above is dated 18 May 1941.

and Fighter Commands, were another source of tension, not only between the Air Ministry and WO, but also between the British and US with regards deliveries of aircraft.[117]

Army Co-operation Command was, during 1941, in the process of re-equipping their squadrons from the obsolete Lysander aircraft to Tomahawks from the US.[118] The army felt that since they had first discussed the issue in February, the decisions thus reached bore 'little relation to the fact, because no satisfactory steps have been taken to implement the agreed policy'. The C-in-C Home Forces, went further in his criticisms of the situation. '... I am convinced that far from progressing co-operation between army and the RAF has slipped back seriously during this period'. He further stated that 'There has so far been no mention of provision of the suitable close support bomber, which was stated to be under consideration last December'.[119]

The delay in replacing Lysander squadrons with Blenheims was due to delays in aircraft (Baltimores) that had been ordered from the US.[120] The specifications, which had been put forward for a close support bomber, could be 'closely met by various types in existence, though not necessarily in production'.[121] The WO argument with regard the allotment of aircraft in support of ground forces was that there should be three squadrons per Corps and three squadrons per armoured division. Half of the aircraft were to be fighter reconnaissance aircraft and the other half bomber reconnaissance aircraft.[122] They also continued to push for some form of an army air arm. The WO argued that army air support squadrons should form 'an air component which should be an integral part of the corps of the army to which it is allotted. They must be specially trained and the machinery for their control must be

[117] TNA WO 32/9836, Minutes of a meeting held at the War Office to discuss army air co-operation, 30 June 1941.
[118] TNA AIR 39/16, Minutes of a Conference to discuss proposals for improving army-RAF co-ordination, 12 May 1941.
[119] TNA WO 32/9836, Memorandum by C-in-C Home Forces, on co-operation between army and RAF, 3 May 1941.
[120] TNA WO 32/9836, Minutes of a meeting held to discuss army air co-operation, 30 June 1941.
[121] TNA AIR 39/139, Army Air Requirements (COS (41) 39 (0), 8 June 1941.
[122] TNA AIR 39/16, War Office memorandum of Army Air Requirements, 12 June 1941.

organised and trained with the squadrons'.[123] The demands of the army were also wildly exaggerated when the size of the RAF at the time is considered, and this was part of the reasoning used by the Air Ministry when dismissing the claims of the army. The CAS (now Portal) stated that

> The Army Air requirements set out in COS (41) 89 (0) call for the allotment of an air component and specialised types of aircraft amounting to a total of 3888 aircraft. This total should be compared with the current first line strength of the RAF which is 3585 and the total of 5623 which was our expansion figure for the Spring of 1942. If these requirements were to be met in the form in which they have been stated it could only be at the expense of the bomber and fighter and expansion. The general effect of meeting these requirements out of the contemplated Air Force programme would be a reduction of 36 long range fighter squadrons, 12 light bomber squadrons, 37 medium bomber squadrons and 130 heavy bomber squadrons.[124]

It cannot be denied that the army exaggerated their requirements for air support during 1941. If they had received all the squadrons they had requested more problems would have been created rather than solved as it would not have been possible for either the army or Army Co-operation Command to make full use of them. Through exaggerating their requirements, the army was hoping to have a fraction of their request fulfilled. Production problems meant that the RAF would not have been able to meet these exaggerated requirements. Even if they had been able to, the RAF's attitude towards army co-operation meant that a minimum number of army co-operation squadrons would have to be agreed to in order to appear to be taking the development of army co-operation as seriously as the army believed was necessary.

The army continued to push for as large an air component as possible to act as their army air arm. The RAF continued to refute these claims, and in October outlined the following reasons

> At a time when the air offensive is a vital factor in our plans the Air Staff believe it to be wrong in principle that a substantial part of our air resources should be placed in a role where training is wholly subordinate to fighting. The Air Staff agree that a high standard of training is necessary. No difficulty arises about such training with the army co-operation squadrons which are permanently allotted to the army. But the balance of fighter and bomber squadrons required for army support must in their view be provided from RAF formations and not be permanently allotted to the army...The Air Staff proposals on the question of army support squadrons are as

[123] TNA AIR 20/950, Summary of Air Requirements, 12 June 1941.
[124] TNA AIR 20/950, Army Air Requirements – Memorandum by CAS, 12 June 1941.

> follows: - Twenty squadrons of army co-operation aircraft will be formed and placed in Army Co-operation Command at the disposal of the army.[125]

The state of army co-operation in Britain and in the Western Desert was particularly poor at the end of the year. Army Co-operation Command was not re-equipped by the end of 1941, and the debate about that best way to achieve this was to continue well into 1942. The development of the Air OP as well as anti-invasion measures continued. Army Co-operation Command was, however, to find itself sidelined to an even greater extent in the calls for resources and the ability to develop ideas beyond the experimental stage. They would also be able to use the work done previously to improve the air support operations conducted in active operations overseas.

[125] TNA AIR 20/950, Army Air Requirements – Note by CAS, c. Oct 1941.

Chapter Five

THE WORK OF ARMY CO-OPERATION COMMAND, 1941

As with any newly created organisation, Army Co-operation Command faced teething problems as it got to grips with its new role and responsibilities. The position of the Command both as a whole and with regards to other non-RAF organisations required modification. The roles and responsibilities of the commanders who were subordinate to Barratt, who was the AOC-in-C, would also require changes. These were found to be cumbersome with certain commanders having their headquarters based in different locations. Further problems were experienced with regards to relations between the Air Ministry and WO over the communications the WO were to receive from Army Co-operation Command. This allowed the RAF the opportunity to restrict further the potential abilities of the Command. Despite these initial problems, the Command was able to confront some of the army co-operation issues that had plagued the joint aspects of operations of the army and RAF during the initial phases of the war.

The strategic outlook of 1941 also impacted on the focus of the RAF. Although the fear of invasion was not as strong as it had been, there were still no plans for a landing on the continent, and the only way to continue to attack Germany was through the air and through naval blockade.[1] The most fruitful of these developments was the work in the development of artillery reconnaissance and spotting first started prior to, and continued during the Battle of France. The work in this area is a prime example of the abilities of the Command and help to highlight the potential the organisation had for experiment and development. It further highlights the restrictions that prevented it from casting its net further in the field of army co-operation, particularly in terms of refining tactical activity at this level of war.[2] This was mainly due to the way in which it had been created by the Air Staff. Army Co-operation

[1] Butler, *Grand Strategy Vol. II* pp.342-53. Potsan, *British War Production* pp.119-22.
[2] This argument is furthered in Carrington, *Soldier at* chapter 3. Cf. Peach, 'A Neglected Turning Point', p.150, p.167. Henry A Probert, 'The Determination of RAF Policy', p.684.

Command sat in between the tactical and operational levels of warfare. Whilst its major focus was on the refinement of tactics with regards the application of air support the major impact of these refinements would be felt at the operational level of war.

As a result of the conclusions of the Bartholomew Committee, further exercises were held throughout 1941 in order to improve both the army and RAF's understanding of army co-operation, and the tactics, communications and command structures required to conduct this efficiently and effectively. Army Co-operation Command was heavily involved in supervising and directing these exercises.[3] There was, however, considerable tension between the WO and Air Ministry, especially over the release of aircraft from active operations for these exercises; Army Co-operation Command was at the heart of the controversy. Strategic aerial operations were the only way for British forces to attack the German homeland, although operations were being conducted in theatres overseas such as the Middle East by land forces, where army co-operation ideas were also being trialled. As the directing body of this training in Britain, Army Co-operation Command, and its ability to call for resources, was at the heart of these tensions.[4] Despite the success of Fighter Command during the Battle of Britain, the fear of invasion was still very real, and much work was done in improving the co-ordination of army support in the event of a German invasion of Britain during the summer of 1941. Army Co-operation Command was largely sidelined during these discussions due to its non-operational nature.

The development of army co-operation continued in discussions between the CAS and CIGS throughout this period. One of the major discussions surrounded the aircraft requirements that would be required to support an expeditionary force facing the *Wehrmacht* on the European continent. The involvement of Barratt and his Command in this process will be highlighted. This will provide further evidence to the status that Army Co-operation

[3] Murray and Millet, *A War to be Won* pp.304-5.
[4] Carrington, *Soldier at* p.43.

Command held with regards both the RAF and the army. From this analysis, it will show that the Command was effectively sidelined in the calls for aircraft, equipment and personnel. Further to this, Barratt found himself excluded from discussions regarding areas such as 'the employment of bomber squadrons in close support of Home Forces'.[5] The head of Home Forces, General Sir Alan Brooke, was still pushing the argument for squadrons to be specially formed for supporting land forces.[6] The major events in the Western Desert, notably operations BREVITY and BATTLEAXE will form a small section to provide the wider context of problems and developments in that theatre.

Re-organisation of Army Co-operation Command

The first major issues with regards the command structure and the relations between the Command and the WO, particularly with regards the communications between the two, were raised just two months after its creation. Barratt's role, as head of Army Co-operation Command, was to implement a training policy for the development of army co-operation with Home Forces. His subordinate commander at No. 71 (Operations) Group was to act as the adviser on matters regarding co-operation, such as in the anti-invasion measures being developed at the time.[7] As soon as the Command had been established, Barratt was advised of certain difficulties in making the command structure work effectively.[8] One of the major issues that existed between the Air Ministry and Army Co-operation Command was the lack of real interest shown by the RAF in this area. In the area of tactical developments in army co-operation, the Air Ministry saw Army Co-operation Command as the place for the WO and GHQ, Home Forces to address their concerns. When it came to higher-level policy

[5] TNA AIR 10/5547, AHB Narrative Close Support.
[6] LHCMA, Alanbrooke Papers 11/15. Alex Danchev and Daniel Todman (eds), *War Diaries 1939-1945: Field Marshal Lord Alanbrooke* (Phoenix: London, 2002 [Weidenfeld and Nicolson: London, 2001]), p.258. The entry quoted above is dated 18 May 1941. Cf. Arthur Bryant, *The Turn of the Tide 1939-1945* (Collins: London, 1957), p.237.
[7] TNA AIR 10/5547, AHB Narrative Close Support.
[8] TNA AIR 39/28, Letter from Headquarters No. 71 Group to AOC-in-C Army Co-operation Command, 22 December 1940.

decisions, however, these discussions took place without Army Co-operation Command being consulted. The expectations of the WO and GHQ, Home Forces also caused problems for the relations between the Air Ministry and WO. The WO expected more from Army Co-operation Command than the RAF were willing to give. Whilst it is debatable if the WO saw Army Co-operation Command as a possible way to create an army air arm, they were expecting the status of the Command to rise as the possibility of a return to the continent increased.

The first major issue raised by Barratt in a letter to the Under-Secretary of State for Air regarded the location of the commander of No. 71 Group when combined with his role as adviser to GHQ, Home Forces. Due to how these issues were resolved, which will be detailed below, and the implications they have with regards the status the Command was held in by the RAF, Barratt's concerns deserves to be quoted at length.

> The AOC [Air Officer Commanding] 71 Group, has in his role of the Home Forces Air Component the dual function of commanding his Group and acting as air adviser to the C-in-C [Home Forces]. To permit him to fulfil the latter function, his own office and that of the Air Branch of his Staff is located at GHQ, while the remainder of his Staff remains at his rear Headquarters at Sunningdale.
> A very great number of questions affecting air matters, many of which have no direct bearing on the component, arise daily at GHQ, and since the Air Branch of No. 71 Group Staff has in effect become the air section of the General Staff at GHQ these problems are invariably passed to it to deal with.
> Arising from this, the AOC, 71 Group, finds both himself and his Air Staff officers tied to GHQ and unable to exercise the necessary supervision over his widely dispersed Command. To relieve this situation I propose that AOC, 71 Group, and his Air Branch should regard Sunningdale as their main Headquarters, and that a liaison staff from my Headquarters should take their place at GHQ.
> The C-in-C Home Forces, has previously discussed with me the defects of the organisation by which 71 Group was saddled with too many tasks outside its providence.
> In addition, I am convinced that a Liaison Section of my Headquarters at GHQ, Home Forces, is essential to permit me to perform fully ... my Directive which charges me with the responsibility for the supervision of all air training in co-operation with the Army and with the development of the tactics and techniques of Army co-operation including close support.[9]

This view was confirmed by GHQ Home Forces, who stated that after Exercise VICTOR it was necessary to make changes 'in the existing methods of liaison between GHQ and RAF

[9] TNA AIR 39/20, Letter from AOC-in-C Army Co-operation Command to the Under Secretary of State for Air regarding the Adjustment of Duties between Headquarters, Army Co-operation Command and Headquarters No. 71 Group in relation to General Headquarters, Home Forces, 5 February 1941. Exercise *Victor* was a series of army-air exercises to test communications and signals methods. Cf. TNA PRO PREM 3/496/1, 3/496/2, 3/496/4.

Commands'. The GOC-in-C Home Forces further stated that the Commander of No. 71 Group could not 'act as the Senior Air Staff Officer [SASO] at GHQ Home Forces before or after 'Action Stations' and at the same time carry out his duties as Group Commander'. This was due to the workload and focus that would be required in either role if the call of action stations was ever made. It was partly due to a lack of personnel to fulfil both roles but also roles that were not fully thought out in terms of responsibilities. This is demonstrated through the speed in which the Command had been created. Part of this speed was the desperation of the WO to have an organisation within the RAF that focused on army co-operation. In order to resolve the situation the General Officer Commanding-in Chief proposed the following.

> The AOC-in-C, Army Co-operation Command to be available to act as my RAF adviser, assisted by: A RAF liaison Staff of one Group Captain and a permanently located at GHQ. A RAF map room staff to maintain 24 hours watch in the combined Navy – Army – RAF Map Room. The Liaison Staff will: (i) receive information from all RAF sources and pass it to GHQ branches, combined map room and any RAF Headquarters concerned; (ii) Transmit naval and military information from all sources to [the] RAF Headquarters concerned; (iii) Transmit any requests for support to AOC-in-C, RAF Commands; (iv) Transmit any requests for support to AOC-in-C, RAF Commands.[10]

In response to the letter from Barratt, the DMC, Air Commodore R.V. Goddard was required to negotiate with GHQ to 'find out how best their requirements can be met ...'[11] In a draft letter to Barratt from the Vice Chief of the Air Staff (VCAS) Air Chief Marshal (ACM) Sir Wilfred Freeman, but which had actually been written by Goddard stated that

> It was realised when your Command was created, that it could not be quite like other Commands, and that its activities must be fairly rigidly confined. It was for that reason that a carefully thought-out directive was given to you, in the hope that some of the difficulties which have since cropped-up might be avoided. I'm afraid it won't do to have an Air Marshal alongside C-in-C, Home Forces, it might interfere with his direct contact with other operational C-in-C's or with DCAS [Deputy Chief of the Air Staff]. That is why your relations with C-in-C, Home Forces were limited to co-operation on matters of training, tactics and technique ... It was feared when we agreed to form the Army Co-operation Command that the WO and Home Forces might be inclined to expect more from you than we agreed upon. The WO knows very well that it is not entitled to ask your advice on Army Co-operation matters. The same applies to GHQ, except on matters defined in your directive. I have discussed with CAS the difficulties which have arisen and he considers that it would be inadvisable to modify your responsibilities. If the associations you already had with GHQ make it difficult to retract without something

[10] TNA AIR 39/20, Memorandum by GOC-in-C regarding Liaison between GHQ, Home Forces and RAF Commands, 13 February 1941.
[11] TNA AIR 39/20, Letter from DMC to AOC-in-C Army Co-operation Command, 20 February1941.

> being said by CAS to the CIGS or to C-in-C Home Forces, perhaps you will let me know what you would like done to clarify your position.[12]

In order to resolve the issue raised by Barratt originally, and allow Army Co-operation Command to fulfil its role, changes were made to the organisation of the Command with the agreement of GHQ, Home Forces. The staff of No. 71 Group was moved from GHQ, Home Forces to the headquarters of the Group. In order to fulfil the role assigned to No. 71 Group an air staff officer of the Group would remain at GHQ. The advice given by No. 71 Group to GHQ on air matters could now no longer be given, and further decisions on this would be required.[13] Barratt was to be adviser to the GOC-in-C, Home Forces 'on Army Co-operation policy in its narrowest sense' except 'the operational employment of the Army Co-operation Units [*sic*] of 71 Group'.[14] A SASO with the rank of either Air Commodore or Group Captain was to be appointed to GHQ as an air liaison officer. He was responsible 'to the C-in-C for advice in air matters; consequently the responsibility of the AOC 71 Group to the C-in-C, Home Forces, will no longer be that of an AOC Air Component as defined in Air Publication 1300 ...'[15] The SASO, Air Commodore J L Vachell began his duties on 19 March.[16] For a newly created Command to experience teething troubles is not unusual, however, the proposed resolution of this problem reflects how Army Co-operation Command was viewed within the RAF as a whole. Barratt found himself sidelined in resolving the issue, continually having to refer the matter to Goddard. Putting this to the Under-Secretary of State for the Air, Barratt went into depth as to the major problem as he saw it

> I agree that there should be a representative of my Headquarters and of Headquarters of 71 Group located at GHQ Home Forces, and I have already, after consultation with GHQ, agreed to leave Major C C Oxborrow, MC to act in that capacity. I suggest that as AOC-in-C, the Army Co-operation Command, *this matter of representation is one for mutual arrangement between myself and the C-in-C, Home Forces*, should circumstances require any subsequent adjustments in the

[12] TNA AIR 39/20, Draft Letter written by DMC on behalf of VCAS, c. February 1941. As this is in response to the communications from AOC-in-C Army Co-operation Command and CIGS, the letter dates after 20 February 1941.
[13] TNA AIR 39/20, Letter from Headquarters, No. 71 Group and GHQ, Home Forces to Army Co-operation Command, 11 March 1941.
[14] TNA AIR 39/20, Memorandum on organisation of RAF Staff, GHQ Home Forces, 11 March 1941.
[15] TNA AIR 39/20, Letter from DMC to AOC-in-C Army Co-operation Command, 16 March1941
[16] TNA AIR 39/20, Letter from I R Hardman to AOC-in-C Army Co-operation Command, 19 March 1941.

> question, I am convinced that the interposition of such an intermediary organisation, owning no responsibility to me, between the Army in this country and the RAF Command set up expressly to co-operate with it, can only lead to friction, delay, uncertainty of council and inefficiency.[17] [Author's emphasis]

71 Group was disbanded in August and in its place, six Army Co-operation Wing Headquarters were to be established and placed at the various Army Command Headquarters. Each wing would be commanded by an RAF officer and 'The officer commanding the Wing Headquarters will have executive control under the army commander of all army co-operation squadrons within the command ...' The RAF officer would also 'act as air adviser to the army commander'.[18]

The WO was also displeased with the restrictions that were imposed upon Army Co-operation Command by the RAF. In a meeting between the CAS and CIGS in February 1941, the subject of the relations between the WO and Army Co-operation Command was discussed. The CIGS aired the WO's frustrations:

> Under the present arrangement the Army Co-operation Command sends reports, advice and opinions on all matters only to the Air Ministry. The War Office suggests that that they should have full access to Army Co-operation Command's opinion ... The WO feels itself greatly handicapped by this restriction ... The Command works for the good of both Services. It is fully understood that the resultant policy is a matter purely for the Air Ministry and War Office to decide. But it is difficult for the War Office to help towards forming a joint policy when it is not in possession of all the facts. The War Office may agree or disagree with the Command's opinion but it would at least like to know what that opinion is. It is suggested, therefore, that the War Office should have full access to Army Co-operation Command's opinion, written or verbal, copies of written matter being sent direct to the War Office at the same time the originals go to the Air Ministry. A considerable speeding up of business will result, and better co-operation between the two Ministries will be possible.[19]

The Air Staff had previously rejected the suggestion put forward by the General Staff.[20] The minutes of the meeting show the true intentions of the proposal put forward by the WO: they wished to 'establish personal contact with AOC-in-C, and the Air Staff at Army Co-

[17] TNA AIR 39/20., Letter from AOC-in-C Army Co-operation Command to Under-Secretary of State for Air, 23 March 1941.
[18] TNA AIR 20/327, Memorandum on Disbanding of No. 71 Group and the Formation of Six Army Co-operation Headquarters, 9 August 1941.
[19] TNA AIR 20/2812, Meeting between CIGS and CAS on Army Co-operation Matters, 19 February 1941. TNA AIR 2/7336, Letter from the War Office to DMC on relations between the War Office and Army Co-operation Command, 18 February 1941.
[20] TNA AIR 20/2812, Notes on the Agenda for a meeting between CIGS and CAS, c. February, 1941.

operation Command ...'[21] Barratt was against the idea of sending all papers to the WO, but was willing to do so if he was given full discretion over what was to be sent.[22] The WO felt that without access to the papers of Army Co-operation Command, they would not be kept up to date on any debates or developments that were being made. Their disagreement with the Air Ministry is justifiable in this case, especially given their experiences in France.

Barratt also felt that the establishment of the DMC placed his Command in a difficult position as regards fostering a spirit of co-operation between his Command and the WO. It further highlights just how hamstrung Army Co-operation Command was in attempting to fulfil its role. Barratt argued that 'there seemed no need for a DMC, since Director of Plans is responsible for planning for Army requirements and the [AO]C-in-C Army Co-operation Command is responsible for advising the Air Ministry of Army Co-operation requirements'.[23] Goddard regarded Barratt's feelings on this subject to be

> ... that he does not wish his activities to be limited by his existing directive. All the difficulties which have arisen have related to matters of future policy or future arrangements, in which he has either gone ahead of Air Ministry authority, or acted upon what he believed to be Air Ministry policy before it has been communicated to him.[24]

The moves by Barratt in this area are open to wide-ranging interpretation. Barratt may have been deliberately trying to usurp the position of Goddard and his Directorate just to create difficulties for the Air Staff, as was well known.[25] Given the position that he was in, combined with his experience in army co-operation matters, his drive and personality, however, lend weight to the argument that Barratt felt that his Command, as originally constituted, could never hope to succeed in achieving what it had been created to deal with. By increasing his responsibilities, and possibly transforming Army Co-operation Command into an operational Command, he had more chance of success in this role. Barratt saw this

[21] TNA AIR 20/2812, Minutes of meeting held to consider Army Co-operation matters, 19 February1941.
[22] TNA AIR 2/7336, Minutes of a meeting to discuss Army Co-operation matters, 19 February 1941. TNA AIR 20/5840, Minutes of a meeting to discuss Army Co-operation matters, 19 February 1941.
[23] TNA AIR 39/28, Letter from DMC to AOC-in-C Army Co-operation Command, 29 January 1941.
[24] TNA AIR 2/7359, Minute from DMC to CAS, 29 January 1941.
[25] IWM Carrington Papers 81/11/6.

new Command as an excellent way to further the field of army co-operation within Britain and as a result, he was not always willing to follow the Air Staff line.

There were further moves from above to alter the make-up of Army Co-operation Command later in 1941. Churchill wrote to both the Secretary of State for Air and CAS regarding certain appointments within the RAF. A vacancy within the US ferry service had arisen and the person originally put forward for it, Sir Hugh Dowding, was deemed unsuitable. Churchill felt that 'the best arrangement would be to send Air Marshal Barratt there, and replace him with Sir Hugh Dowding who will give confidence to the Army that they will have their interests fully represented'.[26] Barratt's position was defended by both the Secretary of State and CAS:

> Neither I nor the Chief of the Air Staff would be prepared to recommend the changes suggested in your minute. Air Marshal Barratt was appointed to the Army Co-operation Command only 6 [*sic*] months ago at the suggestion of the War Office and knows more about Army Co-operation than any other officer of his rank in the RAF. He has done his work very well and his knowledge and experience would be wasted in charge of the Ferry Organisation for which he has no special qualifications.[27]

Churchill held Dowding in great regard and this can be seen as an attempt by Churchill to rehabilitate Dowding after the Battle of Britain. John Ray has argued that he 'still held Dowding in high esteem and did not want a man of such great achievements and undoubted, although sometimes individual abilities, to be dropped'. Further to this, it has been noted that when the first calls for Dowding's removal from Fighter Command were made, Churchill left the matter for over two weeks.[28] The question must be raised, however, why Dowding was not at least put forward for the command of Army Co-operation Command by Churchill when it was first created.

Even if this was the case, both the Air Ministry and WO felt that Barratt was the right man for the job at this time, given his vast experience in army co-operation matters. Dowding's

[26] TNA AIR 19/562, Minute from Prime Minster to Secretary of State for Air and CAS, 2 Jun 1941.
[27] TNA AIR 19/562, Minute from Secretary of State for Air to Prime Minister, 1 Jan 1941.
[28] John Ray, *The Battle of Britain: Dowding and the First Victory, 1940* (Cassell Military Paperbacks: London, 2000 [Arms and Armour Press: London, 1994]), p.166, 160.

appointment to Army Co-operation Command would have caused great problems in the development of army support doctrine. Dowding would have to retire in April 1942 and the appointment of a new commander would cause great disruption, his experience was also in supply and research and not in army co-operation.[29] The literature available on Dowding and the aftermath of the Battle of Britain does not have any analysis of Churchill's move to make Dowding the AOC-in-C of Army Co-operation Command.[30] Many of the works that look at the fate of Dowding after the Battle of Britain did so before the works that look at the development of tactical air power were published. It is fair to say that without the importance of the work being done in the development of tactical air power being highlighted, Army Co-operation Command was seen as a peripheral issue. In a strange turn of events, six months later the Secretary of State for Air sent a minute to the Prime Minister regarding the current expansion of the RAF. In this, he recommended replacing Barratt with Air Marshal Richard Peirse at Army Co-operation Command.

> For some time I have been contemplating a change in that Command and I have discussed it with Portal ... I with Brooke ... mentioned Barratt, and Brooke seemed to prefer it. Barratt does not possess the wide experience of Peirse, nor is he as strong a personality. He is, however, extremely hard-working and is a good commander.[31]

It is necessary at this point to leave the chronological basis of the thesis as a whole, in order to place fully the changes that were attempting to be made with regards Army Co-operation Command in their proper context. The Secretary of State for Air sent a minute to the Prime Minister stating that he wished to move Barratt from his position as AOC-in-C Army Co-operation Command to become Inspector-General of the Royal Air Force and move Air Marshal Sir Alfred Garrod to Army Co-operation Command. The Prime Minister discussed the proposal with both the CIGS and GOC-in-C Home Forces. Both felt that

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[29] Orange, *Dowding* pp. 238-9.
[30] Jack Dixon, *Dowding and Churchill: The Dark Side of the Battle of Britain* (Pen and Sword: Barnsley, 2008), p.147. Martin Gilbert has noted how Churchill wanted to 'give Dowding command of Army Co-operation Command in Britain'. This is made in a footnote and there is no greater analysis of move. *Winston S. Churchill vol. IV: Finest Hour, 1939-1941*(London: Heinemann, 1983), p.1040, fn. three.
[31] TNA AIR 19/562, Letter from Secretary of State for Air to Prime Minister, 20 December 1941.

Barratt should retain his position at Army Co-operation Command. The Secretary of State replied that

> Sir Arthur Barratt is an officer of great ability and long experience. That is why I refused the request of the Secretary of State for War to move him last summer and why I want him as Inspector-General now. On the other hand now is the time to make a fresh start in Army Co-operation Command. The C-in-C should be of unusual energy and imagination who will make the most of the Command's new equipment and vigorously press its claims on the Air Ministry and the Army [*sic*]. Barratt is not, in my judgement, the right man for this job.

The Prime Minister replied:

> I find on enquiry that both the CIGS and C-in-C Home Forces, would very much regret the departure of Air Marshal Barratt. In view of the complaints that are made that the Army [*sic*] has been treated by the Air Ministry in respect of co-operation, and that they have now got an officer whom they like and trust ... Let me see the papers on which you base your statement that the Secretary of State for War requested you to move Air Marshal Barratt last year. My own recollection is that the military opinion was very much in his favour and that was why the move was not made.[32]

The Secretary of State for Air was forced to admit that the papers to which he had referred to above did not exist. The attitude emanating from the Air Ministry regarding Army Co-operation Command, and as a direct result its Commander must again be called into question, as within fourteen months of its existence both the Prime Minister, and the head of the political and military aspects of the RAF attempted to remove Barratt from his position. The final move at attempting to change the man at the head of Army Co-operation Command occurred just after the Secretary of State for Air had been forced to announce to the House of Commons that Army Co-operation Command was in no way inferior to any other RAF Command, despite its non-operational status. This non-operational status reflected how highly the RAF viewed the role of Army Co-operation Command. It also partly reflected the differences that still existed between the RAF and army in terms of the nature and role of tactical air support in land operations. These differences, however, existed prior to the creation of Army Co-operation Command and so cannot be seen as an over riding reason for the attempted removal of Barratt as AOC-in-C, Army Co-operation Command. This embarrassing statement had to be made whilst announcing the 1942 Air Estimates to the

[32] TNA CAB 101/136, Army Air Co-operation Part III, undated.

House.[33] The feelings of the Air Staff regarding Army Co-operation Command can be seen in a letter from Freeman to AOC No 5. Bomber Group, Air Vice-Marshal Slessor.[34]

> I was lunching with Boom [Lord Trenchard] the other day and he raised the question of the present arrangements for army co-operation. I am afraid that I had not thought about it much recently, but I have a feeling that the present system is not right and that the present Army Co-operation Command, which we organised in rather a hurry last autumn, largely in order to satisfy the army's inferiority complex, is not the right answer.[35]

This quote above highlights the feelings of ambivalence held by the Air Ministry regarding air support, and as a result Army Co-operation Command, had changed very little and that the organisation of Army Co-operation Command would be problematic for its Commander. The result of this was the changes detailed above, as well as Barratt pushing to gain greater powers for his Command. Further to this, with several attempts to change the senior make-up of the Command, the stability with which it was able to conduct its work must also be considered. The re-organisation of Army Co-operation was primarily done by the RAF in-house, whilst the WO were consulted on certain aspects of this re-organisation the major decisions were made by the RAF as they were the organisation responsible for the Command.

Events in the Middle East, 1941

After the success achieved in the Mediterranean and Middle East against the Italians in 1940, 1941 was possibly the year that saw army co-operation fall to its lowest ebb in the Western Desert.[36] In May and June of that year, two separate operations were launched to

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[33] Cf.TNA AIR 19/562, Letter from Prime Minster to Secretary of State for Air and CAS, 2 June 1941. Hansard HC Deb 4 March 1942, vol. 378, cols 656-749. Available at http://hansard.millbanksystems.com/commons/1942/mar/04/sir-archibald-sinclairs-statement. Accessed 24 November 2012. TNA CAB 101/36, Draft of Grand Strategy Narratives unpublished, undated. IWM Carrington papers, 8/11/6, Formation of Army Co-operation Command.

[34] Slessor's rank at this time was temporary and would not become permanent until April 1942. Cf. Vincent Orange, *Slessor: Bomber Champion: The Life of Marshal of the RAF Sir John Slessor* (Grub Street: London, 2006), pp.80, 90.

[35] TNA AIR 20/4446, Letter from Air Chief Marshal Sir Wilfred Freeman to John Slessor, 27 July 1941.

[36] For more detail regarding the fighting in the Middle East Cf. I.S.O. Playfair, *The Mediterranean and Middle East Vols. I-IV* (Her Majesty's Stationery Office: London, 1954-1966). Philip Guedalla, *Middle East 1940-1942: A Study in Air Power* (Hodder and Stoughton: London, 1944). See also P. G. Griffith, 'British Armoured Warfare in the Western Desert', in J.P Harris and F.H. Toase (eds), *Armoured Warfare* (B.T. Batsford Ltd:

relieve the German siege of Tobruk: BREVITY and BATTLEAXE.[37] The relief of Tobruk was a strategic necessity as if it continued to be occupied by German forces they would be 'able to advance into Egypt ... opening both the land route along the coast and the harbor for supplies, and also ... concentrate his forces on one push'.[38] Egypt was a vital strategic stronghold for Britain as it controlled the Suez Canal, whilst Britain still had control of Egypt they would still be able to communicate with and draw upon the vast strength of its empire. If the Canal fell into enemy hands then Britain would find themselves in a difficult position strategically and its ability to harness and project the power of the empire. The failure of the Germans to occupy, or at least knock the small, but strategically important island of Malta out of the war made their strategic position, particularly in terms of logistics and supply that more difficult.[39] These operations were unmitigated disasters, particularly in regards to air support, which had completely broken down. There were arguments between the RAF and army commanders over the correct use of aircraft when conducting support.[40] The attitude of the army in the Western Desert was similar to that of the army in Britain; the failure of these operations was due mainly to a lack of air support and it not being conducted in the correct way. During BATTLEAXE, the WDAF performed two roles. The fighters were to act as a protective umbrella that covered the British forces, the bombers were to be prepared to answer any calls made for close support. Changes had been made for operation BATTLEAXE in June and a system whereby 'a prearranged signals communication between air and ground forces' was established. This system, however, was only used once when 'British troops were in contact with the enemy'. The AOC-in-C of the WDAF Air Marshal Sir Arthur Tedder, felt that the British army in the Western Desert did not fully comprehend

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London, 1990). Kent Feorowich, 'Axis prisoners as sources of British military intelligence', *Intelligence and National Security*, 14: 2 (1999), pp.156-178.

[37] Hallion, *Strike from the Sky* p.153. Gladman, *Intelligence and Anglo-American Air Support* pp.59, 76.

[38] Weinberg, *A World At Arms* p.223.

[39] *Ibid*., p.349.

[40] For further details on these arguments see Hall, *Strategy for* pp.82-3. Gladman, *Intelligence and Anglo-American Air Support* p.59

the essential character of air support.[41] In addition to this, the WDAF 'was too weak to matter' during BATTLEAXE.[42] Further training and experience was also required from the aircrews conducting the support. As in Britain after the Battle of France, the army's response to the defeat suffered focused upon gaining a separate army air component. They also believed that 'German troops, when they were in difficulty, immediately summoned the Luftwaffe to deal with ground opposition.[43] Unlike Army Co-operation Command, this training would be developed from experience in operations, a situation that was not available in Britain.

Air Observation Post Development 1941

In January, Barratt embarked upon co-operation with the army on a large scale. In a letter to the Under-Secretary of State for Air regarding artillery reconnaissance, he stated that 'it is desirable to set out the problem as the Army sees it ...'[44] Artillery reconnaissance development began during the Battle of France and this fell in the middle of the new Command's remit. If a new system was to be developed it was to be based on simplicity of training.[45] Fighter Command became responsible for the operational work of D Flight, and as noted by Darrell Knight the

> Advocates of the Air Observation Post were faced with the greatest challenges ... The most pressing question being asked was, "how much risk was too much for an airborne OP pilot to survive while flying at low level in the face of enemy ground formation, or in a sky filled with enemy fighters?"[46]

There had been serious problems with the use of slow and obsolescent Lysander aircraft to fulfil that role during the fighting in France. The few attempts that had been made to conduct artillery shoots from the air resulted in the destruction of the aircraft; where aircraft were not

[41] *Ibid*., p.83-4.
[42] Gladman, *Intelligence and Anglo-American Air Support* p.59.
[43] Hall, *Strategy for* pp.83-4.
[44] TNA AIR 39/47, Letter from AOC-in-C Army Co-operation Command to the Under-Secretary of State for Air regarding air force co-operation with the Royal Artillery, 29 January 1941.
[45]TNA AIR 39/47, Memorandum regarding Artillery/Air Co-operation, 6 February 1941.
[46] Darrell Knight, *Artillery Flyers at War: A History of the 664, 665 and 666 'Air Observation Post' Squadrons of the Canadian Air Force* (Merriam Press: Bennington, Vermont, 2010), p.32.

destroyed they were driven off by enemy fighters.[47] The Air Staff were of the opinion that it would 'be disinclined to recommend the creation of special air units for artillery observation or artillery reconnaissance, unless it can be shown that there is an urgent requirement for such units ...'[48] Trials were held in March, under Army Co-operation Command and the School of Artillery, in order to 'find out if there was any difficulty in positioning a low-wing monoplane while making the observations – there was none'. Slight modifications were also used during the trial. The procedure differed from the usual one used in that 'the initial call for fire were answered by two salvos instead of three, since it was considered to be too difficult to make three observations during one run over the target ...'[49] Further trials were held with Lysander aircraft where shoots were conducted with an RAF officer correcting rather than observing the fall of shot from the artillery batteries.[50]

In a conference held at Army Co-operation Command to discuss and further develop the procedure for artillery co-operation it was suggested that all shoots should be conducted through the procedure used by the gunners of the Royal Artillery based on the ground rather than the clock-code system. It was claimed that using this procedure the required volume of fire could be produced more quickly and the pilot could judge the importance of the target. Barratt, however, felt that the pilot would have a greater burden placed on them than previously.[51] Using the gunner procedure a pilot who had no other training could conduct an impromptu shoot using two-way R/T.[52]

Barratt was sceptical of these trials and their results. He argued that he did 'not consider from the nature of the trials conducted there is any justification for the recommendation that the Artillery method of correcting fire should be introduced in place of the Clock Code

[47] Parham and Belfield, *Unarmed Into Battle* p.17.
[48] TNA AIR 39/47, Letter from DMC to AOC-in-C Army Co-operation Command, 12 February 1941.
[49] TNA AIR 39/47, Artillery Reconnaissance in a Single Seater Fighter Type, c. March, 1941.
[50] TNA AIR 39/47, Letter from Under-Secretary of State for Air to AOC-in-C Army Co-operation Command, 5 Apr 1941.
[51] TNA AIR 39/47, Conference held at Army Co-operation Command on Artillery Reconnaissance, 9 Apr 1941.
[52] TNA AIR 39/47, Artillery Co-operation Trials – Part I, April. 1941.

System'.[53] This viewpoint was reinforced with the visit of the senior artillery officer of Eastern Command, Brigadier Duncan. Duncan was of the opinion that the Air OP had a useful function supplementing the information gained through normal artillery reconnaissance, including the Land Observation Post.[54] Barratt was willing to concede, however, that with highly trained pilots it had always been possible for aircraft to conduct a shoot from the air using the artillery method. Barratt's belief in the 'clock code' system stemmed more from the fear of false conclusions being drawn from brief experiments than from any sense of conservatism about changing the system used for artillery reconnaissance.[55]

Further trials were conducted between Army Co-operation Command and the School of Artillery using the artillery method during April 1941 and the conclusions reached were similar to those seen previously. These were that the 'artillery methods of ranging by corrections to line and range are simpler, quicker, and more efficient than any method based on the 'clock code'. 'They lend themselves more readily to observation from a low altitude behind our own lines, and are more in accordance with the realties of modern air fighting and AA [anti-aircraft] defence'.[56] Further to this, those conducting the trials felt that by adopting these methods 'for air observation [would] result in a simplification of training problems for both to the R[oyal] A[rtillery] and RAF'.[57] After these trials there were still concerns regarding the adoption of a procedure that had been modified prematurely. This concern was felt as high up as the Air Ministry and they were reluctant to see the existing procedure

[53] TNA AIR 39/47, Letter from AOC-in-C Army Co-operation Command to Headquarters No. 70 Group, 12 Apr 1941.
[54] TNA AIR 39/47, Note for Commander-in-Chief on Brigadier Duncan's visit, 14 Apr 1941.
[55] TNA AIR 39/47, Letter from AOC-in-C Army Co-operation Command to Headquarters No. 70 Group, 12 Apr 1941.
[56] TNA AIR 39/47, Artillery Co-operation Tests – Part II, April 1941.
[57] TNA AIR 39/47, Report from Headquarters No. 70 Group to Army Co-operation Command, 15 Apr 1941.

modified until exhaustive trials had been conducted.[58] The factors that account for this reluctance are detailed below.

The failures of the 'clock code' system in France combined with further problems faced in the fighting in Libya led to a loss of confidence in the system in the army.[59] Barratt's response was that the 'clock code' system was not at fault in these operations but that the aircraft employed in it were operating in the face of intense enemy opposition. He was concerned that the trials had been too few and were skewed in favour of a positive result by the School of Artillery. These concerns may be interpreted as simply blocking a new development that had been shown to work in order to preserve the autonomy of the RAF whilst conducting army co-operation work. Barratt also had the luxury of not having active operations to consider when looking at the development of the Air OP and so was able to thoroughly trial the techniques being tested so that they were, not only fully robust, but were suitable to be employed in operations in different theatres. The evidence of co-operation between Army Co-operation Command and the School of Artillery, shown above, leads more to the conclusion that Barratt felt that the procedure could not be successfully carried out, and wished to see more trials conducted before it would receive his approval. He also felt that Army Co-operation pilots did not have the ability to conduct an artillery shoot from the air and that this would be further hampered by enemy opposition, with pilots being concerned for their own safety in the air.[60] Barratt's scepticism regarding the new procedure was only altered when further trials were conducted. With the success of these extended trials, Barratt was then convinced that pilots were able to conduct a shoot and that training in this new method could be done quickly. The new procedure was to be effective from 15 June 1941.[61]

[58] TNA AIR 39/47, Letter from Air Ministry to J D Woodall, 26 Apr 1941.
[59] TNA AIR 39/47, Letter from Major General Otto Lund, GHQ Home Forces to AOC-in-C Army Co-operation Command on Artillery Reconnaissance, 5 April 1941.
[60] TNA AIR 39/47, Letter from AOC-in-C Army Co-operation Command to Major-General Otto Lund, GHQ Home Forces, in response from letter from CGS on Artillery Reconnaissance, 10 May 1941.
[61] TNA AIR 39/47, Minutes of Meetings held at the School of Artillery, Larkhill, 2 June 1941.

The work for Barratt in developing this area was not finished with the adoption of the new procedure. In order to allow the new procedure to work at maximum efficiency it had been agreed that a two-way R/T communication system was to be used. This system was to use two different types of radios sets, one on the ground and another in the air. The ground set was the Army No. 11 Set and in the Tomahawk Army Co-operation aircraft was an Army No. 19 Set. Barratt later argued in a letter to the Under-Secretary of State for Air that the major problem in attempting to use the sets noted above was in the allotment of frequencies for batteries. It was felt that 'this promising suggestion should not be turned down because of the frequency difficulty but that the War Office should be pressed to review the allotment of frequencies so as to permit its adoption.[62] The Director of Telecommunications wrote to Barratt assuring him that the WO saw no difficulty in 'allotting suitable frequencies to Squadrons for Artillery Co-operation'.[63]

Army-Air Support Training Exercises

Throughout 1941 a series of exercises was conducted with two major goals in mind. The first was to increase the number of squadrons, including the appropriate signals and control staffs that were able to provide the support required.[64] The second was to show the ground troops the limits of support that was available to the air and again ensure they were fully versed in the procedure set down to call for support on an ad hoc basis. By achieving these aims, and achieving them as quickly as possible, a more effective and efficient air support system would be developed. This would improve the effectiveness of any force assembled to invade the continent and advance to Germany. A further advantage was that a critical mass would be trained, not only in how to conduct air support, but also how best to further develop

[62] TNA AIR 39/48, Letter from AOC-in-C Army Co-operation Command to the Under-Secretary of State for Air regarding Artillery Co-operation, 15 Aug 1941.
[63] TNA AIR 39/48, Letter from the Director of Telecommunications to AOC-in-C Army Co-operation Command, 9 Oct 1941.
[64] TNA AIR 20/4446, Remarks on Close Support Bombing and other Air activities in Anti-invasion operations by DMC, prepared for use at final conference at GHQ Home Forces, Exercise Dragon, 5-8 Jan 1941.

these techniques for future operations in the European and North African theatres. The biggest of these exercises, BUMPER, was conducted during the traditional army exercise period of July and August. Smaller scale exercises were conducted throughout 1941. The issue of the release of aircraft, particularly the medium bomber squadrons of Bomber Command, which were equipped with Blenheims, did little to reduce the tensions that existed between the army and RAF.[65] It was also made clear by the C-in-C of Bomber Command that the exercises being undertaken were not to be taken as anti-invasion training as it was felt that close support would be unsuitable against an amphibious landing.[66]

The first of the exercises, DRAGON, took place in January. The most striking remark made in the report based upon the exercise was that the tactics involved had previously been 'evolved and practiced ... for joint operations in Palestine and in Air Control operations elsewhere'.[67] The Air Ministry were at pains to point out in early 1941 what they perceived to be the correct use of medium bomber aircraft when employed in the close support role. Goddard argued that

> Owing to the nature of these exercises it may be possible that misconceptions have arisen as to the role of medium bomber squadrons against invasion. In their anti-invasion role the medium bomber squadrons form part of the flexible organisation of Bomber Command and it would be uneconomical to keep them unemployed waiting to support the Army when a role could be found for them within the task of the Bomber Command.[68]

The idea for training all medium bomber squadrons came from a meeting held in October 1940, where Pierse, suggested using the two medium bomber squadrons based in Northern Ireland for training that had previously been used to develop the communications system codified by Army Co-operation Command. The then Director of Plans, Slessor, argued that

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[65] Jacobs, 'Air Support', p.176.
[66] TNA AIR 2/7410, Letter from C-in-C Bomber Command to Under Secretary of State for Air, 14 February 1941.
[67] TNA AIR 20/5840, Remarks on Close Support Bombing and other Air activities in Anti-invasion Co-operation, prepared for use at final conference at GHQ Home Forces, Exercise *Dragon*, 5-8 January 1941.
[68] TNA AIR 2/5224, DMC's draft of Air Staff Memorandum on the use of Close Support against invasion, 23 February 1941.

> ... all medium bomber squadrons would be trained for close support. VCAS said that medium bomber squadrons earmarked for the close support role and he undertook that these would be made available whenever operations against Germany permitted training with the army.[69]

The staff that made these decisions with regards the training of medium bomber squadrons were changed shortly after the decision was made. The officers who filled these positions had, according to Barratt, a different opinion with regards the importance of the training exercises proposed and close support in general.[70] The DMC responded to this charge from Barratt by suggesting that 'it is most improper to suggest that the then DCAS Air Vice Marshal (AVM) Douglas, agreed to the close support doctrine because he was anxious to *appease* the War Office' [emphasis in original].[71] In a further paper written by the Air Ministry, reviewing the potential needs of the army with regards bomber support stated that 'the principal aim of bomber support for the army is to isolate the battlefield ... i.e. direct support'.[72] The WO found that the pace of the training, especially with regards training with the medium bomber squadrons, was not moving as quickly as they felt was necessary. Despite the fact that the overall strategic situation of the Second World War made the prospect of launching offensive operations from bases in Britain unlikely preparations for such an event were at the forefront of the General Staff and Brooke argued that

> Close Support of the Army is not only *not* the primary role of medium bomber squadrons, it is a role which they hardly consider or practice. Out of the proposed trial of 500 sorties of medium bombers for training, only 45 took place ...[73]

He further argued that

> ... he was not satisfied with the amount of support he was receiving from the Royal Air Force. He had always been opposed to the formation of an Army Air Arm, but his experiences in recent months had driven him to the conclusion that some form of this, that is, some RAF resources under the direct control of the Army was essential.[74]

[69] TNA AIR 39/16, Memorandum by AOC-in-C Army Co-operation Command on Close Support Development, c. May 1941.
[70] *Ibid*.
[71] TNA AIR 39/16, Letter from DMC to AOC-in-C Army Co-operation Command, 22 May 1941.
[72] TNA AIR 20/4446, The Employment of Bomber Aircraft in Support of Land Operations, 1 April 1941.
[73] TNA PRO WO 32/9836, Memorandum by CIGS, on co-operation between Army and RAF 3 May 1941.
[74] TNA AIR 39/16, Minutes of a Conference held at the War Office to discuss certain proposals for improving Army-Royal Air Force Co-ordination, 12 May 1941.

That the medium bomber squadrons had not been conducting the training exercises as often or with as great a determination that the WO felt was required was due to their being also used in active operations against Germany. Due to the army's inactivity with regards operations against the enemy the Air Ministry were easily able to counter the claims made above.

In discussing the problem with Portal, Barratt, who had previously discussed the situation with Brooke, stated that ' in his letter to me, [it was] emphasised that the matter did not arise out of any failure in co-operation between myself or my Command but was a matter of policy ...' Barratt went on to explain that '... it appeared to be clearly both difficult and, in fact, impossible at this stage to set aside any large proportion of air forces for the exclusive support of an Army which was not actually engaged in a land campaign'.[75] The same would apply with regards to training exercises. The major problem encountered with regards training exercises in 1941 was that they focused upon the anti-invasion role, as this was the priority for training at this time given the strategic situation faced. The lack of operations for the army hampered the advancement of Army Co-operation Command, as they were unable to put their ideas into practice against the enemy. With this changing environment, British thinking moving from the defensive to the offensive, the priority for training would shift from anti-invasion operations to co-operation with land forces in an invasion and break out capacity.

Another issue with regards training, conducted with squadrons of aircraft also undertaking active operations, highlighted by Barratt was 'that no substantial advantage would result in continuing the training of bomber crews in close support operations at the present time owing to the rapid changes and wastage which take place in Bomber Command'.[76] The training of squadrons of No. 2 Group was to be directed and controlled by Barratt, despite the

[75] TNA AIR 39/16, Letter from AOC-in-C Army Co-operation Command to CAS, 13 May 1941.
[76] *Ibid*.

squadrons involved being under the operational control of Bomber Command.[77] The exercises conducted during this preliminary training period highlighted two major conclusions that could be further developed in future exercises. These were firstly that 'The highly trained medium bomber squadrons ... were capable of adapting to this form of support given a short period of extensive training'. The second was that 'such training lies more in ground organisation, rapid briefing, correct interrogation, quick get-away and turn around, and knowledge of the system ...'[78] This preliminary training only involved certain sections of the army air support organisation. Air Commodore J. W. Baker, the Director of Bomber Operations, argued that 'It remains ... to test the army air support organisation as a whole, and for this purpose it will be necessary for a number of 2 Group Stations to be exercised simultaneously'.[79]

The last major exercise, before the summer exercise season took place was held during March due to the medium bomber squadrons being required for operations over Germany. The next major exercise did not take place until September. The need to release the squadrons of No. 2 Group from their operational responsibilities carrying the combined bomber offensive to the German homeland, as well as despatching training crews to the Middle East, to train the crews who would be conducting operations in this theatre, caused a rise in the tensions between the Air and General Staffs. The principal object that the training looked to achieve was 'to perfect the organisation for the provision of air support, including the method of control' and 'To train the RAF in army support, and incidentally the army in the widest use of this support'. Further to these objectives this preliminary training exercise was to 'investigate the amount of ground training required, gauge the type and extent of the exercises which were subsequently to be conducted by the other stations in No. 2 Group and

[77] TNA AIR 23/1762, Training of Squadrons of 2 Group in Army Air Support – Report on preliminary period by AOC-in-C Army Co-operation Command, 4 July 1941.
[78] TNA AIR 23/1762, Training of Squadrons of 2 Group in Army Air Support – Second Report by AOC-in-C Army Co-operation Command, 4 Jul 1941
[79] TNA AIR 20/5840, Letter from J.W. Baker to AOC-in-C Bomber Command, 20 Aug 1941.

study the organisation for army air support in general.' With the emphasis being placed on developing a workable air support system, the time taken in its full development would be a major factor in the timing of offensive operations overseas; the timing of these operations would also be based upon the prevailing strategic situation. This would be dictated fundamentally by events on the Eastern Front. Further exercises that were to build upon the work done previously were to be directed by Barratt.[80] The ability of No. 2 Group to conduct air support for the army, when involved in operations overseas and not an anti-invasion role, was to be of the necessary standard by 1 September.[81] The Air Ministry saw the training conducted by No. 2 Group as 'an unqualified success'. When discussing the preconceptions of the army with regards the RAF's ability to conduct air support the Deputy DMC felt that these doubts had been disproved.

> The army have always doubted the ability of bomber squadrons, firstly to find battlefield targets, and secondly to get off the ground quickly. Last week's exercises have certainly proved these doubts to be unfounded.[82]

The first major exercise of the summer was conducted with squadrons of No. 2 Group in July 1941. Prior to this, the CSBCs, which had been designed through the Wann-Woodall experiments in 1940, found their role slightly modified. The use and development of the CSBCs had stalled due to the terminology being used. The WO felt that the role played by the CSBCs should 'operate offensive action by both fighter reconnaissance squadrons and bomber reconnaissance squadrons when these are employed in the attack of targets on the ground in Army Air Support'.[83] There was great confusion over the use of the terms 'close' and 'direct' support 'as no clear line of demarcation is possible'.[84] Barratt agreed that the

[80] TNA AIR 2/5224, Minutes of a meeting to discuss the training of the squadrons of No. 2 Group in Army Air Support, 2 Jul 1941.
[81] TNA AIR 8/580, Letter from Director of Plans to CAS, 1 Jul 1941.
[82] TNA AIR 20/2173, Letter from Deputy DMC to CAS, 20 Jul 1941. The letter is not signed by the Deputy DMC to identify this person.
[83] TNA AIR 39/95, Letter from AOC-in-C Army Co-operation Command to Officers Commanding Nos. 32-37 Wings, 21 Aug 1941.
[84] TNA AIR 2/5224, Memorandum by CIGS, to Under Secretary of State for War, 19 May 1941.

terms were not clearly understood and stated in further detail that this was partly due to the bombing tasks that were to be conducted by the CSBCs. It was due to a

> misconstruing [of the term] close support [which is] far too narrow, and in regarding the CSBC as exclusively the instrument for arranging the attack of targets pointed out by forward formations, and not as it should be, the advanced headquarters of the Royal Air Force formation providing intimate support for the land battle.[85]

In order to resolve the situation regarding terminology, Brooke suggested that the terms causing the confusion 'should be abolished and that all bombing carried out by aircraft under the control of army authorities should be known by one name such as "Army Support."[86] The term for the support organisation previously called the CSBC fell into line with the new term used for all support provided for land forces, army air support, and were renamed AASCs.[87] This development had originated from the trials conducted by Army Co-operation Command.

The majority of this training was to be achieved through a major land-air exercise held in September and October.[88] The exercise code-named BUMPER was the largest joint exercise conducted. Its aims, as far as the air aspect was concerned, were to 'study the employment of aircraft in army air support of large formations in offensive operations', as well as the 'employment of army co-operation squadrons in their reconnaissance role when working with Corps and Armoured Divisions'. The newly formed AASCs also found themselves involved in providing communications. No. 1 AASC allotted to Southern Army placed rear links at the aerodromes of aircraft designated to provide air support. No. 2 AASC, which, during the exercise, was allotted to the forces acting as the German IV Army, was tasked with using a slightly different communications system. Rear links were placed at the aerodromes of all

[85] TNA AIR 2/5224, Essence of comments by AOC-in-C Army Co-operation Command on GHQ Draft paper on Air Support, c. May 1941.
[86] TNA AIR 2/5224, Memorandum by CIGS, to Under Secretary of State for War, 19 May 1941.
[87] TNA WO 32/9836, Letter from GHQ Home Forces to Under Secretary of State for War, 7 June 1941.
[88] TNA AIR 20/5840, Letter from DMC to AOC-in-C Army Co-operation Command, 6 Sep 1941.

bomber squadrons but an additional link was also placed at the Headquarters of No. 2 Bomber Group, which was to be in communication with it aerodromes.[89]

The exercises were also to test the ideas that had previously been suggested, and discounted through the Wann-Woodall experiments, that support aircraft should be allotted to formations on the ground. Barratt's report on the air aspect of the exercise as a whole describes this as similar to

> ... the control of any other supporting arm. Squadrons are each equipped with their own "means" and are allotted in support of forward formations in the same way as long range artillery might be allotted. The "means" transmits the forward commands demands direct to the squadron. The army command and RAF command can re-allot squadrons, and allot the reserves, to formations using the normal communications.[90]

Both the advantages and disadvantages of this system were weighed up by Barratt, despite this having been done previously. This system was seen as being the quickest available and the simplest to set up; training would become simplified. The local commander would be able to advise the forward formation what forces were available to support them, and the pilot would benefit from knowing the area he would be called upon to operate in.[91]

Further to this, and given time, the pilots could develop a good working relationship with the ground commanders, as they had done when conducting reconnaissance and artillery spotting during the First World War. BUMPER had provided certain conclusions regarding and, more importantly, enacting developments that would increase the efficiency of the AASC.

> The broad principles on which we have been working have survived the tests of training to which they have been submitted remarkably well. For further progress we need two things – aircraft of the right type in the requisite numbers, and available for the tasks of army air support as a first priority – and secondly, experience in actual operations.[92]

The report quoted above was written by the WO and further highlighted one of the biggest issues that affected relations between the WO and Air Ministry, namely the allocation, design

[89] TNA AIR 39/80, Report by the AOC-in-C Army Co-operation Command on the Air Aspect of BUMPER Exercise, 28 Oct 1941.
[90] *Ibid*.
[91] *Ibid*.
[92] TNA WO 32/10403, Report on Army Air Controls, 16 Oct 1941.

and delivery of aircraft to fulfil the air support role. This was to be a continual problem faced by Army Co-operation Command, especially when the demands from the Western Desert increased as that theatre featured larger in the Allied plans as a base from which to launch operations against Italy.[93] The lack of suitable aircraft will form a later section of this chapter. Further to this, the COS Committee were furnished with the average timings for aircraft to become airborne after targets had been received at the aerodrome. For the No. 2 Group bomber exercise, this was nine minutes and nine seconds.[94] During Exercise BUMPER, the average time was fifteen minutes. Despite this not being under operational conditions against the enemy, these times were a huge improvement on the times taken for aircraft to become airborne during the Battle of France, and the Wann-Woodall experiments. This had been partly due to lack of communications to call for air support during the campaign in France, and showed vast improvements from the end of 1940.

BUMPER had also shown that the AASC had two main functions. First, they were 'to act as a clearing-house for calls for air support initiated by forward army elements'. Second, 'to despatch air support sorties against targets selected as a result of information received from tactical reconnaissance and other sources of intelligence available at army headquarters'.[95] The scale of allotment of the AASC, and how the army commander was to use it, was also clarified during these exercises. 'The scale of one AASC per army means that the control will normally be held at army headquarters until such time as the army commander is in possession of information sufficient to enable him to decide with which of his lower formations he intends to strike the decisive blow'.[96]

[93] For more details on the land and air campaigns that culminated in the German defeat in Tunisia Cf. Syrett, 'The Tunisian Campaign' and Citno, *The Wehrmacht Retreats*.
[94] TNA AIR 8/986, Army Air Requirements, (COS (41) 206 (0)), 5 November 1941. The codename of the exercise of the bombers of No. 2 Group is not noted in the report cited.
[95] TNA AIR 2/5224, Memorandum on Army Air Support Controls, c. October 1941.
[96] TNA WO 32/10403, Report on Army Air Controls, 16 October 1941.

The use of squadrons of No. 2 Group for an extended period of training caused tensions between the Air Ministry and the Prime Minister. Churchill, at this time was anxious that the fighting should be carried to Germany in whatever way possible. After being expelled from the continent, the only way this was possible was through the strategic bombing campaign of the RAF. That substantial numbers of squadrons were prevented from taking part in active operations was of great concern to Churchill.[97] The COS had agreed the removal of these squadrons. Bad weather also prevented the squadrons from conducting operations after the exercises had been completed.[98]

Anti-Invasion Measures

The threat of invasion had not disappeared with Fighter Command's victory in the Battle of Britain. There was a great deal of work done in the preparation of air resources to defend against invasion. The communications and tactics that were to be used in the event of invasion were to add to the already heightened tensions between the Air Ministry and WO. Army Co-operation Command, due to its non-operational nature was effectively sidelined as far as resources and influence was concerned. The importance of the development of anti-invasion measures to this thesis is, however, to highlight other areas of air support development that were taking place, and to further show the status of Army Co-operation Command within this framework. The resources that would be dedicated to repelling a potential invasion, which could have been another aspect that caused tensions to mount was resolved with relative ease.

> There can ... be no possible conflict of aims between the army and the air force and the army will be fully and directly served by all classes of aircraft. It will in fact, be supported by the whole of the Bomber and Fighter Commands.[99]

[97] TNA PREM 3/80, Minute from CAS to Prime Minister, 11 November 1941. Carrington has argued that the fact that '... Army Co-op Command persuaded Bomber Command to take nine squadrons of Blenheims off real operations ... [was] a triumph for Army Co-op and a defeat for Bomber Command. *Soldier at* p.43.
[98] TNA PREM 3/80, Minute from CAS to Prime Minister, 11 November 1941.
[99] TNA AIR 20/950, Army Air Requirements by the CIGS, 4 June 1941.

The Air Ministry argued that as all the resources of the RAF available would be used in the event of an invasion, specialist squadrons formed for the task would not be necessary. It was also argued that, as the army could only be involved in one of two types of operation, namely defensive or counter-attack, the correct role for the air force would be 'the prevention of the arrival of enemy reinforcements and not the direct attack of his forward troops'.[100] The DMC went further when writing of the Air Ministry's opinion.

> The Air Ministry is strongly of the opinion that, in the event of invasion, the opportunities for *direct* support action by bombers will be so great and advantageous that it is likely to be uneconomical to employ bomber squadrons in close support ...'[emphasis in original].[101]

This again shows that the thinking of the RAF with regards air support had changed little since the Battle of France. The commander of No. 71 Group, Army Co-operation commenting on a memorandum on bomber support for the army stated that '... in the event of invasion all bomber aircraft shall remain under the control of C-in-C Bomber Command'. The army were agreeable to this but raised several concerns due to the centralised control of dispersed squadrons. These were 'that [any] success was dependent upon the maintenance of landline communications' and further that 'The average time factor involved will not allow the reasonable possibility of effective attack on close support targets, and in fact is such as to reduce all air bombardment to direct support'.[102] The RAF's expectations of supporting anti-invasion are detailed above and this is further evidence of their thinking.

Barratt's opinion was sought with regards to army requirements during an anti-invasion operation and what Commands the forces were to come from. He argued that '... given an adequate scale of army co-operation squadrons, the fighter and bomber requirements of the army should be capable of being met ... by Fighter and Bomber Commands'. In order to allow Bomber Command to meet the requirements Barratt suggested '... that it will be

[100] *Ibid.*
[101] TNA AIR 20/4446, Remarks on Close Support Bombing and other Air Activities in Anti-Invasion Operations by DMC, 8 January 1941.
[102] TNA AIR 39/140, Comments on Bomber Support for the Army by C-in-C No. 71 Group, 1 February 1941.

necessary to make immediately detailed arrangements for both direct and close support to be put into operation in the event of the enemy securing penetration into this country'.[103]

Army-Air Aircraft Requirements

In 1941, the RAF was ill equipped to conduct air support measures. The army, pushed for Army Co-operation Command to be re-equipped with specialist aircraft for conducting air support. These calls were not limited to air support aircraft; they also pushed for a specialist dive-bomber. This, according to the Air Ministry was based upon the army's false readings of the Battle of France and can trace its roots to the misreading of the battle as shown in the Bartholomew Report.[104] The Air Ministry, due to the pressure placed upon it since the Bartholomew Report, acknowledged that there had been a lack of resources dedicated to those types of operations.[105] Army Co-operation Command was in an almost impossible position with regards to the calls for more resources. As a non-operational Command, it would find itself down the order in the priority for aircraft above it would naturally be Bomber, Fighter and Coastal Commands.[106] The operations conducted by these Commands helped to shape the strategic picture in which Army Co-operation Command developed the theoretical basis of air support. Without the pressure being exerted by the *Kriegsmarine* on British shipping being relieved, operations in continental Europe could not be considered. It had been agreed that the army co-operation squadrons of Army Co-operation Command should be re-equipped with either Brewster or Vultee aircraft.

The Deputy Director of Plans at the Air Ministry, ACM Sir Ronald Ivelaw-Chapman, wrote to Barratt to explain that

[103] TNA AIR 39/16, Notes by AOC-in-C Army Co-operation Command on agenda on air co-operation with the army to be discussed, 27 May 1941.
[104] TNA AIR 39/16, Memorandum by VCAS Slessor, 6 May 1941. TNA AIR 39/139, Draft of Air Co-operation with the Army – Policy – Notes for CAS prior to discussion with CIGS, c. January 1941.
[105] TNA AIR 20/950, Army Air Requirements by the CIGS, 4 June 1941.
[106] TNA AIR 20/4301, Letter from Group Captain J.D.I Hardman to Air Vice-Marshal H. Edwards, AOC-in-C RCAF Overseas, c. May 1942.

> In view of the shortage of pilots and the necessity for concentrating on all economies possible to permit the expansion of the bomber effort, I am aware that it is now not possible to carry out the expansion of army co-operation by the forecasted date, that is to say, May.[107]

Bomber Command was the most important part of the RAF as far as re-equipment and resources was concerned. Army Co-operation Command would only ever receive the scraps form the table of the operational commands. The demands for resources made by the WO with regards air support aircraft were also unrealistic in both the scale of aircraft required, and the timeframe for them to be available for operations.[108] It was also unrealistic to believe that operations involving these squadrons could be launched at this stage of the war. The RAF had committed to, and provided, eleven medium bomber squadrons specifically for close support work by February 1941.[109] This agreement was met with a certain degree of satisfaction from Eden.[110] In a letter, he claimed 'It is particularly satisfactory to me to find that the Air Staff agree to the necessity of providing close support aircraft for the army'.[111] A statement such as this shows just how deep the experience of France had been for the army, and exactly where they continued to lay the blame, partly to shirk the responsibility for the defeat in France. At the end of 1940, the Air Staff were actively considering the specifications of a twin-engine bomber 'with diving qualities'.[112]

The General Staff proposed that the air support requirements for reconnaissance, bomber and fighter support would be fifty-four squadrons. They felt, as was almost inevitable with the directive issued, that these squadrons 'should be allotted to Army Co-operation Command, and trained primarily for army support work'. The Air Staff argued that if the General Staff's proposals were accepted it would make the fifty-four squadrons created

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[107] TNA AIR 2/7336, Letter from Deputy Director of Plans to AOC-in-C Army Co-operation Command, 5 February 1941.
[108] Denis Richards, *Portal of Hungerford* (Heinemann: London, 1977), pp.205-6.
[109] TNA WO 32/9836, Memorandum by C-in-C Home Forces, on Co-operation between the army and RAF, 3 May 1941.
[110] David Ian Hall, *Learning How to Fight Together: The British Experience with Joint Air-Land Warfare* (Air Force Research Institute: Maxwell Air Force Base, Alabama, 2009), p.13
[111] TNA AIR 2/7336, Letter from Secretary of State for Air to Secretary of State for War, c. August 1940.
[112] TNA AIR 2/7336, Note for the Secretary of State for War on the Close Support Bomber situation, c. December, 1940.

'much less efficient as fighters and bombers (which would doubtless be their actual role in conjunction with land operations) than they would be if their primary role was in Fighter and Bomber Commands'. They further claimed that, if they were allotted to Army Co-operation Command for training, their time would 'be taken up in learning tactical reconnaissance detail not essential to close bomber and fighter support'. The time old argument of the ability of the RAF to conduct independent strategic operations would, in the Air Ministry's opinion, be seriously weakened.[113]

As a counter to the fifty-four squadron proposal of the General Staff, the Air Ministry proposed that six new squadrons should be created from scratch and allotted to the army 'for tactical bomber and fighter reconnaissance roles' this would make a total of twenty squadrons available for this role.[114] A further twenty-four squadrons of Bomber and Fighter Commands 'should be trained and exercised to provide bomber and low attack support in the battlefield areas'. The WO's expectations of Army Co-operation Command were dashed at this point. It is arguable that they saw Army Co-operation Command as the potential army air arm, which they had argued and fought for, for so long.[115] With the Air Ministry's blocking of their proposal to advance this idea it became clearer that Army Co-operation Command was created as a tactical measure merely to relieve some of the pressure placed on the RAF in the aftermath of France and Bartholomew. Army Co-operation Command's real power and ability to effect change was seriously curtailed by Air Ministry. It was moves such as this, plus the years of argument and stalling that lead Brooke to claim, with regards the development of effective air support, 'The situation is hopeless and I see no solution besides the provision of an army air arm.'[116] With regards the aircraft that would form the new army co-operation squadrons, whether placed under the control of Army Co-operation or Bomber

[113] TNA AIR 8/986, War Cabinet Chiefs of Staff Committee – Army Air Requirements COS (41), c. July 1941.
[114] *Ibid.*
[115] TNA AIR 39/16, Minutes of a Conference to discuss certain proposals for improving army –RAF co-ordination, 12 May 1941.
[116] Danchev and Todman , *War Diaries 1939-1945* p.258. The entry quoted above is dated 18 May 1941.

and Fighter Commands, were another source of tension, not only between the Air Ministry and WO, but also between the British and US with regards deliveries of aircraft.[117]

Army Co-operation Command was, during 1941, in the process of re-equipping their squadrons from the obsolete Lysander aircraft to Tomahawks from the US.[118] The army felt that since they had first discussed the issue in February, the decisions thus reached bore 'little relation to the fact, because no satisfactory steps have been taken to implement the agreed policy'. The C-in-C Home Forces, went further in his criticisms of the situation. '... I am convinced that far from progressing co-operation between army and the RAF has slipped back seriously during this period'. He further stated that 'There has so far been no mention of provision of the suitable close support bomber, which was stated to be under consideration last December'.[119]

The delay in replacing Lysander squadrons with Blenheims was due to delays in aircraft (Baltimores) that had been ordered from the US.[120] The specifications, which had been put forward for a close support bomber, could be 'closely met by various types in existence, though not necessarily in production'.[121] The WO argument with regard the allotment of aircraft in support of ground forces was that there should be three squadrons per Corps and three squadrons per armoured division. Half of the aircraft were to be fighter reconnaissance aircraft and the other half bomber reconnaissance aircraft.[122] They also continued to push for some form of an army air arm. The WO argued that army air support squadrons should form 'an air component which should be an integral part of the corps of the army to which it is allotted. They must be specially trained and the machinery for their control must be

[117] TNA WO 32/9836, Minutes of a meeting held at the War Office to discuss army air co-operation, 30 June 1941.
[118] TNA AIR 39/16, Minutes of a Conference to discuss proposals for improving army-RAF co-ordination, 12 May 1941.
[119] TNA WO 32/9836, Memorandum by C-in-C Home Forces, on co-operation between army and RAF, 3 May 1941.
[120] TNA WO 32/9836, Minutes of a meeting held to discuss army air co-operation, 30 June 1941.
[121] TNA AIR 39/139, Army Air Requirements (COS (41) 39 (0), 8 June 1941.
[122] TNA AIR 39/16, War Office memorandum of Army Air Requirements, 12 June 1941.

organised and trained with the squadrons'.[123] The demands of the army were also wildly exaggerated when the size of the RAF at the time is considered, and this was part of the reasoning used by the Air Ministry when dismissing the claims of the army. The CAS (now Portal) stated that

> The Army Air requirements set out in COS (41) 89 (0) call for the allotment of an air component and specialised types of aircraft amounting to a total of 3888 aircraft. This total should be compared with the current first line strength of the RAF which is 3585 and the total of 5623 which was our expansion figure for the Spring of 1942. If these requirements were to be met in the form in which they have been stated it could only be at the expense of the bomber and fighter and expansion. The general effect of meeting these requirements out of the contemplated Air Force programme would be a reduction of 36 long range fighter squadrons, 12 light bomber squadrons, 37 medium bomber squadrons and 130 heavy bomber squadrons.[124]

It cannot be denied that the army exaggerated their requirements for air support during 1941. If they had received all the squadrons they had requested more problems would have been created rather than solved as it would not have been possible for either the army or Army Co-operation Command to make full use of them. Through exaggerating their requirements, the army was hoping to have a fraction of their request fulfilled. Production problems meant that the RAF would not have been able to meet these exaggerated requirements. Even if they had been able to, the RAF's attitude towards army co-operation meant that a minimum number of army co-operation squadrons would have to be agreed to in order to appear to be taking the development of army co-operation as seriously as the army believed was necessary.

The army continued to push for as large an air component as possible to act as their army air arm. The RAF continued to refute these claims, and in October outlined the following reasons

> At a time when the air offensive is a vital factor in our plans the Air Staff believe it to be wrong in principle that a substantial part of our air resources should be placed in a role where training is wholly subordinate to fighting. The Air Staff agree that a high standard of training is necessary. No difficulty arises about such training with the army co-operation squadrons which are permanently allotted to the army. But the balance of fighter and bomber squadrons required for army support must in their view be provided from RAF formations and not be permanently allotted to the army...The Air Staff proposals on the question of army support squadrons are as

[123] TNA AIR 20/950, Summary of Air Requirements, 12 June 1941.
[124] TNA AIR 20/950, Army Air Requirements – Memorandum by CAS, 12 June 1941.

> follows: - Twenty squadrons of army co-operation aircraft will be formed and placed in Army Co-operation Command at the disposal of the army.[125]

The state of army co-operation in Britain and in the Western Desert was particularly poor at the end of the year. Army Co-operation Command was not re-equipped by the end of 1941, and the debate about that best way to achieve this was to continue well into 1942. The development of the Air OP as well as anti-invasion measures continued. Army Co-operation Command was, however, to find itself sidelined to an even greater extent in the calls for resources and the ability to develop ideas beyond the experimental stage. They would also be able to use the work done previously to improve the air support operations conducted in active operations overseas.

[125] TNA AIR 20/950, Army Air Requirements – Note by CAS, c. Oct 1941.

Chapter Six

THE BEGINNING OF THE END OF ARMY CO-OPERATION COMMAND, 1942

During 1942, Army Co-operation Command would find itself at the heart of great debate and discussion between the Air Ministry and the WO, over not only how air support should be conducted, but also what RAF organisation should conduct it and what aircraft were best suited to give the support.[1] This year saw the Air Staff discuss the formation that, it can be argued, they would have wanted to create in 1940 if they had not been subject to the great pressure applied on them by the army in the wake of the Battle of France. With the developments and arguments that were taking place during this year, this chapter will argue that it was clear that Army Co-operation Command would not be altered to allow it to take part in any major overseas operations, which were being planned at the time. It will build upon the arguments made in previous chapters regarding how Army Co-operation Command was created. This was especially the case after the US agreed to prioritise the European theatre over the conflict against Japan in the Pacific.

The status of the Command fell even further with discussions regarding the creation of twenty new squadrons of army co-operation aircraft. It had originally been decided that these squadrons were to be established within Army Co-operation Command. This proposal was fully backed by the WO. The decision, however, was reversed and the new squadrons were placed in Fighter Command. This caused great consternation within the WO. The relations between the army and Army Co-operation Command were also at a much higher level than they had been during 1941. The establishment of army co-operation squadrons within the framework of Fighter Command marked the first moves of this Command in the field of army co-operation and was a significant move away from its air defence role for which it had originally been established. Despite the deterioration of No. 2 (Bomber) Group through

[1] That this was a pivotal year in the development of army air support is demonstrated by the title of David Ian Hall's chapter that covers this year: Debate, Policy and Decision, Cf. *Strategy for* pp.117-27.

1941, the discussions regarding its training and composition continued. The arguments between the Air and General staffs highlight the position that Army Co-operation Command held in the overall development of army co-operation in Britain.

With the RAF establishing operational forces for the conduct of army support away from Army Co-operation Command its status was again clearly demonstrated. It also questions, albeit with the benefit of hindsight, the creation of the Command as a whole in 1940. It is one of the major arguments of this chapter, and thesis as a whole, that Army Co-operation Command was simply a stopgap solution to the situation the RAF found itself in in the aftermath of the Battle of France. It further highlights that the Air Ministry never saw Army Co-operation Command being a part of the operational force that would accompany the Army across the Channel. It was also never considered for use in Africa due to a separate air force already being established there. It will be further argued that Army Co-operation Command was created in a rush at the behest of the army, and when it was formed, it was never envisioned that it would be used on any major offensive operations, particularly overseas. This demonstrates the divergent thinking that still existed between the two Services in the application of air support, and how this may be done through Army Co-operation Command. Army Co-operation Command was viewed by the RAF as a whole as placebo to placate the WO. In order to support these arguments that chapter will look at the Barratt's visit to the Middle East, the discussions held regarding how air support formations should be organised. This will include the rise of Fighter Command due to its signals organisation and operational experience. The reports written by Thorold and Slessor on how air support forces could be organised will also be subject to analysis.

One of the major areas where thinking differed between the RAF and army was where army co-operation forces should be placed. The discussions that took place between the two forces in 1942 revealed just how divergent this thinking still was. The WO argued that the

correct place for army co-operation forces was in Army Co-operation Command whereas the RAF argued that given the signals organisation that already existed, and had been tried and tested during the Battle of Britain, in Fighter Command, this was the correct part of the RAF in which to train and develop army co-operation. A series of discussions between Portal and Brooke took place on this issue and will be subjected to greater analysis in this chapter. The discussions did not involve Barratt, or any of the staff officers at Army Co-operation Command, and the focus was on how it may be utilised in the future. The result of these discussions was that Fighter Command and not Army Co-operation Command was to be the home of army co-operation aircraft and its development in the future. With the ongoing experimentation and development of air support in the Western Desert at this time, it is difficult to see how far this influenced the discussions taking place in Britain. The differing strategic conditions in Britain and the Western Desert also make this unlikely. All aircraft in the Western Desert could, in an emergency, be used in a tactical air support role and so made discussion on the make up of any composite group redundant. This was not the case in Britain with its role orientated mono-command structure. Tacit agreement between the RAF and army on the issue of the placing of the new composite groups within the RAF was only reached through the intervention of Churchill.

The non-operational status of Army Co-operation Command was also subject to wide-ranging discussions. There were further calls for the re-equipping of Army Co-operation Command, thus transforming it into a fully operational Command. These calls were once again rejected by the Air Council and add further weight to argument that Army Co-operation Command was not seen as essential to future RAF plans. Despite the changes that were taking place at a command level above Army Co-operation Command, its work continued. A major aspect of this work was a visit by Barratt to the Middle East. This visit was in order to gain more insight into army co-operation based upon the operational experience gained in

that theatre, in isolation from Army Co-operation Command but based on the ideas that had been developed by them after the Battle of France.[2] Barratt's visit highlighted problems that had been faced in Britain as well as in overseas theatres were still not fully resolved. The developments in the Western Desert will form a part of the section looking at Barratt's visit to provide the necessary for context for the developments that were made and also what Barratt saw being applied during his visit. Major operational aspects of 1942, such as the attempted landings at Dieppe, will also not form part of this thesis as despite the use of some Army Co-operation Command aircraft in the operation; its impact did little to affect the development of air support in Britain.[3] In addition, more trials and exercises, including further developments of the Air OP system were taking place throughout 1942 and those that had a major impact will be subject to analysis in the following chapter.

Events in and Barratt's Visit to the Middle East

Much was learned during Operation CRUSADER. Perhaps the most important lesson to come from the operation that was conducted during the autumn and winter of 1941-1942, was the importance of co-located headquarters.[4] This had been advised both in the army co-operation exercises of the inter-war period, and through the experiments conducted by Wann and Woodall. CRUSADER also saw the introduction of a new piece of hardware unavailable to Army Co-operation Command: the fighter-bomber. There were, however, several problems encountered duration CRUSADER. The fluid nature of the battle meant that there was confusion about the locations of friendly and enemy forces and communication problems abounded. Hallion has noted that the '*average* time for a request for air support to the actual attack on enemy forces in response to the call was between *2 ½ and 3 hours*' [emphasis in

[2] Gooderson, *Air Power at the Battlefront* p.26.
[3] For more information on the Dieppe Raid Cf. Ken Ford, *Dieppe 1942: prelude to D-Day* (Osprey: Oxford, 2003) and John P. Campbell, *Dieppe revisited: a documentary investigation* (Frank Cass: London, 1993).
[4]Hall, *Strategy for* p.128.

original].[5] This was longer than the response time during the Battle of France, and after two years of operations, training and development in the Western Desert.

Barratt visited the Middle East during the summer of 1942, and he was able to observe the application of air support during the first three days of the Battle of Alam el Halfa.[6] The purpose of this visit, over the course of two weeks, was to view in detail the air support system in use in that theatre and identify what could be brought back to enhance the air support capabilities of Army Co-operation Command. During the visit, Barratt was able to observe the system during battle conditions and his report is enlightening insofar as it highlights the developments that had been made to the original system, but also how effective the doctrinal ideas laid out during the inter-war period were when fully embraced.[7] Alam el Halfa was a defensive battle, and 'Rommel's last attempt to conquer Egypt'.[8] The growing importance of the Eastern Front, as well as the German failure to occupy Malta in the previous year meant that the Middle East was becoming a neglected theatre for the *Wehrmacht*. Rommel was receiving fewer supplies from Germany and, due to this and the overriding importance of operations on the Eastern Front, meant that if his operation failed the German forces in North Africa would find their position increasingly untenable.

The fact that it was a defensive and not offensive battle also made air support that much easier to control. In order to conduct air support in an offensive battle, a communications system that allowed aircraft to meet the demands of land forces in the field. These developments in the Middle East and North Africa would not have been possible without the training given to No. 2 AASC by Army Co-operation Command before its deployment. Gooderson highlights that No. 2 AASC hade been trained in the Wann-Woodall system and then was involved in operations in the Middle East in 1942. This statement is unsupported in

[5] Hallion, *Strike from the Sky* p.156-8.
[6] Hall, *Strategy for* p.139.
[7] TNA AIR 2/7880, AOC-in-C Army Co-operation Command's Visit to the Middle East, 27 August – 9 September 1942. Written 21 September 1942.
[8] Hall, *Strategy for* p.138.

the text but further evidence to this deployment is in Shelford Bidwell and Dominick Graham's work on the British army and the development on theories of warfare. In this work, the authors' cite an unpublished history of No. 2 AASC titled *Notes from the Theatres of War*, No. 1 written by Major-General J.M. McNeil who had given the authors' access to his papers. Carrington has furthered this argument in an article published in JRUSI where he states 'When the first ASSUs were sent out from AC Command, they were at first fitted into the Desert Air Force system, but the Barratt-Woodall-Oxborrow system prevailed ...'[9]

Barratt highlighted that, 'In order to obtain the closest co-ordination of both Military and Air Plans the Air Officer Commanding, Western Desert, and General Officer Commanding 8th Army are located in the same camp'.[10] As already noted, this was a basic and often repeated aspect of the many doctrinal publications.[11] Barratt also highlighted problems, with regards to advanced headquarters, that had been resolved through experience in operations. The advanced headquarters were based upon the CSBCs first designed through the Wann-Woodall experiments in 1940. He stated

> In order that the Air Officer Commanding, Western Desert, can exercise immediate and direct control over the operations of the Bomber and Fighter Groups, it is desirable that the location of the Air Headquarters should be within reasonable distance of forward aerodromes and adjacent to a landing ground for his own use.[12]

However, advances had been made on this basic premise had been made.

> Experience has shown that it is quite impossible to have a camp in the forward area combining the total staffs of both Army and Air Headquarters. Accordingly, the splitting of Army and Air Headquarters into Advanced and Air Headquarters, is necessary ... provided direct telephone lines between Advanced and Rear headquarters functioned well, few administrative difficulties have occurred.[13]

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[9] Gooderson, *Air Power at the Battlefront* p.26. Bidwell and Graham, *Fire Power* p. 307. Carrington, 'Army/Air Co-operation', p.40.
[10] TNA AIR 32/1041, Middle East Training Manual No. 7, Lessons from Operations, October/November 1942. Gooderson, *Air Power at the Battlefront* p.26.
[11] Cf. Army Co-operation Reports 1927-1935, TNA AIR 10/1708, AIR 10/1759, AIR 10/1827, AIR 10/1777, AIR 10/1794, AIR 10/1913, AIR 10/1914, AIR 10/1915 and AIR 10/1911, RAF War Manual Part I – Operations, AP 1300, AIR 10/1889, RAF Manual of Army Co-operation 2nd Edition, AP 1176.
[12] TNA AIR 2/7880, AOC-in-C Army Co-operation Command's Report, 21 September 1942.
[13] *Ibid*.

The development noted above could only have been learnt through operational experience and making mistakes in the face of battle. This area of experiment and development would never be available to Army Co-operation Command due to its non-operational nature. The co-operation that existed, not only between those at the lower levels of command, but also at the highest level was something Barratt would never experience. This is the case not only when considering the relations that existed between the Air Ministry and RAF and the levels below that, but also in the relationships that existed between the commanders of other RAF Commands and Barratt. The operational experience gained in the Western Desert, however, allowed the commanders in the Western Desert (Coningham and Tedder) to begin planning offensive operations 'before the defensive battle ... had run its course'.[14] These offensive operations culminated in the Second Battle of El Alamein and ended with victory at Tunis in 1943.[15] Hall has noted that in these operations 'the air support system established by Tedder and Coningham was accepted and implemented by the Eighth Army'.[16]

Whilst the idea that the air support system used in the Western Desert was the creation of that theatre alone is debated within this thesis, the fact that it was accepted by Eighth Army was paramount to the development of air support doctrine for future operations in Europe after 1943. The operations conducted in 1943 that culminated in the expulsion of the German and Italian forces from North Africa were the first major operational experience for the US forces and provided a steep learning curve for them.[17] The experience gained in the Western Desert also looked to provide a solution to the perennial argument that had been taking place between the WO and Air Ministry since before the Battle of France: who should have

[14] Hall, *Strategy for* p.140. See also Vincent Orange, 'Getting Together: Tedder, Coningham, and Americans in the Desert and Tunisia, 1940-43', in Daniel R. Mortensen (ed.), *Airpower and Ground Armies: Essays on the Evolution of Anglo-American Air Doctrine, 1940-43* (University Press of the Pacific: Honolulu, Hawaii, 2005).
[15] Hall, *Strategy for* pp.140-1. See also David R. Mets, 'A Glider in the Propwash of the Royal Air Force?: Gen. Carl A.Spaatz, the RAF and the Foundation of American Tactical Air Doctrine', in Daniel R. Mortensen (ed.), *Airpower and Ground Armies: Essays in the Evolution of Anglo-American Air Doctrine, 1940-43* (University Press of the Pacific: Honolulu, Hawaii, 2005).
[16] Hall, *Strategy for* p.141.
[17] Cf. Mortensen *Ground Armies*. Syrrett, 'The Tunisian Campaign'.

operational control of tactical support aircraft. In response to Barratt's report, Air Commodore J.D.I. Hardman, the new DMC, noted that

> One of the main points of contention at home is the problem of the operational control of the Army Support squadrons. The soldier says he must have it because otherwise no target will ever be attacked in time. The airman says he must have it because he alone knows the air situation and must provide fighter cover and, if necessary, close escort ... I am convinced that the only sure solution lies in having joint Headquarters and that it is worth having these even at the cost of splitting up Headquarters into advanced and rear echelons at some slight inconvenience and loss of efficiency If Army and Air Force Headquarters are not split up they will probably be too big to live and work together.[18]

It seems slightly strange that a lack of efficiency would be cited as a possible reason for not splitting up headquarters when no such comment is made by Barratt in his report or indeed had been made by those operating the system in the Western Desert.[19]

Terraine has attempted to explain the levels of co-operation seen in the Western Desert was the realisation that '... at certain times and in certain circumstances Army cooperation would be the function, not of "special" aircraft designed and allocated for the purpose, but of *the whole available air power* ...' [emphasis in original] and that

> The most important difference between England and Egypt at this stage was that [this] principle, though perceived in England was not acted upon; in Egypt, under stress of war, it *was* acted upon. But [Air Marshal Sir Arthur] Tedder did not have to struggle against the rigidities and dogmas of the functional Command system; he could use the RAF in the Middle East as a single unit [emphasis in original].[20]

In his own words, Barratt was 'fortunate to be present at Advanced Air Headquarters during the first three days of ... battle, and I was able to watch the whole machine in action'.[21] These three days gave Barratt further insight into how the theoretical system designed prior the creation of Army Co-operation Command, but then further refined by it, functioned and to observe the changes that had been made. He noted that

> Each evening the General Officer Commanding had a personal meeting with the Air Officer Commanding ... He gave him the clearest possible appreciation of the situation, the information as he knew it, what he intended to do himself, and what he expected then enemy to do. The Air Officer Commanding then said what he could do himself, and a general air plan was agreed upon.

[18] TNA Air 2/7880, Letter from DMC to VCAS on Report on Visit to the Middle East by AOC-in-C Army Co-operation Command, 3 October 1942.
[19] Cf. Hall, *Strategy for* pp.104-116.
[20] Terraine, *The Right of the Line* p352.
[21] TNA AIR 2/7880, AOC-in-C Army Co-operation Commands's Report, 21 September 1942.

> A further conversation took place the following morning as a result of events, ground and air, during the night.[22]

The developments of the AASC system, which had been developed from the CSBC system created through the Wann-Woodall experiments, were also seen to be working well, including where they were located within the headquarters.

> These [the AASC] were reported as being extremely good ... and did not suffer in any way from being back at Army Headquarters ... The target pro forma proved its value, if only in enforcing [the] priority of target messages.[23]

Upon receiving Barratt's report, the DMC called into question the emphasis placed upon the AASC both by those serving in the Middle East and also as a consequence Barratt. He further called into question the thinking of the Army with regard their demands for impromptu support.

> *It is evident that much of the support given is deliberately planned the night before. In other words it is pre-arranged and not dependent upon the AASC organisation at all.* We have always thought this would be so, and all our information points to the fact that the Germans do it the same way. We have often been unjustly accused of falling a long way short of the Germans in our system of providing close support. In point of fact what success the Germans have had has never been attributable to any magical quality in their system of air communications, but to careful planning before a battle and the efficient execution of those plans during it. [Author's emphasis][24]

A statement such as the one above further highlights the position that the RAF felt it was in after the Battle of France, where it felt that a system for calling up impromptu support was not necessary. In order to placate the Army in the wake of the Bartholomew Report, the RAF felt that it had to set up a system that, in the eyes of the current DMC, at least, was redundant from the very beginning. The Army had fundamentally misunderstood the way the *Luftwaffe* conducted air support. It was also within this atmosphere that Army Co-operation Command was created and would fulfil its role. There was, in Barratt's opinion, however, still much that could be learned in the use of the forward tentacles and their use by forward formations in the field, which formed a part of the AASC system.

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[22] TNA AIR 2/7880, AOC-in-C Army Co-operation Command's Report, 21 September 1942. Cf. TNA AIR 20/2107, AIR 37/760 and Hall, *Strategy for* p.139.
[23] *Ibid*.
[24] TNA AIR 2/7880, Letter from DMC to VCAS on Report on Visit to the Middle East by AOC-in-C Army Co-operation Command, 3 October 1942.

> As much education as possible is required in forward formations in the use and possibilities of the tentacles. Too many still regard it solely as a means of receiving air information and do not recognise their responsibility in sending back information vital to the RAF immediately.[25]

In his recommendations for air support in Britain, Barratt stated

> It is considered that this system [the AASC] for [the] passage of information is excellent. It has worked under battle conditions and should be instituted forthwith.[26]

He further argued for changes to the procedure used by pilots conducting tactical reconnaissance. 'It is considered that there is a definite requirement to make a report in the air, particularly if the information is of an important character ... so that in the event of their [the pilot] failing to return the information will not be lost'.[27]

With the decisions taken regarding the Army Air Support Group leaving the future of Army Co-operation Command itself in doubt, it must be questioned how far any lessons that could be taken from Barratt's visit could be incorporated within the organisation. Barratt was still looking to continue the role he had been assigned to develop an air support system within Britain, based on not only his personal ideas but also those being developed overseas and, in particular, the Middle East. In a letter to VCAS Air Marshal M.E.H. Medhurst he argued that

> A re-write of ATI [Army Training Instruction] 6 [*sic*] is certainly now necessary in the light of experience gained. I am much impressed by the Middle East Instruction on the same subject. It started from our own Command Instruction on Air Support and has been brought up to date in the Middle East as a result of actual battle experience. I do not think we in this respect we could do better than to use the Middle East Booklet as the basis for the new one ...[28]

The Rise of Fighters in Army Support

In an attempt to resolve the shortage of bomber aircraft, as well as to expand the RAF's abilities to conduct general air support, it was decided to increase the numbers of aircraft that would be trained in this role. The training and development of the use of fighter aircraft in army support will be analysed in this section. A major factor that influenced this development, apart from the operational experience gained in the Western Desert, highlighted

[25] TNA AIR 2/7880, Report on Visit by AOC-in-C Army C-operation Command's Visit, 21 September 1942.
[26] *Ibid*.
[27] *Ibid*.
[28] TNA AIR 20/2812, Letter from AOC-in-C Army Co-operation Command to VCAS Medhurst, 18 December 1942.

above, was the change in strategic outlook of 1942. The Eastern Front, and particularly the Battle of Stalingrad had been the priority for the *Wehrmacht* and this was consuming vast quantities of material.[29] This left Fighter Command without an enemy that would keep it employed on a full time basis. It looked to the air support role to allow it to continue to call for the resources it had previously enjoyed when it was fighting the Battle of Britain. The development of fighter aircraft in the army support role formed part of the discussions of the army air support group and this development will be analysed as a separate section below for clarity. The further changes in the use of fighter aircraft in an army support role will form one aspect of the following section. There was a certain degree of cross-fertilisation in the use fighter aircraft in support of army operations. It was based upon the experience that had been gained in the Middle East where it was 'shown that Fighter with cannon and machine-guns, have far greater effect than Bombers ...'[30] It was agreed 'that 15 Fighter Squadrons are to be earmarked for Army support duties and are to be made available for training and exercises in this role'.[31] There were, however, caveats placed on this role by the RAF, as there had been when No. 2 Group had been assigned to the same role. This was to be where operations against the enemy took precedence over training in army support.

> It is not intended that these 15 squadrons [*sic*] should be detailed exclusively for Army Support [*sic*]. Operations against enemy aircraft and training for that purpose continue to take precedence before Army support training.[32]

In order to facilitate this development and the training that would be required it was decided that No. 257 squadron was to be affiliated with 'a suitable Army formation ... and general liaison [was] to take place between them'. The idea that this would encourage good relations between army and air formations was not a new one, and had worked with great success during the First World War. As the relations between these two formations

[29] For more details of the fighting on the Eastern Front and Stalingrad in particular Cf. Anthony Beevor, *Stalingrad* (Penguin Books:London, 1999 [Viking: London, 1998]).
[30] TNA AIR 16/776, Notes on Training Fighter Squadrons to Support Army Formations, c. February 1942.
[31] TNA AIR 16/776, Letter from Headquarters Fighter Command to Headquarters 9-14, 81 and 82 Groups, 3 Jan 1942.
[32] *Ibid*.

progressed and reached a certain acceptable standard, the squadron was earmarked to take part in army exercises with its affiliated formation. This improvement in relations was due in no small part due to Army Co-operation Command working with both the WO and Air Ministry. When the experience gained by No. 257 squadron was codified, the training was to be rolled out so that all fighter squadrons were able to conduct air support if necessary.[33] The training was to concentrate on aiding 'Army formations in destroying or opposing enemy tanks and mechanised forces, should they effect ... a penetration in an invasion'.[34] This move received great support from the army and the CIGS stated that

> The power of fighter aircraft in attacking ground targets has been clearly demonstrated in operations against the enemy...*The object is now to put this weapon to its most effective use in Army Air Support, and this will be achieved only by continual practice in handling by Army formation Commanders*, by continual practice, map-reading and recognition of targets by the RAF and by whole-hearted co-operation on the part of both services[Author's emphasis].[35]

The army was again looking to gain operational control over this new form of air support as they had done with No. 2 Group previously and had failed. As the training of No. 257 squadron continued throughout the early part of 1942 certain suggestions were made as to the roles that should be played by fighter and bomber aircraft engaged in army air support. 'Bombers should be used mainly for strategical air support i.e. indirect air support ... Fighters should be used mainly for tactical air support i.e. direct air support.' The squadron also suggested that a standing patrol of fighter aircraft should be continuously maintained during any major land action. This was a similar suggestion to that proposed by the army in the wake of the Battle of France. This had been dismissed by the RAF as not only being wasteful, but also of denying the aircraft involved the inherent value of air power: the ability to project its strength at any point over the battlefield. No. 257 squadron argued, however, that 'It is thought that there will be no flying wastage by having a standing patrol because [the] aircraft [involved] will be in constant demand in that section of the front that [it] is

[33] TNA AIR 16/776, Memorandum on Army Air Support, 2 February 1942.
[34] TNA AIR 16/776, Notes on Training, c. February 1942.
[35] TNA AIR 16/776, Memorandum by CIGS on Fighter Squadrons in Army Air Support, c. January 1942.

allotted [to] by the Army Air Support Control for that particular patrol'.[36] RAF doctrine had not changed on the point of standing patrols over the battlefield and this suggestion was put forward after the squadron had been training for an extended period with Home Forces. It is possible that army thinking had overly influenced the opinion of the Commanding Officer.

Trials were held in May in order to 'investigate the quickest and most practicable methods of support for fighter aircraft to answer calls for support from the Army Air Support Control and to reduce to the minimum time lag between the origin of the message at the forward tentacle and the time of take-off of fighters'. The time lag had been a major problem that Army Co-operation Command had to overcome. The trials focused upon 'the defensive use of the Army Air Support Control'. Certain conclusions reached as a result of these trials required modifications to existing ideas, especially in the event of invasion. Land- lines were to be made available in order to make the fullest use possible of the extensive Fighter Command communications system 'to pass demands from the Army Air Support Control to the Group Headquarters'.[37] An operational instruction from Fighter Command which looked at the methods for providing air support for the army concluded that 'Fundamentally, there will be no difference in the organisation and methods used for this task whether the operation be invasion of the Continent, operations further overseas or the defence of this country against invasion'.[38] Those at the head of Fighter Command rightly stated that

> It is not yet decided as to where the responsibility [for air support] shall lie, as between RAF Commands, for the development of Army Air Support, *but it is obvious that close touch must be kept between Fighter Command and Army Co-operation Command on all aspects of this problem...it is of great importance that Fighter Command, whose personnel will eventually take a major part in Air Operations in support of our armies, should study and train for the task, and it is my wish that the means of giving this support should be the subject of constant study by all Commanders of their staffs* [Author's emphasis].[39]

[36] TNA AIR 16/776, Suggestions by No. 257 squadron in Air Support, undated c. March 1942.
[37] TNA AIR 16/552, Letter from AOC 12 Group to Headquarters Fighter Command, 18 May 1942.
[38] TNA AIR 16/776, Letter from Headquarters Fighter Command to 9-14 Groups regarding Army Air Support (Operational Instruction No. 20/1942 sent with letter), 27 September 1942.
[39] *Ibid*.

It is clear from the statement above that the C-in-C of Fighter Command was well aware of where the future development of army co-operation lay. The rise of Fighter Command, and the development of fighter aircraft in the army support role, was to continue at great pace with the development of the Army Air Support Group. The Air Staff looked to Fighter Command for developing army co-operation as a large amount of resources had already been allocated to it previously. It was seen as less vulnerable to calls from the army to be transferred to army control. Fighter Command also found that its enemy was no longer willing or able to fight it as it had done in previous years and so it was devoid of any real mission.[40] As a result, the squadrons created to conduct army support would face less of a threat from demands for a separate army air arm.

The Thorold and Slessor Reports

The SASO, Thorold, stationed at GHQ, Home Forces was tasked with investigating the type of organisation that the RAF should have for conducting future air support operations. Within this section of the thesis, the report put forward by Slessor, now Assistant Chief of the Air Staff (ACAS), on the same subject will also be subject to analysis, as a comparison of both reports is more beneficial than looking at each individually. That air support could be looked at in two different ways shows how far Army Co-operation Command had come in developing air support thinking. Hall has noted the fundamental differences that existed between these two reports.

> Whereas the Thorold Plan prescribed a general system of air support without a specific battle or campaign in mind, Slessor's paper was a comprehensive and precise proposal to meet the air requirements of opening a second front in Europe'.[41]

The ideas that the Air Staff were willing to be considered in the Thorold Plan differed little from those seen in previous years. They agreed to the need for a certain number of squadrons to be permanently allotted to the army but they disagreed with the army on a

[40] Hall, *Strategy for* p.146.
[41] *Ibid*., p.124.

number of points. These were the 'number of squadrons necessary for this purpose and the type of aircraft with which they are to be equipped'. The Air Staff also agreed that Army Co-operation Command should be 'built up to 20 squadrons' which were to be 'placed at the disposal of C-in-C, Home Forces'. No. 2 Group was also to be built up to twenty squadrons, organised for army air support and train regularly with the army.[42]

The army was willing to accept this build up of Army Co-operation Command. There was, however, still a large disagreement as to where the squadrons of No. 2 Group should be placed. The army did not feel that the best place for these squadrons was within the Metropolitan Air Force, which formed part of Fighter Command. The army wanted these light bomber squadrons to form an integral part of Army Co-operation Command as had been suggested previously in 1941. This move would have two major consequences for the RAF. First, these squadrons would be 'wholly at the disposal of C-in-C, Home Forces', alongside the twenty army co-operation squadrons that had been agreed.[43] Second, and more importantly, this would give Army Co-operation Command, and as a result, C-in-C, Home Forces, access to operational squadrons. The result of this would be that Army Co-operation Command would become a fully operational Command, with the attendant change in status that would have allowed it to make similar demands on new aircraft as Fighter, Bomber and Coastal Commands were able to. It also meant Army Co-operation Command would have to be taken much more seriously by the Air Staff. This was unacceptable to the Air Ministry. The Air Staff used the same arguments as in 1941 against moving No. 2 Group from Bomber to Army Co-operation Command.

> The Air Staff view is that the primary role of this Group must be determined by strategic requirements. Until there is a firm prospect of this Group being needed this year for air support of land forces on the Continent, the Air Staff consider that it would not be justifiable to withdraw the Group entirely from taking part in the air offensive which is the only other means of reducing pressure on the Russian front.[44]

[42] TNA WO 216/127, The Thorold Paper, 1943.
[43] *Ibid*.
[44] TNA WO 216/127, COS (42) 271, 20 May 1942.

A major factor in the army's desire to gain full operational control of No. 2 Group in 1942 was the state that the Group had fallen into in the early part of 1942.[45] Due to its lack of influence, Army Co-operation Command was unable to prevent the near destruction of No. 2 Group. It had been agreed in 1941 that it would be this Group that would provide the majority of bomber support training with the army; it would still, however, be conducting active operations against the enemy. Conducting these operations had taken its toll on No. 2 Group and it 'had practically disintegrated'. This was 'due partly to the shortage of aircraft and partly to casualties incurred in attacks on shipping'.[46] The loss of pilots meant that the majority of the knowledge and experience that had been gained through the training exercises of 1941 had been lost. It is from this perspective that the army's motives for wanting operational control of No. 2 Group must be seen as they had seen a year's worth of hard work and experience disappear. The recommendations that emerged from the Thorold Report were for an organisation that was similar to that of the BAFF organisation that had conducted air support in France in 1940. This organisation was based upon 'a number of functional commanders of bomber, fighter and army support groups, all interposed in the chain of command ...' The RAF felt that this system would be too cumbersome to meet the varied demands required for air support.[47]

The ideas put forward by Slessor offered a solution that differed to the one looked at by Thorold. Whereas Thorold had looked at an organisation that could be used in any theatre of war, Slessor's solution was based on air support being required for an expeditionary force to the Continent. The ideas for creating a second front on the European continent were now being firmed up with the entry of the US and the agreement that Germany was to be the focus of operations. Slessor's solution to this unique problem naturally differed from the Thorold proposal, as Thorold had had more contact with the work of Army Co-operation Command.

[45] TNA WO 199/334, Memorandum on Army Air Support,, undated c. May 1942.
[46] TNA CAB 101/136, Unpublished draft of the Grand Strategy Narrative, undated.
[47] Hall, *Strategy for* pp.124-5.

This solution was based more upon the discussions that had been taking place regarding the creation of composite army air support groups. This proposed new force would allow the RAF to retain the inherent flexibility of air power and place the composite group organisation under the higher operational control of the army commander. An air force commander would direct the general direction for the air forces within this proposed group. This control would be carried out through the headquarters of an army support wing. In order to allow the control to be continued the AASC form was to be extended to allow it to fit into this new organisation.[48]

The General Staff were not convinced about the ability of this proposed force to meet their perceived needs. Slessor felt 'some disappointment to the reaction of the General Staff ... in which I stated plainly my view that the functional system of command was unsuitable ...' Slessor reinforced his claims by claiming that 'He [CIGS] cannot, I think, be aware of the well-known fact that Fighter Command has far more practical experience of the realities of air support for the Army [*sic*] than has Army Co-operation Command'.[49] This was a hugely damming comment, not just on Army Co-operation Command and the work it had done to that date, but also the way in which it was created. It further highlights just how little it could achieve as a non-operational Command. The army's opinion of the use of Fighter rather than Army Co-operation Command for air support is best demonstrated in the discussions highlighted below regarding the development of the army air support group idea that were a direct result of Slessor's ideas.

A change in the attitude towards the idea of using composite army air support groups can be seen in a letter from the C-in-C, Home Forces, regarding a study week held in November 1942. One day of this study week was devoted to the organisation that would be required to

[48] TNA CAB 80/37, Continental Operations 1943: Operational Organisation and System of Command of the RAF, Memorandum by CAS, 21 July 1942.
[49] TNA AIR 75/43, Draft letter from Slessor to Prime Minister, 4 September 1942.

support an army in the field. The major ideas that emerged from these discussions were 'A unified command under a single Air Officer Commanding-in-Chief of all air forces allocated to the support of the field armies in each theatre of operations'. The letter further states that 'The RAF organisation within the unified command [was] to comprise a series of composite RAF Groups, each group containing Fighter, Bomber, Reconnaissance and Army Air Support Squadrons'. The groups 'were to be formed on the basis of providing one Group to each Army in the field'. The Army Air Support Controls were to be reorganised in order to provide 'a permanent control element at Corps Headquarters as well as Army Headquarters'.[50]

The army's planning for the invasion of the continent had grown to such an extent that the thinking regarding the location of air support communications had to be altered to reflect this change. A formation such as a Corp would be on a scale large enough to utilise a formation such as the army air support group, which is a partial explanation as to why it was so long until it was proposed. The proposals put forward from these discussions 'received general approval in the course of the discussion from both the Army and RAF representatives, the latter including the C-in-Cs Fighter Command and Army Co-operation Command'.[51] Woodall, writing to Hardman, argued that the proposal put forward by Home Forces was '... a good, straightforward and clear one, but in certain ways it is applicable to a specific operation rather than to all theatres of war'.[52] Woodall furthers his arguments by analysing the idea of a unified command and the RAF organisation within this and due to potential impact, such ideas could have on the formations used to conduct army air support, deserve to be quoted at length. He argued for an

[50] TNA WO 32/10396, Letter from C-in-C Home Forces, to the Under-Secretary of State for War regarding Organisation and System of Control of Air Forces in Support of Overseas Operations, 5 November 1942.
[51] *Ibid*.
[52] TNA WO 32/10396, Letter from Woodall to DMC regarding Organisation and System of Control of Air Forces in Support of Overseas Operations, 10 November 1942.

> Air Officer Commanding-in-Chief for all air forces operating in a theatre of war. This, however, is not the same thing as a single Air Officer Commanding-in-Chief of all air forces *allocated* to the support of the field armies. For example, Tedder is Air Officer Commanding-in-Chief of the air forces in the Middle East, but his responsibilities extend far beyond the support of the field armies. I cannot see in such a theatre a permanent allocation of air forces to the field armies with a permanent Air Officer Commanding-in-Chief of such allocated air forces ... GHQ recommends a series of composite RAF Groups, each Group containing fighter, bomber, reconnaissance and army air support squadrons. I feel that this is all right and, in fact, most desirable, for the Groups working with armies, but in any given theatre of operations it may well be convenient for the Air Officer Commanding-in-Chief to have under his hand specialist Fighter Groups for the air defence of the area as a whole. This is, in fact, I think the case in the Middle East, where the defence of the Nile Delta is entrusted to such a Group. Although a composite group is ideal for the support of land operations, I do not think that we should we should lose sight of the advantage of functional groups for specialist purposes, nor do I think we can possibly tie down an Air Officer Commanding-in-Chief as to how the Groups other than with armies are organised.[53]

Whilst not being as cumbersome as the proposal put forward in the Thorold Paper, the unified command system being placed above a composite group organisation would make such a system unwieldy and with complex communication routes. That Home Forces were looking to a system organised around composite air support groups is a sign of the co-operation that had been taking place from 1941. The ideas at Home Forces were no doubt influenced by the relationship that they had with Army Co-operation Command. This relationship was almost non-existent at the Staff level above Army Co-operation Command and Home Forces. It is possible that there was some degree of disconnect between the ideas being discussed by the General Staff and those at the lower level of command of Home Forces. Further to this, the idea of gaining their own operational army air force, which had been an aim for the army for many years, was not one that the General Staff were willing to give up on easily, and demonstrate that there was much more work to do in order for full trust to be established.

Army Air Support Groups

The start of 1942 saw an interest in the re-equipping of Army Co-operation Command. With the turning of the tide against Germany in other theatres of the war, such as the Eastern Front, the prospects of an invasion of overseas theatres such as Europe or North Africa had

[53] *Ibid*.

increased.[54] In January, Barratt was advised that a new policy regarding his Command had been agreed. Part of this policy was 'that fifty Mustangs were to be allotted until further notice, to Army Co-operation Command'.[55] A WO proposal, put forward in March, regarding the number of squadrons required for supporting the army was again, greatly exaggerated. The CIGS put forward a request for sixty fighter reconnaissance squadrons, thirty light bomber reconnaissance squadrons and 12 Air OP squadrons in a memorandum presented to the COS Committee.[56] An agreement had been reached in May that the strength of Army Co-operation Command was to be increased to twenty squadrons by September.[57] The major development of 1942 with regards Army Co-operation Command, however, was in the idea of the Army Air Support Group. This was the solution proposed by Thorold in order to reconcile 'the divergent interests of Bomber, Fighter and Army Co-operation Commands.[58]

The discussions regarding this proposal highlight the status of Army Co-operation Command within the RAF. It further pinpoints the rise of Fighter Command in the army support role. The initial purpose behind the Army Air Support Group idea was 'to ensure that, when Operation *Round-Up* occurred, the Army would have a force of Army Air Support squadrons thoroughly trained in that role'.[59] The Joint Planning Staff argued that 'Under the existing set-up there are too many RAF commands concerned – Fighter, Bomber, Coastal and Army Co-operation Commands'.[60] A WO memorandum noted that

[54] Murray and Millett, *A War To Be Won* p.272.
[55] TNA AIR 39/110, Letter from the Director of Operations to Army Co-operation Command, regarding the Development of Army Co-operation Command, 24 January 1942.
[56] TNA CAB 80/35, COS (42) 164 Army Air Requirements, 10 March 1942.
[57] TNA AIR 10/5547, AHB Narrative Close Support.
[58] TNA WO 233/60, Draft of Development of Air Support to the Army 1939-1945 by Charles Carrington, 25 May 1945.
[59] TNA AIR 8/984, Letter from Air Marshal Sholto Douglas to the Under Secretary of State for Air, 18 Aug 1942.
[60] TNA AIR 8/1063, Report by the Joint Planning Staff, 21 May 1942.

> ... the demands for fighters are numerous, demands for bombers are extremely few. The reason why the demands for bombers are so few is almost certainly because commanders fully realise that 2 Group is weak and fully employed on operations.[61]

The WO were of the opinion that RAF commanders saw the training of formations in army air support 'as an additional secondary item to their primary role ... and they deal with it ... on a compromise basis, the given factor being that their permanent organisation and their present operational roles must not be disturbed'. In order to resolve this lack of training the Army resorted to its usual proposal, albeit on a smaller scale than had previously been suggested, that a part of the RAF be placed under their command. In this case, they proposed No. 2 Group. Their reasoning behind this demand was that 'there is no reason why the whole Group or part of it should not be employed on every exercise with the troops ...' Under this plan, No. 2 Group was to be designated an army air support group and would provide the army with the advantage of having 'an RAF organisation focussed entirely on the problems of Army Air Support'.[62]

According to the WO, the following issues would receive attention almost immediately: 'the squadron organisation would be placed on a mobile footing, training would become standardised on the most suitable lines and there will be a certainty of an irreducible minimum of Army Air Support on the day of battle'. This situation would also increase the morale of the army in conjunction with the beginning of planning for future operations by 'altering the Army's present hopelessness about Army Air Support and producing a determination to train itself to make the best possible use of it'.[63] This morale had been lacking when they had been on a defensive footing and a return to the continent seemed unlikely in the near future. The army were fearful that the discussions that had been ongoing with the Air Ministry, since the creation of Army Co-operation Command at the very least, would continue without any significant progress being made on the matter. 'In view of the

[61] TNA WO 199/334, Memorandum on Army Air Support Group, May 1942.
[62] *Ibid*.
[63] *Ibid*.

difference of opinion between the two services, and our past experience, one cannot be optimistic of a quick settlement'.[64] The Joint Planning Staff recommended that in order to fulfil the air support requirements for an invasion the current organisation needed to be changed. The suggestions made by this Staff, was that an Air Striking Command should be formed from Bomber Command squadrons, which would operate from Britain. There would also be fighter and bomber squadrons, which would accompany an invasion force and detailed to support it on the continent.[65]

The COS Committee, upon receiving these recommendations were anxious 'to get the principle of the Air Striking Command going as soon as we can'. The COS felt that, in regards to combined operations, there was 'great difficulty ... being experienced in planning the air side of the Combined Operations, since there is no one big enough to co-ordinate Bomber, Fighter and Coastal Commands'.[66] Army Co-operation Command was not included due, not only, to its non-operational nature, but also, to a lack of aircraft available to the Command, as detailed above. There was a great deal of discussion regarding the fate of Army Co-operation Command under the new proposed organisation for air support. Unsurprisingly, given the close work that had been conducted between them and Army Co-operation Command, the army was in favour of Barratt becoming the air force Commander for *Round-Up*. The RAF was still of the opinion that Fighter Command was the new home of army air support. The AOC-in-C of Fighter Command, Douglas, argued that 'the present Fighter Command organisation would be the best basis for the formation of an air striking force for operations on the Continent ... The Army Co-operation Command would be under the Commander-in-Chief, Expeditionary Force'.[67]

[64] TNA WO 199/334, Letter from B Paget (BGS Training) to CIGS, 28 June 1942.
[65] TNA AIR 8/1063, Report by the Joint Planning Staff, 21 May 1942.
[66] TNA AIR 8/1063, COS (42) 162 (0), 26 May 1942.
[67] TNA AIR 8/1063, COS (42) 162 (0), 26 May 1942. Douglas does not mention his discussions with Brooke in his autobiography *Years of Command*. That an issue such as this which was subject to much discussion between

The Army Air Support Group was to be formed from squadrons who were specialised in this work and 'squadrons from the Fighter and Bomber forces of the Air Contingent which may be detached for the purpose'.[68] The idea of an Army Air Support Group was encouraged by the RAF, and the CAS originally proposed to place this force within Army Co-operation Command'.[69] Due to changes in *Round Up*, caused partly by British reservations regarding invading the Continent during 1942, which caused consternation regarding the organisation of an Army Air Support Group, moves were made to establish a force in principle. The plans that were being made could not be put into effect at this time, however, due to a lack of available forces to conduct them.[70] 'It would seem reasonable ... to press for the immediate formation of the Army Air Support Group, making it clear that the Group should be regarded as a training organisation only [and we should emphasise] our readiness to accept the transfer of the actual squadrons to whatever organisation is jointly agreed in the long run'.[71] The decision not only to form a specialist Army Air Support Group, but for it to be placed within the command structure of Army Co-operation Command had been made in May 1942.[72] With the changes being made for the strategic conduct of the war at the COS level, combined with the practical experience already gained in the Middle East, the RAF continued to have a good enough reason to delay making radical alterations to the army air support structures currently in existence in Britain for now. If the discussions between the British and US settled on a strategy that did not look to invade Europe through France, the operational expertise was available and could be transferred from other theatres. This allowed the RAF

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the two Services does not feature in the diaries of an officer with the status of Douglas partly demonstrates the status of army co-operation and as a direct result Army Co-operation Command in Britain.

[68] TNA AIR 20/2812, Memorandum on the Organisation, Functions and Control of Air Forces in Support of the Army in an Overseas Theatre, 21 May 1942.

[69] TNA WO 199/334, Letter from Paget to CIGS, 27 July 1942.

[70] Hall, *Strategy for* p.118.

[71] TNA WO 199/334, Letter from Paget to CIGS, 27 July 1942.

[72] TNA AIR 20/2812, Memorandum on the Organisation, Functions and Control of Air Forces, 21 May 1942.

the extra room to discuss and debate the ideas that were now being proposed without having to show they were flatly refusing the ideas out of hand.

This was fully accepted by the army, as the relations between them and Army Co-operation Command had improved greatly throughout 1941, and the WO saw this Command as the Army Air Support Groups' natural home. This idea had progressed to such an extent that Barratt was asked by the VCAS whom he would like to command the group that would be placed in his Command. Barratt's choice was a SASO that had served under him in the AASF in France and had staff work experience in India, Air Commodore T.W. Williams. Barratt made further arguments for Williams stating that

> ... he was the power behind the throne in 2 Group, and he knows the Army Air Support [*sic*] business in all its details. The Army likes him, and I know his worth and I think it is time that he had command.[73]

Barratt however, was not to get his man, as he had been allowed to 'go to the Far East at Peirse's special request'.[74] A month after Barratt's recommendation for commander of the Army Air Support Group under Army Co-operation Command, Freeman wrote in a memorandum both to other RAF Commands and to the WO stating that

> You will be aware that it was recently agreed with the War Office to form an Army Air Support Group in Army Co-operation Command. This decision is now under review and it is probable that the Army Support Squadrons will be formed in 11 Group which will subsequently be reorganised to fulfil a dual role of Fighter and Army support in preparation for certain projected operations.[75]

It is hard to explain such a major change in policy, especially in such a short space of time, a letter written in the days preceding Freeman's memorandum can help to shed light on the thinking behind this sudden change. Hall has argued that, on this matter at least, Brooke had found himself outmanoeuvred by the WO and the matter was settled by Churchill in October with a briefing from Brigadier L.C. Hollis of the WO.[76] In early August, Freeman had written Douglas stating 'For the further husbanding of our Spitfire resources, it has been

[73] TNA AIR 20/2812, Letter from AOC-in-C Army Co-operation Command to VCAS Wilfred, 3 July 1942.
[74] TNA AIR 20/2812, Letter from VCAS Wilfred to AOC-in-C Army Co-operation Command, 6 July 1942.
[75] TNA AIR 20/2812, Memorandum by VCAS Freeman, 10 August 1942.
[76] Hall, *Strategy for* pp.126-7.

decided that the 5 squadrons which are due to form for the army support role between now and November should not be created *de nove* but should be provided by transfer from Fighter Command.'[77] By creating the Army Air Support Groups under Fighter rather than Army Co-operation Command, the RAF would be able to prevent the potential creation of an independent operational air force, under army control, which had been a constant aim of the Air Ministry after the Battle of France. It would also be possible through this move to further sideline Army Co-operation Command, especially after the work that had been done in the previous year improving the relations between the WO and Air Ministry. There would also be fewer calls for aircraft for the army support role if Fighter Command were now taking this over, for operations at least. The aircraft were readily available, modifications and training programmes were beginning to emerge, not only from the Middle East, but Army Co-operation Command as well, and all was required was to organise training exercises for the pilots of Fighter Command and allow time for the training to have its desired effect.

It was felt that by expanding the scope of Fighter Command to include the air support role they would be able to organise exercises with greater ease due their status. In many cases, however, Army Co-operation Command had already laid the groundwork in preliminary exercises in 1941 and Fighter Command would be able to build on this. The only area in which Fighter Command was better equipped to develop army co-operation was in its signals organisation. The Fighter Command signals network was static, and thoroughly tested and refined in operations during the Battle of Britain, and enabled the control of several squadrons conducting air support for the army.[78] This signals network was ultimately the key factor in establishing air support within Fighter Command and not Army Co-operation Command as it allowed the centralisation of C^2 capabilities to conduct air support on the operational level. This was something that simply was not possible given the structure, non-

[77] TNA AIR 8/984, Letter from VCAS Freeman to Sholto Douglas, 3 August 1942.
[78] Hall, *Strategy for* p.148.

operational status of Army Co-operation Command and its lack of experience in conducting active operations. The postponement of *Round Up* also had a large bearing on the discussions as to the organisation of air support for the army. *Round Up* was postponed for a variety of factors, one of the most important being the failure of the joint British-Canadian landings on the beached of Dieppe. With operations launched from Britain against the continent now postponed, there was more time to allow a fuller and more rounded discussion about what form any new air support organisation should take. It also meant that exercises could now be conducted in order develop the new organisation as far as possible.

In a letter to the Under-Secretary of State for Air, Douglas set out in more details the RAF's arguments for wanting to establish the Army Air Support Group in Fighter Command, simply putting forward the same argument as had previously been stated.

> ... it seems to me to be most unwise to form an Army Air Support Group in Army Co-operation Command comprising two of the existing squadrons of Fighter Command plus ten new squadrons equipped with fighter aircraft. By all means let us form these additional ten army support squadrons, but let them I suggest, remain in Fighter Command where, in addition to intensive training in Army Air Support, they can also receive a modicum of training in fighter duties ... I understand that the main purpose underlying the formation of these Army Air Support Squadrons was to ensure that, when Operation *Round Up* occurred, the Army would have a force of Army Air Support squadrons thoroughly trained in that role and well practised with the troops which they would actually support in a landing on the Continent...if these 12 Army Air Support squadrons are placed in Army Co-operation Command, they will, it seems, be condemned to spend almost two years and possibly longer divorced from active operations, concentrating merely on training with a diminished Home Forces. In these circumstances the morale of these squadrons is unlikely to be of a high order when the day of battles come.[79]

The army, however, was not in favour of the Army Air Support Group being formed in Fighter Command. CIGS felt that the correct place for the Group was within the organisation of Army Co-operation Command, as had originally been agreed by CAS. In a detailed letter to Brooke, Portal set out the situation as he saw it and re-iterated his recommendations for the Army Air Support Group, including the decision to postpone the formation of forces for *Round Up*, as a result this deserves to be quoted at length.

> The basis [for development] was that when the Army is fighting, the effort of the whole air force must be primarily directed to ensure the success of the land operations; and in these conditions the functional organisation of the air force into Bomber, Fighter and Army Co-operation Commands

[79] TNA AIR 8/984, Letter from Sholto Doulas to Under-Secretary of State for Air, 18 August 1942.

> which...has served us well in the past two years when the army at home has not been engaged, is no longer suitable. On the assumption therefore that the Army would be concentrating in the South-East of England for an offensive across the Channel next Spring, my intention was to reorganise No. 11 Group into a Command comprising 3 composite Groups of Fighter, Bomber and Army Support squadrons which would correspond to the number of armies...the re-organisation...is [now] neither necessary nor appropriate; and in particular the organisation for army support in the United Kingdom must primarily cater for training and the development of the technique both in the air force and the army ... I have undertaken to form 12 Army Support squadrons , and it would be a mistake to postpone their formation until the Spring...The point to be decided now is how, in the new conditions these Army Support squadrons can best be organized ... There are two alternatives , and I propose to leave the choice to you, though I shall advise you which, in my view, would be the more likely to secure the object we both have in mind...And to help you decide on your choice I suggest you should have a talk to Sholto Douglas...The first alternative is to form the squadrons in Army Co-operation Command, under an Army Support Group as a training organisation...The second alternative is to form the squadrons in Fighter Command, and to appoint to the Staff of Fighter Command an Air Officer, Air Vice Marshal or Air Commodore, with a good Brigadier or General Staff Officer I as assistant... I personally have no doubt that the second alternative would give the best results ... I am convinced it will result in better training and a more enthusiastic interest in Army Support ...[80]

Portal's letter raises an interesting point with regards the relative statuses of Army Co-operation Command and Fighter Command. With a staff that consisted of half army officers, could the right person not have been found from within Army Co-operation Command? Portal was willing to transform the operational priorities of one Command, whilst neglecting the organisation that was created specifically for army co-operation. Brooke further highlights this point in his response to Portal's proposals, and further demonstrates the degree to which the army believed that an operational Army Co-operation Command was the solution to the problem of providing air support on the Continent.

> I have considered the alternative proposals which you suggest ... and prefer that which places the 12 Army Air Support squadrons under an Army Air Support Group in the Army Co-operation Command. The Army Co-operation Command has accumulated considerable experience in matters connected with the machinery for Army Air Support and it is a command whose sole responsibility is the study of army requirements with no other conflicting interests. I am anxious to see development within this Command the organisation for Air Support not only for training but also for operations...I have consistently said that I am anxious that these squadrons should when formed and properly trained, take part in offensive operations ... The mere fact that squadrons become trained in Army Co-operation work doesn't [*sic*] from my point of view, justify their release without replacement ... I assume that we are agreed that the formation of the Army Air Support Group is but an initial step towards this training of a total of 20 light bomber [*sic*] squadrons and a minimum of 15 fighter squadrons ...[81]

[80] TNA WO 216/127, Letter from CAS to CIGS, 31 August 1942.
[81] TNA WO 216/127, Letter from CIGS to CAS, 3 September 1942. There are no entries on this matter in Alanbrooke's diaries and it is not mentioned in any of the published biographies.

Brooke made his decision without consulting the advice of Douglas. We can be confident that the advice he would have given would not have differed from the opinions put forward in the letter quoted above. He further argued that

> The Air Officer-Commanding-in-Chief, Army Co-operation Command ... has done his best to make arrangements for his army co-operation squadrons to carry out a small amount of active operations with Fighter Command. While this is all to the good, it is not the same thing for the ordinary pilot as being a member of an active operational Command and engaged frequently in active operations. For the foregoing reasons therefore I strongly urge that the 12 Army Air Support squadrons should be formed in Fighter Command and remain there at any rate until such time as Operation *Round Up* appears imminent.[82]

This is further highlighted in Portal's response to Brooke's decision to have an Army Air Support Group created within Army Co-operation Command. It is clear in this response Portal's feelings with regards Army Co-operation Command and the potential of having to create a training formation within it that could easily become an operational unit. Portal, and as a result, the RAF as a whole still felt the need to accommodate the army as much as possible in this area to avoid the calls of providing little help to the army.

> I note your preference for the first alternative ... that the squadrons should form in Army Co-operation Command, under an Army Support Group as a training organisation. I am sorry you have made this decision because I am sure far better results would be obtained if the squadrons were formed in Fighter Command. I believe you would have been impressed with the arguments that Sholto Douglas could have brought forward in favour of that course. However, you have made your decision without hearing them and we will act accordingly ... I am agreeing against my real judgement in the matter, to the formation of an Army Air Support Group as a training organisation in Army Co-operation Command. I do so because I am anxious to meet you in every way possible and to ensure that the organisation aspect should not be allowed to hold up the formation of the Army Air Support squadrons ... I, for my part, am convinced that the air problem envisaged admits of no other solution. Therefore, with every desire to meet you, I am afraid that I cannot compromise over such a fundamental point.[83]

Freeman, writing in the middle of August stating that the discussions between Brooke and Portal had succeeded in changing the mind of Brooke.

> You will be aware that that it was recently agreed with the War Office to form an Army Support Group in Army Co-operation Command. This decision is now under review and it is probable that the Army Support squadrons will be formed in 11 Group which will be reorganised to fulfil a dual role of Fighter and Army support in preparation for certain projected operations.[84]

[82] TNA AIR 8/984, Letter from Douglas to Under-Secretary of State for Air 18 August 1942.
[83] TNA WO 216/127, Letter from CAS to CIGS, 7 September 1942.
[84] TNA AIR 20/2812, Memorandum by Freeman, 10 August 1942. There is again no mention of these discussions in either CIGS's diaries or in any published biographies.

With the declaration of war on Germany by the US, the strategic outlook of the war had altered radically. There were several options available to Britain and the US in conducting this grand strategic plan. After their experiences in the Dieppe raid, Churchill and the War Cabinet preferred to attack the soft under belly of Europe.[85] These operations would be launched from bases in North Africa using forces that had previously been fighting there. This had two distinct advantages with regards the air support developments taking place. First, the build of troops available for this role would not be hampered through their diversion for operations against the continent. Second, those conducting operations from North Africa against Sicily and the Italian mainland would be well versed in conducting air support from the experience gained in the desert. From this experience further developments could be made to the system, based upon the work of Army Co-operation Command, to be employed with forces operating from Britain and it would be able to operate using the further experience gained through operating in a different theatre. The discussions noted above regarding the development of an Army Air Support Group would have to be finalised and reach a conclusion to allow the army to feel that when these operations were launched they would receive the support from the air they felt was necessary to ensure their success.

Sinclair felt that allowing the decision made by Brooke to stand was incorrect, despite Portal's apparent willingness to allow it. Portal, at a COS Committee meeting then went on to explain his reasons for wanting the Army Air Support Groups to be placed under Fighter Command.

> ... when the large scale [*sic*] Continental operations came into the foreground of the picture, it had become necessary to consider how to organise the RAF to take part in them. It was obvious that the functional organisation of Fighter, Bomber Coastal, etc. Commands would be inappropriate and that we should have to go in for a system of the same type as that employed by the Germans in their big campaigns ... Each Group would be a mixed force of fighter, light bomber, army support and reconnaissance squadrons. Initially these Groups would be operated from Fighter Command sectors in Great Britain ... There would be no place in such an organisation for an Army Co-operation Command. If these ideas were accepted, then it was felt that it would be

[85] Robert M. Citino, *The Wehrmacht Retreats: Fighting a Lost War, 1943* (University Press of Kansas: Kansas, 2012), p.14.

> much better to place the army support squadrons in the Groups of Fighter Command, so that the latter could begin to train wholeheartedly for their continental role.[86]

It is almost impossible to say when the idea of disbanding Army Co-operation Command became intertwined with the development of the Army Air Support Group. It can be argued, however, that the Army Air support Group was what the RAF had been looking for in 1940. Here was a way of developing air support that would allow them to keep operational control of the forces involved and with very little input or comment from the army. This was not possible with the current system involving Army Co-operation Command. The AHB Narrative on Close Support details how the RAF saw the future of air support and highlights further the problems that it faced in trying to apply air support on a large battle front with its command organisation based upon function.

> The existing operational arrangement in England which consisted of functional Bomber, Fighter, Coastal and Army Co-operation Commands was not fully reconcilable with the need for flexibility and rapidity of action which were necessary in order to ensure that the air effort could be applied to the support of any part of the army front. Furthermore, it was necessary for the army Commander to be able to select objectives and apportion effort for almost any number of supporting squadrons and these had to come under the control of one air force commander in any one area, who could see the air situation as a whole an co-ordinate support, reconnaissance and fighter operations. This postulated a non-functional, composite organisation and it was apparent that Fighter Command offered the best basis upon which to build ... Air Support was no longer to depend upon limited resources but was to give the whole strength of Fighter Command behind it and the elimination of Army Co-operation Command therefore became a logical step in invasion, since it could not and would not be able to command sufficient resources.[87]

The RAF faced two distinct choices in this area, especially with the potential development of the Army Air Support Group. These were to convert Army Co-operation Command into a fully operational command, or to transfer the bulk of army co-operation development to Fighter Command. With the potential development of the Army Air Support Group within Fighter Command, this was a choice that was starkly presented to them in a report written by the SASO based at GHQ, Home Forces. Carrington has surmised the army's position regarding the Army Air Support Group in the following way,

[86] TNA PREM 3/8, War Cabinet Chiefs of Staff Committee, 5 October 1942.
[87] TNA AIR 10/5547, AHB Narrative Close Support.

> The General Staff ... adhered to the original proposal and plan as modified by the Thorold paper. In short they preferred Army Co-operation Command with all its imperfections to a share in the attentions of 11 Group at such times as it happened to be not serving another master.[88]

The discussions and development of the Army Air Support Group would continue well into 1943 and will be looked at in detail in the following chapter.

Air Observation Post Development 1942

The Air OP continued to be developed by Army Co-operation Command and the School of Artillery during 1942. Woodall, writing in a letter to Brigadier B.C.H. Kimmins, who was on the Staff of Southern Command, confirmed what the experiments of the previous years' experiments had shown. 'With the fighter reconnaissance type and the new procedure by which the pilots actually shoots the battery using two-way radio-telegraphy, he can, I think, do most of his work from fairly far back ...' Woodall was at pains to point out, however, that the one problem preventing the expansion of the Air OP system was the same problem that would plague the whole of Army Co-operation Command: aircraft supply.

> Of course the main snag at the moment is the ghastly situation of the aircraft supply position ... In all exercises, [the] General Staff want more tactical reconnaissance sorties than the aircraft can do, and as a result artillery reconnaissance comes a bad last in the order of priority.[89]

In early March, a week's training camp for artillery reconnaissance was held. The benefits of this camp went beyond simply the practise of a new technique. The camp afforded the pilots and artillery officers that chance to spend the week living together in the same area, just as they had done in the First World War. This situation increased the co-operation and camaraderie felt by all involved. This camp also saw the techniques being used refined even further. The trials indicated that there was currently no way of ending a shoot conducted by an Air OP aircraft. The ending of a shoot would depend upon if the shoot was a neutralisation, or registration of the target. If it was a neutralisation the pilot wished the artillery batteries to continue firing, he was to state his reasons and 'should not stop firing in

[88] TNA WO 233/60, Development of Air Support, 25 May 1945.
[89] TNA AIR 39/48, Letter from Woodall to Brigadier B.C.H. Kummins, Southern Command regarding Artillery Reconnaissance, 20 January 1942.

order to record the target'. If it was simply a registration shoot, the pilot would end 'the shoot by recording the target'.[90]

Certain problems were beginning to emerge with regards the training of pilots to conduct the Air OP role. 'It has been apparent that the training of AOP pilots lacks practical experience of operations in the field.' The pilots who passed through the Air OP pilot course had to be re-trained by formations on courses lasting up to six weeks. The arrangement was claimed to be at fault.

> ... it is not possible to effect practical training due to...the short duration (6 weeks) of each course ... the shortage of AOP ground personnel to act as Section Personnel, and ... to the establishment of vehicles and motor cycles which is insufficient to meet AOP training requirements under operational conditions in the field.[91]

The solution to this problem was seen to be the formation of an Operational Training Unit (OTU), either as 'a separate unit or ... an enlargement of the present 1424 Flight [the training flight].[92] It was decided, after the trials and debate of 1941, that a gunner officer was to pilot the aircraft involved, engaging targets 'exactly from a ground OP, using R/T.'[93] It was proposed that 1424 Flight should be expanded so as to allow '30 trained AOP pilots ... to be produced every month'. The flight was also to be moved to Army Co-operation Command headquarters at Old Sarum, enhancing the role of the Command.[94] The vulnerability of the aircraft had been well established during the trials that has been conducted. Owing to this, pilots were given certain conditions that they were expected to follow when conducting a shoot. These were that they were to be 'no less than 2,000 yards behind our forward troops, at a height not exceeding 600 feet and [use] ... flights of not more than 20 minutes duration'.[95]

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[90] TNA Air 39/48, Letter from Army Co-operation Command to 32, 34, 35 and 36 Wings regarding an Artillery Reconnaissance Practice Camp, 26 March 1942.
[91] TNA AIR 39/69, Letter from the Commanding Officer No. 651 squadron to Headquarters regarding the Operational Training of AOP (Pupil) Pilots, 1 July 1942.
[92] *Ibid*.
[93] TNA AIR 39/69, AOP Squadrons Memorandum, 26 July 1942.
[94] TNA AIR 39/69, Letter from Headquarters 70 Group to Army Co-operation Command, 28 July 1942.
[95] TNA AIR 39/69, AOP Squadrons Memorandum 26 Jul 1942.

Towards the end of 1942, Army Co-operation Command felt that 'the need has been apparent for a clear statement defining exactly the spheres of responsibility of the RAF and Army for control and administration of Air OP squadrons'. Although the Air OP squadrons were RAF units, they were to be placed under the operational control of the army formation that they were working with. The army were also charged with the tactical training of the squadrons. In order to facilitate this training it was suggested that 'The closest co-operation will be required between GHQ Home Forces and Army Co-operation Command in order that 43 OTU shall be kept full informed of the operational requirements of Air OP squadrons'. With regards the training of Air OP squadrons with artillery batteries, this too was to be the responsibility of Home Forces 'in consultation with Army Co-operation Command'. However, 'where artillery training must be co-ordinated for teaching within 43 OTU, the School of Artillery [was to be] permitted to call conferences of squadron commanders as necessary, with the prior consent and approval of Army Co-operation Command'.[96] The development of the Air OP, and the subsequent placing of the squadrons engaged in this work demonstrates not only the good relations that existed between Army Co-operation Command and the School of Artillery, but also that in certain circumstances it could be beneficial to give the army what they wanted: operational control of aircraft in the field. The Air OP is one of the best examples of co-operation between the RAF and army in Britain during the Second World War. Aircraft were piloted by gunner officers of the RHA and placed under the control of the local army commander for operational duties. The School of Artillery developed their training with Army Co-operation Command, working with rather than against each other as can be demonstrated in other areas of air support development. Army Co-operation Command was to have a continuing role in the development of the Air OP in 1943 and this development will form part of the structure of the following chapter.

[96] TNA AIR 39/69, Letter from Army Co-operation Command to Headquarters Nos. 32-39 Wings, Headquarters No. 70 Group and No. 43 OTU, Control and Administration of Air OP squadrons, 18 Nov 1942.

With the rise of Fighter Command into the role of air support, and the refusal of the Air Council to convert Army Co-operation Command from a training and experimental Command into one that was fully operational, the future of Army Co-operation Command was limited. This will be demonstrated in the next chapter when the creation of the 2nd Tactical Air Force is analysed along with the work and developments of Army Co-operation Command before it was abolished in mid-1943.

Chapter Seven

THE END OF ARMY CO-OPERATION COMMAND AND THE CREATION OF 2ND TACTICAL AIR FORCE

The year 1943 saw huge changes in air support. The year began with a full-scale exercise (Exercise SPARTAN), designed to test the air support systems being formed in anticipation of a return to the continent, but also to gain experience in the use of the new formation that would provide the support: the composite army air support group. The air aspect of this exercise was to be headed by Barratt. The Air OP squadron organisation also formed part of SPARTAN and its performance in this exercise and its placement in the new tactical air force organisation will form an aspect of this chapter. SPARTAN is highly important not only to this chapter, but to the thesis as a whole, as it was conducted by Barratt. It also shows the culmination of the thinking in Britain on how to conduct army support, for which Army Co-operation Command had laid the groundwork. This groundwork, particularly in the development of the signals organisation, would guide the ideas used to create a new air support force. This chapter will argue that despite the fact that the adoption of the composite group idea would make his command redundant, it demonstrated the status that he, and as a result Army Co-operation Command, still had in the field of tactical air power in Britain. It also confirmed the theoretical foundations of the composite group idea and allowed for further development and eventually the transformation of Army Co-operation Command into 2nd Tactical Air Force. The development of the Air OP, arguably Army Co-operation Command's greatest success, was also thoroughly tested in this exercise. This chapter will also argue that 2nd Tactical Air Force was an operational version of Army Co-operation Command with a new commander. In order to demonstrate this, the chapter will analyse both exercise SPARTAN and the discussions that followed it with regards how air support forces

should be organised. It will also analyse the talks that took place regarding the disbandment of Army Co-operation Command and the creation of 2nd Tactical Air Force.

That the RAF did not want to lose the lower formations, or the expertise that had been gained since the end of 1940 demonstrates that Army Co-operation Command had more impact on the development of air support in Britain than has previously been acknowledged. With the enthusiasm being shown for the AASG as the future organisation for providing air support, it is surprising that Barratt was chosen to oversee the first major test of this new organisation. Army Co-operation Command would, however, only last until the middle of 1943. One of the biggest problems facing those who had decided to overhaul Army Co-operation Command was how best to use the expertise that had been fostered within the Command throughout its existence. Many of the units that formed Army Co-operation Command would be transferred to other parts of the RAF instead of disbanded completely. The discussions that took place regarding the disbandment of Army Co-operation Command will demonstrate this further.

The new organisation that would take over the development and implementation of tactical air support differed from Army Co-operation Command in two major aspects.[1] First, 2nd Tactical Air Force was an operational command organisation which would give it the same calls for resources as other RAF Command organisations. Second, with the changing of the tide in the war as a whole, the prospect of an Allied invasion of the continent became an ever-clearer reality, both 2nd Tactical Air Force, and the army in Britain had potential operations to plan and prepare for in earnest. There was also a greater political impetus to expand the war to include an invasion of the European continent. This was due to the increasing build up of troops and equipment by the US. The British government and Services felt that they could not be seen to be falling behind in preparations for such an invasion.

[1] TNA WO 199/334, Letter from the Director of Air (WO) to C-in-C, Home Forces, 28 May 1943.

There was also a greater attempt to learn from operations taking place in different theatres of operations in 1943. Many of the lessons learned from the developments made by Army Co-operation Command, combined with the operational experience gained through the hard fighting in the Western Desert, were combined when the final operations in North Africa (following Operation TORCH) were conducted. Refinements were also made prior to, and during the landings and subsequent operations in Italy.[2] Further to the visit made by Barratt to the Middle East in 1942 a further visit was made by Air Marshal Sir Trafford Leigh-Mallory. This will not form a part of this chapter as it has been well covered in the literature and as it took place after the disbandment of Army Co-operation Command had no bearing on the Command itself.[3] As this thesis has sought to examine the role played by Army Co-operation Command in the development of tactical air power both in theory and in practice, it will not look at the work or operations of 2nd Tactical Air Force.

The Development of the Army Air Support Control

With the development of the composite group, the AASC would require alteration, as has already been discussed above. There were, however, greater discussions and changes, which will be analysed here. One of the major points that caused an issue between the Air Ministry and WO was the permanent allocation of the AASC to the army's corps organisation. The Director of Air (WO) wrote to the C-in-C, Home Forces, General Charles Paget stating that 'the Air Staff are unable to agree to the proposals which you make'. It was felt by the Air Staff that due to its nature, the AASC should remain within the RAF organisation. 'It has always been a cornerstone of the agreed Air Ministry and War Office policy that the A Air SC should be [the] advanced headquarters of the RAF formation providing Army Air Support'. The Air Staff used experience gained in the Middle East to reject the idea that the AASC should become a permanent part of the corps organisation, arguing that

[2] Further details of these developments can be found at Gooderson, *Air Power at the Battlefront*.
[3] Gladman, *Intelligence and Anglo-American Air Support*, pp.181-3. Hallion, *Strike from the Sky* pp.191-2.

> While it is agreed that there may be occasions where it would be desirable to control air support on a corps level (although this apparently has never been the practice in the Middle East) it is considered that these occasions will be rare and that it would be possible to foresee them well in advance, e.g. before a complete Army is established in a theatre of operations or when a corps is given a completely independent mission. It is considered that on these occasions the group or other RAF commands will detach from his staff a responsible officer and the necessary personnel and equipment to the particular corps headquarters from where the air support will then be controlled in precisely the same way as in the combined RAF/Army Headquarters.[4]

With this response to the army's moves to gain operational control of the AASC at a command level that was felt to be too high, the Air Staff continued their arguments by stating 'Taking into consideration the rare occasions on which control will be required on a corps level it is felt that this suggested re-organisation is unjustifiably extravagant.' The efficiency of the AASC would not be improved if these recommendations from the WO were implemented, as there would be 'no saving of equipment or personnel ... as special channels would still be required'. As a result of this, 'There would ... appear to be no advantage in relieving the A Air SC [Army Air Support Control] of these communications'.[5] This communications system, which had been developed from the experiments codified by Army Co-operation Command in 1940, could not be expanded upon without operational experience.

Undeterred by the response of the Air Staff, the WO continued to push for changes to be made to the AASC. Fresh proposals were put forward in February 1943 taking into consideration the arguments that had previously been made by the Air Staff. In these proposals, it was accepted that the AASC remaining as an RAF unit. It was proposed to re-organise the AASC so that it was able to provide '*one section for operational duty at Army* and *one at each of the two Corps Headquarters* (in the event of an Army being composed of more than two Corps, additional Corps sections to be added as necessary)' [Emphasis in original].[6]

[4] TNA WO 32/10396, Letter from Director of Air (War Office) to C-in-C, Home Forces, 13 January 1943.
[5] *Ibid*.
[6] TNA WO 32/10396, Letter from C-in-C, Home Forces to Under-Secretary of State for War and Director of Air (War Office) regarding Army Air Support Controls, 13 February 1943.

The fundamental organisation of the Control, as developed by Army Co-operation Command, was to remain unchanged with it comprising of army and RAF personnel as it previously had.[7] This was based upon the principle that 'communications between A Air SC and RAF units should be manned and operated by the RAF and communications between A Air SC and military formations by the Army'. The use of the RAF personnel to communicate with RAF formations and army personnel to communicate with army formations would ease the communications difficulties that had plagued air support previously. The creation of an RAF group headquarters 'with self-contained W/T communications at Army Headquarters, *the A Air SC no longer to be required to provide W/T communications from Army Headquarters to airfields*' [emphasis in original]. Each AASC section was to have '*wireless equipment to permit direct control of squadrons which may be sub-allotted*' [emphasis in original]. Wireless equipment was also to be standardised 'in order to achieve the greatest possible degree of interchangability [*sic*] and to simplify maintenance ...' Gale recommended that an RAF representative should be placed at Corps headquarters along with the appropriate staff in order to 'act as Air Adviser to the Corps Commander on all air matters'.[8] The recommendations of a joint headquarters and signals organisation pre-dated the experiments conducted by Wann and Woodall and the creation of Army Co-operation Command as they had been put forward during the army co-operation exercises conducted during the inter-war period. As has been stated in the chapter that covers the inter-war army co-operation exercises, however, this point had to be repeated for several years. It was also repeated in the Wann Woodall experiments, by Army Co-operation Command and was exploited to great effect in the Western Desert. As a result of this, it must be questioned how far this concept was readily accepted when it was developed in theory. The arguments put forward by the Air Staff regarding the status of the AASC were also challenged in the letter and demonstrate the

[7] *Ibid.*
[8] *Ibid.*

Air Staff's determination to keep these units under the highest possible level of command and control.

> If the A Air SC Headquarters is accepted as a RAF unit, it is logical to regard it as part of the organisation of a Composite Group, associated with and parallel to an Army. As such *it would be controlled and administered by its parent formation. The Army Staff, which hitherto has exercised command of the A Air SC and has been shown on that establishment should then be borne on the strength of the military formations concerned*, the officers becoming staff officers for air matters of the formation commanders concerned [emphasis in original].[9]

Gale felt that even though the decisions regarding the future of the composite group were not finalised.

> the availability of a new model A Air SC now is an urgent necessity for training and pending the production of the Army and RAF formations involved, *I recommend that the Air Ministry be asked to form one of these units under the appropriate RAF Command, and affiliated to General Headquarters, Home Forces*, and that it should be given temporarily such elements as will make it administratively self-contained, until it can be absorbed within the Composite Group organisation. *During this interim period, the Army Staff should continue to live and work with the A Air SC as before, in order to participate in training and development* [emphasis in original].[10]

The agreement that had been reached between Home Forces and the Air Staff demonstrated the improvement in the relations that had been achieved between the two forces in the years since the Battle of France. This was in part due to the work that had been done by Army Co-operation Command in this area. When this was combined with the experience gained in applying the AASC in operations overseas, the form of the organisation that was to provide air support for the army during its continental operations was slowly beginning to take shape.

Exercise SPARTAN

The decision to hold a large-scale exercise that would involve both troops on the ground and operational aircraft was made in early December 1942, and was scheduled to take place in the first half of March 1943.[11] The air forces required to take part in this exercise amounted to 'a minimum of twenty-four Fighter and Bomber squadrons' and 'two RAF

[9] *Ibid*.
[10] *Ibid*.
[11] TNA PRO AIR 19/318, Memorandum on Exercise SPARTAN March 1943, 12 December 1942. These exercises were based on two armies at full strength. Cf. TNA AIR 16/559, Letter from Vice Chief of the Air Staff, Air Vice-Marshal Charles Broadhurst to AOCs-in-C Fighter, Bomber and Army Co-operation Commands, 12 December 1942.

[composite] groups'.[12] The WO were, as early as December 1942, of the opinion that the exercise would 'provide excellent training in Army Air Support ...'[13] The exercise was designed 'to afford a background on which to present certain problems connected with the planning and control of Air Support which would arise at a Group/Army Headquarters, and to provoke discussion in these problems'. The operational situation that provided the context for the exercise was 'the invasion by forces of this country of the European continent'.[14]

The main objective as regards the air force aspect of the exercise was, 'to study and practice the handling of Mobile RAF Composite Groups ...' The system that would be employed when the army made its attempt to return to the continent had not been decided. The system that was to be employed during SPARTAN was the one that had been considered during 1942 and 'it was desired to try [it] out' in the exercise, under the command of Barratt. The ideas that had been discussed previously were that of the composite group, previously called the army air support group. These groups were to be formed in parallel to, and identify themselves with, the armies with whom they were working, and it was intended that, with the experiences of the exercise, 'to design a force capable of rapid movement and flexible control'.[15] In January 1943, however, a survey of available aircraft had shown 'that it is quite impossible to provide for both the British and German sides on a mobile basis'. In order to be able to fully test out the composite group in an invasion scenario, it was proposed to form the British side on as mobile a basis as possible and to have as many groups organised on this basis 'to try out fully their capabilities and suitability for Continental operations'.[16] For the

[12] TNA AIR 19/318, Memorandum on Exercise SPARTAN, 12 December 1942. TNA AIR 16/559, Letter from Broadhurst to AOCs-in-C Fighter, Bomber and Army Co-operation Commands, 12 December 1942.
[13] TNA AIR 19/318, Memorandum on Exercise SPARTAN, 12 December 1942.
[14] TNA AIR 16/821, RAF School of Army Co-operation Exercise, Employment of Air Forces with the Army, Exercise Instruction Foreword, undated, c. March 1943.
[15] TNA AIR 39/91, Exercise SPARTAN – Preliminary Information, Object of RAF Participation, 12 January 1943.
[16] TNA AIR 16/559, Agenda for Meeting on SPARTAN, 9 January 1943.

purposes of the exercise, the organisation of formations for air support was to be based upon the needs envisaged for 'the assault phase of a combined operation ...'[17]

Taking the lessons that had been learned from operations in the Western Desert, and had been discussed in doctrinal publications during the inter-war period, the composite group commander was to have his headquarters with the army commander.[18] It was specified that the group commander was to sit 'jointly with [the] Army Commander, but not subordinate to [the] army.[19] That the equality of commands still had to be emphasised at this stage of the war, highlights that this was still seen as an issue, despite the amount of discussion that had surrounded the issue and the creation of a Command designed to resolve these problems. This combined with the evidence of its success in overseas theatres, demonstrates that the relations between the two services above the command level were still very poor.

The group headquarters was also to be divided into two sections to increase its mobility, as had been stated in inter-war doctrine, and by both Army Co-operation Command and the WDAF. These two sections were to be 'an advanced (or operational) group headquarters and a rear (or administrative) group headquarters'.[20] Both of these headquarters were to be designed to be 'married' to equivalent army headquarters'.[21] The advanced headquarters was to be created in such a way so it was able to move quickly when necessary and was not prevented from doing so by having to move a large administrative staff. This administrative staff was to be placed within the rear headquarters. It would be responsible 'for the administration of all RAF units in the group area. Squadrons will be administered through the headquarters at each airfield ...' The advanced headquarters would be responsible for

[17] TNA WO 32/10396, Letter from the Chief of Combined Operations to the Director of Air (War Office) regarding Army Air Support Controls, 10 February 1943.
[18] TNA AIR 39/91, Exercise SPARTAN – Preliminary Information, 12 January 1943. For details of the doctrinal publications and their details, see chapter 2.
[19] TNA AIR 16/821, RAF School of Army Co-operation Exercise, undated c. March 1943.
[20] TNA AIR 39/91, Exercise SPARTAN – Preliminary Information, 12 January 1943. TNA AIR 16/821, RAF School of Army Co-operation Exercise, undated, c. March 1943.
[21] TNA AIR 16/821, RAF School of Army Co-operation Exercise, undated, March 1943.

exercising 'operational control through control centres (Mobile Operations Room Units (MORU))'. It was expected that the headquarters would be able control three MORUs but could in exceptional circumstances control up to four. The MORU organisation was to communicate with up to four airfields by R/T or landline and could 'control further airfields by W/T'. These communications functions would allow the MORU to communicate with 'adjacent MORUs and the Mobile Air Reporting Unit'. This organisation was also designed 'to provide ground-to-air communications for the operational control of aircraft'.[22]

Further to this group headquarters organisation, it had been suggested that an organisation on a mobile field force basis would require an Airfield headquarters for each individual airfield. This headquarters was to 'provide for all ground communications by wireless to be augmented by landline when this can be provided by the Army'. These communications systems were required to provide the headquarters with the ability to communicate with aircraft whilst in the air for local flying control.[23] The formation of the four airfield headquarters for the exercise was the responsibility of Fighter Command; however, 2 Group and Army Co-operation Command were to provide one of these units each from their own resources.[24] That personnel from within the Army Co-operation Command organisation were required highlights two major points that have been overlooked in the literature regarding the organisation.[25]

First, the work done by the Command had created a critical mass of thinkers within the organisation that was simply unavailable in any other Command in Britain, and this knowledge was vital with preparations now being made to invade Europe. The delays that had been incurred with the postponement of *Round Up*, and the lessons revealed as a result of

[22] TNA AIR 39/91, Exercise SPARTAN – Preliminary Information, 12 January 1943.
[23] *Ibid*.
[24] TNA AIR 16/559, Memorandum on Exercise SPARTAN – RAF Participation and Allocation of Responsibility to Commands Organisation for Exercise, 21 January 1943.
[25] Cf. Hall, *Strategy for*. Hall, 'The Long Gestation'. Gooderson, *Air Power at the Battlefront*. Jacobs, 'Air Support'. Harvey, 'The Royal Air Force'.

the Dieppe landings, had given the Air and General Staffs the time necessary to fully explore the composite group idea and to exploit the expertise of Army Co-operation Command. Second, with this new organisation under test, the role of Army Co-operation Command was looking increasingly irrelevant. With this in mind, it appears unusual that personnel from this Command would be tasked to take part in an exercise such as this. Through the use of Fighter Command, the personnel who would be taking over army air support, at least in the short term, would gain invaluable experience in this area. Keeping at least a handful of Army Co-operation Command personnel fully versed in army air support developments lends weight to the argument that all that very little would change if Army Co-operation Command were abolished. The organisation created to replace it would be similar in make up, but would have the operational responsibility that Army Co-operation Command never did.

This proposed new organisation was an evolution of the Wann-Woodall system. It advanced the concepts put forward in 1940 and allowed the command and communications system to evolve into one that was better designed to handle the fast moving operations that it was hoped would be the result of a successful invasion of and breakout into the continent. This evolution of doctrinal thinking encompassed first the solution to an operational problem on the theoretical level. The AASC was modified through experimentation. It was then exported to an overseas theatre where it was adapted to meet those specific operational conditions. The staff officers that were to form the staff of the groups involved were to be formed from the officer of Fighter, Bomber and Army Co-operation Commands. The director of the air aspect of the exercise was to be Barratt. In a memorandum written in early December 1942, it was stated that Barratt had 'been asked to give all possible assistance' to the officer in charge of the whole exercise.[26] Barratt was not to be directing the air side of the

[26] TNA AIR 19/318, Memorandum on Exercise SPARTAN, 12 December 1942.

exercise alone, however. The VCAS, Air Vice-Marshal Charles Broadhurst, stated that despite Barratt having the responsibility

> ... for the direction of the exercise so far as the RAF is concerned. Nevertheless, AOC-in-C Fighter Command as Commander designate of the RAF contingent to 'Round-Up' is intimately concerned at all stages of the planning and execution of the exercise and will have the right to express such views as he may wish to the RAF Director ... with the object of ensuring that the forces to be placed at his disposal are economically and efficiently employed.[27]

It is again demonstrated from this that Barratt had never been allowed to have overall control over any aspect of army co-operation training and development that the RAF felt could be an important development, particularly if it involved working with the army. Despite Barratt being the most experienced person in Britain with regards the thinking and development of both army air support and in fostering good relations with the army, he was not allowed the free reign to conduct the exercise along the lines he saw fit. He would always have to take the opinion of another commander of a separate Command, with little experience of conducting air support, into account. Whilst this may give the commander of Fighter Command more experience in handling air support, especially on the scale envisaged in SPARTAN, it must be questioned why a joint directorship was not created to allow the future commander of air support during an invasion of north-west Europe to gain more experience in the role. The new head of Fighter Command was Air Marshal Sir Trafford Leigh-Mallory, and he had been promoted from within the Command's organisation.[28] Despite being well versed in army co-operation matters in general, he did not have the experience Barratt had both in the application of army air support in the field or in its theoretical development. As was the case in the Western Desert command system, Barratt was to be an assistant director to the C-in-C Home Forces, who was overall Director of the exercise.[29]

[27] TNA AIR 16/559, Letter from AVM Broadhurst. Recipient unknown and undated, c January 1943.
[28] Carrington, *Soldier at* pp.83, 110-1.
[29] TNA AIR 39/91, Exercise SPARTAN – Preliminary Information, 12 January 1943.

The exercise took place between 21 February and 3 March 1943. The composite group allocated to the British side during the exercise 'was active on all days on which operations were possible'.[30] Paget, noted that problems had been encountered within the internal RAF organisation. 'The internal RAF organisation was deliberately experimental and was handicapped by limitations in the availability of equipment and personnel. The staffs assembled to conduct the support had little experience of working together with the army formations staffs to which they were responsible for providing support. This unfamiliarity, combined with 'constant communications difficulties confine[d] the possibilities of constructive criticism to the broader aspects'. Paget was confident that, despite the teething problems that had been encountered during the exercise, 'sufficient experience was gained to confirm that this conception [the composite group] is sound and should be accepted for future training and operations'. He further felt that 'The main lesson to be drawn from SPARTAN is the clear recognition by both Services of the task which lies before them, and the urgent need to solve together the many outstanding problems of organisation, staff duties and procedure by practical means, as opposed to theory'.[31] This idea, that the two Services should work together to resolve the problems inherently found in attempting to conduct successful tactical air support, was not an original one, and was one of the fundamental reasons behind the creation of Army Co-operation Command. Exercises on this scale, that would have allowed Army Co-operation Command to demonstrate its abilities to the fullest, could not have taken place without the work done and experience gained by the Command. This is not to argue that SPARTAN now demonstrated the need for Army Co-operation Command. It does show however, that without the groundwork that had been laid by Army Co-operation Command in developing better relations between the RAF and army, an

[30] TNA AIR 39/128, GHQ Exercise SPARTAN, Narrative of Events, March 1943.
[31] TNA AIR 39/128, GHQ Exercise SPARTAN, Comments by Commander-in-Chief, Home Forces, March 1943.

exercise such SPARTAN would have been much more difficult to organise and conduct if relations had been the same as they were in 1940 after the Battle of France.

Paget identified that the composite group idea, together with the combined headquarters, was to ensure 'that the Army and RAF resources are directed to the accomplishment of the common task'.[32] He argued, however, that exercises such as SPARTAN were not enough to allow the relationships between army and RAF staffs to develop to such an extent, as they would be able to function effectively as one unit.

> ... the successful application of these principles is most likely when the respective commanders and staffs are given the opportunity of studying mutual problems together and working in close harmony for some time before actual operations. *It was apparent from SPARTAN that there is much to be learnt by both Services before operational standards are reached in this direction* [author's emphasis].[33]

The striking aspect of Paget's comments regarding how operational standards were to be reached is that he is critical of both Services. This is a step change from how these problems had been tackled previously where the head of Home Forces had laid the blame for any problems faced in conducting effective air support at the RAF's door, and is indicative of the work done by Army Co-operation Command in repairing the relations between the two services.

The future role of the AASC also came under consideration as a result of SPARTAN and the potential further development of the composite group idea with its own communications system.

> SPARTAN showed that the Composite Group makes the A Air SC as an independent mixed unit illogical. Its functions, however, remain of prime importance ...[34]

The AASC faced further changed as a result of SPARTAN. It was to be absorbed into the larger communications system and it was argued that the functions it had performed previously could be performed more efficiently if 'The Army ... provide[d] a separate W/T network for the rapid transmission of information affecting air action and requests for air

[32] *Ibid*.
[33] *Ibid*.
[34] *Ibid*.

support and reconnaissance'. This communications network was to consist of W/T tentacles 'working back from [the] headquarters of forward formations to the point at which Army and RAF Headquarters meet normally corps and Army headquarters' as it had done previously. The RAF was to provide the communications system necessary for the AASC to execute the army's request as part of the general signals organisation of the composite group. It was noted that, 'These communications should include those to enable RAF sections at Corps Headquarters to exercise command on occasions'.[35] A joint headquarters organisation would enhance the abilities of the AASC to work within the composite group system. This would be achieved through having those controlling the aircraft providing the support working alongside those who were receiving and prioritising requests for support from forward formations and reconnaissance flights conducted over the battlefield. A recommendation that had been reinforced through the work of Army Co-operation Command based upon inter-war doctrine. Further familiarisation through minor and major training exercises with the same formations would serve to enhance the efficiency of the personnel of these headquarters and provide greater experience of what constituted priority targets for each service and the limits of air support.

A recurring issue dealt with in Paget's comments about SPARTAN was in the lead-time between the identification of a fleeting target and its subsequent attack from the air.[36] As had been found during actual operations in France in 1940, this lead-time in SPARTAN had been prohibitively long. This is not surprising given the new and unfamiliar personnel combined with a new system that looked to integrate old formations into new formations being used. The long lead-times still being experienced represented a step backwards from the developments made by Wann and Woodall, and accounts for Paget's recommendations for improving the time between the sighting of a target and its attack.

[35] *Ibid*.
[36] *Ibid*.

> The heavy delays frequently experienced in SPARTAN ... would not be acceptable in operations and it is necessary to examine with the greatest care how they can be reduced by improved procedure and the highest standard of training and communications, before it is possible to lay down too rigidly that control of offensive air action must invariably be centralized. In this direction decentralization of effort must not be confused with decentralization of control.[37]

In their attempts to improve the communications and control procedures that would lead to reduced lead-times for unplanned close air support both services had a vast wealth of experience upon which to base their subsequent plans. This experience came from not only the experiments conducted in Northern Ireland in the summer of 1940 by Wann and Woodall, but also by the refinements that had been made by those at Army Co-operation Command. There were also the refinements made in the light of the operational experience gained in the Western Desert.

The allocation of joint headquarters was, in the opinion of Paget, the unrivalled successes of the exercise, which further highlights how quickly this issue could have been resolved if it had been adopted previously in Britain. That it was not lies in the animosity of the relationships that had existed between the two since the end of the First World War. The operational experience of the Western Desert that demonstrated the success of joint headquarters, that this was possible in that theatre was due to what has been described by Terraine as not having 'to struggle against the rigidities and dogmas of the functional Command system; the RAF [could be used] ... as a single unit'.[38] This point cannot be understated when the developments in tactical air support in both Britain and overseas theatres are compared. Army Co-operation Command could, and did, not have the freedom of action available to those in the Middle East who were away from the central control of the Air Council and Air Ministry in Britain. There were, however, areas where the joint headquarters could be improved before operations began. Outside the joint operations headquarters establishment was to be 'separate RAF Operations and Army Operations

[37] *Ibid*.
[38] Terraine, *The Right of the Line* p.352.

sections' who would be responsible for the 'implementation of the decisions taken' in the joint operations headquarters.[39] The only exception to this splitting of headquarters for the operational control of forces was for the dissemination of intelligence material that was of use to both services.

Paget recommended that a combined intelligence organisation should be created to ensure both the RAF and the army received all intelligence that may be of use to both in another demonstration of the improved relations between the two services brought about in part by Army Co-operation Command.[40] In SPARTAN, the passage of information to RAF units had been described as poor and this, to a certain extent, can account for the long lead-times in the engagement of impromptu targets. Paget commented

> It is essential that a general up-to-date presentation of the military situation must be available for all squadrons. This should be supplemented by more precise information as may be necessary when attacks are ordered. The failure to achieve the requisite standard in this direction in SPARTAN may be attributed to inadequate communications and partly to a lack of joint intelligence cells at the point of the group organisation.[41]

The solution, as Paget saw it, to many of the problems that had been shown through SPARTAN was through greater integration at several levels of command. The closest to this solution that had previously been tried in Britain was in the creation of Army Co-operation Command. It, however, was not given the support required from the RAF to allow it to become fully embedded with Home Forces and the necessary integration to tackle many of the problems that faced the Command was lacking when it looked to resolve them. The functional system that Army Co-operation Command had to work within did not exist in other theatres where British air support was being developed, such as in the Western Desert under Tedder.[42]

SPARTAN also highlighted the deficiencies that existed in the collection and analysis of intelligence, particularly that gained from air reconnaissance. One of the biggest issues that

[39] TNA AIR 39/128, GHQ Exercise SPARTAN Comments by C-in-C, Home Forces, March 1943.
[40] *Ibid*.
[41] *Ibid*.
[42] Cf. Byford, 'Fair Stood', p.122. Terraine, *The Right of the Line* pp.351-2.

was revealed during SPARTAN was that 'the amount of work occasioned in dealing with the information contained in reports of all operations – direct from Squadrons – congested the Section and restricted the G10's activities in the broader sphere'.[43] A report by Flying Officer R.A. Symonds argued that despite the problems experienced by the intelligence section during SPARTAN,

> There would not ... be any saving of time in Squadrons sending their reports direct to Group Headquarters by telephone. It became clear at once that this system failed owing to bad communications between Group and Advanced airfields. It is probably quicker for all reports to go via [the] MORU for one Intelligence Officer can be taking a report while another is passing an earlier one to the Group.[44]

It was recommended that using the joint army/RAF headquarters it would be able to collect, collate and disseminate complete intelligence reports to all levels. The reliable communications used in SPARTAN, which had partly been developed by Army Co-operation Command, allowed the system outlined above to flourish. In order to allow this system to flourish in the field the Army/Group Headquarters 'should be an 'Information Centre' in which Army and RAF Intelligence staffs work together and into which information and intelligence from all Army and RAF sources is delivered'. This system 'should adjoin a Combined Operations Centre so that the complete air and ground situation can be jointly appreciated by the general and operations staff, together with their respective intelligence officers who will also be represented'.[45] It was determined that the minimum establishment for a continuous intelligence service should be 'one Flight Lieutenant as Senior Intelligence Officer, one Flight Officer to act as his deputy, and two Pilot/Flying Officers'. In order to make the establishment work at maximum efficiency the Flight Lieutenant 'should be seated next to [the] Operations Brigadier'. Through doing this, the intelligence officer would be 'immediately aware of the contents of all Operations orders'. It would also ensure that if the

[43] TNA AIR 16/852, Brief Report on the Intelligence Report on Exercise SPARTAN, March 1943.
[44] TNA AIR 16/852, Exercise SPARTAN Intelligence Aspect – Report by Flying Officer R.A. Symonds, 14 March 1943.
[45] TNA AIR 16/852, Report on RAF Intelligence in Joint Army/Air Operations in the Field by Wing Commander C.W.B. Harrington, 21 March 1943.

intelligence officer were engaged in contacting a group headquarters, as had happened on a frequent basis during SPARTAN, he would be able to 'hand the telephone to [the] operations Brigadier or take down the message himself'. It was further suggested that 'an Air Liaison Officer [ALO] [should be employed to keep] the Situation Map [up to date], getting the necessary military information for this purpose from Army or Corps Headquarters and passing it to Squadrons'.[46] The effectiveness of the composite group relied heavily upon the quick dissemination of intelligence information to advanced group headquarters. The responsibility for the despatch of reports from returning aircraft to the groups or the squadron intelligence officers responsible for them was to fall to the intelligence officers based at each airfield.[47]

Developments from SPARTAN

The impact of SPARTAN on tactical air power development was vast and in order to assimilate the lessons on the air aspect of the exercise at least, Barratt organised a conference shortly after the exercise had concluded so that the results and experiences of the exercise were 'still fresh in the participants' minds'.[48] Further refinements were also being made to the system that had been implemented in the Western Desert, however, its implementation suffered, largely due to the inexperience of the US forces involved in the Torch landings in conducting such operations, and in conducting offensive operations against a well-determined and gritty enemy.[49] The final report on the air aspect of the exercise was written not by Barratt, but by the senior air umpire, Thorold.[50] Barratt's conference looked to answer several questions that arose from the exercise. These questions ranged from Conferences

[46] TNA AIR 16/852, Report on Exercise SPARTAN (Intelligence Report) by Flying Officer R.A. Symonds, Senior Intelligence Officer, RAF, undated, c. March 1943.
[47] TNA AIR 16/582, SPARTAN Intelligence Report – Report on SPARTAN – SPARTAN Reporting Instruction, undated, c. March 1943.
[48] TNA AIR 2/7808, Agenda for a Meeting to be held by Air Marshal Sir Arthur Barratt (Director (Air) SPARTAN Exercise) at Army Co-operation Command, 19 March 1943.
[49] Citino, *The Wehrmacht* pp.75-109.
[50] TNA AIR 2/7808, GHQ Exercise SPARTAN, Report by Senior Administrative (Air) Umpire, Air Commodore H.K. Thorold, 25 March 1943.

held at army and corps commanders' headquarters through to the proportion of effort devoted to attacking airfields during the exercise.[51] The answers to many of the questions put forward in Barratt's questionnaire can be found in Thorold's report on the exercise. Thorold identified that the army had 'accepted certain responsibilities for meeting many of the needs of the RAF in the field ...' This again marked a step change in the attitude of the army towards the RAF whilst they were conducting support in the field. The composite group idea also had to 'dovetail evenly into that of the Army [to ensure that] the machinery for obtaining [the RAF's] needs work[ed] smoothly'. To allow this to function with the least amount of friction it was 'essential ... that the closest possible relationship be established from the outset between all branches of the staff and Units of the Army and RAF wherever the two Services come into contact'. The third appendix of the report is, however, the most important aspect of Thorold's report on SPARTAN. It is this section that deals with the composite group idea. In this section of the report, many of the ideas that it was proposed to test during SPARTAN were found to be sound but required more training to perfect. Of particular note was the use of advanced and rear headquarters and the MORU concept.[52]

The biggest development to come out of SPARTAN, however, was in the creation of a fully operational composite group. The discussions regarding the creation of such a force on a permanent basis had begun in early March 1943 while SPARTAN was still underway. The meeting at which this ideas was proposed was held as the COS had ruled 'that immediate plans should be made for holding in constant readiness as from 1st May [*sic*] the strongest possible force to re-enter the Continent, as soon as German resistance weakens to the required extent'. The meeting was to look at 'what practical steps could be taken to implement this decision so far as the RAF was concerned'. DMC pointed out to the meeting that the headquarters of a composite group had been created to fulfil the requirements of

[51] TNA AIR 2/7808. Agenda for a Meeting to be held by Barratt, 19 March 1943.
[52] TNA AIR 2/7808, Exercise SPARTAN Report by Thorold, 25 March 1943.

SPARTAN and in his view 'the principal question to be decided ... was as to whether this organisation should be retained after the conclusion of SPARTAN'. This group would then be used as the training formation for squadrons who would be conducting the air support role during, and in the event of a successful landing attempt the operations that would follow. It was pointed out to the meeting that the creation of a permanent composite group headquarters would cause difficulties as the units to form the headquarters for the exercise were in fact borrowed from other units, and 'would be returned to their respective Commands at the conclusion of the exercise'. If the composite group was to be established on a permanent basis, it was recommended that it should take over the training of 2 Group 'and possibly squadrons of Army Co-operation Command'.[53]

The composite group also challenged the fundamental organisation of the RAF. As has been noted, the RAF was organised on a functional basis. The composite group, containing a mixture of fighter, bomber and reconnaissance aircraft, was a radical step change in this structure and reflected the developments in the Western Desert. A unit organised on this basis could never have been contemplated when Army Co-operation Command was created. This was due mainly to the fractious relations, and mutual distrust that existed between the army and RAF at that time, and this lack of flexibility was to hamper the workings of Army Co-operation Command. In order to facilitate the training of units to the level where they would be able to conduct air support operations to the degree required, the meeting recommended that 'The Group Headquarters set up for SPARTAN should be retained as formed as present after the conclusion of the exercise'. Further to this, it was also put forward that 'No. 2 Group and (as a first step) the wings of Army Co-operation Command

[53] TNA AIR 20/2620, Minutes of a Meeting held under the Chairmanship of the VCAS, The Composite Group, 3 March 1943.

should be transferred to Fighter Command'.[54] The idea of transferring portions of Army Co-operation Command was the logical conclusion to the discussions that had started in 1942.

The recommendation put forward to keep the composite group headquarters in being on a permanent basis sparked discussions between the Deputy Chief of the Imperial General Staff (DCIGS), Lieutenant-General Sir Ronald Weeks, CIGS Brooke and CAS Portal. DCIGS was of the opinion that the army 'should jump at this proposal, since it seems to meet the vital requirements for which we have been pressing'.[55] That the army was in favour of the development of the composite group is not surprising as it effectively gave them an operational force that was dedicated to army support. The only area in which they would have to compromise on was over the operational control of the force. This would be vested in an air force officer, but through the joint headquarters that was associated with the composite group, the army officer who was in parallel to the air force officer would have a degree of control over how the force would be used and the target engaged. In a memorandum from the ACAS, responsible for Policy, Air Vice-Marshal Douglas Coyler, argued 'The immediate point at issue is not how a Composite Group shall be operated, but whether it is desirable to establish at once a Composite Group Headquarters ...' As a result of this issue being raised through SPARTAN a conference was held by VCAS, Sir Douglas Evill, in which it was decided to recommend to CAS that

> That the immediate formation of a Composite Group Headquarters in Fighter Command should be authorised, and if possible that this should be done before the end of Exercise SPARTAN. That all existing Composite Group Units should be allotted to this Headquarters.[56]

This recommendation had implications for the higher organisation of the RAF and the development of army co-operation in Britain. The conference highlighted that, as had previously been acknowledged during the discussions for the army air support group in 1942, that 'Army Co-operation Command ... will cease to exist'. It was, however, pointed out that

[54] *Ibid*.
[55] TNA WO 193/679, Letter from DCIGS to CIGS, 5 March 1943.
[56] TNA AIR 20/2620, Memorandum from ACAS (P) to CAS 4 March 1943.

it would be required 'to maintain a formation ... which will be responsible for both Army Co-operation and Airborne forces training'. The Air Staff felt that the disbandment of Army Co-operation Command was a major issue and that it would 'raise a certain amount of protest'. It was argued that whilst there would be problems faced from certain areas of the army, it would be welcomed 'by [the] Commander-in Chief, Home Forces ... in the interests of creating an effective force to support the Army in Continental operations'.[57]

With the acceptance of this recommendation, the days of Army Co-operation Command were numbered and the moves to establish the composite group headquarters proceeded rapidly. The issue was transferred to a discussion between the CAS, and Leigh-Mallory, held in early March. In this meeting, the CAS agreed to the formation of the group on a permanent basis, and that the temporary headquarters established for SPARTAN would be retained.[58] The AOC-in-C, Fighter Command, highlighted the difficulties that were to be encountered in retaining this unit due to the majority of the staff being 'lent for Exercise purposes'. As a result, there would be a period of disruption after the formation of the group while individuals were exchanged to bring the headquarters up to its operational establishment. It was further agreed by CAS that in order to 'meet the requirement of Continental operations, No. 2 Group and the wings in the Army Co-operation Command should be placed in Fighter Command.[59]

That the transferral of units of Army Co-operation Command to Fighter Command was agreed to raises an interesting question with regards to the status, not only of these units, but also Army Co-operation Command itself. These units must have been seen as being capable of being trained to perform within an operational Command within a reasonable time-frame questions the decision not to upgrade Army Co-operation Command to operational status,

[57] *Ibid*.
[58] TNA AIR 20/2620, Minutes of a Meeting on Round Up Preparations – Formation of a Composite Group, 5 March 1943.
[59] TNA AIR 20/2620, Minutes of a Meeting on Round Up Preparations – Formation of a Composite Group, 5 March 1943.

which would have aided its work during its existence. This status was to be part of the rationale for the development of the composite group once it had been established on a permanent basis, with a permanent staff. The VCAS argued that the hostility that may be seen from certain parts of the army would be quelled when it was seen that they would 'have trained for Continental operations a far larger number of squadrons of the types they require than they otherwise could expect, and that the squadrons will be trained in actual battle operations ...'[60] It was also argued that the creation of the composite group would remove the arguments that had occurred during the discussions for the creation of the army air support group regarding where the unit being proposed should be placed.[61] The potential disbandment of Army Co-operation Command was also discussed by DMC.

> I think that if the AOC-in-C's [Fighter Command] recommendations are adopted, and the Group remains in Fighter Command, we shall subsequently have to consider the whole question of the retention of Army Co-operation Command. I believe that the Command has achieved a great deal since it was formed [a] little over two years ago, but now that so much of the work for which it was originally formed has been taken over by Fighter Command, and to some extent by Bomber Command, it is questionable whether it would be desirable any longer to retain it in its present form. This again need not interfere with the immediate issue, and if it is thought that Army Co-operation Command has now outlived its usefulness, this present proposal might be a convenient first step to its disbandment.[62]

The composite group was formed in May 1943 and placed into Fighter Command, the discussions of alternative ideas that preceded the creation of the composite group can be found above. It was designated No. 83 Composite Group.[63] This group was to 'provide facilities for training ground units and squadrons to work together under field conditions, and to provide a means of working out the full requirements and organisation of a Composite Formation'.[64] Further to this a larger re-organisation was also being planned that would affect the Command structure of the RAF. It was decided that a tactical air force would be created within Fighter Command. The result of this new formation being created was the

[60] TNA AIR 20/2620, Letter from VCAS to CAS, 5 March 1943.
[61] TNA AIR 20/2620, Letter from DMC to ACAS (P), 27 February 1943.
[62] *Ibid*.
[63] TNA AIR 8/988, War Cabinet Chiefs of Staff Committee COS (43) 248 (0), Re-organisation of the Metropolitan Air Force for Cross-Channel Operations – Note by the VCAS, 10 May 1943.
[64] TNA AIR 8/984, Memorandum on No. 83 (Composite) Group, Fighter Command – Formation of Group Headquarters and Allocation and Formation of Ground Units, 19 March 1943.

disbandment of Army Co-operation Command, as an organisation of this nature was no longer necessary to advance the thinking and training of army co-operation work. On the face of it, this appears a radical move, which altered the functional basis of the RAF. In reality, however, Army Co-operation Command was simply re-organised as a new operational Command and placed under the direction of a new leader. The initial establishment of the new tactical air force was to consist of 2 Group, 83 Composite Group, 38 Wing and 140 squadron.[65] The COS discussed the note, presented by VCAS, and Brooke stated that 'the War Office was in complete agreement with the above note'. He was at pains to point out, however, that there were still 'some points of detail that such as the Air OP squadrons and the provision for army staff officers at certain RAF headquarters, which would be for the Air Ministry and War Office to work out in consultation'.[66]

SPARTAN had shown the efficiency of the composite group idea which had been developed since 1942 in conducting air support. This success of the composite group as demonstrated by SPARTAN would require a fundamental change in the organisation of the RAF. This was the first time that the RAF was willing to not only contemplate, but also authorise such a change and marked a fundamental shift in how air support was seen and how fundamental it was to success on the battlefield. The trials and tribulations of Army Co-operation allowed, to a certain degree, this change in attitude to be fostered and to become codified with the creation of the composite group headquarters.

The Disbandment of Army Co-operation Command

With the creation of the first composite group, and its placement within the tactical air force organisation, the work began to disband Army Co-operation Command.[67] Its subordinate formations were placed elsewhere within the Command organisation of the RAF in order to retain the knowledge and expertise that had been gained by Army Co-operation

[65] TNA AIR 8/988, War Cabinet Chiefs of Staff Committee COS (43) 248 (0), 10 May 1943.
[66] TNA AIR 8/988, Extract from the Minutes of COS 43 99th Meeting, 11 May 1943.
[67] Only the term 2nd Tactical Air Force will be capitalised.

Command throughout its existence.[68] The creation of the new tactical air force occurred in parallel with the preparations for the disbandment of Army Co-operation Command, both of these events will, however, be looked at individually to allow the decisions that were taken to be placed within their full and proper context. Disbanding a Command organisation as large as Army Co-operation Command would cause great administrative problems, as despite its non-operational status, it had a large staff organisation and many resources that could be well used within the operational Commands of the RAF. To this end, a conference was held on 13 May 'to discuss the administrative details arising out of the transfer of Army Co-operation Command and the transfer of its responsibilities'.[69] The other issue that the Air Council faced with the disbanding of Army Co-operation Command was where to place its AOC-in-C, Barratt and how best to use the person who had been overseeing the development of army co-operation thinking and development with Home Forces in Britain.

The two major formations of Army Co-operation Command that would have to be disposed of were the headquarters organisations of Nos. 70 and 72 Groups. There were, however, lower formations that contained experienced personnel who could develop the systems to be used once preparations for the invasion of the continent, as typified by the *Round Up* discussions, were completed. The problems faced in this respect were further hampered by the fact that the units experienced in conducting air support could not simply be transferred into the new tactical air force or composite group formations as they were being used in overseas theatres such as Italy. The training group of Army Co-operation Command, No. 70 Group 'with all its existing Units is to be transferred to Fighter Command and will

[68] TNA CAB 101/136, Unpublished Draft of Grand Strategy Narratives, undated. This did not form part of the published draft in the Grand Strategy Series.
[69] TNA AIR 39/94, Letter from ACI 1 (Air Ministry) to Air Officers in charge of Administration of Fighter, Bomber and Army Co-operation Commands regarding the Disbandment of Army Co-operation Command, 10 May 1943.

come directly under that Command Headquarters'.[70] When it was placed within Fighter Command, 70 Group was

> to retain its present functions ... [and] in addition, take over No. 13 (Light Bomber) OTU from No. 92 Group, Bomber Command. All anti-aircraft co-operation units at present in existing Groups of Fighter Command. Nos. 1 to 9 Anti-Aircraft practise camps from No. 72 Group.[71]

It had originally been decided that No. 72 Group should be disbanded as a headquarters organisation, and as noted above, part of its units and duties transferred to 70 Group. Those units that were not transferred to 70 Group 'namely [the] RAF Regiment School, Department and Wing are to be transferred to No. 20 Group, Technical Training Command'.[72] It had been decided that the date for the closing down 72 Group should be decided between Army Co-operation Command and Technical Training Command.[73] After further discussions with Home Forces regarding the fate of 72 Group, the DMC decided '... to defer the closing down of 72 Group Headquarters.' The group was now to 'be amalgamated [with No. 20 Group] and the new group thus formed entitled No. 22 Group'.[74] The wings that formed Army Co-operation Command, Nos. 32 to 37 and 39 Wings were to be transferred to Fighter Command.[75] These wing formations had close relations with army commands with whom they had been training. It was decided that, despite their transferral to a different Command, the relationship that they had with their respective Army Commands should continue. The training of these wings would continue, and would now be the responsibility of Fighter Command and they were also to 'exercise direct control of the squadrons for certain specific operations'. The Fighter Command Groups now responsible for these Wings would now also 'assume the same responsibilities for the administration of the Wings and Squadrons as they

[70] TNA WO 32/10348, Memorandum on the Formation of Tactical Air Forces Headquarters. Disbandment of Army Co-operation Command. Closing Down of No. 72 Group Headquarters, 14 May 1943. TNA Air 39/94, Draft Loose Minute – Formation of 2nd Tactical Air Force Headquarters and the Disbandment of Army Co-operation Command Headquarters. Disbandment of No. 72 Group Headquarters. Undated, c. May 1943.
[71] TNA AIR 39/94, Draft Loose Minute, undated, c. May 1943.
[72] *Ibid*.
[73] WO 32/10348, Memorandum on Formation of Tactical Air Forces Headquarters, 14 May 1943.
[74] WO 32/10348, Letter from J.D.I. Hardman to Director of Air (War Office), 28 May 1943.
[75] TNA AIR 8/988, Memorandum on the Formation of Tactical Air Force Headquarters. Disbandment of Army Co-operation Command Headquarters. Closing down of 72 Group Headquarters, 14 May 1943.

have for their existing Fighter Command Stations and Squadrons'.[76] There was also much discussion about the fate of the Air OP squadrons, which were the responsibility of Army Co-operation Command. It was decided, in the days leading up to the disbandment of Army Co-operation Command, that these squadrons

> will be under the composite group for the purpose of command and RAF administration, while they will be allocated to Corps in the appropriate Armies for training and operations in accordance with [the] present position. The remainder of the squadrons will remain in Army Co-operation Wings or formations appropriate to the Army formations with which these squadrons are working.[77]

VIII Air Support Command, which was under Army Co-operation Command for administration was again to be transferred to Fighter Command. The contentious issue of No. 2 Group, which had been an issue never fully dealt with when Army Co-operation Command was in existence due to the internal wrangling of the RAF, was finally settled with the creation of 2nd Tactical Air Force. 2 Group was now to be transferred into this force from Bomber Command on a permanent basis.[78] Transferring this force to a specialist tactical air force would allow it to receive the necessary specialist training that had been called for when it was first proposed to use the force in an air support role. The only part of No. 2 Group that was to remain with Bomber Command was the 'unarmed Bomber Mosquito Squadrons'.[79] The major issue that had prevented this from happening, prior to the creation of 2nd Tactical Air Force, was that aircraft of No. 2 Group were involved in a dual-role capacity. That of conducting part of the strategic bombing campaign and training in army support. Army Co-operation Command was not able to gain the use of No. 2 Group outright due to the lack of aircraft to carry out the strategic bombing campaign at that time. The subsequent loss of aircraft and trained personnel hampered the Command in its role to develop tactical air power in Britain.

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[76] TNA WO 32/10348, Memorandum on Formation of Tactical Air Force Headquarters, 14 May 1943.
[77] TNA WO 32/10348, Letter from Director of Air (War Office) to C-in-C, Home Forces, 20 May 1943.
[78] TNA AIR 39/94, Letter from ACI 1 (Air Ministry) to Air Officers in charge of Administration of Fighter, Bomber and Army Co-operation Commands, 10 May 1943.
[79] TNA AIR 16/566, Letter from ACAS (Policy) Air Vice-Marshal O.E.H. Medhurst to Air Marshal Sir Arthur Harris, AOC-in-C, Bomber Command, 24 May 1943.

There was also much discussion regarding the duties that would be transferred to Fighter Command when Army Co-operation Command was disbanded. The AVM that was to be responsible as the Air Officer for Training on air support matters was to have a staff that consisted of: 'A Group Captain – to be selected from among Army Co-operation Command, A Wing Commander – to be an expert on the flying side of Airborne Forces [and] A Squadron Leader'. With the transfer of 70 Group, it was agreed that 'the AOC [Air Officer Commanding] 70 Group should be an Air Vice-Marshal, in order to compete with the additions being made to 70 Group and his responsibilities in connection with the School of Army Co-operation, which he would have to discharge in place of the AOC-in-C, Army Co-operation Command'. Further to this 70 Group was also to have 'an expert on Light Bombers' on their staff. Barratt was also to forward a list 'of personnel to fill the establishment on TAF [Tactical Air Force] and AOT's [Air Officer Training] staff'.[80] This re-organisation of the role of 70 Group, along with the transfer of responsibilities from Army Co-operation Command, was to involve not only a transfer of tasks but also the people who would conduct them into 2nd Tactical Air Force.

Army Co-operation Command's disbandment was, in real terms, simply a transferral or amalgamation of its resources to other areas of the RAF that had operational responsibilities. Barratt was transferred to become AOC-in-C, Technical Training Command. [81] Carrington has argued that Army Co-operation Command 'worked itself out of a job' and that this was the fundamental reason for its disbandment. Whilst the Command worked as well as it could have given the situation it was faced with when it was created, it is wrong to say as Carrington does that it simply 'faded out of existence'.[82] It has, however, been argued that

[80] TNA AIR 16/566, Minutes of Meeting to Discuss Problems Arising out of the Transfer of Tasks Hitherto performed by Army Co-operation Command to Fighter Command, 19 May 1943.
[81] TNA WO 32/10348, Air Ministry Communiqué, undated, c. June 1943.
[82] Carrington, 'Army/Air Co-operation', p.40.

events and developments in the Western Desert overtook Army Co-operation Command.[83] It was mostly for this reason, along with the need to provide operational responsibilities for an army air support force, that the new organisation was created. As has been demonstrated above the only aspect of the Command that was actually removed was the higher-level organisation and the Commander. The remainder of the units within the Command were reconfigured and transferred, rather than abolished completely. This demonstrates that the work done and the expertise and experience gained were seen as being of vital importance to allow the 2nd Tactical Air Force to flourish both during its training and its eventual deployment for operations overseas.[84] This was necessary as the forces that had been deployed in the Western Desert were now involved in conducting tactical air support operations during engagements in Italy.[85] 2nd Tactical Air Force was simply a re-constituted, operationally ready Army Co-operation Command that commanded the respect of both the RAF and army.

The Creation of 2nd Tactical Air Force

The tactical air force that was to be come into being at the same time as Army Co-operation Command was disbanded was designated 2nd Tactical Air Force in recognition of the first tactical air force that had been created in the Western Desert under Tedder and Coningham. The strategic situation had by this time turned the tide of the war against the *Wehrmacht* and as noted by Murray and Millett, 'No matter how skilled their conduct of defensive battles, the weight of Allied military power was wearing away the Wehrmacht's tactical advantage'.[86] With the successes of the Red Army on the Eastern Front and the pressure of the Battle of the Atlantic being relieved, the prospect of a successful invasion of France being launched increased greatly, although there would still be great difficulty in

[83] Gooderson, *Air Power at the Battlefront* p.8. Jordan and Sheffield, 'The British Army and Air Power', p.79.
[84] Hall, *Strategy for* pp.150-1. Hall, 'The Long Gestation', pp.29-30.
[85] For more details on these engagements and the developments that came from them, Cf. Gooderson, *Air Power at the Battlefront*.
[86] Murray and Millett, *A War to be Won* p.374.

launching the attack at the operational and tactical levels.[87] This new force was to be formed at the headquarters that had been occupied by Army Co-operation Command at Bracknell. This new force was to consist of various parts of other RAF Commands that were to be transferred for this specific purpose. These units were No. 2 (Light Bomber) Group, which was in Bomber Command, No. 83 (Composite) Group, which was under Fighter Command, and No. 140 (Photo Reconnaissance) Squadron, No. 38 (Airborne Forces) Wing, which were in Army Co-operation Command. 140 Squadron was also under the administration of No. 35 Wing, who would continue to administer it when it was part of 2nd Tactical Air Force. Further to this, a second composite group would be added when it was formed, this would be designated No. 84 (Composite) Group.[88] In order to ease the administrative difficulties and to enable the force to establish itself properly, as Army Co-operation Command had been unable to do when it was first created, 2nd Tactical Air Force was established in No. 11 Group, Fighter Command.[89]

The functions of 2nd Tactical Air Force were remarkably similar to that envisaged for Army Co-operation Command when it was created in 1940. The only real difference between the two forces was in the fully operational nature of 2nd Tactical Air Force. This force would be responsible for 'command[ing] the appropriate formations; study[ing] air aspects of Continental operations, [conducting] exercises with Army Group Headquarters, train[ing] the composite Groups, including the tactical reconnaissance squadrons. They were also to 'train light bomber squadrons with the fighters and fighter/bombers of the Tactical Air Forces and to exercise them in actual operations, to make detailed plans in conjunction with C-in-C Army group for the Continental operations when the outline and cover plans have

[87] For more details of the D-Day landings and subsequent operations launched from the beachhead Cf. Max Hastings, *Operation Overlord: D-Day and the Battle for Normandy* (Pan Books: London, 1984) and Murray and Millett, *A War to Be Won* pp.411-445.
[88]TNA WO 199/334, Letter from the Director of Air (War Office) to C-in-C, Home Forces, 28 May 1943.
[89] Hall, 'The Long Gestation', pp. 29-30.

been issued.'[90] The increased emphasis on Continental operations was due to the changing strategic situation that was faced when 2nd Tactical Air Force was being created. With the successes being achieved in overseas theatres, preparations were beginning in earnest for an invasion operation against mainland Europe.

The Development of the Air OP Squadron and its place within 2nd Tactical Air Force

The Air OP squadrons, developed in part by Army Co-operation Command, were also subject to testing during Exercise SPARTAN. The result of the exercise was to alter how these units were to be used on the tactical level. During the exercise, a total of four Air OP squadrons took part. Three of these squadrons formed part of the 'German' side and one worked for the 'British' side. As a result of SPARTAN it was seen that 'there are advantages in the Flight, rather than the Section being regarded as the Tactical unit'. In order to allow the Flight to function effectively as the tactical unit of the Air OP organisation, from SPARTAN it was recommended, that 'The flight should, whenever possible, move as a flight.' Where sections of the flight had been assigned to regiments for observation work, it was noted that 'they can often return at dusk to the Flight Advanced Landing Ground'. The briefing of pilots whilst in the air was also seen to be easier if carried out by the Flight Commander and that as a result there would be 'an economy of effort and minimum casualties'.[91] The Chief Umpire's report into SPARTAN gave the Air OP a glowing report that deserves to be quoted at length.

> The exercise has taught us a lot as to the use of the AOP [Air OP]. Its value has recently been proved with First Army, was found to be immense. *This was the first time that many artillery commanders had had the chance to handle them. They did it will, and the AOP Flights did good work* ... It is now realised what an excellent weapon the AOP is, and it should not be misused, but retained for its legitimate tasks. All Arty OPs should report everything they can about the battle and this applies to the AOP which can be used within our lines on various missions if they don't get taken off shooting the artillery when this is wanted. It should be used under the artillery commanders. AOPs used for artillery observation are confined to the limit of vision from 2,000

[90] TNA WO 199/334, Letter from the Director of Air (War Office) to C-in-C, Home Forces, 28 May 1943.
[91] TNA AIR 39/128, Letter from Army Co-operation Command to Headquarters 70 Group, 32-39 Wings, No. 43 Operational Training Unit, School of Army Co-operation, Air Ministry (DMC), War Office (Director of Air), Headquarters Home Forces (Air), General Headquarters, Home Forces, Royal Artillery, RAF General Headquarters, Home Forces School of Artillery, Larkhill, 17 April 1943.

> yards behind our lines. It does not, therefore, replace Arty R[econnaissance]. Suggested that Arty R is not essential when the battle is fluid, but when it has been established and a fire plan is being made Arty R is valuable for the essential location of targets deeper within the enemy lines than can be seen from the AOP [Author's emphasis].[92]

The use of the Air OP in SPARTAN culminated the development in artillery observation that had begun in the First World War. Army Co-operation Command continued this development in conjunction with the School of Artillery. The comments above, as a result of SPARTAN, highlight one of the major problems faced by Army Co-operation Command. The Chief Umpire highlighted that many artillery commanders had no experience using the Air OP, and it had in effect been an experimental organisation whilst its tactics and organisation were being refined. Very few large-scale exercises were held to allow commanders to gain experience in the use of the Air OP. This was partly due to the squadrons being within Army Co-operation Command and due its status within the RAF, it found it difficult to organise exercises with army formations. This meant that artillery commanders would be face a steep learning curve in how to use the Air OP during operations.

The development of the Air OP squadron within the composite group organisation was subject to major discussion whilst the 2nd Tactical Air Force was being developed. One of the major points for discussion was 'the portion of Air OP Squadrons in the new organisation'.[93] In response to a note sent by the Director of Air (WO) to DMC, it was suggested that, with regard to the Air OP squadron within the composite group

> ... it is not proposed to alter the basic operational and administration organisation of the Air OP squadrons in the re-organisation to which you refer. As far as can be foreseen the bulk of these squadrons will be under the composite groups for purposes of command and RAF administration, while they will be allocated to corps in the appropriate Armies for training, and operations in accordance with the present practice. The remainder of the squadrons will remain in Army Co-operation Wings or formations appropriate.[94]

[92] TNA AIR 39/128, Exercise SPARTAN – Extract from Chief Umpires Report Chapter VI, undated, c. May 1943.
[93] TNA WO 32/10348, Note from Director of Air (War Office) to DMC, 17 May 1943.
[94] TNA WO 32/10348, Response to Note from Director of Air (War Office) by DMC, 20 May 1943.

It was decided that the Air OP should be allocated on the scale of 'one [squadron] per Corps and one per Army'. It was felt that 'Such a scale of allotment would not be permanent but would be effective for operations and necessary prior training only'. Further to this, the status of the troops that formed the Air OP was also subject to alteration and it was agreed that 'Air OP Squadrons should be regarded as War Office troops which could be allotted to theatres as required by the general situation'.[95] This now made the Air OP an interesting functional construct.

That the RAF was willing to allow the transfer of resources away from their operational control further highlights just how much the attitude towards army co-operation had changed. This change in attitude would lead to the calls for an air arm under army control diminishing. This had been the major fear of the Air Staff when Army Co-operation Command was created and throughout its existence. With operations being planned, the emphasis for the development of air support had shifted, and gave both the army and RAF something to concentrate on and work together to achieve a common aim. This common aim had been lacking whilst a return to the continent was not a feasible option and increased the infighting between the two services. Army Co-operation Command was the Command that had been stuck in the middle of this infighting and its ability to conduct its work was hampered as a result. The experience gained in the Western Desert and North Africa had demonstrated what properly constituted air support could achieve and how important artillery observation was in supporting ground troops. This was combined with the theoretical work done by Army Co-operation Command to create a system that would act as a force multiplier in army co-operation.

[95] TNA WO 193/679, Minutes of a Meeting to Discuss the Scale of Allotment of Air OP Squadrons and Future Training Policy for Pilots, 17 June 1943.

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APPENDIX I

DIRECTIVE TO AOC-IN-C ARMY CO-OPERATION COMMAND

1. You are appointed Air Officer Commanding-in-Chief, Army Co-operation Command.
2. Your Command will be organised into two groups:-

   (a) *An Operational group*, comprising those squadrons allotted to Army formations in Great Britain.

   The Commander of the group will act in the capacity of an AOC, Air Component as laid down in AP 1300 Chap. XI, para. 7. An appropriate proportion of the Air Branch of the Staff of this Group will be located with GHQ, Home Forces.

   (b) *A Training group*, comprising:-

   The Army Co-operation Schools.

   The Central Landing Establishment.

   The Air OP Flight.

   Anti-Aircraft and Searchlight Co-operation Units.
3. The Operational and Training Groups will be under your command, except that the Operational Group, being equivalent to an Air Component, will be under the operational control of GHQ Home Forces. These two groups will comprise all RAF units specifically engaged in Army Co-operation duties in Great Britain.
4. Your primary duties will be to implement the policy decided upon by the Air Ministry and War Office, to foster the development of all aspects of Army Co-operation and to further mutual co-operation between the Army and the Royal Air Force. You are responsible in these matters to the Air Ministry and will be adviser to the Air Ministry on all Army Co-operation matters.
5. You will be charged:-

(a) With the supervision of all training in co-operation with the Army, within the terms of the policy communicated to you from time to time by the Air Ministry; and

(b) With the development of the tactics and technique of Army Co-operation, including close support.

You will co-operate as necessary with Commanders-in-Chief other RAF Commands, and Commanders-in-Chief, Home Forces and Northern Ireland, on these matters.

6. Your responsibility towards the Commander-in-Chief, Home Forces will consist solely in ensuring the efficiency of the air forces in the Operational Group. During active operations, you will not be responsible for the operational employment of the Army Co-operation squadrons, nor for air forces provided by other Commands to act in support of Home Forces.

7. In addition to your responsibilities for the two Groups in your Command, you will direct the policy in training and development to be followed by the Officer Commanding No. 75 Wing, whose squadrons are under GOC-in-C Northern Ireland for operations and operational training. You will therefore establish close liaison with the GOC-in-C. You will have the right to inspect No. 75 Wing generally, and to supervise and initiate training exercises in particular. You will not have any other responsibility for No. 75 Wing, which is under the AOC, RAF in Northern Ireland, for administration. The Officer Commanding No. 75 Wing will act in the capacity of an OC Air Component as laid down in AP 1300m Chap. XI, para. 7. Instructions covering the GOC's responsibilities in this connection will be issued by the War Office.

8. Your Command and Group Headquarters staffs will be composed of Army and RAF officers in suitable proportions.