

Re-discovering the Operational Level: Army Co-operation Command and Tactical Air Power Development in Britain, 1940-43

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ABSTRACT

This article investigates the role played by the Royal Air Force's Army Co-operation Command in the development of tactical air power thinking in Britain during the Second World War and how far it was able to demonstrate to the army the impact of tactical air power at the operational level. In this it was relatively successful. Army Co-operation Command demonstrated this to the lower-level formations of the army through training exercises. They were unable to convince senior commanders such as General Sir Alan Brooke whose thoughts on tactical air power centred on close air support and resolving the tactical-level problems ground forces faced when in close contact with the enemy.

The position of tactical air power in Britain after the Battle of France, 1940, was a dire one. The arguments over how air power should be projected on the battlefield had raged between the Royal Air Force (RAF) and Army in Britain since the creation of the RAF as an independent force towards the end of the First World War. With no operations against a hostile enemy to concentrate the minds of the Services, combined with the drastic cut in the post-war military budget, their focus turned to their position and status at home. The two older services, the Army and Royal Navy, saw the newly created RAF as a threat to their pre-war position and also saw the defence budget being split three ways instead of the two that it had been prior to 1914.¹ One of the biggest arguments between the Army and RAF during the inter-war period was over the resources dedicated to, and the development of, tactical air power. The Army felt that the major role for the RAF should be the support of ground forces in the field through the application of close support rather than a wider application of tactical air power in the form of battlefield air interdiction.²

¹ H. Montgomery Hyde, *British Air Policy Between the Wars 1918-1939* (London: Heinemann, 1976), p. 57, p. 67.

² The National Archives [TNA] AIR 10/1911, Royal Air Force War Manual – Part I, 1935.

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Whilst both methods of air support have their greatest impact at the tactical level of war, air interdiction also has a far wider and more influential impact at the operational level than close support.

This was something that the Army in Britain failed to understand for the whole of the inter-war period and the majority of the Second World War. Through the work done in conjunction with the Army, Army Co-operation Command was able to educate the Army in Britain about the ability of tactical air power to have a wider influence at the operational level, but this education was limited in how far up the chain of command it went. At the senior level, commanders such as the Chief of the Imperial General Staff, General Sir Alan Brooke, clung to their ideas on how aircraft could best support forces in the field. This view was a basic tactical-level concept and showed little comprehension of how tactical air power could also have a function at the operational level of war. Brooke and others continued to hold this view, particularly after their experiences fighting in France. They believed that the only way the Army in Britain could get the support from the air it required was through the creation of an army air arm under their operational control. This view demonstrated a lack of understanding of fighting modern warfare at the operational rather than the tactical level. This article will support this argument by analysing the work done by Army Co-operation Command in highlighting the wider application of tactical air power to the army, the work done in improving the theoretical tactical air power provision within Britain and the arguments between the RAF and army over how this provision was best organised for operations on the continent in 1944.

Army Co-operation Command was created as a result of a War Office idea to increase the provision and status of tactical air power in Britain after the British Expeditionary Force (BEF) and French Army's disastrous showing against the German invasion of France in 1940.³ The War Office established a committee to investigate the fighting in France under General Sir William Bartholomew. The problems and failings of the Bartholomew Committee Report have already been well established and the details are not required here.⁴ The impact of it is, however, of crucial importance to this article. It placed the RAF under huge inter-Service political pressure to at least appear to take the development of tactical air power in Britain

³ TNA AIR 2/5224, General Staff Note on Training in Close Support in the proposed Army Co-operation Command, 2 October 1940.

⁴ The Bartholomew Report can be found at TNA CAB 106/220. The failings are highlighted in depth in David Ian Hall, *Strategy for Victory: The Development of British Tactical Air Power, 1919-1943* (Westport, Connecticut and London: Praeger Security International, 2008), pp. 56-9, and Alistair Byford, 'The Battle of France, May 1940: Enduring, Combined and Joint Lessons', in *Air Power Review*, vol. 11, no. 2 (Summer, 2008), pp. 60-73.

more seriously, as the report concluded that the major reason for the BEF's failings was the lack of close support of the ground forces. The report did not criticise the overall Allied strategic plan or the doctrine that guided the BEF's operations, which had been exploited to the full by the Germans, nor their ideas about the pace of operations and how best to utilise and organise armoured forces.⁵ The conclusions reached pushed the RAF into a corner which required firm and decisive action to relieve the pressure it was under. This was done in conjunction with the War Office, and the autumn of 1940 saw many discussions take place between the two Services as to how best the situation could be satisfactorily resolved to their mutual satisfaction.

These discussions eventually led to the creation of Army Co-operation Command under Air Marshal Sir Arthur 'Ugly' Barratt in December 1940.⁶ However, prior to the creation of Army Co-operation Command, work had already started to improve the air support capabilities of the RAF through the Wann-Woodall experiments, which looked to develop a system where ground forces could request support from the air on an unplanned impromptu basis.⁷ These experiments were then codified into informal doctrine by Army Co-operation Command and can be seen as the first piece of joint doctrine of the Second World War. The Wann-Woodall report was distributed to all squadrons within Army Co-operation Command however, due to the RAF's institutional distrust of theoretical solutions to problems, this report was not distributed on a wider scale to RAF Commands overseas.⁸ The Wann-Woodall experiments focused on what the War Office saw as the greatest issue in the application of tactical air support: the attack of unplanned impromptu targets. Whilst this was a major problem for the RAF in France, the base communications system had already been partly developed through the Allied Central Air Bureau (ACAB) which was a forerunner to the Close Support Bomber Control (CSBC) and later the Army Air Support Control (AASC).⁹ The major problem for the RAF in France was not in the attack of impromptu close support targets but in gaining air superiority

⁵ TNA CAB 106/220, The Bartholomew Committee Report.

⁶ The discussions regarding the creation of Army Co-operation Command can be found at TNA AIR 20/281 I, TNA AIR 2/5224, TNA AIR 20/4301, TNA 30/4301 and TNA AIR 39/139.

⁷ The details of the Wann-Woodall experiments can be seen in TNA AIR 39/142 and TNA WO 106/5162.

⁸ Imperial War Museum (IWM) Carrington Papers 8/11/4. TNA PREM 4/19/4, Proposal for the Re-organisation of Army Co-operation with the RAF, c. November 1940. TNA AIR 39/139, Letter from AOC-in-C Army Co-operation Command to Air Commodore R.V. Goddard (Director of Military Co-operation), 1 December 1940; Alistair Byford, 'Fair Stood the Wind for France? The Royal Air Force's Experience in 1940 as a Case Study for the Relationship Between Policy, Strategy and Doctrine', in *Air Power Review*, vol. 14, no. 3, (Autumn/Winter, 2011), p. 52; Byford, 'The Battle of France', p.69.

⁹ TNA WO 106/1597, Letter from General Officer Commanding-in-Chief British Expeditionary Force Lord Gort to Chief of the Imperial General Staff (CIGS) General Sir Edmund Ironside, 27 November 1939. TNA AIR 35/354, British Air Forces in France, Barratt's Despatch, The Establishment of the Allied Central Air Bureau, July 1940; Hall, *Strategy for Victory*, p. 44.

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over the battlefield and using this to project air power at the operational level. Without this success at the operational level, even the best close support system would be useless as it could not be implemented effectively in the face of overwhelming enemy opposition. Whilst the Army claimed to understand the idea of air superiority, if the Bartholomew Report is anything to go by, they did not. The Army's idea of air superiority again demonstrated their lack of understanding of the operational level of war: air superiority for the army was simply an umbrella of fighters protecting land forces.¹⁰

Part of Barratt's role as the Air Officer Commanding-in-Chief (AOC-in-C) Army Co-operation Command was to improve the Army's understanding of the implications of tactical air power at the wider, higher level and improve the relations between the two Services.¹¹ There had been little done to develop theoretical thinking in the War Office in the inter-war period, or even at the start of the Second World War. In fact, it was not until January 1940 that a section to address this issue, MO7, was created. This was a very small section, headed up by Lieutenant-Colonel F.W. Festing. Despite the very quick work done by MO7 in developing their own thinking in this area, the conclusions reached and ideas put forward were similar to those espoused by the War Office during the inter-war period and focused on the tactical-level problems the Army had and would continue to face in the field when engaged with the enemy.¹²

Barratt embarked upon this role almost straight away, despite a certain degree of teething problems being experienced in regards to the overall structure of the Command.¹³ The development of the Air Observation Post (Air OP) was the first major co-operation between the RAF and Army through the work undertaken by Army Co-operation Command and the Royal Artillery. This work highlighted the operational level impact that artillery reconnaissance could have through the use of a new procedure.¹⁴ The new procedure implemented, based upon the system used by artillery observers in Ground Observation Posts, increased the effectiveness of artillery reconnaissance allowing a greater amount of fire-power to be delivered in a shorter time-scale and giving artillery a more decisive impact on the battlefield. The

¹⁰ TNA CAB 106/220, The Bartholomew Committee Final Report 1940, p.15.

¹¹ TNA AIR 20/2811, Directive to AOC-in-C Army Co-operation Command, undated c. November 1940.

¹² TNA WO 106/1596, WO 106/1754, Air Policy, June-July 1940; Hall, *Strategy for Victory*, p.53.

¹³ TNA AIR 39/28. TNA AIR 39/20. TNA AIR 20/327. TNA AIR 20/2812. TNA AIR 2/7336. IWM Carrington Papers 81/11/6.

¹⁴ More details of how the Air OP was developed can be found at Matthew Powell, 'A Forgotten Revolution? Army Co-operation Command and Artillery Co-operation, 1940-1942', in *Canadian Military History*, vol. 23, no. 1 (Winter, 2014), pp. 71-88.

Air OP development also improved relations between the RAF and Royal Artillery. During training camps pilots and gunners were located in the same area and were able to mix. As the pilots' and gunners' personal relationships developed there was a marked improvement in the efficiency of the reconnaissance work from the air, just as had happened during the First World War.¹⁵

The system for artillery reconnaissance by which artillery batteries were advised of the fall of shot from their guns was changed from the clock code system developed by Captain Baron James and Lieutenant Donald Lewis in the First World War. In this system the target was placed in the middle of the clock face and the direction of the fall of shot was indicated in relation to the numbers on the clock. A shot to the north of the target would be indicated by the number twelve, a shot south by six. The distance from the target would be indicated in multiples of one hundred yards.¹⁶ This system functioned well during the static trench warfare phase of the First World War but when semi-mobile warfare emerged in 1918 the system struggled as the command and control system could not keep up with the pace of operations.¹⁷ The Air Staff were happy to continue to use the clock code system in the Second World War. Experiments had, however, been conducted by qualified pilots within the Royal Artillery where the utilisation of the system used by gunners to correct the fall of shot was shown to improve the efficiency of artillery reconnaissance. Many trials were conducted in 1941 by Army Co-operation Command and the School of Artillery where the gunner system was subject to rigorous testing and eventually adopted to improve the operational level capabilities of artillery reconnaissance.¹⁸

Army Co-operation Command continued to develop the basic system that emerged from the Wann-Woodall experiments through further training and experimentation in 1941 where the Close Support Bomber Controls (CSBC), a signals organisation with a joint staff that would approve or deny requests for support in line with overall military plan, was subjected to further rigorous tests as well as ideas that had been dismissed during the initial experiments. It was through training such as this, based on the Wann-Woodall experiments and their further development under Army Co-operation Command, that the lower formations of the Army were educated in the operational-level effect of tactical air support. The Wann-Woodall trials themselves

¹⁵ 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.

¹⁶ Shelford Bidwell and Dominick Graham, *Fire-Power: The British Army Weapons and Theories of War, 1904-1945* (Barnsley: Pen & Sword, 2004), p. 102.

¹⁷ David Jordan, 'The Royal Air Force and Air/Land Integration in the 100 Days, August to November 1918', in *Air Power Review*, vol. 11, no. 2 (Summer, 2008), p. 15.

¹⁸ The details of the discussions between Army Co-operation Command and the School of Artillery and the nature of the trials can be found at TNA AIR 39/47.

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consisted of signals experiments that were designed to discover the most efficient way for forward formations to request the impromptu support of close support bombers. Within this system it was also essential to ensure that messages could then be sent back to the formations that had requested the support in order to advise if they would receive the support they had requested. In order to achieve this mobile forward formations were able to communicate directly with the CSBC.¹⁹

Army Co-operation Command was responsible for the organisation and conduct of this training despite the aircraft coming from Bomber Command. This placed the RAF as a whole in a difficult position with regards to the conflicting priorities this created. There were still disagreements between the two Services over the removal of medium bomber squadrons from active operations against Germany for training and how effective this training was given the high turnover of pilots within the designated squadrons of Bomber Command.²⁰ The War Office felt that the pace of training was not quick enough and Brooke again argued for the army's narrow, tactical-level, view of air support.²¹ Whilst sympathetic to the claims of the Army that not enough was being done to prepare both the Army and RAF to conduct air support, Barratt was well versed in the RAF's fundamental principles of air power and the overarching strategic situation, and he realised that little could be done when the Army was not involved in active operations in Europe and was not likely to be in the near future. Barratt also felt that such training as was being carried out was of little use because Bomber Command's No. 2 Group, which had been designated to conduct it, was suffering high casualty rates on operations and joint training could only ever be undertaken at the most basic level.²²

In an exercise in July 1941 the CSBC saw their role modified and attempts were made by Brooke to change the terminology used in order to prevent confusion. This change in terminology, which Barratt accepted did cause confusion between the Army and RAF, further demonstrated the Army's lack of understanding about the operational-level impact air support could have. Brooke wanted the terms close support and direct support changed to army support.²³ By removing the terms close

¹⁹ TNA AIR 2/5201, Close Support Bombing Trials in Northern Ireland, 21 September 1940; TNA AIR 39/142, Report on Experimental Training in Close Support Bombing by Group Captain A. Wann and Lieutenant-Colonel J.D. Woodall, 5 December 1940; TNA WO 106/5162, Report on Experimental Training in Close Support Bombing by Wann and Woodall, 5 December 1940.

²⁰ TNA AIR 8/580, Letter from Director of Plans, Air Commodore William Dixon, to Portal, 1 July, 1941; TNA CAB 101/136, Un-published draft of Grand Strategy Narrative, undated.

²¹ TNA WO 32/9836, Memorandum by Brooke on co-operation between the Army and RAF, 3 May 1941.

²² TNA AIR 39/16, Letter from Barratt to Portal, 13 May 1941.

²³ TNA AIR 2/5224, Memorandum by Brooke to the Under-Secretary of State for War, 19 May 1941.

and direct support, Brooke, and the General Staff, were hoping for the focus to be placed on the close support of forces when engaged with the enemy and resolving the tactical level problems this presented. Their thinking was not of the operational level impact that a wider consideration of air support could have. The CSBC was renamed the Army Air Support Control (AASC) but Barratt had to re-emphasise that its role was to be the 'advanced headquarters of the RAF formation providing ... support for the land battle' and not simply an organisation 'for arranging the attack of targets pointed out by forward formations ...'²⁴ That this was how the CSBC/AASC was viewed by the Army again demonstrates their thinking in this area was restricted to the tactical level. As an advanced headquarters the CSBC/AASC could provide the necessary information for aircraft to attack targets that would have both a tactical- and operational-level impact for the forces they were supporting and not simply attack targets requested by land forces to overcome a tactical-level problem.

The largest exercise of 1941, BUMPER, took place in September/October and saw the AASC concept trialled in two different ways. One AASC, acting as the British forces, placed rear links at the aerodromes of the aircraft designated to provide air support. Another AASC, acting as the German IV Army, utilised a similar communications system as that deployed by the British forces but added a further link to the headquarters of No. 2 (Bomber) Group. This arrangement enhanced the operational-level capabilities of the force to co-ordinate a greater understanding by the AASC, the aircraft designated to support the land forces and the headquarters of the Group of the wider levels of war impact their support might have. BUMPER also trialled an idea originally dismissed by Wann and Woodall: that air forces should be allotted to forward formations in the same way as long-range artillery. This idea was not dismissed by Wann and Woodall because of concerns over the projection of air power at the operational level but because there were simply not enough Army co-operation aircraft available at the time of their experiments. Such an allocation could, if the requests for support was combined with wider intelligence and an understanding of the operational and strategic-level plan, have a wider operational-level impact. It would also have an impact at the tactical level as local commanders would know the availability of their air resources and could advise forward formations of this. It would also benefit the pilots as they would be providing support in a familiar area of the battlefield.²⁵ Despite the allocation of aircraft to Army formations breaking the principles of air power, the command and control elements of the Wann-Woodall system, where forward formations requested support on an impromptu basis, allowed for aircraft to be designated in such a way in order to

²⁴ TNA AIR 2/5224, Essence of Comments by Barratt on General Headquarters Draft paper on Air Support, c. May 1941.

²⁵ TNA AIR 39/80, Report by Barratt on the Air Aspect of BUMPER, 28 October 1941.

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improve the overall efficiency of the AASC. Wann and Woodall had built upon the basic theoretical ideas that had emerged from France through the ACAB to develop a functioning command and control system that would allow for the almost real-time control of aircraft for tactical support.

BUMPER had finally confirmed the thinking of the RAF on the function of the AASC mentioned above. It could handle the requests for support and take these requests in conjunction with the intelligence available from tactical reconnaissance and the Army's intelligence to select targets that would have the highest possible levels of war impact or, on a tactical level, select targets that were of extreme importance. The AASC's position would be high within the command structure implemented during operations on the continent. Until the battle had reached a point where the senior commander was able to decide where he should strike the decisive blow, the AASC would be located at Army headquarters. In a position such as this, high in the chain of command, the AASC would have access to intelligence and information that would allow it to select targets that would have an impact at the operational level.²⁶ The training exercises had highlighted to those involved in its implementation, particularly the ground commanders, the operational level impact that air support could have. It was only through a practical demonstration that this was possible and such a demonstration was almost impossible to provide to the senior commanders of the General Staff except through active operations.

Although BUMPER and other exercises held in 1941 had shown the importance of training in air support, not only so airmen and troops were familiar with the system but also to continue the development of the system itself, the strategic realities and direction of the Second World War meant that this could not happen as often as the War Office would have liked. A substantial number of squadrons had been withdrawn from strategic air operations against Germany to take part in BUMPER, much to the consternation of Winston Churchill. The situation was made worse by the fact that, upon these squadrons' return to active duty, bad weather prevented the conduct of operations.²⁷

The relations between the senior commanders of the two Services remained strained throughout this period. This was particularly the case between the Chief of the Air Staff, Air Marshal Sir Charles Portal, and Brooke. These poor relations did not mean that the subject of air support for the army was not heatedly discussed between the two but little progress was made on the major issues such as the wider

²⁶ TNA WO 32/10403, Report on Army Air Controls, 16 October 1941.

²⁷ TNA PREM 3/80, Minute from Portal to Churchill, 11 November 1941.

organisation of air support, where the Services were extremely far apart in their thinking. One of the fundamental reasons why this relationship did not improve, despite the work of Army Co-operation Command, was Brooke's inability to see tactical air support as anything more than a close support service that focussed simply on the tactical-level problems the army would face when in contact with the enemy. He was unable to conceive of air support having a wider impact at the operational level of war.²⁸

By 1942 a return to offensive operations on the continent appeared more realistic and, under the code named ROUNDUP, plans were developed for an invasion to be launched in 1943. This plan was eventually cancelled, and ROUNDUP was replaced with the TORCH landings in North Africa, but when the plans for ROUNDUP were being discussed the application of tactical air power was a major feature and serious thought began as to how air support was to be best structured to support the Army. This thought centred on the idea of a composite Army Air Support Group (AASG), which was revolutionary in RAF terms. This new formation moved away from the mono-role command structure that the RAF had implemented in the late 1930s, where a functional command of the RAF was responsible for a specific aspect of air fighting.²⁹ The concept of the AASG came from a proposal put forward by Air Vice-Marshal John Slessor, the Assistant Chief of the Air Staff, for the formation of tactical air forces in Britain. This proposal was designed specifically for providing air support in north-west Europe.³⁰ The main argument between the Air and General Staffs centred on the discussions between Portal and Brooke over where in the RAF command structure the AASG should be placed as the plans began to be made for the invasion of the continent. The two options for the formation of the AASG were within Army Co-operation Command, favoured by Brooke, and Fighter Command, favoured by Portal and the Air Staff.

One of the major issues that had plagued the development of tactical air power in Britain were the divergent interests of the various parties due to the functional, mono-role command structure of the RAF.³¹ In order to resolve this particular issue, the Slessor plan called for composite RAF groups composed of fighter, bomber, reconnaissance and Army co-operation squadrons.³² The AASC's role would also be

²⁸ Hall, *Strategy for Victory*, pp. 153-4.

²⁹ Alistair Byford, 'Fair Stood the Wind for France?', p. 41.

³⁰ TNA CAB 80/37, Continental Operations 1943: Operational Organisation and System of Command of the RAF. Memorandum by Chief of the Air Staff, 21 July 1942; Hall, *Strategy for Victory*, p. 146.

³¹ TNA WO 233/60, Draft of Development of Air Support to the Army 1939-1945 by Charles Carrington, 25 May 1945; TNA AIR 8/1063, Report by the Joint Planning Staff, 21 May 1942.

³² TNA WO 32/10396, Letter from General Paget, C-in-C Home Forces to the Under-Secretary of State for War regarding the Organisation and System of Control of Air Forces in Support of Overseas Operations, 5 November 1942.

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expanded as the Army enlarged, and Slessor's idea was a timely one as such a force would have encountered difficulties if it were to be integrated into anything smaller than a Corps. A formation of this size would have been unthinkable when Army Co-operation Command was created in 1940. This new air support formation was based on the system that had been used successfully in the Western Desert under Air Marshal Sir Arthur Tedder and Air Vice-Marshal Sir Arthur Coningham, where operational experience during CRUSADER in 1941/2 had demonstrated the importance of co-located army/air headquarters.³³ Similar issues to those faced in Britain over the correct form of air support had been encountered in the Western Desert and were only resolved when Churchill instructed that 'Nevermore must the ground troops expect, as a matter of course, to be protected from the air by aircraft'.³⁴ This meant that land troops could no longer expect a standing patrol of aircraft to protect them from hostile air attack. CRUSADER had also demonstrated the importance of the fighter-bomber for conducting air support. The importance of the AASC concept was demonstrated during the Battle of Alam el Halfa through the work of No. 2 AASC, which had been trained in the Wann-Woodall system in Britain before being transferred to the Western Desert.³⁵ Further operational experience would lead to greater refinements in the Western Desert system. Despite these improvements, problems were encountered with the application of air support during the first major Allied operation of the Second World War, TORCH, where the command and control system was based more on the ideas elucidated by Brooke, and Army commanders had operational control over the supporting air forces.³⁶

It had originally been agreed that the AASG would be formed within Army Co-operation Command, as per Brooke's wishes. Despite Portal having stated that he was willing to accede to Brooke's wishes, he reneged on this agreement and pushed for the AASG to be formed within Fighter Command.³⁷ Whilst Portal's actions are open to criticism, the reasons behind them are not. Brooke was still not fully aware of the operational level impact that air support could have when used outside of a

³³ Hall, *Strategy for Victory*, p. 128.

³⁴ Christ Church College, Oxford Portal Papers, Folder 2, Correspondence between the Prime Minister and the CAS, 19 August to 5 September 1941; TNA AIR 41/25, *The Middle East Campaigns Vol II* p.20 and I.S.O. Playfair, *The Mediterranean and the Middle East Vol II: The Germans Come to the Aid of Their Ally* (London: Her Majesty's Stationery Office, 1956), pp. 287-8.

³⁵ Ian Gooderson, *Air Power at the Battlefield: Allied Close Air Support in Europe 1943-45* (London and Portland, Oregon: Frank Cass, 1998), p. 26.

³⁶ Hall, *Strategy for Victory*, p. 141.

³⁷ TNA WO 216/127, Letter from Portal to Brooke, 7 September 1942; TNA AIR 20/2812, Memorandum by Vice Chief of the Air Staff Air Chief Marshal Sir Wilfrid Freeman, 10 August 1942; TNA PREM 3/8, War Cabinet Chiefs of Staff Committee, 5 October 1942.

close support role. Brooke's views on this, and his increasingly fanatical views on the creation of an army air arm, were due to his experiences fighting in France and the increased difficulty he had had since in putting forward the Army's views on air support but they were not, by this time, shared by all those in the War Office.³⁸

Whilst the work of Army Co-operation Command alongside sections of the Army such as the School of Artillery and MO7 had begun to change the thinking and widened the perspective of some people on the General Staff, it had not permeated as far as Brooke.³⁹ His view was that the Army could only receive the support necessary for success in the field through the creation of as many squadrons as possible under the command and control of the Army. The lessons the War Office and General Staff had learned from France were focused on the tactical-level impact of German air support when attacking across the Meuse River. They paid little attention to the work done by the *Luftwaffe* in securing air superiority through conducting interdiction operations, destroying Allied aircraft both on the ground and in the air, securing local air superiority and acting as a force multiplier at the operational level for the German armoured and mechanised forces.⁴⁰

Due to Army Co-operation Command's position as an experimental and developmental Command, its position to influence the higher level commanders of both the Air and General Staffs was limited and the relations between the two Services at this level remained strained until the invasion of the continent. The relations between the two Services at the lower level of command were vastly improved. Army Co-operation Command worked closely with Home Forces to improve their understanding of the operational-level impact of tactical air power and this did permeate upwards to some members of the General Staff. Barratt was aided in this work when he was able to see first-hand how a system that was based on the CSBC/AASC concept functioned when he visited the Western Desert in 1942.⁴¹ This

³⁸ Liddell Hart Centre for Military Archives, Alanbrooke Papers 11/5; Alex Danchev and Daniel Todman (eds), *War Diaries 1939-1945: Field Marshal Lard Alanbrooke* (London: Phoenix, 2002), p. 258; Hall, *Strategy for Victory*, pp. 124-5.

³⁹ TNA CAB 101/136, Army Air Co-operation pp.45-7; TNA PREM 3/8. Minute from General Ismay to Winston Churchill, 29 September 1942. C.E. Carrington, 'Army Air Co-operation, 1939-1945', in *Journal of the Royal United Services Institute*, no. 115 (December, 1970), p. 41; W.A. Jacobs, 'Air Support for the British Army, 1939-1945', in *Military Affairs*, vol. 46, no. 4 (December, 1982), pp. 176, 178; Hall, *Strategy for Victory*; p.121.

⁴⁰ TNA AIR 41/21, The Campaign in France and the Low Countries September 1939-June 1940, Military Summary, German Air Attack, 11 May 1940; Paul Deichmann, *Spearhead for Blitzkrieg: Luftwaffe Operations in Support of the Army, 1939-1945* (London: Greenhill Books, 1996), p. 106; Peter C. Smith, *Dive Bomber: Aircraft, Technology and Tactics in WWII* (Mechanicsburg, PA: Stackpole Books, 2008), pp. 185-6; John Ellis, *Brute Force: Allied Strategy and Tactics in the Second World War* (London: Andre Deutsch, 1990), p. 12.

⁴¹ TNA AIR 2/7880, Barratt's Visit to the Middle East, 27 August – 9 September 1942, written 21 September 1942.

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visit confirmed both Barratt's and the wider RAF's belief that air superiority had to be gained before any successful air operations could be attempted. In the Western Desert this was achieved through interdiction operations that prevented the *Luftwaffe* from contesting air superiority and impeding the close support operations. Without the bruising arguments that typified the situation in Britain, the Western Desert Air Force (WDAF) and Eighth Army were able to co-operate effectively. The situation was further aided by the fact that the mono-role command structure that existed in Britain was not suitable for the Western Desert. The WDAF did not have strategic operations to concentrate their energies on and so all of the focus could be placed on defeating the enemy on the ground.⁴² This concentrated the minds of both the WDAF and Eighth Army and, despite initial differences of opinion about air support, good co-operation was soon fostered between the two Services.

Barratt was able to use this experience in conjunction with the work done overall by Army Co-operation Command to transform the thinking of the army in Britain. They were able to demonstrate to the lower-level commanders the functions and limitations of air support, as well as the higher operational level impact it could have. That it did not permeate through the command chain to the likes of Brooke is not surprising as his views on the issue had been fixed following the Battle of France and there was little that could be done to change them. Brooke was correct to a degree to focus on what he and, in 1940, the majority of the War Office saw as the failings in close air support at the tactical level, but they did not appreciate the complexities that presented themselves in applying the effects of tactical air power to the operational level. By mid-1942, however, the work of Army Co-operation Command and the results obtained in the Western Desert under Tedder and Coningham had begun to change the thoughts of certain members of the General Staff. In the discussions around the proper home for the AASG, Brooke found himself outmanoeuvred by the War Office, who agreed with Portal that the best place for AASG was in Fighter and not Army Co-operation Command. In Fighter Command they could utilise the vast and, more importantly, fully-tested signals network as well as take advantage of the its operational status in order to have more resources devoted to the development of tactical air power.⁴³

⁴² David Syrett, 'The Tunisian Campaign', in Benjamin Franklin Cooling (ed.), *Case Studies in the Development of Close Air Support*, (Washington, D.C.: Office of Air Force History, United States Air Force, 1990), p. 159; Denis Richards, *Royal Air Force 1939-1945 Vol. I: The Fight at Odds, 1939-1941* (London: Her Majesty's Stationery Office, 1953), p. 252; Richard P. Hallion, 'The Second World War as a Turning Point in Air Power', in Seb Cox and Peter W. Gray (eds), *Air Power History: Turning Points from Kitty Hawk to Kosovo*, (London and Portland, Oregon: Frank Cass, 2002), p. 102; John Terraine, *The Right of the Line: The Royal Air Force in the European War 1939-1945* (London: Sceptre, 1985), p. 352.

⁴³ Hall, *Strategy for Victory*, pp.126-7.

Through this move the RAF would also, finally, be able to settle the argument over the creation of an army air arm.⁴⁴ The AASG was essentially what the Army had been asking for since the inter-war period: an air force formation that would be able to provide sufficient tactical air support for ground forces. The only thing that the Army did not get was the operational control. Over this the Army was willing to compromise and the RAF did not have to break the fundamental principles that had been laid down by the Air Staff in the wake of the First World War. The AASG would be under the operational control of an RAF officer, retain the flexibility in approach unique to air power and gain and maintain air superiority through an offensive approach.⁴⁵ The solution, in the form of the Slessor plan, was agreeable to both Services and was done in an atmosphere far different to that when the creation of Army Co-operation Command was being discussed. Whilst the AASG could have flourished in an upgraded, operational Army Co-operation Command, there was simply too much danger that it could be transferred to the Army's operational control. The AASG within Army Co-operation Command would be more susceptible to such a move as the Command had been specifically created to act as a half-way house between the RAF and Army.

The AASG idea was fully trialled in early 1943 in exercise SPARTAN. The air aspect of SPARTAN was commanded by Barratt with the assistance of the new Air Officer Commanding-in-Chief Fighter Command, Sir Trafford Leigh Mallory. SPARTAN was to test the AASG idea in a European invasion context.⁴⁶ SPARTAN incorporated the AASG idea developed by Army Co-operation Command in conjunction with the AASG. The headquarters of the AASG were divided into an advanced headquarters and a rear headquarters to increase its mobility.⁴⁷ This was not a new idea as it had appeared in inter-war doctrine and was subsequently incorporated into doctrinal thinking, first by Army Co-operation Command and subsequently in the Western Desert.⁴⁸ SPARTAN demonstrated the advantages of the AASG concept. The AASG was a combination of the ideas first put forward by Wann and Woodall in the CSBC and composite tactical air force groups that could now handle the fast-moving operations that would occur if the invasion of the continent and the subsequent break-out was successful. This would act as a force multiplier for the Army to prosecute war at the operational level.

⁴⁴ *Ibid.*, pp.123-7.

⁴⁵ RAF Museum, Hendon, Trenchard Papers MFC 76/1/357 – Lecture VIII Air Strategy.

⁴⁶ TNA AIR 16/559, Agenda for a Meeting on SPARTAN, 9 January 1943.

⁴⁷ TNA AIR 16/821. RAF School of Army Co-operation Exercise, undated c. March 1943.

⁴⁸ TNA AIR 10/1827, Army Co-operation Report 1931, Part II; TNA AIR 39/139, Letter from Barratt to Director of Military Co-operation Air Commodore R.V. Goddard, 1 December 1940.

RE-DISCOVERING THE OPERATIONAL LEVEL: ARMY CO-OPERATION COMMAND 1940-43

Despite the RAF's thoughts on army co-operation, which was focused on the application of air power at the strategic rather tactical and operational levels, and when it was created Army Co-operation Command, the work done in Britain through trials and experimentation was vital to transforming the Army's thinking of modern war and how to prosecute it at the operational level. Equally, despite Army Co-operation Command's focus being on tactical procedures and technical innovations, their impact was felt the most at the operational level of war. The Air OP was possibly the Command's greatest success both in terms of this transformation and in how far it was used by the British Army in several theatres. The Air OP allowed the Royal Artillery to enhance its capabilities and bring superior fire-power to bear on enemy targets enhancing their capabilities at the operational level of war. Army Co-operation Command's codification of the Wann-Woodall experiments also helped transform the thinking of the Army at the lower levels of command.

The basis of the system that emerged from the Wann-Woodall experiments, when used in training exercises such as BUMPER, helped to educate lower-level army commanders on both the limitations of air support and the impact it could have, even if they were unable to see aircraft conducting the interdiction missions. This impact would not be seen immediately as its effects were felt at the operational and not tactical level. This transformation also took place within some of the senior commanders of the General Staff, such as General Sir Bernard Paget, General Officer Commanding Home Forces, who, partly through the work of Army Co-operation Command, began to understand what it meant to fight a war at the operational level. This transformation did not extend to the likes of Brooke as his ideas were coloured to such an extent by his experiences fighting in France in 1940 and he wanted to avoid his forces suffering such a heavy defeat again. His ideas about tactical air power prior to the invasion of France in 1944 were such that he could not comprehend the application of air power at the operational level. To avoid another such defeat, Brooke felt it was necessary to provide his forces with an air support force that was designed and trained to tackle the tactical level problems ground forces would face when in contact with the enemy. In order to achieve this, Brooke looked to use the build-up of forces within Army Co-operation Command to create a *de facto* army air arm, whose sole focus would be on the close support of ground forces. This was something that the RAF could not allow as it would break the fundamental principles of air power.

The AASG was incorporated into the new formed 2nd Tactical Air Force which so successfully provided the support for the Allied ground forces during D-Day and beyond. Part of the reason for its overwhelming success was the work done by Army Co-operation Command in improving the relations between the RAF and Army in

Britain and in educating the Army about fighting at the operational level of war. These developments are noted in a draft report on air support for the Army written by the Director of Air at the War Office, P. Browne, in 1945, which noted that 'The Command has done most valuable work during its existence and thanks largely to its efforts and to the lessons learned in in the fighting in North Africa, British technique had been transformed and extended to embrace a much wider range of action than hitherto'.⁴⁹

⁴⁹ TNA WO 233/60, COS (43) 234 (0), 29 April 1943, cited in Draft of Development of Air Support for the Army 1939-1945 by P. Browne (Director of Air War Office), 25 May 1945.