

Bloody April Revisited: The Royal Flying Corps at the Battle of Arras, 1917

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ABSTRACT

The Battle of Arras, 1917 is generally considered a land battle where aircraft played minor roles in scouting and counter-battery work. Meanwhile, a parallel but separate air battle known as “Bloody April” was waged overhead where German pilots, enjoying significant technical and geographic advantages, inflicted very high losses on the British and French flying services. In reality, the ground and air battles were inextricably linked. The Royal Flying Corps under Major-General Hugh Trenchard made great strides towards the development of a modern air campaign. Local and distant bombing raids and air superiority missions made it possible for near continuous reconnaissance, artillery spotting, and contact patrol flights providing invaluable support to the ground forces. As a result, the RFC made a significant contribution to the outcome of the Battle of Arras though there were major problems with this nascent air campaign. Nevertheless, it was an integral step in the development of air power in the First World War.

The Battle of Arras in 1917 is considered the nadir of the Royal Flying Corps' (RFC) fortunes during the First World War. While supporting the offensives of the British First and Third Armies the air service endured one of their worst months of the war – 275 aircraft lost to enemy action and 421 casualties, nearly half of which were fatal. Aptly referred to as 'Bloody April', the outcome of the battle was seen as preordained:

outnumbered, lacking even basic flying skills, outgunned and flying totally obsolescent aircraft, the young boys of the RFC went to their deaths due to the blind intransigence of their commanders.

They died, like the men on the ground, as sacrifices to the doctrine of the offensive at any cost.¹

The RFC was officially guided by a policy which favoured offensive action, tenaciously advocated by Major-General Hugh Trenchard, officer commanding the RFC in France. As he stated on 10 April 1917, 'The utmost vigour must be shown by all pilots and observers'.² This policy worked effectively on the Somme in 1916 and Trenchard formalized it with the publication of 'Future Policy in the Air' in September 1916. This oft-quoted document established that 'an aeroplane is an offensive weapon and not a defensive weapon ... [and] British aviation [should be] guided by a policy of relentless and incessant offensive'.³ The French experience at Verdun had shown that failure occurred in the air as a result of adopting a defensive, or even partially defensive, policy.

Changes in the balance of power in the air in early 1917 eliminated many of the advantages previously enjoyed by the RFC. Trenchard acknowledged these changes, but continued to insist on an offensive policy for the upcoming Arras offensive. 'Bloody April' was the result and he has since been widely criticized by his own airmen and by historians.⁴ Sholto Douglas, who commanded 43 Squadron, recalled, 'the Battle of

¹ Peter Hart refers to this as the 'myth' of Bloody April but it is clear he supports this interpretation with the caveat that the main purpose of the air battle was to protect the 'eyes of the supreme British weapon of battle in the Great War – the artillery'. See Peter Hart, *Bloody April: Slaughter in the skies over Arras, 1917* (London: Cassell, 2006), p. 11.

² The UK National Archives (TNA) AIR 1/1008/204/5/1283, Major-General Hugh Trenchard, note issued by HQ RFC, 10 April 1917. He made this statement in direct reference to pressing low level attacks against retreating enemy troops.

³ TNA AIR 1/522/16/12/5, RFC HQ Memorandum, 'Future Policy in the Air', 22 September 1916.. Thomas Bradbeer argues this document 'would prove to be one of the most powerful and critical documents in aviation history and would serve as the foundation for what would define the tenets of subsequent air power theory in the twentieth century and its use in all air campaigns that followed'. Thomas G. Bradbeer, 'The British Air Campaign During the Battle of the Somme, April–November 1916: A Pyrrhic Victory', (PhD Dissertation, University of Kansas, 2011), p. 16.

⁴ Arthur Gould Lee, a pilot in 46 Squadron, and Sholto Douglas, the officer commanding 43 Squadron, were both highly critical of Trenchard's offensive strategy at Arras. Arthur Gould Lee, *No Parachute: A Classic Account of War in the Air in WWI* (London: Grub Street, 2013 [1968]), pp. 224-225; Sholto Douglas, *Years of Combat: The First Volume of the Autobiography of Sholto Douglas* (London: Collins, 1963), pp. 137-38, pp. 179-80. Critical accounts of Trenchard's offensive policy abound in the historical literature. A few key examples include Alan Morris, *Blood April* (London: Jarrods, 1967),

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Arras in 1917 and the heavy casualties that it cost the Royal Flying Corps provided me with the most anxious period that I was to know during the whole of my life in the air force'.⁵ This was a remarkable statement coming from an officer who played a major role in the Battle of Britain during the next war. Historian Peter Hart considers Bloody April to be about the 'selfless heroism' of the airmen acting for a greater cause to carry out their duty for the men below. In his opinion, the chief contribution of the RFC at Arras was to magnify the effects of the artillery: the RFC 'existed primarily to serve those guns by aerial photography and artillery observation'.⁶ He was not wrong but this was only part of the story. Trevor Henshaw has meticulously catalogued RFC casualties at Arras and concludes that 'The British, for their part, had only one approach to the air war – and implacable offensive so as to control the skies over the battlefield'.⁷

There is no doubt that it was a bloody time for the RFC. In March 1917 during the lead up to the offensive the RFC lost more aircraft and pilots than it had during all of 1915 and the worst of the 'Fokker scourge'.⁸ Losses in April were even worse. RFC casualties paled in comparison to the butcher's bill for the men on the ground but they were crippling for the air services.⁹ What was the point of it?

At Arras we see the genesis of the modern air campaign. Underpinned by Trenchard's offensive concept, the air battle was more nuanced than generally acknowledged. By 1917 the ground and air battles were inextricably linked. Protecting the aircraft and crews supporting the artillery was central to the mission of the RFC. Trenchard developed a multi-faceted approach: aerial reconnaissance provided crucial information for planning the battle, attempts were made to blind the Germans by

pp. 15-16; Trevor Wilson, *The Myriad Faces of War: Britain and the Great War, 1914–1918* (London: Faber & Faber, 2012), p. 134; and Bradbeer, 'The British Air Campaign During the Battle of the Somme', p. 375.

⁵ Douglas, *Years of Combat*, p. 179.

⁶ Hart, *Bloody April*, p. 12.

⁷ Trevor Henshaw, *The Sky Their Battlefield II: Updated, Expanded* (Hertfordshire: Fetubi Books, 2014), p. 75.

⁸ Peter Hart, *Bloody April*, p. 120. The 'Fokker scourge' in 1915 saw the Germans attained ascendancy over the RFC due to fielding an aircraft (the Fokker E.III Eindecker) which pioneered the first operational synchronization gear which allowed its machine gun to fire through the propeller arc without damaging the blades.

⁹ Hart, *Bloody April*, p. 355 and Henshaw, *The Sky Their Battlefield II*, pp. 74-85. By comparison, the British army suffered over 150,000 casualties during the Arras offensive.

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destroying their kite balloons, and bombing raids isolated the battlefield, disrupted logistics, and hassled enemy aerodromes. During the battle itself, contact flights ranged over the battlefield to provide updates on the progress of the troops, continuous artillery patrols were flown to direct artillery fire, and German targets in the communications zone were machine-gunned and bombed. This was all made possible by the fight for air superiority taking place over the battlefield. The RFC made a significant contribution to the outcome of the Battle of Arras. A recent history concludes that though the air campaign had been expensive there was 'consolation [in] the knowledge that without the air effort there would have been no success on the ground'.¹⁰

To understand the evolution of British air operations in 1916 and 1917 we need to look at the French experience at Verdun in 1916. On 21 February 1916 the Germans launched an attritional attack on the salient. General Erich von Falkenhayn, the German chief of the general staff, intended to 'bleed France white' and the French, led by Generals Henri Philippe Petain and Robert Nivelle, had no choice but to reply, 'Ils ne passeront pas [They shall not pass]'.¹¹

Trenchard was in close contact throughout the battle with Commandant Paul-Fernand du Peuty, the senior French air commander at Verdun. At the start of the battle du Peuty deployed his aircraft in a decentralised system only to see them dominated by aggressive enemy tactics. In response, du Peuty abandoned the defensive tactics, concentrated his scouts, and ordered offensive patrols on the German side of the front line. These aggressive actions allowed the French to gain aerial superiority over the battlefield. This offensive against the German Air Service had the benefit of protecting French reconnaissance and observation aircraft while simultaneously denying the same advantage to the enemy. The tide in the air turned again when the French slipped back into a defensive posture as the Germans regrouped and introduced new tactics and aircraft. The French army, threatened by these new measures demanded and received close protection of their soldiers. As a result, the French *Aviation Militaire* quickly lost the advantage.¹²

¹⁰ Peter Dye, *The Bridge to Airpower: Logistics Support for Royal Flying Corps Operations on the Western Front, 1914–18* (Annapolis, MD: Naval Institute Press), p. 95.

¹¹ Robert T. Foley, 'The Battle of Verdun and German Strategy in 1916', Defence-in-Depth research blog, Research from the Defence Studies Department, King's College London (<https://defenceindepth.co/2016/02/15/the-battle-of-verdun-and-german-strategy-in-1916/>). Accessed 19 February 2017.

¹² Andrew Boyle, *Trenchard* (London: Collins, 1962), pp. 168-71; Bradbeer, 'The British Air Campaign During the Battle of the Somme', pp. 86-89; and Michael Molquentin, www.bjmh.org.uk

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Faced with mounting casualties, du Peuty made the bold decision to return to offensive operations. His scout squadrons were again released to attack German aircraft as well as enemy ground targets, supply and transportation hubs, and other targets and the French re-established control of the skies. As one commentator remarked, 'Offensive action did in fact seem to be the key to gaining air superiority'.¹³

On the eve of the Somme offensive du Peuty wrote Trenchard to share the key lessons he learned over Verdun. First was the need to group scout aircraft in squadrons independent of the army cooperation machines and place them under the command of a single air service commander. The second lesson was that the prime mission for the army cooperation squadrons was to gather intelligence; artillery observation was of secondary importance. Trenchard agreed that intelligence gathering was a matter of first importance but he equally valued artillery spotting as the guns were integral to the British method of conducting operations on the Western Front. The final point made by du Peuty underscored the importance of pilot and observer training to allow them to be flexible and effective in a wide range of missions. This point was of particular importance to the British as they struggled to ensure a steady supply of trained personnel for front line units.¹⁴

Trenchard, through his discussions with du Peuty, influenced the course of French air operations at Verdun. In return, Trenchard used du Peuty's hard-won lessons to guide the British air campaign at the Somme during the summer and fall of 1916. As he stated, 'Survival in three-dimensional warfare depended on maintaining the offensive, whatever the odds or the cost'.¹⁵ This maxim guided the RFC to great success at the Somme, but would be severely tested at Arras the following year.

The Somme campaign marked the first time in the history of warfare that an air campaign was planned and executed to support a major army operation. The RFC was tasked with achieving air superiority over the Somme sector before the British Army launched their offensive on 1 July 1916. In preparation, Trenchard directed his squadrons to accomplish six missions aimed to support the army: aerial reconnaissance,

Australia and the War in the Air (Sydney, Australia: Oxford University Press, 2014), pp. 70-71.

¹³ Bradbeer, 'The British Air Campaign During the Battle of the Somme', p. 88.

¹⁴ TNA AIR 2/127/BI 1695, 'Report by Commandant Du Peuty, Sept. 24th, 1916'. Also Bradbeer, 'The British Air Campaign During the Battle of the Somme', pp. 84-85; Boyle, *Trenchard*, pp. 169-70; Wise, *Canadian Airmen*, pp. 360-61.

¹⁵ Boyle, *Trenchard*, p. 156.

aerial photography, observation and direction of artillery, tactical bombing, contact patrols in support of the infantry, and air combat against the German Air Service to enable achievement of the other five tasks.¹⁶ Although the RFC suffered high losses because it rigidly adhered to an offensive strategy throughout the air campaign, the RFC had controlled the skies over the Somme front throughout the offensive. While the ground campaign failed to accomplish most of its stated objectives, for the RFC, the Somme air campaign was ‘an overwhelming success’.¹⁷

In spite of this success, some senior army commanders were dissatisfied with the support they received at the Somme. Close coordination between aircraft and the artillery was essential during an attack and it was acknowledged by all that this relationship could be improved. The army response was an attempt to bring air resources under the command of the artillery, a solution sharply contested by the RFC. Nearly identical proposals were made by two army commanders – Generals Sir Henry Rawlinson (Fourth Army) and Sir Henry Horne (First Army).¹⁸ Rawlinson praised the RFC for their artillery support but pointed to improvements that could be made to the system such as improved training for both artillery commanders and aerial observers, an increase in number of aircraft, and a closer working relationship between the ground and air elements. These proposals were quite sensible (and would in fact be adopted before the Arras battle) but Rawlinson concluded by stating that the ‘only sure method of attaining this ideal’ was to bring the Corps aircraft under the command of the artillery commander.¹⁹ Soon after, Horne argued, ‘Operations on the Somme had proved that tactical success is largely dependent on superiority in artillery and supremacy in the air.... In my opinion, the time is ripe to organize our artillery observers as part of the artillery ... until the direction and control of artillery fire from

¹⁶ Bradbeer, ‘The British Air Campaign During the Battle of the Somme’, p. 10-11.

¹⁷ Molkentin, *Australia and the War in the Air*, p. 71. This view is echoed by others including H.A. Jones, *The War in the Air: Being the Story of the part played in the Great War by the Royal Air Force*, vol. 2, (London: Oxford University Press, 1928), pp. 323-24; Dye, *The Bridge to Airpower*, pp. 87-88 & pp. 139-40; Peter Hart, *Somme Success: The Royal Flying Corps and the Battle of the Somme, 1916* (London: Pen & Sword Books, Limited, 2001); and Ralph Barker, *The Royal Flying Corps in France in World War I* (London: Robinson, 2002 [1995]), pp. 166-67.

¹⁸ H.A. Jones, *The War in the Air: Being the Story of the part played in the Great War by the Royal Air Force*, vol. 3, (London: Oxford University Press, 1931), pp. 307-310. Jones says it is not clear if these two approaches were independent or coordinated.

¹⁹ TNA AIR 1/524/16/12/26, ‘Co-operation between Aircraft and Artillery’. See also David Jordan and Gary Sheffield, ‘Douglas Haig and Airpower’, contained in Peter W. Gray and Sebastian Cox, eds., *Air Power Leadership: Theory and Practice* (London, UK: Her Majesty’s Stationery Office, 2002), pp. 273-274.

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the air is placed in the hands of the artillery, we shall not gain full advantage from our superiority in guns and ammunition'.²⁰

These suggestions struck at the heart of RFC independence and would have seen half of all aircraft at the front transferred to artillery control. Trenchard, with the explicit support of General Douglas Haig, commander-in-chief of the British Expeditionary Force, deflected these arguments by showing that the work of Corps aircraft was more than just artillery spotting. He also ensured that significant improvements were made to the technology, tactics, and training of the artillery cooperation organization over the winter of 1916-17.²¹ Trenchard won this skirmish with his ground-minded colleagues and was working to improve his force but there would continue to be tension between the ground and air services.

Unfortunately for the RFC, there were significant changes in the balance of power between the Summer of 1916 and the Spring of 1917. The German Air Service steadily improved their technological superiority in the air throughout the Somme campaign. In late 1916 and early 1917 the current generation of German scouts, led by the Albatros D-Is and D-IIs, Rolands, and Halberstadts were faster, more maneuverable, and packed greater fire power than most of their British counterparts. This gap only grew with the introduction of the Albatros D-III. British machines, especially the obsolescent DH 2 and BE 2, were well past their prime. The main British scouts like the FE 2b/d, FE 8, and Sopwith 1½ Strutter, were similarly overmatched. The Sopwith Pup and Nieuport 17 could hold their own but it was only the Sopwith Triplane, flown by the Royal Naval Air Service (RNAS) squadrons reinforcing the RFC, that could defeat the enemy on a consistent basis. The RFC placed great hope in a number of outstanding new aircraft arriving in France prior to the Arras battle such as the Bristol Fighter, SE 5, and RE 8. These aircraft would eventually turn the tide but their introduction to battle in April 1917 would be ineffective due to 'technical shortcomings and tactical mishandling'.²²

Planning for the Arras offensive started in late 1916 and Trenchard lobbied hard to improve his squadrons. In January 1917, there were 39 squadrons ready for operations but less than a third were capable of escort operations, offensive patrols, and general

²⁰ TNA AIR 1/524/16/12/26, 'Co-operation between Aircraft and Artillery'; See also in Jones, *The War in the Air*, vol 3, p. 309.

²¹ Jordan and Sheffield, 'Douglas Haig and Airpower', pp. 276-278; Jones, *The War in the Air*, vol 3, pp. 308-317.

²² Lee, *No Parachute*, 2-3. See also Wise, *Canadian Airmen*, p. 394 and Jones, *The War in the Air*, vol. 3, pp. 334-335.

air combat. Of this group, only five were equipped with Nieuports or Pups.²³ Trenchard was promised new squadrons by March but they were slow to arrive and he was well aware of the implications of this delay. On 11 February, he shared his fears with Lieutenant-General Sir Lancelot Kiggell, Haig's chief of staff: 'our fighting machines will almost certainly be inferior in number and quite certainly in performance to those of the enemy. The success of our aerial offensive will consequently be very seriously jeopardized, and we cannot therefore hope that our Corps machines will be able to accomplish their work as successfully or with as few casualties as during the battle of the SOMME'.²⁴ Trenchard desired more time to prepare for the upcoming battle, but the timing for the British attack was dictated by the French and their larger Nivelle offensive in the Chemin des Dames.

There were serious questions regarding the quality of British pilots in the first half of 1917. The combination of the rapid expansion of the RFC along with high training and operational losses created a shortfall in the availability of well-trained pilots and observers. The problem was compounded by inadequate training methods and a shortage of effective training aircraft. As a result, pilots were arriving at the front not prepared for combat.²⁵ Arthur Gould Lee of 46 Squadron was fortunate to arrive in France in mid-May 1917 with 85 hours in his logbook as his training was extended due to an accident which kept him in England. His contemporaries, however, were being sent to squadrons on the Western Front with '15-20 hours' flying when they arrive here, with maybe 10-12 solo, [and] five on the type they're expected to fight on'.²⁶ It is no wonder that the average flying time before becoming a casualty dropped from 295 hours in August 1916 to 92 hours in April 1917.²⁷ One source estimated the average operational life of an RFC pilot in April 1917 to be 17½ flying hours; it was significantly less for apprentices.²⁸

The British also faced a change in German tactics. During the Battle of the Somme the German air service had generally maintained a defensive posture but in the late summer and early fall of 1916 the first *Jagdstaffeln* or hunting squadrons were introduced. These units selected the best pilots to seek and destroy enemy scouts to

²³ Wise, p. 395.

²⁴ TNA AIR 1/522/16/12/5, Trenchard to Kiggell, 11 February 1917.

²⁵ Molkentin, *Australia and the War in the Air*, p. 54.

²⁶ Lee, *No Parachute*, p. 5.

²⁷ John H. Morrow, Jr., *The Great War in the Air: Military Aviation from 1909 to 1921* (Washington: Smithsonian Institution Press, 1993), p. 234.

²⁸ Denis Winter, *The First of the Few: Fighter Pilots of the First World War* (London: Allen Lane, 1982), p. 156.

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provide freedom of action to their army cooperation machines. They were also effective in targeting British two-seaters.²⁹

In spite of these challenges, Trenchard intended to pursue his offensive strategy at Arras. He had been unwavering in his pursuit of this policy at the Somme and operations in April and May 1917 would follow this same pattern. As he saw it, air superiority was the key to winning the air battle.³⁰ On 26 March Trenchard issued orders for the Arras offensive to his brigades. A maximum effort was to be made along the entire front with all existing resources to allow the Corps aircraft the freedom to work with the artillery and infantry with minimal enemy interference. As the order stated, 'The aim of our offensive will therefore be to force the enemy to fight well behind, and not on, the lines'. Offensive patrols were to be pushed deep into Army reconnaissance areas and commanders were to refuse requests for the close protection for Corps machines except in special circumstances. The order specifically referenced RFC success on the Somme as the inspiration for the coming operation and the introduction of new aircraft types made Trenchard 'confident that a similar ascendancy will be gained this year'.³¹

Trenchard had reason for optimism. He may have lacked quality but not quantity. On 9 April, the first day of the offensive, the RFC strength on the First and Third Army front was 25 squadrons and 465 aircraft. More than one-third of these were single-seat fighters. On the other side of the line, the German Sixth Army had a strength of 195 aircraft, less than half of which were suitable for fighting.³² In addition reinforcements were on the way. New aircraft types held the promise of reversing the technology gap. It was hoped to surprise the German Air Service with advanced types such as the SE 5 and Bristol Fighter. To this end, these new aircraft were kept away from the front lines in the weeks leading up to the battle. Unfortunately, the impact of

²⁹ Alex Imrie, *Pictorial History of the German Army Air Service: 1914-1918* (Chicago: Regnery, 1973), p. 41; Peter Simkins, *Air Fighting 1914-1918: The Struggle For Air Superiority Over The Western Front* (London: Imperial War Museum, 1978), pp. 42-44; Richard P. Hallion, *Rise of The Fighter Aircraft, 1914-1918* (Mount Pleasant, SC: The Nautical & Aviation Publishing Company Of America, 1984), p. 74.

³⁰ TNA AIR 1/1008/204/5/1283, 'Minutes of Brigadiers Conference, 9 March 1917', HQ RFC, 10 March 1917.

³¹ TNA AIR 1/1008/204/5/1283, Note issued by HQ RFC, 26 March 1917.

³² Jones, *The War in the Air*, vol. 3, p. 334. On the entire British front the RFC fielded 754 aircraft of which 385 were fighters. By comparison, the Germans strength was 264 aircraft (114 fighters) with another 480 deployed against the French opposite the Aisne.

their introduction was delayed by a combination of teething troubles and a lack of operational experience which combined to limit their effectiveness at Arras.³³ A more positive development was the commitment of RNAS squadrons to the battle. Naval 8 with its Pups had provided great support to the RFC since 1916 and would be joined by four additional squadrons in March, April, and May. The impact of the naval squadrons was considerable as they brought a combination of experienced pilots and excellent machines, especially the Sopwith Triplane.³⁴

The RFC plan for the air battle at Arras contained many of the hallmarks of a modern air campaign. Trenchard's offensive spirit was the driving factor but it was not about brute force. The plan offered a nuanced and flexible approach to control the air space and permit the essential tasks of artillery spotting and reconnaissance to proceed unhindered. The high casualties of 'Bloody April' arose due to a confluence of uncontrollable factors rather than the application of rigid and unimaginative tactics by the Trenchard and the RFC.

In the month before the battle the RFC saw increased activity (and casualties). Preparations for Nivelle's grand offensive were disrupted on 15 March when the Germans abruptly and unexpectedly withdrew their forces. General Erich Ludendorff, the German Chief of the General Staff, on the suggestion of Crown Prince Rupprecht, one of his army group commanders, ordered the move to shorten their line and release divisions for service in Italy. The new defensive position was known as the Hindenburg Line. On average the Germans retired 20 miles along a front of over 100 miles from just south of Arras to the Aisne River. The abandoned area was devastated as the Germans followed a scorched earth policy to deny anything useful to their enemy. During the retreat, the RFC kept a close watch on the Germans, and at great cost photographed their new defensive line and scouted for the advancing armies as they cautiously moved forward.³⁵

The losses suffered by the Corps squadrons during this period were worrying. No. 16 Squadron, supporting the Canadian Corps, was particularly hard pressed in March to the point that III and V Brigades were ordered support I Brigade by flying offensive patrols between Vimy and Douai. British army corps and divisional commanders pressed Haig and Trenchard to provide close fighter protection for the vulnerable

³³ TNA AIR 1/1008/204/5/1283, 'Minutes of Brigadiers Conference, 9 March 1917', HQ RFC, 10 March 1917; Jones, *The War in the Air*, vol. 3, p. 323.

³⁴ See Wise, *Canadian Airmen*, p. 395 and Dye, *The Bridge to Airpower*, p. 93.

³⁵ G.W.L. Nicholson, *Canadian Expeditionary Force, 1914–1919: The Official History of the Canadian Army in the First World War* (Ottawa: Queen's Printer, 1962), p. 241, Jones, *The War in the Air*, vol. 3, pp. 303-305, pp. 324-325.

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army support machines. Trenchard refused to back down from his offensive policy and on 9 April Kiggell distributed a succinct four-page statement of RFC doctrine to the five British army commanders³⁶ intended to clear up misunderstandings amongst the ground forces 'regarding the policy which governs the employment of the R.F.C'.³⁷ The paper, 'Policy in the Air', established that the prime mission of the RFC was to support ground operations. As the airplane was 'essentially an offensive and not a defensive weapon', its potential was lost if it was tied to the close protection of army cooperation aircraft. This policy was based on the hard-won experience of the French at Verdun who succumbed to the calls for close escort only to see the situation worsen. The aggressive tactics consisted of two elements: offensive patrols and bomb raids by day and night. It was recognised that the situation had changed since the previous summer, but this meant that 'We must, therefore, pursue an even more vigorous offensive, and send our forces farther afield'. To let up would be suicide.³⁸ In spite of the severe losses, the RFC continued this policy throughout the campaign.

Air operations in direct support of the Arras offensive began on 5 April. Trenchard intended to isolate the battlefield through medium and long-distance bombing attacks. In addition to degrading the German ability to move reserves around the battlefield, the attacks aimed to draw both anti-aircraft guns and fighters from the front lines to protect critical infrastructure. In the four days before the commencement of the ground assault attacks were made on railway stations and junctions, engine depots, ammunition dumps, troop billets, and villages. Key German aerodromes, especially Douai, Manfred von Richthofen's station, were repeatedly attacked by day and night. There were also two unsuccessful attempts to bomb the headquarters of Crown Prince Rupprecht. He was the commander of the army group opposing the British on the Arras front and attacks were made on 5 and 8 April to destroy his HQ at Hardenpont near Mons.

Concurrently, the RFC conducted a campaign to blind the enemy by destroying their kite balloons along the front lines. These targets were notoriously difficult, and costly, to destroy due to the ground defences surrounding each balloon as well as the operators' ability to quickly haul them down. Five RFC squadrons deployed dozens of

³⁶ General Sir H. S. Horne (First Army), General Sir H.C.O. Plumer (Second Army), General Sir E.H.H. Allenby (Third Army), General Sir H.S. Rawlinson (Fourth Army), and General Sir H. de la P. Gough (Fifth Army).

³⁷ TNA AIR 1/522/16/12/5, Letter, Kiggell to Army Commanders, 9 April 1917.

³⁸ TNA AIR 1/522/16/12/5, 'Policy in the Air', 9 April 1917. Note that this paper should not be confused with Trenchard's 'Future Policy in the Air' (September 1916) though it builds on many of the same ideas.

scouts on these attacks and destroyed five balloons while losing five aircraft in the process. One of the balloons was destroyed on 8 April by Captain William A. Bishop earning him the Military Cross.³⁹

There is no indication that these attacks proved anything more than a minor annoyance to the Germans, but they demonstrate the evolution of British thinking about how to conduct an air campaign at the operational level.⁴⁰ It is worth mentioning that British and Canadian artillery was very successful in the opening stages of the attack. In the three weeks prior to the battle the RFC spent many hours over the front systematically logging German artillery and troop locations and guiding artillery in the destruction of barbed wire in no-man's-land. The majority of German gun batteries were identified by the RFC prior to the battle and subsequently knocked out by Allied gunners often directed by aerial observers. Conversely, Canadian and British gunners suffered very low casualties during the battle, a sure sign that enemy observation aircraft were not operating effectively.⁴¹ This could not have occurred without close cooperation from the RFC whose aircraft were themselves able to operate without significant interference by the German Air Service. It was all connected.

The start of the ground assault on 9 April saw the RFC enter the next stage of their battle plan. The intent was to control German airspace over the battle area. To achieve this Trenchard directed his squadrons to perform a range of complementary missions. Overlapping zones of control were established which were continuously patrolled to keep the enemy at bay. The deepest zone of distant offensive patrols extended 15 to 25 miles from the front in the area beyond Douai and Cambrai. Closer to the front was a zone of close offensive patrols. This area was bounded by Lens–Henin–Liétard–Epinoy–Bullecourt and patrolled by the single-seat scout army squadrons of First and Third Armies. Patrols over the lines were flown by the two-seater Corps squadrons. The goal was to saturate the area making it impossible, or at least very dangerous, for German fighters to penetrate and interfere with the work of the army support aircraft.⁴²

³⁹ TNA AIR 1/1008/204/5/1283, Untitled HQ RFC memo on intended attack on the enemy's observation balloon, 25 March 1917; Jones, *The War in the Air*, vol. 3, p. 343; David L. Bashow, *Knights of the Air: Canadian Fighter Pilots in the First World War* (Toronto: McArthur & Company, 2000), p. 109.

⁴⁰ Jones, *The War in the Air*, vol. 3, 341-343; Wise, *Canadian Airmen*, p. 398;

⁴¹ Tim Cook, 'The Gunners at Vimy', in Geoffrey Hayes, Andrew Iarocci, and Mike Bechthold, eds., *Vimy Ridge: A Canadian Reassessment* (Waterloo: Wilfrid Laurier University Press, 2007), p. 118.

⁴² Wise, *Canadian Airmen*, pp. 399-400; Jones, *The War in the Air*, vol. 3, pp. 343-344, p. 360.

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When working, this program was very successful. On 9 April, the RFC had 48 single-seat fighters patrolling the close offensive zone and 24 two-seat fighters engaged in line patrols. In addition, aircraft from two squadrons operated in the distant offensive zone beyond Douai and Cambrai. This was the ideal offensive concentration and largely prevented casualties among the Corps machines. The RFC reported that hostile aircraft were active on the first day of the battle but often avoided combat, something they did when the odds were not in their favour. Ground observers reported seeing 51 German aircraft of which five crossed the lines. In spite of this activity, only one army cooperation aircraft was shot down.⁴³ Unfortunately, it was difficult to maintain this saturation of the battlespace due to periodic shortages of pilots and machines, weather, wastage, and air crew limitations among other factors. One historian calculated that to continuously patrol the 310-square-kilometre zone throughout the day would require 300-400 daily sorties. This was possible if 150 serviceable fighters each flew two missions a day. But, a survey of RFC brigade summaries shows that more than 300 sorties were flown on only two days in April and a further nine days saw more than 250 sorties. He concluded that, 'In these stark statistics lay the seeds of disaster'.⁴⁴

While these counter-air operations took place, the RFC continued to fly interdiction missions to isolate the battlefield and draw off German resources. Each day when the weather permitted aircraft were despatched to hit a variety of near and distant targets including aerodromes, rail yards, troop concentrations, and other high-value targets. Many of these raids were sent unescorted with no difficulties but problems ensued when intercepted by the Germans. The aircraft used in these missions tended to be obsolescent, like the BE 2, or newer but still teething like the RE 8. Such was the case on 11 April when 2 BE 2s of 4 Squadron were lost during a bombing attack on Cambrai and again during a large raid on the Henin-Liétard rail yard on 13 April when 3 FE 2ds of 25 Squadron and one Martinsyde G 100 of 27 Squadron were lost.⁴⁵ These attacks do show, however, that the offensive bombing raids, though at times costly, drew German fighters away from the front lines.

⁴³ 1st Brigade RFC Operational Summary, 9 April 1917. TNA AIR 1/767/204/4/252; Norman Franks, Russell Guest, and Frank Bailey, *Bloody April ... Black September: An Exciting and Detailed Analysis of the Two Deadliest Months in the Air in World War One* (London: Grub Street, 1995), pp. 33-34.

⁴⁴ E.R. Hooton, *War Over the Trenches: Air Power and the Western Front Campaigns, 1916-1918* (Surrey, UK: Ian Allen Publishing Ltd., 2010), pp. 135-136; The RFC brigade summaries are found in TNA AIR 1/767/204/4/252.

⁴⁵ Jones, *The War in the Air*, vol. 3, p. 347, p. 349.

Weather was a major challenge faced by the RFC in March and April. Much has been made about the Canadian Corps going over the top at Vimy into the face of snow squalls and this weather severely impacted flying operations. In the lead up to the battle, the bad weather caused a large number of artillery shoots to be abandoned or judged ineffective. On the Canadian Corps front over 60 percent of pre-arranged shoots failed for various reasons and weather, at 28 percent, was the leading cause. The percentage was even higher in the IV Corps area where nearly 40 percent of shoots failed due to bad weather.⁴⁶

By the beginning of April it was apparent that the flying weather would be less than ideal but Trenchard urged the 'importance in spite of this of seizing every opportunity of displaying the utmost vigour whenever the weather gives the slightest change for it'.⁴⁷ The bombing offensive was scheduled to begin on 4 April but was delayed 24 hours by weather. On 9 April the RFC reported that the snow was at times blinding and a strong southwest gale blew at altitude. This prompted the abandonment of the bombing programme for the day and limited the number of offensive patrols. Virtually the entire air effort on the first day of the battle was carried by the Corps squadrons working directly with the troops. The 'wild weather' continued the next day and impacted the aerial observation of the battlefield. Some useful artillery shoots were directed from the air but four aircraft crashed as a direct result of the snow storm. Losses to enemy action one aircraft lost and two damaged, were lighter.⁴⁸

As some historians of the later 1944 Normandy campaign have observed, what is good tank country can be even better anti-tank country, and the same can be said of good flying weather.⁴⁹ A slackening in the snow squalls on 11 April increased the RFC sortie rate but there was a corresponding increase in German activity. By the end of the day 15 aircraft had been lost, though some notable successes were achieved including an artillery shoot by 5 Canadian Siege Battery, directed by 16 Squadron, which completely destroyed four of five pits of a German gun battery. Snow squalls scrubbed most flying

⁴⁶ TNA AIR 1/676/21/13/1849, 'The Battles of Arras 1917 (includes preliminary operations), April and May, 1917', p. 3.

⁴⁷ TNA AIR 1/1008/204/5/1283, Major-General Hugh Trenchard, 'Note issued by HQ RFC', 2 April 1917.

⁴⁸ TNA AIR 1/676/21/13/1849, 'The Battles of Arras 1917', p. 25; Jones, *The War in the Air*, vol. 3, pp. 344-346; Franks, *Bloody April ... Black September*, pp. 32-35.

⁴⁹ Marc Milner, 'Reflections on Caen, Bocage and the Gap: A Naval Historian's Critique of the Normandy Campaign', *Canadian Military History* Vol. 7, No. 2 (Spring 1998): pp. 7-17; Angelo Caravaggio, *21 Days in Normandy: Maj. Gen. George Kitching and the 4th Canadian Armoured Division* (Barnsley, UK: Pen and Sword, 2017).

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on 12 April, but the following day, Friday the Thirteenth, brought ideal flying weather and high losses. By the end of the day 18 aircraft failed to return home including a flight of six RE 8s from 59 Squadron on a photo reconnaissance mission which all fell to the guns of von Richthofen's Jasta 11. After another day of fine weather and high losses a low-pressure system settled over the Arras front bringing low clouds and rain for the next week. The weather was so poor that artillery preparations for a renewal of the British offensive, scheduled for 21 April, were delayed by 48 hours.⁵⁰

The weather affected the ability of Corps machines to direct the artillery but even in marginal conditions some work could be done by flying under the cloud layer. Poor visibility, rain, and especially high winds made a greater impact on the bombing effort and offensive patrols. Long range navigation and bombing was nearly impossible when you could not see the ground. The prevailing westerly winds complicated matters as strong headwinds could make it impossible for Allied aircraft, especially those damaged or suffering mechanical issues, to make it back across the lines. Interdiction attacks continued throughout the period but weather prevented the full programme from taking place.

An oft-repeated criticism of the air effort at Arras was the inflexibility of the overall plan, tied as it was to Trenchard's cult of the offensive. One historian argued that Trenchard and the other leaders of the RFC were directly responsible for the high air crew casualties because they 'failed to modify or adjust their thinking in terms of the strategy they directed the RFC to adhere to, most especially when the *Luftstreitkräfte* began to achieve dominance in the skies over the Somme in the autumn of 1916'.⁵¹ This was simply not the case. It is essential to distinguish between Trenchard's rhetoric and actual RFC practice.

Trenchard began the battle laid low, ironically by the German measles, which kept him confined to his bed. It did not stop him from carefully watching over his men and intervening when necessary.⁵² A key element of his orders for the battle was that fighter escorts were not to be provided to Corps squadrons as they went about their business. Heavy losses among these crews did not lead to change this order, but it was modified. In more dangerous areas it was arranged to have two fighters fly nearby to deter attacks. As well, line patrols of four to seven aircraft screened the army cooperation machines and offensive patrols were despatched to intercept enemy

⁵⁰ Jones, *The War in the Air*, vol. 3, pp. 349-51 & p. 356; Franks, *Bloody April ... Black September*, pp. 40-63.

⁵¹ Bradbeer, 'The British Air Campaign During the Battle of the Somme', p.375.

⁵² Boyle, *Trenchard*, pp. 212-213; Hart, *Bloody April*, p. 122.

formations that were detected.⁵³ It was recognised that escorts needed to be supplied to vulnerable bomber and reconnaissance aircraft, especially those near obsolescence. A raid of six BE 2s would have close support provided by six FE 2bs and a more distant offensive escort of six additional scouts such as Pups or Nieuports. Photographic missions were almost always escorted due to the vulnerability of the aircraft as they flew low and straight to record enemy positions. It was not unusually to have as many as 15 fighters directly supporting a photographic element of three aircraft.⁵⁴ The idea that Trenchard's offensive policy meant that vulnerable aircraft were left alone while the scouts ranged over enemy territory seeking to bring the enemy to battle is not supported by the evidence.

On 14 April the German Air Service reinforced the Arras front. A period of maximum effort followed which saw pilots and mechanics surge to allow each aircraft to fly 3-4 sorties per day during critical periods. Consequently, German air strength appeared significantly higher than numbers alone might suggest.⁵⁵ The enemy had the ability to choose when to fight and watch for times when the RFC were very active. This, combined with poor weather, led the Germans to attack at lower heights to take advantage of the visibility under the clouds. This often left the RFC patrols at high altitude and out of contact.⁵⁶ As a result, midway through the battle RFC headquarters issued new orders to adapt to these changing German tactics. Trenchard was still 'very strongly opposed to anything in the nature of a local escort of scouts' but he directed his 'Brigadiers to consider carefully the advisability of working some of their patrols at or about the height at which the Corps machines are working, with high patrols up at the same time'.⁵⁷

As the operation proceeded the RFC issued instructions intended to take advantage of the fluidity of the situation. Corp aircraft were to relay information to army formations being instructed that, 'In one way or another the information must be obtained, and quickly'. The RFC brigadiers were also to take advantage of this intelligence by seizing opportunities 'to take an active part of the fighting on the ground

⁵³ Jones, *The War in the Air*, vol. 3, pp. 321-322.

⁵⁴ Jones, *The War in the Air*, vol. 3, pp. 319, 338.

⁵⁵ This followed an earlier concentration of German aircraft opposite the British as the aircraft were transferred away from Verdun at the conclusion of that battle when the French air service withdrew to refit. TNA AIR 1/9/15/1/22, German Reichsarchiv Answers to Air Ministry Questions; and Winter, *The First of the Few*, p. 155.

⁵⁶ TNA AIR 1/9/15/1/22, German Reichsarchiv Answers to Air Ministry Questions, 10-11; Jones, *The War in the Air*, vol. 3, p. 355.

⁵⁷ RFC Headquarters to I Brigade, II Brigade, III Brigade, IV Brigade, V Brigade, and 9 Wing, 15 April 1917, cited in Jones, *The War in the Air*, vol. 3, p. 354.

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by means of machine gun fire and bombing'. In some cases, pilots were to act first and report subsequently. Such risks were fully justified by the demands of open warfare.⁵⁸

A report on the work of Corps machines detailed the successes and challenges faced by aircraft working in close cooperation with the artillery and infantry. With careful planning aircraft could significantly improve the accuracy of counterbattery and bombardment programs. Contact patrol work was valuable in keeping track of troop progress, but was dependent on the willingness or ability of the infantry to indicate their positions. Aircraft were often required to fly dangerously low to get the necessary information resulting in heavy casualties. It is notable that this eight-page report, which detailed numerous challenges faced by Corps machines in the prosecution of their duties, made no mention of counter-air operations by the enemy.⁵⁹

Losses in the RFC are often used to frame the air power experience at Arras, but it is perhaps more instructive to consider its accomplishments. Towards the end of April, Kiggell, Haig's chief of staff, issued a summary of air operations which offered a telling portrait of success in the air campaign. It is worth listing here:

Number of targets on which batteries were ranged with aeroplane observation on the First and Third Army fronts: 767

Number of targets similarly engaged by the German Artillery on the whole British front (estimated by Wireless Intelligence): 160

Number of photographs taken: 5,216

Number of prints made: 124,053

Number of flights made by our machines for artillery work: 842

Number of flights made by German machines for artillery work: 320

⁵⁸ TNA AIR 1/1008/204/5/1283, Note issued by HQ RFC, 11 April 1917.

⁵⁹ TNA AIR 1/1008/204/5/1283, 'Notes on Recent Operations', HQ RFC. n.d. but ca. late April/early May 1917.

Number of our machines which crossed the line, some for short distance, others for long distances, e.g. MONS, HIRSON: over 5,000

Number of German machines estimated by our A.A. guns to have crossed the line: under 500

Number of our machines which have carried out bombing and attacks with machine gun fire by night: 107⁶⁰

Perhaps the most remarkable statistic is:

Number of machines working on the front on 4 April: 887

Number of machines working on the front on 19 April: 890⁶¹

Despite the heavy losses in men and machines the RFC was able to reinforce its squadrons and increase its net strength in the field. This was also a qualitative improvement as it was largely obsolete types that were destroyed or struck of service, to be replaced by top-of-the-line aircraft.

In these statistics can be found the true contribution of the RFC to the Arras battle. Though the cost was great, the RFC effectively supported the army, its prime mission, throughout the battle. Haig told the War Office in London on 18 May 1917 that the success of the artillery and infantry during the Arras offensive rested entirely on the efforts of the army cooperation squadrons of the RFC. Their ability to guide the artillery, provided photographic intelligence, and mount contact patrols to track the progress of the battle made all the difference. And, the success of these machines was in turn due to the scouts which made that work possible by protecting the vulnerable Corps machines.⁶²

One historian argues, in an otherwise strong study on British air power in 1916, that the Somme was a Pyrrhic victory for the RFC since Trenchard took the lessons learned from the campaign and applied them to the Arras offensive resulting in 'near

⁶⁰ TNA AIR 1/1008/204/5/1283, Lieutenant-General L.E Kiggell, Chief of the General Staff, 25 April 1917.

⁶¹ TNA AIR 1/1008/204/5/1283, Lieutenant-General L.E Kiggell, Chief of the General Staff, 25 April 1917.

⁶² TNA AIR 1/2267/209/70/34, Haig GHQ no. OB/1826 to Secretary, War Office, 18 May 1917.

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catastrophic results'.⁶³ This is over-simplistic. He is correct in that the same actions which led to success on the Somme caused grievous casualties over Arras but the problem did not lie with the doctrine. The principles of air power which emerged from Verdun and the Somme have emerged as near-universal air power tenets and were applied during the Hundred Days campaign at the end of the Great War, during the Second World War, and in numerous conflicts since. There were problems and challenges at Arras – technology, training, and weather, among others which contributed to the high British losses. It was a challenge of application, not foundation.

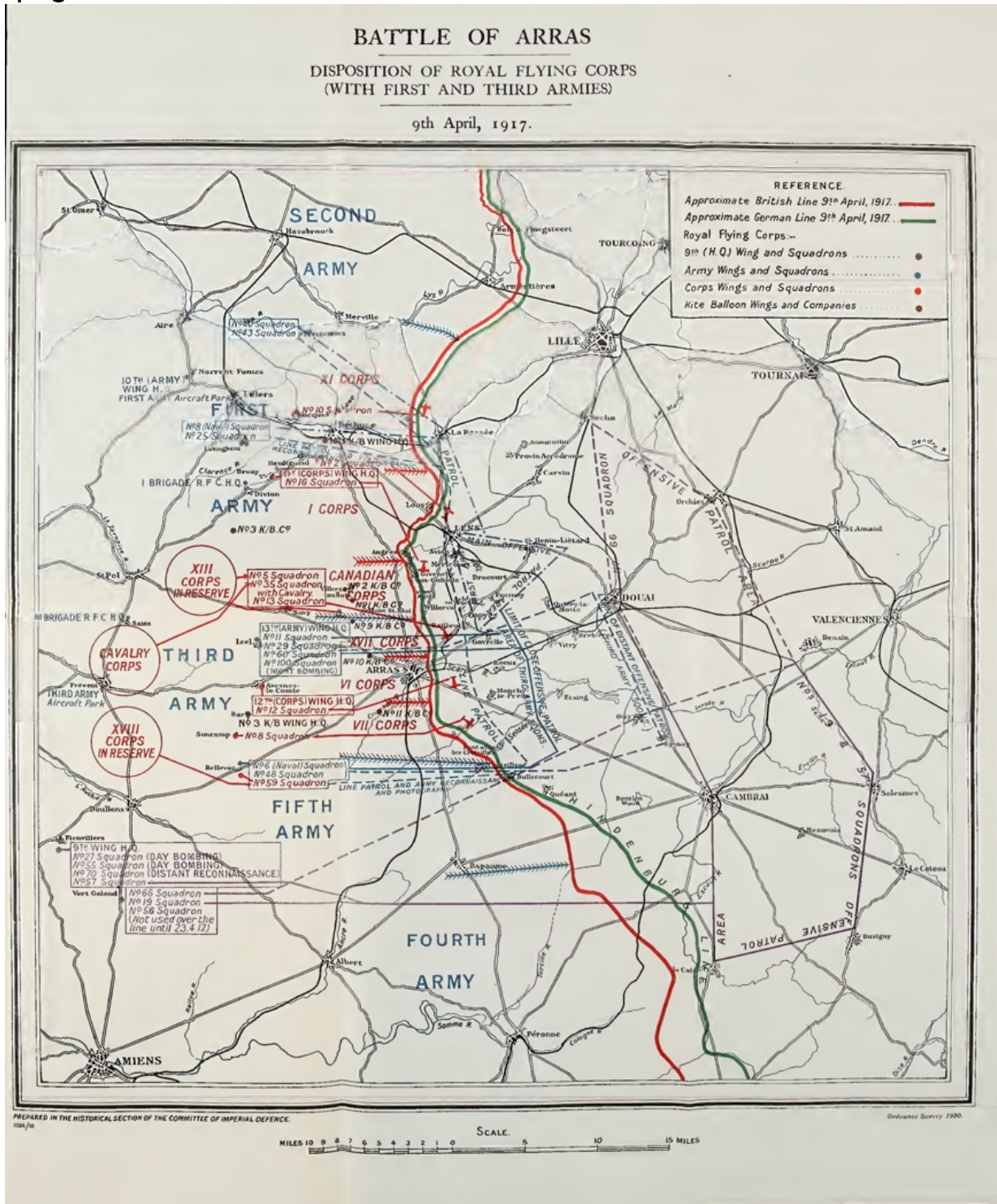
Bloody April was not the result of Trenchard's single-minded pursuit of offensive operations. Rather, for the RFC, the Battle of Arras was the perfect storm of problems. Its inopportune timing was dictated by the need to support the French offensive on the Chemin des Dames even though the RFC was not ready for sustained combat operations. The German technological ascendancy in the sky, which had grown since the end of the Somme campaign, was at its apex. British squadrons were filled with obsolete and overmatched aircraft. The BE 2, FE 2, and others could not match the speed, maneuverability, and firepower of their German contemporaries. Newer types were arriving such as the RE 8, Bristol Fighter, and SE 5 but those aircraft had numerous technical issues to sort out and pilots were still learning how to fight them effectively. The Sopwith Triplane a match for any German machine and the Nieuport 17 and Sopwith Pup could compete but these aircraft were in the minority.

Weather was another major factor for the RFC at Arras. Spring snow storms, high winds, and rain squalls severely impacted air operations in late March and April. Army cooperation flights could often battle through these conditions but offensive patrols, reconnaissance missions, and especially long-range bombing were curtailed. This meant that the RFC only rarely achieved the saturation over the battlefield required for success. This problem was compounded by the need to provide fighter escorts for bombing and reconnaissance missions. Every scout tied down in escort duties was one not free to patrol the offensive zone.

April 1917 was the costliest month of the war for the RFC but it marked the turning point for air operations. The RFC continued to learn how to wage war in the air, but even more importantly, it was learning how to effectively fight an air campaign. The many disparate functions of air warfare – tactical and operational reconnaissance, artillery spotting, interdiction, air superiority, and trench strafing – were being orchestrated to great effect. Trenchard and the other commanders of the RFC were learning how to integrate these various missions so the sum was greater than the parts.

⁶³ Bradbeer, 'The British Air Campaign During the Battle of the Somme', p. 375.
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There were problems yet to be worked out but the path forward was clear and would culminate at the Battle of Amiens in August 1918 which featured the greatest air concentration of any battle of the First World War and set the standard for future air campaigns in the First and Second World Wars.



Map 1: Battle of Arras Disposition of Royal Flying Corps 9th April 1917