

## *Vimy and the Battle of Arras: The Evolution of the Air Campaign*

**Dr Mike Bechthold**  
**Wilfrid Laurier University**

Arras and the Battle of Vimy Ridge are almost exclusively remembered as a land battle where aircraft waged a parallel but separate air battle. The chief contribution of the airmen was to service the guns through reconnaissance and directing the fall of shot. “Bloody April” was the worst month of the war for the Royal Flying Corps (RFC) highlighted by the dominance of the Manfred von Richthofen and the German air service, the emergence of Billy Bishop, and the death of Albert Ball. It was tales of great bravery in the face of daunting odds when “a working machine” doing army support work “will never have a chance against a flying scout.”<sup>1</sup> It was the story of the lions and donkeys in the air.

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.”<sup>2</sup> April was worse. The RFC suffered a staggering 421

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<sup>1</sup> Captain Eric Routh, 16 Squadron, quoting Trenchard’s remarks to the squadron during visit on 8 April 1917, cited in Ralph Barker, *The Royal Flying Corps in World War 1* (London: Robinson, 2002), p. 265.

<sup>2</sup> Peter Hart, *Bloody April: Slaughter in the skies over Arras, 1917* (London: Cassell, 2006), p. 120. The “Fokker scourge” was a phase of the air war in 1915 when 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.

casualties including 207 men killed. By the end of May, total casualties for the year were 1,014, nearly half fatal. These numbers paled in comparison to the butcher's bill for the men on the ground but they were crippling for the air services.<sup>3</sup>

At Arras, we see a significant step forward in air power at the operational level. The main task of the RFC remained the protection of the aircraft and crews supporting the artillery but there was much more to the mission of the air force. By 1917 the ground and air battles were intimately connected. Major-General Hugh Trenchard, officer commanding the RFC in France, commanded a flexible weapon: aerial reconnaissance provided crucial information for planning the battle, bombing raids were staged to interdict the battlefield, and attempts were made to blind the Germans by destroying their kite balloons. Over the battlefield contact flights provided updates on the progress of the troops, artillery patrols directed artillery fire, and German targets in the communications zone were attacked. The struggle for air superiority made all these tasks possible. 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."<sup>4</sup>

Trenchard, the architect of the air offensive at Arras, was widely criticized by his own airmen and by later historians.<sup>5</sup> It is clear that he was seduced by the cult of the offensive, a strategy he employed throughout the war. Since its formation, the RFC valued offensive action over a defensive posture. This plan was formalized by Trenchard during the Somme campaign when he published "Future Policy in the Air."

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<sup>3</sup> Hart, *Bloody April*, 355 and Trevor Henshaw, *The Sky Their Battlefield* (London: Grub Street, 1995), p. 576. By comparison, the British army suffered over 150,000 casualties during the Arras offensive.

<sup>4</sup> 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.

<sup>5</sup> 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 in letters written in 1917 by Lieutenant A.S.G. Lee, Sherwood Forrester, attached Royal Flying Corps* (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, 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), pp. 15-16; Trevor Wilson, *The Myriad Faces of War: Britain and the Great War, 1914–1918* (London: Faber & Faber, 2012), p. 134; and 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. 375.

This oft-quoted document established that British aviation should be “guided by a policy of relentless and incessant offensive.”

The French experience at Verdun in 1916 provided the operational laboratory which proved Trenchard’s offensive air strategy. Trenchard was in close contact with the French throughout the battle. French offensive air actions early in the battle gave them the advantage but it was lost when they emphasized defensive missions. Faced with mounting casualties, the French air commander made the bold decision to return to offensive operations. His scout squadrons were released to take the battle to the enemy. It worked. As one commentator remarked, “Offensive action did in fact seem to be the key to gaining air superiority.”<sup>6</sup>

Trenchard transferred these costly lessons to inform the British air campaign at the Somme during the summer and fall of 1916. He believed that the offensive must be maintained regardless of the cost.<sup>7</sup> For the first time in the history of warfare an air campaign was planned and executed to support a major army operation. The Royal Flying Corps was tasked with achieving air superiority over the Somme sector before the British Army attacked on July 1st, 1916. Trenchard directed his squadrons to accomplish six missions in order to achieve aerial superiority over the battlefield: aerial reconnaissance; 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.<sup>8</sup> Although the RFC suffered serious losses because it rigidly adhered to an offensive strategy throughout the air campaign, when the battle ended, the RFC still controlled the skies above the Somme. While the ground campaign was a failure, historians consider the air campaign a victory for the RFC.<sup>9</sup>

The Somme was a success for the RFC but the situation over the Western Front changed between the Summer of 1916 and the Spring of 1917. The quality of German aircraft leaped past their British counterparts; German scouts were faster, more

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<sup>6</sup> Bradbeer, “The British Air Campaign During the Battle of the Somme,” p. 88.

<sup>7</sup> Andrew Boyle, *Trenchard* (London: Collins, 1962), p. 156.

<sup>8</sup> Bradbeer, “The British Air Campaign During the Battle of the Somme,” pp. 10-11.

<sup>9</sup> 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]).

maneuverable, and armed with twin machine guns. The next generation of British aircraft were still on the way and squadrons deployed obsolescent DH 2 and BE 2 machines which were well past their prime. The main British fighters like the FE 2b/d, FE 8, and Sopwith 1½ Strutter, were outdated. The Sopwith Pup and Nieuport 17 were somewhat effective but only the Sopwith Triplane was equal or superior to the current generation of German aircraft. New aircraft were on their way for the RFC. These machines, the Bristol Fighter, SE 5, and RE 8, among others, would eventually turn the tide but their introduction to battle in April 1917 was disappointing due to “technical shortcomings and tactical mishandling.”<sup>10</sup>

Planning for the Arras offensive started late in 1916 and Trenchard lobbied hard to improve his squadrons. In January 1917, he possessed 39 squadrons ready for operations but less than a third were capable of escort operations, offensive patrols, and general air combat. Trenchard was promised new squadrons by March but they were slow to arrive. A notable reinforcement was the commitment of Royal Naval Air Service squadrons to the battle.

New British pilots were arriving at the front in early 1917 with significantly less training than previous generations. The rapid expansion of the RFC along with heavy 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.<sup>11</sup>

Trenchard was aware of the changes affecting the RFC since the Somme but he still intended to pursue an offensive strategy at Arras. Air superiority was the key to winning the air battle.<sup>12</sup> On 26 March, Trenchard issued orders for the Arras offensive to his brigades. “The aim of our offensive will ... 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

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<sup>10</sup> Lee, *No Parachute*, 2-3. See also Sydney F. Wise, *Canadian Airmen and the First World War*, vol.1 (Toronto: University of Toronto Press, 1980), 394 and Jones, *The War in the Air*, vol. 3, pp. 334-335.

<sup>11</sup> Michael Molkenin, *Australia and the War in the Air* (Sydney, Australia: Oxford University Press, 2014), p. 54.

<sup>12</sup> “Minutes of Brigadiers Conference, 9 March 1917,” HQ RFC, 10 March 1917. TNA AIR 1/1008/204/5/1283.

for corps machines except in special circumstances. The order specifically referenced RFC success on the Somme and Trenchard was “confident that a similar ascendancy will be gained this year.”<sup>13</sup>

The situation was not completely against the RFC. Trenchard 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.<sup>14</sup>

Trenchard’s plan for Arras was predicated on offensive action but his plan was nuanced and offered a 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” were the result of factors out of the control of Trenchard rather than the application of rigid and unimaginative tactics.

The RFC was much more active in the month prior to the battle. Not surprisingly, casualties increased, especially among the Corps squadrons carrying out the vital tasks of artillery spotting and reconnaissance. British army corps and divisional commanders demanded escorts for these vulnerable army support machines. Trenchard, supported by General Douglas Haig, commander-in-chief of the British Expeditionary Force, refused to back down from his offensive policy. On 9 April Lieutenant-General Sir Lancelot Kiggell, Haig’s chief of staff sent a memo on RFC doctrine to the five British army commanders intended to clearly establish “the policy which governs the employment of the R.F.C.”<sup>15</sup> The aggressive tactics consisted of two elements: offensive patrols and bombing raids by day and night. It was recognized 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.<sup>16</sup>

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<sup>13</sup> Note issued by HQ RFC, 26 March 1917. TNA AIR 1/1008/204/5/1283.

<sup>14</sup> 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 aircraft deployed against the French opposite the Aisne.

<sup>15</sup> Letter, Kiggell to Army Commanders, 9 April 1917, TNA AIR 1/522/16/12/5.

<sup>16</sup> “Policy in the Air,” 9 April 1917, TNA AIR 1/522/16/12/5. 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.

The army commenced the Arras offensive on 9 April but air operations began four days earlier. Medium- and long-distance bombing attacks were made to isolate the battlefield. The aim of these missions was to hinder the movement of German reserves and supply columns while also drawing 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 were repeatedly attacked at all hours. There were also two attempts to bomb the headquarters of Crown Prince Rupprecht, the army group commander opposing the British at Arras.

Simultaneously, the RFC attempted to blind the enemy by destroying their kite balloons along the front lines. These targets were difficult and costly to destroy. Five RFC squadrons deployed dozens of scouts on these attacks and destroyed five balloons while losing five aircraft in the process.

These preliminary attacks were a minor irritation to the Germans, but they demonstrated the evolution of British thinking about how to conduct an air campaign at the operational level.<sup>17</sup> British and Canadian artillery was very successful in the opening stages of the attack and much of this success was due to the close partnership with the RFC.

The commencement of the main attack by the First and Third British Armies on 9 April propelled the RFC into the next stage of their battle plan. The main goal was to control German airspace over the battle area. To achieve this, overlapping zones of control were established which would be 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. Just beyond the front was a zone of close offensive patrols. Corps two-seater aircraft patrolled over top of the lines. 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.<sup>18</sup>

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<sup>17</sup> Jones, *The War in the Air*, vol. 3, pp. 341-343; Wise, *Canadian Airmen*, p. 398;

<sup>18</sup> Wise, *Canadian Airmen*, pp. 399-400; Jones, *The War in the Air*, vol. 3, pp. 343-344, 360.

This program was very successful. At the start of the offensive 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. On 9 April, the RFC reported that hostile aircraft were active but often avoided combat, something they did when the odds were not in their favour. 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. But, a survey of RFC brigade summaries shows that more than 300 sorties were flown on only two days in April while a further nine days saw over 250 sorties. He concluded that, "In these stark statistics lay the seeds of disaster."<sup>19</sup>

Alongside these air superiority missions, the RFC also conducted interdiction missions to isolate the battlefield and draw off German resources. Weather permitting, aircraft were sent to attack 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. These attacks showed, however, that the offensive bombing raids, though at times costly, could draw German fighters away from the front lines.<sup>20</sup>

The weather in March and April 1917 significantly impacted air operations. The Canadian Corps contended with snow squalls at Vimy and the snow squalls, high winds, and cold temperatures were an even greater challenge for the RFC. Trenchard understood the limitations imposed by weather but urged the "importance in spite of this of seizing every opportunity of displaying the utmost vigour whenever the weather gives the slightest chance for it."<sup>21</sup> 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

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<sup>19</sup> 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; TNA AIR 1/767/204/4/252.

<sup>20</sup> Jones, *The War in the Air*, vol. 3, pp. 347, 349.

<sup>21</sup> Major-General Hugh Trenchard, Note issued by HQ RFC, 2 April 1917. TNA AIR 1/1008/204/5/1283.

abandonment of the bombing programme for the day and limited the number of offensive patrols.

Good weather, however, brought its own challenges. 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. Friday the Thirteenth brought ideal flying weather and heavy losses. By the end of the day, 18 aircraft failed to return home.

So what can we conclude about the air effort at Arras? Trenchard is frequently criticized for employing an inflexible plan wedded to an ill-conceived offensive concept. 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 [German air service] began to achieve dominance in the skies over the Somme in the autumn of 1916.”<sup>22</sup> This was simply not the case. It is essential to distinguish between Trenchard’s rhetoric and actual RFC practice.

Trenchard and his commanders made numerous changes to his tactics during the battle to mitigate losses. Scout aircraft did not fly in close support of artillery machines but their missions were synchronized to achieve the same result. Escorts were provided for vulnerable bomber and reconnaissance aircraft, especially those near obsolescence. A bombing 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 heavily escorted. It was not unusually to have as many as 15 fighters directly supporting a photographic element of three aircraft.<sup>23</sup> 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.

Bloody April is often viewed through the lense of RFC losses, but it is perhaps more instructive to consider its accomplishments. Towards the end of April Kiggell, issued a summary of air operations that offered a telling portrait of success in the air

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<sup>22</sup> Bradbeer, “The British Air Campaign During the Battle of the Somme,” p. 375.

<sup>23</sup> Jones, *The War in the Air*, vol. 3, pp. 319, 338.

campaign. The statistics clearly show that despite the high losses, the RFC successfully accomplished its main mission of facilitating the artillery spotting and reconnaissance missions so desperately needed by the army. As well, the ability of the Germans to successfully deploy their aircraft to support their army was significantly degraded. Perhaps the most remarkable figure was that the RFC was able to materially increase the number of aircraft at the front as the Arras operation continued. This seems counter-intuitive to an air battle understood only through the high losses suffered by the RFC.<sup>24</sup>

Though the cost was great, the RFC was able to effectively support the army, its prime mission, throughout the battle. No less an authority than 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.<sup>25</sup>

The heavy British losses of Bloody April were not the result of Trenchard's single-minded pursuit of offensive operations. Rather, for the RFC, the Battle of Arras was caused by a confluence of issues. It was staged at a bad time for the RFC but its launch was dictated by the need to support the French offensive in 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 peak. British squadrons still deployed obsolete aircraft and many pilots and observers lacked the training and experience to survive air combat. Newer aircraft were on the horizon but needed to sort out various technical issues, and pilots needed to learn how to fight them effectively.

Spring snowstorms, high winds, and rain squalls severely impacted RFC 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 rarely achieved the battlefield saturation 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 not free to patrol the offensive zone.

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<sup>24</sup> Lieutenant-General L.E Kiggell, Chief of the General Staff, 25 April 1917. TNA AIR 1/1008/204/5/1283.

<sup>25</sup> Haig GHQ no. OB/1826 to Secretary, War Office, 18 May 1917. TNA AIR 1/2267/209/70/34.

Bloody April is remembered as 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. There were problems yet to be worked out but the path forward was clear and would culminate in August 1918 at the Battle of Amiens which featured the greatest air concentration of any battle of the First World War and set the standard for air campaigns in future wars.