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Between Barons and Wolves

British and German Tactical Command in the First Air War, 1914-1918

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ABSTRACT

This thesis outlines the experience of tactical command in the British and German fighter aviation branches in the First World War. It is based on primary and secondary accounts, as well as modern leadership scholarship to guide the study of command. The study considers the assessment of an official historian of the American Expeditionary Force, William Sherman, that 'patrol leading became the most important factor in determining air supremacy' and that tactical command was the decisive factor in British dominance in fighter aviation in late 1918. It considers the qualities of success and the systems of command between the German and British air forces, and determines that they were orientated towards very different goals. It argues that the German system elevated expert pilots into command as part of a defensive aerial effort that created a specialised, elitist organisation, while the British undertook an offensive strategy that necessitated the growth of a large conventional force. While the systems of command were very different, some traits were shared amongst the successful commanders regardless of nationality. Neither system can be determined superior as they served different purposes in pursuit of different ends. The British prioritised strategy at the expense of tactics, while the Germans prioritised tactics at the expense of strategy. While the air war developed and expanded through 1915, 1916 and 1917, the Germans were able to use their more agile and efficient organisation to retain a level of competitive parity against the Allies, even as their forces were increasingly outnumbered. By 1918 the tides had dramatically shifted and the British had managed to improve the quality of their fighter force without compromising on their over-arching policy of expansion. It is concluded that while the standards of patrol leadership differed between the British and German air forces, neither was clearly superior and that tactical command was only one of many essential elements that determined the final balance of British superiority in the air.

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INTRODUCTION

‘Patrol leading became the most important factor in determining air supremacy... The superiority of the British patrol leaders... was responsible more than any other factor for keeping air superiority.’¹

William Sherman

In 1918 the United States War Department published the first in a series of historical documents covering the American Expeditionary Force’s service in Europe. Amongst these was William C. Sherman’s *Tactical History* which dealt specifically with the air war. The published study would remain an obscure document, never achieving much attention outside the military community. The spotlight would be left to the revolutionaries and the radicals like Billy Mitchell and Giulio Douhet who would make extravagant, often controversial claims about the abilities of air power, seizing public and military imagination but always falling short in reality. Sherman’s work, by contrast, was more the product of a historian than a visionary. His approach managed to capture both the tactical nature of First World War air combat and simultaneously describe, perhaps more accurately than the majority of theorists since, the enduring characteristics of air power.

Writing in the *Tactical History*, Sherman focussed primarily on 1918 after American entry into the European conflict. By the time the United States Army Air Service had arrived in theatre, the balance of power in the air war was very different to the closely fought campaigns of exhaustion and attrition that had tied down the British, French and German services over the previous years. ‘Throughout the period in which Americans worked with the British,’ Sherman noted, ‘it will have been observed that the British always held supremacy of the air.’² He attributed this to a number of factors. First, it was due to the ‘fact that the R.A.F. [Royal Air Force] recognised the principle that an Air Force... must be offensive’³. While their offensive policy set the conditions and enabled aerial supremacy, the means by which the British achieved their position of dominance was attributed by Sherman to ‘the early development in the R.A.F. of

¹ Sherman, W., ‘Tactical History of Pursuit Aviation’ in *The U.S. Air Service in World War I*. Alabama: The Albert F. Simpson Historical Research Centre, 1978, p. 335.

² Sherman, W., p. 339.

³ Sherman, W., p. 339.

formation flying.⁴ Finally, Sherman identified the tactical leadership within the British air services as being instrumental in their success.

In his assessment of the British air war, Sherman made special mention of the German offensives in September 1918 which, as he saw it in 1918, was 'probably the hardest [month] that has ever been fought [in the air]'.⁵ It was an illuminating period; the German's had regained a qualitative edge in aircraft compared to the British types and they had, unusually, assumed an offensive strategy. The change in German tactics altered the nature of the air war for a short period, but it was long enough for the British air services to prove that they were the superior force in a contested campaign. With the difference in strategy and equipment removed, British success was attributable to something else, and Sherman was adamant that it was leadership. 'Patrol leading', he wrote, 'became the most important factor in determining air supremacy. The enemy patrol leaders showed skill and ability in handling patrols of several flights. The superiority of the British patrol leaders, however, was responsible more than any other factor for keeping air superiority.'⁶

This thesis will focus solely on those who were involved in the actual flying and fighting. By drawing upon primary sources including memoirs of the aces and pilots and secondary sources covering the air war and those involved in it, this thesis will attempt to identify the accuracy of William Sherman's claim that by 1918 'patrol leading had become the most important factor in determining air superiority.' Specifically, the questions will be asked as to whether there were different styles, systems or cultures of command between the German and British air services; if one of the systems of command was superior to the other and, finally, just how important tactical command was to deciding British aerial superiority in late 1918.

While the era of the biplane and the open-air cockpit is over, the questions of command and leadership raised by William Sherman's study remain timeless. Sherman himself noted that the early duels of the air war represented air power in its infancy, acknowledging that the tactics seen between 1914 and 1918 would soon be rendered obsolete. The 'Homeric Age of the air', as Sherman termed it, 'would pass, just as the duels before the walls of Illium had long ceased to be a feature of infantry combat.'⁷ Yet just as the stories of Achilles and Hector continue to interest and educate us, so to do the experiences of the First World War aviators. Innovation, uncertainty

⁴ Sherman, W., p. 339.

⁵ Sherman, W., p. 335.

⁶ Sherman, W., p. 335.

⁷ Sherman, W., *Air Warfare*. Alabama: Air University Press, 2002, p. 16.

and the human response to combat are universal and recurring themes in any study of command, and all are clearly visible in the experiences and histories of the first air war.

It is hoped that this thesis will provide a case study of organisational evolution in a period of intense combat, furthering an understanding of the origins of air power while identifying lessons of combat leadership and command from the British and German air forces of 1914 –1918. Even though their era has passed, the experiences of the pilots who fought in the First World War can still speak to us in the same way the accounts of the Trojan warriors remain relevant. Above all it is hoped that this thesis will, like the stories of the ancient Greeks, continue to further our own understanding of command and combat leadership.

CHAPTER ONE

THE ACE ASCENDANT

HISTORIOGRAPHY AND RESEARCH QUESTIONS

The first war in the air has attracted a huge amount of interest and attention. Despite the quantity of books and articles published, the field remains caught up in the cult of the expert pilot. Even in academic circles a huge amount of attention has been given to the creation, qualities and importance of the experts with comparatively little discussion on the wider topic of how the first air forces were raised, trained and sustained. Within the last decade the tide has started to turn. It is now possible to read about the training of the first military pilots and the creation of the early air arms, while doctrinal and campaign studies are contributing to an understanding of the air war as it was in reality, fought not by a few celebrated individuals but as a costly struggle linked to the ground forces. The most famed of the fighter pilots who achieved celebrity status, glory and frequently death in their exploits did so only in a supporting role to the reconnaissance and artillery-spotting aircraft. Despite their subordination to the two-seaters, the fame of the fighter pilot has cast a long shadow over the historiography of First World War aviation. Understanding the origins of this elitism is important in understanding the historiography of the period.

Self-Fulfilling Prophecies – Pre-War Theories and Early War Experiences

The belief that military aviation was somehow special had its origins in pre-war theorising that, by 1914, paved the way for the fliers to assume their mantle as the vanguard of a new, idolised elite. Viewing the skies as a theatre of combat was an accepted concept by 1910. While the means of air combat were still a mystery (most of the Victorian science-fiction invoked dirigibles and balloons rather than fixed-wing aircraft)

¹ the knowledge that an enemy could bypass land-bound defences and strike at strategic targets had become apparent in popular culture. Between 1908 and 1914 Zeppelins were so prominent in public awareness that ‘Zeppelin panics’ had become a ‘regular feature of feature of British society.’² Fuelled by the likes of the British science

¹ Paris, M., ‘The Rise of the Airmen: Origins of Air Force Elitism, c. 1890 – 1918’ in *Journal of Contemporary History*, Vol. 28, No. 1 (Jan 1993) pp. 125 – 129.

² Paris, M., p. 133.

fiction writers Jules Verne and H.G. Wells (whose 1908 work *War in the Air*³ is the best-known novel of the kind) an awareness of the air arm as a potent military force had firmly established itself in the public psyche.

The prominent and recurring belief that an air arm could prove a decisive means of war contributed to a perception within the air services that they were somehow exceptional. By 1914 the spectre of air power was very prominent in Germany and England,⁴ and with this came a belief of organisational exception within in the military aviation communities.

The nature of industrialised warfare brought new horrors to soldiers facing a battlefield dominated by unprecedented firepower. Unable to break the operational stalemate imposed by the machine gun and the concentration of immense numbers through rail, the easiest but ultimately indecisive response was to turn to artillery in ever increasing strength. The result was trench warfare, with the powers being held in 'the grip of Hiram Maxim', inventor of the machine gun.⁵ Taken together, the enormous casualty rate and the lack of progress imposed by trench warfare made for grim reading and unwelcome news. By 1915 the aircraft was a proven reconnaissance platform but, more interesting to a public starved of good news, experimentations in aerial combat had proven that it was possible to shoot down other aircraft in the novel phenomenon of aerial duelling.

Major General Sykes, commander of the Royal Air Force after the war, recalled that in the 'early days' of the war 'one asset which we had consistently on our side was the press.'⁶ The British were not alone – the Germans and the French also courted the public with images and stories of their military aviators. Stirring nationalistic sentiment together with the courageous exploits of individual pilots, the ultimate outcome was the creation of the chivalric fighter ace whose stories were intimately and explicitly intertwined with the knights of old. The fighter pilot community was the only branch to be celebrated in this manner. The sailors, submariners, machine gunners and snipers, even the reconnaissance aviators and balloonists, would never be blessed with the aura and fame attributed to the fighting 'few'.

³ Wells, H., *The War in the Air*, New York: Bantam, 2003.

⁴ Morrow, J., *The Great War in the Air: Military Aviation from 1909 to 1921*. Tuscaloosa: The University of Alabama Press, 2009, pp. 1-57.

⁵ English, J. and Gudmundsson, B., *On Infantry: Revised Edition*. London: Praeger Publishers, 1994, pp. 15 – 37.

⁶ Paris, M., 'The Rise of the Airmen: The Origins of Air Force Elitism, c. 1890-1918' in *Journal of Contemporary History*, Vol 28, No. 1 (Jan 1993), pp. 123-141, Sage Publications Limited, p. 134.

Of note is the fact that the term 'fighter pilot' was not generally in use at the time, coming into widespread usage after the First World War ended. It now refers to pilots whose mission is related to aerial superiority. Between 1914-1918 the British referred to their fighter pilots as 'scout pilots', the Germans used the term '*Jagdflieger*', which translates as 'hunting' or 'attack' pilot, and the Americans used the term 'pursuit'. These terms are not entirely accurate, as scouting implies reconnaissance, attack nowadays is more akin to close support missions against ground forces and pursuit implies interception duties. The reality is that the British scout pilots and the German *Jagdfleiger* were fighter pilots, undertaking missions outside of what their narrow nomenclature suggests today.

By the major offensives of 1916 air power was playing an important and increasingly valuable role in military campaigns. Compared to the millions of soldiers involved in the fighting the small fighter pilot community was numerically insignificant, often out-numbered by their own aerial reconnaissance and artillery-spotting peers.⁷ Yet the fighter pilots, out of all proportion to their numbers and role, had ascended to positions of unprecedented fame and prominence. In many ways this was inevitable. Aerial combat allowed pilots to count and compare a victory tally, creating an easily understood narrative of success and failure. The British did not fully adopt the concept of celebrating her leading fighter pilots, demonstrating reluctance in letting pilots be elevated above the infantrymen and gunners below them.⁸ This reluctance was not total; movies were made, and the 1917 propaganda film *With the Royal Flying Corps* featured the service's top scoring ace of the time, Captain William Bishop.⁹ Compared to their peers in France and Germany, however, the British air forces were subdued in their promotions. In contrast a constant media and public frenzy surrounded the heroes of the German air services, with their achievements publicised and lionised in the press.¹⁰

The individualistic nature of air combat, where skill could be quantified and measured, was eagerly celebrated by the public. One of the first documents linkages between mediaeval chivalry and fighter pilots came from the poet Henry Newbolt, who in a 1916 believed that 'Our airmen are singularly like the knights of old romances...

⁷ Morrow, J., pp. 195-196.

⁸ Shores, C. Franks, N. and Guest, R., *Above the Trenches: A Complete Record of the Fighter Aces and Units of the British Empire Air Forces 1915-1920*. London: Grub Street, 1996, p. 10.

⁹ Paris, M., p. 136.

¹⁰ Franks, N. Bailey F. and Guest, R., *Above the Lines: A Complete Record of the Fighter Aces of the German Air Service, Naval Air Service and Flanders Marine Corps, 1914-1918*. London: Grub Street, 1993, pp. 16-18 and pp. 27-28.

There is something especially chivalrous about these champions of the air.¹¹ Such sentiments were echoed in the British Parliament, with Lloyd George praising them as ‘the Cavalry of the Clouds’ while addressing the House of Commons.¹² It is difficult to state with certainty when German literature first linked the Teutonic heritage to their fighter pilot but it is clear, from 1915 onwards, German fighter pilots were celebrated as national heroes.¹³

The fighter pilots on both sides of the lines, then, operated amidst a culture of exception. Robert Morley’s 2006 masters thesis on the British Flying Training systems between 1912 and 1918 concluded that ‘RFC rhetoric’ instilled ‘in pilots a sense that they were individualistic, powerful masters of a new technology – that in the hierarchy of soldiers, they were the elite.’¹⁴ The British were not alone, with similar attitudes being created and reinforced in Germany, France and America.

Through the Eyes of Aces – Primary Sources of the Period

This sense of superiority influenced the organisational culture and individual perspectives of those who flew and fought in the skies. While the majority of pilots understood that their role remained wedded to the military endeavours of the infantry forces and that their effectiveness would be measured by the reconnaissance, artillery and close support battles, the organisational tendency towards elitism nonetheless coloured the historiography of the period. The memoirs published by the famous pilots during the war were, without exception, works of propaganda. Manfred von Richthofen’s *The Red Air Fighter*¹⁵ was written during a period of leave in Berlin in 1917 before his death the next year. Ernst Udet, another leading fighter pilot in the German service, published his recollections in *The Ace of the Iron Cross*¹⁶. Amongst the British, Ira Jones recalled his experiences in *Tiger Squadron*¹⁷ after the war while Major James McCudden wrote and published *Flying Fury*,¹⁸ like Richthofen, shortly before he died. Coloured by the needs of wartime promotion, such accounts endorse the concept of the fighter pilots as an elite. Chivalry, honour and skill are all traits that are emphasised, whereas the ever-present effects of stress, fatigue and fear are ignored. Criticisms of policy and commanders are likewise, and not surprisingly,

¹¹ Paris, M., p. 136.

¹² Paris, M., p. 137.

¹³ Franks, N. et al., *Above the Lines*, pp. 14-15.

¹⁴ Morley, R., “Earning Their Wings: British Pilot Training, 1912-1918.” Canada: University of Saskatchewan, 2006, p. 22.

¹⁵ Richthofen, M. (Trans. Barker J.), *The Red Fighter Pilot*. Florida: Red and Black Publishers, 2007.

¹⁶ Udet, E., *Ace of the Iron Cross*. New York: Arco Publishing Inc, 1981.

¹⁷ Jones, I., *Tiger Squadron*. New York: Award Books, 1966.

¹⁸ McCudden, J., *Flying Fury: Five Years in the Royal Flying Corps*. Pennsylvania: Casemate Publishers, 2009.

absent. These accounts are products of their time and while they make for exciting narratives of duelling, fighting and flying over the Western Front, they largely fail to address the challenges and realities of tactical leadership.

Chimerical Victories – The Issues of Claims, Tallies and Kills

Another trend of First World War aviation – the tallying of personal victories – can also be a very misleading affair. It is very easy in a study such as this to turn to the ‘score’ of a pilot as a measure of their worth, as the majority of non-fiction and some academic works are prone to do. The counting of victories amidst the fog of war and chaos of battle was fraught with inaccuracies at the time, and subsequent historical assessment of the pilots and their claims has only shown how flawed the personal scores are as a unit of measure. Claiming an enemy aircraft as a ‘kill’ had its origins in the very first air battles. Having driven down an enemy aircraft – or having believed themselves to have done so – the ensuing combat reports would make much of this accomplishment.¹⁹ As air combat progressed and personal tallies started to accumulate, the concept of the ‘ace’ pilot emerged. Originating with the French Air Service, the somewhat arbitrary number of five kills was settled upon as the threshold that had to be passed before a pilot could call himself or be considered an ‘ace’.²⁰ The British adopted the French concept of five victories constituting an ace and the Germans eventually followed suit, too. Originally awarding pilots with a Knights Cross for four victories and a *Pour le Merite* (the highest German award available) for eight victories, the rapid increase in scoring seen after 1916 forced the German authorities to raise the requirements for medallic recognition (by the end of the war only pilots whose personal victories were around the 30 mark could expect to be awarded the *Pour le Merite*²¹) but they too lowered their threshold for ‘expert’ status to the five victories mark.²² Referring to their aces as *kanone*, translating as ‘cannons’ in the literal sense, the German nomenclature for their expert pilots is very similar to the American label ‘Top Gun’ used today.²³

Not all victories were equal, however. There is a huge discrepancy in the numbers claimed and the number of aircraft lost in combat over the same period. Some of the reasons for this incongruity relate to the chaotic and confusing nature of air combat, and this was reflected in the reports filed after each sortie. An aircraft diving

¹⁹ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War I*, London: Greenhill Books, 2003, p. 30.

²⁰ Rayder, J., “Armed For Success: External Factors of the World War I Aces.” Fort Leavenworth: CGSC, 1995, p. 3.

²¹ Franks, N et al., *Above the Lines*, p. 14.

²² Franks, N et al., *Above the Lines*, pp. 14-15.

²³ Franks, N et al., *Above the Lines*, pp. 14 – 15.

away might have been a pilot trying to escape, or it might have been due to serious damage to the pilot, engine or airframe. It was even more difficult trying to decide who was responsible for each aircraft that appeared to fall or dive away in something as fast-moving as air fighting. Rules surrounded the process before which a pilot would be awarded a confirmed 'kill' or claim normally involved some form of third-party verification. The German air service had the advantage of spending the majority of their time fighting above their lines, so any British or French aircraft shot down should, theoretically, have been observed by observers in the trenches or, even better, the wreckage should have crashed within their lines. Even with this advantage there is no doubt that the Germans over-attributed aircraft kills to their fighter pilots.²⁴ The British were in an even worse situation with regards to verifying enemy losses. Without the advantage of ground observation they often had to rely solely on their pilot's often disparate and frequently contradictory accounts of a battle. The logical German tactic of diving away towards their aerodromes or towards the protecting fire of ground-based machine guns could often be misconstrued by a British pilot as a personal victory – especially if they had managed to get some rounds off at the German pilot (which, making it a perfect storm of confusion, could in itself be the catalyst for the German to exit the battle by spinning or diving away).²⁵ Following down an aircraft to observe it fall was a dangerous undertaking for a British pilot as they would invariably end their pursuit at a low altitude, a bad place to be, making them a vulnerable target to patrolling German aircraft and ever-present ground fire when they crossed back over to their lines.

Official differences in designations of what constituted a victory confuse matters further. The Germans generally only let pilots claim enemy aircraft that they had destroyed or forced to land inside their own lines and did not let pilots share in an enemy kill. The British recognised a victory as being a German aircraft either destroyed or driven out-of-control from the skies ('OOC' in British reporting terms).²⁶ This category was not present amongst German or French services, and even the British started to discourage OOC claims late in the war.²⁷

Further confusing matters amongst British reporting was a system that allowed kills to be shared. This could mean that fractions such as a '1/2 kill' were sometimes awarded, or alternatively a full kill could be awarded to *both* pilots involved. Thus if two

²⁴ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War 1*, p. 34.

²⁵ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War 1*, pp. 30-36.

²⁶ Shores, C. et al., *Above the Trenches*, pp. 6-7.

²⁷ Shores, C. et al., *Above the Trenches* pp. 6-10 and Franks, N F. et al., *Above the Lines*, pp. 5-10.

aircraft that both shot at an aircraft that was believed to have been destroyed, both crew could receive a victory to add to their record.²⁸ This system was actively discouraged by late 1917, with the awarding of claims becoming more prescriptive than the early war period, however it was not fully eradicated and shared kills were still awarded well into 1918.²⁹

While the systems themselves were evidently unequal between air services, the ever-present fog of war created claims that were themselves widely confused. A single aircraft diving from an engagement could, for instance, be 'claimed' by multiple pilots who, in the heat of battle and through the fog of adrenaline, fear and the chaos of fighting in three dimensions, all thought that they were the one responsible for the supposedly destroyed enemy aircraft. It was the job of dedicated staff officers (Recording Officers in the British squadrons and Adjutants in the German *Jagdstaffels*) to filter through the post-sortie claims and decide which were best supported by collaborating accounts to forward to their higher head-quarters for confirmation.³⁰ The Germans were more circumspect in recognising the claims lodged by their pilots, referring to ground reports of aircraft driven down before they would recognise a claim.³¹ Exceptions did occur, but on the whole the German air service was more thorough and robust in reviewing and processing their pilot's claims compared to the British.³²

While a vast majority of the inaccurate claims submitted can be excused to the confusion and chaos of combat, other biases involved in the process were less well intended. There is little doubt that some pilots were not so much over-optimistic as vulnerable to the temptation to surrender integrity for glory. It is recorded in *Above the Trenches*, for example, that Captain Edgar McCloughry's claims were considered 'over-enthusiastic' by some of his fellow pilots.³³ The accuracy of many pilots claims are suspicious but impossible to authoritatively judge given the passage of time and incomplete records available. What is certain is that kill lists are inaccurate as an imperial measurement or as a quantity for comparison.

Is there, then, any utility or point to noting a pilots personal victory score? The answer is, despite the above caveats, yes. So much emphasis was placed upon the

²⁸ Shores, C. et al., *Above the Trenches*, p. 8.

²⁹ This does not mention the procedure for both the German and British air services to award a two-seater pilot and their observers a victory each if one of them shot an aircraft down. Shores, C. et al., *Above the Trenches* p. 8 and Franks, N. et al., *Above the Lines*, p. 7.

³⁰ Shores, C. et al., *Above the Trenches*, p. 7.

³¹ Franks, N. et al., *Above the Lines*, pp. 6-8.

³² Shores, C. et al., *Above the Trenches*, p. 190 and Franks, N. et al., *Above the Lines*, pp. 111-112.

³³ Shores, C. et al., *Above the Trenches*, pp. 266 – 267.

personal tallies at the time that the shadow of the 'ace' and the competition to rise up the victory tables became an integral part of the profession's culture. The literature of the period and of the history books since is so intimately intertwined with the tallies claimed it would be impossible to ignore them. Even in their own right the victory scores hold some merit. It is the best measurement of competency available; an inaccurate and flawed measurement perhaps, but a measurement nonetheless. Taking the disparities and inequalities between the German and British scores on board, the claims can be a useful tool of *relative* worth. Given that they were subject to the same rules, British pilot claims can be considered roughly equal to another British pilot, and vice versa for the Germans. The difficulties arise when international comparisons are made on the basis of victories rather than context.

The fighter pilot community became obsessed and over-whelmed by the kill phenomena, despite the fact it only construed a small (albeit significant) part of their purpose. Pilots flying the single-seat pursuit or scout aircraft on either side had duties beyond that of destroying the enemy – they were expected to escort friendly reconnaissance, artillery spotting or bombing aircraft and maintain aerial dominance which could be achieved by driving the enemy from the skies without fighting them. Success in these missions could not be always measured by a kill tally. The much-slighted British 'Out of Control' claim, despite not being a kill in the literal sense, nonetheless reflected their mission to achieve supremacy of the air. Even if the German aircraft was not destroyed, the fact that it had been driven from the skies represented a temporary tactical success for the British airmen. Relying on a pilot's claims as a measure of comparison is a dangerous undertaking, but the recorded scores nonetheless tell a small part of a story inside the larger narrative of the air and ground war.

The Post-War Legacy of the Ace

The end of the war in 1918 did not repeal the glamour and prestige that had come to surround the fighter pilots. While an impressive standard in doctrinal support and integration of the air arm into the combined arms battle had been attained, the public perception and officially endorsed perception of the fighter pilot remained simplistic, idealistic and unrealistic. The reasons for this are many and are all understandable. The RAF's future was uncertain; while the organisation had been ascendant through the war years, budget cuts and the demise of the artillery arm to whom the British air forces rise had been beholden changed the situation completely. Organisational self preservation became important as the air force sought to promote

the unique abilities and recent record of air power. Pre-war theories of aviation as a means of decisive independent force returned. The cumulative effect was that the air force was promoted and elevated as a unique and special military branch, colouring both its performance over 1914-1918 and its future potential.³⁴ The British fighter pilot remained an elite.

In Germany, too, the air service remained lionised. The performance of the air units in the closing stages of the war could be looked upon honourably – while Army and Navy formations disintegrated in the face of Allied advances and in some cases mutinied, her air force had kept fighting until the cessation of combat in November 1918. The heroic status of Germany's most accomplished pilots as a community who had continued the idolised tradition of Teutonic warriors provided a rare source of nationalistic pride amongst a defeated society. The belief that the German war effort had collapsed through political betrayal rather than through military failings became popular and appeared to be supported by the untarnished war-record of her flying service.³⁵

Officially and unofficially, the portrayal of the First World War fighter pilots remained caught up in the mythical image of the chivalric elite. Accounts and publications of the air war in the 1920s and 1930s largely embraced the view that had its origins in war-time propaganda. Primary source accounts of this period remain idolised and uncritical. Karl Bodenschatz, adjutant to Manfred von Richthofen for most of 1918, published his diaries under the title *Hunting with von Richthofen*³⁶ but levelled no criticism or critiques against anyone in the flying service. The foreword to his book is a glimpse into the German nationalistic spin leading up into the Second World War in its own right, having being contributed by the commander of the German air force of the time, Hermann Goring. Another German account, *Maluala! The Battle Cry of Jasta 17*³⁷ is likewise heavily affected by the political climate in which it was written. The British accounts were not spared, either. Primary and secondary sources are typically dominated by a belief in the knightly belief in the air fighters. Cecil Lewis's autobiography *Sagittarius Rising*³⁸ remains one of the most famous books published by a First World War pilot and is, compared to it's the rest of the field, a lot more open,

³⁴ Paris, M., pp. 38-39.

³⁵ Franks, N. et al., *Above the Lines*, p. 28.

³⁶ Bodenschatz, K. (Translated by Hayzlett, J.), *Hunting With Richthofen: The Bodenschatz Diaries*. London: Grub Street, 1998.

³⁷ Buckler, J. (Translated by Wait, A.), *Maluala! The Battle Cry of Jasta 17*. London: Grub Street, 2011.

³⁸ Lewis, C., *Sagittarius Rising*. London: Greenhill Books, 1993.

honest and accurate an account. *Sagittarius Rising* is an exception to an otherwise stilted field.

Even official publications were not spared. The war history of Australian involvement in the air war, published as Volume VIII in their official history series, endorses a large number of indefensible claims – the ‘air services on each side in the air war observed through-out a special chivalry’,³⁹ the French were motivated by a ‘gaiety’ that ‘was the ecstasy of soul born of devotion to their country and a high consciousness of the glory in asserting it’⁴⁰ while the German air service was deceitful and inaccurate in registering their claims; the allies, on the other hand, were scrupulous and accurate⁴¹ (as has been covered, the opposite is closer to the truth). Other official publications were a lot more balanced. The British Official Histories (published as *The War in the Air* in seven volumes by Sir Walter Raleigh and H.A. Jones, as well as a sequel summary work *The Royal Air Force in the Great War* by the Air Historical Branch)⁴² were very aware of the primacy of the reconnaissance and artillery support aircraft, to which the fighter pilots were a supporting effort. William Sherman’s publications in America were, likewise, acutely aware of the limitations of air power and its overall contributions to the ground campaigns.⁴³

The Past Anew – Recent and Contemporary Historiography

The later part of the 20th Century saw interest in the First World War pilots continue. A large amount of the interest remains centred on the famous aces, with countless volumes having been published on Manfred von Richthofen alone. A lot of the interest in the period stems from the scale modelling community and, more recently, from those involved in recreating the period in computer simulations. For this reason a vast amount of the literature field is dedicated to the technical issues of air combat – how aircraft were painted, their performance specifications and the statistics of the air war.

To this end a lot of work has been done and immense amounts of research undertaken piecing together individual and unit histories. An encyclopaedic series of books have been published, each identifying the records and claims of the fighter aces

³⁹ Cutlack, F., *The Australian Flying Corp in the Western and Western Theatres of War 1914-1918*, Angus and Robertson Ltd, Sydney (1941), p. xviii.

⁴⁰ Cutlack, F., p. xviii.

⁴¹ Cutlack, F., p. xix.

⁴² Air Historical Branch, *The Royal Air Force in the Great War*. Tennessee: The Imperial War Museum, 1996.

⁴³ Sherman, W., *Air Warfare*. Alabama: Air University Press, 2002, pp. 140-141.

and units in the British and German air forces under the titles *Above the Trenches*⁴⁴ and *Above the Lines*⁴⁵ respectively. Intended solely for the aviation historians, more accessible unit histories have been published for a wider audience. While a large number of unit histories are now in circulation, Osprey Publishing is the most prominent company putting out series of books drawing upon their expansive photographic resources. Their 'Elite Units' series includes books on *Jasta 2 Boelcke*,⁴⁶ *Jasta 18*,⁴⁷ *Jagdgeschwader Nr1*,⁴⁸ *Jagdgeschwader Nr2*⁴⁹ and *56 Sqn RFC / RAF*.⁵⁰ They also run a series of books on 'Aircraft of the Aces', but the sole focus on the achievements of the higher scoring pilots renders these of little value to the thesis. Other Osprey titles summarise the organisation and structure of the air arms, including the *British Air Forces 1914-18*⁵¹ and *German Air Forces 1914-18*.⁵²

Unfortunately, and despite the large amount of material available, the German air service is not well portrayed in historiography. Nearly all the material covers the famous 'elite' groupings of pilots in the expert units, with very little material written about the ordinary units. There are few works on the experience of a normal or ordinary pilot serving in one of the many non-celebrated formations. Peter Kilduff's *The First German Air Force*⁵³ is very brief on subject matter and offers no comprehensive description of the organisation, erring instead towards the photo-essay approach that celebrates the German aircraft and aces. The best summary of the main-stream German air force is to be found at the start of the *Above the Lines* reference covered earlier. Besides this brief introduction, a careful study of the careers of the famous pilots before they transferred can go some way to covering this shortfall, and extrapolating, analysing and reading between the lines of the histories of the famous units can shed further light on the otherwise ignored conventional force. The weakness remains in that the history books have not covered the wider German air units, and this impacts upon the ease and confidence in which conclusions can be drawn without carefully balancing the information at hand with what is not stated.

⁴⁴ Shores, C. Franks, N. and Guest, R., *Above the Trenches: A Complete Record of the Fighter Aces and Units of the British Empire Air Forces 1915-1920*. London: Grub Street, 1996.

⁴⁵ Franks, N. Bailey F. and Guest, R., *Above the Lines: A Complete Record of the Fighter Aces of the German Air Service, Naval Air Service and Flanders Marine Corps, 1914-1918*. London: Grub Street, 1993.

⁴⁶ Van Wyngarden, G., *Jagdstaffel 2 'Boelcke'*. Oxford: Osprey Publishing Limited, 2007.

⁴⁷ Van Wyngarden, G., *Jasta 18: The Red Noses*. Oxford: Osprey Publishing Limited, 2011

⁴⁸ Van Wyngarden, G., *'Richthofen's Circus': Jagdgeschwader Nr I*. Oxford: Osprey Publishing Limited, 2004.

⁴⁹ Van Wyngarden, G., *Jagdgeschwader Nr II: Geschwader 'Berthold'*. Oxford: Osprey Publishing Ltd, 2005.

⁵⁰ Revell, A., *No 56 Sqn RAF/RFC*, Oxford: Osprey Publishing Ltd, 2009.

⁵¹ Cormack, A., *British Air Forces 1914-18*. Oxford: Osprey Publishing Ltd, 2000.

⁵² Sumner, I., *German Air Forces 1914-18*. Oxford: Osprey Publishing Ltd, 2005.

⁵³ Kilduff, P., *Germany's First Air Force: 1914-1918*. Wisconsin: Motorbooks International, 1991.

Modern biographies of the more famous or notable pilots remain common, with some historians having specialised in First World War profiles. Norman Franks, for example, has published works on Manfred von Richthofen, *Beyond the Legend of the Red Baron*⁵⁴ and the *Red Baron Combat Wing*⁵⁵ being but two. He has also published works on Carl Degelow⁵⁶ and Hermann Goring.⁵⁷ Closer to home the New Zealand historian Professor Vincent Orange has published books on Keith Park⁵⁸, Arthur Coningham⁵⁹ and Arthur Tedder,⁶⁰ all fighter pilots who rose to prominence in the post-First World War Royal Air Force, but the majority of the detail is given to their career after 1918.

Generalist accounts of the air war have generally followed the narrative of technical evolution following the introduction of the forward-firing machine gun through to the massed combats of the late war period. While the majority of books published follow this concept of history dominated by the machines and the men who flew them, some of the more recent historians approaching the field have broken away from this narrow portrayal. Peter Hart's series on the British air services in the First World War was recently concluded with the third volume, *Aces Falling*,⁶¹ published in 2008. Hart's three-volume work can be looked upon as the definitive source on the English experience in the First World War air battles. His work draws upon official histories and campaign studies as well as verbal records of the participants held in various collections, and does something the vast majority of the air war material fails to achieve – it places the efforts, hardships and sacrifices of the pilots in a wider context. John Morrow's *The Great War in the Air*⁶² provides a thorough comparison between all air services at each stage of the air war, with careful weight given to balancing the stories of the fighter pilots with the importance of the two-seater role as well as the strategic impact of industry and production.

These works are not alone in balancing the duels of the aces within the far larger struggle of the air war that would be decided on the ground. The periodicals

⁵⁴ Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*. London: Arms and Armour Press, 1994.

⁵⁵ Kilduff, P., *The Red Baron Combat Wing: Jagdgeschwader Richthofen in Battle*. London: Arms and Armour Press, 1997.

⁵⁶ Kilduff, P., *Black Fokker Leader: Carl Degelow*. London: Grub Street, 2009.

⁵⁷ Kilduff, P., *Hermann Goring Fighter Ace: The World War I Career of Germany's Most Infamous Airman*. London: Grub Street, 2010.

⁵⁸ Orange, V., *A biography of Air Chief Marshal Sir Keith Park, GCB, KBE, MC, DFC, DCL*. London: Methuen, 1984.

⁵⁹ Orange, V., *Coningham: A biography of Air Marshal KCB, KBE, DSO, MC, DFC, AFC*. London: Methuen, 1990.

⁶⁰ Orange, V., *Tedder: Quietly in command*. London: Frank Cass, 2004.

⁶¹ Hart, P., *Aces Falling: War Above the Trenches, 1918*. London: Orion Books, 2008.

⁶² Morrow, J., *The Great War in the Air: Military Aviation from 1909 to 1921*. Tuscaloosa: The University of Alabama Press, 2009.

Over the Front and *Cross and Cockade* have come to reflect the accepted reality of the war. Unpublished works relating to the air war have changed, too. Previously related more to the study of the aces and their various attributes, the more modern volumes have instead focussed on the supporting and auxiliary functions of the period. Unpublished theses and monographs cover British Pilot Training, doctrine and tactics in specific campaigns as well as the ever-present study of the aces.

Even though there are a staggering number of biographies written about the famous pilots of the period, the focus is almost solely on the combat narrative. Little attention is given to the organisational or human story behind the fighter pilots – despite being a field of battle where man and machine fought as one, the machinations of conflict still dominate the field. For such a well documented field as First World War aviation there are some surprising omissions – it is difficult even identifying the leaders or commanders at a point in time unless the leader was involved in a notable moment of combat, claimed an enemy aircraft as a kill or was himself shot down. This study will attempt to fill that gap, identifying the role, importance and experience of tactical command in First World War fighter aviation.

The Historical Study of the Leader

The topic and study of command within this thesis has been guided by the approach taken in Joel Hayward's introductory chapter in a New Zealand study of command, *Born to Lead?*⁶³ He believes that traditional command studies have been characterised by popular fascination, autobiographical justification and the tendency to resort to a 'great man' view of the world. Yet the subjects of these histories, Haywood tells us:

were only the head soldiers and sailors of national armies and fleets. They gained their reputations from often subtle, always powerful, social and cultural forces that have gone relatively unnoticed by most military historians. These so-called 'great commanders' brought their own intellects, imaginations and wills to bear, but were ultimately only as decisive as their political systems, civilian masters, national resources, combat forces, equipment and opportunities allowed.⁶⁴

The expansion of humanities and sciences, creating new fields of research and study such as psychology, sociology and anthropology, has allowed the traditional study of commanders to be replaced by a more holistic, contextually and systemically aware model. After the 1960s command studies and the wider study of military history was

⁶³ Harper, G. and Haywood, J. (Eds) *Born to Lead? Portraits of New Zealand Commanders*. Auckland: Exisle Publishing, 2003, p 18.

⁶⁴ Harper, G. and Haywood, J. (Eds) *Born to Lead?*, p. 18.

overtaken by an awareness that the portrayal of history as a narrative of policy or individuals was limited, and the likes of John Keegan's *The Face of Battle*⁶⁵ groundbreaking work turned the emphasis from the decisions of the few to the experiences of the multitude. Yet the transition towards a more holistic approach was not quick. Writing in 1981, Walter Kaegi did not believe that the field of military history had fully evolved in-line with the developments in other disciplines and that those working in the field 'should concentrate their efforts on economic, social and intellectual phenomena.'⁶⁶

Despite Kaegi's misgivings, the study of military history has largely unburdened itself of its prior traditionalism. The most successful military histories are more than ever aware of and receptive to the experience and influences that apply to all levels, especially the soldiery, in combat. Anthony Beevor's best-selling *Stalingrad*⁶⁷ and *Berlin*⁶⁸ intertwine the narrative of the campaigns with the experiences, identities and emotions of participants at all levels. Richard Holmes, another notable historian, has continued the legacy established by Keegan with his accounts of both modern soldiering in *Dusty Warriors*⁶⁹ and in historical conflicts, such as *Soldiers*.⁷⁰ These are only a very small number of a very large field now aware of the importance of identifying with and understanding the experiences and contexts of combat.

Despite the recent re-engineering and new focus given to the subject, defence studies remain a subject of the arts, not a science. Some forays into the field of combat studies have taken the various disciplines and over-emphasised areas. David Grossman's *On Killing*⁷¹ and *On Combat*⁷² attempted to create the science of 'killology' by joining psychology and military history, but an over-reliance on the flawed work of S.L.A. Marshall has undermined his attempts at producing a definitive framework.⁷³ More recently, Dr Jim Storr's *The Human Face of Battle*⁷⁴ has tried to pull in recent developments in related fields such as expert theory and psychology and apply it to the

⁶⁵ Keegan, J., *The Face of Battle: A study of Agincourt, Waterloo and the Somme*, London: Pimlico, 2004.

⁶⁶ Kaegi, W., 'The Crisis in Military Historiography' in *Armed Forces and Society*, Vol 7, No. 2, (Winter 1982) p. 299.

⁶⁷ Beevor, A., *Stalingrad*, London: Penguin, 1999.

⁶⁸ Beevor, A., *Berlin: The Downfall, 1945*, London: Penguin, 2003.

⁶⁹ Holmes, R., *Dusty Warriors: Modern Soldiers at War*, Oxford: Oxford University Press, 2006.

⁷⁰ Holmes, R., *Soldiers: Army lives and Loyalties from the Redcoats to Dusty Warriors*, London: HarperPress, 2011.

⁷¹ Grossman, D., *On Killing: The psychological cost of learning to kill in war and society*, New York: Back Bay Books, 2009.

⁷² Grossman, D., *On Combat: the psychology and physiology of deadly conflict in war and in peace*, United States: PPCT Research Publications, 2004.

⁷³ Engen, R., "Killing For Their Country: A New Look at Killology" in *Canadian Military Journal*, Vol. 9 No. 2, 2008.

⁷⁴ Storr, J., *The Human Face of War*, London: Continuum, 2009.

military situation. While these branches of military studies do not provide a stand-alone framework for the study of combat leadership they can still be used to inform and assist any analysis of command that, by its very nature, is involved in understanding and assessing the behaviour of men in combat.⁷⁵

The Issue of Command

Achieving a reliable and robust understanding of tactical command in such a chaotic period of history is difficult. Joel Haywood's 'Explaining Command' chapter in *Born to Lead?*, mentioned earlier, contains some guidance:

By presenting conclusions as patterns and reliable generalisations, command theorists could offer arguments that explain individual, interpersonal and group dynamics in a clear, wide-ranging, relevant and useful fashion.⁷⁶

Understanding the nature and requirements of the tactical commanders in the first air war can contribute to the 'patterns and reliable generalisations' Haywood describes. Sufficient information is available to identify a successful commander and from this further 'reliable generalisations' as to success in command can be made.

While the word 'command' has been used frequently up to now and its definition appears intuitive, it is still worth identifying just what is meant by the term. British doctrine tells us that command is the 'the direction, coordination and control of military forces'.⁷⁷ Both the New Zealand and Australian Defence Forces share an identical definition of command, one that is both more expansive and detailed than the British description:

The authority that a commander in a military service lawfully exercises over subordinates by virtue of their rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organising, directing, coordinating and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale and discipline of assigned morale.⁷⁸

Joel Haywood draws upon the latter description when he defines 'warfighting command' as having 'three separate but interrelated functions'.⁷⁹ First is command itself, something that is 'unique to military experience'.⁸⁰ Haywood's definition of

⁷⁵ This thesis will refer to 'men' exclusively rather than a gender-neutral term as no evidence has emerged during research of women being involved in aerial combat amongst the British or German services over the period.

⁷⁶ Harper, G et al, *Born to Lead?*, p. 24.

⁷⁷ British Army., *Army Doctrinal Publication - Operations*, para 0314.

⁷⁸ NZDF., *NZDDP-D – Foundations of New Zealand Military Doctrine* (2004) p. G-3 and ADF., *Australian Air Publication 1001.1 - Command and Control in the RAAF* (2009) p. 2-1.

⁷⁹ Harper, G et al, *Born to Lead?* pp. 25-26.

⁸⁰ Harper, G et al, *Born to Lead?* p. 25.

command is linked to authority and power. It is, in his words, 'the legally vested rights of an individual... to exercise authority over subordinates by virtue of rank or appointment...'⁸¹ Haywood also associates command as being associated with the upholding of authority-that is, it is military authority that allows a commander the ability to give orders and direct subordinates but carries with it the responsibilities to ensure the group's 'safety, welfare and morale' while maintaining service discipline. Also constituting warfighting command is leadership, 'the art of influencing and persuading those to particular goals to work willingly' and management, 'the process of establishing task priorities and allocating and directing time and resources efficiently.'⁸²

A Canadian study on the subject identified a similar relationship between command and leadership. Defining command as 'the purposeful exercise of authority over structures, resources, people and activities'⁸³ the author mirrored Haywood's triangular construct:

command... comprises three, often reinforcing components. They are:
authority... management... and leadership...⁸⁴

Based off the above sources command can be narrowed down to the employment of authority, people and resources in pursuit of a military objective. The process of interacting with people in pursuit of an objective is normally referred to as leadership, while the skills of employing resources are referred to as management. Inherent to any concept of command is the need to preserve the vested authority, people and resources for future tasks.

It is also clear in any study of command that the success of the mission is of paramount importance. Above all else, the success of a commander can be measured by the achievement of the objectives set for them.⁸⁵

Limitations and the Scope of Research

Out of necessity this study will be limited to the fighter arms in the British and German air services. It is unfortunate that the extremely valuable and equally (if not more) dangerous work undertaken by the reconnaissance, artillery, bomber and balloon arms of the air services will be ignored but there is insufficient space to do the

⁸¹ Harper, G et al, *Born to Lead?* p. 25.

⁸² Harper, G et al, *Born to Lead?* p. 25.

⁸³ Horn, B. & Mantle, C., *Neither Art Nor Science: Selected Canadian Military Profiles*. Ontario: Canadian Defence Academy Press, 2007, p. iii.

⁸⁴ Horn, B. & Mantle, C., p. iii.

⁸⁵ Zentner, J., "The Art of Wing Leadership and Aircrew morale in Combat." Alabama: Air University Press, 2001, p. 12.

entire breadth of each air service justice. The fighter arms were amongst the most dynamic in growth, doctrinal change and technological development, making observations and analysis of command trends and outputs a lot easier. Research is a simpler matter amongst the fighter units, as they have always been the most written about branches of the services. The illusion of chivalric duelling had created constant demand for accounts and histories of the aces and the fighting units, compared to which records of experiences and histories amongst the other branches are few and far between. What is learnt about the fighter communities of the First World War may well be applicable or indicative of the wider British and German air forces, however, and further areas for research will be looked at in the conclusion.

Based on the material available, the exclusion of the French, Belgium, Austrian and American air services from the scope of this thesis is deliberate. A large number of English sources exist covering the Anglo-German experiences over this period, but material relating to French sources is scarce. The American air service is well accounted for in historical literature, but their late entry meant they didn't undergo the full gambit of trial, experimentation and evolution as did the British and Germans. The American approach was one of adoption, with the majority of the United States forces adopting French aircraft, teachings and doctrines for their forces but a smaller number served with or mirrored British techniques. Some of the American accounts (such as Sherman's work) can be of use in this thesis but an assessment of tactical command in the United States air service will not be undertaken.

Thesis Structure

This thesis will attempt to identify the accuracy of William Sherman's claim that by 1918 'patrol leading had become the most important factor in determining air superiority.' Specifically, the questions will be asked as to whether there were different styles, systems or cultures of command between the German and British air services; if one of the systems of command was superior to the other and, finally, just how important tactical command was to deciding British aerial superiority in late 1918.

To answer these questions, the history of the war in the air will be briefly covered in Chapter Two before the experiences of command in the German air services is looked at in Chapters Three and Four, identifying the experiences of command at the *Jagdstaffel* and *Jagdgeschwader* levels respectively. The British experience of command of the Flight and the Squadron will be the subject of Chapter Five and Six. This study of German and British command will be done by looking at the case-studies of those looked upon as being the 'greatest' tactical commanders,

Manfred von Richthofen for the Germans and Edward Mannock for the British, whose experiences, traits and qualities will be identified and compared with their peers.

Identifying the cultures of command between the British and German air forces will provide an understanding of what defined and contributed to successful command as part of Chapter Seven. Finally, the value of German and British tactical command to the wider air war will be assessed in the conclusion.

CHAPTER TWO

THE WAR IN THE AIR

THE RISE OF THE FIGHTER AIRCRAFT AND THE COURSE OF THE AIR WAR

The aircraft only achieved the importance it did between 1914-18 due to the value it provided to the land and naval forces beneath them. The reconnaissance potential of the aeroplane was clearly proven early in the war over Mons in August 1914, when the intelligence picture compiled from aerial observations confirmed that a German Corps-level force had commenced an 'ambitious enveloping movement directed against the British left flank.'¹ Sufficiently forewarned, the British conducted a fighting retreat over a period of eight days, during which the handful of British aircraft repeatedly relocated airfields behind the front line while continuing to provide information of German movements. Having prevented the out-numbered British force from becoming trapped in a German flanking manoeuvre, the information that flowed to the ground commanders from the British and French aircraft helped set up the Allies for success in September. Cueing the Allied command as to the size and progress of the Germans and alerting the French to a growing gap between two German armies, the British were able to halt German progress while two French Armies exploited the observed gap and trapped the Germans into a salient. Having out-flanked the Germans in turn, the Allies counter-attacked at Marne and drove the Germans back to the River Aisne (see Figure 1: Map of the Western Front Battlefields 1914-1918, p 44). Less than a hundred aircraft had prevented the Germans from gaining an early and potentially decisive victory, first identifying and then helping check and, finally, drive back the Kaiser's forces.² The commander of the British Expeditionary Force believed that the aircraft had provided him 'complete and accurate information' that was 'of incalculable value in the conduct of operations.'³

As a strategic stalemate descended over the front lines the demand for military aviation continued to grow. With the balance of war favouring the defence, trench warfare created an opportunity for aircraft to bypass the static fortifications of the front

¹ Air Historical Branch, *The Royal Air Force in the Great War*. Tennessee: The Imperial War Museum, 1996, p. 25.

² Boyne, W., "The Influence of Airpower on the Marne" in *AIR FORCE Magazine*, July 2011, pp. 68 – 71.

³ Boyne, W., p. 71.

lines. Photographic technology allowed unprecedented detail of positions to be recorded and reported on. In the era of mechanised warfare, the aeroplane proved to be a better, faster and more capable scouting platform than the horse-mounted cavalry of old. Success in the early campaigns and the advent of the trenches had created an immense demand for aerial reconnaissance that would continue to grow as the war entered its second year.

Keen Amateurs – Experimentation in 1915

Just as the importance of the aeroplane as an observation platform was obvious, so too was the need to deny the enemy the ability to use the skies for his own reconnaissance. The early attempts at engaging enemy aircraft in flight with pistols, rifles and improvised machine gun mounts was met with minimal success. Some victories were claimed, but the organisational requirement for aircraft that could fight in the skies needed a better solution than the experimental attempts seen in 1914. Captain Albert Moris's experiences as a pilot of the French Air Service are indicative of the limitations of the time. Flying a Henri Farman biplane built in 1912, Moris exceeded his role as an artillery observer and aggressively waged an individual offensive against the Germans. Leaving his gunner and observer behind so as to increase performance, Albert Moris hunted German balloons and bombed trenches of his own initiative.⁴ On seven separate occasions he clashed with the *Die Fliegertruppen* (the Imperial German Flying Corps), but the nature of air combat at this point meant it was largely an indecisive affair-gunners would fire an assortment of weapons at the enemy while the pilot flew the aircraft. Aerial marksmanship was extremely difficult, with the gunners firing on a separate vector to their own aircraft's movement, forcing them to rapidly calculate complex firing solutions in three dimensions. Lucky hits were not enough to bring down an aircraft, either. Made of fabric and wood, bullets could simply pass through an airframe leaving a small hole but doing little to induce catastrophic damage. To be brought down a critical component, normally the engine or the pilot, would have to be hit. Firing from a moving platform against a manoeuvring enemy, all while taking into accounts the effects of lead, drop, wind and vectors, was an incredibly difficult undertaking. Captain Albert Moris's experiences prove this. In six months of aggressive combat flying his Farman biplane had been hit 253 times in air-to-air combat and as a result of ground fire, but he had survived unharmed.⁵ Luck no doubt played a part as well, but the difficulties in aerial combat were clear and the search for an aircraft engineered for the fighter role was well under way by the start of 1915.

⁴ Bennet, L., *Gunning for the Red Baron*. Texas: A&M University Press, 2006., p. 24.

⁵ Bennet, L., p. 24.

As aircraft production ramped up, faster and stronger airframes and engines were introduced into frontline service, allowing more successful and innovative experimentation. The key to a successful mid-air engagement was to be found in the employment of a fixed, forward-firing machine gun. The rate of fire of such a weapon allowed a pilot to bring substantial weight of fire power to bear on an enemy aircraft, letting statistics and probability assist with the problem of hitting a critical component. Fixing the weapons so that they fired forward, on the same plane of motion of the aircraft itself, greatly simplified the problems of aiming – the pilot would simply point his aircraft at the enemy and, once their directions aligned and he was within range, he could commence firing. It was not an easy undertaking and immense difficulties still surrounded the problem of shooting down an aircraft but the forward-firing machine guns made successful air-to-air combat a possibility.

The key difficulty in combining the machine gun on aircraft related to the propeller. Structurally and ergonomically, the easiest solution of mounting the machine gun to the fuselage meant that the bullets would have to pass through the path of the blade. This design problem plagued otherwise ground-breaking designs, such as the sleek monoplane known designed by the Morane company of France.⁶ Fielded as the first specialised single-seat combat aircraft of the war, the French Morane type 'L' had taken the best solution available-fixing the machine gun in a position so it would fire over the propeller. This solution was far from perfect, and while the Morane design had the basic principles of a single-seat fighter aircraft, the awkward armament prevented it reaching its potential.

The fact that the performance and design of the Morane type 'L' made it an ideal fighter aircraft did not go unnoticed by those who flew in the *Escadrilles*. Knowing that a properly integrated weapon system was badly needed, a number of experimentations were conducted amongst the pilots as they tried to gain a decisive advantage over their German counterparts. The French aviator Roland Garros tried a simple, ingenious but dangerous solution on his Morane and in doing so made the first major break-through. Fitting metal plates to his propeller blades, Garros was able to fire through his propeller with any bullets striking the blades being, theoretically at least, deflected over his head. This solution was crude and created substantial engine problems as the motor had to deal with the vibrations and stress caused from bullet strikes but, in terms of a practical solution, the deflector plates were successful. Garros shot down three German reconnaissance aircraft in April 1915 alone which, for the

⁶ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War I*, London: Greenhill Books, 2003, p. 17.

time, was a revolutionary achievement.⁷ The Germans were worried as the balance of aerial power seemed to be shifting towards the French.

The Fokker Scourge – Germany’s First Fighters

The limitations of Garros’s deflectors would prove his downfall. During one flight Garros developed engine trouble, likely attributed to bullet-strike playing havoc with his motor, and he was forced down inside German territory. Unable to destroy his aircraft, the system Garros had pioneered fell into German hands.⁸ Recognising the need to institutionalise Garros’s system in order to avoid losing the battle that was now being fought in the skies, the Germans passed the captured deflector system to one of their leading aircraft designers, Anthony Fokker.⁹ Fokker’s answer to French improvisation was incorporated as part of his new Eindecker design. The Fokker Eindecker monoplane was similar in performance to the French Morane of the time, but crucially it had a machine gun fixed in front the pilot.¹⁰ Its secret lay in its internal workings. Fokker designed an interrupter gear that would prevent the gun from firing whenever the propeller passed through the line of fire, reaping the advantages of Garros’s concept but removing the danger and engine issues the deflector blade had introduced.

The arrival of the production Eindecker E.III marked the coming-of-age for fighter aviation. The early experiments of Moris and his peers gave way to the systematic slaughter of the German *kanonen* as they were unleashed upon the outclassed British and French aircraft.

Early Organisation

By 1915, the air arms fielded basic and primitive aircraft but they were nonetheless playing an important role in the ground war. As an extension of the army, they had proven their ability to act as the eyes of the artillery and the command staff. The naval forces had acquired air arms of their own, too, and used the aeroplane as important scouting assets in support of their fleets. While indecisive combat had occurred between the primitive aircraft of the period, it was not until the Fokker Eindecker arrived in early 1915 that the earlier predictions of war in the air became a reality. Up until Antony Fokker’s creation arrived in the German units, British pilots were used to chasing German aircraft where possible, with only occasional success. The

⁷ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War I*, p. 18.

⁸ Shores, C. Et al, *Above the Trenches*, p. 11.

⁹ Franks, N. Et al, *Above the Lines*, p. 12.

¹⁰ Eberhardt, S., “Performance Analysis and Tactics of Fighter Aircraft from WW1” Washington: American Institute of Aeronautics and Astronautics, 2005, p. 8.

Royal Flying Corps (RFC) had existed in a honeymoon period of military aviation, where the seriousness of their endeavour had yet to be established. A small force-the RFC had only 153 aircraft in September 1915¹¹ – the aircrew were stereotypically upper-class, with a public school or university background considered desirable.¹² Coupled with a sense of elitism was a widespread lack of experience.¹³ The average British pilot of 1915 had a little over 20 hours flying time,¹⁴ a state that would be described in retrospect as ‘criminal negligence’ once the well-groomed pilots came up against serious opposition.¹⁵

In 1915 *Die Fliegertruppen* had already started allocating different missions to different units. The trend towards ever-greater specialisation would stay with the Germans throughout the war. By the time the Eindecker arrived the six-aircraft strong all-purpose *Feldflieger Abteilung* (FFA) originally attached to the army units in 1914 had been supplemented by dedicated artillery liaison detachments known as *Feldflieger Abteilung Artillerie*, or FFA(A), in August 1915.¹⁶

Initially the Fokker E.III had being assigned to the existing FFA units. The German aircraft industry was rapidly expanding but wasn’t generating sufficient numbers of airframes to allow standardisation of aircraft types within each unit, so a range of aircraft continued to be flown within each FFA. The Eindecker offered a vastly different set of capabilities than the other available types, though, and German pilots quickly realised the potential offered by the E.III and her forward-firing gun. As soon as the new type had being introduced to front line service the Eindecker pilots set about differentiating themselves from their more defensive two-seater peers by actively hunting for allied aircraft.

The British and French were not passive observers to the potential of the fighter aircraft and dedicated fighter units. Within the RFC new squadrons were being formed with the special task of air combat. It was intended to equip the units with the first generation of British aircraft designed specifically for the air war, having taken on board the lessons from 1914 and the start of 1915. The German Eindecker’s arrival on the Western Front pre-empted British plans, with the first British fighter squadrons only in the early stages of formation in England as Antony Fokker’s aircraft were seeing front-

¹¹ Morrow, J., p. 113.

¹² Morrow, J., p. 117.

¹³ Morrow, J., p. 117.

¹⁴ Morley, R., p. 50.

¹⁵ Morley, R., p. 49.

¹⁶ Sumner, I., p. 10.

line service in France.¹⁷ Unable to respond in type, the British were forced to improvise defensive techniques against the German monoplane threat. RFC sorties started to involve multiple aircraft, so the British crews could provide mutual support and protection against the preying Eindeckers.¹⁸ The British could not fight the E.III on their own terms, and supporting each other with increased observation and concentrated defensive fire was the only option available to counter the Fokker threat.¹⁹

A single Eindecker against two or more British observation aircraft was outgunned by the rear-facing machine guns, but a couple or more Fokker's diving onto a British flight, allowing each aircraft to select and press home a simultaneous attack independently, returned the advantage to the single-seat hunters. The next step in the organisation of German aviation was clear, and would set the trend for the rest of the war. Bringing together the capable Fokkers and the pilots who had demonstrated audacity and an aggressive spirit, three new units known as 'fighting single seater commands' or *Kampfeinsitzer-Kommandos* (KeK), were temporarily formed. Mass was answered with mass, and in any battle of equal strength the faster, better armed aircraft would always be superior.²⁰

The three KeK each grouped together seven Eindeckers and provided more than just a tactical advantage. This evolution from all-purpose flying units towards a dedicated fighter force allowed the Fokker pilots to experiment, develop and codify the lessons of air combat, enabling the doctrinal advances that would pay dividends to the German air service through to 1916. No longer separated geographically or by function, the concentration of the E.III pilots allowed information to be shared and small unit tactics to be pioneered to a degree that was simply not possible had the pilots remained dispersed under their previous FFA commands.

The three dedicated KeK reaped a terrible cost on the poorly equipped allied air services. Unable to counter the Fokker E.III with a comparative type, the 'new KeK drove the French from the skies of Verdun at a vital moment'²¹. The British were not spared, either, and aerial operations were sustained at a huge cost in manpower and materiel. This period of German aerial dominance, orchestrated by the teachings of the early German experts Oswald Boelcke and Max Immelmann and enabled by the

¹⁷ Shores, C. Et al, *Above the Trenches*, p. 13.

¹⁸ Shores, C. Et al, *Above the Trenches*, p. 13.

¹⁹ Bradbeer, T., "The Battle for Air Supremacy Over the Somme, 1 June-30 November 1916." Fort Leavenworth: CGSC, 2004, p. 18.

²⁰ Fixed, forward- machine gun being superior in air-to-air combat than the rear-facing pintle-mounted weapon due to reasons of accuracy.

²¹ Sumner, I., p. 16.

capabilities of the Eindecker, became known amongst the British services as the 'Fokker Scourge'.²²

Where the Germans created a unique fighter organisation in the KeK based around seven aircraft, the British squadrons were larger at 18 aircraft. The 'Squadron' designation shows the clear link between the mission of the air units and the cavalry tradition they were inheriting it from, and were comprised of three separate Flights of seven aircraft each. The first single-seat scout squadron, No. 24, had arrived in France in February 1916. A second fighter squadron (No. 29) arrived a month later with the build-up of the British squadrons helping stem, reverse and then end the dominance of the Eindecker.²³ The Squadrons replicated the practice of the air war, both by parallel innovation and through imitation, as taught by Boelcke. Where they differed was in their structure. While the KeK concentrated fighter pilots under the one organisation, there were no hard or fast rules on how they operated. Pairs of Eindeckers plied the skies together, and battles involving ten or more Eindeckers were not unheard of. Boelcke's teachings, though, did not stress numbers and the practice of formations amongst the Germans was an improvised affair, often falling to the discretion of the commander and the whims of the pilots at the time. In contrast the British built their Squadrons around an independent flight, which was looked upon as the basic tactical fighter unit that would take the war to the Germans.

While the allies bled heavily in the skies over France and Belgium, *Die Fliegertruppen* was well aware of just how fragile their position of aerial supremacy was. They had achieved relative control of the skies through the technological advantage provided by the lighter, faster single-seat design of the E.III coupled with working interrupter gear, all of which could be easily reverse-engineered or replicated by the British or French. To this end the Fokker pilots were ordered to only fly or fight over German lines, reducing the chances that their equipment (and, by extension, their pilots) would fall into enemy hands by putting her air force on a defensive footing.²⁴ Thus the key format for the air war was established early. The Germans accepted a defensive war that reduced their ability to employ air power in support of their reconnaissance and artillery arms, whereas the British accepted the immense costs involved in an offensive air war that would provided them the opportunity to influence the all-important ground battle.

²² Bradbeer, T., p. 10.

²³ Shores, C. Et al, *Above the Trenches*, p. 13.

²⁴ Franks, N. Et al, *Above the Lines*, p. 13.

The era of the Fokker Scourge also established the devastating and disproportionate effect a small number of people could have in the air war. It has been reliably calculated, based off recorded kill claims and British losses, that the entire Scourge was the output of some 20 to 30 Eindecker pilots.²⁵ Coupled with their technological supremacy, the lessons of 1915 and 1916 taught the value of concentrating talent as a principle for success and this practice became firmly entrenched in *Die Fliegertruppen*.

The Second Generation of Fighter Aircraft and the build-up to the Somme

By the end of 1916 it was apparent that the air war would, like that on the ground, be a battle of attrition. It was also clear that there would be no quick or decisive end to the hostilities, and as a result plans were drawn up on both sides for a huge expansion of both forces.

Aircraft design continued at a rapid pace. The Eindecker, while a revolutionary gun platform, was still a rudimentary aircraft that left a lot to be desired. Within a year it would be considered completely obsolete as knowledge of aerodynamics and aircraft design accelerated through multiple generations and models. The Eindecker was a single-winged monoplane that controlled its flight by distorting the shape of the wings as had been the standard practice in pre-war aircraft design. This was achieved by cables physical pulling and releasing the wing services, altering the airflow over them and allowing the aircraft's direction to be changed. Just as the Eindecker's gun represented a technological leap over the French and British designs, the newer models eclipsed the Eindecker. Instead of having to control the aircraft through the 'wing-warping' system of changing the shape of the entire wing, the FE.2 and Neiuport designs were controlled by the precise manipulation of small hinged surfaces on each wing. Raised or lowered by a series of wires linked to the cockpit controls, these control surfaces allowed the aircraft to roll around a central axis. Similar control surfaces at the back of the aircraft on the elevators and rudder allowed the pilot to raise or lower the nose of the aircraft, or swing the machine left or right. The simplicity of these control systems belies their importance. Not only could a pilot enjoy a far greater degree of control over his aircraft, but doing away with the need to warp an entire wing meant that they could be reinforced for speed and manoeuvrability.

While a devastating aircraft in the absence of competition, the Eindecker was quickly eclipsed by the first generation of French and British fighter aircraft. The

²⁵ Franks, N. Et al, *Above the Lines*, p. 13.

French deployed the first of their Nieuport fighter line while the first British procured ungainly-looking 'pusher' fighters where the engine was located behind the pilot's 'tub'-like cockpit. Chief amongst these was the Fighter Experimental 2 (F.E.2) and De Havilland 2 (D.H.2) which, having moved the propeller out of the way of the pilot, allowed forward-firing machine guns to be fixed to the nacelle. As ungainly and impractical as they appeared, the 'pushers' were nonetheless soundly designed and, crucially, able to outfight the Eindeckers.

The Battle of the Somme

With French forces in Verdun crumbling to their north, British High Command urgently needed to take the pressure off their Allies. To do this they planned a 'push' against the German lines for July 1916 involving millions of troops. Crucial to their success would be the RFC, tasked with providing information on the disposition of the German units and defensive lines and adjusting artillery fire onto the various objectives. Having assessed the conduct of the air battles over Verdun the British prioritised the mission of air superiority. Driving German aircraft from the skies, it was decided, was the first and most important task if their reconnaissance and artillery-spotting aircraft were to contribute to the ground forces.²⁶

Led by the F.E.2 and D.H.2 pushers, the RFC quickly established dominance over the skies of the Somme. The British aircraft clearly held the advantage and by concentrating their fighter squadrons the RFC were able to drive German air power away from the crucial point of the battle. As the Somme offensive unfolded between July and September the dominance of the Eindecker was clearly over. British aerial superiority was clear; the death of German's lead *kanone*, Oswald Boelcke, in combat during September highlighted the ascendancy of the RFC. Benefitting from their newly gained aerial superiority, the British ground forces benefitted from the constant presence of the reconnaissance and artillery aircraft in the opening battles of the Somme.²⁷

Despite the pendulum of air power swinging towards the British during the first months of the offensive, technical advantages in the air war were short-lived. As the battle for the Somme dragged on into September, the Germans once again took a decisive lead in the air with the introduction of the impressive Albatros biplanes that were faster and more agile than the British FE.2 pusher.²⁸ The pointed, shark-like

²⁶ Bradbeer, T., p. 104.

²⁷ Bradbeer, T., p. 100.

²⁸ Hart, P., *Bloody April*, p. 30.

fuselage of the Albatros was more aerodynamic than the awkward, bubble-shaped FE.2 and its performance was correspondingly better. The Albatros also featured twin machine guns synchronised to fire through the propeller, providing substantially better firepower than the single-gunned British pushers.²⁹ First reaching their front-line units in September, the Albatros DI and DII models would not be present in significant numbers until October, by which point the German air force had reorganised their force and would be in a position to contest the British air forces once again.

The *Fliegertruppen* was reformed as a separate service and renamed the Deutsche Luftstreitkräfte in October 1916 (a term that translates as the 'German Air Force' but is often referred to in English literature as the 'Imperial German Air Service'), having taken on board and learnt from the experiences of the previous months. The new organisation sought to reinforce the original success of the KeK units by expanding their temporary detachments into stronger, permanent and independent formations that were not dependent upon other organisations for support or command.³⁰ The new units were known as *Jagdstaffel*, a 'hunting flight' or *Jasta* for short. Once established, the *Jagdstaffel* would remain the basic fighter unit of the German air service for the remainder of the war. The numerical strength of a *Jasta* would ebb and flow depending on a range of factors, not least of which was the availability of machines and the priority accorded to each unit, but as a rough rule each *Jasta* was over ten aircraft strong. A full-strength *Jasta* should have had 12 aircraft and 14 pilots which generated, on average, seven machines able to fly at any point in time, although the actual numbers often varied.³¹

Just as the advent of the KeK represented an escalation of numbers in the air and brought tactical advantage to the German air service, the move to the *Jagdstaffeln* was met with similar success. The competitive and adversarial nature of the air war favoured strength in numbers, and it is not surprising that every time the tactical fighter units were increased in size corresponding tactical advantage followed. Sustaining such changes were not easy, though, with the need to achieve localised, tactical success brought about by the larger formations having to be balanced against sustaining routine patrol duties. The organisational skills and knowledge needed to make the larger formations work had to be developed, too. Larger formations were not always possible but, when tried, they usually met with success.

²⁹ Shores, C. Et al, *Above the Trenches*, p. 15.

³⁰ Franks, N. Et al, *Above the Lines*, p. 15.

³¹ Hart, P., *Bloody April: Slaughter in the skies over Arras, 1917*, p. 47.

The introduction of the Albatros-equipped *Jagdstaffeln* threw the balance of air power back into the balance. The RFC were not in a position to continue their mission, but the Somme offensive was entering its third and final stage in September and air power remained crucial to British plans. Even with RNAS squadrons being relocated to the Somme and French Nieuport fighters being procured in limited numbers for the RFC, German fighter aviation posed immense problems for the British airmen. Major General Trenchard, commander of the RFC, had no alternative but to continue to support the British offensive. While orders for new and improved fighter aircraft were pending, the British air forces entered the final phase of the Somme at a substantial disadvantage in aircraft quality.

The final months of the Somme offensive were costly for both sides. Unable to counter the Albatros on an equal footing the British massed their aircraft into defensive formations and pushed on regardless. The Germans opposed British air power with their new *Jagdstaffeln*, forcing the RFC and supporting RNAS units to endure heavy losses while they continued to fly in support of their ground forces. By November the weather had turned the Somme into a swamp and the British offensive drew to a close.³²

Despite an enormous cost in men and machines incurred during the final months the RFC and RNAS had sustained their mission and while not a decisive victory on the ground, British achievements in the Somme did succeed in pulling pressure away from the French salient in Verdun.³³ The Somme represented the coming-of-age of British air power with air superiority now looked upon as an essential mission if the reconnaissance and artillery arms of the RFC were to operate. Above all, the Somme validated, to Trenchard at least, the need for a continuous and fighter-aviation centric offensive against the Germans. This policy had proven costly over the Somme and would prove costly for the rest of the war but it was, from the end of 1916 onwards, integrated as a central tenant of British air power.³⁴

The RFC's 'Bloody April' and 1917

Winter was traditionally the period for regrouping as the weather curtailed ground offensives and flying hours alike. Hoping to capitalise on what they perceived as victories of attrition over the Germans at the Somme and in Verdun, the British dedicated most of 1917 to preparing and planning for another series of ground

³² Shores, C. Et al, *Above the Trenches*, pp. 15-17.

³³ Bradbeer, T., p. 103.

³⁴ Shores, C. Et al, *Above the Trenches*, pp. 15-17.

offensives. This first of these, another large push but this time against Arras, started in June. Despite the months that had elapsed since the end of the Somme the RFC fighter fleet had grown in size but remained dominated by the same designs that had been introduced to counter the Albatros at the start of the year. The Germans retained a small but important lead with their latest Albatros DIII and combined this advantage with further organisational innovation. Pulling together four *Jagdstaffeln* under their most successful fighter pilot of the time, Manfred von Richthofen (more famously known as the 'Red Baron') the Luftstreitkräfte created the *Jagdgeschwader*, or 'fighter group'. Controlled by the central figure of Richthofen, this concentration allowed increased numbers (40-60 aircraft) to be brought to bear against the Allied air forces. This was perfectly suited to the German defensive policy of fighting over their own lines, and allowed her fighter units, now outnumbered by the British and French units facing her, to still achieve localised superiority where it was most needed.

The superior skill of Richthofen's pilots and the ability of their new *Jagdgeschwader* to be concentrated in the sectors facing heaviest Allied aerial activity paid dividends for German aviation and reaped a terrible cost on the RFC. Some British units lost more pilots in a month than they had on their strength during the Arras offensive, relying on the influx of new aircrew from the training schools to sustain the constant casualty rates.³⁵ This period would go down in the history of the British air forces as the aptly named 'Bloody April'. As the crescendo of losses escalated, it appeared that the RFC faced an existential crisis as the service 'was being tested to destruction by the exigencies of the Battle of Arras.'³⁶ Over a two-month period straddling the Arras offensive 60 Squadron, as an example, lost 35 pilots, a figure that represented 'almost twice the strength of the squadron'. These losses included three costly days in 'Bloody April' when ten 60 Squadron pilots out of a total of 18 were killed.³⁷ By way of another example, 43 Squadron suffered over 100% casualties during April alone.³⁸ The losses the RFC suffered over this period would not be exceeded until the final three months of the war when the air force had almost doubled in size.³⁹ Despite the incredible cost incurred, the RFC fulfilled their mission. As Peter Hart has noted:

The casualties suffered by the RFC simply pale away into insignificance against [a] backdrop of wholesale slaughter [experienced by the infantry], which would

³⁵ Morley, R., p. 81.

³⁶ Hart, P., *Bloody April: Slaughter in the Skies over Arras, 1917*. London: Cassell Military Paperbacks, 2006, p. 155.

³⁷ Scott, A., *Sixty Squadron RAF: 1916-1919*. London: Greenhill Books, 1990, pp. 44-45.

³⁸ Morrow, J., *The Great War in the Air*, p. 237.

³⁹ Hart, P., *Bloody April: Slaughter in the Skies over Arras, 1917*, p. 355.

without any doubt have been far worse if the airmen had not carried out their duty in the skies above them.⁴⁰

Just as had been the case during the 'Fokker Scourge' British air power was saved by the deployment of new fighter designs. The first of the SE5 line of scouts and the Bristol fighters made their presence known at the front towards the end of April 1917, and these were soon supported by Sopwith Camels in June of the same year.⁴¹ These aircraft would play an important role in British air power as 1917 ended and the offensives of 1918 drew closer.

Outside of the battle for aerial supremacy other developments had been made over the first few years of sustained air combat. While balloons had long been a part of the front line, providing sustained observation for the artillery over the entire front, the Germans had taken lighter-than-air flight a step further and had started bombing London with large Zeppelin airships. Some British air units were re-tasked with home defence, but the strategic effect was negligible. The British were not oblivious to the direction the war was taking and had started forming an embryonic bomber force of her own that would continue to grow over the final year of war.

The Beginning of the End – 1918

By the start of 1918 the industries of Germany and England were geared to support the air war on a greater scale than had yet been seen. The air services tested and procured designs that best fulfilled their requirements of the time, and with the free-flowing government funds of wartime economies the aircraft industries took off at a staggering rate. By the end of 1917 the French Neuport and Spad factories had started delivering their successful late-war models to their *Escadrilles* and the British were deploying the mainstay of their force that would serve out the rest of the war.

Incorporating strong airframes, improved engines and armed with two machine guns, the late-war fleet of British single-seat fighters in the form of the Sopwith Camel, SE5a and the even-newer Sopwith Dolphin were not revolutionary but all were good enough for the final stages of the air war. Compared to these, the other main British fighter, the Bristol F2 (and the improved F2B) remained an oddity and an anachronism. Where all the other fighters of the late war were single-seaters, the Bristol fighter carried a rear gunner, just like the observation and reconnaissance aircraft. But where the other two-seater aircraft of the time were slow, unwieldy and exceedingly

⁴⁰ Hart, P., *Bloody April: Slaughter in the Skies over Arras, 1917*, p. 356.

⁴¹ Guttman, J., *Sopwith Camel; vs Fokker Dr 1: Western Front 1917-18*. Oxford: Osprey Publishing, 2008, p. 15.

vulnerable in the air, the Bristol was fast and capable in its own right. Any aircraft that had a rear-firing observer was able to defend themselves from attack by an enemy aircraft from the most desirable position directly behind them. The Bristol F2 combined this defensive armament with the offensive characteristics of a fighter design, being powerful and agile enough to compete in the twisting dog-fights and having a forward-firing machine gun to allow the Bristol F2 pilot to press home an attack.

The Bristol two-seater was the exception and 1918 belonging to the single-seat fighters of ever-increasing performance. German experimentation in the form of the famed Fokker Triplane Dr.1 aircraft was not overly successful,⁴² and as a result her late fighter fleet heading into 1918 of Dr.1's and aging Albatros variants were outclassed by the British Camel, Dolphin, SE5a and F2B designs.

The Luftstreitkräfte and Late War German Air Power

Even more troubling to the Luftstreitkräfte than the British fighter fleet was the imminent arrival of American forces in Europe. Declaring war in April 1917, American forces were slow to mobilise but threatened to overwhelm the war-wearied German units.⁴³ The German answer was the *Amerika Programm*, which called for an immense build-up of forces on the Western front. Some of these demands were staggering, such as expanding her fighter force from 40 *Jagdstaffeln* to 80 in the midst of an intense campaign. Linked to the *Amerika Programm* were plans to pre-empt the arrival of the Americans and to go back on the offensive.

Having concluded a war of manoeuvre against Tsarist Russia the German High Command planned to surge her eastern forces into France, aiming to win the war before the mobilisation of American forces into this theatre made such an objective impossible. The German Spring Offensive of 1918, code-named *Operation Michael*, saw a new phase of infantry infiltration or 'stormtrooper' tactics smash through the Allied front-lines and break the deadlock of the trenches.⁴⁴

The *Jagdgeschwader* was to be used as a reserve unit, deployed to reinforce sectors as required. On the initiation of *Operation Michael* von Richthofen's unit and the majority of the Luftstreitkräfte was on the offensive, seeking to deny the British and French soldiers the benefit of air support. Aided by thick fog after H-Hour, Allied air power played little role in the first hours of the German Spring offensive and British

⁴² Hart, P., *Aces Falling*, p. 67.

⁴³ Hart, P., *Aces Falling*, p. 12.

⁴⁴ English, J & Gudmundson, B., pp. 15-59.

squadrons were forced to hurriedly abandon airfields in the face of the German advance.⁴⁵

Manfred von Richthofen had cemented his position as the leading fighter pilot of the First World War over this period by achieving the final of his unmatched 80 kills.⁴⁶ No amount of skill could compensate for the dangers and the stress of front-line combat and, as the air war continued to intensify in scale and scope, the leading pilot of the war was killed in action. The *Jagdgeschwader* tactics he had pioneered, though, lived on. The *Luftstreitkräfte* formed another three *Jagdgeschwader* (the German naval air arm, also formed a fighter group)⁴⁷ based off the success of Richthofen's JG1. Lacking sufficient commanders to expand the *Geschwader* concept through the whole service,⁴⁸ temporary groupings of *Jagdstaffeln* known as *Jagdgruppen* were introduced as the next-best solution. The *Jagdgruppen* were localised and transient in composition and, lacking the autonomy and trust placed in the *Jagdgeschwader* leaders, became limited to conducting 'business as usual' operations. The *Jagdgeschwader* commanders and formations were, by contrast, used to reinforce the *Luftstreitkräfte*'s main effort, moving to reinforce areas experiencing heavy Allied fighter activity:

...the *Jagdgruppe* works closely with their own frontline (reconnaissance) machines. This demands their constant attention. Their working space is relatively small in order to be able to fulfil this demand...the *Jagdgeschwader* works for the entire army...by constant attack on [enemy] single-seater formations and by victories. The *Jagdgruppe* flies when the two-seaters are working. The *Geschwader* flies mainly when the enemy is up in strength.⁴⁹

Technically, German air power had taken the lead again by starting to replace the inferior late-model Albatros models and Fokker Dr.1 triplane with arguably the finest aircraft of the war in the DVII. The Fokker DVII, a large, square-nosed fighter featured the standard twin-machine gun load-out in an airframe that outclassed the British Camels, SE5a, Bristols and Sopwith Dolphin fighters. A small lower-wing provided excellent visibility to the pilot while the curved, cantilever-type top wing afforded exceptionally good handling and performance. Combined with an efficient BMW engine, the late-model Fokker was fast, manoeuvrable and by many accounts a delight to fly, representing the ultimate evolution of the First World War biplane.⁵⁰ The handling

⁴⁵ Hart, P., *Aces Falling*, p. 96.

⁴⁶ Franks, N. Et al, *Above the Lines*, pp. 187 – 189.

⁴⁷ It is often stated that the *Luftstreitkräfte* only formed three *Jagdgeschwaders* in total, with even the authoritative reference *Above the Lines* containing contradictory information. Research reveals that the fourth *Luftstreitkräfte*, JG4 was indeed formed in October 1918, but would see less than a month of combat before the end of the war. Source: Franks, N. Et al, *Above the Lines*, pp. 18-56.

⁴⁸ Sumner, I., p. 18.

⁴⁹ Berthold, R., in Van Wyngarden, G., *Jagdgeschwader Nr II: Geschwader 'Berthold'*. Oxford: Osprey Publishing Ltd, 2005, p. 36.

⁵⁰ Guttman, J., *Spad XIII vs Fokker D VII: Western Front 1917-18*. Oxford: Osprey Publishing, 2009, p. 32.

characteristics of the DVII allowed a pilot to push the Fokker to the limits of the flight envelope, exacting as much performance as was possible from the aircraft without undue fear of throwing the aircraft into a dangerous spin. Unlike the less forgiving Sopwith Camel, the DVII was a very stable and predictable machine. She was difficult to stall and had a near-magical ability to 'stand on her nose' as she slowed, allowing a German pilot a stable firing position as she climbed into an attack.⁵¹ In contrast the Camel was known for her vicious flying characteristics; if a pilot pushed her to the limits of her performance envelope the consequences could be deadly. Quick to enter a spin, the Camel established a reputation as a deadly aircraft for inexperienced pilots.⁵² The very instability that made the Camel an excellent dogfighter in the hands of an expert – she was quick to turn, roll or dive away due to her rotary engine and front-heavy design – made her a difficult aircraft to learn to fly and to master, which was the opposite with the Fokker DVII.

Beyond the DVII the Germans were producing an even better performing aircraft in the high-winged DVIII parasol-monoplane. As revolutionary as the design was it came too late to influence the air war, seeing only two weeks of front-line service before the Armistice. What did not come too late to play a part in the air battles were the German aircraft industry's slipping standards. Even as she produced the finest fighters, German manufacturing chains were plagued by poor quality resources and substandard workmanship, meaning that the front-line pilots started to lose faith in their designs and frequently resorted to waiting or flying obsolete aircraft while their grounded Dr.1s and DVIIIs were inspected. An otherwise impressive line of fighters stretching back to the Fokker Eindecker of 1915 was let down in the final months by the effects of a resource-starved, war-weary industry.

It was not just the quality of design that was failing the Luftstreitkräfte, either. Naval blockades and Allied grand strategy had isolated the German war effort from natural resources, with the lack of petroleum in particular posing immense problems in late 1918. The *Jagdstaffeln* had their flying hours cut and German pilots received less training time before reaching their units.⁵³ Simultaneously with the eroding standards of German aviation was the growing strength of Allied air power. The British were increasing their number of fighter units and the standards of their pilots, and the strength of the United States Army Air Service was increasing every month.

⁵¹ Eberhardt, S, p. 7.

⁵² Hart, P., *Aces Falling*, p. 38.

⁵³ Franks, N. Et al, *Above the Lines*, p. 24

Despite having broken through the trenches the Germans had been unable to knock the Allied forces out of the war during *Operation Michael* and the offensive culminated tantalisingly short of Paris without having delivered the decisive blow needed. Forced back onto the defensive, the growing strength of an Allied force bolstered by the arrival of the Americans made German defeat all but imminent.

The Royal Air Force and Late War British Air Power

British air power had well and truly matured by late 1918. The two independent air arms of the British Army (the Royal Flying Corps) and the Royal Navy (the Royal Naval Air Service) were combined into a third service on the 1st April 1918 in the Royal Air Force (RAF). Forming on April Fool's Day, the inauspicious date and less-than-ideal circumstances (the Squadrons were desperately struggling to turn back the German Spring Offensive at the time) nonetheless represented the increasing strength and growth of British air power.

The British had, prior to the birth of the RAF, been at a distinct disadvantage given the quality of her pilots. The British new-comer was, as a generalisation, spectacularly ill-qualified for air combat. Even in late 1917 British pilots were not being taught the necessary skills for air combat. Between March and May of 1917 the RFC was losing aircraft at the rate of 203 losses for every 30 kills claimed, a staggering net loss of 41% of the RFC's aircraft fleet at the time.⁵⁴ Instructors were not trained or resourced to impart the necessary skills to meet the quantitative demand needed to sustain expansion, and many pilots lacked even the remotest inclination towards instructing their students. While the air-war at the front claimed the inexperienced pilots in both combat and accidents, demand was high for more pilots to keep units at a suitable strength, thus fuelling a vicious cycle that saw ill-prepared pilots pushed into the air war well before they were ready. In a way the systems adapted to this – the success of any formation depended on the commander, with the other pilots only bolstering its offensive and defensive capabilities. The newer pilots provided an easier target at the rear of the formation and, once in a dog-fight, would be more likely to make an amateurish mistake, in turn making them more likely to receive hostile attention compared to their leader. Thus the inexperienced pilots served to protect the far more valuable leader in an inadvertent evolution amongst the British and, to a lesser extent, German organisation. As long as skilled leadership could be sustained due to command losses from postings, promotions, accidents and casualties, the

⁵⁴ Morley, R., p. 78.

inexperience of the majority of the pilots could be mitigated by the survival of the commander.

The British struggled to simultaneously supply the growing demand for fighter pilots as her fighter units expanded while reforming her training systems to increase the quality of pilots produced. It was an accepted and known problem amongst RFC HQ that they were sending unprepared pilots to near-certain death, but changing the system without interrupting in the essential supply of aircrew to sustain the policy of offensive growth was a wicked problem. In the summer of 1917 the RFC needed 5,481 pilots to both replace the losses suffered and expand in accordance with future plans. Of the 5,481 pilots needed the training establishment was only able to provide 4,650 trainees, and even these graduates were grossly unprepared for the demands of air combat.⁵⁵

In late 1917 the urgently needed Gosport training system was introduced to target the lack of knowledge and concern amongst the instructors. With better instructors, lessons, standards and training resources, the standard of the average RFC flying-school graduate increased markedly. Dual-control aircraft became standardised at the training schools, allowing trainee pilots more time spent in control of an aircraft at all stages of their training. The focus shifted from generating conformity to allowing experimentation, with trainees taught to fly at the edge of the flight envelope, learning how to recover aircraft from stalls and spins under the supervision of their instructors.⁵⁶ From early 1918 onwards, the British pilots arriving at the fighter units were no longer at the serious disadvantage compared to their German adversary. For the first half of the air war the British sought to equal and then overwhelm the German air force in numerical strength, but they did so from a position of qualitative inferiority. After the effects of the Gosport system were felt at the front, the quality of pilots and commanders increased and the skill gap between the sides closed, allowing the British to apply their larger force more effectively.

The RAF benefitted from the improved training and from the tactical lessons inherited from the RFC and RNAS while the quality of the Luftstreitkräfte was eroding. At the same time, the strength of the RAF had grown to such a level that her fighter force completely eclipsed that of Germany. During the Amiens offensive in August 1918 the Allied air forces were able to concentrate 988 of their fighters against 140

⁵⁵ Morley, R., p. 91.

⁵⁶ Morely, R., 97 – 98.

German fighter aircraft, a crushing superiority.⁵⁷ In terms of production the British had outstripped their enemy, with their industry delivering over 2,500 airframes of all types to the RAF in July 1918⁵⁸ compared to 1,500 delivered to the German air forces.⁵⁹ This does not include French aircraft production, which further overwhelmed the abilities of the German industry to keep pace with their adversaries. The majority of these aircraft in service with the RAF at this stage of the war were the capable work-horses of the Camel, SE5a and F2B. While outclassed by the late-model Fokkers, Allied superiority in numbers eclipsed the need for technical parity:

To win, it wasn't necessary to have the best fighter plane. Victory went to the side flying good enough machines, serving in enormous quantities. The SE5a and Camel were those good enough machines.⁶⁰

While possessing 'good enough' a fighter fleet, the RAF continued to push for further advantages over the Luftstreitkräfte even as Allied armies were nearing Germany. Newer British aircraft started to appear in the Squadrons in small numbers, and plans were drawn up to replace the SE5a, Camel and Bristol fleets with the newer Sopwith Dolphin and Sopwith Snipe designs into 1919, all while continuing to grow the number of her fighter units. Plans were in motion, too, to increase the strength of the strategic bombing arm known as the Independent Air Force ('Independent' as it had a few fighter squadrons permanently assigned to escort duties). Amongst the front-line fighter squadrons the British started experimenting with Wing-level sorties. Only a handful were undertaken and although they did not result in any decisive combat, the formations of various RAF fighter squadrons, each layered at different altitudes, provided a fitting end to the fighter war. What had started with duels between primitive, wing-warping machines had grown into the massed formation battles of late 1918, culminating in the RAF Wing-level formations of over 100 aircraft.⁶¹

At the Going Down of the Sun: British Dominance

Coupled with British air power was the combined strength of the French and American services, culminating in a completely out-numbered and overwhelmed Luftstreitkräfte. The total production and deployment of Allied fighter aircraft overwhelmed that of the Germans by a large margin. In terms of numbers, Germany produced 5,600 late-war fighters (2,512 Albatros DV and Albatros derivatives,⁶² a paltry

⁵⁷ Morrow, J., p. 303.

⁵⁸ Morrow, J., p. 328.

⁵⁹ Morrow, J., p. 305.

⁶⁰ Bennet, L., *Gunning for the Red Baron*. Texas: A&M University Press, 2006, p. 126.

⁶¹ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War I*, London: Greenhill Books, 2003, p. 240.

⁶² Guttman, J., *SE 5a vs Albatros D V: Western Front 1917-18*. Oxford: Osprey Publishing, 2009, p 36.

320 Fokker Dr.1⁶³ and 2,768 of the excellent Fokker DVIIIs⁶⁴) against which the British produced 8,460 Sopwith Camel and SE5a airframes (5,695 Camels⁶⁵ and 2,765 SEs⁶⁶) alone. Five squadrons of Bristol F2 fighters, four squadrons of Sopwith Dolphins and three squadrons of Sopwith Snipes as of November 1918 only added to the RAF's numerical dominance. If the British fighter fleet alone was able to out-number the German force, the addition of the French and American air arms made Allied airpower all but invincible. The ultimate French fighter of the war, the fast and very strong Spad XIII, was the backbone of the French and American fighter units in 1918 and was produced in large numbers, with 8,472 airframes built by the end of the war.⁶⁷

Despite the overwhelming odds against them, the German fighter units continued to fight tenaciously until the Armistice on 11 November 1918. Demonstrating remarkable cohesion, there are no accounts of any *Jagdstaffeln* refusing to fight due to poor morale or desertion as many of the German army and navy units did. Yet there was nothing the men of the Luftstreitkräfte could do to stave off defeat and while they continued to impose greater casualties on the Allied air forces than they lost (in June 1918, for example, the Luftstreitkräfte shot down 487 Allied aircraft for the loss of 150 machines⁶⁸), German air power had been rendered irrelevant in the face of the larger British, American and French air armadas:

For all their success, the Germans had usually been unable to prevent the enemy formations from carrying out their missions, and they had little real effect on the outcomes of the battles raging beneath them.⁶⁹

While the Allies were able to claim eventual air superiority, their victory came at an enormous cost. Despite being outnumbered for the late war period, the Luftstreitkräfte had taken a heavy toll on Allied forces. Having suffered 16,054 casualties (5,953 killed, 7,350 injured and 2,751 captured)⁷⁰ the German forces had been able to maximise the advantages of their defensive effort, economising and concentrating their smaller combat force. As a result, a heavy cost was imposed on the Allies in return for their gains. The British air forces lost similar numbers to the Germans, reporting 16,623 casualties (6,166 killed, 7,245 wounded and 3,212

⁶³ Guttman, J., *Sopwith Camel; vs Fokker Dr 1: Western Front 1917-18*. Oxford: Osprey Publishing, 2008, p. 24.

⁶⁴ Guttman, J., *Spad XIII vs Fokker D VII: Western Front 1917-18*. Oxford: Osprey Publishing, 2009, p 75.

⁶⁵ Guttman, J., *Sopwith Camel; vs Fokker Dr 1: Western Front 1917-18*, p. 24.

⁶⁶ Guttman, J., *SE 5a vs Albatros D V: Western Front 1917-18*, p 36.

⁶⁷ Guttman, J., *Spad XIII vs Fokker D VII: Western Front 1917-18*, p 75.

⁶⁸ Morrow, J., p. 302.

⁶⁹ Van Wyngarden, G., *Jagdgeschwader Nr II*, p. 107.

⁷⁰ Morrow, J., p. 317.

captured)⁷¹ despite their numerical dominance, and these figures only reflect those casualties incurred in combat. In 1918 the RFC/RAF lost over 7,000 pilots, but only 3,700 of these were combat related, so the true cost of the air war for the British would have been a lot higher still.⁷² One RAF study during 1918 calculated that, on average, only one in every four British pilots would survive their training and combat postings. For those that reached the front, the same study concluded that a pilot's life expectancy was around six weeks.⁷³ The air war was obviously a very dangerous, deadly undertaking for the British. The French, while unencumbered by the costly offensive policy of the British, still suffered 7,255 casualties (2,872 killed, 2,922 wounded and 1,461 captured)⁷⁴ and like the British figures these are known to be an incomplete total.⁷⁵ Regardless of the exact statistics it is clear that, while German airpower was rendered irrelevant in the face of the vastly larger British, French and American air forces, the Allied victory in the air came at an immense cost. The Luftstreitkräfte, outnumbered and finally defeated, had nonetheless remained a capable and effective fighting force to the very end.

* * *

William Sherman's claim that British air superiority lay primarily at the tactical level of the patrol commanders need to be considered within this context. The air war of 1918 was an extension of the ground campaigns and the wider strategies of each nation, with the British and French air services finally overwhelming the German forces with industrialised mass rather than out-fighting them at the tactical level. As the sophistication and scale of air combat had eclipsed the early individualistic duels, the impact of strategic supply, industrial support and technology all conspired against the ability of the individual to direct and determine the course of the war.

Despite this the air war remained, more so than the ground war, a series of battles fought at the unit and individual level. While the infantry and artillery arms elevated the science of operational planning involving concentration and mass above the art of small unit tactics and individual initiative, the air war remained an arena where skill, courage and enterprise counted. William Sherman was accurate in describing the aircraft as 'after all but a weapon' that must 'be directed by man'.⁷⁶ Even though the course of the air war was beholden to the direction of a wider struggle

⁷¹ Morrow, J., p. 317.

⁷² Morrow, J., p. 317.

⁷³ Morrow, J., pp. 317-318.

⁷⁴ Morrow, J., p. 317.

⁷⁵ Morrow, J., p. 367.

⁷⁶ William, S., *Air Warfare*, p 7.

between great powers, it manifested itself in the actions and the sacrifices of individuals.

While the eventual outcome may have been decided by the impact of industry, and the outcome of strategies and policies enacted over a number of years, the grand strategy of the air war remained intertwined with the experiences of the pilots. William Sherman's view of air power did not triumph the role of the individual or the ace. He instead prioritised the importance of organisation, tactics and combined arms principles for an air force but he was not blind to the importance of the individual pilot in air combat:

In all fighting organisations, the effectiveness of the whole depends in some degree on the proficiency on the individuals composing it... The characteristic of air warfare markedly enhances the value of individual skill. Largely on this account, the study of individual combat is necessary, not alone because it is essential to an understanding of the operation of masses, but also because it is desirable as an end in itself.⁷⁷

While the individual pilot could not decide the outcome of the war, they did form an important and integral component of air power. When the Luftstreitkräfte was eclipsed by the combined might of the Allied powers in the final months of 1918 the final balance of power was beholden to a number of essential factors, of which the individual was one.

Even against this backdrop of advanced industrialised warfare the 'study of individual combat' therefore remains relevant. The 'value of individual skill' and the importance of the human factor may not have been decisive in its own right, but it remained a critical part in the contest that dictated the balance of air-power in November 1918. William Sherman was aware of the scale and scope in which the first air war was fought, and despite this he still believed that 'the superiority of the British patrol leaders... was responsible more than any other factor' in 'determining air supremacy'.⁷⁸ If Sherman's assessment is to be properly considered, it next must be asked whether British patrol leading was indeed superior compared to that of the Germans.

⁷⁷ William, S., *Air Warfare*, p. 65 – 66.

⁷⁸ Sherman, W., 'Tactical History of Pursuit Aviation' in *The U.S. Air Service in World War I*, p. 335.

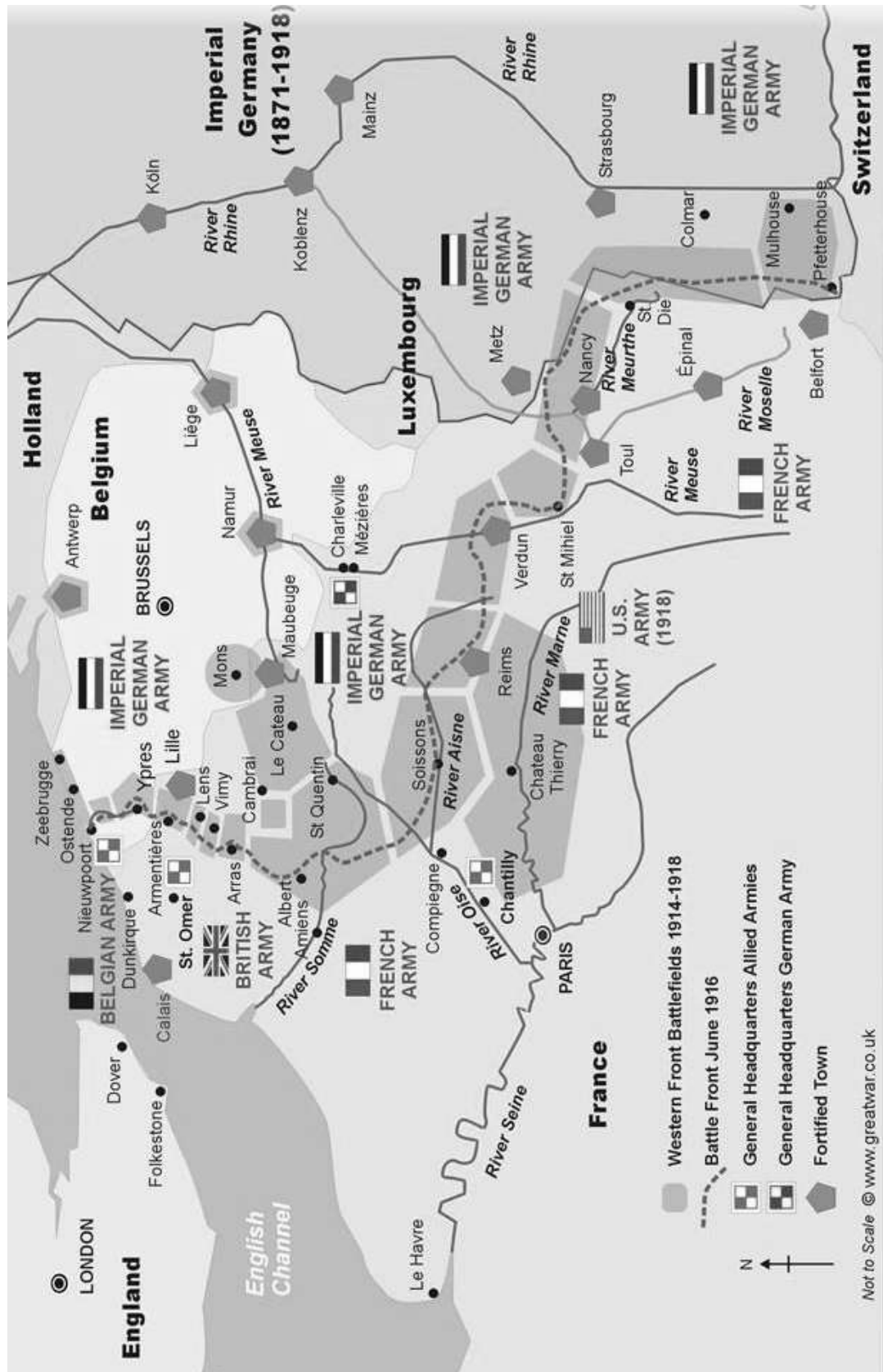


Figure 1: Map of the Western Front Battlefields, 1914-1918 Source: www.greatwar.co.uk



Figure 2: The Morane-Saulnier Type 'L' a revolutionary French aircraft held back by the lack of a properly integrated machine-gun. Source: www.theaerodrome.com

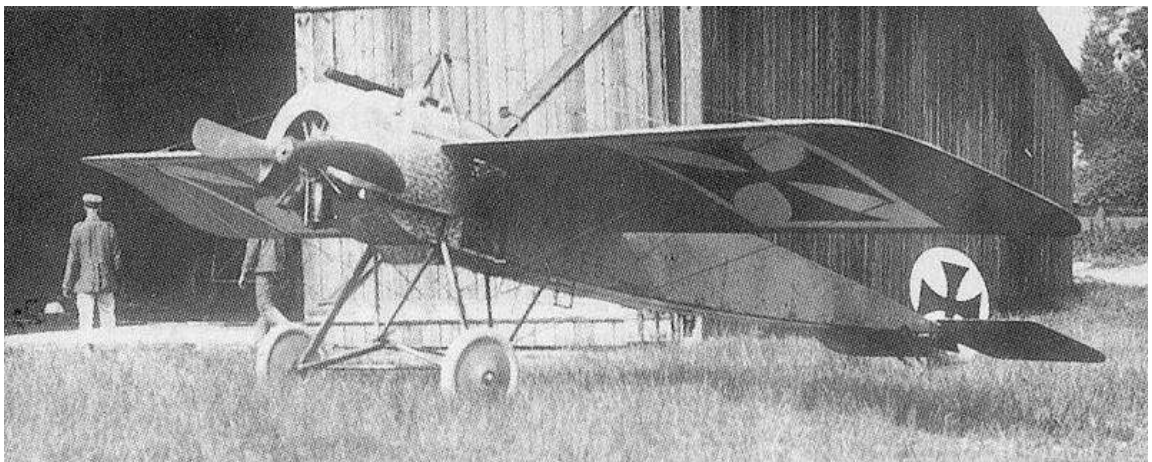


Figure 3: Fokker Eindecker E-series Germany's devastatingly effective early-war fighter featuring a machine gun synchronised to fire through the propeller. Source: www.wikipedia.com



Figure 4: Oswald Boelcke, The 'father' of German fighter aviation. Source: www.wikipedia.com



Figure 5: Max Immelmann, a key pioneering figure in German fighter aviation in the cockpit of an Eindecker E.III. Source: www.wikipedia.com



Figure 6: F.E.2, one of the RFC's answers to the Fokker Eindecker in a 'pusher'-type configuration. The F.E. 2 was a two-seater multi-role aircraft, with the gunner located at the front of the nacelle. Source: www.theaerodrome.com

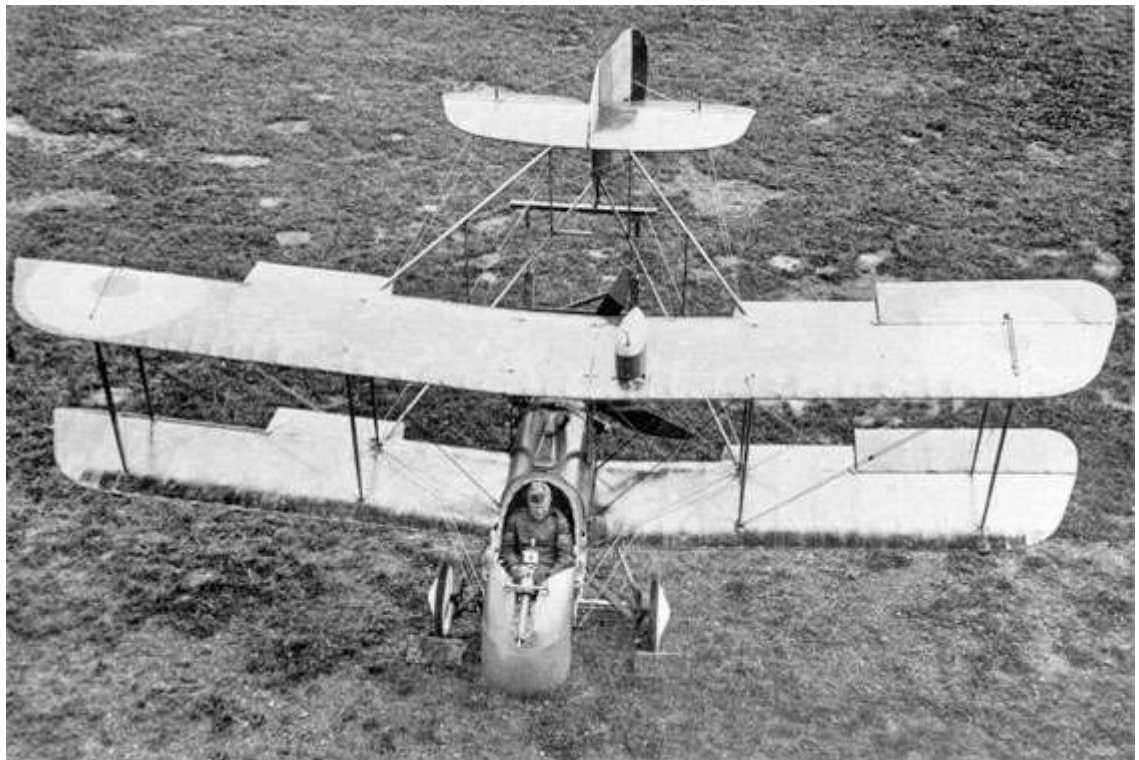


Figure 7: D.H.2, one of the RFC's answers to the Fokker Eindecker in a single-seat 'pusher'-type configuration. Source: www.theaerodrome.com



Figure 8: Nieuport N.11, an early model of a successful French line of fighter aircraft that would see service throughout the war in both French and RFC service. Source: www.theaerodrome.com



Figure 9: Albatros D.III, Germany's front-line fighter that reaped a heavy toll on the RFC in 'Bloody April' of 1917. Source: www.wikipedia.com



Figure 10: SE5a, the successful British fighter of 1917-1918. Source: www.wikipedia.com

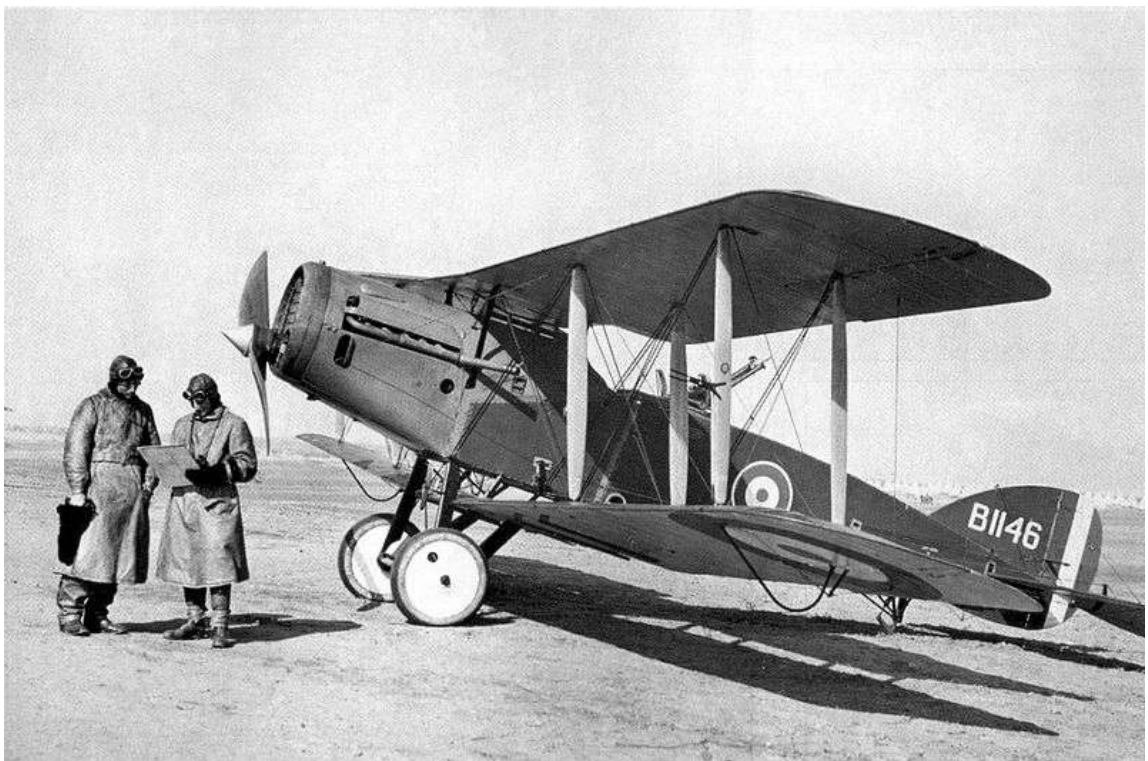


Figure 11: Bristol F2B Fighter, a 1917-1918 British fighter that had the unique feature of a rear gunner. Source: www.wikipedia.com



Figure 12: Sopwith Camel, the front-heavy British fighter aircraft of 1917 and 1918 that was difficult to fly but very agile in a dog-fight. Source: www.wikipedia.com



Figure 13: Albatros D.III, a more-powerful version of the Albatros DI/DII. Source: www.wikipedia.com



Figure 14: Manfred von Richthofen, the most successful fighter pilot of any nation in the First World War with 80 awarded victories. Source: www.wikipedia.com



Figure 15: Albatros D.Va, the final variant of the Albatros line that was out-classed by comparative British and French aircraft by the time it was fielded in mid-1917. Source: www.wikipedia.com

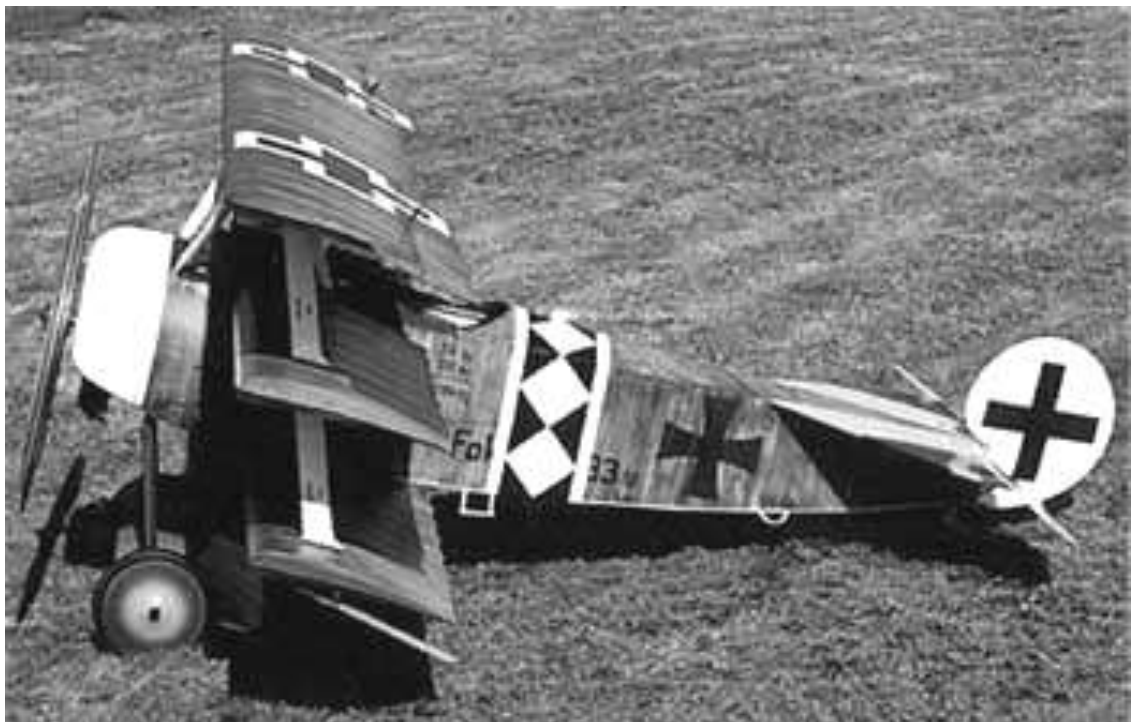


Figure 16: Fokker Dr.1, the famous German triplane that was, like the Albatros D.V, an under-performing fighter aircraft by the time it was deployed in late 1917 and 1918. Source: www.theaerodrome.com



Figure 17: Sopwith Dolphin, a late-war British fighter that saw service in 1918. Source: www.wikipedia.com



Figure 18: Sopwith Snipe, the highest performing British fighter of the war that was planned to form the bulk of the RAF's fighter squadrons into 1919. Source: www.theaerodrome.com



Figure 19: Fokker DVII, an all-round excellent German fighter of 1918 that was probably the best fighter to see front-line service. Source: www.theaerodrome.com



Figure 20: Fokker DVIII, a modern parasol design that was only just reaching front-line service by the time of the Armistice. Source: www.theaerodrome.com

CHAPTER THREE

THE CULT OF BOELCKE

THE GERMAN EXPERIENCE OF JAGDSTAFFEL COMMAND

Oswald Boelcke and Max Immelmann pioneered fighter aviation not only for the German air service, but for the world. Flying and fighting in an ungoverned arena where the principles and doctrine of air combat had yet to be defined, the revolutionary capability offered by the Eindecker E.III created immense potential for individuals to shape the development of air fighting. Boelcke and Immelmann were those individuals, being able to match the potential of the single-seat fighter with skill and aggression as pilots.

Neither would survive long, however. Max Immelmann died in June 1916 while attacking a British two-seater aircraft in an Eindecker.¹ In a closely won race with Boelcke to overtake the other as the highest scoring pilot Immelmann had edged out Oswald by the time he was killed with 15 awarded victories,² establishing his abilities as a tactician and identifying the key skills needed to shoot down an enemy aircraft. The 'Immelmann turn' remains one of the key air combat manoeuvres and is still taught and practiced today. However, its origins and link to Max himself remain clouded as it would have been impossible for an Eindecker to perform the manoeuvre as it is now known, and there is no historical evidence indicating that Immelmann actually invented or executed anything approaching his name-sake turn.³ What is clear is that Immelmann was a skilled pilot and, together with Boelcke, adapted a number of principles that became the foundation of fighter aviation. While Immelmann's death prevented him seeing the evolution of air combat into the era of massed combat where teamwork and cooperation was paramount, he did provide an early example of what an expert could achieve.

Oswald Boelcke would survive into October of 1916, outliving Immelmann by only four months.⁴ That short period, however, saw the escalation of the air war from the early, pioneering attempts of amateurs and enthusiasts into a sophisticated, codified and very deadly undertaking. While Immelmann was instrumental in pioneering

¹ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War I*, p. 51.

² Franks, N. Et al, *Above the Lines*, p. 135.

³ Franks, N. Et al, *Above the Lines*, pp. 134-135.

⁴ Franks, N. Et al, *Above the Lines*, p. 76.

techniques for shooting down enemy aircraft, Boelcke adapted these into doctrine.⁵ Under Boelcke the German air service adopted the tactics and techniques required for air combat, escalating the air war into a battle of mass and posing an existential threat for the out-equipped and out-fought Royal Flying Corp's mission.

The Elite of *Jasta 2*

One of the defining characteristics of the German air service was set during Boelcke's reign. Famous throughout their service, Boelcke and Immelmann had accrued a significant amount of power and influence within the German air service by mid-1916. Lacking experience, knowledge or doctrine of what worked for successful air combat, the word of the *kanone* carried with it substantial authority. Thus they were free to shape the nascent fighter force as they saw fit. While Immelmann's contribution ended with his death in combat in June 1916, Boelcke's influence on his service continued to grow and the formation of the first *Jagdstaffeln* was entrusted to him in August. *Jasta 2* was often known as '*Jasta Boelcke*', showing the importance and value placed upon the key personalities involved in the Luftstreitkräfte.

When forming *Jasta 2*, Boelcke had great scope in identifying and selecting the pilots he wished to employ. Boelcke would not let go of this role and would continue to hand-pick his pilots to serve in his formation throughout his time in command.⁶ Without dictating it as official policy, the power and influence given to the aces by the German military to select their pilots resulted in the concentration of talent in a small number of units. While this started under Boelcke it would remain with the Luftstreitkräfte into 1918-her fighter force (and, indeed, her entire air force) would remain split between the larger, conventional force and the smaller, elite units.

Boelcke's ability to select and develop the pilots under him created a small but successful cadre of pilots. Amongst the experts that Boelcke attracted to *Jasta 2* was Manfred von Richthofen, whose success as both a fighter pilot and as a commander would eclipse even that of Oswald. While Boelcke created an elite unit within the German fighter pilot community, the German air service had already elevated the fighter pilots as an elite branch in themselves within their aviation service:

Simply by the nature of the Air Service's equipment, most single-seater pilots before 1917-18 had seen some initial service with two-seater units, and

⁵ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War I*, pp. 57 – 60.

⁶ Van Wyngarden, G., *Jagdstaffel 2 'Boelcke'*. Oxford: Osprey Publishing Limited, 2007, p. 16.

transferred only at their own request. Only the best of the successful candidates would be considered for training as single-seater pilots.⁷

This created an inherently imbalanced force in terms of quality. While it is difficult to measure the impact the siphoning of talent from what were inevitably second-tiered branches involved in reconnaissance and observation, the monopolisation of skill within the fighter pilot community can be seen to some extent through each unit's performance within the fighter force itself. Concentrating talented individuals into a few units allowed the highest scoring pilots to train and fight together, returning impressive results but depriving the wider organisation of the instruction, example and innovation these expert individuals were capable of. While unreliable, the German confirmation process for confirming pilot victories was far more stringent and accurate than that of the British and the scores of the various *Jasta* shows exactly how the talent, and therefore the success, was monopolised into a small number of units:

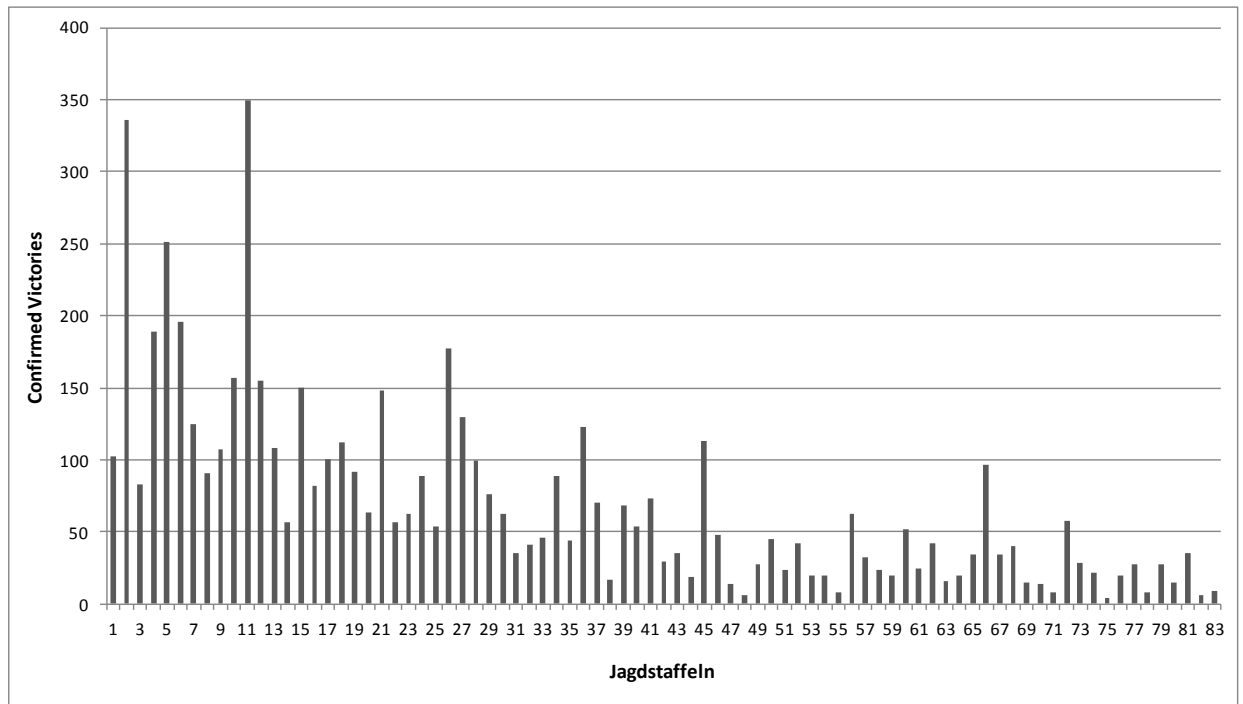


Figure 21: Official Victories of the German Air Service *Jagdstaffeln*, 1914 – 1918.
Source: Franks, N. Et al, *Above the Lines*, pp. 29-56.

Jasta 2 was Boelcke's initial command and his ability to identify, recruit and develop skill is evident from historical accounts—under his tutelage Manfred von Richthofen and Ernst Udet, the two highest scoring German pilots of the war,⁸ started to demonstrate aptitude as combat pilots. In much the same way Manfred von Richthofen would make *Jasta* 11 his unit, drawing in already successful and notable

⁷ Sumner, I., *German Air Forces 1914-18*. Oxford: Osprey Publishing Ltd, 2005, p. 48.

⁸ Franks, N. Et al, *Above the Lines*, p. 241.

fighter pilots. The successors to Boelcke and von Richthofen, too, had the ability to sustain the selection process. While they lacked the profile of their unit's namesake, sufficient scope remained for the commanders to retain the ability to select their recruits, continuing the monopolisation of talent towards select units.

Removing the pilots from the wider air service allowed those with promise the ability to study under the 'greats', but at the same time it reduced the quality of tactical leadership throughout the service. The celebrated *Jagdstaffeln* became bottle-necks for successful pilots in promotion terms, with a large number of high-scoring *Jasta 2* and *11* pilots never receiving the opportunity to command. With this missed opportunity went the chance for these skilled pilots to pass on their knowledge and teachings. While these highly qualified aces added to their own unit's impressive score, the likes of *Jasta 32* and *33*, ordinary units without famous leadership, were being led by men who had a smaller score than some of the *Jagdflyegers* in *Jasta 2* and *11*. This was obvious from the Allied perspective, with the British fighter pilot Victor Yeates writing after the war that:

there were dangerous Huns about, circuses like Richthofen's, but they weren't met frequently... the German habit of draining their best pilots away into circuses left their ordinary people very ordinary.⁹

Inheriting a Legacy: Command of *Jasta 2* after Boelcke

The replacement for *Jasta 2* after Boelcke's death also indicates a level of official favouritism shown by the air establishment towards the 'elite' units. Boelcke had become famous for his exploits as a fighter pilot, being awarded 40 enemy aircraft claims in total, but he had also established a successful system for *Jasta* level tactics. He had built his unit around him, meaning that he would lead from the front and his pilots would support him. At the same time he had identified the basic principles of aerial combat, publishing his doctrine as seven points that became known as the *Dicta Boelcke*. His list was inherently tactical, but as command of a *Jasta* was an inherently tactical position it provided the basic premise through which the Luftstreitkräfte would structure itself and operate. The final point in the *Dicta Boelcke* noted that 'the *Jasta* must fight as a unit with close teamwork between all pilots. The signal of its leaders must be obeyed.'¹⁰ Empowered by success and influence within his organisation, Boelcke built a system of *Jagdstaffel* command around the leader himself. Teamwork was essential, but by leading from the front and having his subordinates follow, the Luftstreitkräfte was able to utilise its small number of expert fighter pilots to the best

⁹ Yeates, V., *Winged Victory*. London: Grub Street, 2008, p. 45.

¹⁰ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War I*, p. 59.

extent possible. Linked to the selection and promotion of experts into the command positions, the German air service was a pyramid whereby the experts sat atop it as *Jasta* commanders in an elite unit, supported by the best pilots underneath them. Behind them came the ordinary units, and at the bottom of the pyramid were the other branches of German military aviation.

Boelcke established his position as ‘the father of the German fighting force’¹¹ before his death in combat. Colliding with one of his wingmen while fighting RFC fighters, Boelcke’s Albatros shed its upper wing and crash-landed behind German lines. Oswald Boelcke did not survive the crash and the famed *Jasta 2* was left leaderless.

The original, most obvious choice to take over Boelcke as *Staffelführer* (*Jasta* commander) had being a pilot already serving in *Jasta 2*, *Oberleutnant* Stephen Kirmaier. Kirmaier was both ‘the senior officer and, coincidentally, the *Staffel*’s highest-scoring fighter pilot at the time’¹² and he had assumed temporary command of the unit in the absence of official direction. His death a few weeks after Boelcke changed the situation again. In the absence of a clear chain of command, the next most senior officer, *Oberleutnant* Karl Bodenschatz, nominally took over command duties although as a non-flying *Offizier zur besonderen Verwendung* (Officer Assigned for Special Duty, or Adjutant, fulfilling administrative and management roles) his span of command was limited. Taking over the tactical leadership in the air was the most experienced and successful pilot at that time, Manfred von Richthofen:

In the absence of a formal *Staffelführer*, Manfred von Richthofen became the tacit leader in the air. He was, after all, the highest-scoring, highest-decorated junior officer in the unit. Apart from his junior status Richthofen was the *Jagdflieger* who the other pilots looked up to.¹³

Richthofen, despite his obvious suitability, was not in consideration for taking over *Jasta 2* at that time. Exactly why is not clear, for he had the qualifications and respect needed to do the job. The command of *Jasta 2* instead passed to a Bavarian *Oberleutnant* by the name of Franz Josef Walz. Walz had the advantage of age over Richthofen, which may have been a driving factor in selecting him. Richthofen’s biographer and aerial historian Peter Kilduff made no mention of why Richthofen was not considered for command but did note that:

¹¹ Franks, N. Et al, *Above the Lines*, p. 15.

¹² Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*. London: Arms and Armour Press, 1994, p. 59.

¹³ Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 62.

Just five days short of his 31st birthday when he arrived at Lagnicourt on 29 November, Walz was senior in age to every pilot except Böhme... Walz possessed the maturity of age to make him truly the 'old man' (and Germans use the same term '*der Alte*').¹⁴

Walz was appointed, it appears, at the invite of *Jasta 2* itself. Referencing the *Jasta 2* pilot Erwin Böhme's letters, Kilduff recalls that:

the officers of *Jasta 2* requested that Bavarian *Obltn* Franz Josef Walz be appointed to succeed the fallen *Obltn* Kirmaier as commanding officer of *Jasta 2*. they wanted someone more like Boelcke and, at that time, Walz seemed to be ideally suited.¹⁵

At the time of his appointment in 1916 Walz did indeed appear to be a rising star in the air service, having achieved six aerial victories in a two-seater unit.¹⁶ He had originally being tasked with forming and leading *Jasta 19*, but three weeks into this assignment he was reassigned to command *Jasta 2*. While Walz's time in command of the Boelcke unit was less than successful, as will be seen later, as of 1916 he appeared a suitable candidate to lead the famed *Jasta*. What is interesting is that the *Luftstreitkräfte* would allow a commander of a *Jasta* to transfer to an elite unit, even when they were clearly needed in their existing post. Throughout the war this phenomenon can be seen again and again: successful pilots and commanders desired to serve in the elite units, and the German air service afforded these select groups priority over the wider force.

Considerations in Command Appointments

Command appointments in the *Luftstreitkräfte* were also swayed by the vestiges of their very conservative and traditional approach to rank and command. Up until 1917 emphasis was placed on one's professional background – a regular officer would be considered suitable for a *Staffelführer* appointment, whereas a reserve officer was frequently not. Such prejudices had started to erode by the last year of the war, but the preference on the regular officers who had gone through the approved officer training establishments (the reserve officer list normally being composed of those who had been commissioned during the war and were not looked on as 'professionals'¹⁷) remained. Even in 1918, some positions in the air service were reserved solely for regular officers.¹⁸ Rank in the *Luftstreitkräfte* was further complicated by the fact that, unlike their British counterparts, pilots could start their flying careers as a non-commissioned officer. This mattered less for the fighter force as by the time a pilot had

¹⁴ Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 64.

¹⁵ Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 63.

¹⁶ Franks, N. Et al, *Above the Lines*, p. 226.

¹⁷ Franks, N. Et al, *Above the Lines*, p. 26.

¹⁸ Franks, N. Et al, *Above the Lines*, p. 26.

proven themselves worthy of attending a fighter training school and a *Jagdstaffel*, they were normally commissioned. However exceptions in the fighter force were still common, creating a very split social strata of aviators inside the unit.

The German air service was also divided between the different kingdoms that sponsored them. *Jagdstaffeln* were divided between Prussian, Bavarian, Saxon and Wurttemberg sponsorship, with some of the very traditional members of the German high command believing that membership, and therefore command, should remain fixed with the 'age-old ideals of rank and privilege within the German hierarchy.'¹⁹ There is very little evidence to suggest that command appointments were given out solely on the basis of upbringing or lineage, but such considerations could explain some otherwise illogical appointments. The historian Norman Franks noted that 'rank and birthright often took precedence over someone being the 'best man for the job''²⁰ which suggests that such considerations did indeed impact on appointment issues. None of the commanders who may have been appointed through these considerations appear to have been influential or notable. One example of a commander appointed to a position based off their regular commission was Hermann Goring who 'was not a success'²¹ as a commander.

Just over a month after Walz assumed command of *Jasta 2* Manfred von Richthofen was himself appointed to the position of *Staffelfuhrer* with *Jasta 11*. Even though the prospect of command represented huge opportunities for the ambitious and evidently very capable pilot, the allure and prestige associated with service in *Jasta 2* remained strong – Richthofen 'publicly protested at having to leave *Jasta 2*'.²²

Successful commanders in the air war needed to be both successful fighter pilots and have sufficient leadership and command skills. The German system inadvertently stifled the development of individuals with these two skill sets. The most successful pilots would be taken into the elite units and their opportunities to prove their leadership, or develop and learn command skills on the job, was reduced. This phenomenon became painfully apparent to the German air service in 1918. While successful, the growth of the *Jagdgeschwader* groupings halted at four such formations. Despite the tactical value of the four-*Jasta* arrangement being obvious, only 16 of the Luftstreitkräfte's 81 *Jagdstaffeln* were assimilated into these larger organisations. The rest remained as independent *Jagdstaffeln* or attached to other

¹⁹ Franks, N. Et al, *Above the Lines*, p. 26.

²⁰ Franks, N. Et al, *Above the Lines*, p. 26.

²¹ Franks, N. Et al, *Above the Lines*, p. 26.

²² Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 67

units as part of a temporary *Jagdgruppe*, not from choice but from an absence of suitable leadership:

Concerned that there were too few leaders of the quality of Richthofen, with the ability to command effectively a unit of this [JG] size, Kogenluft [chief of the Luftstreitkräfte] erred on the side of caution. Instead a number of *Jagdgruppen* were formed during the final year of the war, bringing various *Jasta* together as the tactical situation required but not on the permanent basis enjoyed by the *Jagdgeschwader*.²³

While the concentration and consolidation of talent in the elite units stifled the growth and development of a wider pool of talent within the German air force, there were some notable benefits to the maintenance of the elite units beyond their tactical success. Norman Franks' review of the German air force in *Above the Lines* assessed that a benefit of the elite units could be seen in 'the training ground they gave to potential *Jasta* commanders... this factor was of great importance to the German Air Service, for it gave a continual cycle of new blood flowing into a unit, and experienced men forming the newer units.'²⁴ This may have been true to an extent, but the demand for *Jasta* commanders vastly outstripped the ability of the elite units to generate and their desire to release them.

Franz Walz as a *Jasta* Commander

Regardless of their backgrounds, the need for commanders to lead by example was essential. Commanders were expected to lead their *Jasta* in combat and were judged by their success as a fighter pilot. In this way German leadership can be seen very much as setting an example others would admire, model themselves off, and imitate. Commanders that failed to prove themselves as a fighter pilot, in the elite units at least, were considered failures. This was the case with *Obltn* Walz of *Jasta 2* who, despite his appearance as a suitable replacement for Boelcke, proved unsuitable. Walz's shortcoming was his failure to achieve victories in combat, an activity that appears to have been a central part of commanding an elite *Jagdstaffeln*. Unit histories are damning of Walz:

... as a *Jagdstaffel* commander he had failed to live up to his earlier promise, and had earned something of a lacklustre reputation. In three weeks as leader of *Jasta 19* and then in five months as *Staffelführer* of the elite *Jasta* 'Boelcke' he had still not recorded a single personal victory. The writings of von Ttschek and others show that Walz did fly as *Staffel* leaders, and took part in aerial

²³ Sumner, I., p. 18.

²⁴ Franks, N. Et al, *Above the Lines*, p. 26.

combats, but he was not a successful fighter pilot who led by example as his predecessors had done.²⁵

It was not enough to lead in combat-one had to lead by example by shooting down enemy aircraft. Walz had not stifled talent under him, as Werner Voss rapidly proved himself as one of the war's leading fighter pilots, achieving nineteen confirmed kills in February and March of 1917 alone.²⁶ The unit had not lost an aggressive posture, either, as the *Jasta 2* pilot von Tutschek's records show:

After a month as an air fighter I've made 42 flights, among which 35 were offensive patrols. And all without a personal victory, although *Jasta* "Boelcke" registered 14 air victories, despite the fact that the enemy has been handing back.²⁷

Statistically speaking, *Jasta 2* did well under Walz, claiming 36 enemy aircraft for just two men killed in action. The victories had being largely achieved by just two pilots, Voss and another ace, Otto Bernert, who between them had achieved 83% of the *Jasta's* victories.²⁸ After Bernert was transferred to command *Jasta 6*, Werner Voss remained the only regularly scoring pilot. The power this bestowed on Voss led to a showdown with his superior Walz. Surviving documents prove that Voss, together with another pilot, attempted to have Walz replaced as commander by submitting a complaint alleging that the *Jasta 2* commander was 'war-weary' and 'no longer fit for doing service as a *Staffelfuhrer*.'²⁹ These explosive charges were not well received and all involved suffered. The *Kofl 2* headquarters, to which *Jasta 2* reported to, officially judged Walz blameless but his resignation followed and, after a small period of time as *Staffelfuhrer* of *Jasta 34*, he was transferred to the Middle East. Voss was removed from *Jasta 2* and, even though he received command of *Jasta 5*, the same sentiments as had been expressed by Richthofen (albeit on very different terms) are again evident:

It was considered that the elite tradition of the 'Boelcke' *Staffel* was 'very dear' to Voss, and this transfer was a harsh punishment for him...³⁰

The importance of the *Staffelfuhrer* position can be seen in the next period of *Jasta 2*. With no powerful personality to protect the unit and select capable pilots, *Jasta 2* was almost disbanded. The final commander of *Jasta 2*, Carl Bolle, recorded at the end of the war in a *Staffel* history that:

²⁵ Van Wyngarden, G., *Jagdstaffel 2 'Boelcke'*. Oxford: Osprey Publishing Limited, 2007, p. 42.

²⁶ Franks, N. Et al, *Above the Lines*, p. 229.

²⁷ Van Wyngarden, G., *Jagdstaffel 2 'Boelcke'* p. 30.

²⁸ Van Wyngarden, G., *Jagdstaffel 2 'Boelcke'* p. 42.

²⁹ Van Wyngarden, G., *Jagdstaffel 2 'Boelcke'* p. 43.

³⁰ Van Wyngarden, G., *Jagdstaffel 2 'Boelcke'* p. 43.

Towards the end of April and the beginning of May, *Jagdstaffel* "Boelcke" shared the lot of a good many *Staffeln* – they were stripped by giving away leaders to other units and by additional losses until they were virtually completely disbanded. For the *Staffel*, newly staffed with young pilots, and unsuccessful time arrived in their desolate hunting grounds.³¹

Jasta 2 would survive, but it would not be until February 1917 that one of the original *Jasta* 2 pilots, Erwin Böhme, returned to take command that it started to reclaim its status as an elite *Jasta*. Bolle's history identified the degree to which a unit dependent on the skill and personality of its leader:

There were two basic prerequisites for the renewed success of the *Staffel* – a theatre rich in activity, and a leader with a powerful personality. Next, there was a third task to accomplish – to form the *Staffel* into a unified fighting troop. Here is where the commander's work had to begin... The *Staffel* had Böhme's efforts substantially to thank for its performance that continually improved right up to war's end. The *Staffel* had in Böhme a leader who was able to make its old name worthy again.³²

While Walz is widely considered to have failed in his time as commander of *Jasta* 2, his subsequent service in Palestine shows that his greatest failing was his poor showing as a fighter pilot, not any absence of leadership qualities. While he ended the war with only seven victories he was awarded the prestigious Pour le Mérite for, in part, his 'outstanding leadership of Fl.-Abt 304b'³³ in the isolated and challenging Middle Eastern theatre. A capable leader, Walz was unable to meet the expectation of his men that a leader of one of the elite *Jasta* formations had to be amongst the top-scoring pilots himself. Providing an example as a successful, scoring *kanone* was paramount.

The need for commanders to be accomplished combat pilots can be seen in all the Luftstreitkräfte's successful leaders. Ongoing success as a fighter pilot did not necessarily make a commander successful or popular but failure to achieve success in the air would, as was the case with Walz, disqualify them as someone their pilots wanted to follow. There were two other traits common to the successful and notable commanders – they all had an aggressive mindset when it came to their duties and they all had some aptitude as instructors and teachers. Interestingly, there is no obvious correlation between charismatic or empathetic personality types and age when compared with success as a tactical commander.

³¹ Van Wyngarden, G., *Jagdstaffel 2 'Boelcke'* p. 46.

³² Van Wyngarden, G., *Jagdstaffel 2 'Boelcke'* p. 55.

³³ Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 64.

Carl Degelow, Carl Jacobs and the ordinary *Jagdstaffeln*

While much has been written on the elite units of the German force, only a very small number of publications cover the 'other' *Jagdstaffeln*. Peter Kilduff, Manfred von Richthofen's biographer, has published similar works on Carl Degelow and Hermann Goring. Degelow was an accomplished ace with 30 confirmed victories who served with *Jasta 7* and 40, both ordinary units.³⁴ Degelow's experiences are valuable to any study of command, for despite his achievements he both flew under and then commanded two of the more obscure, hidden *Jagdstaffeln*.

As was the norm with the *Luftstreitkräfte*, Degelow started flying with a two-seater unit before he was (on account of his aggressive use of his observation aircraft) transferred to Mannheim, where single-seater flying conversion flying was taught. His first operational posting was to *Jasta 36*, but after a training accident that was Degelow's fault (during a test flight he disregarded instructions and fired at one of the airfield targets used for gunnery practice and, in doing so, injured another pilot on the ground) he wound up at *Jasta 7*.³⁵ When he arrived in August 1917, *Jasta 7* had only three weeks earlier received a new commander, *Ltn.d.Res* Josef Carl Jacobs. Under his leadership, which was characterised by his reputation as a 'tough but fair commanding officer',³⁶ Jacobs increased the unit's score from 48 to 126 victories in 15 months, an acceptable achievement.³⁷ Jacobs himself was an experienced pilot, having pre-war flying experience despite being a young commander, aged only 23 when he was posted to *Jasta 7*. He had 5 confirmed kills by the time he was *Staffelführer*,³⁸ which is indicative of the differing standards between the favoured *Jasta* and the rest of the service (Kurt Wusthoff, for example, was a pilot in Richthofen's *Jagdgeschwader* JG 1, and he assumed command of that *Jasta 4* in February 1918 when his victory tally stood at around 25 kills³⁹). A number of the trends seen in the elite units held true for Jacobs in *Jasta 7*, with his successful command being sustained through his ongoing ability to destroy enemy aircraft. During his time in command Jacob's added another 43 confirmed kills to his personal score, representing 45% of *Jasta 7*'s victories over that period. Degelow recalls that he had a 'warm smile and friendly word' for those under him, and had been attributed the nickname 'Köbes' that

³⁴ Franks, N. Et al, *Above the Lines*, p. 96

³⁵ Franks, N. Et al, *Above the Lines*, p. 96.

³⁶ Kilduff, P., *Black Fokker Leader*, p. 64.

³⁷ Franks, N. Et al, *Above the Lines*, p. 135.

³⁸ Franks, N. Et al, *Above the Lines*, pp. 135-136.

³⁹ Van Wyngarden, G., *'Richthofen's Circus': Jagdgeschwader Nr 1*. Oxford: Osprey Publishing Limited, 2004, p. 52.

was normally reserved for the helpful waiters of the Rhineland. 'According to Degelow, Jacobs bore the nickname with typical grace and charm.'⁴⁰

While his 'easy manner' was well received by his pilots and he led by example in the air; Jacobs was less effective in one of the crucial skills possessed by the greatest tactical commanders of the air war, the ability to instruct. Jacob's score continued to mount during Degelow's time in *Jasta 7*, but very little progress was being made in generating any further *kanonen* to assist in propelling *Jasta 7* towards the heights of an 'elite' unit. Kilduff noted, accurately, that Jacob's 'subordinates were with him to learn how to survive duels in the air and how to protect their leader's flanks.'⁴¹ Degelow wouldn't score his first confirmed aerial victory until January 1918, when Jacobs was absent. It was not that Jacobs did not train his men (he did) or that he was not interested in how best to destroy enemy aircraft as a *Jasta* (he was) it was rather that he lacked the ability to mentor, develop and unleash his subordinates as fully fledged fighter pilots. With a lack of talent in his unit (his highest scoring pilot, *Leutnant* Billik, was posted out in February 1918 to command *Jasta 52*⁴²) he would have been under pressure to keep achieving victories while developing his junior pilots. Whereas Boelcke and Richthofen had a genius for identifying the cause of their success, stating it simply and then allowing subordinates to learn for themselves, Jacobs did not appear to have had that gift. He had a more difficult situation, too, lacking the prestige and power afforded to the leading *kanonen* to attract the already-promising pilots. It is fair to conclude that Jacobs was an exceptional fighter pilot, as evidenced by his eventual 48 victories (making him the fourth highest-scoring German ace of the war⁴³), but was a victim of the favouritism inherent to the *Luftstreitkräfte*.⁴⁴ His *Jasta* was one of the mainstream units and, even though an extremely able pilot himself, being unable to attract and keep the most promising pilots meant his opportunities to create a highly performing unit were limited.

⁴⁰ Kilduff, P., *Black Fokker Leader: Carl Degelow*. London: Grub Street, 2009, p. 64.

⁴¹ Kilduff, P., *Black Fokker Leader*, p. 73.

⁴² Kilduff, P., *Black Fokker Leader*, p. 85.

⁴³ Sumner, I., p. 18.

⁴⁴ It should be asked why Jacobs, with such a large tally, did not serve in an elite *Jasta* himself. The record is not clear on this, and it is possible that his slow-scoring start to his career kept him away from the elite units. He had taken command of *Jasta 7* with only 5 kills, as noted earlier, and by the time he had added to his score he had firmly established himself as *Staffelführer*, making him less likely or less desirable a transfer option.

Command of *Jagdstaffel 40*

Carl Degelow's score rose slowly, but by May 1918 he had achieved the magic five kills that made him a *kanone*. As Degelow himself noted, this number also carried with it change:

Although we were reluctant to admit it at first... Germany was losing the war. The rate of attrition among German combat pilots rose steadily. To keep the frontline air units up to a reasonable level of success, only men with proven combat records were given positions of command. Amongst the *Jagdstaffeln* this meant that almost any pilot who shot down five enemy aircraft could count on becoming either the commanding officer or at least the second in command of a frontline *Staffel*.⁴⁵

Degelow's five victories meant that he would assume the position of second in command of *Jagdstaffel 40*, located at the same airfield *Jasta 7* was already at and thus only a short walk away. In this way Degelow's career mirrors that of his *Jasta 7* commander. Both Degelow and Jacobs had slowly etched out their victories and, while neither were counted amongst the most promising aces (thus missing out on being posted to one of the favoured units) they had proven themselves worthy enough so that, by default, they got the opportunity to lead from the front. Degelow reasoned that:

Experience had shown that tenacity in the air was a better quality of leadership than formal education and "class" background. As there were ultimately eighty-one German [Army] *Jagdstaffeln*, the need for such an expedient was obvious.⁴⁶

With the new appointment came greater opportunities to achieve a higher rate of aerial victories, as had happened with Jacobs.

Jasta 40 was another ordinary unit. The way in which the units were judged was made clear by the German command chain, as Degelow found shortly after he arrived:

There was, of course, the usual rumblings from the Army Group Command, wondering when our *Staffel's* performance would improve. We could not convince these fellows that our opponents did not simply come along like ducks in a row and wait for us to pop them off, one by one.⁴⁷

What is most striking from Degelow's quote is the emphasis placed upon the victory rate. Everything else, it seems, came secondary to the unit's score sheet.

Degelow was able to lead tactical formations in the absence of the *Staffelfuhrer* and his rate of personal victories increased. The death of his commander during a

⁴⁵ Kilduff, P., *Black Fokker Leader*, p. 96.

⁴⁶ Kilduff, P., *Black Fokker Leader*, p. 96.

⁴⁷ Kilduff, P., *Black Fokker Leader*, p. 102.

sortie on July 1918 meant that Degelow 'was now in command.'⁴⁸ His initial actions as commander reflected one of the key roles of tactical command in the air war, that of an instructor. Degelow assessed that the key weakness to his unit was his 'the Staffel members' varying experiences and overall lack of success'.⁴⁹ His answer was to institute 'a rigorous flying schedule. In addition to our daily missions over the lines, we spent considerable time flying safely behind the lines, where we could practice what I felt to be the tactics needed to defeat the enemy.'⁵⁰

After the war Degelow looked back on the emphasise he placed on training and determined that 'we proved the value of this practice in the final months of the war by doubling and quadrupling our score of enemy aeroplanes brought down.'⁵¹ Unfortunately the record isn't as clear on this matter as Degelow is. *Jasta 40* did register a high rate of victories in the final months of conflict, but the rate achieved is not notably different. Up until July, when he took over, *Jasta 40* was a relatively new unit and had only claimed 15 victories. The rate of success did increase, but only slightly – by the Armistice the Jagdstaffel had accounted for 54 (confirmed) enemy aircraft. While the victories did mount, the value of Degelow's training can perhaps be seen in the success of his subordinates over this period. *Ltn* Rosenstein had three kills at the start of July; by November he was an ace with nine victories. *Ltn* Gilly's score increased from two to seven, and *Vzfw* Groll achieved three of his four victories over the same period. A handful of other pilots scored one or two kills, but the overall trend is clear – while Degelow remained the highest scoring pilot in *Jagdstaffel 40*, being responsible for 56% of the unit's claims, under his leadership three more pilots started to amass personal scores. Most importantly, Degelow's training allowed Rosenstein, Gilly and Groll to achieve a higher rate of success than that initially achieved by Degelow in *Jasta 7* at the start of their careers.⁵² Generating scoring fighter pilots was one of the most crucial aspects to the commanders of the *Jagdstaffeln*, as it was these experts who would become the future commanders.

Degelow's observations on the nature of *Jasta* leadership reinforce the importance of the commander. The necessity to set an example by actively scoring in the air has already been identified as a necessity in the *Luftstreitkräfte*, and this is further reflected in Degelow's views:

⁴⁸ Kilduff, P., *Black Fokker Leader*, p. 110.

⁴⁹ Kilduff, P., *Black Fokker Leader*, p. 110.

⁵⁰ Kilduff, P., *Black Fokker Leader*, p. 112.

⁵¹ Kilduff, P., *Black Fokker Leader*, p. 112.

⁵² Kilduff, P., *Black Fokker Leader*, Appendix I, pp. 180 – 183.

The unity of purpose necessary to a Jagdstaffel's efficiency depended greatly upon the confidence its members had in their leader. Manfred von Richthofen understood this fact of life and set an example of bravery and excellence that his subordinated followed keenly. He was well remembered for flying the same type of aircraft issued to other pilots and squadrons up and down the Front, but he displayed a certain intangible spirit of victory that contributed greatly to the success of his *Staffel-Kameraden* [squadron-mates]. Richthofen knew how to arouse enthusiasm in his men and, above all, how to inspire new members of his famed Jagdstaffel 11.⁵³

The final words of Degelow return to the importance of collective and individual training. Also of interest, too, is the recurring influence, importance and inspiration of the familiar names of Richthofen and Boelcke:

In the spirit of Richthofen, from before dawn into the last rays of twilight, I led the zealous neophyte fighter pilots on flights to airfields all along the Front. The new men who had not yet gone up to trade shots with the enemy could be found in the company of their more experienced comrades, studying with the aid of a telescope the traits of various enemy aircraft. By such observation, which often lasted for hours, we fighter pilots studied the manoeuvres needed to shoot down an enemy airplane. This form of military training – first practised by Richthofen's mentor, the celebrated ace Hauptmann Oswald Boelcke – was the elementary education of the young fighter pilots, during which time, with the coaching of their more experienced comrades, they prepared to enter the great and deadly tournament in the skies.⁵⁴

Degelow was a *Staffelführer* from mid-1918 until the Armistice in November. Boelcke was dead by the time Degelow reached the front and Manfred von Richthofen would not see the end of the war. Despite this, the influence and importance the 'greats' had upon the wider Luftstreitkräfte can be seen in Degelow's example, both in the way he modelled himself and in the esteem in which they were universally held.

* * *

The origins of the Luftstreitkräfte in Oswald Boelcke's teachings and the command of both *Jasta 2* and the more 'ordinary' *Jagdstaffeln* illustrate the importance of the expert *Jagdflieger* to the wider service. Based off the pioneering example and early success of Immelmann and Boelcke, the Luftstreitkräfte evolved a tactical organisation supporting and encouraging the success of her key pilots. It was extremely competitive and exceedingly hierarchical and command positions were directly aligned to demonstrated proficiency as a *Jagdflieger*. Selection criteria for a command appointment were centred upon one's combat performance, with the organisation only wanting capable combat pilots leading the fighter units. Once in a position of command ongoing success in air combat was essential, too.

⁵³ Kilduff, P., *Black Fokker Leader*, p. 112.

⁵⁴ Kilduff, P., *Black Fokker Leader*, p. 112.

The Luftstreitkräfte had created an organisation that was built around her expert commanders and remained, even as the odds swung against her, a potent tactical force. Yet this elevation of tactical efficiency as the primary focus for the force had its drawbacks. It was taken to such an extreme that an inner elite was created within the already-select fighter force, resulting in the likes of the celebrated *Jasta 2* and 11 but denying the wider air service access to the skill and command of the most successful *Jagdflieger*s. This tactical focus dominated the Luftstreitkräfte, and while it enabled early success it also inhibited the ability of the organisation to sustain the growth and expansion that was necessary for the air war of 1918. Both the advantages and the limitations of this system can be seen in the rise of Germany's most accomplished pilot and commander, Manfred von Richthofen.



Figure 22: Franz Walz. Source: www.theaerodrome.com



Figure 23: Carl Jacobs. Source: www.theaerodrome.com



Figure 24: Carl Degelow. Source: www.theaerodrome.com



Figure 25: Lothar von Richthofen. Source: www.theaerodrome.com



Figure 26: Enst Udet in front of his Albatros DIII. Source: www.wikipedia.com



Figure 27: Manfred von Richthofen (sitting in an Albatros DIII) surrounded by pilots of *Jagdstaffel 11*. Source: www.wikipedia.com

CHAPTER FOUR

‘EXEMPLARY DARING AND CONVICTION’

MANFRED VON RICHTHOFEN AND COMMAND OF A *JAGDGESCHWADER*

While Carl Degelow ended the war as an accomplished fighter pilot, his fame, stature and legacy did not approach that of the elite few whose personalities and influence dominated the Luftstreitkräfte. In contrast with Degelow’s relative obscurity the profile, personality and influence of Manfred von Richthofen was enormous. In a culture that worshiped the elite, Richthofen was the ultimate fighter pilot and, correspondingly, was accorded the highest command available at the time.

Manfred von Richthofen’s Rise

An ordinary two-seater observer and pilot for most of 1915 and 1916, Manfred von Richthofen became one of Boelcke’s leading protégés in *Jasta 2*.¹ Proving himself a quick learner, an excellent marksman and an exceptional tactician, Manfred’s rise to fame and command within the Luftstreitkräfte was rapid. While Manfred contributed to the success of *Jasta 2*, under his command *Jasta 11* would eclipse the success of even Boelcke’s famed *Jagdstaffeln*, with Richthofen transforming his own *Jasta* into the highest scoring, most successful fighter unit of World War One. In some ways he was lucky, as his promotion to *Staffelführer* coincided with the arrival of the newest German fighter, the Albatros DIII, a model that would hold a substantial qualitative advantage over their British opponents until May of that year. Additionally, Richthofen was able to continue the German tradition of hand-picking pilots to join him. His first transfer was *Leutnant* Lubbart, a two-seater pilot in a neighbouring FA unit who had ignored the limitations of his aircraft to defeat a British scout.² The new commander used his authority to other ends, too, setting ‘a new tone in air combat leadership’ by making ‘a dramatic change in *Jasta 11*’s appearance.’³ Realising that aerial camouflage was a virtual impossibility, his decision to wash his Albatross in a striking all-over red finish was followed with his subordinates painting large portions of their aircraft in vivid colours, allowing identification of each other in mid-flight.⁴ The bold

¹ Franks, N. Et al, *Above the Lines*, p. 17.

² Kilduff, P., *The Red Baron Combat Wing: Jagdgeschwader Richthofen in Battle*. London: Arms and Armour Press, 1997, p. 60.

³ Kilduff, P., *The Red Baron Combat Wing*, p. 61.

⁴ Kilduff, P., *The Red Baron Combat Wing*, p. 61.

colours added to the mystique and legend of Richthofen as the 'red Baron' and of his entire 'circus', with *Jasta 11*'s appearance being visually striking. This was captured in a report filed by a journalist who visited *Jasta 11* in April:

At the edge of the open airfield, five biplanes stood in a row, ready for take-off... all were painted differently. From a distance, they looked like brightly coloured giant insects, like a swarm of radiant butterflies which were sunning themselves on the ground with wings spread wide. The principle of looking as possible like the colour of the sky was abandoned. Invisibility, it was explained to me, one cannot obtain. Indeed one runs the risk of confusing enemy and friendly aircraft. These different markings on the fuselages are clearly visible in the air, and one recognises the others in a fight and can support them.⁵

Richthofen's appointment to *Staffelführer* of *Jasta 11* did not halt his rapid accumulation of victories. Emulation amongst his subordinates followed, and even in the temporary absence of Manfred *Jasta 11* pilots continued to achieve kills. The aggressive nature of the *Jasta 11* pilots at this point has been attributed to Manfred's example – '*Jasta 11* was inspired by its leader and took the initiative to look for opportunities even in his absence.'⁶ Success bred success, and Richthofen's rising fame allowed him to concentrate the most promising fighter pilots of the time under his command. Richthofen had been in command of *Jasta 11* for less than a month when he secured his second transfer.⁷ In mid-February 1917 Richthofen claimed, in correspondence with a member of the General Staff, that 'I have never had anything to do with *Kanonen*... Only with beginners. My gentlemen always come fresh out of flying school.'⁸ For whatever reason, Richthofen was greatly overstating his abilities as a trainer and understating his powers as a recruiter. Richthofen manifestly did not deal with beginners as a norm. As has been shown, the reach of Richthofen's powers allowed him to draw the most promising pilots to *Jasta 11* – which he did, frequently. What cannot be denied, though, was Manfred's ability to identify future experts:

Manfred von Richthofen was particularly good at talent-spotting and the 1918 stars of the Circus...were pulled straight from two-seater units...⁹

At the same time Richthofen was ruthless in culling those under him who did not meet his standard of excellence – determined, in accordance with the German definition of success for fighter pilots, by their ability to destroy enemy aircraft. It was for this reason

⁵ Wegener, G in Van Wyngarden, G., '*Richthofen's Circus: Jagdgeschwader Nr 1*', p. 11.

⁶ Kilduff, P., *The Red Baron Combat Wing*, p. 62.

⁷ Kilduff, P., *The Red Baron Combat Wing*, p. 62.

⁸ Kilduff, P., *The Red Baron Combat Wing*, p. 69.

⁹ Franks, N. Et al, *Above the Lines*, p. 21.

that Sergeant Hans Howe was posted out of *Jasta* 11 in February 1917, having failed to score a victory in the month he was with Richthofen's *Jagdstaffel*.¹⁰

Manfred's pursuit of success can be seen in the output of *Jasta* 11. By the start of March 1917 *Jasta* 11 had logged almost four times as many sorties and flying hours than any other unit in the 6. *Armee* sector.¹¹ Richthofen's belief in the value of training was shared by most commanders, but his ability to instruct and develop the skills required to succeed as a fighter pilot set him apart from his peers. Building upon the example of Boelcke, Richthofen can be viewed as a very effective mentor to his newer pilots, identifying exactly what it was that allowed a fighter pilot to be successful.

The most important elements of flying, in my view, are skill in taking off and landing, and the personal courage with which a man goes after the enemy. To me, it is a thousand times better to have a daring fellow who might have difficulty making a left turn, but who goes hell for leather after the enemy, than the most elegant Johannisthal [training establishment] airshow airman whom I cannot bring over the Front. We need daredevils, not aerial acrobats!¹²

The results speak for themselves. As the British forces commenced their Arras offensive in March 1917, 27 aircraft 'fell to the guns of the Staffel'¹³. That month *Jasta* 11 was the most successful *Jagdstaffel* in service, and the efforts spent in acquiring and training his pilots was evident-Schafer claimed seven victories in March, Wolf five, Allmenröder three and Richthofen himself ten.¹⁴ These scores represented a prodigious rate of scoring for early 1917.

That same month Lothar von Richthofen, Manfred's younger brother, joined *Jasta* 11. Having followed the standard route of fighter pilots, Lothar had transferred from the cavalry into the air service as an observer. At that point the shadow of Manfred took over and Lothar did not follow the usual posting to a FA unit or even to a normal *Jasta*. Instead, he arrived as an unproven pilot at *Jasta* 11, no doubt 'at the direction of senior officers in Berlin who understood the publicity and morale value of having two heroic brothers, flying and fighting side by side.'¹⁵ Manfred's instruction, Lothar's desire to prove himself worthy, the qualitative advantage provided by the Albatros DIII and the target-rich skies over Arras were a fertile proving ground for any aspiring fighter pilot. Lothar von Richthofen's obvious aptitude for aerial combat shone through, too, and he started accumulating aerial victories at an impressive rate.

¹⁰ Kilduff, P., *The Red Baron Combat Wing*, p. 62.

¹¹ Kilduff, P., *The Red Baron Combat Wing*, p. 69.

¹² Kilduff, P., *The Red Baron Combat Wing*, p. 69.

¹³ Van Wyngarden, G., '*Richthofen's Circus*' p. 8.

¹⁴ Van Wyngarden, G., '*Richthofen's Circus*' p. 8.

¹⁵ Kilduff, P., *The Red Baron Combat Wing*, p. 74.

April 1917 was a tour de force for *Jasta 11* and by extension a tour de force for Manfred von Richthofen, with the RFC throwing a large number of inferior aircraft over German lines as the Battle for Arras intensified. By now *Jasta 11* was, as the historian Greg Van Wyngarden described them, ‘a formidable, experienced and eager combat team’.¹⁶ Manfred had made his mark on his unit by drawing together some very talented pilots, creating the conditions through which they could excel and continuing to lead by example, surpassing the previous record set by Boelcke. Again, *Jasta 11*’s records for April are telling: Manfred von Richthofen claimed 21 kills, Lothar 15, Wolff 23 and Schafer 15.¹⁷ Other pilots scored smaller numbers, with *Jasta 11*’s war in April resembling nothing short of a massacre of British aircraft. They ended April as the top scoring *Jagdstaffel* amongst the Luftstreitkräfte and had achieved ‘legendary status’ amongst the German military and public.¹⁸ Despite their toll on the British in ‘Bloody April’, the casualties were not totally one sided. The Luftstreitkräfte had bled the British heavily but they too had lost a significant number of aircraft and men in the ensuing combat. *Jasta 11* came off lightly with two pilots killed in action, further testament to the skill and expertise of Richthofen’s unit.¹⁹

‘Bloody April’ represented a period of immense success for *Jasta 11* and Manfred von Richthofen. Manfred had proven that, even though he had the luxury selecting the most promising pilots, he was still able to train and mentor his subordinates with considerable degrees of success. Lothar von Richthofen’s rapid ascent as an accomplished *kanone*, despite having arrived at *Jasta 11* as an unproven and inexperienced single-seat fighter pilot, is testament to Manfred’s instruction. Peter Kilduff believed that *Jasta 11*’s conduct over April was exactly that, evidence of Manfred’s abilities as a trainer:

The rising success of Schafer, Wolff and Festner was a tribute to their training under Richthofen and adherence to his tactics: they singled out their targets, pursued them, manoeuvred into advantageous positions and then systematically destroyed them. Nothing fancy; just good flying and straight shooting.²⁰

Accounts of *Jasta 11* from the period in question support this assertion. Lieutenant Erwin Bohme, one of Richthofen’s comrades from his time in *Jasta 2*, described his impressions of *Jasta 11* in a letter home after visiting Manfred over Easter:

¹⁶ Van Wyngarden, G., ‘*Richthofen’s Circus*’, p. 9.

¹⁷ Van Wyngarden, G., ‘*Richthofen’s Circus*’, 9

¹⁸ Van Wyngarden, G., ‘*Richthofen’s Circus*’, p. 9

¹⁹ Kilduff, P., *The Red Baron Combat Wing*, pp. 76 – 87.

²⁰ Kilduff, P., *The Red Baron Combat Wing*, p. 79.

It is astonishing the heights to which he has brought his Staffel in such a short time. He has gathered around him really good people who would walk through fire for him... Richthofen himself is the picture of fitness; one notices that, although he goes up five times on many days, there is no trace of fatigue about him. What I like is that he is so completely without pretension, a refined but quite natural man...²¹

While Richthofen's ability to attract the most promising pilots into *Jasta 11* was instrumental in his success there were limits to his reach. Anticipating rapidly approaching leave at the end of April, Manfred wanted a strong leader to continue his success with his *Jagdstaffel* in his absence. His preference was Bohme himself, who was reportedly thrilled by the offer. He doubted, though, 'whether even Richthofen's influence could free him to return to the front [Bohme being posted to the Valenciennes training establishment at that time].'²² The organisational need was too great for even Richthofen's influence and Bohme was not released from Valenciennes for another few weeks. The propaganda value of having the younger Richthofen take command was too great, so when Manfred left *Jasta 11* on leave Lothar became the acting *Staffelfuhrer*.

During Richthofen's absence the RFC underwent a period of resurgence, introducing a number of new scout designs to their frontline squadrons. The period of qualitative dominance enjoyed by the Germans with their Albatros fighters was over. This did not immediately impact on the success of *Jasta 11* under Lothar, but the return of air parity was worrying their commanders. A 6. *Armee* dispatch reported that 'The increase in British fighter squadrons impedes the activity of our reconnaissance and artillery-spotting crews significantly...'²³ Kurt Wolff, one of the rising stars in *Jasta 11*, reported that 'Single-seat fighters, which had been greatly neglected by the British at the beginning of the year, have in recent times appeared in great numbers over the 6. *Armee* Front. Nieuports, SPADs, Triplanes, new F.E. single-seaters and another type, probably a Bristol single-seater, are over and behind the Front in greater numbers.'²⁴ Attrition of *Jasta 11* pilots was constant given the deadly nature of the air war. Shortly after being posted out of *Jasta 11* and into command of his own unit, one of Manfred's key protégé's, Schafer, was shot down and killed. Despite the fact he had being in combat with a formation of two-seater aircraft, the fact that Schafer was flying an Albatros only added to the pessimism surrounding the German fleet. Richthofen

²¹ Bohme, E in Kilduff, P., *The Red Baron Combat Wing*, p. 79.

²² Kilduff, P., *The Red Baron Combat Wing*, p. 83.

²³ Kilduff, P., *The Red Baron Combat Wing*, p. 92.

²⁴ Kilduff, P., *The Red Baron Combat Wing*, p. 92.

changed his plans on leave and used his influence in Berlin to shape the procurement decisions of his service.²⁵

The influence accorded to the *kanone* in the Luftstreitkräfte was phenomenal, as can be evidenced by Manfred's role in the evaluation of aircraft designs. Despite the marked superiority of the Albatros over the previous month the appearance of a British triplane in RNAS service had created a stir in the German ranks. Richthofen had claimed one as his last victory before going on leave, and other reports had filtered in of the unusual three-winged design providing 'extraordinary' performance benefits. There is no evidence that Manfred sung the praises of the triplane configuration, but the appearance of the triplane must have been on his mind when he lamented the rapidly apparent limitations of the Albatros family. These sentiments had grown through the German air service, ordering their aircraft manufacturers to provide tri-plane prototypes for evaluation. In short order the Fokker Dr.1 would be selected as one of the major fighter designs for the German air service. While a very manoeuvrable aircraft – 'an acrobatic champion, quite unlike any contemporary fighter'²⁶ – the Dr.1 lacked speed and power, crucial performance characteristics for fighter aircraft. The tactics espoused by Richthofen and other successful aces emphasised the importance of attacking from a position of advantage rather than engaging in the twisting and turning manoeuvres inherent to the dog-fight. The triplane design, then, was less suited to the air war than the Germans initially believed. Their counter-parts in the British establishment had accepted this, with the Sopwith Triplane design seeing only limited service before being replaced by more conventional biplanes. German manufacturers, too, would find a vastly superior aircraft in a return to the conventional biplane design of the Fokker DVII that would replace the Dr.1. The rapid and almost irrational adoption of the triplane was a mistake by the Luftstreitkräfte that had been fuelled by the alarm and despondency spread by Richthofen and his peers as to the suitability of the Albatros. It would be a costly mistake, and German dominance in aircraft design would not be regained until April 1918.

²⁵ Kilduff, P., *The Red Baron Combat Wing*, p. 100.

²⁶ Kilduff, P., *The Red Baron Combat Wing*, p. 99.

The Creation and Command of the first Fighter Group

Manfred returned to *Jasta* 11 in early May but he wouldn't spend long as *Staffelführer*. Lothar had recorded in May that the 'British have imitated us and, by using a great number of fighter units, want to snatch back moral superiority from us.'²⁷ The Germans had managed to retain a numerical advantage in the majority of their air battles by fighting as a *Jasta* whenever they expected to encounter a large number of British machines, whereas the RFC and RNAS had persevered in the use of discrete flights for most of the Arras offensive. It was apparent that this situation was changing, and the German response followed the same, proven trend that had seen the KeK organisation morph into the *Jagdstaffeln*. To this end the chief of the Luftstreitkräfte, General von Hoepfner, announced the formation of a fighter group that combined four *Jasta* into a single tactical entity. The purpose of the organisation was stated, briefly as being to '...attain and maintain air supremacy in sectors of the front as required.'²⁸ Manfred von Richthofen was the most obvious choice for the new post, being both the highest scoring pilot and having achieved immense popularity and power while in command of *Jasta* 11. Von Hoepfner had no doubt as to the suitability of Manfred:

...in the personage of Rittmeister [Cavalry Captain] von Richthofen... [it] received a commander whose steel-hard will in relentlessly pursuing the enemy was infused in every member of the Geschwader.²⁹

Herman Goring, who ended the war as the *Staffelführer* of *Jasta* 11, wrote in the unit's history that

...there originated in the person of Rittmeister von Richthofen a fighter pilot whose excellent, wide-ranging leadership skills had to be put to better use than what was possible at the level of a *Jagdstaffel*.³⁰

The new organisation of *Jagdgeschwader* JG1 or 'fighter group number one' represented a mobile unit that could generate between around 60 aircraft at any point in time for the sole purpose of air combat.³¹ It was taking the Luftstreitkräfte down the path of further specialisation, setting aside a unit whose sole job was to find and destroy allied aircraft. The Commander-in-chief of *Armee* 6 made that clear in a July dispatch:

Combating the enemy captive balloons, upon which the bases a large part of his artillery observation, has become very necessary, it is to be primarily carried

²⁷ Van Wyngarden, G., '*Richthofen's Circus*', p. 14.

²⁸ Van Wyngarden, G., '*Richthofen's Circus*', p. 15.

²⁹ Kilduff, P., *The Red Baron Combat Wing*, p. 107.

³⁰ Van Wyngarden, G., '*Richthofen's Circus*', p. 15.

³¹ Franks, N. Et al, *Above the Lines*, p. 18.

out by means of the Army Groups... [Flights] of the Combat Group 'SF des AOK' can be requested anytime... for the amplification of this harassing fire.

Jagdgeschwader I is... to keep the attack zone free of enemy aircraft.³²

Manfred's task was one of pure air superiority. He was not to interest himself in ground attack duties or even balloon hunting missions as they had been tasked to the two-seater units or 'ordinary' *Jagdstaffels*. His was one purely of fighting RFC and French aircraft.

Under his command Manfred had his famed *Jasta* 11 in addition to *Jasta's* 4, 6 and 10. Van Wyngarden described *Jasta* 4 as having 'a distinguished pedigree, a seasoned commander and a core of promising pilots in its ranks.'³³ This is inaccurate. The commander, Obertleutenant von Doring, had only been a *Staffel* leader for three months and had only accrued three victories in this time.³⁴ Von Doring did have a strong set of subordinates under his command however, including at least one ace.³⁵ *Jasta* 10 had an unimpressive record under its commander Oberleutenant von Althaus, who had not added to his victory list of eight kills since July 1916. *Jasta's* 4 and 10 were far from spectacular units when combined into the fighter wing. *Jasta's* 6 and 11 were better off, with *Jasta* 6 under the command of the accomplished *Oblt* Dostler, a 12 victory ace, with the famed *Jasta* 11 now commanded by Wolff who had 31 victories to his name.³⁶ The *Geschwader* sub-units, especially those of JG1, are frequently claimed as being all 'elite' but as can be seen above this was not the case, with Norman Frank's authoritative study of German combat records confirming that the majority of the units within the *Geschwaders* were ordinary *Staffeln*.³⁷ There simply were not enough of the expert *Jasta* to fill such demand. Instead Richthofen and, later, his other *Jagdgeschwader* peers would have to cope in the same way they had in the past, by using their personal profile and the prestige of their position to attract and source promising pilots from the ordinary units. The composition and history of a *Jasta* mattered less than the abilities and influence of their current commander.

On assuming his new command Richthofen concentrated the four *Jagdstaffeln* under his command, positioning them geographically close to each other (while the *Jagdstaffel* would normally occupy different airfields, all would be connected by

³² Bodenschatz, K. (Translated by Hayzlett, J.), *Hunting With Richthofen: The Bodenschatz Diaries*. London: Grub Street, 1998.

³³ Van Wyngarden, G., '*Richthofen's Circus*', p. 17.

³⁴ Franks, N. Et al, *Above the Lines*, pp. 99 – 100.

³⁵ Kilduff, P., *The Red Baron Combat Wing*, p. 108.

³⁶ Kilduff, P., *The Red Baron Combat Wing*, p. 109.

³⁷ Franks, N. Et al, *Above the Lines*, p. 18.

telephone lines directly to Manfred)³⁸ and established the manner in which they would operate. He would continue to lead by example, commanding the very first *Jagdgeschwader* sortie himself, during which he scored his 57th victory which doubled as JG1's first kill. Manfred's first meeting with his *Staffelführer*'s allowed him to outline the tactics his wing would follow:

...no further individual missions [would] be carried out by pilots on their own initiative. Staffel- or Geschwader-strength sorties would be authorised on the basis of information about enemy air activity that he received from front-line sources, the four Staffel commanders being informed simultaneously by telephone.³⁹

Richthofen's tactics followed the same pattern of combat he had espoused as a *Jagdflieger* and as a *Staffelführer*. He fought back against his command chain when they tried to task his *Jagdstaffeln* on routine escort missions, preferring to keep them together for concentrated patrols or holding them in reserve to respond to reports of British or French formations over German lines.⁴⁰ In other areas his policies remained unchanged. Commanders or pilots who did not achieve success were quickly replaced. His ability to hand-pick individuals to serve with his *Jagdgeschwader* remained. In March 1918 his adjutant, Oblt Karl Bodenschatz, wrote that

The Rittmeister selects his people himself. During the winter, he travelled around the various flying schools and *Jastas* and viewed the operations. He has long since stopped having his fighter pilots assigned through official channels. He is allowed to get them himself.⁴¹

Despite Manfred's influence as wing commander, the success of the *Jagdstaffeln* themselves still came down largely to the skill of the individual *Staffelführer*. According to the Commanding General's weekly summary as of July 1917, three of the four JG1 *Jagdstaffeln* were out-performing the entire sector, *Jagdstaffeln* 4 and 6 by a wide margin. This can be seen clearly in Figure 28, with the JG1 units grouped to the left.

³⁸ Van Wyngarden, G., '*Richthofen's Circus*', p. 21.

³⁹ Von Hoepfner in Kilduff, P., *The Red Baron Combat Wing*, p. 110.

⁴⁰ '...the Geschwader is being broken up by deployment of individual Staffeln. On days of major combat, the deployment of several Staffeln at the same time and in the same area is necessary. The Staffeln which must provide cover for the Kampfstaffeln leave the Geschwader formation for the greater part of the day. A pilot who has already been called on for cover flights during long-range missions and bombing flights, cannot, on the same day, fully and completely fulfil his duty as a fighter pilot because, for successful execution of aerial combat, he must be unfatigued and completely fresh.' von Richthofen, M. in Bodenschatz, K., *Hunting With Richthofen*, p. 35.

⁴¹ Bodenschatz, K., *Hunting With Richthofen*, p. 56.

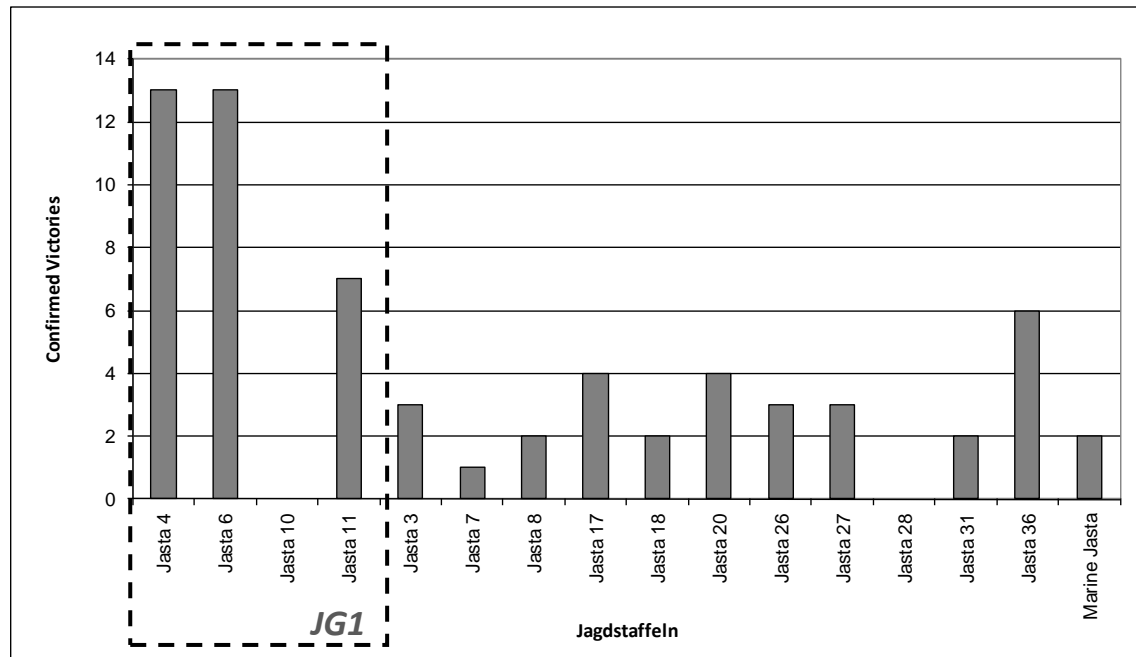


Figure 28: Confirmed victories attributed to single-seat units in the 4 Armeekorps sector over 2 weeks in July 1918, JG1 units highlighted. Source: Kilduff, P., *The Red Baron Combat Wing*, p. 119.

The poor performance of JG1's *Jasta* 10 is also readily apparent. This poor showing can be traced to the commander of *Jasta*, with the *Staffelführer* at the time, *Oberleutnant* von Althaus, struggling as a fighter pilot himself despite a promising start as a Fokker Eindecker *kanon* in 1916. Richthofen had him replaced at the end of July. After he departed it emerged that he had been progressively losing his eyesight.⁴² In place of Althaus, Manfred used his influence to secure another one of the German's prized aces, Werner Voss, who would finish the war as Germany's fourth-equal highest scoring pilot. Voss had taken over *Jasta* 29 only five days earlier,⁴³ but in keeping with the German service's prioritisation of the elite units, *Jasta* 11 was a far more prestigious command and was prioritised over the more 'ordinary' *Jasta* 29. Thus Voss arrived at *Jagdgeschwader* JG1, and under his influence and example *Jasta* 10's lacklustre performance was quickly reversed.

With the creation of the *Jagdgeschwader* tactics and doctrinal employment of the fighter units became an increasingly prominent concern to Richthofen and the wider *Luftstreitkräfte*. The new opportunities for employment and control of the formation brought out differing views as to the conduct and tactics that should be followed. Richthofen clashed with his immediate superior over this matter, seeking greater levels

⁴² Kilduff, P., *The Red Baron Combat Wing*, p. 128.

⁴³ Kilduff, P., *The Red Baron Combat Wing*, p. 128.

of independence in his ability to task or hold in reserve his *Jagdstaffeln*.⁴⁴ It was an interesting clash; Richthofen was a famed and inspirational air commander, whose views directly opposed that held by a Hauptmann Otto Bufe. Bufe was a product of the Prussian military academies and had served with distinction, both in peacetime and in combat. Bufe believed that the answer to opposing British air power lay in orchestrating pre-planned flying programmes that would concentrate JG 1 *Jagdstaffeln* in the air at the same time, each mutually supporting each other at a different attitude. Richthofen believed that he needed to retain the flexibility to deploy his units as he saw fit, responding to the situation of British flights as they were reported. Of equal rank, and despite Richthofen nominally reporting to Bufe as his superior, it was a clash between a famed personality and a professional staff officer.⁴⁵ Given the importance and influence given to the aces inside the Luftstreitkräfte it could be expected that Richthofen would have won this dispute, especially as he had lobbied for change amongst his contacts outside of his chain of command. The decision did swing in favour of Manfred, with the Commanding General of the 4. *Armee* decentralising the command of his units to Richthofen: ‘... *Jagdgeschwader* JG 1 is available to sweep the attack area of enemy aircraft.’⁴⁶ What is not clear is what caused the shift from Bufe’s patrol programme. It is unlikely that Richthofen’s lobbying had precipitated the decision, as the order was given the same day Manfred sent a letter asking for help.⁴⁷ It is more likely that the ineffectiveness of Bufe’s methods caused the change, meaning that Richthofen’s cause triumphed not because he was arguing it but because Bufe was in fact wrong. It is clear, though, that the responsibility for command and control of the *Jagdgeschwader* rested firmly with the *fuhrer*. This schism in the command chain confirmed that the tactical commander had utmost independence and responsibility for the employment and management of their units, and the staff chain existed solely for administrative and managerial support.

Manfred von Richthofen was pioneering the doctrinal employment of massed airpower at the wing level for the first time in history. His techniques for concentrating, leading and attacking with a *Geschwader* were very similar to those he had used for *Jasta* 11, and appear equally successful. Richthofen organised his command so that he and his units were positioned close to the front, able to quickly respond to reports of Allied activity. In this manner he ran a simple but efficient interception system, ensuring his pilots maximised opportunities for combat and mitigated against the tiring effects of

⁴⁴ Kilduff, P., *The Red Baron Combat Wing*, p. 117.

⁴⁵ Kilduff, P., *The Red Baron Combat Wing*, p. 120.

⁴⁶ von Armin, F in Kilduff, P., *The Red Baron Combat Wing*, p. 121.

⁴⁷ Kilduff, P., *The Red Baron Combat Wing*, p. 120.

escort or regular patrols. As the rest of the squadrons in his sector were tasked with these duties, this was a luxury Richthofen could afford. Richthofen was further advantaged by the employment of JG1 as a shock unit that was moved to the area of greatest need—that is, the sectors experiencing greatest Allied activity. For example, as the British offensive in Flanders opened in June 1917, JG1 was located in support of the defensive effort. As the British shifted their resources towards Cambrai as part of their ‘push’ in November 1917, Richthofen’s unit likewise relocated, fighting the reinforced British air forces in that theatre.⁴⁸ The tendency for JG1 to relocate along the front, similar to the touring nature of a circus show, resulted in the British referring to Richthofen’s command (and, later, the other *Geschwaders*) as a ‘Flying Circus’.⁴⁹

Depending on the tactical situation, Manfred alternated between dispatching independent *Jagdstaffeln* on their own missions or massing them into full *Geschwader*-level sorties. In tactical terms he kept his manner and methods of attack simple. Positioning was crucial, and he would ideally position himself above an enemy formation while cutting them off from their own lines. Richthofen, as leader of the formation, would initiate a diving attack on the enemy. In April 1918, shortly before his death, Richthofen released an *Air Combat Operations Manual*. The contents of his manual summarise the practices he had refined over the past months in command of his fighter wing and show just how simple his concept of fighter wing operations are. They also show how dependent his tactics were on his personal example, with Richthofen leading up to 60 machines from the front. Behind him, spread out to the left, right, above and behind his aircraft were his *Staffel* leaders and 150m behind his *Staffel* leaders were the pilots themselves.⁵⁰ The *Geschwader* leader led the *Jasta* leaders and the *Jagdflieger*s followed in support.

The various *Jagdstaffeln*, each commencing an attacking dive behind their commander, would descend upon the British in what Manfred described as a ‘continuous attack.’⁵¹ This would try and force the British formation to break apart and separate, with the first German *Jasta*, led by the all-red airplane of the commander, either commencing a turning battle on the same level as the British or repositioning themselves for another attacking run. In Richthofen’s view, the violence and shock action of the initial action would destroy the integrity of the British formations:

⁴⁸ Franks, N. Et al, *Above the Lines*, p. 18.

⁴⁹ Franks, N. Et al, *Above the Lines*, p. 18.

⁵⁰ Richthofen, M., in Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 231.

⁵¹ Richthofen, M., in Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 233.

Through the brunt of the first attack and through the absolute will of one of each of us to do battle, the enemy formation will be torn apart.⁵²

While engaged in defensive or offensive turns against the first wave, the British aircraft who were now low on energy, having expended speed and potentially altitude in defensive and often panicked manoeuvres, would be targeted by the subsequent waves of *Jagdflieger*s. There were little measures for tactical control at this stage, with Manfred expressing his view that 'every *Geschwader* battle breaks up into individual combats.'⁵³ The only detail stipulated was that

...it must be rigorously noted that the one who is closest to an opponent is the one who shall fire at him. If two or more are within firing range (100 metres) of the same enemy, then the others must wait either to see if the first attacker has a gun jam, and likewise further battle is hindered and turns away, or [they] must seek a new opponent. I have seen scenes in which about ten to fifteen craft were involved in a fight and followed one Englishman down...One does not help [a comrade] by firing with him, rather than holding back in reserve.⁵⁴

Jagdgeschwader JG 1 was comprised of capable fighter pilots so it could be expected that they would have had an advantage once the battle descended into a dog-fight. The final phase of pitched combat, as chaotic and confusing as it may be, was still simplified by Richthofen into a simple, ruthlessly orchestrated concept:

With one sentence one can cover the theme 'Air Combat Tactics', and that is: 'I approach the enemy until about 50 metres behind him, take aim at him carefully, [and] then the opponent falls.' These are the words with which Boelcke brushed me off when I asked about his trick. Now I know that is the whole secret to shooting down [another aeroplane].⁵⁵

Manfred also emphasised the importance of thorough briefings and debriefings, believing that 'after every *Geschwader* flight a discussion is the most important instructive activity.'⁵⁶

In addition to tactics and procedures, Richthofen also recorded what he thought was essential in his leaders:

From *Ketten*⁵⁷-, *Staffel*-, or *Geschwader* leaders I require the following: He knows his pilots thoroughly. The way the *Staffel* [functions] on the ground is the way it will be in the air.

Therefore, these are the prerequisites:

⁵² Richthofen, M., in Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 233.

⁵³ Richthofen, M., in Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 238.

⁵⁴ Richthofen, M., in Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 233.

⁵⁵ Richthofen, M., in Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron* p. 238.

⁵⁶ Richthofen, M., in Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron* p. 233.

⁵⁷ A *Ketten* was a pair of aircraft. This was used for command and control purposes, providing every *Jagdflieger* with someone to follow and someone to look out for them, but was not a formation that operated independently of the *Jagdstaffel*.

1. Comradeship.
2. Strict discipline.

Everyone must show absolute trust in the leader in the air. If this trust is lacking, success is impossible from the outset. The *Staffel* gains trust by [the leader's] exemplary daring and the conviction that [he] sees everything and is able to cope with every situation.⁵⁸

The qualities that made a *Jagdflieger* an expert normally made them a successful commander, too: namely a disciplined and dedicated approach to combat flying, an awareness of what skills and tactics worked in aerial combat (which, in turn, allowed the pilot to instruct others based off their experience) and the aggressive yet astute attitude needed to press home an attack despite the danger were all traits that allowed a pilot to succeed, both as a fighter pilot and as a commander. These are all referenced, albeit in different terms, by Richthofen's qualities above. Sometimes, though, personality traits rendered a person unsuitable or disqualified them from becoming a successful commander. This was seen in *Jagdgeschwader* JG 1 in the case of Lieutenant Wursthoff. Despite a personal total of 27 victories at the time of his relief, he proved himself an adept pilot but immature and thus an unsuitable commander for *Jasta* 4. His replacement was *Leutenant* von der Osten, a less successful *Jasta* 11 pilot (having had only 5 victories) but noted for his maturity. der Osten himself recalled of his predecessor that:

Leutenant Wursthoff was a most dashing and successful fighter pilot. For this reason he had being assigned command of *Jasta* 4 by Richthofen, at the age of 19!... I heard that they did not like him very much there. He was... younger than all his pilots, and he had a very cheeky way. Apart from not being a very sympathetic man, he reported victories which he did not always check. So Richthofen relieved him as *Staffel* leader.⁵⁹

The normal precedent for command succession appears to have been made through reference to the victory tallies however it was possible, as in the case of Wursthoff, that they would disqualify themselves from the appointment once promoted. Richthofen appears to have become more circumspect in his permanent appointments after the *Jasta* 4 situation and had Ernst Udet, transferred into *Jasta* 11 as the intended *Staffelführer*, undergo a trial period with the unit before being confirmed in the position.⁶⁰

At the *Jagdgeschwader* level of command, too, issues arose. Manfred von Richthofen appears to have been both untouchable and faultless, despite his

⁵⁸ Richthofen, M., in Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 235.

⁵⁹ van der Osten in Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 176.

⁶⁰ Kilduff, P., *The Red Baron Combat Wing*, p. 176.

manoeuvres against his nominal superior Bufe at one point. This can largely be attributed to his incomparable aura of success within the Luftstreitkräfte as the leading fighter pilot of the war. The recollections of his adjutant Bodenschatz paints an image of a mature, quiet and aristocratic but occasionally humorous Prussian officer who was very experienced for his twenty-six years of age. Richthofen's image was flawless, and if any of his contemporaries criticised him, none of those sentiments have survived through to today. There are indications that his management practices declined in his later days in command of *Jagdgeschwader* JG 1. Having being shot down twice, he had not survived unscathed – one such incident saw a bullet ricochet off his skull, leaving an open cut to his head and seeing him hospitalised for over a week.⁶¹ By Manfred's own admission this war wound was taking a toll on him towards the end of his life:

I am in wretched spirits after every aerial combat. But that is surely one of the consequences of my head wound. When I put my foot on the ground again at the airfield, I go to my four walls, I do not want to see anyone or hear anything. I believe that [the war] is not as the people at home imagine it, with a hurrah and a war; it is very serious, very grim...⁶²

His 'wretched spirits' and war weariness glimpsed in his above quote, written in April 1918, belie the symptoms of growing combat fatigue. Increasing levels of exhaustion and stress would explain Manfred's spate of spurious decisions that can be interpreted as deteriorating management skills in his final months:

...pilots were transferred in and out of JG I on an almost whimsical basis – some lasted for months, others for only weeks or even days – and these cross-postings continued while JG I was moving...⁶³

There is no further evidence of Manfred von Richthofen's mental state or decision making abilities as he would be shot down and killed, most likely by ground fire, on 21 April 1918 only a few weeks after he wrote about feeling 'wretched'. Richthofen hadn't been instrumental in pioneering air combat or in developing the techniques needed to down other aircraft – that had been done before him by his mentor Boelcke and, to a lesser extent, Immelmann – but he did perfect the skills and, confronted by the massed formations of 1917 and 1918, accrued an impressive victory score. Richthofen's success was exponential and with his acclaim as the greatest fighter pilot came opportunities for command, through which he proved himself a capable leader and manager but, most importantly given the German system, he maintained his performance as a *Jagdflieger*. Even as he commanded unprecedented numbers of

⁶¹ Franks, N. Et al, *Above the Lines*, p. 188.

⁶² Richthofen, M., in Kilduff, P., *Richthofen: Beyond the Legend of the Red Baron*, p. 198.

⁶³ Kilduff, P., *The Red Baron Combat Wing*, p. 193.

aircraft for the time his methods and style of leadership never changed and he always led from the front, setting an example of disciplined application and constant aggression. He demanded similar qualities from his own subordinates and pilots, proving ruthless when it came to replace those under him whom he did not believe measured up. Richthofen was able to build and sustain an elite unit, he was a capable instructor and, above all, his example inspired the pilots underneath him and in the wider Luftstreitkräfte. The air war had matured by the time of his death in 1918 but he had seen the escalation of aerial combat to the fighter group and his image, reputation and influence, much like Boelcke's, far exceeded his span of command and would live on as a legacy within the Luftstreitkräfte long after his death.

* * *

The example of Manfred von Richthofen illustrates the heights to which the Luftstreitkräfte was willing to elevate its experts. At the same time, it also illustrates the limitations inherent to this system that had centralised the practice, development and evolution of fighter combat in select individuals to such a degree that it was unable to sustain more than five *Jagdgeschwaders*.

Above all, Manfred von Richthofen and JG1 represented the elitism inherent to the Luftstreitkräfte's organisation and operations. Richthofen's command absorbed the best pilots and the best equipment and, as a result, created one of the most efficient and effective air units of the war. What it could not do was compensate for the Luftstreitkräfte's organisational and strategic shortcomings. The resources dedicated to JG1 were resources that were denied to the other *Jagdstaffeln* and *Jagdgruppen*, and by late 1918 the opportunity cost of the German system was obvious. Extremely efficient and effective tactically, the system was nonetheless found wanting at the operational and strategic levels. While the Luftstreitkräfte was able to challenge Allied air activity right up until November 1918 it had done so from a defensive and therefore reactionary posture for much of the war. As Allied air power increased in scale and potency, the Luftstreitkräfte was unable to adapt to meet the challenges of massed air combat. This can, in part, be attributed to a situation brought about through Germany's deteriorating strategic situation and due to the Luftstreitkräfte's system that prioritised tactical efficiency above all else.

Manfred von Richthofen's leadership and the wider culture of command within the Luftstreitkräfte need to be assessed within this context. The success of the likes of Richthofen's units and the other elite *Jagdstaffeln* are examples of excellence in patrol leading and tactical command. This excellence, however, was extremely fragile, as was

becoming increasingly apparent towards the end of the war. The defensive posture was an important part of the Luftstreitkräfte's overall strategy, minimising the contribution her *Jagdstaffeln* could make to the ground forces but allowing injured pilots to be recovered and returned to combat, as happened twice in Manfred von Richthofen's career. Lothar von Richthofen, like many of his comrades, would also survive being shot down to return to combat duties.⁶⁴ German strategy demanded a lot from the expert *Jagdflieger*s and they were expected to lead by example indefinitely. The stress of fulfilling this demand in a period of sustained and intense combat took its toll and even Manfred von Richthofen, the most successful of all the *kanonen*, showed signs of acute combat fatigue and exhaustion before he was killed. Although incomparable as a combat pilot, his contribution to the German war effort remained limited to the tactical level.

While the Germans achieved extremely high standards in some tactical commanders, this pursuit of excellence came at a strategic cost. Their wider air service benefitted from the example and the teachings of Oswald Boelcke, Manfred von Richthofen and the other elite *Jagdflieger*s, but they were unable to replicate or expand upon the success of the expert *kanonen* to the scale needed to remain competitive in the air war of 1918.

⁶⁴ Van Wyngarden, G., '*Richthofen's Circus*', p. 66.

CHAPTER FIVE

'A TORCH TO GUIDE OTHERS'

EDWARD MANNOCK AND FLIGHT COMMAND

'I don't think I shall last much longer, Taffy, old lad... when you see that tiny spark come out of my SE, it will kindle a torch to guide the future air defenders of the Empire along the path of duty.'¹

Edward Mannock

While the Germans fostered and rewarded a culture of competitive elitism amongst their fighter pilots, on the other side of the lines the British were approaching the air war very differently. Having been caught unprepared early on in the struggle, both during the arrival of the Fokker Scourge and then during Bloody April as the German hunting *Jagdstaffeln* took their toll on inferior RFC aircraft, the British system had learnt some hard lessons about air combat. From 1917 onwards the British air forces were caught in a period of unrelenting expansion, seeking to overwhelm the Germans through a continuous aerial offensive. This policy was originally tied to Trenchard's observations of the effectiveness of French air power during Verdun.² However, by the end of the war the belief in taking the war to the Germans had taken on a life of its own, and while this belief in the offensive was a source of great discontent to the pilots,³ it was an ingrained doctrine amongst the upper command.⁴ It had also dictated the direction the RAF and her parent organisations, the RFC and RNAS, had taken. Driven by the need to constantly grow the numbers of front-line squadrons there was little appetite for an elevated elite within the organisation. Instead, the British prioritised their conventional force and sought to create as capable an air arm as possible across the whole spectrum of her operations, shunning the German culture of hero-worship for more egalitarian expansion.

While the wider British establishment was reluctant to first acknowledge and then embrace the phenomena of the ace, it was inevitable in a war of mass casualties

¹ Mannock, E., *The Personal Diary of 'Mick' Mannock*. London: Frederick Oughton, 1966, p. 198.

² Bradbeer, T., p. 16.

³ Douglas, S., pp. 179-182.

⁴ Bradbeer, T., pp. 16-18.

that the individualistic achievements of the pilots would become the centre-piece of nationalistic admiration. Despite officialdom's initial reservations, the British aces became an important part of their air war. Similarities with the German experience largely end there, however. The British aces did not automatically ascend to the command their squadrons, and the influence they wielded was not automatically connected to their personal scores.

While the RFC initially attracted the upper classes to their ranks, attrition and the need for capable pilots quickly eroded the unsubstantiated pretences surrounding the selection of pilots. Indeed, some of the most accomplished fighter pilots lived far outside the aristocratic English heritage, with a large number coming from Commonwealth countries – 20-30% of all British pilots were from Canada, Australia or New Zealand.⁵ The man commonly described as 'the greatest patrol leader of any fighter force in World War I'⁶ was typical of the RFC and RNAS fighter pilots in many ways. Edward Mannock was from the lower social classes of Ireland, with his father having served as a Corporal in the Boer war before abandoning his family. Before 1914 Edward worked as a telephone engineer with a love for sports and fondness for music, with no special academic qualifications. He started the war in the trenches before transferring to the air arm, apparently inspired by the exploits of the early British aces.⁷ In the early days of the RFC Mannock would not have been accepted or welcome as a pilot let alone as a flight leader, but by 1917 the priorities and culture of the air forces had changed.

While his lack of social distinction makes Mannock typical of many men who flew in the British air forces, other things about him make him very different. He was old for a pilot at 28 years. There were also rumours that he had defective vision, which appear substantiated although he was manifestly not, as some sources maintain, 'blind in one eye'.⁸

When Mannock arrived at his first Squadron he struggled to achieve any form of tangible success, and in this regard was extremely fortunate to arrive at a time when the balance of the air war had swung away from the Germans. Flying a French-built Neuport fighter in 60 Squadron Mannock was noted as being 'highly strung and sensitive',⁹ in addition to his character traits of being introspective, 'inclined to strong

⁵ Franks, N. Et al, *Above the Lines*, p. 24.

⁶ Jones. I., *Tiger Squadron*. New York: Award Books, 1966, p. 65.

⁷ Shores, C. Et al, *Above the Trenches*, p. 255.

⁸ Douglas. S., *Years of Combat: The First Volume of the Autobiography of Sholto Douglas*. London: Collins, 1963, p. 201.

⁹ Shores, C. Et al, *Above the Trenches*, p. 255.

temper¹⁰ and rather a serious demeanour. He did, however, display an impressive ability to learn. His first victory came on 7 May 1917,¹¹ after which he started to quickly amass a list of personal victories. A month later in June he downed a German aircraft; in July he was awarded two kills; in August five and in September six.¹² His personal tally made him a decorated pilot and, in keeping with British policy, he was rotated into a training establishment for the first few months of 1918.¹³

Edward Mannock returned to the front as a flight commander in 74 Squadron after his short break as an instructor, joining the unit as it was being formed. 74 was one of many squadrons being formed in late 1917 onwards as part of the British attempt to overwhelm the Germans with ever-greater quantities of fighter units. Equipped with the capable SE5a scout, the unit was not wanting in either equipment or manning. Mannock's background and status as an ace gave him the authority and opportunity to shape the new pilots. Whereas the German elite pilots had the chance to select their own subordinates based on demonstrated skill and potential, the British system denied their aces such luxuries. Mannock's perspectives and background, though, did share common themes with the likes of Richthofen, despite their differing environments. Mannock was an average pilot and did not value aerobatic skills.¹⁴ Beyond his awareness of what was required to succeed in the air, Edward Mannock was also an excellent instructor, both in the air and on the ground. Ira Jones, another Irishman, recalled that prior to arriving in France:

the CO detailed Mannock to give us lectures on air fighting... He was a forceful, eloquent speaker, with the gift of compelling attention. After listening to him for a few minutes, the poorest, most inoffensive pilot was convinced he could knock the hell out of Richthofen or any other Hun. Since Mannock's experience of air fighter was extensive, his talks were most valuable.¹⁵

Mannock's success has been attributed to a number of factors, but unlike the German *kanonen* his recorded successes as a fighter pilot did not make him overly famous. Before his death in 1918 he was 'virtually unknown to the British public'¹⁶ and it would not be until after the war, when memoirs started to be written, that the esteem in which he was held within the British air force would become known. *Above the Trenches* notes that Mannock was 'revered by the men who served with him as a great leader

¹⁰ Shores, C. Et al, *Above the Trenches*, p. 255.

¹¹ Shores, C. Et al, *Above the Trenches*, p. 256.

¹² Shores, C. Et al, *Above the Trenches*, p. 256.

¹³ Shores, C. Et al, *Above the Trenches*, p. 255.

¹⁴ Jones. I., *Tiger Squadron*, p. 68.

¹⁵ Jones. I., *Tiger Squadron*, p. 69.

¹⁶ Shores, C. Et al, *Above the Trenches*, p. 255.

and tactician'.¹⁷ He was certainly revered, and a number of records from those he served with, such as Ira Jones's *Tiger Squadron*, border on hero-worship of Mannock.

While Edward Mannock was a successful fighter pilot (his 61 claims have 'proved verifiable to an above average extent',¹⁸ making him amongst the most accomplished British pilots of the entire war) he also had, much like Richthofen, an ability to identify what was needed to succeed in the air war of 1918 and pass it on to other pilots. Ira Jones served with him in 74 Squadron and indicates the ease with which Mannock distilled and conveyed successful air fighting. During training prior to deploying, Mannock emphasised an 'axiom to which he rigidly adhered: "Gentleman, remember. Always on top, seldom on the same level, never underneath."¹⁹ His adage referred to basic fighter pilot tactics whereby altitude allowed a pilot greater flexibility in combat, giving them the opportunity to trade height for speed either as part of a diving attack or to make an escape. Mannock's ability to provide advice extended to more practical matters such as shooting, as Jones noted:

I'm beginning to get a little depressed with my shooting. I have fired at sixteen Huns to date, and they are all still alive!... I've had a long talk with Mick [Mannock] about it. He thinks I am allowing for too much deflection. That is, I'm aiming too much in front of the enemy. He has advised me to do a slight traverse; to sight about 5 yards in front of the engine, then to fire and, while firing, to bring the sight back as far as the pilot... If I do this, he says, I can't help but hit the machine somewhere. I must say it sounds reasonable enough. This is what he says he did at first.²⁰

Edward Mannock was a man of opposites – he was patient and considerate for the men he served amongst, helping and advising those outside his own unit if asked, while possessing an apparently deep-set hatred for the Germans. Mannock was known to advise other pilots throughout the other flights of 74 and even amongst neighbouring squadrons, showing none of the aloofness or elitism often shown by experienced pilots to new arrivals.²¹ There was a culture of learning in 74 Squadron, where Mannock's abilities as a teacher were identified and he was tasked with giving lectures and lessons. Above this Mannock was willing to teach, and his whole squadron benefitted as a result:

¹⁷ Shores, C. Et al, *Above the Trenches*, p. 255.

¹⁸ Shores, C. Et al, *Above the Trenches*, p. 255.

¹⁹ Jones. I., *Tiger Squadron*, p. 69.

²⁰ Jones. I., *Tiger Squadron*, p. 102

²¹ Franks, N. & Saunders, A., *Mannock: The Life and Death of Major Edward Mannock*. London: Grub Street, 2008, p. 85.

His presence was well-felt, for the pilots in the other two Flights equally knew they could learn what they needed to pick up quickly...²²

While it sounds suspiciously like a wartime myth, there is evidence that Mannock's interest in training the pilots around him extended to Mannock 'gifting' German aircraft to new pilots. An extremely able tactician, Mannock would lead his flight into a position of advantage and let his newer pilots press home an attack on an enemy aircraft while he observed and prepared to assist. In an arena as novel and unprecedented as air combat, experience and confidence were key elements in the development of a fighter pilot, as Ira Jones' early disillusionment at not being able to hit his targets shows. A few months after Ira Jones had discussed his inability to hit his targets with Mannock he had become an able fighter pilot in his own right and firmly believed that the first aerial victory was hugely important:

Clem [Lieutenant Harris Clements] bagged his first crashed Hun. He is tickled to death about it. It is wonderful how bucked a pilot becomes when he shoots down his first Hun. His morale increases by 100 per cent. That is why... Mick occasionally gives Huns away, endeavouring to encourage beginners.²³

The Commanding Officer of 74 Squadron, a New Zealander by the name of Major Keith Caldwell, collaborates Jones' story. Caldwell recalled that in one 74 Squadron patrol

Mannock got one [German] and his Flight two others, tho' they say Mannock was really the cause of these two others going down.²⁴

While real, Mannock's habit of 'gifting' kills 'should not be exaggerated'²⁵, according to historian Peter Hart. Based on an analysis of Mannock's records, Hart believes that Mannock only gifted kills five or six times in his career and 'usually claimed a kill for himself in the process'.²⁶ While his tendency to hand new pilots with aerial victories can be over-stated, Edward Mannock's commitment to his men and to the larger war effort cannot. His was not a personal war fought in isolation, as many of the leading Allied aces did while patrolling as a 'lone-wolf'. Mannock looked upon the war as a team effort and saw the success of his men as a reflection and measure of his own success. His ability to train inexperienced, ordinary pilots posted into his flight was impressive-of the

²² Franks, N. & Saunders, A., *Mannock*, pp. 84 – 85.

²³ Jones, I., *Tiger Squadron*, p. 144.

²⁴ Franks, N. & Saunders, A., *Mannock*, p. 84.

²⁵ Hart, P., *Aces Falling*, p. 202.

²⁶ Hart, P., *Aces Falling*, p. 202.

original five pilots posted to Mannock's flight four would become aces and at least three would survive the war.²⁷

Edward Mannock's abilities as a mentor and instructor increased his influence and reputation throughout the RFC/RAF. Able to identify and bring out the necessary qualities in fighter pilots, his ability to influence the air war exceeded his span of command. When stationed alongside 4 Squadron of the Australian Flying Corps (AFC), Mannock was requested to try and improve their performance. Having being transferred from the Middle Eastern front, the Australian pilots were not used to air combat at the speed or scale of the Western Front of 1918. Mannock's teachings were not revolutionary, for similar sentiments were being advocated by others in the RFC, but they did work. Keith Caldwell remembered that

[4 Squadron, Australian Flying Corps] were not getting any Huns at the start and the Camel was good up to 10,000 feet. Mick Mannock was asked to go across and give them a talk. This did the trick, for then on they got cracking and did well.²⁸

Lieutenant Arthur Cobby was one of the Australian pilots in 4 Squadron AFC that Mannock instructed:

Mannock took upon himself the task of making all the pilots around him keen and aggressive. Several talks of his to the Australian pilots there were responsible for some fine aggressive shows against the enemy, and numerous combined affairs were successfully carried out.

Mannock's teachings were being mirrored elsewhere by other commanders, so the acceptance of the 'new style' of air fighting cannot be attributed solely to Mannock. However, 'his dramatic personal success and generally inspiring *persona* gave him a considerable influence.'²⁹ For a Flight Commander, Mannock's ability to influence a neighbouring Squadron is indicative of both the esteem in which his name and teachings were held, and the fertile and receptive environment of the fighting squadrons. As a result, the approach championed by Mannock and other successful tactical commanders spread as an 'overall doctrine' that was accepted 'through the whole of the RFC.'³⁰

While his tactics owed much to his intellectual approach to air combat, Mannock's 'inspiring *persona*' owed a lot to his attitudes he displayed, both to his own

²⁷ The Pilots of 'A Flight' 74 Sqn being Lt Roxburgh-Smith (22 kills, survived), Lt Hamer (survived), Lt Dolan (7 kills, KIA), Lt Howe (5 kills, fate unknown) and Lt Clements (6 kills, survived). Source: Franks, N. & Saunders, A., *Mannock*, pp. 85 – 86 and Shores, C. Et al, *Above the Trenches*, Various Entries.

²⁸ Hart, P., *Aces Falling*, p. 52.

²⁹ Hart, P., *Aces Falling*, p. 52.

³⁰ Hart, P., *Aces Falling*, p. 53.

side and to the enemy. Comparatively, his compassion and care for the pilots under him contrasted sharply with an apparent hatred for the Germans. While the popular narrative of chivalrous conduct between pilots was false, there is little evidence of animosity in memoirs and accounts amongst pilots. Major Sholto Douglas, fighting at the same time as Mannock, recalled in his memoir that ‘most of us had no great feelings of animosity; they were the enemy that we had to cope with, but hatred if them in an emotional sense, was a rare thing.’³¹ Mannock did not possess this emotive neutrality. According to a variety of records he revelled in narrating incidents when he sent German pilots down in flames, speculating on their last moments.³² Keith Caldwell also recalled an incident where Mannock needlessly continued attacking a doomed German two-seater, and when questioned, replied that ‘The swine’s are better dead – no prisoners for me!’³³ However, Caldwell believed that Mannock’s hatred was not real but assumed, done to strengthen his resolve and determination:

Mannock was said to be blind in one eye – I’ve read that quite often – and to be a fervent Hun-hater. Neither was quite true... This hatred attributed to him I don’t believe was true. It was calculated, or assumed, to bolster up his own morale.³⁴

Regardless of whether his hatred was assumed or genuine, Mannock’s drive to kill the ‘Huns’ was a huge part of his leadership persona. He championed an attitude of ruthless aggression tempered with pragmatic tactics, providing his men with both the means and the motivation required to close with and successfully destroy German aircraft.

* * *

Edward Mannock was very much a product of the RFC, epitomising many of its characteristics and traits despite having received no formal command training and his leadership reflected the nature of the RFC at the time. Universally accepting and friendly to the pilots around him, his reputation was built upon his ability to inspire others to follow him, with his rank appearing almost inconsequential in his command style. His authority was derived from his example but unlike the German system that elevated experts into *Jagdstaffel* command, Mannock influenced the pilots around him from a relatively low-level position in the organisation. Because the RFC did not automatically place their experts into positions of influence, the centralised teachings

³¹ Douglas, S., *Years of Combat: The First Volume of the Autobiography of Sholto Douglas*. London: Collins, 1963, p. 201.

³² Jones, I., p. 120.

³³ Russell, H. & Puglisi, W., “‘Grid’ Caldwell of 74” in *Cross and Cockade Journal*, Vol 10, No. 3, Fall 1969, pp. 193-211, p. 201.

³⁴ Franks, N. & Saunders, A., *Mannock*, p. 148.

and practices of the organisation were often insufficient or incomplete. Instead, the system needed junior commanders to innovate and adapt their practices at the front:

...in the absence of a truly dominant ace with the ability and inclination to share that experience, the RFC pilots simply pooled their knowledge to provide a collective framework: during 1917 all the basics of aerial scout fighting were slowly standardised and disseminated through the RFC.³⁵

Edward Mannock was not alone in undertaking this role, with the tactics he advocated being discussed, introduced and practiced elsewhere in the RFC at the same time. Mannock's success as a flight commander came down both to his skills as a tactician, his abilities as an instructor and to the loyalty and friendship he inspired in those around him. His success as a mentor and tactician are tied to the poor standards of the RFC when he started his career, with few commanders understanding the principles of fighter aviation and even fewer taking the time to instruct and train their pilots on their learned experiences. Having lacked a centralised figure whose success could be emulated and replicated, the larger RFC organisation of early 1917 was fertile breeding grounds for confident, intelligent pilots to make their mark realigning British aerial tactics with best practices.

Other notable British aces such as James McCudden were teaching very similar principles to Edward Mannock, and 'gradually the overall doctrine... spread through the whole of the RFC.'³⁶ As the RFC improved its standards across the board, most notably with the introduction of the Gosport training system but also as experienced pilots returned to take command of the squadrons (as will be covered in Chapter Seven), the adoption of improved combat tactics was inevitable. Instead of driving change through empowering centralised experts like the German system did, the British decentralised innovation, creating a larger but less agile force that was still institutionalising the basic principles of massed air combat in 1917.

While Mannock was in the right place at the right time allowing him to establish a reputation as a tactical reformer, it was his attitude, leadership and personality that made his teachings all the more influential. His openness, friendliness and willingness to take on board untrained pilots and mentor them stood in stark contrast to the previous generations of British pilots who, more often than not, received no direction or training on arrival at a unit, and were expected to learn through imitation and adaptation if they were able to survive. Mannock's loyalty and dedication to those

³⁵ Hart, P., *Aces Falling*, p. 49.

³⁶ Hart, P., *Aces Falling*, p. 53.

under and around him, coupled with his proven credentials as a fighter pilot, gave him a 'generally inspiring *persona*' and 'considerable influence'³⁷ within the RFC.

³⁷ Hart, P., *Aces Falling*, p. 53.



Figure 29: Edward Mannock, who was known as being 'the greatest flight commander of the war'. Source: www.theaerodrome.com



Figure 30: Ira Jones, an 85 Squadron ace pilot and comrade, close friend and admirer of Edward Mannock. Source: www.theaerodrome.com



Figure 31: Edward Mannock, taken during his time as a flight commander, showing obvious signs of exhaustion. Source: www.wikipedia.com



Figure 32: Keith Caldwell, a successful New Zealand fighter pilot and squadron commander in the RFC/RAF who was often known by his nick-name 'Grid'. Source: www.theaerodrome.com



Figure 33: James McCudden, one of the RFC's leading aces and tactical reformers alongside Edward Mannock. Source: www.wikipedia.com



Figure 34: William Bishop in his SE5a, the famed Canadian ace of the RFC who would earn a VC but prove to be an unsuccessful squadron commander. Source: www.wikipedia.com

CHAPTER SIX

BRAWLERS, LONE WOLVES AND CHESS PLAYERS

CALDWELL, BISHOP AND MANNOCK AS SQUADRON COMMANDERS

The success of 74 Squadron was not attributable to Mannock's influence alone. The aforementioned Commanding Officer of the unit, Keith Caldwell, was also known to be an 'outstanding personality'¹ and a capable leader in his own right. Made up of three flights, the British system was a lot more flexible than that of the German *Jagdstaffel*. Where the *Jasta* would fly as a unit of 7–12 aircraft the British would normally operate in individual flights of 5–7. The British system allowed the burden of their offensive policy to be shared. Tasks, such as the ubiquitous offensive patrols, could be allocated out within a squadron. Weather allowing, a flight could fly two patrols a day during a busy period, with patrolling times rotated between flights. This way people could be rested and a squadron commander could use his discretion and powers of delegation to enable training to be conducted concurrently with operations. The German system of command demanded the commander lead from the front, providing an example and personally influencing the success of his command, measured in enemy kills. The British flight and squadron system allowed the squadron commander more scope in which to manage his pilots and resources as he had another level of command beneath him, and less emphasis was placed on maintaining his own achievements as a fighter pilot. The degree to which 74 Squadron was able to utilise this system to prepare a new pilots for combat can be seen in the example of Frederick Hunt, who 'was not allowed to cross the lines for at least a week, yet every day Mannock found time to take him up on practise flights and fights.'²

While the German commanders did often oversee the training of their new pilots, it was difficult for them to prioritise this as they were focussed on the operational output of the unit. The British system allowed the squadron commander the ability to decide how best to allocate his men and resources from a second level of command, unburdened by the need to constantly lead from the front.

¹ Jones, I., *Tiger Squadron*, p. 67.

² Franks, N. & Saunders, A., *Mannock*, p 108.

Illustrating just how different the systems were, the RFC sometimes dictated that C.O.s were not to fly themselves.³ The underlying logic was that their management of the unit was more important than the tactical leadership of it that could be provided by the Flight Commanders. While the majority of C.O.s would ignore these rules or bend them, the difference between the German system that placed the best pilots in positions of command and then expected ongoing success versus the British system valuing the less-martial qualities of management are clear.

The Command of Keith Caldwell

Keith Caldwell mixed both qualities and frequently led by example in 74 Squadron. A 'great fighter and a dashing patrol leader',⁴ he had proven himself with 60 Squadron between November 1916 and October 1917. Despite ending the war with 25 claims, Caldwell was a rather poor marksman. Caldwell himself admitted that 'I was certainly a poor shot and it was frustrating to miss so many opportunities'⁵ but additional analysis also indicates that he was also unlucky, frequently bearing the frustration of jammed machine-guns.

Caldwell's habit of leading patrols appears to have been one of the key factors that endeared him to his men. Ira Jones, reflecting on his experiences in 74 Squadron a few decades later with the added hindsight of having served as a Wing Commander in the next World War, was under no uncertainty that 'A C.O. of a fighting squadron is no damned good unless he is of Maxwell or Grid's [Caldwell] stamp... To make certain of success, a fighter squadron must be commanded by a fighting C.O., not an ink-and-blotting paper type.'⁶ A Commanding Officer could provide more hindrance than help, however, if he tried to lead a patrol without the same tactical competency and situational awareness possessed by the full-time flight commanders. The First World War environment that prevented inter-plane communications meant that the members of the flight were dependent on their commander to navigate, identify the enemy and take suitable offensive or defensive manoeuvres as required. A flight commander who flew daily would have a better grip on the business of leading than a squadron commander who would fly less often. Most C.O.s, when they flew, would place themselves in a formation but leave their experienced flight commanders at the front. This delegation of tactical decision making was prudent and effective, and the

³ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War I*, p. 214.

⁴ Shores, C. Et al, *Above the Trenches*, p. 94.

⁵ Russell, H. & Puglisi, W., "'Grid' Caldwell of 74" in *Cross and Cockade Journal*, Vol 10, No. 3, Fall 1969, p. 196.

⁶ Jones. I., *Tiger Squadron*, p. 95.

frequency with which it was practised by the British shows how the nature of air combat imposed practices on the air services that were very different to traditional military organisations.

While Caldwell was well respected by his example of leading from the front, he would probably have been better off flying behind his most experienced flight commander, Mannock, whenever possible. Where Mannock was an astute, clinical fighting pilot in his decision making and positioning, Caldwell was bold, aggressive and unsophisticated. Keith Caldwell had demonstrated his brave but direct approach to air-fighting while as a pilot in 60 Squadron, as was recorded by Captain William Bishop:

In one case I had a Capt. out of my own squadron, a New Zealander, come eight miles across the lines after both his guns had choked, and he was entirely useless as a fighting unit, just to try and bluff away seven of the enemy who were attacking me... it was a tremendously brave act on his behalf as he ran great risks of being killed while absolutely helpless to defend himself in any way.⁷

Caldwell lacked the emotive anger that appeared to drive Mannock, but he was more aggressive in the way he advocated and approached air fighting. On assuming command of 74 Squadron, Caldwell's approach quickly became his squadron's approach:

Caldwell gave us a talk in the mess on what he expected of us. His manner of speaking was straight and to the point... When we got to war, he expected every one of us to fight like hell. It must never be said that a pilot of 74 Squadron had failed to go to the aid of a comrade, no matter how daunting the odds. Finally, no patrol of the Squadron must ever be late taking off.⁸

'Grid', as Caldwell was widely known for his peculiar habit of referring to all aircraft as 'grids', was not always as eloquent in expressing his intent for his squadron but the theme was the same. After a few months of combat Ira Jones recalls one of Caldwell's speeches made over a champagne celebration whereby he emphasised everyone needed to 'Kill the sods, the Hunnerinoes, at all costs. Anywhere and everywhere!'⁹

Edward Mannock's axiom of 'Always on top, seldom on the same level, never underneath' contrasts sharply with Caldwell's 'anywhere and everywhere' approach. Tactically, both leaders took a very different approach when in command of formations. Keith Caldwell was himself full of admiration of Mannock's abilities:

⁷ Russell, H. & Puglisi, W., "'Grid' Caldwell of 74" in *Cross and Cockade Journal*, Vol 10, No. 3, Fall 1969, pp. 193-211, p. 201.

⁸ Jones. I., *Tiger Squadron*, p. 68.

⁹ Jones. I., *Tiger Squadron*, p. 87.

He [Mannock] enhanced his reputation still more by being a magnificent patrol leader, with a capacity for bringing his Flight into an attacking position with reduced risk to his followers. That's where he was so very good, getting up high and the sun behind him, stalking his enemy, then going down very, very quickly, slowing down a little bit before he got there, giving his chaps time to get into a firing position. The record shows that there was a list of about 70 enemy aircraft accounted for by his Flight with very few losses.¹⁰

Caldwell's tactics were far more impulsive, direct and aggressive, as can be witnessed by his decisions during one 74 Squadron patrol he was leading in June 1918:

...[Caldwell] led a full squadron of 19 machines over the Ypres sector searching for enemy patrols, but not a sign of a single fighter anywhere. Caldwell immediately set off for Roulers with the squadron in full support, flew around the [German] aerodromes there and challenged all to fight. They didn't have to wait long. Airplanes from every 'drome in a radius of 15 miles came along, but not to fight. The closest they approached was about 400 yards and as soon as Caldwell attacked, they all scattered. Caldwell flew off with his men, very disgusted. The Germans must have suspected some colossal trap when they saw this British formation and refused to be taken in, little realising that is [SIC] was purely a gesture of defiance.¹¹

Ira Jones put it more succinctly when he wrote about another one of Caldwell's patrols a month later – 'As usual, he totally disregarded tactics.'¹² A little more candidly, Jones also noted that 'All our squadron patrols which he leads are nightmares. He frightens us as much as we frighten the Huns.'¹³ Mannock had a similar view to Jones, stating to the pilots of 84 when they formed that 'Our C.O. is the bravest man in the air force and he'll frighten the hell out of you when he leads the patrols.'¹⁴ Ira Jones understandably favoured the more-prudent approach of Mannock:

...I cannot help but feel that Mick [Mannock] is working on the right lines. After all, we are here to kill without being killed, if we want to win the war.¹⁵

His belief in Mannock's tactics was shared by many, and the success and leadership shown by the older Irishman had been likewise noted by the chain of command. In July 1918, Captain Mannock was promoted to Major and was posted to take over 85 Squadron, replacing the highest scoring Commonwealth ace of the war, Captain William Bishop.

¹⁰ Franks, N. & Saunders, A., *Mannock*, p. 96.

¹¹ Russell, H. & Puglisi, W., p. 206.

¹² Jones, I., *Tiger Squadron*, p. 166.

¹³ Jones, I., *Tiger Squadron*, p. 121.

¹⁴ Mannock, E., *The Personal Diary of 'Mick' Mannock*. London: Frederick Oughton, 1966, p. 184.

¹⁵ Jones, I., *Tiger Squadron*, p. 96.

The Command of William Bishop

'Billy' Bishop, as the Canadian fighter pilot was known, was a very different leader to Mannock. Bishop had flown with Caldwell in 60 Squadron, and was well known to the RFC and public alike as the Commonwealth's leading ace. Unlike Edward Mannock he was not a team player. Upon being appointed flight commander in 60 Squadron, Bishop had shown the very Germanic tendency to seek out enemy aircraft with little regard for his subordinates. Bishop was an extremely capable pilot with remarkable spatial reasoning and situation awareness and, perhaps because of his early success in stalking enemy aircraft, was extremely individualistic.¹⁶ Having shown merit as a fighter pilot the C.O. of 60 Squadron, Major Alan Scott promoted Bishop on the belief that he would be able to put his skills to good use by training the newer pilots. Bishop's insistence on ignoring his duties towards his wingmen meant he kept accruing an impressive list of personal victories, which 'increased his own prestige and that of the entire squadron'¹⁷ in much the same way as the *Jasta* system worked. The opportunity cost was born by his flight members. The historian David Bashow noted that 'Bishop did not normally take the time to bring subordinates along in their combat evolutions.'¹⁸

The cost of Bishop's neglect is easy to see. Major Alan Scott, who had promoted Bishop to flight commander, noted that immediately after receiving the rank of Captain Bishop undertook a lone wolf mission, leaving his 'C' Flight without a leader for their scheduled patrol and as a result 'only one, Young, returned.'¹⁹ On another 60 Squadron sortie Bishop was tasked with escorting Lieutenant Sydney Pope on a photographic mission. Once behind German lines Bishop left Pope to pursue a German aircraft, leaving the camera-carrying Pope alone and jeopardising the mission.²⁰

Bishop's 'lone wolf' style of operations provided him his personal success, but this was attained to the detriment of his flight members. On 30 April 1917 Bishop showed similar neglect in command as he had since becoming a flight commander. Tasked with attacking an enemy observation balloon, Bishop should have escorted the junior Australian pilot Lieutenant Clark to the objective. Instead Bishop ignored the mission objective to hunt German aircraft, and Clark was subsequently killed after

¹⁶ Shores, C. Et al, *Above the Trenches*, pp. 76-77.

¹⁷ Goette, R., "Billy Bishop: Leader of Men? Examining the Leadership Characteristics of Canada's Greatest Air Hero" in *Neither Art Nor Science: Selected Canadian Military Profiles*. Ontario: Canadian Defence Academy Press, 2007, p. 55.

¹⁸ Goette, R., p. 55.

¹⁹ Scott, A., *Sixty Squadron RAF: 1916-1919*. London: Greenhill Books, 1990, p. 45.

²⁰ Goette, R., p. 54.

being surprised by three German fighters.²¹ By the time Bishop received command of 80 Squadron he was a national hero, having received the highest award for bravery – the Victoria Cross – for a solo raid on an enemy aerodrome that was witnessed only by Bishop himself and, in light of historical research, appears very dubious. Despite claiming three Albatros DIII's destroyed, no German records even remotely collaborate Bishop's claims for his VC.²² He was also, as Richard Bickers analysis puts it, a poor leader:

[Bishop's] excuse was that he preferred not to have others' lives in his hands: a poor one for a professional officer at any time and for a flight commander hardly a good qualification.²³

However, Bishop's reputation as an ace preceded him and more than 200 RFC pilots requested a transfer into Bishop's command.²⁴ His aura did not compensate for his lack of focus on his team, and 85 Squadron was left adrift by Bishop's so-called 'lone wolf' style operations. On May 29 1917 Ira Jones records coming across a formation of SE5a's from 85 Squadron:

Mick went up close to them, and we realised that they were 85 Squadron, newly arrived from England.

Their leader turned out to be Nigger Horn, not Bishop, their C.O., who specialises in fighting alone, not in formation.²⁵

That Bishop operated apart from his men should not have surprised anyone. His success as a fighter pilot briefly out-shone his record as a leader, but any loyalty or admiration his men had for him was quickly dispelled in France. One 85 Squadron pilot, Tommy Williams, remembered:

The truth is, he wasn't a particularly good leader of men. He seldom led a patrol and he did his best work alone. Nigger Horn was the unofficial leader of the squadron. Everyone knew that Bishop should never have been given his own command.²⁶

Bishop was a leader in the mess, being known as 'a social lion'.²⁷ This caused problems in itself, and discipline in 85 Squadron eroded. During the unit's initial build-up training, Bishop even managed to anger an associate of the British Prime Minister of the time, Lloyd George, and had to rely on the fame bequeathed by his VC to avoid him

²¹ Goette, R., p. 55.

²² Shores, C. Et al, *Above the Trenches*, p. 76. and Hart, P., *Aces Falling*, p. 49.

²³ Goette, R., p. 57.

²⁴ Goette, R., p. 57.

²⁵ Jones, I., p. 143.

²⁶ Goette, R., p. 63.

²⁷ Goette, R., p. 64.

or his Squadron being punished.²⁸ The lack of a military ethos in 85 Squadron and widespread dissatisfaction at his neglectful leadership was well known through the RFC. In July 1918, three months after taking command, Wing Headquarters promoted Bishop, thus removing him from command.²⁹

In place of Bishop the RAF intended to place James McCudden, another top-scoring ace, as the CO of 85. When a high ranking officer visited 85 Squadron the pilots let their feelings be known – McCudden, to them, was an unwelcome choice. A number of ideas have circulated as to why he would have been unpopular, for McCudden was a successful pilot, capable leader and excellent tactician along the lines of Edward Mannock. It is likely that he was believed a disciplinarian, which would have been anathema to the irregular and ill-disciplined 85 Squadron after Bishop. It is also alleged that McCudden's background was considered to be too 'lower class' for the unit, although this is most likely a spurious rumour as social standing had little weight in the RFC and the eventual choice, Mannock, had every bit the working class background as McCudden. It is more likely that McCudden was thought of, incorrectly, as being another Bishop, 'ruthless, ambitious, unwilling to share'³⁰ and that created consternation. The rather extraordinary complaints against the appointment worked and McCudden's posting was changed, with 85 Squadron receiving the capable Edward Mannock instead.

Edward Mannock as a Commanding Officer

Mannock's conduct as C.O. of 85 Squadron continued the strong performance he had established as a Flight Commander in 75 Squadron. Ira Jones' views may be biased, but his diary entry for July 25 notes that 'Everyone [in 85] say that they much prefer Mick to Bishop as C.O.'³¹ Those sentiments appear to be correct, based off numerous accounts. On arrival Mannock's clinical approach to tactics and ruthless offensive spirit was conveyed to his pilots. One 85 pilot's accounts described the arrival of the newly promoted Major Mannock to the squadron, when he addressed his pilots:

...he certainly is keen. He got us all together in the office and outlined his plans and told each one what he expected of them. He's going to lead one flight and act as a decoy. Nigger and Randy are going to lead the other two. We ought to be able to pay back these Fokkers a little we owe them.³²

²⁸ Goette, R., p. 61.

²⁹ Goette, R., p. 66.

³⁰ Goette, R., p. 67.

³¹ Jones, I., p. 170.

³² Franks, N. & Saunders, A., *Mannock*, p 132.

The first Squadron patrol Mannock organised was a far call from the laissez-fair approach to command shown by Bishop. Edward Mannock instead carefully planned the patrol and led his flight at a lower altitude, inviting German fighter aircraft to attack, before they in turn would be ambushed by the remainder of 85 Squadron. An important transition from the decentralised control of Bishop, Mannock's planning paid off. On 7 July 1918 the mission was executed and several 85 pilots claimed kills with no 85 Squadron pilots or aircraft lost. Above all Mannock had led from the front, placing himself in a position of danger so that his unit could benefit.

Edward Mannock's command of 85 Squadron was very different to that he had experienced under Keith Caldwell. Whereas Caldwell delighted in attacking 'anywhere and everywhere', Mannock was clinical and detailed in his planning. An American pilot seconded to 85 Squadron as was common practice in 1918, John MacGavock Grider, recalled in his book *War Birds* that

'He plans every manoeuvre like a chess player and has every man at a certain place at a certain time to do a certain thing.'³³

Furthermore, Grider recalled that Mannock motivated his men into combat through his aggressive spirit and high expectations. Mannock led by example and expected a lot from his pilots, and would 'raise merry hell if any one falls down on the job.'³⁴ Ira Jones visited 85 Squadron on 25 July, only a few weeks after Mannock had taken over, and recorded in his diary that the unit was doing well:

His pilots were in high spirits; their success over the enemy and their happiness as a family made them so. Whomsoever we spoke to, we heard little else but talk of their offensive patrols and of Mannock's wonderful leadership. The morale of the Squadron had reached its peak. The enemy was spoken of as so much dirt. Mannock was delighted.³⁵

Jones, it should be remembered, may be an unreliable witness as he is prone to hero-worshipping his friend and mentor. Yet Mannock's popularity is believable, given his undoubted abilities as a leader and as a fighter pilot and the concern and attention to his subordinates. At the very least, Mannock would have represented a very welcome change from the neglect of Bishop. The American Grider agreed that 'Mick is a master' and 'brightened up 85 Squadron considerably.'³⁶ Caldwell would remember that

...his influence was soon established with his new command, and up went the standards under his leadership and the example he gave.

³³ Franks, N. & Saunders, A., *Mannock*, p. 68.

³⁴ Franks, N. & Saunders, A., *Mannock*, p. 68.

³⁵ Goette, R., p. 55.

³⁶ Goette, R., p. 68.

What has often been written about Mannock is very true, that he did spare time and patience to build confidence in his new chaps.³⁷

One of the junior pilots in 85 Squadron, a Second Lieutenant Larry Callahan, recalled that Mannock's efforts in mentoring and training his men would often see him place himself in a dangerous position for the benefit of his unit:

He would always be the low man, not high man, that's where I always admired Mannock. He was always low, and I knew it because I was with him. When a bunch of Huns came along he would goad them into attacking him while the rest of the boys were off in the distance, waiting. It worked magnificently.³⁸

As well as training his men, Mannock also motivated them. Determined to cause as much harm to the enemy as possible, Mannock's personal vendetta against the Germans dictated the way he commanded and led. Whether it was true personal hatred or just an assumed emotional front to stabilise, steady and motivate his increasingly fragile mental state³⁹ – the so-called 'mask of command' – Mannock's desire to inflict maximum harm upon the German air service became an integral part of his reputation and leadership. Larry Callahan remembered that

He was determined to win. He hated the Huns and he wanted to kill all of them. He wasn't interested in just killing them himself. He wanted a lot of them killed, and he trained us how to do it.⁴⁰

Edward Mannock did not spend much time as a Commanding Officer. On the 26 July 1918 he took off on an early patrol with a new pilot to 85, New Zealander Lieutenant Donald Inglis, in the hope of 'bleeding' him with his first victory. After the two pilots shot down a German two-seater Mannock's aircraft started burning before diving away 'out of control', as Inglis noted in his combat report. While it is unclear exactly what forced Mannock down (the common explanation being ground fire), the pilot commonly accepted to be the greatest patrol leader in the Allied air forces and the highly respected C.O. of 85 Squadron was killed in action while leading and mentoring one of his own.

* * *

Edward Mannock entered the war when the RFC was struggling to develop and institutionalise urgently needed tactical reform. While the Luftstreitkräfte had prioritised the tactical level of war, the British had focussed their efforts on growing and expanding their fighter force. In contrast to the Germans, the British sought a decisive advantage

³⁷ Franks, N. & Saunders, A., *Mannock*, p. 148.

³⁸ Hart, P., *Aces Falling*, p. 201.

³⁹ Mannock, E., p. 195.

⁴⁰ Hart, P., *Aces Falling*, p. 202.

at the strategic level, the cost of which was the neglect of their tactical standards. The burden of sustaining an offensive under-prepared and under-trained thus fell to the pilots and junior commanders of the RFC. It was this role that Mannock excelled in, improving and helping reform the RFC during a period of urgent need.

Looking back decades later, Keith Caldwell believed that Mannock's success as a fighter pilot came down primarily to his ability as a marksman and as a tactician:

Why was he so successful?... Mannock was an extraordinary good shot, and a very good strategist. I think his success came from those qualities, to make a good approach and when he got there to be a very good shot, in quickly and not to delay too long.⁴¹

Yet Mannock's contribution to the British air war went beyond his abilities and aptitudes as a combat aviator. Some of the skills that made him an excellent fighter pilot also made him an able tactician, instructor and mentor for the pilots around him. This combination of technical excellence and tactical insight was rare but not unique; James McCudden, for example, was equal to Mannock in both regards. Enabling Edward Mannock's unequalled success in the RFC and RAF also came down largely to his popular leadership style.

Like his old C.O. Keith Caldwell in 74 Squadron, Mannock was an empathetic leader who was focussed on his men, led from the front and invested time and effort in training them for combat. Caldwell himself was an extremely successful and popular commander, but just as McCudden had some but not all of Mannock's traits, the same can be said of Caldwell. Where McCudden was a capable pilot and tactician, Caldwell was a brave and capable pilot and an inspiring leader. It was Keith Caldwell's unsophisticated tactics that differentiated him from Edward Mannock. Where Mannock was a masterful tactician and took great care in only accepting combat on advantageous terms, valuing his men's lives while simultaneously demonstrating an aggressive and ruthless spirit to killing Germans, Caldwell simply charged straight at enemy aircraft and was willing to accept combat on any terms offered to him.

Even though Mannock was not the most successful fighter pilot, his tally being exceeded by that of William Bishop, the RFC needed and valued leaders and trainers more than 'lone wolf' fighter pilots. Other RFC commanders equalled Mannock's abilities as a fighter pilot, instructor, tactician and leader, but no other commander combined all those skills together. As a result Edward Mannock's success and

⁴¹ Franks, N. & Saunders, A., *Mannock*, p. 148.

reputation reflected his range of abilities, providing leadership and expertise to the pilots around him when his Corps needed those qualities the most.

CHAPTER SEVEN

SUPERIOR COMMAND?

THE EXPERIENCE, QUALITIES AND SYSTEMS OF COMMAND BETWEEN THE BRITISH AND GERMAN AIR SERVICES

Neither Mannock nor Richthofen lived to see the end of the war, but the example they set while in command lived on within each air service. The air war would continue to expand and grow as larger numbers of increasingly better aircraft reached the squadrons and *Jagdstaffeln*, and the practice of formation flying and group tactics became more sophisticated still. Despite the growth of the air war, the legacies of Mannock and Richthofen remained supreme in their respective services. At the end of hostilities in November 1918 Manfred von Richthofen was still the highest scoring fighter pilot of the war, and was continued to be looked upon as the ultimate *Jagdfliieger* and commander in the *Luftstreitkräfte*.

¹ Edward Mannock had never been the highest scoring British fighter pilot, but his abilities and leadership established his reputation as the greatest British flight commander.² Both pilots, despite their different backgrounds and experiences, were idolised and admired as fighter pilots and as leaders within their services right up to the Armistice. As the modern champions of their respective services, the characteristics, qualities and success of Mannock and Richthofen can tell us something about the systems and the cultures of the organisation in which they fought.

The Experience and Culture of Command in the *Luftstreitkräfte*

Manfred von Richthofen's career started under the tutelage of the first great German fighter pilot, Oswald Boelcke. After Boelcke's death Manfred would eclipse Oswald's importance within the German air service, exceeding his tally of kills and overseeing the escalation of German fighter tactics to the *Jagdgeschwader* level. The legacy of Boelcke would live on, though. By the time Oswald was killed the German fighter service was established as an elite within the *Luftstreitkräfte*, attracting and selecting the best pilots from the two-seater units. Reinforcing the presence of elitism was the further tendency for German experts to be concentrated within key units. The

¹ Franks, N. Et al, *Above the Lines*, p. 88.

² Jones. I., *Tiger Squadron*. New York: Award Books, 1966, p. 65.

likes of *Jasta 2* and *Jasta 11* were the elite of the elite, outperforming other fighter units by a huge margin.

The origins of this elitism can be identified in the context that German air power was, from 1914 to 1918, guided by her *kanonen*. Seizing the lead in fighter aviation tactics in 1915 and again in 1916 and 1917, the Luftstreitkräfte relied on her pioneers and celebrated aces to drive progress and dictate direction. First were Max Immelmann and Oswald Boelcke, who worked together to create the basic teachings of fighter tactics and fighter organisations that would spread through all air services. The next giant who reshaped the organisation of the air service was Richthofen himself, who led the air war into its next stage of massed formation air combat in 1917. Blessed with individuals of immense skill, this method of organisational evolution worked well until the start of 1918.

By then the tide had turned and the weaknesses in this arrangement were beginning to show. The air war was an inherently attritionalist struggle, and the continued and inevitable loss of her key pilots and commanders took a huge toll on the German organisation and aerial war effort. The limits of expansion had been reached, too, with the experience of front-line commanders unable to provide the momentum or expertise required for further expansion in either organisation beyond the four-*Jasta Jagdgeschwaders* or in pushing or refining the employment of air power at the operational level. After 1917 the pinnacle of German air power was in decline, with 1918 seeing the Allied air forces surpass the Luftstreitkräfte and secure an undeniable advantage in the air war until the Armistice in November of that year. The early superiority, intermittent ascent and eventual failure of the German air service remained intrinsically linked to her famous pilots until the end of the war.

Boelcke's legacy was a culture of command that was dependent upon performance. It linked command skills to competency as a fighter pilot, creating a system whereby leaders set an example and used their tactical and technical skills to direct their unit. It was a highly competitive evolutionary system, allowing the best to rise to the top and wield influence. For this reason competency as a pilot and success as a commander went hand in hand. Carl Degelow rose to command *Jasta 40*, one of the ordinary units. His failure to be invited into one of the elite *Jagdstaffels* can be attributed to his slow and unpromising start as a fighter pilot. He was sent away in disgrace from his first unit after disobeying orders and injuring a member of the ground-crew during gunnery practice, and then spent nine months in his second unit during

which he only gained three confirmed kills.³ With such an unspectacular start it is not surprising that Degelow was overlooked by the likes of Manfred von Richthofen for recruitment into the elite units.

Degelow's example also illustrates the difficulties for new pilots to prove their worth in air combat while the most promising opportunities for scoring were monopolised by their commanders. In an air service that prioritised the example of the leader, the *Jagdfliegers* were expected to fly in a supporting role. The commander would, by leading his formation from the front, monopolise the best attacking opportunities for himself and limit the opportunities for the following *Jagdfliegers*. This appears to have been the case with Degelow's early career, and he was unable to claim more than three victories in nine months until he was able to lead the *Jasta* during the temporary absence of his permanent *Staffelführer*. Once his score started mounting, Carl Degelow was appointed the commander of *Jasta 36* and would accrue an impressive tally of confirmed kills, having been awarded 30 by the end of the war.⁴

While a by-product of such a competitive system, the importance of the commander in sustaining his own success had the negative effect of stifling the opportunities and development of the pilots under him. The greatest German commanders, most notably Boelcke and Richthofen, proved capable not only as fighter pilots but also as instructors. They were able to identify, describe and teach the keys to their success. Boelcke published the *Dicta Boelcke* during his career, while Richthofen followed suit with his *Air Combat Operations Manual*. More than that, though, was the ability of both men to identify and develop talent under them. Boelcke selected Richthofen to be one of his *Jagdfliegers* in *Jasta 2*, while Manfred selected a number of pilots who would subsequently attain ace status. As the leading *kanonen* they had the organisation influence that enabled them to be able select the most promising pilots amongst the ordinary *Jagdstaffels*, making their jobs as trainers that much easier. This is not to take away from the fact that both Richthofen and Boelcke were exceptional instructors, able to further the practice of air fighting within their own units. Boelcke's instruction was hugely influential, with his *Dicta* remaining relevant for the entire war. Richthofen proved himself instrumental in developing his unproven brother Lothar, posted into *Jasta 11* as part of a propaganda effort, into a leading ace in his own right. Manfred von Richthofen also proved able as an instructor at the JG level, identifying and teaching the tactics employed as part of the first JG.

³ Franks, N. Et al, *Above the Lines*, p. 96.

⁴ Franks, N. Et al, *Above the Lines*, p. 97.

What, then, do the stories of the less successful commanders tell us? Franz Walsh succeeded Boelcke as the *Staffelführer* of *Jasta 2* and ended his time there in failure, yet went on to prove his leadership and management abilities in the challenging Middle Eastern theatre. Leadership qualities and command skills were simply not enough, and had to be matched with demonstrable expertise. Even successful commanders suffering from injury were burdened with the expectation of success. The case of Rudolf Berthold reinforces this. Chosen to command *Jagdgeschwader 2* in March 1918, Berthold was recovering from having shattered his right upper-arm bone in combat with British fighters.

¹ Having claimed 28 kills when he assumed command² his competency was never in doubt, but there was substantial discontent against his 'fierce drive' and 'aggressive leadership'³ style that was similar to Richthofen's. In a letter to his sister Berthold stated that:

I must have three *Staffelführer* removed. It is a hard blow... the *Staffelführer* had organised a type of plot to overthrow me – I will be ruthlessly hard. In the future I *will* fly again. The boys should be ashamed of themselves...⁴

While there are no further details on the plot Berthold mentioned, records indicate that he did indeed replace three of his four *Jagdstaffel* commanders in a matter of weeks after writing his letter. What is clear is that Berthold's inability to participate in combat was weighing on his own mind ('I *will* fly again'), and more than likely was a central theme to plot against him. Despite the recurring pain of his injuries, Berthold returned to flying duties and led JG2 until being injured again in October 1918,⁵ ending the war as the seventh highest scoring German pilot.⁶

In order to achieve command the German pilot had to be a capable fighter pilot and astute tactician and be lucky enough to have sufficient opportunity to prove his skills. Once in a position of authority, the commander then had to set an example of success. This was essential for any commander, and failure to achieve this would frequently result in disqualification or demotion from command. The traits that separated the great commanders from the ordinary can be linked to the ability to achieve outstanding success as a fighter pilot and to possess the ability to instruct and develop the *Jagdflieger*s underneath them. These two qualities went hand in hand, for

¹¹ Van Wyngarden, G., *Jagdgeschwader Nr II: Geschwader 'Berthold'*. Oxford: Osprey Publishing Ltd, 2005, p. 34.

² Franks, N. Et al, *Above the Lines*, p. 71.

³ Van Wyngarden, G., *Jagdgeschwader Nr II*, p. 34

⁴ Van Wyngarden, G., *Jagdgeschwader Nr II*, p. 35

⁵ Van Wyngarden, G., *Jagdgeschwader Nr II*, p. 120

⁶ Franks, N. Et al, *Above the Lines*, p. 241.

the most famed pilots were able to select their own recruits, which in turn made their role as a trainer vastly easier. However, being a leading ace was not enough in itself, as the experience of Jacob and Degelow shows. Even with the advantage of selecting their own pilots, the inability to instruct them in the skills of air combat could limit the success of the commander. It was this reason that the likes of Rudolf Berthold, a *Jagdgeschwader* commander with a similar style of leadership to Manfred, was unable to achieve the fame, influence and reputation that Richthofen did.

The Experience and Culture of Command in the Royal Air Force

The British were unencumbered by the influence of a pioneering elite within their service, so it was the centralised RFC command structure rather than the front-line experts that drove the organisation's evolution. Largely freed of the power invested in certain individuals in the German model, the RFC and RNAS were able to adopt pragmatic policies as the situation required. As the Fokker scourge and later Bloody April posed a series of crises for British air operations, initial reluctance to move away from the traditional cavalry background of the mid and upper classes was easily overridden by the need to sustain pilot numbers in the face of heavy attrition. By 1918 the British squadrons were relatively egalitarian, with commanders and pilots representing a mix of backgrounds and having little in common with the collection of aristocrats who served in the squadrons in 1915. The British, unencumbered by the traditionalist system practised by the Germans, found excellent leaders in the form of Mannock and McCudden, both from the lower classes of Ireland as well as a large collection of capable pilots from Commonwealth nations, Keith Caldwell amongst them.

Unlike the Luftstreitkräfte, the RAF separated their positions of command from the execution of tactical leadership. A squadron commander was not expected (and sometimes even banned) from leading his men into combat. The majority of squadron commanders would relinquish tactical command for Squadron-level sorties to their flight commanders, organising the details and providing briefings before letting their subordinates take command in the air. If the C.O. did accompany his unit on a mission, it would more often than not be behind the flight commander as a supporting pilot.

Flight command, then, was the level of command that demanded technical and tactical competency. The example of Edward Mannock illustrates the traits and characteristics of a great flight commander. Mannock was an acceptable pilot and excellent aerial marksman, exhibiting a very similar approach to Manfred von Richthofen in prioritising the ability to shoot accurately over the skills needed to perform stunts or manoeuvres. He was, again like Richthofen, a very astute aerial tactician.

Despite the traits exhibited by Mannock, British flight commanders did not need to exhibit the same degree of success or excellence shown by their peers in the German *Jagdstaffeln*. Victor Yeates, the author of *Winged Victory*, was by his own admission an ordinary combat pilot, lacking in aggression. Despite an unspectacular career and being urged at one point by his C.O. to 'get some more Huns' he remained a Flight Commander.⁷ The British system accepted that having experienced pilots leading flights was good enough a solution, with the policy of rotating pilots for rest or training postings overwhelming the need to retain the experts at the front line. It was very much a system designed to take advantage of their numerical superiority, prioritising acceptable quantity over enhanced quality.

During Edward Mannock's time in 84 Squadron he worked under Keith Caldwell. Both pilots were popular, well known leaders in the RFC. Like Mannock, Caldwell was a successful fighter pilot but some key differences separated their approach to command and combat. Mannock's ability to shoot accurately was a huge advantage over Caldwell, but this did not overly affect either's reputation or abilities as a commander. What was well known in the squadron and was frequently commented on by Ira Jones was their different approach to tactics. Caldwell was bold, aggressive and completely lacking in subtlety. Whenever he led Squadron operations he would head straight at the enemy, seeking combat under any circumstances. Mannock, by comparison, was aggressive but calculating. Whereas Caldwell's approach incurred additional risk for the whole formation, Mannock sought as advantageous grounds as possible before accepting combat and would not hesitate to turn from a fight if the odds were not to his liking. Mannock's maxim 'always on top, seldom on level, never underneath' highlighted this philosophy. When 208 Squadron published their memoirs after the war, Squadron Leader Richard Compston described one of their successful Flight Commanders, Captain William Jordan, in terms similar to those used to describe Mannock:

Jordan would be rightly described as a scientific fighter; he combined dash and courage with sound common sense; his heart was always in the right place, but he never allowed it to overrule his head.⁸

While it was important that a commander had the ability to use their 'head' in combat, it was crucial they had 'heart' or a fighting spirit, too. The importance of aggression was inbuilt into the competitive German culture of their air service, but it had to be inspired

⁷ Yeates, V., *Winged Victory*. London: Grub Street, 2008, p. 394-407 & Atkin, G., *Winged Victor: A Biography of Victor M. Yeates*. Bury: Springwater Books, 2004, pp. 98-102.

⁸ Johnstone, E. (Ed.), *Naval Eight: A Classic memoir of a World War I Fighter Squadron*. London: Arms and Armour Press, 1972, p. 79.

and fostered by leadership in the British squadrons. Lacking the elite status and self-selection of the German fighter force, the British fighter pilot needed an aggressive and offensive attitude to be created by their leaders. In a 2008 study of air force leadership and aircrew morale, Lieutenant Colonel Zentner of the United States Air Force assessed three case studies from World War 2 onwards and concluded that 'The influence of combat losses on morale lies not so much in the quantity of losses as it does in the context of the loss.'⁹ The belief that they were risking their lives without sufficient reason – that the mission was unimportant and not worth their sacrifice – was more damaging to morale than combat losses. Zentner found this was true for the German air force in 1940 as it was for the United States Air Force in 1944 and in the Vietnam War. It also helps to explain the importance of aggression to the British leaders in the First World War. Without the belief that it was crucial for them to rid the skies of German aircraft and destroy them wherever they could, any self-belief within RAF squadrons as to their purpose and mission executing Trenchard's continuous offensive would falter. Given the attrition of flying in general and combat aviation in particular over the Western Front, casualties and fatalities were inevitable. If the pilots believed, though, that their mission was worthwhile and justified the risks they took and the losses they suffered their morale would, according to Zentner's thesis, be sustained. This appears true, and explains the popularity behind Caldwell's and Mannock's aggressive drive.

Forceful leadership was only part of successful command amongst the British. Both Mannock and Caldwell were extremely aggressive leaders, but they differed in the key area of tactics. As Sholto Douglas, a C.O. and future Marshal of the RAF noted, 'being great fighters was not enough, and it was those who were great tacticians as well who were contributing the most.'¹⁰ In Mannock's case it was not so much the ability to close with and kill the enemy that his pilots respected most, but rather the care and importance he gave their survival. Squadron Leader Richard Compston's chapter in *Naval Eight* described a flight commander's duty as '...(1) to get into active touch with the enemy to their detriment and (2) to preserve the lives of the pilots under his leadership.'¹¹

The need to close with the enemy belied the importance of the mission, while the value attached to tactics and self-preservation was an equally important trait in a

⁹ Zentner, J., "The Art of Wing Leadership and Aircrew Morale in Combat." Alabama: Air University Press, 2001, p. 17.

¹⁰ Douglas, S., *Years of Combat: The First Volume of the Autobiography of Sholto Douglas*. London: Collins, 1963, p. 190.

¹¹ Johnstone, E. (Ed.), *Naval Eight*, p. 79.

commander. Caldwell certainly had the desire to 'get into active touch with the enemy to their detriment', although his leadership was eclipsed by Mannock's tactics that valued the lives and safety of his men.

There was a large number of flight commanders who combined aggression with capable tactics such as 208 Squadron's Captain Jordan who did not acquire the influence, reputation or admiration achieved by Mannock. Mannock's success can be attributed to the combination of other factors as well. Primarily amongst these must be his abilities as a mentor.

Mannock's career was defined less by his accomplishments as a fighter pilot and more by his ability to foster success amongst the pilots around him. Like the elite of the Luftstreitkräfte in Boelcke and Richthofen, Mannock's principles that he could convey through discussion and instruction. Mannock went well beyond the expectations of a front-line commander in actively mentoring his men into combat, going so far as to deliberately 'blood' them with their first kill. While the degree to which this trait was altruistic is easily overstated – Mannock would frequently claim a share in the victory, meaning that his own pursuit of glory was never disadvantaged by these tactics – the time and effort Edward invested in preparing his men for the air war was of immense importance to his service. William Bishop's success and skill as an individualistic fighter pilot was comparable to Mannock's, but in the British air force example alone was not enough. Lacking the tactics needed to employ his unit effectively, Bishop's men were not effectively used and were not trained or mentored to be able to participate in the air war. It therefore is no surprise that Bishop's time as a commander was an abject failure and that he had to be removed, albeit by promotion, from command.

Edward Mannock's ability to understand, describe and foster an understanding of air combat contributed to his reputation as a tactical commander *par excellence* in the RFC. The time he spent with 4 Squadron AFC and the immediate improvement his discussions provided to their performance is testament to Mannock's ability to mentor, train and instruct those around him. Mannock was a humble, friendly and imminently approachable man whose informality and relaxed leadership suited the egalitarian nature of the RAF fighting squadrons. Able to relate to his subordinates as a friend and displaying concern and empathy for the new pilots, Mannock's personality and leadership style allowed those around to connect with the Irish ace. Not only likable a figure and admirable a leader, Mannock combined these qualities that made him accessible with the qualities that made him an excellent instructor, helping 74

Squadron, 80 Squadron 4 AFC and the other pilots he crossed paths with to improve their tactics and techniques.

Training and instructing was no doubt an essential part of tactical command. British pilots were notoriously unprepared for combat flying, and it inevitably fell to the front-line commanders to improve the standards of their pilots if they were to create an effective unit. The description of the skills required by a flight commander in the 208 Squadron history makes this clear:

Initiative, clear sight, navigating ability, *the power to impart knowledge* and balanced judgement are some of the main attributes which made the successful Flight-Commander in the Great War.¹² [Italics added for emphasis]

This desire and dedication to impart knowledge was also important, and this was reflected in Alan Scott's recollection of what he believed was 'as good a flight commander as we ever had' during his time as C.O. of 60 Squadron:

[he] played always for the squadron, and not for his own hand. He took endless pains to enter young pilots to the game, watching them on their first patrols as a good and patient huntsman watches his young hounds.¹³

The leadership style and instructional aptitude that established Mannock as the greatest British flight commander of the war were mirrored in another of the great British commanders, James McCudden. While McCudden was unfairly treated by the pilots of 85 Squadron when he was due to take command, the truth was that McCudden was an excellent tactician and fighter pilot and 'a most proficient and highly regarded officer'.¹⁴ James McCudden's 'scientific approach'¹⁵ was very similar to that of Edward Mannock, and his 'worth and value' to his unit, 56 Squadron, was 'impossible to exaggerate', according to a unit history:

During his eight months as commander of B Flight, the latter had gained 77 victories, with McCudden's share of the total being 52. This impressive score had been achieved for the loss of only four pilots – an indication of McCudden's excellence as a patrol leader and the care he took of his pilots. Few flight commanders in the RFC looked after their less experienced pilots anywhere near as well as McCudden.¹⁶

James McCudden's success further paralleled that of Edward Mannock, with both pilots sharing an aptitude for being able to instruct others. Mannock's ability to train the

¹² Johnstone, E. (Ed.), *Naval Eight*, p. 75.

¹³ Scott, A., p. 74.

¹⁴ Shores, C. Et al, *Above the Trenches*, p. 268.

¹⁵ Shores, C. Et al, *Above the Trenches*, p. 268.

¹⁶ Revell, A., *No 56 Sqn RAF/RFC*, Oxford: Osprey Publishing Ltd, 2009, p. 88.

pilots around him in the art and science of air fighting has already been covered, and McCudden appears to have been used as a 'centre of excellence' in a similar way:

After lunch on the 13th [January 1917], McCudden left on a Special Duty to the 11th Wing. His technique of destroying enemy two-seaters, apparently with little effort, had come to the attention of Lt Col A J L Scott, CO of the wing, and he requested that McCudden visit the local flying squadrons to lecture on his tactics.¹⁷

In many ways, then, McCudden and Mannock shared similar traits and experiences both as fighter pilots and as commanders. McCudden's death in a flying accident meant he would never command at the squadron level, but in terms of flight command Mannock remained the preeminent RFC commander. Why Mannock's reputation would out-strip a pilot, tactician and trainer as excellent as McCudden is difficult to precisely define. A study of McCudden's service records, though, helps show how his methods differed from Mannock's. While a capable leader, able tactician and excellent instructor, McCudden continued to operate as a 'lone wolf' into 1918. While he fulfilled his duties as a flight commander, never abandoning or leaving his pilots in the manner of Bishop, McCudden scored most of his kills when flying additional patrols alone. Both Mannock and McCudden shared the same skills and qualities, but Mannock's approach to combat aviation was completely team-orientated. McCudden's methods, by comparison, harked back to 1915 and 1916 when pilots often fought independently. While both were great commanders, Mannock's total dedication to his men that set him apart from McCudden. It is most likely this approach that created the difference between the two, with Edward Mannock's reputation as the greatest tactical commander deriving in part from his complete loyalty and focus he gave to the pilots around him.

Generations of Experience

The British and German air services experiences of fighter command clearly diverged over the course of the air war. With the qualities and attributes of success differing between the two forces, comparisons between the two cultures are difficult. Both services measured and recognised success differently, and both applied their fighter forces differently. The Germans fought defensively, losing the ability to have their air arm decisively influence the ground battle but allowing their increasingly outnumbered forces to continue to take a disproportionately large toll on the Allied fliers. The British fought offensively, allowing their air forces to best influence the ground war but incurring a tremendous cost in lives and machines while doing so.

¹⁷ Revell, A., *No 56 Sqn RAF/RFC*, p. 79.

While the reasons behind the evolution of these two different systems have been identified, the ability of each system to retain and promote experience and competency in command has not yet been considered. Did one system provide a clear advantage over the other in raising and sustaining expertise in tactical command?

Both sides struggled with the difficulty of keeping alive the highest performing fighter pilots while letting them influence the air war. No matter how lucky or skilled a pilot was, the statistics of the air war did not discriminate between ace and inexperience. Manfred von Richthofen was killed in action on 21 April 1918, but prior to his death he had survived being shot down twice, benefitting from the German policy of fighting above their own lines.¹⁸ Mannock and McCudden were expert tacticians and experienced pilots but both would be killed, Mannock in action and McCudden in a flying accident, within a month of each other. Bishop survived but he had been deliberately promoted away from flying duties, much to his frustration.¹⁹ The attrition of the experts was so pronounced that Peter Hart's history of the air war in 1918 was titled, aptly, *Aces Falling*.²⁰ While the air war claimed the lives of famed aces from 1915, it was in 1918 as the air war reached a crescendo that the most famed of the aces and *kanonen* were killed.

In an area as dynamic and new as the air war, the organisational knowledge of air fighting had only been gained through immense cost in machines and lives. Lessons, once learned, needed to be passed on to ensure that the expertise in air fighting did not erode. A RNAS Flight Commander recalled that 'our scanty knowledge of aerial fighting was soon augmented by bitter experience', referring to the early air combat in 1916.²¹ That 'bitter experience' understates the immense cost in lives and materiel that needed to be retained if those same costs were not to be imposed again. The C.O. of 84 Squadron, Major Sholto Douglas, was well aware of the importance of the leader:

Being the most experienced of all the pilots, the leader was the most capable of shooting down the enemy quickly and effectively; and with the squadron behind him and acting as a buffer against any attack from the rear he could afford to concentrate all his powers on the destruction of the enemy without having to peer all the time over his shoulder.²²

¹⁸ Franks, N., *Dog-Fight: Aerial Tactics of the Aces of World War I*, p. 185 & Franks, N. Et al, *Above the Lines*, pp. 187-189.

¹⁹ Goette, R., p. 66.

²⁰ Hart, P., *Aces Falling: War Above the Trenches*, 1918. London: Orion Books, 2008.

²¹ Johnstone, E. (Ed.), *Naval Eight*, p. 76.

²² Hart, P., *Aces Falling*, p. 54.

Artificial measures were imposed upon the highest-scoring pilots to ensure their survival. A statistical analysis of the kill rates of the pilots by the aerial historian Leon Bennett has shown that there were 'unwelcome victories' at a certain point.²³ The average rate of claims levelled off after a pilot scored a set amount, reflected by the organisation's desire to post pilots into training establishments or to send them on tours of aircraft testing depots, factories and cities. Having achieved fame the leading experts were symbols of success as well as expert fighters, and their survival was deemed important for morale as well as retaining their experience.²⁴

The retention of experience was important, especially from the experts who had identified and perfected the skills required to succeed in air combat. The retention and positioning of experts in command positions can be measured. Biographical records of the aces in *Above the Lines* and *Over the Trenches* allow the positions each expert occupied at the end of the war to be identified, providing a snap-shot of the career progression behind the command generation as of that date. For example, it is known that *Leutnant* Franz Buchner was in command of *Jasta* 13 on 11 November 1918, and it is also known that he was awarded 40 victories in total, the first of which he claimed on 17 August 1917.²⁵ This means that we can plot, with reasonable accuracy, when he was starting to learn fighter combat as represented by the date of his first kill. The information available is reasonably thorough, for the Germans at least, with only two *Jagdgeschwader* commanders being unaccounted for with this method. *Leutnant* Buchner's score also provides a very rough measure of effectiveness between him and his fellow commanders as determined by their rate of scoring. Plotted onto a graph, it is possible to see when the majority of the *Jagdstaffeln* and *Jagdgeschwader* commanders at the Armistice started their apprenticeships and learnt the skills of a successful *Jagdfleiger*.

²³ Bennett, L., pp. 165-183.

²⁴ Bennett, L., p. 186.

²⁵ Franks, N. Et al, *Above the Lines*, p. 35 and p. 86.

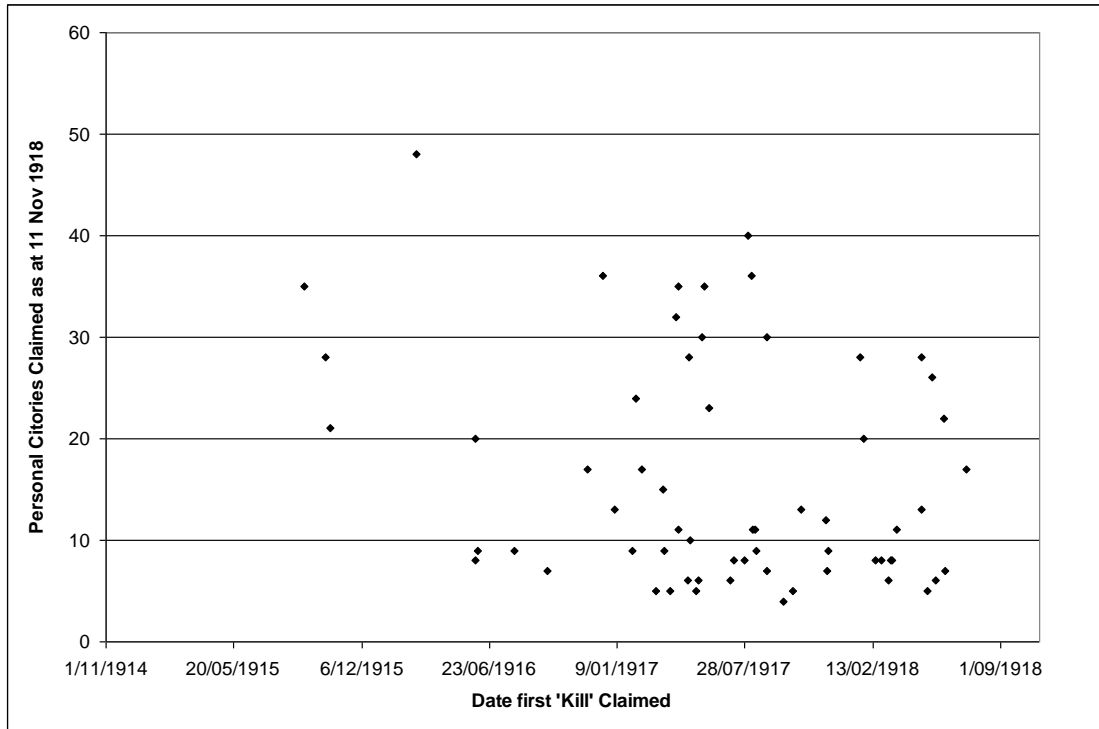


Figure 35: Generational View of *Jagdstaffeln* Commanders as at 11 Nov 1918.
 Source: Franks, N. et al, *Above the Lines*

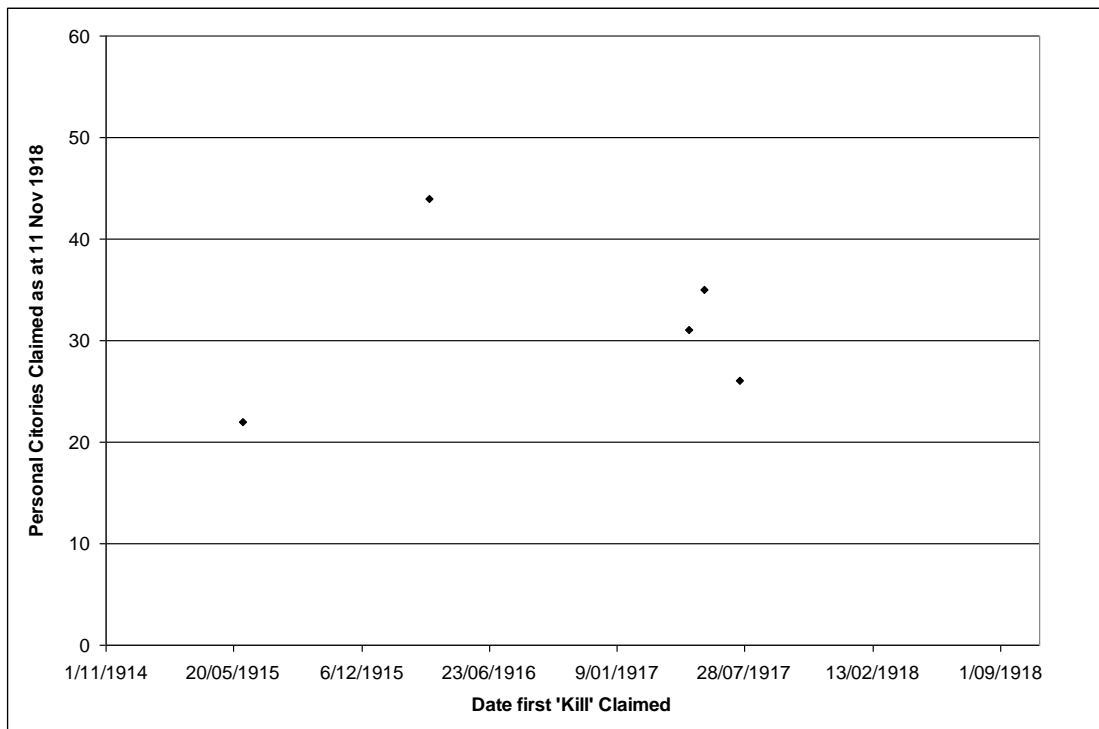


Figure 36: Generational View of *Jagdgeschwader* Commanders as at 11 Nov 1918
 Source: Franks, N. et al, *Above the Lines*

The origins of the *Jasta* commanders as at 11 November 1918 illustrates the heavy attrition rate that affected the Luftstreitkräfte throughout the war, with only three of the commanders having shot down an aircraft in 1915. The vast majority of the *Jasta* commanders learnt their trade in 1917, with a gap of around six months from mid-1918 representing the fact that it would take, at a minimum, six months for even the most prodigal pilot to go from scoring their first kill to being appointed commander. Three of the five *Jagdgeschwader* commanders learnt the basis of their trade in the 1917 air war, as well.

The British records can be worked out the same way, but are less complete as not every squadron commander was a recognised ace (and therefore are not featured in the *Over the Trenches* volume). Due to this limitation of source records British records only reflect their expert commanders. Of the 35 front-line fighter units, 145 flight commanders and 27 squadron commanders can be accounted for, meaning that roughly all the RAF flight commanders and 77% of the C.O.s as of November 1918 are included in the following graphs.

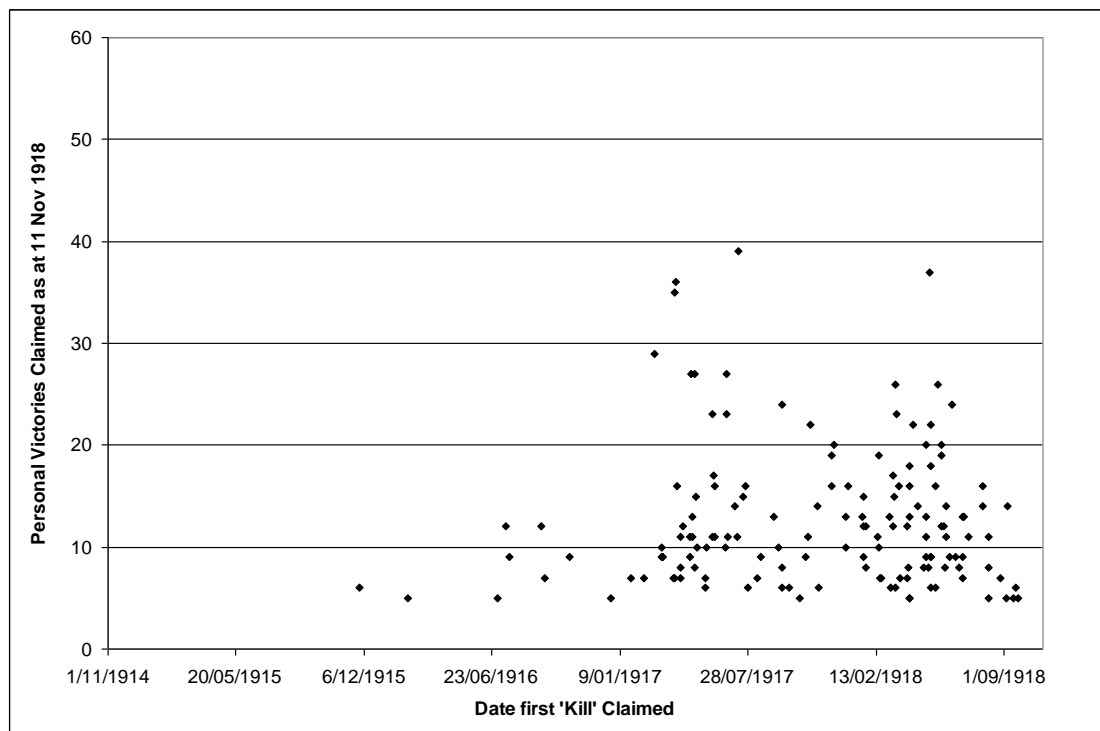


Figure 37: Generational View of RAF Flight Commanders as at 11 Nov 1918.
Source: Shores, C. et al, *Above the Trenches*

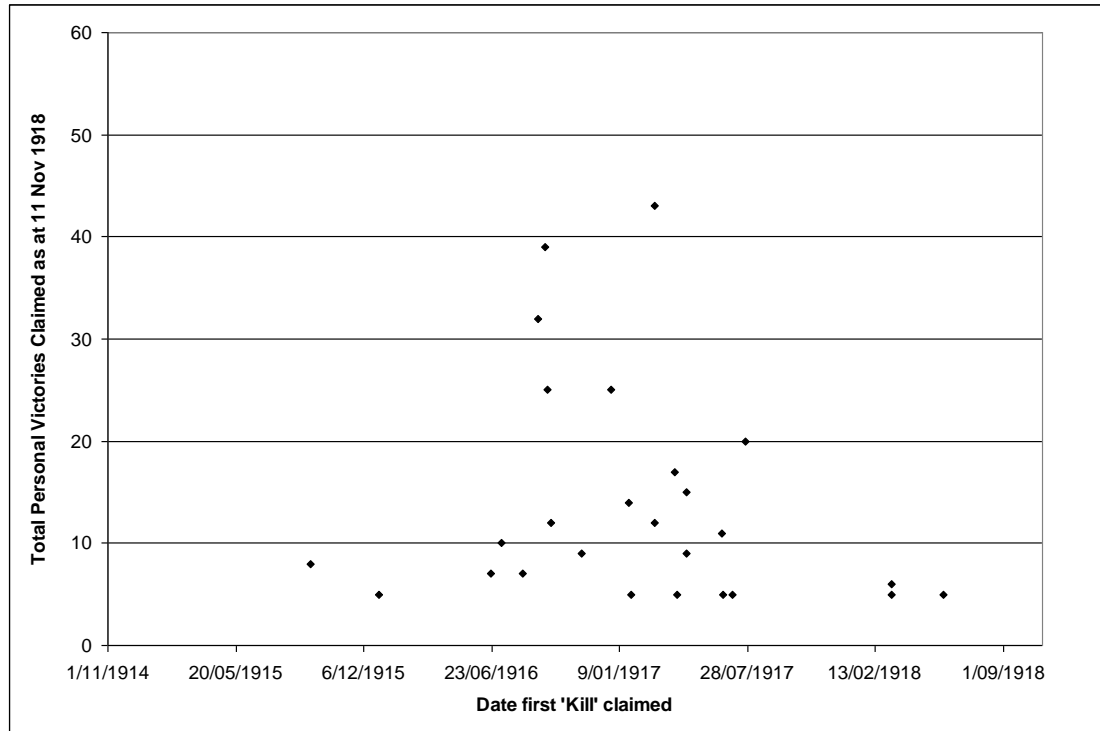


Figure 38: Generational View of RAF Squadron Commanders as at 11 Nov 1918
Source: Shores, C. et al, *Above the Trenches*

Taken together, there was a substantial generational difference between the typical career of a flight commander and squadron commander as of 1918. The flight commanders could have started learning air combat from mid-1917 right up until late 1918, whereas the squadron commanders started their careers in 1917 or earlier. Only three squadron commanders who achieved their first kill in 1918 were in a C.O.'s position as of the end of the war. The retention of experience and technical competence at the flight commander level is clear. It is interesting to note that all flight commander positions are accounted for, meaning that recognition as an ace under the British system was effectively a pre-requisite for flight command (evidenced by the fact that all flight commanders are accounted for in *Over the Trenches*, which was limited to those pilots with 5 recorded kills or more). This was not the case at the C.O. level, with only 77% of them having achieved ace status, and the majority of those are shown to have started their scoring in 1917.²⁶

These results reflect the different systems in use. The British rotated their senior flight commanders away from the front line in order to rest them before they took over as C.O., normally posting them to a training establishment. This created a

²⁶ The figure of 77% is based off the 35 fighter squadrons accounted for in Shores, C. Et al, *Above the Trenches*, pp. 30 – 43.

generational gap between the squadron and flight commanders, and ensured that the experience of the squadron commanders would be reintroduced into the front line units. Some flight commanders who had started their careers early, claiming enemy victories in 1915 or 1916, were still leading flights in 1918. These pilots can be assumed to be suitable flight commanders but, for whatever reason, were not selected for squadron command.

The German system didn't have any such gaps. With fewer positions available for *Jagdgeschwader* command, *Staffelfuhrer* was the highest position the majority of pilots would ever reach. The Germans were also less likely to post their pilots away from front line service. The training posts they did cycle their experienced pilots through were brief and normally used as an opportunity to recuperate injured pilots or to employ those awaiting a posting. This is reflected in the generation of *Jagdgeschwader* commanders of November 1918 that had a varied time of starting to learn combat, spread between 1916 and mid-1918. The attrition of the pilots who started fighting in 1916 is evident, with a far larger number having started from mid to late 1917.

German commanders, then, spent their career as an operational commander with injury or death being the most likely route to disqualification from a position of command. The British had a different system and their pilots faced an operational tour of anywhere between five months and a year before they would be removed from combat and be rested, normally at a training unit. This pool of 'veterans' returned, as flight commanders or C.O.s, after their period of rest. Given the high tempo of operations established by the British as part of their offensive flight patrols such escape from the demands and stress of combat was essential to sustaining the skills gained by the pilots. The C.O. of a Bristol F2B squadron, New Zealander Keith Park was aware that this rotation sustained the experienced pilots from unnecessary death due to combat exhaustion, especially as they had a lot to offer after months of fighting:

Two high patrols a day rendered officers inefficient at the end of five summer months, and necessitated their being withdrawn for a period of rest. In the autumn, winter and early spring, when flying was at lower altitudes, pilots could stand up to longer periods, eight or nine months... Unless carefully checked the highly strung 'enthusiast' wears himself out by extra patrols just when he has become most valuable to his squadron.²⁷

The longer lifespan of the British commander, evidenced both by the statistics and the knowledge that pilots were frequently posted to other positions with the RFC or RNAS, meant that the tactical commanders of the British forces were less likely to die in

²⁷ Hart, P., *Aces Falling*, p. 161.

command than their German counterparts. The British system, therefore, was able to recycle their organisational knowledge in their commanders, providing greater continuity and stability over the long term compared to that of the Germans. The drawback was that the British Squadron Commander was more likely to have learnt air combat in an earlier, different era of the air war that made them less suitable for tactical leadership or formation command. This was reflected by the British C.O. position being a key leadership and management role within the unit, with technical competency, expertise and example provided by the Flight Commanders. The *Jagdgeschwader* leaders, who were more likely to have started their careers later in the air war, were kept in the fight from their first days as a fighter pilot up until their command appointment with negligible breaks. While this inevitably ensured their skills were relevant it also meant that they were more likely to be killed or injured in combat, allowing their expertise to remain where it was needed most at the front line but unable to be used to grow and develop the organisation over the long-term.

In itself neither system was superior, with both sides employing and preserving experience in different ways and to different ends. The British system was orientated towards sustaining growth, preserving a pool of experienced pilots who could take command of a large number of squadrons. The German system was orientated towards maintaining optimum operational effectiveness, keeping their experts in positions of influence and actively contributing to the air war for as long as possible. If the British system was not necessarily superior to the German model, then how important was command in dictating the balance of air power?

The Importance and Value of Tactical Command in the Air War

‘In 1917 the RFC fighter pilots were led either by good or indifferent leaders...
The Germans had a better system developed by their Jagdstaffel formations.’²⁸
Norman Franks

The course of the air war is a story of early German dominance that ebbed between outright superiority and periods of parity while they carefully husbanded their air assets in a defensive strategy. Once the Allied air forces had built up a crushing numerical advantage and the British reformed their pilot training, the *Luftstreitkräfte* were finally overwhelmed in 1918. Coupled with this narrative is the story of tactical leadership in each air service. Embracing the advantage offered by the example of her

²⁸ Franks, N. & Saunders, A., *Mannock*, p. 39.

kanonen, the Luftstreitkräfte evolved a system of command dominated by expert individuals. By 1918 the inevitable attrition of experts and ordinary pilots alike had taken its toll, and the German air force was unable to use her valuable commanders to do anything but sustain the desperate struggle at the front. The limits of expansion within her air arm had been reached with only five *Jagdgeschwader* able to be formed.

On the other side, the British has sustained an incredibly costly and inefficient air war between 1915 and 1917, constantly throwing unprepared and ill-equipped pilots into a deadly struggle. Coupled with the policy of remaining constantly on the offensive the British air forces were unable to gain ascendancy in the skies until they had reformed their training systems and developed a fleet of late-war fighter aircraft in sufficiently large numbers. By 1918 the command system the RAF had inherited had allowed her fighter force to expand to just over 40 front-line fighter squadrons.

John Zentner's 2001 thesis on Wing Leadership concluded, in addition to the importance of fostering an aggressive spirit to justify losses, that tactical innovation was essential to the maintenance of aircrew morale. In his words, 'aircrew morale is primarily concerned with the tactics used to fly combat missions.'²⁹ His case-studies indicated that forcing pilots to execute inefficient tactics was the quickest way to undermining confidence, cohesion and commitment within a unit. At the opposite end of the spectrum, allowing tactical innovation and experimentation was universally correlated with the maintenance of morale. As a function of leadership, the commander could opt for two broad paths:

One method is the personal involvement... of the commander in creating new tactics himself. This may be the most response method to achieve results but it requires the commander to possess excellent tactical awareness and a reputation that translates to mission success and aircrew acceptance.³⁰

This method was the hallmark of the Luftstreitkräfte. The elevation of experts into command allowed them, at both the *Jagdstaffel* and *Jagdgeschwader* level, to lead tactical innovation. Their demonstrable aptitude in air combat created aircrew acceptance, and morale and operational effectiveness was maintained by constantly adapting to the situation.

The other method was embodied by the British air forces. This was 'to rely on the individual squadrons and aircrews in the wing to design new tactics.'³¹ In the case of the British it was the Flight Commanders who were innovating and designing tactics,

²⁹ Zentner, J., p. 97.

³⁰ Zentner, J., p. 99.

³¹ Zentner, J., p. 99.

with the squadron commanders delegating this responsibility as they lacked the 'excellent tactical awareness' and the 'reputation' required.

Norman Franks may have been correct to assert that, in 1917, many RFC pilots were led by 'indifferent leaders' and the German *Jagdstaffeln* of the time were more efficient.³² To say that the German's had an inherently better system is inaccurate, though. The same systems would remain into 1918 as the limitations of the German Luftstreitkräfte were reached and the British RAF finally succeeded in gaining aerial dominance. What had dictated the balance of air power in 1917 can be attributed to the poor training standards amongst the British pilots, the ongoing quest for technical advantage in aircraft design and the number of fighter aircraft each side could generate at any time. Parity of air power was closely contested, with the British being constrained in particular by the inexperienced pilots that were arriving at the fighter squadrons.

Above all, though, the balance of air power was a product of each side's policy. Divergent approaches between the British and German fighter forces had created different standards and requirements, with the British expending a huge amount of men and aircraft to provide support to their ground forces while the Germans sought to conserve their strength while extracting as heavy a cost as possible on the Allies. The systems and cultures of command were slaved to these ends. Thus it is inaccurate to compare the sub-systems of culture and command against each other. Instead, the contribution tactical command provided to their respective strategy should be the key criteria for assessing efficiency. It was the strategic circumstances that decided the state of air power by the end of the war, and not even the experts of the Luftstreitkräfte with *Jagdflieger*s such as Manfred von Richthofen could reverse the numerical overmatch of British, French and American air power.

British air superiority may have been achieved in the skies over France through a demanding aerial offensive sustained over a matter of years but it had been won by the industrial output of pilots and machines who, while not necessarily superior to their German counterparts, were easily 'good enough'. The University of Reading's Dean Juniper stated, accurately, that 'The RAF did not outfight the German air force, it overwhelmed it, filling the skies with aircraft and allowing opponents no respite for repairs or tactical regrouping.'³³ His study of British aeroplane procurement in the First

³² Franks, N. & Saunders, A., *Mannock*, p. 39.

³³ Juniper, D., "Some Were Chosen: A Study of Aeroplane Procurement in the First World War" in *Royal United Services Institute Journal*, December 2004, p. 68.

World War concluded that, above all, the deciding factor in the air war was industrial power:

It was not just a matter of numbers, however. The British procurement and supply system had delivered not only quantity, but quality... That was the final achievement of the new British aviation industry; not just to out-build the greatest manufacturing nation in Europe [that was Germany], but to so demoralize it that it could no longer trust what it produced.³⁴

It was not a race to field the best fighter force, but rather a race to field a good-enough fighter force in sufficient numbers with good-enough aircrew. In 1918 the British achieved this with their overwhelming number of Camels, Bristols and SE5a squadrons, whose operations were only made possible by the large number of pilots who had crucially received improved training, updated tactics and were led by a large number of experienced flight and squadron commanders. Despite the hardships of the years before, the British system's insistence on developing a conventional and large fighter fleet created a force that was, eventually, able to out-fight the German's elitist model.

* * *

The Germans had evolved and retained, from the early days of the air war, a tactically superior fighter force. They had done so at the expense of their operational and strategic levels, investing their resources in optimising their elite units to such an extent that they became the sole focus for their organisation. Up until 1918 such a policy worked well compared to the British, who had neglected their tactical standards and forces to focus their organisation on growing and expanding. The British prioritised strategy at the expense of tactics, while the Germans prioritised tactics at the expense of strategy. While the air war developed and expanded through 1915, 1916 and 1917 the Germans were able to use their more agile and efficient organisation to retain a level of competitive parity against the Allies, even as their forces were increasingly outnumbered. By 1918 the tides had dramatically shifted and the British had managed to improve the quality of their fighter force without compromising on their over-arching policy of expansion. Combined with the French and the growing might of the Americans, British air supremacy was inevitable. Patrol leading was only one of many crucial factors that determined the course of the air war.

³⁴ Juniper, D., p. 68.

CONCLUSION

COMMAND AS AN ESSENTIAL BUT NOT DECISIVE FACTOR

When William Sherman assessed the importance of tactical command as being 'the most important factor in determining air supremacy', he was looking at the final iterations of the air war. It had progressed well beyond the era of pioneering individuals, with 1918 being characterised by large, complex and specialised branches of each air service all struggling to perform their role in the face of heavy opposition. The German's were firmly on the defensive, while the British were committed to a relentless and costly aerial offensive. Fighter aviation had come a long way, and although many of the leading experts that had driven developments such as Manfred von Richthofen and Edward Mannock had fallen in combat, their legacy outlived their deaths and would continue to shape and influence the conduct of the air war until the very end.

Between the two services, vastly different cultures and systems of command had developed. The Luftstreitkräfte had evolved and grown their fighter force into a select elite, choosing, promoting and replacing commanders based on their performance as fighter pilots. The champion of this system, Manfred von Richthofen, set an example of ruthless efficiency, setting and maintaining incredibly high standards until he was killed in combat. The British approach avoided concentrating talent and sought to create a large conventional force, where ordinary units were good enough to overwhelm the entirety of Germany's air force. This system was epitomised by the leadership and teachings of Edward Mannock, whose abilities as an instructor and mentor were just as important to his position of influence within the RFC as his abilities as a fighter pilot.

By 1918, Britain and Germany's approach to tactical command had clearly diverged. Both systems were structured to different ends, with the nature of British tactical command being experienced as part of the drive to expand to overwhelm the Luftstreitkräfte with numbers while sustaining an unceasing aerial offensive over German lines. Faced with the overwhelming odds against them, the German system of command emphasised the use of experts. They sought to maximise the outputs of their highest performing pilots by placing them into positions of command and building a

system of *Jasta* and *Jagdgeschwader* tactics around them. The German approach to the air war was inherently defensive and sought to oppose the Allied air forces through careful economisation of resources and effort at the tactical level. The German aerial campaign, then, was not directly comparable to the British objectives, each being structured to their own ends and each influenced by their own situation.

By 1918 the air war had being largely won by the Allies with the RAF fighter squadrons playing an instrumental role in driving the German *Jagdflieger*s from the skies. The British air forces had paid an extremely high price for their achievement but they had, eventually, met the objectives set for them. By comparison German air power had being rendered irrelevant but, faced with incredible odds, they had continued to test Allied air superiority and even as the German army and navy collapsed into dissent and disarray, the fighter branch remained a remarkably cohesive fighting force. Against this background the Luftstreitkräfte had performed admirably well, even as success swung well away from them.

Given the situation and strategies of each service, the cultures and systems of command in both the British and German air forces were successful in different ways. Both systems and cultures had their strengths and weaknesses and both raised, trained and sustained their fighter forces differently. Neither system was perfect, with the German approach creating a large group of 'very ordinary' units, while the British approach was extremely and needlessly inefficient and wasteful in lives and machines. Both systems had their benefits: the German system extracted an incredible toll on their enemies for remarkably few losses, while the British system eventually allowed their overwhelming superiority in aircraft and men to be brought to bear over German lines, winning them air superiority late in the war.

It is impossible, then, to compare or quantify the qualitative difference in command between the two services. Both fought in the same air war, but both were structured to different ends. Thus William Sherman's assessment of the air war of 1918 was not so much inaccurate as incomplete. The Luftstreitkräfte was not outfought by superior British commanders, as his *Tactical History* implies. British patrol leading was not the decisive factor, but only one important factor amongst many that won the British the air war. Tactical command was, however, essential to the operations of the Luftstreitkräfte and the RFC/RAF. Without the dedication and sacrifices made on the front-line by their junior leaders, neither power's air strategy would have functioned. Tactical command may not have been decisive to the outcome of the air war, but it was crucial in the conduct of it.

* * *

Many of those involved in the first air war returned, in just over two decades, to participate in the even larger battles of the Second World War. The influence, teachings and example of Richthofen and Mannock would live on, and their tactics and beliefs would be expanded onto a larger scale still. Those who had fought in the Luftstreitkräfte and the British air forces in the first war would play important roles in the next war. Keith Park would direct the aerial defence in the Battle of Britain against the new German *Luftwaffe*, which was led by Richthofen's successor in *Jagdgeschwader JG1*, Hermann Goring. Many other pilots, experts and commanders alike, played additional roles in the air forces of 1939-1945. How the organisational systems, culture and experiences of command of the First World War influenced the conduct of the second is another topic in itself. Considerable research remains to be done in this area of study, and this topic has only answered one question of the First World War period. French and American command has been largely ignored, and German sources (beyond those which are available as already translated books) have not been used. This thesis has focussed on the tactical command of the fighter forces, neglecting the experiences of the two-seater units. Further research could be undertaken into the contribution of tactical command as a component of air power within a wider context encompassing subsequent campaigns and wars, or greater emphasis could be given to the First World War period alone to include other nations or other branches. Regardless, it is hoped that this thesis has cast light on the culture, systems and experiences of tactical command of the First World War, and that students of leadership and early air power will benefit in some way from these findings.

Based off this thesis, William Sherman's claim that the 'superiority of the British patrol leaders was responsible more than any other factor for keeping air superiority' appears incomplete. While British tactical command contributed to their claim of aerial superiority in 1918, it did so as part of a far larger struggle to overwhelm German forces. The opportunity cost of creating elite forces weighed heavily on the Luftstreitkräfte into the final year of the war, as their tactically-focussed force was unable to combat the crushing numerical superiority of the Allies. The British, by contrast, had concentrated their efforts on developing their air forces at the strategic level, seeking to expand while sustaining a constant offensive against the Germans. By 1918 they had generated sufficient numerical and qualitative strength, both in machines and in the standards of pilots and commanders, that the RAF was able to overwhelm the smaller, more agile Luftstreitkräfte. The British path to victory was not easy or straightforward, and many factors contributed to the final outcome. Above all,

British patrol leading was only one of many important factors that won the British the air war. Tactical command may have been a crucial and enabling factor but it was the cumulative effects of a grand strategy, encompassing the entirety of policy, men, materiel, machines, industry and organisation, that dictated the final balance of air power in 1918.

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