

## **Recruiting and training the Royal Flying Corps. Finding and preparing the men who would fight Britain's first war in the air**

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**Recruiting and Training the Royal  
Flying Corps. Finding and Preparing  
the Men who Would Fight Britain's  
First War in the Air**

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**By David Spruce, BA, MA**

**Submitted in accordance with the requirements for the degree of Doctor of  
Philosophy**

**The University of Wolverhampton**

**2023**

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## **Abstract**

This thesis explores two interrelated and previously neglected aspects of the Royal Flying Corps (RFC) during the First World War: recruitment and training. The study will examine who the RFC recruited for roles both in the air and on the ground. It will explore how the force's makeup changed as the war progressed, why such changes occurred, their consequences, and how the RFC responded. It will examine how the men were targeted, the recruitment process that followed, and ultimately assess how successful the RFC was in meeting its recruitment challenge. A successful organisation can either recruit skilled men or train the unskilled. This research will show how skilled tradesmen were readily available at the beginning of the war and that the RFC had a lengthy pipeline of pilot applicants. As the war progressed, this dynamic shifted markedly, and the research investigates how the RFC built both a pilot and tradesmen training organisation to compensate for the absence of knowledge in later recruits. The research will also challenge several myths and stereotypes with a particular focus on accident rates during training, and a major new assessment of the role played in training by Robert Smith-Barry. It extensively uses previously untapped sources that challenge existing historiographical contentions, many of which have been based on limited or inaccurate sources. Ultimately, the thesis fills a sizeable gap in our understanding of who the RFC were during the First World War.

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## Introduction

The schoolboys sent to the Flying schools to be groomed for battle [...] were as likely as not to be killed or crippled trying to master dangerous aeroplanes long before they got anywhere near the Western Front. [...] Of the grand total of [...] pilots and observers killed in the first air it is a staggering fact that just over two-thirds lost their lives in training accidents at flying schools<sup>1</sup>

Ian Mackersey's comments are taken from his 2012 book *No Empty Chairs*. The sentiments they embody are common in the Royal Flying Corps (RFC) historiography. Many of the first air war stereotypes relevant to this research are evident in this short passage. The men were still schoolboys – given Mackersey's preceding chapter is entitled 'Public School Boys Wanted', there is no doubt about what type of schoolboy he means. Mastering dangerous aeroplanes during training was deadly, so much so that 66 per cent of them would die learning to fly.

The problem with this paragraph is that every contention is either exaggerated or false. Such assertions about RFC men's recruitment and training illustrate why this thesis is required and assist in the formation of the research questions that follow. By exploring and challenging the popular representations of the RFC, it will uncover who the men of Britain's first air service really were and discover how they were trained. Doing so will challenge widely held views, notions, and myths that continue to be expounded in the First World War historiography.

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<sup>1</sup> I. Mackersey, *No Empty Chairs* (London: Orion, 2014, [2012]), p.67 and p.69.

## Background

Between 13 and 18 August 1914, the first men of the Royal Flying Corps Military Wing made their way to France.<sup>2</sup> They represented the lion's share of an organisation that was only two years old and numbered just 146 officers and 1,097 other ranks.<sup>3</sup> Over the next four years, the transformation of the air force would be remarkable. Manpower levels would grow 140-fold, and the aeroplane would cease to be an object of curiosity and potential and instead become an integral tool in a new combined-arms approach to warfare.

Such exponential growth and the inherent organisational demands brought about by resultant process changes, infrastructure growth and record-keeping complexity would present a stiff challenge even in today's interconnected world. Nevertheless, those that ran Britain's flying services during the First World War achieved such growth in a world of paper and filing cards whilst subjected to intense competition for their manpower. All of Britain's services sought the brightest and most able to fill their roles. Officers were in demand across the military, while the munitions industries at home required skilled engineers and tradesmen.

The latter group, the engineers, tradesmen and labourers, would make up the vast majority of the RFC throughout the war. For example, of the 50,000 uniformed men in France with the RAF in November 1918, 29,000 or 58 per cent were the mechanics,

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<sup>2</sup> W. Raleigh, *The War in the Air: Being the Story of the part played in the Great War by the Royal Air Force: Vol. I* (London: Hamish Hamilton, 1961 [1922]), p.284.

<sup>3</sup> H.A. Jones, *The War in the Air: Being the Story of the part played in the Great War by the Royal Air Force: Appendices* (Naval & Military Press, 2002 [1937]), Appendix XXXV.

fitters, engineers and others who kept the aircraft flying.<sup>4</sup> Only 8 per cent, some 4,000 men, were classed as 'combatants', that is, those that flew either as pilots, observers or gunners. However, these comparatively few men have come to dominate the RFC's historiography and, consequently, how the RFC is perceived today. Very little has been written about the remaining 92 per cent of the Corps. This thesis sets out to change that.

Once recruited, tradesmen needed additional training in the nuances of their roles. Mechanics, sometimes familiar with the technology of motorcars or motorcycles, would still have to learn to maintain and overhaul several different aeroplane engine variants. For those that flew, training during wartime presented unique challenges. The integration and training of such large numbers of new pilots, even in a static, unchanging environment, would have been complex. The RFC's challenge was compounded by the need to train accelerating numbers of men during a period of revolutionary technological and tactical change. For example, a Bristol F2B in service in 1918 had little in common with a Maurice Farman Longhorn of 1914 other than they could both leave the ground. The skillset to fly or maintain this new machine, four times as powerful, sophisticatedly armed, capable of advanced aerobatics and flying more than twice as fast, was totally different. Tactics and processes involving wireless, photography, bombing technology, ground cooperation, and aerial combat were all subject to similar revolutionary advancements. The RFC's recruitment and training performance, therefore, must be judged in the context of this exponential growth and technical and tactical revolution.

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<sup>4</sup> P. Dye, *The Bridge to Airpower: Logistics Support for Royal Flying Corps Operations on the Western Front 1914-18* (Annapolis: Naval Institute Press, 2015),p.9.

## Scope and Definitions

Recruitment and training are intrinsically linked. Consequently, it is necessary to cover them both within the scope of this research. *Recruitment* in this study refers to the process by which a man joins the air services. Such a process includes identifying a specific skill set, targeting personnel to fit the brief, and the process to interview, test and onboard those selected. *Training* refers to the process by which men acquired the skills that enabled them to perform the role for which they had been recruited. Such training could be classroom based, in workshops, via instruction, in practice in the air, or in squadrons and mess tents from peers or senior personnel.

Due to word count constraints, it is necessary to impose limitations on the scope of this research. The study will be confined to the Military Wing of the RFC. Consequently, it will not - other than in passing - reference activity within the naval wing, the Royal Naval Air Service (RNAS). The exception to the latter restriction will be when developments took place after 1 April 1918. At this point, the RNAS merged with the RFC forming the independent Royal Air Force (RAF). The period under examination has been restricted to the war years 1914-1918.

The research scope includes officers and men of all ranks, including pilots, equipment officers and those involved in a trade to keep aircraft airborne. Reference to observers is light touch for reasons that will be elaborated on later. As well as resources recruited and trained in Britain, this thesis will include the recruitment of men within the Dominions, and reference will be made to the training of RFC personnel in schools in Canada, Egypt, and America in addition to Britain.

## Literature Review

There has been no focussed study of the Royal Flying Corps' recruitment during the First World War and only limited studies related to training. Consequently, an extensive secondary source review has been required. Between 1922 and 1937, six volumes plus appendices of the *War in the Air: Being the Story of the Part Played in the Great War by the Royal Air Force* were written in Britain to form the air services' official history. The first volume is stylistically the most striking, perhaps not surprising given that its author, Sir Walter Raleigh, was a Professor of English Literature at Oxford University. Following Raleigh's untimely death, a former officer, H.A. Jones, produced the remaining more stolid volumes. The collective work provides a comprehensive and detailed account of the air service's military and naval wings, but its often illogical sequence makes for a fragmented read.

While the official histories provide an excellent account, it is necessary to exercise caution before placing total reliance on them as a source. Both Raleigh and Jones relied upon reports from serving and former officers – the portrayal of Robert Smith-Barry will be explored in a later chapter, so it is natural that there is often an inherent desire to paint the air service in a good light. Accepting such caveats, *Volume Three*, in particular, contains a valuable, dedicated chapter, *Recruitment and Training*, which provides a good overview of the training system throughout the war as well as some important information regarding the Polytechnic Institutes and the training of tradesmen.<sup>5</sup>

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<sup>5</sup> H.A. Jones, *The War in the Air: Being the Story of the part played in the Great War by the Royal Air Force: Volume Three* (Naval & Military Press, 2002 [1931]),pp.285-302.

Britain was not alone in producing an official history of the war in the air, and those of other nations also contain relevant information. Australia produced its official history, *The Australian Flying Corps in the Western and Eastern Theatres of War 1914-1918*, written by F.M. Cutlack in 1923, a year after Raleigh's volume was issued. Whilst predominantly an operational history, it includes short but detailed appendices on the formation of the corps and the men's training in Australia and England.<sup>6</sup> Published almost sixty years after Cutlack and Raleigh's works, Sydney Wise's *Canadian Airmen and the First World War* made use of newly available sources. This allowed him to provide a comprehensive account of the Canadian men who joined the RFC and the training programmes in Canada and the USA.<sup>7</sup>

Many books on the air war have been written, but naturally, given their broad scope, they have focussed principally on operational aspects and aerial campaigns. Consequently, they contain only thin recruitment and training coverage and often rely on a few limited sources. Given the standing of these texts in the historiography, what they do have to say is important to consider. One of the most influential books on the air war is John Morrow's *The Great War in the Air*. It is a well-written account that covers all belligerents but is perhaps too keen to emphasise what Morrow believes was an RFC preoccupation with class and social status. It was, he says, 'difficult for the British to divorce [...] notions about class and the requirements for a good pilot' and that:

The RFC's characterization of air combat as a sport stemmed from its composition - a corps of commissioned officers who were recruited as much as possible from the

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<sup>6</sup> F.M. Cutlack, *The Australian Flying Corps in the Western and Eastern Theatres of War 1914-1918* ((Naval & Military Press, Undated [1923]), Appendix No.2, 3 and 5.

<sup>7</sup> S.F. Wise, *Canadian Airmen and the First World War: The Official History of the Royal Canadian Air Force, Volume I* (1980).

ranks of public school sportsmen and drawn to flying for the adventure.<sup>8</sup>

Morrow is not alone in making connections between the RFC and Britain's public schools. To some extent, it is a fair observation. The service did target public schools and universities for candidates. However, the linkage often stereotypes the RFC's pilot as so cleverly done in BBC's satire *Black Adder Goes Forth* as some bumptious toff, well-bred but limited. This study will test the extent to which recruitment was focussed on simply finding the best candidates or whether it was influenced by some class-based ideology. On training, Morrow correctly notes that much of the training system's strain was a natural product of the demand placed upon it by the war in France.<sup>9</sup> Whilst noting the haste with which pilots were sent to the front, he, like so many others, offers no credible alternative. Frustratingly too, Morrow quotes statistics on training accidents that compare British, American and French systems that ultimately have no verifiable source.<sup>10</sup> When he turns to improvements in training during 1917, he rightly attributes praise to John Salmond for improving the supply of training aircraft, but, as with much of the historiography, there is a problematic acceptance and reliance on Frank Tredrey's book *Pioneer Pilot* to explain British improvements.<sup>11</sup>

Lee Kennett's work *The First Air War 1914-1918* is like Morrow's, broad in scope covering all belligerents with material on RFC recruitment and training similarly limited. Nevertheless, Kennett does consider the motivations for joining the Corps and cites, in particular, higher pay and volunteering 'in hopes of escaping the hell of the

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<sup>8</sup> Morrow, *Great War*, p.315 and p.117.

<sup>9</sup> Ibid. p.116 & p.174.

<sup>10</sup> Ibid. p.318.

<sup>11</sup> Ibid. p.175.

trenches'.<sup>12</sup> Though Kennett does not include references – a frustrating issue with this work in general – these motivations are confirmed in several primary sources, as will be demonstrated. He is also right to note that a significant source of officer recruits for the RFC were wounded infantry officers, though as will be seen, he is incorrect to conclude that such men often had to ‘talk their way into the flying services.’<sup>13</sup>

Kennett is one of many historians to note that RFC recruiters sought pilots with ‘good hands’, that is, possessing the *touch* required to handle an aeroplane sensitively.<sup>14</sup> Good hands were considered a significant factor in horse riding ability. The parallel was thus made that a good rider might make a good aviator. This parallel is not the creation of historians. It was noted in a September 1918 *Lancet* report entitled, *The Essential Characteristics of Successful and Unsuccessful Aviators* by Captain T.S. Rippon that ‘one of the most important characteristics we have noticed in successful aviators is “hands”.’<sup>15</sup>

While a horse and an aeroplane appear to have nothing in common, Kennett notes that the ‘deftness and dexterity in hand movements [were] common to the good horseman and the good pilot’.<sup>16</sup> Horse riding would continue to be a positive recruitment factor into the 1930s. Kennett differs from Morrow on class, stating that the selection process ‘placed little emphasis on a candidate’s cultural background or social standing.’<sup>17</sup> While he attributes this to the fact that the RFC was ‘a new branch

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<sup>12</sup> L. Kennett, *The First Air War 1914-1918* (New York: Simon & Schuster, 1999 [1991]), p.115.

<sup>13</sup> *Ibid.* p.117.

<sup>14</sup> *Ibid.* p.116.

<sup>15</sup> T.S. Rippon, ‘The Essential Characteristics of Successful and Unsuccessful Aviators with Special Reference to Temperament’ in *The Lancet* (September 28, 1918).

<sup>16</sup> Kennett, *Air War*, p.116.

<sup>17</sup> Kennett, *Air War*, p.116

of the service lacking in tradition and unencumbered by association with any particular class', this, as will be shown, was more valid for later recruits than those who transferred from other army regiments earlier in the war.<sup>18</sup>

Kennett, like others, spends almost no time discussing the processes and procedures related to RFC training, noting only that 'instruction became more effective as the war progressed.'<sup>19</sup> Unfortunately, Kennett stereotypes when he claims instructors were 'fought out or suffering from combat fatigue [...] short-tempered and irritable'.<sup>20</sup> On firmer ground, he is correct to observe that 'flight schools were not the slaughterhouses depicted in more than a few books on early aviation' as this research will show.<sup>21</sup>

Ralph Barker's two works, *The Royal Flying Corps in World War I, From Mons to the Somme* and *The Royal Flying Corps in France, From Bloody April to Final Victory*, are both lively, predominantly operational accounts. Like Kennett's discussion of pilot recruitment, Barker discusses 'hands' and also defends the RFC adding that 'the self-confidence needed to control an animate object, and the ready acceptance of a physical challenge' were essential attributes.<sup>22</sup> Notably, he too dismisses Morrow's class-based connections, pointing out that 'far more people were accustomed to horses as a means of transport than would be the case today.'<sup>23</sup>

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<sup>18</sup> Ibid.

<sup>19</sup> Ibid. p.122.

<sup>20</sup> Ibid. p.126.

<sup>21</sup> Ibid. pp.126-127.

<sup>22</sup> R. Barker, *The Royal Flying Corps in World War I, From Mons to the Somme* (London: Robinson, 2002 [1994]), p.21.

<sup>23</sup> Ibid.

Across both works, Barker mentions Robert Smith-Barry on several occasions and relies on Frank Tredrey's previously mentioned work when doing so. Barker quotes an alleged Robert Smith-Barry rant to Hugh Dowding at Wing HQ about a batch of replacement pilots "They've only seven hours flying, sir, it's bloody murder."<sup>24</sup> Tredrey does quote Smith-Barry as having made this comment. However, he alleges it was to Trenchard rather than Dowding.<sup>25</sup> In actual fact, the comment was second-hand, having been made by one of Smith-Barry's closest friends and right-hand men, Dundas Heenan, to Tredrey during the research for his book in the 1960s and is almost certainly, as will be shown a creation. Elsewhere, in a warning of the dangers of memory and reliance on single sources, Barker also quotes a pilot Vernon Brown as having only 15 hours total flying time when he was made an instructor in 1916. Brown's earlier oral recollections contradict this.<sup>26</sup>

Barker's books are critical of the RFC's approach to training and give little credit for any improvements before the arrival of Robert Smith-Barry. In the absence of any sources, however, such criticism often results in hyperbole rather than sober judgement. Recruits are 'inadequately trained beginners' as late as 1917, for example.<sup>27</sup> Further, in a quote attributed to Trenchard-critic Brigadier P.R.C. Groves, he states that 'untrained lads' were also still being sent on mass to France at this time.<sup>28</sup> Not surprisingly, given the picture Barker is painting, he also quotes Leo Charlton's account that sending inadequately trained men 'seemed little short of

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<sup>24</sup> Barker, *Mons*, p.171.

<sup>25</sup> F.D. Tredrey, *Pioneer Pilot: The Great Smith Barry who Taught the World How to Fly* (London: Peter Davies, 1976), p.52.

<sup>26</sup> R. Barker, *Bloody April*, p.213 and V. Brown, lecture at Royal Aeronautical Society's Historical Group on 10 February 1969..

<sup>27</sup> Barker, *Bloody April*, p.6.

<sup>28</sup> *Ibid.* p.48.

murder'.<sup>29</sup> Charlton's comment is, however, from his later colourful autobiography and not a contemporary comment. It will be discussed shortly. In any case, it is flimsy evidence to justify Barker's assertion that:

The failure to impose strict training programmes on new squadrons as they arrived, and to organise routine training programmes in France, surely amounted to culpable, if not criminal, negligence.<sup>30</sup>

Finally, concerning general books on the RFC, a few words on Denis Winter's *First of the Few*, written in 1983. Though his later book *Haig's Command* became contentious after allegations that Winter had fabricated or misused material, *First of the Few* has escaped similar criticism. Unfortunately, this work also contains spurious or invalidated statistics. Winter does not include footnotes, but he does include a 'Notes on Sources', which consists of a curious mix of works. For example, Winter cites only American Harold Porter's 1921 piece about aerial observation and a series of works written during the war concerning training. None of these cited works contain the negative sentiments that Winter himself expresses.<sup>31</sup> Otherwise, in his chapter 'Learning to Fly', Winter's notes suggest he has relied almost solely on the official histories, with his information on Smith-Barry's reforms again coming from Tredrey.

Winter quotes a bewildering - and at face value, powerful - number of statistics to assert his case that training was, on the whole dreadful. For example, he says that training 'material was laid down in a manual which devoted six of its 141 pages to actual flying instructions' and that Brancker himself 'reckoned that at best only 10 per

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<sup>29</sup> L.E.O. Charlton, *Charlton: An Autobiography* (London: Penguin, 1938 [1931]), p.239.

<sup>30</sup> Barker, *Mons*, p.220.

<sup>31</sup> D. Winter, *The First of the Few: Fighter Pilots of the First World War* (London: Penguin, 1983 [1982]), p.213.

cent of them [RFC instructors] were efficient teachers.'<sup>32</sup> The inference is that this is a book written with a scientific approach to data. However, such claims are more often than not without evidential foundation.

Winter also claims that examinations during training were a 'farce' and training hours 'gentlemanly - 10 am to midday and 2 to 4 in the afternoon with no flying at weekends. After work, time was always a trainee's own'. He also claims that Smith-Barry reforms 'halve[d] the death rate immediately in training'.<sup>33</sup> Such contentions will be tested in this thesis. However, it is his claims regarding deaths in training that have been seized upon by the historiography. For pilots, he alleges:

So pervasive was the fear of death in training that few memoirs chose to probe the area deeply. Put statistically, official figures at the end of the war listed 14,166 dead pilots, of whom 8,000 had died while training in the U.K.<sup>34</sup>

This research has found that virtually every memoir and diary consulted contains some mention of flying training – this is hardly surprising; it was a significant milestone in a pilot's life. Regarding the number of British training deaths, this research will test the veracity of Winter's numbers. Such analysis is vital as other historians, including Edward Bujak, Joshua Levine, Peter Daybell, Ian Mackersay, and experts in the field David Jordan and Michael Molkentin, have quoted the statistic that underlines the reputation of training as deadly.<sup>35</sup>

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<sup>32</sup> Winter, *The Few*, p.37 and p.18.

<sup>33</sup> *Ibid.* p.32.

<sup>34</sup> *Ibid.* p.36.

<sup>35</sup> E. Bujak, *Reckless Fellows: The Gentlemen of the Royal Flying Corps* (London: I.B. Taurus, 2015), p.4, J. Levine *Fighter Heroes of WW1: The Extraordinary Story of the Pioneering Airmen of the Great War*, p.63, D.J. Jordan, *The Army Co-operation Missions of the Royal Flying Corps/Royal Air Force 1914-1918* (PhD Thesis, University of Birmingham, 1997), p.65, P. Daybell, *With a Smile and a Wave: The Life of Captain Aidan Liddell VC MC* (Barnsley, Pen & Sword, 2005), p.233.

While there are no dedicated published books on RFC recruitment, other secondary sources have proved helpful in preparing this work. Jeff Jefford has written and lectured on RFC training over several years. His extensively researched, scholarly work *Observers and Navigators and other non-pilot Aircrew in the RFC, RNAS and RAF* is a masterpiece of detail concerning the RFC's approach to training observers and is why observers will be lightly touched on here.<sup>36</sup> Perhaps less scholarly is Edward Bujak's 2015 work, *Reckless Fellows: The Gentlemen of the Royal Flying Corps*, which, from its opening line, 'The original officers of the RFC were cavalrymen and fox-hunting country gentlemen who belonged to the social elite of Edwardian England', stereotypes the RFC as Edwardian 'hoorah henrys'.<sup>37</sup>

As this thesis will show, the reality was somewhat different. Even amongst the men in the first wave going to France in August 1914, only seven of 101 pilot officers were from cavalry units.<sup>38</sup> In its desire to prove that RFC men 'looked to the recklessness of the fox hunting Edwardian cavalryman for a role model', the work loses sight of the real RFC.<sup>39</sup> Its comments concerning training are predominantly limited to other secondary sources such as Winter or, about Smith-Barry reforms, to the familiar reliance on Tredrey. However, there are some valuable points amongst the generalisations. These are worth noting, such as the fact that Harlaxton Aerodrome was 'placed on the west-facing ridge above the Manor. This produced the additional lift needed to help novice pilots take off', which illustrates unwittingly that rather than not caring, significant thought minimised the potential for accidents.<sup>40</sup>

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<sup>36</sup> G.C. Jefford, *Observers and Navigators and other non-pilot Aircrew in the RFC, RNAS and RAF* (London: Grub Street, 2014 [2001]).

<sup>37</sup> Bujak, *Reckless Fellows*, p.1.

<sup>38</sup> Using the list of officers in W. Raleigh, WITA, pp.288-292.

<sup>39</sup> Bujak, *Reckless Fellows*, p.13.

<sup>40</sup> *Ibid.* p.5.

British pilot training was the dedicated subject of a Masters dissertation by Robert Morley in 2006.<sup>41</sup> While his analysis provides elementary detail on the training system's administration, it is significantly flawed in its conclusions on training effectiveness and its central assertion that instructors were to blame for losses. Morley cites the National Archives and Imperial War Museum as his chief sources of material but is irritatingly imprecise in his footnoting, which contains several errors or omissions. His training opinions result from a small sampling of post-war interviews from officers who attended early RAF College sessions.<sup>42</sup> By his own admission, he failed to consult the extensive material at the RAF Museum, and reference to 'various logbooks' when making assertions concerning flying hours makes any claims impossible to substantiate.<sup>43</sup>

Morley uses a few administrative errors from one archival file to make a sweeping claim that on multiple occasions, 'deliberate falsification of grades and student records' by instructors took place. This, he says, was part of an 'endemic problem'.<sup>44</sup> This research will investigate such claims. Morley's own evidence of instructor failures is confused. Instructors are somehow both too old and too young to be effective. He states on one hand that:

The prevailing climate of indifference was often worsened when students dealt with older and more experienced instructors', [but just two pages later claims,] 'The general inexperience and in some cases, obvious youth of many RFC instructors was also a major cause of a pupil's unhappiness'.<sup>45</sup>

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<sup>41</sup> R.M. Morley, *Earning their wings : British pilot training, 1912-1918* (MA Thesis, University of Saskatchewan, 2006).

<sup>42</sup> A small selection of the over 200 "Account by Course Students of Service Experiences" held between AIR1/2839 and AIR1/2392 have been used.

<sup>43</sup> Morley, *Wings*, p.57, for example footnote, 'IWM73, various pilot and instructor logbooks. PRO Air 4, various pilot and instructor log books.'

<sup>44</sup> *Ibid*, see pages 61, 69 &70 as examples.

<sup>45</sup> Morley, *Wings*, p.64 and p.66.

Dominion pilots of Australia, New Zealand, South Africa, and Canada were vital to the RFC. A small number of historians has served this area of the historiography well. Michael Molkenntin's *Fire in the Sky: The Australian Flying Corps in the First World War* and, in particular, his work for the *Centenary History of Australia and the Great War* series, *Australia and the War in the Air*, are well-researched, scholarly works, providing considerable detail of Australia's contribution to the RFC.<sup>46</sup> Adam Claasen's recent work, *Fearless: The Extraordinary Untold Story of New Zealand's Great War Airmen*, provides a similar well-researched account of the New Zealanders in the RFC.<sup>47</sup> Wise's work addresses Canadian training and other specialist work, such as the chapter in Jonathan Scotland and Edward Soye's *Aviators and the Academy* and Graham Broad's excellent biography of Canadian aviator Eddie MacKay *One in a Thousand* compliment it.<sup>48</sup>

Finally, it is essential to acknowledge Frank Tredrey's influential book, *Pioneer Pilot*.<sup>49</sup> This book is quoted unchallenged across the historiography as *the* account of Robert Smith-Barry's influence on pilot training. The influence of Tredrey is not surprising; it is the *only* book to mention Smith-Barry in any level of detail. The book is an entertaining account of a man's life, a man who was, by turn, a traditionalist, maverick, forward-thinker, eccentric and insubordinate. Tredrey's work was reliant to a very great

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<sup>46</sup> M. Molkenntin, *Fire in the Sky: The Australian Flying Corps in the First World War* (Crows Nest, NSW: Allen & Unwin 2012 [2010]) and *Australia and the War in the Air – The Centenary History of Australia and the Great War Volume 1* (Melbourne: Oxford University Press, 2014).

<sup>47</sup> A. Claasen, *Fearless: The Extraordinary Untold Story of New Zealand's Great War Airmen* (Auckland: Massey University Press, 2018).

<sup>48</sup> J.B. Scotland, & E.P. Soye, *Aviators and the Academy: Early Aeronautics in Canada* (Toronto: Thomas Fisher Rare Book Library, 2017 [2015]) and G. Broad, *One in a Thousand: The Life and Death of Captain Eddie McKay, Royal Flying Corps* (Toronto: University of Toronto Press, 2017).

<sup>49</sup> Tredrey, *Pioneer*

extent on a manuscript written by Smith-Barry acolyte Sidney E Parker which survives in the RAF Museum.<sup>50</sup> This research is also indebted to Tredrey himself for leaving his materials to the Museum, allowing further examination and interpretation of his findings.<sup>51</sup> Such is the influence of Smith-Barry on the training narrative that the final chapter of this thesis will look much closer at how Tredrey wrote his book. Doing so has allowed this research to challenge the resultant historiographical conclusion that Smith-Barry saved British training during the war.

Memoirs and biographies provide a valuable source of information on the backgrounds and motivations of men joining the Royal Flying Corps. Contrary to Winter's view, in almost every case, the memoir has something to say about the nature and, in most cases, the quality of the training received. While 'first-hand' accounts bring with them the apparent advantage of personal experience, caution must be exercised when placing total reliance on them. Problems stem from three factors: i) a failure to appreciate the fallibility of memory and the context of when the memoir was written. ii) A reliance on a small sample of memoirs and taking them as 'fact'. iii) A failure to recognise that such memoirs were not representative of the RFC experience as a whole.

It is vital to note the fallibility of memory and the importance of placing a memoir in the context and period in which it was written. Professor and Chair of Psychology at Samford University, Stephen Chew, notes that 'We are biased to notice and exaggerate some experiences and to minimize or overlook others. Memory is

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<sup>50</sup> RAFM:X003-7892/071 - "Memoirs of Major S. E. Parker".

<sup>51</sup> RAFM:AC/76/19 - Research papers for the book "Pioneer Pilot" and AC/71/9/18 - Correspondence and articles relating to the career of Lt Col Robert Raymond Smith-Barry, 1912-7, August 1963.

malleable.<sup>52</sup> It has been shown in recent studies by Dan Todman, Ian Isherwood and Vincent Trott that the way the war was remembered has differed significantly over time, and recollections of training, in particular, vary considerably.<sup>53</sup>

Therefore, *when* a memoir was written will generally have a significant bearing on what it contains. Disillusionment became a feature of post-war recollections in the 1930s, which was magnified by the Second World War and peaked in the 1960s and 1970s. It is particularly true of infantry memoirs but does, to a lesser extent, hold true in aviation memoirs too. Unlike some of their infantry counterparts, flying memoirs often retain a 'heroic' vista throughout, though a focus on such 'heroism' should not be exaggerated. So-called 'knights of the air' rhetoric and sporting analogies reported by many historians are much overplayed.<sup>54</sup> As Balfour wrote, 'chivalry in the air which so fatuously and ignorantly written about, neither side could afford to indulge in'.<sup>55</sup>

As noted, most general histories of the first air war have tended to rely on a relatively small, select number of memoirs to form their opinions concerning training due to their broad scope. For example, Lee Kennett predominantly uses only one British autobiography, A.J. Insall's *Observer*, written in 1970.<sup>56</sup> John Morrow, whilst using a

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<sup>52</sup> S. Chew, 'Myth: Eyewitness Testimony is the Best Kind of Evidence' at *Psychological Science* (Available at <https://www.psychologicalscience.org/teaching/myth-eyewitness-testimony-is-the-best-kind-of-evidence.html>).

<sup>53</sup> D. Todman, *The Great War: Myth and Memory* (London: Bloomsbury, 2013 [2005]), I.A. Isherwood, *Remembering the Great War: Writing and Publishing the Experiences of World War I* (London: Bloomsbury, 2017) and V. Trott, *Publishers, Readers and the Great War* (London: Bloomsbury, 2019 [2017]).

<sup>54</sup> For example see J.H. Morrow, 'Knights of the Sky: The Rise of Military Aviation' in F. Coetzee & M. Shevin-Coetzee (eds.) *Authority, Identity and the Social History of the Great War* (Providence: Berghahn Books, 1995) and I.A. Isherwood, "'To Fly is more fascinating than to read about flying": British R.F.C. Memoirs of the First World War, 1918-1939' in *The Cupola, Scholarship at Gettysburg College* (Online at <https://cupola.gettysburg.edu/cgi/viewcontent.cgi?article=1012&context=cwifac>, 2014).

<sup>55</sup> H. Balfour, *H. An Airman Marches: Early Flying Adventures 1914-1923* (London: Greenhill, 1985 [1935]), p.95.

<sup>56</sup> A.J. Insall, *Observer: Memoirs of the R.F.C. 1915-18* (London: William Kimber, 1970).

broader number more generally, used A.G. Lee's books *No Parachute* (1968) and *Open Cockpit* (1969) and particularly Sholto Douglas's *Years of Combat* (1963) to inform his views on training.<sup>57</sup> These books, all dating from a similar period, reinforce a selective and generally negative attitude to the training.

Perhaps the importance of publication date is best illustrated with reference to Norman Macmillan's two versions of his autobiography, *Into the Blue*. When first published in 1929, Macmillan had a generally positive view of his training experience. He had, he said, received 'rudimentary instruction under the guidance of capable teachers, who led their pupils in the right direction.'<sup>58</sup> Of his instructors specifically, he said:

In our old 'hun' days, when we were pupils undergoing instruction in the art, we marvelled at the men who tilted their machines vertically sideways when executing a "split air" turn [...]. They were heroes, those split-air merchants. We almost worshipped them.<sup>59</sup>

Macmillan reissued his memoir in 1969. In his introduction, he justified the sweeping change of tone he was about to adopt with the comments:

While this edition retains the original narrative, I have taken the opportunity to make corrections arising from subsequent knowledge. [...] ...Since I now see events from the pinnacle of 50 added years, an elevation in time affording a wider aspect, as of vision from a mountain top, when I have thought it to be right to make comments on what then occurred within my personal experience I have done so.<sup>60</sup>

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<sup>57</sup> A.G. Lee, *No Parachute* (London: Arrow, 1969[1968]) and *Open Cockpit* (London: Grub Street, 2012 [1969]).

<sup>58</sup> N. Macmillan, *Into the Blue* (London: Duckworth, 1929), p.12.

<sup>59</sup> *Ibid.* p.22.

<sup>60</sup> N. Macmillan, *Into the Blue* (London: Grub Street, 2015 [1969]), p.8.

Any positive comments regarding his instructors have been removed in his second version. Returning to the earlier quotation, in his latter edition, he maintains the text, 'rudimentary instruction under the guidance of capable teachers', but his opinion that he was 'led in the right direction' has been removed.<sup>61</sup> This example and several other omissions lead one to conclude that Macmillan was anxious to fit in with the trend of other memoirs written in the late 1960s, a feeling only reinforced by his claims to be indebted to several of these other writers during his introduction.

Most RFC memoirs were written by pilots from similar middle-class families, men with sufficient time, money and contacts to see their recollections published. Without other RFC narratives, these experiences have consequently been seen as representative of the RFC as a whole. Except for Percy Butcher's *Skill and Devotion: A personal reminiscence of the famous No. 2 Squadron, Royal Flying Corps*, self-penned memoirs from the ranks are hard to find.<sup>62</sup> An interesting blend of both air mechanic and officer pilot memoirs can be found in *Fighting Fury* by James McCudden. He occupies a unique space among RFC memoirists.<sup>63</sup> As a man from the ranks, a trained mechanic who became a V.C.-winning pilot, his perspective and what was retained of his writings in his published version is uniquely engaging. Based on notes he wrote the year before he died, the memoir was published posthumously shortly after his death. The project had been encouraged and overseen by Ethel Alec-Tweedie, an author, journalist and mother of McCudden's friend Captain Harley Alec-Tweedie and influential *Aeroplane* editor C.G Grey, the latter writing the introduction. Fortunately, McCudden's original manuscript survives in the RAF Museum, allowing comparison

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<sup>61</sup> Macmillan, *Blue* (1969), p.11.

<sup>62</sup> P.E. Butcher, *Skill and Devotion: A personal reminiscence of the famous No. 2 Squadron, Royal Flying Corps* (Hampton Hill: Radio Control Publishing, 1971).

<sup>63</sup> J. McCudden, *Flying Fury: Five Years in the Royal Flying Corps* (London: Greenhill, 1987 [1919]).

with the published version. Interestingly, significant material related to his days as a mechanic was removed before publication, presumably because Grey thought it less attractive to the general public.<sup>64</sup>

With all those caveats, there is still much to be gleaned from pilot memoirs on pilot recruitment and training. Indeed, memoirs show just how ludicrous it is to attempt to stereotype or pigeonhole RFC pilots' backgrounds. What makes RFC pilots' recruitment so interesting is the very richness and diversity of their families, interests, motivations and aspirations. Some conform to stereotypical views, wealthy military families such as the de la Ferté's or the fox-hunting enthusiast Thomas Marson.<sup>65</sup> However, even with these individuals, caution is required before generalising. A closer read shows that the caricature is tenuous. While Philip Joubert de la Ferté's background may have conformed, he was hardly the high-flying public schoolboy, struggling academically and failing his Royal Military Academy entrance exams before being sent to a 'crammer'.<sup>66</sup> He is not alone. L.E.O. Charlton also failed to excel at school and was likewise sent to a 'crammer' to pass his entrance exams.<sup>67</sup> Smith-Barry was a poor student and was thrown out of Eton.<sup>68</sup> Guy Livingston's school maths report states he was 'Not very clever'.<sup>69</sup> Alfred Critchley was many steps further removed from the stereotype, declaring his background in rural Ontario 'feral' and stating that he could 'hardly write and only just read' when he enlisted.<sup>70</sup>

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<sup>64</sup> <https://www.rafmuseum.org.uk/blog/raf-museum-archives/>

<sup>65</sup> P. Joubert, P. *The Fated Sky* (London: Hutchinson & Co., 1952), T.B. Marson, *Scarlet and Khaki* (London: Jonathan Cape, 1930).

<sup>66</sup> Joubert, *Fated*, p.20.

<sup>67</sup> Charlton, *Charlton*, p.72.

<sup>68</sup> Anne Smith-Barry quoted in Tredrey, *Pioneer*, p.141.

<sup>69</sup> The Kayton Library, St Pauls School, London, 'Report of Class iii for Half year Ending July 1895'.

<sup>70</sup> A.C. Critchley, *Critch: The Memoirs of Brigadier-General A.C. Critchley CMG CBE DSO* (London: Hutchinson, 1961), p.17.

The contents of pilot memoirs can also be used to challenge other stereotypes. Some pilots, such as Eddie McKay, Kenneth van der Spuy and Gwilym Lewis, excelled at sport. Others, Charlton included, hated it.<sup>71</sup> Pilots were also not solely the youngsters portrayed in the historiography. As will be explored later, men under twenty never accounted for more than a third of those killed either in action or in accidents in every year of the war. Charlton was already a 35-year-old Captain when he learned to fly, yet he was still six years younger than American-born explorer Hiram Bingham who began training in Canada in February 1917.<sup>72</sup> Like other Americans such as Curtis Kinney and Bill Lambert, Bingham headed to Toronto to prepare with the RFC.<sup>73</sup>

RFC schools became a melting pot of personalities and cultures. South Africa-born Vivian Voss, who wrote under the pseudonym Roger Vee, and English-born Geoffrey Wall were completing their studies in Baltimore and Melbourne, respectively, when they answered the RFC's call.<sup>74</sup> John Brophy was a tough, adventure-seeking Canadian sportsman. He would head for France enthusiastically while his compatriot Harold Price was introverted, profoundly religious and somewhat apprehensive about mobilisation to the Middle East.<sup>75</sup> Arthur Tedder was working in the colonial service in Fiji. Arthur Harris was a bugler in the Rhodesian Regiment. Guy Livingston had

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<sup>71</sup> G. Broad, *One in a Thousand*, K. Van der Spuy, *Chasing the Wind* (Cape Town: Books of Africa, 1966), G. Lewis, *Wings Over the Somme 1916-1918* (Wrexham: Bridge Books, 1994 [1976]).

<sup>72</sup> Charlton, *Charlton*, p.216 and H.Bingham, *An Explorer in the Air Service* (New Haven: Yale University Press, 1920), p.4.

<sup>73</sup> C. Kinney, *I Flew a Camel* (Philadelphia: Dorrance & Co, 1972), B. Lambert, *Combat Report* (London: William Kilmer, 1973).

<sup>74</sup> R. Vee, *Flying Minnows: Memoirs of a World War One fighter pilot* (London: Naval & Military Press, 2019 [1935]) – Voss wrote under the pseudonym Vee, G. Wall, *Letters of an Airman* (Melbourne: Australasian Authors' Agency, 1918).

<sup>75</sup> B. Greenhouse, *A Rattle of Pebbles: The First World War Diaries of Two Canadian Airmen* (Ottawa: Canadian Government Publishing Centre, 1987).

enjoyed a fledgeling business career in South Africa.<sup>76</sup> Some, such as Aidan Liddell and Smith-Barry, were classically trained musicians, Liddell on flute and piccolo and Smith-Barry on piano.<sup>77</sup>

Memoirs and biographies also demonstrate the myriad motivations for individuals joining the corps. George Devenish, Algernon (A.J.) Insall, Bill Lambert and R.R. Money responded directly to the RFC's calls for volunteers.<sup>78</sup> Some, such as Harold Balfour, Billy Bishop, William Fry and Gwilym Lewis, either did not enjoy army life or wanted to escape the trenches.<sup>79</sup> Many RFC applicants had been injured whilst serving as infantry officers and sought a transfer to continue their military careers. Keith Park had been wounded at Gallipoli, and American-born E.M. Roberts suffered from being gassed with the Canadian Expeditionary Force during the Second Battle of Ypres. Douglas Bell, Wilfred Blake, Liddell, Livingston and Marson were all injured earlier in the war and sought an RFC transfer.<sup>80</sup>

Turning to training, Sholto Douglas notes perceptively in his autobiography that 'Time does alter perspectives, and the re-examination of events must produce different assessments', which is especially true of RFC training.<sup>81</sup> Memoirs contain a bewildering number of attitudes to the training experience. It is easy to see how reliance on an insufficient number of sources can lead to an unbalanced view. Winter's

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<sup>76</sup> V. Orange, *Tedder: Quietly in Command* (London: Frank Cass, 2004), H. Probert, *Bomber Harris: His Life and Times* (Barnsley: Pen & Sword, 2016 [2001]) and G. Livingston, *Hot Air in Cold Blood* (London: Selwyn & Blount, 1928).

<sup>77</sup> P. Daybell, *With a Smile*, p.27 and Tredrey, *Pioneer*, p.2.

<sup>78</sup> G.W. Devenish & H. Porter, *H. A Subaltern's Share in the War* (Victoria, Australia: Leopold Classics, 1917)

<sup>79</sup> Balfour, *Airman*, W.A. Bishop, *Winged Warfare* (New York: George H. Doran Co, 1918), W. Fry, *Air of Battle* (London: William Kimber, 1974), G. Lewis, *Wings*.

<sup>80</sup> D.H. Bell, *A Soldier's Diary of the Great War with an Introduction by Henry Williamson* (London: Faber & Gwyer, 1929), Blake, W.T. ('Wing Adjutant'), *The Royal Flying Corps in the War* (London: Cassell, 1918), Marson, *Scarlet*.

<sup>81</sup> S. Douglas, *Years of Combat* (London: Collins, 1963), p.14.

reliance on Balfour, for example, is plain to see given the latter's claims of the 'scandalous practice of sending active service pilots to France who were not fitted for their jobs.'<sup>82</sup> Balfour is not the only former 60 Squadron acolyte of Smith-Barry who castigates early training. In his 1972 portrayal, Stanley Vincent stated his 'sergeant-major instructor [...] must have been the world worst flying instructor bar none!'<sup>83</sup> Vincent claims instruction was so poor that he witnessed a soloist bank the wrong way, crashing into a nearby house in flames. The problem with Vincent's story is that research shows no such crash was recorded involving the aircraft he detailed at the location he stated in the year he suggested it happened.<sup>84</sup>

Many pilots would become instructors themselves at some point during their service, and a number wrote memoirs. These memoirs have interestingly consistent patterns relating to their instructing experience. Often the memoirist feels free to criticise the *general* standard of instruction, seemingly oblivious to his personal impact on trainees as an instructor. For example, Balfour criticises the effort that went into his instruction, but once he becomes an instructor, he describes the work as 'dull and rather discontented'.<sup>85</sup> Sholto Douglas similarly found instructing 'dull work after my operational flying in France.'<sup>86</sup> Cecil Lewis is perhaps more self-aware, realising that though he had seen instructing as a 'come-down, a confession that a pilot was finished, no use at the front', he admitted in hindsight that such feelings were 'unreasonable, for competent instructors were most valuable to the rapidly expanding

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<sup>82</sup> Balfour, *Airman*, p.40.

<sup>83</sup> Vee, *Minnows*, p.16.

<sup>84</sup> *Ibid.* p.19.

<sup>85</sup> Balfour, *Airman*, p.98.

<sup>86</sup> Douglas, *Years of Combat*, p.130.

force'.<sup>87</sup> Perhaps Roberts best captures the reality of the instructor/pupil relationship when he wrote in 1918 while an instructor that:

Every [..trainee..] wanted to get to the front and fight and gave little thought to the fact that before a man can fight, he must be instructed and trained. Coming in contact with this tendency as an instructor, I now begin to realize what a trial I must have been in my recruit days.<sup>88</sup>

Pilot recollections contradict Denis Winters' view that training was a comfortable life of 'gentlemanly hours'.<sup>89</sup> Gwilym Lewis found his instructors 'very strict' and the hours in 1916 'worse than ever'.<sup>90</sup> He became an instructor a year later and 'got up at 4.30 every morning [...] finishing about 9 pm in the evening'.<sup>91</sup> Archie Whitehouse recalled during his military aeronautics course at Bristol in early 1918 that he worked from '5.30 am to 10 pm from Monday to Saturday'.<sup>92</sup> Rutledge, too, bemoaned a 'Saturday afternoon... three-hour lecture on the Le Rhone engine'.<sup>93</sup> Grinnell-Milne claimed to have trained every available day, the weather, rather than the day itself dictating how many hours.<sup>94</sup> While some historians have mocked RFC examinations as a rubber-stamping exercise, many cadets such as Bell, Blake, Fry, Price and Kinney noted that significant discipline was required to pass. Men were haunted by a fear of failure that may have brought with it a return to their regiments.<sup>95</sup>

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<sup>87</sup> C. Lewis, *Sagittarius Rising* (London: The Folio Society, 1998 [1936]), p.108.

<sup>88</sup> E.M. Roberts, *A Flying Fighter: The Recollections of an American Observer & Pilot in the Royal Flying Corps During the First World War* (Driffield: Leonaur, 2012, [1918]), p.111.

<sup>89</sup> Winter, *The Few*, p.29.

<sup>90</sup> Lewis, *Wings*, p.21.

<sup>91</sup> *Ibid.*

<sup>92</sup> A. Whitehouse, *A Hell in the Heavens: The Adventures of an Aerial Gunner in the Royal Flying Corps* (London: W & R Chambers, 1938), p.265.

<sup>93</sup> S.A. Rutledge, *Pen Pictures from the Trenches* (Toronto: William Briggs, 1918), p.137.

<sup>94</sup> D. Grinnell-Milne, *Wind in the Wire* (London: Panther Books, 1957 [1933]), p.11.

<sup>95</sup> Bell, *Diary*, p.178, Blake, *Adjutant*, pp.6-8, Fry, *Battle*, pp. 38-39, Price quoted in Greenhouse, *Pebbles*, p.177 and Kinney, *Camel*, p.119.

Instructors are often discussed in memoirs, but how they are described is also remarkably different. For Blake, they had 'done their bit at the Front and were home for a rest.'<sup>96</sup> Grinnell-Milne as a trainee, saw their experience as 'living evidence that the age of Heroes and Miracles had come again', and Kinney noted their teachers 'had been face to face with death.'<sup>97</sup> For Insall, instructors, particularly the NCOs, were a 'grand lot'.<sup>98</sup> He appreciated their 'difficult, exacting calling'.<sup>99</sup> He was not alone, for Bell too, his instructors were 'all first class', and Vincent appreciated that 'teaching [...] must have been very trying for the instructors.'<sup>100</sup>

The instructor who put beginner Harold Price through 15 landings during his dual instruction in one 70-minute morning session on 27 February 1917 showed a particular dedication to his task.<sup>101</sup> He also recommended that Price needed at least ten more. Such a diary entry as Prices is very much at odds with Patrick Huskinson's dubious 1949 recollection of a similar period. Huskinson claimed, 'Once a week, for three-quarters of an hour, we had a series of 10-minute dual controlled hops around the plain'.<sup>102</sup> Huskinson continued that he was 'taught absolutely nothing whatsoever about the theory of flying' during his course at Farnborough and 'nothing whatsoever' at Hythe's School of Gunnery in 1916.<sup>103</sup> This thesis will explore which version is more likely the reality.

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<sup>96</sup> Blake, *Adjutant*, p.8.

<sup>97</sup> Grinnell-Milne, *Wind*, p.6 and Kinney, *Camel*, p.25.

<sup>98</sup> Insall, *Observer*, p.17.

<sup>99</sup> Insall, *Observer*, p.17.

<sup>100</sup> Bell, *Diary*, p.177 and Vee, *Minnows*, p.33.

<sup>101</sup> Greenhous, *Pebbles*, p.181.

<sup>102</sup> P. Huskinson, *Vision Ahead* (London: Werner Laurie, 1949), p.14.

<sup>103</sup> Huskinson, *Vision*, p.15 and p.16.

An interesting penchant amongst the most critical of memoirs is to make sweeping criticisms of training in general while countering that their own experience was not nearly so bad. Ira Jones, for example, states, 'it was commonly recognised that most pilots learned to fly in spite of their instructors.'<sup>104</sup> Such comments could be believable if you accept his contention that:

Many of the instructors were pilots who had been sent home because they were afraid of flying' [or had] 'rushed their pupils into going solo so that they could claim credit for having trained the highest number.'<sup>105</sup>

Despite such scathing criticism of instruction in general, Jones personally claims that he:

Was lucky. I was allotted to Lt A.G. Kiddle. This officer, a South African [...], was one of the most reliable instructors at the school.<sup>106</sup>

Sholto Douglas, too, whilst condemning as 'sheer murder' his belief that the 'average [flying hours for a trainee] could not have been more than 20 [..and some..] as little as 14', was, he said, personally lucky to have had over 40 hours under the 'shrewd guidance' of instructor, and later friend Wilfrid Freeman.<sup>107</sup>

### The Gap in the Historiography and Research Questions

At its broadest, this research will address the primary research question, "*how successful was the Royal Flying Corps in recruiting and training its men during the First World War?*" No existing work has attempted to look at the background and

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<sup>104</sup> I. Jones, *Tiger Squadron* (London: Viking Press, 1956 [1954]), p.56.

<sup>105</sup> Ibid.

<sup>106</sup> Ibid. p.52-53.

<sup>107</sup> Douglas, *Years of Combat*, p.94 and p.86.

recruitment of the men of the RFC. Nor has a complete study of training, combining personal recollections with archival facts on infrastructure, flying hours and accident rates, been produced. Further, it is evident from the literature review that there is significant contention in existing sources surrounding the recruitment and training of the men of the RFC. The reason for this research is, therefore, compelling.

To answer the seemingly simple research question requires consideration of several secondary questions. These include an exploration of *how* the RFC recruited its men. What was the process of recruitment? How was this process administered? What were the selection criteria for men joining the service? How did the recruitment process evolve throughout the war? Were such men easy to find, and how did demand compare with supply?

Additionally, the research must consider the *sources* of these men, looking at recruitment from the Army, the Dominions and overseas territories, the wounded, and those directly recruited. Vitality, it must assess how these streams changed as the war progressed. In posing these questions, it will be necessary to look in more detail at *who* the men were via a social and demographic exploration of their backgrounds and assess how this changed during the war. Finally, on recruitment, the men's motivation will be explored. Given that the RFC never relied upon conscription, it is necessary to attempt to understand *why* the men chose to join the flying services.

To judge the effectiveness of RFC training, other secondary questions will also need to be answered. How and when was the training regime created, and who oversaw it? What specialist schools were built throughout the war, and what did they teach? How

was best practice captured? A review of all fatal RFC accidents at home and abroad will be conducted to determine whether training accidents and deaths were as significant as painted by elements of the historiography. Due to his unique status in the historiography of RFC training, this thesis will need to comprehensively assess the real impact of Robert Smith-Barry on improving pilot training. Ultimately, after considering all these questions, the research will conclude on the effectiveness of recruitment and training in the RFC.

### Sources and Methods

While the historiography's failure to adequately address the recruitment and training of the RFC presents a sizeable research opportunity, the fragmented nature of primary source information related to these subjects means that a very significant number of sources require consultation. This research used the service records held by Findmypast for both officers and men to produce a detailed analysis of the men who joined the RFC. This analysis included using the entire collection of almost 300,000 records to produce a locational and occupational analysis. Where detailed data was required, over 1,000 service records were analysed in detail for each year of the war.

The National Archives at Kew holds extensive records related to recruitment and training, but these files have not been consolidated. The AIR 1 repository contains a significant amount of recruitment material, including policies on recruitment, enlistment and expansion, and the formation of new units. There is organisational material, including squadron histories, Directorate of Military Aeronautics minutes, Air Organisation Committee minutes, Air Board minutes, War Office correspondence, and

material related to agreements made with Canada and America concerning recruitment and training.

This research explored almost 600 AIR 1 files related to recruitment and training, of which over 200 were actively used. The bulk of this training material relates to creating, amalgamating and expanding the various RFC schools and training centres. It also includes specific files associated with training mechanics, fitters, and specialists, including training materials and syllabi. Important committee papers, including the *Training Expansion Committee* and *Aerodrome Board Surveys of Schools*, can also be found here. AIR 2 at the National Archives contains materials related to Canadian flying training schools, while AIR 8 contains reports on training and education effectiveness.

The RAF Museum at Hendon holds many pilot logbooks. Of these, a number were selected to create a combined record of pilot trainees' training hours. Additionally, several collections of personal papers and documents have been accessed at the RAF Museum, particularly those related to Robert Smith-Barry.

### Structure

This thesis will consist of six chapters in addition to this introduction and a conclusion. The first chapter will focus on the recruitment of pilots, beginning with the creation of recruitment activities at the Directorate of Aeronautics. The focus will then turn to the first two years of the war when finding men was relatively straightforward before examining both the sources of men and their motivations for joining the Corps. After a

brief look at the recruitment process, the chapter will return to look at the final two years of the war, concluding with significant new analytical research that examines the men's class, age and locational backgrounds.

Chapter Two will investigate how the RFC recruited the vast majority of their organisation – the men on the ground. Similar to chapter one, the type of man recruited and his motivations will be explored. The additional recruitment hurdle of the 'trade test' will be explained before the chapter follows a broadly chronological path through the war. As with pilots, an analysis of recruits' backgrounds will be conducted, showing that the recruit of 1918 was very different from his earlier-war contemporary.

Chapter Three will continue looking at ground-based personnel, addressing their training. The bulk of the chapter will look at the fitters and riggers who made up the majority of the men. It will also look at Equipment Officers, men who became increasingly important as the scale of the organisation expanded beyond all early expectations. Other trades, including armourers, photographers and wireless operators, will be examined in detail before looking at the recruitment of 'boys' and women.

Chapter Four begins the investigation of the controversial topic of pilot training by examining the years 1914 to 1916. The chapter will look at the early use of private schools through early chaotic - if pragmatic first steps to the challenging year that was 1916. The so-called Pemberton-Billings affair will be examined, which led to RFC training being discussed in parliament. The specific topic of complaints received from

the Field will be assessed, as will successes such as the creation of the first schools of instruction.

Chapter Five will continue exploring flying training, examining the war's final two years. Rather than a strictly chronological approach, this chapter lends itself to a thematic discussion of several topics. These include organisation and leadership, the creation of the Cadet Brigade, the rapid expansion of RFC/RAF schools and the Canadian training system. The chapter will conclude with a brief look at the training system as it existed at the Armistice, providing a valuable way of showing the progress made in the four years of war.

The final chapter of this thesis is dedicated to investigating two of the most powerful themes in the historiography of the air service in the First World War. The first is to examine the deadliness of training by examining accident rates. This research opened with a quote claiming that two-thirds of men died during their training; the veracity of such claims will be thoroughly scrutinised. The second is to examine the contribution of Robert Smith-Barry. He is almost exclusively seen as the man who 'saved' pilot training in the First World War. This chapter will examine his actual contribution using an extensive review of archival material. Finally, bringing the two aspects together, it will look at whether training losses were reduced as a consequence of Smith-Barry initiatives.

Ultimately, having addressed the various research questions over these six chapters, the thesis will be in a position to conclude on the effectiveness of recruitment and training in the RFC/RAF during the First World War.

## **CHAPTER ONE: THE RECRUITMENT OF ROYAL FLYING CORPS PILOTS**

### 1.1 Introduction

Chapter one will focus on the recruitment of RFC pilots. It will begin by setting the context of the recruitment challenge, both in terms of the lack of administrative infrastructure and the seemingly ad hoc and chaotic demands for more squadrons that were placed upon it. Following this, the chapter will move to examine the period from 1914 to 1916, focussing on the supply and demand factors that affected recruitment. After this, the study will explore some of the historiography's stereotypes related to the type of man recruited, addressing the extent to which they are true.

The chapter will then move on to examine the recruitment process itself. The process includes the application procedure, the interview and medical examinations. It will opine on the notion often expressed in the historiography that these were cursory affairs. Finally, the chapter will return to recruitment in the last two years of the war. This period was very different from the earlier years and presented new challenges for RFC recruitment. As will be demonstrated, labour shortages resulted in the RFC needing to develop new recruitment methods and to target men quite different from their contemporaries. These changes will be explored in detail before the chapter concludes with an assessment of the effectiveness of RFC pilot recruitment during the First World War.

## 1.2 Establishing Recruitment Activities at the Directorate of Military Aeronautics

When war arrived, there were no specific plans and virtually no dedicated staff for recruitment efforts. Then Deputy Director of Military Aeronautics, William Sefton Brancker, recounted after the war how most physically able men in the RFC rushed to find positions in France. The vacuum left Brancker with almost no resources besides a single staff officer, Major B.D. 'Bertie' Fisher, an officer on secondment from the 17<sup>th</sup> Lancers.<sup>108</sup> With reinforcements not forthcoming, Brancker was forced to rely on personal connections to find the additional men necessary to staff his department. Initially, he commandeered two former Staff College officers, Captains Jackson and Furse, who agreed to provide some temporary assistance. Unfortunately for Brancker, both were soon lost to the Directorate, given their desire to fly. When Bertie Fisher opted to return to his former cavalry regiment in France, Brancker was back where he started. This time he turned to two men he had known during his time in India five years prior. Both would provide the RFC with invaluable service.

The first of these was Major Cecil Marindin, a 35-year-old Royal Artillery officer.<sup>109</sup> Born in India, where his father worked for the Indian Civil Service, by 1914, Marindin was 'buried in an obscure apartment in Cardiff' when Brancker came calling with a role at the Directorate.<sup>110</sup> The second man, William Ward 'Willie' Warner, was a 47-year-old retired Indian Cavalry officer. Before retiring from the Army in 1907, he had worked as a staff officer for many years. Since his military retirement, he had become a director of both The General Hydraulic Company and George Barwick and Sons Ltd.<sup>111</sup>

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<sup>108</sup> Findmypast: *British Royal Air Force, Officers' Service Records 1912-1920*, B.D. Fisher.

<sup>109</sup> Findmypast, *Service Records 1912-1920*, C.C. Marindin.

<sup>110</sup> N. Macmillan, *Sir Sefton Brancker* (London: William Heinemann, 1935), p.64.

<sup>111</sup> Findmypast, *Service Records 1912-1920*, W.W. Warner.

Such positions, in addition to his earlier staff roles, had given him significant and what would prove invaluable organisational experience. By January 1915, Brancker had successfully convinced both men to join the Directorate. Marindin became responsible for liaison with the War Office on organisational matters, and Warner took over responsibility for RFC personnel matters, including recruitment. Whilst there was an expectation that the demand for the RFC would increase to some extent, there was no consensus on how large the RFC would become. In this vacuum, Brancker and his small team had no idea what numbers of men they would be required to source. With little other infrastructure in place, the men began work hiring anyway.

### 1.3 Recruitment Comes Easily 1914 – 1916

Fortuitously for Brancker, when war broke out, applications to become pilots dwarfed the early demands from France. The first RFC men who left Britain in August were already serving officers, predominantly having transferred from the Army. For several months afterwards, with casualties amongst officers almost non-existent, sourcing replacements was so straightforward that even very experienced flyers such as Irishman Denys Wilson could find no way into the Corps. He had learned to fly in France in 1911 and served with the RFC between 1912 and 1913. He was one of the most experienced cross-country pilots, and had crossed the Irish Sea multiple times. Despite this background, he found his initial application rebuffed by the RFC.<sup>112</sup>

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<sup>112</sup> D. MacCarron, *Letters From an Early Bird: The Life and Letters of Aviation Pioneer Denys Corbett Wilson, 1882-1915* (Barnsley: Pen & Sword, 2006), p.2, p27 & p.51.

By the end of July 1914, 352 Royal Aero Club certificates had been granted to Army officers and 274 to civilians who had passed the necessary tests.<sup>113</sup> Collectively, it was logical that these men became the focus of initial RFC recruiting efforts. On 5 August 1914, David Henderson, the Commander of the RFC in the Field, noted:

We are taking steps to enlist certain civilian pilots [...], the intention being to use them as NCO pilots with the Reserve Aeroplane Squadron *or, if found fit, with the Expeditionary Force.*<sup>114</sup>

Henderson's handwritten addition, shown in italics here, clearly indicates that he had no qualms with recruiting civilian flyers for action in France. It was left to Hugh Trenchard, then commanding the RFC Military Wing that remained in Britain, to investigate the actual capabilities of these men. His 17 August report threw proverbial cold water on any suggestion that these men were ready for service. Trenchard's report stated that the 51 officers he had examined 'are not sufficiently advanced to fly at all across country.'<sup>115</sup> Amongst them was 'Adams', likely Francis Adams, who had passed his certificate in June 1913, who Trenchard simply opined was 'not much use'.<sup>116</sup> G.M. Griffiths, in Trenchard's opinion, reached the lofty heights of 'indifferent'.<sup>117</sup> Why such men were not RFC pilot material in August 1914 is well explained by Frank Courtney in his memoir *Flight Path*. He convincingly argues that the reasons were both economic and human:

Only a small percentage of students had much prospect of carrying on the expensive pastime of flying once they had taken their tickets. Many of them lost interest after the novelty had worn off and were content to have a pilot's brevet to exhibit to admiring friends.<sup>118</sup>

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<sup>113</sup> Independently compiled from Gracesguide.co.uk.

<sup>114</sup> NA:AIR1/122/15/40/126-R.F.C. *Maintenance Wing- list of pilots with details of aircraft which they can fly.*

<sup>115</sup> Ibid.

<sup>116</sup> Ibid.

<sup>117</sup> NA:AIR1/122/15/40/126-Maintenance Wing.

<sup>118</sup> F.T. Courtney, *Flight Path* (London: William Kilmer, 1972), p.22.

Though this was undoubtedly mildly disappointing for RFC leadership, it was not gravely concerning. Expectations of required numbers were still small. Brancker wrote to Henderson on 22 October 1914:

The Commander in Chief of the Expeditionary Force has now asked for an increase of three squadrons [...], and I am of the opinion that a further augmentation will eventually become necessary as further troops take the Field...I propose that, eventually, there shall be twelve Squadrons abroad.<sup>119</sup>

The low demand for pilots from the field, however, gave rise to complacency regarding what was already becoming a severe bottleneck in the training system. In November 1914, Captain G.H. Fox of the Central Flying School wrote a report on training capability. He had, in theory, he said, capacity for twenty-eight pilots at Netheravon and Farnborough. However, at the time of writing, he had only fifteen officers under training, yet he still noted that numbers were :

Quite sufficient at a time, and if any more are sent, it will only mean they will have to do a lot of waiting about, besides putting a lot of extra work on the machines.<sup>120</sup>

Without official targets, recruitment proceeded in an ad hoc manner, with individual suggestions as to who should be recruited not uncommon. Some suggestions were seemingly more sensible than others. In a strange example, at the end of September 1914, Trenchard wrote to Brancker suggesting that 2<sup>nd</sup> Air Mechanic (2/AM), J.R.B. Weeding of No.5 Squadron was commissioned and that he commence training to become a pilot. RFC correspondence shows that Trenchard also offered to teach him

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<sup>119</sup> NA:AIR1/143/15/40/316-R.F.C. expansion policy - completion in personnel and material of 1,7 and 8 Squadrons, and authority for formation of 9 and 12 Squadrons.

<sup>120</sup> NA:AIR1/122/15/40/135-Information Regarding the Number of Pupils at Schools.

to fly at Brooklands personally.<sup>121</sup> The offer, which came to nothing, is curious given that Weeding, a pre-war solicitor, had no aviation experience and had only attested to the RFC a month previously. One is left to wonder if Trenchard was having some fun with the Directorate as Weeding, already 32, was over 6'2" tall and rather rotund, weighing as he did, 201lbs.<sup>122</sup>

Unsolicited civilian applications began to arrive at the Directorate in increasing numbers. Such applications would initially receive a standard letter in return informing them that:

The selection of gentlemen not already holding a commission for appointment as officers of the [...] Royal Flying Corps is only made from amongst those in possession of the certificate of the Royal Aero Club of aviators.<sup>123</sup>

The letter was enclosed to a Mr J. Jones on 1 October 1914, along with a handwritten note recommending he gain his certificate at a private flying school before reapplying. Even then, the encouragement was tempered by the warning, 'No assurance can be given you will be selected for a commission in the event of your obtaining your certification.'<sup>124</sup> Whether Jones proceeded is unclear, but successful applicant Gwilym Lewis certainly did. On receipt of the same advice, he wrote to his father asking to borrow £100 for flying lessons at Hendon's London & Provincial School.<sup>125</sup>

For men seeking a transfer from other Army regiments, there were also significant delays even if the man was accepted in principle. Private A.G. Whitehead of D.

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<sup>121</sup> NA:AIR1/381/15/231/22-*Directorate of Military Aeronautics' Records-Vol. XXII.*

<sup>122</sup> FindmyPast, *British Royal Air Force, Airmen's Service Records 1912-1939*, J.R.B. Weeding.

<sup>123</sup> NA:AIR1/366/15/231/6-*Directorate of Military Aeronautics' Records-Vol. VI.*

<sup>124</sup> *Ibid.*

<sup>125</sup> Lewis, *Wings*, p.15.

Company, 6<sup>th</sup> Battalion West Yorkshire Regiment, applied to transfer to the RFC in October 1914. His application stressed that he had a 2<sup>nd</sup> Class Honours degree in Engineering from Cambridge and knowledge of petrol engines gained during three years of competitive motorcycle riding.<sup>126</sup> He was accepted but warned there would be an indefinite wait. In his case, it was indeed quite the wait. It would be two years before Whitehead eventually made it to France as a pilot in May 1917.<sup>127</sup> The RFC recognised but accepted that administrative delays would cost them applicants. Charles Turner was not unusual in applying to both the RFC and RNAS to see which service responded fastest. Turner joined the RNAS in December 1914 as an observer after they moved first to recruit him. He was not surprisingly underwhelmed by the RFC's advice 'to wait a while when they would avail themselves to my offer.'<sup>128</sup> It was nearly three months later that he next heard anything when 'the War Office wrote to [him] again, suggesting that [he] should do some test flying' while he waited.<sup>129</sup> By then, he had already joined the RNAS.

By the end of 1914, experience in France had convinced Brancker that his twelve squadron forecast was going to prove woefully inadequate. On 19 December, he formulated a new forecast based on an expectation that the BEF would eventually run to six Armies. In turn, he believed these would require four squadrons each. To the twenty-four, he added a contingency of six more squadrons for GHQ work. Thus, Brancker predicted that thirty squadrons rather than twelve would now be the most likely requirement. Brancker was clearly uncomfortable doing this work alone, and he appealed to Henderson:

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<sup>126</sup> NA:AIR1/366/15/231/6 -Volume VI.

<sup>127</sup> Findmypast, *Service Records 1912-1939*, A.G. Whitehead.

<sup>128</sup> C.C. Turner, *The Old Flying Days* (London: Sampson Low, Marston & Co, 1920), p.353.

<sup>129</sup> Ibid.

We have been living from hand to mouth so far, but I think the time has now come for a more or less definitive statement of policy for the future development of the RFC.<sup>130</sup>

Despite Brancker's appeals, there is no evidence to suggest that his forecast was accepted as RFC policy for recruitment purposes. Thus with no formal plan and little guidance forthcoming from the Field, his small team soldiered on.

The lack of urgency can be somewhat explained by the absence of casualties. The RFC lost only thirteen men killed in the air in 1914, and the available supply of men continued to significantly exceed demand into 1915. On 6 January, Mr Ernest Alleyn was informed that 'there is still a long waiting list of candidates for appointment to the Royal Flying Corps [and that] it is improbable that you will be selected for several months.'<sup>131</sup> In a bid not to continue to lose candidates who wished to join from the infantry, the RFC decided on an interim solution. Their initiative was to take some transferees to 'afford them the opportunity of studying the interior economy' of the RFC while they awaited transfer. During this time, such men could 'assist Squadron Commanders with the drill and discipline of the new Squadrons.'<sup>132</sup> They were afforded no instruction in flying though some 'air experience' - or joy rides as the men knew them - were arranged. The scheme had some limited success. 2/Lt. G.A. Tuton and 2/Lt. Francis Mond, for example, arrived from the infantry on 8 February 1915. Both assisted No.10 Squadron before Tuton eventually transferred with the RFC to France in July, while Mond followed in December.<sup>133</sup>

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<sup>130</sup> NA: AIR1/143/15/40/316-R.F.C. expansion policy.

<sup>131</sup> NA: AIR1/367/15/231/7 - Directorate of Military Aeronautics' Records -Vol. VII.

<sup>132</sup> NA: AIR1/368/15/231/8 - Directorate of Military Aeronautics' Records -Vol. VIII.

<sup>133</sup> Findmypast, Service Records 1912-1920, G.A. Tuton & F. Mond.

Seventeen-year-old Cecil Lewis complained that 'though I was admitted to the RFC, the months went by, summer blossomed and faded, and still no orders came to join up.'<sup>134</sup> He was eventually commissioned in December 1915. Though Lewis claims he had no idea why there was a delay, he incorrectly asserts that the RFC often took men aged seventeen. They did not. In his case, therefore, at least one aspect of the delay was likely due to the organisation waiting for him to turn eighteen before proceeding, irrespective of waiting lists. From mid-1915, the RFC recognised that while pilot numbers were not a problem, they needed observers with greater urgency. Men such as R.R. Money were offered the inducement by Warner that he 'would be able to send for me in a fortnight as an observer, but that as a pilot I might have to wait several weeks.'<sup>135</sup> Money, and others like him, were persuaded and joined as observers.

On 21 July 1915, Brancker received his first official guidance from the War Office regarding the required size of the Corps. He was told that 'everything must now be organised and ordered for 60 squadrons' and that:

We should aim at completing 30 Squadrons and 10 Reserve Squadrons by January 1<sup>st</sup> 1916, and the remaining 30 Squadrons with five more Reserve Squadrons by December 1<sup>st</sup> 1916.<sup>136</sup>

Interestingly, Brancker ordered that the Administrative Wing should 'arrange recruitment on these lines bearing in mind that the men who enlist later will probably require more training than those who are enlisting now'.<sup>137</sup> Thus, this letter also acknowledges that there was an awareness that training requirements for recruits would become much stiffer during 1916. Despite this expansion order, in October

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<sup>134</sup> C. Lewis, *Sagittarius*, p.9.

<sup>135</sup> Money, R.R. *Flying and Soldiering* (London: Ivor Nicolson and Watson, 1936), p.10.

<sup>136</sup> NA:AIR1/143/15/40/316-*Expansion*.

<sup>137</sup> *Ibid*.

1915, the RFC was still deferring significant numbers of candidates from attending an interview.<sup>138</sup> On the 29<sup>th</sup>, would-be civilian recruit Mr H.G. Cornell of Liverpool was informed that 'there is a long waiting list of candidates for appointment to the RFC, and therefore 'no need for you to hurry for interview.'<sup>139</sup> While there was growth, it remained manageable. For example, in December 1915, 28 replacement pilots were sought by the RFC in France, the most to date in the war.<sup>140</sup> In context, during 1915, the RFC lost just 76 officers killed, 47 of whom had died in action.

Even as late as April 1916, applicant Mr A.S. Leng received a note informing him that:

There is a long waiting list of candidates for appointment to the Royal Flying Corps, and even if you are considered a suitable candidate, it will probably be some time before your services will be required therein.<sup>141</sup>

He was warned that should another unit select him under Lord Derby's recruitment scheme, he would need to join up and reapply to the RFC from there.<sup>142</sup> Recruitment also proved a lengthy affair for Aberystwyth school teacher Tom Owen.

Commissioned into the South Staffordshire Regiment, Owen had travelled to Egypt with his regiment in May 1916 and first noted in his diary on 16 July that he 'Gave in name for RFC.'<sup>143</sup> The following day he records, 'Examined for RFC'. However, it was two weeks later, on 28 July, that he had his first 'interview with the RFC authorities at Mustafa Pasha.' A fortnight later, on 13 August, he was informed that his application

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<sup>138</sup> NA: AIR1/143/15/40/316 -*Expansion*.

<sup>139</sup> NA: AIR1/381/15/231/22 -*Vol. XXII*.

<sup>140</sup> Ibid & NA :AIR1/380/15/231/21 -*Directorate of Military Aeronautics' Records -Vol. XXI*.

<sup>141</sup> NA: AIR1/388/15/231/29 -*Directorate of Military Aeronautics' Records -Vol. XXIX*.

<sup>142</sup> In October 1915, Lord Derby, Director of Recruiting in Britain had launched the 'Derby Scheme', the last real phase of voluntary recruiting before conscription was introduced.

<sup>143</sup> T. Owen, *Diary 1915-1919*. Unpublished.

had been 'deferred, not enough qualifications, asked about adjutancy? Hear soon'. He heard the following day curtly that he had insufficient service and experience for the Adjutant position and consequently wrote that his 'RFC stunt [was] probably off'. It must have come as some surprise to Owen when another month later, on 22 September 1916, he was summoned to attend a further RFC interview. This time he *was* required, and finally, on 30 November 1916, Owen arrived at Aboukir Aerodrome to start his flying training.

Arthur Rhys David believed he had secured a commission in the RFC directly from Eton. However, he wrote frustratedly to his sister on 16 August 1916, 'I went up to RFC HQ on Monday, and after waiting two hours discovered, they were taking no particular steps about my commission.' Whomever David complained to, it had the desired effect. After a meeting with Captain Charteris of the Directorate – 'again too nice for words', he received his orders to report for training on probation a few days later.<sup>144</sup> Arthur Wall also took action on his own behalf after suffering similar frustrations with the recruitment process. The War Office was, he said, 'the very personification of the hide-bound unreasoning and arrogant stupidity that is going to or at least should lose Britain the war.'<sup>145</sup> Wall also bemoaned that his application form had been no short affair. It would, he wrote in his diary, 'furnish enough material for a biography'.<sup>146</sup>

Once passed to the RFC at Adastral House, Wall was suggested to join an Officer Training Corps and seek a commission in the infantry instead. Unsurprisingly

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<sup>144</sup> A. Revell, *Brief Glory: The Life of Arthur Rhys Davids, DSO, MC and Bar* (London: William Kimber, 1984), p.65.

<sup>145</sup> Wall, *Letters*, p.36.

<sup>146</sup> *Ibid.*

frustrated, he pointed out that he had come 'all this way from Australia to fly'.<sup>147</sup> A 'Captain W' then had the temerity to attempt to persuade him to accept a commission in the Artillery instead. Resolute, Wall's name was eventually placed on a waiting list, and he would eventually join. It took John Bygott several applications to join the RFC from the infantry before, on 5 August 1916, his Commanding Officer announced that there was another opportunity to apply. He wrote home excitedly a few days later, 'At last. I have got into the RFC; three hearty British cheers.'<sup>148</sup>

In three months between December 1915 and February 1916, the RFC lost 28 men in action. Such numbers sound trifling, but they were during the quietest flying months and were more than it had lost in the preceding eight months.<sup>149</sup> Worse was to follow, as securing the vital photographic work ahead of the Somme campaign claimed a further 53. Amidst these higher losses, in June 1916, Haig submitted an expansion programme that required an increase in service squadrons to 86 by Spring 1917.<sup>150</sup> The increases in service squadrons also required a near doubling of training squadrons from 32 to 60.<sup>151</sup> Just three months later, the fluidity of the situation was demonstrated when, in response to the German creation of the Jagdstaffeln, Haig requested a further increase in service squadrons from 86 to 106.<sup>152</sup> The number of training squadrons would correspondingly increase from 60 to 95. The Army Council,

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<sup>147</sup> Wall, *Letters*, p.36.

<sup>148</sup> J. Bygott, *Two Soldier Brothers* (London: Jarrolds, 1919), p. 59.

<sup>149</sup> Compiled from C. Hobson, *Airmen Died in the Great War 1914-1918. (DVD)*, available from Naval & Military Press.

<sup>150</sup> H.A. Jones, *The War in the Air: Being the Story of the part played in the Great War by the Royal Air Force: Volume Six* (Naval & Military Press, 2002 [1936]), p.29.

<sup>151</sup> *Ibid.*

<sup>152</sup> Jagdstaffeln were squadrons of 'hunting aircraft', fighters in today's parlance.

in sanctioning the increase, added a further two night-flying squadrons to arrive at a service total across all theatres of 108.<sup>153</sup>

As well as proposed increases, the Somme campaign proved expensive for the RFC, with 244 men lost in action between July and November. In just six months, previously unknown levels of loss had combined with a doubling of the sanctioned size of the organisation. Consequently, by the end of 1916, everything had changed. It was irrevocably clear that officers would be required in numbers that had not previously been considered to replace losses, man new squadrons and support the vastly enlarged infrastructure.

Before addressing how the RFC coped with this situation in 1917 and 1918, the chapter will first examine where the RFC found its men, what constituted an 'ideal' RFC officer and the motivations behind such men joining the service.

#### 1.4 An Ideal Type?

If secondary sources on the RFC are accepted at face value, the ideal type for the RFC was a field sports-obsessed, extrovert public schoolboy.<sup>154</sup> Such sentiments, which gained traction in general histories of the Corps, such as John Morrow's *The Great War in the Air*, can be traced to a reliance on a small number of influential memoirs. One such memoir by Sholto Douglas states that on his transfer to the RFC,

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<sup>153</sup> Jones, WITA, v.6.

<sup>154</sup> See for example, Bujak, *Reckless Fellows*, Mackersey, *Chairs*, J. Hamilton-Patterson, *Marked For Death: The First War in the Air* (London: Bloomsbury, 2016).

he found, 'I was now in the company of individualists, some of whom, I was soon to find, could even be regarded as at least eccentrics if not downright crazy.'<sup>155</sup>

Oliver Stewart echoes this view in his often acerbic memoir *Words and Music of a Mechanical Man*, which like Douglas's, was written in the 1960s:

It was, I began to see, a curious Corps. In the first place, it was unorthodox. About the RFC officer, there was a stamp of insolent individuality. To many of them, for instance, the word discipline was a detonator which could be certain to set off an exhibition of indiscipline. They rejected discipline, they rejected conformity, they rejected social conventions. They were young. They were exaggeratedly individual.<sup>156</sup>

However, as briefly mentioned in the introduction, a more thorough review of sources reveals that such stereotypes are simplistic, and there is much evidence to suggest that pilots were far from all extroverts in manner. Air Commodore E.L. Gerrard, for example, reflected that 'A very high proportion of early pilots were of a quiet type. Introverts, I suppose you might call them.'<sup>157</sup> Brancker reflecting after the war on the question of what made a good pilot, wrote:

The popular impression is that a special temperament is required for success in the air; it is rather assumed that an artistic temperament, a vivid imagination, carelessness and reckless daring are great assets in the psychology of a would-be pilot. Actually, this is not my experience [...] the most unexpected people turned into good pilots.<sup>158</sup>

It is their very failure to conform to any one type that is actually what unites the early RFC recruits. Denys Wilson enjoyed riding, sailing and driving a motor car, all

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<sup>155</sup> Douglas, *Combat*, p.65.

<sup>156</sup> O. Stewart, *Words and Music of a Mechanical Man* (London, Faber, 1967), p.80.

<sup>157</sup> Tredrey, *Pioneer*, p.18.

<sup>158</sup> Macmillan, *Brancker*, p.39.

attributes that would have endeared him to the RFC.<sup>159</sup> L.E.O. Charlton, conversely, hated sport and, by his own account, 'throughout his entire life was cursed with timorousness when confronted with a new situation.'<sup>160</sup> Charlton attended Brighton College rather than a top public school due to the financial worries of his parents. Before joining the Post Office, Frank Courtney's grandfather had been a Galway fisherman. Due to 'family financial circumstances', the younger Courtney was forced to leave school early but found a job with a bookkeeper.<sup>161</sup>

Aidan Liddell's family were wealthy though their wealth was recently derived from the coalfields of the North East of England.<sup>162</sup> Liddell was unimpressed by sporting pursuits and horse riding, preferring the fishing rod, flute and piccolo to the saddle.<sup>163</sup> Philip Joubert de la Ferté was a horse lover, having grown up with them in India. However, his surgeon father had to pay for flying lessons after his son disappointed the family with his poor academic results. Even John Salmond, perhaps the singularly most important person in the training story of the RFC, did not excel in the classroom. He failed both the Woolwich and Sandhurst entrance exams, only scraping into the latter on his second attempt.<sup>164</sup>

Brancker's father was a 'wanderer' and 'traveller', a salesman in today's parlance and had been born in Hamburg, the home of his maternal grandmother.<sup>165</sup> Always interested in aviation, Brancker had accompanied Haig, viewing aircraft manoeuvres

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<sup>159</sup> MacCarron, *Letters*, pp. 1-2.

<sup>160</sup> Charlton, *Charlton*, p.33 and p.58.

<sup>161</sup> [www.earlyaviators.com/ecourtne.htm](http://www.earlyaviators.com/ecourtne.htm) and Courtney, *Flight Path*, p.2.

<sup>162</sup> P. Daybell, *Smile*, pp.15-16.

<sup>163</sup> *Ibid.* p.27.

<sup>164</sup> J. Laffin, *Swifter than Eagles: A Biography of the RAF, Sir John Salmond G.C.B, C.M.G, C.V.O, D.S.O* (London: William Blackwood, 1964), p.4.

<sup>165</sup> Findmypast, *Service Records 1912-1920*, W.S. Brancker.

in India as far back as 1909. In 1912, however, he saw little prospect of joining the fledgling Corps. For one thing, he was very short-sighted – most portraits of him feature his favourite monocle – and feared he would not pass the medical. By his own account, the £75 necessary to pass his Aero Certificate was also beyond him.<sup>166</sup> Brancker's persistence eventually found him a way into the Corps as a Staff Officer. In 1913, however, Henderson stipulated that all officers in the Military Aeronautics Directorate, regardless of position, should be able to fly. Thus, short-sighted or not, Brancker, aged 36, found himself at the Central Flying School.

Guy Livingston, who would play a vital role as Salmond's Chief Staff Officer in the Training Division, also had an unconventional route to the RFC. Despite attending well regarded public school St Pauls, Livingston's progress was stymied by circumstances beyond his control.<sup>167</sup> Livingston claims in his autobiography that the family's wealth was stolen by an unscrupulous solicitor representing his grandfather, thereby limiting his options. Despite passing the Woolwich exams, Livingston enlisted in the Yeomanry to fight in the South African war, eventually becoming a corporal.<sup>168</sup> He left the Army when the war ended and worked briefly for the Department of Railways in South Africa. Later, on his return to England, he worked in 'produce markets in Mincing Lane', London, before working for the Fairfax Trust, a financial institution.<sup>169</sup> While such experiences may seem irrelevant, they are arguably crucially important for the successful operation of the training functions. His varied organisational and planning abilities, garnered from several years in the commercial world, gave him skills eminently valuable for his RFC role.

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<sup>166</sup> Macmillan, *Brancker*, p.30.

<sup>167</sup> Livingston, *Hot Air*, p.18.

<sup>168</sup> *Ibid.* p.20.

<sup>169</sup> *Ibid.* p.38.

Brereton Greenhous's *A Rattle of Pebbles* contains the diary entries of two Canadian men who joined the RFC in 1915 and 1916 and epitomises how RFC pilots could be so different from one another.<sup>170</sup> John Brophy was 'decent but not exceptional' at school but was hardy and sporty, playing competitive ice hockey, baseball and football. Harold Price, in contrast, was an 'introverted, analytical intellectual' and was a 'good chess player' rather than playing team sports. He had been raised, by his own admission, 'in a sheltered environment' and was deeply religious. It is hard to argue with Greenhous that Price's 'outlook on the world when he enlisted was narrow to the point of priggishness.'<sup>171</sup> Arthur Harris, better known for his exploits in the Second World War, was extrovert enough to enjoy amateur dramatics, and he was a keen hunter of game with a rifle.<sup>172</sup> However, when it came to his schoolwork, he, too, failed to excel academically.

Alfred Critchley was brought up in rural Canada, and though he lacked some intellectual ability as a child, he had many of the skills the RFC would seek at his interview:

We could hardly write and could only just read. On the other hand, we could saddle ponies, ride for miles across the ranges, find our way in the dark without compasses, make our own camp, hit a polo ball and ride herd.<sup>173</sup>

Additionally, he represented his school at 'cricket, rigger, fives, swimming and running and was also the school boxing champion.'<sup>174</sup> Ira Jones was another who put non-

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<sup>170</sup> Greenhous, *Pebbles*, p.xiv.

<sup>171</sup> Ibid.

<sup>172</sup> Probert, *Harris*, pp.24-27.

<sup>173</sup> Critchley, *Critch*, p.17.

<sup>174</sup> Ibid. p.21.

academic pursuits before his school work. He attended a Council run primary school before gaining entry to Carmarthen Grammar, where he 'failed all [...] examinations because I wasted my time in fighting and playing rugger.'<sup>175</sup> He worked as a clerk, and his practical wireless technology experience would prove very advantageous when he later applied to transfer to the RFC.<sup>176</sup>

From this myriad of backgrounds and experiences, it is clear that any stereotyping of an *RFC type* is crude and misplaced. As this research turns to where the RFC found its pilots, additional evidence supports this finding.

#### 1.5 - Where Did the RFC find its Pilots? - Public Schools and Universities

No discussion on recruiting pilots and observers in the First World War can ignore the contention that men from the public schools and universities dominated the Corps. Morrow states, 'The RFC sought public school and university youths' and that it was a 'Corps of commissioned officers who were recruited as much as possible from the ranks of public school sportsmen drawn to the adventure of flying.'<sup>177</sup> Bujak claims that 'Up to 1917, the Corps had recruited heavily from among the ready-made subaltern-pool of public schools.'<sup>178</sup> It is unclear what research was done to substantiate such claims. Anthony Seddon and David Walsh's book, *Public Schools and the Great War: The Generation Lost*, contains a relatively brief section of just seven pages dedicated to the Flying Corps. Unfortunately, their analysis is marred by the same issues that dominate much of the historiography when there is a discussion of recruitment and

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<sup>175</sup> Jones, *Tiger*, p.20.

<sup>176</sup> Ibid.

<sup>177</sup> Morrow, *Great War*, p.117.

<sup>178</sup> Bujak, *Reckless Fellows*, p.11.

training – a reliance on a select few well-known memoirs. By repeating the incorrect training loss figures and spurious life expectancy numbers of Winter and Mackersey, their work exaggerates the deadliness of being a pilot.<sup>179</sup> Such deadliness is, in turn, helpful if you are creating, as Seddon and Walsh are, a narrative supporting a link between chivalry, sacrifice, the public schools and the RFC.<sup>180</sup>

Figures for the number of public schoolboys and university men who served in the Corps in total are not available. Consequently, it is impossible to say precisely how many of the total number of public schoolboys served in the RFC and, of those, how many died. However, a new analysis carried out in this research has sought to give some colour to the question of the significance of public schools and universities. By individually analysing Rolls of Honour from schools and universities where they are available, it is possible to look at the proportion of men killed while serving with the flying services. In doing so, we can ascertain whether the RFC stands out in its significance. The evidence in tables 1.1 and 1.2 shows that the universities and public schools produced comparatively small numbers of officers for the RFC compared to those entering other branches of the Army.<sup>181</sup>

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<sup>179</sup> These books grossly overstate training losses as discussed in chapter six.

<sup>180</sup> A. Seddon & D. Walsh, *Public Schools and The Great War: The Generation Lost* (Barnsley: Pen & Sword, 2013), pp.163-170

<sup>181</sup> Analysis of the Rolls of Honour information available for the institutions listed in Table 2.1 and 2.2.

**Table 1.1 – University Losses<sup>182</sup>**

	Men Killed	Men Killed as % of Men Served	Flying Service Killed	Flying Service Deaths as % of Those Killed
Aberdeen	341	13 %	5	1%
Durham	325	13 %	14	4 %
London	659	16 %	61	9 %
Manchester	500	13 %	23	5 %
Oxford	2,673	18 %	62	2 %
Total	4,498		165	4 %

As shown in the table above, involving the analysis of almost 4,500 deaths across five major universities, just 165, or 4% of those who died, did so while serving in RFC, RNAS or RAF.

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<sup>182</sup> Cambridge University does not have information available to be able to assess which regiment men were serving in when they died, but it is known that they lost 2,470 men from a total of 13,878, the loss rate being identical to Oxford's at 18 %.

**Table 1.2 – Public School Losses**

	Men Killed	Men Killed as % of Men Served	Flying Service Killed	Flying Service Deaths as % of Those Killed
Barnard Castle	157	21 %	1	1 %
Bedales	63	12 %	14	22 %
Birmingham K.E.s	246	Unknown	19	8 %
Brighton College	149	Unknown	8	5 %
Charterhouse	687	20 %	53	8 %
Christ's Hospital	445	22 %	28	6 %
Dulwich	534	17 %	36	7 %
Eton	1,157	32 %	44	4 %
George Herriots	461	17 %	9	2 %
Harrow	642	22 %	36	6 %
Lancing	178	22 %	12	7 %
Leys	149	Unknown	8	5 %
Loretto	144	24 %	12	8 %
Shrewsbury	305	16 %	26	9 %
Wellington	700	25 %	39	6 %
Westminster	224	16 %	24	11 %
Winchester	514	21 %	24	5 %
Total	6,768		393	6 %

A similar analysis was conducted on the records of seventeen public schools (table 1.2), which involved the examination of over 6,700 individual losses. Of these, 393, or 6 per cent, were men in the flying services, including a few RNAS men.

From Seddon and Walsh's data, 21,946 former public schoolboys died in total across all the services.<sup>183</sup> This research has calculated that some 5,835 officers and cadets were killed in the RFC and RAF during the First World War.<sup>184</sup> If we extrapolate the 6% proportion from table 1.2 and apply it to Seddon and Walsh's 21,946 boys killed, it implies the loss of roughly 1,300 boys in the air services. This 1,300 would equate to roughly 20% of the total airmen killed. Thus, it can be concluded that while public schoolboys were significant to the RFC, they were likely, not dominant. The proportion

<sup>183</sup> Seddon & Walsh, *Public Schools*. Boys from Headmasters Conference Schools as defined with an '\*' on page 255.

<sup>184</sup> New analysis based on Hobson, *Airmen Killed*.

of public schoolboys in the Corps would, as Bujak suggested, decline markedly as the war went on. By the last two years, such boys were almost non-existent. As early as October 1916, Henderson stated he 'had consulted General Brancker on this subject, and he agrees with me that the public schools are being pretty thoroughly exploited as regards suitable pilots' and 'our best source of supply at present is the commissioned ranks of the Army'.<sup>185</sup>

Evidence derived and calculated from unpublished archival sources of recruitment figures from 1917 allows analysis illustrating just how small a proportion of public schoolboys were entering the RFC by this time:

*Table 1.3- RFC Recruitment from Public Schools – June to October 1917*

RFC Officers	June	July	August	September	October
Opening Month <sup>186</sup>	8,459	8,955	9,268	9,728	10,938
Deaths <sup>187</sup>	(173)	(194)	(221)	(217)	(216)
Recruitment <sup>188</sup>	669	507	681	1,427	780
Closing <sup>189</sup>	8,955	9,268	9,728	10,938	11,502
Public School intake <sup>190</sup>		59	54	27	23
Public School Proportion		11.6 %	8.6%	1.9%	2.9%

The figures in table 1.3 have been calculated to show the number of public schoolboys joining the RFC compared to other branches of the British forces for a brief snapshot

<sup>185</sup> NA:AIR2/129/B11782 -Correspondence with Headmasters' Conference regarding the possibility of Supply of Air Service Officers from Public Schools

<sup>186</sup> War Office, *Statistics of the Military Effort of the British Empire in the Great War 1914-1920*, p.227.

<sup>187</sup> New analysis derived from *Airmen Died*. Figures include those killed in action, died whilst flying, died of wounds and died of injuries. It is recognised that these numbers will include a minor number of non-officers and that some officers will have died of other causes. The numbers still provide a fairly reliable order of magnitude.

<sup>188</sup> Calculated taking into account each month's closing balance and casualties.

<sup>189</sup> WO, *Statistics*, p.227.

<sup>190</sup> 'Intake of Public Schoolboys from 186 schools for temporary commissions' from NA:AIR2/129/B12110 -Suggested Propaganda and Investigation of Recruiting from Schools for the R.F.C.

of time available in late 1917. The proportion of men joining the RFC from 186 public school OTCs falls from 11.6 per cent in July 1917 to less than 3 per cent in September and October. Further, an additional report from early 1918 showed that only 15 candidates from OTCs joined the cadet wing between 11 January and 25 February 1918.<sup>191</sup> Attitudes in 1918 had also become somewhat more mixed based on experience. A September 1918 letter from Lt. Col. Freeman, the Director of Training at the Air Ministry, states:

A boy educated at a public school may well be well educated from a Character point of view (admittedly a very important matter), but this is sometimes attained at some expense to the education of his mind. The reverse may apply to the boy educated at Secondary or Board school.<sup>192</sup>

This research certainly does not claim that public schools were not important to the RFC. However, given that the vast majority of pilots were recruited in 1917 and especially 1918, their importance has been overstated in the historiography.

### 1.6 - Where Did the RFC find its Pilots? - Promotion from the Ranks

A potential source of officers was to promote NCOs or men from the ranks. This research has analysed 1,000 men in each year of the war to assess how significant a source of officers promotions were.<sup>193</sup> Of those attesting in 1914, some 21 per cent were awarded a commission during the remainder of the war. Principally these are men who first learned to fly as NCO pilots or air mechanics, many of them having

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<sup>191</sup> NA:AIR2/129/B12110 -*Propaganda*.

<sup>192</sup> NA:AIR1/14/15/1/49 -*Schools of Aeronautics and Cadet Brigade - Conferences of Commandants and Chief Instructors*.

<sup>193</sup> 1,000 service records were taken from each attestation year at random from Findmypast, *Service Records 1912-1939*.

served first as observers. Given the relatively small resource pool of men who could fly, this was eminently sensible. Men who had flown as observers had already proved they could cope with the rigours of altitude and motion and shown an aptitude for the work.

In 1915 and 1916, only eight men of those sampled in each year were granted commissions. While no policy statements have been identified, it is suggested that the reason for this was the decline in the use of non-officers for work in the air. The primary cause of this decline was external. The Admiralty awarded commissions to all flyers. A failure to follow suit on the part of the RFC would have resulted in far fewer applicants. Whilst the RFC never adopted an 'officer only' approach, the prevalence of non-officer pilots and observers declined markedly as a proportion of the RFC population. There was a modest increase in promotions in 1917 due entirely to the practice established in Canada to recruit and train men before awarding their commission. In 1918, no man in the sample group was awarded a commission in that year. Naturally, there is a timing-related consequence – there was insufficient time between attestation and the end of the war to see promotions. However, by then, the Cadet scheme had become the principal source of pilots, as will be discussed. Overall, this analysis implies that promotion from the ranks was a relatively minor source of pilot officers.

### 1.7 - Where Did the RFC find its Pilots? - The Wounded

A subset of officers transferring from the Army is worthy of separate comment. Many men who had been invalided out of the Army or else left seriously wounded opted to

transfer to the RFC. While we cannot know for sure how many men were thus affected, there is significant anecdotal evidence in memoirs and other accounts. For some like Wilfrid Blake, who wrote anonymously as 'Wing Adjutant' in 1918, the time afforded him by being in an English hospital gave him pause for thought on the conditions he had faced. It was:

After a short but horrible period of infantry work, of which a confused jumble of noise, stench, water, grey uniforms and mud – chiefly mud – were his chief memories, he wished for a change and set about thinking what could be done to attain it [...] Why not try the RFC? Why not, indeed? He had some flying experience and certain qualifications, and the work seemed good.<sup>194</sup>

Aidan Liddell had a similar experience. Wounded whilst winning the Military Cross at La Maisnil, he was invalided home with influenza in January 1915. During his convalescence, he decided to use his pre-war flying abilities to seek a transfer to the RFC.<sup>195</sup> Having re-joined the London Regiment in September 1914, Guy Livingston suffered a severe concussion and was posted home to the Osborne Convalescent Home on the Isle of Wight. Like Blake and Liddell, Livingston used these six months of convalescence to consider his future. In Livingston's case, patronage also played a part as he decided 'to see my old friend Sir David Henderson [...] to see if it were possible for me to obtain an appointment with the Royal Flying Corps'.<sup>196</sup> Livingston, unfit for anything other than light duties, became a Wing-Adjutant in the RFC at Farnborough.<sup>197</sup> 2/Lt. John Laing badly injured his knee while undertaking a course at the Woolwich Academy in 1916, forcing him to abandon his instruction and eventually be declared unfit for service. He was commissioned into the RFC in early 1917.<sup>198</sup>

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<sup>194</sup> Blake, *Adjutant*, p.2.

<sup>195</sup> Daybell, *Smile*, p.226.

<sup>196</sup> Livingston, *Hot Air*, pp.86-87.

<sup>197</sup> *Ibid.*

<sup>198</sup> [https://ol.loretto.com/frmProfile.aspx?A=\\_873](https://ol.loretto.com/frmProfile.aspx?A=_873).

Auberon Herbert, 9th Baron Lucas and 5th Lord Dingwall had been President of the Board of Agriculture in the Government Cabinet when war broke out.<sup>199</sup> He had lost a foot as a war correspondent in the South African War and initially persuaded the RFC to let him into the Corps as an observer in May 1915. A force of nature, Lucas pushed the RFC to train him as a pilot, and he would ultimately become a Flight Commander, losing his life, aged 40, in November 1916.<sup>200</sup> Nor was Lucas alone in respect of his significant injuries. South African Vivian Voss recalled two colleagues in his memoir who had joined the RFC due to injuries and the ingenious methods to accommodate them. Lt. Leisk joined 'the flying corps because of a deformed foot which would have debarred him from the infantry but was no handicap in an aeroplane', while Lt. Hicks, an RFC instructor, 'had his left elbow shattered in France and the forearm was withered in consequence, so he used to wear a leather mitten with a socket in it fitted over the top of the joystick.'<sup>201</sup> Thomas Marson lost his leg above the knee at Gallipoli on 28 August 1915 and initially sought alternative service with the infantry. He notes that:

At length, after making myself a thorough nuisance to everyone I knew [at the War Office], I succeeded in getting seconded in November 1916 to the RFC.<sup>202</sup>

Also wounded at Gallipoli was New Zealander Keith Park, hit by a shell that killed the horse beneath him. Park, graded as permanently unfit for service with the 29<sup>th</sup> Division due to his injuries, successfully secured a move to the RFC.<sup>203</sup> A third Gallipoli man,

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<sup>199</sup> Money, *Soldiering*, p.13.

<sup>200</sup> <https://www.english-heritage.org.uk/members-area/members-magazine/auberon-herbert/>

<sup>201</sup> Vee, *Minnows*, p.37 and 45.

<sup>202</sup> Marson, *Scarlet*, p.131.

<sup>203</sup> V. Orange, *Park: The Biography of Air Chief Marshal Sir Keith Park GCB, KBE, MC, DFC, DCL* (London: Grub Street, 2010 [2001]), p.14.

Norman Hargreaves, a Lieutenant in the East Lancashire Regiment, became seriously ill with enteric fever. He was sent back to Britain and immediately transferred to the RFC after recovery.<sup>204</sup>

As so many anecdotes show, being invalided from the infantry did not necessarily debar a man from the RFC. The nature of the role, though demanding physically, allowed men who would have otherwise seen their service end, to find another method of serving.

### 1.8 - Where Did the RFC find its Pilots? - Pilots from Overseas

John Morrow has argued that the RFC turned to overseas recruitment as the availability of men from the 'British middle and upper classes' dwindled, and quality fell in the last two years of the war.<sup>205</sup> While it is true that Britain sought to exploit the manpower that existed in the Dominions, there is no evidence of class-based calculations. More simply, it resulted from a pragmatic and logical desire to ramp up quantity. The Australian Flying Corps was inaugurated as early as 1915. Four officers and 60 men arrived in Basra, Mesopotamia, that May and took part in efforts to relieve the siege at Kut.<sup>206</sup> The first complete squadron raised in Australia left for Egypt in March 1916. At a similar time, Australian newspapers reported on the opening of a new flying school near Melbourne in a move that seemingly came as a surprise to the RFC, albeit a welcome one to whom the Colonial Office forwarded the press cuttings.<sup>207</sup> While the British were keen not to demotivate efforts in Australia, they

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<sup>204</sup> [https://ol.loretto.com/frmProfile.aspx?A=\\_837](https://ol.loretto.com/frmProfile.aspx?A=_837).

<sup>205</sup> Morrow, *Great War*, p.167 and 240.

<sup>206</sup> NA:AIR1/686/21/13/2252 -*Statistical Data*.

<sup>207</sup> NA:AIR1/388/15/231/29 -*Vol. XXIX*.

preferred Australians to enlist with their infantry units and seek transfer to the RFC once in France or Egypt. On 11 July 1916, the War Office made a formal request for such men due to the force's rapid expansion. Praising the 'exceptionally good work which has been done in the RFC by Australian-born officers', the AIF was advised that some 200 commissions in the Special Reserve of the RFC were to be made available to Australian NCOs and men.<sup>208</sup>

New Zealand, which would establish two training schools during the war and provide 300 officers to the flying services, was initially reluctant to lose officer material to the RFC.<sup>209</sup> Only Joseph Hammond of New Zealander pre-war flyers joined the initial ranks of the RFC as a pilot. Like those in Australia, others were told to join infantry regiments and apply once they got to Europe. Men such as Seaforth McKenzie, who had significant mechanical experience, still found this was easier said than done, with senior officers frustrating his applications throughout 1915.<sup>210</sup> South African influence in the RFC dates back to 1914. One of the initial five South Africans selected for the RFC was Kenneth van der Spuy. Van der Spuy was the son of a Cape Town accountant and worked for a bank when he saw an advertisement for young men to form a new flying arm for the South African Defence Force.<sup>211</sup> In November 1914, a South African identity was cemented when the RFC created No.26 Squadron from the South African Aviation Corps, which by October 1915 had become known as No.26 (South African) Squadron.<sup>212</sup> In December 1915, the Directorate wrote to No.26 Squadron's commanding officer, reassuring him that 'every endeavour will be made to

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<sup>208</sup> Cutlack, *Flying Corps*, p.421.

<sup>209</sup> NA: AIR1/686/21/13/2252 -*Statistical Data*.

<sup>210</sup> Claasen, *Fearless*, p.91.

<sup>211</sup> Van der Spuy, *Chasing*, p.26.

<sup>212</sup> P. Lewis, *Squadron Histories, RFC, RNAS and RAF, 1912-59* (London: Putnam, 1959).

complete the third flight of your Squadron with South African Officers as far as possible'.<sup>213</sup> The squadron would go on to see service in East Africa.

As the evidence will demonstrate below, South African numbers continued to be important, particularly in 1918. However, Canada provided the most significant dominion support to the RFC during the war. In August 1916, Capt. Innes-Kerr was dispatched to Canada to establish an RFC presence.<sup>214</sup> His principal role was to build on knowledge gained from a visit to Canada a year earlier by Colonel Burke but now to take practical steps to establish a permanent footing. He was 'to obtain suitable candidates for commissions in the RFC Special Reserve and also to arrange for the enlistment of suitable men as air mechanics.'<sup>215</sup> He was to report on Canadian schools and aircraft factories and opine on their advancement.<sup>216</sup> On 21 December, Brancker wrote to Innes-Kerr confirming that five officers with flying experience, four with 'technical aviation experience', and two with aviation rigging experience were being readied for service in Canada. Finally, Brancker also confirmed that sanction had been sought from the War Office to begin the enlistment of Canadian officers and air mechanics via a local recruiting presence which Innes-Kerr was to help define.<sup>217</sup>

Initially, the RFC stated that Canadian recruits were to be 'of pure European descent and sons either of natural-born or naturalised British subjects.'<sup>218</sup> Their four-month course would include their preliminary flight training, but they would only qualify for commissions after completing a further satisfactory period with the RFC in Britain. If they were found to be of an unacceptable quality as RFC officers, they would be

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<sup>213</sup> NA:AIR1/381/15/231/22 -Vol. XXII.

<sup>214</sup> NA:AIR2/127/B12062 -*Policy for the Development of the RFC in Canada 1916.*

<sup>215</sup> NA:AIR2/9/87/8060 -*Obtaining of Pilots in Canada for R.F.C 1916.*

<sup>216</sup> NA:AIR2/127/B12062 -*RFC in Canada.*

<sup>217</sup> Ibid.

<sup>218</sup> Ibid.

offered to an Infantry Officer Cadet Battalion instead. If again unsuitable, they could join the infantry in the ranks or be discharged and receive a third-class passage back to Canada.<sup>219</sup>

While early records are not entirely reliable, recruitment returns show that some 592 Canadian applicants were processed between May 1915 and the end of 1916. Of these, only 145 (24 per cent) proceeded overseas for training.<sup>220</sup> The early recruitment challenges the RFC faced in Canada were numerous. In an age before mass media, spreading the word regarding the RFC was not a simple endeavour, and many regions had not even heard of it. Even when the air force was known, there was still a widely held view that flying was exceedingly complicated and expensive, both factors putting off would-be recruits. In a bid to improve the process, in April 1917, attempts were made to involve the Aero Club of Canada. It used the club's records of Canadian aviators to reach out to those men who were not already serving. The scheme yielded few valuable results, so in May, the RFC turned its attention to twenty-six Canadian public schools and universities, approaching them directly to find recruits. This initiative, too, proved of limited value, and at the end of May, the RFC accepted that it needed a new approach.

This new thinking led to the decision to decentralise recruitment efforts by ceding authority to regional recruitment committees. These formed in Montreal, Charlottetown, Winnipeg, Regina, Calgary and Vancouver, adding to the original base in Toronto. These committees managed the 'first interview' process, with selected men

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<sup>219</sup> NA:AIR2/127/B12062 -*RFC in Canada*.

<sup>220</sup> NA:AIR2/166/RU4527 -*General Statistics of RAF in Canada & Memo on Development of the RFC in Canada*.

sent on for medicals and an additional interview with RFC officers in Toronto. The scheme generated approximately twenty applications daily, on target for the 600 recruits that the RFC hoped to find in 1917 but some way short of the 1,500 desired in 1918.<sup>221</sup> Also in May 1917, the RFC pursued what it believed would be a much larger innovative opportunity by expanding its reach into the United States. An RFC office opened in New York, and recruitment drives occurred in Boston, Chicago, and Minneapolis. While the initiative was tacitly agreed to by local politicians, coming as it did just a month after the United States entered the First World War, the effort was remarkably tactless. It was also illegal, and after three months – during which some 450 potential recruits had been identified of varying degrees of quality - the scheme was abandoned as, as one administrator put it, 'this arrangement could not last long in view of the danger of politicians interfering with us.'<sup>222</sup>

In September 1917, the system of recruitment committees was deemed a success, and the initiative was expanded. Significant effort was expended educating the recruiting committees in an attempt to drive down the continuing high rejection rates. Additional roving committees now travelled Canada to smaller towns, their attendance being advertised in advance in local newspapers. As the scheme was becoming large and unwieldy, Canada was divided into five recruiting districts, each with an appointed officer in charge. The change streamlined the recruiting process by removing the need to send all recruits for an interview in Toronto.<sup>223</sup>

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<sup>221</sup> NA:AIR2/166/RU4527 -*Statistics*.

<sup>222</sup> *Ibid.*

<sup>223</sup> *Ibid.*

The system, measured in recruited cadets, is impressive. In the six weeks of 15 February to 31 March 1917, only 106 men had been identified for recruitment. In contrast, in six weeks from 1 October to 15 November, potential recruits rose to 1,003, exceeding targets. In total, 7,451 men were interviewed between February and November 1917; of these, 2,660 (37 per cent) were recruited.<sup>224</sup> To put this in context, Canada had produced only 5 per cent of new pilots in June 1917, but in December, it reached a high of 33 per cent. Though the proportion would fall in Spring 1918 to approximately 20 per cent, the importance of new Canadian recruits can not be overstated.<sup>225</sup> In the RFC itself, the Canadian influx did not go unnoticed. Englishman Stanley Rutledge, attending a course at No.1 School of Military Aeronautics at Reading, observed that the RFC 'are taking the Canadians in large numbers. Flying calls for initiative and other qualities which chaps from overseas seem to possess to a high degree.'<sup>226</sup>

### 1.9 - Why Did Men Join the RFC? - Adventure

The reasons for people choosing to join the RFC are often as varied as the individuals themselves, and assessing motivation must rely on qualitative research, principally on personal recollections. From an extensive search of such accounts, specific themes emerge. For some, the chance to join the RFC came at an opportune time, none more so than future leader Hugh Trenchard. He was bored with regimental life in 1912 and feared that his chances of future promotion had passed him by. However, he would probably never have joined the Corps in 1912 if he had not received letters from his

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<sup>224</sup> NA:AIR2/166/RU4527 -*Statistics*.

<sup>225</sup> NA:AIR1/1306/204/11/190 -*Number of R.F.C. officers by unit serving Overseas*.

<sup>226</sup> Rutledge, *Pictures*, p.137.

close friend Captain Eustace Lorraine, who had recently joined the new service. In a letter to Trenchard, he wrote, 'You've no idea what you're missing [...] Come and see men like ants crawling.'<sup>227</sup> Trenchard was not alone in seeing the new service as his last hope. L.E.O. Charlton believed joining the RFC was a 'last chance to do something fascinating and dangerous'.<sup>228</sup>

For some men, proximity to the airfields of Hendon helped rouse in them a passion for flying. Oliver Stewart's interest had been piqued by his attendance at Hendon in 1913. As a 17-year-old reporter for his mother's society magazine, *The Lady*, he was enthralled by the machines and their pilots.<sup>229</sup> Harold Balfour enlisted in the Special Reserve of the King's Royal Rifle Corps on 1 November 1914, and training on Salisbury Plain brought him into close contact with the RFC. He hung around the airfield in the hope of blagging a passenger flight with a 'God-like pilot'.<sup>230</sup> Finally successful, he admitted to being 'mentally intoxicated' and persuaded his father to advance the £75 necessary for him to pursue his Royal Aero Club Certificate.<sup>231</sup> William Fry's experience was similar to Balfour, his first contact coming as a member of the Somerset Light Infantry taking part in a 'battle course' on the Plain. He had noticed that there was 'glamour attached to wearing a pilot's or observer's wings'. However, though he lacked Balfour's self-confidence and ambition to become a pilot, the opportunity of becoming an observer was much more attainable.<sup>232</sup>

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<sup>227</sup> A. Boyle, *Trenchard: Man of Vision* (London: Collins, 1962), p.95.

<sup>228</sup> Charlton, *Charlton*, p.212.

<sup>229</sup> Stewart, *Words*, p.9.

<sup>230</sup> Balfour, *Airman*, p.20.

<sup>231</sup> *Ibid.* p.21.

<sup>232</sup> Fry, *Battle*, p.35.

Many men were attracted to the Corps due to its unique spirit. Perhaps it would be something akin to working in a 'start-up' where entrepreneurial spirit trumps established concepts of authority and status in today's world. Stanley Rutledge clearly explains why he and his brother Wilf sought to transfer to the RFC. Writing in 1918, he stated, 'I am sure Wilf and I are going to like the change from the infantry. The flying service is the premier service in the army today.'<sup>233</sup> In his biography of Trenchard, Boyle notes that 'whether an officer belonged to cavalry or infantry, whether he boasted of being a sapper or a gunner, the prestige attached to his old unit was forfeited as soon as he entered the Central Flying School.'<sup>234</sup> Charlton also noted that when he joined the Corps as an Army Captain, he became an insignificant beginner in a mixed society of Army and Navy officers [where] distinctions of rank did not exist. They were all only pupils bound without rivalry.'<sup>235</sup>

#### 1.10 - Why Did Men Join the RFC? - The Belief They Would See Action Sooner

Evidence suggests that there was a widely held view that joining the RFC would enable a man to see service at the Front sooner than if they joined or remained in the infantry. Future VC winner Albert Ball was one such man. He had enlisted from a small engineering firm in Nottingham as a Private and was motivated to learn to fly in the belief that it would get him to France sooner. Frustrated at the training he was receiving with the North Midlands Divisional Cyclist Company, he attended the Ruffy-Baumann Flying School on his own initiative in his spare time. Having obtained his RAeC certificate, he was seconded to the RFC in October 1915.<sup>236</sup> P.B Hunter, an officer in

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<sup>233</sup> Rutledge, *Pictures*, p.134.

<sup>234</sup> Boyle, *Trenchard*, p.102.

<sup>235</sup> Charlton, *Charlton*, p.216.

<sup>236</sup> C. Bowyer, *Albert Ball, VC* (Wrexham: Bridge Books, 1994 [1977]), p.27.

the Army Service Corps, wrote to his Commanding Officer in April 1915 seeking a transfer because:

I wish to serve in a combatant unit, and because my lack of Military Training would make it necessary for me to go through a long course of training before I should approach any standard of efficiency in an Infantry Regiment [...] My technical knowledge, training and natural interests should give me an opportunity of becoming efficient more rapidly in the Royal Flying Corps.<sup>237</sup>

Despite Hunter having a sound background in mechanical engineering and having worked with Daimler in Coventry, there is no record that his sought-after transfer was successful. R.R. Money, on the other hand, had better fortunes. He applied from his infantry training camp in the Spring of 1915 after senior officers suggested that he could get to France in just three weeks if he applied to become an observer.<sup>238</sup> Money's experience is echoed by Billy Bishop, who was told, 'If I wanted to get to the front quickly, I would have to go as an observer.'<sup>239</sup>

### 1.11- Why Did Men Join the RFC? – To Use Their Mechanical Backgrounds

Mechanically minded men were particularly sought after by the RFC. E.M. Roberts was born in Duluth, Minnesota and pursued a living in 'lumbering, construction and sheep-raising.'<sup>240</sup> The 20-year-old moved to Calgary and, lying that he was born in Sasalta, Alberta, joined the Tenth Canadian Infantry Regiment. Mechanically minded and with vast experience in operating and repairing tools and machines, he was transferred to a mechanical transport section, where he became a lorry driver. Gassed at Second Ypres and having suffered a bad motorcycle accident as a despatch rider,

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<sup>237</sup> NA:AIR1/828/204/5/217 –*Applications*.

<sup>238</sup> Money, *Soldiering*, p.10.

<sup>239</sup> Bishop, *Winged Warfare*, p.20.

<sup>240</sup> Roberts, *Fighter*, p.13.

Roberts sought a transfer.<sup>241</sup> He eventually attended a course at No.1 School of Aeronautics on 9 October 1916 and was made a Observer on 15 November.<sup>242</sup> Fellow American-born Bill Lambert was also working in Canada when he joined the RFC in June 1917. Obsessed with flight and model making since a young age, he had witnessed the Wright Brothers flying at an exhibition and had, as a technical man, assisted the pilot and local technicians with the repair of the aeroplane.<sup>243</sup> A determined W.R.S. Humphreys of the Canadian infantry was also mechanically minded and had the advantage of having learned to fly in 1911. He followed up his British education with a life of 'ranching, gold mining, [and] railroading in the lumber camps'. The 29-year-old followed up his application via his senior officers with letters directly to the RFC in which he apologised for 'making a nuisance of [himself]' as he attempted to accelerate his application.<sup>244</sup>

### 1.12 - Why Did Men Join the RFC? – Escape

Douglas Bell, who had already been twice seriously wounded, noted in his diary on 13 August 1916 that:

During June, before leaving the mining area, a notice came round asking young officers to volunteer for the RFC in view of the great contemplated expansion of this branch; and I was so sick of trenches (and trench mortars) that I had sent in my name, on the principle of anything for a change.<sup>245</sup>

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<sup>241</sup> Ibid.

<sup>242</sup> Findmypast, *Service Records 1912-1939*, E.M. Roberts.

<sup>243</sup> Lambert, *Combat Report*, pp.17-18, p.23.

<sup>244</sup> NA:AIR1/828/204/5/217 -*Applications*.

<sup>245</sup> Bell, *Diary*, p.174.

Arch Whitehouse transferred at a similar time to Bell, but rather than seeking a transfer from the conditions, he was trying to escape his comrades. Though born in England, Whitehouse spent half his 18 years in New Jersey before working his way from Canada in a cattle boat. Whitehouse felt no 'kindred spirit' for the men of the Northamptonshire Yeomanry and was desperate to leave them behind as soon as possible.<sup>246</sup> For Oliver Stewart, who also joined the Corps in mid-1916, it was a case of avoiding the fate of his two older brothers, one of whom had been killed and one severely wounded in the infantry. Stewart believed that his brothers 'could not hope that their survival would be influenced by skill, ingenuity, coolness or even physical strength and mental agility' as he would in the RFC.<sup>247</sup>

### 1.13 - Why Did Men Join the RFC? - The influence of Patronage

Contacts in the right places could certainly help oil the RFC's application process, but patronage was not simply the preserve of the RFC but very much a feature of Victorian and Edwardian Britain.<sup>248</sup> Lt. R.G.N. Murray of the 9<sup>th</sup> Gurkha Rifles submitted his application in July 1915 and enclosed a copy of his October 1912 RAeC certificate. His application stalled because of the glut of applications compared to demand. In frustration, he turned to his contacts in the RFC, one of whom wrote to Captain Festing at the Directorate, stating that Murray 'seems a very desirable person' and hoped 'you will get him for us out of the kindness of your heart.'<sup>249</sup> Another man, Lt. D. St Gordon of the 1<sup>st</sup> Highland Light Infantry, openly volunteered that one of his reasons for joining

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<sup>246</sup> A. Whitehouse, *The Fledgling: An Aerial Gunner's Experience in World War I* (London: Nicholas Vane, 1964), p.80.

<sup>247</sup> Stewart, *Words*, p.94.

<sup>248</sup> W.J. Reader, *Professional Men: The Rise of the Professional Classes in Nineteenth Century England* (London: Weidenfeld and Nicolson, 1966), p.4.

<sup>249</sup> NA:AIR1/828/204/5/217 -Applications.

the RFC was that 'My uncle Colonel D. Le G. Pitcher is Assistant Commandant at the Central Flying School, Upavon.'<sup>250</sup> Gordon's application was smoothly passed through the channels.

Major G.A.E. Chapman's application to the RFC came with support from the very top of the organisation. His letter seeking a transfer and associated approval from his commanding officer was forwarded to Festing in July 1915 by Henderson himself. Chapman had made a 'come and get me' appeal, but Festing advised that the RFC 'makes it a hard and fast rule never to apply for officers, but always requires the application to come the other way around.' Festing consoled, 'As soon as your application comes through, we will ask the Adjutant General for your services.'<sup>251</sup> However, Henderson was not satisfied and asked Festing to be more proactive and to:

Read through the enclosed letter and, if you can see your way to do so, help Chapman get into the RFC. I trained him as a subaltern in my late Battalion, and I know that he is capable and keen and is physically very active and youthful still.<sup>252</sup>

A further example of patronage is the unusual intervention on behalf of an air mechanic seeking assistance in obtaining a commission. On 11 March 1916, Lt. Col E.A. Stanton, the Military Secretary in Canada, wrote from Government House in Ottawa to the War Office about 1/AM William Drummond Matheson. The reason that Stanton was interested in such a lowly ranked man was that he was a family friend of Sir Wilfrid Laurier, the ex-Prime Minister. Laurier had written on behalf of Matheson, stressing

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<sup>250</sup> NA:AIR1/828/204/5/217 -*Applications*.

<sup>251</sup> *Ibid.*

<sup>252</sup> *Ibid.*

that the man was 'naturally anxious to obtain a Commission.'<sup>253</sup> Laurier and Stanton's intervention worked. Six months later, Matheson was flying with No. 25 Squadron in France.<sup>254</sup> Geoffrey Wall, a Liverpoolian emigrant to Australia, would suffer a frustrating process when he enlisted in the RFC in London in December 1916. His path was also smoothed by family connections. He made clear in his diary that a letter from Sir Ronald Munro-Ferguson, the Governor-General of Australia, was a weighty driver behind the success of his application. 'I have carried it round as a sort of talisman', he wrote, 'and it has been very effective.'<sup>255</sup>

#### 1.14 - The Application Process in Britain

Any applicant wishing to join the RFC had first to apply in writing. For men already in service, this entailed putting forward a written request for transfer to their commanding officer. Between 1914 and 1916, whether a request was accepted or rejected seemed - at least to many applicants - to be at the whim of commanding officers. Though Denis Richard's biography of the future Marshal of the RAF Charles "Peter" Portal, *Portal of Hungerford* does not refer to it, the RAF was almost denied his services. While it is widely reported that Portal sought a transfer from his role as a motorcyclist, it has not been recorded that Portal's application was initially refused. In his application, Portal confessed that:

My only qualifications for the RFC are that I have always taken a great interest in flying and in aeroplanes. I understand petrol engines thoroughly and have a fair mechanical and scientific knowledge.<sup>256</sup>

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<sup>253</sup> NA:AIR1/388/15/231/29 -Volume XXIX.

<sup>254</sup> Findmypast, *Service Records 1912-1939*, W.D. Matheson.

<sup>255</sup> Wall, *Letters*, p.37.

<sup>256</sup> NA:AIR1/828/204/5/217 -Applications.

However, his commanding officer, A.C. Champion-Jones, did not reject his application purely on the contents but rather on technical grounds. Portal was not eligible for a transfer, given that he held only a temporary commission. After a week's internal debate, the issue was escalated to Lt. Col. Travers-Clark, who wrote to the RFC requesting clarity. Fortuitously for Britain perhaps, Capt. Festing for the RFC asked that such men be sent for an interview irrespective of their commission status.<sup>257</sup> 2/Lt. G.F. Westcott of the 1<sup>st</sup> Indian Cavalry Supply Chain was another who benefitted after advice was sought directly from the RFC. His application was also almost rejected after his senior officer Lt. Col. H. Codrington, noted that 'he has no experience in flying.' In a demonstration of how ad-hoc the approval system was at this time, Westcott's commanding officer Capt. J.N. Muirhead opted not to leave the matter there and wrote to Festing asking if he wished to see Westcott. Festing's 'yes please' paved the way for Westcott to join the Corps.<sup>258</sup>

While it would be human nature to expect senior infantry officers to reject a request from a particularly useful man or accept one from someone deemed a liability, there is no evidence suggesting that rejections were unfairly meted out. As presented, the supply of officers significantly exceeded the demand during this period. Consequently, the RFC would seek applicants during specific periods. It would not be unreasonable for commanding officers to reject applications outside these windows because they would go nowhere even if approved. During one such window, William Fry remembered that the Commanding Officer of the Roehampton Balloon School had been around the camps at Salisbury Plain attempting to recruit balloon observers. He

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<sup>257</sup> NA:AIR1/828/204/5/217 -*Applications*.

<sup>258</sup> *Ibid.*

responded to a notice that appeared in their unit orders for RFC volunteers and put his name down.<sup>259</sup> Algernon John Insall and his brother were route-marching around Surrey with the Royal Fusiliers when they 'listened to an urgent appeal from the War Office [...] asking for volunteers to join the RFC, to be trained as pilots.'<sup>260</sup>

In theory, civilians would approach local recruiting officers and ask to be referred to the RFC. There appears to have been some reluctance to do so. This reluctance was likely due to oft-reported pressures that men experienced to sign up for the infantry. Instead, many men directly applied to the Directorate of Military Aviation or the War Office. It would appear from correspondence files that all such applications were dealt with on their merits. A successful applicant would receive a standard acceptance letter confirming his appointment as a Second Lieutenant on probation with the Special Reserve. He would be required to arrive with his kit, for which a list of items was helpfully included, and advised to go to Messrs Cox & Co at 16 Charing Cross to receive a £50 outfit allowance.<sup>261</sup>

The RFC never recruited via conscription, so the application process remained unchanged throughout the war. The RFC was considered a specialist service, and conscription too blunt a tool for finding sufficiently skilled men. As the need for officers became pronounced in 1917, more exhaustive appeals were made to the infantry to find applicants. With shortages acute in all branches, the RFC was forced to rely on increasing numbers of direct applicants and a new cadet scheme which will be

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<sup>259</sup> Fry, *Battle*, p.35.

<sup>260</sup> Insall, *Observer*, p.11.

<sup>261</sup> NA:AIR1/381/15/231/22 -Volume XXII.

discussed shortly. A similar process existed for recruitment in Egypt, but here it was initially a haphazard and poorly administered affair. In April 1917, it was noted that:

Of the hundred officers sent to Egypt at the end of January, a considerable number were admitted to hospital on arrival, these Officers reported for instruction in aviation on discharge from hospital, but there is no evidence that they had been so selected in England beyond their personal statements.<sup>262</sup>

A few weeks later, Charlton, for the Directorate, advised Brig. Gen. W.G.H. Salmond, the RFC Commanding Officer in the Middle East, that:

For the present, owing to expansion at home, no further pupils will be sent for instruction in aviation. Expand resources locally to meet your demands.<sup>263</sup>

Such unhelpful remarks drew a withering response from Salmond. To placate him, the RFC in England sought to improve the supply system by seeking volunteers for service in Egypt. In September 1917, the RFC asked Wing Commanders for a list of men 'recommended for, and desirous of further flying in Egypt.'<sup>264</sup> The list, when received, contained a mixed bag of applicants. There was, for example, 2/Lt. C.R. Moore, who had '70 hours flying' and was 'strongly recommended.' Then again, there was also 2/Lt. P. Rawnsley, whose name it advised to remove from the list as 'he now has 'cold feet.'<sup>265</sup>

Successful candidates would then be called for an interview - until 1917 in London and from that date at one of the six regional centres established for the process. While elements of the historiography have been critical of the RFC's interview process, often

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<sup>262</sup> NA:AIR1/130/15/40/214 -*Officers Proceeding to Egypt for Instruction in Flying 1916-17.*

<sup>263</sup> Ibid.

<sup>264</sup> NA:AIR1/366/15/231/6 -*Vol. VI.*

<sup>265</sup> Ibid.

ridiculing questions regarding horse riding or driving, they also fail to offer an alternative. For Morrow, questions about riding connected to notions of class.<sup>266</sup> Again there is no evidence of any such linkage, and criticisms fail to consider the obvious fact that the horse would have still been a common form of transport across the classes in Edwardian Britain. Additionally, this was a new service. Almost no one applying would have had any contact with an aeroplane. It is not unreasonable for the RFC to have drawn parallels between the ability to control another vehicle or animal, particularly at speed, where a cool head and calm demeanour are essential.

Algernon Insall's interview in March 1915 was 'short' but 'made me feel extremely welcome.'<sup>267</sup> Having responded to a notice seeking applications to the RFC in December 1915, William Fry arrived for his interview with Warner at the War Office. Warner questioned his intentions before asking 'if I could ride a horse and sail a boat.'<sup>268</sup> Duncan Bell-Irving recalled that Festing enquired about his sporting ability, 'Footer, boxing, cricket – good! Experience with a rifle gained on Canadian hunting trips and school cadets.'<sup>269</sup> Stanley Vincent wrote in 1972 that, 'when I was 17 years old, I went to the War Office to volunteer for the Royal Flying Corps where having said I could ride a horse, I was accepted after a medical examination.'<sup>270</sup> Douglas Bell, in his diary, elaborated further in his abridged version of his interview with an 'RFC Selecting Officer at the railhead (Mericourt)':

'Q. Have you any engineering experience?

A. No, Sir.

Q. Can you drive a car?

A. No, Sir.

Q. And you think you can be a pilot?

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<sup>266</sup> Morrow, *Great War*, p.315.

<sup>267</sup> Insall, *Observer*, p.19.

<sup>268</sup> Fry, *Battle*, p.35.

<sup>269</sup> E. O'Kiely, *Gentleman Air Ace: The Duncan Bell-Irving Story* (British Columbia: Harbour, 1992), p.56.

<sup>270</sup> Vincent, *Fever*, p.15.

A. Yes, Sir.

Q. Can you ride or sail?

A. I can ride.

Q. What games do you play?

A. Rugger, I was in the School XV and have played a lot since; cricket and tennis, of course.

Q. And you seriously consider that you can tackle a pilot's job?

A. Certainly, Sir.

Q. Right! Here's your ticket to London town, and good luck to you.<sup>271</sup>

Norman Macmillan mentioned nothing of his interview process when he wrote his memoir *Into the Blue* in 1929, but when he reissued it forty years later, he apparently recalled and included a very similar verbatim exchange with his interviewer:

'Why do you want to transfer to (or join) the Royal Flying Corps?'

'Because I want to fly.'

'Can you ride?'

'I have ridden.'

'Have you sailed a boat?'

'Yes'

'Do you know anything about internal-combustion engines?'

'I know the Otto cycle and 2-stroke principles.'

'Have you driven motor cars or motorcycles?'

'Yes'

'Do you know anything about flying?'

'I have read Flight magazine, Aeronautics and The Aeroplane since Bleriot flew the Channel..<sup>272</sup>

Macmillan's rewrite is interesting for many reasons, and it will be touched on numerous times throughout this thesis. His latter version is clearly written to fit in with the more critical style of memoir in fashion at the time. Indeed Henderson thanks Sholto Douglas and Ira Jones for helping assist his memory in his acknowledgements. Australian pilot Norman Brearley's 1971 memoir also demonstrates the fallibility of memory. He confidently recalls being introduced to:

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<sup>271</sup> Bell, *Diary*, p.174.

<sup>272</sup> Macmillan, *Blue (1969)*, p.9.

Captain Warner, but I had already recognised him as the famous cricketer 'Plum' Warner. Inevitably the conversation turned to cricket – not that I played much, but he expected cricket to be part of my Australian background.<sup>273</sup>

While the story must have been a good one to recount over the years, Brearley is mistaken. There is no record of Sir Pelham Warner - who played 15 test matches for England and managed the infamous Bodyline Tour of Australia in 1932/3 - ever having been in the RFC. The Warner he met was certainly the aforementioned William Warner.

Following the interview, candidates would be referred for a medical examination. There are indeed cited examples of men passing early medical examinations with questionable medical histories. Even ignoring the fact that Trenchard was considered 'far too big' and 'far too old' by his former senior officer Col. Stuart, he also had a very questionable medical history and possessed 'only one whole lung'.<sup>274</sup> However, there are also clear examples in the historiography to suggest that by the end of 1916, the medical examination was no longer cursory. Geoffrey Wall, fresh from his frustrations at the War Office and Adastral House, reported that:

There are three men to pass, and the exam is pretty stiff. The examining doctors are specialists [...] and take the eyesight, heart nerves and hearing, respectively. [...] Quite a lot of men are ploughed for trifles, [...] one, for instance, was turned down because he was too tall at 6'1"; another because his tonsils needed cutting and another for his teeth.<sup>275</sup>

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<sup>273</sup> N. Brearley, *Australian Aviator* (Adelaide: Rigby, 1971), p.8.

<sup>274</sup> Boyle, *Trenchard*, p.96.

<sup>275</sup> Wall, *Letters*, p.39.

Stanley Rutledge wrote on 10 June 1917 that he had passed his medical in London and was quite surprised by the thoroughness, even if he did find some aspects comical:

It was a great examination. First, we had a doctor look at us for general physique, then another doctor examines carefully as to heart and lungs, then an eye, ear and nose man, and last of all to a nerves test. The test as to nerves was quite laughable. One had to shut the eyes and stand on one leg, there was hopping along a straight line, balancing tuning forks on boards etc. We were at it from 10 am until 3.30 pm.<sup>276</sup>

Men dropping out of training due to vertigo or nausea remained a serious issue until late 1917. Medical examinations had no way of finding men affected by the condition. However, this changed on 15 November 1917 with the formal adoption of the Barany Chair. The new tests ascertained:

Their powers of equilibrium. These cases were taken without selection from those men who showed dizziness or nausea in flight [...] It was found, almost without exception, that men who crashed on several occasions or who had reported being dizzy or sick in the air were unable to react properly to "Turning Tests".<sup>277</sup>

It is clear that such tests were conducted for at least a year before the formal adoption, as Wall endured them in December 1916. He describes how the doctor:

Put me in a revolving chair, told me to shut my eyes and spun the thing around till my head reeled. Then he suddenly shone a ray of light in my eye and looked at it for a while. Following this, you had to walk along a red line on the carpet and balance on one leg for a minute. You've no idea how difficult they both are.<sup>278</sup>

Writing in 1919, Lt. Col. Martin Flack issued a paper, '*Some Simple Tests of Physical Efficiency*', which detailed tests used during the war aimed at establishing lung capacity and a man's ability to cope with the effects of altitude. Such scientific

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<sup>276</sup> Rutledge, *Pictures*, p.134.

<sup>277</sup> NA:AIR2/166/RU4527 -*Statistics* .

<sup>278</sup> Wall, *Letters*, p.39.

methods, the article said, were welcomed by the 1918 Director of Training, who noted, 'Any method which reduces the medical examination to an exact science which can be recorded in figures capable of direct comparison [...] should be of the greatest value'.<sup>279</sup>

However, it is clear that even in 1917, medical examinations were not infallible. Curtis Kinney attempted to join the American Air Service after the US declared war on Germany but was rejected after failing his medical due to defective hearing in his left ear. Undaunted, Kinney travelled to Toronto and not only managed to pass the RFC's medical but also falsified his date of birth as he was at this time over the age of thirty.<sup>280</sup>

### 1.15 - A Shortage of Pilots. A Change of Approach 1917-1918

On 21 June 1917, in response to daytime bombing attacks on London, the War Office decided that the number of squadrons in the RFC should increase again, from 108 to 200.<sup>281</sup> Further, they intended 40 extra squadrons should be formed to undertake long-range retaliatory bombing. The unrealistic proposals were immediately met with thinly veiled scorn by those connected with the service. Sir William Weir, recently appointed Controller of Aero Supplies, stated that such an increase in aircraft production would only be possible if there were an associated wholesale reshuffle of industrial policy, not to mention significant lead times.<sup>282</sup> Brancker agreed and believed it useless to accelerate airframe and engine supply without addressing associated issues

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<sup>279</sup> M. Flack 'Some Simple Tests of Physical Efficiency' in *The Lancet* (Volume 193, Issue 4980, 8 February 1919, Pages 210-212).

<sup>280</sup> Kinney, *Camel*, p.v.

<sup>281</sup> Jones, *WITA*, v6, p.2.

<sup>282</sup> *Ibid.* pp.15-16 and p.31.

connected with such increases. For example, where would these airfields be, he wanted to know? The Ministry of Agriculture, he said, was unwilling to turn over further land for airfields and associated accommodation facilities. Then there was the increased manpower requirement to contend with. Official historian H.A. Jones reckoned that the proposal meant an extra 22,500 flying personnel and 61,000 mechanics would require recruiting and training.<sup>283</sup> Something new needed to be done to find additional men.

### 1.16 - Cadet Scheme

The RFC was always seeking ways to streamline the recruitment and training process. In May 1917, a preliminary technical school, drawn up along the lines of an OTC, was proposed for cadets. The school allowed these young men to join the Corps aged 17 years and ten months and then to transfer into the Cadet Wing when they reached 18. Brancker, who articulated the proposal, listed several advantages. Some additional training before they arrived at the Schools of Military Aeronautics at Reading and Oxford would be beneficial, and it was also clear that being able to attract 17-year-olds opened up a 'wider field' of recruits. Brancker stated that while it was not proposed to entice boys from their schools before their education was complete, he noted that 'there is [...] a big field in the lesser public schools and secondary schools where there is much good material.'<sup>284</sup> The application form for these would-be Cadets is also instructive. As well as schooling information and the occupation details of their fathers, sporting proficiency was requested. Additionally, they were explicitly asked whether

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<sup>283</sup> Jones, *WITA*, v6, p.69.

<sup>284</sup> NA:AIR1/120/15/40/80 -R.F.C. *Officer Cadet Training Corps-School for Officer Cadets*.

they could '1) Drive car. 2) Drive cycle. 3) Ride. 4) Sail a Boat.'<sup>285</sup> Finally, they were asked to state their proficiency in Morse, map reading, and perhaps more improbably, the Lewis gun.

One of the advantages of securing officers from other branches of the Army was that they arrived already imbued with a grounding in military life and regulations. When the RFC acknowledged that they would be taking in significant numbers of civilians, they recognised that it would be necessary to give them some basic military training before they began formal work on aviation. Thus, in July 1917, they created the RFC Cadet Wing at Denham in Buckinghamshire.<sup>286</sup> Here, other ranks and civilians were given groundings in drill, discipline, military law, map reading and basic gunnery techniques.<sup>287</sup> Cadet Arthur 'Rowe' Spelling, writing to his mother in 1918, leaves her in no doubt that he is not slacking. In his second week, he writes, 'We do nothing but work and when we are finished that, we have to play sports as that is the principal part of our course and then study again after that.' Later he claimed, 'I am hard at work and no time at all to myself, not even a moment [...] I start work at 6 am and do not stop until 10 pm, and then clean up and have to be in bed by 10.30 pm. We are worked to death.'<sup>288</sup> Spelling was happy to endure the hard work. He knew that he and others like him would be commissioned after training.

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<sup>285</sup> NA:AIR1/120/15/40/80 -*School for Officer Cadets*.

<sup>286</sup> This will be discussed more in subsequent chapters.

<sup>287</sup> Air Ministry *A Short History of the Royal Air Force* (London: Air Ministry, September 1929), p.242.

<sup>288</sup> RAFM:AC96/39 -*Letters of 2/Lt Arthur Rowe Spurling*.

## 1.17 - Finding Alternative Sources of Men

Though this chapter is focused on pilots, it would be remiss not to look briefly at non-combatant officers, such were their numbers. Every new squadron required more mechanics to maintain the new aircraft. These men and the resultant new activities required officer oversight and management. So too, did the increasing numbers of aircraft parks, repair shops and salvage facilities. The revolution in training discussed in detail later meant that the number of schools, in addition to training squadrons, ballooned.

It is important to understand that only 14 per cent of the officers on strength at the end of October 1918 were combatants in France.<sup>289</sup> As table 1.4 (below) shows, most officers - over 40 per cent - were employed in home areas, managing the organisation and overseeing RAF infrastructure, especially training where some 7,500 men were under instruction to become pilots. The increased number of training units led to the creation in January 1917 of Groups, which a few months later became Brigades.<sup>290</sup> After the merger of the RFC and RNAS, the RAF reorganised into Areas, each now under the direct control of the Air Ministry. Such units required significant numbers of officers to manage and administer them. Additionally, Ordnance Aircraft Depots were placed under RFC control, and Acceptance Parks were formed to take delivery of new aircraft for erection and testing before they were sent onward to training or service squadrons.

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<sup>289</sup> Calculated from data in Jones, *WITA, Appendices*, p.172.

<sup>290</sup> Air Ministry *A Short History of the Royal Air Force*, p.241.

*Table 1.4 - Number of RAF Officers, end of October 1918<sup>291</sup>*

	Number	Proportion
Combatants in France	3,700	14 %
Combatants in Other Theatres	2,000	7 %
Non-combatants in All Theatres	2,300	8 %
<b>Subtotal in Theatres</b>	<b>8,000</b>	<b>29 %</b>
Home Areas	11,400	42 %
Under Instruction	7,500	27 %
In Hospital / Other	400	1 %
Subtotal Home & Training	19,300	71 %
<b>Total</b>	<b>27,300</b>	<b>100%</b>

The rapid growth in the service is demonstrated in Table 1.5 (below). The accelerating growth of non-officers led to a significant growth in Equipment and Technical Officers to oversee their activity. The ranks increased from just under 100,000 men at the end of 1917 to over 260,000 at the end of the war. Corresponding officer numbers more than doubled from 12,000 to 27,000.

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<sup>291</sup> Jones, *WITA, Appendices*, p.172.

*Table 1.5 - Explosion in Manpower Numbers*

Month	Officer Numbers	Pilot Numbers <sup>292</sup>	Other Ranks Numbers
August 1914	103	-	1,097
December 1914	197	-	2,083
August 1915	702	-	6,532
December 1915	1,270	-	13,753
October 1916	5,203	1,413	45,858
December 1916	6,554	1,643	48,177
August 1917	9,268	3,515	78,334
December 1917	12,064	4,182	99,891
June 1918	20,580	6,123	196,000
November 1918	27,810	-	263,365

The net result of this growth was that the RFC would now need to recruit differently and target a very different type of man.

In the Autumn of 1917, Major Donald Cameron of the RFC, Capt. H.D. Briggs of the Admiralty and civil servant Mr Walter Medwood met to discuss pilot requirements.<sup>293</sup> The purpose of the meeting was explicitly due to the expectation 'that the number of candidates fit to become officers may fall short of requirements.'<sup>294</sup> The meeting concluded with several recommendations though they were modest given the impending surge in demand. The number of RFC selection centres would double from three to six to cope with the anticipated increase in civilian recruitment. Additionally, the RFC would seek to restrict the recruitment of men to become Equipment Officers to true technical specialists, with the remaining demand made up from ex-pilots. Such a move would free up more applicants for pilot training.<sup>295</sup>

<sup>292</sup> Pilot numbers are not available throughout. However, *WO Statistics*, p.227 and p.506. gives a split of officers/non-officers and pilot/non-pilot, the latter for a limited period.

<sup>293</sup> NA:AIR2/87/B7144 - *Training Organisation of the RAF*. Capt. Cameron was a former Royal Artillery and Indian Army Officer that was at this stage of the war a Staff Officer in the Air Ministry. Mr Walter Medrow was a pre-war civil servant who became an Assistant Superintending Clerk at the Air Department in July 1917.

<sup>294</sup> Ibid.

<sup>295</sup> NA:AIR2/87/B7144 - *Training Organisation*.

These initiatives were accompanied by the first concerted efforts to use newspapers for pilot advertisements in addition to ground-based men. In Ireland, for example, men of 'good education' and those already at an OTC were encouraged to arrange interviews with RFC officers in Dublin.<sup>296</sup> The upper age limit for cadets increased to 30.<sup>297</sup> As well as looking towards older recruits, the RFC also turned to youth. From November 1917, men aged 17 and eight months were recruited with a view to training as pilots and observers. In reality, they first needed to complete an introductory four-month course of instruction, but it allowed them to enter the Officer's Cadet Wing immediately after they turned 18.<sup>298</sup> Though the change in target age seems modest, the changes in the age profile of pilots in 1918 was pronounced.

#### 1.18 - A Change in Focus – Age

To demonstrate the change in the age profile of pilots during the latter stages of the war, this research has combined data from several sources. Firstly, there is anecdotal evidence found in archival files. In late 1916, the RFC instigated formal reporting from its Schools of Military Aeronautics to track precisely how many young men were being recruited. These returns of men aged under 19, 18 and a half, and 18 are illuminating. For example, Oxford's No.2 School of Military Aeronautics return in November 1916 shows that just five men aged under 19 were on the introductory course, and at Reading's No.1 School, six. Oxford had two men under 18 and a half and Reading a further six. Neither school had any men in training that were under 18.<sup>299</sup> Throughout

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<sup>296</sup> 'Royal Flying Corps', *Freeman's Journal* (5 April 1917, p.6).

<sup>297</sup> 'This is your call, it's you we want', *Birmingham Daily Post* (10 June 1918, p.6).

<sup>298</sup> 'How to Become a Flying Officer', *Dover Express* (23 November 1917, p.4).

<sup>299</sup> NA: AIR1/136/15/10/269 –*Aeroplanes and Artillery Co-operation Training 1916-1917* and NA: AIR1/136/15/40/271 –*Training No.1 School of Instruction, Reading*.

the war, there are also numerous examples of men being turned down for service with the RFC because they were too young. For example, Captain T.W. Hawkesley, who had forwarded an application from a youth he knew, received a letter from the Directorate of Military Aeronautics advising him that 'the lad to whom you refer is too young' and that he reapply again 'when he has attained the age of 18 years.'<sup>300</sup>

While the RFC had shown an evident reluctance to recruit men it deemed too young, there is evidence produced here which shows that the average recruits in 1918 were markedly younger than they had been earlier in the war.

*Table 1.6 - Age Profile – Sample of Pilots<sup>301</sup>*

Age	1914	1916	1917	1918
17-20	1 %	30 %	34 %	66 %
21-23	29 %	29 %	24 %	20 %
24-29	46 %	30 %	34 %	12 %
30-39	21 %	8 %	6 %	2 %
40+	3 %	3 %	2 %	-

The analysis in table 1.6 uses a combination of data sets of similar size to compare the average ages of officers across the war. The data in 1914 comes from examining the age of the pilots that embarked for France that August. The 1916 and 1917 data relates to men killed that year who are listed in Du Rovigny's *Roll of Honour*. The 1918

<sup>300</sup> NA:AIR1/381/15/231/22 -Vol. XXII.

<sup>301</sup> Attestation ages are not readily available so this new analysis uses the following sources: Age of 1914 pilots who embarked for France in August 1914, Age at death of pilot's killed and in Du Rovigny 1916 & 1917 and age of pilots on a course at the School of Military Aeronautics in April 1918.

data is derived from the names of men named in archival files attending courses at the Schools of Military Aeronautics in April 1918.<sup>302</sup> The latter courses comprised men who, in the case of two-thirds of them, were aged 20 or under. These men included both new cadets and transfers from the infantry. This group is significantly different in age from those killed in 1916 and 1917 and bears no resemblance to the experienced force of mature officers that first took to the air in France in 1914, only one of whom, Arthur Thomson, was under 21.

It is recognised that using the age of men at their deaths is not the same as looking at men's ages when attesting. Clearly, a man dying in 1917 may have been recruited in 1914 and therefore be in a different age group at death from when he joined. However, it is asserted that the comparison is correct directionally, and thus the measure is used here as a proxy. We can, however, take the analysis a step further and only look at men killed in accidents. By doing this, we are more likely to isolate pilots who are in training and, therefore, have more recently joined. The results of this are shown in table 1.7.<sup>303</sup>

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<sup>302</sup> NA:AIR1/161/15/123/12 – *No.2 School of Aeronautics, Oxford – Results of Examinations.*

<sup>303</sup> Killed While Flying is often used as a proxy for training. It is not a perfect proxy as some men 'killed while flying' were experienced men, and some were ferry pilots but it is materially similar.

**Table 1.7- Age Profile – Men ‘Killed While Flying’<sup>304</sup>**

Age	1914	1916	1917	1918
17-20	0 %	28 %	35 %	38 %
21-23	71 %	33 %	26 %	27 %
24-29	29 %	36 %	34 %	31 %
30+	0 %	3 %	5 %	3 %
	100%	100%	100%	100%

This analysis produces materially different results for 1918, much lower than in table 1.6. The explanation for this is that while young men were being recruited in 1918 and entering training courses, the war ended too soon for them to become casualties. Thus, while the age of recruits fell markedly in 1918, the average age of those dying did not. It is also interesting to note that the average RFC pilot killed in the First World War was no younger than the average infantryman in the First World War or pilot in the Second.<sup>305</sup> Based on this research, the historiography’s perception of young RAF pilot casualties is somewhat overstated.

### 1.19 - A Change in Focus – Geography

The regional birthplace of the pilots also markedly changed as the war went on. Eight hundred men have been researched in detail to ascertain their backgrounds. Using the birthplace details ascertained for 400 men killed between 1914 to 1917 and 400

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<sup>304</sup> The category of death ‘killed while flying’ will be discussed in more detail later in this thesis. It principally includes those killed in training.

<sup>305</sup> Infantry and Second World War age calculated using Commonwealth War Graves Committee download of casualties.

men killed in 1918 highlights how recruitment in 1918 differed from preceding years.<sup>306</sup> The association of RFC recruitment with the South East of England at the beginning of the war was pronounced. The RFC remained a London and Southern English force for at least the first three years of the war. Such an association with the region is unsurprising. Initial flying schools were concentrated in that area. Therefore, it is perhaps likely that men born and raised where these schools were concentrated, near Hendon, north London or the airfields of Kent and Essex, were most likely to feel some fledgling attachment.

Initial recruitment activity for the Corps was also very much centred on London. For most of the war, would-be pilots were sent only to London for interviews. While a train fare would be covered, associated expenses connected with such a trip were not, so, understandably, men local to London would be attracted. However, as this research has just shown, by 1918, most positions in the RFC were not for pilots in France but rather for officers to remain in England (and Scotland) to manage the RFC/RAF's infrastructure. This change, coupled with the macro effects of labour shortages and service growth, forced the RFC to expand its recruitment net geographically, and new recruitment centres opened.

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<sup>306</sup> Extra weight is given to 1918 given numbers of men recruited was greater than preceding years combined.

*Table 1.8 - Region of Birth – Pilot casualties<sup>307</sup>*

Birth		<b>1914-1917 Killed</b>	<b>1918 Killed</b>
London/South East		41 %	27 %
Midlands		8 %	8 %
North		9 %	17 %
Other England		12 %	7 %
<b>Total England</b>		<b>70 %</b>	<b>59 %</b>
Scotland		6 %	8 %
Ireland		7 %	3 %
Wales		2 %	2 %
<b>Other Britain</b>		<b>15 %</b>	<b>13 %</b>
Australia		3 %	4 %
Canada		3 %	11 %
India		3 %	-
South Africa		2 %	6 %
Other Overseas		4 %	5 %
<b>Total Overseas</b>		<b>15 %</b>	<b>26 %</b>

As table 1.8 (above) shows, those from London and southern counties fell from 41 per cent to slightly more than a quarter. Men from the north of England almost doubled as a proportion to 17 per cent, but the 'Englishness' of the Corps declined from 70 per cent to 59 per cent. As discussed earlier in the chapter, the principal factor behind this latter decline is the number of men recruited from Canada, though there were increases too in Australians and South Africans.

#### 1.20- A Change in Focus – Social Class

Finally, as well as a change in age profile and geographical background, officers of 1918 were more often than not from a different social class to those of their predecessors. This research, looking at the same men as in the sample above, has

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<sup>307</sup> 1914 men from the 103 who went to France in August. 1916-1918 sample of 800 pilots. Details from service records at Findmypast.

used census records to discover the occupation of their fathers. Occupations are then allocated to one of five social classes, class one being the highest and five the lowest.<sup>308</sup>

The analysis shows a significant change in the backgrounds of the men killed in 1918 compared to previous years, as shown in Table 1.9. Of the 400 sampled men killed from 1914 to 1917, almost 80 per cent were from the highest social class. The most significant single component was men from military families whose fathers had been serving officers, followed by a significant proportion from the clergy. Not a single man identified was from social class group four or five. The 400 men in 1918 are markedly different. Those in social class one fall to just a third, with the single most significant number being the sons of engineers. In contrast, the number of farmers, teachers, clerks, and tailors' sons increases markedly. Three per cent of the men came from unskilled working families, and the sons of labourers were now flying with the aristocracy.

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<sup>308</sup> Using *A Dictionary of Occupational Terms Based on the Classification of Occupations used in the Census of Population, 1921* (HMSO, 1927), ORDER XXII, Sub-order 2, Section 725, kindly provided by Dr Tom Thorpe.

*Table 1.9: Occupational Backgrounds – Sample of 1,600 Pilots*

<b>Father's Occupation</b>	<b>1914 - 1917</b>	<b>1918</b>
Military	19 %	4 %
Church	14 %	5 %
Living on Own Means	9 %	3 %
Medical	7 %	3 %
Legal	7 %	3 %
Engineer	2 %	5 %
Other Social Class One	21 %	10 %
<b>TOTAL SOCIAL CLASS ONE</b>	<b>79 %</b>	<b>33 %</b>
Merchant	3 %	4 %
Managerial	2 %	4 %
Farmer	2 %	8 %
Teaching	1 %	4 %
Other Social Class Two	7 %	5 %
<b>TOTAL SOCIAL CLASS TWO</b>	<b>15 %</b>	<b>25 %</b>
Clerk	2 %	9 %
Tailor	1 %	4 %
Commercial Traveler (Sales)	-	3 %
Grocer	-	2 %
Other Social Class Three	3 %	10 %
<b>TOTAL SOCIAL CLASS THREE</b>	<b>6 %</b>	<b>28 %</b>
Innkeeper	-	2 %
Carpenter / Joiner	-	2 %
Other Social Class Four	-	7 %
<b>TOTAL SOCIAL CLASS FOUR</b>	<b>-</b>	<b>11 %</b>
Labourer	-	2 %
Other Social Class Five	-	1 %
<b>TOTAL SOCIAL CLASS FIVE</b>	<b>-</b>	<b>3 %</b>

### 1.21- Conclusion

In June 1914, at the so-called 'Concentration Camp' gathering on Salisbury Plain, the RFC successfully demonstrated many of the military uses to which aircraft could be put. While this operational success was helpful when mobilisation came not two months later, the infrastructure by which the Corps would be recruited had not been built. The Directorate of Military Aviation was almost a 'one-man band' under Brancker,

and he played a major role in building RFC capabilities. As has been demonstrated, there was no consensus on the number of men the RFC required or the timing of their recruitment. Aside from a small organisation at the Central Flying School, there were no training capabilities outside of privately owned and operated schools. This bottleneck, along with a severe shortage of aircraft, meant that officers, principally recruited as pilots, were required only in small numbers. Thus, the RFC's recruitment structure came under very little pressure through 1916, and applicants were often told there would be a delay in their recruitment.

In 1917, there were significant changes to both demand and supply factors. Haig and Trenchard ordered a doubling of the force. While it was one thing for France to demand service squadrons, such requests had knock-on effects. Service squadrons also needed training squadrons, and aircraft needed aircraft parks, workshops, and salvage yards. Pilots had to be trained in various aspects of flight at a rapidly growing number of schools. All activities needed officers not only as pilots but to manage more junior men. For the first time, losses in action and training outstripped the production of newly trained men. In Britain, there was a national shortage of manpower, not only for the demands of Haig's infantry but also from key industries, including aircraft production. Industrial demand will be discussed in more detail in the following chapter.

With the competing needs of the infantry for men now unprecedented, the RFC could no longer rely on officer transfers to fill their pilot ranks. The Corps would need to find civilians and turn them into officers themselves. The RFC, therefore, recruited civilians in increasing numbers, men who, by 1918, were more likely to be the sons of clerks, grocers, tailors and even unskilled men than they were to have come from a gentrified

family. They were increasingly younger than previous officer recruits, and up to a third of them at one point came from Canada. Others came increasingly from the Midlands and the North of England rather than the traditional recruiting grounds in the South East. When the war ended, the RAF contained approximately 27,300 officers, a far cry from the 103 it had entered the war with in August 1914.<sup>309</sup> Some 5,300 officers had been killed during the war, meaning that at least 33,000 officers had been recruited.<sup>310</sup> As this chapter has shown, this was not a simple exercise and only with pragmatic and practical leadership was the RFC successful in finding the officers and pilots it needed.

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<sup>309</sup> War ended numbers calculated from data in Jones, *WITA, Appendices*, p.172

<sup>310</sup> New analysis calculated using Jones, *WITA, Appendices*, p.172 and WO, *Statistics*, p.227 and p.506.

## **Chapter Two – Recruiting the Men on the Ground**

### **2.1- Introduction**

This chapter will explore the recruitment of the non-commissioned men who carried out many roles on the ground. Non-officer numbers grew from 1,097 in August 1914 to over 260,000 at the Armistice. Their importance to the RFC can be gleaned from the fact that it required over 40 men in 1918 to keep an aircraft serviceable.<sup>311</sup> Such men always constituted between 88 and 93 per cent of the total air force, yet the historiography all but ignores their story.<sup>312</sup> This chapter aims to rectify that by addressing some important questions.

Fundamentally, who were these men? Where did they come from, how were they found, and why did they want to join the RFC? The recruitment process will be explored, including the trade test, the passing of which was a vital prerequisite for any man wishing to join the service. The chapter will examine the role advertising played throughout the war in attracting men to the service. Most notably, the chapter will examine changes both to processes and the men themselves throughout the war. As with pilots, a recruit of 1918 would be very different from one of 1914.

The data of some 292,000 attestation records - the vast majority of the total available - have been collated to produce a comprehensive occupational and geographical analysis to assess the RFC's recruitment success. Additionally, in a similar study to

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<sup>311</sup> Jones, *WITA*, v6, p.28, footnote 2.

<sup>312</sup> Derived from information contained in WO, *Statistics*, p.227 and p.506.

that carried out with pilots in chapter one, almost 1,000 men, selected at random, were examined in detail to give the first view of the men themselves, their ages, heights, weights and whether they were recruited as civilians or servicemen. Collectively this research will aid our understanding of how the force developed during the war.

The recruitment of the RFC cannot be understood without referencing the complex environment in which the recruitment occurred, particularly in the latter stages of the war. Therefore, the chapter must dwell briefly on the demand for industrial manpower across British industry and the demand from other branches of the Army. The intense competition for labour profoundly affected the makeup of the RFC, not least in the significant recruitment of women and boys. The chapter will also explore the relationship with third-party suppliers and manufacturers, noting the two-way transfer of men and knowledge. The establishment of the Canadian recruiting system was discussed in chapter one, but its impact on the recruitment of tradesmen will be better understood in this chapter. A clever reciprocal arrangement with America in 1918 will also be examined, whereby the Americans provided the manpower, and the RFC provided the training. Finally, the need to explore new labour markets, such as Ireland and new techniques, such as cinema, will be investigated. The chapter lends itself to a broadly chronological approach though most notably, it will address how the RFC changed over the years to maintain the supply of men.

## 2.2 - The Move from Soldier to Civilian

The first men to join the RFC in 1912 were recruited predominantly from the ranks of the Army, especially the Royal Engineers, which had provided the first men of the Air

Battalion. An analysis of 180 men who joined the RFC in 1912 shows that 139 (77 per cent) of them transferred from other units of the Army.<sup>313</sup> The discipline of these experienced army men proved invaluable in the chaotic days of late 1914. Describing the pressures of his first taste of combat and accompanying inclement weather, young air mechanic Percy Butcher looked on the experienced men as father figures. He remembered:

The gales and the Battle of the Aisne almost coincided so that the fitters never left their work [...] This is where the new boys like myself owed so much to the skill and technical knowledge of the experienced men who had transferred from the Royal Engineers.<sup>314</sup>

A similar sample in 1913 shows that such reliance had diminished, with only 30 of the 180 men joining via inter-service transfers. This pronounced reduction was to become a long-term trend. Recruitment focus throughout the war was redirected towards finding trade experience in the private sector.

### 2.3 - The Ideal Recruit?

Throughout the war then, the majority of the men recruited to the RFC to serve on the ground were civilians. In its recruitment literature, the RFC was very clear about the professions of the tradesmen it sought. They were listed at length in recruitment materials given to recruiting officers and advertised on various recruitment posters and national newspaper advertisements. Initial recruitment materials stated that men needed to be 18 to 30 years old and 5'2" or over tall, but often a blind eye was turned. That men who failed to conform to these standards joined is hardly surprising when

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<sup>313</sup> This represents approximately 15 per cent of the total records for 1912 and 13 per cent for 1913. Not all service records have information, full or partial.

<sup>314</sup> Butcher, *Devotion*, p.32.

an accompanying statement to the conditions read, 'Candidates not in all respects eligible to physical standard, but otherwise qualified, may be specially considered for enlistment.'<sup>315</sup> By way of example, an unnamed civilian was sent a rejection letter dated 1 November 1914 by RFC recruitment officers. In it, they tactfully told him that he was too old and had 'no prospect of employment with the RFC'. That was unless he could 'give particulars of very special qualifications.'<sup>316</sup>

In other words, the RFC would be brutally pragmatic regarding recruitment. Their principal concern was the skillset. Age and height were and would remain strictly secondary priorities. When recruitment was relatively straightforward during the first two years of the war, standards were more exacting. Then, as recruits became harder to find, they were often relaxed. Ernest Humberstone, for example, was rejected by the RFC in 1914 when his chest measurement was found to barely reach the required minimum.<sup>317</sup> He returned to less exacting tape measures in late 1915 and was accepted. The RFC also recognised that the ground crew's fitness levels need not be as stringent as those of an infantryman. Such flexibility opened up a pool of resources rejected by the Army. James Seignior was one such man. Turned down by the infantry because he was not physically fit enough, Seignior was encouraged to join the RFC, who, he was told, was 'less interested in physique'.<sup>318</sup> With perfect eyesight and hearing, he was deemed ideal as a wireless operator and went on to work with the artillery in France.

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<sup>315</sup> 'Royal Flying Corps' in *Flight Magazine* (No23, vol IV, June 8, 1912, p.510).

<sup>316</sup> NA: AIR 1/366/15/231/6 - Vol. VI.

<sup>317</sup> IWM:Sound Archive 22 - Ernest Humberstone.

<sup>318</sup> IWM:Sound Archive 34543 - James Seignior.

## 2.4 – The Role of Advertising

Using advertisements in poster form and newspapers as recruitment tools pre-dated the war. George Eddington had worked for Marconi as a mechanic and driver towing a bulky wireless set behind his truck. When made redundant, these recruitment posters drew Eddington to the Flying Corps. The RFC was looking for mechanics, and Eddington saw this as a chance to join a new and exciting service. He later confessed that while he saw the RFC as more exciting than the regular Army, he also hoped it would prove less brutal.<sup>319</sup> James Gascoyne was another man who responded to these early posters. He was a motor mechanic in the Midlands and had never seen an aeroplane before he joined. Like Berry, Gascoyne believed he was entering a service at the cutting edge of technology, a thought that excited him. He did, however, labour under the misapprehension that he would soon be flying. Instead, his skills were just what the RFC required as a mechanic. Consequently, he would go to France with the first wave of the RFC as a motor mechanic in 1914. He fondly recalled the excited and thankful French locals showering his lorry with gifts. So grateful, he claimed tongue-in-cheek that he believed the lorry had more wine onboard than spares by the time he reached their airfield.<sup>320</sup>

Samuel Saunders, too, responded to an advertisement. In his case, an October 1914 Dublin newspaper was seeking mechanics.<sup>321</sup> He was told to report to his local recruitment office at 10 a.m. sharp. In his naivety, Saunders expected this would be a personal appointment and expressed comical incredulity on discovering queues 3-4

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<sup>319</sup> IWM:Sound Archive 13 – George Worth Eddington.

<sup>320</sup> IWM:Sound Archive 16 – James V Gascoyne.

<sup>321</sup> IWM:Sound Archive 292 – Samuel Saunders.

men wide and half a mile long containing men seeking to join all three services.<sup>322</sup> Victor Utting, an 18-year-old piano shop apprentice, was another man who saw an advert in a newspaper encouraging men to join the RFC as wireless operators. He joined the RFC in August 1915, in his case at the London Polytechnic.<sup>323</sup> Walter Ostler, called up under the Derby Scheme in August 1915, recalled being given a choice of services and elected to join the RFC, where he was 'very pleased and excited to be accepted' as a wireless trainee.<sup>324</sup>

From 1916, the RFC became more creative in attracting men to the Corps. One of the best examples of this was via the use of cinema. The RFC took advantage of this relatively new medium and put on patriotic pictures at cinemas nationwide with increasing frequency. An early example was the screening of '*The Eyes of the Army*'. This propaganda piece was shown before the main picture, '*Far From the Madding Crowd*,' in April 1916.<sup>325</sup> In time, screenings of RFC pictures were accompanied by a presentation by an officer who had returned from France, sometimes accompanied by a senior NCO. When the film or presentation was over, recruiting officers would swoop and attempt to recruit available men.

In October 1917, the RFC approached Pathé Freres Ltd, intending to use the company to create a film on training officers and men of the RFC. The resulting film would then be used as a recruitment tool. The company filmed at nine RFC locations, including the Cadet Brigade at Hastings, the No.1 School of Aeronautics in Reading, the Central Flying School, and the Recruits Depot. Commanding officers of selected

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<sup>322</sup> IWM:292 - Saunders.

<sup>323</sup> IWM:Sound Archive 9759 - Victor Utting.

<sup>324</sup> IWM:Sound Archive 39 - Walter Ostler.

<sup>325</sup> 'The Eyes of the Army', *Dundee Courier* (20 April 1916, p.1).

establishments were asked to 'issue instructions for every assistance to be given to the cinema operator, and that he should be allowed considerable latitude in his taking of his photographs as these will be censored later'.<sup>326</sup> The resulting thirteen-minute film was then used in cinemas in 1918.<sup>327</sup>

It is not surprising that some training films were slick. They were often produced by a gentleman named Edmund Distin-Maddick. Distin-Maddick had been a Second Lieutenant in the Directorate of Military Intelligence at the Home Office, assisting propaganda and censorship. He had been in charge of cinematographic film production on the Western Front and claimed to have been involved in the famous film *The Battle of the Somme* before transferring to the RFC.<sup>328</sup> An example of how sophisticated such evenings had become can be seen on 30 January 1918, when Lt. Alston presented 'A Pilot's Experiences on the Western Front' at Kinnaird Hall, Dundee. His presentation of '100 thrilling lantern slides' was accompanied by the band of the Royal Garrison Artillery.<sup>329</sup> Other lectures included Lt. Walmsley in Yorkshire discussing 'Flying in East Africa' in August 1918 and Captain Paul Bewsher's 'The Bombing of Bruges Docks' a month later. The latter two lectures concluded with 'full information [being] given on how to join the Royal Air Force'.<sup>330</sup> While we cannot know precisely how many men were recruited due to such productions, the fact that they were used with increasing frequency illustrates that the RAF found them helpful.

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<sup>326</sup> NA:AIR1/129/15/40/203 -*Cinema Propaganda for R.F.C.*

<sup>327</sup> IWM:870 – *Basic RFC Training for Pilots in Britain, 1917.*

<sup>328</sup> P. Hodgkinson & J. Clarke, 'The Great War Dead of Norwood Cemetery' in *Stand To! The Journal of the Western Front Association* (Number 126, April 2022).

<sup>329</sup> 'Royal Flying Corps, Air Fighting in France', *Dundee Courier* (30 January 1918, p.1).

<sup>330</sup> 'A Lecture on Flying in East Africa', *Whitby Gazette* (9 August 1918) and 'A Lecture on the Bombing of Bruges Docks', *Nottingham Evening Post* (3 September 1918. P.3).

## 2.5 – The Application and Medical

Civilian applicants were encouraged to join via the nearest Army recruiting officer or write to the RFC directly, either at Aldershot or the War Office. Their application needed to include character references, details of their past trade experience and proof of any relevant qualifications. Applicants seeking a transfer from within the Army required written support from their commanding officer. As with any man enlisting in other branches of the Army, would-be RFC men were then given a medical examination. Though medical classifications would change throughout the war, men were broadly placed into one of three categories, A, B or C.

Category A men were fit for general service. That is, they could perform any front-line activity. Category B men were suitable for home service or labour activities overseas but not for front-line soldiering. Category C men were fit for home service roles only. These categories were further subdivided later, such that B3 or C3, for example, now meant that a man was only fit for sedentary work. The RFC had distinct advantages regarding recruitment over other branches of the Army. The majority of roles in the RFC were based in Britain. This meant that men suitable for home service only could readily be found a role in the Corps. As the RFC employed a significant number of clerks for the administrative, stores and inventory management roles, there were many positions for which B3 or C3 men were perfectly suitable. Late in the war, the medical categories changed again. Grades one to three were introduced. Under these guidelines, Grade 1 was generally equivalent to Category A. Grade 2 became equivalent to Category B1 and C1 - namely, non-front-line activity overseas or home service. Grade 3 was generally reserved for men unsuitable for combatant service.

Frederick Hunt initially attempted to join the RFC in 1915. He was a sought-after man as he worked as a telegraphist in the Post Office. The RFC specifically targeted post office telegraphists for wireless duties and required men 'of a reasonable standard of education and A1 for fitness,' he recalled.<sup>331</sup> Unfortunately for Hunt, the RFC did not consider him A1 for fitness, and he was categorised as C3. Destined for a home service desk job, he claimed - by methods he did not elaborate on - to 'pull strings' and, in March 1917, was accepted into the RFC for wireless training.<sup>332</sup> It is almost certainly the case that what changed was the number of men such as Hunt who were available. In 1915, Hunt was easily replaceable. By 1917 he was not. As with age and height, fitness was viewed pragmatically as the war continued.

## 2.6 - Trade Test

The qualifying trade test was a standard RFC recruitment feature introduced in 1912 and used throughout the war. Trade tests were designed to do two things. As the title suggests, the principal aim was to ensure the man was proficient in his trade. A second, less obvious aim was to find *expert* tradesmen. In the early part of the war, such men would become immediate or near-immediate NCOs in the rapidly expanding service. In December 1915, the RFC added a testing school at the Duke of York's headquarters at Chelsea Barracks.<sup>333</sup> Men sent here for trade tests were given a certificate that could then be presented to recruitment officers and help smooth their application. Trade tests would often vary in form. Ernest Humberstone, a trainee electrician, was sent for his trade test on a platform fitted to the back of a Crossley

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<sup>331</sup> IWM:Sound Archive 24917 - Frederick Hunt.

<sup>332</sup> Ibid.

<sup>333</sup> Jones, *WITA*, v2, p.289.

tender. He had to name a large selection of tools for his examiners before explaining their application. With this done, he went on to become a storeman.<sup>334</sup>

Percy Butcher remembered his tests with the appropriately named supervisor Mr Measures. Butcher's tests involved making a hexagonal ¼-inch nut from a 3-inch metal bar. With these tests complete, he was shown to a Crossley tender for a second test. After exercises testing his reversing skills, he was asked to drive his instructors through Farnborough to Aldershot and back. His driving skills impressed more than his metalwork, and he became a driver.<sup>335</sup> Samuel Saunders from Dublin recalled a two-stage process. He first had to pass a simple verbal test before he was even allowed to take a practical test - an initial screening element sometimes used to stop recruitment officers from wasting their time.<sup>336</sup> In 1916, London-based fitter Les Reed had seen recruitment posters for RFC tradesmen on the walls of the Regent Street Polytechnic. The RFC's relationship with the Polytechnic was important, and its role in training will be discussed in the next chapter. It was well-connected with industry nationally, making it well-placed to find men with the requisite skills. It began interviewing candidates for the RFC in March 1916. A year later, Major Robert Mitchell, who ran the scheme at the Polytechnic, reported to the War Office that it was sending forward some 1,500 candidates per month. Reed was only seventeen and, therefore, too young to enlist, but the Polytechnic still called him in and sent him for a trade test at Woolwich. As no 'boy' scheme existed in the service at this time, the RFC informed him that he would hear from them as soon as he turned 18. When his birthday duly arrived, he was still required to repeat a trade test before being allowed to enter the

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<sup>334</sup> IWM:22 – Humberstone.

<sup>335</sup> Butcher, *Devotion*, p.15.

<sup>336</sup> IWM:292 – Saunders.

service as a fitter.<sup>337</sup> A similar situation occurred for Ernest Dobson. He applied as a 17-year-old but received a polite postcard in October 1917 telling him, 'I cannot do anything for you till you are 18. Please apply then.' It was signed, 'Recruiter'.<sup>338</sup>

## 2.7 - The Motivation for Joining

The men's motivation for joining the service in the ranks was similar in many cases to those wishing to fly. Often they had witnessed flying in some capacity before the war. Humberstone had worked near Hendon Airfield. He believed joining the RFC was 'romantic'; flying was new and exciting.<sup>339</sup> Samuel Saunders had watched the flying and met some pilots at Leopard's Town in Dublin.<sup>340</sup> William Berry saw flight as 'the coming thing' and joining the RFC as 'quite something'.<sup>341</sup> Cecil King remembered an aura surrounding the new Corps and that Infantrymen were jealous of them, and not only because of their higher pay. The men often considered themselves superior to other parts of the Army, seeing the RFC as 'an elite unit'.<sup>342</sup> Such beliefs were not discouraged by officers and NCOs who believed such attitudes helped form a 'good camaraderie' amongst the new men.<sup>343</sup> John Boon, who joined the RFC in late December 1916, recalled that he was the only one of his friends to get into the RFC though many tried and that it was the cause of some jealousy amongst his pals.<sup>344</sup> Others, such as Walter Ostler and William Young, had seen and spoken to men

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<sup>337</sup> IWM:Sound Archive 14574 – Les Reed.

<sup>338</sup> Authors Collection – Papers of Ernest Dobson.

<sup>339</sup> IWM:22 – Humberstone.

<sup>340</sup> IWM:292 – Saunders.

<sup>341</sup> IWM:Sound Archive 1 – William Berry.

<sup>342</sup> IWM:Sound Archive 27 – Cecil King.

<sup>343</sup> Ibid.

<sup>344</sup> IWM:Sound Archive – 9476 – John Boon.

returning from the trenches on leave, which was enough to persuade them to avoid the infantry if possible on enlistment.<sup>345</sup>

Skilled men were often in key industrial roles, and some employers sought to discourage them from joining up. Edgar Woolley, an apprentice with a Leeds engineering firm, was warned that he would 'put a big future at risk' if he enlisted.<sup>346</sup> His namesake, Edgar Wooley, a London clerk with a paper manufacturer, was also pressured to remain with his employer when war broke out. He followed his employer's wishes until he saw an advertisement for wireless operators and decided he needed to 'do his duty'.<sup>347</sup> Men who had not enlisted often found themselves in awkward, if not embarrassing, situations with other civilians who labelled them as 'shirkers'. Fear of, or the actual presentation of, white feathers is a much-mentioned fear.

To illustrate this, Walter Ostler was a London railway clerk in 1914. He was advised that his role was critical in assisting the mobilisation and transfer of units to Dover and onwards to France. A ladies' presentation of a white feather on a crowded tram left the 6'1" tall Ostler squirming with embarrassment.<sup>348</sup> The authorities were moved to assist such workers. Ostler received a blue enamel badge that signalled he was an essential worker.<sup>349</sup> He eventually enlisted with the RFC under the Derby scheme in 1915.

In July of that year, the Government passed the National Registration Act. An essential element was discovering how many men of recruitment age were engaged in various

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<sup>345</sup> IWM:39 – Ostler, IWM : Sound Archive 32177 – William Young.

<sup>346</sup> IWM:Sound Archive 6487 – Edward Woolley.

<sup>347</sup> IWM:Sound Archive 316 – Edgar Wooley.

<sup>348</sup> IWM:39 – Ostler.

<sup>349</sup> Ibid.

key trades nationwide. The results showed that almost five million men of military age had not joined one of the services, of which only 1.6 million were in designated high-skill roles.<sup>350</sup> The Group System was introduced in October 1915, and it was this that became commonly known as the Derby Scheme after Lord Derby, the Director-General of Recruiting. RFC recruitment became subject to this scheme, and RFC advertisements appealed to men to state their preference for the RFC when their time came.<sup>351</sup>

William Brooks had a similar experience to Ostler. He was a metal moulder at an iron and steel foundry. He also volunteered for the RFC under the Derby Scheme and was given a khaki armband with a red-crowned emblem which helped deter 'nuisance people' who tried to 'hand out the feathers'.<sup>352</sup> John Boon, a telegrapher at the Post Office, was also glad of this armband. He wore it at all times so 'that people knew I wasn't slacking' until he opted to join the RFC. William Young, too, though only 17, was hassled about joining up and was another man who enlisted under the Derby Scheme. As stated, underage sign-up allowed men to be called up as soon as they turned 18. Young welcomed the khaki armband that protected him from adverse comments during that interim period. He opted to join the RFC as soon as he turned 18 rather than wait to be called up by the infantry under the general scheme of conscription.<sup>353</sup>

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<sup>350</sup> <https://www.longlongtrail.co.uk/soldiers/a-soldiers-life-1914-1918/enlisting-into-the-army/the-group-scheme-derby-scheme/>

<sup>351</sup> 'Men attested on the Group System in Groups after No.14 may now apply', *Lancashire Evening Post* (2 February 1916, p.4).

<sup>352</sup> IWM:Sound Archive 34538 – William Brooks.

<sup>353</sup> IWM:32177 – Young.

## 2.8 - Finding the Tradesmen – 1914

In the early months of the war, recruiting officers paid little or no attention to the occupation of men enlisting in the infantry. Consequently, men with applicable skills for a technical service, such as the RFC, were 'lost'. In October 1914, it was calculated that engineering trades had lost 12.2 per cent of their workforce to enlistment, a figure that would rise to 19.5 per cent in July 1915.<sup>354</sup> Despite this, throughout 1914 and 1915, the RFC had little trouble finding civilian men with desired trades, so the infantry's recruitment was of little initial consequence.

As shown in chapter one, when war was declared, RFC leadership lacked clarity concerning how many men they were allowed to recruit. In November 1914, the RFC was reorganised, and the Administrative Wing was formed. This comprised two Reserve Squadrons, the Depot, Aircraft Park and Record Office under Lt. Col. E.B. Ashmore. The lack of clarity is illustrated by two letters just two weeks apart by senior figures in the Administrative Wing. Major Charlton wrote to Brancker on 21 November 1914, stating, 'Recruiting is very brisk, this past week 99 recruits have been obtained [...] I am within very few of "other ranks" sanctioned on 14 October.'<sup>355</sup> However, on 1 December 1914, Lt. Col. Ashmore wrote to Brancker, imploring that given 'recruitment is proceeding rapidly,' it would be beneficial if someone could give him 'full knowledge as to how far I can go in the matter of recruitment both by enlistment and transfer.'<sup>356</sup> While Charlton appears to have had a sanctioned target, Ashmore was in the dark.

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<sup>354</sup> Jones, *WITA*, v6, p.58.

<sup>355</sup> NA:AIR 1/143/15/40/316 -Expansion.

<sup>356</sup> *Ibid.*

Trenchard's biographer Boyle claims that initially, Trenchard and Brancker took things into their own hands and opened a recruitment centre 'in the West End of London, fixing pay rates as high as those offered to the best army tradesmen.'<sup>357</sup> Boyle claimed their efforts were successful. 'By mid-September, 1,100 trained men had enrolled as riggers, fitters and mechanics.'<sup>358</sup> Brancker's biographer MacMillan writing almost 30 years before Boyle, had recalled a similar story. Without a War Office focus, Brancker asked 'Holt, a very able and determined Flight Commander' to set up a direct recruitment office.'<sup>359</sup> With no agreed rates, the RFC opted to pay up to 10/- a day, 'the special rates sanctioned during peace for the Army Service Corps in an emergency.'<sup>360</sup> Brancker deemed the initiative a distinct success capturing some of the most skilled tradesmen available. These men joined the pre-war recruits in becoming the backbone of the new service later in the war.

The assertion that RFC recruitment leaders were forced to take the initiative to attract men and that they set their own pay rates rings true, given that the War Office's priorities lay elsewhere. However, the recruitment numbers that Boyle quotes are a gross exaggeration. Recruitment figures produced after the war show that the RFC recruited less than 700 men in total, *including fliers*, between August and the end of November 1914. In one anecdotal example of the small numbers initially required, Trenchard, as Commanding Officer 1<sup>st</sup> Wing, sent Ashmore a letter on 4 December 1914. He stated, 'Men are not urgently wanted now, but a continual stream [of tradesmen], say 4 or 5 a week is what is wanted most in my opinion.'<sup>361</sup>

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<sup>357</sup> Boyle, *Trenchard*, p.118.

<sup>358</sup> *Ibid.*

<sup>359</sup> Macmillan, *Brancker*, p.70.

<sup>360</sup> *Ibid.*

<sup>361</sup> NA: AIR1/1283/204/11/13 -*Col. Trenchard: semi-official correspondence.*

As with pilot applicants discussed in chapter two, in 1914, the RFC received far more applicants from tradesmen than it needed. On 17 December, Herbert Dodman of the Isle of Wight received a letter advising him that 'recruiting for the Royal Flying Corps is open in the London area to a limited number of first-class tradesmen.'<sup>362</sup> He was warned that any trip to London was to be at his own expense, and if he was not already suitably discouraged, a personal message was appended stating, 'Only men possessing a high standard of technical ability will be accepted.'<sup>363</sup>

## 2.9 - Finding Tradesmen in 1915

In April 1915, Major John Salmond moved to head the Administrative Wing and became the most influential figure in the RFC recruitment and training story. It was Salmond who oversaw the introduction of scalable processes for recruitment and was responsible for the building of training systems both for pilots and tradesmen. In his role, he was ably assisted by Guy Livingstone, who had found his way into the RFC as an acquaintance of Henderson, as illustrated earlier.

Livingston was made a Wing-Adjutant and became responsible for, amongst other things, 'the technical efficiency of the rank and file.'<sup>364</sup> A vital aspect of Livingston's work lay in recruiting such men. To produce a functioning service Livingston recognised that he could either recruit men with the necessary skills or train unskilled men to proficiency. Finding the right trade-off between the two options was essential.

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<sup>362</sup> NA: AIR1/381/15/231/22 -Vol. XXII.

<sup>363</sup> Ibid.

<sup>364</sup> Livingstone, *Hot Air*, p.89.

As he saw it, 'we were trying to turn butchers and bakers into technical tradesmen' and that with growth, 'the efficiency of the technical personnel would very rapidly deteriorate unless some new method' of obtaining the men could be found.<sup>365</sup> Livingston and Salmond first devised a scheme which Henderson proposed to the War Office to 'comb' non-technical units for tradesmen in the skills required by the RFC. The War Office, already conscious of skilled workers being under-utilised in infantry units, had already formed a Committee on Technical Recruiting. Livingston was duly appointed as the RFC representative to this forum. One key output of the meetings was that Commanding Officers of non-technical Army units were required to complete forms with the details of any pre-war technical men so that they could be captured centrally by the War Office.

Such men once identified and, if willing to transfer, were then subjected to trade tests by one of the ten trade test parties that the RFC had formed to vet potential recruits. On 22 December 1915, for example, Captain MacSweeney of the Directorate wrote to the Administrative Wing, giving details of 18 men who were returning from the BEF to join the RFC.<sup>366</sup> These included men like Private A. Nutt and Rifleman C. Gillings. Nutt was a fitter by trade and had been in France since May 1915 with the 1<sup>st</sup> Battalion Somerset Light Infantry, having joined up in December 1914. Gillings, already 41, was a South African War veteran with the Rifle Brigade who had re-joined his old unit in April 1915. He entered the RFC in his pre-war occupation as a coppersmith.

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<sup>365</sup> Livingston, *Hot Air*, p.89.

<sup>366</sup> NA:AIR1/381/15/231/22 -Vol. XXII.

Livingston claims that in three months - likely between June and September 1915 - some 25,000 technical tradesmen were transferred to the RFC due to this 'comb-out' initiative.<sup>367</sup> Whilst numerous sources, including the minutes of the administrative function at the Aeronautics Department, confirm the importance of these initiatives, the problem with Livingston's account is the number of men he claims transferred. We know from Livingston's account that 'during this period Colonel Salmond had gone overseas to command a Wing'.<sup>368</sup> Since Salmond's transfer occurred in August 1915, the three-month period must straddle that month. Taking the most generous interpretation means that in October 1915, the RFC's ranks should have been swollen by the 25,000 men found in infantry units. In fact, the force had grown to only 9,087 in October, an increase of just 2,561 men on the end of July 1915.<sup>369</sup> To be charitable to Livingston, the 25,000 number may represent the total result of the scheme throughout the war. However, it is a reminder of the danger of simply accepting statistical 'facts' from memoirs.

During 1915 a combination of these initial infantry comb-outs and a continuing flow of skilled civilian volunteers meant that the RFC could still carefully choose the men it wished to recruit. In a further December 1915 letter, MacSweeney sent a list of 21 more infantry NCOs and men hand-selected to return to England to train in the RFC. Half of the men were fitters and turners by trade, three had formerly been blacksmiths, two were sheet metal workers, and one a storeman.<sup>370</sup> Limits were placed on how many men the RFC could recruit from Army regiments. In October 1915, Lt. Col. Marindin advised that the RFC had been given authority to proceed with approaching

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<sup>367</sup> Livingston, *Hot Air*, p.90.

<sup>368</sup> Ibid.

<sup>369</sup> Using data from Dye, *The Bridge to Airpower*, p.165.

<sup>370</sup> NA: AIR1/381/15/231/22 -Vol. XXII.

Territorial units with a view to putting men forward for trade tests. The RFC was required to detail a prioritised list of men they would like to test. A maximum of fifty men would be allowed to transfer from any regiment's second or third-line battalions. Further, at no stage could a battalion be reduced below 600 men after the RFC's recruitment.<sup>371</sup>

Some infantrymen took the initiative for a transfer themselves and wrote to the RFC directly from France. Private Edwin Booth of the Cheshire Regiment wrote to the Directorate in December 1915 seeking a transfer for both he and his brother, advising that both had worked pre-war on camera repairs.<sup>372</sup> He had failed to follow the correct transfer procedure, but rather than being chastised was politely told to seek his commanding officer's permission and reapply through the proper channels. This time armed with the necessary approvals, he transferred to the RFC as an instrument repairer - his brother Harold following in February 1916. Not all men were as skilled as the Booths. In October 1915, Captain Campbell, the officer in charge of photographic efforts, wrote a lengthy letter to Mr A.J. Freeman, who had failed a photography trade test. Campbell's letter was admirably courteous, given facts from an internal memorandum. This report showed that the inept Freeman:

Had spent three hours making the enclosed 12 [photographic] copies, and [the examiner] considered it unnecessary to proceed further. Leaving his bad workmanship out of the question, his time compares very badly with our rate of production.<sup>373</sup>

Not all officers were like Captain Campbell, and perhaps not surprisingly, the number of applicants was causing the system forged in crisis to creak. When this happened, it

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<sup>371</sup> NA:AIR1/367/15/231/7 -Vol. VII.

<sup>372</sup> NA:AIR1/381/15/231/22 -Vol. XXII.

<sup>373</sup> Ibid.

did not always respond as well as it might. In May 1915, Mr J.G. Thomas of Neath complained to the War Office that he had been informed of vacancies at a Drill Hall meeting in his home town two weeks previously.<sup>374</sup> He made an application and was put satisfactorily through trade tests. Thomas obtained references on his character and ability from his employer. He was then called for a medical, which he also passed. He then waited for his call-up. Instead, the disappointed applicant received a letter saying there were no vacancies. Thomas wrote to the RFC, complaining, "It seemed rather hard lines that I should be told there were no vacancies after obtaining special permission to enlist from my employer, the Board of Trade."<sup>375</sup>

William Berry finally joined the Corps in October 1915. He worked for the export office dealing with trade to Japan. His repeated efforts to enlist had been rejected numerous times because there were no vacancies. Berry was:

On constant watch for the opportunity to join the Corps, but whenever the RFC started recruiting within five minutes, it was shut again. They had no problem getting high-calibre men who knew their trades.<sup>376</sup>

Berry eventually pleaded his case with a sympathetic recruitment officer who allowed him in as a cook on hearing that he had once worked as a chef.<sup>377</sup> It is this 'proficiency' that is on his attestation form. Berry's experience of difficulty entering the Corps is borne out in advertisements that appeared in the press. One of the numerous examples is found on 14 January 1916 in the *Dundee Courier*, where the advertisement states the:

Royal Flying Corps is now open for a limited number of highly skilled tradesmen. [The trade test dates were listed,

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<sup>374</sup> NA:AIR1/369/15/231/9 -*Directorate of Military Aeronautics' Records – Vol. IX.*

<sup>375</sup> Ibid.

<sup>376</sup> IWM:1- Berry.

<sup>377</sup> Ibid.

and men assailed,] Do Not Delay or you will be “Too Late”.<sup>378</sup>

The flow of resources was not entirely one-way. The munitions industry was naturally also seeking similar men and appealed to the RFC to release those with direct experience. Appeals are evidenced in a letter to the Directorate asking for details of men who had previously worked for Vickers Ltd before the war. On this occasion, in December 1915, six RFC men were identified. However, the men themselves were given a choice as to whether they wished to remain with the RFC or return to England as munitions workers. In this event, only one, 1/AM Kingsworth, opted for release from the RFC.<sup>379</sup> In a further example, in February 1916, 2/AM Edmund Archer was approached about a return to England to work on munitions production with Victor Motors in Kent. In internal correspondence, Major Powell at the Directorate says that Archer will move ‘if he is willing’, again showing that men had the agency to resist transfers if they did not wish to transfer.<sup>380</sup> Archer’s service record is unbroken, so he evidently said no.<sup>381</sup>

The relationship with third parties was complex. On the one hand, they competed for resources, but on the other, they provided the RFC with invaluable assistance. During 1915 the RFC made widespread use of third-party suppliers and manufacturers to assist in men's training, as will be shown in chapter three. The RFC also attempted to outsource work to these firms in a bid to save on the recruitment of men. For example, in late 1915 and early 1916, six firms, Arrol Johnston, Wolseley, Clement Renault,

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<sup>378</sup> ‘The Royal Flying Corps’, *Dundee Courier* (14 January 1916, p.5).

<sup>379</sup> NA: AIR1/381/15/231/22 -Vol. XXII.

<sup>380</sup> Ibid.

<sup>381</sup> Findmypast, *Service Records 1912-1939*, E. Archer.

Gordon Watney and Dudbridge Iron Works, took over responsibility for engine repairs. However, except for the two firms that manufactured the engines, the RFC reported that:

It is found that there is a lack of appreciation of the necessity of good organization and systematic work in repairing aeroplane engines.[...] Most of the firms imagine that because they have repaired motor car engines that therefore they have nothing more to learn.<sup>382</sup>

Consequently, additional engine RFC examiners were considered essential for this quality control. Ultimately, the RFC abandoned the scheme entirely, opting to recruit the necessary numbers to carry out the majority of salvage and repair internally.

New research presented here supports the assertion that recruitment was relatively straightforward in 1915. Despite a doubling of attestations from 14,344 to 29,615 between 1914 and 1915, the RFC was actually more successful in finding men in their target trades.<sup>383</sup> In 1915, 76.2 per cent of the men whose records list a trade matched those in recruiting materials.<sup>384</sup> This proportion was some 10 per cent higher than in 1914 and more significant than that achieved in the two years preceding the war. The most significant trade recruited is at face value, surprising. There were 2,281 clerks recruited in 1915, more than any other trade, including carpenters and joiners (1,741) and fitters and turners (1,562). Such men were actively sought as well-educated and easily trainable; in many cases, they had organisational skills and potentially some modest man-management experience. As the war progressed, there would also be

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<sup>382</sup> NA:AIR1/388/15/231/29 - Vol. XXIX.

<sup>383</sup> Attestation numbers based on total records at Findmypast, *Service Records 1912-1939*.

<sup>384</sup> Calculated from searches of over 20 trades plus associated variants. For example, mechanic, motor mechanic, motor engineer, mechanical engineer etc.

two clerks per flight to record flying times, clerks in workshops to keep a tally of tools, and up to a dozen clerks in each stores depot accounting for issues and returns.<sup>385</sup>

Another reason for the relative absence of strain on the recruiting system was that casualties remained very light. Consequently, the demands for extra men from France were relatively modest. In February 1915, for example, just 44 men were requested to replace casualties and support growth. The only stipulation to the request was that the men sent would include six coppersmiths, four riggers and five clerks for Headquarters.<sup>386</sup> By way of comparison, two years later, in 1917, the corresponding monthly request would be for 576 men.<sup>387</sup>

The RFC used newspapers extensively to aid recruitment, although no reference to a coherent media plan has been found. That said, there are discernible improvements in the targeting of advertisements that appeared throughout the war. In 1914, an array of advertisements can be found. There are general appeals for men for 'ordinary enlistment' alongside advertisements for specific trades such as drivers and specific skills such as wireless or photography.<sup>388</sup> In 1915, though newspaper advertisements became more widespread, they were still relatively low-key, given the continued availability of recruits. Where advertisements were made, they still tended to target

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<sup>385</sup> NA:AIR1/122/15/40/137 -*Schools of Aerial Gunnery & Fighting*.

<sup>386</sup> NA:AIR1/368/15/231/8 -*Vol. VIII*.

<sup>387</sup> NA:AIR1/1288/204/11/42 -*Personnel - Requirements in for the Expeditionary Force - January to June 1917*.

<sup>388</sup> For example, there are general appeals for men in 'Corps Open for Recruiting', *Sunderland Daily Echo* (27 October 1914, p.5), 'All Branches of the Service are now Open for Ordinary Enlistment', *Widnes Examiner* (19 December 1914, p.5) and 'Recruits Wanted', *Portsmouth Evening News* (17 December 1914, p.4) and specific advertisements such as for drivers, 'Tradesmen and Drivers', *St Helens Examiner* (19 December 1914, p.5).

specific trades rather than any broad appeals for recruits. An example in Birmingham's *Evening Despatch* in June 1915 was typical of those in this period.<sup>389</sup> It appealed for:

Chauffeurs, Acetylene Welders, Aeroplanes Mechanics, Short-hand Typist Clerks, Cable Jointers, Instrument Repairers, Tailors as Sailmakers, Wireless Operators, Motor Cyclists (experienced), Electricians, Blacksmiths and Coppersmiths

A lack of a centralised approach is perhaps evidenced by a similar advertisement appearing in Preston the same month with different trades required, while in Edinburgh, only wireless operators were sought. Reflecting the competition with the munitions industries, advertisements often stated that men should apply only if 'they are not actually working in munitions.'<sup>390</sup> Newspapers were also used for advertising when RFC Recruiting Officers would be in specific towns seeking recruits. For example, in September 1915, the *Western Mail* in Cardiff advertised that Sergeant J.H. Greek would attend the Cardiff Recruiting Office seeking a full range of trades.<sup>391</sup> However, as the aforementioned Mr Thomas of Neath shows, that was no guarantee of entry.

## 2.10 - The First Headaches. Recruiting in 1916

As 1916 opened, Trenchard was happy with the manpower levels and the recruitment process. He wrote to London to praise Lt. Col. Charlton for his 'excellent organisation' given:

The various large drafts which have been sent overseas [...] have invariably arrived on time, in good order and accompanied by clearly made out and accurate nominal

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<sup>389</sup> 'Call to Arms', *Evening Despatch* (7 July 1915, p.3).

<sup>390</sup> 'Wanted for the Royal Field Artillery and Royal Flying Corps', *Isle of Wight Observer* (30 October 1915, p. 4).

<sup>391</sup> 'Royal Flying Corps Military Wing', *Western Mail* (13 September 1915, p.1).

rolls giving all the information necessary about each mechanic.<sup>392</sup>

During the following year, there would be a further doubling of attestations to 58,805, and at face value, the RFC was again very successful in finding sufficient numbers of skilled men. The proportion of men in target trades was almost unchanged in 1916 at 75.9 per cent (1915 - 76.2 per cent). However, the RFC had to work much harder to make this happen.

Having the right tradesmen available proved a headache for the RFC for reasons beyond simply sourcing the men. Resourceful officers in France and Britain took it upon themselves to adapt or re-train men rather than send for reinforcements from home. This meant that the RFC would be working on the assumption it had several coppersmiths, for example, working at a particular aircraft park only to discover they had been retrained as riggers when seeking to transfer them elsewhere. So widespread had this practice become that in order to keep accurate lists of men by trade, transferring men between trades without official sanction became prohibited. As Major Powell explained:

Wings and Squadrons at home have been re-mustering men under their command in different trades from those in which they were originally mustered, and this practice causes considerable difficulty to the record office in forecasting and allotting the personnel of each particular trade [From now on,] remustering will [only] be done by the OC Admin Wing.<sup>393</sup>

As a result, the Admin Wing had to be notified of any such proposals - a significant but necessary increase in workload.

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<sup>392</sup> NA:AIR1/1288/204/11/43 -Requirements of Personnel by trades for the Expeditionary Force - February 1915 to June 1916.

<sup>393</sup> NA:AIR1/385/15/231/26 -Vol. XXVI.

With the advent of conscription, some men enlisted in the RFC to avoid being drafted into the infantry. Hubert Harrison, who was 25 in 1916, had a few years of experience in a building yard when he was younger. During this time, he learned many aspects of joinery, an experience that he successfully used to join the RFC as a carpenter in January 1916.<sup>394</sup> Norman Bates, a 19-year-old plumber, also opted to use his trade experience to apply for the Corps, and his metalwork abilities allowed him to enlist as a tinsmith in February 1916.<sup>395</sup>

While the introduction of conscription was in some ways an advantage, as summer advanced, it was becoming apparent that finding skilled civilians had become significantly more challenging. Competition for resources was intense. In July 1916, Air Board minutes captured the situation thus:

The Air Board had written to the War Office regarding the return of skilled workmen from the Army. Meanwhile, the War Office were writing to the Ministry of Munitions with a view to obtaining skilled labour for enlistment in the Army. The Army Ordnance Corps were much in need of skilled artificers. It appeared that there was a general demand for skilled labour in excess of the supply available from all sources.<sup>396</sup>

John Boon had signed up under the Derby Scheme in late 1915 but continued his employment as a telephone linesman at the General Post Office for another year. A driven man from a poor background, he had attended night school to gain City & Guilds qualifications, including 1<sup>st</sup> class passes in magnetism and electricity, telegraphy and telephony. What makes Boon's recollection interesting when he joined the RFC, just after Christmas in 1916, is that it signifies a subtle but significant change had taken

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<sup>394</sup> IWM:Sound Archive 10916 – Hubert Harrison.

<sup>395</sup> IWM:Sound Archive 10262 -Norman Bates and Findmypast, *Service Records* – Norman James Bates.

<sup>396</sup> NA:AIR2/127/B12062 – *RFC in Canada*

place. He was *assigned* to the RFC and given no choice in the matter. His technical background and employment meant he had to be drafted into a technical service.<sup>397</sup>

Demand for men for service in Egypt also increased pressure on the Administrative Wing. The RFC in Egypt had been given autonomy over recruiting men, and trade test facilities had been set up locally for NCOs and men who applied to join the RFC from ground forces in the Middle East.<sup>398</sup> When volunteer numbers proved insufficient, specific requests by trade were made to the RFC in England to backfill the shortfall, adding to recruitment pressures.

#### 2.11 - Manpower Shortages. Recruiting in 1917

In Britain in 1917, the demand for manpower now significantly exceeded the supply. In January, the Government decided that 100,000 men needed to be released from previously protected industries in agriculture, mining and munitions to meet the demands of the Army. There was immediate opposition to the scheme from all sides. A Government Committee was formed to discuss the issue and confer with Haig. Their March 1917 report increased to 330,000 the men that would need to be found from protected industries between March and July. After fierce opposition from industry, further discussion took place, and a compromise of 250,000 was agreed upon. The announcement immediately led to large-scale industrial unrest as plans, which included large-scale labour dilution, were resisted.<sup>399</sup> Unrest in May 1917 saw 200,000 workers come out on strike. By the end of the dispute, some 1.5 million days of

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<sup>397</sup> IWM:9476 – Boon.

<sup>398</sup> NA:AIR1/385/15/231/26 -Vol. XXVI.

<sup>399</sup> Labour dilution called for the substitution of skilled men with unskilled men.

production had been lost. When the scheme's target date of July 1917 arrived, only 18,000 men had been released from munitions industries instead of the 124,000 that were targeted as part of the 250,000 ambition.<sup>400</sup> To provide additional complications, the German decision to declare unrestricted U-boat warfare led to a renewed shipbuilding programme which required an unplanned 80,000 extra workers.

Amid these issues came the previously mentioned July 1917 decision to double the size of the RFC. Thus, with Britain facing significant labour supply issues, the Corps needed an additional 17,000 pilots, 5,500 observers, and 61,000 mechanics. Though the RFC's Director of Recruiting stated:

I feel reasonably confident that we will find all the men required for the RFC, but it is quite certain that this large expansion of the flying corps personnel will affect infantry drafts,

he was only considering front-line personnel.<sup>401</sup> The extra squadrons would need thirty-five new aerodromes, and each aerodrome would need to be resourced. Extra squadrons meant extra aircraft. Producing those aircraft alone would require an additional 25,000 skilled, 58,000 unskilled men and 70,000 women. The challenge was enormous.

Admirably, but to little effect, the RFC attempted to find some internal economies to help the situation. In July 1917, the War Office appointed an RFC Dilution Officer whose duty was to examine the air service stations at home and report on possible savings in skilled labour. This effort was expanded the following month, and

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<sup>400</sup> Jones, *WITA*, v6, p.65.

<sup>401</sup> *Ibid.*

eventually, seventy air stations were visited. Unfortunately, the final report dated 16 November 1917 concluded the opposite of what was desired. Rather than finding savings, it reported that skilled fitters were already dangerously thin on the ground and recommended recruiting 30,000 women to help fill shortfalls immediately.<sup>402</sup>

By mid-1917, the RFC had accepted that unskilled men were required to improve the manpower situation. Initially, this had proved hard to swallow. An internal memorandum in February 1917 stated that the RFC:

Is prepared to accept raw recruits, provided they are not of trades in which they will require to go through a course of instruction before employment in the RFC. That is to say, any raw recruits drafted must be sufficiently skilled in their trades to carry out the work required of them immediately.<sup>403</sup>

Essentially, this gave nothing and was an untenable position. Those men who attested from target trades fell from 76 per cent in 1916 to 68 per cent in 1917. Though the percentage reduction does not sound material, it was on a much larger base of attestations, and the number of untrained men entering the service was significant. Unskilled labourers doubled to over 2,000. More than 800 salesmen, 600 painters and decorators, and 500 grocers were among the men joining the ranks and requiring training. An August 1917 advertisement sums up explicitly how things had changed when recruiting tradesmen. For the first time, advertisements looked for 'skilled or unskilled men of almost any occupation'.<sup>404</sup> Age requirements, too, were explicitly

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<sup>402</sup> Jones, *WITA*, p.65.

<sup>403</sup> NA:AIR1/1288/204/11/42 -*Personnel – Requirements*.

<sup>404</sup> 'Wanted at Once', *Exeter and Plymouth Gazette* (10 August 1917, p.4) and 'Royal Flying Corps', *Dundee Courier* (21 September 1917, p.1).

relaxed, and advertisements included comments such as, 'men of military age and over age accepted'.<sup>405</sup>

As stated, the expansion of the RFC was second only to shipbuilding in the government's priorities, and it was given an unprecedented opportunity to recruit men from previously protected industries. By this stage of the war, most skilled men still at home held what was known as the Red Card - officially Army Form 3476A – that was granted under the Schedule of Protected Occupations.<sup>406</sup> It allowed men in protected industries, such as war production or munitions, to avoid being drafted via conscription. The RFC, however, was allowed to call on such men, though it could not force them to join. Newspaper advertisements in 1917 confidently assured men holding the Red Card that they could have it withdrawn if they so wished. As an incentive, adverts stressed that:

Special rates of pay prevail in the technical Corps. They are higher than those in the infantry [and] it is hoped that large numbers of skilled men will embrace the opportunity of placing their skill at the disposal of the Nation with the certainty that it will be employed to the best advantage.<sup>407</sup>

Throughout 1917, men continued to transfer from the Army but fell as a proportion of total recruits. In a sample of 400 men each year, infantry transfers fell from 24 per cent of men joining to just 8 per cent between 1916 and 1917.<sup>408</sup> Leslie Furse was one such man who transferred. He had served in France with the Rifle Brigade between 1915 and 1917. He was sent back to England on leave and was deemed unfit to return to active service with his unit. Consequently, Furse was encouraged to sign up for the

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<sup>405</sup> 'Royal Flying Corps', *Nottingham Evening Post* (14 September 1917, p.2).

<sup>406</sup> Hansard, (HC Debate, 11 June 1917, vol.94, c586).

<sup>407</sup> For example, 'Artificers Wanted', *Daily News (London)* (23 June 1917, p.4) & 'Artificers Wanted to Serve in the Royal Flying Corps', *Manchester Evening News* (24 September 1917, p.2)

<sup>408</sup> Royal Flying Corps Officer and Men Sample Excel in RFC Men Master directory.

RFC as an opportunity to continue his service. After an interview in London, he was selected to become a wireless operator before entering pilot training in late 1917.<sup>409</sup>

Leonard Davies had studied aerodynamics, engines and mechanics as part of a motor engineering course at college. His childhood had been spent making model aeroplanes, culminating in a full-scale replica of an early Cody machine. As a boy scout, he had spent much time hanging around Hendon airfield, cleaning old machines, helping out and gaining wisdom from the mechanics there. When war arrived, he joined the Royal Fusiliers, serving in France between November 1915 and February 1917. He had had a 'very rough time' in the infantry and 'definitely did not want to go back into the trenches'.<sup>410</sup> By then, a Lance Corporal, he applied via his senior officer and joined the RFC as a fitter. Cecil Meager had served as a Private with the Hampshire Regiment since before the war and had seen service at Gallipoli and Palestine. He confessed to being 'rather surprised' when an RFC recruiting officer came around the men in 1917 as he believed his unit was already 'short of infantrymen'. Meager had worked as a carpenter in a shipyard before joining the Army. He estimated he was one of about fifty men who put their names down for transfer.<sup>411</sup>

During 1917, the RFC continued to use the London Polytechnic to aid recruitment. Its Director, Robert Mitchell, wrote to the War Office articulating the effort involved:

The work entailed involves a considerable amount of trouble and expense, especially in connection with the examination of candidates for the wireless. Very careful selection is made, and a number of those sent forward are men who have passed public examinations, including the London Matriculation and the B.Sc. [...] During the last two

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<sup>409</sup> IWM:Sound Archive 9712 - Leslie Furse.

<sup>410</sup> IWM:Sound Archive 9343 - Leonard Davies & Findmypast, *Service Records*, Leonard Gordon Davies.

<sup>411</sup> IWM:Sound Archive 8326 - Cecil Meager.

months, some 3,000 recruits have been sent forward. We have to interview a great many more than we select.<sup>412</sup>

While digging deep for men in Britain, the RFC also turned to Canada in 1917 to provide some of the answers to their recruitment needs. Canada provided 4,971 air mechanics between March and November 1917, receiving applications from 13,844 men.<sup>413</sup> As can be judged from the relatively low conversion of applicants to recruits, recruitment in Canada was not straightforward. Wage inflation presented a particular challenge for the RFC and resulted in 6,418 men rejecting the RFC on the grounds of insufficient inducements.<sup>414</sup> While RFC rates were 15 per cent higher than the Canadian Expeditionary Forces rates for unskilled men, this proved insufficient to attract the best tradesmen.

As recruitment officers recalled, ‘The first question each recruit would ask was “, What is the pay?” or “How much will my wife get?” The latter question was due to a system in force in Canada whereby all married men of the Canadian Expeditionary Force received assistance from a charity called the Canadian Patriotic Fund. The payments amounted to \$20 per month plus an extra \$5 per child, paid to wives of enlisted men serving overseas. Initially, as a British force, the RFC was excluded from this arrangement, and it took considerable effort and patient negotiation to gain inclusion. In the event, the payments were granted only to those passed medically fit to serve overseas.<sup>415</sup>

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<sup>412</sup> Jones, *WITA*, v2, p.289.

<sup>413</sup> NA: AIR2/166/RU4527 – *Statistics*.

<sup>414</sup> *Ibid.*

<sup>415</sup> NA: AIR1/721/48/4 – *Development of The R.F.C. in Canada*.

Canadian Medical Boards proved a further problem for the RFC. The Canadian Expeditionary Force's policy was only to enlist men of category A fitness. Consequently, the RFC found that 'Boards absolutely refused to pass men for us if other than A.'<sup>416</sup> Though frustrating for the RFC, the Medical Boards were not simply being difficult. Such intransigence can be understood given that if a man was found to be unfit for service on arrival in England, the Board was held responsible for the cost of returning him to Canada. The RFC requested that the British system of A, B and C be adopted for their recruits, and though eventually successful, the debate 'caused considerable delay and had to be carefully handled to avoid friction.'<sup>417</sup> In the event, the following number of men were recruited over the spring and summer of 1917:

March	-	424
April	-	793
May	-	332
June	-	509
July	-	539
August	-	422

Then, on 29 August, the RFC was aided by the Canadian decision to introduce the Military Service Act. The act allowed the Government to conscript men aged 20 to 45. The decision helped swell RFC numbers as men enlisted in the RFC to avoid conscription into infantry units. Numbers enlisting jumped to 691 men in September 1917 and almost doubled to 1,261 in October.<sup>418</sup>

Alongside these initiatives, in mid-1917, the RFC began actively recruiting boys and women in Britain.<sup>419</sup> In the case of 'boys', these young men were required to be

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<sup>416</sup> NA: AIR1/721/48/4 -*Development*.

<sup>417</sup> Ibid.

<sup>418</sup> Ibid.

<sup>419</sup> NA: AIR1/1288/204/11/42 -*Personnel - Requirements*.

between 15 ½ and 17 years of age. If selected, they would undertake an apprenticeship in woodworking, engineering or sailmaking and eventually become ‘fitters, coppersmiths, electricians, carpenters, turners, blacksmiths, instrument repairers, sailmakers and riggers’.<sup>420</sup> Harold Eager was one such 17-year-old. Though he had been doing well at school, his family had been unable to afford to send him to college, and at fourteen, he was working two jobs at a barbers shop and butcher. By the time he was sixteen, his stepfather had got him a job at his dockyards as a messenger boy. Harold saw the advertisements for this new scheme and joined as a ‘boy’ in November 1917. He was able to ‘learn a trade’ by becoming a rigger, transferring to the RAF on his 18<sup>th</sup> birthday in July 1918.<sup>421</sup>

By the time Eager joined, the scheme was already going well. A 6 October 1917 RFC memo reported that:

The experiment of enlisting boys into the RFC [...] and of training them in one or other of the Flying Corps trades has already proved most successful. Boys have come forward freely, are of an excellent type and are proving an extremely valuable aid to our work.<sup>422</sup>

Further, the RFC noted that:

It is understood some 3-4,000 boys from 15-18 years of age may shortly be discharged from Munition Factories where they are presently engaged in various “blind alley” occupations, and it would be of great value if sanction could be given so as to allow a proportion of these boys to be made available to the RFC.<sup>423</sup>

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<sup>420</sup> ‘Required for the Royal Flying Corps’, *Rochdale Observer* (12 May 1917, p.2) and ‘Wanted, Fifteen boys for Royal Flying Corps’, *Coventry Evening Telegraph* (11 June 1917, p.3).

<sup>421</sup> IWM : Sound Archive 16310 – Harold Eager.

<sup>422</sup> NA: Air 2/12/87/Labour/38 - *Employment of Boy Labour 1917*.

<sup>423</sup> Ibid.

Thus, the RFC was successfully enlisting young men who were learning a trade and helping the RFC's manpower crisis. At this stage, the RFC also reversed its attitudes toward using women in the service. In September 1915, Miss Enid Alderson, a 22-year-old Australian woman who lived in Richmond in Surrey, had attempted to join the RFC. Though her letter does not survive, the RFC's response to her request does. In it, she was told concisely that 'there is no position in the RFC in which a lady could be employed, and it is, therefore, regretted your application cannot be entertained'.<sup>424</sup> Two years later, it would be a very different story. Female recruits were first used in February 1917 when women began to be recruited as drivers. Since then, they had been recruited in growing numbers to carry out an increasing number of roles, including those in repair shops and at service depots.

When the RAF formed in April 1918, it became necessary to constitute a separate corps for women, the Women's RAF (WRAF), which offered women the option to transfer from the existing air arms of the Women's Army Auxiliary Corps (WAAC), the Women's Naval Service (WRNS) or the Women's Legion. By the end of April 1918, 67 officers and 6,738 other ranks transferred from the WAAF, 46 Officers and 2,821 other ranks from the WRNS and 496 drivers from the Legion.<sup>425</sup> At the Armistice, some 25,000 women were serving in the WRAF.<sup>426</sup> Though it had been stipulated that none should serve overseas, an exception was made for some women employed at aircraft repair shops at Rouen who had been posted there as members of the WAAC.

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<sup>424</sup> NA:AIR 1/374/15/231/15 - Vol. XV.

<sup>425</sup> Jones, *WITA*, v6, p.73.

<sup>426</sup> *Ibid.*

Motivations for women joining were as varied as for men. Florence Parrott joined the WAAC and later transferred to the WRAF, driven by a desire for revenge. She had been working as a wine waitress at Liverpool Street Station in London when a bomb from a Zeppelin caused damage to the station and lightly wounded her. Parrott joined at the Connaught Club after an interview which consisted principally of an expedition to discover what applicable skills she had. Having had some previous cookery experience whilst working as a young housekeeper, she joined as a cook and served with the Officer Training Corps at Denham.<sup>427</sup> Dorothy Bairfield, who had been a nurse with a military family, joined the WAAC in 1917 in a desire to do her bit and became a waitress at an airfield at Hastings. Like the male recruits, she enjoyed the feeling that she was working for a 'unique body', and she too chose to transfer to the WRAF in 1918. She went on to serve in the officer's messes on airfields at Shorncliffe and Uxbridge to the war's end.<sup>428</sup>

Outside the RFC, the importance of these women and boys to the aircraft industry cannot be understated. In August 1916, the industry employed some 12,600 women and 6,500 boys. These numbers accounted for 32 per cent of the workforce. Just fifteen months later, in November 1917, there were 52,700 women and 17,100 boys, 40 per cent of employees. Numbers continued to grow, and by the war's end, 126,600 women and 33,000 boys would equate to 46 per cent of the industry's workforce. Within the Corps itself, in November 1917, now Major-General John Salmond estimated that the numbers of other ranks still required to complete the targeted 200

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<sup>427</sup> IWM:Sound Archive 8857 – Florence Parrott.

<sup>428</sup> IWM:Sound Archive 34541 – Dorothy Bairfield.

squadron establishment were 68,000 men and 17,855 women short.<sup>429</sup> There was a long way to go.

## 2.12 - All Change. Recruitment in 1918

The sheer scale of the ground crew operations in Britain in 1918 was formidable. There were twenty-two aircraft acceptance parks, two Marine Acceptance Depots, thirteen Repair Depots, ten Stores Distributing Parks, eight Stores Depots, as well as a Balloon Acceptance Depot, Transport Issue Park and Transport Depot.<sup>430</sup> The stores depots alone employed some 8,000 men and a similar number of women.<sup>431</sup> The RFC/RAF recruited almost 111,000 men during the final eleven months of the war, a 44 per cent increase on those recruited in the whole of 1917.<sup>432</sup> Nevertheless, of 1918 recruitment Livingston recalled that 'the human material was, of necessity deteriorating in quality'.<sup>433</sup> While there is no evidence to show that the workmanship of the men in 1918 was inferior, there were essential changes in the type of man being recruited in the last year of the war. As highlighted earlier in the chapter, the shortage of skilled manpower resulted in the RFC/RAF being much more pragmatic about who was recruited.

A functioning training system for the men, which will be discussed in the next chapter, allowed the Corps to recruit unskilled men and train them rather than relying on their civilian occupations. Consequently, recruits of 1918 were much less likely to come

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<sup>429</sup> Jones, *WITA*, v6, p.77.

<sup>430</sup> Compiled from data in NA: AIR 1/452/15/312/26 Vol. II - *Aerodrome Board. Quarterly survey of Parks and Depots of the RAF (U.K.)*.

<sup>431</sup> NA: AIR1/683/21/13/2234 - *Precis of Training, RFC and RNAS*.

<sup>432</sup> Based on the total attestation volumes at Findmypast, *Service Records 1912-1939*.

<sup>433</sup> Livingston, *Hot Air*, p.113.

from an advertised trade than at any point in the war. They were also more likely to be much younger or much older than those recruited earlier. The men themselves were physically smaller than they had been historically. The RFC/RAF had to widen their geographical net in new ways to find such men. This led to an influx from outside the traditional recruiting regions, including a specific campaign in Ireland and a novel quid pro quo scheme with America.

While some men continued to transfer from the infantry, they were proportionately comparatively few compared to both previous years' transfers and the civilian inflow. In the survey of men referenced earlier, only 3 per cent of RFC recruits were transferees from the Army in 1918 compared to the high of 24 per cent in 1916.<sup>434</sup> The vast majority of men recruited were, then, civilians. By mid-1918, any attempt to target specific trades or to recruit from a narrow age group had all but been abandoned. Recruitment advertisements became non-trade specific and employed propaganda or incitement for the first time in a bid to encourage men to join. 'Bomb Germany!' one implored. Others that 'tradesmen of any trade' and 'Aviation Cadets (Pilots), Public and Secondary schoolboys' were sought.<sup>435</sup> Even men who had been previously rejected were asked to reapply.<sup>436</sup> Perhaps the most inciteful attempt to attract recruits can be found in an advertisement on the front page of many newspapers on 14 September 1918. It contained a shrewd and comprehensive address of why a man might join the RAF.<sup>437</sup>

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<sup>434</sup> Based on a review of 400 service records in each year.

<sup>435</sup> 'Volunteer Immediately', *Coventry Evening Telegraph* (6 July 1918, p.1).

<sup>436</sup> 'Irish Recruiting Council', *Londonderry Sentinel* (31 August 1918, p.2).

<sup>437</sup> 'The Royal Air Force and Why You Should Join it', *Tamworth Herald* (14 September 1918, p.1).

The advertisement extolled the glamour of the service, noting the Victoria Cross awards and other decorations awarded to date. The service, recruits were told, is quite different from the Army and Navy. In the RAF, 'everyone has a chance, and there is no possibility of anyone who has the right stuff in him being left behind.' Further, 'position and promotion cannot be obtained by "knowing someone" in the RAF. It is merit alone that counts.' Perceptively the advertisement also addressed the 'class' issue stating, 'Another fable to be cleared up is the impression that it is necessary to have private means to become an officer in the RAF; there was never a more stupid fallacy'. It went on to detail opportunities that would include the chance to 'strafe the Hun', 'carry out reprisals over Germany', and to protect convoy ships. The extraordinary piece also addresses new skills that will be learned, their applicability, the safety of flying in statistical terms compared to other services, and a personal note to worried 'women folk.'<sup>438</sup>

Despite skill shortages and generalised advertising campaigns, the proportion of men recruited from trades listed in recruitment materials was still 62 per cent in 1918. While this is lower than the 76 per cent in 1915 and 1916, it is still a testament to the skill of RFC/RAF recruiting officers. However, as more men joined in 1918 than in other years combined, in absolute terms, a significant number of unskilled men were recruited.

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<sup>438</sup> 'The Royal Air Force and Why You Should Join it', *Tamworth Herald* (14 September 1918, p.1).

*Table 2.1 – Attestation Occupations of Enlisting RFC/RAF Men<sup>439</sup>*

<b>Occupation</b>	<b>1914</b>	<b>1915</b>	<b>1916</b>	<b>1917</b>	<b>1918</b>
<b>Records</b>	<b>6,464</b>	<b>13,699</b>	<b>26,626</b>	<b>30,062</b>	<b>47,257</b>
Fitter / Turner	13 %	11 %	10 %	9 %	17 %
Clerk	10 %	17 %	13 %	18 %	14 %
Mechanic/Engineer	16 %	10 %	7 %	8 %	9 %
Carpenter / Joiner	12 %	13 %	26 %	14 %	6 %
Driver	4 %	7 %	6 %	6 %	4 %
Electrician	3 %	5 %	3 %	3 %	3 %
Sailmaker	1 %	3 %	4 %	3 %	2 %
Draughtsman	1 %	1 %	1 %	1 %	2 %
Warehouse/Storeman	1 %	1 %	2 %	2 %	1 %
Instrument Repair	1 %	1 %	1 %	1 %	1 %
Wireless	1 %	3 %	1 %	1 %	1 %
Photographer	1 %	1 %	2 %	1 %	1 %
Other Advertised Trade	3 %	2 %	3 %	2 %	2 %
<b>Total in Advertised Trades</b>	<b>66 %</b>	<b>76 %</b>	<b>76 %</b>	<b>68 %</b>	<b>62 %</b>
Labourer	14 %	7 %	4 %	7 %	13 %
Students	-	1 %	1 %	3 %	4 %
Farmer	1 %	-	-	1 %	2 %
Saleman	1 %	1 %	3 %	3 %	2 %
Miner/Hewer	5 %	2 %	-	1 %	2 %
Painter/Decorator	2 %	1 %	2 %	2 %	1 %
Other Non-Advertised	12 %	12 %	15 %	16 %	16 %
<b>Total in Non-Advertised Trades</b>	<b>34 %</b>	<b>24 %</b>	<b>24 %</b>	<b>32 %</b>	<b>38 %</b>

Table 2.1 contains the records of all men where attestation occupations were listed. As shown, more unskilled labourers (5,930, 13 per cent) joined than all classes of employee bar fitters, turners and clerks in 1918. During 1915 and 1916, just 100 students were recruited into the ranks from schools and universities. In 1918 this number rose to 1,747. There are sharp rises in the numbers of teachers, butchers, farmers, grocers, painters, salesmen and miners in the latter part of the year.

<sup>439</sup> Based on number of attestation records indicated from Findmypast. Where trade is listed. A significant number are blank.

The men themselves were also quite different, as the RFC/RAF accepted men younger and older than their previous target range. As shown in Table 2.2, based on a sample of random attestations where age is known, 78 per cent of men recruited in 1918 were either 20 or under or over 30, compared to 33 per cent in 1914.

Table 2.2 - Age at Attestation, a sample of 975 Men

Age	1914	1915	1916	1917	1918
<b>Records</b>	<b>195</b>	<b>195</b>	<b>195</b>	<b>195</b>	<b>195</b>
Under 20	11 %	29 %	19 %	36 %	44 %
21 - 25	46 %	44 %	31 %	17 %	17 %
26 - 30	21 %	16 %	25 %	18 %	5 %
30 +	22 %	11 %	24 %	29 %	34 %
<b>Under 20 or Over 30</b>	<b>33 %</b>	<b>40 %</b>	<b>43 %</b>	<b>65 %</b>	<b>78 %</b>

As stated earlier, from mid-1917, the RFC found that:

It is possible to employ a considerable number of boys in the RFC in substitution for full-grown men. [...] The more boys we can take in [...] and usefully train, the easier will the solution of this very difficult problem become.<sup>440</sup>

In a manpower return dated 13 July 1918, the age of boy recruits was recorded<sup>441</sup>:

Age 15	-	3
Age 16	-	1,147
Age 16 ½	-	1,724
Age 17	-	1,716
Age 17 ½	-	325
Total	-	4,915

<sup>440</sup> NA:AIR2/12/87/Labour/38 -*Boy Labour*.

<sup>441</sup> NA:AIR2/12/87/RFC/642 -*Employment of Boy Labour*.

While with contemporary eyes, one may expect this total of 4,915 boys to compare to student recruits in the table above; they do not. It must be remembered that most of these boys were at work when they joined the RAF. Therefore, they transferred to the RAF from other trades rather than from schools and colleges. None of these youngest recruits was allowed to serve overseas before they reached 18. Thus they were distributed across almost 20 RFC establishments in Britain, including Training Depot Squadrons, Training Schools, and stores hubs and depots.<sup>442</sup>

It was not just the young that the RAF were recruiting in 1918. Harold Eager, a former 'boy' recruit himself, recalled that by mid-1918, 'old chaps, 55 and that' were joining. Such men, like the boy recruits, were guaranteed service in Britain, which freed up younger men like Eager to head to France.<sup>443</sup> From April 1918, the RFC began calling explicitly for men aged up to fifty to enlist. They did so in large numbers, and there are also many examples of men over 50 joining.

Tasmanian Bannatyne Macleod enlisted as a 58-year-old civil service pensioner. He had worked in the Indian civil service and married in Bangalore an incredible 32 years before the war broke out. He enlisted on 8 May 1918 as a batman. 61-year-old Harry Oborn enlisted as a labourer from Salisbury and had served in the Army Medical Corps since October 1916. Oborn, though, is not the oldest recruit this research identified. Thomas Cox was born on the 20 March 1856 in Shrewsbury, and his enlistment form notes his age as 62 ¼. He enlisted in June 1918 and served as a labourer with various balloon sections. As noted, men joining at this age were, in most services, guaranteed

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<sup>442</sup> NA:AIR 2/87/RFC/642 - *Boy Labour*.

<sup>443</sup> IWM:16310 - Eager.

home service as they fell outside of the Military Service Act. However, men joining the RAF would, at any age, still be offered the chance to serve overseas.<sup>444</sup>

Partly due to the old and young recruits, the physical stature of the men enlisting in 1918 was also very different from earlier in the war. Using the same sample as above for age, this research recorded men's chest and height measurements across the war years. The results show that men were, on average, 2" shorter in height in 1918 - 5'6" on average – compared to 1914. They were also 3" less broad around the chest at 32". Whilst such differences might not sound significant, as the statistics below show, many men who would have been deemed physically unacceptable earlier in the war were now recruited.

Percentage of Men Enlisting Under 5'3" in height

1914	-	4 %
1915	-	7 %
1916	-	11 %
1917	-	15 %
1918	-	17 %

Percentage of Men Enlisting with Chest Measurement of 30" or less

1914	-	1 %
1915	-	5 %
1916	-	7 %
1917	-	15 %
1918	-	17 %

The 1918 recruits were then, increasingly from outside traditional-age groups and physically smaller than their earlier counterparts. Additionally, they also came from different regions than those who came before them.

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<sup>444</sup> 'Not Too Old at Fifty' *The Halesworth and East Suffolk Advertiser* (2 April 1918, p.1).

As stated earlier, when looking at pilots, the South-East of England had been the traditional recruiting ground for the RFC since its inception in 1912. The proportion of recruits from the South-East had increased to 55 per cent in 1916. Of course, birth location does not equate directly to enlistment location. Men may have moved locations for work or even to the South East to join the force. By 1918, other regional recruitment centres had also opened. However, even with those caveats, the 1918 change is marked.

Table 2.3 is compiled using all attestation records where a location is known. Though still up in nominal terms, the proportion from the South East collapsed to just 26 % of recruits in 1918. Scotland and Ireland, which had accounted for only 6 % of recruits in 1917, jumped to 16 %. There were also increases in men from northern counties and the Midlands.

Table 2.3 - A Geographical Widening of the Net<sup>445</sup>

<b>Region</b>	<b>1914</b>	<b>1915</b>	<b>1916</b>	<b>1917</b>	<b>1918</b>
<b>Records</b>	<b>10,498</b>	<b>16,381</b>	<b>22,315</b>	<b>25,434</b>	<b>84,153</b>
South East	35 %	48 %	55 %	45 %	26 %
North	26 %	19 %	18 %	21 %	25 %
Midlands	15 %	12 %	10 %	13 %	19 %
Other	10 %	11 %	11 %	13 %	10 %
<b>Total England</b>	<b>85 %</b>	<b>90 %</b>	<b>93 %</b>	<b>92 %</b>	<b>79 %</b>
Scotland	8 %	5 %	4 %	5 %	9 %
Ireland	4 %	2 %	1 %	1 %	7 %
Wales	3 %	3 %	2 %	2 %	3 %
<b>Other Great Britain</b>	<b>15 %</b>	<b>10 %</b>	<b>7 %</b>	<b>8 %</b>	<b>19 %</b>
<b>Overseas</b>	<b>0 %</b>	<b>0 %</b>	<b>0 %</b>	<b>0 %</b>	<b>2 %</b>

Ireland accounted for only 253 attestations in 1916, a year marked by the Easter Rising in Dublin. In 1918 the RFC adopted a particular and subtle change of focus in their advertisements seeking men in Ireland. They now required men ‘for the maintenance of aeroplanes employed on the destruction of Zeppelins’ rather than for service in France.<sup>446</sup> Nor was this the only ‘revenge’ focused bid to attract recruits. In May 1918, the RAF advertised for 5,000 recruits to help ‘our Royal Air Force keep on bombing Germans’.<sup>447</sup> The fact that the RAF was an independent service and no longer part of the Army also assisted recruiters in Ireland. As Bowman, Butler and Wheatley note in their discussion of Irish recruitment in *The Disparity of Sacrifice*, ‘the RAF was the service of choice for recruits in late 1918.’<sup>448</sup> So great was the response to

<sup>445</sup> Overseas men - South African and Canadian men. Overseas numbers do not included American mechanics who remained US servicemen.

<sup>446</sup> ‘Skilled Tradesmen are Required’, *Londonderry Sentinel* (19 September 1916, p.2).

<sup>447</sup> ‘Last London Air Raid, Over 200 Casualties’, *Dublin Post* (30 May 1918, p.3).

<sup>448</sup> T.Bowman, W. Butler, M.Wheatley, *The Disparity of Sacrifice : Irish Recruitment to the British Armed Forces, 1914-1918* (Liverpool: Liverpool University Press, 2020), p.132.

advertisements in Belfast that an appeal went out for men to desist from attending in person at the Recruits Depot until further administrative manpower had been added and instead to apply in writing.<sup>449</sup> This research shows the significance of Irish recruitment in 1918 by comparing it to total English recruitment across the war years as follows:

	<b>1914</b>	<b>1915</b>	<b>1916</b>	<b>1917</b>	<b>1918</b>
English Enlistments	8,986	14,780	20,756	23,218	67,169
Irish Enlistments	379	286	253	294	5,768
<b>English to Irish Ratio</b>	<b>24:1</b>	<b>52:1</b>	<b>82:1</b>	<b>79:1</b>	<b>12:1</b>

The ranks of the RAF were also swollen in 1918 by men from America. Britain's need for manpower and America's need for training assistance resulted in a reciprocal agreement being signed. The result was that America would send 15,000 technical men to Britain for training.<sup>450</sup> Once training was complete, the men would join RAF Training Depot Stations in Britain, allowing the freed-up RAF men to go to France.<sup>451</sup> Initially, the scheme was bedevilled by logistical issues and illness, with men quarantined before travelling. On 2 March 1918, for example, the Military Attaché in Washington telegraphed the War Office advising that 3,000 men:

Have left for England February 26<sup>th</sup> [...] Bricklayers have been released from quarantine and will sail March 6<sup>th</sup>. They have no tools but advised Signal Corps to send them without. [...] A further 4500 men will sail from here on March 6<sup>th</sup>. This makes a total number of men sailed up to February 26<sup>th</sup>, 9,900.<sup>452</sup>

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<sup>449</sup> 'French's 50,000', *Belfast News-Letter* (26 July 1918, p.4).

<sup>450</sup> NA:AIR1/686/21/13/2252 – *Statistical data*.

<sup>451</sup> Laffin, *Swifter*, p.97.

<sup>452</sup> NA:AIR1/400/15/231/41 -*Vol. X*.

Additionally, a short time later, on 13 March, London was advised that 200 tailors were also being sent to England as sailmakers.<sup>453</sup> Another week later, on 18 March, competing priorities were causing challenges in getting the men to Britain. The Military Attaché again cabled the War Office, this time to report that the:

General Staff have cancelled for the present all aviation personnel proceeding overseas as they state the shipping accommodation is required by other troops. [...] If a cable could come from Foulnois [Chief of Air Service, American Expeditionary Force] asking that the shipment of aviation personnel might still continue, I believe that the General Staff would cancel their present drastic order. [...] There are [...] 6,000 men fully equipped and waiting for shipment at the docks in NY.<sup>454</sup>

Whether Foulnois involved himself is unknown, but the issues were eventually overcome, and 16,244 American tradesmen would eventually be sent to the RAF, the equivalent of 15 per cent of enlistments in 1918.<sup>455</sup>

## 2.13 - Conclusion

The recruitment of the men in the ranks of the RFC/RAF is ultimately one of profound success. When the war was declared, the challenges faced were similar to those discussed in chapter two: a lack of infrastructure and clarity around squadron numbers and, consequently, unknown manpower requirements. Additionally, complicating matters was the fact that a significant number of skilled men joined the infantry in the initial flush of recruitment in 1914. However, the relatively slow build-up of the RFC meant that the Corps was relatively untroubled by such issues until mid-1916. At this

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<sup>453</sup> NA:AIR1/400/15/231/41 -Vol. X.

<sup>454</sup> Ibid.

<sup>455</sup> Jones, *WITA*, v6, p.77 and Findmypast, *Service Records 1912-1920*, 1918 attestations.

stage of the war, the competing needs of home industries and the infantry made the recruitment challenge much harder.

Despite competition for manpower, the RFC always found ways to recruit the number of men required, and the statistics presented here highlight its success. In each year of the war, the RFC/RAF recruited over 60 per cent of men from the class of trades that they had defined in initial recruitment materials. In 1915 and 1916, more than three-quarters of the men were from target trades. This was a considerable achievement, particularly when placed in the context of the national shortage of skilled labour that Britain faced.

The RFC quickly recognised the importance of a man's skillset over the rigid interpretation of physical attributes, even stating such in their recruitment guidelines. They realised, too, that men not necessarily fit for life in the trenches would be suitable for roles in stores, depots and workshops. As the war continued, men were increasingly likely to be recruited with low medical board examination results. They became shorter and physically less imposing as the war continued, but there was no discernible evidence that the force's efficiency was reduced.

The RFC spotted an opportunity to recruit younger men, so-called 'boys', into the service. Guaranteeing them service in Britain reduced potential parental opposition and gave them a real apprenticeship in a trade. From a service perspective, it created a skilled pipeline of men once they turned eighteen. These young men were joined by increasing numbers of older workers who, unfit for the trenches, were perfectly capable of many roles within the RFC. Across Britain, a dilution of skilled labour in

factories and munitions plants occurred, and women became invaluable to the war effort. The RFC/RAF, too, recruited substantial numbers of women to free up men for service abroad and the WRAF was successfully created in parallel with the men's organisation. As labour shortages became acute by the close of 1917, the RFC had in place a fully functioning training establishment. Its importance in allowing the recruitment of unskilled men was vital in finding sufficient numbers.

The RFC had successfully used posters and newspaper advertisements since its formation in 1912. For the first three years of the war, media recruitment concentrated on appeals to men of specific trades and experience. As the viability of such advertisements waned, the RFC subtly changed the focus to appeal to men's desire for revenge. The men on the ground were told that they, too, could strike at Germany. Such advertisements were accompanied by the increasing use of cinema both as a medium and a recruitment hall. Patriotic productions, compared by serving officers, were followed by appeals to sign up there and then.

Using newspapers and cinemas allowed the RFC/RAF to recruit from beyond their traditional bases in the South East of England. Specifically targeted appeals, such as the one in Ireland in 1918, resulted in unprecedented success when accompanied by a message that stressed the independence of the air service from the Army. Canada provided significant numbers of tradesmen as it did with pilots. Though recruitment was not without its challenges, there remained a significant Canadian presence from 1917 until the end of the war. These men were accompanied by over 16,000 American tradesmen who joined the RAF physically, if not formally, in 1918, bolstering the ranks when most needed. Combining the factors above, the RFC and the RAF successfully

recruited the 300,000 men they needed to fight the first war in the air. It was a success made possible by significant compromise, pragmatism and creativity.

## **Chapter Three: Training Ground-Based Personnel**

### **3.1 - Introduction**

The RFC entered the war with a desire to train its men using a combination of classroom-based lectures and practical training. At the June 1914 Concentration Camp, for example, 'technical schemes, lectures, experiments of all sorts, inspections and general coordination of methods filled a hectic month.'<sup>456</sup> However, such principles would be sorely challenged under the stress of war. This chapter will examine how the men on the ground were trained. Civilian recruits would need to learn to be soldiers first and then specialise in their respective trades. This initial introduction to Army life usually involved what felt like days of interminable drills and harsh discipline. Many men, such as George Eddington and Ernest Humberstone, recalled that the NCOs in charge of 'square bashing' were ex-Guardsmen whom they soon learned to respect even if they loathed the tedious activity.<sup>457</sup> After this, men would move on to focus on their technical discipline.

The predominant portion of the chapter will focus on the training of fitters and riggers. Whilst all trades were essential in their own way, these were the men who kept the airframe and engines serviceable. The chapter will, however, also look at other ground-based specialisms. Equipment officers had the role of managing the burgeoning network of aircraft depots and parks, as well as handling the logistics and inventory management of the Corps. Armourers who managed the RFC's weaponry

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<sup>456</sup> Macmillan, *Brancker*, p.51.

<sup>457</sup> IWM:13, Eddington & 22, Humberstone.

needed unique training in their vital and dangerous work. Other specialist areas examined will include wireless and photography, and there is a brief consideration of the training of boy recruits to the service.

This chapter naturally follows the analysis of recruitment in chapter two. As stated in the introduction, for a functioning service, men needed to be recruited and trained in their role's specifics. The last chapter explained how, initially, sufficient numbers of skilled men were found, and training was, consequently, less of an issue. By the war's end, however, the recruitment of significant numbers of unskilled men who lacked even the most basic competency in their new roles would require significant instruction. Coupled with this, technological and tactical advances changed the nature of roles for ground-based personnel, which created an additional training challenge for the RFC. This chapter will explain how the RFC attempted to meet that challenge.

### 3.2 - Training Fitters & Riggers

London wheelwright Cecil King joined the RFC in September 1913. He benefitted from the widespread Army policy of supporting men in completing their schooling. He passed his 3rd and 2<sup>nd</sup> class Certificates of Education in October and November 1913 before excelling as a 'skilled rigger' by April 1914.<sup>458</sup> He was promoted three times during the following year, becoming a Flight Sergeant in November 1915. He recalled that in the early days of the war, men undertook identical initial training whether they were identified as a likely rigger or fitter.<sup>459</sup> Each man was trained in a classroom by

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<sup>458</sup> Findmypast, *Service Records 1912-1939*, Cecil Reginald King.

<sup>459</sup> IWM:27, King.

his instructor until he was familiar with the airframe. They would learn the nature, use and construction of its various parts. They would then get practical training in the workshops, removing parts that would likely see the most damage, particularly wheels and wings. They learned to appreciate the importance of stress and strain on the bracing wires. The men would troop from workshop to hangar with notebooks and pencils at the ready, making notes that they could refer to later. Men would then pass through the engine shops learning the basics of the Renault and Gnome engines. Again, they had a short period of practical experience, stripping down the engine and understanding the workings before reassembling and testing it. In this way, most men left the initial three months of training with the same general appreciation of both the airframe and engine. Selected as a rigger, Cecil King was sent to No.5 Squadron, where his specialised rigging training began. There, under the flight's qualified rigger, he learned the practical day-to-day aspects of his new job. He was then sent to the CFS for further intensive training that included sailmaking and the production of certain vulnerable parts, such as skids in the workshops, a process which took a further three months.<sup>460</sup>

Alongside this, for the first twelve months of the war, the RFC experimented with the training of men to serve as what they termed Leading Artificers. These men are what we might term 'jack of all trades' in contemporary language. Such men would be carefully selected fitters and riggers from the intake of skilled civilian workers.<sup>461</sup> They underwent six months of preliminary training at the Royal Aircraft Factory before being sent to the Field, where their role was to act as the skilled experts within each

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<sup>460</sup> IWM 27, King.

<sup>461</sup> NA:AIR1/133/15/40/230 -*R.F.C. Mechanics – training and wages of.*

squadron. As an additional advantage, it was believed that these men could also help oversee the on-the-job, in-squadron training activities. During their artificer training, the factory supervisor graded the men at each stage of the programme. Alfred Boshell, for example, was described as ‘a good average all-round mechanic. [...] He took great interest in his work and can be relied upon to give a good account of himself.’ The unfortunate Boshell had ‘promised well’ in the engine shop until ‘he was injured by walking into a revolving propellor.’ An occupational hazard, if ever there was one.

Another fitter, T.W. Collins, showed well as a ‘sound and capable man’. Dubliner Thomas Cheeseman was a ‘good class and very capable mechanic [who was] able to think things through for himself and carry a job to a successful conclusion.’<sup>462</sup> G. Hall was ‘energetic, able and practical’, Cornelius Henderson ‘thoroughly good and capable’.<sup>463</sup> All of these men went on to serve the RFC in France or Egypt, with Henderson, a prewar engineer commissioned as a second lieutenant in the Engine Repair Shops in March 1918.<sup>464</sup> Not all men were reported to be so capable. Reginald Campkin, a London motor mechanic, was regarded by his foreman as a ‘plodder rather than a brilliant worker’. However, this did not stop Campkin from progressing to become a Sergeant-Major in August 1917.<sup>465</sup> On the other hand, the supervisor of E. Williams wrote that he had:

Proved to be of such an unsatisfactory character that I suggest he be discharged as useless for either the RFC or the Royal Aircraft Factory. [He is] a fairly good mechanic but hopelessly lazy.<sup>466</sup>

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<sup>462</sup> NA: AIR1/133/15/40/230 -*Mechanics*.

<sup>463</sup> *Ibid*.

<sup>464</sup> Findmypast, *Service Records 1912-1939*, Cornelius Henderson.

<sup>465</sup> NA: AIR1/133/15/40/230 -*Mechanics* & Findmypast, *Service Records 1912-1939*, Reginald Campkin.

<sup>466</sup> NA: AIR1/133/15/40/230 -*Mechanics*.

He was indeed discharged, his service record stating that he was unfit for his duties.

The leading artificer scheme became a source of short but intense dispute between RFC leadership and the indomitable Royal Aircraft Factory superintendent Mervyn O’Gorman. O’Gorman had been involved in British aviation since Secretary of State for War R.B. Haldane had appointed him the first civilian head of the balloon factory in 1909. His relationship with the military was often tense, and in 1916 he was forced to leave the Aircraft Factory post after being scapegoated following a parliamentary enquiry into RFC losses. On 22 April 1915, O’Gorman wrote indignantly to Warner at the Directorate. He had discovered that five of his men sent to the RFC had been later discharged from the Corps. He was at a loss to understand why such men should be released and said that if the RFC did not want them, he would ‘be very pleased to have them back at the RAF.’<sup>467</sup>

John Salmond, then Commanding Officer of the Administrative Wing, was unrepentant. He stated that he had received a report on each man’s capability, and in the RFC’s opinion, they ‘were not considered suitable for enlistment’.<sup>468</sup> Diplomatically, Warner at the Directorate tactfully argued on behalf of O’Gorman that ‘these men are very well reported on as mechanics of considerable ability.’ With hindsight, one can see that the issue was a lack of clear accountability, but Warner did perhaps hit the nail on the head when he suggested that ‘the introduction of such men into the Corps, and their immediate promotion over the heads of older soldiers, is likely to cause some dissatisfaction.’ They should, he said, be persevered with. Salmond escalated the

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<sup>467</sup> NA:AIR1/133/15/40/230 -*Mechanics*.

<sup>468</sup> *Ibid*.

matter to Lt. Col. Sykes, then commanding the Military Wing. He sided strongly with Salmond and ended the argument by ending the artificer scheme. He stated that in future:

No attempt should be made to turn men into all-round mechanics. [...] fitters should be fitters purely and simply, and men trained as riggers should have little or nothing to do with engines.<sup>469</sup>

As shown in previous chapters, the men who headed to France with the first wave of the RFC in August 1914 were experienced and skilled. The relatively slow expansion of numbers through 1914 and early 1915 meant that the RFC put no formal training system for technical men in place. Training such men would be principally achieved through acquiring knowledge whilst on the job. To illustrate, in January 1915, Major Marindin asked for ten air mechanics per squadron to be sent for service in France. He did not care much for their level of proficiency as ‘the technical training of these men will be carried out with the Expeditionary Force and trained men, therefore, should not be selected.’<sup>470</sup>

In most cases, recruits were sent to reserve squadrons, but in some cases, such as the one above, newly enlisted men could be sent straight to service squadrons in France for training. When this was the case, these squadrons had their establishment of trained men increased by ten to allow the training of the recruits to be carried out effectively.<sup>471</sup> As these recruits became operational, the excess manpower would be absorbed by promotions, transfers or casualties.

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<sup>469</sup> NA:AIR1/133/15/40/230 -*Mechanics*.

<sup>470</sup> NA:AIR1/367/15/231/7 -*Vol. VII*.

<sup>471</sup> The ‘establishment’ was the approved or sanctioned number of men allowed in the unit.

During the early part of the war, the RFC expanded by carving new service squadrons from Reserve Aircraft Squadrons. The latter was the main training unit for both pilots and men. The reserve aircraft squadron establishment was 50 per cent greater than a regular operational squadron. The excess allowed a nucleus of trained men to always remain within the training squadron when a new service squadron was carved from it. This system was logical and worked, but it was not without issues. Conflicting priorities were an immediate problem. The principal priority for the Squadron Commander of a Reserve Squadron was pilot training. His role was made far more complex by the need to contend with the training of a myriad of different types of tradesmen. The RFC was learning as it went along. Wing Commanders were ordered to investigate training methods employed among their squadrons regarding tradesmen and to 'report on the system generally as soon as some experience is gained.'<sup>472</sup> What worked well was to be shared in order to become best practice.

In early 1915, the RFC began experimenting with new ways of training their tradesmen. Alongside the in-squadron training, it introduced the first courses of instruction for fitters and riggers at the CFS. The aim was not only to train men but also to find new instructors that would allow the number of courses to expand. Again there were teething problems. In early May, the school's commandant complained that:

The fitters sent to the CFS for instruction are very young and inexperienced and, consequently, not in a position to take full advantage of the course of instruction.<sup>473</sup>

Men of this type were improbable to make instructors, and Salmond was requested to:

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<sup>472</sup> NA:AIR2/6/87/4469 - *RFC Formation of New Squadrons & Training of Personnel*.

<sup>473</sup> NA:AIR1/371/15/231/11 - *Vol. XI*.

Endeavour to detail a proportion of men who have already enough experience to profit sufficiently by the course to be able to instruct others on joining squadrons.<sup>474</sup>

The ongoing difficulties of finding and tracking men by specific trade were also highlighted at this early stage. The CFS complained to the Administrative Wing that too many riggers and insufficient fitters had been sent. This imbalance resulted in 'more riggers than can be usefully trained, while there are vacancies for men in the fitters' shops.'<sup>475</sup> There is no record of a no doubt exasperated Salmond responding.

It was soon evident that the combination of the CFS training courses and in-house reserve squadron methods was not producing enough trained men. Therefore, in early 1915, the RFC began sending men from both service squadrons and the RFC Aircraft Park to suppliers and aircraft manufacturers for training. The scheme's benefits were articulated in a letter sent to the firm Rushton, Proctor and Company. It was the case, the RFC said:

That much benefit accrues to the public service from the system of attaching small parties of the RFC from time to time to the workshops of Government contractors for aeronautical material. This measure has proved a valuable means of accelerating and perfecting the training of the RFC personnel.<sup>476</sup>

Early efforts were, however, poorly coordinated. Consequently, men were often sent to whichever supplier the supervising NCO was most familiar with. In March 1915, the Directorate stepped in to aid arrangements, and the Administrative Wing was made responsible for coordinating outsourcing. Squadrons were henceforth mandated as to which firms were to be used, and a limit of eight men per firm was imposed.

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<sup>474</sup> NA:AIR1/371/15/231/11 -Vol. XI.

<sup>475</sup> Ibid.

<sup>476</sup> NA:AIR1/139/15/40/296 -*Training -attachment of parties from the R.F.C. to contractors for instruction.*

Outsourced training would last fourteen days for riggers and seven days for fitters, a period that seems to have been arbitrarily arrived at by the RFC rather than calculated in conjunction with the firms concerned.<sup>477</sup> Initial numbers are detailed in Table 3.1 below.

Table 3.1- Training of Fitters & Riggers at Third-Party Factories – March 1915<sup>478</sup>

<b>Third-Party</b>	<b>Squadron/Park</b>
Aircraft Company	No.18 Squadron & Aircraft Park
Armstrong Whitworth	No.11 Squadron & Aircraft Park
Arrol Johnstone	No, 13, 14 & No.15 Squadrons & Aircraft Park
A.V. Roe	No.12 Squadron & Aircraft Park
Bleriot	No.11 Squadron & Aircraft Park
British & Colonial	No.13 Squadron & No.17 Squadron
Daimler – Gnome engines	No.11 & No.12 Squadron
Daimler – RAF engines	No.13, No.14 & No.15 Squadrons
Peter Hooker	Aircraft Park
Vickers Crayford	No.11 Squadron & Aircraft Park
Vickers Erith	No.14 Squadron & No.15 Squadron
Wolseley	No.13, No.14 & No.15 Squadrons

In June, the scheme was extended to include men from Reserve Aircraft Squadrons and other firms were added to the approved list of outsourced training providers. As an additional check on quality, the Royal Aircraft Factory was asked to inspect all new firms before approval was granted for them to commence training.<sup>479</sup> In August 1915, Martinsyde and Rolls Royce were added to the list of firms participating, and the Administrative Wing reported that some 114 men were now under training at third-party works. Despite pushback from Wolseley Motors in Birmingham that five days

<sup>477</sup> NA:AIR1/369/15/231/9 -Vol. IX.

<sup>478</sup> Ibid.

<sup>479</sup> NA:AIR1/139/15/40/296 -Contractors.

was sufficient for training purposes, the training period was also extended to fourteen days for both fitters and riggers.<sup>480</sup>

Whilst it is impossible to know for sure how well-trained the men became as a result of the initiative, some gauge of its success can be found in the fact that it continued to expand. Firms responded readily to the RFC's requests for help, and no evidence in RFC files suggests that any firm refused their requests. However, the scheme was not without issues. On 11 May 1915, some squadrons were instructed to send an NCO with their men after disciplinary issues.<sup>481</sup> On 14 August, the manager of the Beardmore aero-engine maker Arrol-Johnston Ltd wrote to the Directorate, suggesting the training scheme was not working as well as it might. He noted that over 200 men had passed through his factory by this stage, but while 'some have profited by and utilised to the best of their ability the experience they can gain here [...], others have not.' Without a supervising officer, he said, 'we have no control over them' and 'it is left entirely to the individual enthusiasm of the man to make himself proficient in our engine or not as it pleases him.' In a barely veiled criticism, the manager concluded,

While we do not wish to suggest that there have been any slackers, still, it is the truth that had there been a responsible officer to take charge of these men, they would have learned far more.<sup>482</sup>

The RFC was reluctant to spare officers or NCOs to oversee men during this training, but with discipline becoming a common theme of feedback, it had to consider action.

In a placatory letter to all firms sent on 25 August 1915, the RFC advised that:

The party will, if possible, be in charge of a non-commissioned officer for discipline, but failing this, the

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<sup>480</sup> NA:AIR1/373/15/231/14 -Vol. XIV and NA:AIR 1/139/15/40/296 -Contractors.

<sup>481</sup> Ibid.

<sup>482</sup> Ibid.

oldest man will be put in charge, and an officer will attend to make periodical inspections.<sup>483</sup>

On 4 September, the Directorate felt the need to write again to commanding officers of all Wings, instructing them that men must 'clock in and clock out of the works in the same way as workmen employed in the factory' and that 'it should be impressed upon the men that the rules of the works must be strictly obeyed.'<sup>484</sup>

Despite the troubles, the scheme continued, and it was expanded significantly during September and October 1915, as illustrated in table 3.2:

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<sup>483</sup> NA:AIR1/139/15/40/296 -*Contractors*.

<sup>484</sup> NA:AIR1/374/15/231/15 -*Vol. XV*.

**Table 3.2: Training of Fitters & Riggers at Third-Party Factories – October 1915**

<b>Aeroplane or Engine</b>	<b>Model or Task</b>	<b>Third-Party</b>
Aeroplane	BE2b	J.A. Whitehead & Co
		L.A. Jouques
	BE2c	Wolseley Motors Ltd
		British & Colonial Ltd
		G & J Weir Ltd
		Armstrong-Whitworth & Co Ltd
		Daimler Motor Co Ltd
		Vickers Ltd
		Ruston Proctor Ltd
	BE2c Erecting	Barclay, Curle & Co Ltd
		Alex Stephens & Sons
		Napier & Miller Ltd
		W. Denny Bros Ltd
		North British Locomotive Comp.
	BE2d	British & Colonial
	BE8a	Coventry Ordnance Works Ltd
		Vickers Ltd
	RE7	Austin Motor Co Ltd
		D. Napier & Son
		Siddeley Deasy Motor Car Co
		Coventry Ordnance Works Ltd
	FE2b	Boulton & Paul Ltd
		G & J Weir Ltd
	Bristol Scout	British & Colonial Ltd
	Martinsyde Scout	Martinsyde Ltd
	Avro	A.V. Roe Ltd
		Bleriot Ltd
		S.E. Saunders Ltd
	Maurice and Henri Farmans	Aircraft Manufacturing Co
	DeHavilland	Aircraft Manufacturing Co
	Morane	Grahame White Aviation Co
	Bleriot	Bleriot Ltd
	Voisin	Dudbridge Ironworks Ltd
	Sikorski Biplane	Hamilton Edwards Ltd
	Armstrong Whitworth	Armstrong Whitworth Ltd
Engine	RAF1A	Wolseley Motors Ltd
		Daimler Motor Co
		Siddeley Deasy Motor Car Co
		Lanchester Motor Co
		Austin Motor Co
		Rolls Royce
	RAF4A & 5	Siddeley Deasy Motor Car Co
	80 hp Gnome	Daimler Motor Cp
	90 & 100 hp Gnome	Peter Hooker
	Clerget	R. Gwynne & Co
		Rushton, Proctor & Co
	100 & 150 hp Green	Green Engine Co
	70 hp Renault	Rolls Royce
		Wolseley Motors Ltd
	80 hp Renault	Wolseley Motors Ltd
	140 hp Salmon	Dudbridge Iron Works
	120 hp Beardmore	Beardmore Aero Engine Co Ltd

As illustrated in the table above, the sheer complexity of supply arrangements, compounded by the myriad of aircraft and engine types, made the scheme's organisation a significant headache. Standardisation of supply arrangements was a topic much discussed both in Britain and amongst other belligerents. While not a discussion for this research, it is without question that the proliferation of aeroplane and engine types and their suppliers greatly complicated the training process.

A letter from Trenchard in March 1916 helps illustrate supply-related training problems:

In consequence of the decision to replace the Beardmore engines in RE7s by 12 cylinder RAF4a engines [...], I should be glad if it is possible to arrange for fifteen good fitters in the latter type of engine to be posted to the Expeditionary Force for duty when the RAF 12-cylinder engines are despatched. The Beardmore mechanics [...] will be available for transfer to the Home Establishment if desired. In addition, would it be possible to arrange for an expert in this type of engine to be sent from the factory for temporary duty at once to instruct the mechanics of No.21 Squadron in the new engine?

He added above his signature the words, 'This matter is, I think, most important.'<sup>485</sup>

The men's training at third-party suppliers continued into 1916, and unfortunately, so did occasional complaints. The RFC had also outsourced its driver training using the London General Omnibus Company's Training School and their Milman Street garage in London. The company had agreed that up to 400 drivers from the Army Service Corps and RFC could be sent for training at any one time. However, in January 1916, the company wrote asking for clarity concerning the arrangement, given that numbers had fluctuated from just 19 to 275 since the arrangement began. Understandably,

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<sup>485</sup> NA:AIR1/139/15/40/296 -*Contractors*.

while they were happy to be flexible, such a wide variation in numbers made it difficult for them to plan their own work.<sup>486</sup>

A.V. Roe, the manufacturer of the successful Avro aircraft, wrote to Captain Wheatley on 16 February 1916 in a letter forwarded to commanding officers across both the Brigades and Directorate. In an uncharacteristically direct manner, the company stated:

These fellows do not seem to take life at all seriously. [It was not a great advertisement when] men of the RFC have lolled about the Machines. [He had] often wondered to what extent we are responsible for these men; I do not like to report them because they might take out their spite [but] I shall be pleased to hear whether you have heard anything at all from other manufacturers.<sup>487</sup>

For young men removed from the routine of squadron life, some hours spent in a third-party factory probably felt like a change of pace, and it is perhaps not surprising that some took the opportunity to mess around. It should be said that the number of complaints is small when set against the throughput of the scheme. Recollections found in numerous memoirs must also be considered if judging the men. They attest to the dedication of the fitters, riggers and mechanics, and it is hard to find anything but fulsome praise for the men. Pilot officer T.B. Marson, for example, recalled that:

The mechanics (no squadron had a better lot) were imbued with the same pride and interest in the squadron that he felt himself [...] The squadron contained many fine craftsmen, and there was little they could not make or repair.<sup>488</sup>

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<sup>486</sup> NA:AIR1/383/15/231/24 -Vol. XXIV.

<sup>487</sup> NA:AIR1/139/15/40/296 -Contractors.

<sup>488</sup> Marson, *Scarlet*, p.136.

R.R. Money remembered that ‘very few orders had to be given and scarcely any supervision was exercised’.<sup>489</sup> Major Dore wrote, ‘we have the best mechanics in England, the best wireless operators, the best instrument makers and the most skilled armourers.’<sup>490</sup> Given the historiography’s fixation with the so-called aces, Joubert de la Ferté’s book *The Forgotten Ones* about the ground crew stands out. He is fulsome in his praise for the dedication of men who were, in his opinion, unsung heroes.<sup>491</sup>

Elsen Foard, the son of a Berkshire grocer, joined in March 1916, by which time over 100 men from each Brigade were training at third-party works. Foard had been working as an apprentice at a local garage before joining up. After drills and parades at Larkhill and a trade test that involved tool identification and a practical filing test, he was deemed ready to be sent straight to a squadron. His previous fitting experience at the garage marked him down to be ‘fast-tracked’, and just a month after joining, he was posted to Savy, France, as a 2/AM with ‘A’ Flight, No.13 Squadron.<sup>492</sup> He recalled that each Flight Sergeant was responsible for the mechanics’ training and standard of work in his flight. The jobs customarily done by the fitters were filling petrol and oil tanks and clearing valves of sooty deposits. When 13 Squadron started to replace its aged BEs with RE8s, he was sent on an aircraft-specific training course with Technical Sergeant Major James, a pre-war regular from Montrose. After the course, Foard was posted to an HQ flight, where he became responsible for significant overhauls.<sup>493</sup>

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<sup>489</sup> Money, *Soldiering*, p.15.

<sup>490</sup> Quoted in R. Barker, *Bloody April*, p.177.

<sup>491</sup> P. Joubert de la Ferté, *The Forgotten Ones: The Story of the Ground Crews* (London: Hutchinson, 1961).

<sup>492</sup> G. Mottram, *A Fitter’s Tale* in *Cross & Cockade* (Vol.10, No.4, 1979), p.176.

<sup>493</sup> *Ibid*, p.177.

The RFC was an organisation that recognised the importance of training manuals and working guidebooks, a reflection of what Aimee Fox has referred to as 'vertical learning'.<sup>494</sup> Published works were designed to supplement the men's notes and act as a way of catching and documenting best practices throughout the service. An early example is the manual *Instructions on the Dismantling, Maintenance and Lubrication of the LeRhône Engine*, of which 300 copies were issued to squadrons in December 1915.<sup>495</sup> In March 1916, 200 copies of *Bleriot Monoplane – Hints on Erection and Adjustment* were requested for distribution.<sup>496</sup> In the same month, a comprehensive demonstration of how much written material was being made available at this stage can be found. Major Powell of the Directorate wrote to the Officer Commanding Castle Bromwich airfield. The inference from the letter is that each airfield had what was essentially a reference library, and Powell was arranging to add to the Castle Bromwich collection.

Powell promised twenty copies of *Notes on Flying Various Aeroplanes* and *Notes for the Guidance of Mechanics in Charge of Aeroplanes*. He noted that the influential publication *Notes for Observers* had now been absorbed into the *RFC Training Manual*, the second edition of which was now distributed. Copies of published works by American and European authors were also included, as well as other manuals such as *Spinning, Silhouettes of Aeroplanes, Notes on care & maintenance of Wireless Signalling Apparatus, Notes on Artillery observation from Kite Balloons, The 100hp Monosoupape Gnome engine, Notes on RAF engine, Notes on Photography, Signals between Aeroplanes and Artillery (clock code), Hints to assist Observers to Locate*

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<sup>494</sup> A. Fox, *Learning to Fight: Military Innovation and Change in the British Army 1914-1918* (Cambridge: Cambridge University Press, 2018), p.78.

<sup>495</sup> NA:AIR 1/380/15/231/21 -Vol. XXI.

<sup>496</sup> NA:AIR 1/386/15/231/27 -Vol. XXVII.

*German Battery Positions, and Wireless Telegraphy and Telephony Simply Explained.*<sup>497</sup>

The *RFC Training Manual Part I* was produced in 1914, principally under the direction of Lt. Col. Sykes. In that edition, 75 per cent of the content related to reconnaissance. In the second December 1915 edition, pages dedicated to reconnaissance had been reduced to closer to 35 per cent. Material related to artillery cooperation reflects the increasing reliance on the batteries and more than doubled to 45 per cent between issues. Aerial fighting, virtually non-existent in 1914, was almost 10 per cent of content in 1915.<sup>498</sup> When the second edition, the *RFC Training Manual Part II*, was distributed in early 1916, it was mandated that a copy was sent to every RFC officer. Collectively, the Directorate distributed some 3,000 copies.<sup>499</sup> Publications became more focused and specific as more information was gained. For example, from September 1916, all riggers received copies of *Truing-up of Aeroplanes 1916*, a guide covering the specifics of each aircraft type and general principles.<sup>500</sup>

As discussed in chapter two, from 1916, the competition for skilled labour became acute in Britain. Consequently, it became clear that the RFC would need to rely increasingly on training its fitters and riggers rather than finding skilled or semi-skilled men. Until April 1916, a limited number of technical courses occurred at the Regent Street London Polytechnic. In April, the decision was taken to end men's training at this institute and expand the activity to one new large school run by the RFC. This new

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<sup>497</sup> NA:AIR1/387/15/231/28 -Vol. XXVIII.

<sup>498</sup> RAFM:001289 Training Manual, Royal Flying Corps – June 1914 and RAFM:001290 *Training Manual, Royal Flying Corps (Military Wing) – December 1915.*

<sup>499</sup> NA:AIR1/386/15/231/27 -Vol. XXVII.

<sup>500</sup> Air Department *Truing-up of Aeroplanes 1916* (London, Air Department, 1 September 1916, No.5).

school would become the School of Technical Training at Coley Park, Reading.<sup>501</sup> In the interim, the decision was taken to expand the No.1 School of Military Aeronautics. In addition to the initial ground training of the 300 pilot officers, the school would now also be responsible for training 1,000 fitters and riggers.<sup>502</sup> Two weeks later, with approval granted, the CWS Jam Works in Reading was taken over for the purpose. Initially, the five-week course would give men a general knowledge of both fitting and rigging alongside specialist knowledge of at least one engine or machine. The training course was continually adapted based on learning, both in Reading and via feedback from the Field. In August 1916, a specialist engine fitters course was added for selected officers and men. The course duration was flexible depending on the complexity of the engine being studied and the capability of the men.<sup>503</sup>

By October 1916, the technical course had expanded from five to eight weeks, and, following feedback from France, greater emphasis was placed on the fitting of engines. By then, 125 trained riggers and fitters were being produced a week, an output of 1,000 for every eight-week course.<sup>504</sup> By this point, a second school, now known as the School of Fitters, had been added at Netheravon, and on 2 November 1916, approval was granted for a third school in Edinburgh.<sup>505</sup> The opening of additional schools added much-needed capacity to the training system, but the system was growing spontaneously rather than by calculated design. The new schools gave rise to a confusing command structure. The Reading school was commanded by the Commandant of No.1 School of Military Aeronautics. In contrast, the two new schools

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<sup>501</sup> NA: AIR1/683/21/13/2234 - *Precis*.

<sup>502</sup> *Ibid*.

<sup>503</sup> *Ibid*.

<sup>504</sup> *Ibid*.

<sup>505</sup> NA: AIR1/120/15/40/86 - *Establishment of School of Fitters at Netheravon - October to December 1916*.

became the direct responsibility of the Training Brigade. In February 1917, the RFC removed this anomaly, merging the latter schools under Reading control while simultaneously moving all three to now report to an 'Inspector of Technical Training at the War Office.'<sup>506</sup> By this stage, there were now 1,440 men under instruction across the three entities, training that required some 240 instructors.<sup>507</sup>

As the expansion of the RFC accelerated in 1917, the corresponding shortage of skilled labour became more serious. However, by utilising the fledgling training system alongside outsourcing arrangements, the RFC found a way to continue to train its support personnel. The process was aided by a further organisational change that would significantly assist in improving the efficiency of the ground training system. Following a complete tour of all units of the Training Division, Salmond and Livingston put forward a radical reorganisation. The current system involving reserve squadrons to train personnel was abandoned. The development of Training Depot Stations from an amalgamation of three reserve squadrons allowed the number of support personnel to be drastically reduced through economies of scale. Thus, when tradesmen were required in significantly larger numbers, these efficiencies helped reduce the number of men required and eased the administrative burden on the training system.<sup>508</sup>

The use of third-party civilian firms continued, albeit on a smaller scale, even after the RFC's training systems and processes had matured. On 30 June 1918, it was finally reported in an internal RAF memorandum that 'Courses of instruction on Aero Engines

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<sup>506</sup> NA: AIR1/123/15/40/139 -*Correspondence regarding the Amalgamation of Schools of Fitters & Riggers at Reading, Netheravon & Edinburgh into School of Technical Training (Reading) 1917.*

<sup>507</sup> Ibid.

<sup>508</sup> Livingston, *Hot Air*, p.103.

at civilian firms (except for a Rolls Royce course) were discontinued'.<sup>509</sup> The Rolls Royce courses continued to run fortnightly at the company's Derby factory while other training was moved back in-house to be carried out at the School of Technical Training. Similarly, the courses of instruction on 'motor transport fitting and driving at civilian firms', including the London Omnibus Company, were replaced by internal courses at No.1 Motor Transport Depot at Hurst Park.<sup>510</sup>

In 1918, the training syllabi for most technical areas were further overhauled. The new syllabus for courses in rigging, for example, highlights just how far the instruction of tradesmen had come by November 1918.<sup>511</sup> Instruction was no longer left to the initiative of individual trainers. Instructors themselves had formal eight-week courses with exams to pass before they qualified as rigging instructors. Rigging instruction was divided into eight segments: the theory of flight, materials, workshop practices, rigging, wire splicing and bending, sailmaking, care, handling and maintenance of machines, and bomb racks and bomb sights. A similarly in-depth programme of study for engine fitters included metals, lubrication, cooling systems and engine design, and the practical aspects of dismantling, tuning, overhauling, and maintaining engines.

The change of nomenclature brought about by the creation of the Royal Air Force meant that men entering as tradesmen became known by the contemporary term mechanic. After entering the RAF at one of the nine reception depots, they would be classified by trade test into one of the trades in table 4.3:

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<sup>509</sup> NA:AIR1/676/21/13/1840 – *Notes on Flying Training at Home*.

<sup>510</sup> *Ibid.*

<sup>511</sup> NA:AIR1/160/15/123/3 -*Syllabus for courses for instructors in Rigging, Engines and Aerial Navigation*.

Table 4.3: Mechanics – trade specialisms in 1918

Acetylene Welder	Armourer	Blacksmith	Boat builder
Camera Repairer	Carpenter	Coppersmith	Draughtsman
Driver – Motor boat, Petrol, Steam		Electrician	Fitter – Engine
Fitter -General	Mech transport, jig and tool maker		Heavy Worker,
Instrument repairer	Machinist	Magneto Repairer	Millwright
Motor Body Builder	Moulder	Pattern maker	Photographer
Pilot	Propellor Maker	Rigger	Tinsmith
Turner	Upholsterer	Vulcaniser	Winch driver
Wireless Operator	Wireless Mechanic		

Irrespective of trade, all men would have three weeks of drill and discipline before a six-day course of musketry instruction. Depending on their trade, they would then be drafted to one of the technical establishments for specific training. Most men went to Halton Camp to undertake an eight-week programme. Blacksmiths, coppersmiths, tinsmiths and general fitter courses lasted twelve weeks, while those taking the engine fitters course would be there for sixteen weeks. Blacksmithery had moved beyond shoeing transport horses to making engine forgings and metal fixtures. Coppersmiths learned to make induction pipes. Engine fitters would complete the same general fitter course before moving on to specialist instruction which involved becoming an expert on one particular engine type.<sup>512</sup>

General fitters would then typically go on to work at repair parks and depots, whereas engine fitters were more likely to join a squadron. Motorboat drivers used by the Naval service would go on a course at Grain or Calshot, while Hurst Park was reserved for mechanical transport drivers and vehicle fitters. The RFC deemed draughtsmen, steam drivers, jig and tool makers, instrument repairers, millwrights, motor body

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<sup>512</sup> Cutlack, *Flying Corps*, p.431.

builders, moulders, pattern makers, propellor makers, upholsterers and vulcanisers sufficiently skilled when they attested. Provided they passed their trade test, they were posted directly to a Depot and into service.

In theory, at the end of their respective course, all men would be presented with a 'Certificate of his Ability'. They would then be drafted to a unit as fully qualified air mechanics. Unfortunately, the practice did not always match the theory. Even in late 1918, the RAF was forced to recognise that:

Owing to the recent demand for mechanics, the most skilled men are frequently drafted away to stations before the completion of the Disciplinary Course, in which case they receive no Service Technical Instruction at all. They become ordinary mechanics of the station to which they are appointed.<sup>513</sup>

Thus, while things had markedly improved by 1918, operational demand would trump training time right up to the Armistice.

### 3.3 - Training for Equipment Officers

Equipment officers were chiefly engineers recruited from associated trades. Such backgrounds were deemed ideal for the role of running workshops or depots. Other equipment officers, often pre-war clerks, managed the complex technical stores operations that the RFC maintained. Some ran the receipts and issues ledgers, and managed stocktakes. Others oversaw the complicated logistics channels for replacing parts as they were used. Initially, there was no formal training programme for such

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<sup>513</sup> NA:AIR1/2087/207/7/39 - *Training Courses in RAF for Commissioned and Non-Commissioned Personnel.*

men, and they were left to enhance their initiative through the experience of those already in positions. This unsatisfactory arrangement was changed in the Spring of 1916 when an Equipment Officers Section was opened at No.1 School of Military Aeronautics to provide some elementary instruction.<sup>514</sup> More advanced training was then continued at aircraft depots before onward deployment.

On 11 March 1918, a new syllabus was released for an eight-week course for Equipment Officers. Until this point, all Equipment Officers were treated as generalists, receiving instruction in all aspects of technical stores, Quartermaster's stores, motor vehicles, engine repairs, and rigging.<sup>515</sup> The new syllabus reduced the amount of general instruction and introduced specialist training in one aspect of equipment officer duties. These new courses for Equipment Officers – who became Technical Officers following the formation of the RAF - were held at the new Technical Officers School at Henley. Four specialisms were identified, engines, rigging, motor transport, and stores. After two weeks of standard introduction, specialists spent the remaining six weeks studying their respective subjects.

Stores Technical Officers were treated slightly differently from their engine, rigging and motor transport counterparts. They spent their six weeks studying each of the other specialisms before a final two weeks on the intricacies of stores accounting. The sound logic for this was that men who had received an introductory course in each area would have accumulated knowledge of many components in circulation. Such awareness would significantly help them in their role in stores.

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<sup>514</sup> NA:AIR1/15/15/1/63 - *New Syllabus - Equipment Officers School of Instruction - 4/6/1918 - 8/11/1918.*

<sup>515</sup> NA:AIR1/160/15/123/10 - *Correspondence on, and amendments to syllabuses for Oxford and Reading Schools.*

Before this, officers and men entering stores often did so with very little knowledge of what any aircraft or motor component looked like. Non-officer storeman William Berry recalled no direct training for his positions in aircraft depots and stores in 1916.<sup>516</sup> His training as an export clerk would have taught him the importance of creating effective paper trails, but the world of aircraft parts was new. As Peter Dye has observed, the complexity of spares that the RAF managed was with 'few if any pre-war parallels.'<sup>517</sup> Every week the RAF required one to two thousand tons of stores and had over 50,000 individual part items.<sup>518</sup> Nor was it simply about scale. Obsolescence was a significant issue, and for Berry and his colleagues, training and aircraft manuals became vital in assisting them in managing old parts out of stores and new parts in.

The training for Technical Officers was again enhanced in September 1918 when a new syllabus from the Technical Officers' School of Instruction was issued. Engine Specialists would now undertake a ten-week course of instruction, and rigging specialists continued with an eight-week course with an amended syllabus. After completion, they would manage one of the myriads of depots, aircraft parks, and workshops. Motor transport specialists had a six-week programme before being sent to a motor transport hub. Administrative men would continue their current course of instruction before they took up a position at one of the RAF stores' facilities.<sup>519</sup> All Equipment Officers faced exams at the end of their course, each carrying a 60 per cent pass mark. Men failing the exams found that their fate was in the hands of the

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<sup>516</sup> IWM:1,Berry.

<sup>517</sup> Dye, *Bridge*, p.147.

<sup>518</sup> Ibid. p.147-148.

<sup>519</sup> NA:AIR1/15/15/1/63 – *New Syllabus*.

school Commandant. He had the option – often taken - to dismiss them back to civil life rather than allowing them to resit the exam if he so chose.<sup>520</sup>

Equipment Officers also played a crucial role in training other officers and men at both the Schools of Military Aeronautics and Technical Training. There they would train would-be pilots, other Equipment Officers, or technical tradesmen in their specialised area. James Gascoyne had been a driver in the RFC since 1913 and prided himself on his knowledge of the motor transport used by the Corps.<sup>521</sup> After receiving a commission, his knowledge and expertise did not go unnoticed. In the Autumn of 1916, he was posted to Reading to teach an Equipment Officer's course. In addition to delivering lectures on motor engineering and engines, he was also responsible for writing the training manuals for both the Crossley and Leyland tender.

### 3.4 - Training Armourers

Armament officers were responsible for the care, cleaning and upkeep of all guns in the squadron, including their mountings and sights. They were also to ensure that pilots in their squadron had received gunnery training and were aware of the latest developments. Assistant armourers managed the men responsible for the day-to-day maintenance and servicing of all armaments in the squadron. Alongside an in-depth understanding of the machine guns themselves, armourers would ensure that ammunition was accurately filled and belts did not stick – the source of many complaints in pilot memoirs. A unique record of ammunition had to be maintained and

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<sup>520</sup> NA:AIR1/160/15/123/6 -*Syllabus for Technical Officers at the School of Instruction, Henley.*

<sup>521</sup> IWM:16, Gascoyne.

agreed upon with stores. Daily tallies of ammunition spent and remaining on hand in the squadron had to be reported.

Similar to other disciplines, the first significant developments in training for such men came in late 1916. Armourers were to be trained alongside Gunner-Observers at Farnborough during a one-month course. The programme had a 100-man capacity, and perhaps in a forlorn effort to prevent semi or untrained men from being posted early, Lt Col. Charlton at the Training Brigade stated, 'The duration is definite, and no man will be removed until he has either completed the course or been rejected as unsuitable.'<sup>522</sup> On completion of the training, the men would be assessed by the Training Brigade, and a decision would be made as to which men became Armourers and which would head to Hythe for training as Gunner-Observers. Since armoury was not a trade that a man would be joining with prior knowledge, the RFC preferred to find other skilled RFC tradesmen and re-muster them as trainee armourers. In December 1916, reflecting on the scarcity of such men, Major Drew of the Directorate of Air Organisation stated that while suitable men of any other trade could be trained as an armourer, it was expressly forbidden for any existing armourers to be re-mustered to another trade.<sup>523</sup>

In June 1917, an Armament School opened at Ealing, London administering courses for both pilots and mechanics. There were three courses aimed at the latter, one for Armament Officers, one for Assistant Armourers and finally, one for Gear Fitters, the men who would fit and maintain the interrupter gears on fighter aircraft.<sup>524</sup> By

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<sup>522</sup> NA:AIR1/129/15/40/205 -*System of Training in Aerial Gunnery*.

<sup>523</sup> Ibid.

<sup>524</sup> NA:AIR1/683/21/13/2234 -*Precis*.

December 1917, demand for such training had outstripped supply, and the school was forced to move to a larger facility at Uxbridge. In early 1918, an Armourers (Technical) course was also implemented. This eight-week programme consisted of six weeks on guns and gun gears and two weeks on bombs, bomb gears and sights. The majority of men selected for the course continued to be serving RAF personnel who had shown an aptitude or had experience in weaponry. They were joined by a few civilian enlistments 'with special qualifications' or by Boy Armourers who had been trained in this area before joining the RAF on their eighteenth birthday.<sup>525</sup> After the course, the men would be posted to Gunnery Schools and squadrons at home and abroad as qualified Assistant Armourers.

Despite the advances in training, things did not always proceed as planned. On 5 June 1918, Major General John Salmond, now commanding the RAF in the Field, wrote a memorandum complaining about the standard of Armourer training. Unlike Trenchard, who habitually commented about training, Salmond, having formerly headed the Training Division, understood the issue and potential remedies well. Salmond claimed that while men posted overseas had a good theoretical understanding of guns, most lacked practical experience. The:

Deficiency in training has been overlooked by us on account of our demands on England for so many armourers and has been met by distributing these men amongst squadrons in the hope that they might become efficient when mixed with men of practical experience.<sup>526</sup>

Whilst notifying the Directorate of the issue, Salmond also submitted detailed suggestions to improve the situation. He proposed extending the length of Assistant

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<sup>525</sup> NA:AIR1/2087/207/7/39 - *Training Courses*.

<sup>526</sup> NA:AIR1/1125/204/5/2110 - *Reports and Training in Gunnery*.

Armourer courses to two months, with every man being given practical training in, amongst other things, the repair of guns, fittings and mountings – to as many aircraft types as possible, gun sights, filling ammunition links, arming and unarming bombs, and fitting racks. He also proposed extending the training beyond this course. It would be beneficial, he said, if men could subsequently attend a School of Aerial Gunnery to receive some practical experience. Failing that, some experience gained in an Aircraft Park would be of value before the man finally transferred to his service squadrons.

As in other areas, the RFC issued several official publications that became lengthier and more detailed as the war progressed. In two 1918 examples, the RAF issued *RAF Instructional Notes on the Lewis Gun*, a 42-page pamphlet that combined several instructional notes into one book.<sup>527</sup> More substantial was the September 1918 publication, *Details of Aerial Bombs*, which drew together 36 instructional leaflets giving details on loading and fusing various RAF ordnance and details on bomb racks.

The introduction of the latter stated that:

These instructions and diagrams will, as far as possible, be kept up to date by the issue of fresh leaflets and diagrams, as required from time to time by the introduction of modifications in the existing type of bombs or by the advent of entirely new designs.<sup>528</sup>

The war ended before the instructions required updating.

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<sup>527</sup> The War Office *R.A.F Instructional Notes on the Lewis Gun, 1918* (London: War Office, 1918).

<sup>528</sup> Air Ministry *Details of Aerial Bombs* (London: Air Ministry, September 1918).

### 3.5 - Training for Photography

Almost as soon as the first photographs had been used in anger to prepare for the Battle of Neuve Chapelle in March 1915, the RFC found that aerial photographs could be enlarged and viewed by groups, aiding planning considerably. The method employed lantern slides and an Optical Lantern, an item similar to an overhead projector. With the use of lanterns gaining traction in France, the responsibility of producing the slides rested with the RFC's photographic section. With no in-house expertise, Commanding Officer Major Campbell sought the assistance of Newton & King, the 'leading lantern slide manufacturer in the country'.<sup>529</sup> They agreed to take two RFC men at a time for a course of instruction in 'professional slide making' until the section achieved proficiency.<sup>530</sup> The RFC also found other ways of using third parties. The Booth brothers of the Cheshire Regiment, who had transferred as camera repairers, returned to their employer Thornton-Pickford Ltd for a refresher course of instruction before joining the Corps.<sup>531</sup>

When occasional complaints were made about the standard of photography training, the RFC sought to act quickly. On 26 September 1915, not long after the first School of Photography had opened at Farnborough, the Training Brigade informed the Directorate in London that they had received complaints 'against the training of Photographic Assistant Equipment Officers (PAEO) in particular' from France.<sup>532</sup> The same 'chicken and egg' situation applied to photography as it did to other areas of training. The RFC in France demanded men at short notice. It demanded them in more

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<sup>529</sup> NA:AIR1/379/15/231/20 - Vol. XX.

<sup>530</sup> NA:AIR1/381/15/231/22 - Vol. XXII.

<sup>531</sup> NA:AIR1/386/15/231/27 - Vol. XXVII.

<sup>532</sup> NA:AIR1/127/15/40/146 - *Formation of Pool of Photographers at R.F.C. Recruits Depot.*

significant numbers than were available. When these demands were met - in the only way possible – by sending semi-skilled men, complaints of inadequate training ensued. The same situation existed for non-officer photographic men too. With these men, ‘in most cases, they have only been allowed to stay at the Recruits Depot for training for periods varying from 7 to 14 days.’<sup>533</sup> To counter the issue, the Training Brigade sought authority to immediately establish a ‘permanent pool of forty photographers’ at the Recruits Depot. When ready, these men could be drawn upon by the Photographic Training School at Farnborough. They would also be supplemented by fifteen Photographic Assistant Equipment Officers and become available to backfill in either the Training Brigade or France as required.

Three days later, on 29 September 1915, London confirmed that the request for the pool was agreed upon and that extra PAEOs would be distributed when identified. In November, the Administrative Wing was informed by the Directorate that no less than fifty photographers, including repairers, were to be kept as a pool at the Photographic Training School, with an additional thirty maintained as a pool at the Recruits Depot. A 14-day syllabus was implemented, though the Officer Commanding the School noted that ‘obviously if more time can be given to the training of the men, the more important points will be enlarged on and further practice obtained.’<sup>534</sup> In light of demand, this was wishful thinking.

The approved increases resulted in the generation of 35 trained photographers a fortnight instead of the previous 12.<sup>535</sup> The increase might sound trivial in the context

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<sup>533</sup> NA:AIR1/127/15/40/146 – *Pool of Photographers*.

<sup>534</sup> *Ibid.*

<sup>535</sup> *Ibid.*

of RFC growth, but even a seemingly modest request had significant consequences for the training establishment. The Regent Street Polytechnic had to be called upon to provide extra training capacity for the RFC school. Additionally, accommodation at the school proved inadequate, so extra buildings were required to house those under training. Darkroom capacity was a further problem. An extra one was built at Adastral House to assist, but that 'still only leaves five dark rooms, containing seven lanterns, for instruction work,' noted the School's commanding officer.<sup>536</sup> Consequently, he took over a building at nearby Pinehurst, where he had his carpenters roughly build additional facilities. Thus, such a small change sprouted a significant number of actions.

By the end of 1916, 54 men were under instruction in photography, only sixteen of whom were at the RFC's school at Farnborough. A further twelve men were under instruction at the hastily constructed Pinehurst location, but the majority, twenty-six, were being trained at the London Polytechnic. Under NCO instructors Sergeants McLellan and Leach and Corporal Newson, these men were trained in using cameras, the Batchelor mirror, and the camera obscura.<sup>537</sup> The camera obscura, involving centuries-old pin-hole camera science, had been introduced as an aid to bomb training. It involved a machine flying over the camera obscura at various heights from which it was intended that bombs would be dropped. Using specially designed equipment and readings from charts, bombsights could be set before aeroplanes left the ground. The use of the Obscura shows that the Photography School was focused

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<sup>536</sup> NA:AIR1/127/15/40/146 - *Pool of Photographers*.

<sup>537</sup> D. Spruce, 'The Development of British Air Power on the Western Front to the end of 1915' in *Cross & Cockade*, (Spring 2021, Volume 52/1), p.110.

on the training of bombing pilots as well as those using traditional aerial cameras for reconnaissance purposes.

The demand for trained photographers continued to grow, and in early January 1917, the School of Photography reported that it was on track to train 150 men a month.<sup>538</sup> In August, an enlarged School of Photography was created at South Farnborough with an establishment of 115 men. By April 1918, the size of the school had more than doubled, with 310 men and women now working and training at the facility.<sup>539</sup> In a sign of how expansion continued until the Armistice, on 11 September 1918, demands were made to double the output of photographers, camera repairers and photographic officers once more. As no accommodation was available for these additional men and women, Major Burchill, Commandant of the school, arranged to operate shifts allowing training to take place day and night.<sup>540</sup> While output from the school was doubling, emphasis was also placed on improving the quality of the training and absorbing the training requirements of the old RNAS.<sup>541</sup> The breadth of the school's workload also expanded beyond the naval aspects. The growth of cinema as a training medium necessitated the training of men in using and maintaining cinematographs. This burden also fell on the School of Photography. Consequently, at the war's end, the school's establishment had increased to over 700, with more than 530 of these under instruction.<sup>542</sup>

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<sup>538</sup> NA:AIR1/127/15/40/146 - *Pool of Photographers.*

<sup>539</sup> NA:AIR1/683/21/13/2234 - *Precis.*

<sup>540</sup> NA:AIR1/17/15/1/86 - *School of Photography South Farnborough, Establishment of. 10/12/1916 to 7/11/1918.*

<sup>541</sup> NA:AIR1/683/21/13/2234 - *Precis.*

<sup>542</sup> NA:AIR1/17/15/1/86 - *School of Photography.*

By November 1918, the complexity of the training requirements at the School of Photography had resulted in separate courses for Air Mechanics (Photographers) and Camera Repairers (Photographers).<sup>543</sup> The trainees on the former course were principally civilians with photographic experience, plus a few additional transferees combed out from the Army who had such experience. The ten-week course trained all aspects of photography, including the camera mechanism, attachment to aeroplanes, printing, developing plates, loading magazines, mixing of solutions, and using lantern slides, in addition to a theoretical course on the value of photography in warfare. There were examinations at its conclusion, requiring the student to pass each aspect to complete the course. If successful, he would then be mustered as a photographer and posted to Wings to continue his practical training in the Field. This latter 'on the job' training was expected to last an additional three months for the ablest and five to six months for others. The new Camera Repairer course was open to men from select civilian trades, principally instrument makers or watchmakers. The five-week course taught the men how to adjust and repair the mechanism of the cameras, including the Mark III Hythe Camera Gun used at Gunnery schools. On completion, these men would join a Wing photography section as demand for them required.<sup>544</sup>

### 3.6 - Training for Wireless & Telegraphy

In late January 1915, Capt. B.E. Smythies, a former Royal Engineer with wireless experience, was attached to the RFC and sent to St Omer. His brief was to create a training system for wireless operators in the RFC and to ensure that the Corps had

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<sup>543</sup> NA:AIR1/2087/207/7/39 - *Training Courses*.

<sup>544</sup> *Ibid.*

adequate equipment in this new but rapidly expanding area.<sup>545</sup> He was soon joined by two civilian experts and newly appointed officers, T. Vincent Smith and S.C. Callaghan. The three worked swiftly, and just a month later, in February 1915, the RFC made its first attempts to introduce some standardised wireless training.

The initial course was modest, consisting of a one-week programme of morning-only instruction established at the Reserve Signal Depot of the Royal Engineers at Aldershot. The minor nature of the course meant that numbers were limited to just twelve men. Instructions read that only 'those officers undergoing instruction for appointment to Assistant Equipment Officers should attend, and such other Flight Commanders and Flying Officers as can be spared'.<sup>546</sup> The attendees would be asked to provide their thoughts as 'if successful, arrangements will be made to institute further similar courses.'<sup>547</sup>

The RFC practice of seeking external training assistance also extended to wireless telegraphy. In May 1915, Major Dowding, Officer Commanding No. 9 Squadron, met with a Mr Turnbull of the Marconi Company.<sup>548</sup> The output of the meeting was Marconi's agreement to produce and run a course of training for RFC wireless operators. Dowding then informed the Administrative Wing that they should liaise with Turnbull and 'send all wireless operators now in the RFC who require training to Marconi House [...] as early as possible.'<sup>549</sup>

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<sup>545</sup> Jones, *WITA*, v2, p.92.

<sup>546</sup> NA:AIR1/368/15/231/8 -Vol. VIII.

<sup>547</sup> Ibid.

<sup>548</sup> No.9 Squadron was at this time used for experimental wireless work.

<sup>549</sup> NA:AIR1/371/15/231/11 -Vol. XI.

Soon after, it was clear that demand for wireless operators would outstrip Marconi's capacity. The RFC, therefore, sought immediately to source other training providers. The London Telegraph Training College submitted a proposal to assist on 23 June 1915 and was appointed soon after.<sup>550</sup> The college's proposal guaranteed training places for 75 further men at a time. Demand was such that the combined outsourced numbers quickly increased to 400 men.<sup>551</sup> In August, the Regent Street Polytechnic joined Marconi and the London Telegraph Training College in providing wireless training. The Polytechnic ran a 13-week training course, and records show that the RFC paid £5 per man for the training.<sup>552</sup> Each man was given a fortnight's trial, during which time the Polytechnic could terminate the men's training if they proved unsuitable.<sup>553</sup> Three days after contracting with the Polytechnic, the RFC received a new offer from the British School of Telegraphy in Clapham. The school offered the RFC training for a further 200 men at any point in time and became the fourth wireless training provider for the RFC.<sup>554</sup>

The RFC recognised that despite its oversight of the external training syllabi, men would still need some advanced instruction when they entered the Corps. Thus, an advanced training scheme was conceived for delivery at Brooklands. Unfortunately, whilst the concept was sound, the RFC had little initial capability to make the scheme a reality. At the end of August 1915, the first advanced programme for just 12 men was instigated. The idea was that initial cohorts would then become trainers themselves. In this way, the capability to deliver the training would grow with each

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<sup>550</sup> NA:AIR1/683/21/13/2234 - *Precis*.

<sup>551</sup> *Ibid*.

<sup>552</sup> *Ibid*.

<sup>553</sup> NA:AIR1/373/15/231/14 - *Vol. XIV*.

<sup>554</sup> *Ibid*.

course until sufficient trainers existed. Pragmatically, however, the RFC needed its wireless operators in the Field as soon as possible and could not wait for an advanced training scheme to be constructed.

Consequently, while it was a stated desire that 'eventually it may be possible for all wireless telegraphists to undergo this course', the RFC recognised that for the vast majority of men, it would be 'necessary to draft them into units as soon as they have completed their instruction in the London schools'.<sup>555</sup> It would take until 20 November 1915 for the RFC Wireless School at Brooklands to be formally established along the conceived lines. Elementary training capabilities had also been instigated in-house, supplementing the outsourced arrangements. However, by July 1916, in-house numbers were still relatively small, with 300 elementary and 100 advanced pupils being trained at a time by the RFC.<sup>556</sup>

By late 1917, the training of wireless telegraphy had largely been brought back in-house, though would-be recruits were encouraged to take external courses before applying to the Corps. Wireless officer training was now established at the Wireless & Observers School at Brooklands, where on average, thirty men were enlisted on each course. In contrast, the School of Wireless Operators at South Farnborough was training some 600 air mechanics at a time. On 1 October 1917, the Directorate of Air Organisation urged the creation of a single school to supersede the two existing ones, arguing that economies would be obtained and best practices better shared and adopted. Approval for the new scheme was granted, and a new enlarged No.1

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<sup>555</sup> NA:AIR1/373/15/231/14 -Vol. XIV.

<sup>556</sup> NA:AIR1/120/15/40/89 - *Proposed Est of the Wireless School Farnborough & NA:AIR1/379/15/231/20 -Vol. XX.*

Wireless School was created with facilities to train fifty officers and 1,050 other ranks at a time. Just a month later, on 8 November 1917, approval was granted for a second school, No.2 Wireless School to be created at Penhurst in Kent.<sup>557</sup> In 1918, the RAF added a 'finishing course' in wireless telegraphy at its wireless schools. Courses were attended by both officers and wireless mechanics who, on completion, would return to their squadrons as Wireless Telegraphy Officers or specialist mechanics.<sup>558</sup>

As with other roles, wireless operators' training had become established and comprehensive by the war's end. A new man joining the RAF and wishing to become a Wireless Operator (Learner) would be selected by recruitment officers, usually from men who had experience at a Post Office or had been through a telegraphy school or college. Future ace James Ira Jones was an example of a man taking this route. His stated desire was to become a wireless operator, and he went on a course at the British School of Telegraphy to pursue his Postmaster-General's certificate to smooth his application process.<sup>559</sup> Jones joined the RFC in 1915 when learning was primarily 'on the job'. For recruits in 1918, the process was very different. After two weeks of standard drill and routine work, they would be sent to the No.1 Wireless School at Flower Down. There they would undertake a ten-week course, emphasising practical work devoted to enhancing Morse skills and using tuners on the ground. This practical work was accompanied by lectures on the theory behind the use of wireless in the air services and specific technical matters such as magnetism and electricity.

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<sup>557</sup> NA:AIR1/683/21/13/2234 - *Precis*.

<sup>558</sup> NA: AIR1/400/15/231/41 - *Vol. X*.

<sup>559</sup> Jones, *Tiger*, p.20.

With this stage of training complete, the majority of the men were ready to be employed as wireless operators by Corps squadrons. The ablest, however, were kept back for further training in two new wireless developments called Continuous Wave and Directional Finding. These men would undertake a further eight-week course in the new technologies. They would then either proceed to a squadron that specialised in such technology or as a Wireless Observer NCO. Those working on airships with the Navy had a twelve-day programme at Cranwell before proceeding to Eastchurch for gunnery and bomb-dropping training. Thus, a man could spend up to thirty-two weeks in wireless training before being deemed fit for service.<sup>560</sup>

Those working on wireless equipment rather than being wireless practitioners would go through a separate programme at the same school. These men would be selected from several practical engineering or mechanical trades. They would undergo an additional trade test to ensure they had sufficient aptitude to become Wireless Mechanics. The men would then go through a ten-week preparatory course, including lectures and practical training on the fitting, tuning and maintaining aircraft tuners. They would then be divided into one of four groups at that stage. Corps Squadron mechanics would have a further four weeks on the practical aspects of work with their machines. Therefore, a wireless mechanic for an artillery squadron would require a minimum of fourteen weeks of training. Again the ablest mechanics were held back for additional training in either Continuous Wave work, Handley Page Bombers or Large Flying Boats. All men earmarked for this specialist instruction would do an additional two-week course collectively before being divided into their specialisms. Specialist training would then require six or seven weeks before the man was fit to

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<sup>560</sup> NA:AIR1/2087/207/7/39 – *Training Courses*.

enter service. War had proved an accelerant for wireless technology. Artillery observation was the principal role of the RFC in the First World War. Thanks to the early work of Capt. Smythies and the many men who followed him, the RFC produced sufficient trained men to satisfy Haig's armies.

### 3.7 – The Training of Boys

When discussing 'boys', it is important to remember that these young men were not the teenagers of today. They had often been in an apprenticeship or full employment for at least two years. In contrast to the myths of widespread underage recruitment, in theory, at least, no boys were allowed to enter directly as service mechanics throughout the war. Boys joining the RFC were sent to Farnborough, and naval applicants to Crystal Palace. They were medically examined, kitted up and classified according to their trade. All boys were then sent to Halton Park, where they underwent a course of drill and discipline lasting eight weeks. First impressions were not always favourable. John Ross, who joined at seventeen, recalled:

It had been given the posh title of "The School of Technical Training" [...], but during our stay at Halton, we had no technical training. There was not an aircraft within miles, no aircraft parts, not even a spanner, not even a file.<sup>561</sup>

Instead, the focus was on inducting the boys into military life, focusing on drills and routines before technical training started.

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<sup>561</sup> J. Ross, *The Royal Flying Corps Boy Service* (London: Regency Press, 1990), p.73.

In 1918 at the end of this course, boys enlisted for the duration of the war were sent directly to home service units, where they were put to work as assistants to skilled men in various trades. Boys who had signed up for ordinary enlistment were drafted to one of the following Training Establishments for training:

Cranwell - Fitters (Engine), Machinists, Riggers  
Eastchurch - Fitters (Engine), Blacksmiths, Coppersmiths, Tinsmiths  
Letchworth – Machinists

The period of the courses for these men varied from a minimum of sixteen weeks for a welder to thirty-six weeks for an engine fitter. At the end of this training, the 'Boy' would be turned out as a skilled mechanic of his trade.

### 3.8 – Examinations

Despite the desire to move men through the training process as swiftly as possible, examinations were almost always used as a final test before a mechanic could be considered skilled in his trade. Throughout the war, there is ample evidence from the results to show that such exams were far from easy. As subject material expanded in breadth, examinations became more difficult, and with such a mixed bag of educational and technical abilities entering the recruitment process in 1918, it is unsurprising that there is no marked trend of improvement in results throughout the war. Mechanics in 1918 not only had to pass a theory exam but also had to demonstrate their skills in practical demonstrations. These practical aspects often found men wanting.

To illustrate, of the 64 men who took the 23 March 1918 Ordinary (i.e. non-specialised exams), 46 (72 per cent) passed. Of the 56 Specialists, 36 passed (64 per cent.)<sup>562</sup> Of exams held on 27 April 1918, rigging and engine specialists were noted to have performed well with a 'marked improvement over the previous course.' Of the transport specialists, however, the standard was poor, with a 'marked inability to solve simple practical problems' that resulted in 40 per cent of them failing. Results of a course held months later on 29 July 1918 reported that while motor transport specialists had performed well, engine and rigging specialists were just 'fair' and worryingly that 'questions involving practical knowledge proved the greater weakness.' On question three of the engine specialist paper, the examiner remarked, 'Not one answer was correct [and] one candidate stated that this must be a printer's error'! On question eight, 'many absurd answers were submitted'. Likewise, the rigging specialists showed 'a general lack of practical knowledge and familiarity with salient features of the machines dealt with on the course.'<sup>563</sup> Such was the melting pot of abilities that some found examinations beyond their capabilities, but such was the RAF's determination to keep quality high that men were either made to resit or return to civilian life.

### 3.9 - Conclusion

As this chapter has demonstrated, the training of the rank and file by 1918 greatly surpassed earlier efforts. The training story is in many ways similar to that of recruitment. Little idea of the scale to which the Corps would grow resulted in largely ad hoc, in-squadron efforts to train men. Such an approach was initially satisfactory.

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<sup>562</sup> NA: AIR 1/161/15/123/11 - *Reports on examinations held at the Technical Officers' School of Instruction.*

<sup>563</sup> Ibid.

The men at this early stage were, after all, already well-skilled and, in many cases, arguably the best the country had to offer. However, due to growth, command issues and inefficiency, training in service squadrons soon became unsuitable.

The RFC, therefore, embarked on a significant outsourcing venture to train its men. It would be wrong to categorise this as a coherent, well-planned strategy; it was not. Instead, initially, at least, it was a series of steps taken on a trade-by-trade basis to increase the supply of skilled men. The complexity of such arrangements was daunting; over forty firms were used to train riggers and fitters alone during 1915 and 1916. Such organisational requirements necessitated the centralisation of oversight under the Administrative Wing.

These arrangements helped fill a severe hole in the RFC's organisational capabilities. While the RFC had consistently recognised the need for classroom and workshop-based training, it lacked a scalable training solution during this time. These outsourced arrangements helped provide a short-term solution to the RFC's training needs in a time of burgeoning demand for the Corps. In parallel, the RFC turned its attention to building its own training capability, the first serious output of which was the Reading School of Technical Training in July 1916. From then on, the RFC's in-house training capabilities proliferated, and the number of specialist schools increased to more than forty by the war's end. As in-house capability grew, the outsourced relationships were gradually reduced and stopped altogether when no longer needed.

The RFC targeted their training systems, procedures, documentation, syllabi, and examinations as a method of securing effectiveness. In each, by 1918, there had been

a significant advance on 1914 and 1915. Despite managing the integration of RNAS training into the newly formed RAF in April 1918, the development of training capabilities continued seamlessly. The RAF never rested on its laurels, and syllabi and procedures continued to be enhanced throughout mid to late 1918. The recruits of 1918, less skilled than their predecessors, needed more training. Aircraft and engines were significantly more complicated. The RAF was being used in ways that were simply impossible in 1914. All these factors necessitated extending training periods, required better supervision, and stringent examinations. All of these were in place at the Armistice.

## **Chapter Four: Learning to Fly 1914-1916**

### **4.1- Introduction and Attitudes to Learning**

This chapter will address the development of pilot training in the First World War until the end of 1916. In 1914, the British Empire encompassed almost a quarter of the world's land mass and a similar proportion of its population, approximately 400 million people. Policing and administering such a network was a vast commitment, doubly so given the army was just 250,000 men strong.<sup>564</sup> British forces could be called upon to engage anywhere in the Empire at anytime. As such, the terrain, climate, and nature of the insurgency could all be very different depending on where in the empire events occurred. Consequently, military flexibility became 'the army's watchword' and mirroring this in their approach to learning, the British Army preferred to manage by ethos rather than rigid doctrine.<sup>565</sup>

Such an approach was instilled into Britain's officer corps, bringing with it a 'distaste for prescription, and an emphasis on character and the individual.'<sup>566</sup> As demonstrated in the following chapter, the initial officers of the RFC were drawn overwhelmingly from this pool of officers. Therefore, they arrived immersed in this culture, and it is unsurprising that the army ethos was amplified in the fledgling RFC. What Aimeé Fox calls an 'individualised and personality-driven approach to problem solving and

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<sup>564</sup> 'An annual time series for the size of the armed forces since 1700', *Ministry of Defence Statistics*, available at <https://assets.publishing.service.gov.uk/media/5a81d66740f0b623026996e1/2017-04440.pdf>

<sup>565</sup> A. Fox, *Learning to Fight: Military Innovation and Change in the British Army 1914-1918* (Cambridge: Cambridge University Press, 2018), p.20 and p.25.

<sup>566</sup> Fox, *Learning to Fight*, p.21.

learning' was precisely what the RFC would need in their world of new technologies and tactics. While the RFC was, in a genuine sense, a part of the British Expeditionary Force until an independent RAF was created in 1918, the air service developed and operated with almost complete autonomy, including its approach to recruitment and training.

The Army believed that learning occurred principally through its network of connections and relationships. At its pre-war size, such an approach was feasible, at least in theory. Fox refers to this self-directed learning, driven by empowered individuals, as 'Liberal' learning.<sup>567</sup> Social networks allowed individual officers to find a path of least resistance through the organisation to get things done. Relative to the size of the Army, the air service remained comparatively small throughout the war, and such informal approaches to learning were encouraged and maintained. Other approaches to learning in Fox's model include Horizontal, Vertical and External learning. Horizontal learning is attained at a group level, drawn from best practices, and shared, for example, amongst squadrons. This approach is different from vertical learning, which is primarily centralised and driven from the top down in the organisation. The codification of the approach through directives, pamphlets, and manuals is a good example of the latter. Finally, external learning, as the name suggests, is from experience gained outside the organisation from civilians, allies, and even the enemy. The British Army relied on the networking of all four approaches to achieve success. This book will demonstrate that this is also true for the RFC and the RAF.

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<sup>567</sup> Fox, *Learning to Fight*, p.54.

The historiography on training during this period is largely unanimous, characterising it as insufficient and inadequate. Ralph Barker is a typical example, castigating the RFC for its 'continual drafting of squadrons to France of men who had never even completed the minimum training laid down'. Such actions, he states, were 'reprehensible.'<sup>568</sup> His characterisation of 'inadequately trained beginners' is supported by Robert Morley's claims that the RFC's system 'surely amounted to culpable, if not criminal negligence.'<sup>569</sup> Ian Isherwood claims pilot training was 'insufficient for the duties in which pilots were called on to perform' and later that the amount of training time was 'woefully insufficient by any standards'.<sup>570</sup>

In his PhD, David Jordan also called training 'largely inadequate'.<sup>571</sup> Ronald Gadd states, 'Inadequate instruction was obviously one of the reasons for the horrifying accident rate in pilot training which did not slacken until the introduction of the Smith-Barry system.'<sup>572</sup> Gadd's contentions on accidents and Smith-Barry's influence will be dealt with in a later chapter. Norman MacMillan's 1969 version of his autobiography added the accusation that 'Most contemporary flying instructors knowledge [...] was insufficient'.<sup>573</sup> Winter echoed these sentiments concerning instruction. Training, he said, was:

Under the charge of regular soldiers either too old for active service or, in the peculiarly British way, given command of training establishments because they had already proved inadequate in field command.<sup>574</sup>

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<sup>568</sup> Barker, *Bloody April*, p.151.

<sup>569</sup> Ibid, p.6 and Morley, *Wings*, p.49.

<sup>570</sup> Isherwood, *Great War*, p.152.

<sup>571</sup> Jordan, *The Army Co-operation Missions*.

<sup>572</sup> R. Gadd, *Combat Stress Reaction and Morale in RFC/RAF Aircrew 1914-1918* (PhD, University of Wolverhampton, 2020), p.104.

<sup>573</sup> Macmillan, *Blue (1969)*, p.16, The contention was not in his 1929 version.

<sup>574</sup> Winter, *The Few*, p.27.

He assesses that 'for three years the combination of a faulty philosophy and simple incompetence murdered many men'.<sup>575</sup>

Of course, most works cited here examine the RFC in general or other niche areas of RFC history. They touch on pilot training, sometimes with a chapter, some with just a few dismissive sentences. Consequently, most opinions rely on works by other historians who have gone before them. In other cases, such as John Morrow or Lee Kennett, there is a reliance on a small number of memoirs and recollections. Which memoirs are selected has a powerful influence on the stance subsequently taken. L.E.O Charlton's 1931 memoir, for example, stated that sending men to France 'who could only just fly and knew nothing beyond seemed to him to be little short of murder'.<sup>576</sup> Charlton continues that he 'put his foot down' on the matter but was overruled by his senior officers. Similarly, Percy Groves claims that 'pupils were being sent wholesale to France before they had acquired even the minimum standard of proficiency necessary for active service'.<sup>577</sup> He continues that 'many, owing to their lack of training, did not survive even a week. They were driven like sheep to the slaughter'.<sup>578</sup> Groves also maintains that senior commanders subverted his personal efforts to improve the training system.<sup>579</sup>

Such claims by Charlton and Groves must be treated with a healthy dose of cynicism.

Neither were junior officers without influence. Charlton was Chief Staff Officer at the

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<sup>575</sup> Ibid, p.37.

<sup>576</sup> Charlton, *Charlton*.

<sup>577</sup> P.R.C. Groves, *Behind the Smokescreen* (London: Faber & Faber, 1934), p.124.

<sup>578</sup> Groves, *Smokescreen*, p.125.

<sup>579</sup> Ibid, p.126.

Directorate of Military Aeronautics for almost all of 1916 and was made Director of Air Organisation in 1917. He was well respected by Salmond and Trenchard and was intrinsically involved in the training process. Charlton was more than a decision-maker; he was a policymaker. As for Groves, he headed training efforts in the Middle East and under his leadership, the region mirrored standards and procedures introduced in England and France. Later, in March 1918, he was to become Director of Flying Operations at the Air Ministry.

Charlton's comments, thirteen years after the war's end and coloured by his recent acrimonious exit from the RAF, are likely an attempt to put distance between himself and events and fit in with opinions that were starting to appear in other memoirs. Groves's comments are coloured by more than a little personal animosity towards Trenchard, an animosity that he took every opportunity to air after the war. So while Charlton and Groves's recollections must be questionable, some historians' 'murderous' conclusions on the training system are understandable, given that both men are significant sources in their works on the RFC.

Writing in 1963, former First World War Wing Commander Sholto Douglas also used 'murder' to describe training. He said his experience in 1915 could only be described as 'sheer murder: no pilots should ever have been sent overseas so grossly short of training.'<sup>580</sup> Echoing Charlton and Groves, Douglas claimed that he 'came to feel very strongly [about the training system], and I did not hesitate to voice my criticism.'<sup>581</sup> Again, this is unlikely. This research has been unable to find any archival evidence of

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<sup>580</sup> Douglas, p.94.

<sup>581</sup> Ibid.

officers objecting to training standards, policies, procedures or guidelines. Indeed, contemporary criticisms of training in any form are harder to find than might be imagined. Major Powell's memorandum of 23 March 1916 does, however, refer to 'Several serious complaints [having] been received lately from the GOC, RFC in France concerning the insufficient training of some of the Pilots sent out as reinforcements.'<sup>582</sup> These criticisms will be explored and assessed.

The chapter will broadly follow a chronological path whilst dwelling on pertinent topics at an appropriate time. It will start by exploring the early steps in 1914 and some of the early challenges of 1915. The chapter will then consider the development of Schools of Instruction that first appeared at the end of 1915 for ground-based learning. Next, the chapter will examine 1916. This year was undoubtedly challenging for the RFC, but the chapter will examine whether it was the disaster portrayed in many books. Accounts of 1916 usually rely on two specific aspects that feature prominently in the historiography during this period. The first is the so-called Pemberton-Billings affair. Named after a vocal Member of Parliament, his allegations of inadequate training, amongst other things, led to a significant government enquiry. The second is the alleged complaints about the training system that emanated from the Field in France. Finally, after considering criticism of the system in place at the end of 1916, the chapter will be in a position to conclude on RFC pilot training through the first two years of war.

#### 4.2 - Training in 1914 – Small Steps

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<sup>582</sup> NA: 1/664/17/122/696 - *Training in RFC 22/3/16 - 30/11/16.*

The Central Flying School (CFS) was devised with the birth of the RFC on 23 April 1912. It opened as a physical entity on 19 June, and its first flying training course began two months later on 17 August. It remained the RFC's only flying school until the outbreak of war, by which time six training courses had been completed there.<sup>583</sup> The numbers of graduating pilots at this stage were small. In 1913, just 56 pilots were issued their Royal Aero Club (RAeC) certificates after graduating from the CFS. In the seven months of 1914, before the outbreak of war, remarkably, only 23 men had graduated from the school. When war came, it was an evident and immediate priority for the RFC to expand its training capability beyond the CFS. In the first instance, on 17 August 1914, the RFC paid £4,200 to purchase the Bristol Flying School, perhaps the country's most famous private facility at that time.<sup>584</sup> As well as aeroplanes and spares, the arrangement also saw Bristol's instructors contracted to assist in the RFC's training process. The RFC then added to its four existing airfields at Netheravon, Montrose, Gosport and Dover by purchasing the privately owned Joyce Green and Shoreham airfields in September. Land for other airfields at Beaulieu, Castle Bromwich, Catterick, Northolt and Norwich was added shortly afterwards.<sup>585</sup>

Chapters Two and Three discussed the impact of the expectation of a short war on recruitment. Such expectations also affected early training capabilities. The lion's share of working aeroplanes, spares, pilots, and mechanics departed for France with the first RFC wave in mid-August, in a process that Brancker later referred to as 'emasculatation'.<sup>586</sup> The decision to allow so many good men to depart at once was,

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<sup>583</sup> NA:AIR 1/683/21/13/2234 – *Precis*.

<sup>584</sup> *Ibid*.

<sup>585</sup> Raleigh, *WITA*, p.430.

<sup>586</sup> Macmillan, *Brancker*, p.62.

said Brancker harshly, 'the only amateurish feature in the whole original plan of campaign - it was illogical and unpardonable and had bad results later on.'<sup>587</sup>

The problem Brancker faced was that precious little was left in Britain to carry out the dual task of constructing new service squadrons and training new pilots. At the end of August, the RFC was so starved of resources that there were only 36 aeroplanes fit for this work. To improve the available number of aeroplanes, ten more were immediately requisitioned from private schools, and thirty new aircraft were ordered from manufacturers.<sup>588</sup> Thirty-six aeroplanes was also coincidentally the number required for a full CFS complement at this time. Consequently, no aeroplanes were available to form a nucleus for new squadrons until new machines arrived.

If the situation regarding the availability of aeroplanes was poor, that concerning manpower was not much better. Just ten trained RFC pilots remained to assist with training, overseeing the twenty-eight men then undergoing instruction at the CFS.<sup>589</sup> The RFC was faced with the immediate conundrum of whether to satisfy manpower demands from the BEF in France or to bring men home to assist with training. It would remain a perennial problem. Trenchard and Brancker, who were attempting to build the RFC in Britain, urgently appealed to the BEF to send home more pilots to assist with training. Perhaps not surprisingly, given the RFC's growing workload and flushed with early successes in France, such overtures were strongly resisted, not least on occasion by the men themselves, who were frightened of missing out on the action.

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<sup>587</sup> Ibid.

<sup>588</sup> NA:AIR 1/686/21/13/2252 - *Statistical data*.

<sup>589</sup> Ibid.

It took a long month before, at the end of September 1914, a few pilots led by Major Arthur Longcroft returned to assist Trenchard.<sup>590</sup> Even this tiny number of men helped considerably, and just a month later, five reserve squadrons had been established for training purposes. By the end of November, as more men returned to Britain, there would be ten. Alongside the fledgling elementary training system in Britain, men were required to refine their craft in France, with senior officers acting as impromptu instructors. Philip Joubert de la Ferté's diary entry from 27 September 1914, for example, records that he had had 'A most irritating day of short flights trying to teach McNeece how to take photos from the air.'<sup>591</sup> The hapless McNeece 'spoilt many plates and was sick three times.'<sup>592</sup> Who McNeece was is unclear, as no RFC service record for him can be found. Given De la Ferté's experience, this may be just as well.

In October 1914, the issue that would vex the RFC for the entire war became more apparent: how was the urgent need for squadrons in France to be balanced against giving new pilots sufficient time in the training system to acquire skills? There was no precedent to help determine what *sufficient* training looked like. On 17 October 1914, Field-Marshal French wrote to the War Office, commending the RFC for its invaluable reconnaissance work, but it was already evident to him that the five RFC squadrons in France would not be sufficient for long. Consequently, he requested that three more squadrons be immediately readied for France. He continued:

Such efficiency as the RFC may have shown in the Field is, in my opinion, principally due to their organisation and training. It is, therefore, most desirable that any reinforcements should be organised, trained and equipped in exactly the same manner as the squadrons now in the Field.<sup>593</sup>

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<sup>590</sup> Raleigh, *WITA*, p.430.

<sup>591</sup> RAFM:AC71/14/2/8 - *Diary of Phillip Joubert de la Ferte, 1914*.

<sup>592</sup> *Ibid*.

<sup>593</sup> NA:AIR 1/143/15/40/316 - *Expansion*.

Such an objective, while entirely understandable, was unrealistic. Such resources simply did not exist.

Demands for new squadrons soon intensified further. As discussed earlier, by December 1914, Brancker believed that thirty squadrons plus another five in reserve would be required during the war. On reading Brancker's view, Kitchener famously scribbled 'double this' on the latter's memorandum.<sup>594</sup> The Official History notes that Kitchener's prioritisation of the service 'came as a tonic and an incentive to the directing staff of the Flying Corps, [and] created an atmosphere in the War Office favourable to a generous consideration of the air service demands'.<sup>595</sup> However, no amount of favourable atmosphere could turn out trained pilots quickly. To cope with the growing demand, the RFC had no choice but to proceed pragmatically with what it had available. It had quickly outgrown the CFS and private schools and was forced to carry out elementary training elsewhere. With nowhere else to turn, the RFC transferred all elementary training to its newly created reserve squadrons, and the CFS provided the final graduation tests for new pilots.<sup>596</sup>

#### 4.3 Growing Pains - 1915

An acute shortage of aircraft and engines would remain the most severe impediment to accelerating the RFC's training capability for a significant time. Member of Parliament William Joynson-Hicks later cast doubt on Kitchener's influence. As a vocal and opinionated orator on air matters, Joynson-Hicks stated in April 1917, 'Someone

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<sup>594</sup> Jones, *WITA*, v3, pp.285-286.

<sup>595</sup> *Ibid.*

<sup>596</sup> Raleigh, *WITA*, p.454.

will hang on a lamp post in Whitehall when the War is over for the abominable neglect of the Air Service and the engine question at that time [in early 1915].<sup>597</sup> Frank Barnwell, a much smaller cog in the growing wheel, felt first-hand what the shortage of aeroplanes meant and played his own small part in attempting to remedy the situation. Barnwell had worked as a skilled rigger for the Bristol Aeroplane Company since 1910. With the advent of war, he volunteered for the RFC in August 1914. He had completed his preliminary training at the No.2 Reserve Squadron, but during his final training, he was held up by a lack of available aeroplanes at the CFS. One of these supply bottlenecks was at Barnwell's former employer. Consequently, Barnwell was instructed to augment his flying training with one day a week at his former employer to help rig the urgently needed Bristol aircraft.<sup>598</sup>

On 9 January 1915, a week after Barnwell started his weekly returns to Bristol, the RFC was forced to amend its training processes. Reserve squadrons would now take on responsibility for ground-based training and elementary flying. Service squadrons preparing for France would be called upon to provide the higher training element, supplementing the CFS.<sup>599</sup> Consequently, to accelerate the production of new reserve squadrons, both existing reserve and service squadrons would now need to train the nuclei of men to create them. The continuing changes to squadron status caused confusion, if not chaos and a short moratorium had to be declared on sending new squadrons to France until the scheme was given time to stabilise.

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<sup>597</sup> *Hansard* Air Board, Vol. 92, 26 April 1917.

<sup>598</sup> NA:AIR 1/367/15/231/7 - Vol. VII.

<sup>599</sup> *Ibid.*

At this stage, the RFC estimated that an average pupil would require '10 hours of air experience' to reach some level of proficiency and that the elementary stage would take six to seven weeks.<sup>600</sup> On 13 January 1915, Brancker wrote to the Administrative Wing - which was responsible for training - stating the criteria on which reserve squadron commanding officers would be judged. Brancker's memorandum unwittingly captured the conundrum faced though he failed to recognise the mutually exclusive aims of his request. The:

Value of the work performed by Commanding Officers, [he said], 'will be estimated largely on the rapidity with which they train personnel *and* the degree of efficiency reached by those under training.'<sup>601</sup>

In other words, produce better-trained pilots, and train them more quickly. How this was to be achieved was, at best, unclear.

The Brancker memorandum does, however, provide helpful detail on the size the training system had reached by this point of the war. The three existing reserve aircraft squadrons, No.'s 1, 2 and 3, had 45 pupils under elementary instruction, all on Maurice Farmans. The use of No.'s 1, 7, and 8 Service Squadrons had increased higher training capacity by 40 pupils alongside the 30 existing at the CFS. The multitude of aeroplane types being used also added significant additional complexity. While reserve squadrons all had Maurice Farmans, the CFS had both Maurice and Henri Farmans, along with Vickers Fighters, Avros, RE5s and BE2s. Progressing to a service squadron to complete training involved the possibility of flying RE5s, RE7s, Avros, Moranes, BE2s and FE2s.<sup>602</sup> While the principles of flight might have been the

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<sup>600</sup> NA:AIR 1/367/15/231/7 - Vol. VII.

<sup>601</sup> Author's italic. NA:AIR 2/6/87/4469 - *New Squadrons*.

<sup>602</sup> NA:AIR 1/367/15/231/7 - Vol. VII.

same, all aeroplanes had their idiosyncrasies, and indeed, the FE2 was the first 'pusher' any fledgling pilot would have come across since flying a Farman.

A system under pressure was squeezed further when the RFC increased the number of pilots per squadron from twelve to fifteen in the first week of May 1915.<sup>603</sup> The decision, taken for operational reasons, was perfectly understandable. As summer approached in France, more flying time was available, and a combination of these extra hours and the increased demand for the RFC's services meant more pilots were urgently needed. Additionally, there was a recognition that while official casualties were light, there was a need to recycle pilots home more regularly, which, whilst helping the instructor situation, increased the requirement for new men in France. Thus, the change in Britain resulted in a further fifty-two pilots being required just to bring the training squadrons up to establishment.

Managing the organisation during this period of constant change was, then, a significant challenge. On 7 May, the Directorate informed the Administrative Wing that 'as suitable aeroplanes become available, the Reserve Squadrons will also undertake the advanced training of a limited number of pilots'.<sup>604</sup> Whilst accommodating yet another tweak to the system, they were reminded to ensure 'that the number of pupils receiving advanced instruction in Reserve Squadrons does not interfere with the instruction of beginners'.<sup>605</sup> While it is easy with hindsight to sit back and criticise those responsible for creating the bamboozling system that had materialised, the RFC had minimal options. They were reacting extemporaneously to a series of demands that

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<sup>603</sup> Jones, *WITA*, v3, p.294.

<sup>604</sup> NA:AIR 1/371/15/231/11 - *Vol. XI*.

<sup>605</sup> NA:AIR 1/371/15/231/11 - *Vol. XI*.

were arriving piecemeal. Their reactions were pragmatic, given that they had no time to step back and strategically determine the best way forward.

An example of the issues that arose due to not balancing speed and competency can be found in the case of the hapless 2/Lt Fulton. On 27 May 1915, Salmond wrote to Joubert De La Ferté, now the commanding officer of No.15 Squadron. Salmond observed that 'one of the 80 hp Avro machines has been smashed by 2/Lt Fulton doing his solo [..and that his..] previous instruction in these machines [...] was only 10 minutes with an instructor.'<sup>606</sup> In what amounts to a comic understatement, Salmond added, 'This would not appear to be enough.'<sup>607</sup> Salmond then requested that the insolvable be solved:

Without meaning to discourage you in pushing on pupils as fast as possible, I want you to remember there is only a very small supply of dual-controlled machines and that the greatest care is to be taken of each one.<sup>608</sup>

De La Ferté investigated and reported:

On inquiring why this officer had been allowed out in this foolish manner, I was informed that it was your desire to push people on as fast as possible. I will see that so stupid an interpretation of your wishes is discouraged.<sup>609</sup>

While De La Ferté's response is diplomatic, it is easy to understand the commanding officers' dilemma.

It is perhaps unsurprising that some complaints about training outcomes were beginning to surface, given the piecemeal approach to growth. On 28 June, an annoyed Godfrey Payne, the Commander of the CFS, wrote to the War Office

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<sup>606</sup> NA:AIR 1/1288/204/11/53 - *Procedure to be followed with regard to the RFC in order to meet demand for units.*

<sup>607</sup> Ibid.

<sup>608</sup> Ibid.

<sup>609</sup> Ibid.

demanding assistance. By this time, all his pupils should have passed their elementary training before reaching his school. However, in his memorandum, Payne bemoans that many men are arriving without technical and practical experience. He appeals that:

Unless some hard and fast standard is laid down [...] and a more rigid observance to the necessary flying tests [...] is adhered to, the examination at the Central Flying School becomes a farce, a pure waste of time.<sup>610</sup>

In his response to Payne, Marindin for the Directorate agreed that Payne's role was to provide the final training for all graduate officers from the CFS. However, he admitted:

To meet the shortage of pilots which exists at present, it is permissible to appoint flying officers in the RFC who have proved their ability as pilots to their Wing Commanders but who have not passed the oral and written examinations laid down in the pamphlet issued with Army Order 300 of 1913.<sup>611</sup>

Marindin's comments are illuminating for two reasons. Firstly, in July 1915, the RFC still relied on flying tests and examinations put forward for the Royal Aero Club Certificate created in 1913. Second, while the RFC had rules in place, they circumvented them at will when circumstances required. Such a tendency would become a recurring theme.

The first attempt to introduce some modest air fighting training began in November 1915. The training entailed new pilots 'being opposed to an experienced flight commander' in mock combat.<sup>612</sup> In the same month, night flying began too. Major Powell for the Directorate said of night flying that:

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<sup>610</sup> NA:AIR 1/1267/204/9/66 - *5th Wing - Graduation of officers at C.F.S.*

<sup>611</sup> *Ibid.*

<sup>612</sup> Jones, *WITA*, v3, p.294.

It is anticipated that heavy calls may shortly be made on the Corps for pilots who have been trained for this duty, and you should, therefore, take every opportunity of practising the officers under your command in this work.<sup>613</sup>

Pilots were aided in night training by a Royal Naval Air Service pamphlet, *Notes on Night Flying*. The document from the Director of the Air Department at the Admiralty had been forwarded to Salmond in August. Salmond, in turn, sent it to the Directorate, stating:

I have read these over very carefully and think they are excellent. I know that the RNAS have been training in night flying for some considerable time, and the experience they obtain is very valuable.<sup>614</sup>

The RFC and RNAS often shared information regarding training despite an often fractious relationship when it came to procuring aeroplanes and recruiting pilots.

As shown in Chapter One, at this stage of the war, the RFC had a significant pipeline of pilot applicants, and instructors were required to act quickly and decisively with pupils thought incapable. Such men were sometimes offered an alternative role in the RFC or else would be returned to their regiments. Rather than callously sending unsuitable men to France, the RFC vigorously sought to remove them from the Corps. While Dowding, commanding the Administrative Wing, caveated that 'a "thruster" should always be given a great deal more slack than his more prudent brethren', in late 1915, the RFC introduced 'Confidential Reports' as an appraisal tool.<sup>615</sup> For each pupil, the report detailed the types of aircraft flown, the time spent in the air and any

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<sup>613</sup> NA:AIR 1/137/15/40/275 - *Night flying - correspondence re training*.

<sup>614</sup> Ibid.

<sup>615</sup> NA:AIR 1/131/15/40/218 - *Pilots sent to Expeditionary Force with insufficient training. General training of pilots*.

general comments on their performance.<sup>616</sup> These reports were then used to weed out those unlikely to make a good pilot.

Archival files contain some excellent examples of these reports. Sergeant Power, for example, was considered 'entirely unreliable in the air [...] apt to lose his head and [likely to] perform the most dangerous and wholly unnecessary evolutions.'<sup>617</sup> Lt. Bebb's commanding officer reported that his 'continuous sickness renders him unlikely to become an efficient pilot', and he was hardly proving to have strong moral fibre given he had a 'habit of submitting cheques which are dishonoured.'<sup>618</sup> Both Power and Bebb were returned to their infantry units. Demonstrating the flexibility available to RFC command, while Captain Hooper did not 'convey to [his instructor] the impression that he is keen on flying', he was a respected officer and hence offered the opportunity of supervising workshops as an Equipment Officer rather than leaving the service.<sup>619</sup>

New examinations introduced at the end of 1915 also helped to weed out those unlikely to make the grade. 2/Lt J.S. Impey, for example, scored consistently poorly across all eight subjects examined and was sent back to his regiment. Captain J.H. Tyssen also failed to achieve the total accumulated mark across all exams. While he had scored full marks in his 'Morse Code' examination and 90 per cent in 'Formation of Troops', he had managed only 10 per cent on 'Renault Engines' and 25 per cent on 'Rigging.' His inconsistent performance saw him allowed to resit the examinations

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<sup>616</sup> NA:AIR 1/371/15/231/11 - *Vol. XI*.

<sup>617</sup> NA:AIR 1/758/204/4/117 - *Officers confidential reports from Central Flying School*.

<sup>618</sup> *Ibid.*

<sup>619</sup> *Ibid.*

rather than being returned to the North Somerset Yeomanry.<sup>620</sup> It is also instructive to note that the Schools of Military Aviation at Reading and Oxford, discussed below, planned for 'wastage rates' of 25 per cent when calculating their potential throughput.<sup>621</sup> Such a high wastage rate shows that the weak were indeed weeded from the course rather than pushed through.

#### 4.4 Schools of Instruction

On 1 December 1915, the first School of Instruction opened for officers in Wantage Hall at Reading University, the idea for which should be credited to Charlton.<sup>622</sup> The school would form the initial training destination for all recruits, whether transferring from the infantry or joining as a civilian. New joiners would, from now on, be sent to the school for all ground-based instruction before going on to learn to fly in reserve squadrons. The initial study included 'instruction in engines, rigging of aeroplanes, map reading, reconnaissance, cooperation between the Flying Corps and other arms, signalling, and organisation.'<sup>623</sup> The Reading School's initial equipment was primitive, to say the least, consisting of just two obsolete Martinsyde aeroplanes and a single fifty-horsepower Gnome engine. Despite the poor equipment, the living facilities in the university were clearly good. Recruit William Fry remembered 'a modern and very comfortable building with plenty of bedrooms and an excellent mess and dining room run by the peace-time staff.'<sup>624</sup> With the success of the first school proven, a second School of Instruction opened in Christ Church, Oxford, in April 1916.

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<sup>620</sup> NA:AIR 1/1267/204/9/66 – 5<sup>th</sup> Wing.

<sup>621</sup> NA:AIR 1/136/15/40/271 – No.1 School.

<sup>622</sup> Macmillan, *Brancker*, p.121.

<sup>623</sup> Jones, *WITA*, v3, p.295.

<sup>624</sup> Fry, *Battle*, p.36.

Their nomenclature as Schools of Instruction lasted only until October, when they became Schools of Military Aeronautics and, later in the war, more simply Schools of Aeronautics. Other schools at Denham, Bristol, and Cheltenham and one each in Egypt and Canada would follow. These schools were all dedicated to pilot ground instruction, and observers were, until a few months before the Armistice, to earn their observer brevet only through experience in the field. Not until January 1918 did No.7 (Observers) School of Aeronautics open in Bath, a facility dedicated to training observers.<sup>625</sup> At the end of September 1918, a second observer school called the No.9 (Observers) School of Aeronautics was formed at Reading before moving to a new facility in Cheltenham.<sup>626</sup> Thus, the capacity for ground-based instruction significantly increased between the beginning of 1916 and the end of the war.

#### 4.5 A Challenging Year - 1916

Throughout 1916, pilot numbers grew fivefold. Such expansion exacerbated the bottleneck present in a system that had been growing through a series of ad hoc decisions. On 9 March 1916, the RFC brought in the man who would most significantly influence training during the war, John Salmond. Salmond was promoted to Brigadier General and appointed to the command of VI Brigade, which would become the Training Brigade in July. This position would have sole responsibility for all aspects of RFC training. Soon after his appointment, Salmond brought in Guy Livingston as his Chief Staff Officer. Salmond and Livingston recognised the need for urgent

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<sup>625</sup> Macmillan, *Brancker*, p.121.

<sup>626</sup> NA:AIR 1/676/21/13/1840 - *Training at Home*.

improvement, including the need for more structure and discipline in the training processes. The two embarked on a:

Tour of inspection of every one of the training units, where [they] carefully examined the whole organisation, the personality of the commanding officers and the flying instructors, and returned to the Training Brigade HQ with a detailed report on each training unit.<sup>627</sup>

A significant step forward in improving the standard of flying training came about as a consequence of an early March 1916 meeting between Salmond, Trenchard, Brancker, Dowding, by now commanding a training Wing, and Lt. Col. Burke, the new commander of the CFS. During the meeting, it was agreed that the RAeC certification process was no longer sufficient and that new minimum standards needed to be introduced before a pilot could be deemed qualified. Burke made the telling observation that:

People who have been training pilots at home [...] are given no information as to the best way to obtain the required results or where such information can be found. Further, the time taken to turn raw material into the required article, the number of pupils per instructor and the anticipated proportion of failures are not given. This information would help to obtain the required results.<sup>628</sup>

In other words, it was one thing to set standardised minimum levels but quite another to standardise the training approach. Burke's intervention makes it clear that the RFC knew it needed to standardise instruction, but it would find little serious traction until the advent of the School of Special Flying some eighteen months later.

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<sup>627</sup> Livingston, *Hot Air*, p.91.

<sup>628</sup> NA:AIR 1/131/15/40/218 - *Insufficient training*.

Brancker proposed a minimum standard of 15 hours of solo flying before a pilot could be considered qualified. Burke suggested that the minimum should be 50 hours instead, with 15 hours spent on *service* aircraft rather than in total. Brancker's proposal was the one accepted, but his minuted response to Burke's points is worth quoting in full:

I am absolutely with you in principle, but I fear that, at the moment, we cannot make graduation more difficult than laid down in the draft which I sent you. Already the output is not nearly equal to the demand, and thanks to the rapid expansion during the past six months, we are very nearly bankrupt at the moment. The standard has been allowed to drop too low, hence my memorandum, but the time has not come yet to raise it to a really satisfactory basis.

I quite agree that no information has been given as to the best way of training pilots, but so far, I have never met two people who agreed closely on this subject [...] I will keep your letter, and when I see daylight as regards meeting the demands of the Expeditionary Force in pilots, we will again discuss the question of raising the standard of graduation.<sup>629</sup>

Thus, RFC leadership in 1916 was united in the understanding that training standards needed to be raised further but recognised that the infrastructure could not produce sufficient pilots for France if such action were taken. Getting pilots to France was non-negotiable. As a result, a compromise on delaying pilots being sent to France in order for them to obtain more experience was never seriously contemplated. This will be discussed briefly later. Consequently, the only option was for a compromise to be reached on training time.

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<sup>629</sup> NA:AIR1/131/15/40/218 -*Insufficient training*.

The output of the meeting was formalised on 23 March, and the new minimum guidelines for qualification came into force. To qualify, a man needed to have the following:

- 1) A minimum of 15 hours of solo flying
- 2) Flown a service aeroplane satisfactorily
- 3) Completed a cross-country flight of at least 60 miles featuring two witnessed landings
- 4) Climbed to at least 6,000 feet and remained there for at least 15 minutes. Then perform a landing with the engine off in a circle of 50 yards in diameter
- 5) Completed two landings in the dark, assisted by flares

A month later, on 22 April 1916, more formality was added to the pilot certification process. Certification would now be divided into three parts. Part A would involve passing written tests on subjects studied on the ground. Part B would consist of ground-based practical tests on machine and engine components. These parts would be managed by the schools at Oxford and Reading. Finally, Part C would involve passing the flying tests defined on 23 March.<sup>630</sup> It was mandatory for Part A to be passed before Part B, but strangely it was considered immaterial if the flying tests in Part C were carried out before or after the other parts. All examinations were set by the CFS and marked by Wing Commanders. To check on the consistency of marking, one marked paper from each Wing had to be submitted to the CFS for checking. Thus, new standards, examinations and formalised certification procedures were introduced in a month.

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<sup>630</sup> NA:AIR1/997/204/5/1241 – *Training of Pilots and Observers 25 Oct 1915-22 July 1917.*

Salmond's mission was to solve the quandary of increasing training effectiveness without affecting the supply of pilots. He and Livingston were fully aware of the conflict and concluded that the most significant impediment at this time was the continuing struggle to obtain sufficient numbers of training aeroplanes. Livingston used his commercial and logistical nous gained pre-war to simplify the supply chain. He noted that the Avro, quickly becoming the predominant training aeroplane, was delivered in a most inefficient manner. The machine was made in Manchester by A.V. Roe, where it was assembled, rigged and checked. If satisfied, the machine was then disassembled, put into large packing cases and sent to the Aeronautical Inspection Department of the RFC at Farnborough. On arrival, the machines were re-assembled, rigged and checked. Inspection complete, the machines were then disassembled, repacked and shipped once more, this time to the various training airfields where it was again.

Looked at logically, the system was ponderous. Consequently, Livingston shipped the aircraft directly from A.V. Roe to the training squadron. After assembly, the Aeronautical Inspection Department, now based onsite, inspected each machine before use. Such an obvious simplification had a significant effect on lead times. While these quick wins were helpful, improving the training process itself was more challenging. Livingston's memoir is much vaguer on the impact he and Salmond were immediately able to bring to bear on pilot output, stating only that:

By various other equally simple changes in the organisation, the result was that the output of pilots at the end of the specified period was slightly in excess of my estimate.<sup>631</sup>

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<sup>631</sup> Livingston, *Hot Air*, p.92.

By the beginning of May 1916, RFC leadership had seen enough of the new standards 'to set at rest any doubts to their soundness.'<sup>632</sup> The direction of travel was clear, and Charlton appealed for help from Wing Commanders:

In anticipation of the occasion arising for an increase of the stringency of these regulations to an even further extent, it is desired that you will submit suggestions in this connection at an early date.<sup>633</sup>

Charlton reiterated, 'It should be recognised that the aim is an increase of the standard of efficiency, not at the expense of the output in pilots.'<sup>634</sup> The RFC had been aided on 1 April 1916, when the CFS became a dedicated RFC school following an Admiralty decision to move RNAS operations to an independent school near Grantham.<sup>635</sup> The change increased the capacity available to the RFC at the CFS by 40 per cent. In context, however, the overall number of pilots under instruction in early 1916 was still only 120 men at any one time, a throughput that, as Brancker had noted, was struggling to keep up with demand.

Canadian-born John 'Don' Brophy took his first flights on 30 December 1915, before the introduction of the new standards. After two flights of eleven and twelve minutes, his diary entry recalled his instructor's witty comments on his performance. 'I show signs of having a mad desire to take a shortcut through the ground to China, and this he doesn't like.'<sup>636</sup> After twenty-five days, the confident Brophy qualified for his certificate after completing the new tests, including the requisite time on a service aeroplane. However, his subsequent training on the BE2c was significantly thwarted

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<sup>632</sup> NA: AIR1/131/15/40/218 - *Insufficient training*.

<sup>633</sup> Ibid.

<sup>634</sup> Ibid.

<sup>635</sup> NA: AIR2/13/42/FS/277 - *Central Flying School Administration 1916*.

<sup>636</sup> Greenhous, *Pebbles*, p.16.

by snowy weather and the perennial shortage of machines. The situation was not helped by the fact that training aircraft at this time were also shared with home defence pilots, including those manning Zeppelin patrols. Consequently, training often found itself at the end of the queue when it came to the use of aeroplanes.

Brophy's first solo on a BE2c did not come until 4 March 1916, when he recorded in his diary that 'the joy of riding a 2c can't be imagined.'<sup>637</sup> A month later, on 3 April, Brophy had his first flight in an RE8 which he thought 'big and heavy' compared to a BE2c, but he was resigned. 'I might as well get to like it as I'm evidently destined to fly it', he wrote.<sup>638</sup> There was a strong emphasis in his training on landing – widely considered still the most dangerous aspect of flying. Brophy did eight in succession on 9<sup>th</sup> April 1916. Two days later, as one of the first pupils under the new system, he notes that he took his exams to complete 'Part A' of his qualification, with part C already done. With part B completed on 3 May 1916, he was told to report to the War Office for service overseas.<sup>639</sup> He had spent four months in the training system.

After arriving in France, new pilots continued to practice with their service squadrons. Most squadron commanders had a paternal instinct regarding their new arrivals. Wherever practicable, they would spend as much time as possible acclimatising before undertaking an active mission. Trenchard believed that new pilots required anywhere from ten days to four weeks of additional training before crossing the line.<sup>640</sup> Brophy was a typical example of this policy. He was with No.21 Squadron for three weeks before being allowed by his commanding officer to cross the lines. Time was

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<sup>637</sup> Greenhous, *Pebbles*, p.48.

<sup>638</sup> *Ibid*, p.60.

<sup>639</sup> *Ibid*. p.63.

<sup>640</sup> NA:AIR2/6/87/4469 – *New Squadrons*.

spent with his observer getting used to the lie of the country around them. Wireless signalling was repeatedly practised, and numerous flights over the Camera Obscure were made to improve his bomb-dropping accuracy.<sup>641</sup> It was 7 June 1916 before he did what he termed his first 'real work' – an observation flight for the British cavalry. Thus, even in mid-1916, it had been over five months since Brophy began training before he took his first operational flight.

Brophy's experience is far from unique, and there is ample evidence that pilots and observers were mandated to practice in their free time. In a memorandum dated 27 October 1915, pilots and observers had been told to take advantage of the quieter winter months for practice, focusing on improving their artillery cooperation skills.<sup>642</sup> Such a use of time would remain the case later in the war. As the winters of 1916-1917 and 1917-1918 approached, similarly detailed memorandums were issued stating bluntly that 'when work over the lines will inevitably be curtailed, every opportunity must be taken to carry out training.'<sup>643</sup> Then a comprehensive list of expectations followed, including everything from the camera gun to pitching aeroplane tents.<sup>644</sup> Many squadron commanders also arranged for lectures to be given throughout these quieter periods. For example, No.54 Squadron hosted lectures as diverse as 'Openings in India after the War', 'Court Martial and Minor Offenses' and 'Fighting in the Air.'<sup>645</sup>

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<sup>641</sup> Greenhous, *Pebbles*, pp.72-73.

<sup>642</sup> NA:AIR1/997/204/5/1241 – *Training*.

<sup>643</sup> Ibid and NA:AIR1/1582/204/82/1 -*4th Brigade Various training instructions and reports*.

<sup>644</sup> NA:AIR1/997/204/5/1241 – *Training* and NA:AIR 1/1582/204/82/1 - *4th Brigade*.

<sup>645</sup> Ibid.

On 10 May 1916, Lt. Col. Charlton, now a senior staff officer at the Directorate of Military Aeronautics, wrote to the Administrative Wing, Training Brigade and Central Flying School. Charlton was sharing feedback from pilots in France, which stressed the importance of night flying and fighting in the air. Charlton's memorandum also encouraged that there should be:

Frequent practice in manoeuvring for fighting positions and for the pilots to be encouraged, to this end, in trick flying, under, as far as possible, service conditions of height. Subsequently, a certain proficiency in this subject will be required of pilots before graduation.<sup>646</sup>

This emphasis on 'trick flying' is interesting. The standard narrative in the historiography is that such dangerous manoeuvres were avoided and that it was only with the arrival of Robert Smith-Barry in the training organisation in mid-to-late 1917 that aerobatics was attempted during training. Evidently, this was not the case. Additionally, men in the training system needed to be given tools to aid their practice. Charlton demanded the early supply of camera obscuras, bomb sights, wireless sets, cameras, and the newly developed camera gun for aerial fighting practice, two of which were to be supplied to every squadron in England. There is evidence that Salmond's initiatives bore immediate fruit. Trenchard, for example, wrote on 17 May 1916, 'I wish to say that lately there has been a marked improvement in the quality of pilots sent overseas.'<sup>647</sup>

The RFC doubled in size in the first nine months of 1916 to twenty-six squadrons, and such growth was not the only issue with which the training system had to cope. Increasingly, the organisation was required to carry out new roles as well as respond

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<sup>646</sup> Authors emphasis. NA:AIR1/131/15/40/218 -*Insufficient training*.

<sup>647</sup> Ibid.

to the introduction of new tools and technologies and night flying and fighting in the air had, as stated, become obligatory. Artillery observation, by far the predominant role of the RFC throughout the war, was being enhanced by continuous new developments in wireless. Bomb dropping had improved with the advent of sights and training aids such as the Camera Obscura. Consequently, Salmond recommended further changes to the syllabus in June 1916 and the introduction of new tests.<sup>648</sup> The burden on the training organisation was never static and constantly evolving.

Further new regulations were issued on 30 November 1916. Minimum solo hours before any pilot could be considered for overseas service was increased from fifteen to twenty, and in the case of certain service aeroplanes, to a minimum of twenty-eight hours. BE12, DeHavilland Scout and FE8 pilots now needed a minimum of 25 hours solo, of which not less than five had been on the machine they would fly. For all Sopwiths, SE5s and Morane scout pilots, a minimum of 28 hours solo, including at least eight on the machine in question, was required.<sup>649</sup> Other than named aeroplanes, the minimum time for other pilots remained two hours on the type they were destined to fly.

Thus, the new criteria included the following:

- 1) A minimum of 20 hours of solo flying time
- 2) The ability to fly a service aircraft satisfactorily
- 3) The successful completion of a cross-country flight of at least 60 miles, during which he must have landed twice, with both witnessed by an RFC officer

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<sup>648</sup> NA:AIR1/131/15/40/218 -*Insufficient training.*

<sup>649</sup> NA:AIR1/997/204/5/1241 - *Training.*

- 4) The ability to remain at 8,000 ft for 15 minutes before landing with the engine off within a designated 50yd circle
- 5) Successfully complete two landings in the dark illuminated by flares<sup>650</sup>

The changes were accompanied by new tests in gunnery, artillery observation, bomb-dropping and photography, all of which had been updated based on new learning.<sup>651</sup>

The new tests were shared with the Egyptian operation on 16 December and implemented there too. W. Fry recalled that almost as soon as the new regulations appeared, he and all his fellow 'C' Flight pilots were sent on a gunnery course at a new 'air-to-ground range and camp which had been opened at Bercq-Sur-Mer, near Le Touquet'.<sup>652</sup>

While instruction improved for new pilots, keeping pilots in the Field updated with the latest developments and thinking was no easy matter. Much tactical training would be learned 'on the job', but the RFC also distributed vast numbers of pamphlets and books to squadrons in France and Egypt in an attempt to share the latest thinking with the men in the Field. The documentation had come a long way in 1916, including an updated copy of the 1914 RFC Training Manual, which was distributed to all pilots and many men. Morley claims that the new edition was 'largely the same as the 1914 version', but as shown in Chapter Three, this is far from the case.<sup>653</sup> Additionally, the RFC routinely sent men to France to give additional lectures on specialist subjects or the latest developments. In just one example, in December 1916, Lt. Oxley was

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<sup>650</sup> It was noted that the OC Admin Wing had the 'power to dispense with this test in cases where they consider that too much time will be wasted in waiting for a favourable opportunity.'

<sup>651</sup> Jones, *WITA*, v3, p.297.

<sup>652</sup> Fry, *Battle*, p.105.

<sup>653</sup> Morley, *Wings*, p.52.

requested to tour squadrons 'to give practical lectures on bombs, bomb sights, bomb releases and give demonstrations with dummy bombs'.<sup>654</sup>

Training of pilots and men began in Egypt in 1916. A summary of the RFC operation in Egypt, contained in the archival file *History of Training of Pilots in Egypt*, states that training began that June. Cutlack, however, in his official history of the Australian Flying Corps, traced its origins to six months earlier when the Army Council suggested that Britain take advantage of weather differences and establish training facilities in the Middle East.<sup>655</sup> Cutlack's earlier date is supported by a routine report from Capt. Dalton to the Directorate on 7 March 1916 which shows that a weekly ground-based course had already been established at Ismailia using documentation from the Schools of Military Aeronautics in Britain as their starting point.<sup>656</sup> Ground-based instruction was formalised in Egypt with the opening of the No.3 School of Military Aeronautics on 21 August 1916. The first pilots graduated from the Egyptian operation during the last two weeks of November 1916, when 20 men completed training. A further 30 followed before year-end. To put the size of the Egyptian operation in context, at the same time as these 50 men graduated in Egypt, 336 men graduated in Britain.<sup>657</sup> As far as possible, the Egyptian operation mirrored that in Britain. Later, in April and May 1917, copies of examination papers from Reading and Oxford were also shared with Egypt, standardising exams.<sup>658</sup> Four hundred and thirty men would graduate in Egypt in 1917, while in the same period, the RFC reported that 5,324 men

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<sup>654</sup> NA:AIR1/136/15/40/269 -*Aeroplane and Artillery Co-operation*.

<sup>655</sup> Cutlack, *Flying Corps*, p.423.

<sup>656</sup> NA:AIR1/387/15/231/28 -*Vol. XXVIII*.

<sup>657</sup> NA:AIR1/131/15/40/222 -*Personnel - trained pilots, Home and Egypt. Fortnightly return of graduated pilots for Air Board*.

<sup>658</sup> NA:AIR1/130/15/40/211 -*Flying School at Aboukir, Egypt - graduation of pilots from*.

had graduated in Britain. Thus the Egyptian operation accounted for around 7.5 per cent of graduations.<sup>659</sup>

In 1918, the creation of additional Egyptian schools continued to mirror the British setup, which will be discussed in detail in the following chapter. In June 1918, an Egyptian Artillery Observation school became the No.3 School of Navigation and Bomb Dropping. An Aerial Fighting School and a School of Aerial Gunnery merged in July to become the No.5 Fighting School. Also, in July 1918, a flight based on Gosport methods was introduced, with 55 of 68 men successfully passing. In September, the Fighting School became a Flying Instructor School handling 18 pupils a fortnight and grading them the same way as in Britain.<sup>660</sup> No.3 Cadet Wing, which came online at the end of 1917, had some 2,137 cadets enter the system, with 1,774 completing the nine-week course by the end of the war.<sup>661</sup>

Returning to 1916, on 19 November, Trenchard informed the Training Brigade via the Directorate that he would like to see 'stricter flying tests, particularly at heights over 8,000 feet'.<sup>662</sup> This was due to the return of some pilots to Britain who were 'unable to withstand the effects of atmospheric conditions'.<sup>663</sup> However, in an interesting illustration of the conversations between the Training Brigade and the Field, Trenchard withdrew his demand two weeks later after discussing with Charlton the 'difficulties involved' with implementing his suggestion.<sup>664</sup>

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<sup>659</sup> NA: AIR1/131/15/40/222 -*Personnel - trained pilots.*

<sup>660</sup> NA: AIR1/408/15/240/2 - *History of training in Egypt, 1916-1918.*

<sup>661</sup> Ibid.

<sup>662</sup> NA: AIR1/131/15/40/218 -*Insufficient training.*

<sup>663</sup> Ibid.

<sup>664</sup> Ibid.

Despite the advances made in 1916, a memorandum from the Director of Air Organisation's office illustrated the trade-off operating between training and operational demand from the Field. On Christmas Eve 1916, the Commandants of the School of Military Aeronautics were expressly told that;

It may be necessary, owing to the demand for Officers for training, to post a certain number of men to the Field before they have completed their practical examination.<sup>665</sup>

Thus if operational Field commanders demanded pilots, men would be considered available, provided they had passed parts A and C.<sup>666</sup> It is worth noting that this change affected only those pilots identified as artillery observation or reconnaissance pilots as opposed to scouts. From 6 December 1916, a clear delineation between the two types had been established with those considered the best pilots training for service in scouts. The consequence of this decision was that men would now train only on the type of aircraft that they were sure to fly overseas.<sup>667</sup>

#### 4.6 The Pemberton-Billing Affair

Noel Pemberton-Billing was an eccentric pre-war inventor and flyer who joined the RNAS in January 1915.<sup>668</sup> A year later, he had become disillusioned with the flying services, particularly its direction under Sir David Henderson. In a bid to influence policy, Pemberton-Billing resigned his commission, stood for Parliament, and was successfully elected MP for Hertford at his second attempt in March 1916. This chapter need not dwell on many of his pronouncements which were often long-winded and

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<sup>665</sup> NA:AIR1/136/15/40/269 -*Artillery Co-operation*.

<sup>666</sup> Ibid.

<sup>667</sup> Ibid.

<sup>668</sup> See B. Stoney, *Twentieth Century Maverick: The Life of Noel Pemberton-Billing*, (East Grinstead: Bank House Books, 2004).

acerbic, often drawing contempt from fellow members. However, on 22 March 1916, he successfully inflamed the Commons when he said, 'I would suggest that quite a number of our gallant officers in the Royal Flying Corps have been rather murdered than killed.'<sup>669</sup> He also stated that with inept training and decrepit machines, the RFC was guilty of criminal negligence.<sup>670</sup> Many MPs were dismissive, and Stanley Spooner, the influential editor of *Flight*, criticised Pemberton-Billing's 'unnecessarily vehement language', terming his speech the 'irresponsible ravings of third-rate journalism'.<sup>671</sup> However, Pemberton-Billing successfully pressured the Government to form a Committee of Enquiry into the air services, which first met in the middle of May.

Pemberton-Billing's former service, the RNAS, refused to cooperate with the enquiry, placing themselves above his comments. In the RFC, opinions as to whether to cooperate varied. Henderson saw it as an opportunity. At a high level, the enquiry was a chance to clear the service's name. He also believed the pressing issue was the supply of new aeroplanes, and the enquiry was a chance to raise the issue's profile in Government. The problem had been exacerbated by squabbles over aircraft orders with the RNAS, and the enquiries findings might force the Government to assist in this matter. To that end, Henderson told Trenchard that the enquiry would help place the service 'on a better footing'.<sup>672</sup> Trenchard was less convinced about this stance. Boyle claims in his biography of Trenchard that he 'was mildly astonished that Henderson should stoop to defend himself against an irresponsible charge'.<sup>673</sup> Brancker

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<sup>669</sup> Stoney, *Maverick*, p.96.

<sup>670</sup> *Hansard*, HC Deb, Vol 81, 28 March 1916.

<sup>671</sup> 'Pemberton-Billings' in *Flight* (Issue 13, 30 March 1916, p.257).

<sup>672</sup> RAFM:MFC76/1/76 – *Trenchard Papers – Correspondence with Henderson*.

<sup>673</sup> Boyle, *Trenchard*, p.173.

concluded with Trenchard. In his autobiography, he wrote, 'Never was there a more useless waste of time and energy in the middle of a great war.'<sup>674</sup>

The Committee reported its findings in a report dated 3 August 1916. A High Court judge, Justice Clement Bailhache, chaired the enquiry. Bailhache was a recent High Court appointee in 1912 and specialised in commercial rather than criminal law. He was, however, famous for his ability to get quickly to a point and for his brevity.<sup>675</sup> The other six panel members included the former commanding officer of II Corps, General Horace Smith-Dorrien, renowned engineers Charles Parsons and Charles Bright, senior lawyer John Balfour-Browne, and finally the Conservative MP for York and Liberal MP and future Home Secretary Edward Shortt.

The *Final Report of the Committee on the Administration and Command of the Royal Flying Corps* was released in November 1916.<sup>676</sup> As can be gauged from the report title, it was thorough and wide-ranging, with many issues discussed that are beyond the scope of this research. While Pemberton-Billing dismissed the report as a 'white-wash', there is little in the report to support such a view. Criticisms were made of the RFC in many areas and considered a specific charge: *Insufficient Training of Pilots and Observers*.<sup>677</sup> The Enquiry recognised that the RFC had grown from a standing start and that supply issues of both instructors and aeroplanes were somewhat inevitable at the beginning of the war. The report recorded 'that the present system of training pilots, except regarding fighting in the air, meets with our unqualified approval'

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<sup>674</sup> Macmillan, *Brancker*, p.123.

<sup>675</sup> <https://www.commercialcourt.london/cm-bailhache>

<sup>676</sup> NA: AIR2/9/87/7661 – *Enquiry into the Administration of the R.F.C., 1916.*

<sup>677</sup> *Ibid.* p.70.

but noted that 'Training is still, [...] hampered to some extent by a shortage of instructors as well as by shortage of school aeroplanes.'<sup>678</sup>

The report did not spare the RFC criticism regarding fighting in the air and dedicated five pages of its report to its findings in this area. It noted the slow progress in providing schools of aerial fighting and that there was still just one at Hythe at the time of writing. The report criticised the fact that it had taken over a year to open the Hythe school and that the opening of others 'has, up to now, proved an insurmountable difficulty.'<sup>679</sup> While recognising that the siting of the schools had posed a problem given their nature, they rightly concluded that 'the problem should, we think, have been solved long before this.'<sup>680</sup> The provision of gunnery schools will be more thoroughly examined in the following chapter. The result was that they concluded that some pilots had been sent to France with a lack of practice in aerial fighting.

The Enquiry recognised that the climate was an issue with the training of pilots in Britain. In these early days of the war, low clouds or heavy rain could delay or cancel training altogether. As a consequence of this finding, they recommended that the RFC seek a training base with a better climate, noting that the South of France had been considered. It can be deduced from the report that Henderson cleverly suggested the problem to the panel and then proposed its solution. While it was Canada rather than the south of France, with Texas providing a warm weather solution, the RFC had been considering the issue since 1915.

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<sup>678</sup> NA:AIR2/9/87/7661 - *Enquiry*.

<sup>679</sup> *Ibid*.

<sup>680</sup> *Ibid*.

Pemberton-Billing had erroneously claimed that no advantage was taken of private schools early in the war, a matter discussed and disproved earlier. The Enquiry did, however, criticise the seriousness with which the RFC had trained its observers. To paraphrase the report, they were treated very much like second-class citizens, a situation they lamented and encouraged the RFC to change. Unfortunately, a full consideration of the development of observer training is left predominantly outside of the scope of this work due to word count constraints. As stated earlier, it is impeccably dealt with already in Geoff Jefford's excellent *Observers and Navigators and other non-pilot Aircrew in the RFC, RNAS and RAF*.<sup>681</sup>

An interesting consideration of the report was the accusation that seventy-four pilots had been sent home from France for further training the day after Pemberton-Billing had been elected into the House of Commons. While the inference was clearly that Pemberton-Billing's appointment had led the RFC to recognise and change their ways, the enquiry found this not to be the case. The enquiry rightly observed that 'pilots are from time to time sent home in batches, as also are pilots when promoted, or sent home to form new squadrons.'<sup>682</sup> This particular allegation, the Enquiry concluded, was 'an excellent illustration of how a witness who retails information of the "gossip" order may be misled, and, incidentally, of the class of unfounded suggestions which we found may be abroad.'<sup>683</sup>

The enquiry ultimately concluded:

The task of fault-finding, always unpleasant, became more and more distasteful to us as we proceeded with our inquiries. When we look back to the RFC at the outbreak of

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<sup>681</sup> Jefford, *Observers*.

<sup>682</sup> NA:AIR2/9/87/7661 - *Enquiry*.

<sup>683</sup> *Ibid.* p.146.

the war [...] when we see it now increased out of all recognition in numbers and efficiency [...] its training schools, its aerodromes, its equipment, its pilots and observers, its army of mechanics, it seems as though the RFC is a new creation.

Our admiration is increased when we remember that all the work necessary to bring it into its present state of efficiency has been done while bearing the heavy burdens of rendering such service as the Army required of it in the Field and on the fronts.<sup>684</sup>

When Pemberton-Billings continued to expound his 'murderous' allegations before the report's findings had been released, an exasperated Edward Shortt said of Pemberton-Billings Committee appearance:

He produced any amount of hearsay evidence and would give no names. The Member for East Hertfordshire [Pemberton-Billing] was invited to call any witnesses that he chose – any witnesses. He was not only invited to call witnesses. He was pressed over and over again to say whether the cases he brought before the Committee were those upon which he relied [...] he was pressed by the learned judge to say whether he had any more cases to which he attached any importance at all, and he said he had not.<sup>685</sup>

Even with his credibility undermined, Pemberton-Billing was unrepentant. In December 1916, he stoked the fires once more, stating in the House of Commons that:

We are wasting our time in training pilots in this country. I have pointed out to them that my experience of aviation has shown me that it is a fortunate day when a young learner gets, on average, four minutes in the air in England. In the initial stages of learning to fly, the atmospheric conditions must be more or less favourable. The result is that these young fellows are waiting about the aerodrome for their turn or for the weather.<sup>686</sup>

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<sup>684</sup> NA: AIR2/9/87/7661 - *Enquiry*.

<sup>685</sup> *Hansard*, (HC Debate Vol 85, 22 August 1916).

<sup>686</sup> *Hansard*, (HC Debate Vol.88, 14 December 1916.)

By now, fellow MPs were tired of Pemberton-Billing's outbursts, and though he continued disparaging RFC leadership, particularly that of David Henderson, Parliament paid him little further attention.

#### 4.7 Complaints from the Field

In concluding this chapter in 1916, it is necessary to look at a more relevant source of complaints concerning pilot training: the Field itself. In 1967 a file at the National Archives entitled, *Pilots sent out to EF [Expeditionary Force] without sufficient training & General Training of Pilots* was created.<sup>687</sup> The file covers the period from 30 December 1915 to 18 December 1916, which, by most accounts, was the worst period of pilot training. A second file, *Training Pilots and Observers*, covers training more generally and, while it duplicates some contents, covers a lengthier period through July 1917.<sup>688</sup>

This research makes no attempt to justify men sent to the Front without the training levels consistent with policies in place at the time. However, context is utterly crucial. Firstly, the complaints within this file are not complaining of 'inadequate' or 'insufficient' training in policy terms; they capture instances where the system has failed to prevent men from being sent overseas without meeting the minimum criteria. Thus, rather than showing leadership did not care for the *inadequate* training of the men, the very fact that there were complaints and there were men sent home for further training shows the exact opposite. Even in the hour of greatest need, men would not be sent out on

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<sup>687</sup> NA:AIR1/131/15/40/218 -*Insufficient training*.

<sup>688</sup> NA:AIR1/997/204/5/1241 - *Training*.

patrol without the agreed number of hours in the correct aircraft type. The feedback loop worked, and failures were corrected.

What is also clear from the file is that when there were errors, they were vigorously followed up with those responsible held to account. The experience of Lt. George Garrod will serve to illustrate this. On 29 December 1915, RFC HQ in France wrote to Garrod asking him to confirm which aircraft he could fly. They had clearly noted that the form from the CFS stated he had experience on a BE2c and a Caudron. Garrod's scribbled reply states that he had not flown a BE2c as the school did not have one available.<sup>689</sup> Marindin at the Directorate forcefully took up the issue with the training establishment but found a form-filling error was the most likely cause. Garrod received additional training and ended the war as an instructor himself.

What Trenchard also says in his memorandum to the Training Establishment regarding Lt Garrod is particularly important and challenges the narrative that RFC leadership did not care about the training status of his men:

If there is a serious shortage of both pilots and machines at home, may I be informed so that I can inform GHQ, and we may take steps to cut down the amount of work being done? This, of course, would be very unfortunate owing to the fact that there is more and more required in cooperation with artillery and in order to combat the German machines, which are getting very active and numerous.<sup>690</sup>

Trenchard is fully aware of the limitations of the fledgling training system. Thus, even with increased demand for his services from Haig, he offers up the possibility, albeit unpalatable, of reducing the amount of work undertaken by the RFC in the Field.

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<sup>689</sup> NA:AIR1/131/15/40/218 -*Insufficient training*.

<sup>690</sup> *Ibid.*

Trenchard considered training men like Garrod in the Field but considered it:

Very unwise to start a training establishment again out here as, at present, it only means the destruction of service machines, and I have sufficient work to do at present trying to keep the other machines serviceable owing to the shortage of machines.<sup>691</sup>

As stated earlier, it was also clear that there was an expectation that some men would require a small amount of additional training when they arrived in France. Trenchard had put aside an instructor and aircraft specifically for this purpose. As he articulated to the Directorate, the problem was that he had too many pupils arriving needing to use it. Writing in January 1916, Trenchard informed Marindin that he now had seven men requiring additional training. With the heavy winter ground, he was concerned that the aircraft would not last long.<sup>692</sup>

The 'complaints file' also helps disprove the historiography's obsession with inept training by demonstrating that a thorough feedback loop was in place. When 2/Lt F.A. Garlick claimed in France that he had never done a cross-country flight, an investigation was initiated. A training establishment memo curtly tells flight commanders that 'this question will not be allowed to rest until a definite answer [...] is obtained.'<sup>693</sup> It transpired that Garlick had carried out at least one cross-country flight as they found he had undertaken a 65-mile trip to Basingstoke. However, the checks failed to establish whether Garlick had carried out the landings he was supposed to make during the trip and that officers had simply assumed he had. Assuming was not

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<sup>691</sup> NA:AIR1/131/15/40/218 -*Insufficient training*.

<sup>692</sup> *Ibid.*

<sup>693</sup> *Ibid.*

in accordance with stated procedures, and further guidelines were issued to enforce the checks on pilots during their cross-country flights.

Some men may have obtained their certification but still turned out to be unsuitable when they arrived in France. 2/Lt M.A. Lillis's commanding officer found he 'shows little sign of improvement and appears to have no judgement.'<sup>694</sup> Demonstrating the propensity for the RFC to view observers as second-class citizens, he recommended using him instead in that capacity. When Major Powell of the Directorate followed up with the Admin Wing, he was much more strident:

It is not understood how an officer who is reported to be fit for overseas should, on arrival in France, be found to be so completely unsuited for the duties of a pilot unless the officers who were responsible for his training and graduation made a very grave error of judgment in reporting him, firstly, as fit to graduate, and secondly, as fit for overseas. I am, therefore, to request that you will enquire into the circumstances of this case and submit a very early report on the matter.<sup>695</sup>

The Officer Commanding No.8 Reserve Squadron backed his instructors. He pointed out that though he had had little time with the officer concerned himself, Lillis:

Was confidentially reported to me as being an average Avro pilot, and I would not hesitate to show an Officer posted [...] as fit for overseas unless I had personal experience to the contrary.<sup>696</sup>

Issues with gunnery training were mentioned previously. Trenchard had formally requested that 'men should be trained as far as is practicable, in fighting in the air' back in October 1915.<sup>697</sup> Whilst the School of Aerial Gunnery opened shortly

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<sup>694</sup> NA:AIR1/131/15/40/218 -*Insufficient training*.

<sup>695</sup> Ibid.

<sup>696</sup> Ibid.

<sup>697</sup> NA:AIR1/997/204/5/1241 - *Training*.

afterwards, its throughput, at least initially, was small, and training was often uneven. In April 1916, Trenchard wrote home stating he had received one man who claimed to have never seen a machine gun and therefore asked for instruction in it and a second man who, whilst he had fired a gun, had never changed a drum in the air. Trenchard stated:

Pilots are not sufficiently trained in the use and manipulation of the Lewis gun in the air. It is essential [...] that pilots should be able to change the drum with great rapidity and using only one hand.<sup>698</sup>

It is fair to say - as the Pemberton-Billings enquiry also found - that the RFC was forced to play catch-up in this area. Trenchard was promised in response to his April memorandum that additional gunnery instructors had been added. However, the response was vague regarding when every pilot would undergo training with the Gunnery School at Hythe before service in France. In the meantime, issues continued with standards of gunnery, prompting a further challenge from Trenchard in October. In response, the Directorate attempted to placate Trenchard, reassuring that:

All pilots of Fighter Machines will be fully trained in this respect [on the mechanisms of Lewis and Vickers guns] by December 1916, and the great majority of them will be so from now onwards, in the guns, they will be required to use. I am to add that all pilots joining the Expeditionary Force from the present time will have a good knowledge of the Lewis and Vickers guns.<sup>699</sup>

Trenchard was well aware that it was his demand for men in France that was causing the training system to creak, but he continued to drive the Training Division hard. Throughout 1916, he also had cause to complain about pilots failing to wind in their wireless aerials correctly and others who could not use their compass properly.<sup>700</sup> He

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<sup>698</sup> NA:AIR1/997/204/5/1241 - *Training*.

<sup>699</sup> *Ibid*.

<sup>700</sup> *Ibid*.

did so knowing that the feedback he provided would be taken onboard, and indeed, in both these cases, adjustments were made to training courses. Feedback drove improvement in methods.

This research contends that the 'complaints from the Field' narrative is somewhat overplayed. Instead, the relatively small number of complaints collectively shows that a strong feedback loop existed. Each complaint was vigorously followed up, and actions were taken. The fact that each complaint was investigated also suggests that the actual number of complaints cannot be particularly high. Had the numbers been great, the training organisation would simply have ground to a halt. What the complaints file does *not* show is that there was a conscious effort on the part of instructors to falsify records. Such an assertion is, as stated, a central theme in Morley's thesis on pilot training. He makes the claim that instructing issues 'included the deliberate falsification of grades and student records.'<sup>701</sup> This research finds such accusations baseless.

Instructors found themselves in a uniquely stressful situation. The organisation was growing exponentially, demands placed upon them were incessant, and standards kept changing. Recordkeeping in their paper-based world, including flying hours and aeroplane types flown, relied on accurate logbooks. That occasional mistakes were made is entirely human and, frankly, inevitable. On 17 December 1915, Major Warner at the Directorate wrote to the Commanding Officer of No.2 Brigade. In it, he complained that some pilots had arrived for advanced training and been found not to have passed their preliminary aspects. In this case, Warner investigated and found

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<sup>701</sup> Morley, *Wings*, p.70.

that just such an administrative error had been made. There were apologies, and Warner duly reported, 'I am to say that instructions are being issued to prevent a recurrence.'<sup>702</sup>

A more pertinent issue was that some pilots were not arriving in France with imperfect training due to error or oversight but rather because of a conscious decision based on perceived necessity. In July 1916, for example, the Reading and Oxford schools were accommodating more pupils than they had been designed for. On 14 July, Charlton at the Directorate wrote to Major Saunders, the commanding officer at No.2 School of Instruction. In his letter, he asked the Oxford school to help relieve the pressure on Reading, which 'has been obliged to supply officers in considerable numbers [to the Field] who have not finished their course'.<sup>703</sup> Oxford was asked to increase each of its three classes from 70 pupils to one hundred. After that, however, any 'surplus beyond this [...] should be sent directly by you to squadrons'.<sup>704</sup> Remembering Charlton's autobiography, so much for 'pushing back'.

Charlton was not blind to what he was asking the training organisation to do. He justified the move in a subsequent letter to Trenchard:

They will be absolutely raw material and will learn to fly before they have passed the Schools. I do not, however, anticipate that their numbers will be very much in excess of 50 or 60, all told, but it is necessary to adopt this plan in order to deal with the present situation, which I hope, will not be of very long duration.<sup>705</sup>

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<sup>702</sup> NA:AIR1/381/15/231/22 - *Vol. XXII*.

<sup>703</sup> NA:AIR1/136/15/40/266 - *No.2 School of Instruction, RFC*.

<sup>704</sup> *Ibid*.

<sup>705</sup> *Ibid*.

Given the service's rapid expansion, Charlton was perhaps engaging in wishful thinking, though he was taking measures in parallel to increase school capacity. On 11 November, seeking to avoid sending any further men with incomplete training to the RFC in France, he found a novel alternative. From now on, any pupils beyond the capacity of the schools would be sent to the Aeronautical Inspection Department or Artillery training camps instead. There, they could either study the work in factories or learn more about wireless signalling.<sup>706</sup> Such methods were used until the additional capacity had been created.

There can be no question that this was a difficult period for the RFC, but studying the tone of Trenchard's memorandums and replies at this time is interesting. The historiography often references his 'complaints', but in reality, comments contain little in the way of criticism. Trenchard certainly appeals for more progress and chivvies his subordinates to speed up training. Such an attitude is entirely consistent with his rank and position. However, he was well aware of his organisation's conundrum and knew how hard he could push. In Trenchard's mind, the delivery of pilots to France always took precedence over the duration of training. Such prioritisation would not change at any stage in the war.

#### 4.8 Conclusion

The RFC had prepared well for mobilisation overseas. It also practised many tactical aspects of deployment at a comprehensive gathering, the so-called Concentration

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<sup>706</sup> NA:AIR1/136/15/40/269 -*Artillery Co-operation*.

Camp, in June 1914. Despite this, due to 'short-war thinking', there was no consideration given as to how to grow and train the organisation, a situation Brancker later described as 'amateurish'. This oversight resulted in an organisation left in Britain after the RFC departed to join the British Expeditionary Force, which was bereft of both aeroplanes and instructors. While the RFC had a lengthy waiting list of applicants from the infantry and civilian populations, there was no training infrastructure for them to pass through. Barely more than twenty men had completed a Central Flying School course in the seven months before the outbreak of war, and it took several weeks before the RFC in Britain was able to obtain a few men from France to assist in the training of new reserve squadrons.

The RFC were the victim of their own success. They had proved their worth in weeks, and consequently, Field Marshal French demanded more squadrons. With few resources and lacking an organisational plan, early training efforts were confused and haphazard. A combination of the CFS, reserve squadrons, and service squadrons were all called upon to train new pilots and aid expansion. Whilst the actions of the RFC in Britain were pragmatic in their approach, the lack of clarity regarding how big the force would need to be, coupled with supply issues concerning aeroplanes, would dog the force for over a year.

Only with the arrival of John Salmond in early 1916 did the RFC's training efforts improve radically. He, and his Chief Staff Officer, Guy Livingston, were quick to deduce that the training standards and policies were no longer fit for purpose. In a March meeting that included Trenchard, the first set of minimum training standards was agreed upon. With standards in place, structure was added to the organisation, and a

new certification process was introduced that logically broke the training into three parts. The first of these parts was classroom-based instruction, and new schools were opened at Reading and, three months later, Oxford to accommodate the activity. A new syllabus, new exams and stringent oversight by the CFS were also added and within a month of Salmond and Livingston's arrival, the future training architecture had been implemented.

The fifteen hours of minimum solo flying time introduced in March 1916 was never claimed to be an end goal. The minimum number was increased as soon as possible to twenty in November, and Brancker confirmed in a letter to Burke the desire to increase this further as soon as feasible. Ultimately, this proved impossible in 1916 due to a lack of resources. As the RFC scrambled to expand in the face of demand from France, the lack of training aeroplanes limited the number of men that could be pushed through the system. Such demand remained Trenchard's principal focus, which meant a squeeze on the training system. The historiography's conclusion is overwhelming: the system responded by sending inadequately trained men to France. This research believes such statements are overblown and has shown that the RFC worked hard to avoid such occurrences.

Unsuitable men were weeded out of the force rather than pushed on to France. Appraisal reports and new exams were tools to prevent the incapable from being sent overseas. The training was then continued in squadrons in France, where paternal commanding officers ensured that men received as many days of additional training as possible before they flew an active mission. Finally, when men did slip through the net and arrived in France without adequate skills, complaints were made by officers in

the Field. These complaints were not met with platitudes by the training organisation. In all cases found, they were followed up vigorously and occasionally pointedly until reasons for the failure were ascertained. Where an issue was systemic, processes or syllabi were changed to prevent reoccurrence.

Of course, it is easy to sit back in judgement with the benefit of 100 years of history and to declare training in this period was 'inadequate' or 'insufficient'. Were fifteen hours solo too little? Twenty? No one can answer that, but we can say that the best minds in British military aviation at that time met, discussed and concurred that a compromised number of hours had to be agreed upon that balanced competency with demand from the BEF. Had hours been extended, the BEF would have gone short of the support it needed. Undeniably, the RFC ended 1916 in an incomparably improved position concerning training compared to just eighteen months earlier. However, change over the next eighteen would be equally seismic, as discussed in the next chapter.

## **Chapter Five - Learning to Fly: 1917-1918**

### **5.1 Introduction**

The previous chapter explored the changes and improvements made to the RFC's training procedures and processes until the end of 1916, challenging some of the existing historiographical narratives. This chapter will continue exploring pilot training, focusing on the war's last two years. Rather than a strictly chronological approach, the material relevant to this chapter lends itself to a discussion of specific essential themes in a combined 1917-1918 period. Firstly the chapter will consider the organisation and leadership of training in this period. It will examine how the RFC was structured to cope with the exponential growth in the Corps, including the key personnel involved.

The chapter will then discuss training in the Cadet Brigade, which was fundamental to training recruits, especially when they were overwhelmingly civilians in the last year of the war. It will then look at the development of schools that proliferated during this relatively short period and touch on the changes that needed to be made to syllabi to stay current with demands from the Field. This exploration will include the School of Special Flying development under Robert Smith-Barry, though a detailed analysis of his contribution will be reserved for the final chapter.

The role of Canada has been featured throughout previous chapters, and such is its importance to the training narrative that time must be set aside to consider the contribution of the Canadian establishment here. Finally, it is fitting to conclude with a

look at the training system of late 1918, analysing the progress that had been made whilst acknowledging the challenges that remained.

## 5.2 The Organisation of Training

RAF records show that in June 1918, the service flew 61,140 hours of operational missions on the Western Front. Such flying time represented a 171 per cent increase on the 22,500 flown in September 1916 which had been the highest number that year.<sup>707</sup> To achieve this growth, the number of pilots increased by almost 300 per cent from 1916 to 6,123 at the end of May 1918. Of these, 3,151 were in Britain, and 303 were in Canada, the vast majority in the training system.<sup>708</sup> Such growth required a wholly different organisation to remain manageable and controllable. The task facing the RFC at the beginning of 1917 was considerable. An expansion of twenty service squadrons and thirty-seven reserve squadrons had been approved, and it fell upon the training organisation to create them.

To assist in this, on 1 January 1917, the RFC decentralised its Training Brigade. Three new regional administrative centres called Group Commands were created and headquartered at Adastral House in London. Northern Group Command was established at York, Eastern in London and Southern at Salisbury.<sup>709</sup> In August that year, the Training Brigade became the Training Division. Effective 1 April the following year, on the creation of the RAF, the Directorate of Training came into being, led by John Hearson. In truth, his organisation had been operating for some time before the

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<sup>707</sup> WO, *Statistics*, p.505.

<sup>708</sup> *Ibid*, p.506.

<sup>709</sup> See Appendix One.

announcement, concerning itself with questions of policy and standardisation given the impending changes. On 28 April 1918, a conference was held to discuss the transition of heritage organisations. Consequently, effective 8 May, the training brigades and group commands were rearranged so that their units now fell into one of the new Areas.

<b>Area</b>	<b>Location</b>
No.1 (South Eastern)	London
No.2 (South Western)	Salisbury
No.3 (Midlands)	Birmingham
No.4 (North Eastern)	York
No.5 (North Western)	Glasgow

The Areas were given significant autonomy, each to be commanded by a Major-General, directly responsible to the Air Ministry. These Areas began to take over the myriad of administrative responsibilities, which from 20 May would include the allotment of aeroplanes and the posting of pupils for elementary instruction. The allocation of pupils to special schools was managed directly by the Directorate of Training at the Air Ministry. The administration of the training infrastructure was significant, and the management and recording of personnel as they travelled through the organisation was vital. Daily telegrams were demanded from each school, detailing who was under instruction and the likely duration of their stay. Similarly, daily wires

were required from each Area detailing the number of places they required at each school.<sup>710</sup>

By 5 June 1918, the reorganisation was essentially complete. The fact that it was managed seamlessly and invisibly, as far as operational units were concerned, is a testament to those involved's skill and attention to detail. The Air Ministry was now able to issue a memorandum confirming roles and responsibilities:

- 1) The Air Ministry (Directorate of Training) was responsible for training policy and the operation of that policy in so far as it related to schools under its jurisdiction. It was responsible for all syllabi and the appointment and removal of training personnel.
- 2) Area Commanders were accountable for the internal management of training establishments within their Area. They were responsible for 'carrying out training strictly adhering to the Training Transfer Card issued to all officers and laying down the tests necessary to pass Category A, B and C.'<sup>711</sup>

The Training Transfer Card was a simple but effective book introduced in 1917 and became the method by which an individual's training record was captured.<sup>712</sup> The card was the responsibility of the trainee pilot, and at each stage of training, he was required to obtain sign-off from commanding officers at the school. The cards provide an excellent summary of the complicated requirements to qualify as a pilot in the war's latter stages, as shown later.

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<sup>710</sup> NA:AIR1/676/21/13/1840 – *Training at Home*.

<sup>711</sup> Ibid.

<sup>712</sup> Author's Collection – Training Transfer Card of John Maltby Brown. An example can be found in NA:AIR1/137/15/40/272 -*School of Military Aeronautics*.

While the new structures assisted the management of the burgeoning organisation, acquiring sufficient new land for airfields and skilled resources to manage and equip them became increasingly more difficult in 1917, as shown in earlier chapters. Salmond and Livingstone's 1916 tour of training units led them to conclude that using single squadrons for training was inherently inefficient from a manpower perspective. Such a view can readily be appreciated as the same support organisation was required whether supporting one squadron or several. Thus, in February 1917, a solution was proposed to group three training squadrons into one new unit called a Training Depot Station (TDS). While agreed in principle, an intense operational focus on supporting the Battle of Arras meant that little practical action was taken until July. At this stage, sanction was given for forming seven new units, the first TDSs in the RFC.<sup>713</sup> They, too, will be discussed further later in this chapter.

### 5.3 Training Leadership

Throughout much of 1917, the RFC had arguably its most capable administrators in their best roles, yielding a level of planning and efficiency that greatly enhanced the capabilities of the training establishment and the RFC in general. Livingston astutely noted in his autobiography after the war:

It was found that a good flying officer was frequently only a tolerably good flight commander, an indifferent Squadron Commander and a bad Wing-Commander, due to the fact that the characteristics necessary for fighting in the air are very different from those required for executive command in the Field. [...] it presented a very real difficulty in providing squadron and wing commanders to meet the requirements of our rapid expansion. The administrative

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<sup>713</sup> NA:AIR1/122/15/40/137 – *Aerial Gunnery*.

work necessitated our keeping in constant touch with the various Army Commands throughout the country and working in close liaison with them.<sup>714</sup>

Such a phenomenon is not as strange as Livingston thought. Today, the best computer programmers rarely make the best IT Directors or the best accountants the best Finance Directors. The skills to manage large departments differ significantly from the technical knowledge required to manage the detail. So it was in the RFC. The best fighter pilots were not the best organisational leaders. However, the RFC and later RAF were blessed, or downright lucky, to find themselves with some extraordinarily effective administrators. John Salmond, who had commanded the Training Brigade since July 1916, became GOC, Training Division in August 1917. Salmond's star was very much in the ascendancy. He was to move briefly to become the Director General of Military Aeronautics at the War Office on 18 October 1917, replacing David Henderson. Then, in January 1918, he took over from Trenchard as the GOC RFC in the Field.<sup>715</sup> It is implausible that Salmond would have ended up commanding the RAF had he not been viewed at the War Office to have done an exemplary job in helping grow and equip the Corps.

Throughout Salmond's role in training, he was ably assisted by his Chief Staff Officer, Guy Livingston. Livingston followed Salmond to London when the latter was promoted. L.E.O. Charlton had been a senior Staff Officer at the Directorate of Military Aeronautics since March 1916 and became Director of Air Organisation in February 1917. Livingston inherited Charlton's position in London while Charlton took over operational command of V Brigade throughout 1918. Sefton Brancker, who had

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<sup>714</sup> Livingston, *Hot Air*, p.105.

<sup>715</sup> Effective 1 April 1918, this became GOC RAF in the Field. Trenchard moved to head the new Independent Force which focussed on long-range bombing.

worked tirelessly since the start of the war, had preceded Charlton as Director of Air Organisation in March 1916, from where he was to become the Deputy Director-General of Military Aeronautics in February 1917. Though he wished to command operationally, when he did so, his position as Commander of the RFC in Palestine was short-lived. He soon returned to London, where his organisational ability was better used. First, he became Controller-General of Equipment and, finally Master-General of RAF Personnel. Thus, Salmond, Charlton, Brancker and Livingston provided command continuity throughout a significant period of the war.

The training organisation was also assisted by the addition in November 1917 of experienced Wing Commander Edgar Ludlow-Hewitt, who had returned to England in a newly created role as Inspector of Training at the Training Division. He was later promoted to GOC Training Division, but this appointment proved unhappy due to a series of political machinations, in no small part due to Smith-Barry, that will be discussed later. In Ludlow-Hewitt's place, John Hearson, who had succeeded Livingston as Chief Staff Officer at the Training Division in October 1917, provided much-needed continuity, taking over the command of the Training Division for the remainder of the war.

#### 5.4 Strategic Planning and Training Depot Station Adoption

Before leaving the Training Division, Livingston undertook the RFC's first strategic planning and forecasting exercise. Uniquely, he gathered together all elements of aeroplane and manpower demand and supply, factored them into a single plan, and widely shared it across the Corps. As can be imagined in this paper-based world, this

was a monumental but arguably well-overdue task. It required someone of Livingston's organisational nous and tenacity to complete it. He involved the aircraft manufacturers, the Ministry of Munitions and operational leadership in England, France and the Middle East. Called simply the 'Programme of Development', the output was a detailed picture of future requirements and delivery dates.<sup>716</sup> From the bottom up, he calculated aircraft availabilities with suppliers, manpower numbers and pilot output from the Training Division to produce a detailed deliverables timeline. Thus when a change was demanded from the Field or a delay happened at a manufacturer, the effects could be factored into the plan. When the RNAS and RFC merged in April 1918, the RNAS's requirements were similarly built into the plan, initially inherited by Hearson and later the office of the Master General of Personnel.

At the end of 1917, Hearson stated that the Training Directorate intended to increase the effectiveness of the training machine. The intention it declared was to:

- 1) Increase the efficiency of pupils whilst maintaining output
- 2) Improve pupil/instructor relations
- 3) Fix responsibility for pupil instruction

And more prosaically :

- 4) 'Preparing the ground for the eventual introduction of a higher standard of flying and ground instruction as soon as the development of Home Training Units permitted.'<sup>717</sup>

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<sup>716</sup> Livingston, *Hot Air*, p.103 and NA:AIR1/31/15/1/156 -*Training-programme of development.*

<sup>717</sup> NA:AIR1/676/21/13/1840 - *Training at Home.*

The means to achieve these aims were to be the widespread and accelerated adoption of the TDS system. These 'All-Through' squadrons, so called because the Elementary and Higher training took place in the same unit, were now aggressively pushed. Instructional improvements, some of which were initiated by Smith-Barry were adopted. The chopping and changing of instructors would cease, allowing a more settled relationship between instructor and pupil. The number of pupils allotted to each instructor would be 'slowly reduced' to a maximum of six.<sup>718</sup> Each instructor would have a mix of pupils at the various stages of instruction, so no instructor had more than half of his pupils undertaking dual elementary instruction at any time. This instructor would now be responsible for a pupil throughout his entire instruction, building more trust and a better relationship.

Though TDSs, as previously noted, were approved in February 1917, adoption had been slow. This new drive mandated that 'Training Depot Stations of two or more Flight Group strength are [to be] formed at all stations in the UK and Ireland'.<sup>719</sup> Such change was now to be 'treated as definite instructions'.<sup>720</sup> The extra emphasis accelerated the 'redistribution of personnel as quickly as possible with as little dislocation as possible'.<sup>721</sup> Henceforth, all new service squadrons would be formed by selecting pilots who were ready from four different TDSs, each providing a complete Flight. Station Commanders were to 'select the very best personnel available' at the time of formation and not simply select an existing group of pilots.<sup>722</sup> After the formation of these complete Flights, the involvement and responsibility of the training organisation in their

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<sup>718</sup> NA:AIR1/676/21/13/1840 - *Training at Home*.

<sup>719</sup> NA:AIR1/31/15/1/156 - *Programme of development*.

<sup>720</sup> Ibid.

<sup>721</sup> Ibid.

<sup>722</sup> Ibid.

development would cease. Hearson's drive was successful, and by September 1918, there were 58 fully formed TDSs, with a further ten transitioning. Additionally, eight TDSs had been formed for the dedicated training of the US Air Force.<sup>723</sup>

## 5.5 The Cadet Brigade

Initially created as the Officer Cadet Battalion in February 1916 to train selected officers from the Infantry, the Battalion was expanded to become a Wing in its own right with four squadrons of one hundred men each in October 1916. At this point, the RFC announced that all non-officers joining the Corps, whether from the infantry or civilian life, would join this new Wing.<sup>724</sup> Here they would learn the basics of military service, including drill and map reading. Through drill was rarely popular, most men recall that instruction was interesting and challenging.<sup>725</sup> The scheme was deemed a significant success, with men moving on to the Schools of Aeronautics better prepared for future training. Plans were soon tabled to increase intake numbers by half. The two existing Cadet Wings, No.1 at Denham and No.2 at Winchester, were added to by four more between July and September 1917.

As discussed in chapter three, recruits of 1918 were markedly different from those joining earlier in the war. The academic abilities of new cadets became such that in the summer of 1918, the RAF went so far as to recruit several schoolmasters to the Cadet Brigade to lecture arithmetic.<sup>726</sup> At this stage, the Directorate of Training decided to opt for a character-based assessment of cadets rather than relying solely

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<sup>723</sup> NA:AIR1/452/15/312/26 Vol. I -*Aerodrome Board*.

<sup>724</sup> Jones, *WITA*, v6, p.298.

<sup>725</sup> For example, Vee, *Minnows*, p.21.

<sup>726</sup> NA:AIR1/14/15/1/49 - *Conferences*.

on academic ability for officer selection. Consequently, cadets would be measured on their sporting prowess, aptitude for leadership, character, keenness, and technical proficiency, as well as academic ability.<sup>727</sup>

The merger of the RFC and RNAS in April 1918 required the unification of much of the cadet's training curriculum. Brig. Gen. A.C. Critchley was seconded from his role leading training in the Canadian Corps to take command of the RAF Cadet Brigade.<sup>728</sup> With significant personal experience and joined by some of his trusted administrators, Critchley spent time appraising the training before recommending changes. While it is clear from archival sources that he drove change, Critchley's 1961 memoir should be approached with caution. In it, Critchley claims that it was he who first organised ground training to be completed prior to flying, a change that has already been demonstrated to precede his arrival by some considerable period. Critchley is also perhaps the source of Denis Winter's erroneous training loss claims, as he states that on his arrival in the training organisation, 'they were killing nearly 50 per cent of the cadets during flying training.'<sup>729</sup>

Where Critchley did add value was in his firm stance that too many subjects were being taught too early. This, he believed, overloaded the cadets with too much information and consequently, little of it was retained. With agreement from the Schools of Aeronautics, Critchley decided that the Cadet Brigade would 'confine itself to teaching thoroughly, drill and discipline, map reading, signalling (four words a minute guaranteed) and to the building up of the Officer and offensive spirit'.<sup>730</sup> In May

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<sup>727</sup> NA:AIR2/114/RU4041 – *Cadets General Classification and Procedure of Cadet's Course Canada*.

<sup>728</sup> Ibid.

<sup>729</sup> Critchley, *Critch!*, p.83.

<sup>730</sup> NA:AIR1/14/15/1/48 – *School of Aeronautics – Reports of Conferences of Chief Instructors*.

1918, Critchley and other members of the training organisation met with officials from the Ministry of Information and attended an exhibition of official war films. Impressed, it was decided to introduce cinematography as a training aid at the Cadet Brigade and the Schools of Aeronautics. So seriously did the RAF take the use of this medium in training that they also sanctioned the establishment on 21 May 1918 of a London Photographic Centre (RAF). This establishment supervised the preparation and distribution of RAF films, and 'each school and Cadet Brigade was [...] fully equipped with the necessary equipment for showing the pictures to the best advantage.'<sup>731</sup>

## 5.6 Ground-Based Schools and Syllabi

For those successful at the Cadet Brigade, it was then on to a School of Aeronautics for a two-month ground-based course.<sup>732</sup> This instruction was designed to give all men the same basic knowledge they would need regarding theoretical aspects of flight, their aeroplanes and engines and other subjects that would be important in their roles. In the last two years of the war, the RFC/RAF spent a substantial amount of time and effort debating and adjusting the syllabus taught at these schools. On 9 January 1917, the commandants of No.1 and No.2 Schools of Military Aeronautics met to discuss proposed changes to the ground-based syllabus. On this occasion, the meeting was convened after requests from the Field that a significant uplift in gunnery skills was required. With a finite amount of classroom time available, other subjects would need to be cut to handle the significant increase in gunnery hours. Thus, the amount of time

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<sup>731</sup> NA:AIR1/676/21/13/1840 – *Training at Home*.

<sup>732</sup> For the development of the Schools of Aeronautics, see Appendix Two.

spent on 'practical' training in some subjects at the No.1 School of Aeronautics at Reading was adjusted thus:<sup>733</sup>

Table 5.1: Hours of Instruction per Subject<sup>734</sup>

	Existing Hours	New Proposal
Map Reading	9	3
Gnome Engines	6	4
Beardmore Engines	6	4
Renault Engines	6	4
Rigging	15	12
Machine Guns	3	18

By November of 1917, however, it is clear from archival training records that the bulk of training on the ground was still on engines and rigging:

Table 5.2: No.1 & No.2 Schools of Military Aeronautics Syllabus – November 1917

	Hours
Engines	77.5
Rigging	42.5
Map Reading/Artillery Observation	24
Signalling	21
Machine Guns	20
Bombs	10
Instruments	5
Total	200 <sup>735</sup>

As shown above, over half of the available hours were spent on the two subjects. It was believed that the pilot needed to understand his machine and engine if problems

<sup>733</sup> NA: AIR1/136/15/40/271 – No.1 School.

<sup>734</sup> Table includes subjects where hours changed.

<sup>735</sup> NA: AIR1/1582/204/82/1 - 4th Brigade.

arose. In the event of forced landings, practised so studiously in early training, they could restart the aeroplane and continue their flights. There is also perhaps an element of the pilot being able to keep an eye on the ability and work of their air mechanics. However, while in 1914, this may have been possible with basic frames and small engines, in 1918, with engines many times more powerful and frames made from metal as much as wood, this was simply impossible. There is also little evidence in pilot memoirs of pilots needing to second guess or correct mechanics. There was perhaps a perception that new men joining as mechanics were less skilled than the old hands. Indeed, writing of an 18 June 1918 meeting, the Chief Instructor of No.5 School of Aeronautics at Denham complained to his Commandant that:

It was contemplated increasing the number of hours of instruction on engines, and it was suggested that some hours might be taken away from the rigging. This I consider would be a mistake [...], a good knowledge of rigging is most essential, especially these days when the standard of Air Mechanics is not as high as it used to be in France and elsewhere.<sup>736</sup>

However, the old hands were still in the service, and many men were many years more experienced. New air mechanics had a substantial number of experienced men around them. If criticism can be levelled at the training syllabus, it is perhaps with this obsession with engines and rigging. Quite simply, significant time was wasted teaching pilots subjects that they never used. For example, in late 1917, tuition now forced pilots to specialise in only one type of engine during their studies. However, there was no guarantee that the service aeroplane they ended up flying would be powered by the engine that they had learned about.

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<sup>736</sup> NA:AIR1/14/15/1/48 – *Conferences*.

Instructors at the Schools of Aeronautics kept their courses as practical as equipment allowed. Each school's 'Running Shed' now had up to eight working engines to aid instruction.<sup>737</sup> Each class was supported by significant written material, mainly produced by a special drawing section within the War Office resident in Reading.<sup>738</sup>

In signalling, pupils were expected to be able to read and send a minimum of eight words a minute. Once proficient, pupils would undertake artillery observation and map reading practice, often perched high above a 30 by 40-foot square model of a part of the line, known as the 'Magic Lantern Artillery Board'.<sup>739</sup> The machine gun training by now focused on the Lewis gun. It included a thorough knowledge of the gun's mechanism and problem-solving, especially clearing jams and changing cartridges. Additionally, the men practised firing the gun from a 'plunging nacelle' with a camera gun that allowed the pupil to see his results and learn from his mistakes.<sup>740</sup> Finally, they would have oral and written exams that an independent Board now set.

In January 1918, further meetings approved the removal of the artillery observation component from school syllabuses altogether. In April, the majority of gunnery training was removed too. Instruction in both subjects would now occur at new specialist schools later in the men's training.<sup>741</sup> Aerial Navigation was added as an extension to the existing map reading syllabus. To help ensure consistency and quality of instruction, all men selected to be instructors at these ground-based schools were

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<sup>737</sup> NA:AIR1/1582/204/82/1 -4th Brigade.

<sup>738</sup> Author's collection – Training Materials of Cadet O. Wilson-Jones.

<sup>739</sup> NA:AIR1/1582/204/82/1 -4th Brigade.

<sup>740</sup> Ibid.

<sup>741</sup> See Appendix Three.

mandated to attend refresher courses held at Henley for engines and rigging and Bristol for navigation.<sup>742</sup>

On 11 June, the Chief Instructors of each School of Aeronautics attended a conference to discuss the syllabus yet again.<sup>743</sup> An agreement was not easy to reach, and it is clear from archival files that the RAF never stopped tinkering with the syllabus before the Armistice arrived. In some respects, this is understandable, given that feedback was constantly being received in light of experience in the Field. Regardless, the endless debate caused distraction within the schools. As late as 29 October 1918, for example, Lt. Col. Freeman of the Director of Training Staff chaired a meeting at the Air Ministry of all School of Aeronautics Chief Instructors. Even the purpose of the meeting sounded convoluted:

To discuss the interpretation of the Syllabus of Training as far as its application of war requirements and its adaptability to what was of most practical use from the point of view of the training required at Training Depot Stations, also to ascertain as far as possible, what influence the training at schools has on the subsequent instruction of the cadet.<sup>744</sup>

In simple terms, it was again to review the syllabus of the schools. The review's intent was the recurring theme of simplification. As Lt. Col. Pretyman put it at the meeting:

If a Cadet's preliminary ground instruction becomes too comprehensive, then he forgets most of it in a very short time; whereas, if his instruction was simpler, the essential points could be insisted on in a manner that he would have less chance of forgetting those points.<sup>745</sup>

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<sup>742</sup> NA:AIR1/683/21/13/2234 – *Precis*.

<sup>743</sup> NA:AIR1/14/15/1/48 – *Conferences*.

<sup>744</sup> *Ibid*.

<sup>745</sup> *Ibid*.

The immediate action from the meeting was for each Chief Instructor to visit a TDS for at least two to three days to better understand the trainee's needs at the next stage. From this meeting, it is possible to view the suggestions positively - the RAF were still attempting to improve things to the end of the war. Alternatively, perhaps, the question should be asked why just two weeks from the Armistice, did the Schools of Aeronautics still not know what was required at a TDS?

While syllabus changes to stay current were one issue, the sheer scale of growth was another. By mid-1917, the capacity of places at the Schools of Military Aeronautics had been exhausted again. The proliferation of such schools demonstrates the rapid pace of expansion occurring until the war's end. In August and November 1917, No.5 and No.6 Schools of Military Aeronautics for pilot training were formed.<sup>746</sup> A further school, No.8 School of Aeronautics, was formed in July 1918. In addition, the two dedicated schools for observers were formed, No.7 (Observers) School of Aeronautics in January 1918 and No.9 (Observers) less than 50 days before the Armistice in September 1918. While the new schools were coming online, two options were discussed to deal with the shortage of places. One option was to reduce the training period. A second to make a concerted effort to find men in other infantry units who would not require a Cadet course. In the words of the memorandum, 'The first method was considered unsatisfactory from experience, and the second method was advocated.'<sup>747</sup> As well as saving time in the training process, there is evidence that men from the infantry were less likely to be found unsuitable for the service after joining. For planning purposes, wastage rates for men from infantry transfers were estimated at 17 per cent in July 1917, compared to 27 per cent assumed for civilian

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<sup>746</sup> See Appendix Two.

<sup>747</sup> NA:AIR1/683/21/13/2234 - *Precis*.

recruits.<sup>748</sup> As was demonstrated earlier in this thesis, however, finding men in infantry regiments was less straightforward in practice the longer the war went on.

Throughout the last two years of the war, technological and tactical advances were at their greatest. Aeroplanes such as the Bristol F2B fighter were very different in terms of performance, armament and equipment from earlier models. During the German offensive in the spring of 1918, aircraft would be called upon to replace retreating artillerymen, strafing the advancing enemy. Later, combined operations with infantry and tanks were used successfully for the first time in military history. Such skills had been learned in new specialist schools.

### 5.7 - New Training Schools

Perhaps the most pressing training development need throughout the war was in the use of gunnery. As discussed, the concept of fighting for aerial supremacy in the air pre-dated the war. As aircraft capabilities improved, the first School of Aerial Gunnery opened in late 1915. As noted in the previous chapter, there was much criticism of the RFC for not adding additional schools in 1916. Evidently, they did try, but the expansion project was an abject failure. Approval was granted in mid-1916 for the 'formation of a much larger School of Aerial Gunnery at Loch Doon, Argyllshire' and a third site at Turnberry in Ayrshire.<sup>749</sup> These sites had been approved after an extensive search involving officers scouring Scotland, Ireland and the Norfolk Broads for a suitable water-side base.<sup>750</sup> The Loch Doon project proved an expensive disaster for

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<sup>748</sup> NA:AIR1/683/21/13/2234 - *Precis*.

<sup>749</sup> NA:AIR1/664/17/122/696 - *Syllabus*.

<sup>750</sup> Macmillan, *Brancker*, p.120.

the RFC and almost cost Brancker his job. The project, when abandoned, had incurred £433,000 in costs versus an initial estimate of £150,000.<sup>751</sup> Though Brancker would still argue after the war that, 'I still believe that if we could have pushed it through it would have been a most valuable asset to our training', poor planning and site selection, the latter involving little local input, doomed the project to failure from the start.<sup>752</sup>

Consequently, the RFC remained with only one gunnery school until January 1917, when the Turnberry school became the No.2 School (Auxiliary) of Gunnery. This new school became dedicated to the training of scout/fighter pilots. One hundred and fifty pilots a fortnight were to be sent to the school after they completed their Higher Training. Following the opening of this second school, the first at Hythe focussed on the training of observers, or 'aerial gunners' as they became known. Another school of gunnery was added at Aboukir in Egypt in April 1917 before finally, in August, a third British school was formed near New Romney airfield on the Kent coast. A month later, the RNAS added its first dedicated gunnery school at Frieston, Lincolnshire.

Schools of Aerial Gunnery should not be confused with Schools of Aerial Fighting though their purposes are complementary. While the former focussed on the ability to use, aim and fire the machine guns, the latter focused on the latest tactics regarding manoeuvre and fighting. The first concrete steps towards improving the training of fighting in the air came on 17 September 1917 with the approval of a School of Aerial Fighting at Ayr Racecourse, just down the coast from the Turnbury school. The school

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<sup>751</sup> *Hansard*, (HL Debate, 21 March 1918, v29, p.564-571)

<sup>752</sup> For an excellent summary of the work that had been undertaken at Loch Doon, see <http://secretscotland.org.uk/index.php/Secrets/LochDoonAerialGunnerySchool>

was equipped with 24 Avros, a mix of rotary and stationary engine scouts, and a small number of DH4s and Bristol Fighters. The school, which also intended to take in 150 pupils per fortnight, was divided into three Groups, each of two Flights. No sooner had the operation begun than it was clear that demand for places would outstrip this school too. On 11 October, approval was given to form the No.2 School of Aerial Fighting at Driffield, Yorkshire, which became operational on 28 February 1918.<sup>753</sup> The complexity of activity at the schools can be gleaned from the letters of Ian Henderson to his father, Lt. Gen. David, in May 1918 when the son was an instructor at the Ayr school.

We go off in formation and someone comes along as the Hun with his circus and fights. [...] Last Monday there were 35 or 40 Avros in three formations stretching from the sea to about Kilmarnock, and the trenches were represented by the railway line [...] The Avros were escorted by about 10 or 12 Camels. I was put in charge of the Huns, consisting of 3 SEs and 3 Spads, 3 Monoplanes (Bristol) and about 6 Bristol Fighters. [Using the camera gun] I got two beautiful pictures of the leader and another from about 30 yards range, and they never knew I was there at all. It then turned into a dogfight.<sup>754</sup>

The dangers are also explicitly illustrated as Henderson was 'sorry to say that at this stage of the fight, two Camels ran into one another, end on, and were absolutely pulverized.' Ian would himself die in an accident just a month later, on 21 June 1918.<sup>755</sup>

The level of activity was pronounced, Henderson reporting shortly before his death that 103 hours of flying was done in one day at Ayr and that there 'are any number of ranges [...] with pupils doing gunnery courses – the horrible pop pop pop goes on all day.' Whilst gunnery and fighting schools were being added, a third type of school

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<sup>753</sup> NA:AIR1/676/21/13/1773 – *Notes on Flying Training at Home.*

<sup>754</sup> RAFM:173620 - *Letter from Ian Henderson to father David regarding the merger of schools at Turnberry - May 1918.*

<sup>755</sup> RAFM:AC 71/12/463 – *Air Ministry Accidents Department report on the deaths of Captain IHD Henderson MC and Lieutenant HB Redler, 21 June 1918.*

known as the School of Special Flying at Gosport was created on 2 August 1917.<sup>756</sup> The school, led by Robert Smith-Barry, was created from an amalgamation of Smith-Barry's No.1 Training Squadron with No.27 and No.55 Training Squadrons. Though it operated independently of the other schools and reported administratively to Salmond, it was treated the same way as any other new Training Depot Station. Smith-Barry will be discussed in more detail later in this thesis, but it is necessary to understand his crucial contributions to pilot training. Utilising dual control instruction, pilots were taught how to get into and out of all manner of manoeuvres they would experience in France. Arguably, much of this was already taught at Advanced training squadrons, and at the School of Aerial Fighting that opened at a similar time. Nor was Smith-Barry, as many sources suggest, the first to capture some of these principles in an official pamphlet. In July 1916, Lt Col A.C.W. MacLean, Commandant of the CFS, issued a set of *Hints for Young Instructors on How to Instruct in Flying*.<sup>757</sup> This was the first real instruction pamphlet which, though a step in the right direction, failed to include instruction on any form of aerobatics or how to get out of difficulty.

Smith-Barry did, however, wisely argue that instruction should not end at the point at which a pupil had been shown the manoeuvres. Instead, a pupil would practice for some time alone before being taken up again by the instructor to troubleshoot issues and remove bad habits. Smith-Barry also argued – unsuccessfully in this case – that the number of hours of training was irrelevant and should be removed as a measure of a pilot's ability to qualify.

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<sup>756</sup> NA:AIR2/12/87/Schools/174 -*School of Special Flying RFC. Gosport: Formation and establishment.*

<sup>757</sup> IWM:LBY K.4032 -*Hints for Young Instructors on How to Instruct in Flying.*

Due to Frank Tredrey's *Pioneer Pilot: The Great Smith Barry who Taught the World How to Fly*, the historiography has generally treated Smith-Barry's 'new' methods as his greatest achievement. However, this research argues that Smith-Barry's most significant contribution to flying training is not this. The profound change emanating from the Special School of Flying that would have revolutionised capabilities had the war continued into 1919 was his recognition of the importance of training the trainer. The role of instructors had to be taken as seriously as that of any leader in France. Their skill was vital in the production of better pilots. In November 1917, Smith-Barry suggested that three officers from his School of Special Flying should work in scout or 2-seater squadrons for six weeks in France, while in return, three officers should be sent home to learn the new methods. Salmond had the move approved by Trenchard on 22 November with the proviso that the 'Instructors [were] to do the ordinary work of pilots' as well as impart knowledge.<sup>758</sup>

Thus the essential Smith-Barry improvement became the seeds sown for the standardisation of instructor abilities through their dedicated training. As demonstrated in the next chapter, this outcome did not accord with Smith-Barry's personal ambition. Instead, the role of the School of Special Flying would be narrowed to focus entirely on the training of instructors. All instructors, whether an experienced combat pilot back from France or a rookie who had just qualified, had to pass through an instructor's course at Gosport. Over time, the School of Special Flying was renamed an Instructor's School, and in the latter months of the war, others opened in each RAF Area.

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<sup>758</sup> NA:AIR1/676/21/13/1773 - *Training at Home*.

Evidence of the effectiveness of the School of Special Flying course is rare in memoirs, but Arthur David's diary provides a valuable overview. He was sent from the CFS to Gosport to take an early instructor's course in September 1917. He described what happened at Gosport as 'super instruction. Some clever people down here have devised a very sound system of instruction, and to standardize this in the Flying Corps, they train other instructors.'<sup>759</sup> To the course's credit, he continued, 'The amusing part of the show is that many others like myself have found out how very badly they really fly and have settled down to learn again.'<sup>760</sup> He described that a man 'considered by many the best pilot in the Corps said that he learnt more about flying in three weeks down here than in the three years previous.'<sup>761</sup>

In January 1918, Smith-Barry moved to take command of the Northern Training Brigade in York, the RFC having already decided that the School of Special Flying would become a dedicated instructor's school. Smith-Barry's political manoeuvrings would see him exiled from the RFC, as shown in the next chapter. In April and May, the two existing fighting and gunnery schools were merged into Schools of Aerial Fighting and Gunnery at Turnbury and Marske (Cleveland), with a third added at Bircham Newton (Norfolk) and the former RNAS operation maintaining a fourth.<sup>762</sup> At the end of May 1918, the nomenclature changed again, and the schools simply became No.1, 2, 3 and 4 Fighting Schools, respectively. On 1 April 1918, an Instructor's School opened in Redcar, Cleveland, taking the methods honed at Gosport. In May, the Gosport School of Special Flying became the No.1 School of

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<sup>759</sup> Revell, *Brief Glory*, p.95.

<sup>760</sup> Ibid.

<sup>761</sup> Ibid.

<sup>762</sup> See Appendix Three.

Special Flying, dedicated to instructor training. The Redcar school became No.2. Further regional instructor schools followed in July and August.

For pilots who were flying the reconnaissance and artillery observation aircraft that made up the bulk of the RFC and RAF, their training also benefited from the opening of new dedicated schools. Wireless capabilities, predominantly regarding the learning and transmitting of Morse messages, had been taught at Schools of Aeronautics since their creation in late 1915 and early 1916. This instruction had been complemented by a Wireless School, which in October 1916 became known as the Wireless and Observers School at Brooklands. No further progress was made until November 1917, when a new school was spun out of the existing Brooklands school, becoming the Artillery & Infantry Co-operation School. The following day, 8 November 1917, No.2 Wireless School opened, and in January 1918, further specialist training was concentrated at a new School of Navigation and Bomb Dropping that was formed from No.2 Training Depot Station at Stonehenge. Details of other schools, including a number dedicated to naval operations, can be found in Appendix Four.

### 5.8 - Training in Canada

Attention will now turn to the contribution made by Canada to RFC pilot training. Its importance to the supply of men has already been noted in chapters three and four, but it was also important as an additional training location in its own right. The RFC had identified the potential of Canada as early as 1915 when it sent small delegations to the country. Flying training, independent of the RFC, began in Canada that year using a small school at Long Branch, eight miles from Toronto. It was a very modest

affair principally due to a lack of aeroplanes that was partially remedied by a new factory that began producing in February 1916.<sup>763</sup> From this thesis's perspective, the years 1915 and 1916 in Canada are relevant only for context. Of the 128 certified pilots produced in Canada in those two years, only 22 joined the RFC, the remaining 106 opting for the better terms offered by the RNAS.<sup>764</sup>

It was not until January 1917 that the RFC made its first serious efforts to create a Canadian training operation. A nucleus of 14 officers, including four recruitment staff, four equipment officers, four flying officers, plus 77 other ranks in support, departed for Toronto.<sup>765</sup> Their mission was to form 20 squadrons, and they were given a free hand as to how they did so. The early mission faced significant obstacles unrelated to those mentioned in earlier chapters concerning recruitment. Their arrival was inauspicious. Thick snow blanketed the area, but they selected Camp Borden as their central training location even though they could see next to nothing. From a facilities standpoint, this was a logical choice. Camp Borden had been a significant base for the Canadian Expeditionary Force. As such, it was owned by the government and had basic facilities for the men. While the surrounding area appeared flat, thawing snow revealed thousands of tree stumps which required removal. This endeavour was no small task, and it took some 1,800 men and 100 teams of horses until mid-March to complete the operation. Only then could airstrips be constructed, and to their credit, the first aircraft flew at Camp Borden not long afterwards on 30 March 1917<sup>766</sup>. Two other sites at Deseronto, approximately 140 miles from Toronto and the combined fields of Armour Heights and Leaside, some 30 miles from Toronto, would soon follow.

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<sup>763</sup> NA:AIR1/721/48/4 - *Development*.

<sup>764</sup> Wise, *Airmen*, p.41.

<sup>765</sup> NA:AIR1/721/48/4 - *Development*.

<sup>766</sup> NA:AIR2/166/RU4116 - *Proposals around the establishment of a Canadian Flying Corps*.

The RFC's initial plan was that only elementary training would occur in Canada, with all subsequent aspects occurring once the men arrived in England. It was soon realised that the plan would not work in practice. At this stage, the elementary training requirement was just seven hours of solo flying per pilot. Consequently, it was realised that trainees would pass through the system so fast that aeroplanes would be end up under-utilised and standing idle. Therefore, within a month, at the end of April 1917, it was decided that both elementary and higher training should take place in Canada, with only specialised training reserved for Britain. Development occurred rapidly, with reserve squadrons being added at an average pace of almost one per week. If there was a downside to Canadian training at this point, it was that distance ruled out the possibility of bringing back experienced men from the Western Front as instructors. Therefore, the best recruits were held back to become new instructors themselves.

The strain on the Canadian operation soon increased due to a reciprocal scheme agreed by the War Office with America following the latter's April 1917 entry into the war. The initial effect of the agreement was the visit of a steady stream of senior US officers to Camp Borden. There, they observed Canadian methods and left with copies of training materials. This process is described in detail by American officer Hiram Bingham, who, in his 1920 autobiography, was wholesome in his praise for the RFC's openness and candour.<sup>767</sup> The sharing of materials was incidental compared to the RFC commitment to training ten American squadrons, a pledge which involved training over 500 flying officers.<sup>768</sup> The significance of this commitment can be gleaned from

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<sup>767</sup> Bingham, *Explorer*.

<sup>768</sup> NA:AIR2/166/RU4867 – *Reciprocal Scheme between USA & RFC Canada for Training of Personnel*.

figures from 23 November 1917, which show that 36 per cent, 273 of 760 pilots under instruction, were for American forces.<sup>769</sup> This assistance significantly accelerated American deployment and drew copious praise from Major-General William Kenley, in the United States Air Service.<sup>770</sup>

In return for assisting in training American pilots, the RFC partially solved one of its long-standing problems and put it at a considerable advantage compared to German forces. The US made available training schools in Texas, assisting the RFC with training during the northern hemisphere's winter. This research calculated the reason for seeking such an alternative analytically. Using data from 38 Training Depots between October 1917 and March 1918, calculations show that the ratio of possible flying hours over available daylight hours was just 55.3 per cent.<sup>771</sup> In other words, in winter, flying was only possible in just over half of the daylight hours in Britain. The US scheme operated over the winter of 1917/18 and continued until 14 April 1918. It allowed the use of three US airfields and the establishment of a School of Aerial Gunnery at one of the sites.<sup>772</sup> Between October 1917 and the end of the scheme, 456 RFC/RAF men had been thoroughly trained in Texas. An additional 343 had started their training in Canada before completing it in the US.<sup>773</sup>

The Canadian set-up grew to mirror that in Britain on a smaller scale. A cadet wing mirroring the British system had been created in Canada in February 1917. On 1 July, No.4 School of Aeronautics opened at Camp Borden with 204 cadets. The new facility

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<sup>769</sup> NA:AIR1/721/48/4 - *Development*.

<sup>770</sup> NA:AIR2/166/RU4869 - *Reciprocal Scheme*.

<sup>771</sup> Base data at AIR1/452/15/312/26 Vol. I - *Aerodrome Board*.

<sup>772</sup> NA:AIR2/166/RU4869 - *Reciprocal Scheme*.

<sup>773</sup> *Ibid*.

swelled to 600 pupils by November 1917, supported by 17 officers and 149 NCOs and men.<sup>774</sup> A Canadian school of Gunnery was added, allowing elementary gunnery training also to be trained in situ. By 23 November 1917, the Canadian schools had trained some 578 pilots for the RFC and 100 for the American Air Service.<sup>775</sup> A further 760 men were under instruction, 487 for the RFC and 273 for America. The average solo flying of pilots sent overseas was just a few seconds under 60 hours, significantly more than the average British pilot.<sup>776</sup> The average fell in 1918 in a calculated bid to increase throughput.

### 5.9 - British Flying Training by the Armistice

An 18 October 1918 memorandum from Director of Training John Hearson shows that the RAF training system was meeting the demand for service squadrons and that planning was in full swing to increase throughput by a further 60 per cent to meet 1919 estimates.<sup>777</sup> His paper also gives a valuable summary of the workings of a Training Depot Station at the war's end.

In each were 36 instructors, half dedicated to front-line instruction, each with six pupils. A further 12 instructors acted in a support role as Assistant Instructors, with the remaining six teaching the theory and application of their new skills. The paper also shows elements of Smith-Barry's theory at work in using extended dual instruction and restricted instructing hours per instructor. Hearson estimated that 45 pupils were being produced per TDS per month. Each 'cost' on average 50 hours in an Avro, of which

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<sup>774</sup> NA:AIR1/721/48/4 - *Development*.

<sup>775</sup> Ibid.

<sup>776</sup> Ibid.

<sup>777</sup> NA:AIR1/33/15/1/196 - *Training Depot Stations establishment of, and output of pilots from*.

20 were in dual instruction. Back calculating, Hearson deduced that each dual instructor would be required to do just one-and-a-half hours of instruction daily, a figure he stated 'which is a little high' but had been in line with Smith-Barry's recommendations.<sup>778</sup> Hearson concluded that in November 1918, the TDS network would produce 1,220 graduations, sufficient for the 1,021 pilots estimated to be required in France.

Such was Hearson's view of the world at headquarters. Helpfully a detailed communique for May to November 1918 for No.3 (Training) Group RAF survives. The document provides an invaluable summary of the scale of training efforts, but also articulates deficiencies that were still evident. No.3 Group consisted of four Wings (No's. 7, 26, 36 and 39), each with 'some half dozen Training Squadrons'.<sup>779</sup> 1918 summer weather was good, and the Group flew for 93,000 hours, of which 28,500 were dual. Reflecting Hearson's estimates of dual instruction time, the average per instructor can be calculated and ranges from 1 hr 7 minutes to 1 hr 26 minutes across the four Wings.

In the Group, the RE8 and DH6 were used for almost all instruction in May and June 1918. The use of these aircraft runs contrary to historiographical claims that the Avro had been introduced across all training units.<sup>780</sup> Here, 'it was not until September that Stations could be fitted out with Avros. With this change, the instruction was raised to a much higher standard.'<sup>781</sup> From July 1918, each pupil was receiving at least 12 hours

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<sup>778</sup> NA:AIR1/720/35/16 – *Report on Proposed Large Flying Schools.*

<sup>779</sup> RAFM:B1441 -*Reports on the formation, admin and performance of 3(Training) Group 1918.*

<sup>780</sup> Ibid.

<sup>781</sup> Ibid.

training on a service machine before proceeding to a Finishing School, more than double the minimum requirement of five hours.

As well as having to find training aircraft, there were also pressures of finding instructors. In May, the Group was short of some 60 instructors, and not surprisingly, 'training was severely held up on this account.'<sup>782</sup> Though by the end of August, the deficiency of instructors had been compensated by extra Assistant Instructors, 'all Stations felt the lack of Flight Commanders and Instructors with Overseas experience, but this was unavoidable as the supply of these officers from Overseas was very limited.'<sup>783</sup> Such experience was crucial, with the report noting, for example, that those with experience in France were quick to point out that initially firing during aerial fighting practice was taking place at far too great a distance, with little chance of success. Training Depots also played a role in generating new instructors as well as graduating pilots. No.3 Group produced some 183 Assistant Instructors throughout the summer of 1918, and 55 men were sent on Instructor courses at a Flying Instructor School.<sup>784</sup> The communique also evidences the role of Wing Examining Officers, who ensured standards of instruction were met and provided advice on support for improvements if required.

Practical challenges related to gunnery continued to be noted, with the selection of suitable 'Aerial Firing Sites' proving a significant challenge. The report notes that 'in many cases, the Aerial Firing had to be carried out on the Aerodrome, which was very unsatisfactory. In some cases, sites were chosen, but owing to agricultural

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<sup>782</sup> RAFM:B1441 -3(*Training*) Group 1918.

<sup>783</sup> Ibid.

<sup>784</sup> Ibid.

requirements, these could not be taken over.<sup>785</sup> Even though some 1,338,978 rounds were fired from the air, long-standing issues remained. The use of the Camera Gun should have aided the Group. However, it is confessed that 'the importance of the Camera Gun work was not fully realised' at the beginning of the summer 1918. Only later did the number of films used rise, from 503 in June to 3,428 in September as its use became more widespread.<sup>786</sup>

While aerial firing practice may have started slowly, they were more successful in the training of bombing. Noting that they were 'exceptionally fortunate in having a site for live bombing' at Lakenheath, the Group combined Camera Obscura work with live practice at chalk targets constructed at the site.<sup>787</sup> Along with 980 Camera Obscura tests, 5,233 live bombs, that is, 46 ½ tonnes, were dropped.<sup>788</sup> Such successes in this capacity may have been partly responsible for the October decision to convert the Group to solely bombing work. While the standardisation was welcomed, significant practical issues occurred due to the changeover of machines.<sup>789</sup>

The reason for looking at this report in detail is that it provides extensive evidence that the simplistic historiographical consensus that training was terrible through 1916, improved due to Smith-Barry in 1917 and was markedly better in 1918 is far too simplistic. The system had grown exponentially and was training activities that were barely imagined just four years earlier. Nevertheless, significant problems remained. Even in March 1918, the demand for men versus the provision of training time was still

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<sup>785</sup> RAFM:B1441 -3(*Training*) Group 1918.

<sup>786</sup> Ibid.

<sup>787</sup> Ibid.

<sup>788</sup> Ibid.

<sup>789</sup> Ibid.

evident. When the situation arose, demand from France would always be the winner. Referencing men who had failed the 43<sup>rd</sup> course at the No.2 School of Military Aeronautics in March 1918, Major Freeman, writing for the Director of Training, stated that:

I am directed to inform you that it is considered that, in view of the great demand at the present time for RFC Pilots, as many as possible of those who failed, but not too badly, should be carefully considered by you for 1) Posting for training as NCO Pilots, 2) For a further course of instruction as Pilots.<sup>790</sup>

Thus, for all the improvements, a decline in the quality of the pilot raw material, as discussed in chapter two, and demands from the Front could still lead to relaxed standards when circumstances dictated.

While resource issues remained, and the call from the Front was unceasing, what cannot be denied, is that the training curriculum for pilots had been utterly transformed by the war's end. This transformation is best illustrated by looking at the time a pilot would spend training and what activities were entailed.

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<sup>790</sup> NA:AIR1/137/15/40/272 -*School of Military Aeronautics*.

## Becoming a Scout / 2 Seater Fighter Pilot - November 1918

Title	Location	Duration	Taught
Cadet	Cadet Brigade	8 - 10 Weeks	Drill, Discipline, Map reading, Military Law, Deportment, Signalling
Cadet	School of Aeronautics	6 - 7 Weeks	Engines, Rigging, Aerial navigation, Instruments, Photography, Artillery & Infantry Co-operation

Is then selected for particular pilot type either due to aptitude or demand

Cadet	Armament School	4 Weeks	Machine guns, ground firing, Bombs & bomb racks
Flight Cadet	Scout Training Squadron or Training Depot Station	4-5 Months	Flying, Formation flying, Forced landings, Flying in clouds, Aerial Gunnery

**After ~ 3 months, graduates "A" on a 'leading up' machine with minimum of 25 hours instruction**

Flight Cadet	Scout Training Squadron or Training Depot Station		Practical tests including Cross-country flying, Cloud Flying, Reconnaissance, Aerial Fighting, Compass Course flyig, Firing at Ground Targets, Exams in Signalling, Map Reading, Navigation and Machine Gunnery
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**After ~ 4-5 months, passed tests and with minimum 35 hours instruction including 5 on his service machine, graduates "B"**

Second Lieutenant	Fighting School	3 Weeks	Advanced ground firing, aerial firing, aerial fighting tactics, advanced formations
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**After 10 ~ 11 Months , graduates "C", given Wings and fit to be service pilot**

Thus, the system had expanded sufficiently to allow men, in most cases, to spend ten to eleven months in the training process. While it might be imagined that a Corps pilot, that is, an artillery observation or reconnaissance pilot, might be less, in fact, they were the same:

## **Becoming a Corps Pilot - November 1918**

<b>Title</b>	<b>Location</b>	<b>Duration</b>	<b>Taught</b>
Cadet	Cadet Brigade	8 - 10 Weeks	Drill, Discipline, Map reading, Military Law, Deportment, Signalling
Cadet	School of Aeronautics	6 - 7 Weeks	Engines, Rigging, Aerial navigation, Instruments, Photography, Artillery & Infantry Co-operation

Is then selected for particular pilot type either due to aptitude or demand

Cadet	Armament School	4 Weeks	Machine guns, ground firing, Bombs & bomb racks
Flight Cadet	Corps Training Squadron or Training Depot Station	4-5 Months	Flying, Formation flying, Forced landings, Flying in clouds, Aerial Gunnery

**After ~ 3 months, graduates "A" on a 'leading up' machine with minimum of 25 hours instruction**

Flight Cadet	Corps Training Squadron or Training Depot Station		Practical tests including Cross-country flying, Cloud Flying, Reconnaissance, Aerial Fighting, Compass Course flyig, Firing at Ground Targets, Photography, Bombing and Artillery Procedure. Exams in Signalling, Map Reading, Navigation, Machine Gunnery, Bombs & Bomb gear, Artillery Picture Target, and carried a passenger
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**After ~ 4-5 months, passed tests and with minimum 35 hours instruction including 5 on his service machine, graduates "B"**

Second Lieutenant	RAF and Army Co-Operation School	2 - 3 Weeks	Artillery & Infantry cooperation, Map Reading, Fighting in the air
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**After 10 ~ 11 Months , graduates "C", given Wings and fit to be service pilot**

Day and Night bombing pilots could expect to spend even longer in training, with the programme stretching towards a year.

## **Becoming a Day Bombing Pilot - November 1918**

<b>Title</b>	<b>Location</b>	<b>Duration</b>	<b>Taught</b>
Cadet	Cadet Brigade	8 - 10 Weeks	Drill, Discipline, Map reading, Military Law, Deportment, Signalling
Cadet	School of Aeronautics	6 - 7 Weeks	Engines, Rigging, Aerial navigation, Instruments, Photography, Artillery & Infantry Co-operation

Is then selected for particular pilot type either due to aptitude or demand

Cadet	Armament School	4 Weeks	Machine guns, ground firing, Bombs & bomb racks
Flight Cadet	Day-Bombing Training Squadron or Training Depot Station	4-5 Months	Flying, Formation flying, Forced landings, Flying in clouds, Aerial Gunnery

**After ~ 3 months, graduates "A" on a 'leading up' machine with minimum of 25 hours instruction**

Flight Cadet	Day Bombing Training Squadron or Training Depot Station		Practical tests including Cross-country flying, Cloud Flying, Reconnaissance, Aerial Fighting, Compass Course flyig, Firing at Ground Targets, Exams in Signalling, Map Reading, Navigation and Machine Gunnery
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**After ~ 4-5 months, passed tests and with minimum 35 hours instruction including 5 on his service machine, graduates "B"**

Flight Cadet	Fighting School	3 Weeks	Advanced ground firing, aerial firing, aerial fighting tactics, advanced formations
Second Lieutenant	School of Navigation & Bomb Dropping	4 - 5 Weeks	Taught practical day aerial navigation, cloud flying, bombs, bomb gear and bomb dropping, aerial fighting in formation, practical map reading

**After 10.5 ~ 11.5 Months , graduates "C", given Wings and fit to be service pilot**

## **Becoming a Night Bombing (Handley Page) Pilot - November 1918**

<b>Title</b>	<b>Location</b>	<b>Duration</b>	<b>Taught</b>
Cadet	Cadet Brigade	8 - 10 Weeks	Drill, Discipline, Map reading, Military Law, Deportment, Signalling
Cadet	School of Aeronautics	6 - 7 Weeks	Engines, Rigging, Aerial navigation, Instruments, Photography, Artillery & Infantry Co-operation

Is then selected for particular pilot type either due to aptitude or demand

Cadet	Armament School	4 Weeks	Machine guns, ground firing, Bombs & bomb racks
Flight Cadet	Handley-Page Training Squadron or Training Depot Station	4-5 Months	Flying, Formation flying, Forced landings, Flying in clouds, Bombing

**After ~ 3 months, graduates "A" on a 'leading up' machine with minimum of 25 hours instruction**

Flight Cadet	Handley-Page Training Squadron or Training Depot Station		Practical tests including Cross-country flying, Flying by map and compass only, Reconnaissance, Firing at Ground Targets, Night flying, Night reconnaissance, Day and Night Bombing. Exams in Signalling, Map Reading, Navigation, Instruments, Machine Gunnery, Bombs & Bomb gear, AAerodrome control.
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**After ~ 4-5 months, passed tests and with minimum 35 hours instruction including 5 on his service machine, graduates "B"**

Second Lieutenant	School of Navigation & Bomb Dropping	4 - 5 Weeks	Practical night navigation, Map Flying day & night, Compass flying day & night, Use of searchlights, bombs & bomb gear, Night aerodrome procedure
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**After 10.5~ 11.5 Months , graduates "C", given Wings and fit to be service pilot**

As is shown in the examples of the principal pilot types above, minimum hour specifications were still used, 25 hours for the Part A of graduation and 35 for Part B. Consequently, it was rare for any man to be heading to France with less than 50 to 60 hours minimum flying at the end of the war.

### 5.10 Conclusion

This chapter has illustrated how the RFC/RAF benefitted from the consistency of sound administrative leadership. This direction was coupled with appropriate strategic decision-making. The decentralisation to Group and Area Commands, the creation of Training Depot Stations and administrative introductions such as the Programme of Development and Training Transfer Card all helped the Corps achieve rapid growth. In June 1916, the RFC produced some 203 pilots for active service. In March 1917, this figure had risen to 388, and a year later, in March 1918, 1,082 new pilots were produced. In the final month of the war, 1,220 new pilots completed training.<sup>791</sup> The intake capacity of the system was now 3,000 cadets a month.<sup>792</sup> To support this throughput, the size of the training organisation had become immense. The RAF operated Training Depot Stations out of almost 70 airfields across Britain, which employed 2,800 officers, 22,700 other ranks and 11,800 women. Together, they had a training capacity of 9,500 pilots, and almost 3,800 aeroplanes were at their disposal.<sup>793</sup>

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<sup>791</sup> NA:AIR1/683/21/13/2234 – *Precis*.

<sup>792</sup> NA:AIR1/686/21/13/2252 – *Statistical data*.

<sup>793</sup> Compiled from NA:AIR1/452/15/312/26 *Vol. I & Vol. II*.

The last two chapters have combined to show that the historiography does the RFC a grave disservice by dismissing their training efforts as amateur or inadequate. As illustrated earlier in the thesis, the civilian trainee pilot of 1918 was quite different from the army officers of 1914. The 1918 men also needed to know more and fly machines that were significantly more complicated. Such was the number of recruits that the Cadet Brigade expanded to seven wings. To deal with quality issues, the RFC hired tutors and adjusted appraisal methods to allow good men through while continuing to reject those unsuitable. Canada was vital to the RFC for many reasons. It was a recruitment centre, training base and, following a novel and innovative reciprocal agreement with America, a warm weather training facility in the Northern Hemisphere's winter.

The Training Depot Station solution was eventually fully rolled out by the war's end. The new stations allowed the grouping of elementary and higher training in one place under one team of instructors. Not only did this have benefits in terms of the quality of instruction, but it was also significantly more efficient, with each TDS being the equivalent size of three previous training squadrons. However, the solution took time to adopt and roll out, delays which were costly in manpower terms. There were issues too in the roll-out of gunnery training. By the end of the war, gunnery and fighting training was revolutionised compared to just eighteen months earlier and it was inconceivable that men would not pass through formal training at a dedicated school. However, delays in this area had been pronounced. Whilst recognising that the geography of Britain does not lend itself to the wide expanses of waterside space that were optimum for such facilities, the RFC could and should have moved quicker in this area. The Loch Doon debacle certainly did not help and cost the RFC at least six

months use of a specialist school. This area remains one where the RFC is most open to criticism regarding its efforts.

Other schools for wireless, navigation, bomb-dropping and infantry cooperation proliferated by the war's end. Each had a fully defined syllabus, with independently set and marked examinations at the conclusion. The School of Special Flying helped set new standards in training flying instructors, which ultimately became the international standard. This development was significant, but Smith-Barry's ideas were not the panacea often referred to in the historiography. Instead, he was one important cog in what had become a very large wheel, a wheel that required management by skilled administrators. The syllabus at the Schools of Military Aeronautics were constantly tweaked to stay current and to find sufficient time to cover the subjects required at that stage of the war. While attention to the syllabus was necessary, it was seemingly a never-ending process, and the obsession with rigging and engine instruction for pilots was little more than time wasted in most cases.

The experiences of the No.3 Training Group in 1918 demonstrate that while training was much more sophisticated than in 1916, some issues remained defiantly stubborn to remove. A shortage of training aeroplanes, especially the Avro, dogged them into 1918. Instructors were often hard to find, particularly those with overseas experience. That said, the Group report does note improvements in all areas as 1918 progressed. The training system was never perfect, and issues remained until the end of the war. By then, however, the average training time for a pilot would be eleven months. The RFC ultimately found a way to train its men in sufficient numbers to meet the demands of the Field.

## **Chapter Six – Training Controversies**

### 6.1 - Introduction

While the previous two chapters have dealt with the depth and breadth of pilot training during the First World War, they could not sufficiently address some of the controversies related to training that dominate works on the war in the air. The purpose of this chapter is to address two of these in more detail in order to test their veracity. The first of these relates to training accidents. This thesis opened with a quotation from Ian Mackersey, who claimed that two-thirds of pilots lost their lives in training.<sup>794</sup> Though Mackersey's claimed percentage is the highest this research has found, he is far from alone in describing losses of greater than half. Many of these references have been touched on, from axe-grinding memoirs such as that by P.R.C. Groves to the more colourful assertions of Denis Winter. Firstly, this chapter will seek to accurately calculate the proportion of men lost to accidents. With this established, the research will seek to determine the proportion killed due to error versus those killed due to mechanical failure. The attitude of the RFC towards accidents will also be addressed by investigating the little-mentioned Accidents Committee formed in 1917.

The majority of the chapter will be dedicated to assessing the contribution of Robert Smith-Barry to First World War training. Today, the Smith-Barry Academy is a training facility within the Central Flying School of the Royal Air Force.<sup>795</sup> Based in the Trenchard Building at RAF Cranwell, the academy is responsible for researching new

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<sup>794</sup> Mackersey, *Empty Chairs*, p.69.

<sup>795</sup> <https://www.raf.mod.uk/our-organisation/stations/raf-college-cranwell/news/central-flying-school/>

training methodologies. Its brief currently includes investigating virtual reality technologies for use in pilot training. That Trenchard and Smith-Barry's names are enshrined together within the same RAF facility today has a certain irony. Though both men are intrinsic to the history of pilot training, their relationship, as will be shown, eventually reaches a breaking point. The chapter will investigate how this reputation was earned and the extent to which it is deserved. Given that Smith-Barry's reputation is still revered in today's RAF, challenging the existing narrative is no small matter, but this chapter intends to tell the real story of Smith-Barry, which has never been accurately told.

To explore his contribution, it is necessary to first explore his historiographical representation and where that originated. As will be demonstrated, several significant assertions have been made regarding Smith-Barry's contribution, which need to be tested against archival material. Smith-Barry's achievements will be examined by looking at his contribution and influence on the force. It is impossible to understand Smith-Barry's contribution and limitations without understanding his character. This will be illuminated by examining hundreds of personal letters, not least those of the man himself. With all these items taken into account, the chapter will be able to assess Smith-Barry's contribution and legacy. Finally, bringing the two subjects together, the research will explore whether accidents were reduced due to Robert Smith-Barry's 1917 initiatives. In particular, it will examine the accuracy of important statistics used to support such claims.

## 6.2 Accident Rates During Training and Attitudes Towards Them

Claims that more than half of pilots died in training in Britain have been allowed to flourish while it has been accepted that, as Morrow put it, 'it is impossible to establish training casualties in Britain.'<sup>796</sup> Indeed, contrary views are hard to find in the historiography. One such dissenter, Graham Broad, states that:

There is no empirical support for the oft-stated claim that half of all pilots died in training [.. and that..] careful historians will note that RFC authorities were not unaware of the shortcomings of their pilots. Training establishment authorities made continual efforts to improve their standards.<sup>797</sup>

This research aims to put any such uncertainties at rest and prove the level of casualties in training in Britain whilst broadening the investigation to include the Middle East and France. It does so by building on painstaking work already carried out, particularly by Trevor Henshaw and Chris Hobson.<sup>798</sup> It is also indebted to Cross & Cockade Editor Mick Davis for sharing a data log based on the RAF Museum's accident cards. This research has cross-referenced these records to Hobson's work and taken the analysis further by judging the proportions attributable to pilot error, malfunction or poor weather.

The debate over the level of training accidents is as old as the war itself, beginning while it was still in progress. Under-Secretary of State for War James (Ian) MacPherson claimed in parliament on 20 March 1917 that:

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<sup>796</sup> Morrow, *Great War*.

<sup>797</sup> Broad, *One in a Thousand*, p.29.

<sup>798</sup> T. Henshaw, *The Sky Their Battlefield II: Air Fighting and Air Casualties of the Great War. British, Commonwealth and United States Air Services 1912 to 1919* (Barnet: Fetubi, 2014 [1995]) and C. Hobson, *Airmen Died in the Great War 1914-1918. The Roll of Honour of the British and Commonwealth Air Services of the First World War* (Ipswich: J.B. Hayward & Son, 1995).

The percentage of accidents, fatal and otherwise that have occurred during the training of pilots for the RFC' were 1.5 per cent in the second half of 1915 and 1.53 per cent in the second half of 1916.<sup>799</sup>

Though challenged on the figures, no further explanation was forthcoming. In the same debate, Major Baird stated that 3 of 58 casualties in England between 1 December 1916 and 28 February 1917 were due to structural failings. Pemberton-Billings, ever the provocateur, claimed, '30 per cent of our total efficiency is being killed during training' and asked that consideration was given to 'the advisability of altering the system of training, which is largely at fault for all these accidents.'<sup>800</sup> Baird responded that Pemberton-Billing was 'entirely in error [...] I know they are nothing like that.'<sup>801</sup> The RFC's own calculations, of which no underlying detail has been found, concluded that 43 per cent of accidents in the last half of 1918 were due to 'inexperience or bad flying'.<sup>802</sup> Data from the post-war period of early 1919 show that 46 per cent of accidents were due to 'inexperience or bad flying, 13 per cent due to engine failure, 8.5 per cent in aerobatics, and 5 per cent through poor weather.'<sup>803</sup> Such statistics give a flavour of the confusion surrounding accident rate statistics.

To arrive at an accurate assessment of training losses is not the simple exercise that might be imagined. To begin with, even the complete casualty information is not as definitive as might be imagined. This issue is illustrated in table 6.1 below:

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<sup>799</sup> *Hansard* (HC Debate Vol. 92, 20 March 1917)

<sup>800</sup> *Hansard* (HC Debate Vol. 92, 28 March 1917)

<sup>801</sup> *Ibid.*

<sup>802</sup> NA:AIR2/114/A34172 -*Monthly Reports on Military Flying Accidents at Home.*

<sup>803</sup> *Ibid.*

Table 6.1: Royal Flying Corps/RAF Casualties

	Total Airmen Killed
War Office Data (1922)	8,704 <sup>804</sup>
Official History: War in The Air (1937)	9,378 <sup>805</sup>
Wise (1980)	8,355 <sup>806</sup>
Winter (1983)	14,166 <sup>807</sup>
Hobson (1995)	9,352 <sup>808</sup>
Hobson (DVD Version 1.0)	9,478 <sup>809</sup>
This Research Scope	8,820 <sup>810</sup>

This research has used the individual data in Hobson's reissued account on DVD as a starting point. His numbers, built bottom-up of individual names and records, are remarkably close to the Official History's 1937 number for those killed and missing in action numbers.

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<sup>804</sup> NA: AIR 1/14/15/1/57 – *Western Front – German Statement of German and British Losses*.

<sup>805</sup> Jones, *WITA, Appendices*, p.160 (Appendix XXXV).

<sup>806</sup> Wise, *Airmen*, p.649.

<sup>807</sup> Winter, *The Few*, p.36, and repeated in Bujak, *Reckless Fellows*, p.4 and Levine, *Fighter Heroes*, p.63 amongst others.

<sup>808</sup> Hobson, *Airmen Died in the Great War 1914-1918*.

<sup>809</sup> *Airmen Died in the Great War 1914-1918. The Roll of Honour of the British and Commonwealth Air Services*, DVD-ROM, Version 1.0, available from Naval & Military Press Ltd.

<sup>810</sup> RFC, Australian Flying Corps (AFC) and RAF. Excludes RNAS.

**Table 6.2 Fatalities by Service: 1914 - 1918<sup>811</sup>**

Year	RAF	RFC	AFC*	Total
1914	-	17	-	17
1915	-	136	2	138
1916	-	651	6	657
1917	-	2,455	51	2,506
1918	4,500	885	117	5,502
<b>Total</b>	<b>4,500</b>	<b>4,145</b>	<b>176</b>	<b>8,820</b>

\*Australian Flying Corps

Examining the total fatalities by year and service, as in table 6.2, is illuminating. Even though the RAF existed for only seven months in 1918, it accounted for more than half of the casualties. No year was deadlier in the war than the last.

This data has then been sorted by cause of death and by year. A widely used category, 'Killed While Flying', is often believed to equate directly to training losses, as illustrated in table 6.3. Such a straightforward translation is not strictly accurate as 'killed while flying' also includes deaths of trained pilots in accidents as well as operational losses amongst non-combatants, for example, ferry pilots who were responsible for delivering new aircraft to France and returning with obsolete models. However, it gives us a starting point that can then be used to build a new bottom-up analysis using individual accident cards.

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<sup>811</sup> Compiled from *Airmen Died in the Great War 1914-1918*, DVD-ROM, Version 1.0.

**Table 6.3 - Total Fatalities by Cause of Death<sup>812</sup>**

	1914	1915	1916	1917	1918	Total
Killed While Flying	7	32	174	768	1,869	2,850
Killed in Action	6	54	336	1,380	1,989	3,765
Non-Flying Accidents	1	16	28	67	124	236
Natural Causes	1	12	81	157	573	824
Unspecified	2	24	38	134	947	1,145
Total	17	138	657	2,506	5,502	8,820

**'Killed While Flying' Expressed as Percentages<sup>813</sup>**

	1914	1915	1916	1917	1918	Total
Percentage of Total Deaths	41 %	23 %	26 %	31 %	34 %	32 %
Percentage of 'Known' Deaths	47 %	28 %	28 %	32 %	41 %	37 %

From this data, we can state that if every accidental 'killed whilst flying' death was training related, these figures represent the absolute worst-case view of the proportion of deaths in training. What can already be seen is that such deaths were never - in any year of the war and even excluding unknown deaths from our denominator - close to half of the total. Consequently, even at this analysis stage, it can be concluded that Winter, and those quoting him, are wrong.

It is possible to drill down further into this data (Table 6.4) for a feel of training-related losses by looking at *where* the fatality occurred. As discussed in chapter five, some

<sup>812</sup> Unspecified deaths include a number of illness related deaths, specifically pneumonia or influenza, the so called 'Spanish Flu'. This has been determined by individually researching a number of deaths to find other records such as newspaper reports or family histories. It is possible that the Army wished to conceal the impact of the pandemic and therefore failed to specify the cause of death.

<sup>813</sup> Known deaths excludes 'unspecified'.

training took place on the Western Front in service squadrons and additional 'top up' training for inexperienced flyers who arrived in France. However, this extra training activity was a relatively small component compared to the training in Britain. With this in mind, we get a refined result by focusing only on fatalities in principal training locations in Britain, Canada, America and Egypt.

**Table 6.4 - Killed While Flying – Locational Analysis**<sup>814</sup>

	1914	1915	1916	1917	1918	Total
Britain	3	14	108	425	1,110	1,660
Egypt	0	0	6	22	79	107
Canada	0	0	0	23	68	91
USA	0	0	0	11	25	36
Home Locations	3	14	114	481	1,282	1,894
Total Fatalities	7	27	164	703	1,730	2,631
Percentage Home Locations	18 %	10 %	17 %	19 %	23 %	21 %

Thus, this table shows that those killed while flying in the main training locations were never greater than a quarter, reaching a maximum of 23 per cent in 1918 and averaging 21 per cent across the war.

So at this analysis stage, we can definitively say that the actual proportion killed in training was between 21 per cent from table 6.4 and 32 per cent from table 6.3. It is perhaps interesting to note that the comparable Second World War figure is 23 per cent, yet training in the Second World War does not come in for intense criticism.<sup>815</sup>

<sup>814</sup> The 2,631 fatalities differs from the 2,850 in table 6.3 due to 219 casualties who died of wounds after the crash.

<sup>815</sup> Analysis created using Chris Hobson's *Airmen Killed in the Second World War* DVD, also available from Army & Naval Press.

In a further refinement, losses have been examined by the squadron and unit.

***Table 6.5 - Fatal Accidents in Britain 1914 – 1918, Analysis by Unit***

Training /Non-Training	Type	Number
Training	Schools	272
	Reserve Squadrons	147
	Training Squadrons	472
	Training Depot Stations	364
	Night Training Depot Stations	40
	Australian Training Squadrons	22
<b>Sub-Total</b>		<b>1,317 (73 %)</b>
	Probable Training Related	45
<b>Total Training</b>		<b>1,362 (76 %)</b>
Likely non-training	Active Squadrons	336
	Acceptance Parks	36
	Other Operational Units	46
	Unknown/Unclear	16
<b>Total non-training</b>		<b>434 (24 %)</b>
Total Accidents (Bottom-up)		1,805
Training Losses (Bottom-up)		1,362
Total Casualties (table 7.3)		8,820
<b>British Training Losses (%)*</b>		<b>15 %</b>

\*1,362 training losses as a percentage of 8,820 in scope killed.

A bottom-up analysis of casualty cards identified 1,805 casualties resulting from accidents in Britain. This number is 145 (8 per cent), greater than the number identified by Hobson.<sup>816</sup> The difference can be explained by the inclusion of American Air Service casualties who were also captured with casualty cards. By looking at these cards by unit, a better idea can be found as to the proportion that was training related. The result, shown in table 6.5, illustrates that between 70 and 75 per cent of the 1,805 casualties ‘killed whilst flying’ did so during training. Thus, table 6.5 suggests that the

<sup>816</sup> 1,805 compared to 1,660 in table 7.4.

proportion of men killed in British training was 15 per cent. Thus, Winter's 'greater than half' comment, so widely re-quoted, is not just wrong but spectacularly wrong.

Finally, an additional analysis of the 1,805 casualty cards related to British deaths has been conducted to ascertain the cause of the crash where possible. What this shows is that there was a marked tendency in the casualty cards to blame the dead pilot for the crash. Such a tendency contrasts sharply with write-ups of those accidents where the pilot involved survives. In these cases, the cause is almost certainly attributed to a problem with the machine. Cynically then, if you died, it was your fault; if you survived, it was the machine that caused the problem.

This research has attempted to apply a more open mind to each accident, given the facts available. For example, the stall was the most common cause of an accident in every year of the war. Many of these occurred due to engine failure shortly after take-off. On occasion, the engine failed through no fault of the pilot, but sometimes it was a result of their actions, for example, 'choking' the engine with too rich a petrol mixture. Regardless, pilots were told during elementary training that in the event of engine failure, they were to glide straight ahead and land wherever they could. Under no circumstances should they attempt to turn back to the airfield. Any attempted turn would cause a significant reduction in airspeed with almost inevitable catastrophic consequences. Despite this being drummed into pupils, time and time again, men attempted to get their stricken aircraft back to the airfield and lost their lives. Pride could cause even the most experienced flyers to attempt it; perhaps the best-known example is Major James McCudden VC, DSO and Bar, MC and Bar, MM. In such

cases, this research has attributed the fatality to pilot error for failing to follow instructions.

***Table 6.6 - British Accidents – Bottom-up Cause Analysis***

	Enemy Action	Accident <sup>817</sup>	Weather	Machine	Pilot	Unknown	Total
Total Number	4	42	33	223	1,174	329	1,805
Percentage of Total Accidents	0 %	2 %	2 %	12 %	65 %	18 %	100 %
Percentage of Known Accidents <sup>818</sup>	0 %	3 %	2 %	15 %	80 %	n/a	100 %

This analysis shows that where some information on the cause of the accident is available, only 20 per cent of accidents were definitely *not* the pilot's fault. In 5 per cent of cases, either the fatality was due to accidental causes or truly inclement weather such as heavy snow or dense fog. In another 15 per cent of cases, the cause of the accident can be attributed to structural failure. Even here, judgement has been applied. If a pilot is carrying out aerobatics and his aircraft collapses, casualty cards almost inevitably blame him for placing undue stress on his machine.

This research has often taken a more sympathetic approach unless the actions can be considered reckless. Brancker believed and stated during a January 1917 lecture that, 'The most common type of accident follows engine failure. The cure will assuredly come in peace, when we can devote more energy towards real reliability in the engine.'<sup>819</sup> It is undoubtedly true that the loss of power just after take-off caused many accidents, but he is mistaken in his belief that this was the predominant cause.

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<sup>817</sup> Principally unfortunate collisions between man and propellor.

<sup>818</sup> Excludes those 329 accidents where the casualty card simply states 'not known' from the base number.

<sup>819</sup> Macmillan, *Brancker*, p. 142.

So what conclusions can be drawn from this new research into fatalities during the First World War? Of the 8,820 men who died included in the scope, 32 to 37 per cent were 'killed while flying'. These include men killed in training in Britain but also ferry pilots delivering aeroplanes and experienced pilots taking a practice flight behind the lines in France. Further analysis showed that 21 per cent of the total men killed were lost in a training location, that is, Britain, Canada, the US and Egypt. While some training took place on the Western Front, training deaths in France are unlikely to be material to the overall numbers.

The research also conducted a bottom-up analysis of 1,805 casualty cards and determined that 1,362 were likely to be men during training. This proportion equates to 15 per cent of total air losses in scope. Thus taking into account other training losses in Canada, the US and Egypt, the total percentage of men killed in training becomes closer to the 21 per cent derived from the top-down analysis. Therefore, in conclusion, training losses in the First World War were likely in the order of 20 per cent of total men killed in the RFC/RAF, a far cry from the 50 per cent or more stated in the historiography.

### 6.3 The RFC's Attitude to Accidents

The RFC's culture of investigating accidents and attempting to learn from them predated the war. The first man in charge of RFC accident investigations was Hugh Trenchard at the Central Flying School in 1913. Even if we ignore the human tragedy of a pilot lost during training, for the RFC, a man killed meant an investment wasted. In war, men would always die in training, particularly in such a new and extreme

venture as flying, but accepting such is not the same as not caring. If only to maintain the maximum strength of the force to fight the German air force, the RFC would do whatever it could to minimise the number of losses whilst maintaining the force in France. Perhaps the most compelling evidence that the RFC cared about *why* accidents occurred is that they intended to investigate all accidents and that fatal accident reporting was mandated.

Such findings are recorded on 'casualty cards' at the RAF Museum.<sup>820</sup> Explanations can vary from a curt 'pilot error' to lengthy explanations and suggestions for design changes. On 15 May 1917, accident reporting was enhanced by the creation of an Accidents Committee. Formed at the suggestion of Mervyn O'Gorman of the Royal Aircraft Factory in February 1917 and backed by Henderson and the Air Board, the Committee's specific intent was to produce 'a systematised investigation of the cause of accidents to aircraft with a view to reducing the loss of life to pilots from preventable causes.'<sup>821</sup> Specifically, it was tasked with finding design or structural issues to improve pilot safety. Later in the war, O'Gorman summed up the predicament faced by the RFC. Accidents, he said:

Yield data on which it is possible to estimate the actual degree of safety of the machine; from this, an enlightened judgement can be formed of the necessary compromise between safety and military efficiency.<sup>822</sup>

Squadron commanders attempted to comply with accident reporting, but initially, at least, forms were often incomplete or lacking in detail. On 20 June 1917, a widely

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<sup>820</sup> Available online at <https://www.rafmuseum.org.uk/research/default/archive-collection/first-world-war-casualty-cards/>

<sup>821</sup> NA:AIR1/515/16/3/82 - *Formation of an Accidents Committee and Committee of Technical Inquiry. Aircraft accidents.*

<sup>822</sup> NA:AIR1/28/15/1/139 - *Accidents Investigation Committee - Final Report.*

distributed memorandum criticised some units for 'not strictly complying with instructions regarding the reporting of aeroplane accidents', clarifying that the Committee's brief was structural and design-focused and not out to find individual faults.<sup>823</sup> Chaired by O'Gorman, the initial members were Professor Petavel of the Advisory Committee for Aeronautics, Mr G.B Cockburn, the Government's Inspector of Aeroplanes, Captain Stammers from No.39 Squadron or else another Flight Commander to represent the Directorate, and a representative from the unit in which the accident occurred.

During the last three months of 1917, the Accident Investigations Committee had written over 60 reports. An idea of the Committee's workload can be found by examining the minutes of its meetings. On 7 September 1917, for example, the Board considered six 'Final Reports', six 'Final Draft Reports', three further 'Draft Reports for Discussion', and five 'Preliminary Reports'.<sup>824</sup> A shortage of time prevented all fatal accidents from being thoroughly investigated. Often after a brief investigation, particularly where it was likely that pilot error was the cause, the investigation would be halted. The Committee's usefulness came not from individual reports but by recognising trends and frequent causes. These were formulated into 'General Reports' or "G" Reports as they were known. By the end of November 1917, the Committee had issued four G Reports, with four more in progress. Of these eight, some were general, such as G8 on accidents due to stalling or G3 on precautionary measures. Others, however, were very specific, such as weaknesses in wing design on the BE2e, reducing variations in trimming speeds between machines, or the deterioration of

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<sup>823</sup> NA:AIR1/515/16/3/82 -*Accidents Committee*.

<sup>824</sup> *Ibid*.

three-ply due to bacteria and castings in control systems. It was accident reports involving the Camel that officially identified gyroscopic motion as a significant cause of accidents for beginners. Essentially, the powerful rotary engine on the relatively light frame caused the aircraft to want to roll in the direction of engine rotation, an alarming characteristic for the uninitiated.<sup>825</sup>

Evidence that the Committee's work reached unprecedented levels in 1918 is evidenced by the fact that on 30 April 1918, the Committee were now holding day-long meetings at least once, and often twice every week.<sup>826</sup> Of course, such work is all well and good in theory, but the most crucial question is, did the Committee lead to change? While they recognised the limitations of their influence over the design department of the RAF, there is evidence that reports were taken seriously and that procedural and training orders and design features were influenced. For example, following the death of American cadet H. Ainsworth in a Curtis JN4 machine in late 1917, the accident report's recommendations led to changes. The two-page comprehensive account into Ainsworth's death led the Training Division to issue strict orders to all units that the machine:

Is not considered suitable for other than ordinary, straightforward flying. It is definitely unsuitable for stunting as it is not up to modern requirements as regards strength.<sup>827</sup>

They attached a complete precis of the aircraft's history to assess if previous maintenance may have been the cause, much as modern-day investigators would do. The fatal crash on 19 December 1917 was the 12<sup>th</sup> incident in which this specific JN4

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<sup>825</sup> NA:AIR2/114/A34172 -*Accidents at Home*.

<sup>826</sup> NA:AIR1/28/15/1/139 - *Investigation Committee*.

<sup>827</sup> NA:AIR1/515/16/3/82 -*Accidents Committee*.

had been involved since it entered service on 2 October 1916.<sup>828</sup> Accidents did not need to be fatal to be investigated or lead to change. Captain J.R. Gould crashed into a hedge during take-off after his elevator lever broke when he pulled it back. The report found weld flaws at the point of the fracture and concluded that no welded parts should be used on this control. The Designs Branch of the RAF was called in to investigate, and the part was redesigned to prevent issues in future models.

These examples, however, are not to suggest that the RFC always puts training safety first as an organisation. As O’Gorman stated, there was a balance to be struck between safety and efficiency. Costly changes were also resisted. For example, there are instances in archival files of the RFC pushing back when complaints were made about dangerous airfields. The safety of landing strips was discussed at several Training Expansion Committee minutes, a gathering tasked with ensuring effective and efficient infrastructure for the training organisation. Joyce Green, long a problem due to its boggy ground, was the source of much ire. The GOC of South Eastern Area wrote on 26 July 1918 that 'The Aerodrome is bad. Minor smashes continually occur through no fault of the pupils or instructors. The situation of the station is bad [...] machines getting off in a Northerly direction, have in the case of engine failure, no alternative but to land in the river of mud.'<sup>829</sup> In response, the Committee pointed out that the airfield had been 'producing pilots very efficiently for over three years' and recommended its continued use. Similarly, requests from the GOC of Beverley Aerodrome in Yorkshire to discontinue training there because the accident rate was double the next worst were rejected.<sup>830</sup>

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<sup>828</sup> NA:AIR1/515/16/3/82 -*Accidents Committee*.

<sup>829</sup> NA:AIR1/28/15/1/132 -*Training Expansion Committee - minutes of 1st-9th general meetings*.

<sup>830</sup> *Ibid.*

To conclude, the accident rate attributed to training in the RFC in the First World War has often been grossly exaggerated in the existing literature. The loss rate in training was in the region of 25 per cent, not out of line with losses incurred during similar activity in the Second World War. Rather than being unconcerned, the RFC investigated all fatal accidents, even if they were quicker to blame the pilots for fatal crashes than those when the pilot survived. The addition of an independent Accident Committee, which actively sought to identify and solve structural or systemic issues, is a significant indicator that the RFC/RAF took preserving lives in training very seriously. The thesis will now turn to Robert Smith-Barry.

#### 6.4 – The Historiographical Representation of Robert Smith-Barry

Smith-Barry's moniker as 'the man who taught the world to fly' has been generally accepted by recent aviation historiography. As stated earlier, purportedly, it was Trenchard himself who gave Smith-Barry this title. However, this research has found no evidence that this was the case and believes that the comment was *attributed* to Trenchard in 1939 by C.G. Grey, the influential but controversial editor of *Aeroplane Magazine*.<sup>831</sup> Grey had made similar assertions a year earlier at a Gosport Reunion Dinner, where he declared that 'the fact that the Gosport System was worldwide was the greatest monument to Smith-Barry'.<sup>832</sup> The first use of the description in the press appeared in May 1940. On the 1<sup>st</sup> and 2<sup>nd</sup>, a few newspapers ran a piece entitled,

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<sup>831</sup> Tredrey, *Pioneer*, p.113.

<sup>832</sup> 'A Reunion of Aviators- "Gosport" Pilots - Reminiscences at Brooklands' in *Hampshire Telegraph* (15 July 1938, p.20).

'Father of Flying Training.'<sup>833</sup> The reference, which wasn't attributed to Trenchard, described Smith-Barry as, 'genial, bearded, powerfully built [...] and now 54 years old.'<sup>834</sup> As will be demonstrated, the timing of the article was no coincidence given Smith-Barry's determination to be involved in the Second World War. Ultimately, it is not known who initiated the article, but Grey remained a staunch advocate and claimed in *Aeroplane* after the Second World War that Smith-Barry 'landed a Blenheim on an impossible field when his engine quit on him.'<sup>835</sup> As will be shown, this version of events is, to be charitable, debatable. When Trenchard wrote a foreword about training in a 40<sup>th</sup> Anniversary celebratory book for the Central Flying School in 1952, he did not mention Smith-Barry in his introductory words.<sup>836</sup> Even amongst family members, there was some confusion about where the term emanated. In 1950, Smith-Barry's cousin claimed 'Sir John Salmond told me recently he "did more than anyone else to teach the world how to fly"'.<sup>837</sup>

The only other significant mention of Smith-Barry in the press before his death in 1949 was concerning his tax affairs, which will be touched on later. Former pilot Gwilym Lewis, in his diary, detailed significant improvements that were made in both ground-based and in-flight training, as well as improved documentation but made no mention of Smith-Barry.<sup>838</sup> Sholto Douglas, who is passionate and articulate regarding his view of training, also fails to mention him. Ditto Cecil Lewis and countless others. An

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<sup>833</sup> For example, 'Father of Flying Training' in *Forfar Dispatch* (2 May 1940, p.4), *Shields Daily News* (2 May 1940, p.3), *Londonderry Sentinel* (2 May 1940, p.6), *Belfast Telegraph* (1 May 1940, p.5), and *Portsmouth Evening News* (1 May 1940, p.4).

<sup>834</sup> Ibid.

<sup>835</sup> Article in the *Roundel*, a Canadian magazine found in RAFM:B3310 -Correspondence and research docs re AD Bell-Irving's proposal for book on Smith-Barry 1937-1963.

<sup>836</sup> RAFM:AC71/9/18 -Correspondence and articles relating to career of Lt Col RR Smith-Barry 1912-1963.

<sup>837</sup> Ibid.

<sup>838</sup> Lewis, *Wings*, p.80

interesting illustration that Smith-Barry was not widely renowned outside his circle of 60 Squadron acolytes can be found in the two autobiographies of Norman Macmillan. Macmillan attended the Gosport school as a pupil, so one would imagine he was well placed to comment on Smith-Barry. However, it is notable that he does not seem to have known for sure who was responsible for the school. In 1929 he wrote that 'I flew to Gosport to the Special School of Flying, commanded, and I *believe* originated, by Lt. Col. Smith-Barry.'<sup>839</sup> In his 1969 re-write, any doubts about Smith-Barry's contribution had gone. Macmillan now declared, 'The man who created this - Lt-Col. Smith-Barry was a genius. He believed in short hours and concentrated work.'<sup>840</sup> There is a good reason why Macmillan's memory had 'improved' by 1969. By then, efforts had been underway for as many as a dozen years by Smith-Barry supporters to create a new version of his achievements, and Macmillan himself had been approached as a potential author. These seeds, first planted in 1957, would eventually blossom into Frank Tredrey's book, *Pioneer Pilot: The Great Smith Barry who Taught the World How to Fly*, nearly twenty years later.

Smith-Barry then, had fallen from the limelight, but that was not always the case. His reputation had received a significant boost not long after the Great War ended in 1918. The official history spawned six volumes between 1928 and 1937, and contains favourable comments regarding Smith-Barry's achievements. The source of this section in the Official Histories can be traced to a 1919 memorandum from Ewan Gilchrist entitled, '*Report by Captain Gilchrist on the Special School of Flying, Gosport*'.<sup>841</sup> Cape Town-born Gilchrist was not, however, an impartial observer. He

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<sup>839</sup> Authors italics. Macmillan, *Blue* (1929), p.184-5.

<sup>840</sup> Macmillan, *Blue* (1969), p. 193.

<sup>841</sup> NA:AIR 1/2397/265/1 - *Report by Captain Gilchrist on the Special School of Flying, Gosport* .

had served under Smith-Barry in No. 60 Squadron between July and December 1916 before being seriously injured in a crash that left him unable to fly until August of the following year. During this period, Smith-Barry stayed in regular contact, and promised Gilchrist a role as an instructor at the newly formed School of Special Flying, a promise he duly delivered on. The two became close friends.

Gilchrist wrote of Smith-Barry:

Perhaps the feature that was the most striking about Gosport - very carefully fostered by Smith-Barry, who was in this respect a great leader - was the high flying "moral" that formed the atmosphere of all the school's activities. We not only were charmed by Smith-Barry's very strong personality; we admired his audacity in the air, and I think I should be upheld unanimously in my statement by all the instructors - and quite unquestionably by the first half dozen to be appointed when I say that the driving force of our efforts - was the desire to please Smith-Barry.

This affection and loyalty to Smith-Barry, whilst genuine, is essential to the creation of his legacy. His unorthodox methods drew men in. Smith-Barry had an aura of a maverick that some found attractive. Gilchrist continues in his report:

For the rest, one's memory consists of living in great luxury at a private house we took about 3 miles from the aerodrome and of quite furious and infinitely dangerous "stink-bike" races down to the aerodrome or back that we used to have every day.

Other contemporary figures close to training also give Smith-Barry significant credit.

Guy Livingston, for example, states that Smith-Barry:

Evolved a system of training so superior to that which existed before, that the standard of pilots of the RFC was so immeasurably superior to that produced under the old system that the RFC rapidly regained its superiority over the Germans.

Brancker, too, writing before his death in 1930, recalled:

I do remember the extraordinary work done by Major Smith-Barry at Gosport [...] We established a school for the training of instructors under Smith-Barry at Gosport, from which was evolved the famous Gosport system of training; it completely revolutionized our old hide-bound and slow methods; it made training far safer and more thorough; it simplified the supply of training machines; and, to my joy, it bore out my old theory that preliminary training on the slow, pusher type of aeroplane was quite unnecessary.

Even Andrew Boyle, Trenchard's biographer, writing six years after his subject's death, described 'the great Smith-Barry, who contributed more to the art of airmanship as a result than any other pilot on earth.' That said, perhaps Boyle's description of Smith-Barry as an 'opinionated individualist' is equally deserved.<sup>842</sup>

#### 6.5 – The Writing of Tredrey's Book

This research contends that it is vital to understand the book's origins and its contributing sources to understand Smith-Barry's current reputation. It is this work, after all, that contains on the title page the famous quote attributed to Trenchard and the book has become the de facto story of Smith-Barry's career.<sup>843</sup> Tredrey states in his acknowledgements that his:

Book has been based on a manuscript record of RFC and RAF service in WW1, which Wing Commander S.E. (Sidney Ernest) Parker made after he retired from the Royal Canadian Air Force in 1945, on letters and papers received from the late Mrs Anne Smith Barry (nee Garnier) and the late Mrs Vera Demacon (nee Owen) and on letters and Gosport diary written by the late Flt Lt C Nepean Bishop.<sup>844</sup>

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<sup>842</sup> Boyle, *Trenchard*, p.202.

<sup>843</sup> Tredrey, *Pioneer*, title page.

<sup>844</sup> Ibid. Acknowledgements.

These comments are accurate to a point but are far from the whole story. In fact, Tredrey's work was constructed by a small group of Smith-Barry's friends and fellow 60 Squadron officers, led by Canadian Duncan Bell-Irving. Bell-Irving's views are plain from a presentation he made to the Royal Canadian Air Club Association when he said that Smith-Barry:

Produced practically all the great pilots in the last years of the war [and] if it had not been for him, the Allies would have very probably been beaten in the air, which would have meant losing command of communications, and eventually the war.<sup>845</sup>

This hyperbole is rendered even more astonishing when Smith-Barry's surprisingly short tenure in 1918 is considered, as we shall see.

It is true that Tredrey leaned heavily on the short memoir written by Parker, referred to in his introduction. Its influence can be seen throughout the book. Parker, a friend and former 60 Squadron pilot with Smith-Barry, later succeeded him at the School of Special Flying. Parker, writing in 1964, stated:

There has been a lot of nonsense written about Smith-Barry and a lot of sense that has not been written. Nearly all the articles about Smith-Barry were written by those who were not intimate with him, such as C.G. Grey, editor of the "Aeroplane", but who were facile and popular writers. They have been responsible for much misunderstanding regarding the important role he played in flying affairs, and it is with the object of doing some small measure of justice to this great man that this screed is being written.<sup>846</sup>

Work for a potential book began eight years before Parker's work in May 1958 when Bell-Irving reached out to Smith-Barry's widow Anne. Bell-Irving, like Parker, had been

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<sup>845</sup> RAFM:B3310 -*Correspondence*.

<sup>846</sup> RAFM:X003-7892/071 -*Memoirs of Major SE Parker*.

a pilot under Smith-Barry in 60 Squadron in 1916 and was brought to Gosport as a Flight Commander when Smith-Barry took over No.1 Reserve Squadron in 1917. Smith-Barry and Bell-Irving remained friends and corresponded sporadically over the years. In his first 1958 letter to Anne, Bell-Irving articulates the idea of a book for the first time:

At this late date, some of “Smith-B’s” old friends have come around to the idea that something should be done to recall to posterity the very great contribution to aviation and to the first war victory of the Allies made by Bob Smith-Barry.<sup>847</sup>

Bell-Irving articulated why he believed it was required in what became the essential *raison d'être* for Tredrey’s later book. It is worth quoting in full:

The broad basis of our thinking is that Bob was purposely and designedly side-tracked and submerged by various of his Service seniors by reason of his personal brilliance: that in comparison with sundry regular officers whom we have been invited to recognise as Air Force pioneers and also many ‘star-turn’ air heroes, the great name of Smith Barry is in grave danger of being forgotten.

We think of him as the man who revolutionised flying training and flying technique, and in doing so, in the face of the strongest opposition of many lesser men, made the difference which enabled us to win the war: possibly both wars.

We think, too, of how near Smith-B came to the top-most Air Force command and of the machinations which lost him the appointment.<sup>848</sup>

Smith-Barry’s story then, according to Bell-Irving, was not simply a tale of improving flying technique but one of a man against the system. Soon after his contact with Anne Smith-Barry, in June 1958, Bell-Irving approached author Quentin Russell about writing the book for them. In colourful language, Bell-Irving suggested:

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<sup>847</sup> RAFM:X003-7892/071 -*Parker*.

<sup>848</sup> RAFM:B3310 -*Correspondence*.

The man who won the first war in the air, and had a remarkable influence on winning it in the second, was the Irish nonconformist R.R. 'Bob' Smith-Barry. He was [...]designedly 'shot down' and pushed into Air Force oblivion by lesser men of the Regular Soldier variety. Even Boom Trenchard did less for the RAF than Smith-Barry: yet who hears of Smith-Barry now?<sup>849</sup>

Anne had been consulted on the choice of author and opined that 'I feel it should be somebody with discretion as to the use of the papers. They may be libellous, particularly Bob's paraphrase - not sent - answer to Portal.'<sup>850</sup> The letter that Smith-Barry wrote but never sent occurred after Sir Peter Portal rejected his training proposal in 1939 – a rejection that will be discussed later. Portal was approached by Parker and Bell-Irving to take part in their Smith-Barry venture but replied on 23 July 1958 that:

I am sorry to have to tell you, however, that I don't think I ever wrote to him or had a letter from him in my life: my time in 60 Squadron was very short, and I left Gosport with the Squadron in early May '16 and never returned there.<sup>851</sup>

This was patently untrue, and perhaps due to discretion or disdain, Portal wanted no part in the work. When informed of Portal's comments, Anne Smith-Barry told Bell-Irving:

Lord Portal certainly did write to Bob as he showed me his letters at the beginning of the war - they were always most tactful and conciliatory but not helpful. Presently you will see a copy of what Bob wrote to him, also what he would like to have written but didn't send.<sup>852</sup>

Whatever Smith-Barry would have liked to say remains hidden. Anne must have thought twice about sending it, as it is not in Bell-Irving's file.

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<sup>849</sup> RAFM:B3310 -Correspondence.

<sup>850</sup> Ibid.

<sup>851</sup> Ibid.

<sup>852</sup> Ibid.

Other 60 Squadron men were approached, as well as selected others whom Bell-Irving hoped would be sympathetic to the story. Parker, Stanley Vincent and Bell-Irving were careful in selecting whom they would approach, choosing not to make contact if they perceived the comments would be negative. Thus a somewhat jaundiced, one-sided tale of Smith-Barry's brilliance was being assembled. Vincent, for example, approached 'Pip' Playfair, hoping he would have evidence of Smith-Barry's complaints from 60 Squadron, but Playfair could not oblige. Vincent also committed to contact Sir John Salmond, who one would have thought would have been an essential witness. There is no record of him doing so, and nothing from Salmond ever made its way to Tredrey.

By 1959, Bell-Irving had received several rejections from authors, including Russell, MacMillan, and former RFC man turned author Arch Whitehouse. The latter advised Bell-Irving that:

I do not think such a book would have very wide circulation or interest. I know you, and I would buy one [...], but the subject matter of WW1 air training is so limited ...that, at best, it could offer but a chapter or two that might be read by today's aviation enthusiasts.<sup>853</sup>

Stanley Vincent also approached John Taylor, who released his book, *C.F.S. Birthplace of Air Power*, in 1958. Vincent, who had provided material to Taylor, told Bell-Irving that Taylor's work 'does, in fact, give considerable credit to Smith B (a good deal of it owing to me!)'<sup>854</sup> At this stage, having tried and failed to find an author, Bell-

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<sup>853</sup> RAFM:B3310 -Correspondence.

<sup>854</sup> Ibid.

Irving was forced to conclude that his project was dead. That is until Air Chief Marshal Sir James Robb saw an advertisement in *Aeroplane Magazine* in 1961.

The advertisement placed by Frank Tredrey was seeking information from anyone who might have information on the career of Smith-Barry. Tredrey had worked with Smith-Barry briefly in 1943, and Tredrey recalled a 'gifted, dynamic and sometimes wayward man'.<sup>855</sup> It would take Tredrey until the summer of 1962 to discover, having also contacted Anne Smith-Barry, that Bell-Irving had done initial work. Before handing over any materials, Bell-Irving sought assurances from Tredrey that the materials would be used 'responsibly.' In discussing his progress, Bell-Irving told Tredrey:

Some were quite interested (Balfour says he would help financially), Heenan, Deighton, Mrs Phillippi etc. Some are disinterested: the late 'Boom' Trenchard and Smith-Barry did not see eye to eye, and Lord Rothermere resigned rather than take sides with Smith-Barry against Trenchard and the established scheme of things.<sup>856</sup>

Tredrey continued his research but found fewer records than he would have liked or expected. Firstly he found that nothing remained from Smith-Barry's tenure at the School of Special Flying. In February 1965, a frustrated Tredrey wrote to Bell-Irving:

Part of my struggle in collecting material about him has been because he seemed to burn everything, lose it or otherwise dispose of it whenever he left a station. The vital records of Gosport, HQ Training Brigade York, 60 Squadron in 1916 - all are missing from the official archives. And finally, his private papers were 'lost in a flood' at Durban.<sup>857</sup>

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<sup>855</sup> RAFM:B3310 -*Correspondence*.

<sup>856</sup> *Ibid.*

<sup>857</sup> *Ibid.*

In the meantime, Robb provided Tredrey with a copy of Scott's 60<sup>th</sup> Squadron history and some of his personal correspondence.<sup>858</sup> Tredrey notes the conflicting nature of accounts which will be discussed later. Was he a good pilot or a poor one? Hands-on or absent? Misunderstood or a schemer? These contradictions, plus a dearth of official material, led to Tredrey writing to Robb in November 1962 to say that he was to make another effort to find the truth in the archives before starting work on the book in 1963. In the event, Alan Duncan Bell-Irving would die in 1965, James Robb in 1968 and Anne Smith-Barry in 1969. None would see Tredrey's book, which would not be released until 1976.

#### 6.6 - Smith-Barry Complaints

The current historiographical narrative is that in 1916, while Commanding Officer of No.60 Squadron, Smith-Barry began to complain loudly to London about the parlous state of training. Allegedly Trenchard sent for Smith-Barry, stating:

It's about time you went home to try out these ideas you've been pestering me with. I've told the training people. So don't let me or yourself down.<sup>859</sup>

Versions of this statement are repeated throughout the historiography. Barker contents that Smith-Barry was 'contemptuous of the whole basic philosophy and psychology of the training organisation, quite apart from his reluctance to put half-trained men into battle.'<sup>860</sup> Barker quotes Stanley Vincent when he states that Trenchard's patience

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<sup>858</sup> A.J.L. Scott, *Sixty Squadron R.A.F: A History of the Squadron from Its Formation* (Oxford: Casemate, 2016 [1920]).

<sup>859</sup> Boyle, *Trenchard*, p.202.

<sup>860</sup> Barker, *Mons*, p.189.

cracked, and he called for Smith-Barry to tell him, 'Don't worry us any more with your complaints. If you think you can do better, go and do it.'<sup>861</sup>

Vincent, as shown earlier, flew under Smith-Barry at 60 Squadron and would later become one of the first three Flight Commanders at the School of Special Flying. In his 1970s memoir, he stated that Smith-Barry 'had left [60 Squadron] almost in disgrace because he had complained so much and so frequently about the abysmal state of training of the pilots sent out to fight'.<sup>862</sup> The trouble with these assertions is that there is not a single word of evidence that this research has uncovered of Smith-Barry complaining to Trenchard or anyone else. Several complaints made in 1916 by various officers in the Field were discussed in an earlier chapter. None of these emanated from Smith-Barry.

Later in the chapter, Smith-Barry's writings will be discussed, particularly his so-called 'puff book'. It is telling that one memorandum that Smith-Barry seems not so keen on to refer to later was a 20 November 1916 memorandum 'Instruction for Scout Pilots'.<sup>863</sup> This is the only Smith-Barry memorandum that remains from this time period. Coming shortly before his return from 60 Squadron to No.1 Reserve Squadron, it is entirely out of touch with the state of flying training at the time. In it, Smith-Barry makes many sweeping assertions. He opens with:

The majority of the new scout pilots at present sent out have learnt only so much of airmanship as is necessary to leave the ground and frequently to land without doing damage to them. It is understood that nothing more is asked of them.<sup>864</sup>

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<sup>861</sup> Ibid, p.194. From Vincent, *Fever*, p.40.

<sup>862</sup> Vincent, *Fever*, p.40.

<sup>863</sup> NA:AIR1/997/204/5/1241 - *Training*.

<sup>864</sup> Ibid.

Rather than sending for Smith-Barry, Trenchard has handwritten, 'Where does he get all his information? Gossip!'

If this document is the 'complaint' to Trenchard that the historiography credits Smith-Barry with, it is notable because it contains few practical suggested improvements. That said, he was undoubtedly correct that the art of instruction should be seen in the same positive light as fighting the enemy rather than as a chore. He was also correct that instructors needed to allow the pupil to take more control of the aircraft in the early stages, and by taking more control, they would take more risks. This, in turn, would help them learn more quickly. To aid this process, more dual-control instruction was considered vital. Finally, Smith-Barry, stated that he had compared British training with French schools in Pau, and that:

An instructional squadron [along Pau lines] could be formed at home, through which all fighting machine pilots had to pass before finally going to France, it would be of inestimable utility. Moreover, it would entail little more than a slight modification of one of the existing reserve squadrons.<sup>865</sup>

His comments regarding French training are fascinating, given the very different comments and conclusions he would soon reach.

While this memorandum from Smith-Barry would find its way to Trenchard, it was via Lt. Col. Shepherd, commanding 3 Brigade, rather a direct approach. Far from instructing Smith-Barry to return to England as the historiography claims, none of

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<sup>865</sup> NA:AIR1/997/204/5/1241 - *Training*.

Trenchard's handwritten comments indicate particular agreement. That Smith-Barry returned from 60 Squadron to head No.1 Reserve Squadron is not in doubt. That it was because he had some good ideas is possible. That it was a result of his repeated complaints is almost certainly false.

### 6.7 – The Originality of Smith-Barry's Ideas

An assertion in the historiography is that until Smith-Barry initiated changes, instructors were loathed to allow pupils to take any risks during their training. There is, however, evidence to suggest that this was not the case. In March 1916, the Directorate instructed pupils to 'be made to fly in bad weather on all possible occasions.'<sup>866</sup> On 16 June 1916, Major Drew at the Directorate issued a list of 41 'Maxims' that had been compiled for instructors by 'a distinguished officer of the Royal Flying Corps.' The Directorate took exception to just one, number 28. This read, 'No young pilot should be allowed out in bad bumps until he has done ten hours piloting.'<sup>867</sup> To this, Drew was instructed to reply, 'Bumps give confidence, for if properly treated, they are quite innocuous and have never yet caused a serious accident.' Thus, instructors were explicitly told to fly in difficult conditions to build confidence.

The historiography also credits Smith-Barry, in late 1917, with the decision to end careful flying during training and for encouraging pilots to learn aerobatics in order to escape perilous predicaments. Evidence suggests that the RFC was already aware of the need to give pilots more licence to experiment before Smith-Barry's arrival. In a

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<sup>866</sup> NA:AIR1/997/204/5/1241 - *Training*.

<sup>867</sup> NA:AIR1/676/21/13/1773 - *Training at Home*.

February 1917 critique of lectures on 'General Flying' given at Reading, Salmond made several pertinent points. A lecture note stated that an instructor should take over the controls immediately if the pupil did something wrong. In response, Salmond wrote, 'This is NOT what an instructor should do. He should allow the pupil to do what is wrong up to a certain point before correcting him.'<sup>868</sup> On advice that a pilot should always be on the lookout for potential landing sites in case of engine failure, Salmond wrote, 'If a pilot gets accustomed to doing this, he will never make a good aviator. He will have very little time for reconnaissance work or anything else.' He concluded his remarks by saying, 'I do not want to criticize unduly [...] but throughout, stress is unduly laid upon the dangers of flying, and in some instances, bad advice is given.'<sup>869</sup>

Nor is it true that Smith-Barry's September and November 1917 memorandums, which will be discussed in more detail, were the first thoughts on adventurous aerial fighting committed to paper. MacLean's 1916 paper was mentioned previously, and on 28 February 1917, Capt. Ernest Foot had issued a ten-page document, 'Fighting in the Air'.<sup>870</sup> At the time, Foot was an instructor at the Central Flying School but had ironically spent time in 60 Squadron with Smith-Barry and would join him at the School of Special Flying in August 1917.<sup>871</sup>

Smith-Barry is also credited with the idea that the pupil/instructor relationship should be more robust and that pupils should maintain the same instructor throughout their training. Again, this made good sense, but there is evidence that the RFC was desirous

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<sup>868</sup> NA:AIR1/136/15/40/271 - *No.1 School*.

<sup>869</sup> *Ibid*.

<sup>870</sup> RAFM:DC73/65/3 - *Recommendations to flying instructors by Gosport school of flying 1917*. Though the file suggests that this document emanated from the SoSF, it was actually issued by Foot many months earlier.

<sup>871</sup> Findmypast, *Service Records 1912-1920*, E.L. Foot.

of making such changes but had been prevented simply by insufficient instructors. In the same March 1916 report referenced above, Powell stated that with more aircraft and instructors available, 'it is hoped [...] to make fewer changes between them than has been the case during the winter.'<sup>872</sup> Multiple instructors had been a case of necessity rather than policy.

## 6.8– Smith-Barry's Piloting and Instructing

Brancker wrote after the war that Smith-Barry:

Personally demonstrated that a good pilot could throw his machine into any position and then regain control with ease and perfect safety to himself. He quickly proved that the art of spinning, looping and rolling was not only safe but was absolutely essential for successful fighting in the air. I will remember the thrill with which I watched him one fine May morning at Gosport.<sup>873</sup>

S.E. Parker, who succeeded Smith-Barry at the School of Special Flying, recalled too that he was an excellent pilot. Smith-Barry, he said, 'enjoyed flying and was a daring and spectacular airman and preferred an aeroplane to other means of travel. His nerves were good and steady, and he had courage common in his ancestry.'<sup>874</sup> Parker also claims that when it came to actual instructing, 'Smith-Barry did his stint and more, of teaching with the officers under his command, which heightened the respect and loyalty which we had for him.' C.G Grey writing on Gosport, claimed Smith-Barry 'took up every machine himself after overhaul'.<sup>875</sup>

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<sup>872</sup> NA:AIR1/997/204/5/1241 - *Training*.

<sup>873</sup> Macmillan, *Brancker*, p.138 .

<sup>874</sup> RAFM:X003-7892/071 -*Parker*.

<sup>875</sup> In *Central Flying School - 40<sup>th</sup> Anniversary 1912-1952 Book*, p21, found in RAFM:AC71/9/18 - *Correspondence*.

However, off the record, memories were quite different. Writing to Tredrey in 1961, Bell-Irving confessed, 'It is not generally known that Smith-Barry himself did very little flying and practically no instructional flying after the School of Special Flying got going.'<sup>876</sup> While Parker wrote publicly of Smith-Barry that 'he wasn't a parade square officer or the type who likes to sit in an office', Bell-Irving privately disagreed.<sup>877</sup> After reading an article by Tredrey in the *RAF Review*, Bell-Irving wrote to Tredrey, 'I don't know', he said, 'if you wrote the story in *RAF Review*, which made much of SB's skill as a pilot. Actually, at Gosport, SB did very little flying, and as his letter indicates, he 'hid in his office.' He also added, 'I never saw SB roll'.<sup>878</sup> The 'hiding' comment is not Bell-Irving's but Smith-Barry's himself. The latter wrote of his First World War days while working as a ferry pilot in 1940, 'I was even more of a coward in those days and being young could afford to hide in an office.'<sup>879</sup>

Tredrey confirmed that he had written the *RAF Review* article that Bell-Irving was challenging but that the editors had taken over with their 'sensationalist cliches.' Tredrey confirmed that 'all the evidence seems to show that, in fact, Robert Smith-Barry was a pretty rough pilot. Major Parker remarks on this in his own record.'<sup>880</sup> Vincent, too, though a staunch defender of Smith-Barry, agreed. He stated privately, 'I saw Smith-Barry do very little flying either in France or at Gosport, and then nothing spectacular.'<sup>881</sup> Such comments, coming from those closest to him, are telling.

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<sup>876</sup> RAFM:B3310 -*Correspondence*.

<sup>877</sup> RAFM:X003-7892/071 -*Parker*.

<sup>878</sup> RAFM:B3310 -*Correspondence*.

<sup>879</sup> *Ibid*.

<sup>880</sup> *Ibid*.

<sup>881</sup> *Ibid*.

There may well be a good reason why Smith-Barry shied away from flying later in the war that has nothing to do with cowardice. Regardless of developments in flying technology, it remained a physically and mentally very challenging role. As speeds and altitudes increased, so too did the cold, which could still be agonising despite improvements in flying suits. On opening the School of Special Flying, Smith-Barry requested a Crossley Landaulette, a vehicle not generally used in the RFC. The reason given for this exception was that Smith-Barry 'owing to his severe accident, is unable to stand cold weather, and it is, therefore, necessary from a health point of view that he should have a closed car.'<sup>882</sup> The accident referenced was a double leg break in 1914, but if Smith-Barry struggled with the cold during transport in a motor vehicle, this must have been extremely troubling in the air.

#### 6.9- Smith-Barry and the Adoption of the Avro as a Training Aircraft

The so-called Gosport method was predicated on using a single type of aircraft, the Avro 504. Smith-Barry is widely praised for obtaining this aircraft for use in training. However, RFC records show that the Avro was already the RFC's training aircraft of choice before Smith-Barry even left 60 Squadron. For example, the Assistant Director of Aircraft Equipment wrote to Salmond on 5 December 1916, stating, 'Further Avros will be available for fitting with 100 HP Monos if the experiments at present being carried out by you prove successful.'<sup>883</sup>

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<sup>882</sup> NA:AIR2/12/87/Schools/174 -*Special Flying*.

<sup>883</sup> NA:AIR1/128/15/40/179 -*Training Brigade, R.F.C. - requirements of aeroplanes and engines for December, 1916*.

The experiment referenced refers to attempts to fit this more powerful engine type to an Avro frame. This achievement revolutionised the Avro as a training aircraft. Dundas Heenan, Smith-Barry's lead mechanic, claimed in a presentation made with Tredrey to the Royal Aeronautical Society in 1962 that on Smith-Barry's instruction, it was he who had fitted the engine to the Avro.<sup>884</sup> There is strong evidence to suggest that this is not true. Guy Livingston sheds more light on the story in his autobiography. He has no axe to grind with Smith-Barry, indeed stating that he is 'a genius for training pilots', but he does cast significant doubt on the Avro story.<sup>885</sup>

Livingston, writing in 1929, recalled that several of these 100 HP engines were available from obsolete pusher aircraft and that Salmond conceived the idea of pairing it with the Avro. Initially, there was significant pushback. Col. Bagnall-Wild, the Chief of the Aeroplane Inspection Department, 'informed categorically that the suggestion was impractical and impossible [...]and that machines so fitted were likely to catch fire.'<sup>886</sup> Undeterred, Salmond had Livingston send an engine to Smith-Barry at Gosport and one to Major Lockett-Henderson at Croydon. They were instructed to fit an engine but not to fly it as Salmond wished to do this personally, given he had ignored the Inspection Department. Livingston writes, 'Smith-Barry failed, but Lockett succeeded by reversing the engine bearers, and Salmond flew satisfactorily'.<sup>887</sup> The Inspection Department was then invited to view the results and clear the aircraft, which they duly did. Given production delays, the Training Division took it upon itself to fit 200 aircraft with the new engines. With the new aeroplane proven, it was rolled out to squadrons, including Smith-Barrys.

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<sup>884</sup> RAFM:B3310 -*Correspondence*.

<sup>885</sup> Livingston, *Hot Air*, p.136.

<sup>886</sup> *Ibid.* p.97.

<sup>887</sup> *Ibid.* p.136.

## 6.10 – Robert Smith-Barry's War

Robert Raymond Smith-Barry was born in London on 4 April 1886. He was the only child of James Hugh Smith-Barry and Lady Charlotte Cole, the daughter of the Earl of Enniskillen. Both families were descended from the Irish gentry. As a young man, Robert had all the opportunities his class brought but failed to seize them fully. Like many other early officers of the RFC, family connections allowed an easy passage for him into Eton. Showing problems with authority that would dog his career, he was expelled, 'your son we can do nothing for, he is idle and appears to take no interest in the subjects before him', his tutor allegedly told his father.<sup>888</sup>

James Smith-Barry hired a private tutor for his son, who sought a place at Cambridge University. Vincent Orange claimed that Smith-Barry attended but failed to complete his degree, while Tredrey believed he failed his entrance exams.<sup>889</sup> Either way, Smith-Barry had failed to show any academic prowess and failed to complete any studies. He returned to his family home in London and was allowed to pursue a passion for the piano, which he was said to have mastered. His father found him a position in the diplomatic service in Istanbul, but again his son showed no gumption and soon returned home. It was then that his parents paid for him to take flying lessons. Finally, Smith-Barry had found his vocation, securing Royal Aero Club certificate number 161 on 28 November 1911 at the Bristol Flying School. Pre-war Smith-Barry spent some time as a civilian instructor before joining the new Royal Flying Corps as a 2/Lt. in the

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<sup>888</sup> RAFM:DC74/181 -*Collection of letters and press cuttings relating to Smith-Barry 1938-1973*

<sup>889</sup> Oxford Directory of National Biography at

<https://www.oxforddnb.com/display/10.1093/ref:odnb/9780198614128.001.0001/odnb-9780198614128-e-72242> and Tredrey, *Pioneer*, p.3.

Special Reserve in October 1912, and a week later, he started the first RFC course at the new Central Flying School.

It is intriguing to wonder whether the conflicts that Smith-Barry would create later in his career originated in this early period. He came from a wealthy family but had squandered many of the advantages his class had given him. Now he found himself in the RFC, very much a minority. He was good enough to be selected among the first 101 officers sent to France in August 1914, but he was one of just ten from the Special Reserve. The remainder were all former army officers.<sup>890</sup> With no military background, the transition to army life, albeit in a new and in many ways different service like the RFC, must have been challenging.

Smith-Barry's initial war in France lasted just thirteen days. On 18 August, near Peronne, Smith-Barry's BE8 was wrecked in an accident which killed his observer Corporal Fred Geard.<sup>891</sup> The crash resulted in a lengthy hospital stay for Smith-Barry, and it was March 1915 before he could fly again at Brooklands. He then spent over a year in various training squadrons, which eventually saw him promoted to Flight Commander. It was not until 10 May 1916 that Smith-Barry joined No.60 Squadron as one of three flight commanders under Major 'Ferdie' Waldon. All four leaders were ex-Eton though it is unclear whether they already knew each other.

Sixty Squadron left for France on 25 May 1916, and following the death of Waldon in early July, Smith-Barry was promoted to Squadron Commander. He returned to

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<sup>890</sup> Database of 1914 officers created from names listed in Raleigh, *The War in the Air*.

<sup>891</sup> Henshaw, *Battlefield II*, p.359.

England to head No.1 Reserve Squadron on 29 December 1916.<sup>892</sup> He had spent only 192 days in France with No.60 Squadron. In contrast, though he declared that training was 'left to those who were resting, those who were preparing to go overseas, and those who had shown themselves useless for anything else', he had spent 460 days in various training roles.<sup>893</sup> His first action was to recruit as many of his former 60 Squadron men as possible. As Fry recalled:

At Gosport, there were to be seen many of the old faces, including Leslie Foot, George Philippi, Reggie Smart, Dundas Heenan, Gilchrist and others. Smith-Barry had taken a large furnished house in which he lived with those nearest to him who could afford it.<sup>894</sup>

We know from Smith-Barry's service record that he became commander of the new School of Special Flying for instructors at the beginning of August 1917, by which time he had experimented with his methods on only approximately 60 students. Tredrey claims that on the first course, only two of the men 'had flown as observers. The rest were regimental officers from the School of Aeronautics at Reading and had not yet been in the air.'<sup>895</sup> This again appears to be untrue, and Tredrey may have been spun a yarn by Smith-Barry's acolytes. From archival files, we know that Salmond witnessed the flying for himself and asked that Smith-Barry prepare a report on the men he had watched flying.<sup>896</sup> The report survives, and the men in it are named. Contrary to what Tredrey believed, Smith-Barry's report admits that 'twelve of the thirteen are Observers so that there was somewhat better material to work with than the average.'<sup>897</sup> Thus the men whose training hours and progress were sent to the

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<sup>892</sup> Findmypast, *Service Records 1912-1920*, Robert Raymond Smith-Barry.

<sup>893</sup> RAFM:AC71/9/18 -*Correspondence*.

<sup>894</sup> Fry, *Battle*, p.138.

<sup>895</sup> Tredrey, *Pioneer*, p.52.

<sup>896</sup> RAFM:AC71/9/18 - *Correspondence*.

<sup>897</sup> *Ibid*.

Divisional Command were the pick of the trainees, quite unlike the men Tredrey mentions in his book.

In *Reminiscences re Smith-Barry. Special School of Flying – Gosport*, Captain Gilchrist claimed:

One of the ways in which we used to flatter ourselves was by training pilots who had been turned down as useless and incapable of flying from the training schools, and with these, we had few failures.<sup>898</sup>

This is the only mention of such an activity that this research has found. It runs contrary to all other evidence. As demonstrated at many points in this research, throughout the war and at all stages of flying training, instructors were encouraged to weed out those incapable – there were few second chances. In fact, Smith-Barry himself wrote, ‘In 16 weeks work it has been found necessary to remove 45 per cent of the pupils from Maurice Farman Squadrons, and 5 per cent of those from Higher Training Squadrons. This has not been enough. I should certainly have got rid of more, i.e. have set a better standard.’<sup>899</sup> Finally, the idea that the cream of the flying training schools would take in ‘useless and incapable’ flyers is unimaginable.<sup>900</sup>

In May 1917, Smith-Barry articulated his early thoughts based on his experience at No.1 Reserve Squadron.<sup>901</sup> He acknowledged that ‘some may think them heterodox, but most, it is thought, will consider them quite normal, and indeed rather old fashioned.’<sup>902</sup> Interestingly if it was ‘immediately accepted’ as the new basis for

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<sup>898</sup> NA:AIR1/2397/265/1 – *Gilchrist*.

<sup>899</sup> NA:AIR1/2126/207/77/3 - *Copy of Pamphlet, “General Methods of Teaching Scout Pilots”*.

<sup>900</sup> NA:AIR1/2397/265/1 – *Gilchrist*.

<sup>901</sup> RAFM:AC71/9/18 - *Correspondence*.

<sup>902</sup> NA:AIR1/2126/207/77/3 – *Pamphlet*.

teaching, as Tredrey claims, it was not until October 1917 that some 500 copies of his methods were distributed to other training squadrons.<sup>903</sup> In the document, Smith-Barry stressed the importance of dual control and an important change to current practice: at least half of the dual control instruction should occur after ‘the pupil has gone off alone.’ In other words, Smith-Barry recognised the need for the pupil to return to his instructor after attempting the manoeuvres to remove any bad habits that might have been picked up in practice.

As well as ordering the distribution of the Gosport methods in October, Salmond ordered that all new instructors would be trained in Gosport methods going forward. Additionally, current instructors would be required to do refresher courses at Gosport, and veteran Gosport instructors should visit other pilot-training units to check on methods and standards.<sup>904</sup> Instructors were told to let advanced pupils ‘fly exactly as they chose, their experiments being limited only by the state of their own nerve.’

Instruction entailed teaching:

Pupils by means of dual control how to get out of all the various difficulties which one may get into in flying. The object has not been to prevent flyers from getting into difficulties or dangers but to show them how to get out of them satisfactorily and, having done so, to make them go and repeat the process alone.<sup>905</sup>

Conservative methods were abandoned, and a letter from Lt. Col. W.W. Warner for the Director of Air Organisation at the War Office on 31 August 1917 removed height restriction on the performance of ‘stunts’.<sup>906</sup> In his distinctive style, Smith-Barry noted, ‘If the pupil considers this dangerous let him find some alternative employment, as

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<sup>903</sup> NA:AIR1/2126/207/77/3 -*Pamphlet*.

<sup>904</sup> Laffin, *Swifter*, p.80.

<sup>905</sup> NA:AIR1/2126/207/77/3 -*Pamphlet*.

<sup>906</sup> RAFM:X003-7892/071 -*Parker*.

whatever risks he has been asked to run here, he will have to run 100 times as many when he gets to France.<sup>907</sup>

At this stage, Smith-Barry's star seemed to be in the ascendant. His methods were accepted, and plans were afoot to make the school a specialist instructor's academy. As will be shown, this was, however, not to Smith-Barry's liking, and within a few months, he had been marginalised. The bald facts from his service record are that on 23 January 1918, he was promoted to head the Northern Training Brigade. At some point, he returned to Gosport and from there, on 21 May 1918, he was sent to America.<sup>908</sup> At face value, this seems like a reasonable progression and certain 60 Squadron acolytes of Smith-Barry claim that he was indeed promoted. Parker states, 'Changes were now taking place in Smith-Barry's career, and he was shortly afterwards promoted to Brigadier General and moved to NE Group, taking the faithful George Philippi along with him.'<sup>909</sup> Given this, why would Dennis Winter claim in *First of the Few* that 'the RAF [sought] to get rid of him and ignore his achievements as soon as it decently could'?<sup>910</sup>

The truth can be pieced together from several different sources and is quite different to both versions. Things started to turn for Smith-Barry in October 1917 when his commanding officer Salmond moved from the Training Division to London to become Director General of Air Organisation.<sup>911</sup> While there is little evidence of a close relationship between Smith-Barry and Salmond, Salmond had trusted the maverick in

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<sup>907</sup> RAFM:AC71/9/18 -Correspondence.

<sup>908</sup> Findmypast, *Service Records 1912-1920*, R.R. Smith-Barry.

<sup>909</sup> RAFM:X003-7892/071 -Parker.

<sup>910</sup> Winter, *The Few*, p.32.

<sup>911</sup> Salmond would replace Trenchard as GOC RFC in the Field in January 1918.

Smith-Barry to put into practice his ideas. Salmond was to be joined in London by Livingston, and their successors in the Training Division were Edgar Ludlow-Hewitt and Charles Longcroft. Smith-Barry likely saw Ludlow-Hewitt as a peer rather than a commanding officer. Both had been pilots in the fledgling RFC when it was sent to France in August 1914, but unlike Smith-Barry and Salmond, Ludlow-Hewitt had not been in the RFC for the two years preceding the war. Longcroft, like Ludlow-Hewitt, was not someone with whom Smith-Barry would have a natural affinity. Sandhurst graduated, and he had been an Army officer since 1903. Longcroft joined the Air Battalion at the first opportunity before moving to the RFC when it formed. He had risen through the ranks commanding squadrons, wings and then brigades. He, therefore, had significant experience in managing large organisations and was well suited to head the training organisation.

On 9 November 1917, Smith-Barry issued a report on French flying schools and potential personnel savings that could be affected.<sup>912</sup> Smith-Barry and Heenan had travelled to Pau to investigate French methods. Why this trip took place is intriguing. Smith-Barry had headed the School of Special Flying for just three months and arrived there with many ideas to implement. While there is no evidence of him being instructed to go to France, a memorandum from Salmond at the time does reference that Gosport was involved in experimental work that may help reduce the demand for elementary aeroplanes and support personnel.<sup>913</sup> This latter objective may help explain the reason for the trip.

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<sup>912</sup> NA:AIR1/720/35/17 - *Report on Flying Schools (French) and the Economy in Personnel they Effect.*

<sup>913</sup> NA:AIR2/12/87/Schools/174 - *Special Flying.*

Smith-Barry, however, submitted a lengthy self-serving document on his return. In his preamble, he initially extolled the virtues of the larger French schools. 'At Pau', he said, 'no new machines are received and [...]none are struck off charge however badly they may be damaged', all machines he claimed were repaired by mechanics onsite.<sup>914</sup> However, he then turned to what he had witnessed. 'The flying', he said, 'is of a very second-rate character, and the moral of both instructors and pupils could not possibly be worse. Pupils are on this account, reluctant to go there.' Having ridiculed French efforts at aerobatics, he stated that 'the aeroplanes appeared to be being smashed at an astounding rate. Every landing was a matter of the gravest anxiety.' These assertions clearly run counter to Smith-Barry's introduction, which extolled the virtues of the French schools. Following this preamble, the true nature of Smith-Barry's intentions became apparent, and he began his pitch. With no underlying data, he stated the following:

- Pau, with 40 machines in the air, suffered five major repairs a day
- The RFC Training Brigade, with 1,113 machines in the air, suffered 109 major repairs a day
- However, at Gosport, with 15 or 16 machines in the air, there were just 0.48 major repairs a day.

He concluded that the French suffered 12.5 per cent of their machines smashed per diem, the Training Brigade almost 10 per cent, whereas he suffered just 3 per cent per annum. Thus he said, 'the French at Pau have to cope with four times as many

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<sup>914</sup> NA:AIR1/720/35/17 - *Flying Schools*.

smashes per machine as I do here, despite the risky experiments that are being made.<sup>915</sup>

Even though Smith-Barry was presumably also to investigate French teaching methods, he saw no need. He arrogantly proclaimed, 'Owing to this marked inferiority in the French flying, I did not enquire too closely into the methods of teaching or the output of pilots.'<sup>916</sup> It is perhaps strange then that Brancker credited him with having 'studied the doings of the best French stunt pilots and come home to put their sensational performance to real practical use for war.'<sup>917</sup> Regardless, Smith-Barry cut to the chase. 'Therefore, if we could abolish wings and squadrons and create large schools by uniting several aerodromes under one head and running them as one unit with a single main workshop', significant efficiencies in manpower and machines could be achieved. He declared that only six men would be required to maintain each aeroplane instead of the 12 in regular training squadrons and nine in the new TDSs. Such findings were based more on creative mathematics than any weight of evidence.<sup>918</sup>

Smith-Barry did not wait for a reply and, on 14 December 1917, issued a second paper, this time nakedly entitled *Report on Proposed Large Flying Schools from Gosport*. Now, he set his sights not only on commanding a larger flying school but also on taking over ground instruction from the long-established Schools of Military Aeronautics. Such actions would see these schools abolished. He claimed that despite his instructors working no more than a maximum of one and a half hours per day, his

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<sup>915</sup> NA: AIR1/720/35/17 - *Flying Schools*.

<sup>916</sup> Ibid.

<sup>917</sup> Macmillan, *Brancker*, p.138.

<sup>918</sup> NA: AIR1/720/35/17 - *Flying Schools*.

pilots were ready for France in half the time of other training establishments. Based on only three months of data and having taken in the ablest recruits, such claims were contentious, to say the least.

Smith-Barry laid down his requirements regarding manpower, aircraft and even land. The work, he said, 'has been carefully considered by an expert', though the said expert remained unnamed. In remarks unlikely to endear him to fellow members of the Training Division or its Commanders, he stated:

The present arrangements are so chaotic, even if I were to enter upon a long description of them, it would be very difficult to say precisely what the proposed scheme or any other partial scheme would replace. [...] It would need too much space to criticise [the Training Divisions' aircraft requirements and length of training courses]. I leave it, therefore, to be its own criticism.<sup>919</sup>

No official response to Smith-Barry's proposals can be found in archival files. It is likely that wiser, more experienced training figures were unmoved by his proposal. Indeed, Brig. Gen. Ludlow-Hewitt chaired a second conference of 'Officers Concerned with the Training of Pilots in the RFC' at the Air Board Office of the Ministry not long after Smith-Barry's proposal. It is telling that Smith-Barry was not invited to the sessions during which his proposals were not mentioned.<sup>920</sup>

His report ignored, Smith-Barry's indignation would have been amplified on 6 January 1918, when his school was 'demoted' back into the Training Organisation alongside other schools. Henceforth it would be administered by the Southern Training Brigade and not by the Training Brigade HQ directly.<sup>921</sup> On 27 January, Smith-Barry was told

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<sup>919</sup> NA:AIR1/720/35/16 - *Large Schools*.

<sup>920</sup> NA:AIR1/14/15/1/49 - *Conferences*.

<sup>921</sup> NA:AIR2/12/87/Schools/174 - *Special Flying*.

he would leave Gosport to take command of the Northern Training Brigade at York. Soon afterwards, in early February, George Phillip, one of Smith-Barry's closest friends and former 60 Squadron pilot, moved to the Air Ministry. Phillip had spent much of 1917 unfit for flying, having been wounded and now moved to become the Personal Secretary to the first Air Minister, Lord Rothermere.<sup>922</sup>

Smith-Barry used his time in York not to take forward Northern Training Brigade but to scheme for a more prominent role in London. What is clear from archival files and many other accounts is that Smith-Barry reached out directly to Rothermere. Such a move was high risk, to say the least, given that members of Rothermere's Air Council included Henderson, Trenchard and Brancker, amongst others. The communication was uncovered, and on 6 February, Smith-Barry was formally reprimanded. Tredrey quotes Longcroft's letter stating:

It is noticed that you are in the habit of communicating directly with the Air Ministry. Your attention is directed to the King's Regulations, para. 445, which clearly lays down that this procedure is illegal. Under no circumstances, therefore, will you communicate directly with the Air Board either by letter or by telephone nor will you visit the Air Board without first obtaining permission from this Headquarters.<sup>923</sup>

Parker claims that Smith-Barry had gone beyond writing letters and had visited Rothermere and, he claimed unconvincingly, Prime Minister Lloyd George.<sup>924</sup> While the latter visit is likely Smith-Barry bravado, Boyle writes that 'Longcroft began to receive a "daily barrage of petulant minutes" from no less a person than Rothermere.'<sup>925</sup> Not surprisingly, Longcroft confronted Rothermere to find the latter

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<sup>922</sup> Tredrey, *Pioneer*, p.79.

<sup>923</sup> Ibid. p.81.

<sup>924</sup> RAFM:X003-7892/071 -*Parker*.

<sup>925</sup> Boyle, *Trenchard*, p.264.

well briefed on training losses at Gosport and making insinuations that Longcroft was not rolling out Gosport methods quickly enough. Longcroft was furious at being undermined and asked to return to France, a request that was granted. It would appear that Smith-Barry had convinced Rothermere that he should take over RFC training.

From his inside position at the Air Ministry, Philippi wrote on 8 March to Smith-Barry that 'I think we've got 'em by the short hairs at last. Don't make any moves at all until you see me again'.<sup>926</sup> Parker claims that Smith-Barry was recalled to London and that the two began planning a training overhaul for Gen. Frederick Sykes. Lacking any self-awareness whatsoever, Parker wrote that he and Smith-Barry decided:

Trenchard was to go [...] Removing Trenchard from his command was the most difficult task SB had to cope with.<sup>927</sup>

While, with the benefit of hindsight, such a scheme sounds crazy, it is apparent that Smith-Barry genuinely believed it was happening.

It was at this stage, however, that Ludlow-Hewitt discovered Smith-Barry back in London, apparently installed as Longcroft's replacement. Trenchard simultaneously heard from both men about what boiled down to a coup. While Trenchard could not appease Longcroft sufficiently for the latter to stay, he ordered Smith-Barry back to Gosport and confronted Rothermere. The Minister admitted that 'Smith-Barry had proposed several radical suggestions for the reorganisation of the Training Division in a series of private letters.'<sup>928</sup> Smith-Barry's temerity 'staggered Trenchard less than

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<sup>926</sup> RAFM:AC71/9/18 -*Correspondence*.

<sup>927</sup> RAFM:X003-7892/071 -*Parker*.

<sup>928</sup> Boyle, *Trenchard*, p.266.

Rothermere's bland acknowledgement that he had encouraged the correspondence.<sup>929</sup> As Parker put it naively:

In establishing Gosport, it was necessary to win over the heads of the Flying Corps but to establish a fighting force, it was necessary to go much further, right over the heads of the Air Force Command to the Government itself.<sup>930</sup>

Clearly, these events soured the relationship between Trenchard and Rothermere, although in truth, their relationship had already been seriously damaged due to differing opinions regarding the creation of an independent RAF. Trenchard, very much a proponent of the RFC remaining a subsidiary of the Army now resigned, causing a military and political stir. Trenchard would return to head the new Independent Force, a strategic bombing function, but the uproar cost Rothermere his job. With his political sponsor gone and trust amongst senior officers no doubt devastated, Smith-Barry was finished as a force in the new RAF.

While Smith-Barry's subsequent move to America was portrayed sympathetically as an opportunity for him to extol Gosport's methods there, even Parker referred to the move as 'Smith-Barry's exile to the USA.'<sup>931</sup> He recalled that 'Smith-Barry had to be removed. First, it was suggested that he be posted to far away Egypt, but then as America was showing great interest in the Gosport system, it was decided to 'exile' Smith-Barry and a small staff (including Philippi) to the USA and let them expound his theories to the Red Indians.'<sup>932</sup> In fact, archival files show that training efforts with

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<sup>929</sup> Boyle, *Trenchard*, p.266.

<sup>930</sup> RAFM:X003-7892/071 -*Parker*.

<sup>931</sup> *Ibid*.

<sup>932</sup> *Ibid*.

America had begun many months before Smith-Barry's involvement with many transatlantic visits in both directions.<sup>933</sup>

Smith-Barry was officially told of his move on 29 May 1918.<sup>934</sup> There he would report to Brig. Gen. Charles Lee at the British Aviation Mission in Washington. Lee was a former Lt. Col. in the West Somerset Yeomanry but had been attached to the RFC since November 1914 and worked his way up the Staff Officer ranks.<sup>935</sup> Smith-Barry's instructions were clear, as was his reporting line, which was reiterated to him. 'Your duties will be to assist and advise the American Aviation Service in regard to Flying Training, *always subject to the instructions given by Brig Gen Lee.*'<sup>936</sup> There would be no more maverick tendencies.

That said, even after Smith-Barry had been removed, he could still not help interfering. Just two days later, on 31 May 1918, he wrote to his replacement Parker thus:

As to Gosport, you have all my congratulations, from a personal point of view, there is no one whom I should sooner see there. Let it alone, and it'll serve you well; if you make reforms, let them be in the direction of improving the course by having a lecture or two and teaching something of the theory of workshopery etc., but for God's sake, don't curtail the liberties of the instructors.<sup>937</sup>

Smith-Barry would see out the war in America and be transferred to the unemployed list early in February 1919.

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<sup>933</sup> NA:AIR1/137/15/40/272 -*School of Military Aeronautics*.

<sup>934</sup> NA:AIR1/402/15/231/43 -*Vol. XIII*.

<sup>935</sup> Findmypast, *Service Records 1912-1920*, Charles Frederick Lee.

<sup>936</sup> Author's emphasis. NA:AIR1/402/15/231/43, *Vol. XIII*.

<sup>937</sup> RAFM:B3310 - *Correspondence*.

## 6.11 - Smith-Barry's character

When Smith-Barry took command of the School of Special Flying, Parker recalls, with only a little exaggeration, that 'All the officer personnel were now ex-members of No.60 Squadron and there was an esprit de corps and a freedom such as existed in very few stations, perhaps even none other.'<sup>938</sup> It is not difficult to imagine the 'us against the world' atmosphere that Smith-Barry would have created. His irreverence and lack of respect for authority would appeal to those below him but not surprisingly alienate those above. As Parker again recalled, 'He had very little respect for the higher command'.<sup>939</sup>

There is nothing definitive to determine whether there was a fractious relationship between Smith-Barry and Trenchard himself before the events of 1918 dramatically soured things. Parker and others believed 'There was some animosity between Smith-Barry and Trenchard which, no doubt, had its beginnings in the earlier days of flying.' The two men were attendees on the same first course at the CFS in 1912. Did the junior Smith-Barry take exception to the older, more senior army officer? In a letter to Bell-Irving in 1927, Smith-Barry alludes to the fractured relationship with Trenchard. Asked whether he had considered re-entering service, Smith-Barry responded:

No, I'm not back in the aeroplanes. If Boom happened to remember my name, which is most improbable, he'd not let me so much as smell one of his aeroplanes. It is wonderful how well they seem to get on without us, those fellows.<sup>940</sup>

Smith-Barry, however, did believe that the force would be better off *with* him than without him. A very telling episode in the Second World War helps confirm the

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<sup>938</sup> RAFM:X003-7892/071 -*Parker*.

<sup>939</sup> *Ibid*.

<sup>940</sup> RAFM:B3310 -*Correspondence*.

fundamental flaws in Smith-Barry's character and reputation but also casts doubt on the veracity of material used to justify his contribution to First World War training. Shortly before the second war, in July 1939, Smith-Barry took an Instructors Course at Brooklands.<sup>941</sup> The course did not lead to an immediate role in the RAF, and just after the outbreak of hostilities, he wrote to Group Captain James Robb begging him, 'In God's name, give me something to do, in uniform or out of it.'<sup>942</sup> Robb had been Commandant of the Central Flying School since 1936 and would shortly be involved in leading training activities in Canada.

Smith-Barry wrote to Robb again on 24 July 1939, enclosing two pamphlets he claimed were 'exact reprints with no further additions' of his materials from the First World War.<sup>943</sup> Robb, in turn, reached out to ex-60 Squadron Harold Balfour, who was now Under-Secretary in the Air Ministry, stating, 'I received the attached yesterday from Colonel Smith-Barry, together with a private letter which makes it appear that he has not had very much good luck.'<sup>944</sup> Enclosed was a booklet entitled, '*Notes on Teaching Flying for the Instructors' Courses at No.1 Training Squadron, Gosport.*' The booklet, in pristine condition, is dated May 1917. This is the only copy of such a document discovered in this research, and it is proposed that Smith-Barry may have constructed it for his 1939 proposal rather than it actually being a document from 1917. In it, he claims that 'speaking tubes are now being fitted'. He also articulates almost all of the improvements made at the School of Special Flying, which he claims has been in operation for 16 weeks. Sixteen weeks would mean a start date in January 1917. While Smith-Barry returned to head No.1 Reserve Squadron at that time, the School of

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<sup>941</sup> RAFM:AC71/9/18 -Correspondence.

<sup>942</sup> Ibid.

<sup>943</sup> Ibid.

<sup>944</sup> Ibid.

Special Flying was not approved until August 1917. To believe that this document originated in May 1917 is also to believe that Smith-Barry had nearly every answer to flying training before he arrived at Gosport on 29 December 1916.<sup>945</sup> There is also the document's title, 'for the Instructors' Courses at No.1 Training Squadron' – there was no Instructor's Course at that time.

When Smith-Barry returned to Gosport, it was to experiment with elementary and higher training methods for pupils. It was not to teach instructors. Smith-Barry's pamphlet claims, 'As both officers and men prefer to have the evenings free to any other part of the day, it has been made a rule here *during the summer months* to shut down every evening unless absolutely unavoidable.'<sup>946</sup> Such a claim is inconsistent with a document allegedly written in May, i.e. before the summer months. Smith-Barry's booklet concludes that:

I scarcely expected this scheme to be a success when I started the experiment, but it has been found to be a great improvement on the old system, to which everyone here would be very sorry to return.<sup>947</sup>

Combined, these statements support the belief that this is a retrospective document. Such a re-writing of history matters because the contents of this booklet were taken as read by Tredrey. His book is fundamental to the story of Smith-Barry as training's saviour. As an aside, Anne Smith-Barry also forwarded a copy of these pamphlets to Air Vice Marshal E.J. Kingston-McCloughry for inclusion at the Central Flying School in 1950. Anne claimed that was all that remained of Smith-Barry's work aside from two portraits that she also sent.<sup>948</sup>

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<sup>945</sup> Findmypast, *Service Records 1912-1920*, R.R. Smith-Barry.

<sup>946</sup> Authors emphasis. RAFM:AC71/9/18 - *Correspondence*.

<sup>947</sup> Ibid.

<sup>948</sup> Ibid.

A second pamphlet was enclosed for Robb entitled '*School of Special Flying, Gosport. Results (Elementary Section), Miscellaneous Letters, &c. November 1917.*' It contains eleven documents purported to have been written by Smith-Barry or his associates between November 1916 and November 1917.<sup>949</sup> Again, there are reasons to believe that this may be an edited edition of Smith-Barry's thinking despite the historiography's subsequent reliance on it. For example, he includes a document, 'Instruction of Scout and Other Pilots – Written in France, 10<sup>th</sup> November 1916,' which again rather too neatly articulates improvements that would later be made in training pilots. Curiously, however, there is an amended footnote that reads, 'Added 21<sup>st</sup> November 1916 – On second thoughts, it appears to the writer that the best way to make use of the above principles would be to start a School for turning out Instructors in Flying, with the idea of all Instructors eventually going through it.' This research concludes that such uncanny foresight of what RFC leadership did in late 1917 is staged. Given that Smith-Barry's earlier 21 November 1916 memorandum survives in the National Archives – and has no such addition – it is hard to believe that this is not a Smith-Barry creation.<sup>950</sup>

While some documents can be substantiated by other archival sources, others cannot. The evidence Smith-Barry used to demonstrate the success of his course is one element that can be examined. His evidence is preposterously weak to substantiate claims that his school was producing miracles. First, it is for the period 3 September 1917 to 11 November 1917. In other words, barely two months. The results are only for 'elementary' training only and take no account of higher training. Finally, the

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<sup>949</sup> RAFM:AC71/9/18 –*Correspondence.*

<sup>950</sup> NA:AIR1/997/204/5/1241 –*Training.*

accompanying statement, 'none of these officers had flown in any Machine whatever, except some who had done so as Observers,' has been proven false. As demonstrated, this course contained handpicked men, all of whom had been identified as having high potential and almost all of whom were very experienced observers. They would be far from representative of a new batch of flying cadets.<sup>951</sup>

If there were any lingering doubts about when this material originated, this research contends there is no argument when a letter from Anne Smith-Barry to Bell-Irving of 4 September 1958 is considered. She indicates that she has mailed him these two booklets, now housed in the RAF Museum in London. She states they are

The only things Bob said he had ever written about flying, also what he called his Puff Book with quotations about himself that he had printed. He did this in order to get a job in the last war.<sup>952</sup>

Why this is so important is that Tredrey placed absolute reliance on these documents in writing his book. Tredrey's book has never been challenged and has become the source of almost all comments on training in the RFC during the First World War. Ultimately, a significant aspect of our understanding of First World War training has been built on documents created for a job application in 1939.

From correspondence in that year, it can be deduced that Balfour and Robb asked Smith-Barry to send a proposal on training. While still in the process of constructing his proposal, the chances of it being a success were dealt a blow when Robb was sent out to Canada. Thanking him for his help, Smith-Barry wrote:

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<sup>951</sup> RAFM:AC71/9/18 -*Correspondence*.

<sup>952</sup> *Ibid*.

I owe you a debt of gratitude for hospitably receiving me at the CFS and for all your help which has really started me going again. Without it, I should be on the bottom rung [...], and indeed, now you are gone, that is probably where I should find myself.<sup>953</sup>

Robb had attempted to coach Smith-Barry, advising him to submit a proposal to Balfour related to 'intermediate and advanced training' only. However, Smith-Barry ignored him and submitted a proposal that included 'Elementary training' and 'straight through training', thus covering all three stages. Smith-Barry and Heenan's proposal, 'Memorandum on Flying Training,' was submitted on 10 October 1939 and opened:

It is understood that there is an intention to increase the amount of military flying in this country and that a great effort must be made for new schools to be as economical as possible. The writers, who collaborated in the last war to form the so-called School of Special Flying at Gosport, have been invited to submit their suggestions.<sup>954</sup>

The proposal is not dissimilar in style to Smith-Barry's 1917 submission on large flying schools. It is long on statistics, for example, around training hours at Gosport – 'an average of 15.5 hours for the first fifty-four elementary pupils at Gosport' – but short on self-awareness. His data is 20 years old, and his proposals regarding efficiencies, even to the untrained eye, sound painfully naïve. However, Smith-Barry was pleased with it, and two days after submission on 12 October 1939, he wrote to Robb again thanking him for his assistance and enthusing, 'Balfour, I learn from Heenan, was quite pleased with it and has forwarded it to Portal.'<sup>955</sup>

Charles 'Peter' Portal had begun the First World War as a dispatch rider in the Royal Engineers and was commissioned in November 1914. Bored, he sought a transfer to

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<sup>953</sup> RAFM:AC71/9/18 -*Correspondence*.

<sup>954</sup> *Ibid.*

<sup>955</sup> *Ibid.*

the RFC in July 1915 as an observer. In early 1916 he began flying training, was appointed a pilot officer in April 1916 and in May, joined No.60 Squadron at a similar time to Smith-Barry, and they departed for France on 25 May 1916. Their time together was relatively short, as in July 1916, Portal moved to become a Flight Commander in No.3 Squadron. Unlike Smith-Barry, Portal remained with the RAF and rose swiftly through a series of operational and staff positions. In October 1939, when Smith-Barry's proposal landed on his desk, he was at the Air Ministry as Air Member for Personnel.<sup>956</sup>

In the event, Smith-Barry's proposal was already in trouble. Again, as in the previous war, this was entirely due to his own failings. The events are captured in a letter to Robb on 24 October 1939. He confirms to Robb that he submitted his proposal on the 10<sup>th</sup> but now calls it 'a very hurried inaccurate version'.<sup>957</sup> It was forwarded to Portal the following day. Unsurprisingly, Portal forwarded it to other officers, no doubt for comment, including Arthur Longmore, who headed RAF Training Command and Lawrence Pattinson, who led No.23 Training Group, which included the Central Flying School. Smith-Barry had a series of uncomfortable meetings with the two of them. Leaving aside his questionable statistics, it transpired that in order to complete his proposal, Smith-Barry had made a series of unauthorised visits to Training Squadrons in order to obtain data. Additionally, rather than submit his proposal through military circles as requested, Smith-Barry again decided he knew best and approached the politicians. He had written to Balfour directly and told him, 'I have obtained permission to visit several Flying Training Stations at each of which I have asked the same series

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<sup>956</sup> <https://www.rafweb.org/Biographies/Portal.htm>. In October 1940, Portal would become Chief of the Air Staff.

<sup>957</sup> RAFM:AC71/9/18 -*Correspondence*.

of questions with a view to finding out what economies could really be made.<sup>958</sup> Such an assertion was untrue.

Now Smith-Barry's lie had embarrassingly come home to roost. He had never been granted such permission. Smith-Barry told Robb:

Oct 20 - Longmore expressing only a mild irritation at my unorthodox visits to FTSs [Flying Training Squadrons] - Letter from me apologising. Oct 24 (today), Pattinson came here - He has not yet read it. It would doubtless reach him shortly. Tactful but well-masked irritation at unorthodox visits. Information got like that's no good.<sup>959</sup>

It got worse. To obtain access to the squadrons, Smith-Barry claimed that his friend Robb, the then Central Flying School commandant, had granted him the approval. While they had discussed access, this was not the case. Robb leaving for Canada evidently left Smith-Barry's subterfuge embarrassingly exposed. He apologised to Robb, telling him, 'I told him (which was the case) that though you and I had indeed discussed making such visits, it was unfortunate that I had darted off and made them without your final sanction' and that 'I hope no harm will come of my excess of zeal & of your hospitality.' Again on the 26 October, he wrote to Robb, 'I say I hope I did not let you in it with those dam'd visits.'<sup>960</sup> He concluded, 'As to the thing being seriously taken up, I should think it's more than doubtful.'<sup>961</sup> Smith-Barry would betray the trust of even those who had backed him to advance his own status.

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<sup>958</sup> RAFM:AC71/9/18 -Correspondence.

<sup>959</sup> Ibid.

<sup>960</sup> Ibid.

<sup>961</sup> Ibid.

On 23 November 1939, Smith-Barry met with 'Portal, Pattinson & another of Pattinson's rank and 18 or 20 others.'<sup>962</sup> The meeting must have been a sobering experience. His proposal was shot down in proverbial flames. They had, he said:

Not the least difficulty in proving that an economy of 50 per cent in aeroplanes was impossible. Nor was it thought necessary to discuss the possibility of any lesser economy.

Early in 1940, Smith-Barry wrote to Robb, not so much admitting defeat but blaming the recipients of his proposal for not appreciating it. He stated:

As to my training schemes, though it would certainly be to the country's interest to carry them forward, I can think of no individual to whose personal interest it would be, so I think I've established a right to be left at peace in that quarter.<sup>963</sup>

While thanking Robb for his assistance, he alluded to it being Robb's fault that he had failed:

Hope to see you when you come back to thank you for fathering and mothering me all that time before you went. It was that going away to Canada that knocked my business on the head.<sup>964</sup>

In December 1942, Smith-Barry wrote of these 1939 events in a letter to Bell-Irving:

Do you want a copy of the rubbish? [his report] There is one - Balfour had it on Oct 10, just before he left. He flung it at Portal's head and told him it was a masterpiece & he was to do something about it. Portal and Co saw at once on which side their bread was buttered & decided to drown the kitten. But as it was such a distinguished kitten, let it be drowned with a band playing.<sup>965</sup>

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<sup>962</sup> RAFM:AC71/9/18 -Correspondence.

<sup>963</sup> Ibid.

<sup>964</sup> Ibid.

<sup>965</sup> Ibid.

Even then, Smith-Barry alluded to not being finished with his scheming, telling Bell-  
Irving:

The last thing really would be to sit tight for about six months, I should think. Am trying to see a man who I'm told is a power behind the throne though I don't know if he really is.<sup>966</sup>

In the event, Smith-Barry did join the RAF in April 1940, not in any training capacity but rather as a ferry pilot that August. This activity was cut short by a nasty October accident, which earned him a stay in the famous Guinea Pig hospital in East Grinstead.<sup>967</sup> Again, the events of the accident are not how they seem. While C.G. Grey wrote that 'he landed [...] when his engine quit on him,' Vincent disputes this.<sup>968</sup>

Vincent's private letter to Bell-Irving reveals that:

The poor old boy was caught in low cloud and high trees while delivering a Bristol Blenheim, which was too heavy and fast for him, not really knowing the blind instruments etc., and he tried to keep in visual conditions, but he and the cloud and the trees all met up together, and that stopped his delivery trips.<sup>969</sup>

Even his 'retirement' in 1943 was not without controversy. In August that year, Smith-Barry wrote to Bell-Irving telling him, 'In June I retired according to plan and am now a civvy in a houseboat on a lake'. However, in 1945, he told a personal friend, Ramsay, 'Leigh Mallory sacked me so quick - he never said why'.<sup>970</sup> The truth was that Smith-Barry had been sent to India as a ground instructor after recovering from his accident. After his crash, he was expressly grounded. The story recounted by Smith-Barry's

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<sup>966</sup> RAFM:AC71/9/18 -*Correspondence*.

<sup>967</sup> <https://www.eastgrinsteadmuseum.org.uk/patients/robert-smith-barry>

<sup>968</sup> RAFM:B3310 -*Correspondence*.

<sup>969</sup> *Ibid*.

<sup>970</sup> RAFM:AC71/9/18 -*Correspondence*.

friend and former colleague in India, Duncan Stone, too late for Tredrey's book in 1979 was that:

It was not long before Smith-Barry asked for an aeroplane to fly. The Air Ministry, by then, had proclaimed him Non-general duties, which we were all aware meant that he was not allowed to pilot one of his Majesty's aircraft. [They phoned around asking what to do, and a Flight Commander said] if Smith-Barry wished to have an aircraft, the flight was on no account to be entered in the Flight Log Book. [...] When he flew, he always refused to wear a parachute but kept an old brown cushion embroidered with fading red initials SB on one side, which he kept in his office [...] usually no helmet or goggles so that no one could get in touch with him from the ground.<sup>971</sup>

Whether Leigh-Mallory caught wind of his antics is unknown, but according to Stone, when Smith-Barry pestered London to create an Indian Flying School, and it was turned down, he retired. To the end, Smith-Barry could not deal with authority.

Smith-Barry also had issues relating to deception in his private life. Running short of cash, he had sold a family property, investing £150,000 in 1937 into a series of insurance policies. He later claimed to have given some away but sold others for a profit. In 1945, the Inland Revenue came after him for the tax on the profit he had made. In April that year, Smith-Barry, described in court as a 'mathematical genius', won an appeal against the payment.<sup>972</sup> His joy was short-lived, however, as the Inland Revenue challenged the decision.<sup>973</sup> On 26 July 1946, newspapers reported that Smith-Barry had lost his case and that rather than passive investment, he had undertaken 'adventure and trade.'<sup>974</sup> Consequently, he was liable for the tax. Though

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<sup>971</sup> RAFM:DC74/181 -Letters.

<sup>972</sup> "Tax Appeal Won—Profits on Insurance Policies" in *Birmingham Mail* (20.4.1945, p1).

<sup>973</sup> "Liable for Income Tax" -*Hull Daily Mail* (25.7.1946, p1).

<sup>974</sup> "Mathematical Genius Must Pay Tax" in an unidentified newspaper report contained in RAFM:DC74/181 -Letters.

granted the right of appeal to the House of Lords, there is no record that Smith-Barry did so.

#### 6.12 - Why did Smith-Barry have a problem with Authority?

The question should be asked why given he was from a gentrified Irish family with roots going back to Charles II, he had such a problem with hierarchy. Why did others believe he was at war with 'army officer types'? There is no mention of Smith-Barry ever attempting to join the Army before he entered the RFC. He had, as noted, been poor at Eton, failed his Cambridge University exams, spent a year perfecting the piano and experienced a failed assignment in Constantinople. Perhaps these failures imbued in him an inferiority complex or else a need to prove himself better than others at any cost. Though many RFC men, including L.E.O Charlton, refer to the early Corps as a collection of men who cared little for their former Army or Navy careers, there was almost certainly a stigma attached to the few men who flew to France in August 1914 who, like Smith-Barry, were in the RFC Special Reserve rather than attached from their regiments.

A.J.L Scott's 1920 *Sixty Squadron RAF* contains relatively little on Smith-Barry, but what he does have to say sounds very close to the mark. He recalls,

He was a great "character" [...] A trifle eccentric, he was a fine pilot. [...] Although beloved by his squadron, his superiors sometimes found him a little trying officially. It is often said, half admiringly, of a man by his friends that "he doesn't care a damn for anyone." I believe this to have been almost literally true of Smith-Barry.' [...] He was a fine, if original squadron commander, almost too original, in fact, even for the RFC, where originality was encouraged.<sup>975</sup>

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<sup>975</sup> Scott, *Sixty Squadron*, p.11.

Finally, concerning his character, there is an intriguing question of illegitimacy in his family. Bell-Irving recalled a conversation with Smith-Barry at the latter's home in 1937. Smith-Barry found Bell-Irving looking him up in a copy of Debrett's Peerage & Landed Gentry. In what Bell-Irving took to be all seriousness, Smith-Barry commented, 'well, it's a pity my parents weren't married, they never did, you know, something careless about the Irish attitude to conventions of that sort in Ireland at that time.'<sup>976</sup> Bell-Irving was much embarrassed, and Smith-Barry, he said, was very sensitive on the subject. Though Bell-Irving told Tredrey this, he asked that Tredrey to used discretion to avoid an 'unwanted reaction'.

Tredrey did his own research and concluded that Smith-Barry's parents were indeed married. However, he found that his:

Great-great-grandfather, also James Hugh Smith-Barry, [a] carefree gentleman, lived with Anne Tanner, who bore him two sons and three daughters. He kept a pack of hounds and maintained houses in Dublin, Cork, Oxford, London, Paris and Naples. He got through £20,000 a year, a vast sum of money in those days. His omission to marry Anne Tanner cut off all his descendants from the Earldom of Barrymore.<sup>977</sup>

Could it be then that family history and scandal played some small part in his lack of deference to authority and a refusal to conform? Tredrey chose to make no mention of this in his book.

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<sup>976</sup> RAFM:AC71/9/18-*Correspondence*.

<sup>977</sup> RAFM:B3310-*Correspondence*.

## 6.13 - Records Disposal

There also remains the unfortunate question of why the paper trail related to Smith-Barry is so self-serving and contrived. In a 1962 letter from Tredrey to Robb, he wrote,

The records for 60 Squadron were produced for me last week, but they started in January 1917. The records for the first year of its existence - April to Dec 1916, RSBs time - were 'officially burned'. Remembering that SB and co were faced with a bill for £88,000 and a court martial warrant on Dundas Heenan (withdrawn only a day or so before the trial), for stores "not properly accounted for" when they left England, hasty to get at the Huns - did RSB burn them?<sup>978</sup>

More was to follow when Tredrey also discovered that Smith-Barry had

A ceremonial burning of NE Training Group papers at York. He seemed to believe in removing the evidence, just as no doubt the 17th-century Irish landowners removed the peasants if they became a nuisance! All his private papers seem to have been lost in a flood at Durban post-1945. He certainly intended to make life difficult for his biographers.<sup>979</sup>

Even the flooding remains questionable, thanks to an Anne Smith-Barry letter to Bell-Irving in 1958. 'Enclosed', she said, 'is a list of papers in my possession [...] as I had destroyed nothing to do with Bob: data for a lawsuit over the re-building of this, not big house, business matters long gone west etc. I've burnt them all now!<sup>980</sup>

Friend Duncan Stone recalled that Smith-Barry's study was full of papers, including the wall covered in graphs. 'The lavatory, not used by the ladies, was odd. One had to wade through masses of paper documents etc., to the throne, which was placed on a

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<sup>978</sup> RAFM:AC71/9/18-*Correspondence*.

<sup>979</sup> *Ibid.*

<sup>980</sup> RAFM:B3310-*Correspondence*.

dais about a foot high in the centre of the far wall.’ He recalled that Anne ‘burned all his sums considering them too dangerous to fall into other’s hands. When he was asked to go to South Africa to help Anne sort Smith-Barry’s papers out, he arrived to be told there had been a flood. ‘As far as I remember, there was only his ...school report from Eton left’.<sup>981</sup> It is not unwarranted to wonder whether and why Anne had disposed of his paperwork.

#### 6.14 – Smith-Barry and Accident Reduction

One of the most common historiographical claims regarding Smith-Barry’s methods is that they reduced training accidents. Smith-Barry acolyte and organiser of his reunion dinners, Capt. H.D. Davis writing for the Bedford Record, made the outlandish claim that before the School of Special Flying, a life was lost in training for every ten hours of instruction. Following the school’s opening, he stated, ‘The immediate effect [...] was to reduce fatal accidents from one in 10 hours of instruction to one in 141 hours.’<sup>982</sup> Where Davis got his statistics from is unknown, but had he been accurate with a fatal accident every ten hours, the RFC would simply have ceased to exist.

In comments attributed to Stanley Vincent, Ralph Barker states that the ‘number of lives saved [due to Smith-Barry reforms] was incalculable.’<sup>983</sup> As we have seen, Vincent was one of the parties that helped forge Tredrey’s work. Even excellent air historians Dr David Jordan and Dr Michael Molkenin have repeated claims that the number of fatal accidents fell dramatically following Smith Barry’s work. Jordan, in his

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<sup>981</sup> RAFM:DC74/181-*Letters*.

<sup>982</sup> “Articles on Flying - Famous Instructor to write for The Bedford Record” in Bedfordshire Times and Independent (5 September 1930, p.12).

<sup>983</sup> Barker, *Mons*, p.194.

PhD, relied on *Pioneer Pilot*, claiming, 'the fact remains that after his methods of instruction were adopted, the death rate in training was halved'.<sup>984</sup> MolKentin quoted Robert Morley's thesis, which in turn quoted American historian Lee Kennett that, 'Fatalities amongst students during the following year would decrease from one per 790 flying hours to one every 1340 hours of flight training.'<sup>985</sup> Unfortunately, Kennett's quote is unsubstantiated and impossible to verify without underlying data. Morley, in turn, claims 'a considerable drop [...] in pilots killed' by quoting Tredrey.<sup>986</sup>

Claims that Smith-Barry's methods reduced accidents began to emanate from the School of Special Flying almost immediately after it opened.<sup>987</sup> There is a good reason why Smith-Barry was keen to make such claims – the rollout of his methods depended on it. As Gilchrist wrote in 1919, Smith-Barry realised that 'the question of safety still rather rankled [with senior officers], and the adoption of Gosport methods "en-bloc" depended on this factor in his judgement.'<sup>988</sup>

Assessing whether one person's initiatives led to a reduction in accidents analytically is impossible. The data does not exist to make such a comparison, even if the basis upon which it could be measured could be agreed. However, this research believes it is possible to make some reasonable assertions given facts regarding the operation there. One must remember that initially, the school consisted of only three training squadrons and that the distribution of Gosport materials did not begin until October

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<sup>984</sup> Jordan, *Army Co-operation Missions*, p.73

<sup>985</sup> M. MolKentin, 'The Dominion of the Air: the Imperial Dimension of Britain's war in the air, 1914-1918' in *British Journal of Military History* (Volume 4, No.2, 2018), p.54, R.A. Morley, *Wings*, p.111, Kennett, *Air War*.

<sup>986</sup> Morley, *Wings*, p.110.

<sup>987</sup> NA:AIR 1/720/35/17-*Report on Flying Schools (French)*.

<sup>988</sup> RAFM:AC71/9/18-*Correspondence*.

1917. Secondly, the School of Special Flying quickly became an instructor's school. Thus it was taking in the best raw material to train. Not surprisingly, therefore, this research has found only ten confirmed fatalities at instructor schools.

Unquestionably, the new Schools of Special Flying for instructors would not only have standardised but also likely significantly improved the standard of instruction. A valuable added component post-Smith-Barry was an audit function whereby some of the best instructors were sent around the training squadrons to assess the quality of work there. This would have ensured that standards were maintained. However, 'better' instruction was not introduced with the aim of reducing training losses. While it was hoped that this would be a welcome side-effect, the purpose of the instructor's schools was to produce more effective pilots better prepared to take on German machines.

The crude measure of 'killed whilst flying' losses, introduced at the beginning of this chapter, shows that the proportion killed in this manner, i.e. in non-combative flying, actually rose in 1918 from 1917 (31 per cent from 28 per cent). In absolute terms, the numbers increased by 146 per cent to 1,730. Those killed in action also grew, but by only 47 per cent, despite the massive increase in activity. This, of course, proves nothing definitively but may indicate that while training was no safer, losses in action were reduced from what they would otherwise have been. This makes sense intuitively. Throwing an aircraft around during training was intrinsically more dangerous than safe circuits. That accident numbers would fall is counter-intuitive, even allowing for better instruction. However, those who survived and went on to active squadrons were better prepared to face the rigours of combat in the air.

Morley is not alone in claiming that after the success of the Special School of Flying, there was 'a considerable drop in the number of wrecked aircraft and pilots killed during training.'<sup>989</sup> Morley references Tredrey as evidence, Tredrey having quoted that 9.75 per cent of aircraft were lost pre-Gosport flying and 3.11 per cent afterwards.<sup>990</sup> Unfortunately, there are several problems with this data. Firstly, the origin of this statistic is Smith-Barry. They were mentioned previously as taken from his 9 November 1917 report entitled *Report on the French Flying Schools*.<sup>991</sup> The numbers, therefore, are self-serving, and the report was an attempt by Smith-Barry to forge a more prominent role for himself in the training organisation, as discussed.

There is no supporting evidence for the 9.75 per cent number, while his claim for his own school, as indicated earlier, was based on a tiny number of hours and only 60 days of evidence.<sup>992</sup> To muddy the water - but also to be fair to Smith-Barry – Smith-Barry is not claiming that these loss numbers represent *before* and *after* the Gosport school's creation. This is a misinterpretation made by Morley. Smith-Barry claimed that 9.75 per cent were expected aeroplane losses in the RFC and that he lost only 3.11 per cent at his school.<sup>993</sup> An eagle-eyed reviewer of his report at the time noted in pencil in the margin that Smith-Barry's 3.11 per cent number represented only elementary instruction and took no account of accidents later in training or instructor training. In other words, reviewing officers had already spotted that he was telling only half the story.

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<sup>989</sup> Morley, *Wings*, p.110.

<sup>990</sup> Tredrey, *Pioneer*, p.76.

<sup>991</sup> NA:AIR 1/679/21/13/2198-*Reports on French Flying Schools*.

<sup>992</sup> NA:AIR 1/720/35/17-*Flying Schools (French)*.

<sup>993</sup> *Ibid*.

As shown, this research has been able to accurately determine the percentage of those killed in training as opposed to other activities. A better measure of training safety, however, would be determining the number of fatalities per hour of training flown. Unfortunately, obtaining reliable and consistent data for this has proven impossible. What data there is, is either incomplete, available for short periods, for specific squadrons, or comes from undeterminable sources. Worse, this research has determined that what data does exist has also been misinterpreted and misused. Molkentin states that in 1918 there was a reduction in accident rates compared with November 1917, from one accident per 790 flying hours to one in 1,340 hours.<sup>994</sup> The reference for this statistic is a combination of Kennett and Morley.<sup>995</sup> Tracing Morley's information leads back to Kennett too. As is the case throughout much of his book, Kennett does not give a source for either figure. However, this research has been able to trace the source of Kennett's data to Wise.<sup>996</sup> That is where the problem with this statistic begins. Wise states that the RAF's training casualty figures for January to October 1918 were 1.34 per thousand hours.<sup>997</sup> Mathematically, that is very different from one every 1,340 hours, a distinction that Kennett and, subsequently, Morley missed.

Calculated correctly, 1.34 per thousand hours equals one accident per 746 hours. Unfortunately, the misuse of the data gets worse. Kennett claims that 'Records for January-October 1918 indicate that in RFC/RAF training establishments there was

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<sup>994</sup> Molkentin, *Australia*, p.54.

<sup>995</sup> Kennett, *Air War*, p.129 and Morley, *Wings*, pp.110-111.

<sup>996</sup> Wise, *Airmen*, p.107.

<sup>997</sup> *Ibid.*

one death for every 790 hours of flying.<sup>998</sup> Wise quotes that statistics show 'that from January to October 1918 there were 1.34 fatalities per 1000 hours of flying'<sup>999</sup> – as shown, one every 746 hours. In other words, the 790 and 1.34 actually represent the *same* time period in the first place. Therefore, it is wholly unsurprising that these 790 hours are similar to the 746 hours derived from back-calculating Wise. This error is critical because it is used to give credence to the idea that Smith-Barry's reforms improved pilot safety. To stress again, the consequence of this error has given Smith-Barry credit for a 40 per cent reduction in accidents, a reduction that simply does not exist.

There are other problems with giving Smith-Barry credit for reducing accident rates. Wise, too, declares when explaining the improvement in Toronto accident rates, 'There seems little doubt that the introduction of Gosport methods of flying training is the chief explanation of the sharp improvement shown by RAF Canada in August 1918.'<sup>1000</sup> Wise asserts that hours per accident in Canada doubled from 1,560 to 3,300 between July and August 1918, improving further to reach 5,800 in October 1918.<sup>1001</sup> The problem with Wise's assertion is that on 26 March 1918, Major Hoare in Canada complained to Major Drew at the Directorate in London that though he had recently seen Smith-Barry's pamphlet unofficially, it had not been formerly dispersed to Canada.<sup>1002</sup> Indeed, this research has found no official dissemination of 'Gosport methods' despite copious Canadian documentation. The document trail does, however, show a later rollout of instructor training to Toronto. Assuming that Hoare

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<sup>998</sup> Kennett, *Air War*, p.129.

<sup>999</sup> This research has determined that AIR1/686/21/13/2252-*Statistical data* is the source of Wise's data though he does not state it.

<sup>1000</sup> Wise, *Airmen*, pp.107-108.

<sup>1001</sup> *Ibid*, p.107.

could implement Smith-Barry's methods, having only seen a copy of his pamphlet requires a significant leap of faith given the tight timescales.

There are other problems. Firstly, as mentioned, much is made of the fact that Smith-Barry's methods relied on the use of dual-control Avro 504s. The Avro was, it is widely agreed, an excellent training aircraft. Unfortunately, Canada had no such aircraft. It had the Curtis JN4 and, under best-case plans, would not have had Avros until April 1919. The underpowered JN4 was incapable of most of the methods of training that Smith-Barry advocated and, as shown, had been officially banned from teaching stunt flying. Thus, much of the advanced training would have been impossible in the Curtis, or if attempted, would almost certainly have increased fatalities. Unfortunately for Smith-Barry advocates, there is yet another problem with Wise's assertion that Smith-Barry's methods were the reason for the increase in safety in Canada. In addition to aeroplanes, the Canadian establishment would have required instructors to deliver the new methods. As the No.8 Training Group report illustrated in the previous chapter, instructors were in short supply until the Armistice. It is hard to conceive that even in the improbable event that Britain prioritised Canadian over British training as instructors became available, sufficient instructor numbers would not have been available to produce the improvement cited in the available time.

Of training in Texas during the winter of 1917/18, Wise quotes Don Clark's 1972 recollection, *Wild Blue Yonder*, stating that 'the death rate was out of all proportion [...] there were no curbs on any type of flying; every good stunt ever heard of was attempted by anyone crazy enough to try it.'<sup>1003</sup> If this is true, it would be strange.

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<sup>1003</sup> Clark quoted in Wise, *Airmen*, p.106.

Firstly, as noted, the cadets were in JN4s and discouraged – later banned – from stunting in it.<sup>1004</sup> Secondly, the historiographical narrative holds that it was Smith-Barry who introduced adventurous flying in training, yet Clark's experience pre-dates Canadian knowledge of Smith-Barry methods. It is perhaps more likely that Clark played to his prospective audience in the 1970s and that Wise was unwise to rely on them. To evidence this, a memorandum from the Commanding Officer of Taliaferro Fields in Texas dated 6 May 1918, states that the 'proportion of deaths from accidents to pilots trained' was 2.39 per cent, a number that equates he writes 'to an average of one fatal accident for each 1400 hours of flying'.<sup>1005</sup> Such a loss rate was excellent and, therefore, inconsistent with Clark/Wise's assertion.

While those that survived training may well have been better pilots due to Smith-Barry methods, there is additional evidence that they may have increased accidents rather than reduced them. On 31 August 1917, the Accidents Investigation Committee released a report following fourteen similar accidents. These were due to the 'considerable change in the conditions in which machines are used'.<sup>1006</sup> These included strong winds and increased engine power but particularly 'Manoeuvres which a few months ago would have been deprecated as imposing considerable stresses on the aeroplane structure, now form part of the regular course of training'.<sup>1007</sup> It recommended that the Royal Aircraft Factory urgently consider structural strength in existing and new designs. It also asked that consideration be given to further experimental work required to understand the stresses associated with these

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<sup>1004</sup> NA:AIR1/515/16/3/82/142-Accidents Committee.

<sup>1005</sup> NA:AIR2/166/RU4869-Reciprocal Scheme.

<sup>1006</sup> NA:AIR1/38/15/1/260-Formation of Technical Enquiry Committee to Investigate Accidents.

<sup>1007</sup> NA:AIR1/515/16/3/82-Accidents Committee.

manoeuvres. Thus, while the Smith-Barry approach to adventurous flying might produce 'better' pilots, it did not necessarily make them safer regardless of their skills.

The last word on statistics on training accident rates comes from official reports at the war's end. A British '*Air Operations Summary*' at the end of October 1918 states that, on average, 750 aircraft and 100 men were lost each month in training.<sup>1008</sup> In October 1918, 76,928 hours of training were flown. Therefore, 100 fatalities equate to 1.5 per thousand hours – 800 hours per fatality.<sup>1009</sup> This figure, coming just two weeks before the Armistice, is *very* close to the 746 and 790 hours discussed above. These figures suggest that any improvement in fatality rates in training was, at best, marginal. Such a result is, on balance, much more likely to be the case. As stated, Smith-Barry's methods were never about reducing training casualties. They were about improving pilot performance in the Field, and if there were improvements, they would be reflected in the operational excellence and longevity of those pilots in France.

## 6.15 – Conclusion

This chapter set out to address some controversies concerning pilot training. The prevailing narrative that half or more of all pilots killed in the First World War has been comprehensively proven to be false. This conclusion is essential because such statistics form the base on which the story of inept training has been constructed. If it is accepted that training losses in Britain were closer to 15 per cent and 25 per cent

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<sup>1008</sup> NA:AIR1/686/21/13/2252–*Statistical data.*

<sup>1009</sup> *Ibid.*

overall, less than half that claimed, and in line with Second World War losses, the argument that training was 'inadequate' is significantly undermined.

The chapter went to lengths to explain how mathematical misinterpretation has been used to confirm a construct that Smith-Barry was responsible for reducing the rate of accidents during training. The correct use of data has shown that there was no such reduction in accidents overall, and no evidence exists to link Smith-Barry to improvements. Further, the research has shown that even the best historians, such as S.F. Wise, are not infallible when using statistics when a result is expected. Further, the chapter spent time exploring for the first time the establishment of the Accident Committee and how the RFC used accidents in a bid to improve the safety of flying. This untold story is essential evidence that the RFC was far from an uncaring organisation.

When Smith-Barry returned to Gosport to head No.1 Reserve Squadron at the beginning of 1917, Salmond and Livingston sought to solve the manpower crisis by finding efficiencies within their organisation. No doubt Smith-Barry's ideas regarding training efficiencies as well as new methods would have played well with these senior officers. Smith-Barry found Gosport was not exempt from the introduction of Training Depot Stations when on 31 July 1917, No.1 Reserve Squadron merged with No.27 and No.55 Training Squadrons. However, while it was manned in the same way as a standard TDS, it had a particular purpose. The new entity was to be named the School of Special Flying 'for the purpose of teaching specially selected pilots all the tricks and aerobatics in flying which have proved of use in aerial fighting.'<sup>1010</sup>

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<sup>1010</sup> NA:AIR2/12/87/Schools/174-*Special Flying*.

It was, however, only a month later, on 31 August, that Brig. Gen. Charlton, now the Director of Air Organisation, announced a new purpose for the school. In what Charlton called 'super training', the School would now focus solely on a new important activity, the instruction of instructors.<sup>1011</sup> While Smith-Barry's focus on the instructor is perhaps the most important element of his ideas, there is no clear evidence that he initiated nor wanted this change in the school's focus. Parker believed that 'Considerable credit for the establishment of an instructor's school must go to John Salmond'.<sup>1012</sup> Indeed, the evidence presented here supports the view that focusing the school in this way was not Smith-Barry's intention. Repeated papers show he hoped to lead new enlarged schools that incorporated all aspects of training on the ground and in the air.

The work done at this school was essential but came so late in the war that its results would only have been genuinely felt in 1919. In any case, to Smith-Barry's dismay, on 4 January 1918, the School of Special Flying was absorbed into the rest of the training infrastructure when its reporting line moved from Training Brigade HQ to the Southern Training Brigade.<sup>1013</sup> Other instructor's schools would be formed in other regions during the rest of 1918. Ultimately the RFC rejected Smith-Barry's vision of the future organisation. This rejection, as demonstrated, led to Smith-Barry's manoeuvrings that, in turn, led to his downfall.

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<sup>1011</sup> NA:AIR2/12/87/Schools/174-*Special Flying*.

<sup>1012</sup> RAFM:X003-7892/071-*Parker*.

<sup>1013</sup> NA:AIR2/12/87/Schools/174-*Special Flying*.

This research concludes that Smith-Barry was a man entirely unsuited for senior command. His ideas may have improved British pilot training, but he was unfit to lead a large organisation. As Livingston wrote:

Other qualities besides a genius for training pilots were required for such a command - in particular, knowledge of Staff duties, power of organization etc., and it must also be realised that Smith-Barry was a comparatively junior officer.<sup>1014</sup>

While Smith-Barry may have inspired loyalty from many of those he commanded, his inability to accept his limitations ultimately soured his legacy in the RAF. His decisions in both wars to go around his senior officers, ignore command structures, deliver proposals different from those requested, and not accept no for an answer marked him down as untrustworthy.

By 1918, Smith-Barry's school had become a small cog in a vast RAF training machine. Smith-Barry himself, in later years, disclaimed having made the system, saying he had 'only done the donkey-work, others improving on it. I merely wrote the alphabet', he said, 'others wrote the classical works.'<sup>1015</sup> He was, he said, 'only a drag on the wheel at Gosport' though he added no doubt with a smile, 'Never mind. I got most of the credit anyway.'<sup>1016</sup> Duncan Bell-Irving and a few 60 Squadron acolytes made this the case. His legacy as the 'man who taught the world to fly', appropriate or not, lives on.

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<sup>1014</sup> Livingston, *Hot Air*, p.136.

<sup>1015</sup> "A Reunion of Aviators- "Gosport" Pilots - Reminiscences at Brooklands" in *Hampshire Telegraph* (15 July 1938).

<sup>1016</sup> RAFM:B3310-*Correspondence*.

## **Conclusion**

When war was declared, the Corps faced significant challenges. Many political and military figures agreed that the war would be short. Consequently, the RFC departed for France in mid-August 1914, leaving almost no men or functioning aeroplanes to form new squadrons or establish training capabilities. Flight was new and unproven in any significant way militarily. While the use of aeroplanes in almost all forms had been imagined pre-war, the carrying capacity of early aircraft meant that, in most aspects, such thinking remained theoretical. Further, there had been no planning to determine how many men and machines would likely be needed in the advent of war. This failure to anticipate the likely size of the Corps meant that no thought about how men would be recruited had occurred. This lack of planning extended beyond the flying corps, as illustrated in the stream of skilled men who enlisted unchecked into the infantry.

As this research has demonstrated, these early issues caused few initial problems. In Brancker and Trenchard, the RFC had single-minded, focused, self-starting leaders who required little direction. Without guidance from the War Office, they established their own recruitment process, opening an RFC office and taking over private schools and airfields. The second recruitment advantage through mid-1916 was a ready pipeline of willing and able men. While initial pilot recruitment efforts focussed on individuals already possessing pilot certificates proved fruitless, the low number of casualties and modest expansion meant enough trainee pilots were easily found. It was a similar story on the ground. In 1914 the RFC had a significant number of men with at least two full years of experience in the RFC who were supplemented by the RFC's pick of the best civilian tradesmen. As demonstrated in a new analysis of

attestation records, in both 1914 and 1915, the RFC was able to recruit more than three-quarters of their men from trades that matched their recruitment materials.

While recruitment came easily in the early years of the war, bottlenecks in the training system were becoming apparent. Initially, there was an organisational reluctance to send home men to act as instructors, often matched by the individual pilot's reluctance. While this hindered the training of new pilots, the central issue remained a lack of aeroplanes, an issue that would dog the Corps for at least the first two full years of war. 1915 was essentially a year of muddling through. Pilot training involved an ever-changing combination of squadrons and the CFS, while standards for pilot proficiency were unchanged from 1913. The growth in ground crew numbers meant that 'in squadron' methods, used successfully from 1912 through 1914, became insufficient.

The training of pilots and men was boosted in early 1916 by the arrival of new leaders, particularly Major John Salmond and his Adjutant, Captain Guy Livingstone. They along with fellow leaders of the Corps were ex-Army officers and as such, had been 'schooled' in Army methods of learning and leadership. This thesis demonstrated that Aimee Fox's work on learning and innovation, especially the focus on the latter, is consequently equally applicable to the RFC. Salmond and Livingstone's early inspections of training units yielded near-immediate improvements. For pilot trainees, the first minimum standards were introduced. Alongside these, ground schools opened at Reading and Oxford to train men in the theoretical aspects of their roles. The training scheme was adjusted so all men received ground training before learning to fly. This process had the advantage of weeding out those unsuitable before wasting time in an aircraft.

This thesis explored the creative use of third-parties in training ground-crew in 1915 and 1916 for the first time. Salmond and Livingston rightly concluded that this was, at best, a short-term fix and that the future demands for men would render these training arrangements inadequate. In the summer of that year, therefore, the first ground school was opened at Reading for fitters and riggers. The growth of the facility and the numbers trained allowed a corresponding reduction in the use of suppliers until they were phased out entirely in early 1918. These 1916 steps were essential in allowing the RFC to cope with the war's latter years.

In 1917, the demand and supply dynamics of manpower materially changed. The surplus of trainee pilot material and trained men on the ground evaporated. Manpower demands from the Infantry significantly increased and were accompanied by similar demands from the home front for men in munitions. The effect on the RFC was that transferees from the infantry became harder to find, and the RFC increasingly needed to recruit unskilled civilians on the ground. Despite the unprecedented challenges in 1917, this research has shown that fundamentally, the RFC rose to meet the recruitment challenge successfully.

They achieved this through a combination of methods and initiatives. In Britain, the use of the media grew to include the use of the relatively new medium of cinema. Additionally, the RFC recognised that impediments to roles in the infantry need not be so in the RFC. In a new analysis, this research has demonstrated that the ever-pragmatic Corps placed the skillset of the men above their age and physical stature. Older, younger, physically less imposing men were recruited in great numbers, as

were wounded infantry officers for roles as pilots. Alongside these changes, they implemented a 'boy' scheme to create a pipeline of skilled eighteen-year-olds of the future. These young men served on the Home Front as they undertook their training. Alongside them, the RFC recruited ever-growing numbers of women to free up men for service in France. Initially used as drivers, women's roles were expanded and deepened to include positions in workshops, stores and air parks.

At no stage of the war was the RFC recruiting and training in a stable, static environment. The Corps was not only growing exponentially but given greater engine power, aircraft could now be used for activities previously only imagined. Bombing became feasible, and aim improved with the development of bomb sights. Fighting in the air became widespread as scouts were used in attempts to dominate the air and protect their observation aircraft. Formation flying tactics were introduced, and wireless capabilities increased. All these changes resulted in a deepening training requirement. The RFC responded with schools of observation, bomb dropping and gunnery, amongst others. The RFC was rightly criticised for being too slow to recognise the need for gunnery training, a decision compounded by the botched selection of the Loch Doon site in Scotland. Whilst forced to play 'catch-up' in this area, the RFC found new ways to enhance training in new technical areas, accompanying all of them with testing examinations to weed out the unsuitable.

In 1918, the RFC continued to grow quickly. This research has helped demonstrate the invaluable contribution of Canada in training both pilots and men. At one stage in 1917, Canadian pilots accounted for a third of new pilots graduating, and they continued to represent a fifth into 1918. A clever reciprocal agreement with the United

States led to the use of Texan airfields in winter and saw the RFC train significant numbers of American pilots who subsequently saw service in France. Additionally, the RFC recruited and trained 16,000 American mechanics who saw service in British squadrons until their American counterparts were created.

By the Armistice, a comprehensive training system was in place, with a curriculum that varied depending on the man's target role in the Corps. Civilian pilot trainees were now taken through a Cadet scheme that taught them the basics of military life and discipline before they entered the training process. Training timescales for new pilots in late 1918 were upwards of ten or eleven months and tailored for the type of aircraft they would fly. Improvements in methods introduced at the School of Special Flying had been concentrated into the standardised training of instructors who also faced examinations and grading. Only the most capable instructors would be allowed to train the pick of the best pilots in scout squadrons.

This research set out to analyse how deadly training was by examining data about accidents. It has demonstrated that training was nowhere near as deadly as reported in most areas of the historiography and that it was no worse than the RAF in the Second World War. The Corps sought to minimise accidents by focusing on the individual and the system. As well as examinations, the RFC used annual reports to root out those who would prove ineffective as pilots. Even at the peak of the pilot shortages of late 1916 and early 1917, no evidence suggests this system relaxed. Pilots continued to be sent home for further training if they were not sufficiently skilled, and in-squadron training continued in France before men were allowed over the line. The RFC did not accept instances of insufficiently trained men being sent to France

lightly. Each was followed up and investigated. Lessons were learned, and procedures changed. All accidents were subject to investigation, even cursory, and an Accident Committee was formed to find systemic issues that could be remedied in production. Such actions help demonstrate that the RFC was not the uncaring machine that has often been painted. Nor, it is recognised, was their attention simply an act of benevolence. Better-trained pilots were less likely to wreck aircraft and more likely to be a success at the Front. Eliminating the cause of accidents would directly assist the war effort.

Almost all general texts on the RFC have relied on Frank Tredrey's book to describe training during 1917 and 1918. Tredrey's book on the achievements of Robert Smith-Barry promotes the notion that he saved the RFC's pilot training system and men's lives with his reforms. Given his status within the historiography, and indeed in today's RAF, it was necessary to devote significant time to examine his contribution. The material reassessment presented in this research has shown that Smith-Barry's status, achievements and, ultimately, his contribution have been exaggerated. Some reasons for this, such as the destruction of records, lie with the man himself. Others, such as a blinkered reliance on a small number of friendly anecdotes or the unquestioning acceptance of Smith-Barry's writings, result from Tredrey's approach. Further, errors in the use of data by historians have led to a linkage between Smith-Barry and accident reduction that does not exist.

The training system was always a balancing act between time in the system and the Field's constant demand for men. The RFC desired to give their pilots many more hours than the minimum prescribed, but training time was never allowed to hold up the

supply of men to France materially. While there is much criticism of this decision to compromise training time for the demands of Haig and Trenchard in France, few commentators offer an alternative. Increasing throughput was not an option due to aircraft availability. As demonstrated, aircraft production was already a priority for the government, second only to shipbuilding. The only alternative, therefore, would have been to reduce the number of men sent to France.

Military leaders could not countenance such an option at the time. After initial gains in 1914, the German Army adopted a predominantly defensive attitude on British parts of the line until the March 1918 offensives. Consequently, the onus was on the British and French infantry to affect an outcome. Artillery became the primary weapon, and the RFC quickly became the Army's 'eyes.' Reducing pilots at such a crucial juncture would have meant a material effect on Britain's ability to prosecute the war on the ground. Additionally, in aviation circles, thinkers accepted that control of the air was essential and would need to be fought for. This thinking and the RFC's approach to it are well-served by Dr James Pugh's PhD thesis and subsequent book.<sup>1017</sup> As Trenchard stated in September 1916:

Air power was an 'offensive and not a defensive weapon' [.and effort should be one of..] 'relentless and incessant offensive, [...] The aeroplane is not a defence against the aeroplane'.<sup>1018</sup>

The Germans, too, came to recognise this. General von Bulow was said to have commented in January 1917 that the Germans, too, 'must exchange defence for

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<sup>1017</sup> J.N. Pugh, *The Conceptual Origins of the Control of the Air: British Military and Naval Aviation, 1911-98* (PhD, University of Birmingham, 2012) and J. Pugh, *The Royal Flying Corps, the Western Front and the Control of the Air, 1914-1918* (London, Routledge, 2019).

<sup>1018</sup> RARM: MFC 76/1/4-Trenchard Papers-Future Policy in the Air.

offence, and do to the English what they are doing to us.'<sup>1019</sup> Therefore, the RFC could not accept a reduction in scout patrols that protected these vital observation sorties.

This thesis set out to fill a significant gap in our understanding of the Royal Flying Corps and opine on its recruitment and training effectiveness. Using anecdotal material from many previously untapped sources, both primary and secondary, and the analysis of many thousands of assertion records this thesis presents a new view of how the men of the RFC were found and prepared for war. While the war on the ground during the First World War has been subject to extensive re-evaluation since the days of *Lions Led by Donkeys*, attitudes to the Royal Flying Corps, particularly with respect to training have not received such attention until now.<sup>1020</sup> It is hoped that this work forms part of a similar serious re-assessment.

The recruitment and training story in the RFC and later the RAF is ultimately one of unprecedented success. From a tiny fledgling force, the Corps grew into a sophisticated weapon in combined arms operations that involved both tanks and infantry. Such an achievement was only possible because the Corps found ways to continue to find sufficient numbers of men to fill the ever-growing squadron numbers and was able to train them to undertake their roles. The Corps learned as it went along, the cauldron of war accelerating this process.

By luck and design, the Corps had the right men in place at the right time to make this happen. The entrepreneurial Trenchard and workaholic Brancker in 1914, the new

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<sup>1019</sup> Quoted in P. Marr, 'Haig and Trenchard: Achieving Air Superiority on the Western Front' in *Air Power Review* (Volume 17, No.2, Summer 2014).

<sup>1020</sup> The term originated in A. Clark, *The Donkeys* (London: Pimlico, 1991 [1961]) and has been extensively de-bunked by a number of historians. See the work of Professor Gary Sheffield for example.

methods of Salmond, Livingstone and Charlton in 1916 and 1917, and the steady hands of Ludlow Hewitt and, latterly, John Hearson in 1918 deserve significant credit for establishing and maintaining an appropriate structure. The historiography of the RFC had done the organisation a grave disservice with its portrayal of an amateurish recruitment process and inept and deadly training system. This new analysis and resulting conclusions have demonstrated the significant skill, compromise and resourcefulness levels involved in finding and preparing those men. The constantly evolving system proved sufficient to prepare the Corps to fight and win the first war in the air.

Appendix One – RFC/RAF Organisation

20 July 1916

II Brigade and VI Brigade re-designated the Training Brigade

Aldershot Group Command to the Training Brigade

1 January 1917

Eastern, Northern and Southern Group Commands created

5 August 1917

Training Brigade re-designated the Training Division

Eastern, Northern, and Southern Group Commands redesignated as Eastern, Northern and Southern Training Brigades respectively and moved to Training Division

1 November 1917

1 April 1918

Eastern Training Brigade re-designated No.12 Group  
Northern Training Brigade re-designated No.16 Group  
Southern Training Brigade re-designated No.7 Group

No.1 Area RAF (London) created controlling No. 1, 2 and 3 Group (RFC) and 4 and 5 (RNAS)  
No.2 Area RAF (Salisbury) created controlling No. 7 and 8 (RFC) and No. 9 and 10 (RNAS)  
No.3 Area RAF (Birmingham) created controlling No.12 and 13 Group (RFC) and No.14 (RNAS)  
No.4 Area RAF (York) created controlling No.16 and 17 Group (RFC) and No.18 (RNAS)  
No.5 Area RAF (Glasgow) created controlling No.20 and 21 Group (RFC) and No.22 (RNAS)

8 May 1918

No.1 Area re-designated South Eastern Area  
No.2 Area re-designated South Western Area  
No.3 Area re-designated Midlands Area  
No.4 Area re-designated North-Eastern Area  
No.5 Area re-designated North-Western Area

Additional Groups were created for the duration of the war and became part of the Area command structure depending on location.

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## Appendix Two – Ground-Based Instruction School Development

### Reading

No.1 School of Instruction – December 1915  
No.1 School of Military Aeronautics – October 1916  
No.1 School of Aeronautics – April 1918

### Oxford

No.2 School of Instruction – April 1916  
No.2 School of Military Aeronautics – October 1916  
No.2 School of Aeronautics – April 1918

### Egypt (Aboukier to Abbasia to Heliopolis)

No.3 School of Military Aeronautics – November 1916  
No.3 School of Aeronautics – April 1918

### Canada (Toronto)

No.4 School of Military Aeronautics – July 1917  
No.4 School of Aeronautics – April 1918

### Oxford

No.5 School of Military Aeronautics – August 1917  
No.5 School of Aeronautics – April 1918

### Denham

No.6 School of Military Aeronautics – November 1917  
No.6 School of Aeronautics – April 1918

### Bath

No.7 (Observers) School of Military Aeronautics – January 1918

### Cheltenham

No.8 School of Aeronautics – July 1918

### Reading (to Cheltenham 10/1918)

No.9 (Observers) School of Aeronautics – September 1918

## Appendix Three – Gunnery and Aerial Fighting Schools

3 October 1915

Machine Gun School formed at Dover

13 September 1915

Machine Gun School re-designated School of Aerial Gunnery

27 November 1915

School of Aerial Gunnery moves to Hythe

1 January 1917

School of Aerial Gunnery re-designated No.1 (Auxiliary) School of Aerial Gunnery  
No.2 (Auxiliary) School of Aerial Gunnery formed at Turnbury

1 April 1917

School of Aerial Gunnery (Egypt) formed at Aboukir, Egypt

1 August 1917

No.3 (Auxiliary) School of Aerial Gunnery formed at New Romsey

1 September 1917

RNAS Gunnery School formed at Freiston Shores

17 September 1917

No.1 School of Aerial Fighting formed at Ayr

11 October 1917

No.2 School of Aerial Fighting formed at Eastburn

9 March 1918

No.1 (Auxiliary) School of Aerial Gunnery merged with No.3 (Auxiliary) School of Gunnery to form No.1 (Observers) School of Aerial Gunnery

No.1 (Observers) School of Aerial Gunnery formed at New Romsey

1 April 1918

RNAS Gunnery School (School of Aerial Fighting and Bomb Dropping) re-designated No.4 (Auxiliary) School of Aerial Gunnery

6 May 1918

No.2 School of Aerial Fighting merged with No.4 (Auxiliary) School of Aerial Gunnery to form No.2 School of Aerial Fighting and Gunnery at Marske

No.3 School of Aerial Fighting and Gunnery formed at Bircham Newton

No.4 School of Aerial Fighting and Gunnery formed from No.4 (Auxilliary) School of Gunnery at Frieston

## Appendix Four – Creation of Other Schools for Pilot Training

24 October 1916

Wireless School re-designated Wireless and Observers School at Brooklands

(before) 2 July 1917

Special Instructors Flight formed at London Colney

2 August 1917

School of Special Flying formed at Gosport

7 November 1917

Artillery & Infantry Co-operation School formed from Wireless and Observers School, Hursley Park

8 November 1917

No.2 Wireless School formed at Penhurst

5 January 1918

No.1 School of Navigation and Bomb Dropping formed from No.2 TDS at Stonehenge

31 January 1918

School of Aerial Co-operation with Coastal Artillery formed at Gosport

1 April 1918

Instructors School formed at Redcar

2 April 1918

Wireless Telephony School formed at Biggin Hill, later moved to Chattis Hill

17 May 1918

No.3 School of Navigation and Bomb Dropping formed at Almaza, Egypt

18 May 1918

School of Special Flying becomes No.1 School of Special Flying

Instructors School at Redcar re-designated No.2 School of Special Flying

23 June 1918

No.2 School of Navigation and Bomb Dropping formed at Andover

1 July 1918

No.1 Observers School formed at Eastchurch

No.1 School of Special Flying re-designated South West Area Flying Instructors School

No.2 School of Special Flying re-designated North Eastern Area Flying Instructors School

Midland Area Flying Instructors School formed at Lilbourne

North Western Area Flying Instructors School formed at Ayr

1 August 1918

School for Anti Submarine Inshore Patrol Observers formed at Aldeburgh

29 August 1918

Special Instructors Flight disbanded into South East Flying Instructors School

1 September 1918

No.4 School of Navigation and Bomb Dropping formed at Thetford

14 September 1918

No.2 Observers School formed at Manston

19 September 1918

Artillery & Infantry Cooperation School re-designated RAF & Army Co-operation School

24 September 1918

No.2 Wireless Telephony School formed at Port Meadow

1 October 1918

School of Anti-Submarine Inshore Patrol Observers re-designated Marine Observers School

15 October 1918

School for Marine Operational Pilots formed at Dover

19 October 1918

Observers School of Reconnaissance, Maps and Photography formed at Shrewsbury

22 October 1918

Irish Flying Instructors School formed at Curragh Camp

## Appendix Five – Training Schools at the Armistice

School		Location
Aerial Co-operation with Coastal Defence Batteries		Gosport
Aerial Gunnery (No.1 Observers)		Hythe and New Romney
No.1 School of Aeronautics		Reading
No.2 School of Aeronautics		Oxford
No.5 School of Aeronautics		Denham
No.6 School of Aeronautics		Bristol
No.7 School of Aeronautics		Bath
No.8 School of Aeronautics		Shorncliffe
No.9 School of Aeronautics		Cheltenham
Armament School		Uxbridge
Balloon No.1		Larkhill
Balloon No.2		Lydd
No.1 Balloon Training Base		Sheerness
No.1 Balloon Training Depot		Roehampton
No.2 Balloon Training Depot		Richmond Park
Boys Training		Eastchurch
Central Flying School		Upavon
No.1 Fighting School		Turnberry
No.2 Fighting School		Marske
No.3 Fighting School		Sedgford
No.4 Fighting School		Freiston
Naval Fighting School		East Fortune
Fleet Aerial Gunnery and Fighting		Leuchars
Free Balloon (No.1)		Hurlingham
Flying Instructors – SW		Gosport
Flying Instructors – SE		Shoreham
Flying Instructors – Mid		Lilbourne
Flying Instructors – NE		Redcar
Flying Instructors – NW		Ayr
Flying Instructors – Irish		Curragh
Ground Armament		Eastchurch
Higher Training		Greenwich
Instruction (Cadet Brigade)		Hastings
Instruction for Administrative Officers		Greenwich
Marine Observers		Aldeburgh
Marine Observers		Eastchurch
Marine Operational Pilots		Dover
Medical Officers Instruction		Hampstead
Motor Transport Instruction		Hurst Park
No.1 Navigation and Bomb Dropping		Stonehenge
No.2 Navigation and Bomb Dropping		Andover
No.4 Navigation and Bomb Dropping		Thetford
No.1 Observers		Eastchurch
No.2 Observers		Manston
Observers School of Reconnaissance & Aerial Photography		Monkmoor, Shrewsbury

Physical Training			Cranwell
RAF and Army Co-operation			Winchester (Worthy Down)
Technical Officers School of Instruction			Henley
Technical Training			Halton
No.1 Wireless School			Flowerdown
No.2 Wireless School			Penshurst
Wireless Operators			Flowerdown
Wireless Telephony			Chattis Hill
Aerial Fighting			Canada
Aerial Gunnery			Canada
No.4 School of Aeronautics			Canada
Armament			Canada
Artillery Co-operation			Canada
No.3 School of Aeronautics			Egypt
Armament			Egypt
No.5 School of Fighting			Egypt
No.3 Navigation and Bomb Dropping			Egypt

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