France and the Development of British Military Aviation

By Air Vice-Marshal Peter Dye

Prior to WW1 no European country embraced powered flight more enthusiastically than France. French aviators, aircraft and aero-engine manufacturers led the world. Inevitable it was a Frenchman, Louis Bleriot, who first flew the English Channel. Not for 3 years was British military aviation was formally established as the Royal Flying Corps (RFC).

The RFC relied heavily on French industry for its aircraft and aero-engines and French experience for its doctrine and organisation; French flying schools trained many of its pilots. The relationship continued through the First World War. Many aircraft and engines were purchased in France to help expand the RFC and to supplement shortfalls in British production. The RFC's doctrine was also influenced by French experience, particularly in the employment of air power at Verdun. This was underscored by the close personal relationship between General Hugh Trenchard and his French counterparts, notably Commandant Paul du Peuty.

The French contribution to British military aviation in its first critical years whilst significant has now largely been forgotten. The French influence was vital to the development of the RFC and central to Trenchard's vision for an independent air service. This paper explores the political, social and military aspects of this relationship, including French influence on British thinking about air power and on the enduring doctrine and ethos of the RAF.

Introduction

There was no European country that embraced powered flight more enthusiastically than France. The Wright brothers' achievements and particularly their visit to Europe in 1908, when they flew in front of huge crowds, inspired adventurers, entrepreneurs and industrialists alike. French aviators, aircraft and aero-engine manufacturers, soon led Europe – if not the world – in realising the potential of aviation. The names of these early pioneers became as familiar to the British public as those of American and Russian astronauts

Major General, Later Lord Trenchard, GOC RFC 1915-1918

half a century later. France was also not slow to appreciate the military potential of aircraft and quickly established pre-eminence in the practical development of this new weapon. Britain, concerned by the growing power of Germany, could only look with admiration, and envy, at the innovation and energy of the French aircraft industry and their government's willingness to invest in military aviation. Indeed, one British pioneer encouraged his fellow experimenters to follow his example and emigrate to France in order to escape the ridicule which greeted all attempts at flight in England.

It was perhaps inevitable that it should be a Frenchman, Louis Bleriot, who first crossed the English Channel by air, but it would be another three years before British military aviation was formally established; in the form of the Royal Flying Corps (RFC). In the years prior to the outbreak of the First World War, the RFC relied on French industry to provide the majority of its aircraft and aero-engines, while drawing heavily on French experience for its organisation and using French flying schools to train many of its pilots. This close relationship would continue, and even strengthen, during the First World War. Substantial quantities of aircraft and aero-engines were purchased in France to help expand the RFC and to make good shortfalls in British production. The RFC's emerging doctrine was also greatly influenced by French wartime experience, particularly the contribution of air power in the defence of Verdun. This was underscored by the close personal relationship between Brigadier-General Hugh Trenchard, Head of the RFC on the Western Front, and his counterparts in the French Air Services, notably Colonel Paul du Peuty. Trenchard readily acknowledged the debt he owed these officers and their influence on his thinking and on the standards of the RFC.

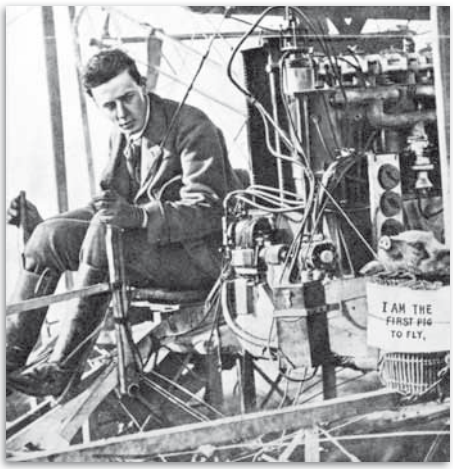
The French contribution to British military aviation in its first critical years was undoubtedly significant, but is now largely forgotten. French ideas, experience, doctrine and equipment were vital to the development of the RFC and were central to Trenchard's vision for an independent air service. The Anglo-American bomber offensive of the Second World War owed much to this legacy – a debt that can still be seen in the history and traditions of the Royal Air Force (RAF). This paper will explore the political, social and military aspects of this relationship, including French influence on British thinking about air power and on the enduring doctrine and ethos of the RAF.

The Beginning

The development of aviation in Edwardian Britain is a story of individual endeavour in the face of political and military indifference. For the visionaries, who had wholeheartedly embraced aviation, and instinctively understood its immense potential, the Government's attitude was incomprehensible. But, for those tasked with running the Empire, aviation was seen as an expensive toy that offered little – particularly at a time when military budgets were under pressure from the cost of post-Victorian modernization. These factors weighed heavily in the political debate, as possibly did the view that, invented by the Americans, and enthusiastically taken up by the French, aviation was not something that should properly excite an Englishman.

For the media, notably newspapers such as the Daily Mail owned by Lord Northcliffe, aviation generated considerable publicity and provided a stick to beat the Government. Nevertheless, of all the nations, Great Britain remained uniquely sceptical of the efforts of her own pioneers.[1] Little wonder that John Moore-Brabazon, holder of the first British Pilot's License, should write to the newly established *Flight* magazine that:

'I have known the difficulties of constructing a machine in England, where everybody is so ready to discourage one, ridicule one and look upon one as an amiable idiot…My advice to anyone about to build a machine is to do it in France: there he will find the enthusiasm without which it is so difficult to really make a machine fly.' [2]



John More-Brabazon, the first Englishman to fly a powered aircraft and an ardent aviation pioneer who in 1909 exorted his fellow countrymen to emigrate to France where aviation was taken more seriously

It was not just Moore-Brabazon who looked across the Channel for inspiration. Aeronautical progress in France had attracted the military's attention since the turn of the Century. Colonel Templar, Head of the Balloon Factory at Aldershot,

had been greatly impressed by the progress made by Santos-Dumont with navigable airships in 1901. Later that year he visited his French opposite number, Colonel Reynard, to learn more, although he was denied access to the latter's workshops at Chalais-Meudon. With the signing of the 'Entente Cordiale' in 1904, such barriers rapidly disappeared, leading to joint military talks as well as the sharing of technology – largely, it has to be said, to the benefit of the British. German aeronautical progress was also of some considerable interest, particularly Count Zeppelin's pioneering achievements, but this was overshadowed by long-standing concerns about Germany's ambitions – further exacerbated by the Agadir Crisis. These two themes, ever closer working with France and the growing belief that war with Germany was inevitable, dominated the development of British military aviation in the decade before the outbreak of war.

Interest in aviation was one thing, political support was another. The arrival of the Wright brothers in London, and the intense media interest they aroused, did little to move the Government.

'In May 1909 the Wright brothers arrived in London. They received a tremendous welcome. Wilbur and Orville Wright were living symbols of the new air age. Their British contemporaries were at this time distressed by the fact that Britain had fallen behind France and Germany in aeronautical achievement.' [3]

On 25 July 1909, Louis Bleriot flew the Channel from Calais to Dover in 38 minutes, in a small machine of his own design. For many aviation advocates this was a key turning point.

'When Monsieur Bleriot landed at Dover he opened a new chapter in the military history of the British Isles.' [4]

Of course, the argument was not so easily won and aviation in Britain continued to be viewed with apathy, suspicion and even open hostility by naval and military authorities.[5] Indeed, in April 1909, the War Office had prohibited further experiments with aeroplanes as the costs were considered too high.[6] It was probably not helpful when it was pointed out that matters were different in France.

'I ask you to give publicity to the success of aviation as adapted to military purposes because it is high time that our authorities took some steps to follow the example of the French.' [7]

Major General Frederick Sykes, Commander of the Military Wing, who modelled the organisation of the RFC on the French Air Services

Gradually, however, the arguments and the lobbying began to bear fruit. In October 1911, Major (later Sir) Frederick Sykes was ordered by Brigadier Henry Wilson, Director Military Operations at the War Office, to visit France and write a report on *l'Aviation francaise*. This he duly produced in November 1911. Titled *'Notes on Aviation in France'*, Sykes

outlined the value of aeroplanes in war and the importance of strategic reconnaissance, raids against vital points and tactical reconnaissance, including finding targets for the artillery and facilitating intercommunication between forces.[8] There is little doubt that Sykes' tour of French military aviation establishments provided the organisational blueprint for the RFC.[9]

'Before the war, France was the recognised world leader in flying and hence Sykes' report from France could be considered one of the most important pre-war organisational influences on British aviation.' [10]

Sykes, who was appointed Head of the RFC's Military Wing, rapidly set about creating an effective air service, drawing heavily on French aviation practice. Many of these principles would later be incorporated in the RFC's Training Manual, first published in 1915, that provided the foundation for all future British air power doctrine.[11]

Although much was achieved in the next few years, British aviation continued to lag behind both France and Germany. By the end of 1911, France had issued more than 500 pilot's certificates compared to just 110 in Great Britain. On the outbreak of war, the five most important aviation records (including distance, duration, height and speed) were all held by either France or Germany. No British pilot held a world record of any sort.

From the beginning, Britain's aeronautical efforts were handicapped by the lack of reliable aero-engines of adequate power. This single problem effectively constrained the development of the British aviation industry, both before and during the war. In August 1914, there was no aircraft or aero-engine industry to speak of, while a number of key components – such as magnetos – could only be obtained abroad. The pressure of war overcame most of these problems, but the supply of aero-engines continued to bedevil aviation planning right up to the Armistice. Part of the difficulty was that it was found easier to purchase engines in France than to develop British alternatives.

'The unreliability, coupled with the great weight, of contemporary engines drove the pioneers to despair. Monsieur Seguin produced the Gnome much as a conjurer might produce a rabbit from a hat.' [12]

British aviation came to rely almost exclusively on French aero-engines and French aircraft. When the RFC was formed in April 1912, it was able to boast an establishment of just fewer than 200 personnel and 17 machines with another 36 on order – half of these to be supplied by France and all powered by French engines. In comparison, French military aviation possessed at least 100 aircraft and the German air services a similar number.

'The French authorities, who were naturally gifted with more imagination than our own politicians, had grasped the potentialities of aircraft very early in their development, and had spent large sums of money in order to encourage their experimenters. The results had far exceeded their expectations and the French pilots and constructors were far ahead of the rest of the world in every

branch of aviation.' [13]

It was not just French aircraft and engines that dominated the development of British aviation. French aviators became as well known in England as they were in France. They inspired and entertained the public and, inevitably, excited professional jealousy. Popular, charismatic and embodying the spirit of adventure, they were fashionable in a way that their English counterparts were not.

'In September 1913, Pégoud flew his Bleriot monoplane above the Weybridge track in a manner which dumfounded the sceptics and silenced every accusation of chicanery. To say that British pilots were staggered would be inadequate to express the complete stupefaction which was felt by all who witnessed his beautiful exhibition of perfect control.' [14]

For the military, there was no doubt where they should look for a role model. A steady stream of RFC officers visited France over the next few years, either to observe the Army Manoeuvres or to inspect factories and flying fields.[15]

'In aeronautical matters France is without doubt far ahead of any other country, and we must therefore look to her for hints as to the manner in which we may best augment our own resources in this direction' [16]

Materiel Contribution

At the outbreak of war the RFC possessed just 50 frontline aircraft, compared to the 141 serving with l'Aéronautique Militaire and over 200 with the German air services. As the full potential of military aviation became clearer, the RFC grew rapidly, but only because it was possible to procure additional aircraft and aero-engines in France. The French contribution to the British air effort was timely, substantial and essential. As the official history of the Ministry of Munitions observes:

'French assistance was of peculiar value in that it was rendered in the first months of the war, when home industry was incapable of supplying the Services with the necessary equipment. The French rotary engines alone enabled the two Services to carry on through the first two years of the war, and such were the qualities of these engines that they were used in increasing quantities throughout the war. French aeroplanes were also invaluable during the first two years of the war and the Maurice Farman was the standard training machine until nearly the end of 1917.'[17]

A Bleriot monoplane supplied to the RFC in the early months of the First World War

Britain did supply some aeronautical material to France, including aircraft, and machine guns, but this was a fraction of what was provided in return.[18] Entire RFC squadrons were equipped with French aircraft, serving in all theatres. French aircraft also provided a large proportion of the training machines needed to

supply pilots for the Western Front where the strength of the RFC increased from just five squadrons in 1914, to 29 by 1916, and nearly 100 by the Armistice.

Although the direct procurement of aircraft from France became less important as the war progressed, the supply of aero-engines remained vital in powering British manufactured machines. The continued failure in British production, led the Government to encourage companies, such as Rolls Royce, to design and produce aero-engines rather than remaining solely automotive engine manufacturers. Even so, airframe production continued to outstrip aero-engine production.

Supply of Aircraft and Aero-engines

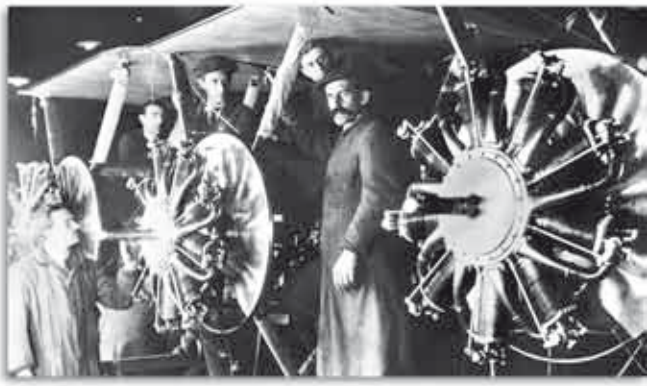
Table 1:
British Aircraft Production, 1914 – 1918

Aircraft	1914	1915	1916	1917	1918	Total
UK	193	1,681	5,716	13,766	30,671	52,027
Overseas	7	661	917	1,066	111	2,762
Percentage %	**4**	**39**	**16**	**8**	**1**	**5**

Table 2:
British Aero-Engine Production, 1914 – 1918

Engines	1914	1915	1916	1917	1918	Total
UK	99	1,721	5,363	11,763	22,088	41,034
Overseas	39	911	1,864	4,902	9,181	16,897
Percentage %	**40**	**53**	**35**	**42**	**42**	**41**

From both a qualitative and a quantitative perspective, French aeronautical materiel was hugely important in sustaining the growth of British military aviation. The scale of this contribution is only too evident if we look at the total British aircraft and aero-engine production during the war (Tables 1 and 2). In percentage terms, the supply of aircraft from overseas (largely France) represented some five per cent of total wartime production but nearly 40 per cent in 1915. The supply of aero-engines from overseas (again largely France) represented some 40 per cent of total wartime production and over 50 per cent in 1915.



The RFC benefited greatly from the supply of French aero-engines throughout the war

Moral and Intellectual Contribution

Although the provision of adequate quantities of aeronautical materiel, in the face of significant wastage, was a major problem for the RFC, there were many other challenges to be met before military aviation could make an effective contribution to the war. The RFC and the Service Aéronautique were partners in the struggle to develop a conceptual model for military aviation and, just as importantly, to gain the understanding of army commanders and the support of politicians. In this process the RFC was not necessarily the junior partner, although it soon found that there was much to be learnt from the Service Aéronautique. Close contact with the French in the first months of the war caused the RFC to rapidly reappraise its approach to aerial

photography and map making. By December 1914, the RFC's photographic organisation had been re-modelled entirely along French lines and, when this was changed to a more decentralised arrangement in early 1916, the RFC followed suit.[19] In a similar way, the RFC's procedures for army co-operation, notably the employment of contact patrols to support infantry attacks, was largely drawn from French practice. Although Lord Trenchard is commonly regarded as the father of the Royal Air Force, it is often overlooked that he initially resisted the idea of an independent air service. Moreover, his views on air power and the importance of strategic bombing only emerged over time, changing as the war progressed. Central to this process was his relationship with the Service Aéronautique and, in particular, its senior officers.

Colonel Hugh Trenchard arrived in France in November 1914 to take command of the RFC's Third Wing. In August 1915 he replaced General David Henderson as Head of the RFC in France, commanding the RFC through both the Somme and Third Ypres, before returning to London in January 1918 to become the RAF's first Chief of the Air Staff. He resigned after three months and later commanded the Independent Force, tasked with conducting a strategic bombing campaign against Germany.

Commandant Paul du Peuty was a pre-war cavalry officer who joined the aviation service early in the war.[20] He commanded Escadrille MS 48 on its formation in March 1915 and subsequently a groupe de chasse and reconnaissance on the Artois front

Commander of the French Air Services, a personal friend and staunch ally of Trenchard, Commandant Paul du Peuty

before, in the autumn of 1915, being appointed to the French 10th Army – at that time located between the British First and Third Armies. Following General Nivelle's arrival as CinC in December 1916, du Peuty replaced Colonel Barès as Head of the Service Aéronautique at GQG. He resigned his post in August 1917 to return to the Army, being killed in action in March 1918.

Both Trenchard's personal papers, and the Official History, describe the importance of his French opposite numbers, notably du Peuty, in the development of his thinking on operational and tactical matters. Neither airman was fluent in the other's language, but through Maurice Baring, Trenchard's liaison officer, they were able to develop a shared view of how air power should be employed in support of the ground battle.

All the evidence suggests that Trenchard and du Peuty had a warm professional and personal relationship. Although Trenchard was a few years older and had learnt to fly before the war, du Peuty had been wounded in air combat while commanding a squadron

and had considerable operational experience.[21] It would also appear that Maurice Baring's unique character and abilities made him the ideal go-between in the relationship and that both Trenchard and du Peuty valued him highly.

In the autumn of 1915, Trenchard and du Peuty met to distil their collective experience into fundamental principles governing the employment of aircraft in war. The need to co-ordinate the 10th Army's air activities with adjacent RFC formations may have been the instigation for this debate, but there were matters of real substance to be addressed which would have long-lasting implications for British air power doctrine.

'This policy (the Strategic Offensive) was thrashed out in the autumn of 1915 in many conversations between General Trenchard and Commandant du Peuty, talking and arguing over the experiences of the two air services.' [22]

It has been suggested that the concept of the strategic offensive was uniquely Trenchard's, not least by Trenchard's biographer, and that in turn it shaped the French response to the German air effort at Verdun.[23] In my opinion, the evidence is far from conclusive. What seems more likely is that the two airmen contributed to a process in which theory, experience and analysis were woven into a new orthodoxy that employed aircraft as a weapon of attack rather than of defence.[24] Just as importantly, they both concluded that the effective employment of military aviation was only possible through centralised control and decentralised execution. With the move of the French 10th Army, in early March, both Trenchard and Du Peuty were determined to establish liaison officers in the other's headquarters to facilitate their continued communications.[25] Du Peuty was now based on the Verdun front from where he provided regular reports, willingly sharing his experience and reinforcing Trenchard's views about the need for a continuous offensive in the air: [26]

'The lessons that can be drawn with the greatest certainty from the experience of the Battle of Verdun are:

- *The necessity of grouping in each Army the fighting machines employed on offensive duties under a single commander.*
- *The primary importance of the work done for the higher command.*
- *The need for great adaptability in the organisation as well as the necessity of a high degree of training.'*

These lessons were incorporated in the RFC's planning for the Battle of the Somme, which saw the German air services severely handled, conceding air superiority to the British for several months. Indeed, such was the success of the RFC that it caused a major reorganisation of the German fighter force.

An important step in the RFC's preparations for the Somme, based on the French experience at Verdun, was Trenchard's decision to withdraw the fighter aircraft provided to the corps (army co-operation) squadrons for self-defence and to organise them into dedicated fighter squadrons.[27]

Trenchard and du Peuty's influence had wider implications when America joined the war in 1917.

Lacking both equipment and experience, several military missions were sent to Europe to address these shortfalls. One of those involved was Lieutenant Colonel William (Billy) Mitchell – later to command the air combat units of the United States Air Service (USAS) in France. Mitchell met Trenchard and du Peuty in the spring of 1917 and had extensive discussions with both. His views on air power were greatly influenced by these conversations.[28]

Du Peuty's decision to resign his command, in September 1917, and return to the army was a great blow. Good relations between the RFC and Service Aéronautique continued under his successor, Colonel Marie Charles Duval, but du Peuty's abilities were greatly missed. According to Maurice Baring, du Peuty had *'proved himself to be the most daring of pilots and the soundest of flying officers and organisers.'* Du Peuty wrote a personal letter to Trenchard explaining his reasons for leaving.

'Dear General, I have been appointed into the 4th Zouaves with the promise of being shortly given a battalion. In leaving the Flying Corps, I want to thank you for the very valuable help you have been kind enough to give me when I commanded the flying units of the 10th Army and later when I was at GQG.

I want to tell you how much I admire the British Flying Corps with which we have fought together and to which we are bound by ties of such affectionate comradeship. Lastly, thank you for the personal affection which you always showed me and which was the most valuable of stimulants for me.

I need hardly tell you that if I am leaving the Flying Corps, to which I had given myself wholly, it is because I feel I have not only ceased to be of use to it but that I might do harm and be a source of trouble. Soon, from the trenches, I will applaud the services of our allied forces in the air.'[29]

Trenchard and du Peuty were destined to meet just once more, in November 1917, when the General visited Epernay (enjoying an obligatory tour of the Moet et Chandon factory). Baring commented that with du Peuty's death *'the French lost a great soldier and an example of the finest type of man that France can produce. He had all the noblest qualities of the French nation, and as one of our pilots who knew him very well said to me: "It makes one feel a worm to be with him."'*[30]

It should not be thought that Trenchard was without criticism of the Service Aéronautique. While he acknowledged their innovation and leadership, he felt that they lacked something in delivery:

'Generally speaking, I would say that the French Air Service excels in conception, but to a certain extent fails in execution. The development of aerial methods especially in the case of aerial fighting owes a very great deal to French thought and initiative and ***we have based our tactics largely on their teaching.'***

'Their organisation for making use of aerial information, studying photographs, reporting the result of bombardments, keeping the command in touch with the advance of their troops is extremely good. Its execution, in my opinion, leaves something to be desired and this is principally due I think to a lack of real discipline.'[31]

In some ways I find this more nuanced view more encouraging, and

credible, suggesting that, in private, the interaction between the two air services was more robust and challenging than has so far been suggested. When Trenchard left France in 1918, there was no doubt about his public feelings:

'I would be grateful if you could express to all those involved with the French Air Services the heartfelt debt and gratitude that I feel towards them for all the assistance that they gave me whilst in command of the Air Services in France. I can state categorically that it was the example shown by the French aviators at Verdun and at other important battles that influenced me directly. I also wanted to learn from the French Air Service's modus operandi; the perfection they demonstrated whist undertaking artillery and photographic missions were the benchmarks that I applied to our own artillery missions.'[32]

The Legacy

The French contribution to the development of British military aviation, although readily acknowledged in official histories and individual memoirs, was rapidly forgotten in the difficult post-war years and any residual obligation was effectively swept away by the catastrophe that was 1940. More long lasting, and certainly as important, was the French contribution to the evolution of air power doctrine in both the RAF and the USAS. The Strategic Offensive, and the model of central control with decentralised execution, were integral to Trenchard's vision of an independent air service and were echoed in the inter-war writings of American air power theorists. This doctrine, ultimately, would find its expression in the Combined Bomber Offensive. How much of this is directly owed to du Peuty and his colleagues can only be guessed at. According to Maurice Baring, du Peuty's personal contribution was incalculable.[33] The French view was equally positive. According to Ferriere, du Peuty's liaison officer at Trenchard's headquarters, effective collaboration between the respective air services could be traced directly to Verdun and the interplay of ideas between two men who implicitly trusted each other.[34]

There is, of course, another lasting legacy – one that is readily visible to this day. When the RFC arrived on the Western Front in August 1914 its aircraft were without national markings – unlike French military aircraft that had featured a roundel

French and British aviation personnel at a joint medals ceremony, France 1918

of blue, white and red since 1912.[35] Indiscriminate fire by friendly forces led GHQ to instruct that all RFC aircraft should be marked with the Union Flag. It was soon discovered that this was easily confused with the German black cross. On 29 October 1914, General David Henderson wrote to the Chef de Mission Francaise to the effect that 'Many reports have recently been received from both French and British sources as to the difficulty of recognising British aeroplanes. It is therefore proposed to try a system similar to those on French machines which are more clearly visible. Have you any suggestions or remarks, please?' The answer must have been positive as from December 1914 all British aircraft were marked with a red, white and blue roundel – a marking that continues to be used to this day – if only the Service Aéronautique had retained the licensing rights![36]

Notes

[1] Driver, The Birth of Military Aviation (Woodbridge: The Royal Historical Society & The Boydell Press, 1997), p. 26.
[2] JTC Moore-Brabazon, Flight, 2 January 1909.
[3] Alfred Gollin, *The Impact of Air Power on the British People and their Government, 1909-14* (London: Macmillan, 1989), p. 22.
[4] Colonel Charles Repington, Military Correspondent of The Times, Blackwoods Magazine, July 1910.
[5] Sykes, *From Many Angles* (London: George Harrap, 1942), p.88.
[6] Broke-Smith, *The History of Early British Military Aeronautics* (Bath: Library Association, 1968), p. 33.
[7] George Holt Thomas, Letter to the *Daily Mail*, 17 September 1910.
[8] Sykes Papers, RAF Museum *MFC77/13.*
[9] Sykes, Op cit, *p.93-96.*
[10] Ash, *Sir Frederick Sykes and the Air Revolution 1912-1918* (London: Frank Cass, 1999), p.24-25.
[11] The Training Manual (Part 2), sometimes known as the War Book, described the functions of the RFC including its strategical and tactical employment. The Training Manual was conceived by Sykes in February 1913 to provide guidance on how the Military Wing should operate in war. TNA *AIR 1/785/204/4/565* refers. Neville Parton, 'The Development of Early RAF Doctrine', *The Journal of Military History*, Vol 72, No 4, October 2008, identifies the importance of the Training Manual in the development of British air power thinking.
[12] At the first British Aero Show held in March 1909 - Dallas Brett, *History of British Aviation 1908-1914* (London: The Aviation Book Club, 1933), p.25.
[13] Dallas Brett, *Op cit*, p. 69-70.
[14] *Ibid,* p. 69-70.
[15] This included Major Herbert Musgrave, Assistant Commandant and Officer in charge of experiments who attended the Army Manoeuvres of 1912, expressing great admiration for all that he saw, and Major Robert Brooke-Popham who toured French aviation establishments in May 1914. *TNA AIR1/783/204/4/515.*
[16] Barrington-Kennett, Military Aeronautics in France, *Royal United Services Institute Journal*, February 1912, p.171-178. Barrington-Kennett was later the RFC's first Adjutant.
[17] Ministry of Munitions, *History of the Ministry of Munitions Vol 12* (London: HMSO, 1922), p.177
[18] At a meeting held between the French Aviation Service and the RFC held in London on 15 December 1915, it was agreed that the British would provide Sopwith 1 ½ Strutters, as well as hydrogen bottles and an example of the CFS Mk4 bombsight. *TNA AIR1/625/17/11.*
[19] Chasseaud, *Artillery's Astrologers* (Naval

and Military Press: Uckfield, 1999), p. 26 and p.52.

[20] Born on 6 July 1878, Paul Fernand du Peuty was an officer of the Spahis who came late to aviation. He commanded MS 48, equipped with Morane-Saulnier Parasol fighters, from 29 March – 8 September 1915 (he was shot down and wounded in air combat on 1 July 1915), before taking over as Head of the Air Services at GQG on 21 February 1917. Evidently a talented man, he fell foul of politics and resigned when Petain appointed Colonel Marie Charles Duval, an infantry officer, over his head on 2 August 1917. He joined the 4th Zouaves later that year and served with them as a battalion commander, being awarded the l'Ordre de l'Armée before his death in action at Orvilliers on 30 March 1918.

[21] Trenchard was born in 1873, making him five years older than du Peuty.

[22] Jones, *The War in the Air*, Vol 2 (Oxford: Clarendon Press, 1922), p.164-166.

[23] Boyle, *Man of Vision* (London: Collins, 1962), p 166-168.

[24] *Fighting In The Air*, Issued by the General Staff, April 1918, p. 2.

[25] Lt Ferriere and Captain Cooper respectively.

[26] Conclusions of the report by Commandant du Peuty, forwarded to Brigadier-General Trenchard, *The Working of Aviation in the Vaux-Douaumont Sector.*

[27] Jones, *Op cit*, p.167-168.

[28] Mitchell, *Memoirs of WW1 From Start to Finish of Our Greatest War* (New York: Random House, 1960), p.21-25.

[29] Personal letter to General Trenchard from Colonel du Peuty dated 23 September 1917.

[30] Baring, *Flying Corps HQ 1914-1918* (London: Bell & Sons, 1920), p.256-257.

[31] *Secret Memorandum on the French Air Services*, dated 28 August 1917. Trenchard Papers.

[32] Letter from Major-General Hugh Trenchard to Colonel Duval, Head French Air Services in the Field, dated January 1918.

[33] Baring, *Op cit*, p. 129.

[34] Boyle, *Op cit*, p. 171.

[35] The Inspection Permante de l'Aeronautique issued instructions to this effect on 26 July 1912. Robertson, *WW1 British Aeroplane Colours and Markings* (Albatros Productions: Berkhampstead, 1996), p.24.

[36] *Op cit*, p. 25-26.