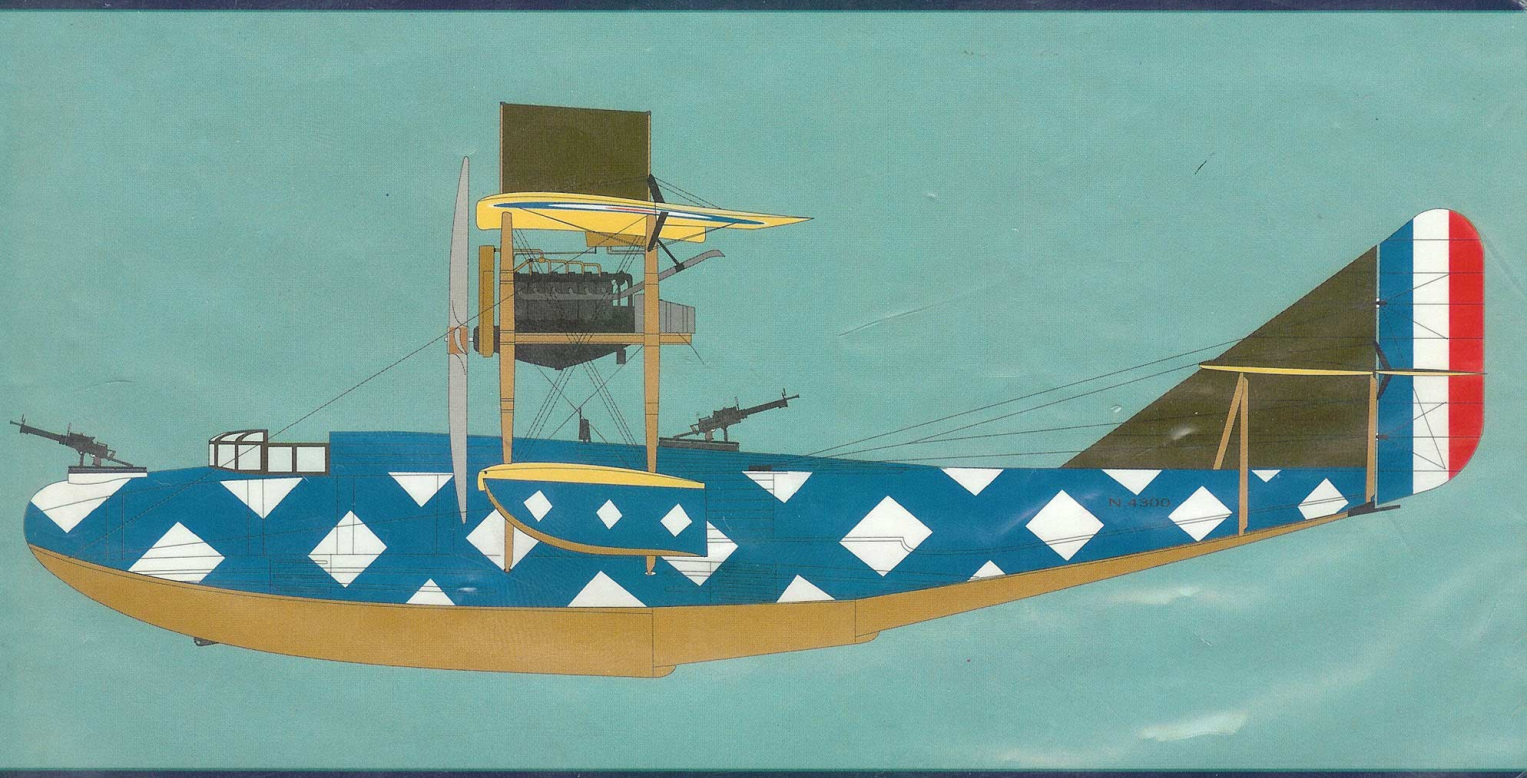
Royal Naval Air Service
1912-1918



Brad King

Foreword by His Royal Highness
The Duke of York CVO, ADC

HIKOKI PUBLICATIONS

Royal Naval Air Service 1912-1918

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First published in Great Britain in 1997 by
Hikoki Publications
16 Newport Road, Aldershot, Hants, GU12 4PB
E.mail 101660.304@compuserve.com
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ISBN 0 9519899 5 2

Edited by Barry Ketley
Colour Artwork by David Howley
Badges by Mark Rolfe
Maps by Steve Longland
Design by Hikoki Publications
Printed in Great Britain by
Hillmans, Frome, Somerset

Distribution & Marketing by
Midland Publishing Ltd
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Tel: 01455 233 747 Fax: 01455 233 737

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Publisher's note:

This book would not have been possible without the generous co-operation and assistance of the staff of the Imperial War Museum, to whom we extend our grateful thanks

Caption to front cover: *Felixstowe F2A, N4300, depicted as she appeared at Felixstowe in 1918. Originally forming part of the equipment of one of several RNAS Flights numbered in the 300 series based at Felixstowe, the aircraft is shown in one of numerous individual dazzle patterns adopted for quick identification in the air. The underside of the hull also carried the pattern on a few of these flying boats, although existing pictures tend to suggest that this was not the case with N4300. Upper surfaces of the wing were the standard PC 10 khaki. On the 20th August 1918 the Felixstowe RNAS units became RAF Squadrons in the 200 series, N4300 then becoming part of the equipment of 230 Squadron*

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Dedication:

Juin et Pierre de le part "du Garçon D'or"

ACKNOWLEDGEMENTS

First and foremost the author and publisher would like to thank His Royal Highness the Duke of York for finding time from his many other more pressing duties to write an introductory foreword to this book. The invaluable assistance of Captain Neil Blair RN is also gratefully acknowledged.

Many friends and colleagues have given me their unselfish help and support during the writing of this book and I would like to thank them for their generosity.

From the Imperial War Museum I would especially like to thank Peter Simkins (the Museum Historian), Laurie Milner, Peter Cracknell, Mark Seaman, Chris McCarthy, Toby Haggith, Teresa Silk and Dave Curtis.

To my good friends and colleagues Terry Charman and Peter Hart for reading the manuscript and saving me from many howlers. Any that are left are all my own work.

I would also like to thank:

Margaret Brooks and the staff of the Sound Archive for their invaluable assistance and for allowing access to this remarkable collection of recorded reminiscences.

Jane Carmichael, Assistant Director, Collections and former Keeper of the Photograph Archive for her enlightened assistance, David Parry for helping to find and pointing out photographs from the collection, and Ron Brooker, Chief Photographer and his staff for processing the prints.

Angela Weight, Keeper of the Department of Art and her staff, especially Jan Bourne and Pauline Allwright for again allowing me access to the largest collection of British art in the world outside the Tate Gallery.

Diana Condell for allowing me access to the Imperial War Museum uniform collection.

Finally to Nigel Steel and his colleagues in the Department of Documents for indulging my late, awkward and obscure requests.

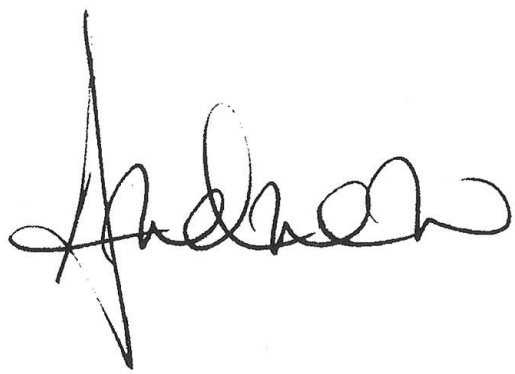
Other friends and fellow Cross and Cockade members likewise deserve thanks, especially Trevor Henshaw for his unstinting generosity in allowing me to plunder his research, Major Gary Perkins DFC, USAAF (retd), John Lee, Marcel Comeau MM, Guy Marner, Barry Ketley and the late Wing Commander Gwilym Lewis DFC.

For allowing me to use photographs from their collections I would like to thank Jack Bruce, Stuart Leslie, John Edmunds and Bruce Robertson.

My late father, Maurice, gave me a love of flying; my uncle Ron Wright, a love of history. Both have given me the gift of a great pleasure in life which transcends mere thanks as does the love and support of my wife Lin and my son Ben. Without their tolerance, stamina and good humour what follows may never have got started or finished.

BUCKINGHAM PALACE

The story of the Royal Naval Air Service, the risks its men took and their achievements during the First World War form the basis of a tradition of which both the modern Fleet Air Arm and the Royal Air Force are justly proud. Their feats are all the more remarkable when one realises the primitive nature of the aircraft they flew and how knowledge could only be gained through trial, error and in some tragic cases death. Whilst the Royal Flying Corps had its heroes in Albert Ball, James McCudden and Mick Mannock, the RNAS too could proudly acknowledge the exploits of Charles Samson, Raymond Collishaw and largely unknown leaders like Robert A. Little and Roderick Dallas. Bradley King's excellent narrative is a timely publication which will enable the reader to learn of their courage, skill and dedication. I and my colleagues in the Royal Navy and the Fleet Air Arm are all too aware of some of the dangers they faced in what was for them a new environment - the air.



AIR AND SEA

Developments, experiments and disappointments

Aviation was in its infancy when the idea was put to the Admiralty that its naval possibilities should be considered.

The direction originally taken was not towards heavier-than-air flight, but with the airship. The aeroplane was considered to be a gimmick, rather than as a serious addition to the naval arsenal; the fate of many an invention. By July of 1908 developments in lighter-than-air flight had improved sufficiently for Captain Bacon, the Director of Naval Ordinance, to submit to the First Sea Lord, 'Jackie' Fisher, a paper suggesting that the Navy investigate the possibilities of purchasing a rigid airship for fleet reconnaissance work. This seemed a sensible move, given that the role of the Royal Navy was the protection of the trade routes of the British Isles. By being able to see further over the horizon, the mightiest fleet in the world would gain the advantage over the rapidly expanding and modernising German Navy.

A sub-committee of the Committee of Imperial Defence recommended the purchase of an airship and Vickers, the navy contractor, was given the task of building it. Two years later the aptly named *Mayfly* broke her back after four days' mooring trials and was a complete write-off. Not only did the Admiralty lose all interest in airships but they also disbanded the experimental section that was a part of the original enterprise. Thus airships were, for the moment, an embarrassment to the Admiralty and all enthusiasm for the project evaporated.

All was not lost though. While the *Mayfly* had been building, a man stepped forward with an offer to the Royal Navy that could hardly be refused. It could be said that without the intervention of Mr Francis K. McClean, naval flying in Britain would never have—literally—got off the ground. McClean was a notable pioneer pilot. Intensely patriotic, he would be the first pilot to fly along the Thames to Westminster in 1912.

1 Above: *Francis McClean at the controls of the Tandem Twin with Samson as passenger. Aircraft number 11 in his fleet, the Tandem Twin was a converted single-engined Short. An extra 50 hp Gnome was fitted to the front, wing extensions were added and the pilot and passenger sat side-by-side, hence the name. The aircraft was a nightmare to fly, being totally unstable and unable to fly in a straight line. The rear propeller was only ten inches behind the pilot's head and his feet fouled the carburettor for the forward engine. Because of the draught, she was known to all as 'The Vacuum Cleaner'. Samson Collection. (IWM HU 67847)*

He would also be the first to fly *through* Tower Bridge and *under* the others on the way. He owned several machines and based himself at the Royal Aero Club flying field at Eastchurch on the Isle of Sheppey. This field was rapidly becoming a centre for civilian flying excellence. The Short brothers, Horace, Eustace and Oswald, were renowned for their balloons and had a factory at Battersea. Indeed they were already supplying parts for the *Mayfly*. When they moved into aircraft construction they opened another factory at Eastchurch, next door to the Royal Aero Club field.

McClean owned much of the land and leased it to the Club for £1.00 per annum. In February 1911 McClean offered to the Royal Navy the loan of two of his Short machines so that naval officers could learn to fly. Over two hundred officers applied for flying training from which the Navy chose four. They were Lieutenants G. V. Wildman-Lushington RM, Reginald Gregory, Arthur M Longmore and Charles Rumney Samson. Unhappily Wildman-Lushington fell ill just before the course was due to start and his place was taken by Lieutenant Eugene L. Gerrard of the Royal Marine Light Infantry. The course was to be for six months and included a visit to various aircraft factories in France to view the latest developments. Cecil Grace, another self taught pioneer aviator who had a hangar at Eastchurch, offered to teach the men to fly for free. Before he could start, Grace drowned when his aircraft came down in the English Channel. His offer was taken up by George Cockburn, another accomplished pilot, who had been the only British representative at the Reims meeting in 1909, the first 'air show' in the world. It is remarkable that the Navy should think it quite in order to ask the Shorts to provide the men with free technical instruction at the factory as well. The Shorts, however, were shrewd business operators and gladly agreed. Thus a connection with Eastchurch, the Navy and the Shorts was cemented.[1]

Developments and experiments were prompted by the needs of the Royal Navy's responsibilities and with the demise of the airship apparently certain, so the idea of a seaplane came to the fore. In September 1911, Commander Oliver Schwann clubbed together with some other officers and bought an aircraft from A. V. Roe. Experimenting with various ideas for floats at Barrow (as well as with skids for use on wooden decks) Schwann managed to take off from the water and had the distinction of being the first pilot in Britain to do so. Unfortunately he was not a trained pilot and demolished the aircraft on landing. Nonetheless his idea was proved to be sound.[2]

In December of 1911 McClean bought a further ten acres of land next to the club field and gave it to the Royal Navy to set up a flying school of their own. This remarkable generosity laid the foundations for naval flying and from then on the idea of aircraft in the Royal Navy was firmly established. The pilots continued to extend the limits of their experience by getting into the air as often as possible and flying longer and longer distances. The aircraft were exclusively from the Short factory 'next door' and proved to be as reliable as anything yet available.

The Royal Navy then turned its attention to possible defences against the threat of the submarine. Lt. W. H. A. Williamson from the submarine service had submitted a paper to the 'Submarine Committee' which, among other things, suggested that seaplanes be used to detect and attack submarines from the air. Sufficient interest was raised to allow for some experiments with wireless and although the results of these exercises were limited, it spawned further work on wireless communication. Within a very short time the distance over which wireless messages could be received from the air increased from 10 miles by the end of 1912 to up to 45 miles a year later. Sixteen aircraft were fitted with wireless sets by the end of 1913.

Other technical developments gathered pace. The distances involved with fleet work led to experiments with ship borne aircraft, not only of the seaplane variety but also with aircraft taking off from a ship itself. Lt. Samson had in fact taken off from the forecastle of HMS *Africa* as early as December 1911 and further work on the *Hibernia* and *London* was carried out. Ultimately these experiments would lead to the invention of the flush-decked aircraft carrier but for the moment the preference switched to seaplanes carried on ships, their floats being of more use on the everlasting runway of the sea. It is difficult to appreciate the enormous dangers that pilots like Samson and his colleague, Lt. L'Estrange Malone, undertook to prove ideas and theories.

Airships were revived after Mr (later Colonel) Mervyn O'Gorman, Superintendent of the Royal Aircraft Factory and Captain Murray F. Sueter (the erstwhile 'Inspecting Captain of Airships' and later commander of the RNAS), had returned from a tour of Europe to review the latest continental developments. Progress in airship theory and design had been so swift since the *Mayfly* disaster that immediate remedial action was needed to catch up with France and Germany. The Airship Section was immediately reconstituted. Orders were placed for a German machine of the Parseval design and for an Astra Torres ship from France. The home-grown Willows was to be used for flight training. In July 1913, another construction project was placed with Vickers besides further orders with British and continental constructors. It was decided that from 1 January 1914 all work with airships would be the sole responsibility of the Admiralty.

While these technical developments were under way

and tactics to support them evolved, the administrative side of naval flying was also being established.

The Admiralty acted on its own initiative and technical experimentation was ahead of that of the Army. The Army had a balloon tradition dating back to the 1880s[3] but by 1909, the advances in development of the heavier-than-air machine were putting the Government under increasing pressure to take the aeroplane seriously. Such was the clamour from aviators[4] (and the pioneer constructors who had an eye on lucrative contracts) that the Government was under considerable pressure to act decisively. After all, military thinkers had been given a nasty scare with the arrival of Blériot at Dover. No better demonstration was needed that Britain was from then on "no longer an island".

Boys' comics of the period were awash with stories with lurid titles such as 'The Winged Terror'[5]. This, together with similar tales of London being bombed, whipped the public into a frenzy of impending doom with Zeppelins expected overhead at any minute. The public at least seemed all too aware of the potential dangers. The lack of progress in Government backing was considered "humiliating" in the aviation press[6]. The British Army had, in 1909, called a halt to aeroplane experiments after considering costs of £2,500 excessive when German expenditure was standing at £400,000 a year. By 1911 Germany had agreed to spend £1.5 million, France £750,000.

In April of 1912 the intentions of a Government stung into action at last became known. It published plans to organise military and naval aviation into one service to be known as the Royal Flying Corps. It was to have both a Military Wing and a Naval Wing, a Central Flying School, an Aircraft Factory at Farnborough and a Reserve. As a reflection of its small size, the commanding officer of the RFC would hold the rank of Captain.

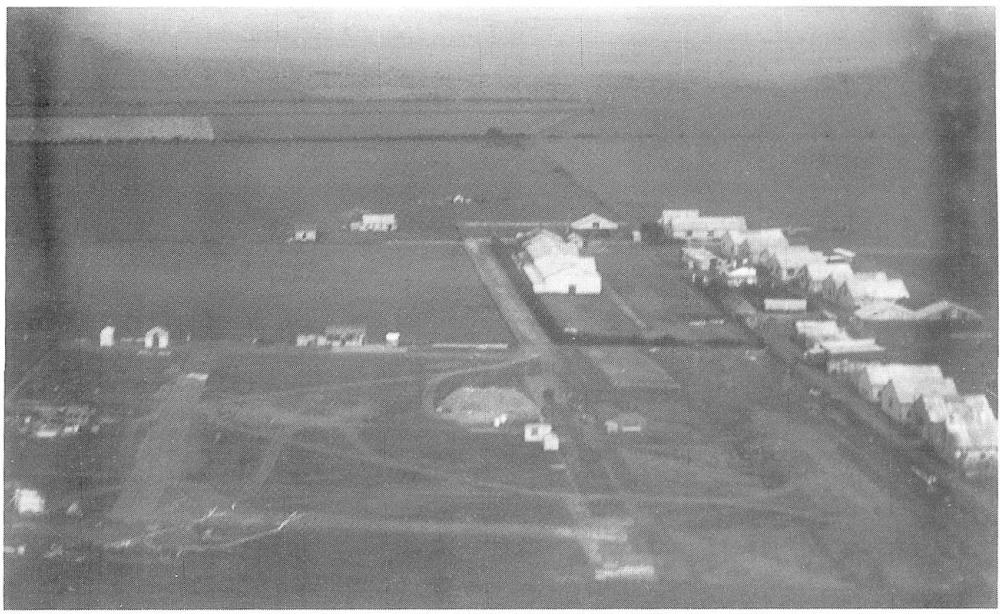
Whilst the new unit was unified on paper, actual control had been split between the War Office and the Admiralty. This led to conflict between the two branches of the service that was to last until the formation of the RAF in April 1918. Whilst the new organisation and scheme for services' flying was admirable, the split in responsibility doomed the unity of the whole to failure. For its part the Admiralty were not going to take any notice of the Army, let alone contribute any funds to the junior service; it kept Eastchurch as a flying school rather than defer to the CFS. Within a few short months the appellation 'Naval Wing' had been dropped and unofficially the unit would henceforth be referred to as the 'Royal Naval Air Service'. A remarkable naval officer, Captain Godfrey Paine, was appointed to command the CFS which, although a brave stab at integration, confused the issue.[7]

The RFC first appeared in the Army List for October of 1912 and the officers of the Naval Wing were listed as follows:

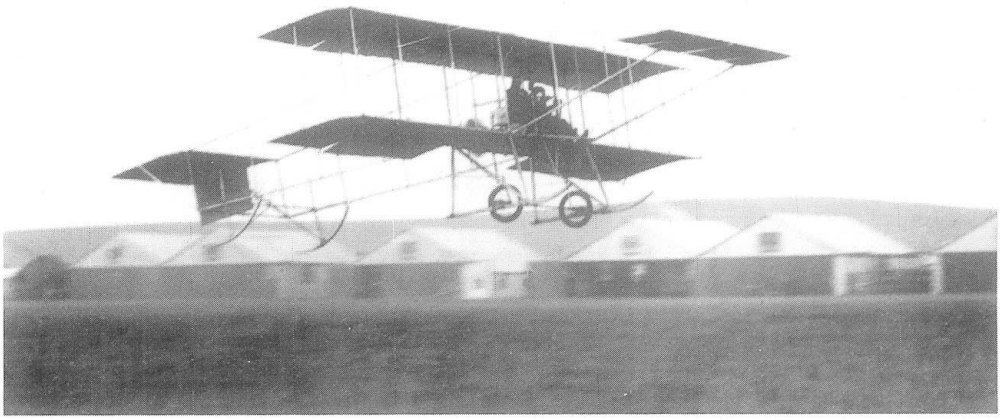
Officer Commanding:
Commander C. R. Samson, RN[8]
Flying Officers:
1. Captain R. Gordon, RM
2. Lieutenant J. W. Seddon, RN
3. Lieutenant W. Parke, RN
4. Lieutenant C. J. L' Estrange Malone, RN
5. Sub-Lieutenant F. E. T. Hewlett, RN

At its formation the Naval Wing's role was undefined, the Royal Navy not having a clear picture of its function. Aeroplane experiments were still in hand and tactics still being thought out, but gradually facilities grew and seaplane bases started to be established around the coast of the island besides Eastchurch[9]. The naval manoeuvres of 1913 did throw up important lessons for the operation of aircraft, especially the need for larger, more robust seaplanes to deal with the rolling peculiar to the North Sea. More importantly, a definite tactical policy document was written by the First Sea Lord that laid out the requirements and tasks of the RNAS. Aircraft required would be a seaplane capable of operating from ship or shore, a scout to work with the fleet and, finally, a home defence fighter.

In 1913 the RFC, or more precisely the Government, became engulfed in a scandal of enormous proportions. Essentially progress in aircraft and manning procurement had been slow and the Government had not spent the money it had promised on the RFC. The War Office had to admit that after 18 months of life the RFC was unfit for service (regardless of the enthusiasm and commitment of its pilots and men) and the excuses and half-truth responses of Colonel Seely, the Secretary of State for War, only served to compound the disgrace. The one "bright spot", as Dallas Brett calls it, was that the Naval Wing had remained fiercely independent and had refused to obtain aircraft solely through the Royal Aircraft Factory. It refused to ban monoplanes (perceived by the Army as dangerous after accidents involving wing failure)[10] and maintained an attitude of "free experiment" with all types of machines. The split could not be better illustrated and the departure of navy flying from the RFC became inevitable. This was due in no small measure to the attitude of officers like Samson and Murray Sueter. The addition of Winston Churchill, First Lord of the Admiralty since 1911, to this formula made independence of action a certainty. In fact, Churchill had himself been taught to fly by Lt. John Seddon at Eastchurch, all the better to understand the fliers' problems.



2: *The Royal Aero Club's airfield at Eastchurch as seen from one of Francis McClean's aircraft in 1912. As can be seen, the airfield is well developed with members' private hangars or sheds to the right. McClean leased these grounds to the club for the sum of one shilling per year and the first person to land was C.S. Rolls on 20 November 1909. McClean's house, 'Stonefitts' nestles among the hangars centre right (IWM Q 102082)*



3: *McClean and passenger take off from Eastchurch on the evening of 5 November 1910. This machine is Short S.26 (Number 3 in McClean's fleet) and is seen here after the fitting of a 50hp Gnome rotary and modifications to the tail and elevator following a crash in August. When lent to the Navy it was found to be underpowered and thereafter reserved for taxying practice. Navy pilots christened her 'The Dud' (IWM Q 102084)*

4: *The following day, McClean (in front) took aloft his good friend Dr W.J.S. Lockyer. Lockyer was, like McClean, involved in astronomy and also an accomplished balloonist. His experiments with aerial photography broke new ground and it is suspected that the aerial picture of Eastchurch was taken by him. All too evident is the precarious position of the passenger. Initial tuition involved the pupil reaching over the pilot's shoulder to get a feel for the controls (IWM Q 102086)*

None the less, while Churchill seemed to champion an independent line on an operational level he remained to be convinced of the need for separate flying services. The final act of separation did not take place until after he had left his post in 1915.

In July 1914 a formal note was sent round the fleet detailing new administrative arrangements for the flying service and was a *de facto* statement of independence. It still referred to the Royal Naval Air Service as forming "the Naval Wing of the Royal Flying Corps",[11] but did lay out the structure, conditions of service, even details of uniform and new rank names.[12] Nothing could have been clearer that the intention of the Naval Wing was to detach itself from the RFC and the lack of comment by Churchill, given his views on the separation of the flying services, is strange indeed.

Not all officers were happy with this new scheme, so much so that a campaign to resist it forced a split in the service and led to faulty organisation in order to accommodate differing views. Murray Sueter, now a Commodore and the Director of the Air Department, himself issued a memorandum addressed to the "Junior Officers in my Department" effectively telling them that if the RNAS was to succeed then they must all pull together. If not, he would "submit their names to the Board for their services to be discontinued in the Air Department"—not an auspicious start. Factional rumblings and intrigue would harry the RNAS for most of its life. At least, or perhaps at last, some semblance of organisation and direction was published, and Sueter ("brilliantly inventive, impatient of authority, and highly prone to hubris")[13] can rightly claim the credit for 'fathering' the RNAS.[14]

The Fleet Review off Spithead in the week of 18 April 1914 allowed the RNAS to show off its skills. All the usable aircraft gathered at Portsmouth, Weymouth and Calshot. After extensive rehearsals by pilots from Eastchurch, a 'V' formation flew over the Fleet in front of the King and seventeen seaplanes, with three airships, provided the finale. Afterwards they embarked on a leisurely flight to the Central Flying School, pleased with the success of their display. Not long into their stay at CFS, urgent orders were received to return to Eastchurch with all due speed, where they arrived on 27 July. The seaplanes and airships at the various coastal stations were put on a war footing and ordered to prepare for coastal patrols. At Eastchurch on 29 July, orders were received to the effect that aircraft were to confine themselves to protection duties rather than offensive action and be ready for any eventuality. Within a few days Britain and the RNAS would be at war.


"THE AEROPLANE," SEPTEMBER 7, 1911.

THE AEROPLANE

1D WEEKLY

Edited by CHAS. G. GREY. ('AeroAmateur')

Vol. I.] [Registered at the G.P.O. as a Newspaper.] THURSDAY, SEPTEMBER 7th, 1911. [No. 14

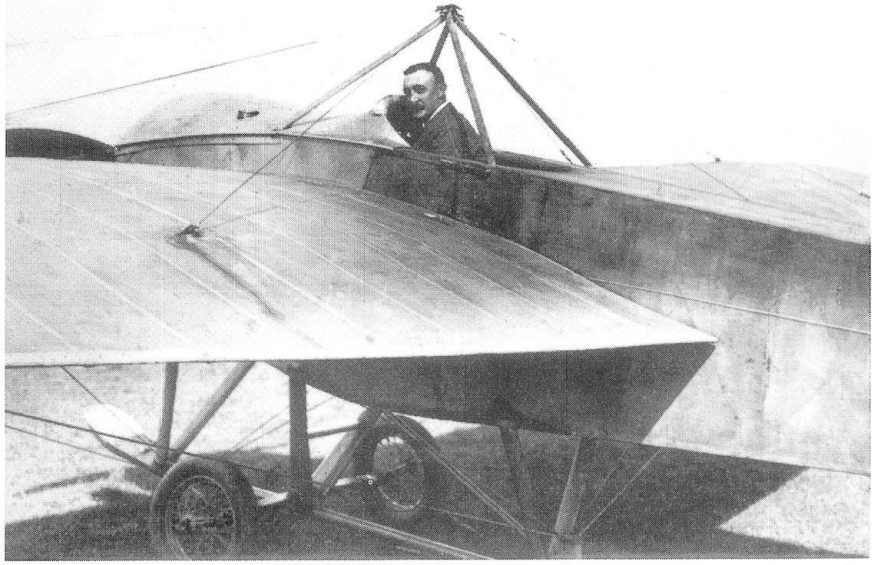
Our Naval Aviators.

1. Lieut. Samson, R.N. 2. Lieut. Gregory, R.N.
3. Lieut. Gerrard, R.M.L.I. 4. Lieut. Longmore, R.N.

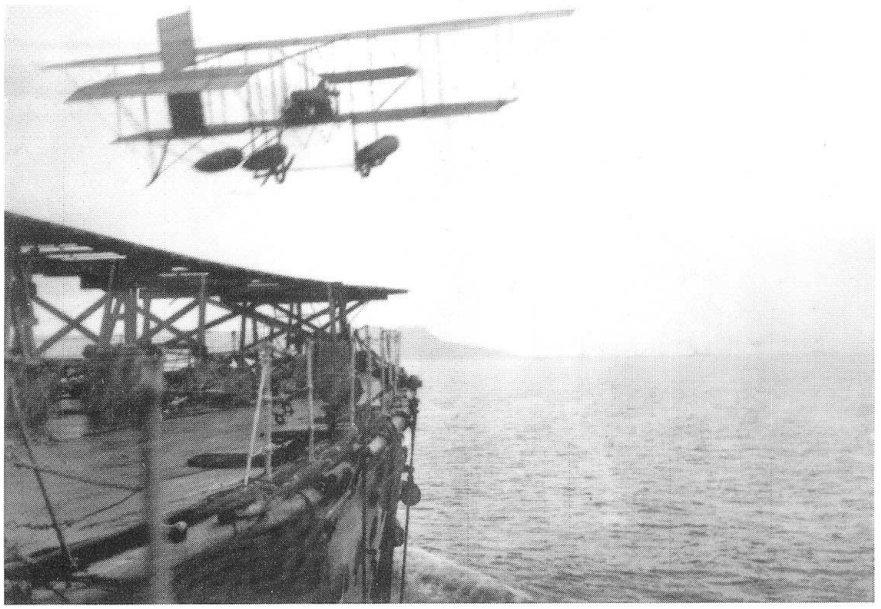
5 Top Left: *Captain Oliver Schwann, who on 18 November 1911, became the first man in Britain to take-off from water, despite his never having flown an aeroplane before. The aircraft was A.V. Roe's 35hp Type D, bought with £700 raised from his fellow officers and their wives. He was appointed Assistant Director of the Air Department in 1912 and commanded HMS* Campania *in 1915. He changed his name to Swann in April 1917 and became Air Vice-Marshal Sir Oliver Swann, serving as Air Liaison Officer, North Midland Region during the Second World War (IWM HU 67829)*

6 Above: *Names in the news. Front cover of 'The Aeroplane' for September 1911. Samson Collection (IWM HU 67845)*

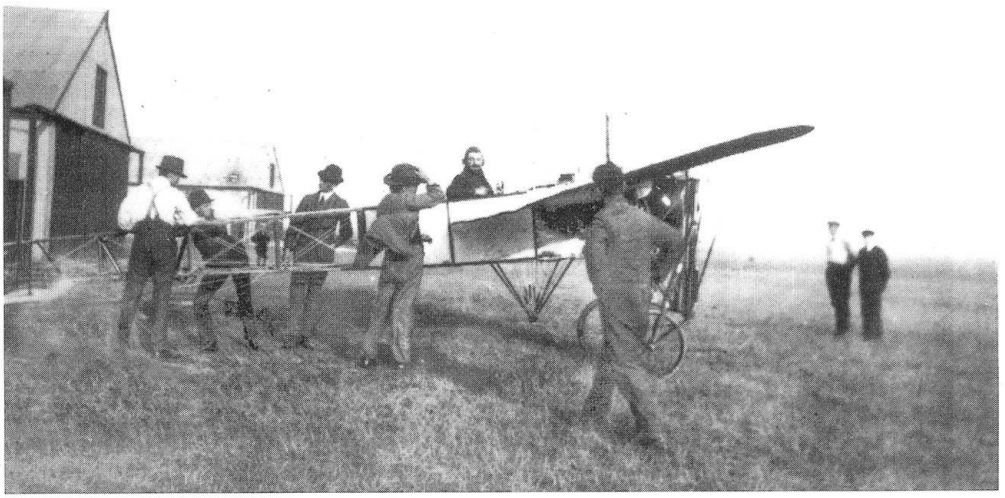
7: *Captain Eugene L. Gerrard, RMLI, took over from Lieutenant Wildman-Lushington, RM, on the first flying course after the latter fell ill (IWM HU 67740)*

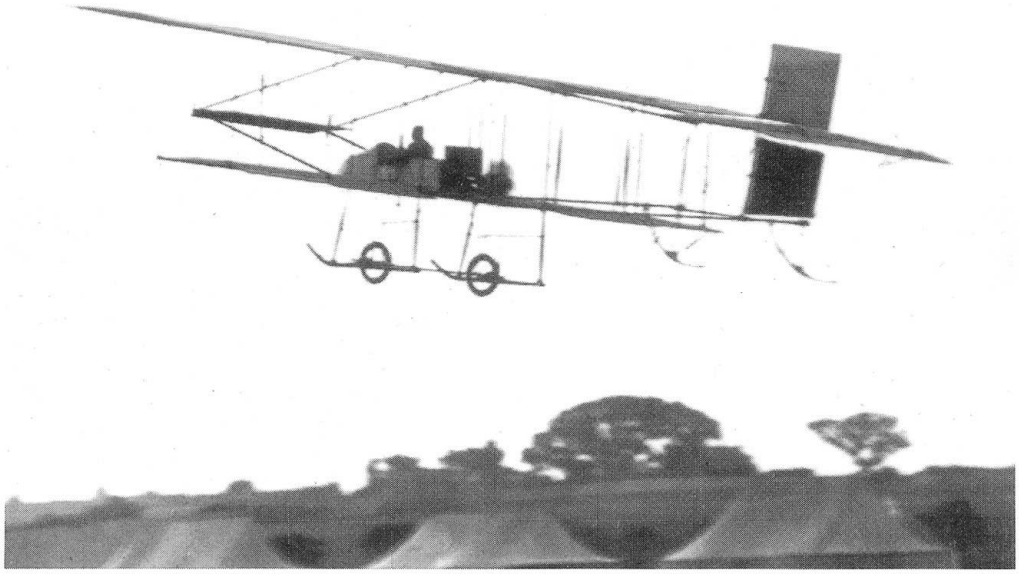


8: *Samson takes off from the forecastle of HMS* Hibernia *in Weymouth Bay on 2 May 1912. Samson Collection (IWM HU 67841)*



9: *Samson at Eastchurch in 1912 about to take off in the Short M.2 monoplane. Top speed was 65 mph. Standing to his left is Horace Short. Samson Collection (IWM HU 67843)*

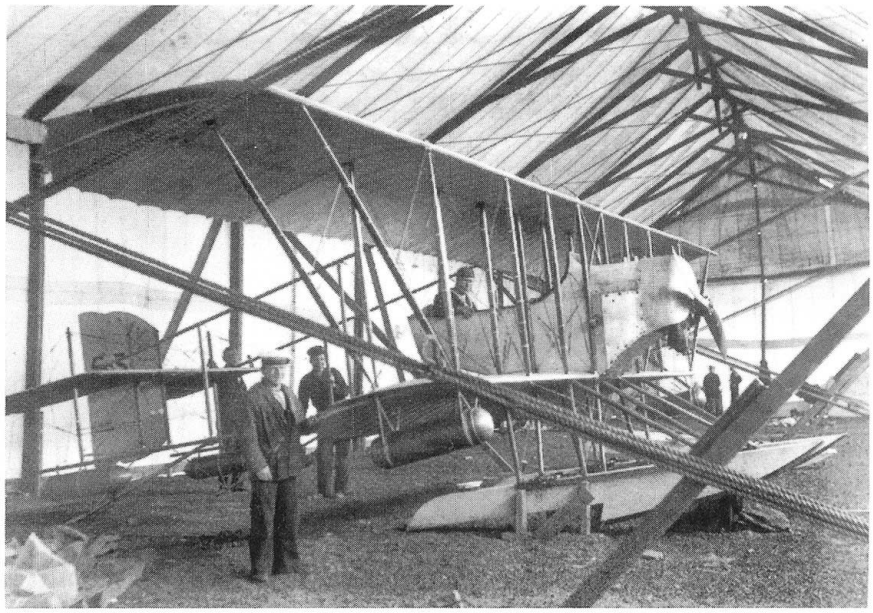




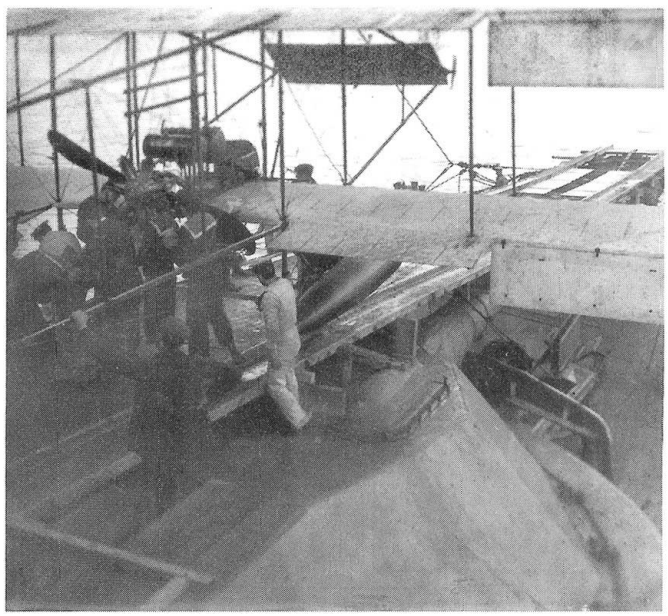
10: *"Homeward bound". Samson takes off from Dover for Eastchurch in S.28 on 6 July 1911. Samson Collection (IWM HU 67844)*

11: *"Self taking Bob Barret on T2 at Lodmore". Talking to them in the foreground is Captain Scarlett, the first Inspecting Captain of Aircraft and later an Air Vice-Marshal. Samson Collection (IWM HU 67842)*

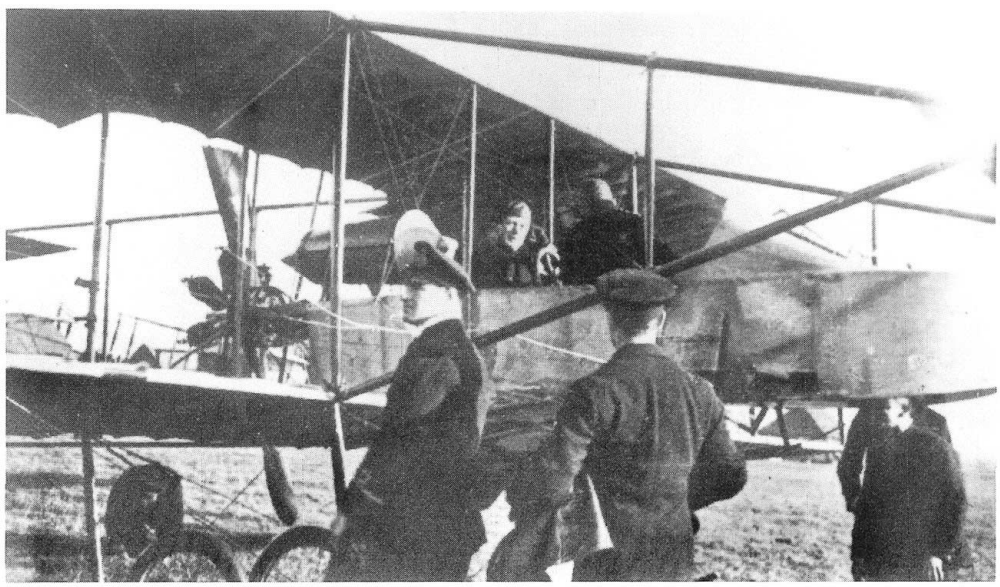
12: *Major Eugene Gerrard RMLI, one of the first four naval officers to learn to fly performs the first flypast by an aeroplane at a Review on Perham Down on 22 May 1912. Taking the salute is General Sir H.L. Smith-Dorrien, GCB, DSO, ADC (IWM Q 67019)*



13: *Caudron G.II number 55 at Great Yarmouth being readied for the Royal Navy manoeuvres of July 1913. The aircraft was attached to HMS* Hermes *(IWM Q 90147)*



14: *"An interesting experiment was carried out this afternoon from the deck of the battleship 'Africa'. Lieut. C.R. Samson, one of the naval airmen, making the first aeroplane flight from a British war vessel. His Short biplane* was towed alongside Africa in Sheerness Harbour at ten minutes to two this afternoon, and half an hour later the naval pilot started his machine from planks built out of the Africa's turrets. The machine rose grandly, encircling the battleship, and then flew to Eastchurch". Press cutting in the Samson papers (IWM HU 67846) *S.28 T2*



15: *The then First Lord of the Admiralty, Winston Churchill, took a keen personal interest in the fledgling RNAS. Here he is about to go aloft in a Short 27. On the left is Lt. Gilbert Wildman-Lushington, one of the first four naval officers selected to learn to fly. He was killed in a flying accident while an instructor at Eastchurch on 2 December 1913 (IWM CH 4779)*

OFF TO WAR

Airmen, sailors and landships

After coastal patrols, the other consideration that occupied the thoughts of the RNAS was the protection of the British Expeditionary Force as it crossed to the Continent. The aeroplane and the airship allowed lines of communication to be greatly extended and a temporary seaplane station was set up at Ostend so that patrols could commence. With regard to operations with the Grand Fleet, it was quickly realised that the aircraft of the RNAS were not ready for sustained work. Three cross-Channel ferries were impressed and converted into seaplane carriers. These were *Empress, Engadine* and the *Riviera*. Even so, this was very much a stop-gap as the ships did not have the range or the speed to keep up with the Fleet. Because of these extra, unwanted problems, the Cunard-owned *Campania* was therefore acquired and a fore-deck fitted for aircraft to operate from. She could carry up to ten aircraft as opposed to the three or four on the former ferries. *Campania,* however, would not be ready for use until May 1915.

Meanwhile, the Commanding Officer of Eastchurch, Charles Rumney Samson and his men of the Eastchurch Squadron had not been idle. Samson had been exercising them in war manoeuvres throughout 1913, in addition to experimental work with bomb dropping inventions and seaplane/carrier trials. On the outbreak of war, the Eastchurch Squadron was not only a school of flying but also a collection of the service's most experienced and innovative flyers. This was in no small measure due to the exertions of this remarkable man. His actions and that of this unit in France, Belgium and the Dardanelles are a catalogue of buccaneering versatility rare in the modern atmosphere of 'specialisation'.

Throughout his pre-war career, Samson had shown himself to be a pioneer of the first order. Testing machines, theories and new gadgets, he appeared as a fearless leader who would try everything once for himself before asking others to do the same. He was well known in flying circles and to the general public alike from articles in the picture-papers of the day. He certainly had a popular following as a darling of derring-do and had great influence where it mattered most — among his peers, superiors and with politicians. Together with Arthur Longmore he had been a prime mover in lobbying the Admiralty to take up Francis McClean's offer in 1911. He dined with the King after being the first man to fly off from a moving ship.

16 Above: *One of the armoured Rolls fabricated in Dunkirk's shipyards. This may be Lord Grosvenor's private Rolls-Royce which over the week following its conversion "shook itself to pieces on the pavé". The gun is a 3-pounder on a locally made chassis. Samson Collection (IWM HU 67858)*

On 25 August, Samson reported to the Director of the Air Department, Commodore Murray Sueter, to receive his orders. These were to proceed to Ostend with his squadron as soon as possible in support of the Marine Brigade who were to occupy the town. Samson found his men back at Eastchurch "keen as mustard", and they set off after a delay (and lunch) on the 27th of August.

The ground party of eighty other ranks embarked on HMS *Empress* and included Samson's brothers, who had joined him as Transport and Supply Officers at the outbreak of the war. Felix and Bill (F.R. and W.L. Samson) gathered together a motley collection of vehicles which included not only Felix's own car, but also nine others. Felix also fitted a Maxim machine gun to his – just in case. Two 5-ton Mercedes lorries and eight London bus chassis, (one of which was chassis number 2), completed the squadron transport. In the company of a collier, the *Empress* set sail.

Meanwhile, Samson and his pilots were preparing for the flight with the usual odd assortment of aircraft. They were: two B.E.2a's, two Sopwiths, two Blériots (one of 50hp, the other 80hp), and one each of an Henry Farman, Bristol and Short seaplane which had been converted to wheeled undercarriages.

Pausing only to paint Union Jacks on the aircraft and to place two bicycle tyres around their bodies in case they should have to ditch in the Channel, the party took off.[15]

They crossed the English Channel to Calais, went on to Dunkirk and finally arrived at Ostend after one and a half hours in the air. Samson had to find a place to land big enough for all the squadron's aircraft and the only spot he could see that was open and near the town was the Leopold Race Track. He managed to land, dodging bullets from nervous Royal Marines as he did so. Samson, in his very readable memoirs,[16] wrote how they seemed "very disappointed to find I was a British naval officer. They had come to Belgium to shoot Germans and were simply aching to let off their rifles at the first opportunity".

Courtney landed at Dunkirk with engine trouble but the others squeezed into the perimeter of the racetrack without incident. The following day they constructed a camp and raided the stores of the crew of the newly arrived *Astra Torres No. 3* airship. They were kitted out for very comfortable campaigning but, according to Samson, they were "rather innocents compared to my band of pirates".

The work of war reconnaissance began immediately but their stay was to be all too brief. It readily became apparent that the forces at Ostend were horribly exposed. The Marines were under-equipped; their only artillery support was from the ships off-shore and only six machine guns were supplied for the whole brigade. The Marines were therefore ordered to return to England on the 30 August, only three days after arriving. Samson was horrified and contrived to remain on the Continent even though the ground party and squadron stores had already embarked on the SS *Empress*. Fortunately, he had already agreed to reconnoitre the roads to Thourout and Bruges, the Brigade having no suitable motor transport of their own. Brother Felix's car and a wagonette were got ready and "four of the fiercest Eastchurch men we had" were selected from the volunteers "clamouring" to go on the expedition. They set out like a medieval royal progress, the locals cheering them along the route. At Thourout they were told that they had only just missed some twenty German cyclists (luckily, thought Samson, considering the small size of his own party). Samson and his men left the people of Bruges with the impression that they were merely the vanguard of the whole British army, a delusion he was happy to indulge. From this small outing, Samson turned his thoughts to the possibility of armouring the cars and Felix was "especially keen on the scheme".

Mindful that he had been directly ordered to withdraw, Samson set off for Dunkirk as slowly as possible, praying for fog along the way. Here Lord Grosvenor wrote off his Blériot on landing and Samson was absolutely delighted at being presented with an excuse to stay longer. A passing French General was regaled with stories of the squadron's activities and prowess in a shameless display of swank, and together with the help of the British Consul at Dunkirk, the desired effect was achieved. They sent off a formal request to the Admiralty requesting that Samson be allowed to stay and just as "things were getting desperate" the necessary orders were received for them to "carry out reconnaissance duties as required by the French General at Dunkirk".

At Dunkirk they settled into the sanatorium next to the field selected for an aerodrome and began the daily round of flights whilst Samson set about the retrieval of the ground support.

One of the ground crew was more surprised than the others to be on the ship back to France. Arthur Beeton had only just joined the RNAS. He lived on the Hamble River and knew the local seaplane station at Calshot well. He had been in charge of the machine shop of a local firm of marine engineers and had made parts, including a starter gearbox[17], for the station's Engineering Officer. When war broke out he tried to enlist in the Royal Engineers. They were full up, so he walked to the Naval Office but balked at "Eight years on, four in reserve" as an Engine Artificer. As he was

heading for the door the recruiter said he had "something just in" — the Royal Naval Air Service "That's more like it — four years on and four in the reserve". He was sent to Hendon for a trade test and passed as a leading mechanic[18] and was then given a railway ticket to Sheerness.

"What's this for?" I said, "I'm in digs in Southampton". He said 'Well, they give you leave' and I believed him!"

Four of them went down to Sheerness that morning and Beeton was to break the golden rule of service life – never volunteer. "A Petty Officer came into the room and said: 'Any of you lads use a rifle?' I said I could. He asked 'Where did you learn?' I said 'Four years in the Territorials – company shot at that too'. '*You're* the man we want'... I thought 'What the devil have I done now?' It appeared he'd got twenty men waiting to go across the Channel with Commander Samson. One of them had got the measles and I took his place. "

He was given a uniform and was on the boat that afternoon. "My girl in Southampton was still waiting for me – she got a field post card three weeks later saying I was in Dunkirk !"

As it was his trade skills were under-used (he was a fitter and turner) for at Dunkirk there was little if any equipment.

Someone had the idea of sending out car patrols in case an aircraft should force land and require assistance. From this it was a short step to actually set out on offensive patrols especially if the weather was so bad that flying was cancelled.

The first such patrol took place on a trip to Lille on 2 September on what should have been a simple drive. It developed into a cat and mouse game to surprise a German patrol in the town. At La Carnoy they were told that the Germans were in Lille and Samson had the foresight to telephone the *Préfecture* there to find out what the situation was. After being told that a thousand Germans had entered the town, Samson retired to Dunkirk with this new intelligence. Although inconclusive, this trip had been a very useful exercise. On 4 September near Cassel — the site of the famous hill up and down which the Grand Old Duke of York had marched his men — an ambush was set up for another patrol. The ruse was upset by the premature arrival of a German car which after a quick fight, made off in the direction of Bailleul with two wounded aboard. Samson proved to be a master of the telephone once again and, as with the expedition to Lille on the 2nd, was kept informed by the local post office in Bailleul of the whereabouts of the Germans. The people had a grandstand view of the action from the top of the hill and Samson's party were fêted by them.[19]

From here the reputation of the Eastchurch Squadron grew in the area, especially with the Germans, who blew the skirmish at Cassel out of all proportion. Général Bidon was most impressed, so much so that on 5 September he asked Samson and his cars to escort French infantry and cavalry back to Lille. Intelligence had been received that the Germans were leaving the town and indeed when they arrived they were told that some 2000 infantry and 80 cavalry had gone that very morning. Samson was conscious of the effects his actions would have on the population *vis-à-vis* the Germans and was always at pains to make sure of their safety from reprisal. Lille was no exception. He heard from the *Préfect* of a brush he had had with a particularly nasty German lieutenant and no doubt other tales of "frightfulness". He intended to evacuate the English and French wounded he found there but was asked by the *Préfect* to advertise the fact that he had occupied the town, thereby passing the responsibility from the townsfolk, which he gladly did. The proclamation was quickly printed and posted around the town:

"To the Authorities of the City of Lille,

I have this day occupied Lille with an armed English and French force
C. R. Samson
Commander, RN
Officer-in-Command of English Force at Dunkirk etc."

The latter flourish was added, as usual, to give the impression that a much larger force was on hand and indeed, on the 8th September, Samson was to receive reinforcements. After these incidents Samson discussed further possibilities for car work with General Bidon who obtained permission for him to use the facilities at the large Dunkirk shipyard, *Forges et Chantere de France*. The vehicles were taken into the yards and fitted with ships' plate to designs by Felix Samson. His own car, a 50 hp Mercedes dubbed 'The Iron Duke', was the first to be converted.

As Samson's armoured car operations grew more succesful he felt it necessary to ask for fifty or so more men.

"Mr Winston Churchill fortunately was taking an interest in our work, and with his usual custom of backing up any enterprise that was beginning to show signs of life, he decided to send me a large force of Marines" consisting of 250 under the command of Major Armstrong whom Samson describes as "game for anything".

At the same time Churchill ordered a considerable number of motor-cars to be armoured. He also started enlisting officers and men for a proper armoured car force.

With this level of reinforcements Samson could hold Amiens, Arras, Douai and the surrounding area from German soldiers who had been accused of "terrorising" the local population. The Germans now had a healthy respect for him and his men and rumours of atrocities or affronts to the dignities of the locals were guaranteed to send Samson into action.

Samson could now consider his force well equipped. Armour plate (as opposed to the more brittle boiler plate) was on its way from England and the various vehicles were armed to the teeth, so to speak. More forays out into the countryside developed into a 'sport' known as 'Uhlan-hunting' or as Samson put it, "Ewe-lamb" hunting.

In addition sorties were tried in co-operation with an aircraft and on one particular day a car was seen to be speeding towards them. The armoured cars quickly deployed into a defensive formation, and the oncoming vehicle was seen to stop. A civilian jumped out and raced towards them. Such were the niceties of the period, the gentleman presented Samson with his card which proclaimed him to be a local barrister. Nothing could be understood as he jabbered excitedly away, and it took a while to calm him down. Eventually it was realised that a large body of Germans were on their way from Lille to Douai and would Samson's men "follow him and kill some?"

"Finally, I discovered that there might be between two and three thousand with two batteries of Artillery, but, as he naively explained, 'What are the numbers compared to your machine gun?' Personally, I thought about 2,000 Germans rather a tough proposition for four Englishmen and one unreliable old Maxim, and I regretted that we could not carry out the slaughter he desired. He was very crestfallen and said, 'But I will come too!'."

The aircraft confirmed that the force was about three miles away and the information was passed back to the French HQ.

Samson moved his headquarters out to Hazebrouck in order to spread his forces over what was then open country, the better to operate without a long trek back to Dunkirk and to provide early warning of German incursions. Dunkirk was not relinquished, a Flight being retained there for coastal patrol. So successful was this move and the resultant skirmishes that one wall of the quarters at Hazebrouck was festooned with lances and Uhlan helmets. About eight or nine horses were captured, one of which Samson was to keep for his own use both in France and at Gallipoli.

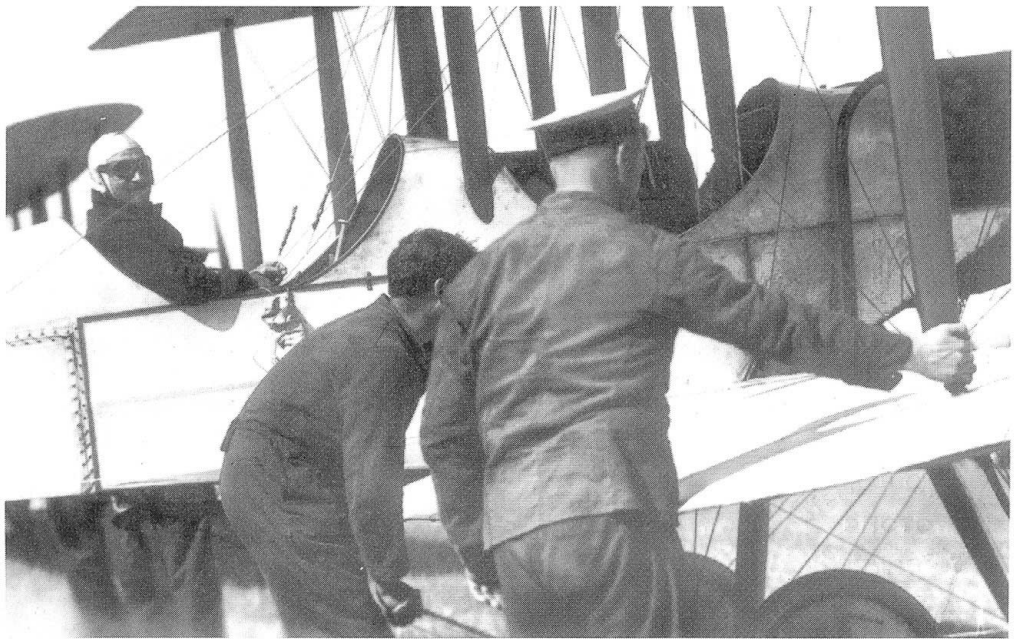
As the Germans advanced in the weeks ahead, his force of highly mobile armoured cars were involved in many skirmishes. At Douai, they were called upon to help with the defence of the town where Samson had a close shave when bullets spattered a girder next to his face. At one point he "was proceeding along a road not far from Ghent, when I heard firing close at hand. I went to the direction it came from and discovered a civilian standing on a bridge over a canal; between his legs was a bicycle, in his hands a rifle. On the opposite bank of the canal, along the tow path, were four Uhlans on horses. The civilian had already killed two, and as we arrived he dispatched the others. Having completed the job, he got on his bicycle and pedalled past me, raising his hat as he passed. "

Samson stopped him and discovered that his family had been murdered by the Germans and he was getting some of his own back.

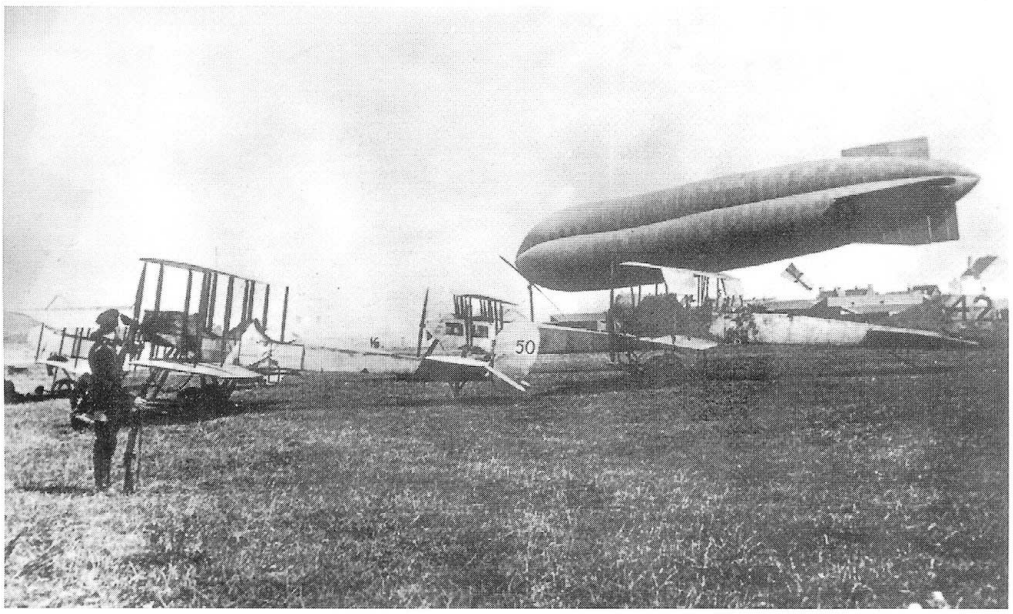
The defence of Antwerp kept them busy until it was evacuated on October 8 and 9. With the aircraft looking out for enemy guns, the armoured cars covered the flank of the withdrawal in many long patrols back towards Douai and Mons. On 15 October another move, this time to Poperinghe, reflected the rapidity of the German advance and the fluidity of the situation. New 'Admiralty pattern' armoured cars started to appear on the scene but Samson and his 'experts' viewed them dimly, there being many design faults in the armour plate. Nonetheless they were a welcome addition, as were armoured lorries (some 'acquired' from the Army Service Corps by Samson's 'bandits') and a Milnes

17 Right: *"A Good Shake Hand". Bill Samson and a rating greet two exotically dressed soldiers of the French colonial forces at Douai. Samson Collection (IWM HU 67852)*

18: *Officers and men of the Eastchurch Squadron seen in Dorset in the summer of 1914. From left to right the officers are: Christopher Draper, Briggs, Usborne, Samson, Marix, Courtney in his RMLI uniform, Beaver, unknown. The men are wearing cap tallies with the legend 'Royal Flying Corps'. Only about 80 of these are thought to have been issued while the RNAS was the Naval Wing of the RFC. Note the Royal Marines in their Broderick caps. Samson Collection (IWM HU 67850)*

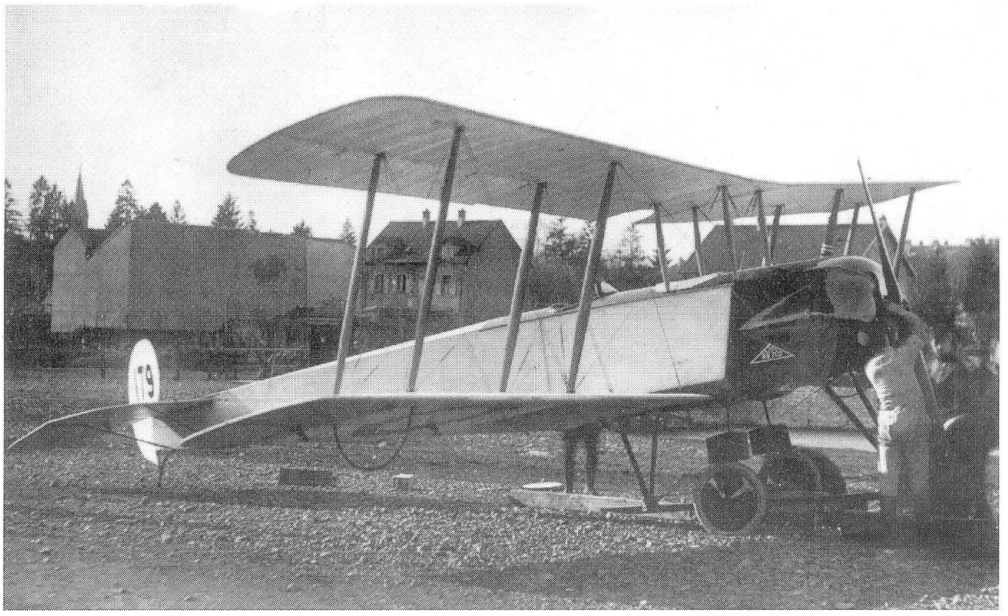


19: *Samson in his favourite aircraft, B.E.2a Number 50, during the 1914 Fleet Review at Spithead (IWM HU 67857)*

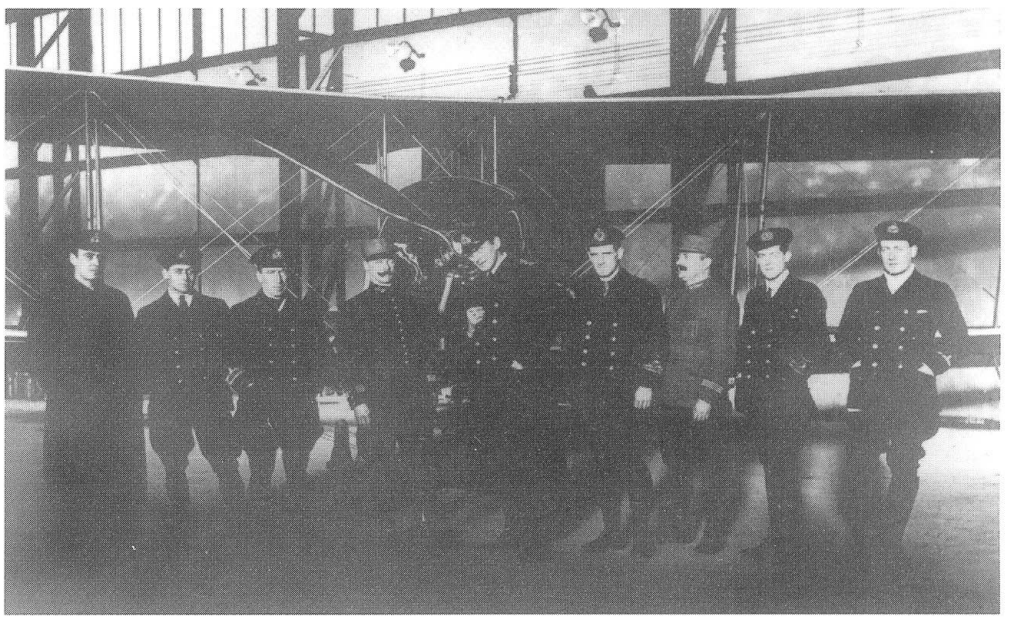


20: *The Eastchurch Squadron at Dunkirk in 1914. The aircraft include Short No. 42, a Sopwith Tractor, Henry Farman F.20 and Samson's favourite B.E.2a, No. 50. In the background is the airship* Astra Torres No.3 *which Samson's men raided for stores (IWM HU 67825)*

21: *Mainstay of the RNAS' bombing effort in the early months of the war was the Avro 504. This particular aircraft is No. 179 and is seen at Belfort waiting to depart on the famous raid on Friedrichshafen of 21 November 1914. Unfortunately for Flight Sub-Lieutenant Cannon, the tail skid broke on take off and he had to withdraw from the enterprise. No. 179 was effectively jinxed, suffering many mishaps throughout her career. She was finally struck off in June 1916 (IWM HU 67824)*



22: *Despite being of poor quality after being taken in a gloomy hangar, this is an historic picture of, from left: Flight Lieutenant Broke, Flight Lieutenant Sydney V. Sippe, the Squadron Commander, Philip Shepherd, unknown French officer, Lieutenant Noel Pemberton-Billing, Squadron Commander Edward Featherstone Briggs, unknown French officer, Flight Commander John Babington and Flight Sub-Lieutenant R.P. Cannon, pictured at Belfort just before the Friedrichshafen Raid, October 1914 (IWM Q 73784)*

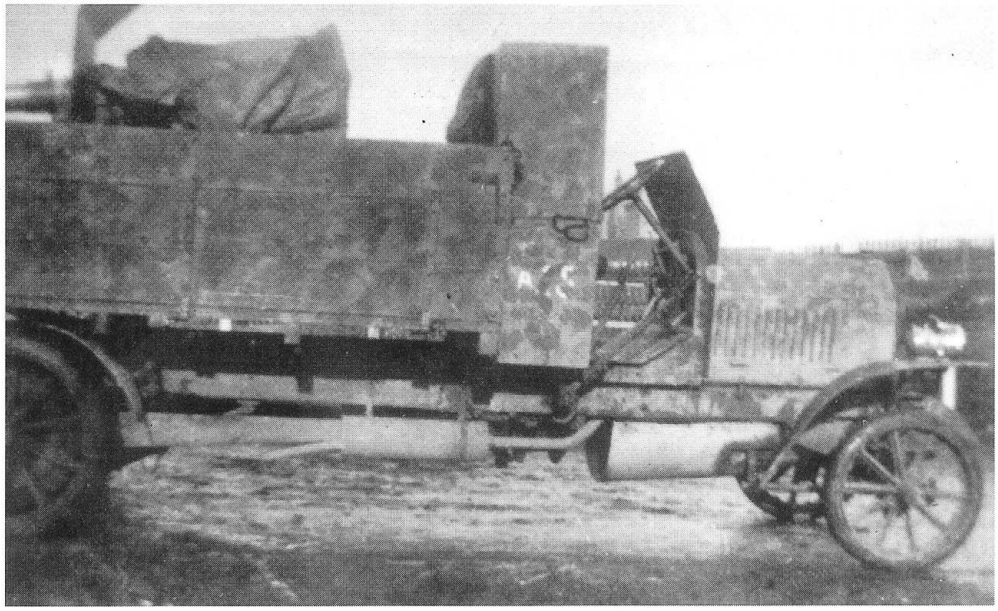


23: *Three Avros ready to start out on the historic Friedrichshafen Raid, 21 November 1914. The pilots are aboard their machines and the mechanics are standing by to start the engines. From left to right: No. 873, Squadron Commander Edward Featherstone Briggs; No. 875, Flight Commander John T. Babington; No.874, Flight Lieutenant Sydney Sippe (IWM Q 73780)*

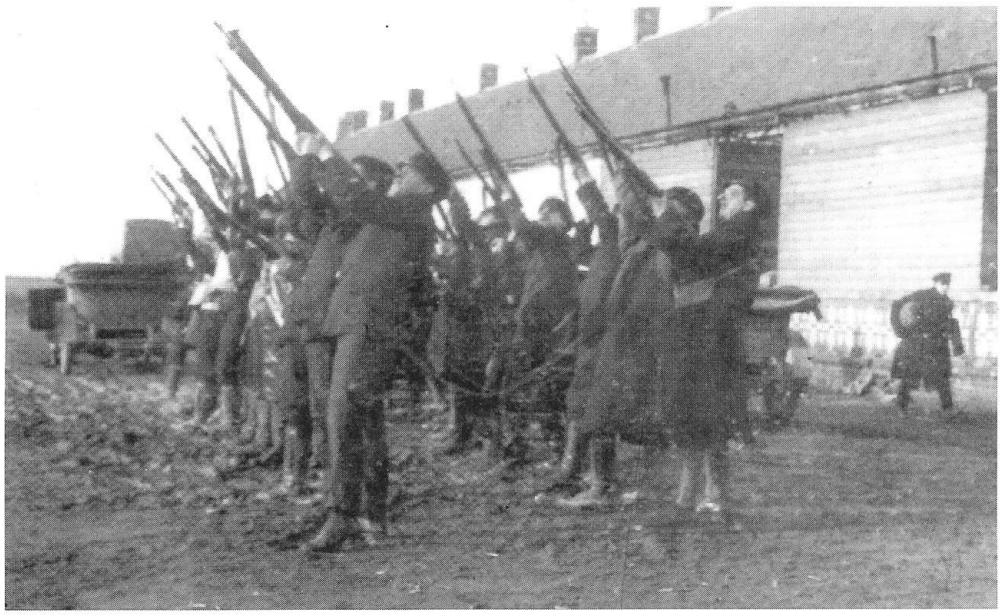
24: *The diminutive Samson and officers of the Eastchurch group while out on an armoured car patrol in 1914. Bill Samson sports his customary monocle. Samson Collection (IWM HU 67853)*

25: "My convoy of motor buses and armoured cars on the way to Antwerp during the siege". This photo, annotated by Samson, shows the diversity of motor transport then in use and commandeered by the BEF. Note that the buses are still in their civilian livery. As the months passed the London buses would acquire army green paint with wooden shutters over the windows. For now Belgian civilians could only wonder at the delights of 'Dewar's White Label'. Samson Collection (IWM HU 67854)

26: *Admiralty pattern Wolseley armoured cars passing through men of the Northumberland Hussars on the Zillebeke Road, 15 October 1914 (IWM Q 50706)*



27: *The 3-pounder gun mounted on a Milnes Daimler (Mercedes) lorry chassis which was ideal as emergency mobile artillery. When fired it "kicked up like a mule". Samson Collection (IWM HU 67856)*



28: *In order to deal with enemy air attacks on Dunkirk in 1914, Samson would line up the men of the squadron and present the offending airmen with volley fire in good old 'Thin Red Line' fashion. Note the scattered cartridge cases. Samson Collection (IWM HU 67857)*

29: *The crew of a Seabrook armoured lorry in action. This clearly shows how the armoured sides of the body folded down to allow the gun to traverse 360°. Not all guns were fitted with a shield like this one. Via Laurie Milner (IWM HU 66661)*

Daimler (Mercedes) lorry sporting a 3-pounder gun which was ideal as emergency mobile artillery. Beeton remembers the reason for its invention:

"One day we was out with three or four crew with this lorry and shots came from somewhere and they couldn't see where they were coming from. So out he [Samson] gets, stands on a bank there with his field glasses and he looks round and sees one or two of the crew looking over the top. He said 'Get your heads down, you'll get shot!' And there he was standing on the bank."

Later on they came across a windmill which they soon discovered was occupied by German snipers. One of the armoured car's crew was hit which infuriated Samson.

"He went back to Dunkirk and got a 6-pounder gun (sic), and mounted it on this lorry. When they fired it kicked up like a mule, its back wheels went up in the air! He had a Royal Marine gunner there with him then and they got this windmill with the second shot." The unit was not to return to Dunkirk until early November.

An additional part of the function of the Eastchurch squadron was the defence of the United Kingdom from Zeppelin attack and what better way than to take preventative measures? The idea of the "pre-emptive strike" was well received. With hindsight Churchill thought the Zeppelin "much lower as a weapon than everyone else".

In *The World Crisis 1912-1914* he wrote: "I believed that this enormous bladder of combustible and explosive gas would prove to be easily destructible. I was sure the fighting aeroplane, rising laden from its own base, armed with incendiary bullets would harry, rout and burn these gaseous monsters. I had proclaimed this opinion in the house of Commons in 1913."[20]

There were various means to deal with them and a psychological victory was imperative. Samson would note: "Winston Churchill was very keen on attempts being made to attack the Zeppelin sheds at Düsseldorf and Cologne, and as the only possible starting place was Antwerp, he issued instructions that a unit should be detached from my force to proceed to Antwerp." This was on 3 September and Courtney, Osmond and Beevor, the only men he could spare, were sent to Ostend to prepare. Unfortunately, although the aircraft were pegged down in the lee of some sand dunes, a squall on the 12 September cartwheeled the machines across the beaches, destroying all three.

Under pressure from the Air Board, Samson took control of the raid the following week and sent three more machines, including his own B.E.2a, No. 50, to Antwerp. Not only was he expected to prepare for this long distance raid but also to help with the defence of Antwerp, *and* provide support to Belgian forces. By this time the rest of the unit and its aeroplanes were setting up at an airfield in the village of Morbecque, three miles south of Hazebrouck. The various elements of the force were now dispersed thus:

A 'Headquarters Flight' at Morbecque (actually one aircraft, 80 hp Short Biplane No. 42) with the armoured cars and lorries, one flight at Dunkirk for coastal patrols and the Aeroplane Repair Depot. The three aircraft preparing for the Zeppelin raid were of course at Antwerp and a Flight was being made ready to fly to Lille in case the Allies should occupy the town in force.

Samson went to inspect preparations for the raid on the 17 September. Again the Air Department were chivvying him up and were anxious for some results. At last the crew were ready to go and on 22 September the first British long distance bombing raid of the war was carried out. Four machines went, two to Cologne and the others to Düsseldorf. No.50 was flown by Major Gerrard, No. 149 (Sopwith Tabloid) by Squadron Commander Spenser Grey with Lieutenant Newton Clare as passenger, No. 906 (Sopwith Tabloid) by Flight Lieutenant Charles H. Collet, and Flight Lieutenant Reginald L.G. Marix in Sopwith Tabloid No. 168.

On the way they encountered heavy fog and whilst the others had to turn back,[21] Collet kept on and appeared out of the clouds not a quarter of a mile from the Düsseldorf sheds. Unhappily he flew too low over the target and the two bombs seen to enter the roof of the shed failed to explode. There had not been enough altitude for the safety fan on the 20lb Hales bombs to unwind and prime the bomb. One did explode slightly away from the shed causing two or three fatalities.

The second raid had better results and was the more remarkable for the extreme conditions in which it was undertaken. Planned for 6 October the weather deteriorated to such an extent that it looked as though the operation would have to be cancelled. Only on the 9th did it slightly improve enough for an attempt to be made. The airfield came under fire as it was now within range of German guns firing into Antwerp. Winston Churchill was in the town at the time trying to organise a possible defence. At the British HQ in the Hotel St. Antoine, Churchill had a meeting with Spenser Grey. Churchill was told that all was now ready for the raid to be carried out but Churchill was of the opinion that it was now impossible, given the imminent collapse of the defence of the town. Spenser Grey pleaded with him that it could still be done. So enthusiastic was he, that he followed Churchill into the toilets and put his case to him through the cubicle door. Churchill gave his permission but the prospect of actually taking off into an incoming German artillery shell was not a happy one.[22]

The enemy were bearing down on the town fast and it was touch and go whether or not the airfield would have to be evacuated. As it was the town was rapidly being drained of troops. The aircraft were pulled into the centre of the field in case a building was hit and splinters damaged them. At 1.20 pm, after the morning mist had cleared, Spenser Grey in Sopwith Tabloid No. 167 took off for Cologne. He was followed by Reggie Marix in Sopwith Tabloid No. 168 who had been ordered to head for the sheds at Düsseldorf.

For Marix, success was complete. Diving on the shed to a height of 600 feet he let his bombs go. Within 30 seconds the roof fell in and flames erupted to a height of 500 feet. Inside, the new Zeppelin, the Z9, was completely destroyed. Marix came under ground fire and losing height, managed to fly to within twenty miles of Antwerp before his petrol ran out. Borrowing a bicycle he pedalled his way, and then by car drove his way, back to the airfield. It proved impossible to go back for the machine with more petrol to salvage it.

Grey could not find his target due to a thick mist and he searched around for a quarter of an hour, being shot at as he did so. In the end he gave up and bombed Cologne railway station arriving back at Antwerp at 4.15 pm. Here the scene was decidedly dangerous. The airfield was shelled at 8.30 pm and Germans were seen in the woods nearby. Passing British troops said that a general evacuation order had been given earlier at 6.00pm and, deciding to follow the already departed squadron to Ostend, Grey and Marix finally arrived there on 10 October.[23] Grey, Marix and Collet all subsequently received the DSO, gazetted on 23 October 1914.

By October 15 what was to be the First Battle of Ypres commenced and with it the fight for the coastline. The mobility of the previous months was coming to an end and the front lines now became stabilised. Withdrawing to Dunkirk, many of the armoured cars were sent back to England and the RNAS would have to commit all its resources to work protecting the coast. At the end of October the RNAS forces at Dunkirk were being built up and personnel from Calshot went over to reinforce the seaplane effort and bolster the work of the new Dover Patrol. Duties mainly consisted of spotting for monitors off the coast which were trying to stem the enemy's advance by firing into the flanks of the German army. Searching for submarines was another essential activity which would develop over the next year and keep an RNAS presence on the coast until the end of the war.[24]

One effect of the advance of the German army and the loss of Antwerp was that the RNAS no longer had the range to reach Zeppelin facilities in Germany. Two other objectives were just in range from the French border further south, namely, the airship shed and Zeppelin factory 250 miles away at Friedrichshafen on Lake Constance and the naval sheds in Northern Germany at Cuxhaven.

Noel Pemberton-Billing, founder of the Supermarine aircraft company and later MP, was under orders to organise a raid on the former. Collecting together aircraft and personnel, a new squadron was formed in Manchester under the command of Squadron Commander Philip Shepherd. Pemberton-Billing left England on 21 October, arriving at Belfort, an airfield chosen for its proximity to the border, on the 24th. He made arrangements with the French authorities for the secret accommodation of the participants and returned to Manchester to collect four Avro 504's, pilots and a support staff of eleven. Arriving at Belfort by train on the 14th, all the aircraft were erected and ready within sixteen hours. Preparations were carried out in great secrecy, although bad weather delayed the flight until 21 November.

Each aircraft carried four 20lb Hales bombs and took off at five minute intervals. Squadron Commander Edward Featherstone Briggs (in Avro No. 873) was followed by Flight Commander John Babington (No. 875), and Flight Lieutenant Sydney Sippe in No. 874. The last, Flight-Sub Lieutenant Cannon, broke No. 179's tail skid on take-off and had to withdraw.

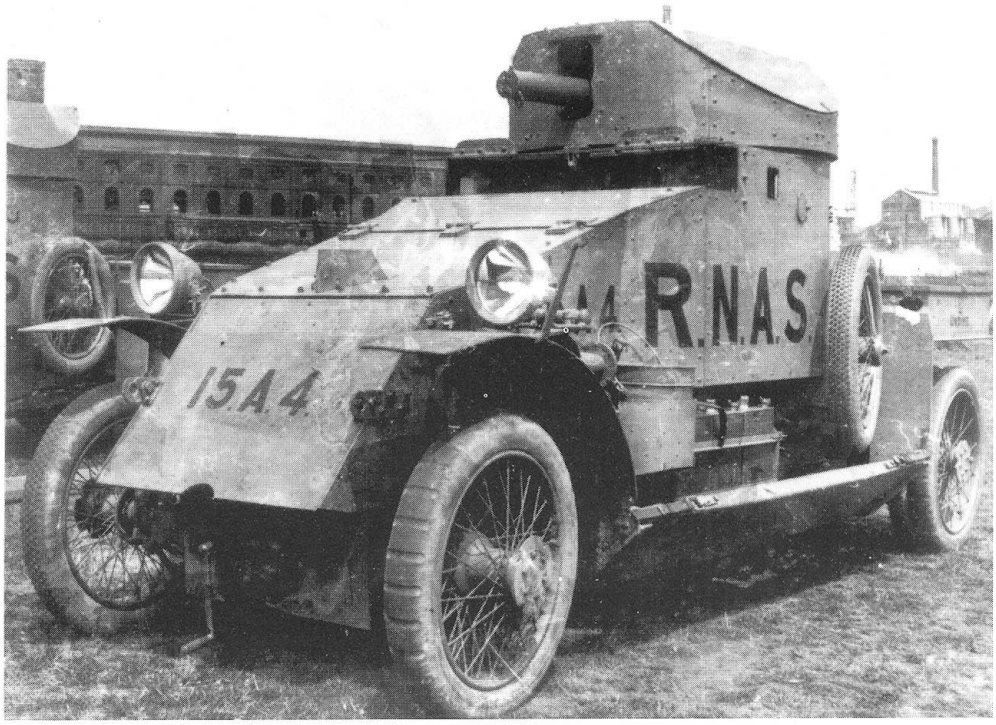
The route had been carefully planned to avoid compromising neutral Switzerland's borders and the three aircraft arrived at noon. Briggs attacked first through a hail of ground fire, dropped his bombs but was brought down and taken prisoner. Sippe hit some troops and then placed two bombs in the shed itself before beating for home with one bomb still attached. Babington attacked while the defences concentrated on Sippe. The results of his work blew his aircraft head over heels — he had hit the gas works. The damage to this and a Zeppelin under construction shook the Germans badly and defensive measures were panicked into place, thereby tying up many men and resources in the months ahead.

The three pilots were awarded the DSO. The press, especially *Le Matin*, wrote lurid stories about the mistreatment of Briggs by soldiers and civilians. The Allies were said to be "seething with indignation". So inaccurate were these stories that Briggs felt compelled to write a denial while still in captivity which he forwarded via the American Embassy. The crowd had not in fact got its hands on Briggs and a blow was administered by a nervous soldier. Subsequently Briggs was defended by an officer, who threatened to shoot anybody who came close. He wrote that in his personal opinion "a German officer would consider such an act (i.e. hitting a prisoner) beneath his dignity, as would an English officer." Briggs would later escape and return safely to England.

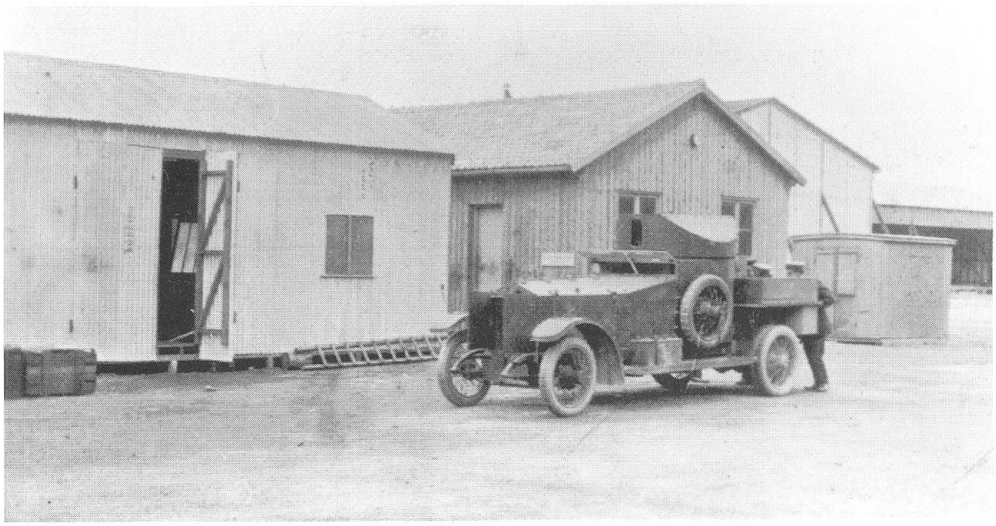
30: *Admiralty pattern Talbot armoured cars on the road. HMS* Aniche *and HMS* Orchies *in the background (both named after towns in their area of operations) and the others seen here were of the second type sent out to France. Samson did not like the lack of driver protection and had six built up in the Dunkirk ship-yards to the standard seen here. The white objects on the hull plate are spare tyres, not life-belts. Samson Collection (IWM HU)*

31: *The distinctive uniform and badges of the RNAS Armoured Car Division personnel is clearly shown in this group photo of Seabrook crew men. Via Laurie Milner (IWM HU 66663)*

32: *A Seabrook armoured lorry. This vehicle was developed as direct result of Samson's successful adaptations in the field. The Seabrook was an American designed chassis and some thirty were built up to take this sort of heavy armament. Via Laurie Milner (IWM HU 66662)*



33: *This vehicle is Lanchester armoured car Number 4 of A Section, 15 Squadron. This unit went to France in 1915 and worked alongside the Belgians who used some of these vehicles themselves. The commanding officer was an MP from Norfolk, Commander Oliver Locker-Lampson. He would prove to be as much a buccaneer as Samson and took his cars to Russia, operating in Galicia and along the Romanian border. Via Laurie Milner (IWM HU 66666)*



34: *A 1914-pattern Rolls-Royce armoured car in service with the RNAS at Dunkirk, probably in 1915. Note the aperture in the turret for a machine gun and the open armoured radiator shutters (Barry Ketley)*

35: *Lanchester armoured cars of the RNAS Armoured Car Division, possibly at Wormwood Scrubs, the RNAS-ACD training centre. About 36 of these vehicles were ordered by the Admiralty and began to arrive in early 1915. With cars like these operations and squadrons became far more disciplined as opposed to the ad hoc affairs which Samson had initiated. Traditions die hard in the navy, which can be seen in the addition of a flagstaff for a white ensign on top of the turret. Via Laurie Milner (IWM HU 66667)*

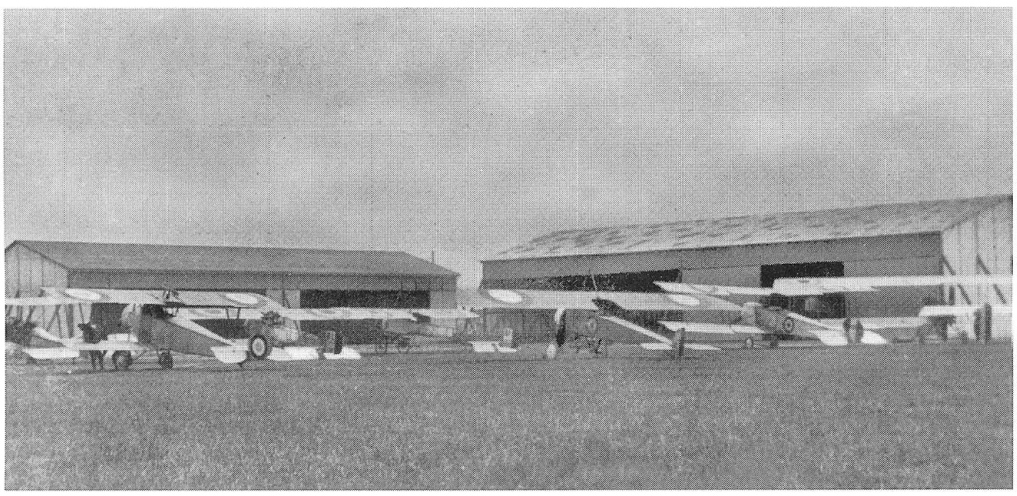
Cuxhaven was a different prospect altogether. Far in the north of Germany any approach to the area would mean having to get in close. The three seaplane carriers *Engadine*, *Riviera* and *Empress*, carrying nine aircraft between them, with two destroyers and ten submarines as escort, formed the force that headed straight for the Heligoland Bight. They hove-to some twelve miles to the north of Heligoland on Christmas morning. Within the hour seven seaplanes set off but unfortunately the element of surprise was lost and the action developed into a running cat and mouse game between the attacking force, German seaplanes and Zeppelins, one of which collected six hundred bullet holes. The aircrews could not locate any of their targets, due in no small measure to the thick mist that hung over the area and the fact that the sheds were really at Nordholz, further south. Nonetheless, invaluable intelligence was brought back about the position of the German fleet.

Only three of the aircraft made it back to the ships and the rest of the operation concentrated on finding the missing crews who would be picked up by the submarines at various locations.

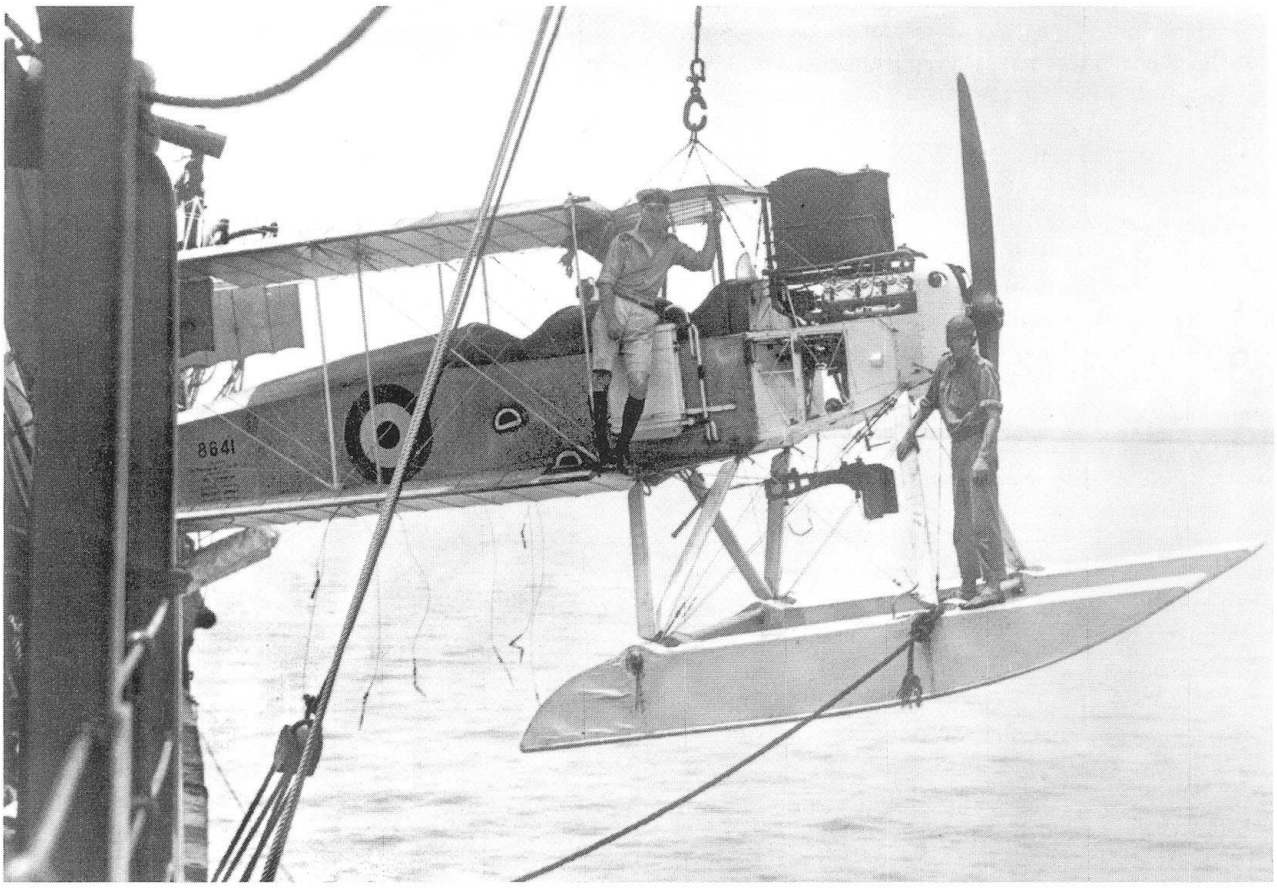
The first few months of war had seen the RNAS come under enormous pressure to produce results in a wide variety of tasks and operations. It had not been found wanting.

38 Above Right: *Officers of 3 Squadron on their way to Paris and the Dardanelles, March 1915. Samson Collection (IWM HU 67855)*

37 Right: *Lieutenant Hicks and an unidentified officer outside the Ritz Hotel, Paris, on their way to Marseilles and onward to the Dardanelles. Samson Collection (IWM HU 67890)*



38 Left: *Aircraft of 1 Naval Wing at St. Pol, sometime in June 1915. Left to right: an anonymous B.E.2c; a Nieuport Ni 10, possibly 3163; two Blériot Parasols, Nos. 1547 and 1548; next the famous Morane Saulnier Type 'L' No. 3253 in which Flight Sub-Lieutenant Warneford gained the VC for shooting down Zeppelin LZ37; Avro 504B, possibly 1004; lastly an Henry Farman F.27 'all-steel' bomber (Barry Ketley)*



1915-1916
The Dardanelles, Africa and the Mediterranean

Allied to the Central Powers' cause, the Turks seemed to be as they had always appeared — the sick man of Europe. Heavily under the influence of Germany in the years leading up to the outbreak of war, Turkey had within its Government a pro-German faction committed to bringing the country into the war on their side. To this end the German battle cruiser *Goeben* and its escort *Breslau*, were nominally purchased by Turkey and both ships steamed through the Dardanelles to Constantinople. The threat to Allied shipping in the Mediterranean and moves by Turkish forces in Palestine which seemed to threaten the Suez Canal (and thus Britain's link with India), prompted the Royal Navy to concentrate a British Squadron on the island of Tenedos. When the Turkish Navy shelled some Russian port facilities in the Black Sea, hostilities became a reality. In order to take the pressure off Palestine and Russia, it seemed that a push through to Constantinople by the Royal Navy would secure a new southern flank and force Germany to fight on three fronts.

The RNAS had already been supplying seaplane support to the fleet in the area but their contribution was woefully inadequate. Once the decision to force a passage to Constantinople, with an attack to hold the flanks at Gallipoli, had been made, the need for a more robust effort by the air services was more than obvious. What would be more natural, then, for the First Lord of the Admiralty and champion of the current strategy to look to his own, proven force to reflect his own energy and enthusiasm? Churchill therefore called upon Commander Charles Rumney Samson and the Eastchurch Squadron.

By his own admission Samson confessed that nothing much happened in Flanders until the end of January, when a flurry of activity saw the Eastchurch men involved in various night and day bombing operations along the coast. By that time however, his force was beginning to feel the strain and his machines were in a sorry state of repair. For one raid he could only muster three aircraft and it was soon necessary to

39 Above: *A good view of Short 827 No. 8641 as she is hoisted aboard HMS* Manica. *Of interest is the 112 lb bomb carrier and the release cables hanging from the fuselage. Equipped with a 150hp Sunbeam Crusader power plant and with a flight duration of three and a half hours, the 827 served in many theatres. 8641 was still on board* Manica *as late as February 1917. Via Laurie Milner (IWM HU 66635)*

bring in machines for specific operations from England. Even so, Samson was not allowed to hang on to these men as reinforcements and again he was reduced to "meagre resources".

At last, in February 1915, Samson received orders to return home with his unit, now designated No.3 Squadron. They were replaced by another squadron and left most of their aircraft behind. This "was not at all to our liking" even though the newly formed No.1 Squadron was commanded by Arthur Longmore, one of the original Eastchurch men. However, enough was enough and for a while it looked as though they might revert to a training role — a "horrid thought". Murray Sueter tried to allay these fears over the telephone, which brightened Samson up somewhat. They moved to Dover through an horrendous "pea-souper" fog and waited for instructions. It was not long before he was summoned to London. On returning Samson gave his men the news that they were to proceed overseas without delay.

For the ground crews the journey to the Dardanelles would be under the command of Squadron Commander Richard Bell-Davies. They boarded the steamer *Inkosi* (which was not designed as a trooper) at Plymouth and set sail.

For a while it seemed that the journey would prove uneventful as the men watched the Eddystone light dip below the horizon. Unused to the sea, the fitters and riggers of the Eastchurch Squadron lay steady in their hammocks. Watching a knot in the woodwork move this way and that, Arthur Beeton suddenly realised that all was not well. The ship was entering the Bay of Biscay. Feet stumbled around the deck and soon learnt to wait for the roll before lunging for the ladder aloft. A breakfast of greasy bacon did for many and three days later the ship entered Marseilles with passengers past caring whether they lived or died.

While these victims were puttering south, Samson was attending to travel arrangements for himself and the forward party. Samson had managed to hang on to his favourite B.E.2a, 'Old Number 50', which was crated and travelled with them; he was determined to get in the air as soon as possible after arrival. Samson, four officers and 27 men formed the Advance Party and they moved off, B.E.2 and all, in under twelve hours from the receipt of orders. Flight Lieutenant Edward Osmond (later Lieutenant Colonel, OC 61 Wing RAF), was the officer in charge of the transport, and on arrival at Plymouth found that the cranes could not take the weight of the lorries. Ever resourceful, he had the bodies removed and the party left England on 11 March. At Boulogne a supremely confident Samson issued a lofty order to Osmond and Charles Collet to "be in Paris that night without fail!" He then motored on to Paris with Bill Samson and Butler in the two tourers (one being the 'Squadron Rolls'). Satisfied that new replacement aeroplanes had been ordered and were on their way to Marseilles the party settled into a room at the Ritz placed at his disposal by a pre-war chum.

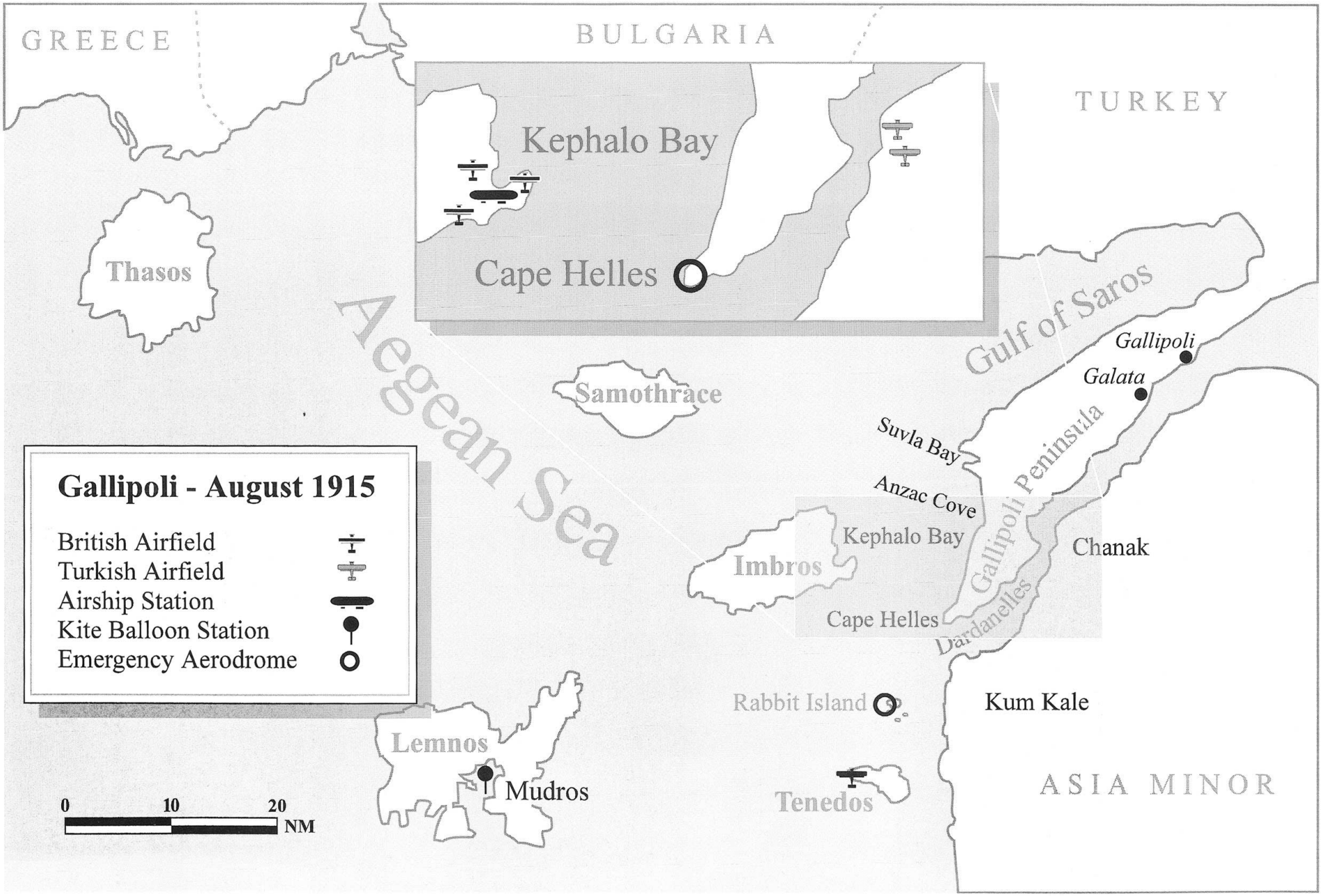
Osmond arrived as Samson was coming down to breakfast, who taking pity on him sent Lieutenant Butler on with the lorries in his place. On the 16 March they arrived at Marseilles and found that the new aircraft had already been loaded into the *Abda*. It merely remained for the party to settle themselves in for the voyage.

On arrival at Imbros on 21 March, Samson reported to the commanding officer, Admiral Wemyss. Later, Sir John de Robeck, the Commander in Chief, arrived. Hitherto the seaplanes from *Ark Royal* had valiantly struggled to achieve what they could but they were not really suited to the task. He was glad to have something that promised better. Knowing he had No. 50 safely with him, Samson sought to impress de Robeck with his efficiency and promised an aircraft would be in the air within 12 hours. It remained for them to steam on for Tenedos where a party from the *Ark Royal* had started to construct an airfield three and a half miles from the main town.

Tenedos stands in the Aegean some 18 miles from the Gallipoli peninsular. The airfield itself had been a vineyard and was about 300 by 600 yards. The owner rented out the field to the Royal Navy, keeping some vines aside for his own use. He regularly came to tend them and would become a familiar sight around the camp.

They arrived offshore on 22 March, but bad weather delayed the landing of the aircraft until the 26th. They were able to erect the canvas hangars they had brought with them and settle in as comfortably as one can when one's new home threatens to collapse at any minute. Neither was the task of landing stores easy. For one thing the aircraft bought in France had been delivered direct to Marseilles and loaded straight onto the ship before Samson's arrival. When the hatches were opened they found packing cases 47 feet long which defied any attempt to move them ashore. A pinnace and launch from the *Vengeance* were planked over and the makeshift raft used to move the cases to the shore. From there they were manhandled to the airfield some three miles away along a rough road.

The whole operation took two gruelling days. Seven aircraft were landed on the first day, the remaining four on the next. By the third day all the machines had been erected. The two Maurice Farmans with their 100hp Renault engines were ideal but the eight new 80hp Henry Farmans[25] were considered too underpowered to be of much military use. None the less a machine


GREECE
BULGARIA
TURKEY
Kephalo Bay
Cape Helles
Thasos
Aegean Sea
Samothrace
Gulf of Saros
Gallipoli
Galata
Suvla Bay
Anzac Cove
Gallipoli Peninsula
Kephalo Bay
Chanak
Imbros
Cape Helles
Dardanelles
Rabbit Island
Kum Kale
Lemnos
Mudros
Tenedos
ASIA MINOR
Gallipoli - August 1915
British Airfield
Turkish Airfield
Airship Station
Kite Balloon Station
Emergency Aerodrome
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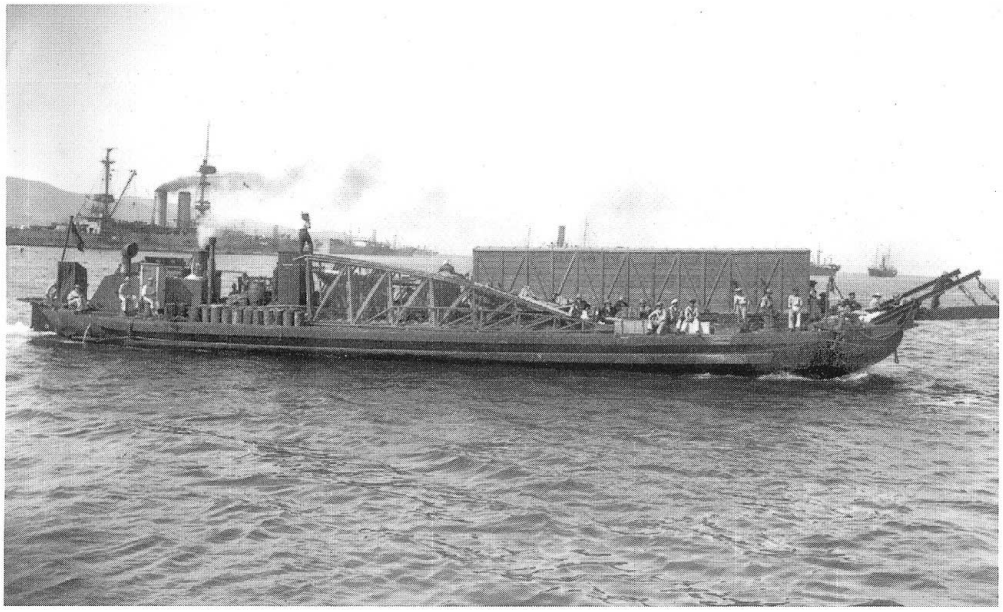
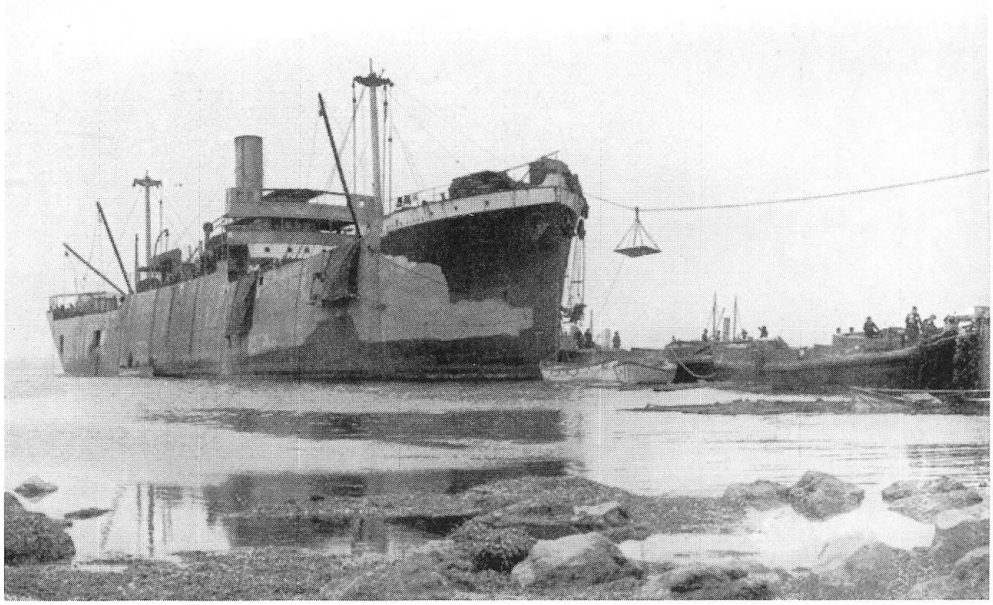


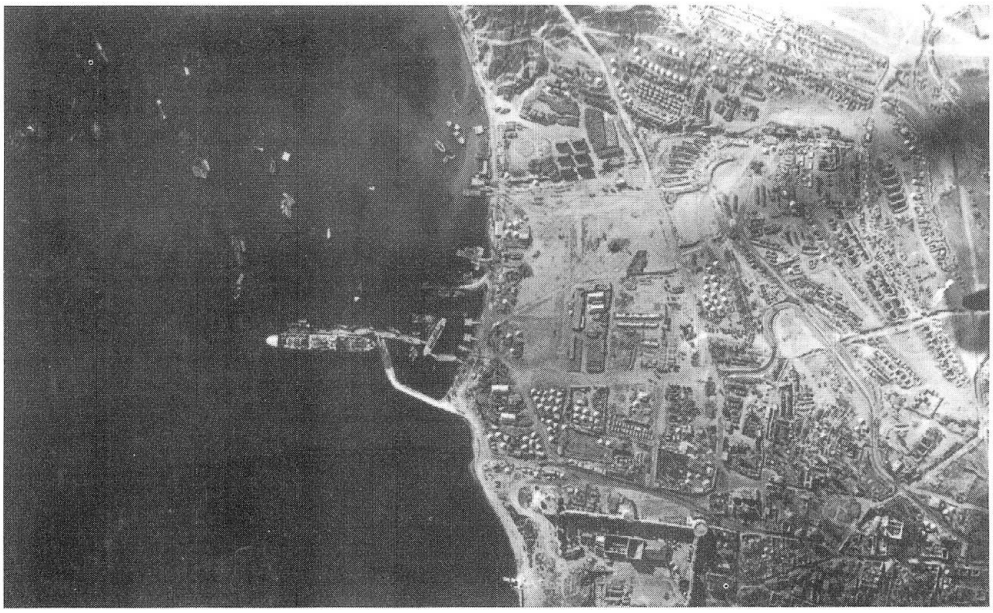
40: *Landing stores was never easy. When 3 Squadron arrived at Tenedos they found that the aircraft bought in France and loaded straight onto the ship before Samson's arrival were in packing cases 47 feet (14.3 m) long, which defied any attempt to move them ashore. A pinnace and launch from* Vengeance *were planked over and the makeshift raft used to move the cases to the shore. From there they were manhandled to the airfield some three miles away along a rough road (IWM Q 13459)*

41: *The officers of the Eastchurch Squadron survey their new surroundings on their arrival at Tenedos, 26 March 1915. They seem unimpressed. Samson stands in the middle of the group wearing a flying helmet. Samson Collection (IWM HU 67873)*

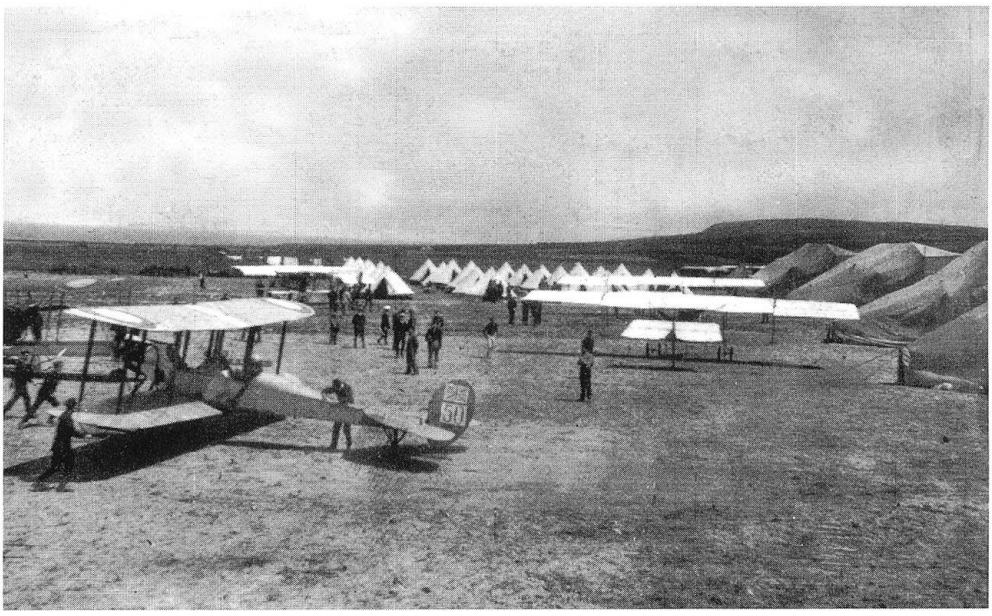
42: *An aerial view of 'W' Beach or 'Lancashire Landing' as it became known. To the right of the harbour and marked with an 'X' is the emergency landing ground. Further to the right and out of the picture would be 'V' Beach and the River Clyde. On the day of the landings the sea was "red with blood". Samson Collection (IWM HU 67859)*



43: *The SS* River Clyde *beached high and dry at low tide off 'V' Beach. This converted collier was used as a 'Trojan Horse' to effectively double the number of men that could be put ashore. The well-planned operation went badly wrong in practice when the naval bombardment failed to suppress Turkish opposition. Heavy casualties were inflicted by point-blank Turkish fire as men left the specially-cut side ports. RNAS men provided machine gun support from the ship's superstructure (Barry Ketley)*

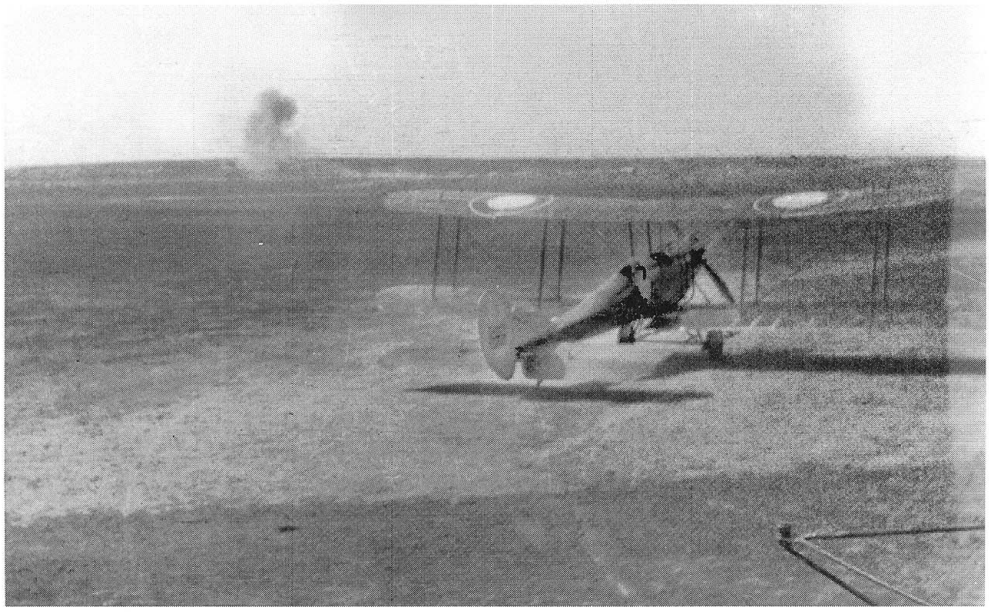


44: *This view of 'V' Beach shows the large scale buildup of stores. In the middle is the beached* River Clyde *with the fort of Sedd el Barr at the lower edge of the picture. Samson Collection (IWM HU 67822)*

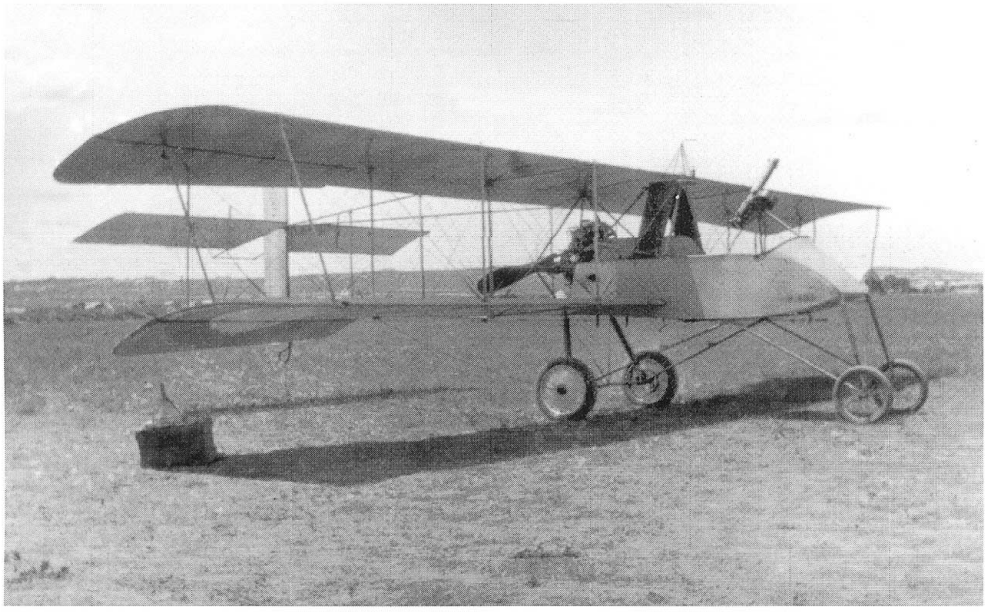


45: *A good view of the flight line at Tenedos. Samson's B.E.2a, number 50, is in the foreground and is ready to start off. A rating is draped over the rear of the fuselage to hold the tail down while Samson runs up the engine. Samson Collection (IWM HU 67862)*

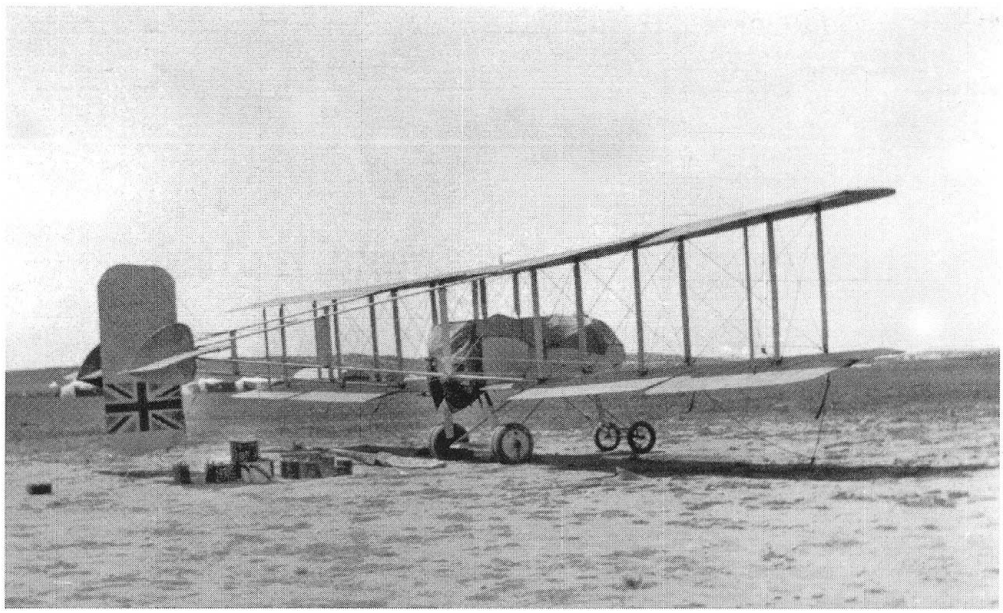
46: *A Maurice Farman can be just made out in flight over the field headquarters of General Sir Ian Hamilton, the unfortunate commander of the Gallipoli operation until he was replaced in October (Barry Ketley)*



47: *June 1915. A Turkish shell bursts on the emergency airfield at Cape Helles. B.E.2c number 5 is in the foreground. On arrival at Gallipoli, Arthur Beeton asked where the landing ground was. He was told "You see where that shell's just burst, that must be right on it" . Of interest is the dark camouflage on wings and tail, and the light-coloured (probably clear-varnished) fin and rudder. The number '5' can just be made out above a small Union Jack. Note the white-outlined cockades which appear to be of the RNAS red ring variety (IWM Q 44344)*

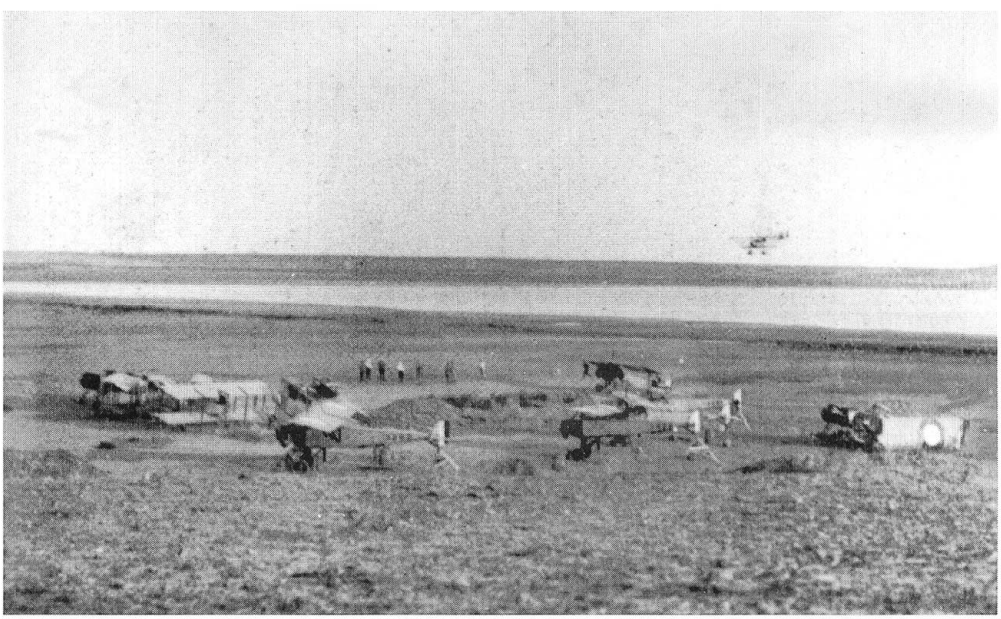


48: *No. 9 (with maker's number V.605 just visible in small characters towards the front of the nacelle) was one of the original Voisins on the squadron strength and is shown here at Imbros in August 1915. The gun on the tripod mounting appears to be a standard army-issue Vickers with a side mounted magazine (IWM Q 44287)*



49: *Marix's big Breguet de Chasse. Fitted with a 100hp Canton Unné engine, Marix had great faith in this machine. In it he intended to bomb Constantinople. Samson was impressed with its carrying capacity and the effect it had on Turkish troops (IWM Q 44283)*

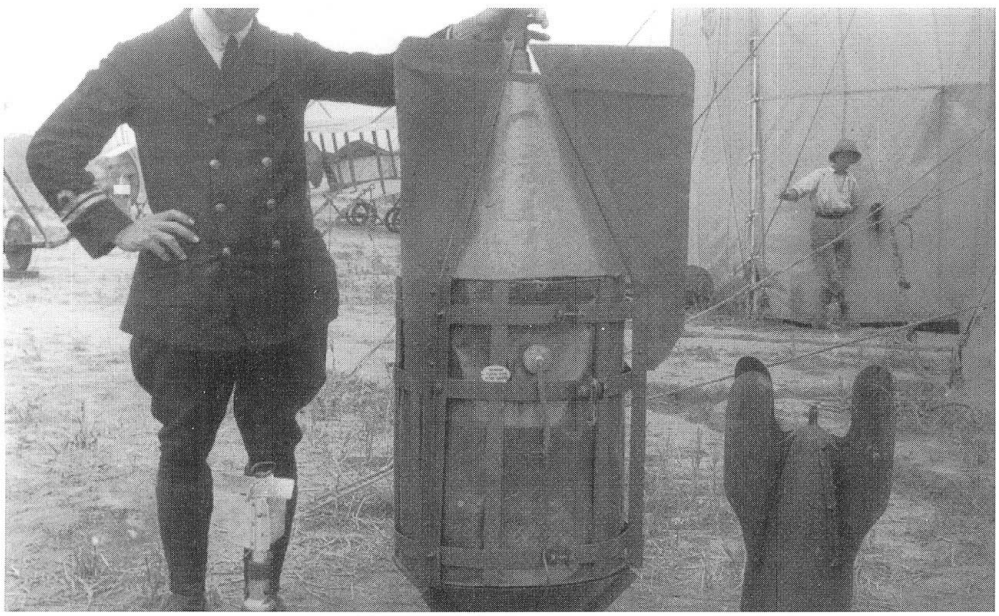
50: *Flight Commander Reggie Marix DSO in front of one of 3 Squadron's Maurice Farmans in the summer of 1915. Marix wears the khaki uniform adopted by many, but by no means all, members of the RNAS in the Aegean. There is what appears to be a drum and winding handle for a trailing aerial for a wireless set attached to the side of the aircraft nacelle (IWM Q 44405)*



51: *A Caudron G.III of 2 Wing trundles in to land on the field at Imbros, soon after the unit's arrival in late August 1915. Five out of the six Morane-Saulnier Type L parasols sent there can be made out. Numbers 3258 and 3262 were the first and last respectively of the batch to be flown operationally. The sixth machine, 3257, was something of a lame duck and was used for spares. The unassembled aircraft with black engine cowlings appear to be Avro 504's (Barry Ketley)*

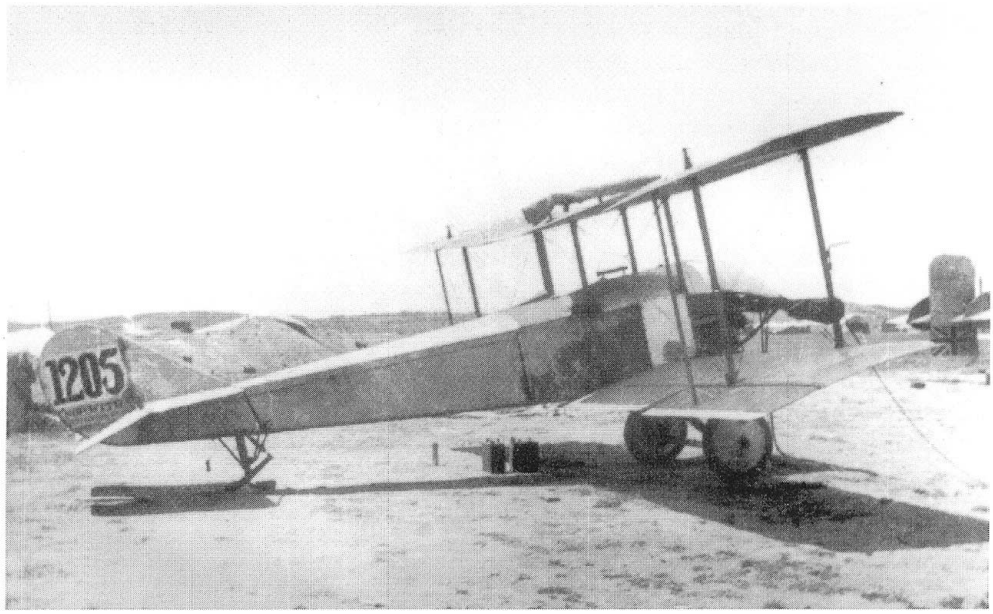
52: *A group photograph taken on Imbros of the last of the original Eastchurch party. The bearded Samson sits in the centre of the group with his be-monocled brother, Bill, to his left. Samson Collection (IWM HU 67864)*

53: *A Turk before breakfast. Lone Turkish aircraft were regular visitors to the RNAS. Here members of 3 Squadron man one of the Vickers guns which formed the air defences of the airfield at Imbros. Not only has the gunner suffered the inconvenience of having his morning shave interrupted, but he, and most of the onlookers, are still in their pyjamas (IWM Q 44291)*



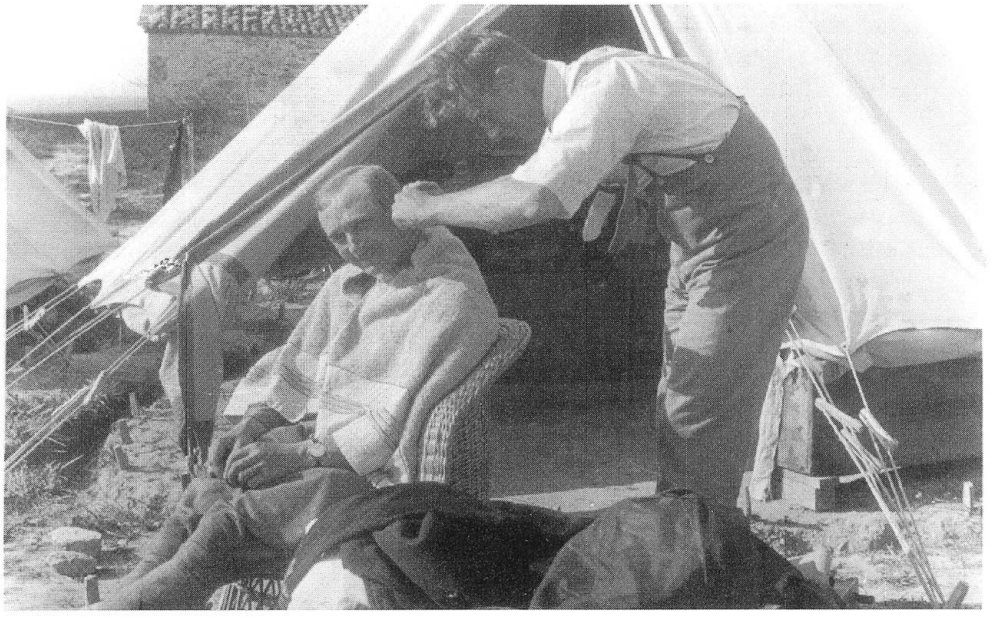
54: *A home made incendiary bomb constructed from a 10lb bomb and a petrol tank. The pilot was warned to head straight out to sea in case of accidents. On impact it failed to go off immediately and Turkish troops took it in turns to have their photograph taken while standing on it. Sadly, one such group eventually did set it off (IWM Q 44277)*

55: *This Sopwith Tabloid, 1205, was originally sent to 1 Squadron before serving with 3 Squadron on Tenedos from June 1915. Samson complained that they had a habit of "shaking out their engines". An outstanding machine pre-war, its remarkable speed of 92 mph marked it out as a natural choice for military work. Squadron Commander Spencer Grey and Flight Lieutenant Reggie Marix flew to Cologne and Düsseldorf in Tabloids numbers 167 and 168 (IWM Q 44288)*



56: *The Belgian Dessessoir attached himself to the Eastchurch squadron to look after the big Breguet and Farman Shorthorn 1241. An expert on the Canton Unné, he was the mechanic to Gustav Hamel, a pre-war racing and pioneer pilot. To the ratings he was a strange addition to the unit, especially when he demonstrated his skill at kick-boxing. On one occasion he entered the tent he shared with three other engineers and went to make a cup of tea but filled the kettle with petrol by mistake. Soon the whole tent was ablaze. Here he is at the squadron aircraft 'hospital' (IWM Q 44273)*

57: *Flight Commander Charles Collet (left) and Flight Commander G.L. Thomson outside their quarters at Tenedos in July 1915. A holder of the DSO, Collet was burnt to death in an accident on the 19th of the same month (IWM Q 44296)*



was a machine and although Samson did not like it, they were all that were available to him.

On the 28 March Samson tested one of the 80hp Henri Farmans and then went for a flight over the Dardanelles in Number 50. One of the unexpected problems facing the pilots was the novelty of flying regularly over the sea, but gradually they settled into a routine of war work of sorts. Spotting for mines, submarines, chasing the odd elusive Turkish aircraft and a tentative attempt at bombing, shows the scatter-gun approach to operations. Samson and his men were used to being versatile. With no support from any RFC units, all requirements for air work would fall to them and the seaplanes in the carriers accompanying the fleet. Nonetheless the whole idea seems to have been to advertise the arrival of the 'Eastchurch Pirates' to the Turks and to the rest of the Royal Navy. Osmond and Collet had their work cut out as the only signallers on the island but the Royal Navy were pleased with their first attempts at gun spotting.

Shortly thereafter SS *Inkosi* arrived with the rest of the Eastchurch group and the inventory of equipment was completed.

Taking stock, the Squadron now consisted of: B.E. 2a No. 50, the two Maurice Farmans with 100hp Renault engines, the eight new Henry Farmans bought in France, two new B.E. 2c's, a B.E. 2a "bitser" erected from spare parts, two Sopwith Tabloids which "had the habit of shaking out their engines", No. 1241 (another Maurice Farman veteran) and Marix's 'Big Breguet'. This beast had a 200hp engine and was championed by Marix as a bombing machine to strike terror in Constantinople. Samson was not convinced but nonetheless humoured him. No. 1241 was a Maurice Farman Shorthorn with a Canton Unné engine. This was "the pride of the squadron" and was looked after by a Belgian, Dessessoir, who treated it very much as his 'baby'. It had proved itself to be very versatile and reliable. On 21 December 1914 it made the first night bombing raid carrying eighteen 16lb bombs to Ostend.

The 18 officers made use of the farmer's house and a few tents, whilst the 102 men lived exclusively in a tented camp. Extra accommodation and workshops were made out of the huge Farman packing cases. To men more familiar to a northern climate the new environment took some getting used to. Not least of the problems were the insects. Beeton and his comrades found an elegant solution to the omnipresent flies:

"We found the flies in these bell top tents went up into the top of the tent, in the peak every night. So we found the fire extinguisher — which every tent had — a couple of squirts, and they all died, and we got rid of them. When the fire extinguisher ran dry, we went to the store keeper — he was one of them old naval types, 'There's been no fire, you're not having any', so we filled it with petrol, we found it just as good. We squirted the petrol up in the top there, and the flies all died, until a plane caught fire just outside and all the officers that ran to it collared the first fire extinguisher they could get. They squirted petrol, and the petrol caught alight and came back to their hands, you see. Oh! there was a row about that."

Somehow Samson managed to persuade the C-in-C to order more Maurice Farmans. Within a very short time Samson had his team, aircraft and accommodation in place and some extra observers from the army as well. From 11 April onwards regular flights were undertaken over the peninsular to take photographs of fortifications and gun positions before the landings. The value of such work presently showed its worth as gradually the whole of the area of operations was mapped and photographed from the air. The main expert in this work was Flight Lieutenant C. H. Butler who struggled with a small folding camera before begging a better model from the French. Between this time and June he would personally take some 700 plates. Lieutenant Commander Brodie, the commander of the submarine *E15* was also taken aloft to give him vital intelligence for a proposed operation. He was to force the Narrows on the day of the landings but ran aground despite a diversion laid on by the pilots. She was eventually torpedoed to prevent salvage by the Turks.

Samson was more than pleased with Sir John de Robeck's remark that "the RNAS has done excellent work of great value to our future operations".

Ark Royal meanwhile had left Tenedos and was teasing the Turkish staff by hinting at various possible landing places, dodging from Mitylene to Mudros and on to the Gulf of Adramyti. By 6 April her aircraft were spying on Enos for a feint attack on the 7th. Thereafter she returned to spot for the navy's guns, attacked the battleship *Turgud Reis* and thence sailed to Mudros. *Manica*, a balloon ship, arrived on 9 April to provide static observation for the guns (initially of HMS *Triumph*) and would stay in the area for the summer before sailing to East Africa. Her advantage over aerial spotting was the telephone link with the balloon and the immediate corrections she could make.

On the day of the landings the task was to direct ships' fire and correct to prevent any reinforcements from reaching the beachhead. Samson had a ringside seat, but impotent to act, he could only watch as the men leapt from their boats into the surf to be caught by barbed wire placed under water. The Turks opened up and "the sea was literally whipped into a foam by the hail of bullets and small shells". The *River Clyde* was beached and he could plainly see the lighters filled with dead.

"I saw one gallant deed, which impressed itself on my memory. A Naval steamboat came in right up close to the beach in the face of a terrible fire and towed off a cutter which was full of dead and wounded; they did the job as neatly as if they had been taking liberty men off in peacetime".

When he got back to Tenedos he told the others that the sea for fifty yards from the beach was "absolutely red with blood, a horrible sight to see". The rest of the day followed the same pattern of reconnaissance, photography and spotting until by dusk all had been in the air at least three times apiece. What impressed most however, was the gallantry of the 29th Division below them and the acts of bravery they had seen.

The landings were put right and two days later Samson went ashore to see if he could rig up an airstrip to be ready for use in early May. He thought it would provide quicker communication with the ground forces. A scrubby, miserable, though relatively flat piece of ground was found at Cape Helles and from here a couple of aircraft operated during the day. The field, however, was within easy range of the Turks and in full view of the hill at Achi Baba which dominated the area. Landing among the shell fire certainly broke the monotony. Rising ground formed some sort of protection but after the loss of five aircraft regular use was stopped. By the end of June it was decided to use it as an emergency strip only. Arthur Beeton would have first hand experience of the privations of the Gallipoli shore:

"Well, the news came on that one of our B.E.2c's had come down, with the engine seized up. The machine was alright, it wasn't damaged. So the job was to get a fresh engine out to it. And my mate George [Lacey][26] — he was a devil, go anywhere anytime — he said 'Oh, we'll go'. Two of us, that's all it was, 'We'll go'. And the Navy sent in this little Greek steaming thing, not very big it was, but they picked this engine up and George and I with our tools and that, and away we went. But the Aegean Sea that day was a bit nasty, it was doing what we called a 'Gayby Glide', it was rolling and pitching. And I didn't feel too good, so I laid down on the deck. I must have napped off a bit because when I woke up there was a banging going on; we were passing through the fleet. Terrific it was, and I got up and I went up to the front of our little packet I said 'Whereabouts is the aerodrome up there on the Cape Helles?' 'Aerodrome' he said, 'What's that?'. I said 'Where the machines land'. 'Oh', he said 'that's just over ...' and he pointed with his finger. Just as he pointed, a great cloud of red fire and smoke went up in the air. He said 'You see where that shell's just burst, that must be right on it'. "

The next problem was getting themselves and the engine up to the field. Because of the shellfire nobody would take them until a driver with a GS wagon was ordered to. "[He] cursed us all the way, and then he showed us the patch, a brown patch on the ground, where his mate and his mule had caught a shell yesterday. Anyway, he whipped the mule up, and we went across this half a mile of sand, and the engine was going up and down, and there was no springs on them things you see. And we were going up and down, and when we got to the top of the sand dunes, he stopped he said 'I'm not going back until it gets dark'. He wouldn't, stopped there. We had to go down back to the beach, walk this time, to find some bits of timber that would make a tripod for lifting. And we found a piece of rope that wasn't too rotten, and we came back again. But coming back we noticed that the ground we were treading on was full of maggots. It's where they buried the dead not very deep in the sand."

After this initiation, Gallipoli was, to Beeton and Lacey, "a wicked place."

They soon learnt why the aerodrome had been abandoned. Lacey told Beeton to go outside and make a cup of tea with a blow-lamp and a billy-can. In the ninety degree heat "a ping — a bullet — went past my ear. So I came back in again !" Condensed sea-water suddenly had a whole new appeal to the two friends. Corps Headquarters, however, was less than impressed with the constant attention the Turks gave to them. Lacey and Beeton nonetheless put together a Voisin from scrap bits and pieces and moved it around the airfield at night. By day the Turks would loose off in a rage and waste an enormous amount of ammunition. On the first day alone, one hundred and twenty-seven shells crumped around the invincible machine.

Beeton and Lacey would stay at Cape Helles for two months or more.

Shortly after the landings the squadron maintained patrols in the air to warn of any Turkish reinforcements heading towards the beachhead. In addition they continued to spot for the guns of the fleet, but this proved to be a very frustrating pastime. Samson wondered whether it was worth the effort as essentially the navy either refused to accept the corrections or did so when it was too late to be effective. Perhaps it was pride on the gunners' part but little improvement was made in the weeks ahead. Some weeks later Collet landed at Cape Helles and complained to Beeton that he was wasting his time.

"Captain Collet was going round and round for about two hours and come down and he said 'Damn the navy Beeton, they don't like us you know' he said. They didn't, they thought we were damned useless. He said 'I've been going round there firing Very lights [and] they're not taking a damn bit of notice of me at all.' "

To be fair, the gunners, certainly on the day of the landings, had enough visual targets right in front of them. There is no doubt, however, that the work of the squadron on this and subsequent days was tireless and the information and photographs they brought back invaluable. On the morning of 17 May Marix spotted preparations and unusual activity at the port of Ak Bashi Liman. The Turks were preparing a counter attack at Anzac on the night of 18th/19th. Marix passed on what he had seen to Headquarters. When the attack went in on the morning of the 19th, the Anzacs were fully prepared and cut down the attack in its tracks. Behind the Turkish lines, Marix with Samson as observer, ranged up and down with the Big Breguet which they had loaded with a 100lb bomb and fourteen 20 pounders. They caused much damage and panic in the port facilities, so much so that the labourers fled to the hills and stopped work for two days. Samson was delighted with the results and won over as to the effectiveness of the Breguet.

By June, natural attrition had taken its toll on the squadron's resources and Samson received 8 new aeroplanes. Unfortunately they were Henry Farmans which had been proved useless for war work and, rather than accept them, he arranged for them to be returned. They never arrived and disappeared into thin air. Samson mused that the aircraft probably ended up as a "lost tribe" somewhere.

By early June the squadron was beginning to feel the strain and Samson himself felt quite "played out". His brother Bill had been invalided home after a particularly gruelling time floating in the water for four hours with a smashed leg after a machine he was in crashed. Butler, the ace photographer, got hit by shrapnel. Bell-Davies was down to nine stone and Collet "was by no means the man he was". The C-in-C decided they should have a rest in Egypt and a rota of leave started up. Still with no RFC support, all air work over the Peninsular was being undertaken by them and Samson alone had chalked up 180 hours in the air since 1st April.

The Turkish air force (bolstered with, and trained by, German pilots) was nowhere near as active as the Germans had been in Flanders. However Collet and Hogg did manage to shoot an aircraft down with a rifle on 22 June.

In July, Colonel Frederick H. Sykes, lately commander of the RFC in France, was sent out to assess the situation in the Mediterranean and recommended a major overhaul of the flying services there. In his memoirs *From Many Angles* (Harrap, London 1942) Sykes would give Samson all credit for his achievments but would also describe him as "a fine aviator and born fighter, but without much organizing ability". He would also remark that one of his more difficult tasks would be to assume command from Samson which the latter very much resented. His first steps were to move the squadron and its aircraft to Imbros to be nearer Suvla Bay where new landings were to be made.

As at Tenedos, conditions on Imbros were far from ideal. For ten-stone Arthur Beeton the work in the summer heat was gruelling:

"There was a bit of a harbour in Imbros, and the only place where we could get a lot of petrol was in there. And we had to carry it about three mile on loose sand. The sand came over your boots practically. We had a two gallon [tin] under each arm, and one two gallon can in each hand — eight gallons each — to carry three miles..... you had to put it down, if you put it down you've got to get it up again, and all that. Oh! It nearly broke us in two."

Various practical details such as a large scale reinforcement of the unit and the introduction of single types of aircraft were mooted. In addition, the photographic activity was formalised and improved with new equipment. Another kite balloon ship, the *Hector,* was sent out to aid the hard worked *Manica* (later replaced by the *Canning*). *Ark Royal* was reinforced with another seaplane carrier, the *Ben-My-Chree*. Sykes was far-sighted on air matters and had a remarkable gift for organisation (he had built up the RFC from scratch in 1912).The real problem, as he saw it, was that RNAS units in the area were woefully undermanned and would remain ineffective if the essentials of bombing lines of communication, spotting and photographic work were to be undertaken. Samson could and would perform heroically with his men, but with only ever a maximum of 11 pilots (at times only six) and five serviceable machines the pressure would tell in efficiency. As it was, the seaplanes from the *Ark Royal* could only spot effectively by riding thermals to gain height, such was the inadequacy of the design of their aircraft. Also, naval organisation meant that the Admiralty treated command in the RNAS as if each unit were a ship; the captain was king and essentially able to act independently. Sykes would therefore try to organise the force on RFC lines to create some sort of cohesive command structure which he would take over with the rank of Wing Captain.

The new commander still had diplomatic problems, however, and by the end of August, Vice Admiral de Robeck was writing to the First Sea Lord "I hope he [Sykes] and Samson will work together. There is rather an unfortunate publication of the Air Department which has appeared here; it contains private letters from Samson criticising Sykes." Samson obviously felt undervalued and that the achievements of his men had been overlooked. This problem did not really resolve itself as can be read between the lines of the following private letter which Sykes wrote to Samson as late as

26 November:

"Dear Samson,

I agree entirely with you that you and your officers have borne the brunt and burden of the day out here and that it is very bad luck that apparently so little notice has been taken of the splendid work carried (sic). I know that the Vice-Admiral quite recognises its value.

You are wrong in your assumption that your recommendations cannot have been forwarded; every single one which you have submitted has been sent on, and I have sent in covering recommendations or concurrences with them. I have been in hopes for some time that a result of these recommendations might reach us. I think it will come.
Yours sincerely,
F H Sykes"[27]

In anticipation of the increase in size of the force available to the commander, 3 Squadron was re-designated yet again, this time to 3 Wing. For a while at least 'anticipation' would have to remain a hope, as the new 2 Wing[28] would not arrive until 31 August. By that time the impetus of the Suvla landings had been spent and static warfare had returned.

The Turks were very sensitive, and rightly so, to the vulnerability of their lines of communication. The bombing of camps and facilities hampered supply and unnerved the Turkish troops. Whilst Marix attempted to bomb Constantinople (the Breguet developed a fault and had to turn back) others devised a 500lb super-bomb for Samson to drop from a 130hp Henry Farman.

Others attempted more devilish devices. The artificers in the squadron made a tank, inside which was fixed a ten pound bomb that would act as a detonator. When filled with petrol and dropped it was hoped that it would cause widespread damage. The pilot was told to fly directly out to sea in case it went off on take off but did so without incident. Unfortunately the bomb did not explode, although they heard later from Turkish prisoners that soldiers had taken it in turns to have their photographs taken standing on the bomb. Alas, just such a group did set it off with ghastly results.

It was not all one sided though. The Turks regularly flew over to attack the airfield and the site was circled with Vickers guns.

"They were bombing us one day, and Sammy come out as usual swinging his goggles, and as we got near his plane, we heard this one coming down. Instead of coming with a scream it was going wogger, wogger, wogger, wogger. And he said 'What the hell's coming down here? Get down', so we laid down and it was an home-made [bomb] ....they hadn't got it balanced properly, and it was toppling over and over. It hit the ground and didn't go off. He fired at it for half a day trying to make it go off, but it wouldn't so we lassoed it, and towed it away. "

On another occasion .... "he came out while the bombs were still dropping, swinging his [goggles] and got in his machine to get after them but when I got there I found I hadn't got my dope can . .... So I swung it and hoped it'd go but no.... swung it three times. He said 'Have you doped it?' I said 'No sir'. Oh! you ought to have heard his language. I had to go a hundred yards to get that dope can and he swore at me all the way there and all the way back. He never said the same word twice."[29]

August was a month of highs and lows. On 12 August the RNAS achieved another notable first in the attack on a 5,000 ton supply ship by a seaplane from the *Ben-My-Chree*. Flight Commander Charles H. K. Edmonds[30] carried a 14 inch torpedo to within 300 yards of the ship, dropping it 15 feet from the water. It exploded amidships and she began to settle by the stern, the first successful torpedo attack by an aircraft in the world. The commander of *Ben-My-Chree* was Eastchurch veteran Squadron Commander Cecil L'Estrange Malone. He forwarded a report to the Admiralty in which he included that of Edmonds and it is reproduced here in full:[31]

REPORT OF FLIGHT,
by Flight Commander Charles H.K. Edmonds.

In accordance with your Operation Order No.26

Seaplane. – No.842
Pilot. – Flight Commander Edmonds
Armament. – 14" Mark X Torpedo
Time and position at commencement of flight. – Xeros Island 4.55 a.m.
Time and position at completion of flight. – Xeros Island 5.45 a.m.
"I climbed to 1500 feet and crossing the Isthmus of Bulair over the low land one mile to the East of Bulair, arrived over the Sea of Marmora and shaped course along the coast towards the North East.
The steamer to be attacked was lying just to the West of Injeh Burnu. There were a number of sailing craft, about twelve in all, between Injeh Burnu and Gallipoli, also a tug towing two large lighters just to the East of Injeh Burnu, all within two miles of the European shore. Opposite Dohan Aslan a navigation buoy was visible, but I cannot be certain whether this is the red conical buoy or the light buoy shown on the Admiralty chart No.1004.
Approaching Injeh Burnu, I glided down and fired my torpedo at the steamer from a height of about 14 feet and a range of some 300 yards, with the sun astern of me. I noticed some flashes from the tug

previously mentioned, so presumed she was firing at me and therefore kept on a westerly course, climbing rapidly. Looking back, I observed the track of the torpedo, which struck the ship abreast the mainmast, the starboard side. The explosion sent a column of water and large fragments of the ship almost as high as her masthead. The ship was of about 5000 tons displacement, painted black, with one funnel and four masts. She was lying close to the land, so cannot sink very far, but the force of the explosion was such that it is impossible for her to be of further use to the enemy. She appeared to have settled down a little by the stern when I ceased watching her.

I noticed a line of trenches running North and South about half a mile East of Bulair, also considerable rifle fire when in this vicinity. There were three groups of about five men in khaki on the Exomili Bulair Road, and a small camp near the trenches mentioned above and just to the North of the Road. It is submitted that information regarding the Dohan Aslan Bank buoys and the fact that all water traffic was within two miles of the European coast, might be of use to commanding officers of H.M. submarines."

On 17th Edmonds would make the second successful torpedo attack on three tugs near Ak Bashi Liman. At the same time Flight Lieutenant G. B. D'Acre flying Short No.184, came down on the water at False Bay with engine trouble. He taxied towards a large steam tug and successfully fired his torpedo at the run. With the loss of weight, and with bullets whipping up the sea around him, he managed to lift off from the water and find his way back to his ship. The tug blew up and sank.

Charles Collet was killed in a flying accident on the 19th and his loss was felt keenly. He was an old Eastchurch man and had been with Samson from the start.

Arthur Beeton rushed to the scene:

"He was going off on, I don't know what the occasion was he was going off, but he picked up George Lacey, the one that was with me on the Dardanelles and took him. He took off over the cliffs and there was always an undercurrent you had a watch. And he hit this current and instead of going forward he turned and came back, lost flying speed and crashed. Well, George saw it coming, he was in the seat under the engine on the B.E.2c, there's a seat that goes under the engine practically, and if they hit the ground the engine comes on top of you. Well he knew that, and when he saw it crashing he got out, he got half way out. And it threw him, oh I should think fifty yards away. [He got a] compound fracture of both legs. But he'd got no burns, and there was Collet trapped in this damn machine. In between where he came down and where we were there was a ravine about seventy feet deep, we had to go down it and up by the side, a difficult thing to do. And when we got to the top, the other side, we saw it was on fire. Well, we tried to pull it off, get him out, but we couldn't, we got our hands and faces scarred and this chap ..... Mick Keogh[32], he got the Albert Medal for it. He saw what happened from the other side of the ravine, and before he descended he picked up a big black tarpaulin, and he wrapped that around himself and he went in and pulled him out. [Collet] was so badly burned, if you'd catch hold of him you got handfuls of flesh. But he was still alive, he said to the doctor 'Put me out, put me out', when the doctor injected some pain killer in him, what it was for I don't know."

When 2 Wing did arrive, it brought with it the welcome addition of 16 pilots and 200 ground staff. The aircraft, however, were still a mixed bag of six Morane Parasols, six B.E.2c's, six Caudrons and four Bristol Scouts. With this sort of force now in the area the work rate was greatly improved. 3 Wing would remain in Gallipoli until the end of the year and with it the evacuation, but not before one of their number, Bell-Davies, had been recommended for the Victoria Cross.

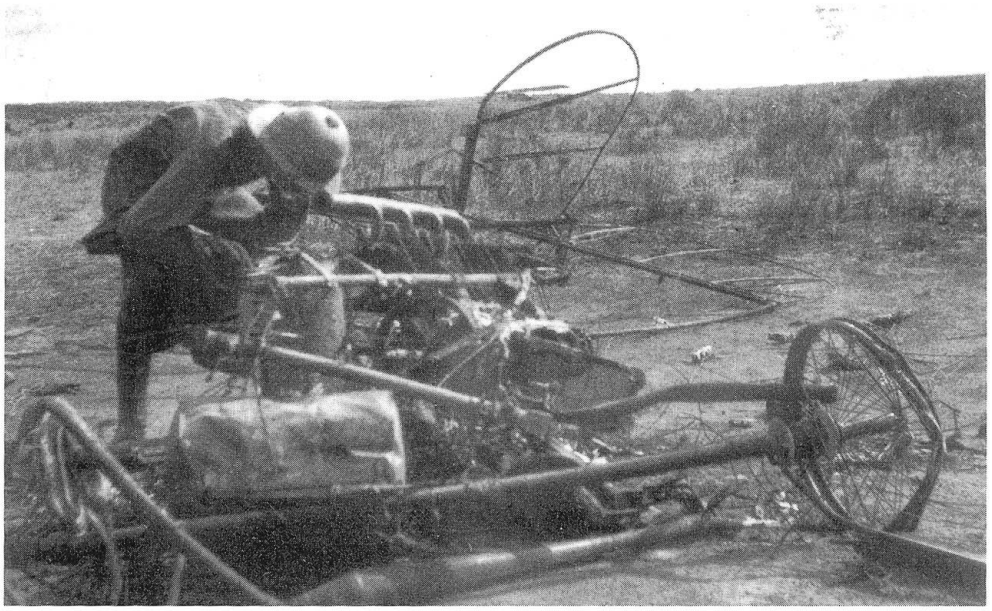
For a few days the pilots had been paying some attention to a station at Ferejik and on 19 November the whole squadron set off. The attack was successful and the force made its way back to Imbros independently. On the return flight Flight Lieutenant Gilbert F. Smylie was hit and forced to land about a mile from the station they had just attacked. If caught, his chances were slim, but luckily he was seen to land by Bell-Davies in his tiny Nieuport. Circling, he spotted a good place to land and squeezed the 6-foot Smylie "in some mysterious way" into the cockpit. They took off in true 'Boy's Own' fashion with bullets whizzing around them.

After he had landed, Samson said to Arthur Beeton ".....'I passed Davies on the way back, I simply shot past him, I wonder whether his engine is [alright]'. 'I don't know Sir'. 'It's funny' he said 'They're the same type of machine, they should keep together really'. Well, half an hour later Davies came in. I asked 'Your engine alright Sir?', 'Yes, perfect'. Then he said 'Cramped are you?' 'I beg your pardon Sir?' It turned out he was talking to Lieutenant Smylie, who he'd rammed down under his feet in the cockpit. It took about two hours to get him out. "

Smylie had destroyed his aeroplane but had to leave his flying coat behind. In it he left a message "Please return my coat, which I have had to leave, to No. 3 Wing." He would be awarded the DSC.

The RNAS would maintain a presence in the

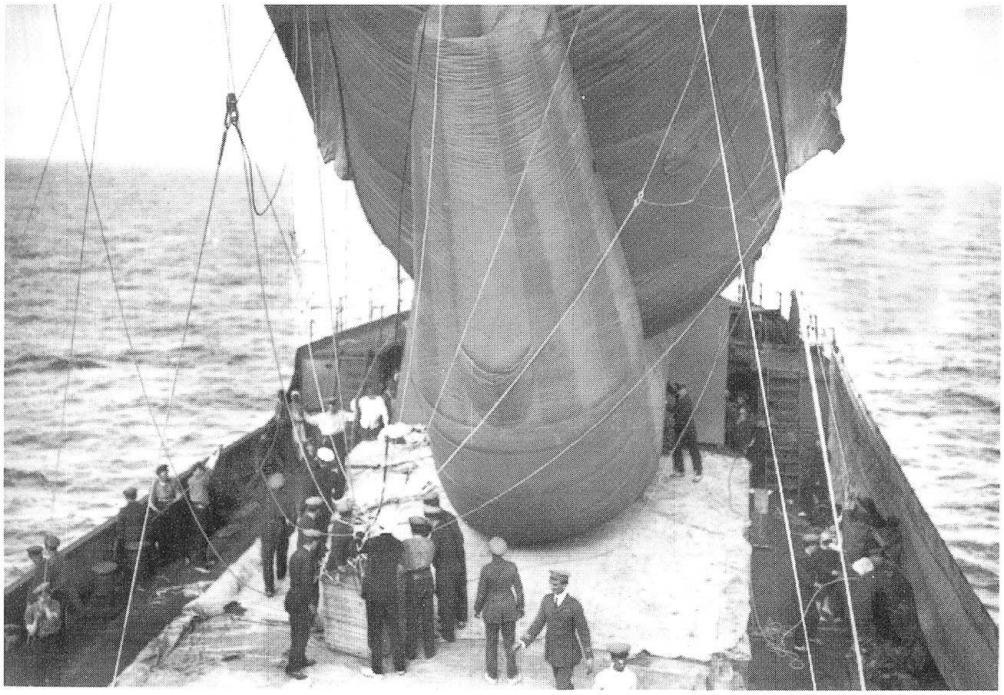
58: *The burnt-out remains of Collet's B.E.2c. He was killed while turning back to the airfield with an engine problem. His passenger, CPO George Lacey jumped before the crash and survived, albeit seriously injured, but Collet was trapped in the wreckage. CPO Michael Keogh was awarded the Albert Medal for trying to get him out of the blazing fuselage. The pipe in the foreground is the typical early B.E.2 exhaust. Samson Collection (IWM HU 67863)*



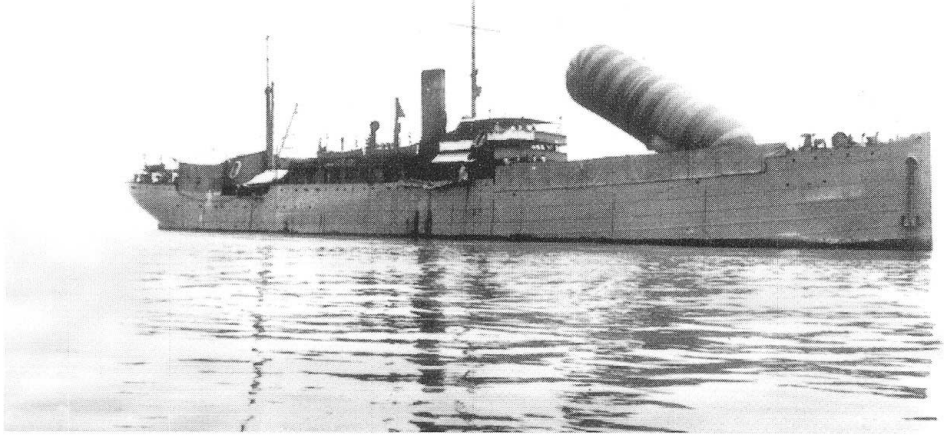
59: *A Royal Marine holds a Turkish bomb which failed to go off during an air raid on Imbros. This was not an unusual occurrence as Arthur Beeton recalls: "We heard this one coming down. Instead of coming with a scream it was going wogger, wogger, wogger, wogger.... it was an home-made [bomb] ....they hadn't got it balanced properly, and it was toppling over and over. It hit the ground and didn't go off. [Samson] fired at it for half a day trying to make it go off, but it wouldn't so we lassoed it and towed it away". (IWM HU 67892)*

60: *Cape Helles, June 1915. The airfield was regularly bombed and shelled. Here Beeton and Lacey's 'home' has received a near miss. On one occasion Beeton was caught in the open when a stick of three bombs came down. "I heard this damn thing coming and I dived into a hole in the ground. Somebody collapsed on top of me with maps – it was a brigadier. 'Oh', he said 'I had this hole dug for me'. I apologised". That bomb blew the fabric off a B.E.2 nearby (IWM Q 44336)*

61: *On 18 December 1915 Samson took up a 500lb bomb in one of the Henry Farman F.27's. It was the largest bomb dropped to date and the Farman "took it up like a bird". Samson flew around for half an hour looking for a target. He saw a long building which he decided "must be full of Turks", dropped the bomb and completely wrecked it. Samson Collection (IWM HU 67870)*



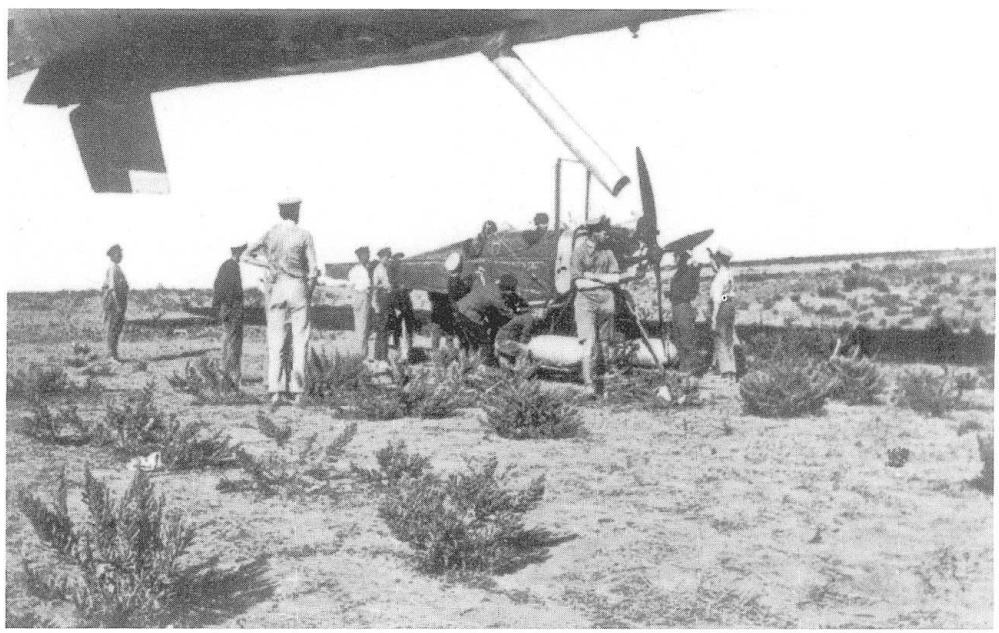
62: *SS* Manica*'s balloon is held steady while the observer waits to board the basket off the Gallipoli shore in the summer of 1915. Via Laurie Milner (IWM HU 66626)*



63: *The tramp steamer SS* Manica *hove to off Gallipolli. She was the first ship in the Royal Navy to operate this 'Drachen' type (or any other type) of balloon. Captain Edward Maitland, pre-war commander of 1 (Airship) Squadron RFC, had seen them being operated by the French and advised the British authorities to use hese instead of the spherical types then in service. Note the canvas screens and the hangar aft for her complement of Short seaplanes. Via Laurie Milner (IWM HU 66619)*

64: *The Great Workshop Fire. Samson was censured for "allowing" this to happen. Arthur Beeton was cleaning a Nieuport's valves when a little ball-bearing came out in his hand. He gave it to the crew chief, Sam Leigh, who took it to the workshop tent and dropped it into a great bowl of petrol which was used for washing large engine parts. The hapless Leigh struck a match, and "instead of putting somebody's coat over it, they started shovelling sand in. Well, that made the petrol come up over the sides, and the whole place went up" (IWM HU 67865)*

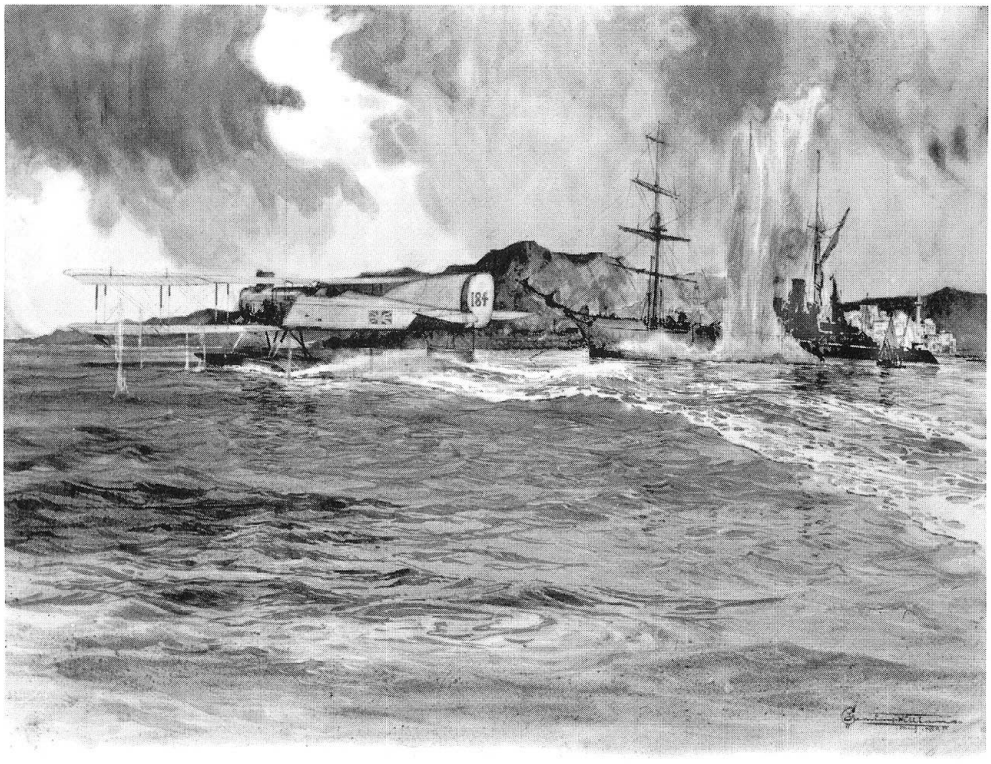
65: *Frederick Sykes saw that there was a need for airships to take the strain of anti-submarine work from the hard-pressed men of the aeroplane units in the area. Although he asked for eight, one SS airship was put into use in September 1915 and found to be adequate to cover the area of greatest submarine activity. Here she is ready to go aloft. The airship station was initially on Imbros but moved to Mudros on 21 October. Note the floats under the control car. Samson Collection (IWM HU 67868)*



66: *This Short 803 was one of a number modified by having a 100hp Gnome rotary engine installed in place of the water-cooled Salmson. Called the Improved Type 74, this one has come to grief through a collapsed float. Of interest here are the early RNAS markings. The Union Jack is supplemented by a red and white roundel which is just discernible on the lower wing. Note that the wingtip float has had the same treatment. This may be the prototype, number 161, which was damaged on takeoff in May 1915 (IWM HU 66646)*

67: *Two of Manica's officers ashore at Gallipoli. They wear Victorian 'Naval Landing Accoutrements' and the RNVR officer on the right wears a pilot's badge on his sleeve. The other officer is a member of the Royal Naval Reserve as indicated by the double-twist sleeve lace. Note the band in between the rank lace which indicates his specialisation, red for surgeons, blue for electrical and green for engineering. Via Laurie Milner (IWM HU 66652)*

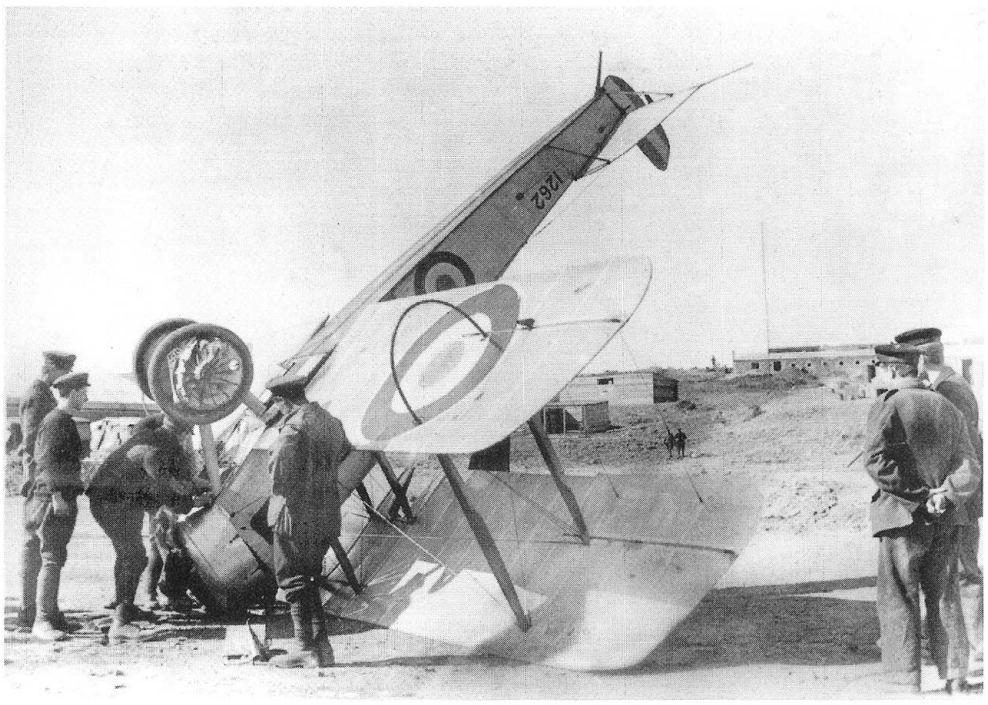
68: *A studio portrait of Richard Bell-Davies taken after his epic rescue of George Smylie on 19 November 1915 (IWM Q 69475)*



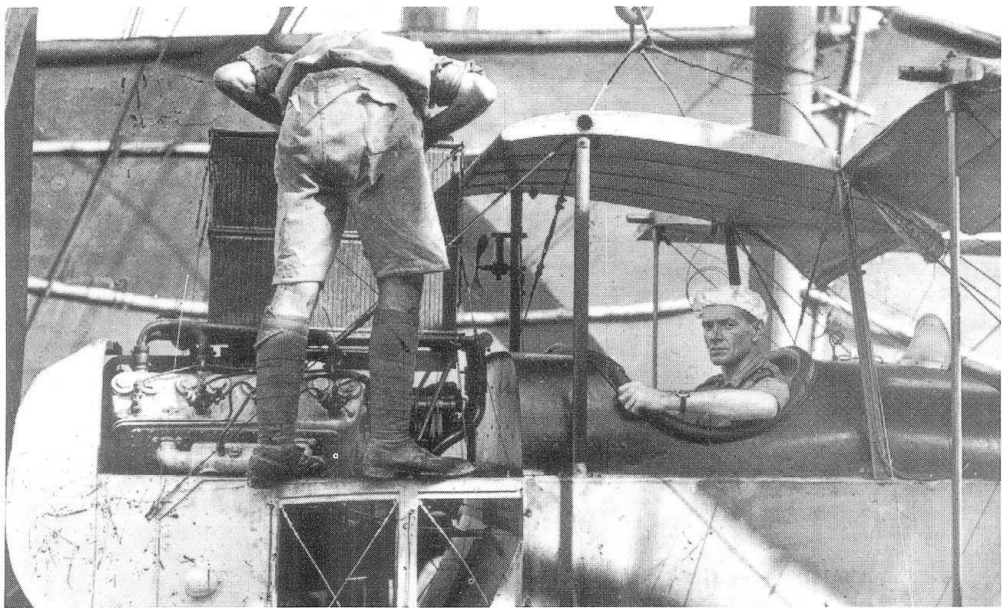
69: *17 August 1915. Operating from* Ben-My-Chree, *Flight Lieutenant G.B. D'Acre in Short No. 184 came down on the water at False Bay with engine trouble. He taxied towards a large steam tug and successfully fired his torpedo at the run. With the loss of weight, and with bullets whipping up the sea around him, he managed to lift off from the water and find his way back to his ship. The tug blew up and sank. A painting by C. Fleming Williams now in the collection of the Imperial War Museum (2448/PIC1369)*

70: *All the comforts of home. In the officers' 'kitchen' at Imbros the Sunday joint is being carved with a well-aimed pickaxe. Samson Collection (IWM HU 67866)*

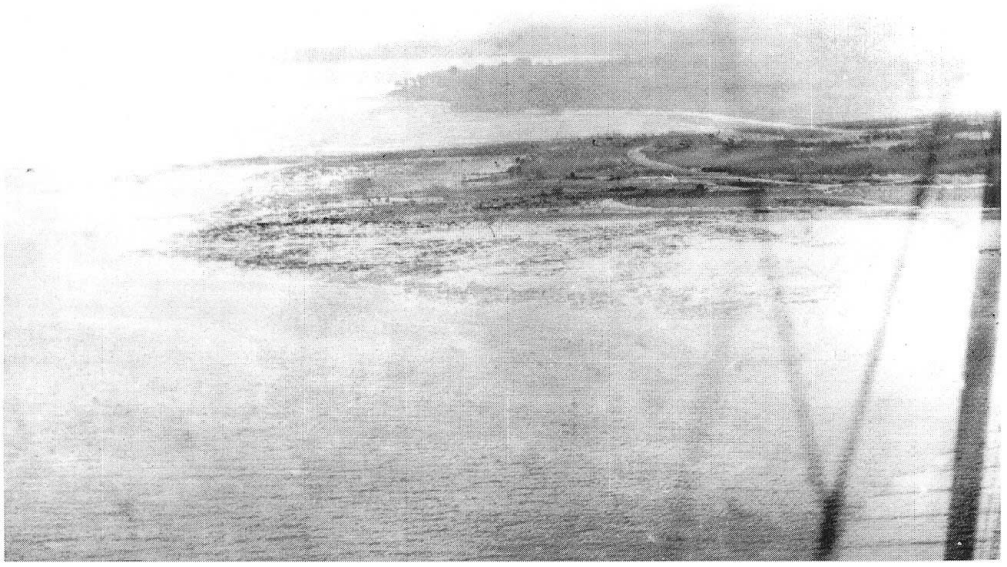
71: *This Bristol Scout C arrived in the Dardanelles in SS* Nankin *on 5 August 1915. Here it is seen after Flight Sub-Lieutenant Francis Bremner overturned it on landing at Imbros on 18 January 1916. By March 1916 the aircraft was crashed again by another pilot and written off (John Edmunds)*



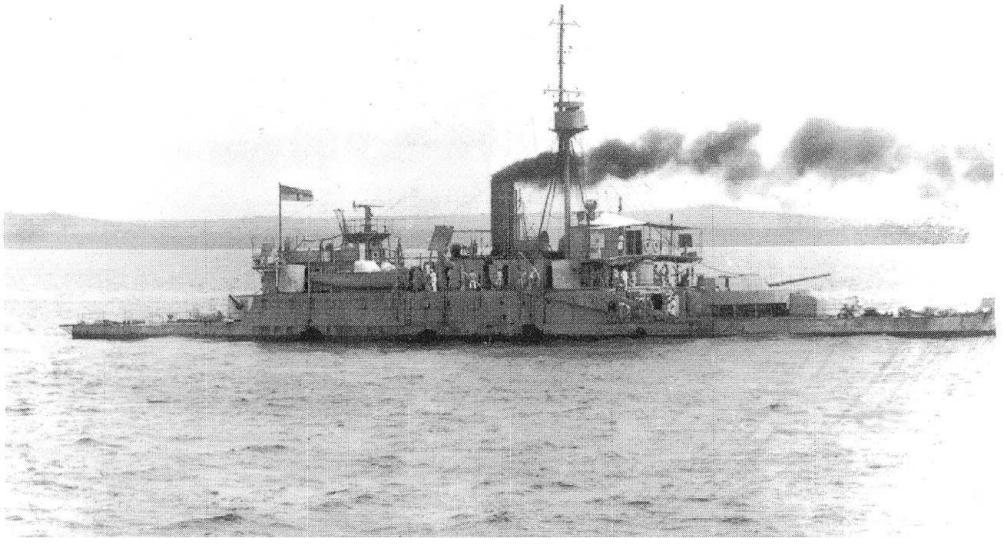
72: *Christmas Day, 1915 and 3 Wing are about to begin the Officers vs Men football match. Samson gets ready to kick-off. Five minutes into the game a Turkish plane came over. Arthur Beeton, playing in goal for the men's side, recalls: "I watched this damned Turk plane and it went round and round over the pitch. I thought, 'Is he going to drop his bombs?' No, he went across to the sand dunes and dropped them out of the way, a proper gentlemen he was" (IWM HU 67867)*



73: *One of* Manica*'s Short 827's receives attention on the hangar deck. Note the lifting cradle on top of the centre section and the locating pins for the folding wings. Via Laurie Milner (IWM HU 66633)*



74: *The insect-infested maze of the Rufiji Delta as seen from the cockpit of a Short seaplane operating from the balloon ship* Manica. *Via Laurie Milner (IWM HU 66648)*



75: *One of the monitors (HMS* Severn *or* Mersey*) that dealt with the* Königsberg. *Via Laurie Milner (IWM HU 66650)*

Mediterranean and develop it into a viable theatre of operations. For the time being 3 Squadron's total flying time was an astonishing 2,600 hours in nine months.

African interlude

Just as the *Goeben* and *Breslau* had been a cause of concern to the Royal Navy in the Mediterranean, so the German cruiser *Königsberg* was a real threat to shipping in the Indian Ocean.

As early as the 29th September 1914, the light cruiser HMS *Pegasus* had been caught and sunk when the *Königsberg* had slipped out of Zanzibar on a 'raiding cruise'.

Like the Minotaur of Greek legend, the *Königsberg* had slipped back into the waters of the Rufiji Delta, a labyrinth of narrow channels, swamp and reed beds. At the centre of this system she could defend herself from all who ventured near by boat or overland and every attempt to find her was frustrated. Shallow draught vessels could be picked off by her guns and in a similar way to the bocage of the Normandy campaign a war later, vegetation obscured views from one channel to the next.

The obvious solution was to search for her from the air but no aircraft were available in the area. Two old colliers, the *Newbridge* and *Somali*, were sunk in the entrance to the delta to bottle up the *Königsberg* whilst the Royal Navy turned to a civilian, one H.D. Cutler, to assist with an air search. Cutler had been touring South Africa with two 90hp Curtiss flying boats which on closer inspection had definitely seen better days. The Navy pressed one into service and commissioned Cutler to fly her.

Arriving at Niororo Island in early November the 'boat was patched up as well as could be and commenced 'operations' at 0700 on the 22nd. The hull gave serious cause for concern and for the time being no observer was carried. It was proposed that the other Curtiss should be brought up from Durban and the hulls exchanged.[33]

Meanwhile, on his next flight, Cutler encountered a tropical storm and was forced down on an uninhabited island. Only luck saved him and he was found quite by accident. Two days later he would be in the air again.

This time luck was with him and he spotted the ship twelve miles up river. It was initially thought that the position had been wrongly plotted as the channel to the supposed berth was reckoned to be too shallow for a ship of *Königsberg's* draught. Subsequent flights, however, with Royal Navy officers as observers showed that Cutler had been right.

A later flight confirmed that the cruiser had since shifted her position and so on 10 December Cutler set off again to see if she was attempting to break out. His luck did not hold and he was forced to land through engine failure. He was captured, but his aircraft was later recovered by a Royal Navy motor boat from under the noses of the enemy. By December, therefore, all that remained to be done was for a suitable force to be assembled for an attempt to destroy the ship.

On 21 February the reinforcements arrived in the shape of two Sopwith Type 806 seaplanes under the command of Flight Lieutenant J. T. Cull. They were very business-like affairs but their 100hp rotary engines were not up to the task. The tropics have unusual effects on aeroplanes, not least the constant danger of damage caused by the excessive heat and moisture. The hazard of an aeroplane breaking up due to melting glue was a very real one. In flight the aircraft struggled in the thin air and it was obvious that these machines could not carry bombs *and* an observer, to a sufficient height, at the same time. The effort in getting them to East Africa had therefore been a waste and it would not be until the beginning of April that Short seaplanes would arrive to replace them.

The condition of these machines was not much better, being particularly old and, one suspects, "got rid of" to East Africa. They were overhauled and put to work keeping the *Königsberg* in view and photographing her. Even so the Shorts could only achieve a practical height of around at 600 feet because of air pockets and the thin, humid air. On 25 April, the date of the first Short operation, the machine was shot down by rifle fire. Luckily the aircraft landed on the water without mishap and was towed back.

For the moment this was all that could be done as the means with which to attack the ship were not at hand. It was deduced from her position that the only major ship in the area, HMS *Chatham*, could not reach *Königsberg* with her guns and that the job would have to be carried out by a flat bottomed craft. To this end two monitors were asked for but the *Severn* and the *Mersey* would not arrive until June.

In addition to these, two Henry Farmans with Canton Unné engines and two 80hp Caudrons arrived on the 18th. These were sent to a beach on the island of Mafia whence they were taken through the jungle to a prepared airstrip in the interior. Exercises commenced to ensure the success of the operation, but unhappily two of the machines came to grief before they could see action.

And so operations commenced with the two surviving machines on 6 July when *Severn* and *Mersey*

sailed into the north channel and commenced firing at the *Königsberg*. A gunnery duel ensued and the monitors were compelled to retire to make repairs. The German cruiser, however, had also been hit, though her armament, and thus her fighting capabilities, remained intact. Observation work was exhausting, one observer alone putting in 9 hours of flying in one day.

The attack recommenced on the 11th and this time the aircraft would spot for the *Severn* whilst the *Mersey* shifted position to put off the German gunners. Flight Commander J.T. Cull and his observer that day, Sub-Lieutenant H.J. Arnold, were in the air at 200 feet when the first salvo left *Severn*. On the seventh volley the shells were seen to overshoot the target which was then successfully corrected from the air. Just as the next shots were seen to hit the forecastle of the *Königsberg,* Cull radioed that he had been hit by shrapnel and was forced to land on the river. In the anxiety of the moment he found time to make the last corrections that sealed the *Königsberg*'s fate. A huge explosion tore the ship apart. The column of smoke and debris gave the British gunners their target and in less than two hours the ship was little more than burning scrap.

Further reconaissance in August showed that the Germans were attempting to retrieve the ship's guns for use onshore and thereafter the focus of attention would be on a land campaign.

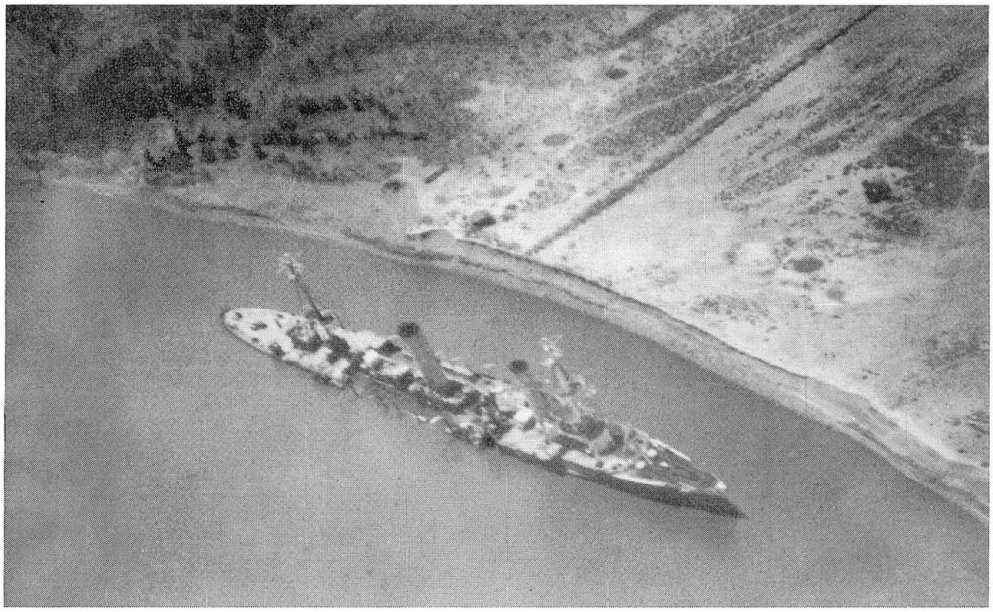
After assembling at Zanzibar and then moving on to Mombassa, the various elements of the RNAS were re-deployed. Squadron Commander R. Gordon, RMLI, and three Shorts left for Mesopotamia on the 12th August, whilst Cull was sent to Maktau to provide support to the land forces from the middle of September.

An armoured car unit was transferred there after the successful completion of operations in German South West Africa and Cull, with his men, worked their way from Maktau to Serengeti and then on to Mbuyuni. Here they were joined by 26 (South African) Squadron.

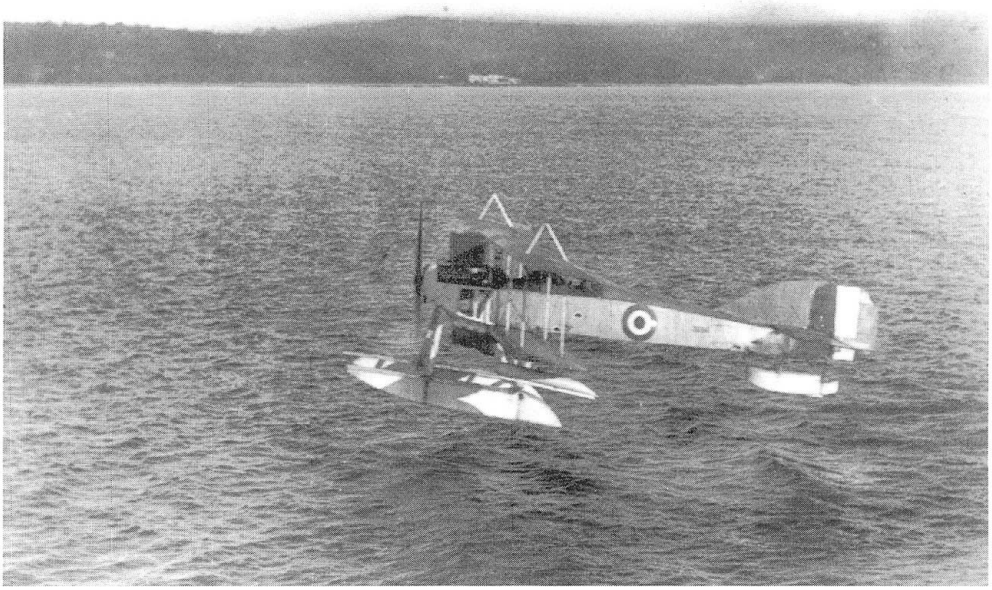
By January 1917 the RNAS units were withdrawn to Zanzibar to operate around Dar-Es-Salaam and the Rufiji Delta again, while 26 Squadron took on the duties left by their withdrawal.

All in all the campaign had been a great success notwithstanding the difficulties imposed by the geography and climate of the area. Flying was interrupted by the rainy season which ran from May to October. This also caused ground mist and cloud to occur, adding to the difficulties of air and ground crews alike. The extremes of terrain alone, not to mention the activities of the native wildlife and particularly gruesome insects, were enough on their own to hinder successful operations and it is to their credit that the airmen were prepared to attempt flights to try to achieve some measure of success.

77: Königsberg *sunk at her moorings in the Rufiji Delta. This photograph was probably taken by the Flag Commander, The Hon. R. Bridgeman DSO. He acted as observer on several flights during the* Königsberg *operations, but was later drowned on 9 January 1917 while on a reconnaissance with Flight Lieutenant Moon, who was taken prisoner. East Africa, December 1916 (IWM SP 989)*

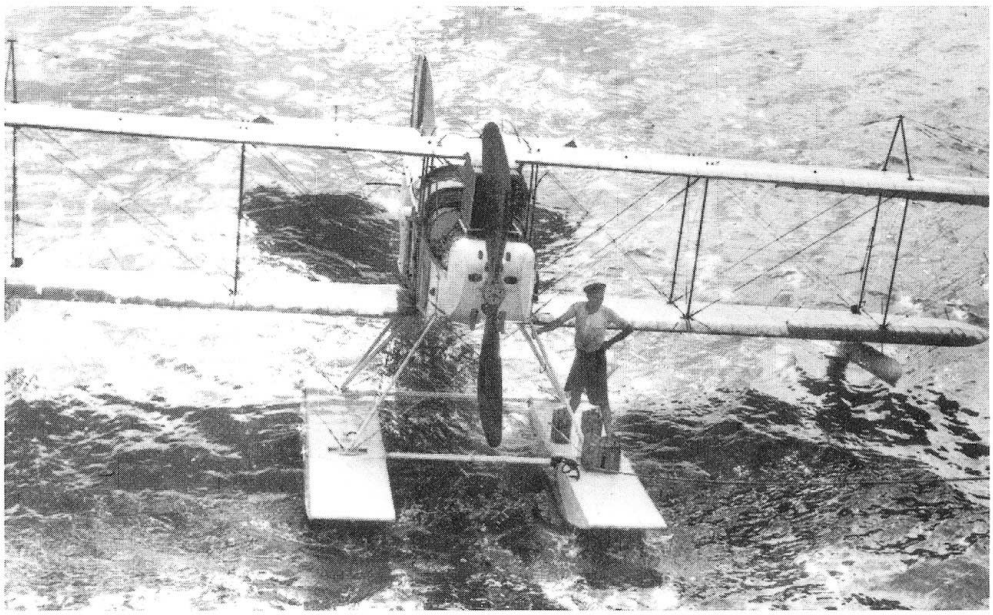


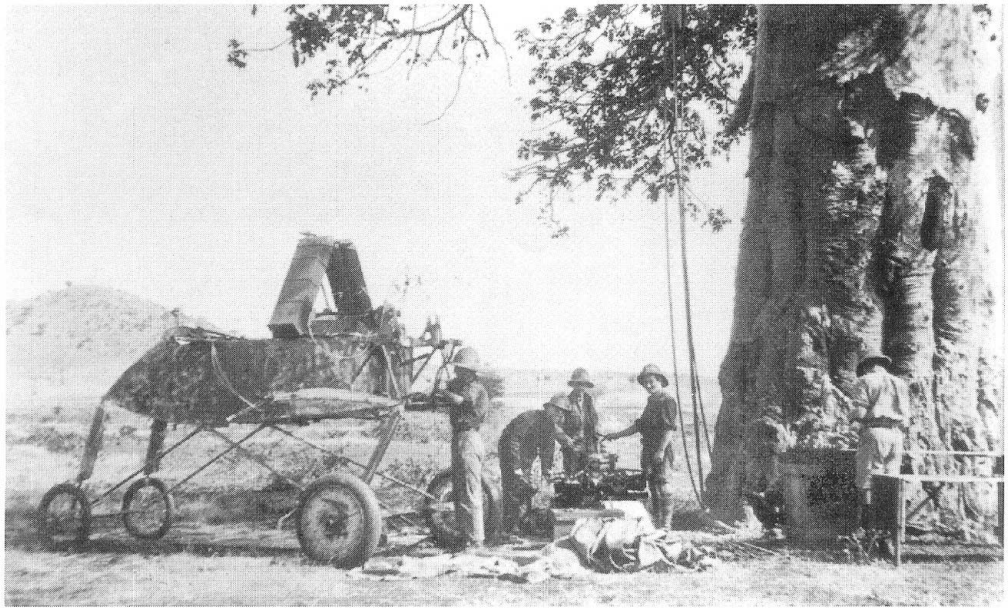
78: *After the sinking of the* Königsberg, *the campaign moved inland. On the coast air support and patrols were still needed to forestall any attempt by German ships to resupply her land forces. This was provided by aircraft from* Laconia, *which arrived in April 1916.* Manica *and* Himalaya *followed in May. Here Short 827 number 3096 'Britons Overseas No.4' of 8 Squadron (not to be confused with 8 Squadron which later served on the Western Front) comes in to land next to the* Manica. *Via Laurie Milner (IWM HU 66636)*



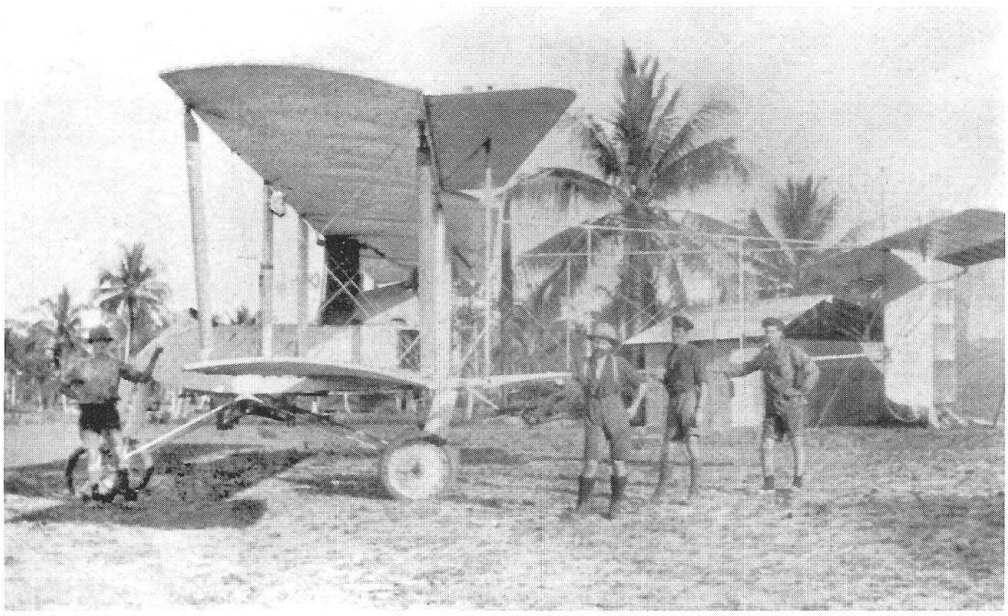
76 Opposite Left: *The crew of the monitor* Severn *approach the wreck of the* Königsberg *to survey their handiwork (IWM SP 967)*

80 Right: *A pristine Short 827 moored alongside 'mother' being hand refuelled prior to a mission. Note the fuel cans on the float. Via Laurie Milner (IWM HU 66642)*

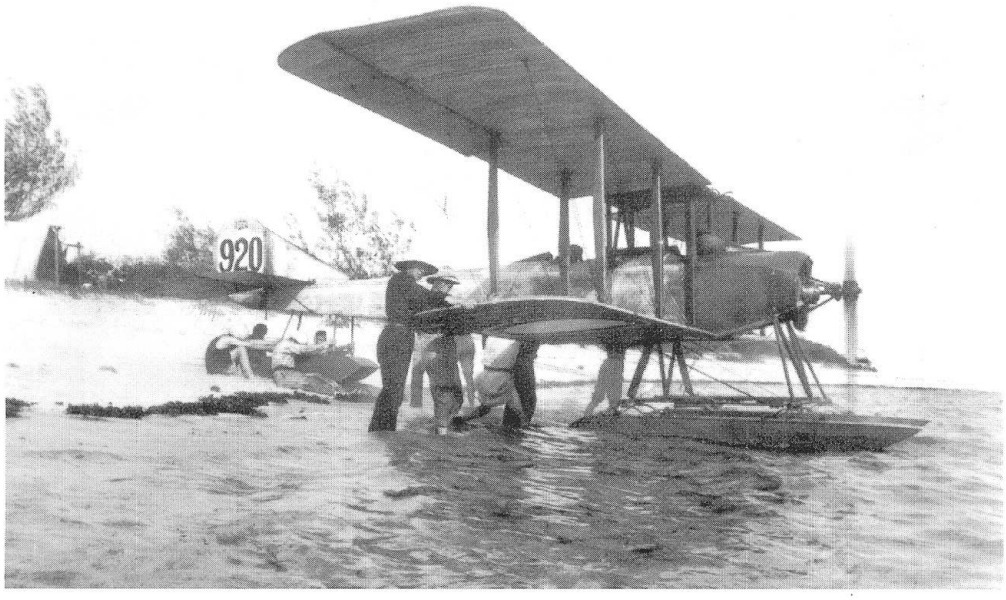




81: *'Under the shade of the spreading banyan tree'. An engine change for a Voisin LAS of 7 (N) Squadron at Kondoa Irangi, East Africa. Note the locally applied camouflage(J.M. Bruce/G.S. Leslie Collection)*

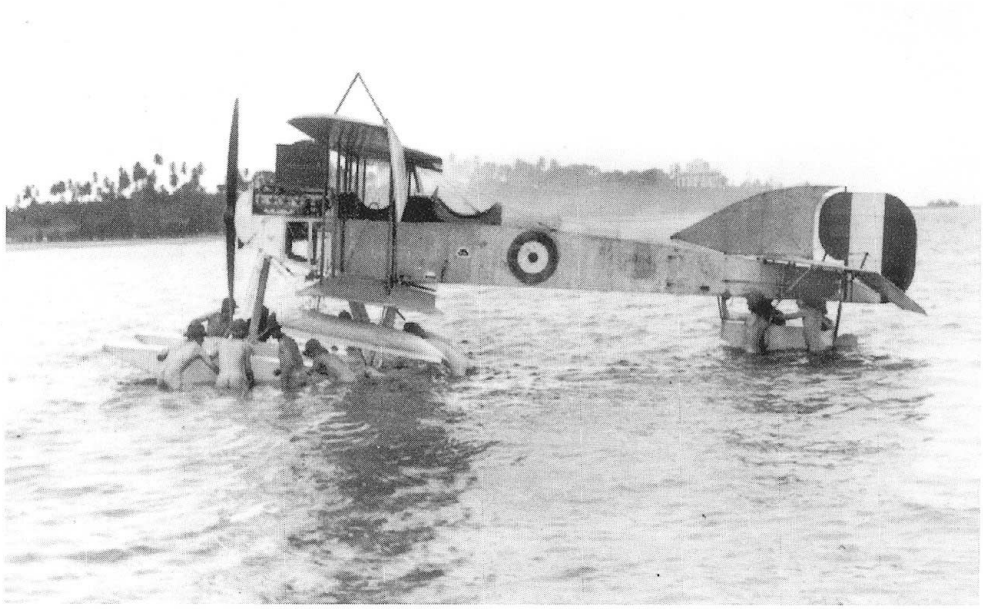


82: *A Voisin LAS of 7 (N) Squadron ashore somewhere in East Africa (J.M.Bruce/G.S. Leslie Collection)*

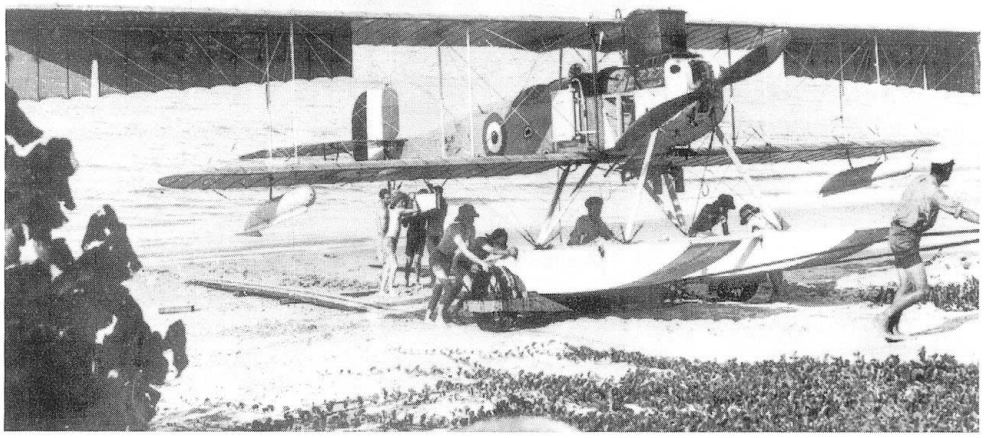


83: *Sopwith Admiralty Type 807 Number 920 during flight testing at Niororo Island, off the East African coast, in February 1915. Based upon HMS* Kinfauns Castle, *the aircraft suffered a series of landing accidents. Condemned in July 1915, and abandoned by the RNAS at Mombassa, it was salvaged by the RFC and somehow found its way to Force D in Mesopotamia in October. It was eventually written off after yet another forced landing in January 1917 (J.M. Bruce/G.S. Leslie Collection)*

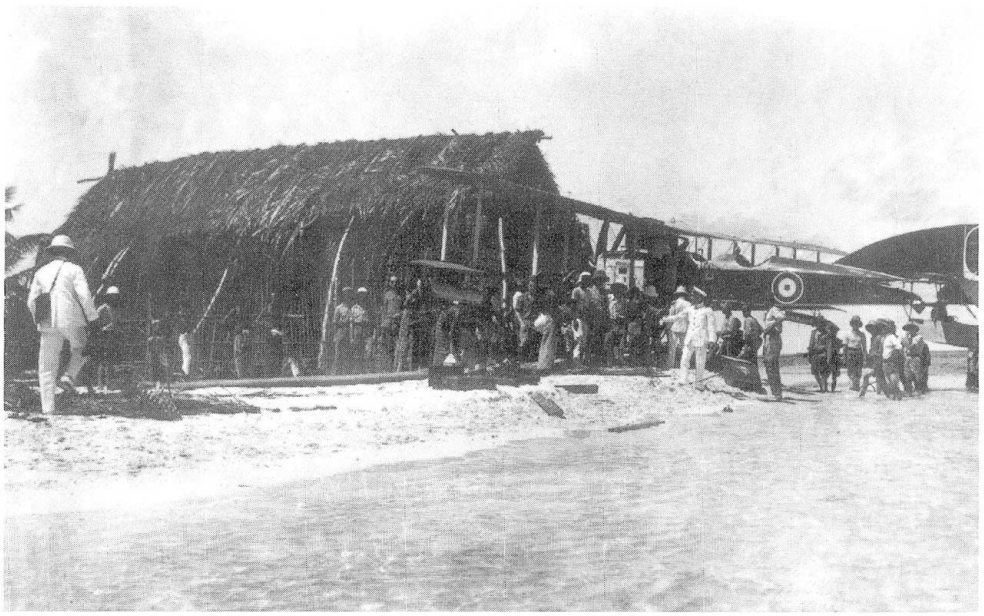
84: *Short 827 Number 3096 is manhandled off Zanzibar in mid-1916. This machine was one of the first to arrive in the area on the SS* Clan MacPherson. *3096 operated from* Manica, Laconia *and* Himalaya *as often as from the shore stations. She stayed out for a year, receiving a major overhaul in November 1916. Note the very cool tropical uniforms being worn by the handling party. Via Laurie Milner (IWM HU 66647)*

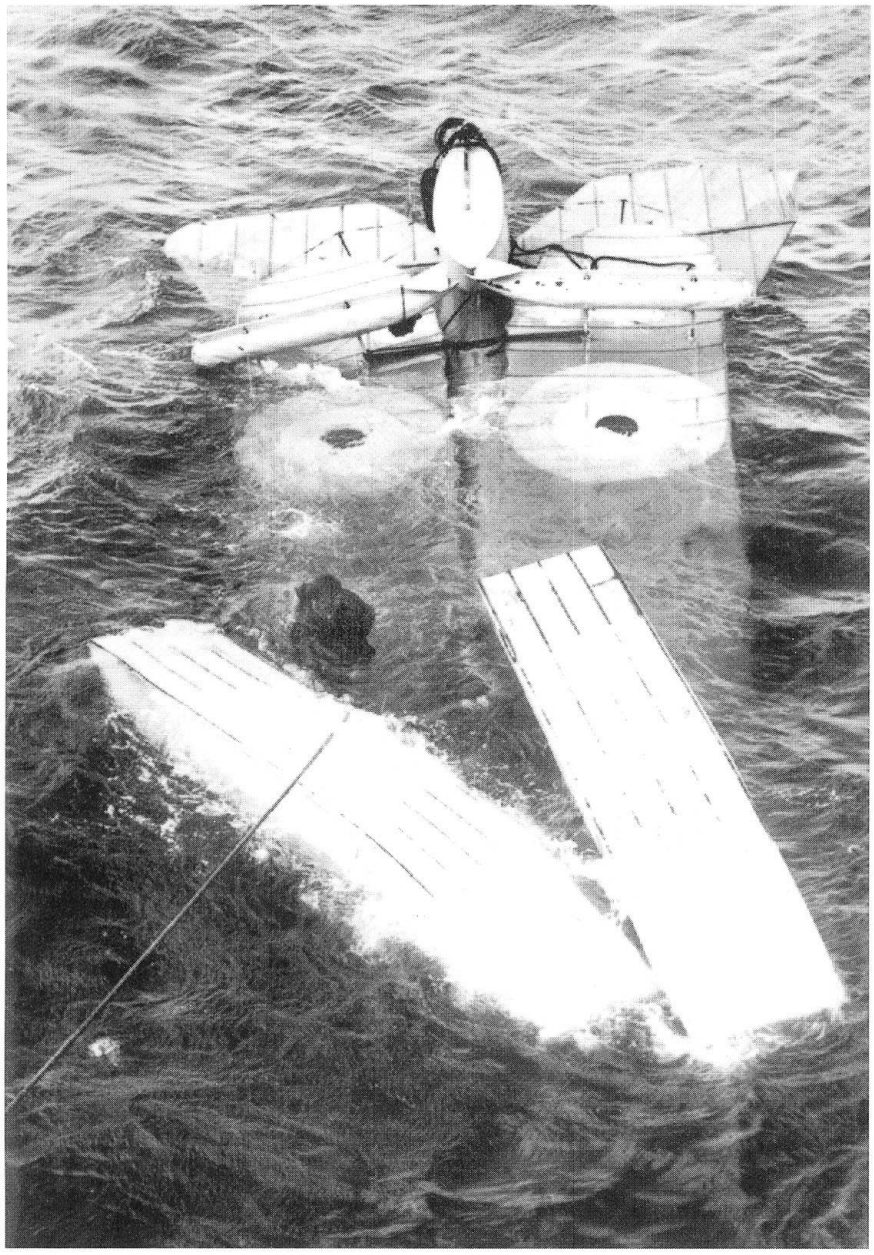


85: *Short 827 Number 8641 is brought ashore at Chukwani Bay on Zanzibar Island in 1917. Via Laurie Milner (IWM HU 66643)*

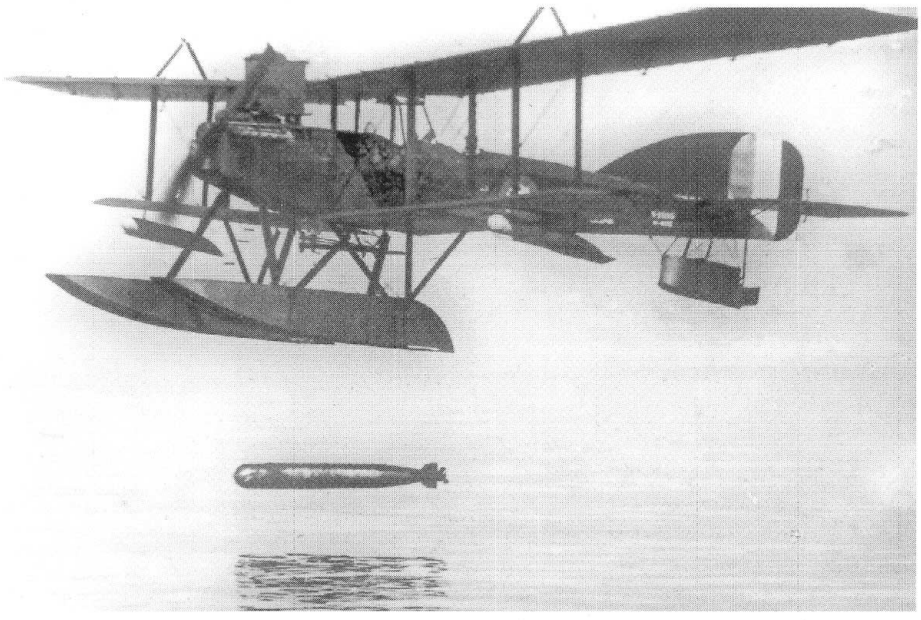


86: *Aircraft of the RNAS ranged far and wide. This Short 184 (8018) was fitted with tropical filters and served with* Raven II *and* Empress *during their exploits in the Mediterranean and Persian Gulf. Here she is even further afield, being beached on Male Island in the Maldives in the Indian Ocean. When* Raven II *went to Colombo for coaling, 8018 was sent on a reconnaissance of Ari Atoll on 21 April 1917. Blown off course, she found her way to Male where she was recovered by the mother ship on 6 May (IWM HU 67874)*

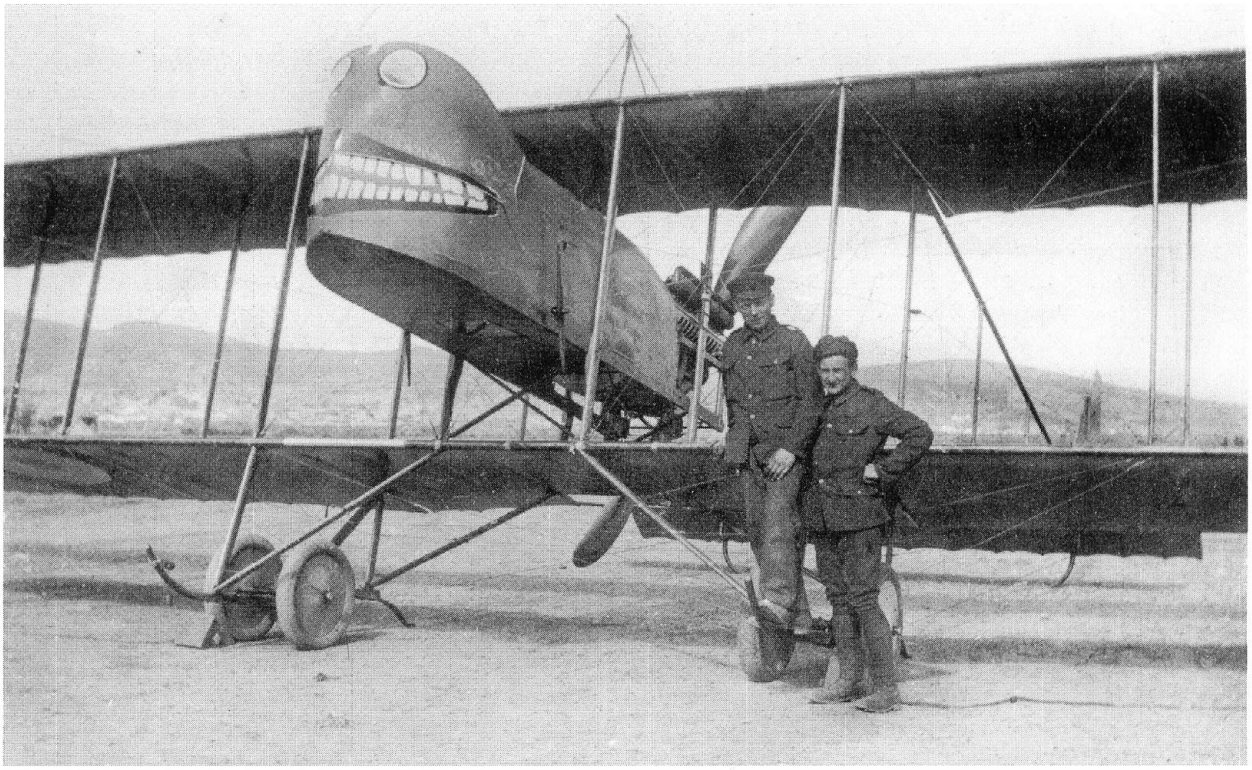




87: *This is probably the wreckage of Short 827, Number 8642. She was on her way from Zanzibar to Dar-Es-Salaam when she overturned. Although she looks fairly intact here, she broke to pieces in the swell despite an attempt at salvage. Note the man in the water attempting to secure a line. Via Laurie Milner (IWM HU 66638)*



88: *An 18-inch torpedo drops from a Short 320 seaplane (so called because of the original powerplant, a 320hp Sunbeam Cossack engine). Developed to take on U-boats in the Mediterranean, the type met with little success. A torpedo school was established at Malta and these machines operated with 6 Wing from Otranto and Brindisi to try their luck in the Adriatic. 6 Wing was formed in March 1917 and was commanded by Charles Edmonds, who had earlier performed the first successful torpedo attack in aviation history, on 14 August 1915 (IWM Q 27453)*



1915-1917
Aegean blockade

When 3 Wing was disbanded some of the equipment and personnel were transferred to the newly arrived 2 Wing and a major re-organisation took place. With the withdrawal of land forces from the Dardanelles Peninsular, the Royal Navy began blockading the coastline. There was also a need to protect allied merchant and naval shipping plying the length of the Mediterranean. The main activity was to concentrate on attacking Turkish positions on the Peninsular, bombarding Smyrna and other coastal targets of opportunity.

Imbros remained the main airfield for aeroplanes for the time being. Six-foot two Francis Bremner was posted with five others to 3 Wing and would stay on with 2 Wing during 1916. He went overland to Paris, eventually arriving at Headquarters at Mudros, on the island of Lemnos. Sent on to Imbros, he quickly encountered some unexpected difficulties. The airfield nestled in between eccentric features, a salt lake to one side, the harbour the other. Ahead were some hills and sand dunes which funnelled the wind in unexpected directions and made each take-off an experience in itself. The other problem was the surface of the aerodrome. At home in England all the airfields were of grass, so that ".... by glancing over the side as you were landing, you could tell by what the grass looked like as to roughly what your height was. Once you could see the blades of grass then you knew you were pretty close to the ground".

Imbros, in contrast, was a *mud* aerodrome and judging height had to be re-learned. On one occasion a ferocious headwind whisked him up to 1,000 feet when suddenly his engine cut. Unable to land straight ahead because of the sand dunes he was forced to turn back to the aerodrome, a most dangerous manoeuvre that rarely ended happily for the pilot concerned. Just clearing the aircraft hangars he made a vertical turn over the salt lake with only a foot to spare under his wing tip. Levelling out, all seemed to be going well when a gust of wind came down from the hills and clutched him back up to fifty feet. He landed upside down unhurt, only to tear his breeches as he clambered out. Crashing seemed to be the least of his worries as any number of things conspired to kill personnel — Bremner goes on to say, "Then I saw the soil cart, which was also the ambulance."[34]

The inherited aircraft on the squadron's strength were also interesting:

"I was flying the old Voisin, which was a queer old machine; it was built of bicycle tubing and had a four-wheeled undercarriage and if you made a bad landing

89 Above: *This oft-photographed and famous aircraft was part of 2 Wing at Imbros and arrived in 1916. Known variously as 'Goo Goo', 'The Bogey Man' or 'The Gooney Bird', it was a Maurice Farman M.F. 11bis, Type 37, serial number 9133. It crashed on landing after a night raid in June 1916 (John Edmunds)*

it galloped across the airfield and you had to get off again. Once you got off it went on galloping in the air until you could get control of it."

Apart from the aircraft, an airship base — with one SS airship — was established at the HQ in Mudros. Two seaplane carriers and two kite balloon ships completed the force. Command passed to Wing Captain F.R. Scarlett in February and attention was turned to the possibility of extending offensive activity to railway lines and other forms of communication on the mainland. To do this an additional Wing was requested and another squadron for 2 Wing thought necessary. The new Wing was not approved. 2 Wing, however, did maintain its structure with a squadron each of two-seater fighters, reconnaissance aircraft and two of bombers.

This situation could not last for long and a major re-think of policy in the Mediterranean was undertaken. At a conference in Malta at the beginning of March, it was decided to extend the zone of operations along the whole of the southern coast of Turkey as far as Cape Alupo. It was also decided that whilst aircraft patrols would be spread along the entire region, the bombing force would be highly mobile and able to operate quickly wherever needed. It was also understood and acted upon that facilities would be placed out of reach of reprisal attacks.

A new aerodrome was built at Thasos, well within range of prime targets vital to the Turko-Bulgarian[35] lines of communication, and a small force of three Henry Farmans (which Samson in the previous year had dubbed "useless for war work") a Nieuport Scout and two Bristol Scouts were sent from Imbros in May. Bremner went with them.

"It was a very much more isolated place than Imbros. It was a very difficult aerodrome to approach because it was on a piece of land which rather jutted out into the sea; the land sides were high hills."

The first two aircraft to land crashed in the down-draught. Nobody else dared follow and Bremner, who had orders to land last and to protect the only single-seater at all costs, tentatively took the initiative and went down for a closer look. It appeared that there was a strip that went across the runway which looked like a dip or a ridge in the ground. The others had mistakenly over-compensated for what in reality was only different coloured grass and had been caught by the wind sweeping down from the hills for their pains.

The group lived in tents and as usual shared the island with the omnipresent flies.

"If you were eating jam you had to wave your hand over the jam all the way from the plate to your mouth to make sure you weren't eating flies. The only time to use the latrines was just before lunch. As soon as the gong went the flies left the latrines and went to the mess tent!"

A group of French fliers were attached to them and the combined unit was wearily designated 'A' Flight. The RNAS thought the French woefully unprepared for campaigning. Dubbing them 'amateurs', they had very little in the way of food and supplies. They really were a mixed bunch. The Adjutant was named Préjelan and was an artist for *La Vie Parisienne*; another pilot, Constantini, a pre-war racing-car driver who called Bremner "le grand pilote du petit Bristol", introduced himself "by smacking his chest and saying 'Je suis Constantini, pilot du Nieuport, très bon pilote, moi'. "

The 'amateur' jibe did not, however, extend to their flying abilities. They were also first-class mechanics, especially Constantini, who helped to sort out many a technical problem with the French-built Nieuports and even showed Bremner how to land one properly. They were very generous with the expertise and spares, giving Bremner a real Bosch magneto, a rare commodity which he would transfer from aeroplane to aeroplane.[36]

Thasos was in effect the eastern outpost of the line which extended from here through to the island of Stavros and on to Salonika. Operations included many attacks on crops in Bulgaria with petrol bombs made on the island, but generally little happened that Bremner thought of as "any use".[37]

The official history does however cite persistent attacks on railway lines, passing traffic and supply dumps. In October a large bridge over the River Nester was hit and a span was completely demolished. Another bridge was attacked at Shimshirli on 30 October with similar results.[38]

Spotting for monitors was also undertaken from Thasos. This had its own hazards and pilots learnt to give the monitors a wide berth.

"I used to fly circles round the target and then fly an extended sweep round over the ship to see if she'd laid out [any signals] and then go back. I did a figure of eight and crossed the line of fire. I was very careful not to do this until I could see the top of the gun barrel. Once I could see that I knew I was under the trajectory. On one occasion she fired just as I was crossing her; I wasn't high enough above because a 15-inch shell passing underneath me created such as disturbance that my own machine went down just like a stone. I sort of hit the bottom of the air (or the hole, let's say, that the shell had made in the air) with a bang and my wings went up a bit, and then I was all right, but I think I dropped about 500 feet."

Accuracy was another matter entirely:

"The target was very often behind a range of hills and the navy aren't very good at that. You see, you don't have hills in the sea. You see your target, there's nothing in the way, you just fire at it. With us sometimes you would report that the shell was a few yards short and then the next shell was a few miles over, because it just cleared the top of the hill and it was a long time before the shell came down. They hadn't anything like a howitzer. All the naval guns had too much too flat a trajectory for that sort of work. The Admiral once said to our CO, 'How is it that I do so much better shooting when the French are spotting than when you are?' and our CO said 'Well, sir, the French are very polite'."

'D' Squadron was stationed at Stavros and carried out similar work for 80 Brigade at Sturma and of course for ships protecting the seaward end of the flank. An SS airship was stationed there for anti-submarine patrols in the Gulf of Salonika, whilst 'B' Squadron was based at Mitylene. 'C' Squadron was the designated unit at Imbros which attacked shipping and railway lines in the old Dardanelles battle area and beyond in the vicinity of Constantinople.

As far as aerial conflict was concerned the enemy were very inactive until the last two months of the year when all three airfields were bombed. By the end of 1916 Thasos was itself heavily raided by enemy aircraft from the airfields at Drama and Xanthi, so it was not all a one-sided affair.

The mobile units were very much the preserve of the seaplane carriers, initially *Empress* and later *Ben-My-Chree*, *Raven II* and *Anne* which had been at Port Said since the evacuation of Gallipoli. *Raven II* and the *Anne* were captured German tramp steamers converted to take two seaplanes each. They provided much needed reconnaissance support and ranged the length of the Mediterranean, harrying Turkish positions along the coast of Palestine and even venturing back into the Persian Gulf for operations off Aden.

In one attack the three ships split and placed themselves at points stretching over a hundred miles. Over the next few days their aircraft attacked targets all along the coast from Adalia in Turkey to Bureir on the Egyptian border. It had all the trademarks of a commander like Samson, who just happened to be the new Captain of the *Ben-My-Chree*.

By early August it was felt that a small re-organisation of the RNAS would be beneficial. Stavros became the centre for aircraft engaged on co-operation work whilst Thasos was used for seaplanes on anti-submarine duties and fighter escorts. These units concentrated on the Bulgarian Sturma Front and the units based at Imbros and Thermis operated over the Dardanelles.

Mudros had up until now been the headquarters station, providing logistical support to all the other units in this theatre. In June, however, bombing operations were started from here and to this end a Handley Page 0/100 was flown out from England (a flight of some 2,000 miles) by Squadron Commander K.S. Savory. Later, with Flight Lieutenant Maclelland and Lieutenant P. Rawlings,[38] an attempt was made to bomb Constantinople. The aircraft arrived over the city at 11.55 pm after a flight of 3 hours and twenty minutes, and circled Stenia Bay. Here they found their targets — the *Goeben* and *Breslau*. On the first pass, four 112lb bombs were dropped and fell alongside the *Goeben*. An explosion was seen and then on the second run, four bombs hit the same vessel just forward of the bridge area. The aircraft then moved up to the Golden Horn River and attacked SS *General*, a supposed headquarters ship. Bombs were seen to strike her as well as a building in the town thought to be another HQ. The huge machine returned safely to Mudros, landing at 3.40 a.m.

Captain Graham Donald was based on Imbros and was in charge of one of the Camel flights there. Part of their work was to patrol the Dardanelles in case the *Goeben* and *Breslau* made any attempt to enter the Mediterranean. On the 19th January 1918 some of the pilots were going away on leave and a party was held that evening that lasted into the small hours. To their horror they were woken at about 7 a.m. with shouts of "The *Goeben*'s out! The *Goeben*'s out!" Both the *Goeben* and the *Breslau* had managed to slip their moorings and break out into the Aegean. Everybody grabbed what machine he could, the bombers at Imbros being always at the ready. Donald's own Camel was under repair at the time and so all he could find was a spare Pup with near empty tanks.

The dawn patrol had missed the breakout, not realising that the ships had already passed them. The cruisers bombarded Kephalo and Kusu and sank both *Monitor No. 28* and HMS *Raglan* at anchor. They were then spotted 5 miles from Kusu and were shadowed by seaplanes as they made their way south. Aircraft from Imbros constantly harried the two ships and dropped everything they could on them, forcing the *Breslau* to zig-zag her way into a minefield where she sank "most convincingly". The RNAS therefore claimed the victory as they maintained that they had forced her into the minefield in the first place.

The RNAS then turned their attention to the *Goeben* which made off for the Dardanelles. Bombed again and listing 15∞to port, she was run aground at Nagara Burnu, close to a German seaplane station and "the finest anti-aircraft guns" in the area. For the next week the ship was constantly attacked from the air, Donald and his Camels providing fighter cover for the bombers. When the bombers had done their job, the

Camels swooped down and strafed the ship with machine gun fire.

"The air was stiff with German fighters. They were attacking our bombers and several got shot down. It was one long confused mêlée dogfight. The one thing that mattered was the *Goeben*. All the RNAS planes in the Aegean were attacking her; quite a lot of RFC 'planes from Palestine—fully 70 aircraft."

Eventually, she was refloated and escaped back to Constantinople under the cover of darkness.

Help for Romania and Russia

While the RNAS were engaged in harrassing the enemy from the Mediterranean, other RNAS units were doing so from an unexpected quarter—Russia.

Oliver Locker-Lampson was an MP who raised his own armoured car unit for service in Flanders. When the trench lines became fixed on the Western Front his unit, numbered 15 Squadron, was faced with disbandment. (Indeed the RNAS became keen to divest itself of land units and transferred some to the army. Thus the Duke of Westminster's 2 Squadron went to Egypt and elements would eventually support Lawrence in Arabia). Locker-Lampson was in many respects similar in outlook to Samson. He was an expert at getting his own way despite the wishes of his senior commanders and had a devoted following among his men. With his unit facing extinction he managed to engineer an official request from the Russian authorities for the services of his unit as a part of wider allied support for the Eastern Front, with the added bonus that his unit was expanded to a division.

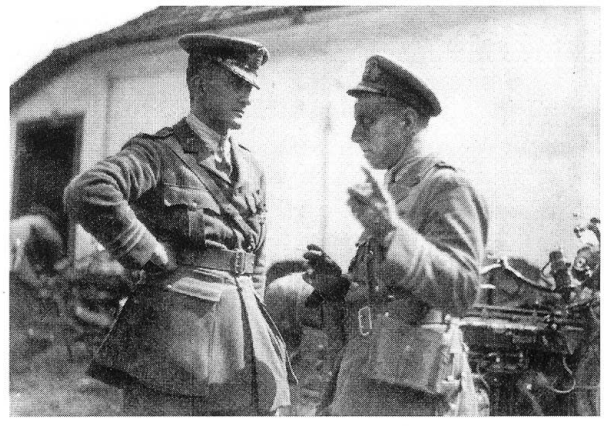
They landed at Alexandrovsk (later Murmansk) in January 1916 with 33 armoured cars and four heavy Pierce-Arrow lorries armed with 3-pounder guns. Support vehicles included wireless trucks, command vehicles, cranes and staff cars.

After a suitable working-up period Locker-Lampson found his unit work in the south of the country. His units were spread along the border with Turkey and North Persia between the Black Sea and Caspian Sea. Not only did they have to fight Turks but also the local Kurdish population who had been incited to rise and attack their Russian overlords.

When the campaigning season started to slow down for the winter in September (the Caucasus Mountains are inhospitable at the best of times) the British Armoured Car Division, as it was known in Russia, was faced with the prospect of a long period of inactivity. All units of the division were collected and moved to Odessa when suddenly Romania joined the war on the Allied side. The Division thereafter operated on the Galician Front and in Romania, helping to stiffen the Romanian sector when her inexperienced army was rolled back in the face of Austrian and Bulgarian attacks. They would stay in Russia throughout the trials and tribulations of first the Kerensky administration, and then the Russian Revolution. This was a time when the unit found itself in a very difficult position. After Russia extracted herself from the war with Germany, Leon Trotsky (then in charge of Foreign Affairs) played a cat and mouse game with the division; there were attempts to arrest members of the units, raid their winter quarters at Kursk and even confiscate their equipment. Eventually the Division managed to extricate themselves through Murmansk. They would, however, return to Russia as part of the British 'Dunsterforce', operating again in the sweltering region on the Persian border, but this time against the Red Army.

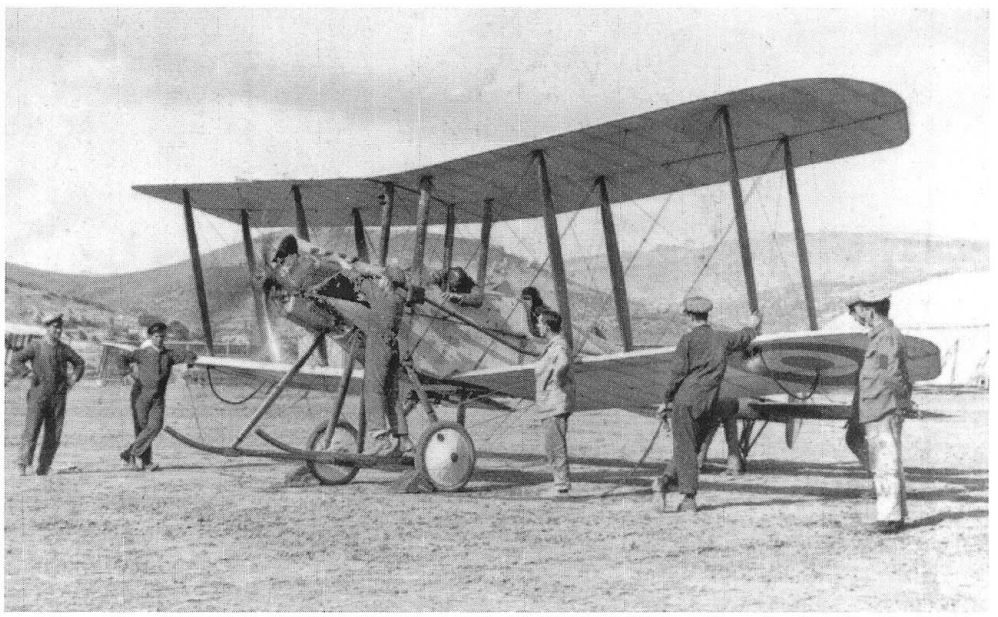
While Locker-Lampson was in Romania another unit of the RNAS of a more conventional nature had been ordered there. Two groups of aircraft were sent from 2 Wing on Imbros and were designated 'S Squadron'. The first party arrived near Bucharest on 25 October 1916, the second followed in November and consisted of the usual motley collection of Farmans and Nieuports. Known to the Romanians as the 'English Squadron', they had little influence on the conduct of the war on this front, but did supply valuable instruction and experience to the fledgling Romanian air services. The crews of the two-seaters flown on operations usually consisted of British pilots with Romanian observers. A few combats were recorded and at least one 'German' aircraft was shot down by Flight Lieutenant A.F.F. Jacob on 23 December. (Jacob had flown Nieuport 12 number 8525 to Romania, but had got lost and landed in Russia by mistake. He had eventually reached Bucharest on 30 November).

When Bucharest fell in late 1916, S Squadron left their aircraft to the Romanians and, along with some volunteer nurses, were issued with British passports by Locker-Lampson who provided escort and facilities for their evacuation as well as getting his own units away from encirclement.



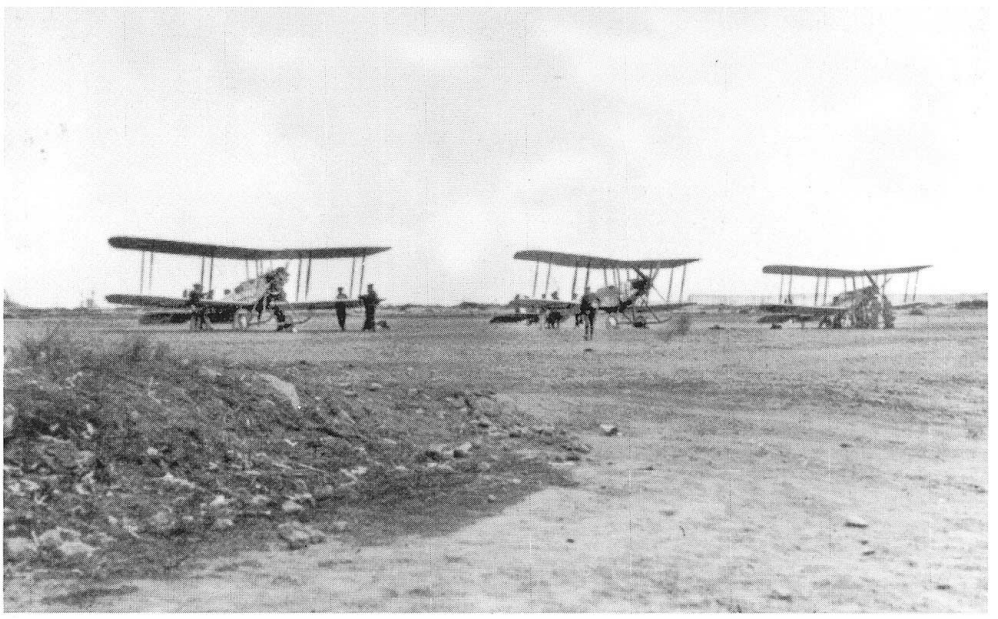
91: *B.E.2c No. 1111 clearly shows the early Union Jack marking on the fuselage with an RNAS red and white roundel under the wing. No. 1111 arrived at Tenedos on the SS* Nankin *and served with 3 Squadron/Wing until December 1915 (IWM Q44284)*

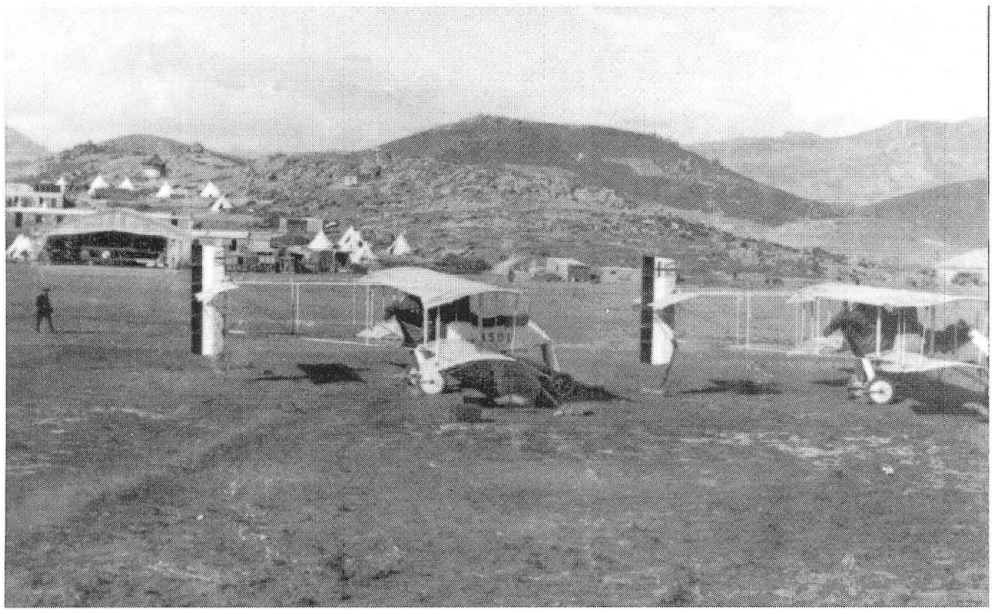
92: *Last minute adjustments to the engine of an anonymous B.E.2c on Imbros (Barry Ketley)*



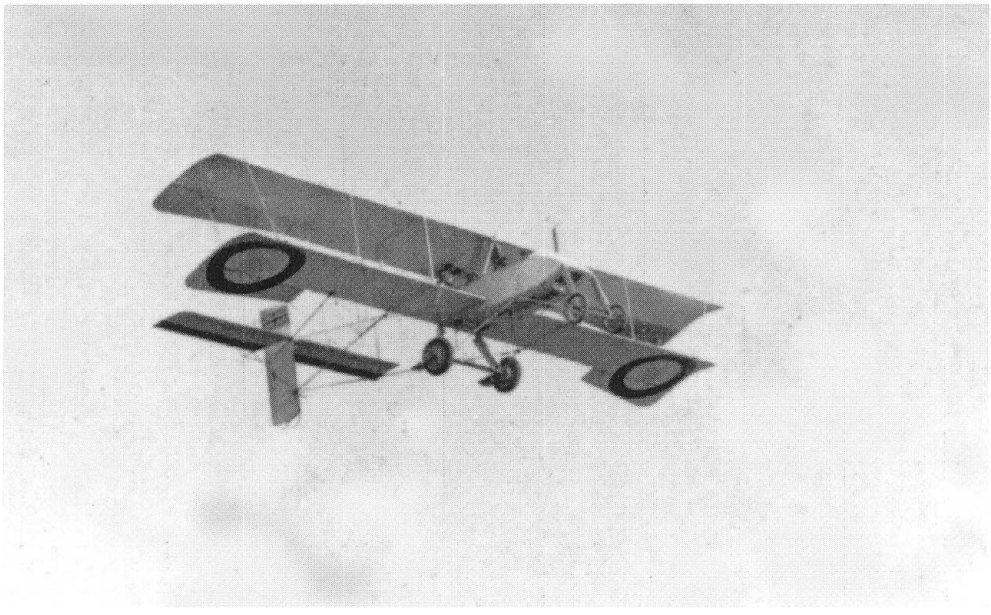
90 Left: *Commander Oliver Locker-Lampson and one of his (dusty) officers. MP for the North Huntingdonshire constituency, he raised 15 Squadron on his own initiative and paid some of its expenses himself. He was eventually awarded the CMG and DSO. In 1918 he was appointed the Russian representative at the Ministry of Information (IWM Q 81081)*

93 Right: *Three regrettably anonymous B.E.2c aircraft of 2 Wing being prepared for a mission on Imbros, sometime in 1916 (Barry Ketley)*

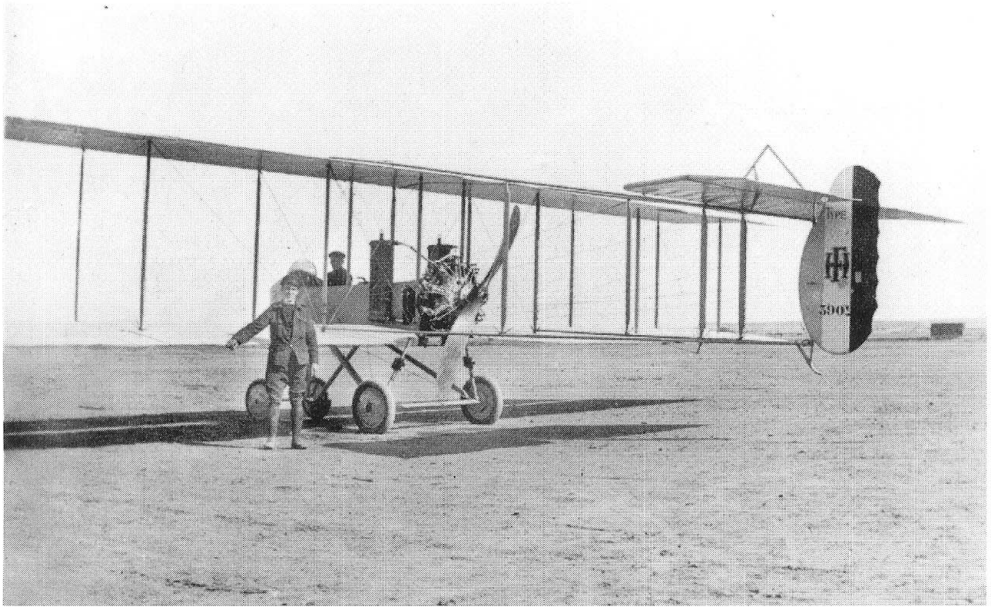




94: *Two Voisin LA.S bombers, Nos. 8501 and 8503, probably of 3 Wing at Imbros in summer 1915. 8501 was written off in early 1916, while 8503 force landed in a salt lake on 17 January 1916. Note how the early Union Jack markings on the rudders have been supplemented by stripes (Barry Ketley)*



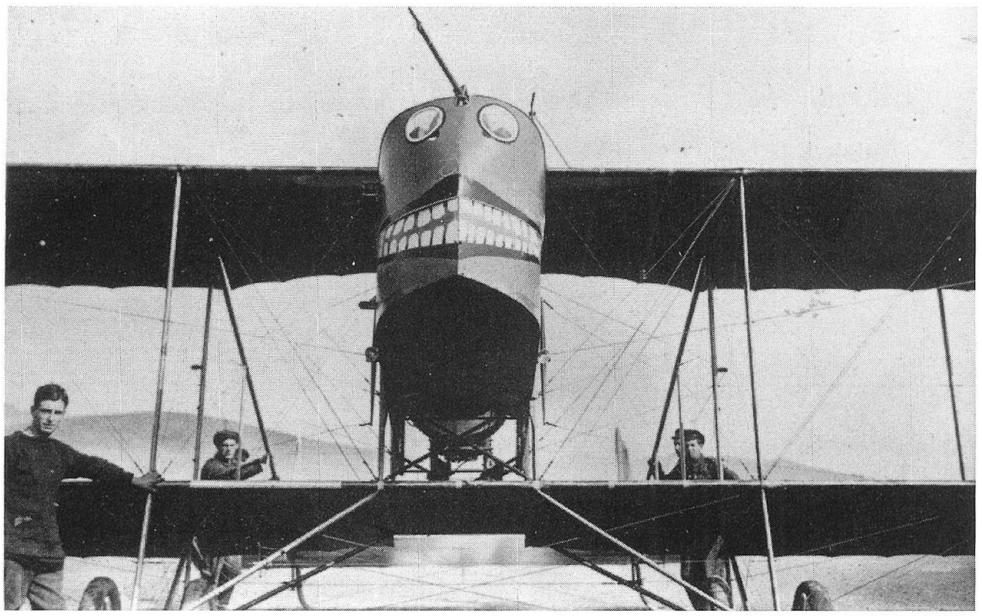
95: *A rare in-flight shot of a Voisin LA.S, one of five serving variously with 3 and then 2 Wing at Imbros from summer 1915 until early 1916 (Barry Ketley)*



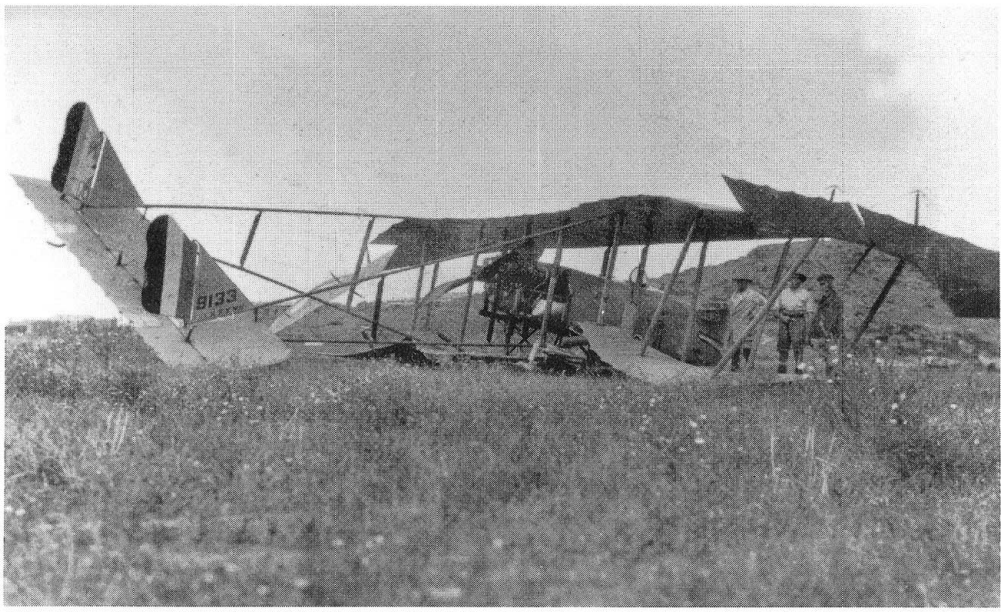
96: *Harry Pearson stands next to an all-steel Henry Farman F.27, number 3909, of 2 Wing at Imbros in the summer of 1916. Powered by a 150hp Canton Unné, the F.27 was a vast improvement on the earlier 80hp F.22 which Samson thought "useless for war work". Note the company monogram on the rudder (John Edmunds)*

97: *Naval personnel examining the wreckage of an unidentified Morane-Saulnier Parasol, which still retains its original French construction number, MS 297. Six of these aircraft were delivered to the Aegean in August 1915 for use by 3 Wing. Given the RNAS serials 3257-3262, the aircraft retained their French markings and only carried their RNAS identities on the fuselage sides. Details of the fates of these aircraft are not recorded, but the gloomy expressions and state of the remains suggest that this one was lost in a serious accident (Barry Ketley)*

98: *Aggressively armed with two Lewis guns, this is Maurice Farman 'M3', otherwise known as No. 1381 of 3 Wing at Imbros in late 1915. Powered by a 110hp Renault engine, this machine lasted until January 1917 (J.M.Bruce/ G.S.Leslie Collection)*

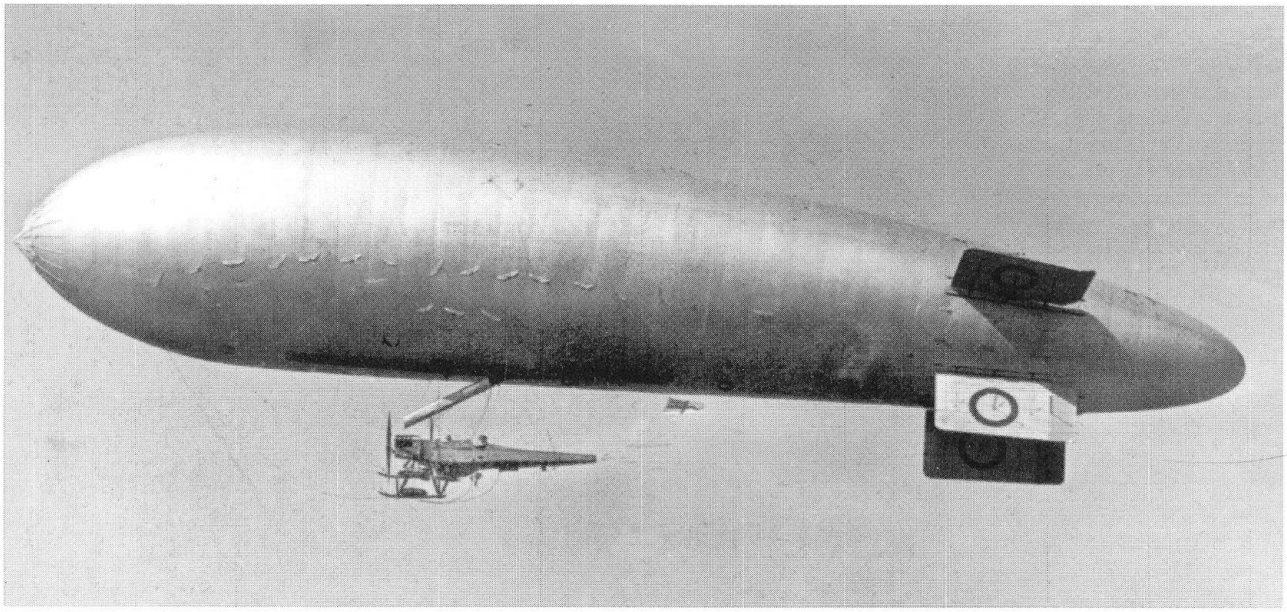


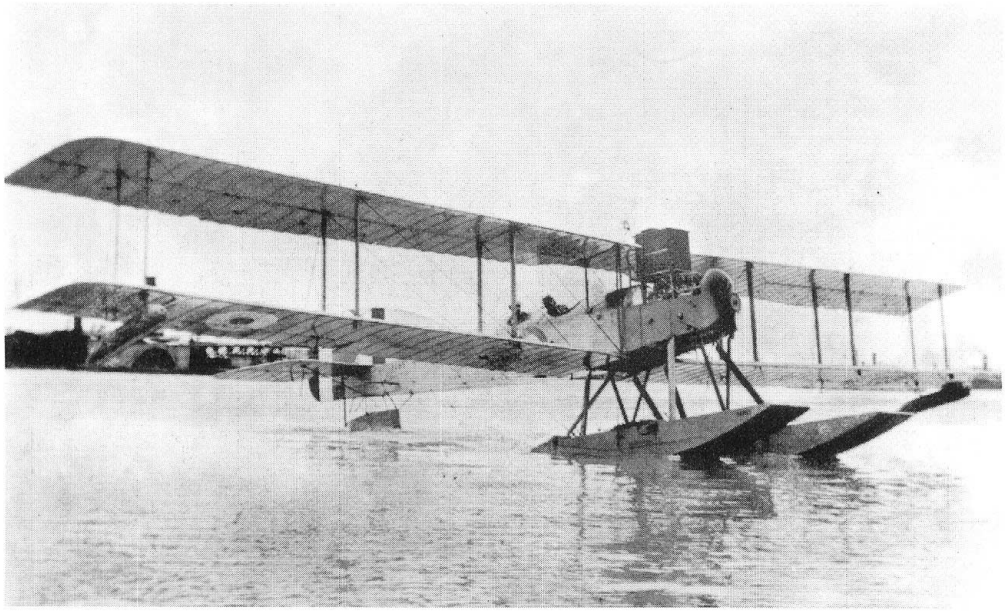
99: *Another view of the 'Goo Goo', Maurice Farman F.37, No. 9133, whose comical appearance is offset by what appears to be a stripped Lewis gun on a flexible mounting. Just visible on the lower edge of the nacelle are two small landing lights. These were not enough to prevent the aircraft crashing on return to Imbros from a mission in June 1916 (J.M.Bruce/ G.S.Leslie Collection)*



100 Left: *The tail end of the 'The Gooney Bird' after crashing while landing at night in June 1916. The serial (9133) is clearly visible in this view (Barry Ketley)*

101 Below: *This is most probably SS BE 19, the only airship of its type to serve in the Aegean. With a B.E.2 fuselage for the crew, it was not unknown for the engineer, if necessary, to start the engine in the air while standing on the skids. The tube above the Renault engine is the blower to the ballonet. Note the white ensign (Barry Ketley)*

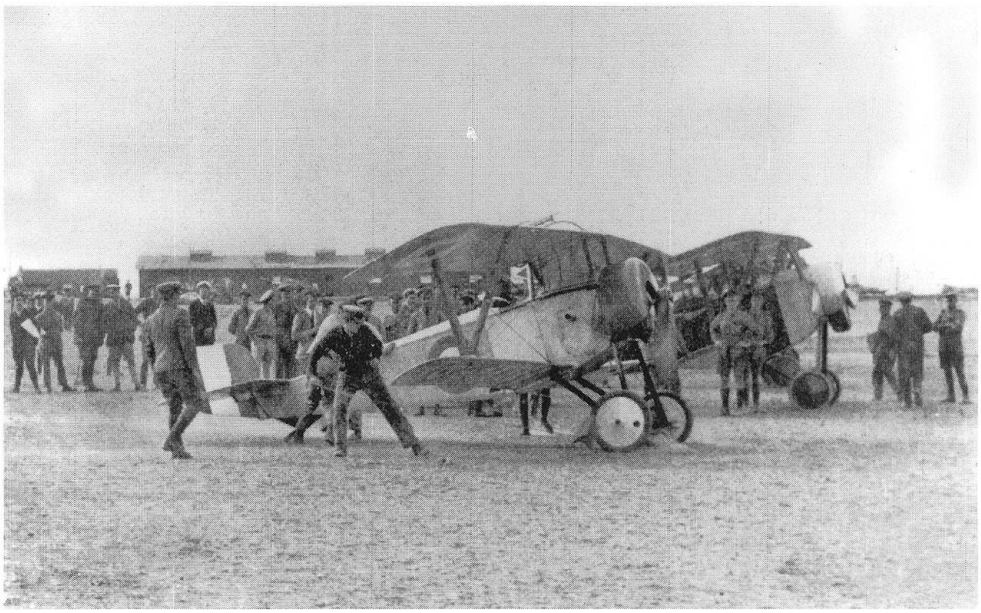




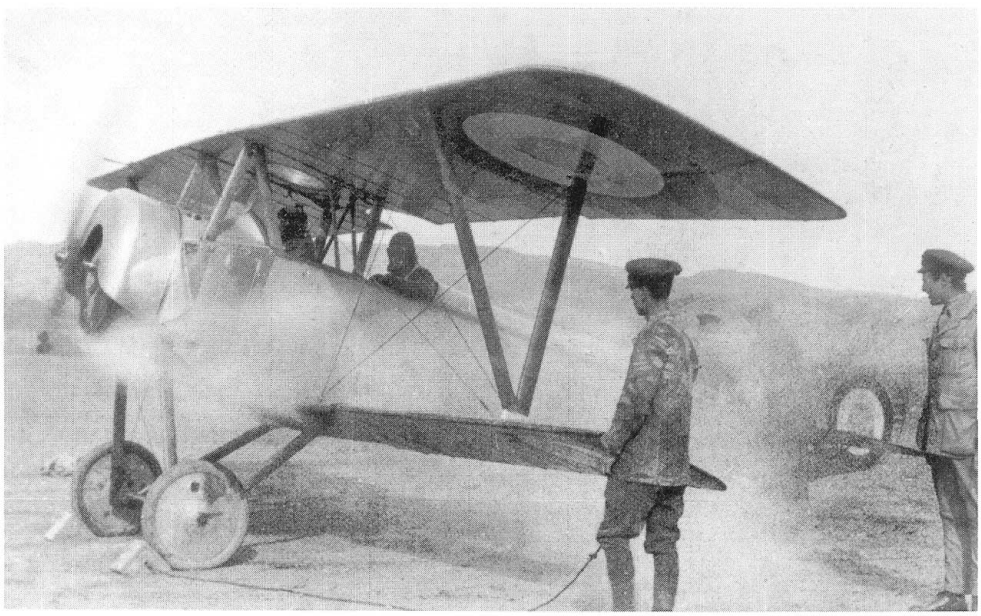
102 Left: *Short 184 number 8085 operated with both* Anne *and* Raven II *in the Mediterranean and from Port Said following the evacuation from Gallipolli. Via Laurie Milner (IWM HU 66644)*

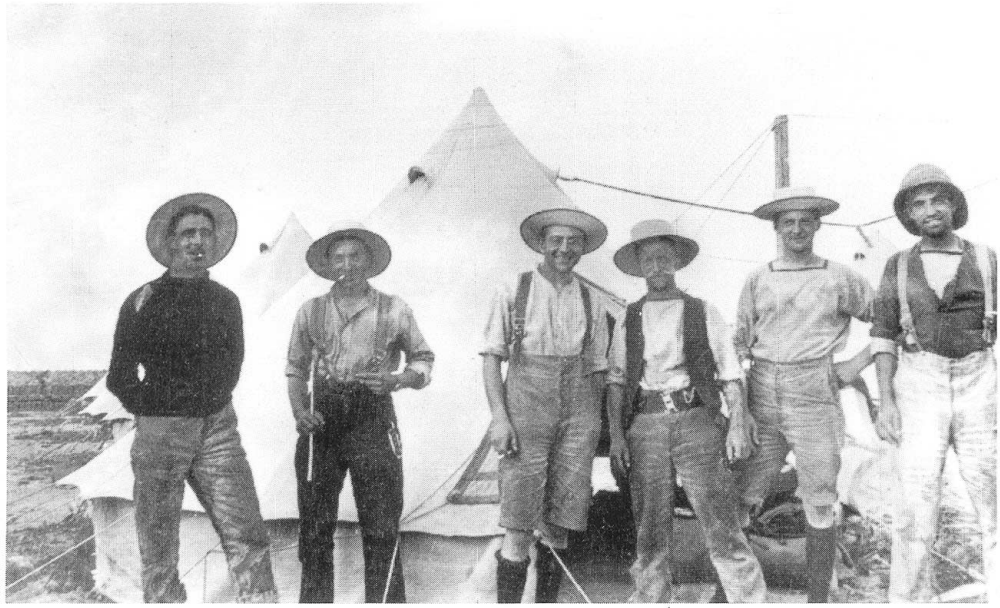
103: *Typical of the many attempts to increase firepower, this is a Nieuport 12 with three Lewis guns. This is possibly No. 3925 which was delivered to 2 Wing at Imbros in June 1916 and nicknamed the 'Gunbus' (Barry Ketley)*

104: *The original caption to this picture says that these Nieuports are about to depart to Romania. Judging by the crowd something special is certainly happening. If these are the aircraft for Romania, then the Nieuport 11 nearest the camera is either 3975 or 3978. This latter machine was flown by Flight Commander S.A. Adams from Imbros to Romania on 25 November 1916. It made a forced landing some 16 miles SSW of Bucharest and was then carried the rest of the way on a truck. Note how the wheel chocks have just been pulled away by a mechanic (Barry Ketley)*



105: *The cloud of castor oil vapour generated by the engine of this Nieuport 10 has obscured the serial on the rear fuselage. There is a small four-digit inscription on the trailing edge of the rudder, almost crowded out by the oddly positioned roundel, which could also be the serial. The aircraft is most likely in service with 3 Wing on Imbros in late 1915 (Barry Ketley)*





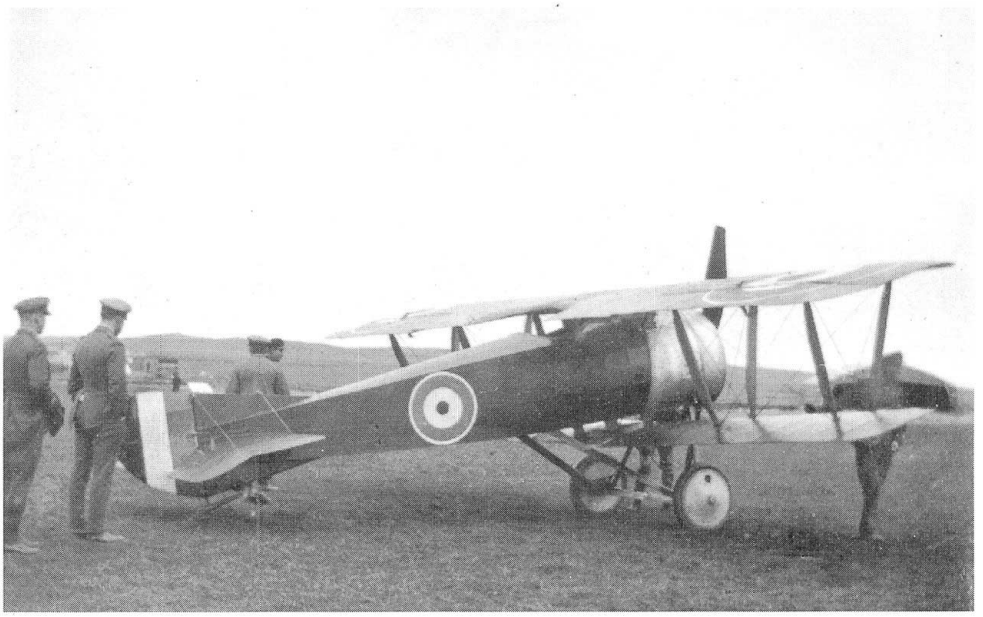
106: *2 Wing at Imbros and a classic example of the many and varied combinations of clothing worn by the RNAS ratings. The straw hats date back to the days of sail (John Edmunds)*

107: *Two Nieuport two-seaters being prepared for flight. Nearest is 3922, a Nieuport 12, which was delivered to 2 Wing at Imbros on 4 February 1916. It was crashed on landing by Flight Sub-Lieutenant H. V. Reid eleven days later. Reid later flew Nieuport 12 No. 8514 to Romania on 25 October that year (Barry Ketley)*

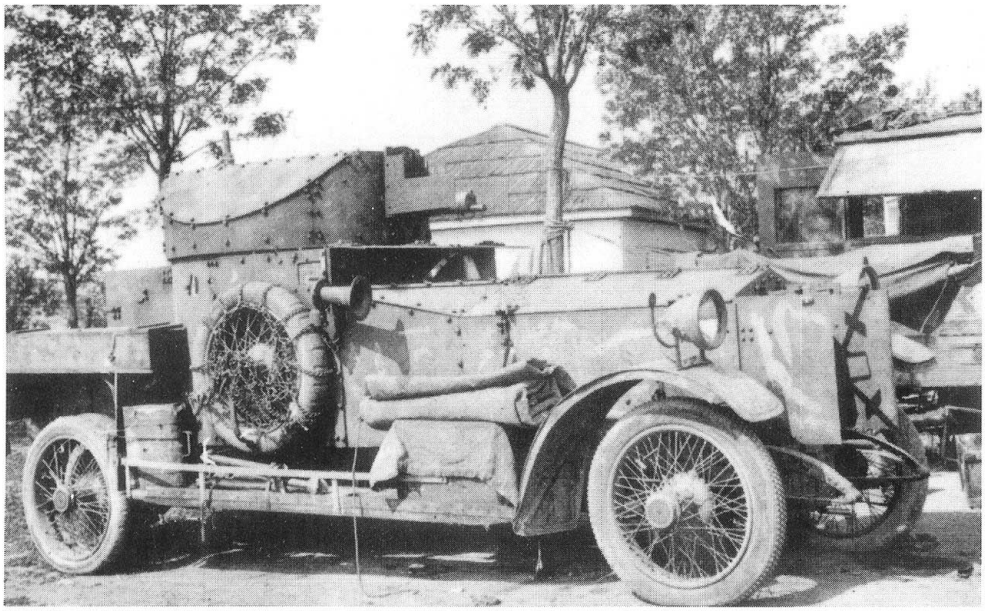
108: *Bristol Scout with 2 Wing running up before a patrol in the Aegean. The aircraft is fitted with a Lewis gun attached to the starboard side of the fuselage, and probably firing (unsynchronised) through the propeller arc. It also has white outers to the wing roundels, unusual against a light finish such as this (IWM Q 90001)*

109: *N5431 was the only Sopwith Triplane to serve overseas with the RNAS. It is pictured here at Imbros while with 2 Wing. She accounted for at least five enemy machines before hitting a wall on landing and breaking- up. Note the Lewis gun fitted to the interplane struts. Parts of her were used to construct the Alcock Scout (IWM HU 67826)*

110: *Flt. Lt. John Alcock of later transatlantic flight fame served as an officer with 2 Wing at Mudros. While there he constructed this little machine out of spare parts. Dubbed the Sopwith 'Mouse' or Alcock Scout, the fuselage and lower wings came from Triplane N5431, while the upper wings were adapted from a Pup. Before he had a chance to fly her, Alcock was shot down and taken prisoner. While in prison camp he received a postcard which read "Your baby taken for an airing, but is still having trouble with teeth. She has now been fitted with new clothing. Now a great improvement in health" (IWM Q 68553)*

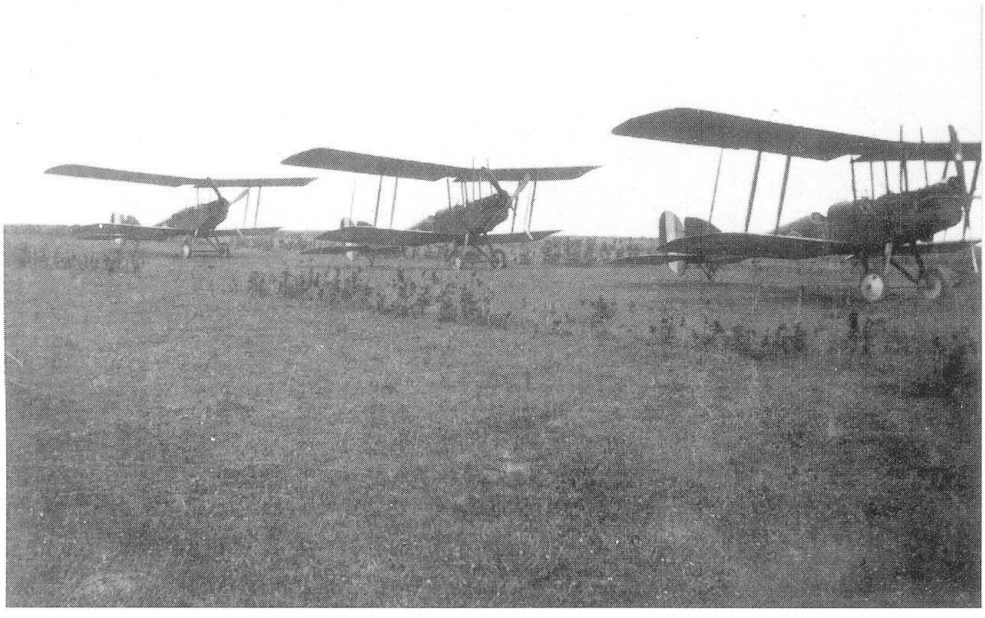


111: *A Sopwith Pup (9942?)with the typical striped elevators of Beardmore-built models seen in service with 'C' Squadron, 2 Wing, on Imbros. Note the armament which consists of both a Vickers gun firing through the propeller arc and a Lewis on an oblique mounting (J.M. Bruce/G.S. Leslie Collection)*

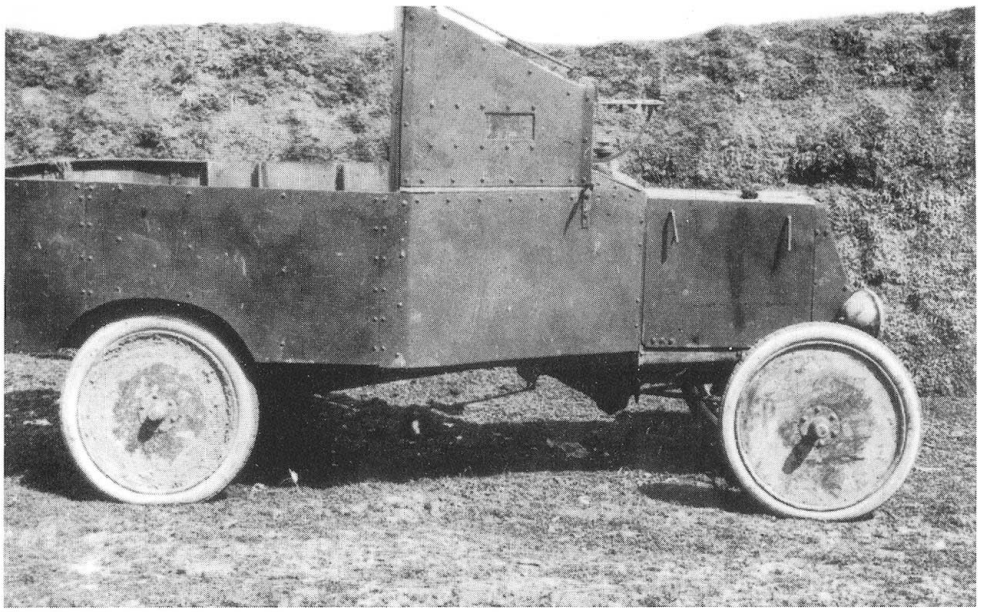


112: *This Rolls-Royce armoured car was the personal mount of Lt. Cmdr. Wells-Hood, the Commanding Officer of No.2 Squadron of the British Armoured Car Division in Southern Russia. It was the only one serving with the division. The only other Rolls-Royce was Locker-Lampson's personal saloon which he took with him (IWM HU 72638)*

113: *Men of the British Armoured Car Squadron on their way to the front, South Russia, 1916. Their unit name is chalked on the side of the car and the occupants' view of their flea-ridden accommodation is plain to see in the name they have christened it with: 'Itchy Shack' (IWM Q 81057)*



114: *Three B.E.2c's of the Royal Flying Corps at Denisof aerodrome near Tarnopol, Galicia, July 1917. Locker-Lampson's vehicles towed some of these aircraft to waiting railway wagons when the retreat threatened the airfield. These machines were not operational but were supplied with RFC instructors to form a training unit for Russian personnel (IWM HU 72600)*



115: *The Ford Model T armoured tender was an improvised vehicle developed by the RNAS home workshops at Newport in Wales. Nine were built by G. Allen & Sons of Tipton and were the brainchild of CPO L. Gutteridge. With a strengthened rear axle and protection for the crew in the form of 5mm armour plate, they were highly successful, being very manoeuvrable and having a high ground clearance, essential for off-road operations. They were armed with a rear-facing Maxim gun that could be quickly dismounted for ground actions and were often reversed into action! (IWM HU 72629)*

116 Below: *Some idea of the conditions encountered by the division can be seen in this Lanchester armoured car up to its axles in mud. Note the tyre chains and the crude Russian national cockade on the side of the vehicle (IWM Q 81097)*

BOMBERS AND BOMBING

The Royal Navy versus the Zeppelins

At the outbreak of the war the agenda for the role of the RNAS was a best ill-defined, at worst scrappy and incoherent. Not one aircraft went with the fleet to Scapa in the first week of the war (which would remain the case until the arrival of the *Campania* in the following May) and the defence of the realm rested at that time with the Army under Lord Kitchener.

Once the BEF was safely escorted across the Channel, it was left to individuals like Samson, operating on his own initiative, to carve out a role for themselves and their service. In addition the Army became preoccupied with the land war and had little time to think about the defence of Britain from aerial attack. Accordingly, this responsibility was passed over to the Navy at the request of Kitchener and with the keen acceptance of Churchill.

Other members of the Royal Navy were less impressed and the prospect of providing resources for a role they did not want, had not sought and for which they were not trained, chafed. The situation would not be resolved until the middle of the following year. For the moment the Army pleaded that they had to concentrate all their efforts on the Western Front and could not spare the aircraft.

Churchill's aggressive plans for the RNAS resulted in the pre-emptive attacks on the Zeppelin sheds and plans to strike at the German High Seas Fleet at Wilhelmshaven with torpedo carrying seaplanes. Certainly the case for him was clear cut:

"We would have to concentrate our energies on the Belgian coast and make every effort to attack Zeppelin bases in case they opened some in Belgium."

Fortunately Churchill had men under him who were of the same opinion but the organisation of the RNAS in these early months was unequal to the task and would not really be restructured to any great satisfaction for the time being.

By 7 November 1914, the Commander-in-Chief in

117 Above: *A crew member of an SS Z Class airship about to throw a bomb from the rear cockpit of the gondola. Captain Thomas Williams later recalled "We could keep up for long hours but our bomb capacity was't very great. We had quite small bombs which were more or less lying loose. Eventually we hung them over the side on bits of string and carried sheath knives to cut the string to drop the bomb. We had no bomb sights; simply knocked a couple of nails in as a rough indication of trajectory" (IWM Q 67695)*

France had been given control of Dunkirk on the understanding that the RNAS would continue with their 'special mission'. While Samson marauded with his independent commission, Dunkirk started to expand as new tasks were given to it. Its strategic position enabled it to do two things. First it could act as an extension of the force at Dover and provide a screen for cross-Channel traffic. Secondly it could operate along the Belgian coast to watch for Zeppelins, submarines and to observe any ground movements on the part of the enemy.

The coast at this time, and the Front in general, was starting to stabilise and the submarine menace was taken more than seriously. The flooding of the plain at Nieuport forced the Germans back onto drier ground, but in addition to protecting its right flank, the occupied Belgian coast afforded ideal exits from the ports of Ostend and Zeebrugge (with their inland waterway routes into the hinterland) for the German submarine fleet. Later on they even set up assembly depots for prefabricated U-boats which would also receive the attentions of the RNAS as early as November 1914. Eventually the base at Bruges would be able to hold over 60 destroyers and submarines.

Initially the work that 3 Squadron could do was hampered by the mixed types of aircraft and the number that were serviceable at any one time but we have already seen the reputation for versatility it created and with which Dunkirk would always be associated. Not only did it operate on the ground but it also harried the Germans along the coast with successive day and night bombing attacks to keep the enemy tired and harassed. Little else could be achieved for the present.

With the departure of 3 Squadron[40] to the Dardanelles in March 1915, the position was taken up by their replacements, 1 Squadron, under Squadron Commander Arthur Longmore. The idea of a new "bloody paralyser of a machine" to continue and expand the bombing role came from Murray Sueter, and Longmore worked out some ideas on how a "giant machine" could be effectively used.

The importance of Zeebrugge came to the fore with the sinking of the *Formidable* off the Isle of Wight, but any attempt to attack the U-24's home base by conventional means were shelved because of commitments to the Dardanelles. Attacks by U-boats along the English coast (Barrow was bombarded at the end of January) and an announcement by the Germans of a general blockade of the British Isles led, however, to immediate action. A concerted effort to bomb the Belgian harbours during February met with some limited success. Throughout March and April, the attacks would be continued by 1 Squadron, even if sometimes by only one aeroplane.

Zeppelins still constituted a threat and raids on England had already started in May 1915. Whilst various means were taken on the mainland and off the coasts to deal with them, units in France were considered to be the first line of defence and were expected to take the initiative. This they certainly did, destroying or damaging three of the airships and forcing the Germans to think again about using Belgian facilities as a permanent base. On 17 May LZ39 was spotted off the Dunkirk coast and Flight Commander A. W. Bigsworth in an Avro 504B, managed to cripple the Zeppelin by putting four bombs through her gas cells. They failed to explode and the machine made it back to its shed at Evere, losing gas all the way.

On 7 June four aircraft set out to raid the sheds at Evere and Berchem St Agathe. Unknown to them, however, only one Zeppelin was at Evere, the others being on their way back from a raid on England. As luck would have it, one of the pilots, Flight Sub-Lieutenant R.A.J. Warneford was on his way to Berchem St. Agathe when he spotted LZ37. Fifty minutes later he had managed to reach and outclimb the behemoth. Turning towards it he placed his Morane Parasol into a shallow dive and raced over the ship 150 feet above it, releasing his six 20-pounders as he did so. The explosion flipped the aircraft over and when he regained control the Zeppelin was already burning on the ground. Astonishingly, one of the crew survived when he became entangled in the wreckage and crashed through the roof of a nunnery. Tragically, two nuns he landed on were not so fortunate and both were killed.

Not content with this excitement, Warneford found that a stray bullet had severed his fuel line and he was forced to land behind German lines. He was able to repair the line without being discovered but the engine gave him some anxious moments when it refused to start. When at last it did fire, Warneford had to run after and leap into the machine as it trundled off without him. For these exploits Warneford was awarded the Victoria Cross, but he had little time to enjoy the honour. Ten days later a machine he was testing broke up in the air and he was killed.

Thomas Thomson, a wireless operator at St Pol, was there when Warneford returned:

"There must have been four hundred and fifty spark plugs in that machine, all sorts of bits and [pieces], because everybody went along, took something out of the thing, put something back. And the next bloke along took the next thing, you see. "

The others on the raid reached Evere and the first to arrive, Flight Lieutenant Wilson, managed to fool the anti-aircraft batteries into thinking they were friendly with some judicious use of a torch. Three 65lb bombs shattered the roof. By the time Flight Sub-

Lieutenant Mills had arrived the element of surprise had curiously vanished. It did not, however, deter him from putting four 20lb bombs (from 5,000 feet) into the shed containing LZ38. Thereafter LZ39 was moved to the relative safety of the Russian Front.

The RNAS at Dunkirk could justifiably feel proud of their anti-Zeppelin achievements and to some extent their work against the U-boats. On 21 June the Admiralty decided to expand Dunkirk to accommodate six Squadrons of seaplanes and aircraft. At this time though, it must be remembered that a 'squadron' could consist of any number of aircraft from three to six or ten machines. Others, such as seaplanes, could be designated 'flights' and it is indicative of the disorganisation of the administration of the RNAS that this problem would not be addressed until the middle of 1916 when formal criteria would be established. For the moment this new unit would be known as 1 Wing, RNAS.

The tasks of Dunkirk now included covering and spotting for monitors bombarding the coast, and plotting minefields, although the Dunkirk force felt a steady drain on their resources as aircraft and personnel were sent out to the Dardanelles.

In August another re-organisation took place and the six Dunkirk squadrons were amalgamated with the two from Dover and placed under the direct control of Wing Captain C. L. Lambe. He in turn reported to the Vice-Admiral Dover Patrol, Reginald Bacon.

Lambe sorted out the division of labour among the squadrons and for the first time they could start to specialise. Dover (now designated 1 Wing) handled reconnaissance and fighter patrols while the others at Dunkirk (2 Wing) combined into pairs. One group spotted for the monitors and reconnoitred the Belgian coast, while the others were responsible for fighter patrols and bombing. Other units of the RNAS were also consolidated into various commands reporting to local commanders rather than to the Air Department direct.

The qualities required of aircraft for useful bombing was not lost on Lambe and new types such as the Short bomber and Sopwith 1½ Strutter began to arrive in November 1915. The latter had the distinction of being the first British production aircraft to sport a synchronised machine gun.

With these machines, attacks on bigger and more distant targets could be attempted and Lambe recommended to Vice-Admiral Reginald Bacon just such a strategy. Lock gates, railway bridges and a whole range of likely candidates were proposed and accepted as viable. The following month the Admiralty were able to take advantage of new batches of men coming to the end of their training in Canada and England. They approved the expansion of the Dunkirk contingent to take in another eight squadrons grouped into two new Wings. Each Wing was to be formed of four squadrons of six aircraft each.

None of these initiatives had come from the Admiralty, but from the local commanders. The results, however, were thoroughly in keeping with Churchill's original idea for the use of the forces at Dunkirk, even if they were only now getting "the tools to do the job". At least while the Dunkirk squadrons and the RNAS in general were hitting the enemy, criticism could be deflected from the sailing navy.

Unfortunately, the impetus created by Churchill and Fisher would be dissipated by their resignations in May of 1915 over the failure of the Gallipoli landings. Their replacements, Arthur Balfour and Sir Henry Jackson, somehow lacked the same interest in the flying services and no doubt the more traditional view of the functions of the Royal Navy re-asserted itself. Murray Sueter finally succumbed to the infighting within the service on 8 September and was relegated to look after aircraft procurement. The navy replaced him with Rear-Admiral C.L. Vaughan-Lee as the new 'Director of Air Services' who had absolutely no experience of the air side of things. Churchill and Fisher had, however, left the RNAS with fifteen armoured car squadrons, three armoured trains, Kite Balloon units working with (and later totally passed over to) the Army and a network of anti-aircraft defences. Whilst the upper echelons consumed themselves in civil war, those on the ground or close to it carried on much as before, albeit on a more secure administrative footing.

The remainder of the year would witness the intensification of the U-boat campaign with the sinking of the *Arabic*, an unarmed White Star liner (another, the more famous *Lusitania*, had been sunk in May) and this new attack agitated American-German relations still further. 2 Wing would be heavily engaged in further major operations against the U-boats and remaining Zeppelins, destroying L12 before they were ordered to the Dardanelles in August. 1 Wing replaced them and undertook an attack on the lock gate at Zeebrugge, then Ostend. A number of submarines were also attacked, two of which were damaged. The activity of the German seaplane force was little in evidence at this time and combats were few, only two 'kills' being recorded.

Taking stock at the end of 1915, the RNAS had operated over home waters, in Belgium, in the Dardanelles Campaign and in East Africa, as wide a theatre of operations for a small force as no other.

Early 1916 saw two developments which directly affected the RNAS. The first was the withdrawal of 3

Wing from the Dardanelles which greatly reduced the commitment to the area, and the transfer of responsibility for Home Defence back to the War Office. The Admiralty embarked on a huge programme of airship building to patrol the North Sea at the expense of developments with ship-board seaplanes. Lambe continued to look at the possibilities for his new expanded force as each new squadron and wing became operational. To accommodate them, new airfields were built at Coudekerque for 4 Wing and Petite Synthe for 5 Wing, together with facilities for an expanded Central Repair Depot to cope with the extra maintenance demands.

On January 26 the first co-operative operation of 1916 between monitors and aircraft was carried out and for the first time one aircraft registered shots for five monitors. The pilot would tap the Morse key as soon as the shell exploded and give the necessary corrections to the ships. By calculating the flight time of each shot, each individual monitor could identify its own shells and know when each signal was relevant to them. Further bombardments were, however, called off until the spring.

Much to the confusion of the service and historians alike the organisation of the RNAS was revised once again and from now on six pilots became a Flight, and two (or three!) Flights would constitute a Squadron. The number of Squadrons in a Wing could, however, remain fluid. At last though, the RNAS was beginning to take on some of the lessons in organisation that the Royal Flying Corps had already learnt.

Spenser Grey formed 5 Wing in Dover and took it over to France at the beginning of March. For the time being they had to participate in raids on German airfields whilst still under strength, as a full complement would not be achieved until the end of April. It was equipped with Caudron GIV's and, more importantly, the Sopwith 1½ Strutter which allowed them to concentrate on developing a distinct bombing function. The 1½ Strutter (or Sopwith Type 9700) with its synchronised machine gun could provide effective escort to the Caudrons. 4 Wing began to occupy Petit Synthe on 11 April and both were soon in action up and down the coast.

At the same time, March 1916, 1 Wing was divided into two separate squadrons and from then on would concentrate on supporting the Royal Navy at sea. It would still have to look in two directions, to Dover and up along what was now called 'the Iron Coast'. With this change came replacement aircraft in the shape of the obsolete B.E.2c for night-time directing and 2-seater Nieuports for daytime spotting and photographic work.

In April the authorities decided that Lambe could pursue more vigorously the tactical bombing policy that the RNAS at Dunkirk was developing. Bacon meanwhile concentrated on bottling up German naval forces in their harbours by laying extensive minefields. Fighter protection was essential and particular attention was paid to a new German seaplane base at Mariakerke which was hit repeatedly. Hitherto the role of German seaplanes had been limited but now the commander of *Seeflugstation Flanders 1* would ask for better and faster fighter machines as a priority.

The regular bombing by the RNAS of German bases along the coast was curtailed by retaliatory attacks on Dunkirk between 19 and 22 May. 32 people were killed with many wounded; seaplanes even attacked Dover. Effective fighter interception was further reduced by the withdrawal of a French Nieuport squadron to the Verdun sector. To counter this loss, Furnes aerodrome was sent two flights of fighters which would eventually become the first specialist fighter unit of the RNAS.[41] Bacon ordered that operations would not be mounted for their own sake but only as part of larger strategies involving military or naval forces. In fact he wrote to Lambe that he thought "indiscriminate bombing is useless" and for the time being would only be carried out when a distinct advantage would be gained.

The summer therefore was taken up with actions against coastal fortifications in combined operations, notably against the so-called Tirpitz Battery. The RNAS was tasked with keeping prying aircraft away from a new gun the navy was installing with which to pound it.[42] Originally the Royal Navy was to have an important role in the Somme campaign by providing a force to attack and capture Ostend from the sea. Practicalities worried the naval planners as the Germans had installed another huge battery at Ostend which could sweep the landing area at will. Fortunately when the land offensive stalled, the plan was scrapped and attention was turned to the Tirpitz Battery. This fortification was hampering monitor operations by keeping them off-shore at arms length.

At the same time 5 Wing also began operating effectively against the Zeppelin sheds at Evere and Berchem in addition to bombing the usual targets of U-boat bases and supply lines along the coast.

It will be recalled that the Admiralty had always advocated the use of the bomber as a strategic weapon even to the extent of asking for a "bloody paralyser of a machine". Despite the successes of the 'Zeppelin shed raids' of 1914, little activity had been seen during 1915. This was mainly due to the lack of organisation at Dunkirk and the ongoing commitment to the Dardanelles. In 1916 however the idea would be revitalised and the RNAS opened up discussions with the French to see what could be done.

The French were needed because, in the first place, they were like-minded. They already had a 'strategic' force in being and had no qualms about bombing industrial targets in Germany itself. [43] For the second part, the French sector was much nearer the German border and this meant that access to Germany could be gained without having to fly over neutral Holland.

Rear-Admiral Vaughan-Lee was of the opinion that strategic bombing would not only be popular with civilians at home, but that it would draw German aerial resources away from the Front. A conference in October established a method of working between the two forces and by May 1916 a new Wing was formed to undertake this new scheme.

Thus, on 5 May 1916, a new 3 Wing came into being under the command of Wing Captain W. L. Elder. He went to Paris to discuss preparations with the French while the personnel of the unit moved to Manston. On 16 May the advance party arrived at Luxeuil, the base chosen for the purpose. Here they would share facilities with the American volunteers of the *Lafayette Escadrille* and *4ème Groupe de Bombardement.*

It could be reasonably assumed that 3 Wing would receive all the resources it needed but it was not until October that it would become fully equipped. Throughout the summer it was constantly denied aircraft and pilots, as first Lambe at Dunkirk, and then the RFC, demanded priorities for reinforcement. Lambe was having to cope with increased enemy activity on the coast whilst the RFC, committed to the Somme offensive, were woefully under-equipped with proper bombing machines.

Political difficulties were brought down on the RNAS by the Admiralty themselves. They had engineered the proposal from the French to set up a strategic bombing unit knowing full well that there would be opposition from the War Office. The Army naturally insisted that the land forces needed the full and undivided attention of the air services and any diversification would jeopardise their efforts. The Admiralty, however, had neglected to inform General Sir Douglas Haig, General Officer Commanding the British Expeditionary Force, of developments. Although they managed to smooth things over on the surface, they nonetheless carried on with their plans, thereby making relations with the Army potentially worse. And so it was that the new 3 (Naval) Wing would be deprived of its full complement as Sopwith 1½ Strutters were drained off to the Army.[44] Reluctantly Elder saw sixty 1½ Strutters diverted to them.

Even so Elder did manage to put on some sort of show and, as usual, he was given a free hand. The French usually decided where and when to bomb and all Elder was expected to do was to keep his superiors informed.

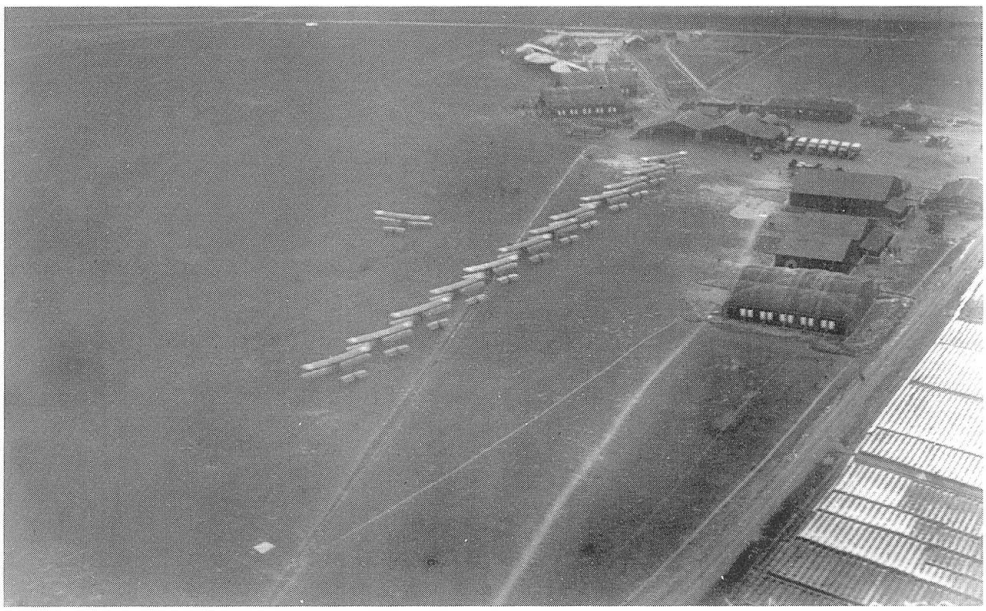
A note by Vice Admiral Sir H. F. Oliver, Chief of War Staff at the Admiralty, clearly states the attitude. He wrote that Captain Elder [sic] was "following the orders of the French Military Air Service" and that Luxeuil was "behind the French part of the line and well removed from the BEF in France." If the War Office wanted information then perhaps "the French Headquarters should be asked."[45]

Away from the politics, Elder sent two 1½ Strutters on a raid with the French on 30 July, the first operation of the Wing. The target was a benzine plant at Mülheim, some 60 miles from Luxeuil. Christopher Draper, later dubbed 'The Mad Major' for his exploits in flying through and under bridges, was on the raid. His Observer, Sub-Lieutenant Leslie Perks was shot through the top of the head when they were attacked by a Roland. He survived the war. The landing wires were shot through and on landing the wings literally fell off the machine.

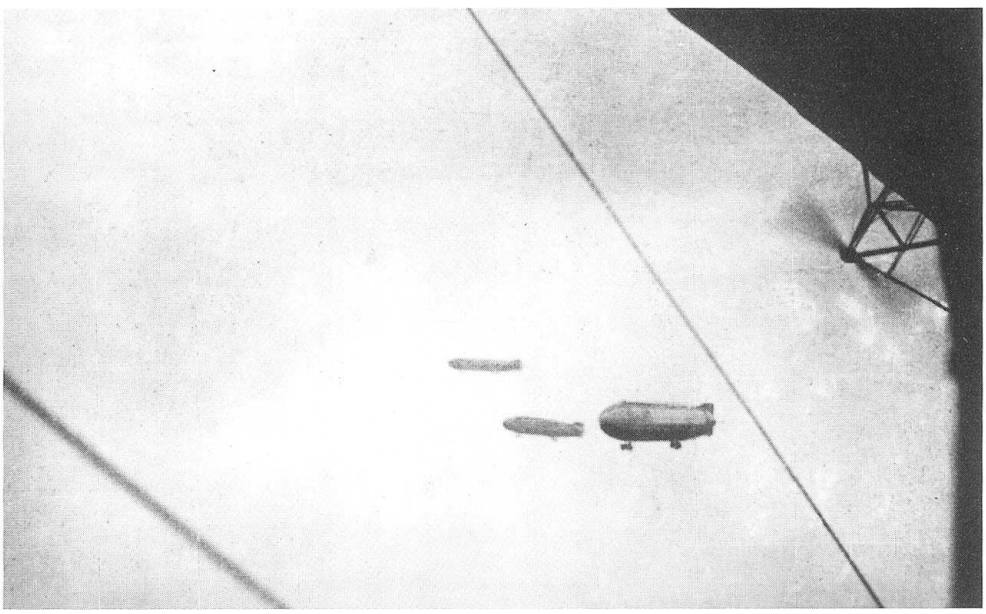
Thereafter operations would commence properly once the Wing had grown to somewhere near its full complement. The 'Sopwith Sailors' of 3 Wing were formed into two Squadrons, Red and Blue. From Luxeuil, raids could be mounted into the Rhine industrial area. A disadvantage was that a mountain range, the Vosges, and the Black Forest had to be crossed first.

A forward base was established at Ochey (near Nancy) and from here targets in the Moselle and Saar valleys could be attacked. Both areas, however, suffered from fog and mist which added to the unit's problems. In addition, the winter of 1916-1917 was particularly bad for flying and it seemed that the Fates were against the Wing from the start. Operational difficulties, lack of resources, coupled with the drain of aircraft and men back to Dunkirk meant that it could not resist another round of inter-service rivalry. 3 Wing was finally disbanded in April 1917. Its effectiveness is in dispute; only 18 raids were carried out compared to the 52 of 4 and 5 Wings. However it could claim that it did to a small extent tie down defensive resources in Germany much as the 1914 raids had done. It established the principle of the bomber as a strategic weapon and started to take delivery — at last — of the "bloody paralyser"—the enormous Handley Page 0/100. This formidable machine arrived in France on 3 November 1916 and started operations in March of the following year. It would, perhaps, be 3 Wing's lasting legacy to aerial warfare. The 0/100's would survive the breakup of the Wing and form the nucleus of the later Independent Force.

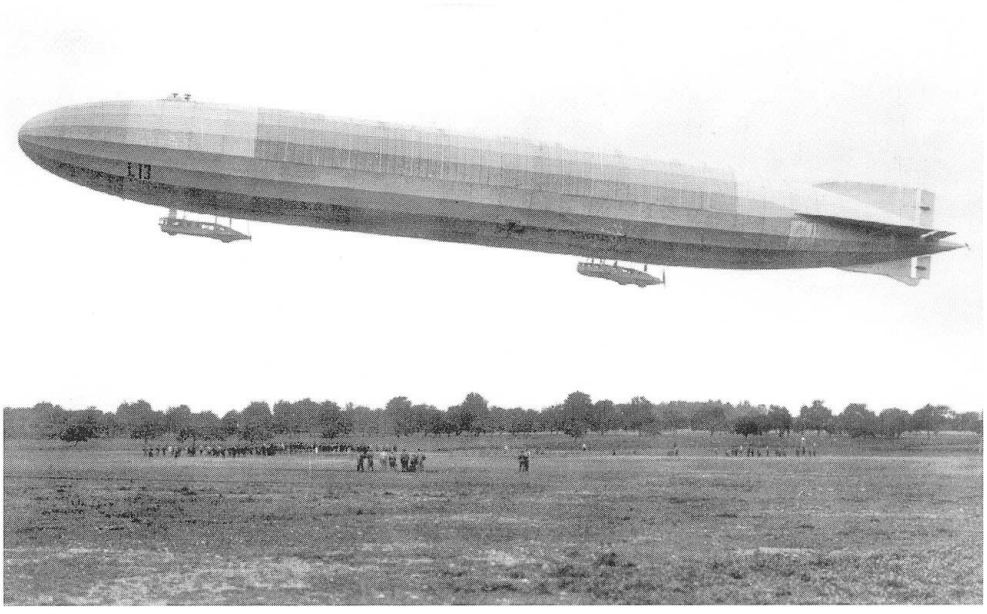
118: *Aerial view of Dunkirk airfield, with F.E.2s (possibly of 6 Squadron RFC) in residence (IWM Q 11552)*



119: *The threat, 1915-style. Zeppelins L13, L10 and L11 on their way to England. L12 was shot down by gunfire on 9 August 1915 (IWM Q 58452)*



120: *Zeppelin L13 was brought into commission in August 1915 and was commanded by Kapitänleutnant Mathy, the Zeppelin 'ace'. Mathy and his crew perished in 1916 when Captain Tempest shot them down in the 'Potters Bar' Zeppelin, L31. Note the cross insignia on the lower portion of the envelope just forward of the rear observation car (IWM Q 58556)*

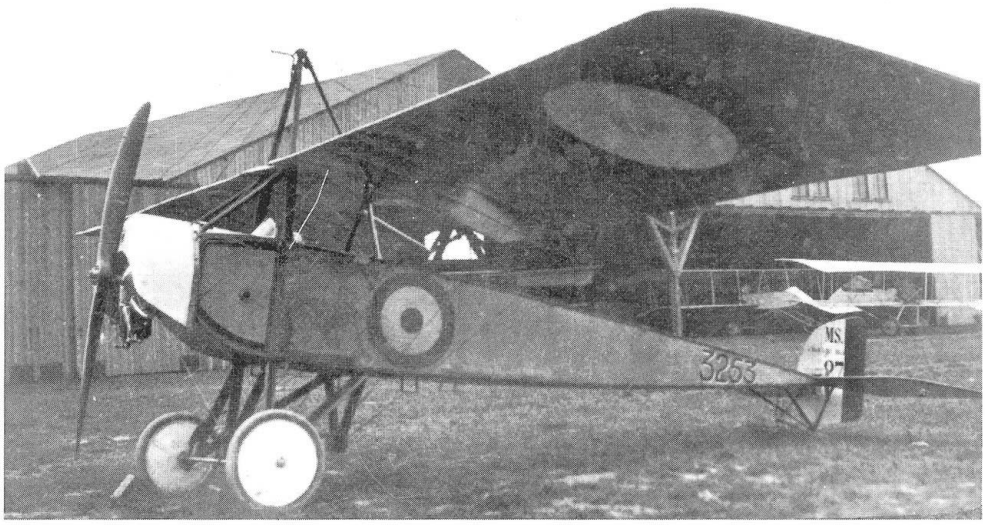


121: *Flight Commander A.W. Bigsworth stands next to Avro 504B No. 1009 in which he attacked LZ39. On 17 May 1915 LZ39 was spotted off the Dunkirk coast and Bigsworth managed to cripple the Zeppelin by putting four bombs through five of her gas cells. A propeller was shorn off and one man was killed. Although Bigsworth saw some smoke coming from the tail, the bombs failed to explode and LZ39 made it back to her shed at Evere, losing gas all the way. Following another attack on 7 June, LZ 39 moved to the Eastern Front, only to burn out in her shed at Kovno (IWM Q 69480)*

122: *A short term resident of the RNAS station at Dunkirk/St. Pol was Avro 504B No. 1002. This machine was delivered to Naval 1 at Dover on 5 February 1915. Later that month it was at St. Pol where it remained until June. Soon afterwards it returned to Dover where it was involved in patrols against hostile aircraft. Despite several crashes it was repaired and survived in service until September 1917 (J.M. Bruce/G.S. Leslie Collection)*

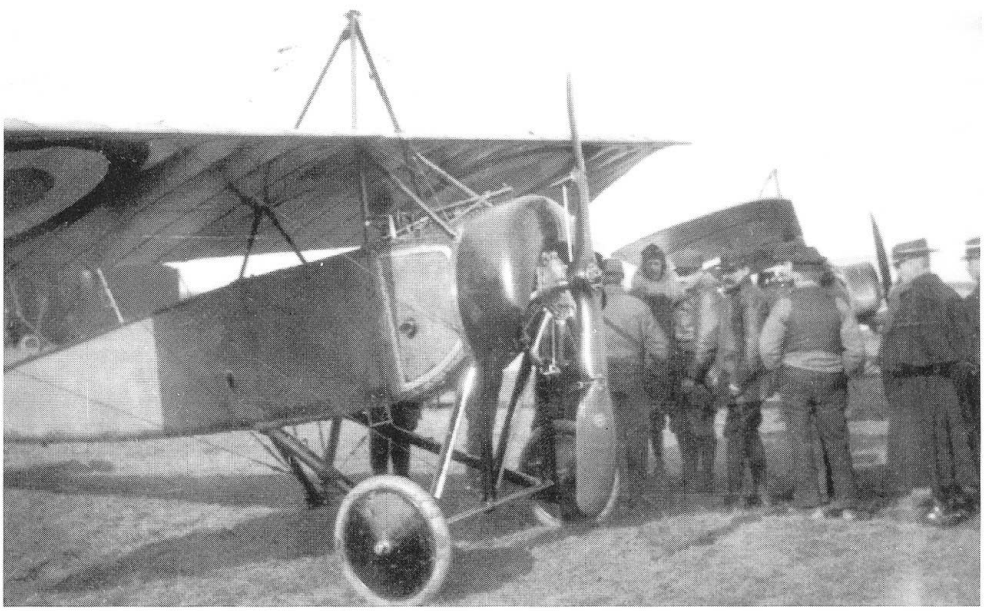
123: *Warneford's Morane Parasol at St. Pol after his battle with LZ37. Thomas Thomson, a wireless operator at St. Pol, was there when Warneford returned: "There must have been four hundred and fifty spark plugs in that machine, all sorts of bits and [pieces], because everybody went along, took something out of the thing, put something back." In the background is Sopwith Gordon Bennett Racer number 1214 which had deflector plates fitted on the propellor and was armed with a Lewis gun (IWM HU 67827)*

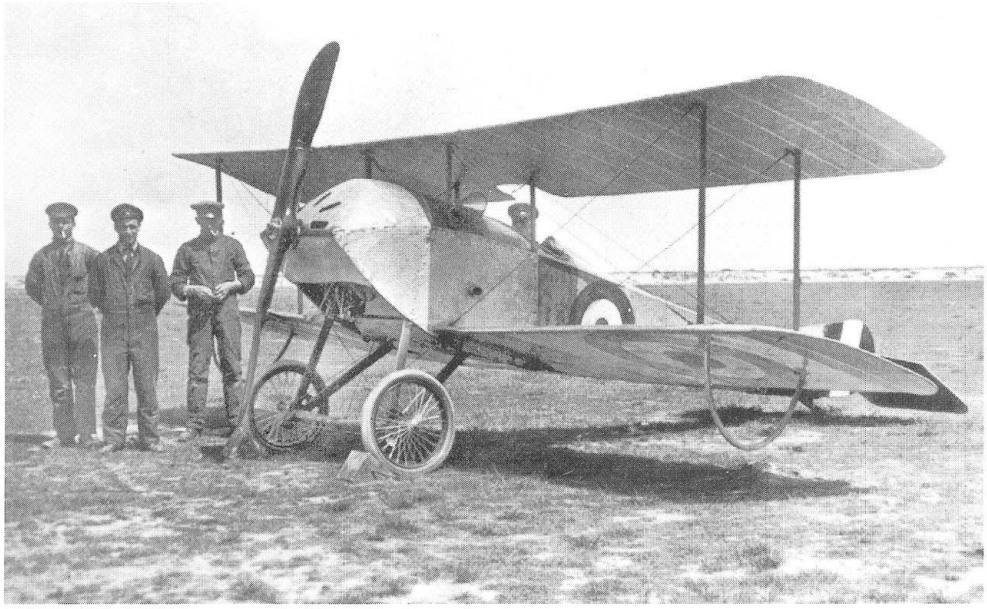
124: *3253, probably the most famous of all Morane Parasols, in which Flight Sub-Lieutenant Warneford gained his VC. Two Voisin Type LA pusher bombers can be seen in the background (Barry Ketley)*



125: *France 1915, and four RNAS 'Zepp Strafers' pose for the camera. From left: Flight Lieutenant J.S. Mills, A.W. Bigsworth DSO, J.P. Wilson and R. Warneford VC. Mills and Wilson destroyed LZ 38, the first Zeppelin to attack London, in her shed at St. Evere on 7 June 1915, while Warneford was having a "thrilling duel at close quarters" with LZ 37. Bigsworth caught LZ 39 over Ostend on 17 May and severely damaged her (IWM Q 69479)*

126: *Roland Garros, in flying helmet, pays a visit to Buc aerodrome. In the foreground the armament and the deflector plates attached to the propeller on his Morane Parasol can be clearly seen. Garros would gain his first victory with this device on 1 April 1915. It seems highly likely that a visit like this was the inspiration for the fitting of similar devices to RNAS aircraft such as the Sopwith Gordon Bennett Racer based at Dunkirk/St. Pol at this time. Samson Collection (IWM HU 67891)*



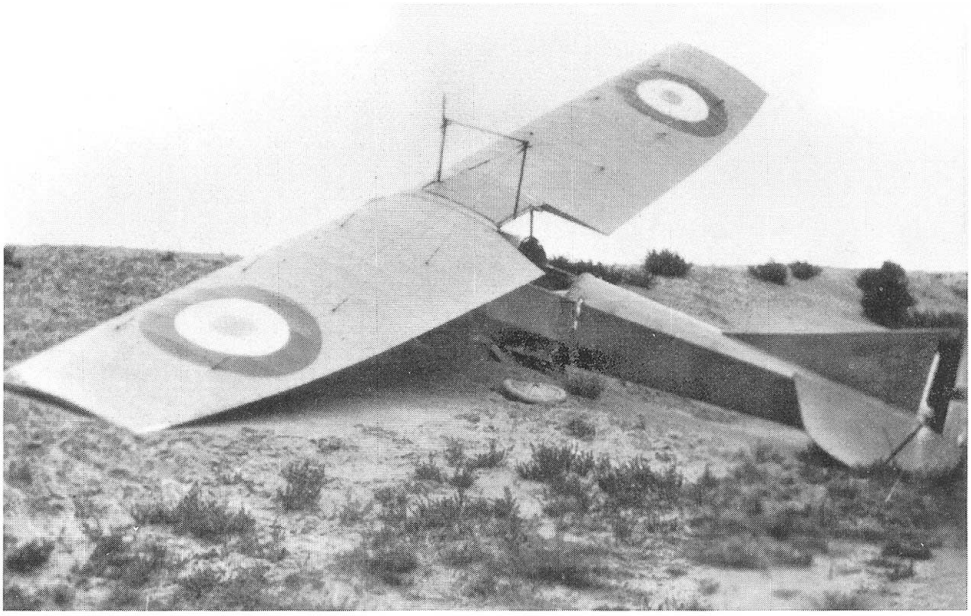


127: *Sopwith Gordon Bennett Racer number 1214. Seen here at St. Pol/ Dunkirk, probably in early 1915, the machine has several interesting features. In particular it is armed with a machine gun fitted to the starboard fuselage side firing through the propeller by virtue of deflector blocks which can just be seen on the blades. Additionally, it uses wing warping for control, and is fitted with a small head rest, wing tip skids and extra cooling louvres in the engine cowling (Barry Ketley)*

128: *Bristol Scouts lined up at Eastchurch in 1915. The first two aircraft served in France with various Wings. Note the early Union Jack markings and the mounting for an over-wing Lewis gun on Number 1246 (IWM Q 58422)*

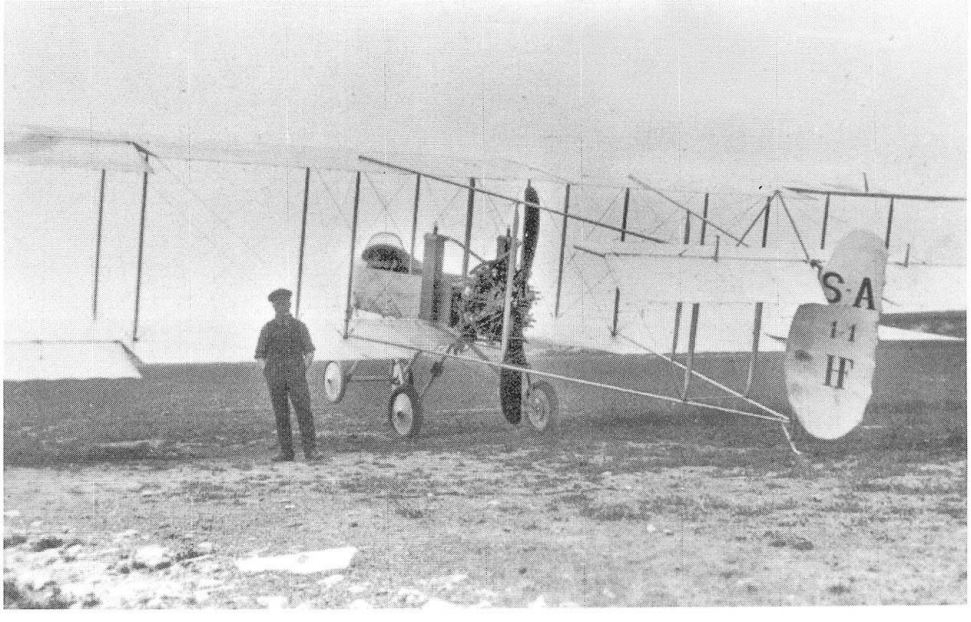
129: *A rare aircraft by any standards, this is an unfortunately unidentified REP parasol monoplane shown after crashing on the sand dunes near St. Pol. Twelve were ordered and five were sent to the Reserve Squadron of 1 Wing at Dunkirk in September 1915, although only four actually arrived there. The machine may be 8455 after the addition of fin stripes. Note the comfortable button-backed seat for the pilot (Barry Ketley)*

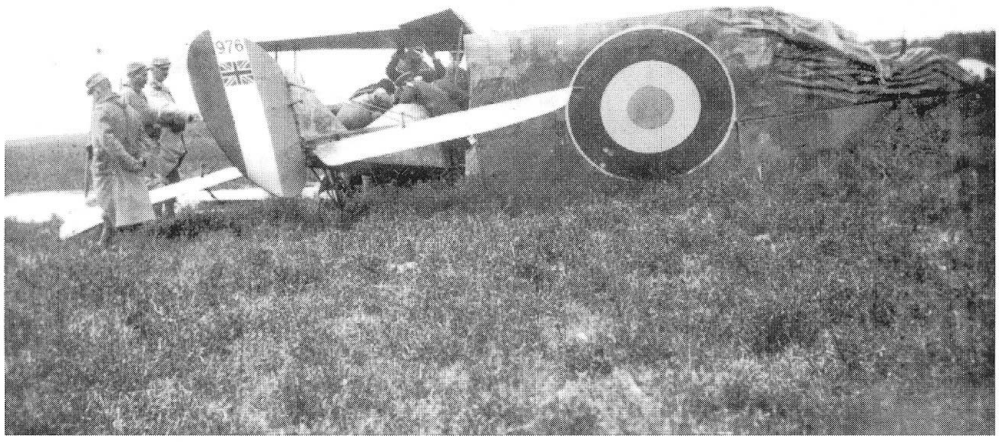
130: *Another view of the grounded REP seen in the preceding picture. The object hanging from the centre fuselage is the rear occupant's seat belt (Barry Ketley)*



131: *French-built REP, number 8455, whose serial can just be distinguished on the rudder. Delivered to the Reserve Squadron at Dunkirk on 23 September 1915, its fate after 6 November that year is unknown. The contraption on the side of the fuselage is a bomb release lever (there also appears to be a compass mounting, or is it a sight?) and the machine is also fitted with two Admiralty-pattern bomb carriers Mk.II under the fuselage capable of accommodating 65, 100 or 112lb bombs (Barry Ketley)*

132: *A Henry Farman F.27 'all-steel' pusher biplane with a Canton-Unné radial engine, believed to belong to the Eastchurch squadron which arrived in France under the command of Charles Samson. The meaning of the 'SA' code on the tail is unknown (Barry Ketley)*



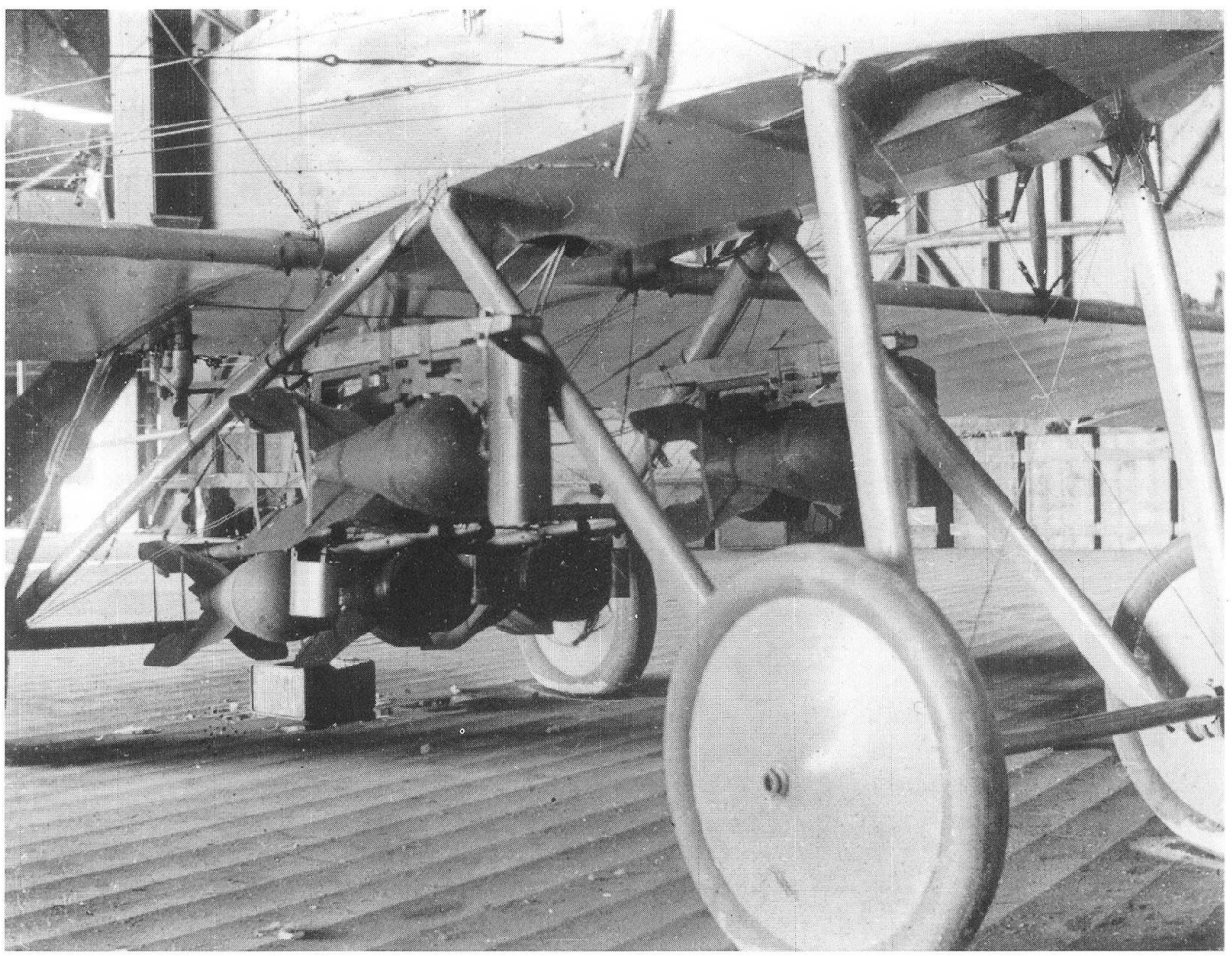


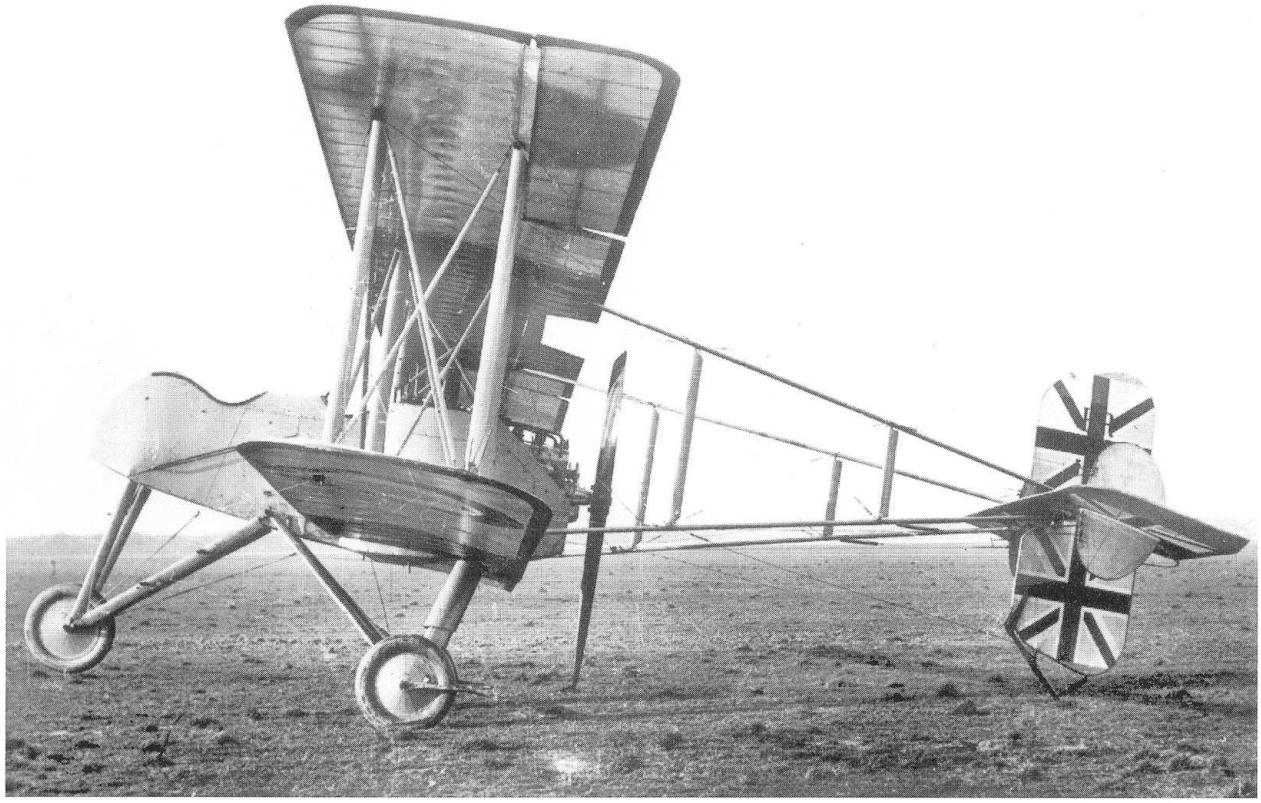
133 Above: *RNAS aircraft at St. Pol in 1915. Nearest to camera is Avro 504B number 1004 which was at St. Pol between January 29 and 21 June 1915. Immediately behind is a very rare machine in RNAS service, a Vickers F.B.5 Gunbus, No. 861. Known to be at St. Pol on 26 February 1915, it was written off on 26 June. It is possible that this was the machine flown by Harold Rosher which he mentions in one of his letters in the book 'In the Royal Naval Air Service.' He didn't like it. Bringing up the rear is a Farman F.27 'all-steel' pusher (Barry Ketley)*

134 Above left: *The wreckage of B.E.2c, 976, being inspected by curious French poilus in their horizon blue uniforms* ***135 Left:*** *976 again. Originally delivered to Hendon on 27 April 1915, by 1 October it was with Naval 4 at St. Pol. Still with 1 Wing RNAS by December it was written off sometime in early 1916. This may be the occasion. This picture illustrates some of the earliest attempts at camouflage—note the blotches on the wings and fuselage. Compared with the tones of the Union Jack, the roundels appear to be modified from early RNAS types with red outer rings (Barry Ketley)*

136: *A French Voisin 4 bomber escort armed with a 37mm Hotchkiss cannon. Named 'Le Rapace' (Bird of Prey), number 2 presumably belongs to one of the French squadrons which shared the St. Pol/ Dunkirk landing fields with the RNAS in 1915-1916. These units were from both the French army and navy. Little is known of their activities, except for the fact that the aircraft were found to be better suited to ground attack duties. The effect of the massive cannon when it was fired must have been interesting for the pilot (Barry Ketley)*

137 Below: *An impressive array of five 112lb bombs underneath the fuselage of an all-steel Henry Farman F.27. Note the hole in the floor for aiming and the bomb-release cables going into the fuselage (John Edmunds)*

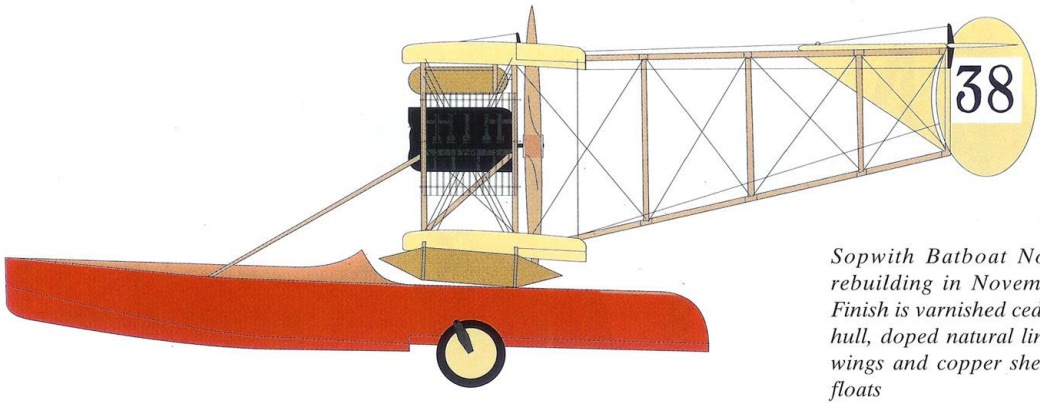




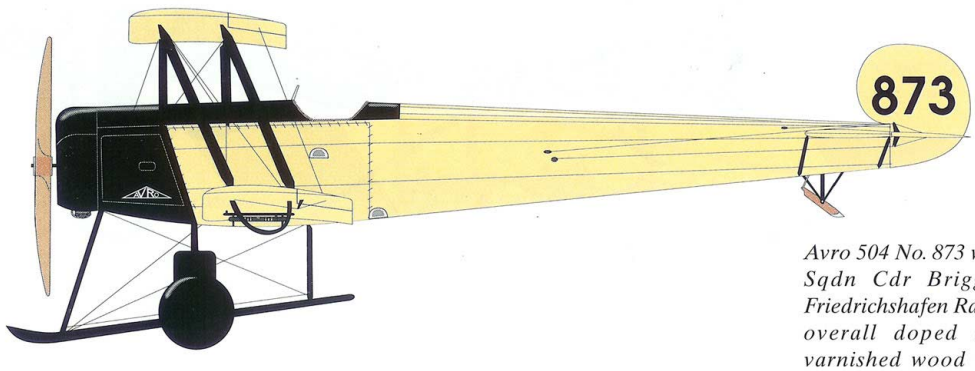
138 Above: *Breguet de Chasse (Type 8) with a 225hp Sunbeam engine. Five served with 1 and 3 Wings at St. Pol, another ten with 5 Wing at Dunkirk in spring 1916 (Barry Ketley)*

139 Left: *A3932 was a Phoenix-built Short Bomber intended for 3 Wing at Luxeuil, but transferred to the RFC in June 1916 (Barry Ketley)*

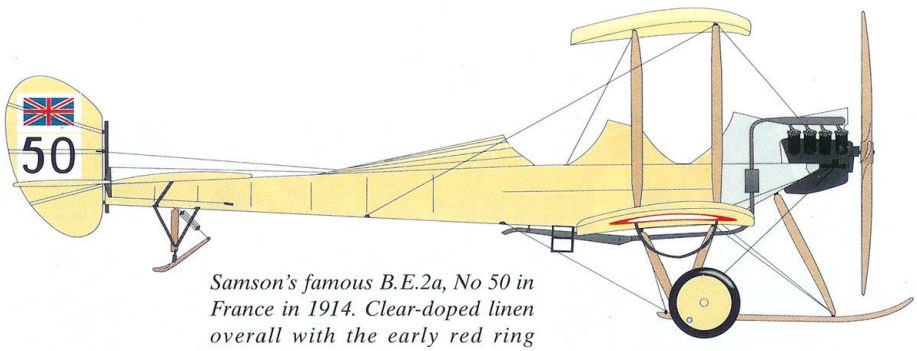
140: *This is believed to be a Grahame-White built Breguet Type 5, possibly 9426, with a 250hp Rolls-Royce engine. One of a small batch of ten, known by the manufacturer as a Grahame-White Type XIX, and intended for 3 Wing at Luxeuil, it was obsolete by the time it was completed in late 1916. Consequently it was delivered to Hendon (where this picture may have been taken) and never saw service (Barry Ketley)*



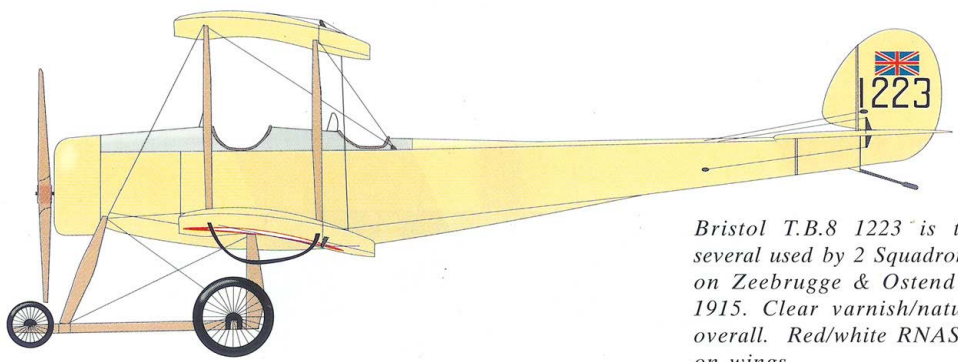
Sopwith Batboat No.38 after rebuilding in November 1913. Finish is varnished cedar for the hull, doped natural linen on the wings and copper sheet wingtip floats



Avro 504 No. 873 was used by Sqdn Cdr Briggs on the Friedrichshafen Raid. Finish is overall doped linen and varnished wood with black enamelled cowling



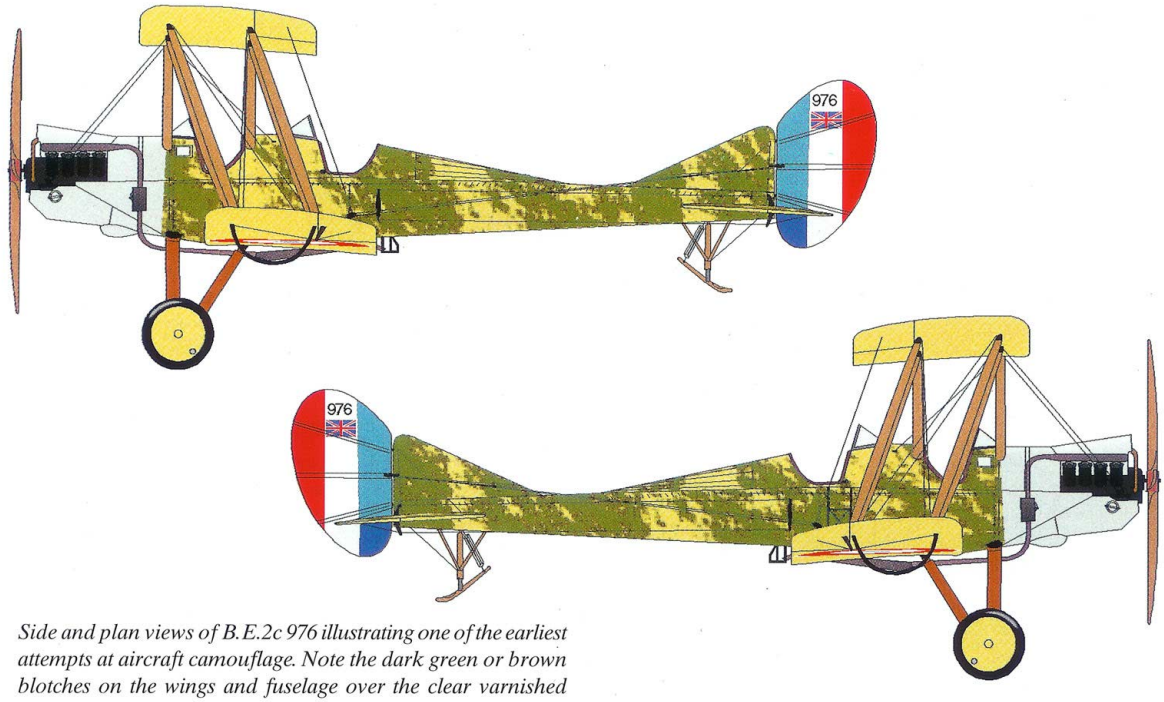
Samson's famous B.E.2a, No 50 in France in 1914. Clear-doped linen overall with the early red ring RNAS markings on the wings and Union Jack on the rudder



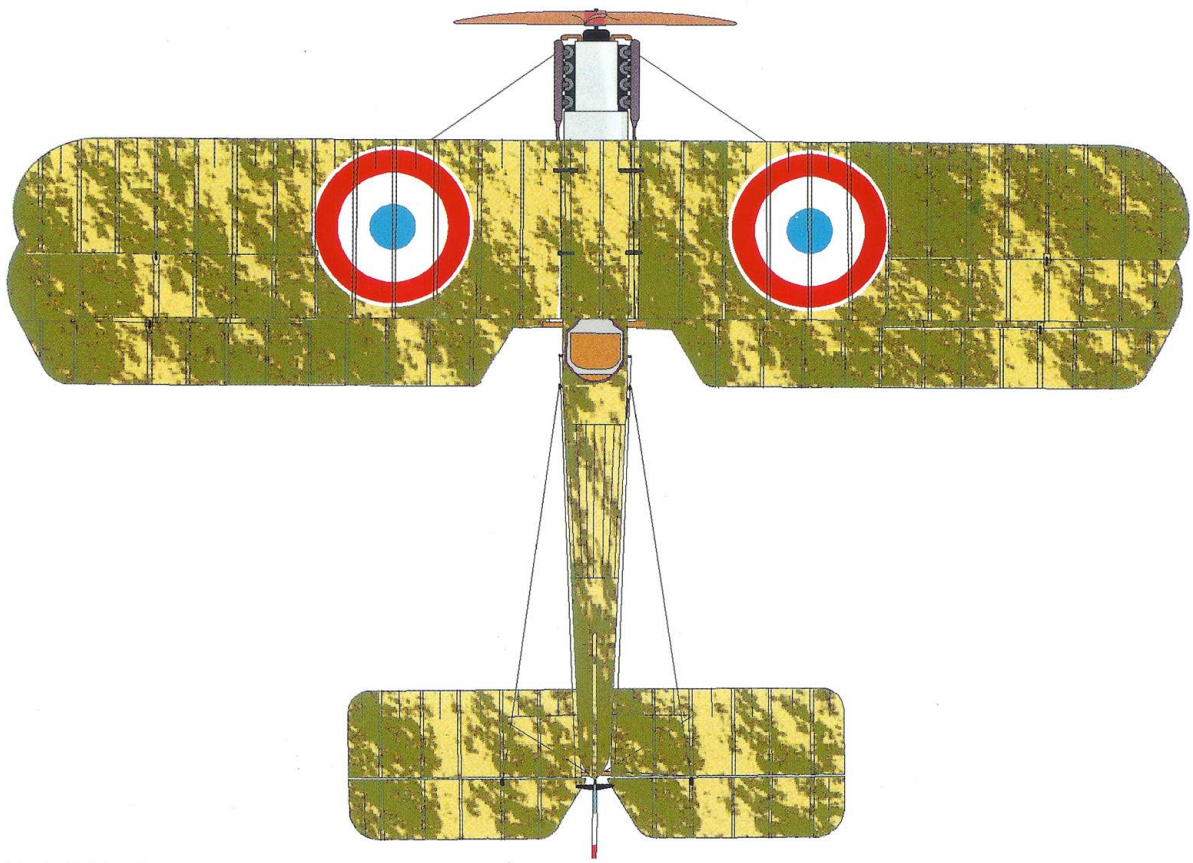
Bristol T.B.8 1223 is typical of several used by 2 Squadron for raids on Zeebrugge & Ostend in spring 1915. Clear varnish/natural metal overall. Red/white RNAS markings on wings

1/72 SCALE

CAMOUFLAGE & MARKINGS



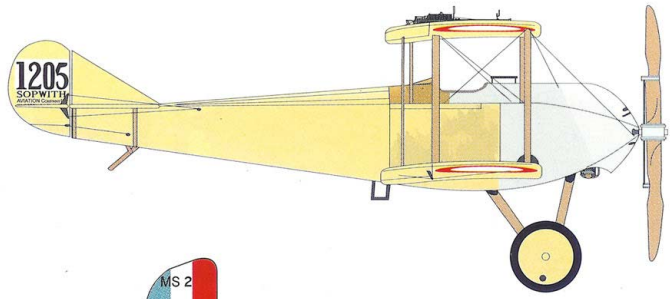
Side and plan views of B.E.2c 976 illustrating one of the earliest attempts at aircraft camouflage. Note the dark green or brown blotches on the wings and fuselage over the clear varnished linen fabric. Compared with the tones of the Union Jack (see photo 134), the roundels appear to be modified from early RNAS types with red outer rings. Shown as it appeared at the time it crashed while with 1 Wing at St. Pol in early 1916

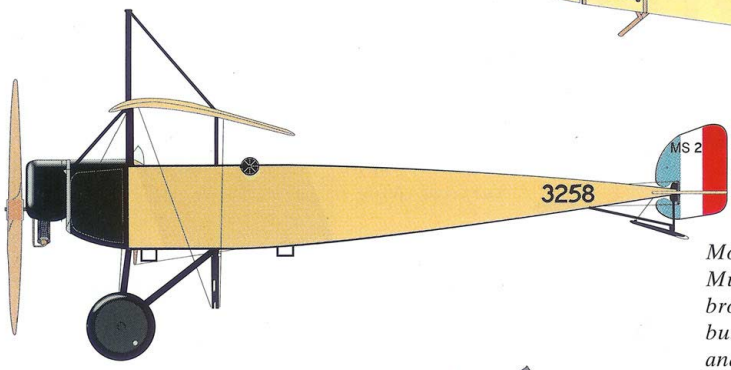


1/72 SCALE

CAMOUFLAGE & MARKINGS

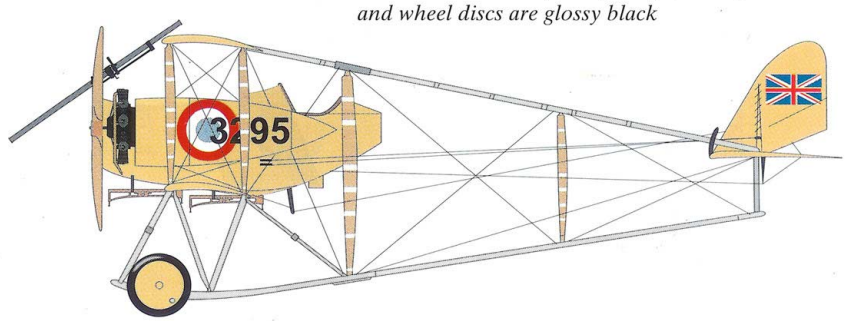
Sopwith Tabloid No. 1205 wears the typical early RNAS finish of weathered clear-dope and natural metal panels. The only markings appear to be on the rudder. Note the Lewis gun and deflector plates on the propeller. 3 Wing, Tenedos, 1915

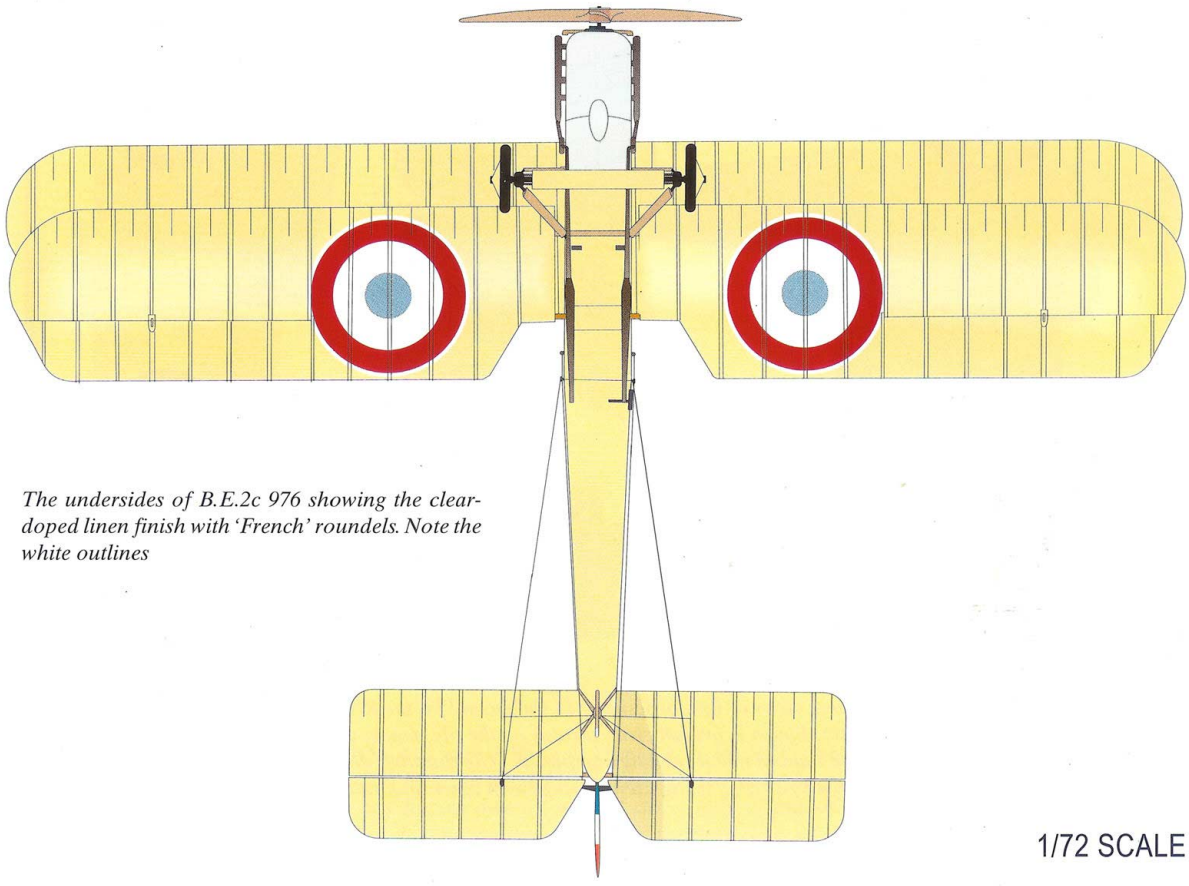




Morane-Saulnier Type L, 3258, of 3 Wing on Mudros in 1915 in the overall clear-doped brownish-yellow fabric worn by many French-built machines. The fuselage edges, metal panels and wheel discs are glossy black

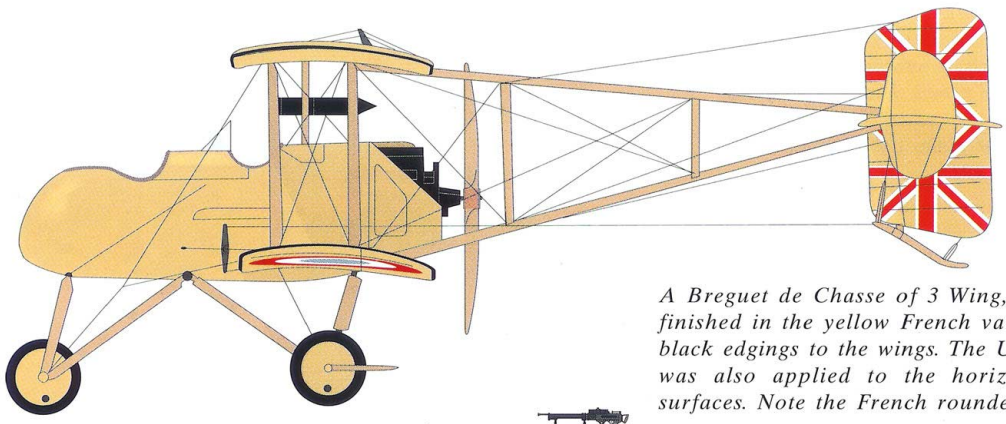
Caudron G.IV 3295 of 1 Wing is equipped with the huge Davis gun. It is probably finished in the yellowish-beige French varnish. Many RNAS Caudrons used the rounded fins as seen on this example at St. Pol in late 1915-early 1916



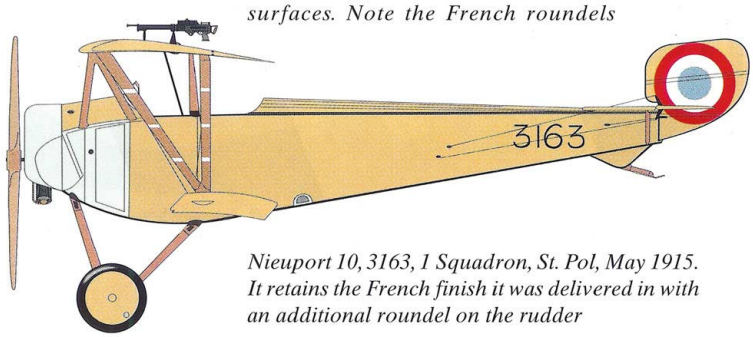


The undersides of B.E.2c 976 showing the clear-doped linen finish with 'French' roundels. Note the white outlines

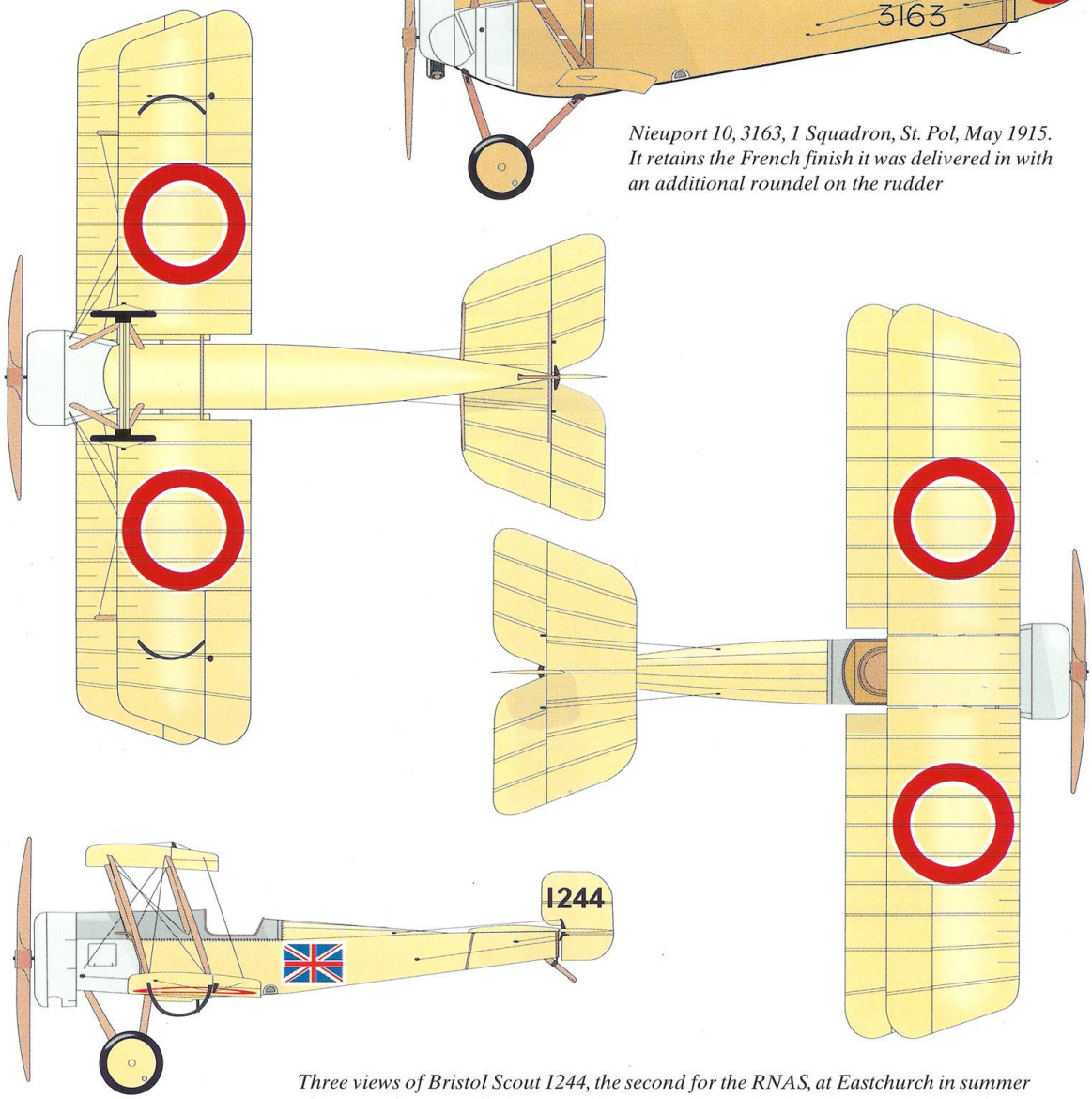
1/72 SCALE



A Breguet de Chasse of 3 Wing, probably finished in the yellow French varnish with black edgings to the wings. The Union Jack was also applied to the horizontal tail surfaces. Note the French roundels



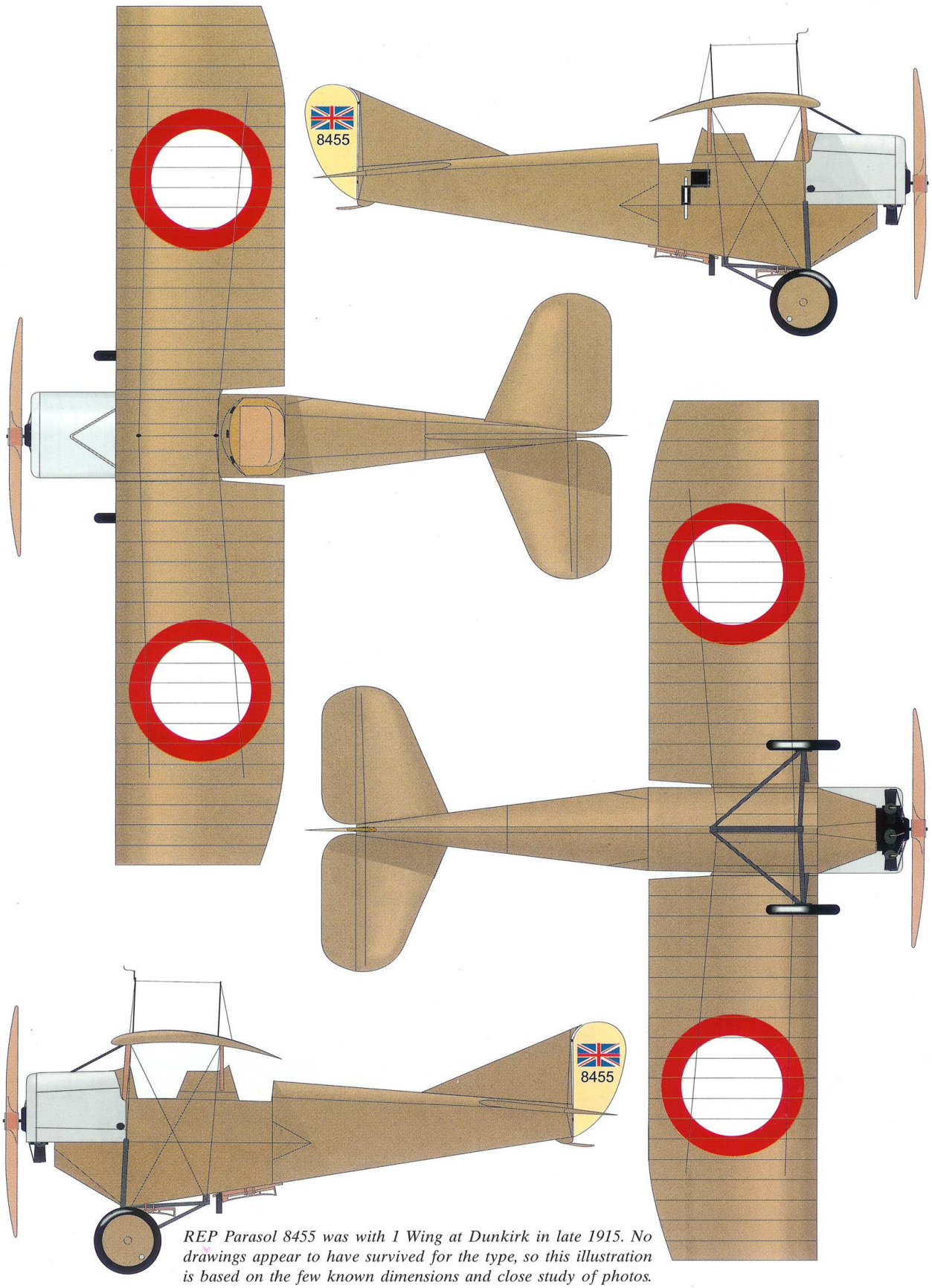
Nieuport 10, 3163, 1 Squadron, St. Pol, May 1915. It retains the French finish it was delivered in with an additional roundel on the rudder



Three views of Bristol Scout 1244, the second for the RNAS, at Eastchurch in summer 1915. Finish is overall clear varnish on the ply panels, clear dope on the linen fabric and natural metal cowling and panels. The roundels are an interesting variant of the RNAS red ring, being literally rings with inner and outer white surrounds

1/72 SCALE

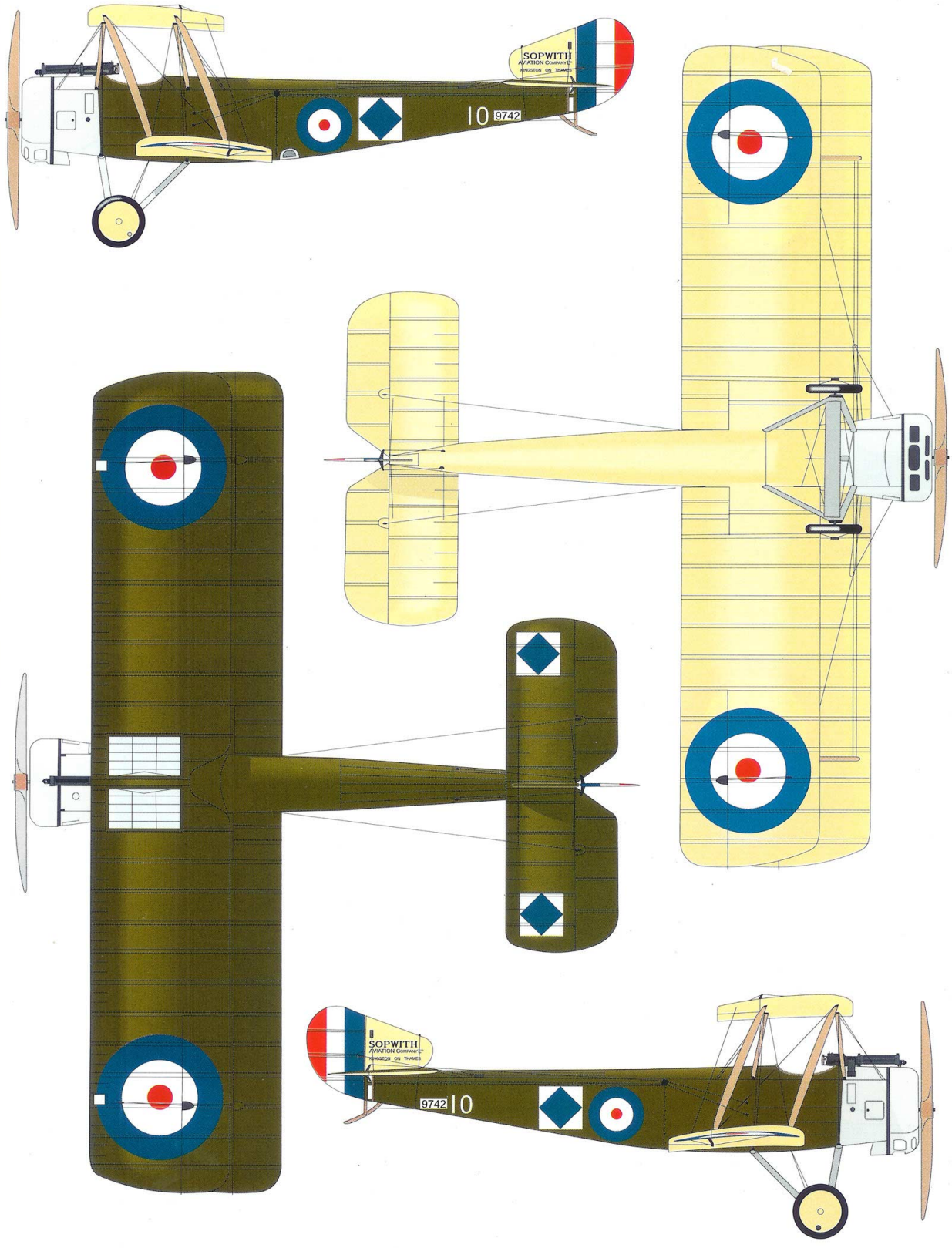
CAMOUFLAGE & MARKINGS



REP Parasol 8455 was with 1 Wing at Dunkirk in late 1915. No drawings appear to have survived for the type, so this illustration is based on the few known dimensions and close study of photos. Finish is a dark biscuit-colour, possibly through use of a rubberised fabric, with typical early RNAS rings

1/72 SCALE

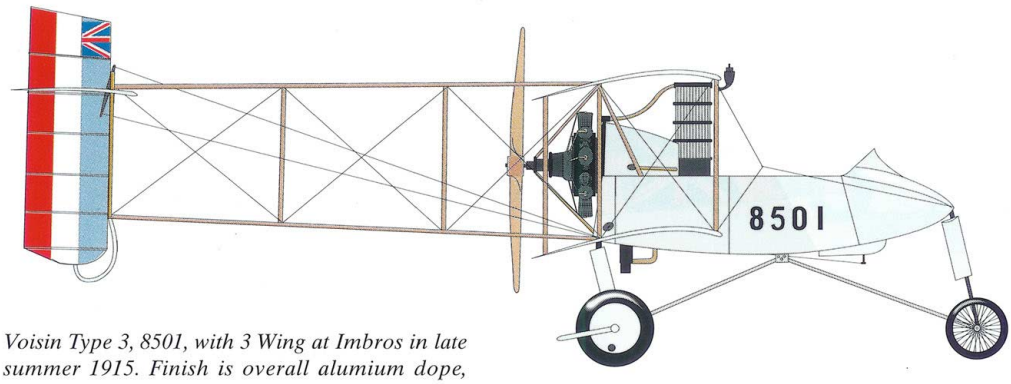
CAMOUFLAGE & MARKINGS



A single-seat Sopwith 1½ Strutter of A Flight, 2 Squadron, 3 Wing, probably flown by FSL McNeil at Ochey in late 1916-early 1917. No. 9742, '10', is finished in early PC10 on the uppersurfaces (except for the fin) with clear doped undersides and natural metal cowling. The roundels are the newly-standardised red/white/blue type, while the diamond marking was used to identify the flight and squadron

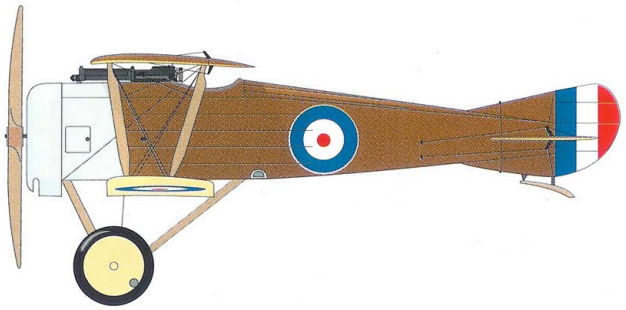
1/72 SCALE

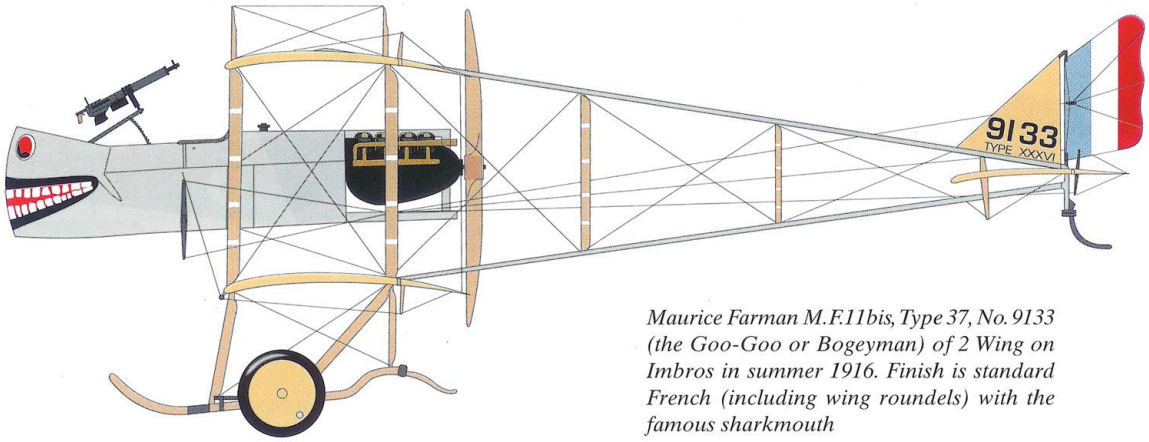
CAMOUFLAGE & MARKINGS



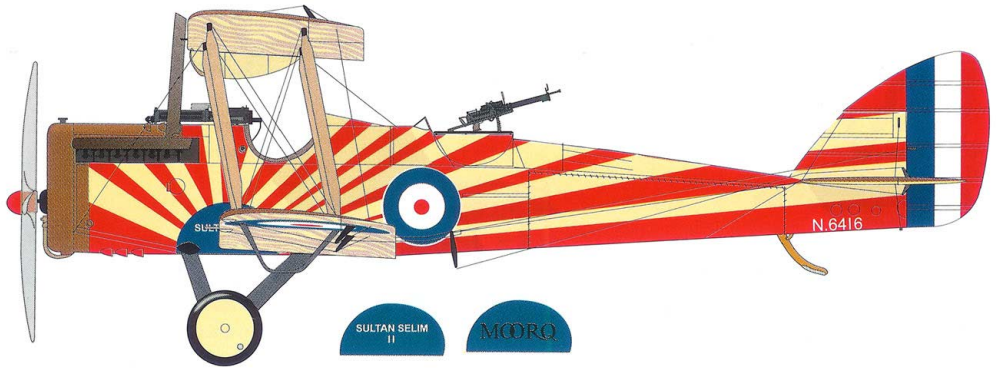
Voisin Type 3, 8501, with 3 Wing at Imbros in late summer 1915. Finish is overall alumium dope, probably with French-style wing roundels

The one-off Alcock Scout, probably finished in PC12 and clear dope with standard roundels. It never had a serial number



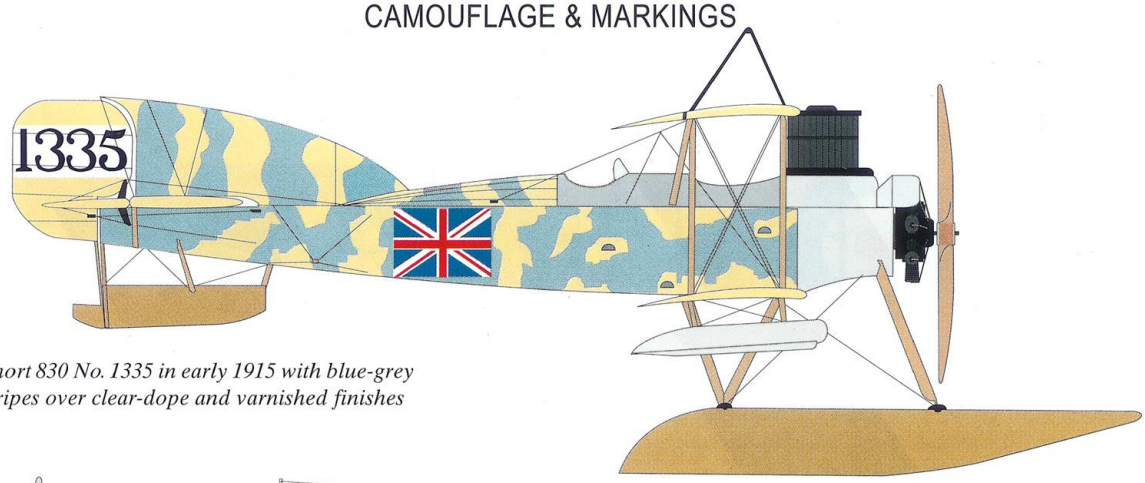


Maurice Farman M.F.11bis, Type 37, No. 9133 (the Goo-Goo or Bogeyman) of 2 Wing on Imbros in summer 1916. Finish is standard French (including wing roundels) with the famous sharkmouth

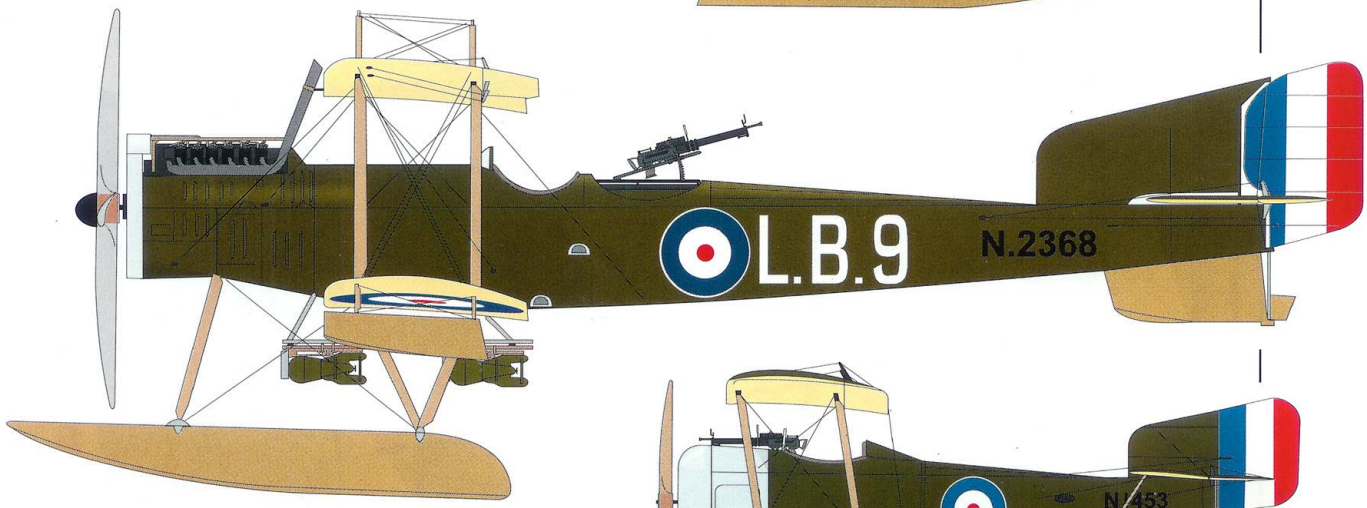


DH.4 N6416 is shown as it appeared while with F Squadron, 62 Wing at Imbros in summer 1918. The sunburst marking is most probably red over natural linen, with an odd 'squiggle' effect under the wings. The name 'Moorq' appeared on the port side at one point. The fuel tank under the upper wing was also moved to the starboard side. (See photo 216)

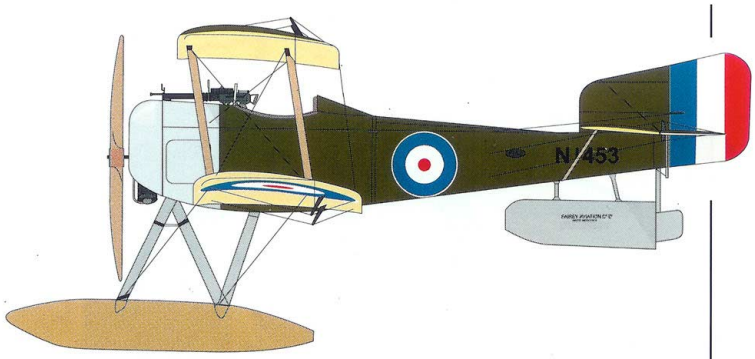
1/72 SCALE



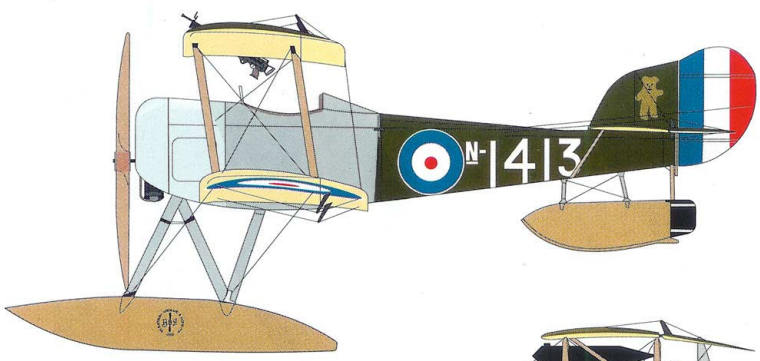
Short 830 No. 1335 in early 1915 with blue-grey stripes over clear-dope and varnished finishes



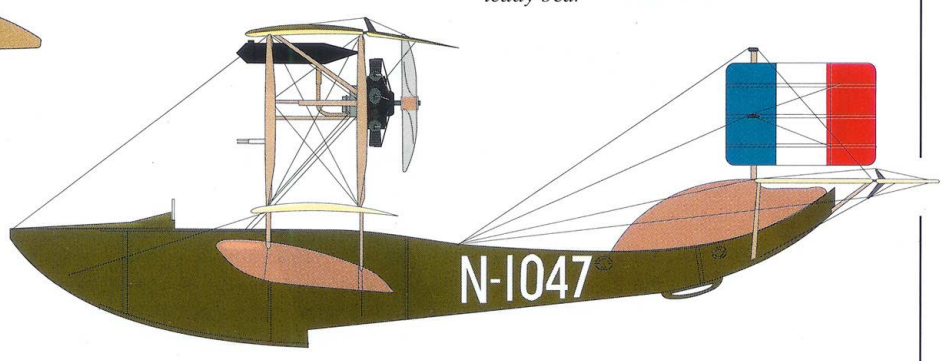
Fairey Campania N2368 of HMS Pegasus *in 1918. Finish is PC10/clear dope and varnish*



N1453, a Fairey Hamble Baby in standard PC10/clear dope had a very brief career. Delivered to Calshot on 21 September 1917, it was wrecked five days later



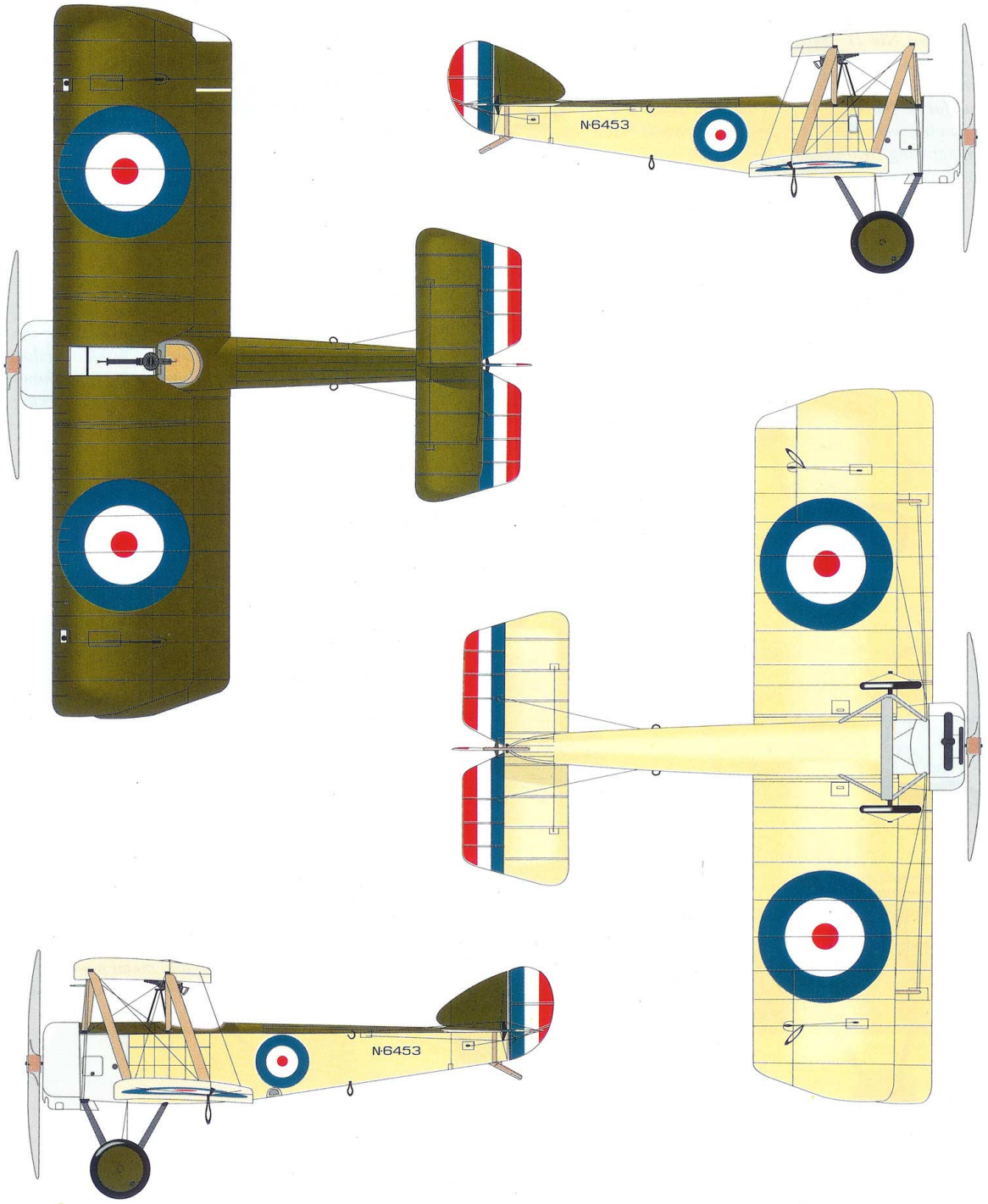
Sopwith Baby, N1413, as seen at Hornsea Mere in October 1917. Finish is PC10 khaki with clear-doped undersides and varnished floats (with Blackburn logo). Cowling is natural metal, ply fuselage panels are grey enamel paint. Note the teddy bear



FBA Type B, N1047, wears the French delivery scheme of clear dope and varnished ply hull. Wings were British-built, so had full-chord British roundels with white outlines. Calshot, summer 1917

1/72 SCALE

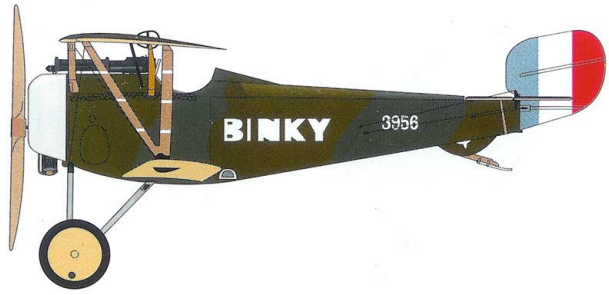
CAMOUFLAGE & MARKINGS

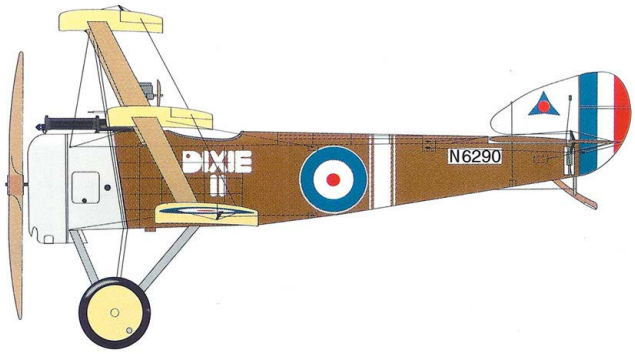


Sopwith Pup N6453 was the aircraft in which Squadron Commander E.H. Dunning made the first-ever landing on a ship underway, when he successfully touched down on HMS Furious *at 11.10 am on 2 August 1917. It is shown here as it appeared five days later, finished in PC10 and clear dope, with a natural metal cowling and fuselage panels. Only Beardmore-built Pups had the striped elevators. Although not noted in contemporary accounts, N6453 presumably sustained slight damage on the first landing as it has had recent repairs to the starboard lower wing aileron. Note the leather grab loops under the wings and on the fuselage*

1/72 SCALE

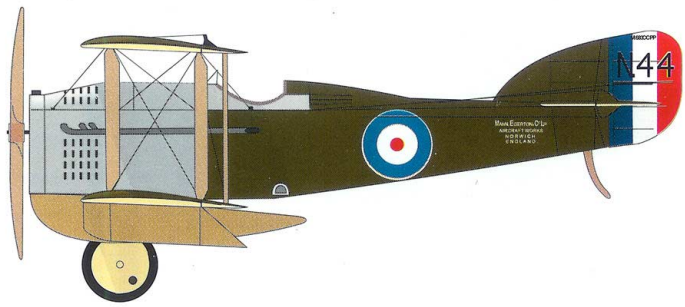
Nieuport Nie 21 3956 of Naval 3, in January 1917. 'Binky' wears sprayed-on green and brown French camouflage with clear doped or pale yellow under surfaces. Natural metal cowling. Standard RFC roundels were probably applied above and below the upper wing, below on the lower wing

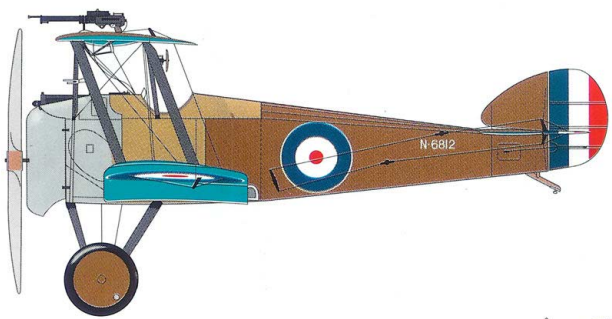




Sopwith Triplane N6290 of 8 Squadron, May 1917. PC12 was the specified uppersurface finish for the type, with clear doped undersides. Close inspection of the photo on which this drawing is based shows the name to be 'Dixie II'. Note the personal marking on the fin

Mann Egerton H.1 shipboard fighter, N44, was the only one built. Finish is PC 10 with battleship grey engine cowling panels and varnished ply under-fuselage and wingtip floats. Isle of Grain, December 1917



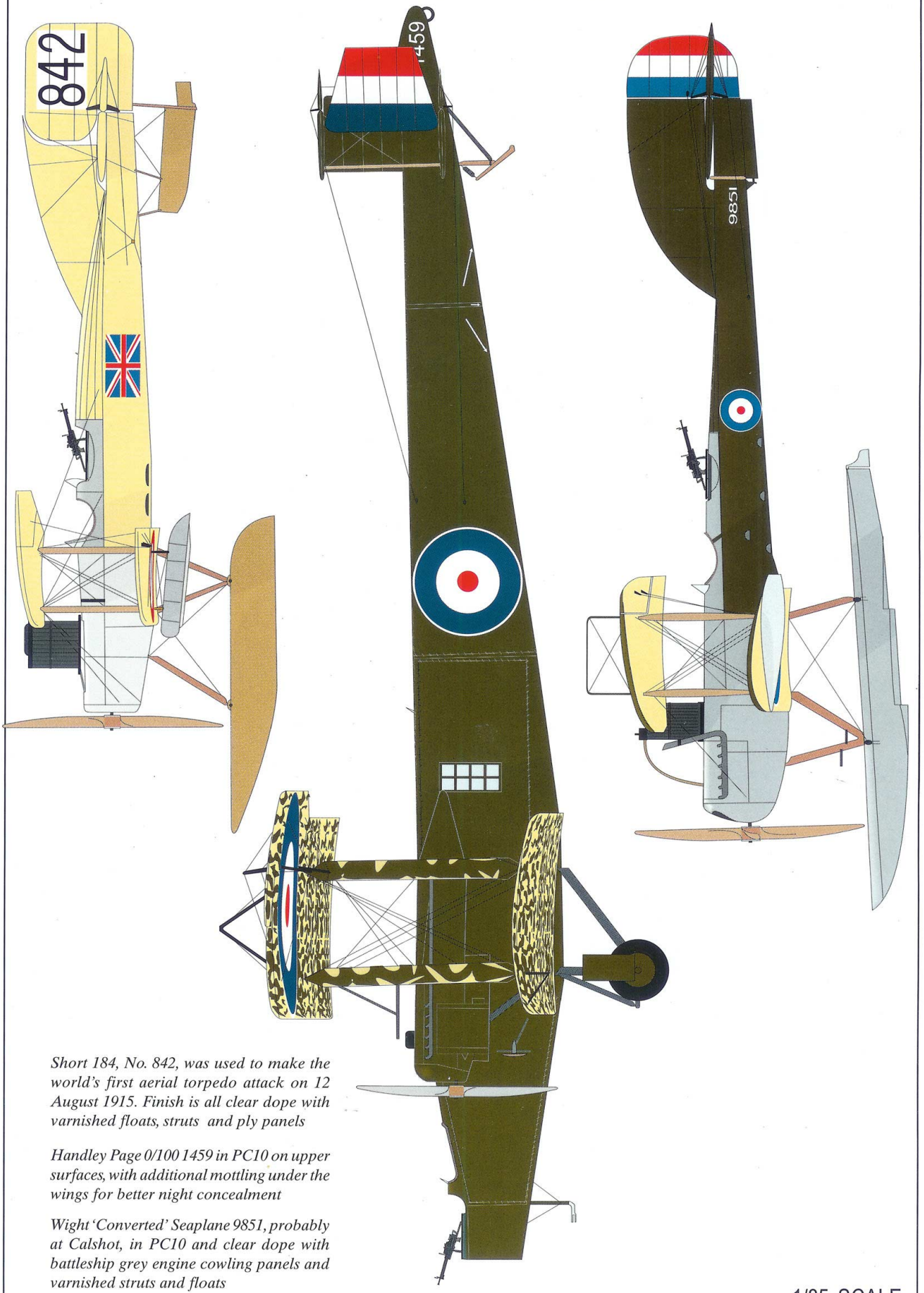


Sopwith 2F.1 Camel N6812 in which Lt Culley shot down Zeppelin L53. Colours are probably PC10 uppersurfaces and wheel discs, light blue undersides and battleship grey cowling and metal panels. It is on display in the IWM in an inaccurate colour scheme

Sopwith F.1 Camel B6289 of 'A' Flight, 10 Squadron. Standard PC10/clear dope finish with black and white stripes to identify the flight. ('B' Flight used red and white, 'C' Flight blue and white). Wheel disc designs identified individual pilots

1/72 SCALE

CAMOUFLAGE & MARKINGS



Short 184, No. 842, was used to make the world's first aerial torpedo attack on 12 August 1915. Finish is all clear dope with varnished floats, struts and ply panels

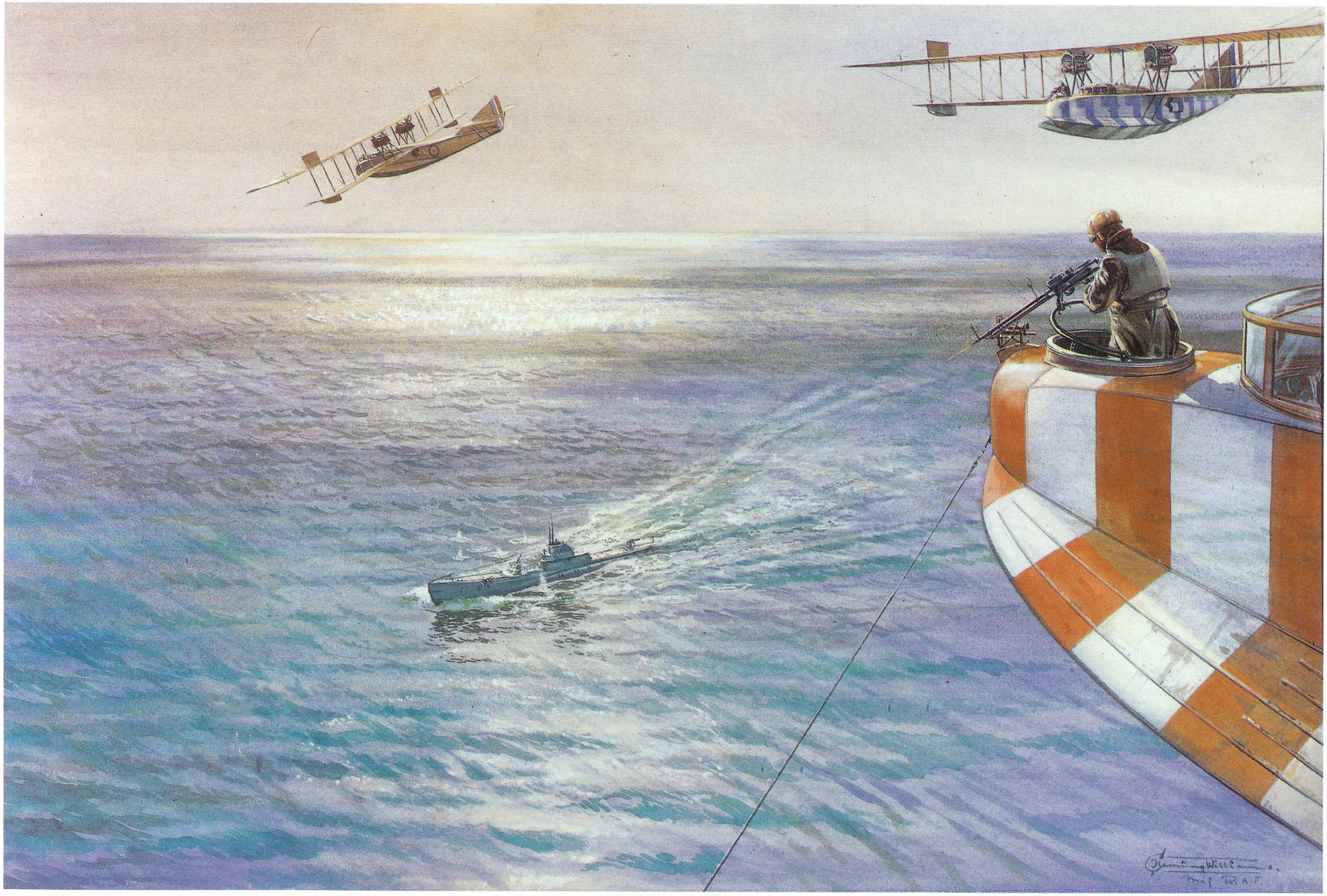
Handley Page 0/100 1459 in PC10 on upper surfaces, with additional mottling under the wings for better night concealment

Wight 'Converted' Seaplane 9851, probably at Calshot, in PC10 and clear dope with battleship grey engine cowling panels and varnished struts and floats

1/85 SCALE

Above: *'Mothering the Convoy'. A painting by C.R. Fleming-Williams from the Imperial War Museum Gallery (IWM 2447)*

Right: *'Flying boats machine-gunning a crippled German submarine'. A painting by C.R. Fleming-Williams from the Imperial War Museum Gallery (IWM 1623)*



2021

Above: *'A Good Samaritan'. A painting by C.R. Fleming-Williams from the Imperial War Museum Gallery (IWM 1223)*

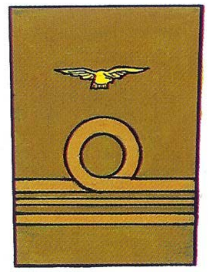
Left: *'The bombing of El-Afuleh railway junction'. A painting by C.R. Fleming-Williams from the Imperial War Museum Gallery (IWM 2846)*

RANK BADGES & INSIGNIA OF THE ROYAL NAVAL AIR SERVICE

Wing Captain

Wing Commander

Squadron Commander



Squadron Commander Khaki Uniform

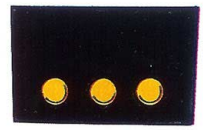
Squadron Commander

Flight Commander

Flight Lieutenant

Observer Lieutenant

Flight Sub-Lieutenant



Flying Officer

Wing Captain

Wing Commander

Squadron Commander

Flight Lieutenant

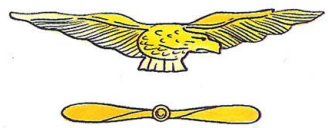
Flight Sub-Lieutenant

Flight Sub-Lieutenant (RNR)

Flight Sub-Lieutenant (RNVR - early)

Flight Sub-Lieutenant (RNVR - later)

Officer Pilot



Engineer

Other Ranks Pilot

Airship Coxswain

Airship Coxswain

Artisan

Reserve Officer (on shoulder)

Rank Star

General Branch

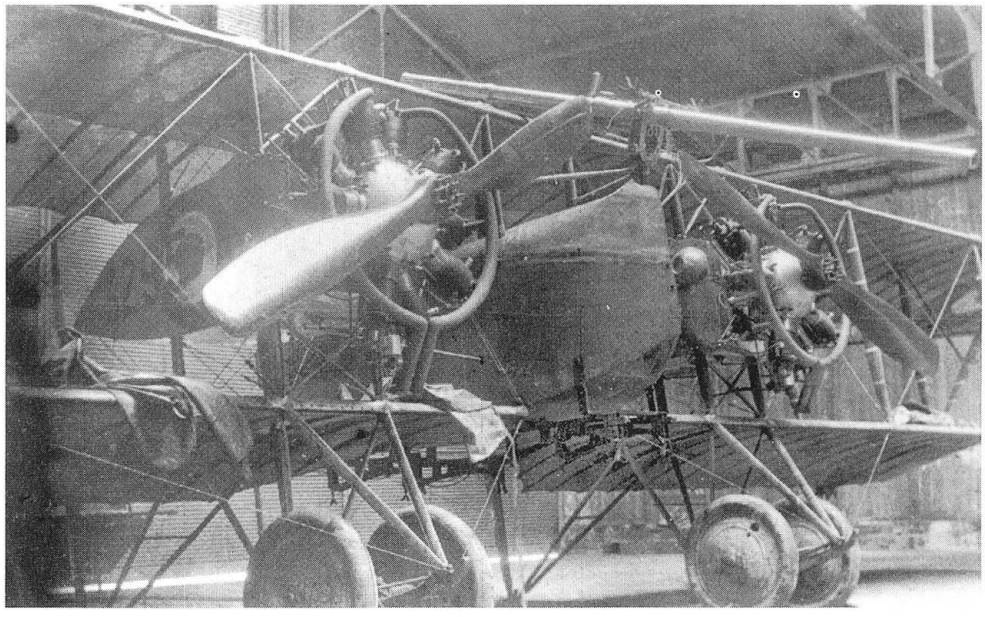
Wireless Telegraphist

Anti-Aircraft Corps Petty Officer

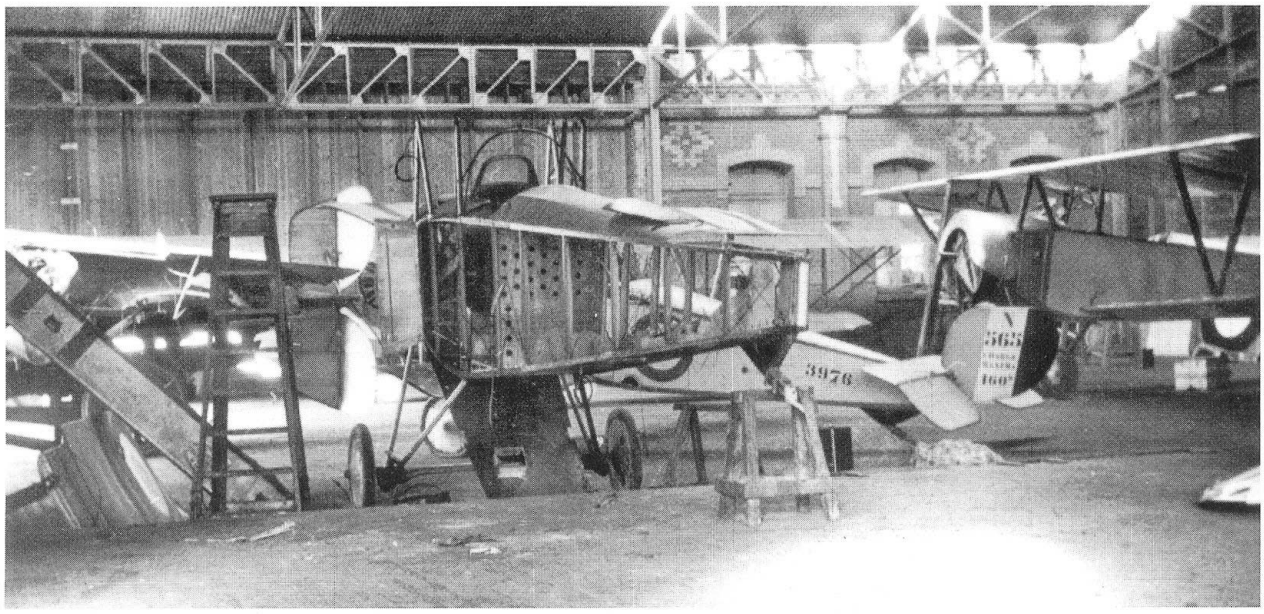
Anti-Aircraft Corps

141: *Caudron G.IV, 3289, which was at St.Pol from late September 1915, eventually being written off in late July 1916. By the amount of interest it is attracting and the generally clean condition, the machine may have been newly delivered (Barry Ketley)*

142: *Hangar view of a unique Caudron G.IV, number 3295, fitted here with the experimental Davis gun. With 1 Wing at St. Pol from 19 October 1915, it took part in numerous tests and bombing raids until it was eventually struck off charge on 15 June 1916 (Barry Ketley)*

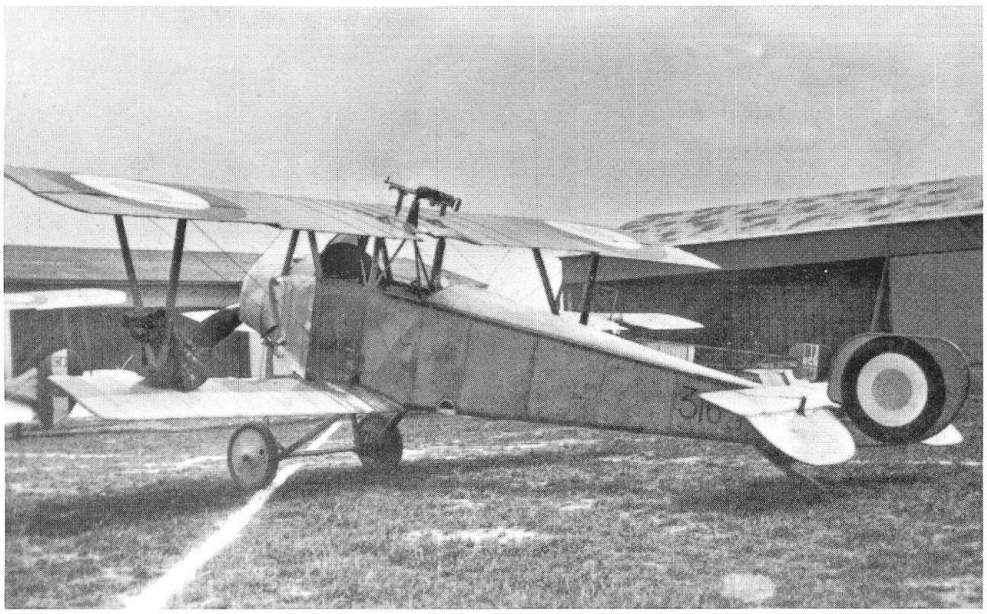


143 Below: *Over 55 Caudron G.IV's served as bombers with the RNAS and were the mainstay of 5 Wing which formed at Coudekerque under Spenser Grey. This particular aircraft is with 3 Wing at Luxeuil. They remained in use until superseded by the HP 0/100 (IWM Q 68074)*

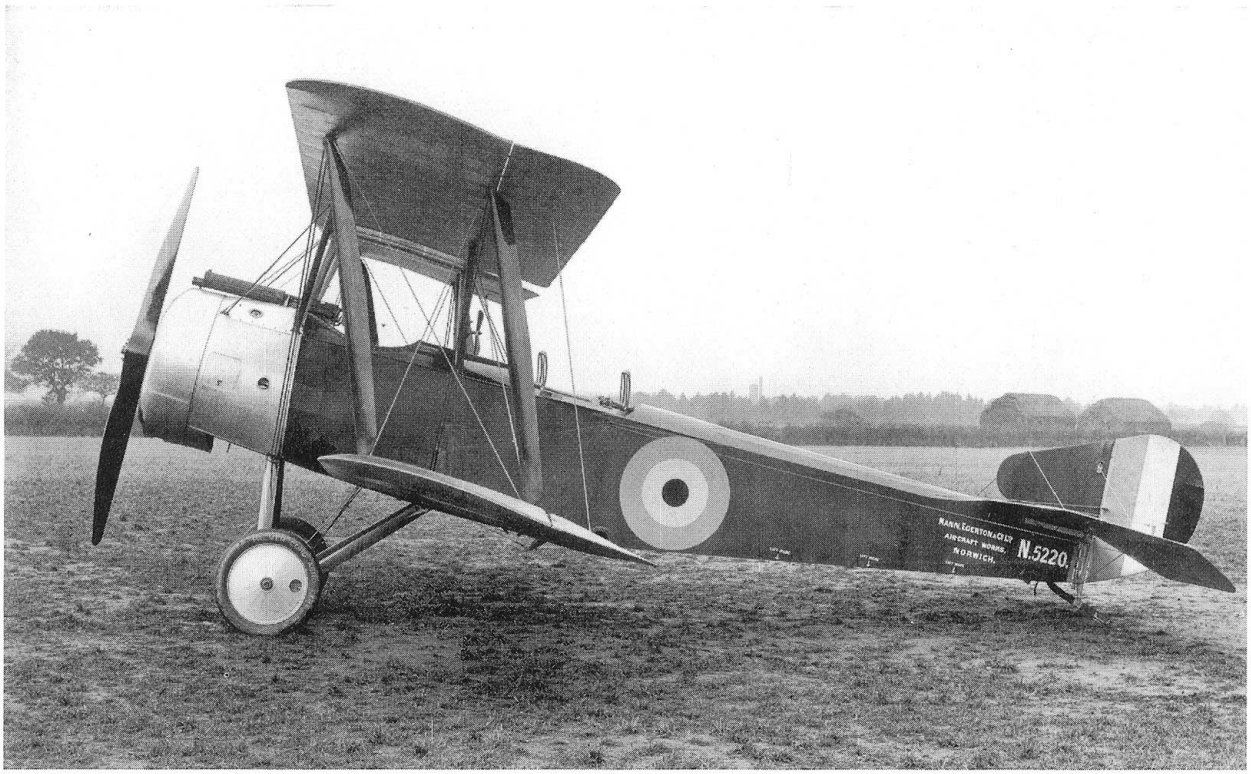


144 Above: *Interesting hangar shot showing several Nieuport scouts under repair or erection. Nieuport Ni 11 3976 still retains its previous French identity (N565), having being delivered direct to 1 Wing at St. Pol in October 1915. It suffered an accident there and was written off on 15 April 1916 (Barry Ketley)*

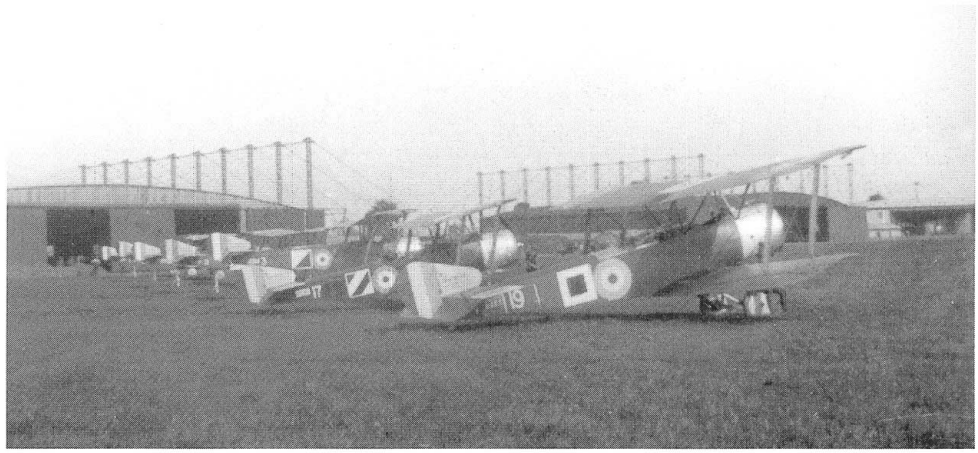
145 Left: *Another view of Nieuport 11, 3976, now fully assembled and armed at St. Pol. Note the Breguet de Chasse in the background (J.M. Bruce/ G.S. Leslie Collection)*



146: *The first Nieuport 10 delivered to the RNAS, number 3163 arrived at Naval 1 (which became 1 Wing RNAS) at St. Pol in late May 1915. It was written off by December that year. All 24 of the first batch delivered retained their French cockades above and below the wings and bore additional markings on the rudder surfaces, as required by the RFC from November 1914. The tail of a B.E.2c, 973, shows to the left. Behind 3163 is Bleriot XI-BG parasol 1547. This machine served with Naval 1 for precisely three months between 21 March until 21 June 1915 (Barry Ketley)*



147 Above: *The first Sopwith 1½ Strutter, N5220, of a batch of 30 built by Mann, Egerton & Co. of Norwich in late 1916 (Bruce Robertson)*

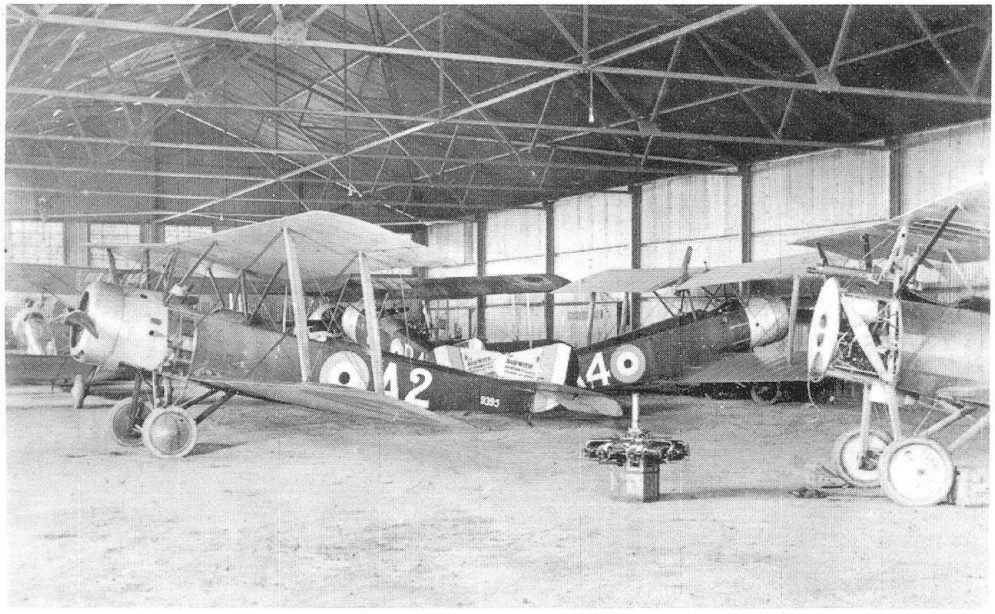


148 Right: *1½ Strutters of 3 Wing at Luxeuil in about September 1916. Nearest is 9722 (19) 'Sao Paulo Britons No.1'; 9739 (17) 'Britons in Egypt No.2' and 9657 (3). No. 19 was briefly based at Ochey and flown by C.R. Draper, later OC of Naval 8 (IWM Q 68079)*

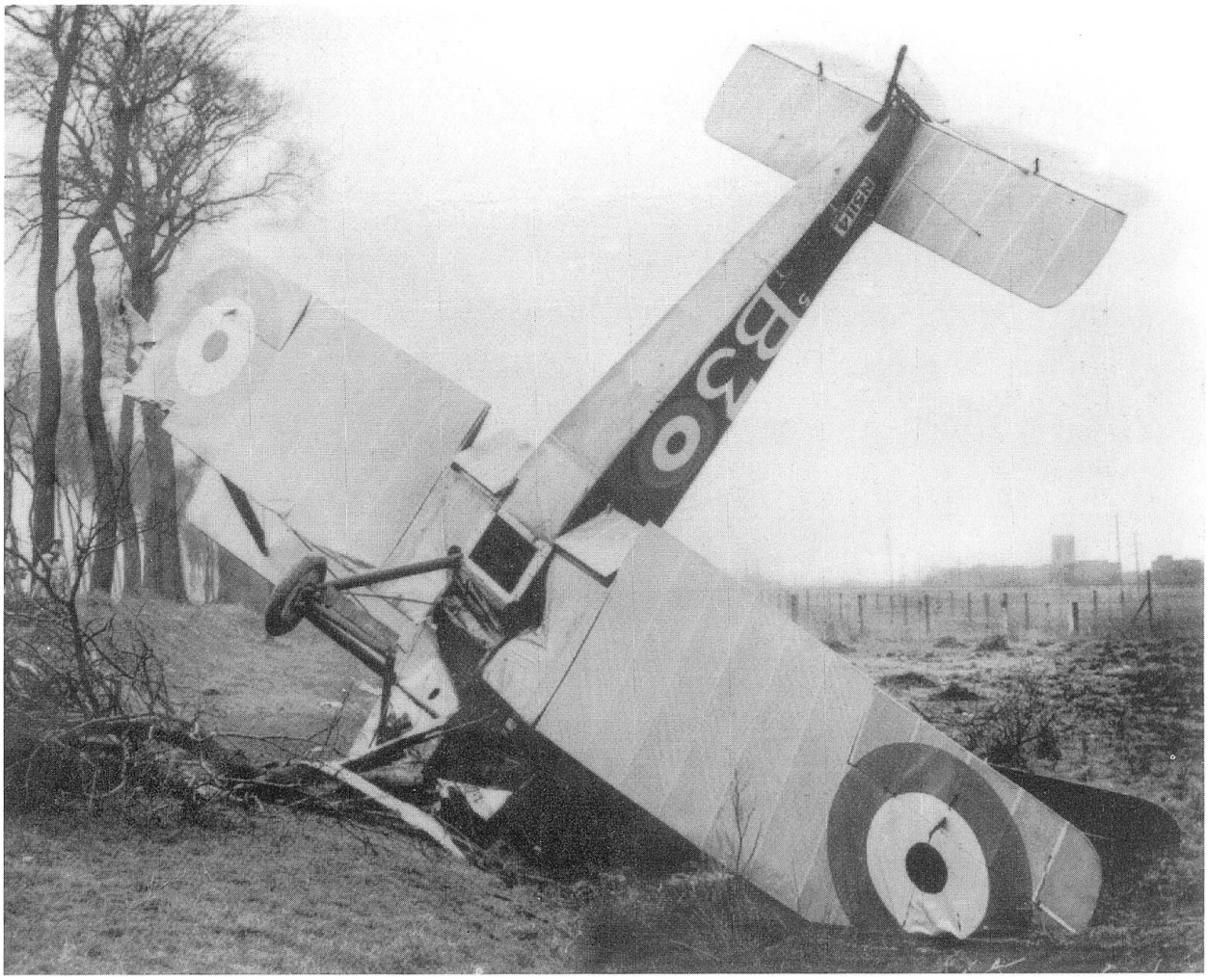
149 Right: *Sopwith 1½ Strutter N5116 arrived at Luxeuil on 15 November 1916. Seen here as a single-seat bomber, number '43' served with 4 Flight, then 2 Squadron of 3 Wing before being transferred to the French. Powered by a 110hp Le Rhone engine, the 1½ Strutter was the first British aircraft to have a factory-fitted synchronised machine gun for the pilot. Versatile and easy to fly, the machine quickly earned a reputation second to none as a bomber, fighter escort and reconnaissance aircraft and served in every theatre (IWM 868078)*

150: *Sopwith 1½Strutter 9378, 'New Zealand No.1, Poverty Bay' was crashed by Flight Sub-Lieutenant G.C.V. Hewson at Coudekerque on 23 April 1916 with the result seen here. It had been with 5 Flight, 'A' Squadron of 5 Wing for just over a month. It was, however, repaired and later saw extensive service with several other naval units before being eventually struck off charge while with 233 Squadron, RAF, on 22 February 1919. Note the interim dark camouflaged spine and wings seen on several machines of the type (J.M. Bruce/ G.S. Leslie Collection)*

151: *A lineup of Sopwith 1½ Strutters of 3 Wing at Luxeuil in November-December 1916. N5098, '32', was eventually transferred to the French on 20 April 1917. The apparent stripes on the engine cowlings are the shadows of the horizontal propellers cast by the low winter sun. The French were so impressed by the 1½ Strutter that they built well over 4,000 for themselves (J.M. Bruce/ G.S. Leslie Collection)*



152: *Sopwith 1½Strutters of 5 Wing in a hangar at Couderkerque. 'A2', number 9395, was a presentation aircraft named 'Tientsin Britons No.1'. At the time it was seen here it was serving with 5 Squadron from the end of December 1916, until the unit moved to Petite Synthe on 1 April following. It was wrecked on 21 April and scrapped on the 27th suffering from general fatigue (J.M. Bruce/ G.S. Leslie Collection)*



153 Above: *The Sopwith 1½ Strutter introduced several innovations apart from the synchronised gun. Here N5114 of 5 Squadron allows a good view of the open bomb chamber used by the British single-seat bomber versions after it came to grief on 26 February 1917 while being flown by E.T. Newton-Clare. The damage led to it being written off on 24 March. The flaps at the wing roots are actually air brakes. Note also the small white figure '5' just before the fuselage code 'B3' (J.M. Bruce/ G.S. Leslie Collection)*

154 Right: *Yet another casualty from 5 Squadron, 9383 was also a presentation machine, 'Britons in Japan No.1'. It was damaged beyond repair on 10 February 1917 while being flown by F/Cdr J.C.P. Wood (J.M. Bruce/ G.S. Leslie Collection)*

155 Left: *A typical selection of aerial bombs deployed between 1914 and 1918. On the left on the shelves are various 25lb Cooper bombs fitted with striker caps and arming vanes. The bomb on the right shelf is probably a petrol bomb. Other items seen are detonators, striker caps and bombsights. On the floor, from left to right are a 16lb incendiary; 65lb HE; 100lb RL (named for the Royal Laboratories, at Woolwich where it was designed); 112lb HE RL Mk. 3 and 230lb RFC Mk. 3 (IWM Q 61064)*

156 Left: *A grainy air-to-air picture of Sopwith 1½ Strutter 9722, '19', of 5 Wing. It may be being flown by the notorious Christopher Draper, the later 'Mad Major', famous for his low-flying exploits under London bridges (IWM Q 69457)*

157 Below: *War on the Western Front, winter 1916-17. Sopwith 1½ Strutters of 5 Wing prepare to take off on a mission from the snow-covered field at Couderkerque (Bruce Robertson)*

THE SPIDER WEB

Of seaplanes, flying boats–and gasbags

While 1916 had been the year of confusion, 1917 would be the year of consolidation. After two and a half years of war the RNAS would finally dispense with trial and error and start to organise itself. From January the RNAS had a representative for air matters on the Board of the Admiralty for the first time and Commodore Godfrey Paine, ex-commander of CFS and RNAS Cranwell, took up this position as Fifth Sea Lord.

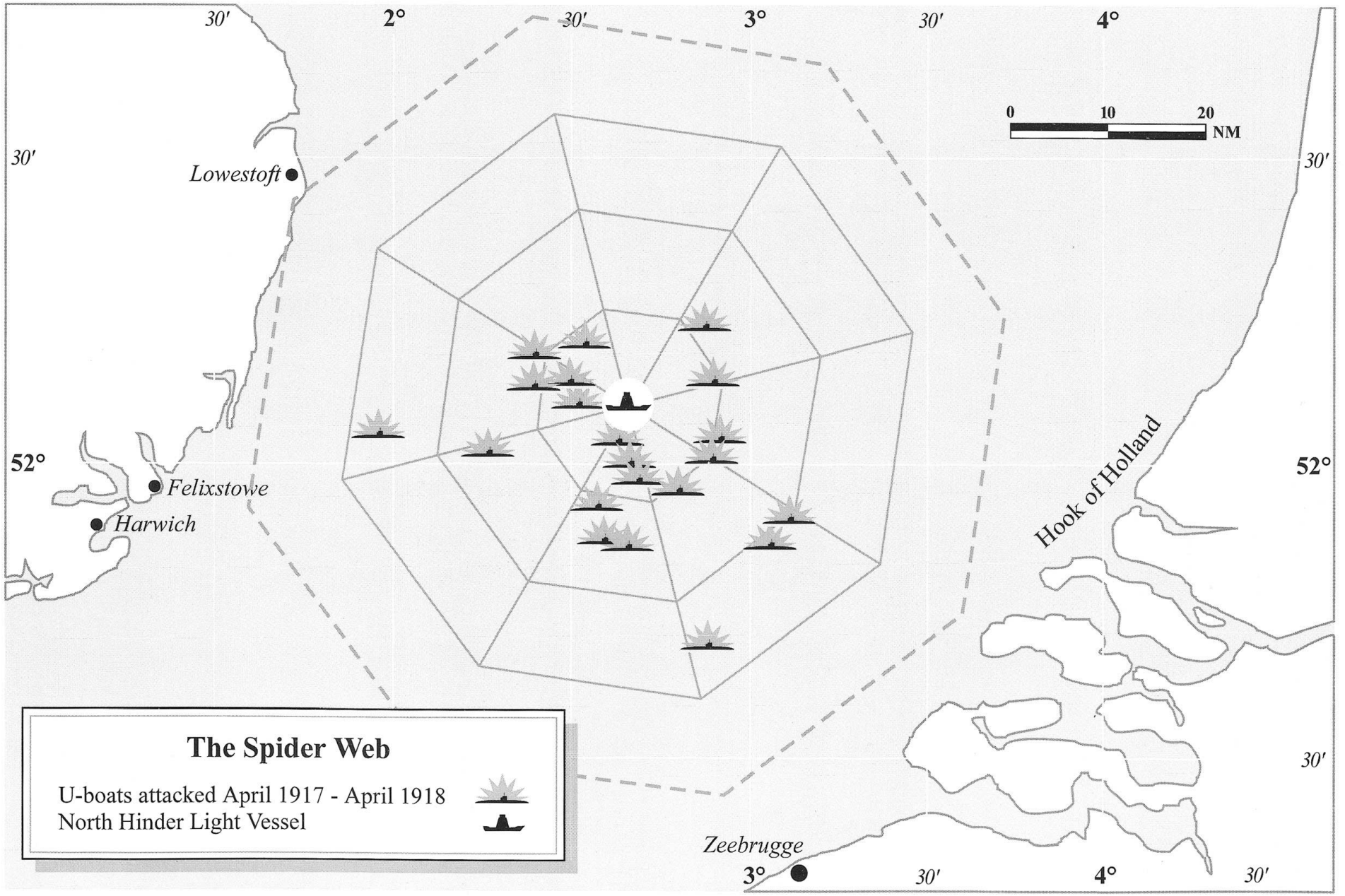
With the organisation starting to become effective, the RNAS now had better weapons for combat. On land they had the Sopwith Pup and the 1½ Strutter, over the sea they had the flying-boat and the airship.

The flying boat had come about through the enthusiasm of Lt John Porte who had flown a design by Glenn Curtiss in America before the war. Porte had been invalided out of the Royal Navy after contracting tuberculosis. Because of his subsequent experience with Curtiss he was taken back in August 1914 and put in charge of flying training. Curtiss had been building a large hulled, two engined flying boat called *America*, which Curtiss intended to fly across the Atlantic. Porte was the test pilot and on returning to duty in the Royal Navy he described his civilian work to Murray Sueter. Murray Sueter, a very willing listener, was impressed with Porte's enthusiasm. After further investigation the *America* and her sister boat were bought from Curtiss which he delivered at the end of 1914.

Over the following months, Curtiss developed and improved on the original design, known as the H.4, and the Royal Navy finally took into service the improved H.12 model. The design did have certain drawbacks in that the hulls were inherently weak. They could stay in the air for nearly seven hours but they also suffered from poor defensive capabilities at a time when aerial combat was becoming a serious development of the air war. Porte was able to improve on Curtiss' original concept and produced a larger, stronger hull. This was the first of a line of models that would be named after the station where they were built and tested, namely Felixstowe.

Porte's new hull shape was capable of handling rougher seas than the Curtiss hull and the configuration of the fuselage, tail assembly and power plant also enabled more armament to be fitted. From the prototype F.2, the line would extend to the F.5, although this latter model would arrive too late to see effective war service.

158 Above: *The centre of the 'Spider Web'. The North Hinder Light Vessel as seen from a passing flying boat. Fane Collection (IWM HU 67691)*


30'
2°
30'
3°
30'
4°
0
10
20
NM
30'
Lowestoft
30'
52°
Felixstowe
Harwich
Hook of Holland
52°
30'
Zeebrugge
3°
30'
4°
30'
The Spider Web
U-boats attacked April 1917 - April 1918
North Hinder Light Vessel

The first use to which these 'boats were put was in anti-submarine work. In December of 1916 the Admiralty finally set up a unified command to deal with the submarine menace and their strategy was well in place when the Germans declared — or rather re-introduced — unrestricted submarine warfare in February of 1917.[46] This Anti-Submarine Division could now co-ordinate the offensive strategies which they had been developing over the winter.

U-boats were still slipping through restrictive measures such as the net barrage put up in the exit channels by Admiral Bacon. However by the spring it had been found that the submarines would use their radio communication during their outward journeys from their home bases. By using two or more listening posts to monitor these transmissions, it was possible to fix the location of the submarine to within a few yards. In addition, the U-boats would spend a large part of the outward journey on the surface to conserve battery power and it was found that the main channel would invariably pass the North Hinder Light Vessel, some 52 miles from Felixstowe.

A plan was therefore devised whereby the Felixstowe flying boats would commence pattern searching for submarines in an organised fashion and to a strict set of procedures. An octagonal search grid was devised and centred on the North Hinder Light. Sixty miles across and subdivided into eight search areas, over 4,000 square miles of sea could be covered by constant, rotating patrols. A submarine would take some ten hours to cross the area, more than enough time to mount a concerted attack. Aircrews were issued with the latest wireless location plots and could cover the area in five hours or so. This pattern became known as the 'Spider Web' and the effects of this new system on U-boat operations was immediate. The first Spider Web patrol was undertaken on 13 April by Felixstowe No. 8661. Canadian Squadron Leader T. Hallam, whose excellent memoirs, *The Spider Web*, are a fascinating evocation of what he termed "the romance" of flying boat flights, founded what was to become known as the 'War Flight' and was on board for its inauguration. The flight proved the practicability of the Spider Web system even if the return trip was an anxious one. Because of the absence of buoys and reference points (removed to impede the enemy) it had been decided to fly a course without correcting for wind speed and they drifted closer to the Dutch Coast than was intended.

"Coming back against a head-wind it took so long that I thought at first that somebody had moved England."

Nevertheless, the trip had proved that "there was no difficulty in flying the Spider Web under ordinary conditions."

In the first three weeks eight submarines were found and three attacked. Four destroyers were caught on the way back to Zeebrugge and were overhauled by 8661 (known as 'Old '61') ten miles south east of the North Hinder light. Almost immediately the flying boat crew found themselves rocked by shells from all four ships. Calling up assistance, they somehow weaved through the shrapnel and made their way back to Felixstowe.

The first apparent success came on the 20 May when the 'UC36'[47] was sighted and attacked as she dived. Two bombs entered the water just in front of the conning tower and the patch of oil on the surface confirmed the submarine's fate. Returning home in the fading light the aircraft arrived back at Felixstowe and crashed on landing in the swell.[48] There remains the possibility, however, that this was the British *E-33* which was attacked in just such a manner and at the same time.

Nevertheless, in the three months from May, daylight operations by U-boats were seriously hampered and became tense affairs, some four U-boats being attacked in this quarter. The inauguration of more frequent patrols seems to have caught the armaments officer unawares and for a while there was a shortage of bombs. Hallam quotes the officer in charge of the Main Bomb Stores as remarking with indignation to a request for fresh supplies: "Impossible! Felixstowe? Why, I supplied you with sixteen bombs two years ago!"

Operations were fraught with hazards other than combat and crews would find that the North Sea could be a lonely, unforgiving place. Engine failures could, and would, force aircraft onto the sea with exhausting results. On 24 May a Sopwith Baby flown by Flight Sub-Lieutenant L. Maxton came down in the sea. Flight Sub-Lieutenant Morris and a wireless operator, G. Wright, set off to find it, only to suffer engine failure themselves. Forced to land in a British minefield the Short Seaplane broke up in the swell and the two clung to a float for five days and nights. They had managed to release two pigeons, one of which got home to report their plight.

Fog and heavy seas were against them but on the fifth day a Felixstowe had to return early from a routine Spider Web patrol. By chance they spotted the two castaways and, signalling his position back to shore, Flight Sub-Lieutenant J.L. Gordon, took a chance and landed in the swell. After desperate clutchings as the waves smashed over the boat, the two exhausted crew were dragged on board. Taking off again was difficult however and the boat was damaged on the second attempt. There was nothing for it but to taxi the aircraft the twenty-two miles back to Felixstowe. In another incident two crew were picked up by the purest chance by a destroyer who saw them bobbing in life jackets in

fading light. Their engine just "fell to pieces." Such long-distance taxis and rescues would become almost routine occurrences.

The one missing element in these activities was any interference from the Germans. Although they had been stung into reorganising their seaplane squadrons by the attention that Dunkirk had given them, the inauguration of the Spider Web patrols had found them wanting once again. Dunkirk had been running down its seaplane operations, transferring personnel over to land based fighters like the Sopwith Pup. The RNAS at Dunkirk were becoming almost totally committed to land operations, but supplied fighter cover to the Large America H.12's and the Felixstowes of the Spider Web.

The German bases on the Flanders coast therefore had two fronts to fight on. In May the naval squadrons were re-organised and firm operational requirements were issued to specific stations to deal with incursions by British aircraft. Hitherto the philosophy behind German operations had been to avoid combat at all costs. Their aircraft were unarmed and under-powered. By the end of 1916 some protection was afforded by adapting land plane designs such as the Albatros W4 and Hansa-Brandenburg KDW. Previously the seaplanes they had been using were types such as the Friedrichshafen FF 33 but now they began to receive the upgraded FF 49C variant.

From May 1917 the Germans began to take on the British flying boats. Ironically, the 'Large Americas' were bombed on 4 July at Felixstowe, a new departure in tactics for the German forces. The 14 Gothas that attacked managed to gut one flying boat and damaged one other. On a second attempt at the end of the month eight personnel were killed, three of them civilians. Twenty others were seriously wounded, but the element of surprise had now been lost and none of the British machines were hit.

In September an entirely new aircraft was delivered to the German forces in the shape of the Hansa-Brandenberg W12. The W12 was unique in that it was designed from the start as a seaplane fighter and had the advantage of having a rear gunner. Designed by Ernst Heinkel the machine had a 150hp Benz motor which gave it a superior airspeed of 100 mph.

Its arrival in September coincided with that of a new commanding officer, Friedrich Christiansen, a "full-out merchant" according to Hallam. A superb organiser and tactician, the role of the Zeebrugge Seaplane Station went over to the offensive and in the new year, epic running battles between the two forces became more frequent and savage. In fact the balance was evened up considerably and there was a danger the Germans would gain a lasting advantage.[49] Christiansen gave further insight to Heinkel about operational considerations with the result that a monoplane version of the W12, the W29, would appear in April 1918 and would prove to be a formidable fighter.

Hallam records a typical skirmish in February 1918. Clayton and Adamson were out in 'Old '61' when "they found trouble."

"Five enemy seaplanes dived out of a cloud in formation and settled on their tail. The accompanying boat was some distance ahead, and the surprise was complete.

The Engineer and Wireless Operator dived into the stern and got the rear guns into action. Clayton waggled the tail from side to side in order to give each man a clear field of fire alternately.

One of the enemy dived in to shove home an attack and Robinson, the Engineer, put a long burst from his machine gun into his engine. The Hun side-slipped, struck the water at speed, the floats collapsed, and the seaplane disintegrated into a twisted mass of wreckage."

They did not have it all their own way however. On the 15 February two 'boats were out on patrol twenty five miles past the North Hinder Light Vessel.

"The pilots were some distance apart booming along looking for submarines, when seven winged Huns fell upon them. Purdy made a right hand turn and steered in a south westerly direction. Faux opened out his engines and started to turn after him; but his port engine failed, and he swung away to the left, thus opening the distance between himself and Purdy.

Faux found the air mixture control lever had moved forward with the throttle and had shut down one engine; but in the few seconds he took to put this right, three of the enemy were on top of him and four were on Purdy's tail. Purdy was crashed in flames."

One of the most memorable battles would take place on 4 June 1918 when a formation of four F.2A's and a lone Large America set out on a patrol under the command of Captain Robert Leckie. One aircraft developed a problem and made for the Dutch Coast. Shortly thereafter, twelve seaplanes from the German base at Borkum arrived on the scene to finish off the straggler. Turning toward them, Leckie engaged the flight in a brief fight. Three of the flying boats circled Captain Dickey and his crippled machine as it taxied to neutral waters. Suddenly another sixteen German seaplanes arrived on the scene. Leckie brought his formation into a 'vee' head-on to the attackers which administered a broadside as the two fleets passed. Then, changing to line astern the attackers were again

subjected to a broadside which Nelson would have been proud of. After forty minutes of swirling action, the fight broke up with two flying boats lost and two enemy seaplanes seen to crash.

The flying boats also provided convoy patrols (known as 'The Beef Trip'), the 'convoy' system having been instigated to protect against submarine attacks. Flying boats would search the route ahead of the convoy and report or attack any U-boats they sighted. The summer of 1917 would still see high losses of tonnage as not all ships employed the convoy system until the autumn of that year. From then on the U-boat would be less and less effective in stopping supplies getting through.

Anti-Zeppelin operations were still very much an extension of Home Defence duties and operations against Flemish coastal bases continued in the tradition of 1914. The Zeppelin menace was still as real a threat as that of the submarine, if only on a psychological level. After the war Churchill was right when he said:

"The aeroplane was the means by which the Zeppelin menace was destroyed, and it was virtually the only means, apart from weather, and their own weakness, by which Zeppelins were ever destroyed."[50]

While the Cuxhaven raid had pointed the way, up until the middle of 1917 seaplane operations against Zeppelin bases had singularly failed. The success of the Large Americas and Felixstowe flying boats against the U-boat gave the RNAS a new weapon to engage Zeppelins over the long tracts of sea but this did depend on good intelligence. Large as they were, it was almost impossible to stumble over a Zeppelin except by the most amazing luck. Again wireless interception proved to be the answer and provided enough information for a hunt to be set up.

The first of these operations was on 14 May 1917 when a Zeppelin was found mine-spotting near the Terschelling Light Vessel. She was sighted from fifteen miles away by the crew of a flying boat observing complete radio silence. Robert Leckie was at 6,000 feet, the L22 some 3,000 feet below him. Putting his machine into a shallow dive, Leckie swept below the tail and under the ship, allowing the co-pilot, Lieutenant Galpin, to fire a burst of incendiaries into the hull. When the guns jammed Leckie veered away so they could be cleared but the mortal wound had been given and the L22 plunged tail first to the sea. The Zeppelin was completely destroyed in 45 seconds.

On 14 June Flight Sub Lieutenants B.D. Hobbs and R. F. Dickey were on patrol when they spotted the L43 at 1500 feet. Climbing to 2,000 feet they surprised her and again pumped incendiaries into the hull. After two bursts the L43 erupted in flames. Later that day Galpin and Leckie encountered the L46 but she got away by dumping water ballast and shooting up to 18,700 feet. Leckie and Galpin would however encounter the L46 again on 26 July when she was on patrol with L44 and L45. Creeping up behind her unnoticed they were just about to attack when they were spotted and L46 shot upwards again, eluding the stunned onlookers.

Surprise was therefore essential to these cat and mouse games, the mouse being the more dangerous of the two. To keep the initiative various devices were tried. Some, such as using D.H.4's to accompany the flying boats to initiate two-pronged attacks, met with no success. The solution that did produce results would be the towing of lighters carrying land based fighters behind ships. This method was the result of experiments carried out by Samson, by now the Commander of Great Yarmouth Air Station. These hair-raising experiments would bear fruit on 11 August 1918 when Lt Stuart D. Culley took off in a Camel 2F1, number N6812, which was being towed behind HMS *Redoubt*. L53 had been shadowing a sizeable group of cruisers and destroyers of the Harwich Force. Culley took half an hour to reach absolute ceiling but luckily found himself on the same level as the Zeppelin at 19,000 feet. Managing a long burst from his Lewis guns from head on, the Camel stalled away as the airship began a death plunge of three and a half miles to the sea below.[51]

The Cinderella of the service in the early days was the airship, which was not surprising given the ripples of disapproval that followed in the wake of the *Mayfly* disaster. However the non-rigid airship had shown signs of promise and the Astra Torres *No.3* had been sent to accompany Samson to Dunkirk in 1914. As an offensive weapon the airship would be of little use but as a scout that could warn of dangers ahead, it was ideal.

Two members of the *Mayfly* project, Wing Commander E. Masterman and Commander N.F. Usborne took the more successful Willows design and produced the new SS or Submarine Scout airship. Power was supplied by the fuselage of a B.E.2c slung underneath:

"They were very crude. We could keep up for long hours but our bomb capacity wasn't very great at all. We had quite small bombs which were more or less lying loose; rolling about the floor. Eventually we hung them over the side on bits of string and carried sheath knives to cut the bit of string to drop the bomb. We had no bomb sights; simply knocked a couple of nails in as a rough indication of trajectory. My first armament was a Webley Scott pistol hanging on a brass cuphook on the side of the fuselage."[52]

The design would eventually grow from 20,500 cubic feet (580 cu.m) to a huge 70,000 (1990 cu.m) but mercifully with properly designed gondolas. Fast at 40

mph, they could stay in the air for 8 hours or so.

Arthur Balfour's conference to discuss the whole airship programme on 19 June 1915 led to the great expansion of the airship side of the service and 50 of these SS types were ordered. It was also decided that they should confine their activities to narrow coastal channels.

The larger C class of airship was also introduced. This design consisted of a trefoil type structure of three gas bags containing 170,00 cubic feet of gas. Although the speed was not greatly improved, endurance was increased to about 12 hours. To accommodate the growing use of airships, stations sprang up around the coast and by the end of the year 29 were in service. Their area of operations now extended from Land's End to Aberdeen.

By the end of 1916 the fifty SS airships had been delivered. Even so, a new version, the SS Zero class was already in development. Although intended to be towed, the Zero class was adopted as a standard design even though its low speed made it vulnerable. Vulnerability was really a matter of certainty rather than probability. They were all virtually defenceless to gunfire and attack from the air. The object of the exercise was to steer clear of trouble whenever possible. Tragedies did occur and the outcome of any combat with an airship was a foregone conclusion. In bad weather the envelope was susceptible to damage and some airships simply vanished without trace.

Surprisingly, the Admiralty did decide to build another rigid airship for fleet reconnaissance work despite their previous experience with the *Mayfly* and the known limitations of this type of construction. Eight or so of the 23 and 23X Class were built. One German Zeppelin, the L33, was forced down and an exact copy, the R34, built. They were never really serious contenders or additions to the fleet armoury.

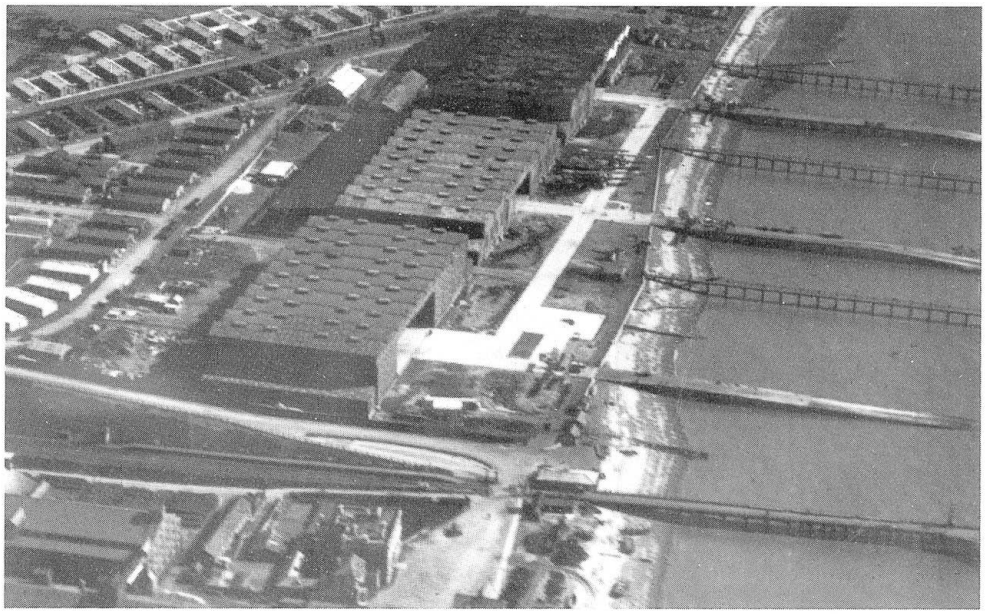
With the introduction of the Anti-Submarine Division and the formulating of new operational procedures, the airships would come into their own, as did so many other things for the RNAS in 1917. With all the new stations operational, the airships could now supply the Merchant Navy, convoys and naval forces with long range reconnaissance and sea mine surveys. The towing experiments of the previous year where still carried on and some convoys leaving coastal waters towed an airship with them for the first few hours of the voyage.

While the SS and C Class airships covered the coastal waters, there was a need for extended coverage of the approaches to the British Isles and for airships to work in conjunction with the flying boats now operating from around the country. The NS or North Sea type was developed and came into use in early 1918. Basically an adaptation of the *Astra Torres* design, the envelope carried 360,000 cubic feet (10,200 cu.m) of gas and sported the luxury of a enclosed cabin. Her 250hp Rolls-Royce engines kept her in the air for twenty hours.

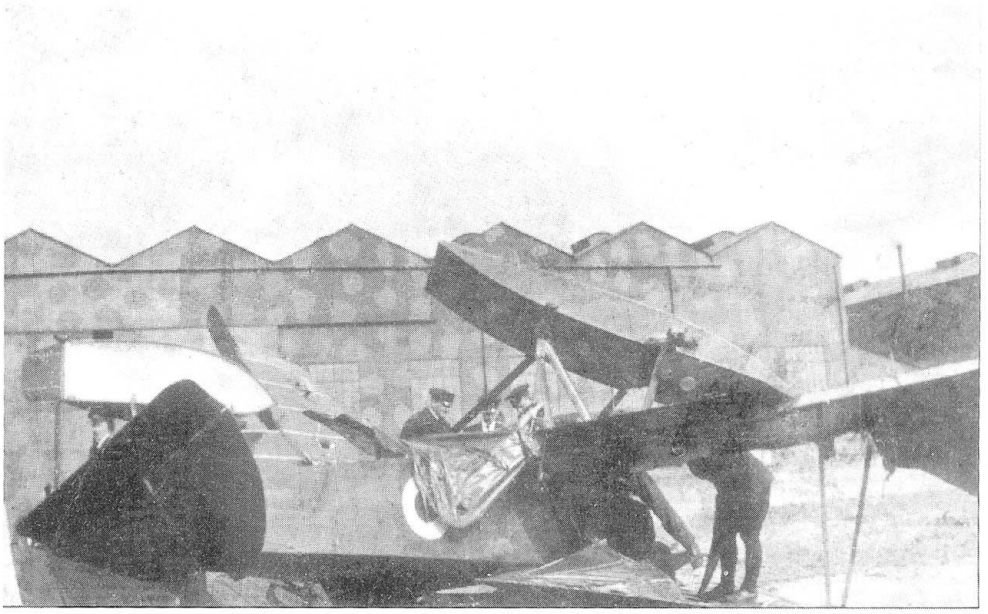
As mentioned above, the whole idea of the airship was to act as a lookout rather than to be an offensive weapon. The success of the enterprise therefore rested on how efficient the crew were at finding and reporting enemy activity. From the minute of first sighting the job of the commander was to pass on this information to the local Naval Commander who would then concentrate his forces accordingly, receiving updated reports from the airship. In order to fix the position of the airship wireless triangulation was again used. By reporting every hour, the progress of the airship could be plotted on the featureless map of the sea. Unfortunately, the enemy, especially the rejuvenated seaplane forces from the Belgian coast, could also make use of this information. Such were the consequent casualties, from Pulham in particular, that this Norfolk station became restricted to training and development only. The work formerly carried out by its airships was passed over to the R.34 and the flying boats stationed nearby.

Once the U-boat commander had spotted the airship he had a choice either to engage or submerge. The latter option would suit the airship as a submerged submarine was thought to be of less danger to shipping. Once the submarine was down, the job of the airship was to keep her down. The trooper USS *Cleveland*, for instance, was certainly saved by the intervention of the C.2 and SS Z 14.

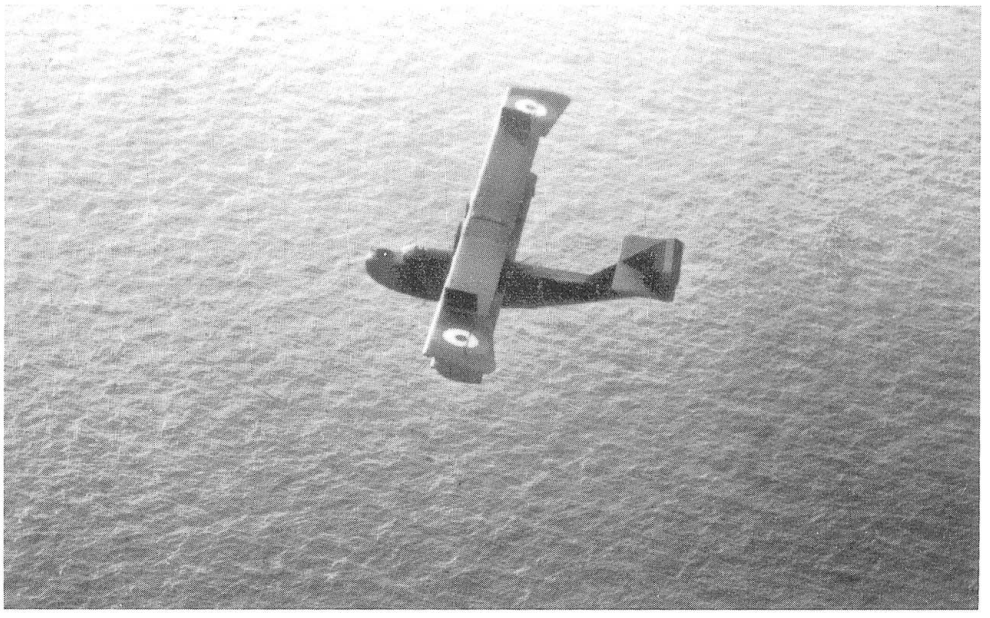
The United States Navy was impressed with the effectiveness of the 'blimp' as an observation platform, so much so that they were still being developed and used in the Second World War. As late as the 1980's there was talk of reviving the blimp for similar duties with US forces and the Royal Navy.



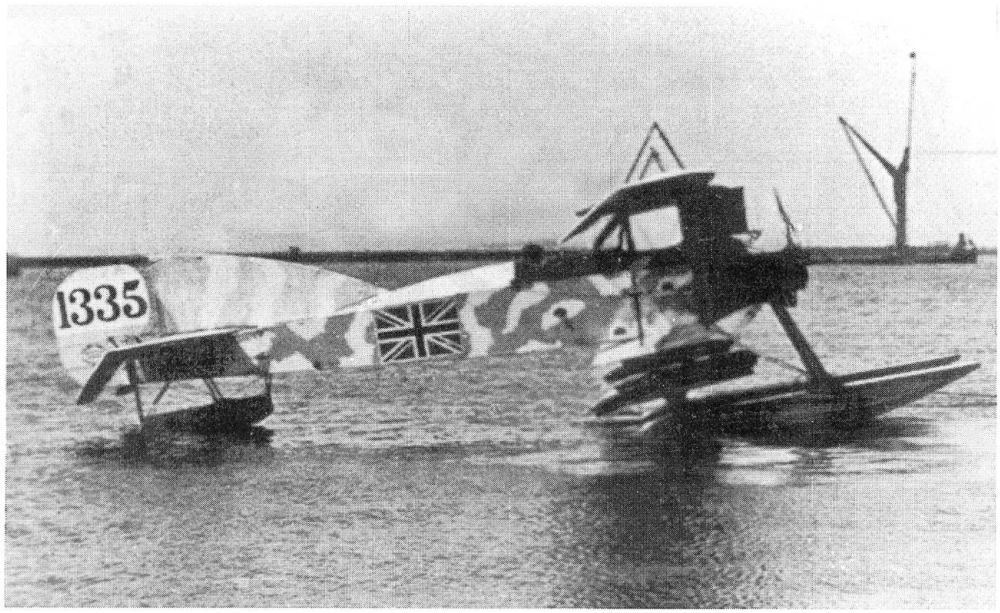
159: *The great Felixstowe Air Station in early 1918. Note the three slipways extending down to the sea, each of which has a flying boat in position at the landward end. Two more large flying boats can be seen on the hardstanding in front of the middle hangar (IWM HU 67876)*



160: *The threat to the English homeland was not only from airships. For example, this was the scene at the Royal Navy base at Felixstowe after the raid by Gotha bombers from Kagohl 3 on 4 July 1917. Two 12 kg bombs destroyed one flying boat by fire, and seriously damaged this Sopwith Baby floatplane. Six naval ratings and three civilian workmen were killed, while eighteen naval personnel and a civilian were wounded. The camouflage on the distinctive hangars was obviously not very effective. No German aircraft were lost, despite a spirited defence (Bruce Robertson)*

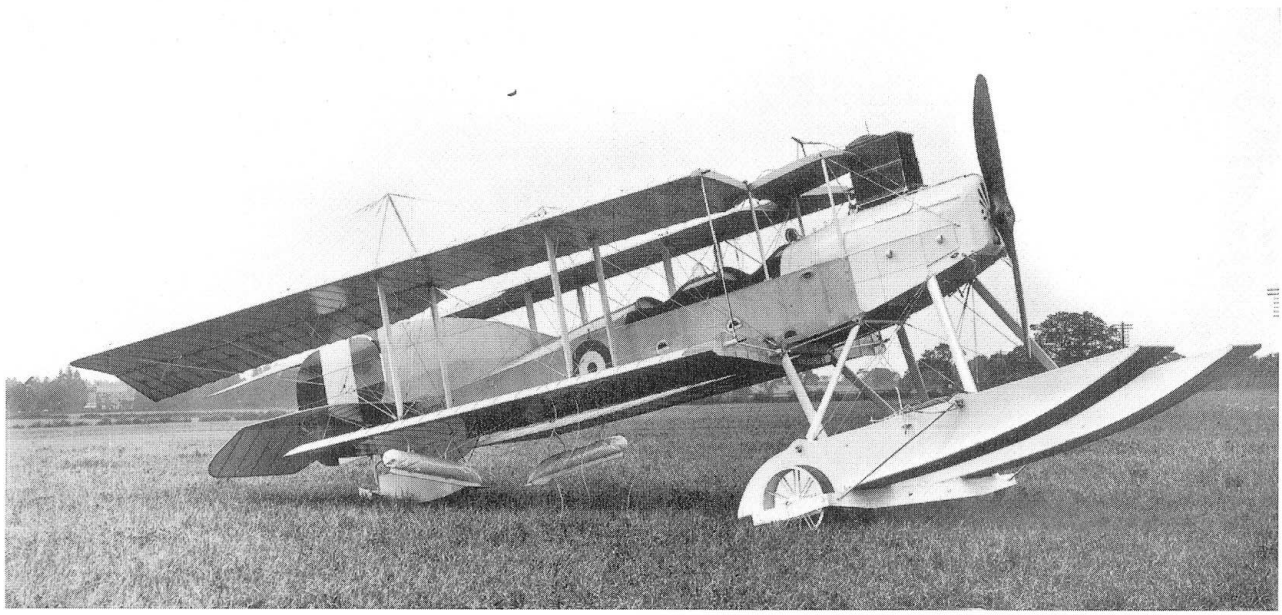


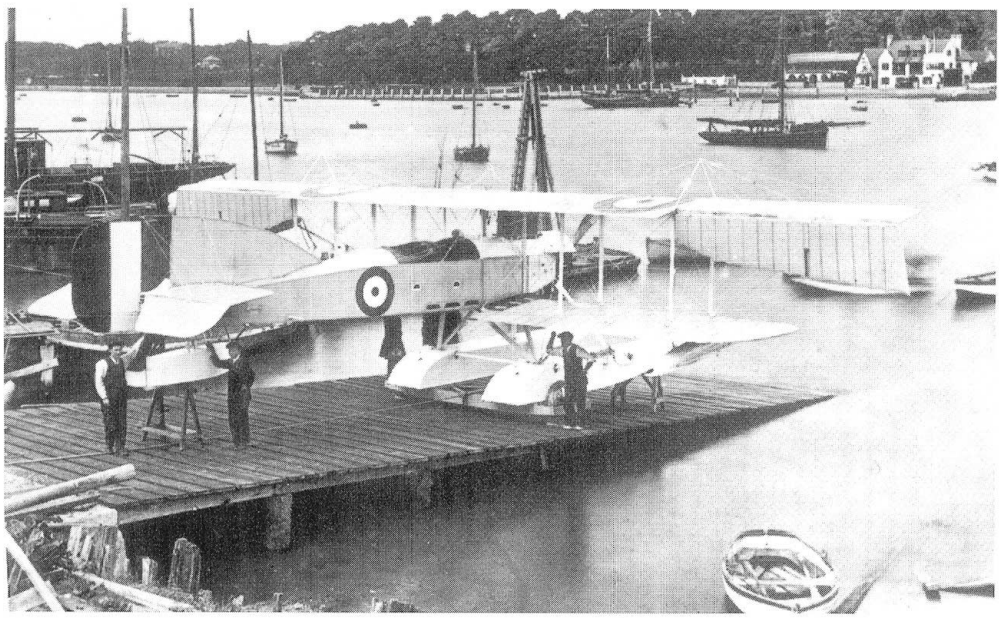
161: *Curtiss 'Large America' 8661 or 'Old '61' as she was known to the men at Felixstowe, in and over her natural elements — the air and sea. 8661 performed the first 'Spider Web' patrol of the war on 13 April 1917. Fitted with an F2A hull in January 1918, she led an adventurous life, as did most of her contemporaries. Two Zeppelins (L22 and L43) were shot down by H.12s and at least four enemy submarines claimed (IWM Q 67581)*



162 Left: *The work of patrolling the sea lanes in the early days was shared with floatplanes such as Short 830 No. 1335 seen here. This was the first machine to be camouflage finished at the factory. It was delivered in April 1915 and saw much service on both sides of the Channel before being written off in a forced landing at sea on 23 March 1916 (Geoff Thomas)*

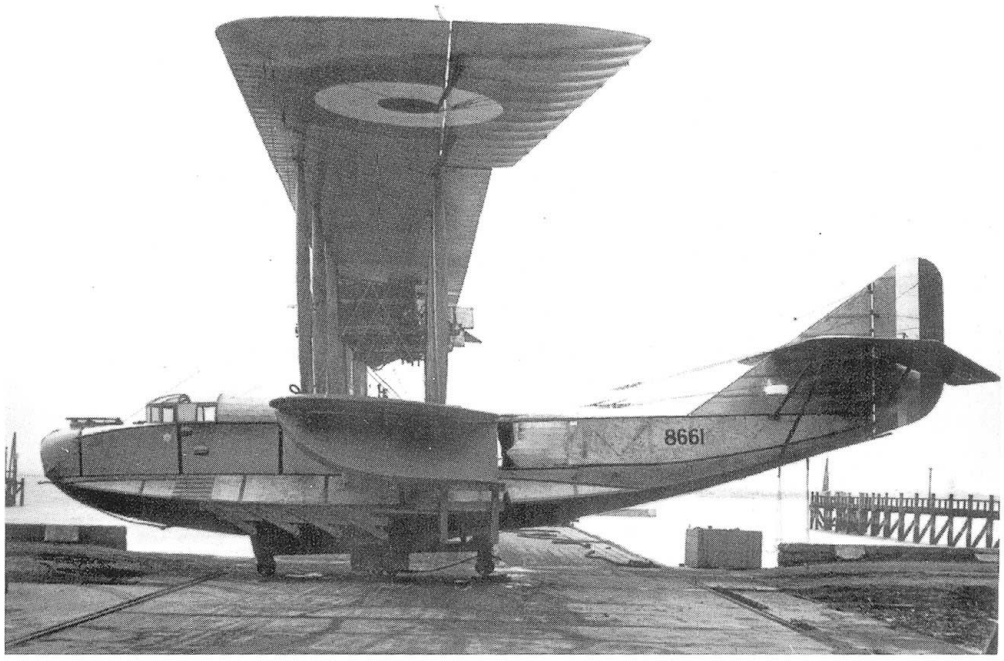
163 Below: *A pristine Short 184, newly completed by Mann Egerton, whose name can just be seen on the rear fuselage in front of the tailplane (Bruce Robertson)*



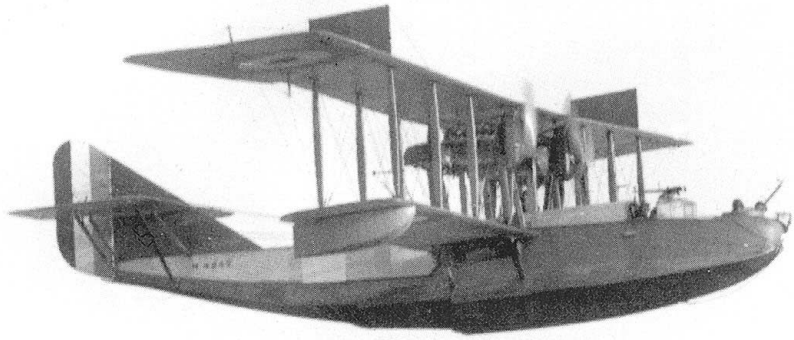


164 Left: *This is 9751, the first of twenty Westland-built Short 166 floatplanes, which was delivered in June 1916. Seen here on the River Hamble, the aircraft was based at Felixstowe from August 1916 until 26 June 1917 when she was transferred to HMS* Vindex. *A month or so later she returned to Felixstowe (on 1 August) only to be scrapped in late September (Barry Ketley)*

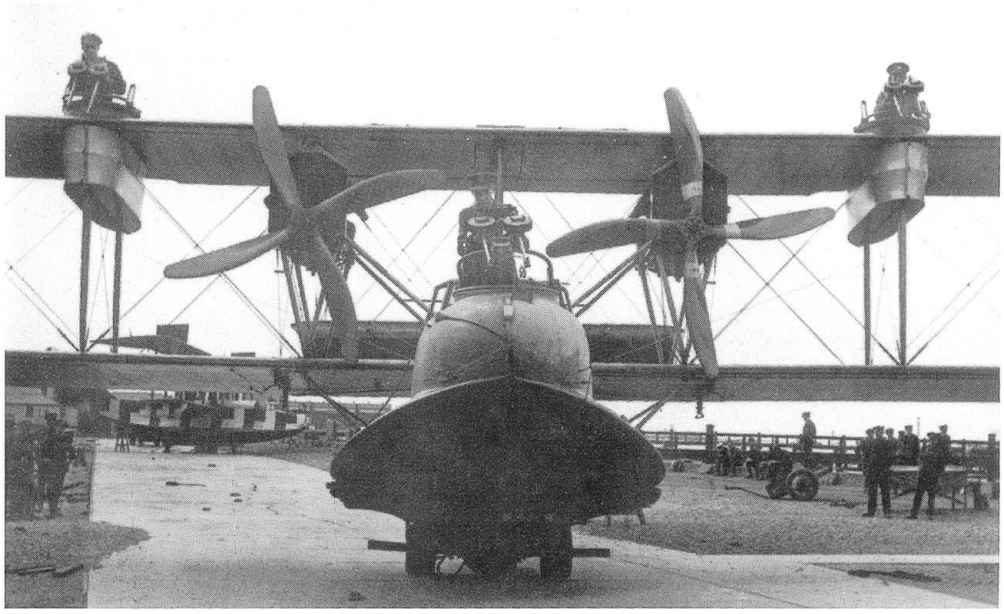
165: *Another view of Curtiss Large America 'Old '61'. There is what appears to be a small Yorkshire rose emblem on the hull, just below the windscreen enclosure. What appears to be a censor's mark on the fin is in fact a patch of badly-applied white paint (IWM Q 67581)*

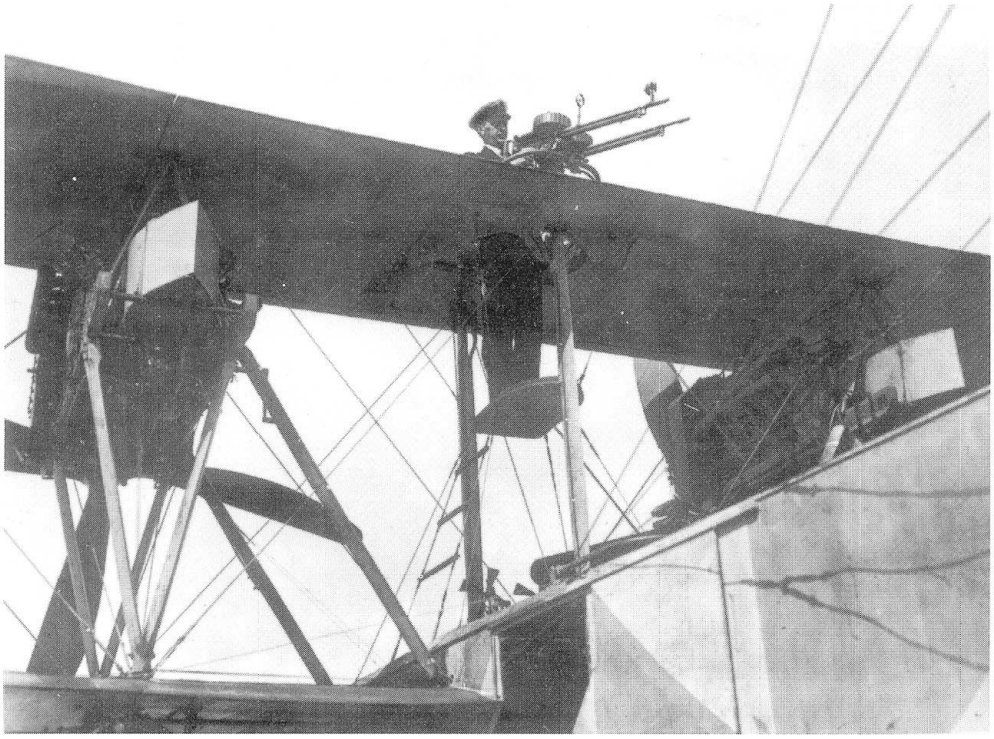


166: *Another Felixstowe F.2A, N4297, showing the enclosed or 'screened' cockpit. Made of an early type of plastic, the panels were highly susceptible to yellowing by sunlight and a reaction to salt spray. The F.2A was powered by two Rolls-Royce Eagle VIII engines. The painted panels on the rear hull, one of many such 'dazzle patterns' intended as a rescue aid in the not unlikely event of a forced landing on the sea, appear to be a combination of blue and white (IWM Q 27500)*

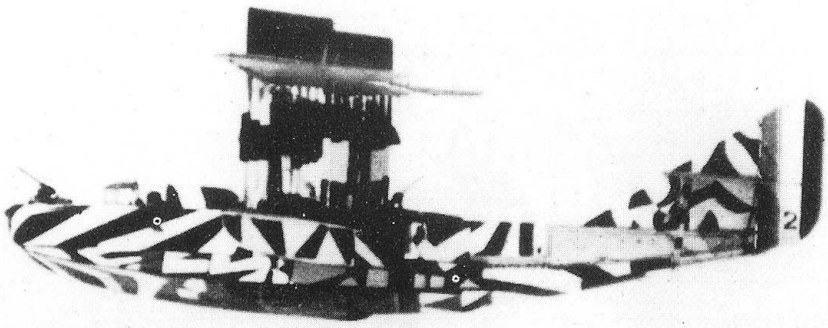


167: *The addition of 'fighting tops' to this Curtiss H.12 shows one of the measures taken to combat attacks by enemy fighters. Note that all the Lewis guns are on twin mountings. The overall effect is strangely reminiscent of a sailing ship. Note the dazzle patterned F.2a in the background (IWM HU 67888)*



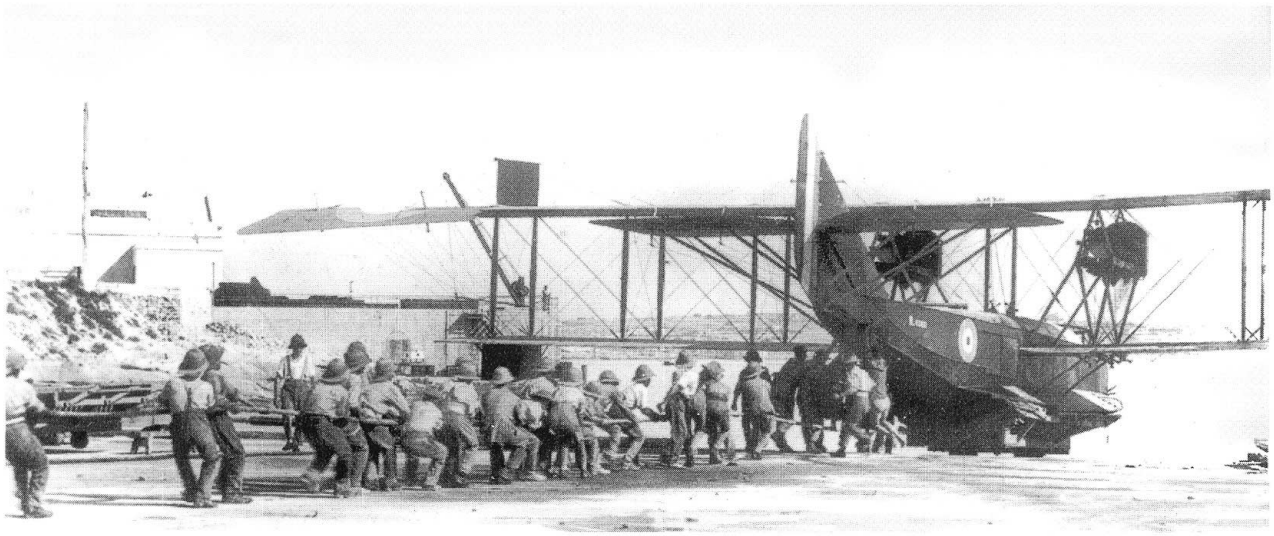


168: *Another Nelsonic attempt at self-defence is seen here on Felixstowe F.3, N4248. Unlike the 'fighting tops', this position was accessible during flight as indicated by the 'ratline' ladder on the port side. This aircraft arrived at Felixstowe in March 1918, only to be burnt out in August (IWM HU 67882)*

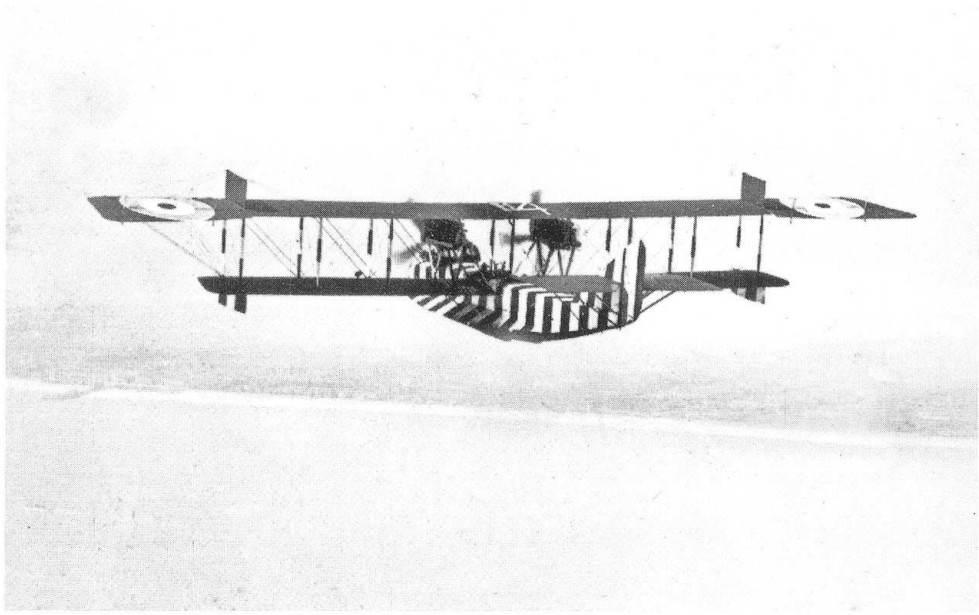


169 Left: *This is Felixstowe F.2A N4283 being flown by Captains R. Leckie and G.E. Livock. It was finished in this spectacular black and white scheme in March 1918 (IWM Q 82243)*

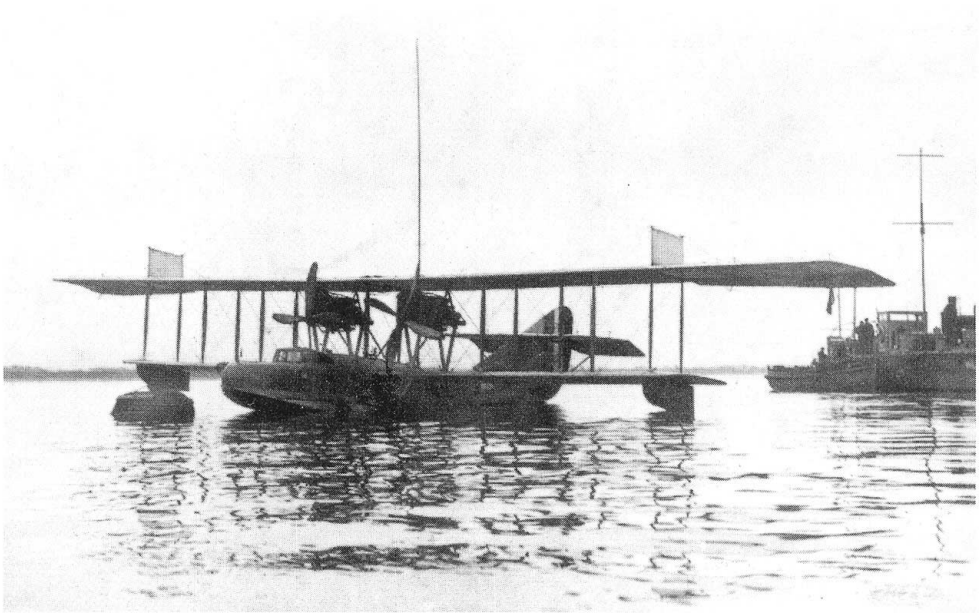
170 Below: *The success of the Felixstowes in the North Sea led to 18 F.3's being built in the Malta Dockyards in 1918. This is N4360, the first, being hauled ashore at Kalafrana. By the end of the war F.3's were operating all over the Mediterranean. Three flew from Tripoli to bomb a German spy wireless station at Misurata in Libya (IWM Q 27456)*



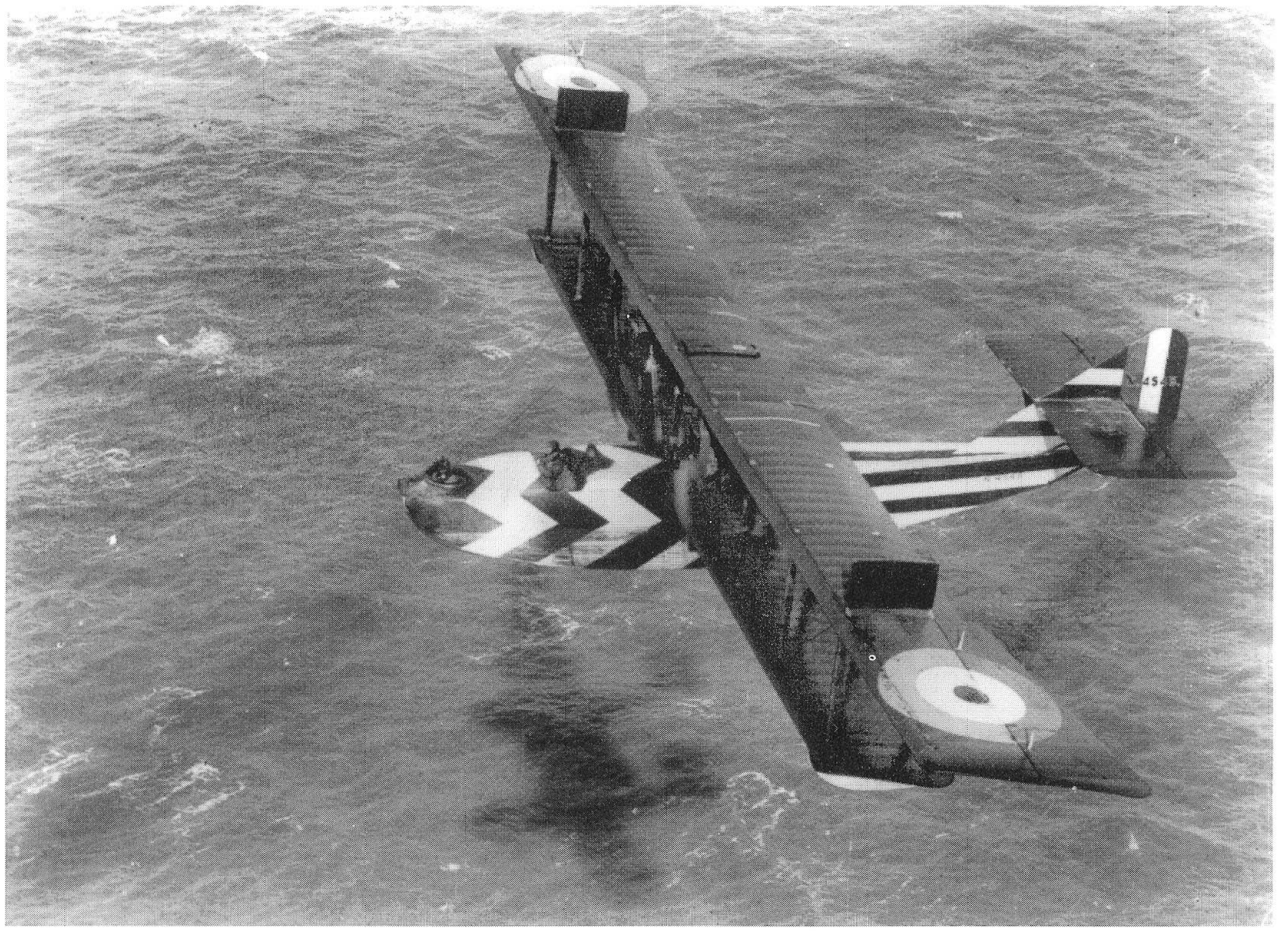
171 Above: *An unfortunately unidentified Felixstowe F.2A out on patrol. Note the number '3' on the bow (IWM Q 27429)*

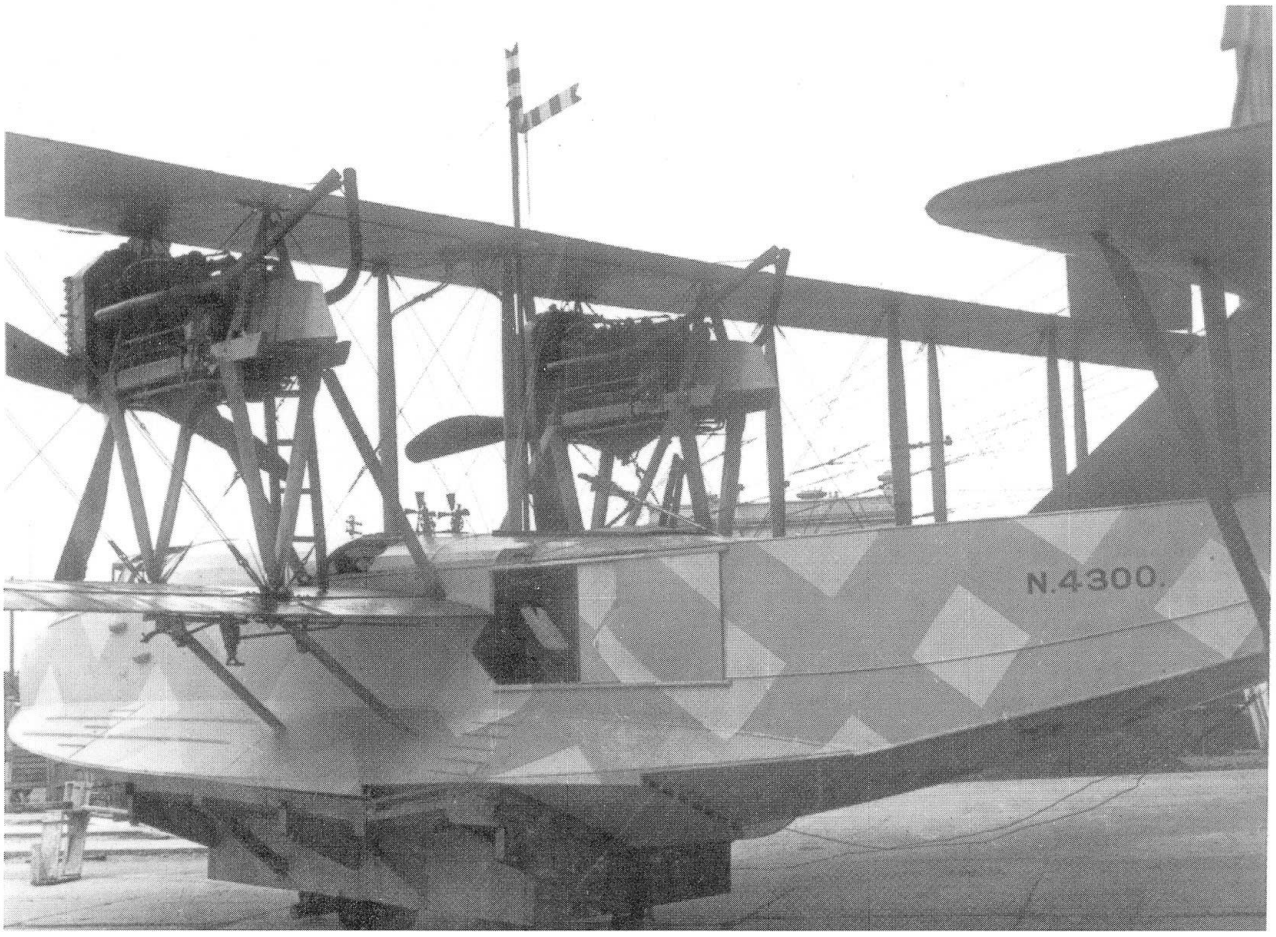


172 Right: *Captain Robert Leckie DSC in an F.2A off Yarmouth after a patrol. The number '4' on the upper wing may give a clue to the aircraft's identity. Although not known for certain, the colours of the dazzle pattern on the aircraft appear to consist of red and white or, possibly, yellow. Yellow seems unlikely, however, on account of the availability of paints at the time (IWM Q 82247)*

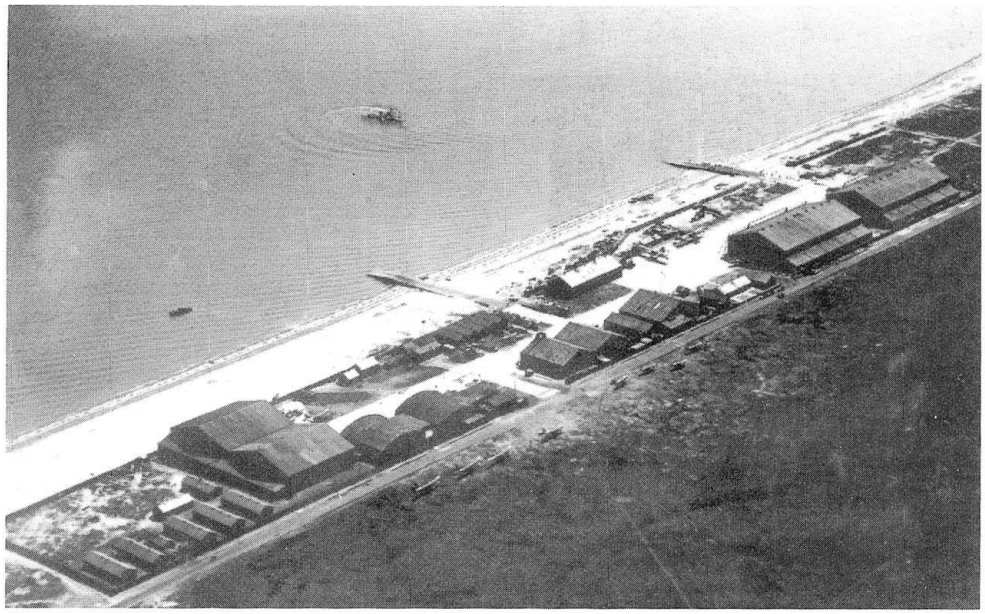


173 Right: *This is a Curtiss H.8 'Large America', number 8691, which was used for wireless experiments at Felixstowe with a telescopic mast during June 1917. It was modified with a new hull to H.12B standard shortly thereafter and flew patrols from Calshot and Felixstowe. It was eventually written off after a forced landing and subsequent beaching off Worthing Pier on 14 December 1917. On the original print a large bomb can just be made out hanging under the port wing root (Bruce Robertson)*



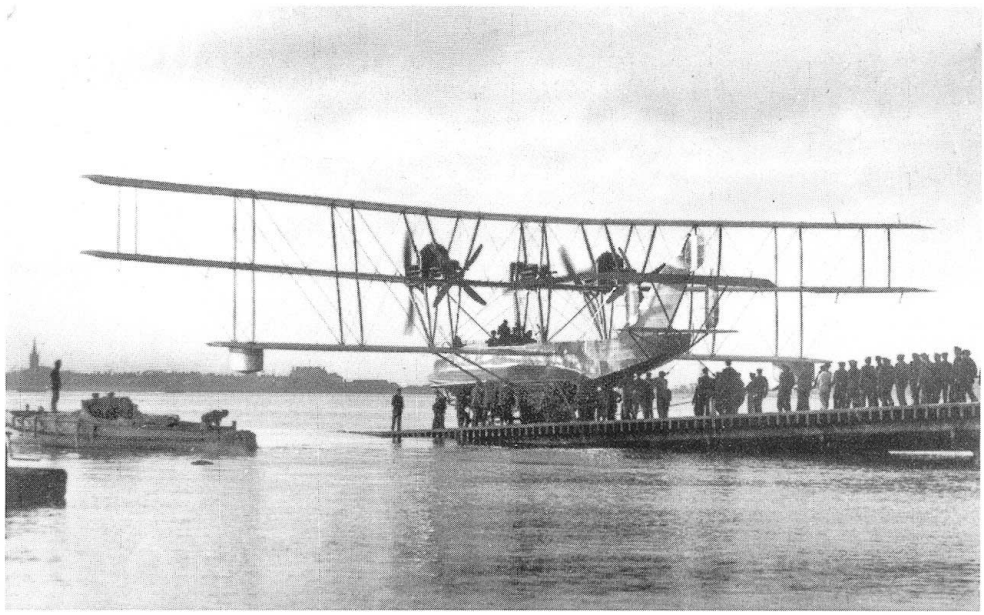

N.4300.

174 Left Top: *An open cockpit Felixstowe F.2A on patrol. The dazzle paint scheme originated as a means of passing the time, but was adopted in various forms by other Great Yarmouth and Felixstowe 'boats. The schemes aided identification in the air during combat and on the water in the event of force-landing. This particular machine, N4545, was from Felixstowe and had modified ailerons and a red and white striped hull (IWM Q 27501)*



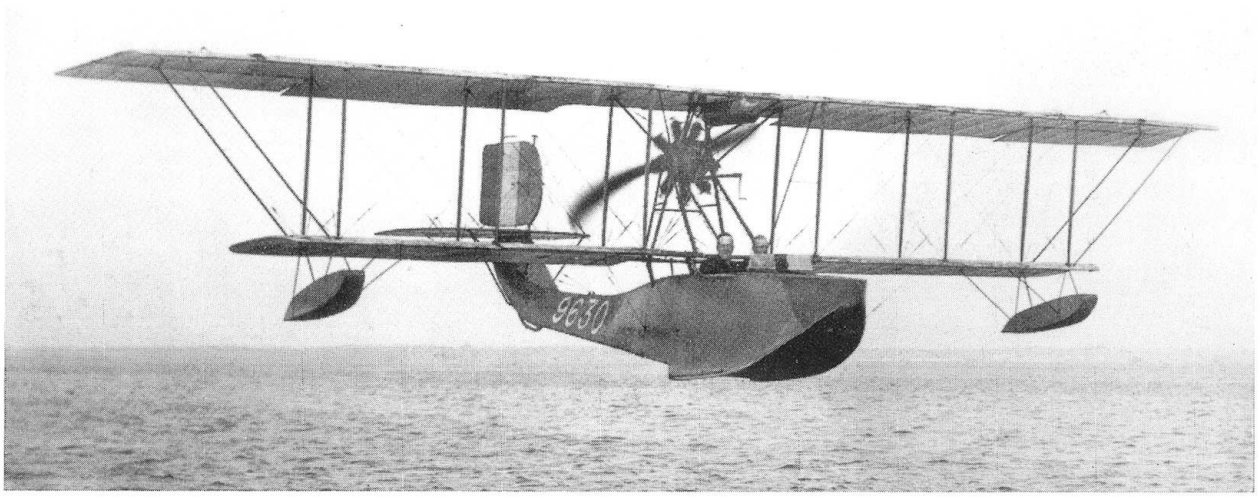
176 Right: *Great Yarmouth Air Station seen from 1,000 feet (IWM HU 67880)*

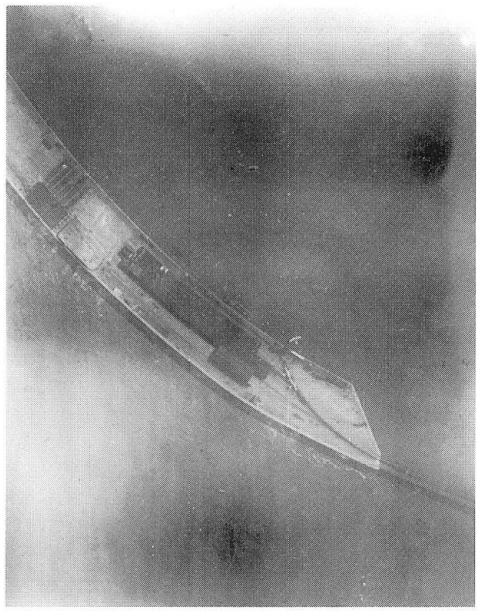
175 Left Below: *A good view of Felixstowe F.2A, N4300. Of note are the exposed 375hp Rolls-Royce Eagle engines, gun port hatch and the semaphore signalling arms. This aircraft is featured in full colour on the dust jacket of this book (IWM HU 67883)*



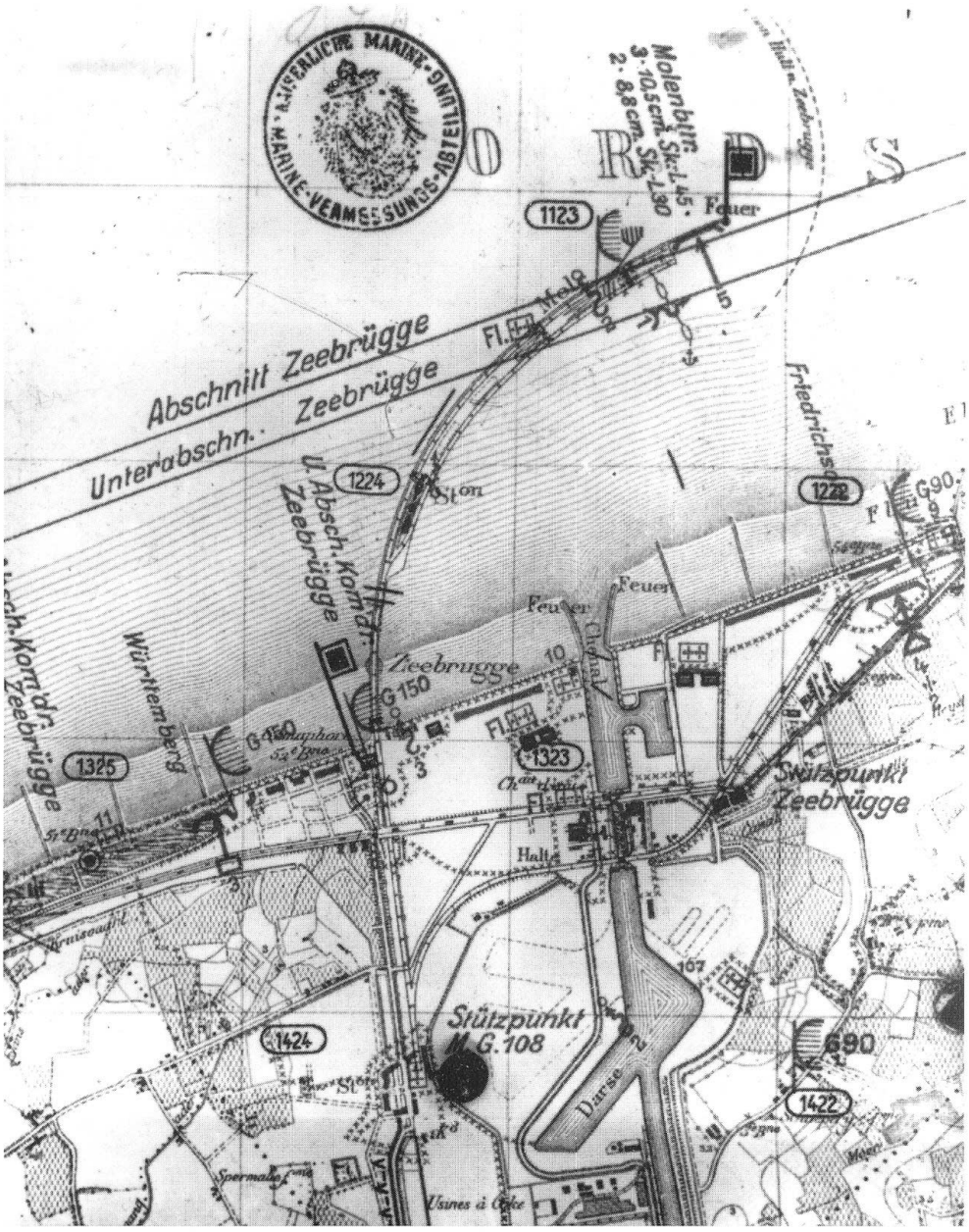
177 Right: *The ill-fated experimental Felixstowe Fury triplane, N123 (Bruce Robertson)*

178 Below: *FBA Type B, 9630. One of 24 bought from France, it was at Calshot in November 1917, and Lee-on-Solent by March 1918, being used for training (Bruce Robertson)*





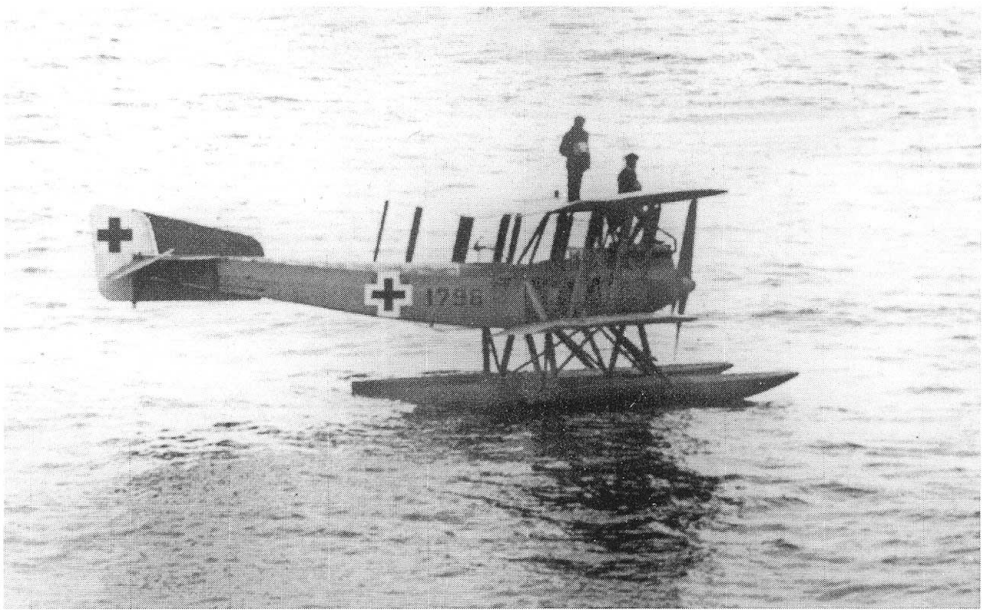
179: *A reconnaissance photo of the German seaplane station at Zeebrugge. Three Friedrichshafen floatplanes can be clearly seen on the distinctive curved mole. This picture may be one of a series taken by a 202 Squadron D.H.4 shortly before the raid of 22-23 April 1918. Fane Collection (IWM HU 67689)*



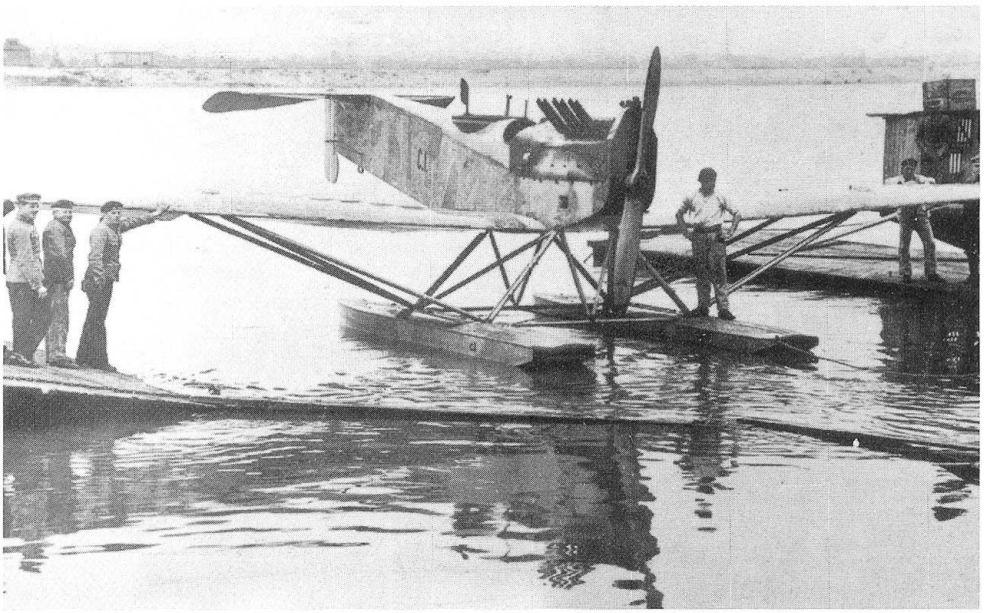
180: *A German plan of Zeebrugge dating from about April 1918, just before the famous raid. The drawing shows artillery positions for the defence of the harbour and the seaplane station can be seen marked on the curve of the mole (IWM Q 67727)*

181: *One of the land types turned into a floatplane for the Imperial German Navy was the Albatros W.4. Developed from the Albatros D.I fighter, it was powered by a 160hp Mercedes engine. The floats bear a remarkable similarity to those found on British floatplanes such as the Sopwith Baby. Conceived as a stop-gap, aircraft such as these gave the German Navy the chance to redress the balance in the lower North Sea in late 1917 (IWM Q 67754)*

182: *The crew of Friedrichshafen FF49c, 1796, based at List on Sylt, wait to be rescued after being shot down on 17 June 1918. The aircraft was one of a group which attacked HMS* Furious *which was reconnoitering the Heligoland Bight before the Tondern Raid. A running battle ensued with various aircraft.* Furious *managed to get off a Camel piloted by Lt. G. Heath. He claimed this aircraft as a victory and after the crew, Leutnant der Reserve Wenke and Flugzeugmaat Schirra, had been rescued, the seaplane was sunk by gunfire from HMS* Valentine *(IWM HU 67690)*

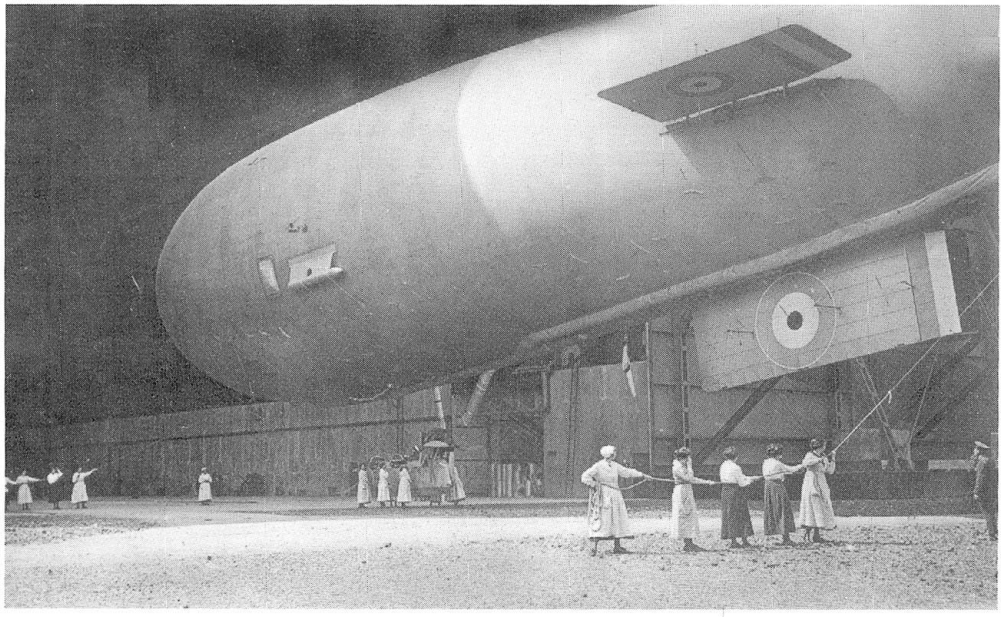


183: *One of the most dangerous opponents for the British flying boats was the Hansa-Brandenburg W.29, designed by Ernst Heinkel. Fast, manoeuvrable, heavily armed and aggressively flown, the type entered service with the German Navy in spring 1918. The oddly camouflaged example seen here is in fact the sole aircraft of the type to be built by the Hungarian UFAG company under licence and is undergoing trials with the Austro-Hungarians on Lake Balaton (Simon Watson)*

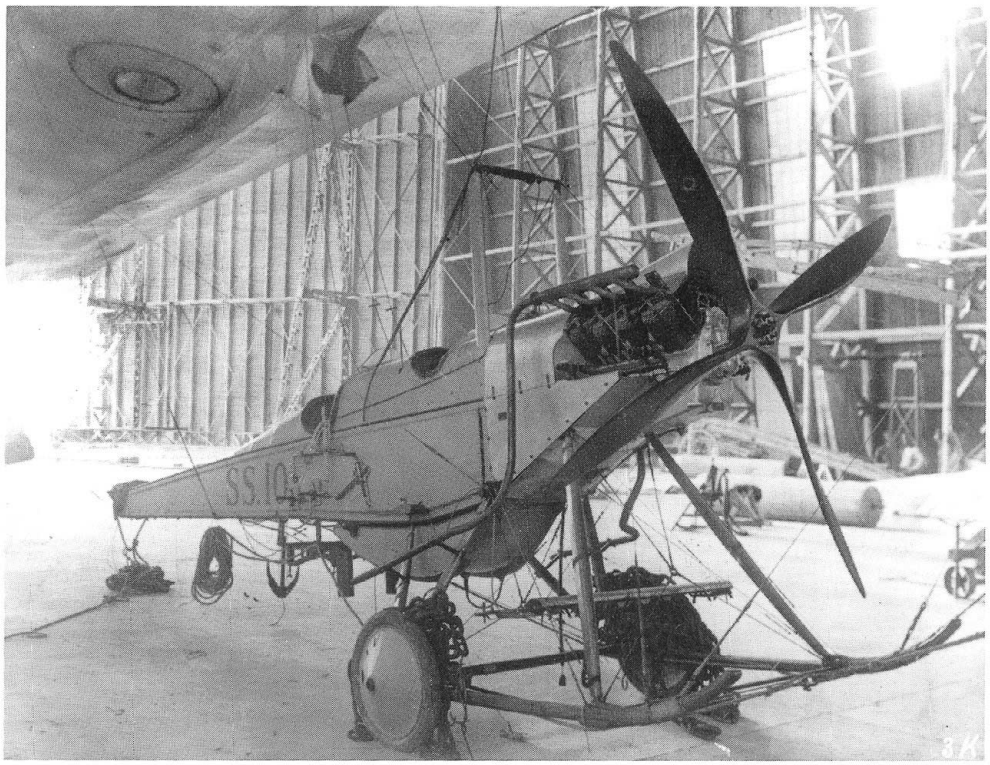


184: *"Down for 15 hours, mid-Channel, still waiting". Lt. F.D.J. Silwood photographed when his Wight 'Converted' seaplane, no. 9851, came down due to terrible weather conditions on 18 January 1918. The open sea can be a very unforgiving place, but luckily for Silwood and his observer, their carrier pigeons managed to get a message home. On account of the weather the birds were reluctant to leave the aircraft, but Silwood shooed them off by throwing his last half-crown at them. They made it to Portland and Silwood thought it the best half-crown he ever spent (IWM Q 84225)*

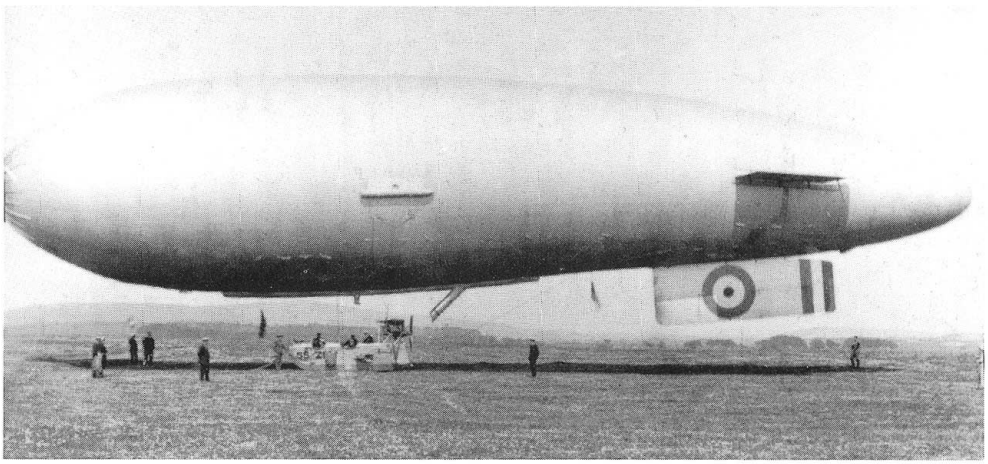
185: *Attempts to get aircraft to the operating altitudes of the Zeppelins led to early experiments in 1915 involving SS airships and B.E.2c aircraft. One of the champions of the idea, Cdr. N.F. Usborne (seen here during such an experiment) was tragically killed when the B.E.2c he was piloting dropped unexpectedly from the parent airship. The rear suspension wires remained attached, flipping the aircraft onto its back. Usborne was thrown out and the passenger, Lt. Cdr. de Courcy Ireland, could do nothing to save himself. The aircraft crashed in the goods yard of Strood railway station (IWM Q 73629)*



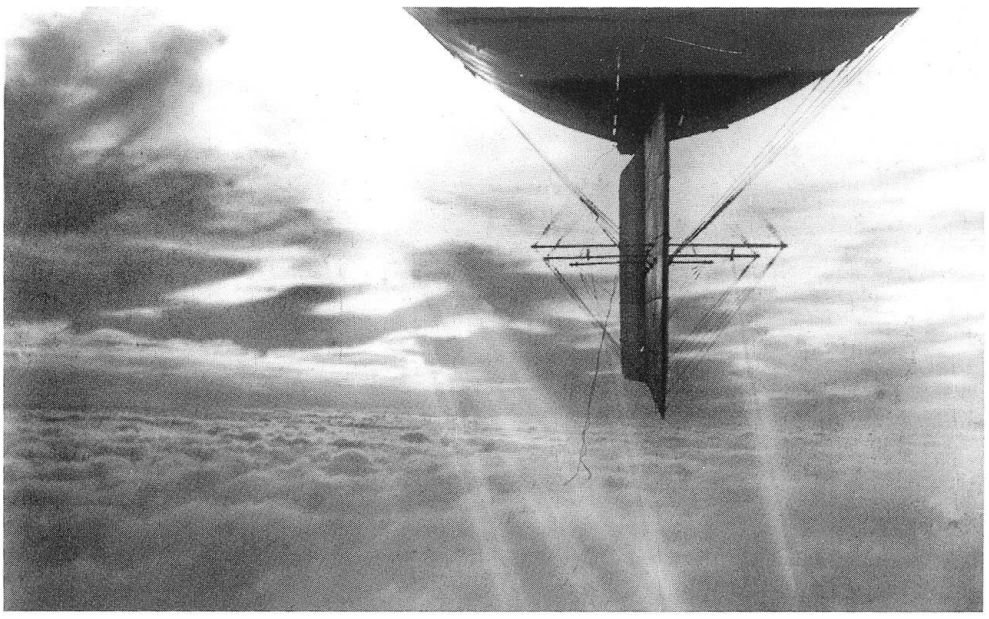
186: *An SS Z airship is walked back into its hangar at Howden by an all-female handling party. The gondola was a purpose designed affair and the crews had the luxury of a parachute. The petrol tank and parachute case can be seen attached to the side of the envelope (IWM Q 27507)*



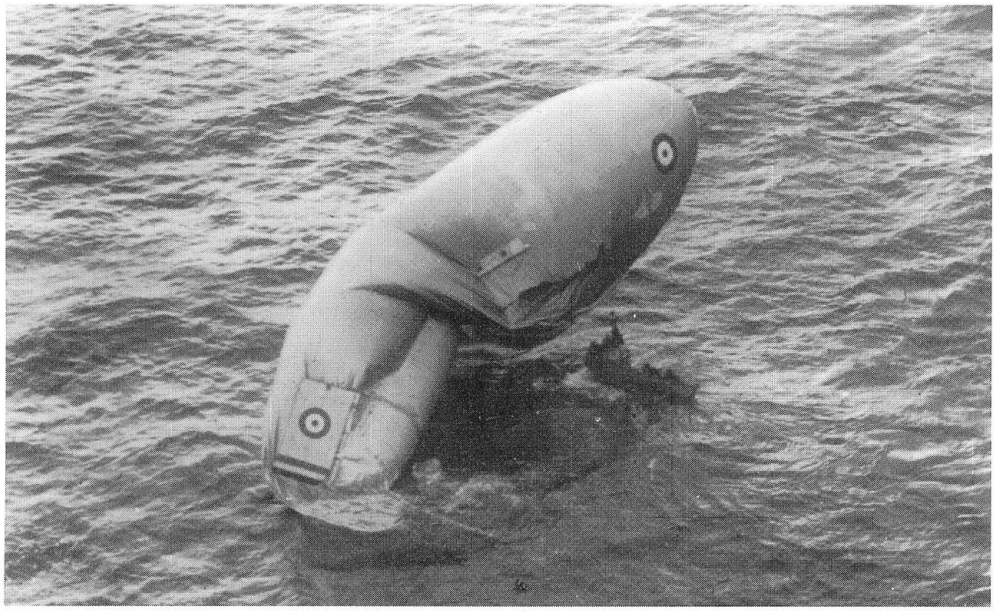
187: *A good view showing the primitive nature of the early SS type airships. The modified B.E.2 fuselage supplied both the motive power and the crew accommodation for SS 10. This particular machine was eventually sold to Italy. Note the anchor stowed aft of the cockpit and the very early use of the 'slipper' fuel tank between the undercarriage struts. Other SS airships made use of an Armstrong Whitworth fuselage or Maurice Farman nacelle (IWM Q 88944)*



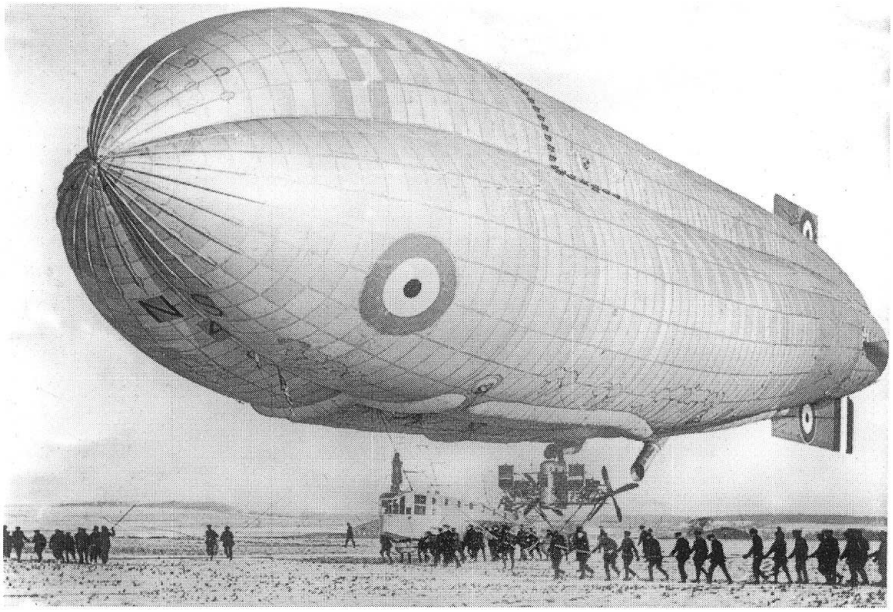
188: *This is His Majesty's Airship SS Z 12 or SS Z 13, both of which were at Luce Bay in 1918 (Barry Ketley)*



189: *The romance of airship flying. A view aft from an SS Z airship high over the North Sea (IWM Q 27576)*

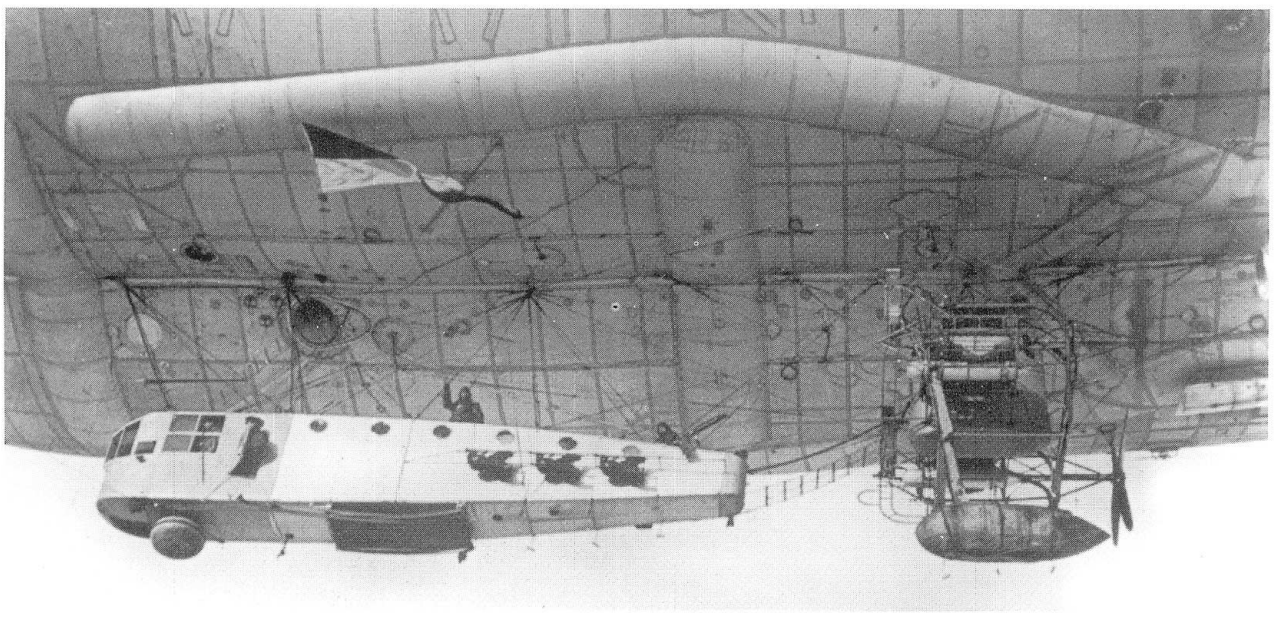


190: *...and the hazards of airship flying. An SS Z down on the water. The crew are being rescued by rowing boat (IWM Q 27434)*

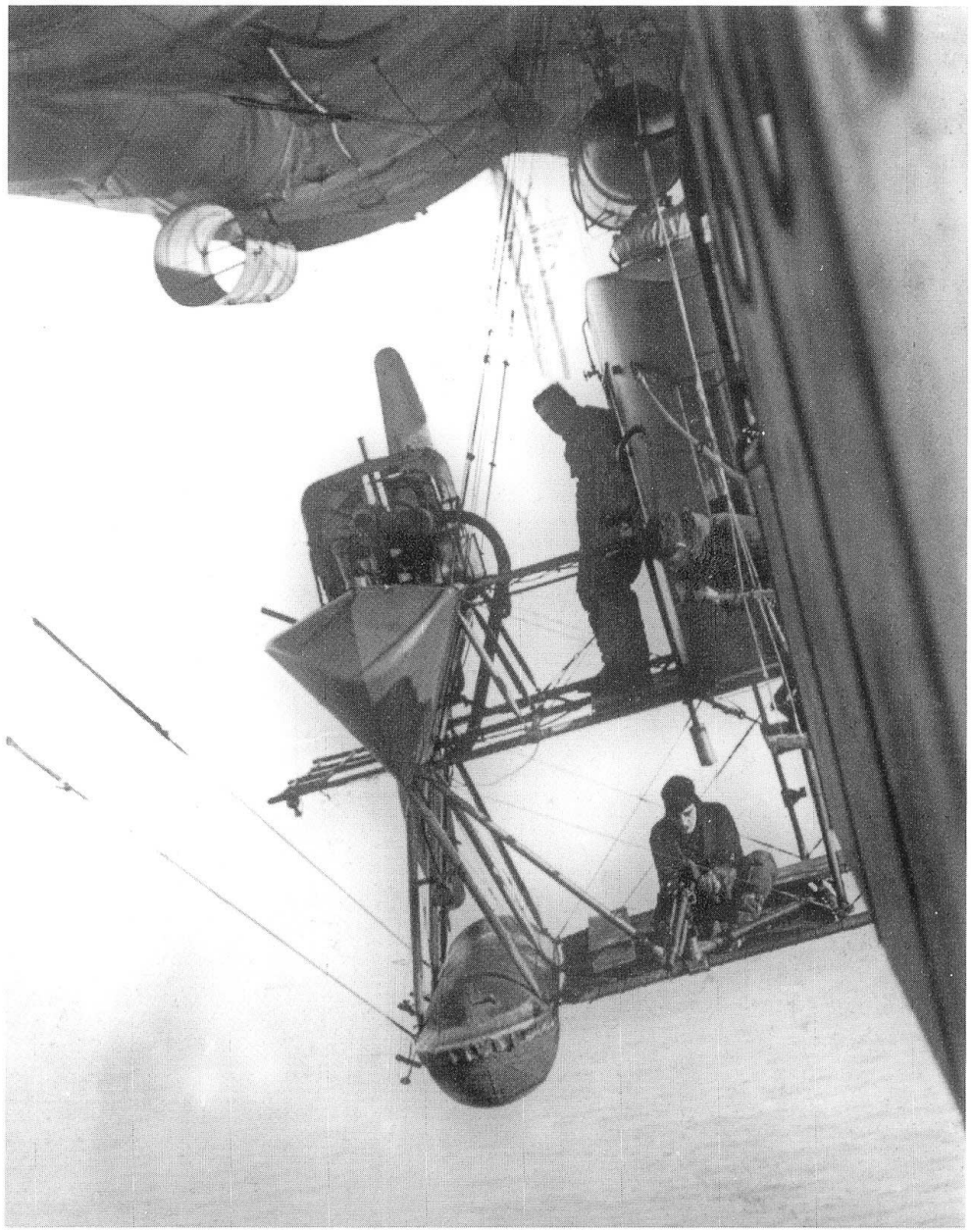


191 Left: *North Sea Airship No.4 seen just before her maiden voyage. The trefoil construction of the envelope containing some 360,000 cubic feet of gas can be clearly seen. Two 250hp Rolls-Royce engines gave a maximum speed of 57 mph. The control car was far more comfortable than the earlier types and two crews could be carried for long patrols (IWM Q 27433)*

192 Below: *The enclosed cabin of a North Sea class airship. Three 112lb bombs are attached to the side of the car. In-flight access to the engines is via the rope walkway (IWM Q 27579)*

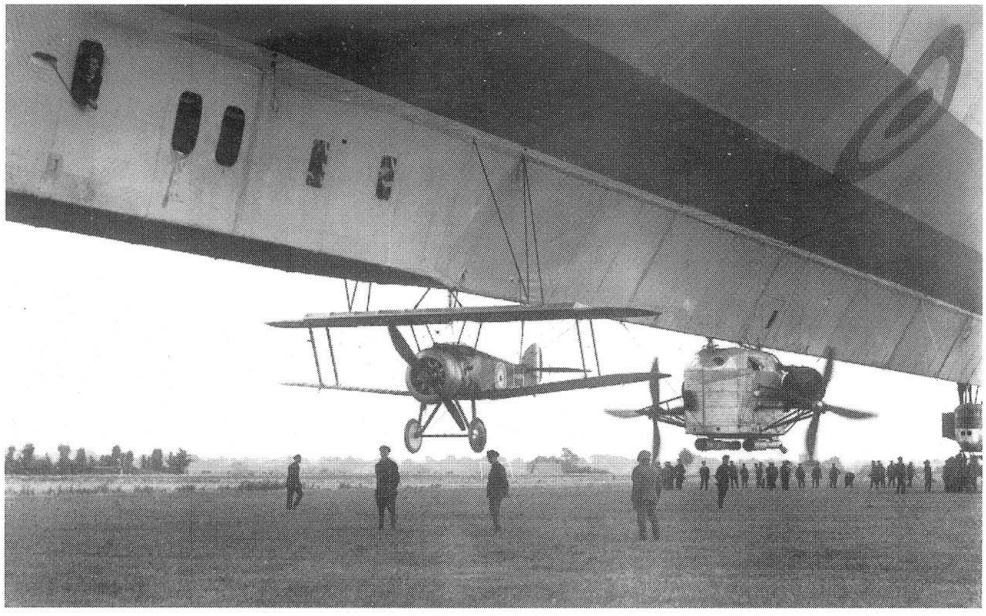


193: *The dangers and risks of airship service are amply demonstrated in this classic picture. A Lewis gunner at 'action stations' on the engine gantry of a North Sea type airship. Note the complete lack of any type of guard rail or even a safety line (IWM Q 27488)*

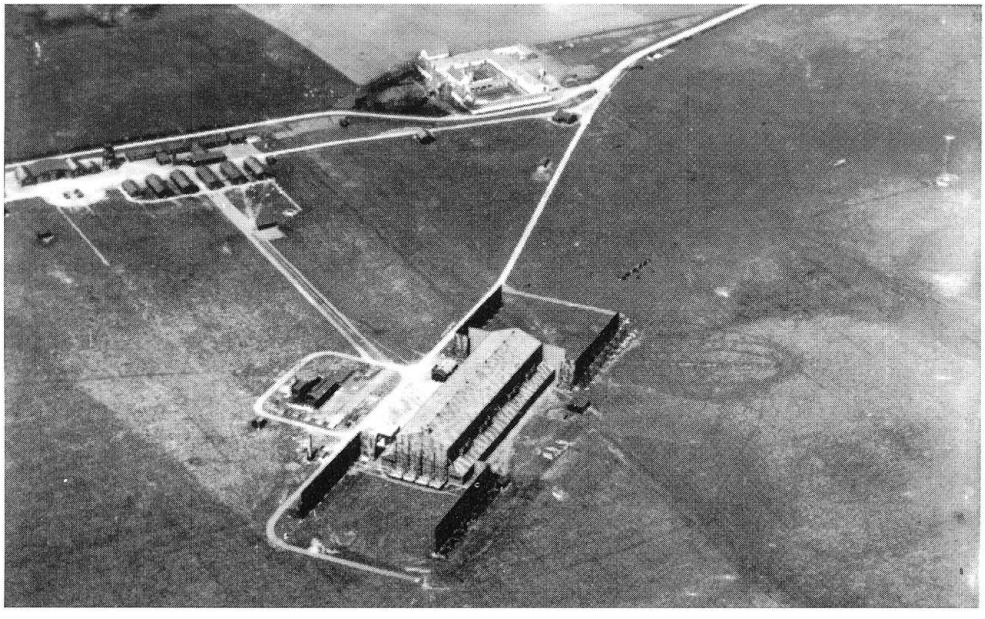


194: *Adjusting the petrol cock on an early Coastal Star airship while in flight (IWM Q 27437)*

195: *Trials of the R23 rigid airship began in August 1917 and four of this class were built. With the exception of the R29, none of the other airships of the R23 and R23X classes went into combat, although some patrols were undertaken. Only R29 ever actually saw action against U-boats (including U115 in September 1918). The machine gun platform on top of the hull is clearly visible (IWM Q 27575)*

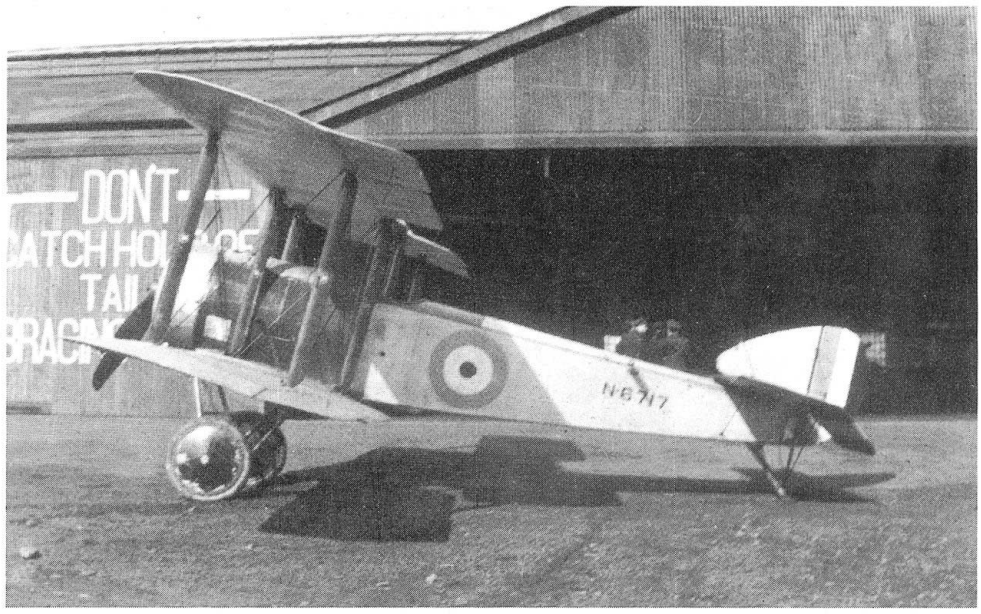


196: *The six machines of the R23X class provided platforms for a number of interesting experiments. Here R23 is seen at Howden with Sopwith Camel N6814 suspended beneath her. These 'drop' trials were fairly successful, having been conceived as a way of getting a fighter up to the same altitudes as a Zeppelin and therefore able to attack it more effectively. Earlier experiments along these lines using SS type airships were abandoned after the deaths of Cdr. Usborne and Lt. Cdr. de Courcy Ireland (IWM Q 27476)*

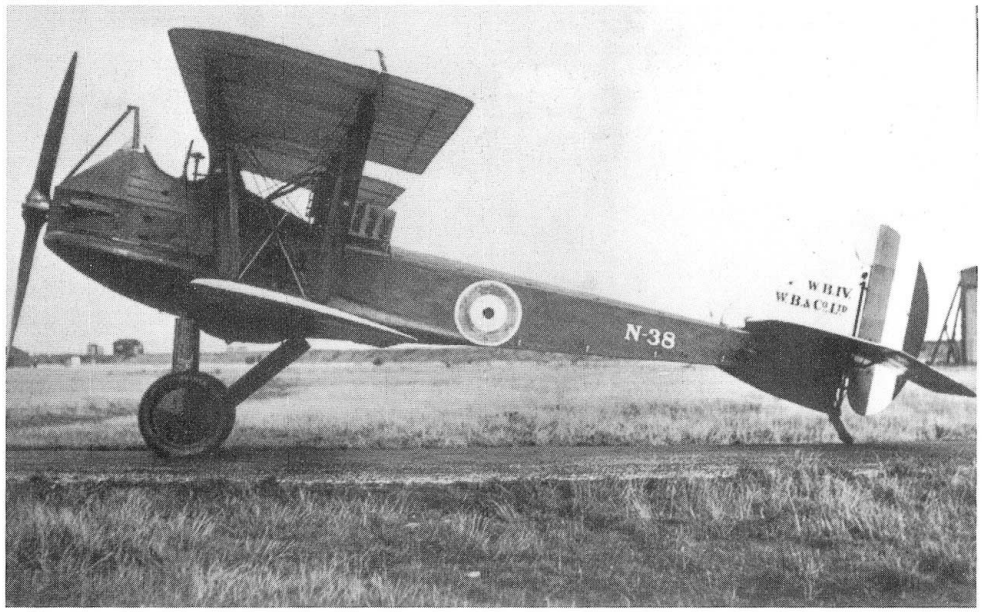


197: *Home to several SS class airships used for patrolling the Irish Sea, this is Royal Naval Air Station Luce Bay, seen looking north-west, sometime in 1918. Note the protective windscreens at each end of the hangar to prevent the airships being swung about during the delicate manoeuvres as they were taken in and out the hangar (Barry Ketley)*

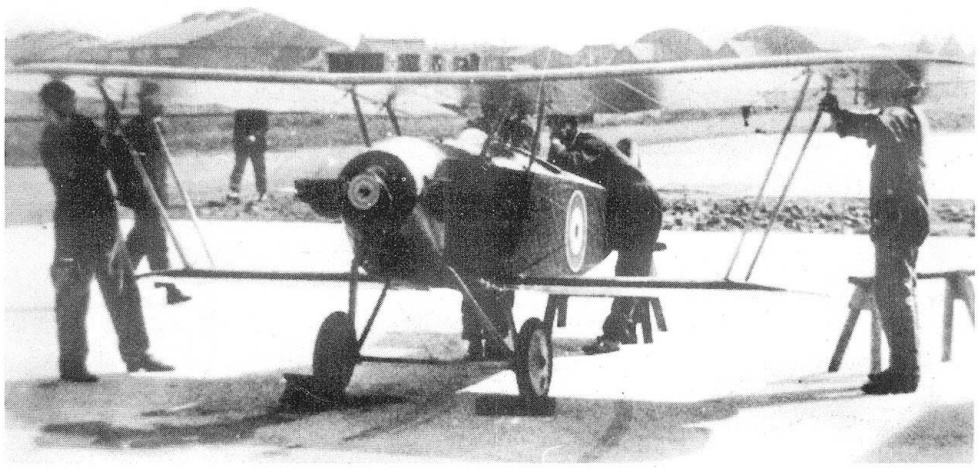
198: *Under the stimulus of the Zeppelin threat, the Royal Navy responded by expending much effort in trying to develop an effective shipboard fighter. In the process several unsuccessful designs were evolved from existing aircraft types. Among them was the Beardmore W.B.III, a development of the Sopwith Pup. Also known as the SB3D, the aircraft had folding wings and a jettisonable undercarriage. The changes seriously impaired the flying qualities with the result that most machines went straight into store (Bruce Robertson)*



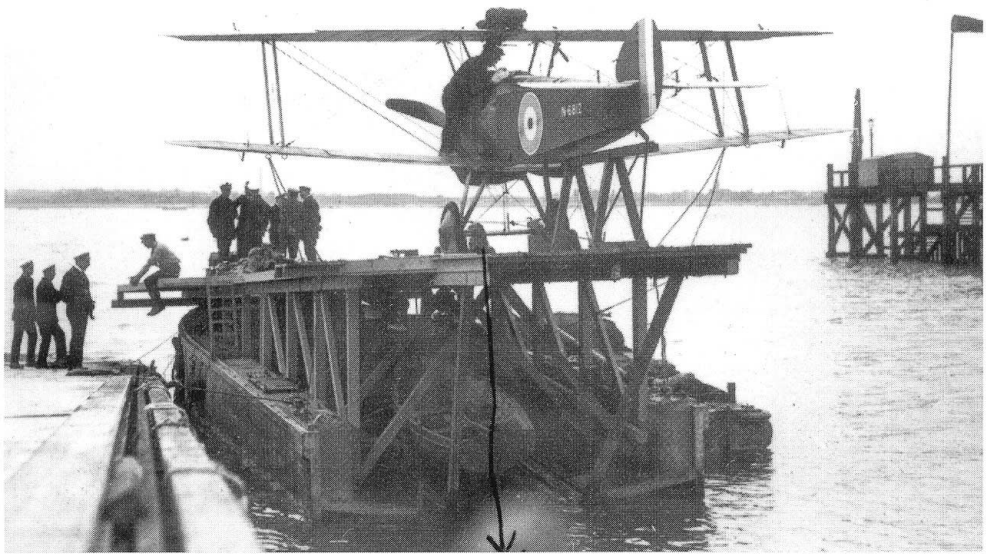
199: *Also intended for use as a shipboard fighter, the Beardmore W.B.IV was a much better machine than its predecessor. It was not, however, a match for the Sopwith 2F1 Camel. In particular, the Hispano-Suiza engine was regarded as far too complex for shipboard use. As a result only the single prototype, N38, was built and is seen here undergoing ditching trials at the Isle of Grain on 27 September 1917. The following day during one such test the buoyancy chamber collapsed and the machine was lost (J.M. Bruce/G.S. Leslie Collection)*



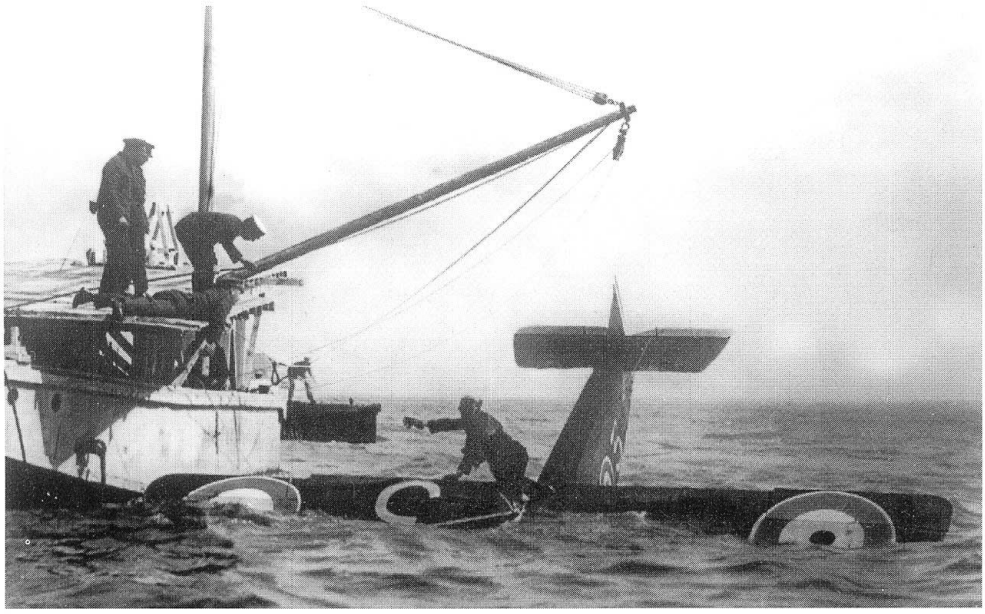
200: *After it was realised that Zeppelins were vulnerable to incendiary bullets, the Royal Navy had the idea of using numerous small ships on standing patrols, each with its own anti-airship fighter. Designed to fly from platforms on gun turrets and the like, the Port Victoria P.V.7 (aka the Grain Kitten) was developed by the RNAS depot on the Isle of Grain in early 1917. The smallest aircraft in the world capable of carrying a pilot and a Lewis gun, its engine was found to be totally unreliable and the project was consequently abandoned. Sopwith's Camel did the job instead (Bruce Robertson)*



201: *A more effective way of reaching the Zeppelins was found to be by towing lighters carrying various types of aircraft behind naval vessels. These extended the range of the aircraft and allowed quicker responses to the approach of a Zeppelin. Here a Felixstowe F.2A is being towed by a destroyer, possibly HMS* Teazer, *which carried out such an operation on 11 June 1918 in the Heligoland Bight (Bruce Robertson)*

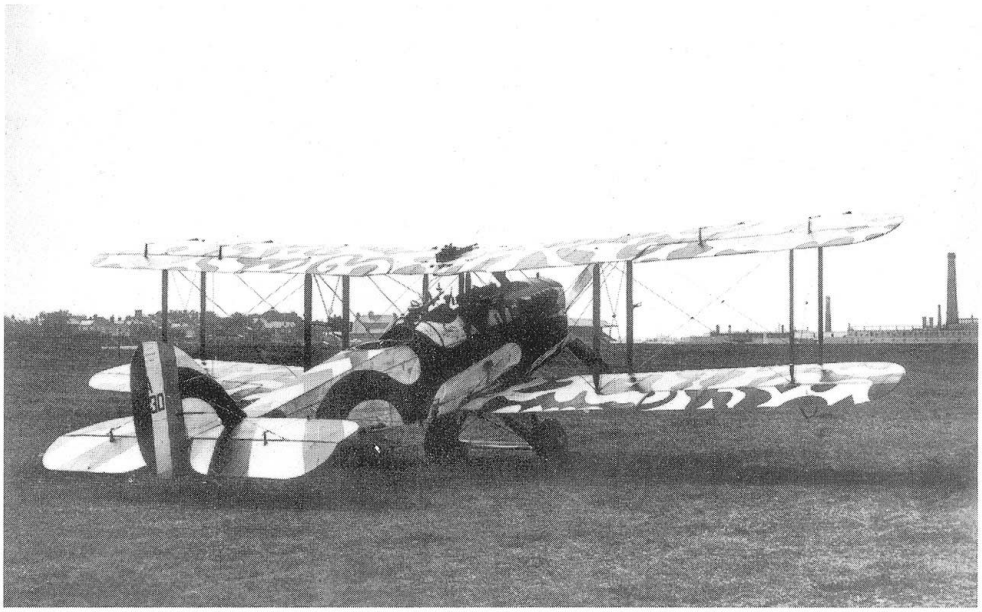


202: *Another type of aircraft to be launched from a lighter was the Sopwith Camel. This is 2F1 Camel N6812 at Yarmouth on 31 June 1918. The tail skid had a ball attachment which slotted into the guide rail. On 11 August, flown by Lt S.D. Culley, N6812 was launched from a lighter towed behind HMS* Redoubt *and attacked Zeppelin L53. The airship went down in flames off the Heligoland Bight and both Culley and his Camel were retrieved safely by the lighter after ditching. The aircraft is now preserved in the Imperial War Museum (IWM HU 67884)*



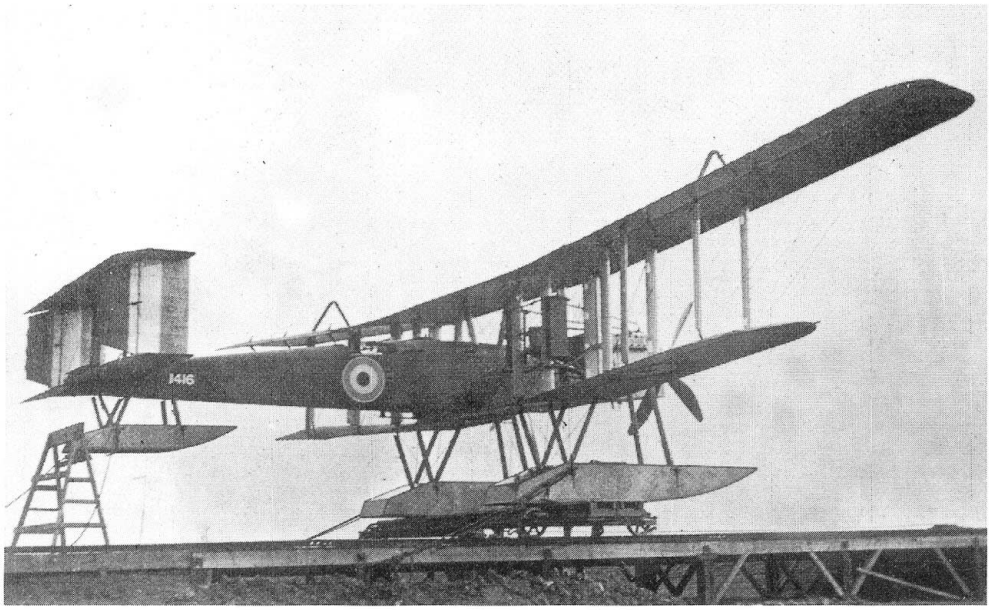
203: *When Lieutenant Culley rose from his floating base to attack L53 he had only one option when the time came to 'land'. Here a pilot has put down on the water and the lighter from which he took off has arrived to retrieve him (IWM Q 27539)*

204: *This spectacularly 'camouflaged' Airco D.H.4, A7830, arrived at Yarmouth in December 1917. It was flown by the irrepressible Wing Commander Charles Rumney Samson DSO and Air Mechanic Radcliffe during an attack on a U-boat off Lowestoft on 21 March 1918. Two 65lb bombs were dropped, although no submarine is recorded as being damaged or sunk on that date. These aircraft also worked with the Felixstowes when out looking for Zeppelins. The reasons for the black(?) and white finish are unknown, unless they were similar to those of the flying boats (IWM HU 67881)*

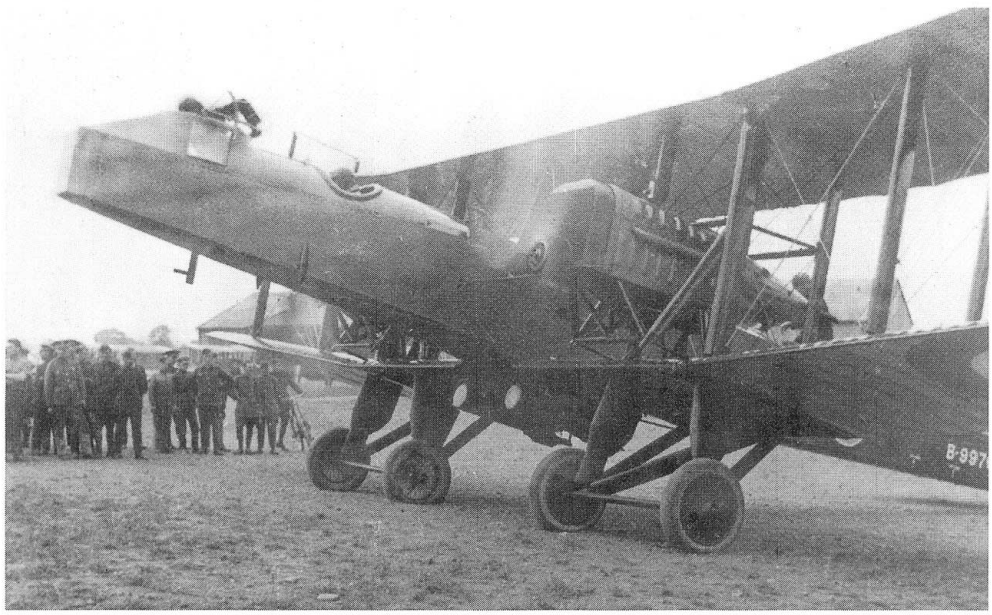


205: *N2008 was a Fairey Hamble Baby Convert based at Yarmouth. In May 1918 she crashed on take-off, thereby introducing herself to a D.H.4 (probably A7830) and a Camel, before demolishing the wire fence in front of a hangar. Samson Collection (IWM HU 67875)*

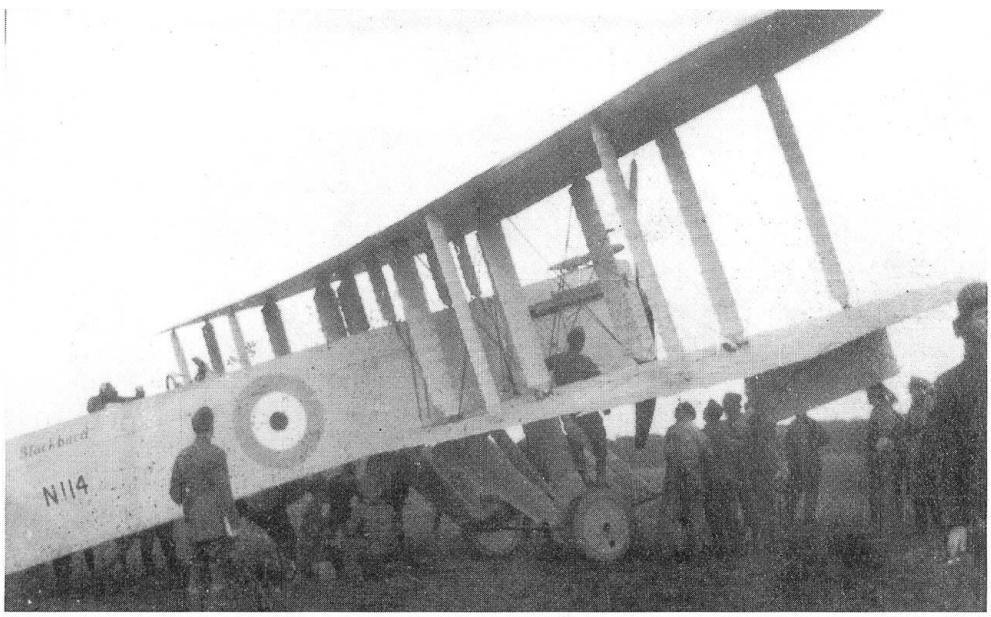
206 Below: *Many older aircraft were used for home defence duties. Bristol Scout D, N5399, was used at Cranwell and by Redcar War Flight. The aircraft was turned over on landing by Flt. Lt. N.W.G. Blackburn on 12 June 1917 (IWM Q 106120)*



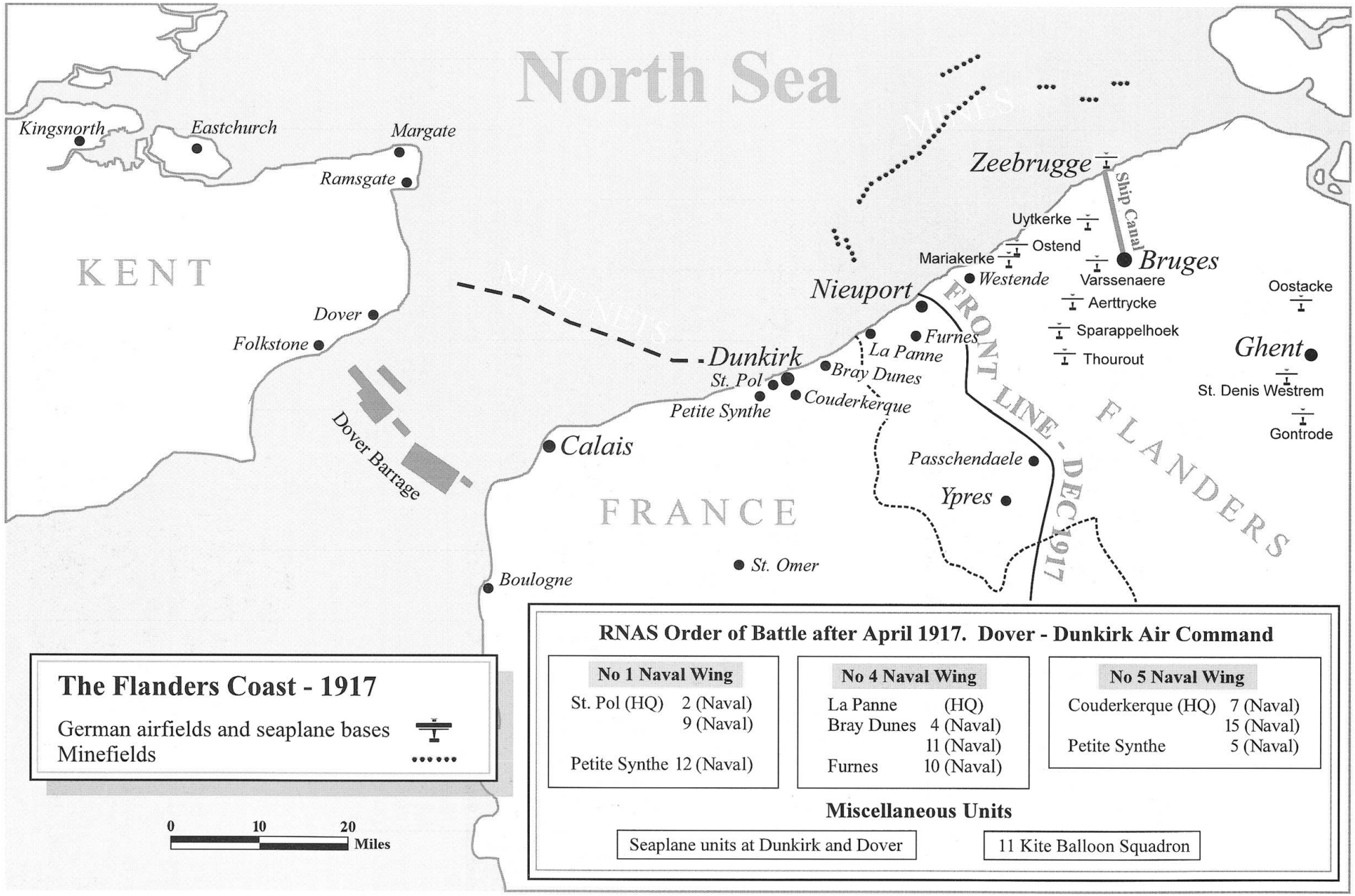
207: *Intended for use as a long-range anti-submarine patrol aircraft, the Blackburn G.P. (i.e. General Purpose) seaplane was developed in 1916. This is N1416, the second of two built, which was completed at Brough during winter 1916-1917 and powered by two Rolls-Royce Falcon engines. Trials on the freezing River Humber were fairly successful, but despite its ability to carry a torpedo it was not awarded a production contract (Bruce Robertson)*



208: *Recognition that anti-submarine patrol aircraft had to be independent of sea states led to a land-based version of the Blackburn G.P. The result was the ungainly looking Kangaroo which first flew in early 1918. Capable of carrying a respectable bomb load of up to 520lb and fitted with night flying equipment and wireless as standard, it should, perhaps, have enjoyed greater success than it did. 20 were built for the RNAS, but were not delivered before the formation of the RAF. Here B9976 of 246 Squadron prepares to leave Seaton Carew in mid-1918. Note the depth charges under the fuselage (Bruce Robertson)*



209: *N114 was the second Blackburn Blackburd, built in 1918 as a ship-board torpedo bomber for use on the Royal Navy's first aircraft carrier, HMS* Argus. *Completed in mid-August 1918, this machine was extensively modified after trials with the first prototype. As it turned out, neither the odd Blackburd nor the competing Short Shirl were found to be acceptable and the Royal Navy opted for the more manoeuvrable Sopwith Cuckoo instead (Bruce Robertson)*


North Sea
KENT
FRANCE
FLANDERS
Kingsnorth
Eastchurch
Margate
Ramsgate
Dover
Folkstone
Dover Barrage
Calais
Boulogne
St. Omer
Dunkirk
St. Pol
Petite Synthe
Couderkerque
La Panne
Bray Dunes
Furnes
Nieuport
Westende
Mariakerke
Ostend
Uytkerke
Zeebrugge
Ship Canal
Bruges
Varssenaere
Aerttrycke
Sparappelhoek
Thourout
Oostacke
Ghent
St. Denis Westrem
Gontrode
Passchendaele
Ypres
FRONT LINE - DEC 1917
The Flanders Coast - 1917
German airfields and seaplane bases
Minefields
0 10 20 Miles
RNAS Order of Battle after April 1917. Dover - Dunkirk Air Command
No 1 Naval Wing
St. Pol (HQ) 2 (Naval)
9 (Naval)
Petite Synthe 12 (Naval)
No 4 Naval Wing
La Panne (HQ)
Bray Dunes 4 (Naval)
11 (Naval)
Furnes 10 (Naval)
No 5 Naval Wing
Couderkerque (HQ) 7 (Naval)
15 (Naval)
Petite Synthe 5 (Naval)
Miscellaneous Units
Seaplane units at Dunkirk and Dover
11 Kite Balloon Squadron

HELPING THE RFC

The legacy

For the fighter squadrons of the RFC, the spring and early summer of 1916 had been a good one. The arrival of aircraft such as the Airco D.H.2, a purposely designed fighting scout, had swung the balance back in their favour. The RFC had begun to learn the lessons of 1915 and the old type of squadron, with its mixed bag of machines, was out of date. 24 Squadron arrived with the D.H.2 as its sole aircraft type and the concept of the specialist squadron soon proved its worth. The Fokker *'Eindecker'* and its domination of the Front had finally been dealt a mortal blow and over the Somme it became increasingly difficult to bring the 'Hun' into combat. This new 'fighter' concept and the advantage it produced, gave the pilots of the RFC a much needed boost.

General Hugh Trenchard (commander of the RFC since August 1915) formulated a policy of the Offensive Patrol which basically meant that the fight should be taken behind the enemy lines. While the Somme offensive crashed to a halt, the RFC enjoyed the upper hand. Faced with this onslaught, the Germans completely reorganised their flying services and introduced new aircraft types themselves. By November the pendulum had swung back in their favour as the new 'hunting squadrons' or *Jagdstaffeln* made their presence felt.

210 Above: *Major Roderick Dallas seated in his S.E.5a, D3511, while Commanding Officer of 40 Squadron. The curious camouflage may have been intended to hide the aircraft from an enemy above during low-flying ground attack operations. The later Sopwith Salamander 'trench fighter' was intended to carry a similar camouflage for just this purpose (Wing Commander G.H. Lewis via Barry Gray)*

The new Albatros fighter was fast, streamlined and armed with two synchronised machine guns. As soon as it arrived on the Western Front in September 1916, the shark-like hunter began to take its toll on the D.H.2's and two-seaters and there seemed to be no defence against the revitalised German forces.

Trenchard knew, of course, that the new offensive planned for the spring of 1917 would find the RFC wanting. The casualties inflicted by the offensive policy and the reaction of the German Air Services was taking its toll. The RFC was looking into the abyss. He proposed a massive expansion of the RFC to 56 squadrons of fighters and two-seaters with an additional twelve of bombers. At these sorts of levels the supply of men and machines could not be met by existing means and the RFC turned to the RNAS for help.

The Admiralty agreed to assist and a new squadron was formed specifically to help the RFC with its land operations. As has been seen, Lambe had already begun to re-organise Dunkirk and had already been forming

fighter squadrons of his own. Number 8 (Naval) would be the first to be handed over under the command of Squadron Commander G.R. Bromet.

Equipped with the Sopwith Pup, 1½ Strutter and a flight of Nieuport 11's, the unit was posted to the RFC airfield at Vert Galand, on the Amiens-Doullens road. Soon the squadron would become an all-Pup unit and by the end of December had shot down 24 enemy aircraft for the loss of two pilots. In early January 1917 they returned to Dunkirk having handed over their aircraft to another new 'RFC' squadron, Naval 3. This squadron had been formed in November under the command of Redford 'Red' Mulock, a well-liked Canadian who had the distinction of being Canada's — and the RNAS' — first 'ace'. Mulock was typical of the fresh Canadians who breezed into the British flying services and who helped to revitalise them. While training at Eastchurch, he ran into a hedge which broke the undercarriage wires and forced the four-wheeled undercarriage back along the fuselage.

"Most people would have called it a crash, but Red Mulock was one of those Canadians who take a lot of stopping. So he went along into a farm [and] borrowed a couple of lengths of rope."

Pulling the undercarriage back into shape he lashed it with the clothes line, got some local lads to sit on the tail while he swung the propeller and flew back to Eastchurch.

"Somebody reported this appalling piece of repair work to Colonel Gerrard and he sent for Mulock and started tearing him off an awful strip for daring to fly a plane under those conditions. Mulock, being not so conventional as the rest said, 'Excuse me sir, have you examined the aircraft personally?' and Gerrard said 'No, I haven't' 'Well,' he [Red] said, 'I'd be obliged, sir, if you would'. At the aeroplane Mulock asked what was wrong with the repair stating that he was quite happy to take off at that very moment and that furthermore 'She's perfectly safe'. Gerrard agreed without demur."[53]

On its return to St. Pol, 'Naval 8' was split up to form two squadrons; 8(N) and 9(N). They also re-equipped with a new fighter from the Sopwith stable — the Triplane. Whilst the Pup had been able to hold its own with the Albatros, the Triplane was a distinct improvement over an already-good machine. Powered by the 110hp Clerget rotary, the 'Tripehound' was faster than the Pup and highly manoeuvrable. The squadron returned to RFC control and commenced operations from Auchel. Herbert Thompson (later Sir Herbert Thompson CIE) joined Naval 8 at the height of the Battle of Arras—soon to be dubbed in RFC circles 'Bloody April'. The machine was a delight to fly and was the direct inspiration for one of the most famous aircraft of all time, namely the Fokker Dr I triplane, in which Manfred von Richthofen met his death.

"She [the Sopwith Triplane] was a superb climber. When three of us were up led by Booker[54] way over Vallenciennes, we were coming back off patrol (at) about seventeen thousand and we saw a batch of the travelling circus between us and home and the sun. It was impossible for three Triplanes to take on about nine Albatrosses [sic] and so Booker simply sat on his tail and we went over the top of them."

By the end of March, four squadrons were under RFC control, namely Numbers 1,3,6 and 8. In order to provide a fifth unit, personnel were again taken from the hapless 3 Wing. This became Naval 10. Formed in February 1917 under the command of Flight Commander B.C. Bell, Naval 10 was also re-equipped with the Triplane in May.

One of its number was a Canadian,Raymond Collishaw. He was to become one of Canada's most famous aces and had already seen service with 3 Wing at Luxeuil and with Naval 3. At Naval 10 however he would be commander of 'B' Flight. Initially it seemed that the squadron had been used as a dumping ground for ineffective pilots — a not uncommon event in any military formation in any war when units are asked to supply personnel by HQ. Collishaw found himself utterly alone during one scrap and resolved to get rid of those he deemed unreliable. His five chosen replacements would prove to be a formidable group. Each machine was painted with black metalwork and sported the names 'Black Death', 'Black Maria', 'Black Sheep', 'Black Roger' and 'Black Prince'. The pilots were all Canadian and were Collishaw, Flight Sub-Lieutenants Ellis Reid, M. (Alex) Alexander, J. (Jerry) E. Nash and John E. Sharman. 'A' Flight would be recognised by red wheel covers, whilst 'C' Flight had blue.

Naval 10 operated originally around the Dunkirk area and Collishaw (who would claim 34 victories while with the Squadron) shot down four aircraft in five days when the squadron went under RFC control on 1 June 1917. On 5 June his score was increased to 13 with the destruction of an Albatros C type. On the 6 July he shot down six Albatros D.V's — a remarkable 'first' for the squadron, RFC and RNAS. This new arrival on the Western Front pushed the pendulum back in the Allies' favour, the German pilots treating them with great respect. In four months the 'Black Flight' would account for 87 enemy aircraft.

After some leave Collishaw returned in November and was given command of 13 (Naval) and then 3 (Naval), which he commanded when the RFC and RNAS amalgamated.

In Naval 8 another expert shot was Robert A. Little. An Australian by birth, Little started out with the Squadron Pups and would shoot down 24 of the enemy in the Triplane. Once described by Thompson as a "ham-handed pilot" his forte lay in his superb eyesight and shooting ability.

The standing squadron joke was that Little had written off more British planes than German due to bad landings. On one occasion he forced down a German aircraft which landed intact. Little came down and landed beside him, only to turn his aircraft over. There followed an amusing debate as to who had brought down whom.

In the air though he was "absolutely ruthless" in the way he dived and "extremely hard to keep up with". Little was killed on 27 May after tackling a Gotha bomber at night. A bullet ruptured an artery in his thigh and he crashed near Neoux. He is buried in Wavans War Cemetery, near the RFC's James McCudden VC.

In July and August of 1917, 8(N) converted over to the Sopwith Camel, the most successful fighter of the war. Again highly manouverable it required a much more respectful approach by the pilot, being "frisky" compared to the Pup and Triplane, but once mastered it proved a superb 'pilot's machine.'

Ronald Sykes[55] was lucky to have Canadian Captain Roy Brown as his Flight Commander in 9 (Naval) Squadron. Brown took him out on a familiarisation flight and introduced Sykes to the 'power dive':

"He took me round and into a steep dive to introduce me to just how much a Camel could stand. He went over fairly quickly down nose first — I was following. Very soon we were going down vertically with engine full on. The airspeed indicator was round to its maximum 180 knots and everything was making a terrific din — the wires, the wind in the struts — everything was shaking and howling. Out of the dive first of all, his speed dropped slightly when he throttled back the engine. I throttled back mine just about an eighth of an inch at a time we came out of the vertical. With every little movement you could feel the centrifugal force pushing right down into your shoulders, pushing you down onto your seat. When the speed got down to 150, it handled quite well and we continued to pull out. It just seemed that above 150, it had to be handled in a very sensitive way, otherwise the canvas and wood would have broken up."

The Camel could turn to the right in an instant because of the torque of the rotary engine. In a left turn "you could just move your stick an inch or two over to the side and the Camel would immediately turn over onto a wingtip. At the same time you pulled the stick back into your stomach and the nose began to whip round the horizon. You had to put on full left rudder because the gyroscopic forces from the big Bentley engine tended to make the nose climb into the sky."[56]

Even with an experienced Flight Commander like Roy Brown, the novice pilot had to keep his wits about him and learn quickly the lessons of combat in the dangerous skies of 1917 and 1918. The individual combats of 12 months before now gave way to confused, dreamlike, terrifying melées between large formations. On 20 September Sykes found himself at the back of a flight of five Camels when Brown spotted a two-seater near Ostend. This was a decoy, for as the Camels swooped on the 'easy' prey, four Albatros fighters of *Jasta Boelcke* dived out of the sun above them. Brown's guns jammed and he pulled out of the trap using climbing turns. The inexperienced Sykes — the last man — started to lag behind when *Unteroffizier* Paul Baumer opened fire:

"The bullets came through my cockpit and grazed my back. The engine stopped and petrol squirted all over my leather coat and sheepskin boots. Immediately Roy Brown came down and although his guns were jammed he did a lot of stall turns and manoeuvres above the four Germans who just left me alone. Then the sky cleared — they'd disappeared — gone away!"[57]

He managed to glide the aircraft back to the British Front Line and crashed into a shell hole in No-Man's Land. Scrambling from the wreck as the Germans started to shell it, he swam across the Nieuport Canal where he kicked off his sodden boots and scrambled into a trench.

Even if each unit had a healthy respect for the other, inter-squadron and inter-service rivalries still remained. On 27 September, Booker and Thompson were out on patrol when Booker spotted a German below. Diving, they both fired at the 'Hun' when Thompson found that Booker had disappeared. Nonetheless he stayed with the German machine and suddenly realised that it was "going down". Thompson followed and saw him crash. Booker had actually been brought down by British ground fire but was unharmed.

On landing back at base, Thompson reported the fight. When Booker returned (he had come down not far from the German *Oberleutnant* Hans Waldhausen of *Jasta 37*) he was incensed that Captain Mick Mannock and Lt. John Tudhope had turned up to claim the 'kill' for 40 Squadron. In the event Tudhope had also stumbled upon Waldhausen and fired a few rounds at him so the victory was shared. It did not stop Booker believing the 40 Squadron claim to be "impudent" and after the war Waldhausen confirmed to Thompson that his machine had been hit by only three bullets. At the time though, Mannock would never have claimed a kill

for himself or anybody else unless he thought it was so.

By this time the 25 year old Bromet was promoted to Wing Commander and Christopher Draper, whom Thompson considered to be "the finest pilot I'd ever seen" became Acting Squadron Commander. Captain Graham Donald came across him flying seaplanes at Dundee Seaplane Station and was of the same opinion stating that he was "undoubtedly the world's finest pilot."

"He used to fly quite regularly through the Tay Bridge; which is not like the Forth Bridge. The Tay Bridge was built on stone pillars quite reasonably wide apart. He used to fly through that quite gaily. One day he challenged me to follow him through. So I followed just a comfortable distance behind. As he went through, it struck me that he'd dashed little clearance on his wingtips. It struck me that it wasn't enough for me anyway. So I may as well admit it here and now, I funked it at the last moment. I was on the old Short biplane and I just pulled her right up and went over the bridge, not through.

So when we got back to the station, Christopher said, 'Well, you managed it alright?' I had to admit to him I funked it. He said 'What?! what?' I said 'No, I funked it.' He said 'Why?' 'Well' I said, 'what clearance did you have at your wingtips?' 'Oh! About a foot and a half, I should think — each wing — three feet overall.' I said 'You know, from a rough guess, I think the old Short seaplane's five or six feet wider span than the Avro, which you were flying. If I hadn't have funked it, you know, I'd have knocked the Tay Bridge down and you'd have got the blame!"[58]

Draper had joined Naval 8 in early September as a Flight Commander and took over the squadron officially on 28 October. When he first arrived he found that Bromet had created a superb unit that was smart, efficient and in a high state of morale. Everything of course was done in the Navy fashion, with Ward Rooms, ship's bells and 'lower decks'.

From August onwards the squadrons working with the RFC were gradually withdrawn until only Naval 8 was left at its outpost at Mont St. Eloi. For January and February 1918, 3 Naval were stationed at Bray Dunes. In March they were transferred to the RFC's 10 Wing and relieved Naval 8 at Mont St. Eloi. Then in March they were pitched headlong into the cataclysmic German offensive that nearly won them the war.

Still weakened by the efforts of the previous year, the British Army found itself operating over nearly 30 miles of new front vacated by the French. The French had themselves been seriously affected by the mincing machine of Verdun and had in addition suffered the ignominy of large scale mutinies and subsequent executions. The Germans agreed an armistice with the new Bolshevik regime in Russia. Now that the Russian Front no longer mattered, units were transferred west.

The new offensive opened on 21 March. The Allies knew that an offensive was being planned because of the increased activity that had been seen on the German side. What they did not know, however, was when that offensive would be unleashed. The British had to defend the Channel Ports and had little chance of holding the Germans back. As troops and units fell back, the air services were thrown against the German armies, ground-strafing their way along the whole front. British pilots found themselves tackling low flying German *'schlacht'* or attack aircraft, as they themselves wheeled low over the battlefield. Such was the swiftness of the advance that pilots returning from operations would find that their unit had moved to a new site. Some aircraft were lost on the ground by artillery shelling, others in the highly dangerous strafing operations that all were engaged in. The pilots knew that skill had nothing to do with survival, but that luck was all that mattered.

Low down, troops became a blur and many aircrew casualties occurred when trying to sort out friend from foe. The worst day was 25 March when Haig issued his famous 'backs to the wall' order and squadrons were aloft most of the day. On 28 March the shelling was coming closer to Mont St. Eloi and Naval 3 moved to Treizennes. Naval 8 arrived at La Gorgue on 2 April and within five days found the whole front ahead of them under attack. As Portuguese and British troops were pressed back, Draper found himself in a most precarious position. As the shelling had got closer, all the equipment and supplies had been packed up. Reports from passing troops confirmed that the airfield would have to be evacuated but the problem was that the whole area was fogbound. Some volunteered to fly aircraft out but it was decided that such a course would be far too dangerous and unnecessary. Draper sent the Squadron transport off to Serny, parked the aircraft in the middle of the field and at the last moment burnt all the machines to save them from the enemy. Fortunately the Squadron fetched up close to a secure Supply Depot and was re-equipped with Clerget Camels within 48 hours.

The last significant event to affect the RNAS was, of course, the creation of the Royal Air Force.

Ever since the Admiralty had split the Naval Wing from the Military Wing of the RFC, tensions had existed between them and the War Office. To people such as Lieutenant General Sir David Henderson, the idea of a split force had always been anathema and much of the political work in the intervening years had had the goal of unification very much in mind.

A number of ideas from different people led to the same conclusion. Henderson and Sykes had laid down much of the groundwork when setting up the RFC before the war. They both served on Colonel Seely's Parliamentary Sub-Committee which had responsibility for developing an 'air force'. The formation of the RNAS had scotched any moves towards a unified force then, but the framework was to hand.

The main impetus which prompted the move was the question of the diversification of equipment and resources supply. The Admiralty had been much better served by their own direct contacts with manufacturers and the RFC were envious of the service they received. For one thing, the RNAS had much better deliveries of engines and while manufacturers were giving priority to them, the RFC, with their cumbersome reliance on the Royal Aircraft Factory at Farnborough, and the suspicion with which the makers were held by them, conspired to starve the RFC of vital resources.

Although a committee had been formed to co-ordinate the matter of supplies, the practice proved to the contrary. Lack of standardisation and co-operation in the early part of the war hampered the effort of both the air services. Despite urgings to form a unified command, the authorities formed a Joint Naval and Military Committee under Lord Derby to be known as the Joint War Air Committee instead. The result was that the old rivalries came to the fore and once again nothing came of this initiative. It was apparent that the needs of both services were quite different and whilst the Royal Navy advocated the need for long distance bombing, the Army advocated the tactical use of the air arm. With no executive powers and unable to influence policy, the members of the committee resigned on 29 March 1916.

The causes of this failure were addressed by Lord Curzon and his recommendations led to the formation of the Air Board. This body tried to effect a compromise but again it was not given any executive function. Doomed to failure, the Air Board was dissolved seven months later. The reorganisation of the German Imperial Air Service in the latter half of 1916 and the alarm registered by Haig to the War Office, seems to have been the catalyst which triggered and focused the minds of the interested parties onto the question of aerial resources. Prompted by Trenchard, Haig asked for an additional twenty squadrons to meet the menace. To do this from current RFC resources was impossible and the committee knew that it would have to look elsewhere to resource the need. The results of this have been described, but over and above this there was increasing disquiet from the public at large as to the effectiveness of the flying services against the threat of German air raids. The production of engines was the main difficulty, the Admiralty having more or less cornered the market through their shrewd business connections. It was soon seen that a co-ordination of effort was needed to avoid delay, waste of labour, materiel and output.

An earlier report from the Committee of Inquiry under Mr Justice Bailhache was highly critical of the whole of the supply organisation and the combination of the publication of the committee's report in August, coupled with Haig's demands and the general dissatisfaction with aeronautical organisation, led to the formation of the second Air Board under Lord Cowdray.

Unlike its predecessor, this Board had some, if limited, executive powers and became responsible for the design and procurement of aircraft and their allocation to the services. The Ministry of Munitions handled aircraft inspection during construction and the supplies of material.

Another raid on England on 13 June resulted in 162 deaths and 432 injured Londoners. This demonstration of invincibility by the Germans prompted further demands from the public for protection by the air services. On 7 July 22 Gothas again came over London, seemingly unopposed. Such was the public outcry that the Prime Minister asked the South African leader, General Jan Smuts to look at the air defence of London and the whole question of the organisation of the air services. It was soon realised that the Air Board could only go so far, given its limited powers, and that something more extravagant was needed. There was no question that the Air Board under Cowdray had not done wonders but it was felt that a fully fledged Air Ministry would solve the problem once and for all.

Smuts was effectively a committee of one, but the influence of General Sir David Henderson, who himself advocated and recommended the unification of the two air services, is plain to see in the final report. If only for this, Henderson, and also to a great degree Frederick Sykes, could be rightly labelled the true fathers of the Royal Air Force. Trenchard was in fact opposed to the idea of a combined service and would later have to agree that Henderson had been right. Henderson saw that Germany recognised that the two navies were at a standstill and that the way forward would be with submarines and aircraft. He recommended to Smuts that "logically the desirability of a separate unified Air Force is almost beyond dispute." An apparent reduction in production of ships and army materiel seemed to confirm this. He therefore advocated that the use of aircraft to bomb German production facilities to smithereens was the way to cut German communi-cations and win. It could be argued that without Henderson's persistent confidence in the air arm, the Royal Air Force would not have become a reality. For him there was no time to be lost. "It is a race between Germany and ourselves as to who begins

first."

By the middle of August, Smuts handed in his report. The first part dealt with the inadequacy of defence arrangements for London but his recommendations in the second part were formed into the Air Force (Constitution) Act, 1917. Receiving the Royal Assent on 29 November, the Air Ministry was formed, an Air Council set up to run it and a date fixed for the inauguration of the new force set for 1 April 1918. This gave plenty of time for transitional arrangements to be made.

For the men in the field the formation passed almost unnoticed. A bald statement as to the change had little effect on the day to day operations of the squadrons on the Front, most being preoccupied with the German Offensive. Squadrons of the RNAS were re-numbered by the addition of 200, Wings by adding 60, and 200,000 to the service number of all personnel below the rank of Sub-Lieutenant. Thus 3 Naval became 203 and 1 Wing, 61. For the time being Army ranks were adopted and whilst some diaries record the whole event in passing, other men viewed the idea with horror. Draper wrote :

"We lost our Naval status and became 208 Squadron RAF. I know that, to the last man, we were very upset at the change..... Gone were Watch Keeping, Liberty-men, the Master-at-arms, or 'Jaunty', the Duty Petty Officer who would report to the Officer of the Watch: 'Liberty Boat along-side, Sir', the ships' bell, complete with snow white clanging rope, and the chaps asking: 'Permission to go ashore, Sir,' which made the local Army and our visitors howl with delight, considering we were so many miles from the sea."[59]

Other RNAS men found themselves transferred into ex-RFC units and vice-versa. For example, the Australian Roderick Stanley Dallas had spent his career with 1 (Naval) Squadron. In April 1917 he shot down 8 aircraft. By June 1917 he had received a bar to his DSC and been given command of the Squadron. Flying two-seaters as well as fighters he had shot down 23 aircraft (including two whilst flying the prototype Sopwith Triplane) by March 1918. On 15th March he was given command of 40 Squadron RFC, arriving on the 17th, 14 days before amalgamation. Captain Gwilym Lewis,[60] commander of B Flight, wrote home "we have got a new CO from the RNAS — Commander Dallas — a perfectly priceless chap."

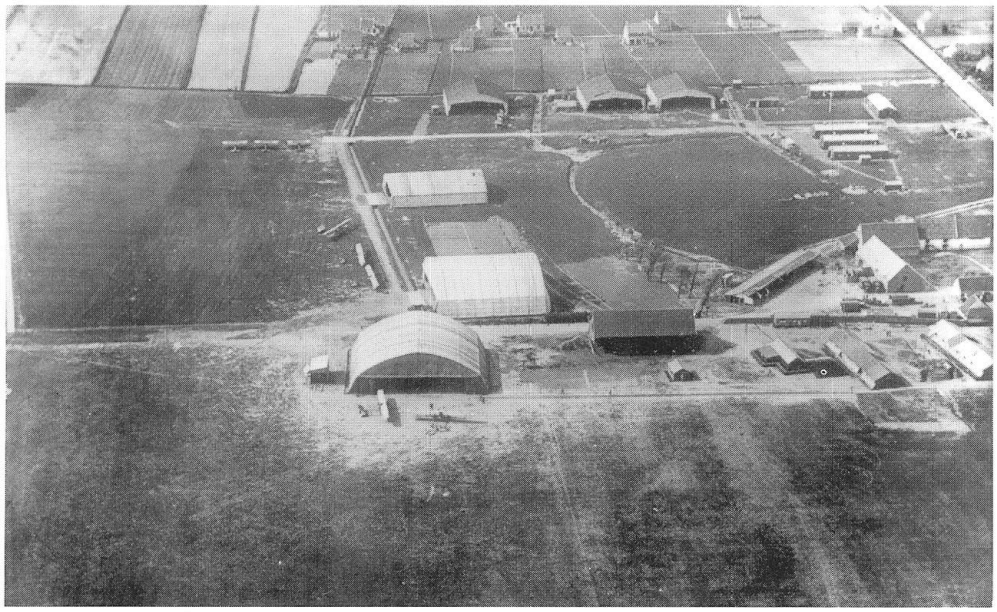
Quickly dubbed 'The Admiral', Dallas soon settled in and swiftly became the admired leader he had been in 1 (Naval). He took the wrench from the Navy and switch from Camels to SE5's in his stride. Two weeks later he received a flesh-wound from ground troops and his aircraft was practically a write-off. Ten days later he was back at the Squadron (on a stretcher) and as soon as he could hobble he went up in his aircraft. Lewis wrote:

"The Admiral has started flying and is quite mad. He went over to Douai and dropped a pair of boots with a message to the effect that as the Huns couldn't come up and fight he was afraid they must be wearing their boots out." He shot up and bombed the airfield as curious Germans went to collect the boots and shot down an aircraft on the way back for good measure.

Sadly Dallas was killed on 19 June whilst engaged with three Fokker Triplanes of *Jasta 14*. The Jasta Commander, *Leutnant* Hans Werner was credited with shooting him down. Lewis and the Squadron could not believe the news. He would write home that he had lost a good friend and that "we simply adored him". He spoke for all when he said that he was "too good for this world, I suppose" .

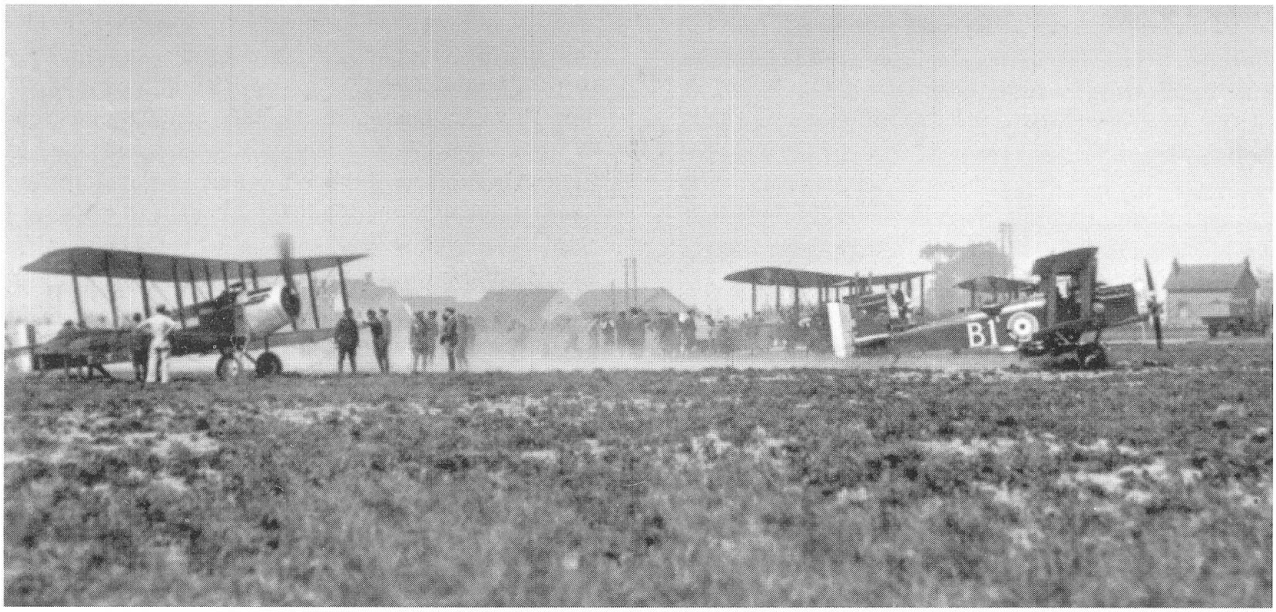
So what lay ahead for the men of the RNAS in this new world? Over the Western Front, Captain Roy Brown would chase Baron von Richthofen along the Somme valley and claim the 'kill' for 209 Squadron. The bombing policy of the old RNAS would come to fruition in the form of the Independent Force, operating deep into the German industrial heartland with their giant Handley Page 0/400's by night and D.H.4's by day. At sea Culley would attack and destroy the L53 and HMS *Furious* would launch the first carrier-borne attack on land targets in history. Seven 2F1 Camels would attack the airship facility at Tondern, destroying the L54 and L60 in their sheds.

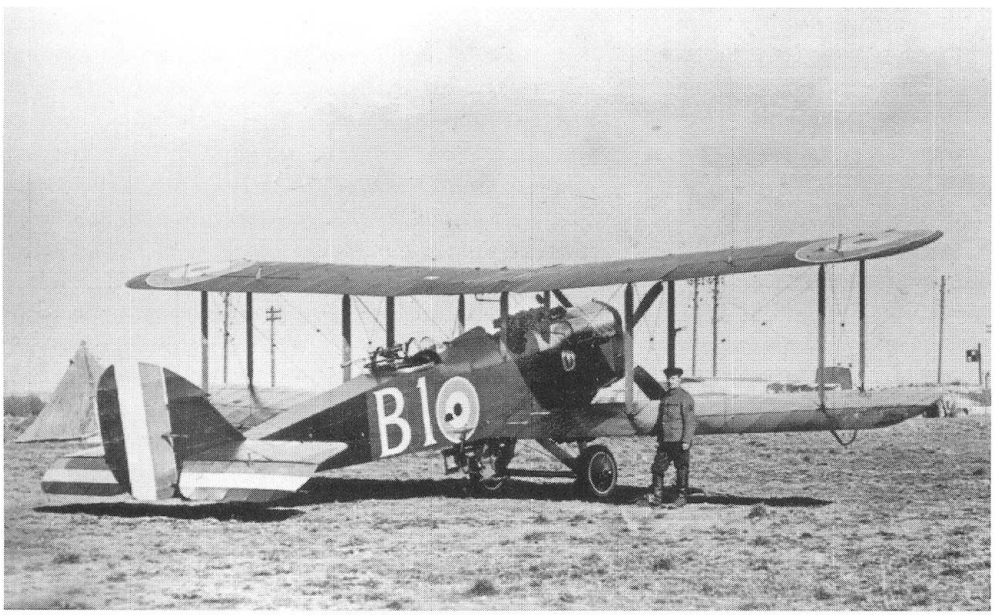
Today the Royal Air Force owes much of its tradition to the men of the RNAS—a look at the modern uniform shows distinct naval influences in the officer's cap badge, the eagle insignia, rank structure and sleeve rings. Its history donated a string of notable firsts, and its tradition carried on in flying boat or maritime patrol squadrons of the 200 series. Their legacy would enable the RAF to connect the Empire, develop strategic bombing and serve as a model for air forces around the world.



211 Left: *A good aerial view of the airfield at Bray Dunes taken on 25 May 1917. The Caudron aircraft belong to 4 Squadron RNAS and elements of the French Aéronautique Militaire (IWM Q 69454)*

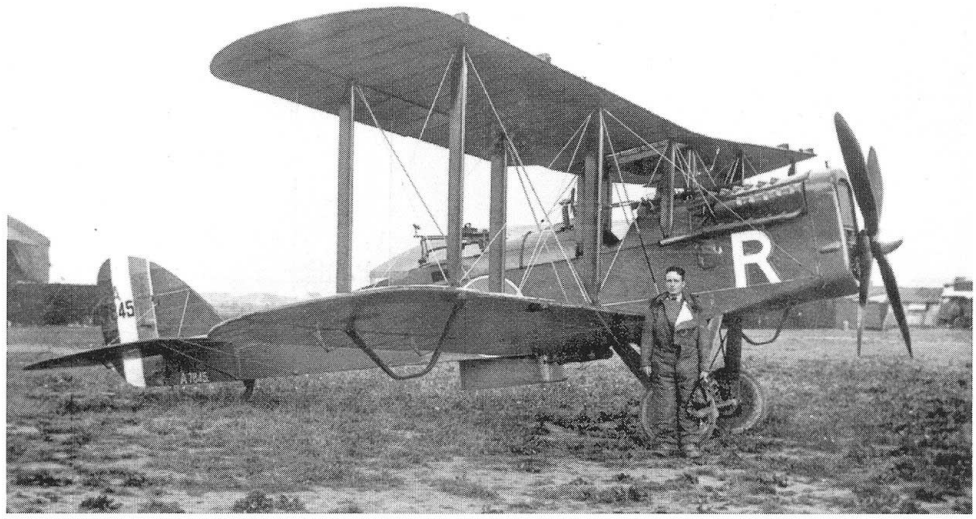
212 Below: *Airco D.H.4, N6000, of Naval 5 getting away from Dunkirk in spring 1917. Note the Sopwith B1/B2 bomber, B1496, at the unit for service trials. It was fitted with a forward firing machine gun, which is believed to have been synchronised by means of the French-developed Alkan-Hamy gear (J.M. Bruce/G.S. Leslie Collection)*





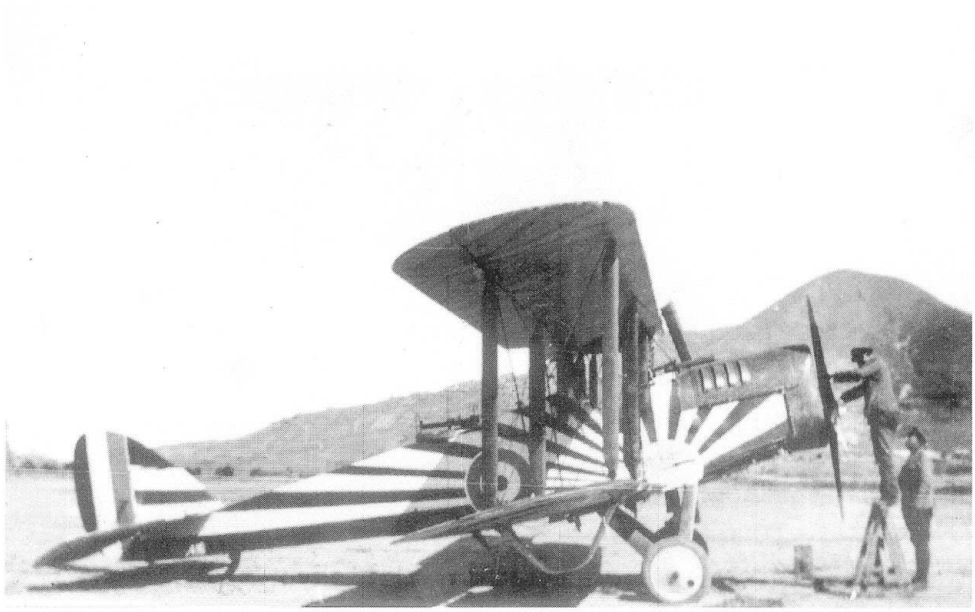
213 Left: *D.H.4 N6000 in service with 5 Squadron coded 'B1' probably in summer 1917. This machine saw considerable action and her crews shot down several enemy aircraft. Apart from the red, white and blue stripes on the tail surfaces, the square-section rear fuselage also appears to be red (J.M. Bruce/G.S. Leslie Collection)*

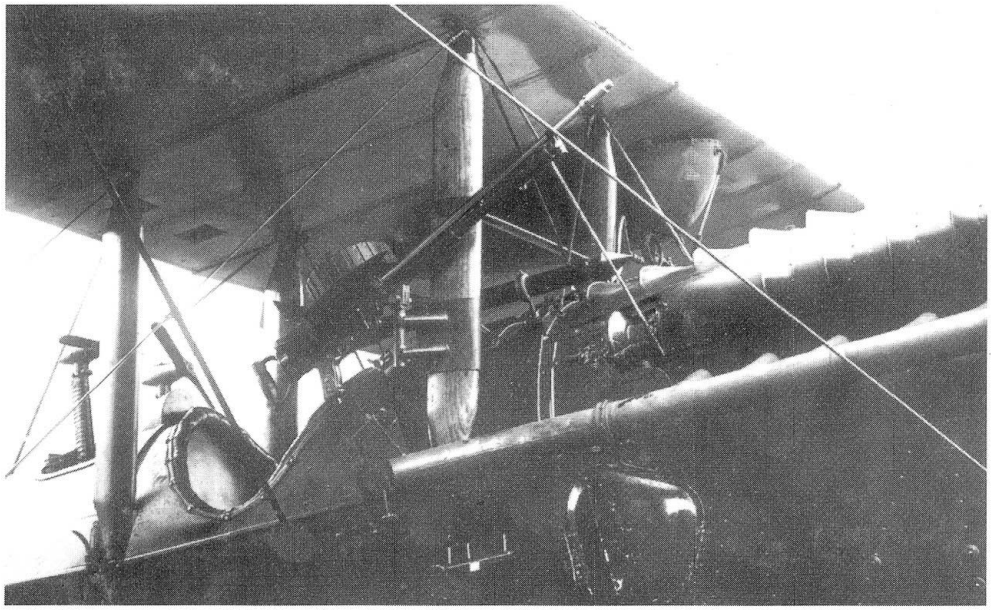
214: *Captain Robinson in front of D.H.4 A7845, 'R', of 202 Squadron RAF on 1 April 1918. The day previously the unit had been 2 Squadron RNAS. Subsequently the machine survived a crash landing on 25 May and transfer to 98 Squadron in March 1919 before being scrapped. Note the large fairing under the fuselage, believed to house a large camera. In naval hands the D.H.4 was found to be a highly capable bomber and reconnaissance aircraft (J.M. Bruce/G.S. Leslie Collection)*



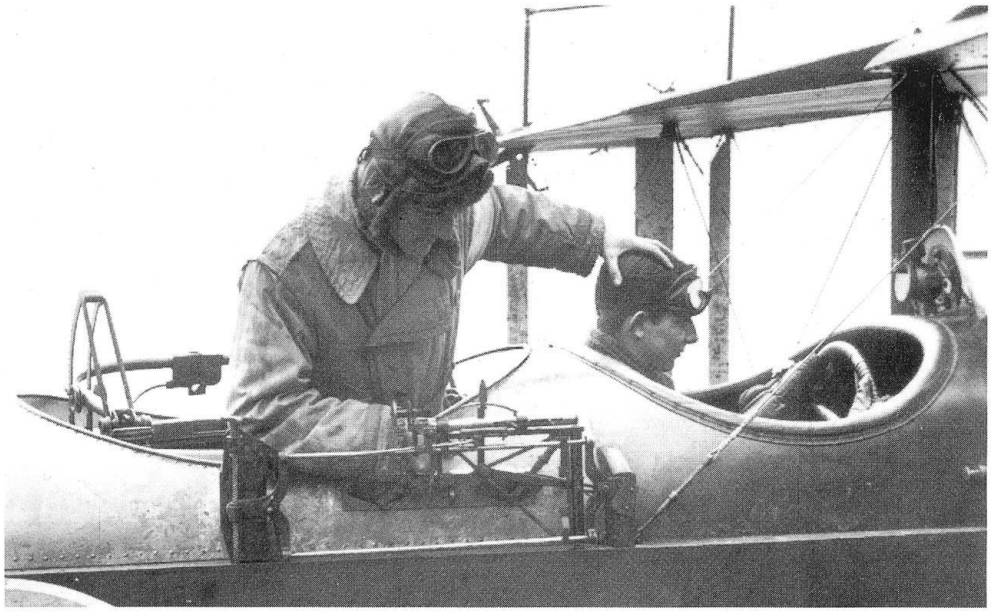
215: *D.H.4 A8025, 'Z', probably from 'C' Flight (the so-called Escort Flight) of 202 Squadron in June 1918. Exceptionally heavily armed, it not only has the standard twin Vickers guns above the engine and the rear-firing Lewis gun, it also sports twin Lewis guns above the wing. These must have been effective as the crew fought off five enemy fighters over Middelkerke on 27 June 1918 and arrived safely back at base (J.M. Bruce/G.S. Leslie Collection)*

216: *Far away from the gaze of central authority, pilots could indulge themselves far more than those closer to home. In France such extravagance would have been stopped at short notice. N6416 arrived in Mudros in January 1918 and served with 2 Wing. The legend 'Moorq' was painted in the 'sun' on both sides of the fuselage. At some time the legend 'Sultan Selim II' appeared on the port side instead (Author's Collection)*



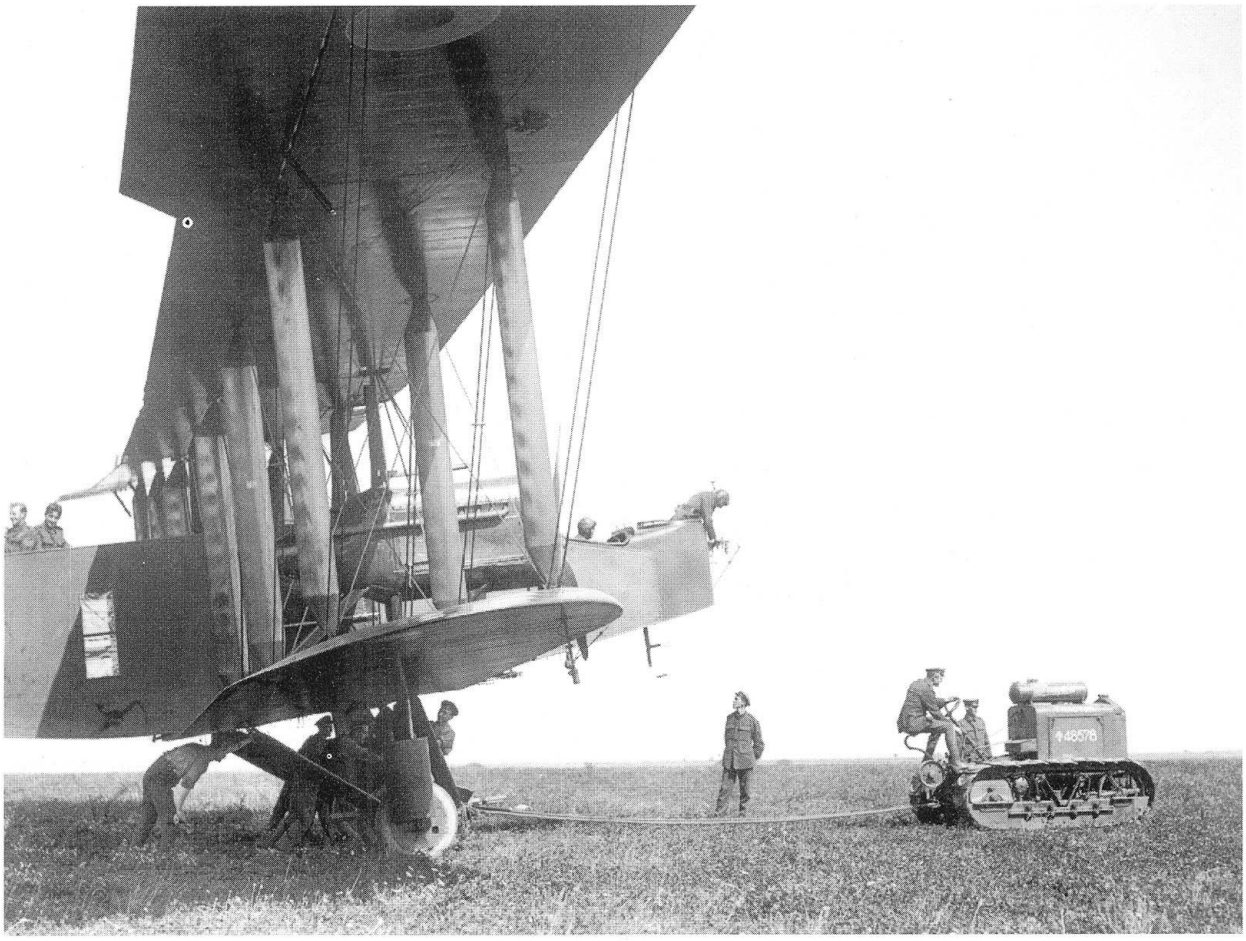


217: *Never reluctant to try out a better way of taking the fight to the enemy, the men of the RNAS tried out many different methods of increasing their offensive armament. Here a Lewis gun firing forward, just outside the arc of the propeller, has been fitted to D.H.4 no. A7830. This is in addition to the two synchronised Vickers guns fitted as standard to most D.H.4's built for the RNAS. This is the same machine flown in a special paint finish by Wing Commander Charles Samson (seen earlier in picture 204) in which he attacked a U-boat on 21 March 1918. Samson Collection (IWM HU 67878)*

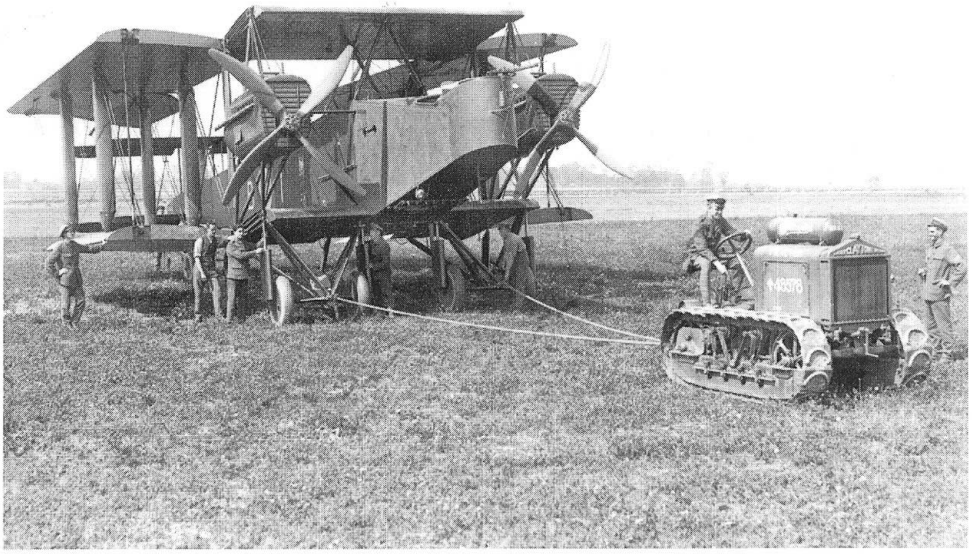


218: *It was soon realised that accurate bomb dropping required a little more attention to detail than a deft lob over the side of the aircraft. Lt. Dangerfield demonstrates how the pilot of a bomber could be directed in the air. The CFS Bomb-Sight seen here was designed by 2nd Lt. G. Dobson and Lt. Bourdillon of the Central Flying School (hence its name). It was in use with a few minor improvements until the end of 1916. The sole major failing of the D.H.4, however, namely the distance between the two cockpits, meant that a different technique was necessary (IWM Q 60869)*

219: *Great excitement among the men of Naval 7 at Coudekerque on the day the first 'bloody paralyser' in the shape of Handley Page 0/100 No. 3116 finally arrived. This was the scene that greeted the pilot, Squadron Commander Spenser Grey DSO (of the Cologne raid of 1914) on 2 April 1917. The machine was lost while in service with 'A' Squadron at Manston in Kent when it burst into flames just before landing and crashed on 3 November 1917, killing several of the crew (J.M. Bruce/G.S. Leslie Collection)*

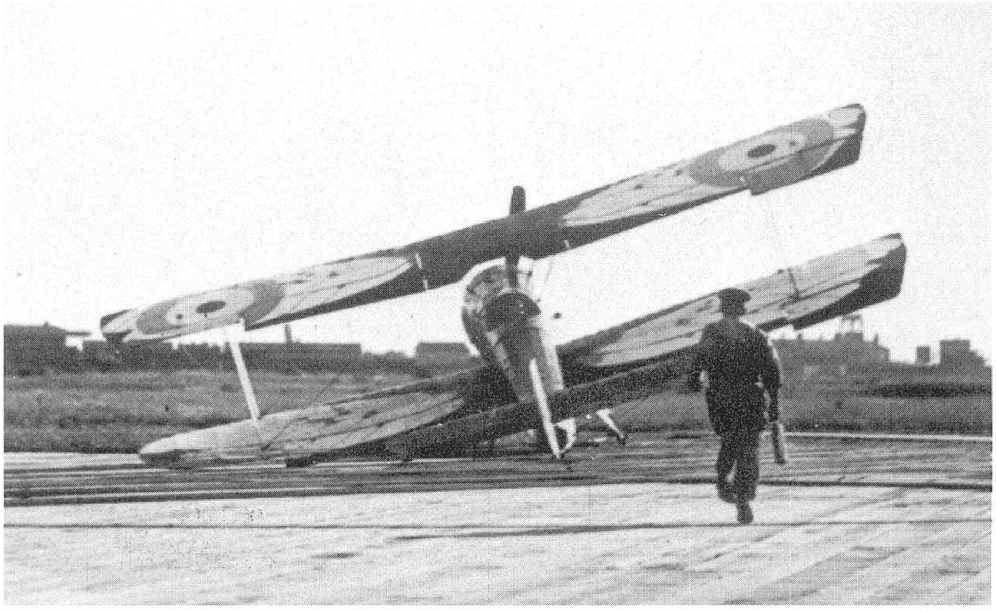


220 Above: *As the design of the Handley Page 0/100 evolved into the much improved 0/400, the need for more sophisticated ground support equipment became apparent. The unloaded weight of an 0/400 of 8,200lb (3,720kg) made it impracticable to manhandle in the same way as other aircraft of the period. Here a Clayton Tractor is being used to tow a machine of 207 Squadron to the take-off point at Ligescourt on 29 August 1918 (IWM Q 12107)*

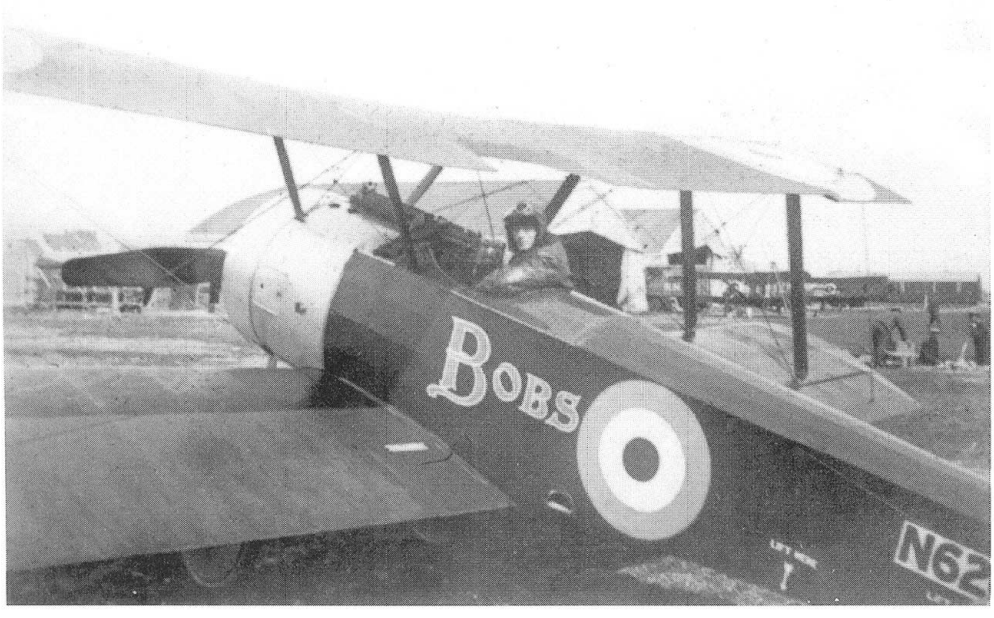


221 Right: *One of the striking features of the 0/100 and 0/400 series was wing folding. This was in response to the need to keep the hangars necessary to house the beast as small as possible. To some extent it also made handling on the ground a little easier. This is another view of the same 207 Squadron aircraft seen in picture 220 above (IWM Q 12105)*

222: *Seen immediately post-war, this is one of the heavy guns which the Germans used to both shell the RNAS airfields on the Flanders coast and also to dissuade naval forces from approaching too close to the German-held ports used by the U-boats. Nicknamed the 'Leugenboom', it is a 380 mm turreted cannon, one of a battery at Breedene just to the east of Ostend, which was used to shell Dunkirk. Targets like this were attacked by RNAS bombers in support of the naval raids on Zeebrugge and Ostend in late April 1918. The man in the background to the left of the gun gives an indication of its size (Barry Ketley)*

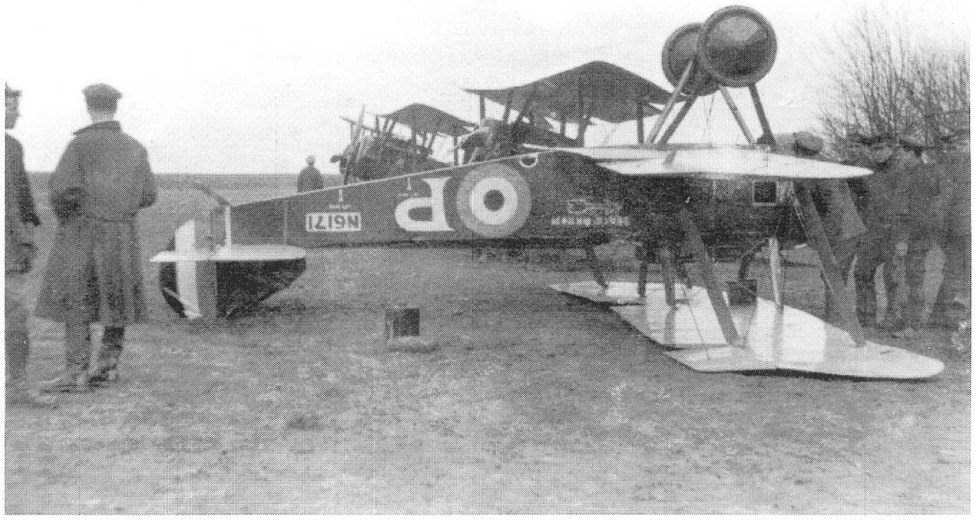


223: *An unfortunately unidentified Pup coming to grief on the Isle of Grain on 10 September 1918. Note the 'white feather' wing markings (J.M. Bruce/G.S. Leslie Collection)*

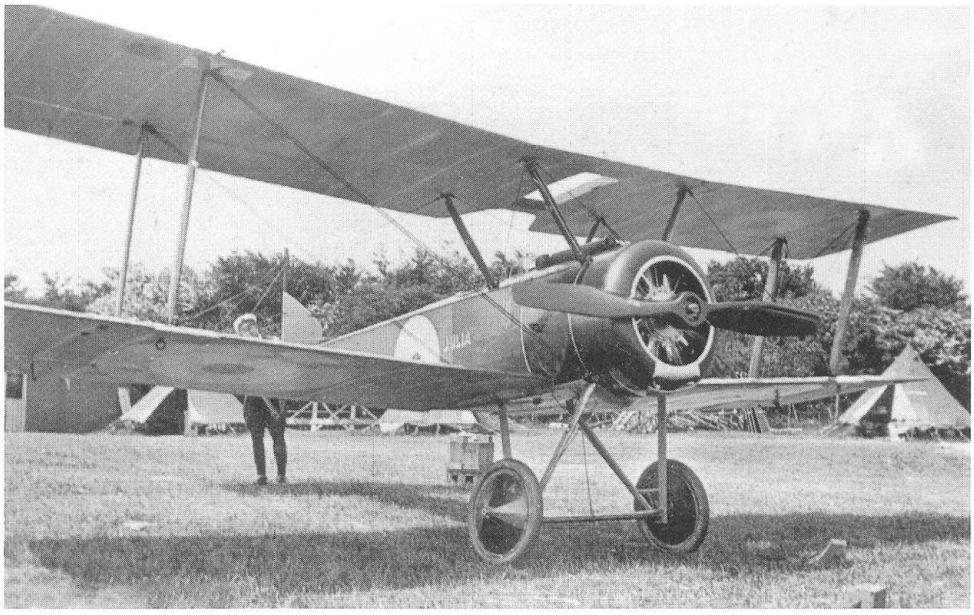


224: *This is Sopwith Pup N6200, 'Bobs', with 4 Squadron at Bray Dunes in April 1917. The name appears to be in blue with a white outline. This aircraft had an enviable service career, shooting down four enemy aircraft and surviving a forced-landing in the sea after an engine fire. It was retrieved and rebuilt and then repaired again after two more crash landings before being finally pensioned off on 30 March 1918. (J.M. Bruce/G.S. Leslie Collection)*

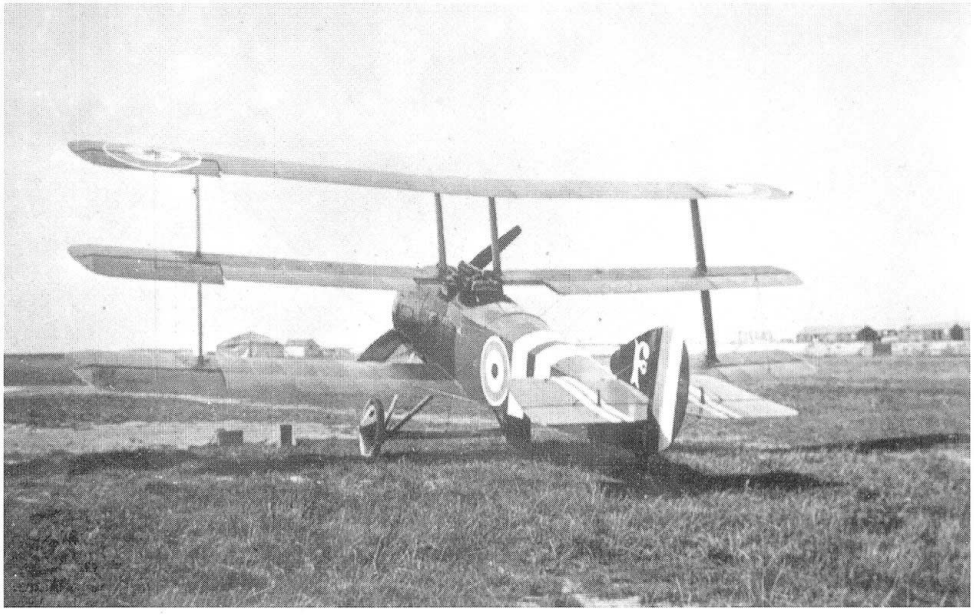
225: *Sopwith Pup N6171 of Naval 3 at Marieux after being upended in a storm in March 1917. Flight Sub-Lieutenant Pierce was a highly successful pilot while flying the 'Black Arrow', being responsible for, or sharing in, four victories by the beginning of May. After a crash-landing on 6 May it was repaired and ended up with the Seaplane Defence Flight at St. Pol in July. By the end of the year it had been relegated to training at Cranwell (J.M. Bruce/ G.S. Leslie Collection)*

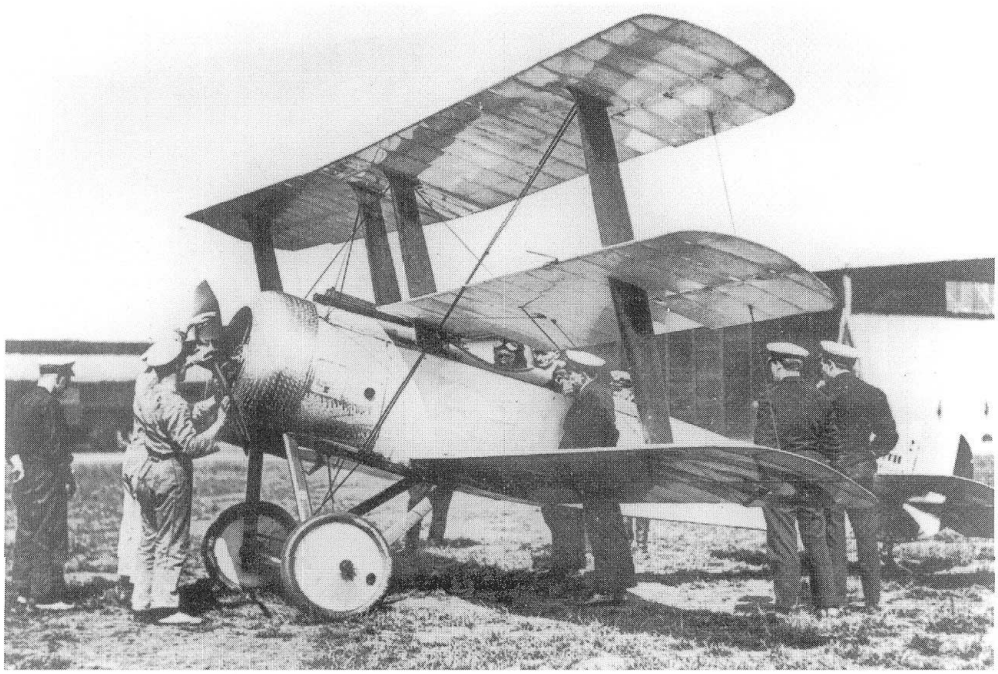


226: *'Julia', Pup N6442 of the Walmer Defence Flight in June 1917. The aircraft spent a generally uneventful life on Home Defence and training duties, ultimately ending up at East Fortune in February 1918 (J.M. Bruce/ G.S. Leslie Collection)*

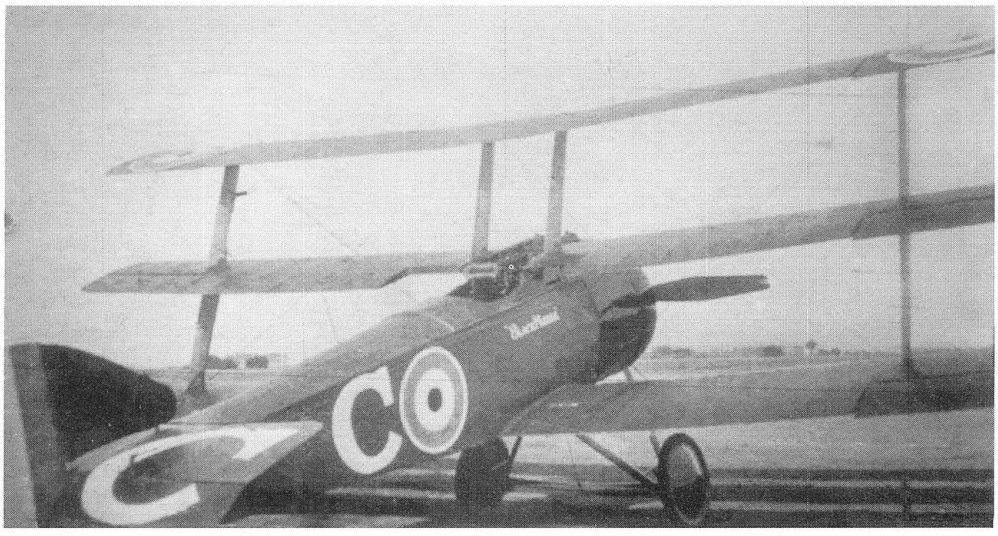


227: *This is believed to be Sopwith Triplane N534 in 1917. If so, then the white stripes could signify that it is the machine of Squadron Commander Roderick Dallas of 1(N) Squadron, who shot down a German scout in it on 16 August 1917. Note that it is fitted with two Vickers guns, marking it out as one of a batch of six so equipped, built by Clayton & Shuttleworth in Lincoln ((J.M. Bruce/G.S. Leslie Collection)*





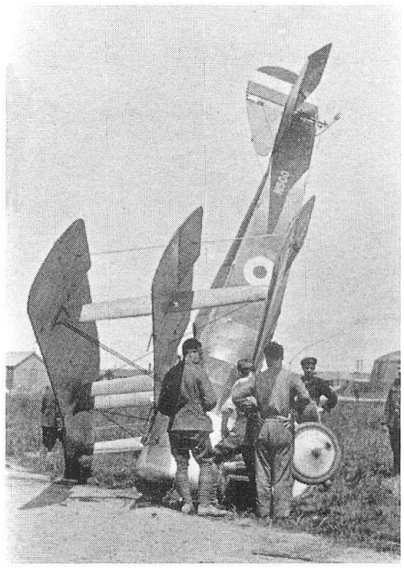
228: *The prototype Sopwith Triplane, N500, at St. Pol in June 1916. Herbert Thompson (later Sir Herbert Thompson CIE) flew one with Naval 8: "She was a superb climber. When three of us were up way over Vallenciennes, we were coming back off patrol (at) about seventeen thousand and we saw a batch of the travelling circus between us and home and the sun. It was impossible for three Triplanes to take on about nine Albatrosses [sic] and so Booker simply sat on his tail and we went over the top of them" Booker was a gifted pilot with 29 victories on the Triplane, while Raymond Collishaw and Naval 10's 'Black Flight' built a legend (IWM Q 67061)*



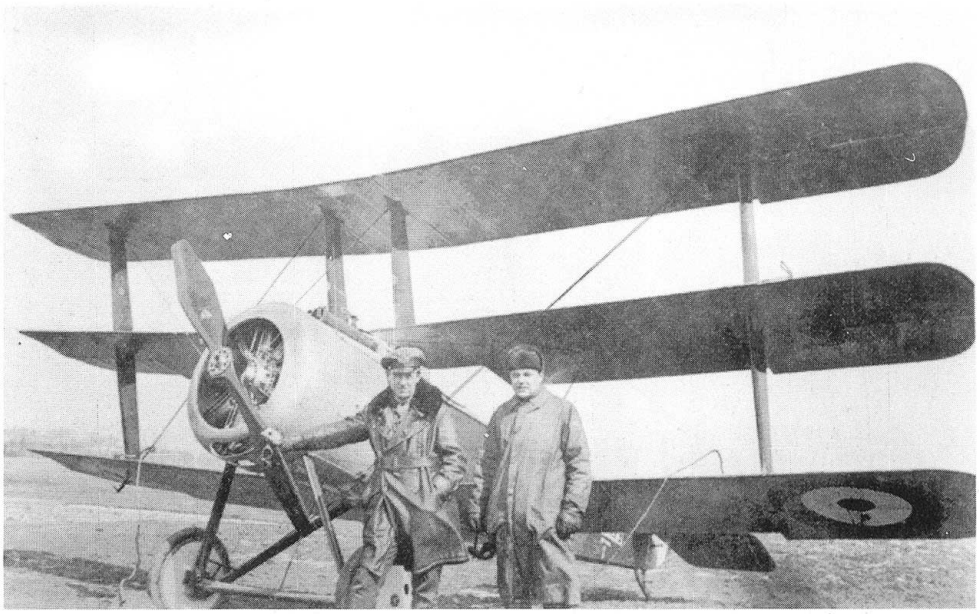
229: *This is N533, another of the twin-gun Triplanes built by Clayton & Shuttleworth. Named 'Black Maria' it was used by the leader of the famous 'Black Flight' of Naval 10, Raymond Collishaw. 'C' presumably denotes 'Collishaw'. Note how the cowling panels are finished gloss black (J.M. Bruce/G.S. Leslie Collection)*

230: *This is Flt. Lt. John Alcock in front of Triplane N5431 while it served with 2 Wing on Mudros in 1917. Written off in a crash in June 1918, parts of her survived in the Alcock Scout (J.M. Bruce/G.S. Leslie Collection)*

231: *Sopwith Triplanes of 1(N) at Bailleul on 28 October 1917. Number 7 shows the white tailfin marking of a flight commander. The RFC were under extreme pressure following losses during the latter part of the Somme offensive and the reorganisation of the German air service. The Admiralty agreed to pass over to the RFC 50 complete SPADs and a further 120 they had on order in addition to four complete squadrons to work under RFC control. In return the RNAS had exclusive use of the Triplane, but the Admiralty's procurement initiatives and the problem of aircraft supply remained contentious until the formation of the RAF (IWM Q 66794)*



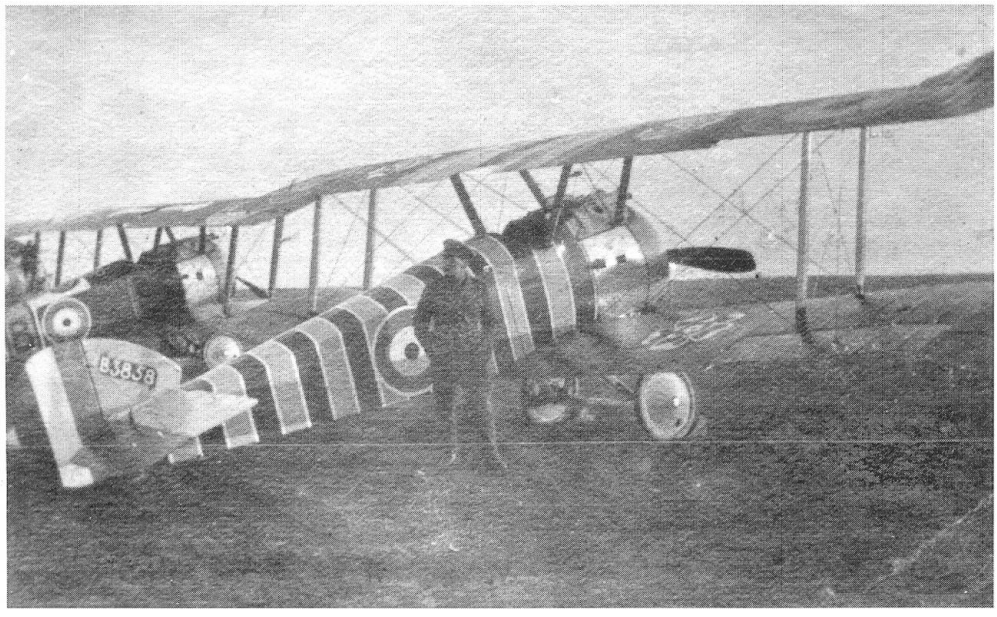
232: *This is N500, the prototype Sopwith Triplane in less dignified pose while serving with Naval 8. This was probably on 26 February 1917 when an engine fire on take-off forced an emergency landing while being flown by Flight Sub-Lieutenant R.R. Soar who was unhurt. Previously the aircraft had served with 1 Wing as the personal mount (named 'Brown Bread') of Roderick Dallas who shot down at least two aircraft in it. After service with several other RNAS units she was finally deleted in December 1917 (J.M. Bruce/G.S. Leslie Collection)*



233: *N5479, a presentation Sopwith Triplane named 'Britons in Spain No.1' joined 1 Squadron RNAS in April 1917. Coded '8', the aircraft was used to shoot down or share in the destruction of at least five enemy aircraft before being scrapped in November 1917 (J.M. Bruce/G.S. Leslie Collection)*

234: *Members of 203 Squadron RAF pay their respects to Robert Little who was killed on 27 May 1918. From left to right they are: Louis Bawlf, Arthur Whealy, Harold Beamish, Raymond Collishaw and Leonard 'Tich' Rochford (IWM CO 2852)*

235: *Sopwith Camel B3881 of 'A' Flight of 9(N) Squadron in July-August 1917. Standing in front is Flight Sub-Lieutenant E. Pierce. Naval aircraft were generally more colourful than their RFC counterparts and this is no exception. Apart from the diagonal white band on the fuselage, on the fin is a pasted-on cutout of a famous comedian of the time, George Robey. This device was also carried by at least two other machines of the flight (J.M. Bruce/ G.S. Leslie Collection)*

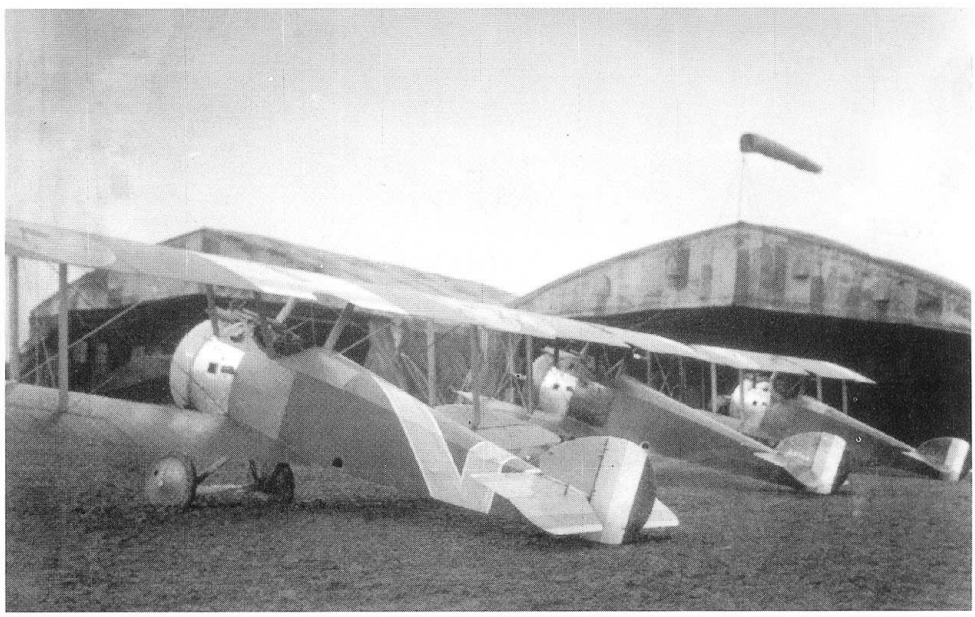


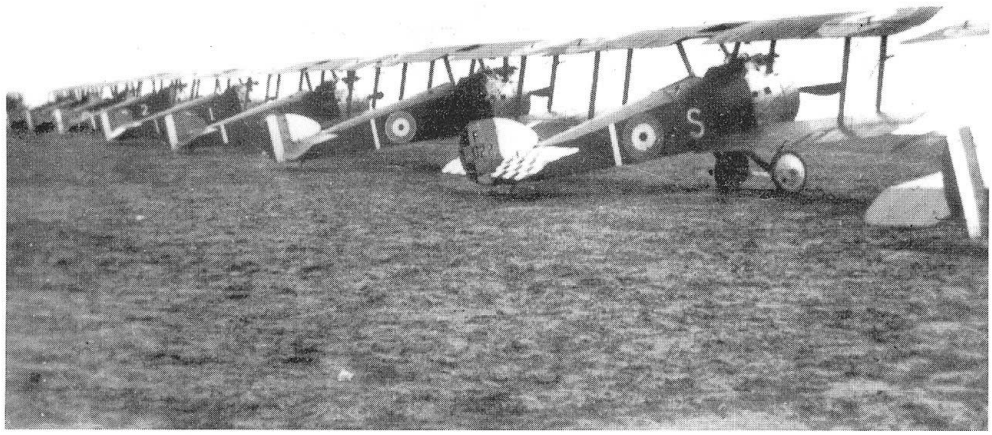
236: *As colourful as any of the machines of von Richthofen's Circus with its green and mauve striped fuselage, Sopwith Camel B3858 was also flown by FSL Pierce, but this time while he was with 3 Squadron at Walmer in November-December 1917. Flown by several pilots, the aircraft enjoyed a remarkably successful career, being used to destroy or force down at least eleven enemy machines. Eventually she was shot down by a group of Fokker D.VIIs on 4 July 1918. Even then the pilot, Second Lieutenant Frank, was unharmed (J.M. Bruce/G.S. Leslie Collection)*

237: *This is the starboard side of Camel B3858 showing the green and mauve stripes which were not solely confined to the fuselage, but also decorated the centre section of the upper wing. Additional ornamentation took the form of what appear to be highly detailed white Yorkshire roses on the upper surfaces of both upper and lower wings. The serial was only carried on the starboard side of the fin (J.M. Bruce/G.S. Leslie Collection)*

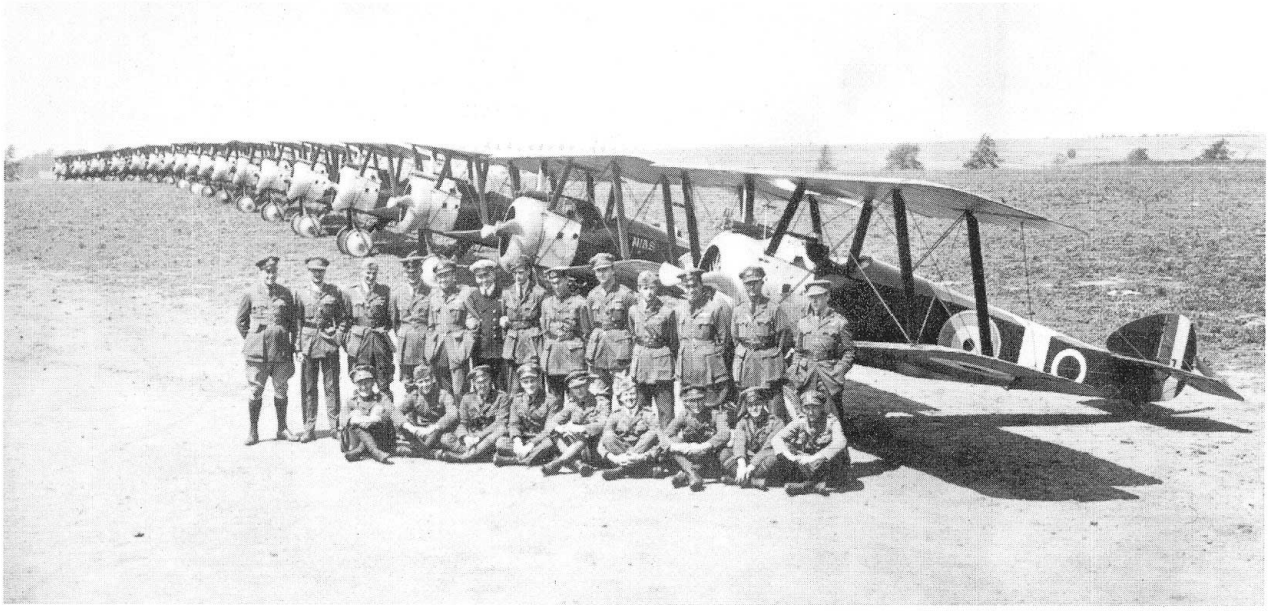
238: *This is either Camel B7202 or B7191 of 9(N) Squadron in January-February 1918. The squadron became 10(N) on 4 February and 210 Squadron on 1 April with the formation of the RAF. The tailplane and wing markings are believed to be light blue edged in white (J.M. Bruce/G.S. Leslie Collection)*

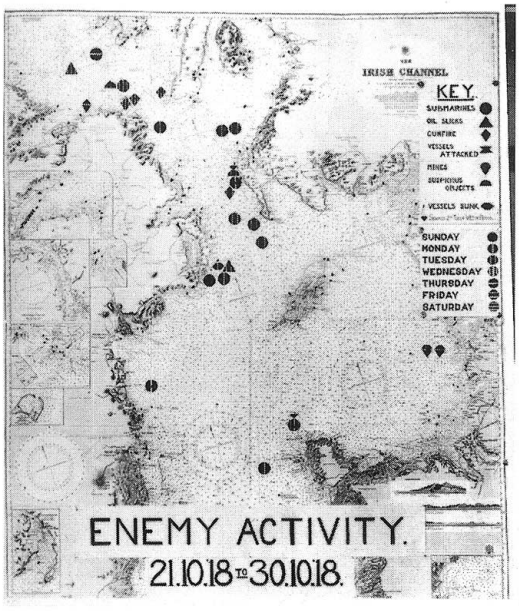
239: *Another view of the Clayton & Shuttleworth-built Camel seen in the picture above. The location appears to be the Middle Aerodrome, Bray Dunes. The centre machine is B5749 which crashed on landing on 11 March while being flown by FSL H.A. Patey. After another crash landing in August it was rebuilt as F6263 (J.M. Bruce/G.S. Leslie Collection)*

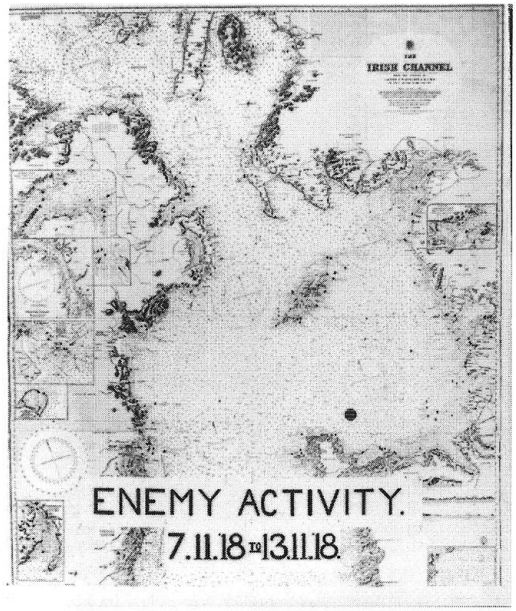


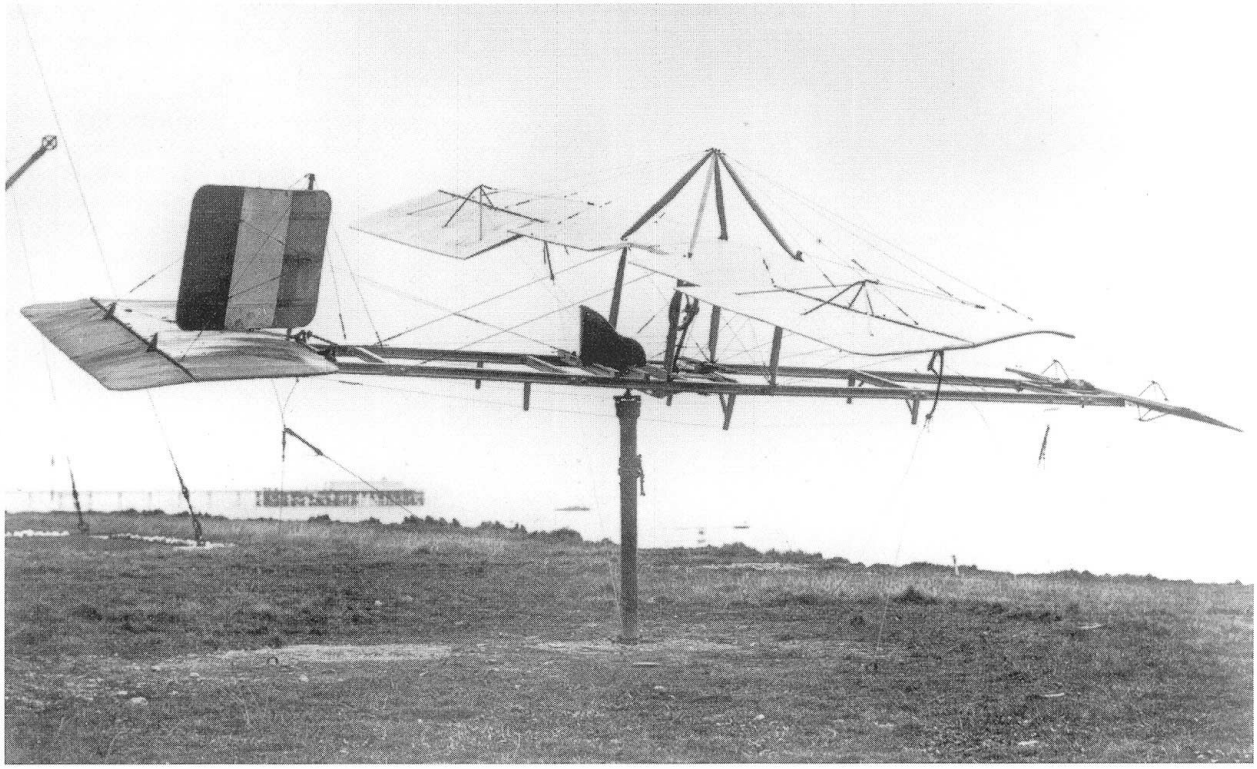


240 Left: *Camels of B and C Flights of 201 Squadron in August 1918. F6022, with the checkered tail, was rebuilt from D1813 (IWM Q 106108)* ***241 Below:*** *The men of 203 Squadron at Izel-le-Hameau in August 1918. Left to right, front row: F.G. Black, F.T.S. Sehl, F.J. Shaw Britnell, W. Carter, N. Towell (Equipment Officer), W. Sidebottom, N.C. Dixie, L.H. 'Tich' Rochford and J.W. Hunter. In the rear: L.D. Bawlf, R. Stone, Y.E.S. Kirkpatrick, C.H. Lick, E.T. Hayne, Raymond Collishaw, J.D. Breakey, C.H. Nelson (Recording Officer), E.F. Adams, A. Rudge, A.T. Whealy, H.F. Beamish & P.W. Bingham (Recording Officer) (IWM CO 2858)*









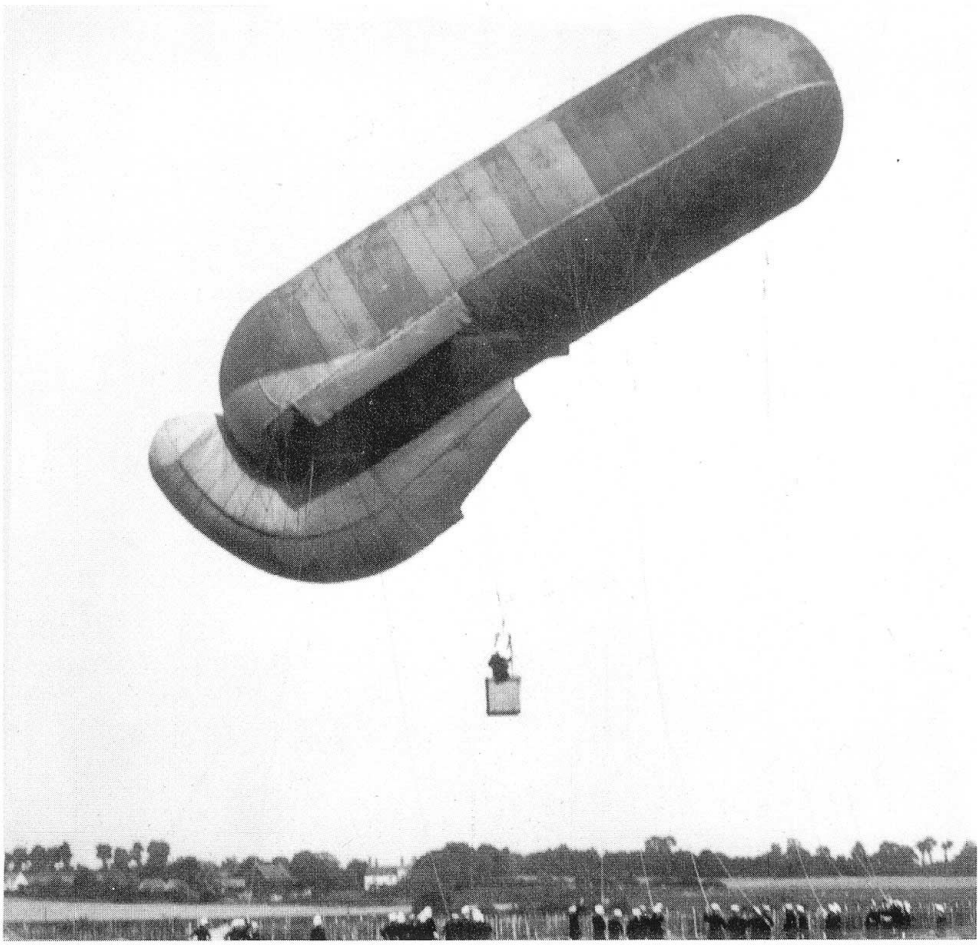
MARINE MISCELLANY

Men and machines

242 & 243 Left: *The end — two charts from the RNAS airship base at Luce Bay which need no explanation (Barry Ketley)*

244 Above: *This contraption was used for 'testing the air stability of pilots under training' at RNAS Lee on Solent (IWM Q 69458)*

245 Right: *"Darling, do send me a picture of yourself with the machine you fly in." One of the first of the Drachen observation kite balloons to reach the RNAS, seen in September 1915. The observers in these were usually given parachutes, unlike the unfortunate aircrews of the heavier-than -air machines. Note how many men were required on the ground to handle the balloon. A similar device to this one was sent out to Gallipoli aboard the S.S.* Manica *to spot for the guns of the Royal Navy ships bombarding the Turks ashore (Bruce Robertson)*

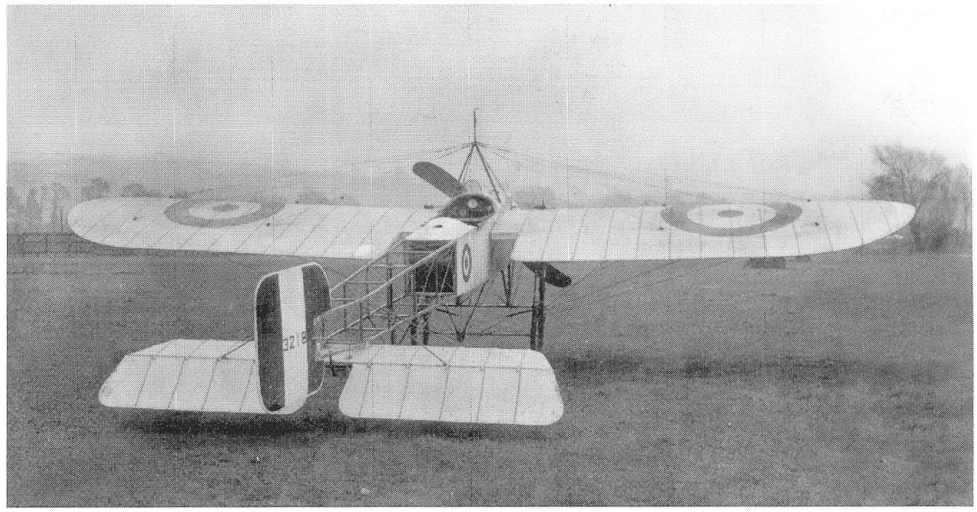


246: *A steely-eyed Flight Lieutenant and later Squadron Commander, John Tulloch Cull was commander of the RNAS Expeditionary Force in East Africa during the* Königsberg *operation. In March 1915 he took over command of the newly arrived 8 (Naval) Squadron (a different unit to that later formed on the Western Front). His cap badge is off-centre compared to the peak and is standard Royal Navy rather than RNAS (IWM HU 67878)*

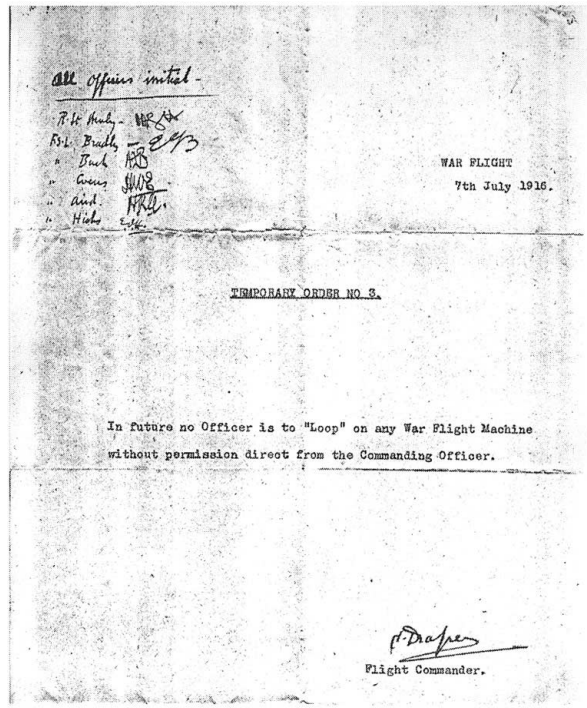
247: *Officers of the Eastchurch War Flight in 1916. Left to right: FSL Buck, Evans, E.T. Bradley, Flt. Lt. Christopher Draper, (commander of the unit) Birbeck and Flt. Lt. Henley. Draper later commanded Naval 8 and was considered an exceptional pilot by all who knew him. He later earned for himself the title 'The Mad Major' on account of his passion for flying under bridges of all shapes and sizes. He is noted for repeating Francis McLean's feat of flying under all the Thames bridges—but in the 1950's! (Private Collection)*

248: *The inimitable Christopher Draper about to take his father for an illicit trip in Blériot XI-2 number 3228. This aircraft had only a brief career with the RNAS, being delivered on 5 July 1915 and written off on the 11 August (Bruce Robertson)*

249: *Blériot XI-2 number 3218 was one of a batch of 25 bought directly from the manufacturer in summer 1915. It was erected at Chingford in early July, which may be the date and location here as the machine looks very new. It was deleted on 22 April 1916 (IWM Q 73773)*



250: *This order from Christopher Draper must have caused great hilarity among the members of the Eastchurch War Flight, given their commander's own regard for flying regulations. One of the signees is Flight Sub-Lieutenant H.R. Aird who was shot down with Jack Alcock in Handley Page 0/100 number 3124 during a raid on Constantinople on 30 September 1917 (Private Collection)*



all officers initial -

WAR FLIGHT
7th July 1916.

TEMPORARY ORDER NO 3.

In future no Officer is to "Loop" on any War Flight Machine without permission direct from the Commanding Officer.

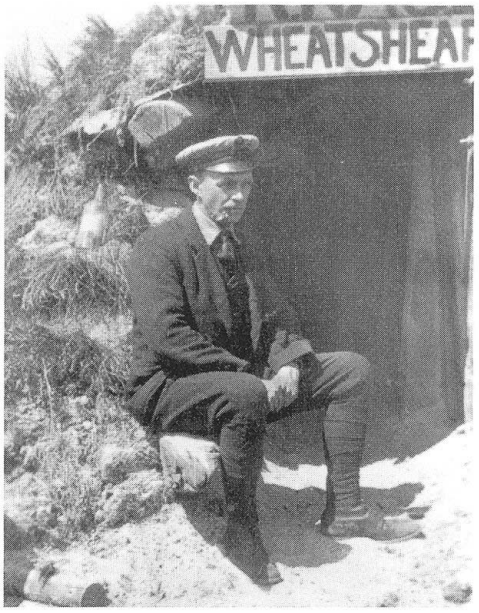
Flight Commander.

251Right: *Petty Officer Mark Darley seated in the pilot's position in the nacelle of an anonymous Henry Farman F.27 bomber with 1 Wing at St. Pol in 1915. An interesting design detail is the cutout in the undercarriage strut fairing to act as a footstep (Barry Ketley)*

252 Far Right: *An unidentified Petty Officer in front of an Avro 504B at Westgate-on-Sea, sometime in 1915. Note how his coat has only six buttons compared to the eight used on officers' coats (Barry Ketley)*

253: *The RNAS were not the only force who had to make do with some unlikely flying machines; their French allies had similar problems. This is one of two Breguet AG 4's built as two-seat fighters in late 1914. Given the serials BR 52 and BR 53, they were not popular and were both written off before the end of the year. What is clear from this picture is that one of them at least was used by the French Navy, whose early roundel can be seen under the wing of this machine crashed at Buc. Samson Collection (IWM HU 67889)*

254 Far Left: *An unidentified Sub-Lieutenant in front of a B.E.2 type. He bears a passing resemblance to Raymond Collishaw*



255 Left: *PO Darley enjoying a pipe at the entrance to his palatial 'ole among the dunes on the beach at Dunkirk. It is not known whether the official name of the airfield really was 'RNAS Wheatsheaf'.*

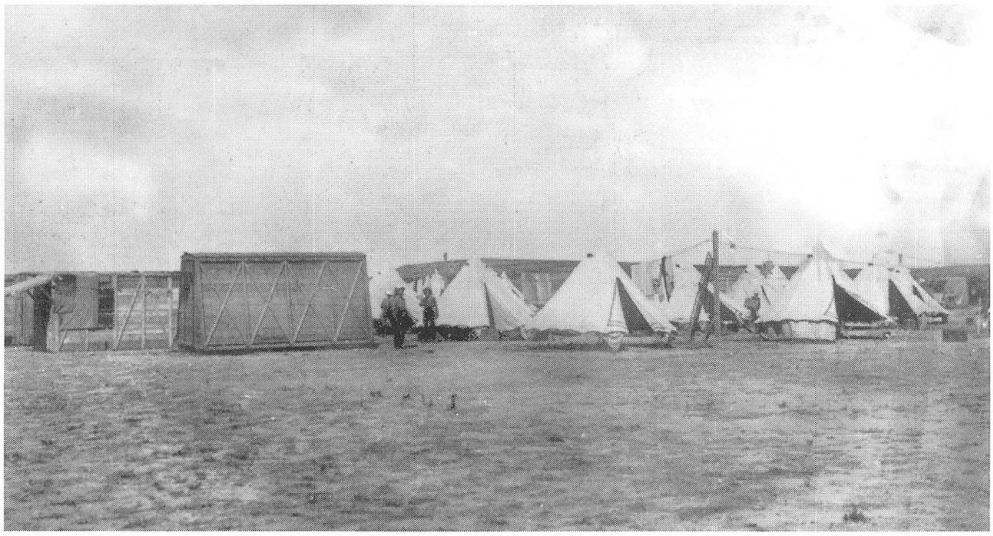
256: *Roderick Dallas, one of the foremost RNAS fighter leaders and a skilled exponent of the Sopwith Triplane, seen early in his career. The aircraft type remains unidentified, despite the sophisticated 'N' type interplane struts (IWM Q 69701)*

257 Above: *Naval aviation could never reach full potential until aircraft were able to return to their parent vessel. Sqdn. Cdr. E.H. Dunning made the world's first successful deck landing on 2 August 1917. Five days later he carried out a second landing, as seen here. The handling party is literally helping to pull Dunning's Pup onto the deck of HMS* Furious, *at the time a highly unsuitable ship for the purpose. He changed aircraft for a third attempt but was tragically drowned. As a result the Royal Navy would be the first to have a dedicated aircraft carrier with a proper landing deck (IWM)*

258 Right: *A studio portrait of Lt Charles Dawson Booker, a Sopwith Triplane pilot who scored 22 of his 29 victories on the type. Commander of 'C' Flight, 8 (Naval) from 18 May 1917, he later commanded 1 (Naval) until his death in action on 13 August 1918. On his khaki field uniform he wears the eagle pilot's badge and the ribbons of the DSC and the French Croix de Guerre with a star to indicate a Mention in Despatches (IWM HU 67830)*

258 Far Left: *Harry Cecil Pearson served on* Ark Royal *and in Gallipoli where he contracted dysentery. Here he is showing his RNAS rank of Air Mechanic, next to his father, an old soldier 'doing his bit' in the Pay Corps (John Edmunds)*

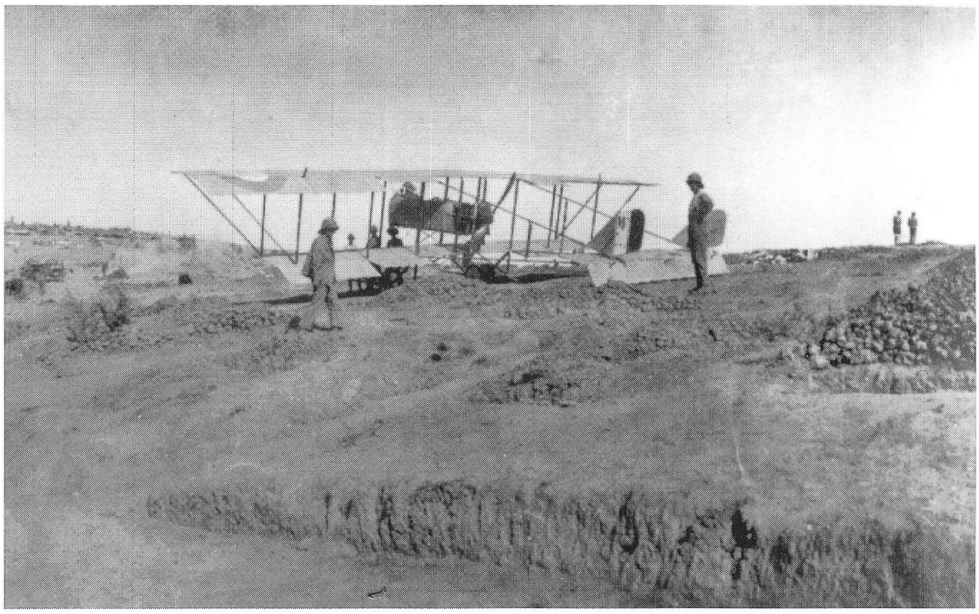
259 Left: *Flt. Lt. E.T. Bradley (in tropical uniform) poses by the German Friedrichshafen bomber he brought down with his observer, 2nd Lt. R.C. Repton of the RFC, on 8 April 1917. At the time he was flying Sopwith 1½ Strutter N5224 from Hadzi Junas in the Aegean while with 2 Wing (Private Collection)*



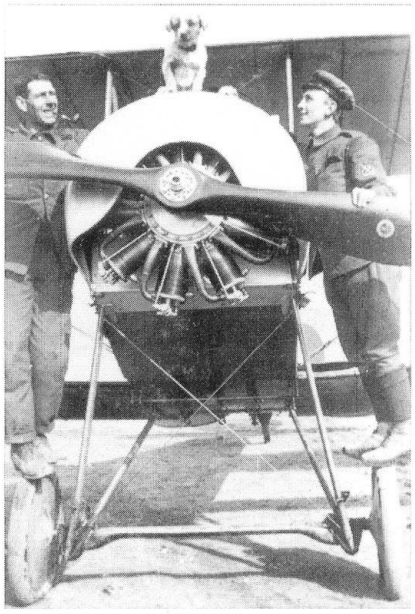
260: *The mens' camp at Tenedos. Apart from the bell tents, the men made much use of the empty aircraft packing cases for extra accommodation, workshops and stores. Samson Collection (IWM HU 67871)*

261: *The SS* River Clyde *grounded off 'V' beach as seen through the struts of an aircraft undercarriage. Samson Collection (IWM HU 67861)*

262: *A Maurice Farman, clearly marked with the red and white RNAS roundels, forced down near Chocolate Hill, Gallipoli, summer 1915. The aircraft has the maker's number 3 or 805 stencilled onto its rudders (IWM Q 25125)*



263: *There were occasional moments of light relief on Imbros. Here two ratings play with Wing Commander Smythe-Piggott's terrier, Zum, perched nonchalantly on the cowling of a Nieuport. Note the very pale colour of the tyres (Barry Ketley)*

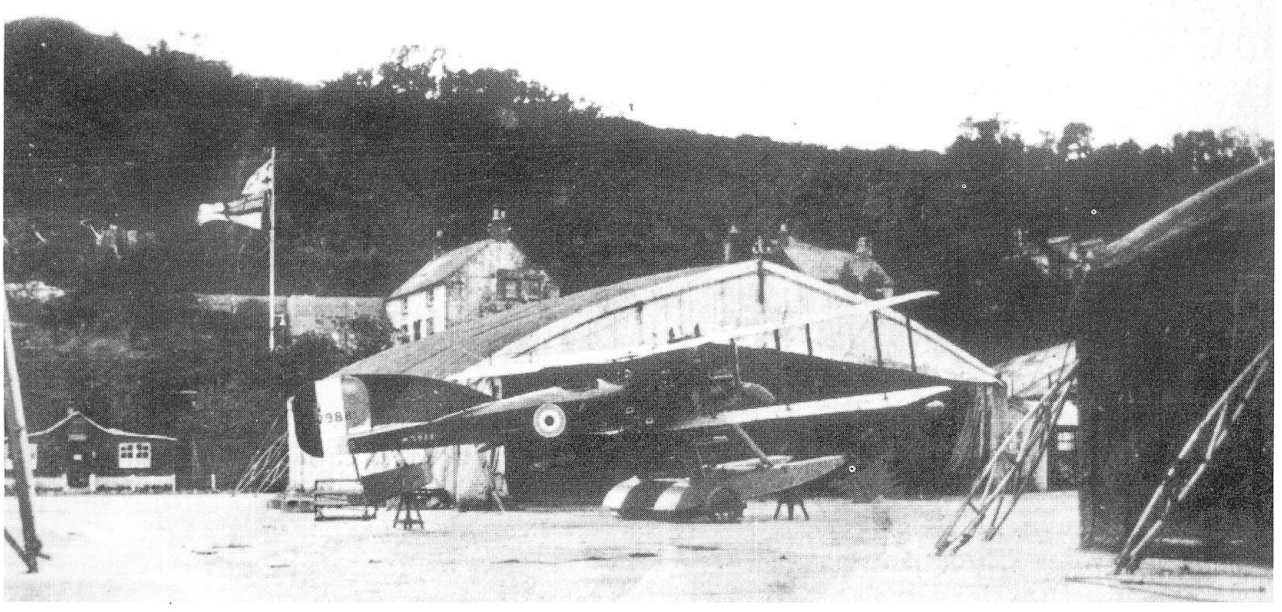


264: *Among the less successful types to reach the RNAS was the eccentric Pemberton-Billing P.B.25, intended to be a single-seat fighter. This is 9004, the fourth of twenty built. Subject to much ribald criticism, the machine displayed very dangerous handling qualities, which when compared to the Sopwith Pup meant that the P.B.25 was quickly and gratefully consigned to oblivion. 9004 was delivered to Dover on 23 October 1916 and somehow survived to be deleted a year later (Barry Ketley)*

265: *Another view of Pemberton Billing P.B.25 number 9004 at the RNAS Guston Road field in Dover, probably in late 1916. The machine in the background is a Breguet Type V Concours, possibly 1398 which is known to have been at Dover in November 1916 (Barry Ketley)*

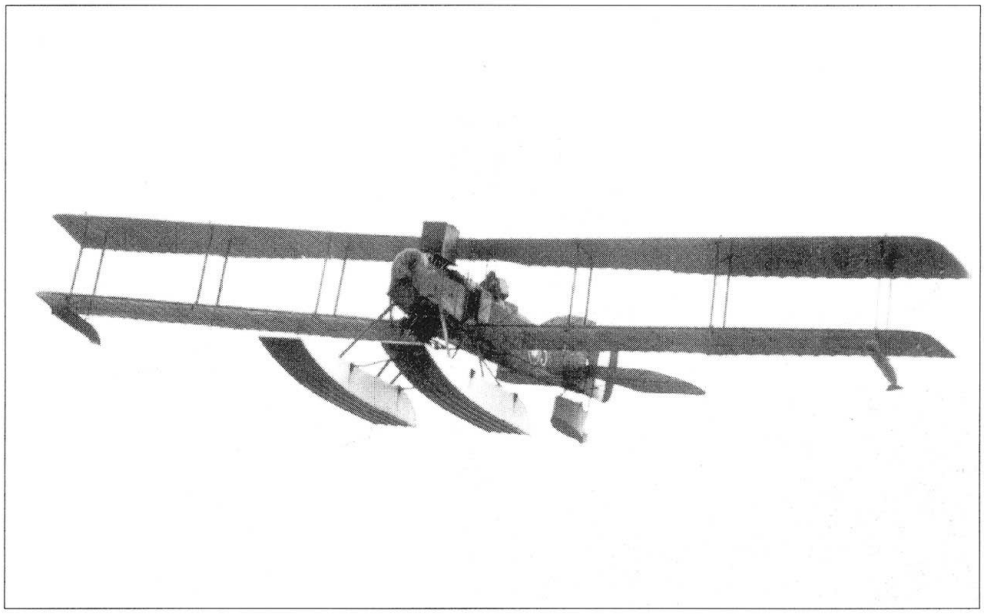
266 Left: *A Norman Thompson-built Short S.38, number 8437, which was used with a modified undercarriage at the RNAS flying school at Chingford. It lasted for less than three months between 27 January until 8 April 1916 before being deleted—the Avro 504 was proving to be a far superior training aircraft (Bruce Robertson)*

267 Below: *RNAS Newlyn in late 1918. Wireless-equipped Short 184, No. N2988 served with 424/5 Flights and then 235 Squadron, but was by then obsolete and was deleted in January 1919 (Bruce Robertson)*

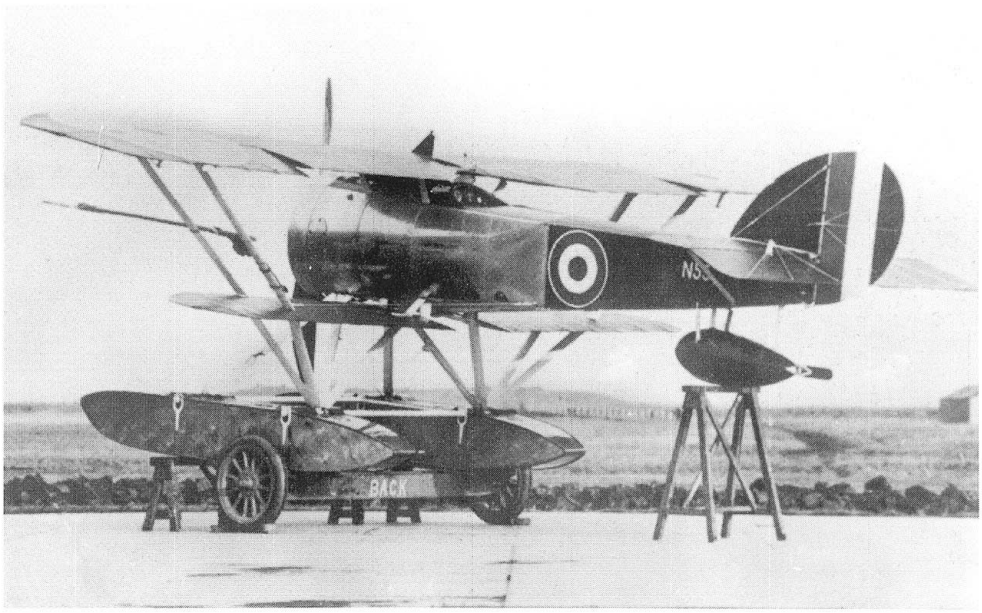


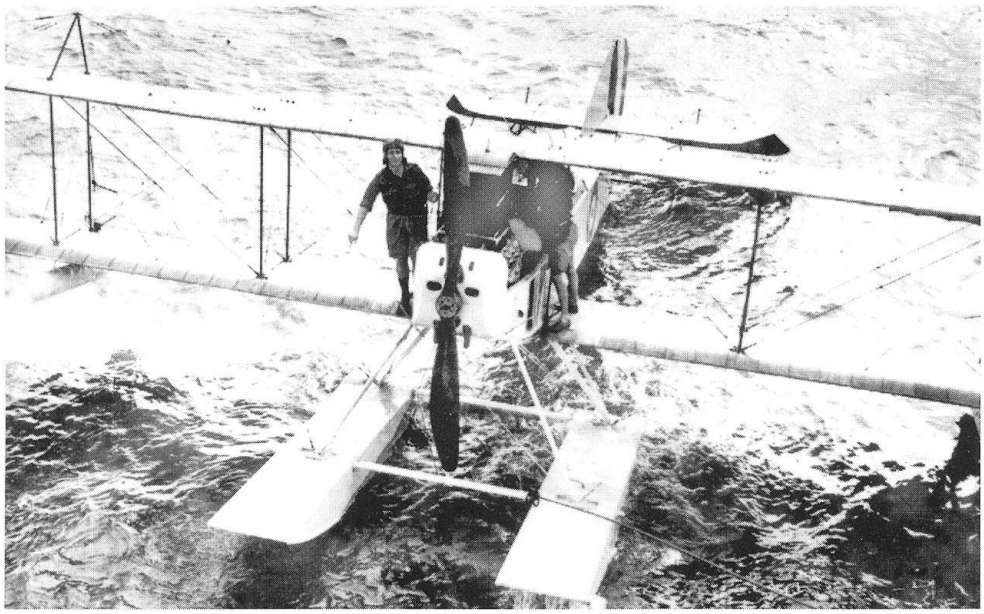
268: *According to the original caption to this picture this is a 225hp Sunbeam-engined Short 184 taxiing on the River Tigris and belongs to F.W. Bowhill's 'Special Squadron'. Bowhill later became Air Chief Marshal Sir Frederick, nicknamed 'Ginger' and commanded RAF Coastal Command during its most critical years until 14 June 1941 (Bruce Robertson)*

269: *An uncommon picture of a Short 184 in flight. The observer appears to be holding an enormous camera (Bruce Robertson)*

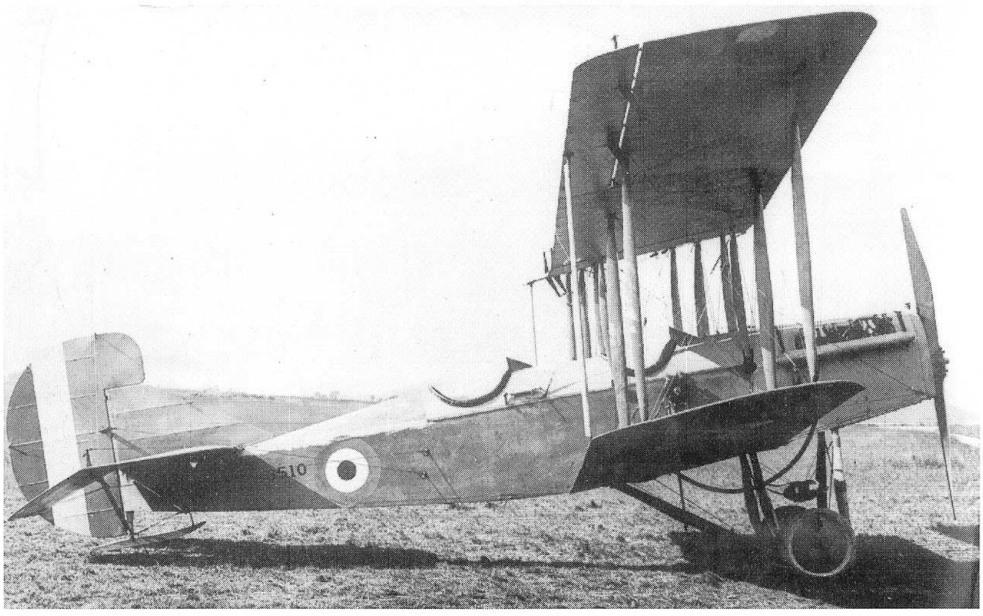


270: *N55 was the one and only Port Victoria P.V.9 floatplane fighter developed by the Royal Navy Depot on the Isle of Grain. Intended for use on anti-Zeppelin duties it was powered by a 130hp Clerget when it first appeared in July 1917. A development of the same concept which produced the P.V.2, it was later fitted with a 150hp Bentley rotary engine which delayed further trials until June 1918. Subsequently it was used for trials until late 1919 (Bruce Robertson)*

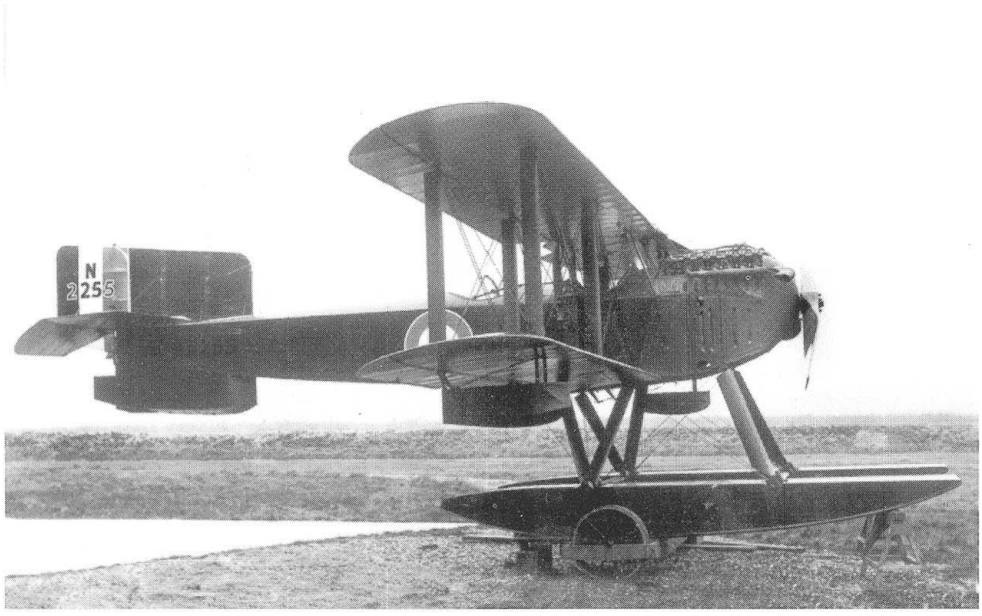




271: *The crew of a Short 827 prepare to be hoisted off a shining sea onto the mother ship somewhere off the East African coast. Via Laurie Milner (IWM HU 66641)*

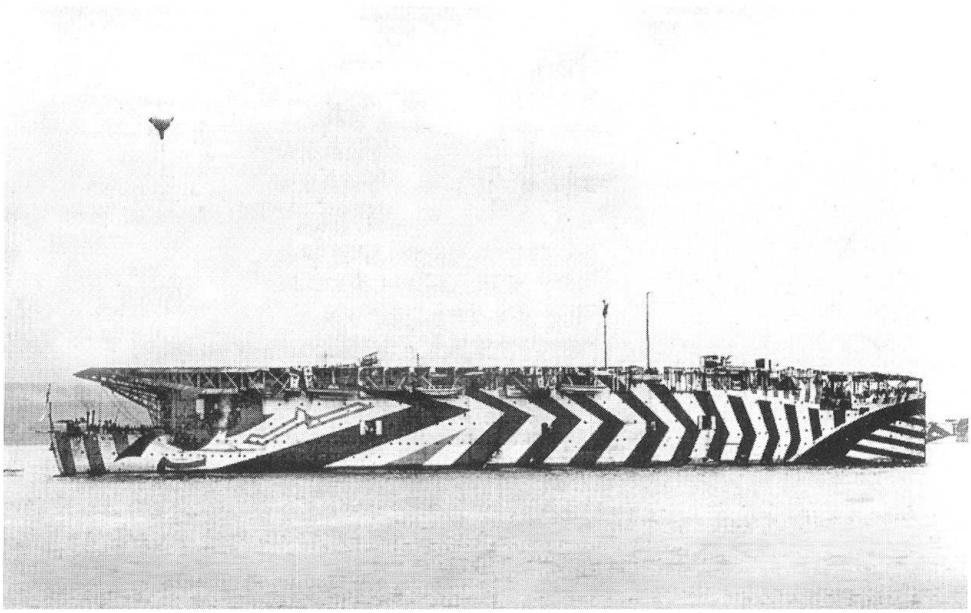


272: *Curtiss R.2 3510 is typical of the many RNAS aircraft which were used for development work of all kinds. It was initially delivered to Hendon for direction-finding experiments in June 1917. During the course of these it was later fitted with a 200hp Sunbeam engine and soon afterwards a Curtiss 160hp VX. It eventually ended up on training duties with 201/2 Training Squadron at Cranwell until the end of June 1918. As seen here it appears to have undergone recent repairs to the fuselage spine (Bruce Robertson)*



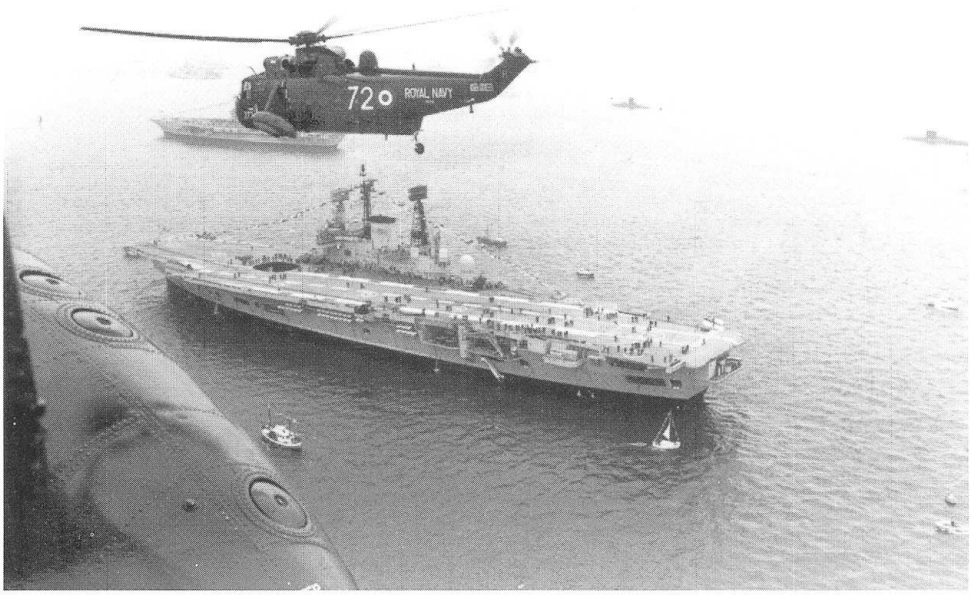
273: *The first examples of what was to become a very long-lived line of aeroplanes were just entering service with the Royal Navy as the war ended. Originally built as a Fairey IIIB, N2255 was converted to a IIIC by the substitution of a Rolls-Royce Eagle engine in place of the Sunbeam Maori. Regarded as probably the best floatplane of the 1914-1918 war, it was the first general-purpose aircraft for the RNAS, combining the dual roles of bombing and reconnaissance. This one was converted to civil use as G-EAPV and later went to Sweden (Barry Ketley)*

274: *Three pictures which illustrate how, although the technology may change, the concept, the problems and the dangers remain the same. This is HMS* Argus, *newly completed in October 1918 with an experimental dazzle camouflage pattern. The first ship in the world capable of actually retrieving her aircraft on board while underway, she demonstrates the fundamental characteristics of all later aircraft carriers, although the island carrying the charting and ship control functions exists only in a primitive charthouse at this time (Barry Ketley)*



275: *A Fleet Air Arm Vought Corsair fighter landing on the Fleet Carrier HMS* Illustrious *during her time with the British Pacific Fleet for operations off the islands of the Sakishima Gunto in summer 1945. By now the ship's control and flying functions had been greatly improved and enlarged and installed in the 'island' on the starboard side of the flight deck. Arresting systems and deck barriers had also been developed into a highly efficient means of recovering aircraft. Clearly seen is the steam coming from the bow indicating wind direction (Barry Ketley)*

276: *By the 1970's the helicopter was firmly established as the Royal Navy's maid-of-all-work, being used for anti-submarine warfare, search and rescue, troop carrying and transport. Combining the capabilities of the earlier airship and the aircraft, able to both detect submerged submarines and then attack them, it also has the outstanding advantage of being able to operate from platforms on relatively small ships. Seen here is Sea King XV700 of 814 Squadron over HMS* Hermes *during the Spithead Review in June 1977. The biggest aid to safer operation of fixed-wing aircraft, namely the angled flightdeck, is obvious (R.L.Ward)*



RNAS ORDER OF BATTLE

31 March 1918

Aircraft Units in Overseas Commands

1 Wing (Dunkirk)
Wing Commander P.F.M. Fellowes DSO
- 2 Squadron (Bergues) D.H.4/9
  Flight Commander B.S. Wemp
- 13 Squadron (Bergues) Camel
  Squadron Commander R. Graham DSO
- 17 Squadron (Bergues) D.H.4
  Squadron Commander W.L. Welsh DSC

2 Wing (Mudros)
A/Wing Captain R. Gordon DSO
- A Squadron (Thasos) Pup/ Camel
- B Squadron (Mitylene) Camel
- C Squadron (Imbros) Camel
- D Squadron (Stavros) Camel
- E Flight (Hadzi Junas) 1½ Strutter
- F Squadron (Mudros) Camel
- G Squadron (Mudros) 1½ Strutter
- Z (Greek) (Thasos) 1½ Strutter/ Camel

3 Wing disbanded 30 June 1917

4 Wing (La Panne)
A/Wing Commander E. Osmond
- 4 Squadron (Bray Dunes) Camel
  Squadron Commander B.L. Huskisson DSC
- 8 Squadron (Teteghem) Camel
  Squadron Commander C. Draper

5 Wing (Malo-les-Bains)
Wing Commander J.T. Cull DSO
- 7 Squadron (Coudekerke) H.P. 0/400
  Squadron Commander H. Stanley-Adams
- 11 Squadron (Petite Synthe) D.H.4/9
  Squadron Commander H.G. Travers DSC
- 12 Squadron (Petite Synthe) Camel
  Squadron Commander A.R. Arnold
- 14 Squadron (Coudekerke) H.P. 0/100
  Squadron Commander H.G. Brackley DSO, DSC
- 15 Squadron (Coudekerke) H.P. 0/100
  Flight Commander J.F. Jones DSC

6 Wing (Otranto)
Wing Commander C.H.K. Edmonds DSO
- 1 Seaplane Squadron
- 2 Seaplane Squadron
- Aeroplane Flight
- Wing Equipment Base (Pizzone)

Units under Royal Flying Corps control

13 Wing, 3 Brigade
- 1 Squadron (Fienvillers) Camel
  Squadron Commander C.D. Booker DFC

10 Wing, 1 Brigade
- 10 Squadron (Teteghem) Camel
  Squadron Commander B.C. Bell DSO,DSC
- 3 Squadron (Treizennes) Camel
  Squadron Commander R. Collishaw DSO, DSC, DFC

22 Wing, 5 Brigade
- 5 Squadron (Bois de Roche) D.H.4
  Squadron Commander S.J. Goble DSO, DSC

11 Wing, 2 Brigade
- 6 Squadron (Sainte Marie Cappel) D.H.9
  Squadron Commander C.T. MacLaren
- 9 Squadron (Clairmarais) Camel
  Squadron Commander C.H. Butler

41 Wing, 8 Brigade
- 16 Squadron (Villesneuve) H.P. 0/400
  Squadron Commander H.A. Buss DSC

Overseas Kite Balloon Stations
- Alexandria
- Bizerte
- Brindisi (forming)
- Corfu (forming)
- Gibraltar
- Malta (forming)

Overseas Seaplane Stations
- Alexandria
- Cherbourg
- Gibraltar
- Malta (Kalafrana)
- Mudros
- Otranto (and sub-station at Santa Maria Di Leuca)
- Port Said
- Suda Bay (Crete)
- Syra Island
- Taranto

Overseas Airship Stations
- Mudros (Kassandra)

Ships in Overseas Commands
As at 1 April 1918 on transfer to Royal Air Force:

Command:
- Malta Group:
  Engadine, Riviera, Manxman
- Aegean Group (Mudros):
  Ark Royal, Peony
- Egypt Group (Alexandria)
  City of Oxford
- Gibraltar Group:
  Empress

APPENDICES

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Sykes Ronald: IWM 301

Thompson, Sir Herbert, CIE: IWM 000308/06

Thomson, Thomas Brown, DSC: IWM 000309/07

FOOTNOTES TO THE MAIN TEXT

1: see Peter King, *Knights of the Air* p83, Constable 1989

2: Dallas Brett, in his *History of British Aviation*, hastens to comment that although the experiments were not "conspicuously successful", this was due to Schwann's "almost complete ignorance of the art of flying as to any defect in his floats". Dallas Brett Vol 1, p119

3: The first 'flypast' in the world was by a balloon manned by two officers standing to attention. It was towed past the saluting dais at the 1879 Army Manoeuvres.

4: In May 1911 a show had been put on by aviators at Hendon for the benefit of three hundred Members of Parliament (including the Prime Minister and Secretary of State for War). It was intended to show them the military possibilities and the lessons were not lost on Winston Churchill, First Lord of the Admiralty. Dallas Brett wrote: "By arrangement with the War Office some troops had been posted under cover in the country between Hendon and St Albans. M. Hubert and Mr C.C. Paterson flew two Army officers over the terrain at 3,000 feet, and the latter returned having correctly plotted the positions of the infantry and artillery on the maps provided. These reconnaissance flights set the seal on a most successful and impressive demonstration".

5: A 'Sexton Blake' adventure from *The Boy's Friend* of 1910.

6: Dallas Brett p124

7: Paine was a superb organiser and was universally known at CFS as 'The Owner'. His colourful use of language was legendary and his dressing-downs terrifying. One, no doubt apocryphal, story is told of a student pilot who fainted at the controls of his Henry Farman after switching off his engine by mistake on landing. The aircraft had rumbled towards and been stopped by Paine's office and the certain knowledge that a tornado was heading his way proved too much for him.

8: Samson had in fact been Commanding Officer of the Naval Flying School at Eastchurch since 1 April 1912.

9: These were: Isle of Grain, Calshot, Felixstowe, Yarmouth, Killingholme and Dundee

10: This attitude would confirm the ascendancy of the biplane for the next twenty years despite evidence to the contrary. Excellent types such as the Bristol M1 would never be used to their full potential. The advent of the 'pusher' type of aircraft was difficult to achieve in monoplane form which also delayed monoplane development.

11: Admiralty Circular Letter CW. 13964/14, 1 July 1914: *'Royal Naval Air Service - Organisation'* PRO Adm. 1/8378

12: Administratively the Naval Wing had been reorganised due to its expansion in December 1913. Nominal control was moved from HMS *Actaeon* to the Officer Commanding HMS *Hermes* thence to the Central Air Office at Sheerness, a headquarters created for the holder of the new post of 'Inspecting Captain of Aircraft'.

13: *Documents relating to the Royal Naval Air Service, Vol 1.* Ed. Capt S.W. Roskill.

14: For a rather scathing view of the situation see *The Great War in the Air* by Edgar Middleton pp 53/54 published by the Waverley Book Co in the 1920s.

15: The pilots were: Lieutenants R. Bell-Davies (First Lieutenant), E. Osmond, E.F. Briggs, J. Courtney, RMLI and Flight Lieutenants Sippe, Dalrymple, Clark Beevor, Rainey and Lord Edward Grosvenor. Ground officers were Captain Barnby RMLI (Camp Commandant), Staff-Surgeon H.V. Wells (both certificated pilots) and Brownridge, the repair officer. Lieutenants W.L. and F.R. Samson and Sub-Lieutenants A. Nalder, Galass, Huggins and Isaac served to provide transport, intelligence and observers.

16: *Fights and Flights.* Benn, London 1933

17: The ground crews had to stand on the floats of seaplanes to swing the propeller, a very dangerous occupation. This gear box seems to have been an early attempt at a crank-start system. Beeton SR 8323/06 Imperial War Museum Department of Sound Records.

18: He was told after the test that if he had slipped the instructor a "ten bob note" he could have been a Chief Petty Officer.

19: The party consisted of Samson, Flight Lieutenant Sydney Sippe in charge of the other car, Lieutenant Felix Samson, Sub-Lieutenant Nalder, Leading Shipwright Pratt, Armourer's Mate Harper, Able Seaman Matcham, Stoker Wright and Private Edmunds.

20: Quoted in *British Air Policy Between The Wars 1918-1939.* p22 H. Montgomery Hyde.

21: Navigational skills were very much by visual reference at this time.

22: *Reggie—The Life of Air Vice Marshal R.L.G. Marix, CBE, DSO.* John Lea.

Pentland Press 1994.

23: Cab. 37/121/127 and Air 1/671 Report by Spenser Gray to the Director of the Air Department quoted by Roskill. All dates are taken from Gray's original report.

24: These operations were seen as the responsibility the Dover authority and later on would come under its direct control.

25: Although domiciled in France, the Farman brothers were of English ancestry. Not until later did Henry change the spelling of his name to the French form.

26: CPO (Mechanic) George Lacey.

27: Samson papers. Imperial War Museum Department of Documents 72/113/3

28: Originally 2 Squadron, and, like 1 Squadron/Wing originally raised to work with the RFC.

29: In order to start a rotary engine, each cylinder had to be primed, or 'doped' with petrol. A small oil can was used for this.

30: Later commander of 6 Wing at Otranto.

31: Air1/665. Squadron Leader C. L'Estrange Malone, CO *Ben-My-Chree* to DAD 14 August 1915, which includes Edmond's report. Quoted in Roskill.

32: CPO Michael Sullivan Keogh.

33: Telegram from HMS *Chatham* to Admiralty 23 November 1914. Reports of reconnaisances. Series No.II. 1st November to 31st December 1914. Samson Papers. IWM 72/113/3.

34: Taped interview with Captain F.D.H. Bremner. Imperial War Museum 000004/09.

35: Bulgaria had by this time entered the war on the side of the Central Powers.

36: At the beginning of the war magnetos were only produced by Bosch in Germany. When war broke out and the supply was cut off, copies were hurriedly put into production but proved very unreliable. A real Bosch magneto was a prize indeed and a remarkably generous gift from the French.

37: On one raid a hut was bombed close to the Greek border. It turned out to be a Greek Staff HQ and everyone elected to keep quite as to the identity of the pilot responsible, for which Bremner was very grateful.

38: Initially the aircraft were not supplied with bomb racks which had to be sent out to the island later, sighting was done through a hole in the floor.

39: Flight Lieutenant Jack Alcock, later to fly the Atlantic, was shot down in this machine and taken prisoner on 30 September 1917.

40: The Eastchurch Squadron was redesignated 3 Squadron on 1 September 1914.

41: In true Byzantine/ RNAS style this unit was known as A Squadron, 1 Wing and was renamed 1 (Naval) Squadron in December.

42: The gun was a 12-inch naval gun with a range of 27,000 yards. Based at Adinkerke and named *Dominion Battery*.

43: Even in the early months of the Second World War, one member of the Air Council would not sanction the bombing of factories in the Ruhr because they were "private property"

44: The RNAS were all too well aware of the potential costs to itself in 'planes. In response to the War Office memo complaining of the Admiralty's actions Vaughan-Lee would write in June "It is the same story, the War Office want to stop our long distance bombing in order to get hold of our engines and machines and so to cover their own deficiencies, at the same time they proclaim to the world....that they have Mastery of the Air". Adm. 1/8449. Quoted as No.128 by Roskill.

45: This was written in October when the War Office had yet again complained about the bombing activities of the RNAS. Vaughan-Lee had proposed this tactic to Oliver. Adm1/8449. quoted by Roskill as No.137.

46: Hitherto U-boats had usually come to the surface to fight and used their deck guns to cripple and sink shipping. From now on the emphasis would be on underwater operations and the greater use of torpedoes. On 19 April, nine merchant ships and eight trawlers were sunk by U-boats.

47: The 'UC' class of U-boat were minelayers.

48: The crew were unharmed. They were Flight Sub-Lieutenants C.R. Morrish, and H.G. Boswell as pilot and second pilot with 1st Air Mechanic W.P. Caston as engineer and Leading Mechanic A.E. Shooter as wireless operator.

49: Christiansen even embarked on a campaign against British submarines in 1918, attacking and sinking the *C-25* off the Harwich coast.

50: *The World Crisis. 1912-1914.* W.S. Churchill p312. 1923

51: Culley's Camel is currently on display at the Imperial War Museum, London.

52: Taped interview with Captain Thomas Blenheim Williams. Imperial War Museum 313.

53: Captain Graham Donald. Taped reminiscences IWM No 000018/11

54: Charles Dawson Booker. A superb Triplane pilot who scored 29 victories on this type. He was a Flight Commander of C Flight from 18 May 1917. He later commanded 1(Naval) and was killed in action on 13 August 1918. Robert J.O. Compston (25 victories and later commander of 40 Squadron RAF) commanded A Flight.

55: Taped interview with Ronald Sykes. Imperial War Museum AC 301.

56: Ibid.

57: Sykes was flying Camel number B3906. In March 1918 he joined Naval 3 and in August 201 Squadron.

58: Draper was also famed for flying between the towers of the ruined abbey which was the dominant landmark just above the airfield at Mont St Eloi.

59: Major Christopher Draper, DSC. *The Mad Major.* 1962. Air Review Ltd.

60: Later Wing Commander G.H. Lewis, DFC, and author of the classic and highly entertaining book *Wings Over The Somme.* Re-published by Bridge Books, Wrexham in 1994.

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Aircraft, German

ISBN 1-9519899-5-2

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