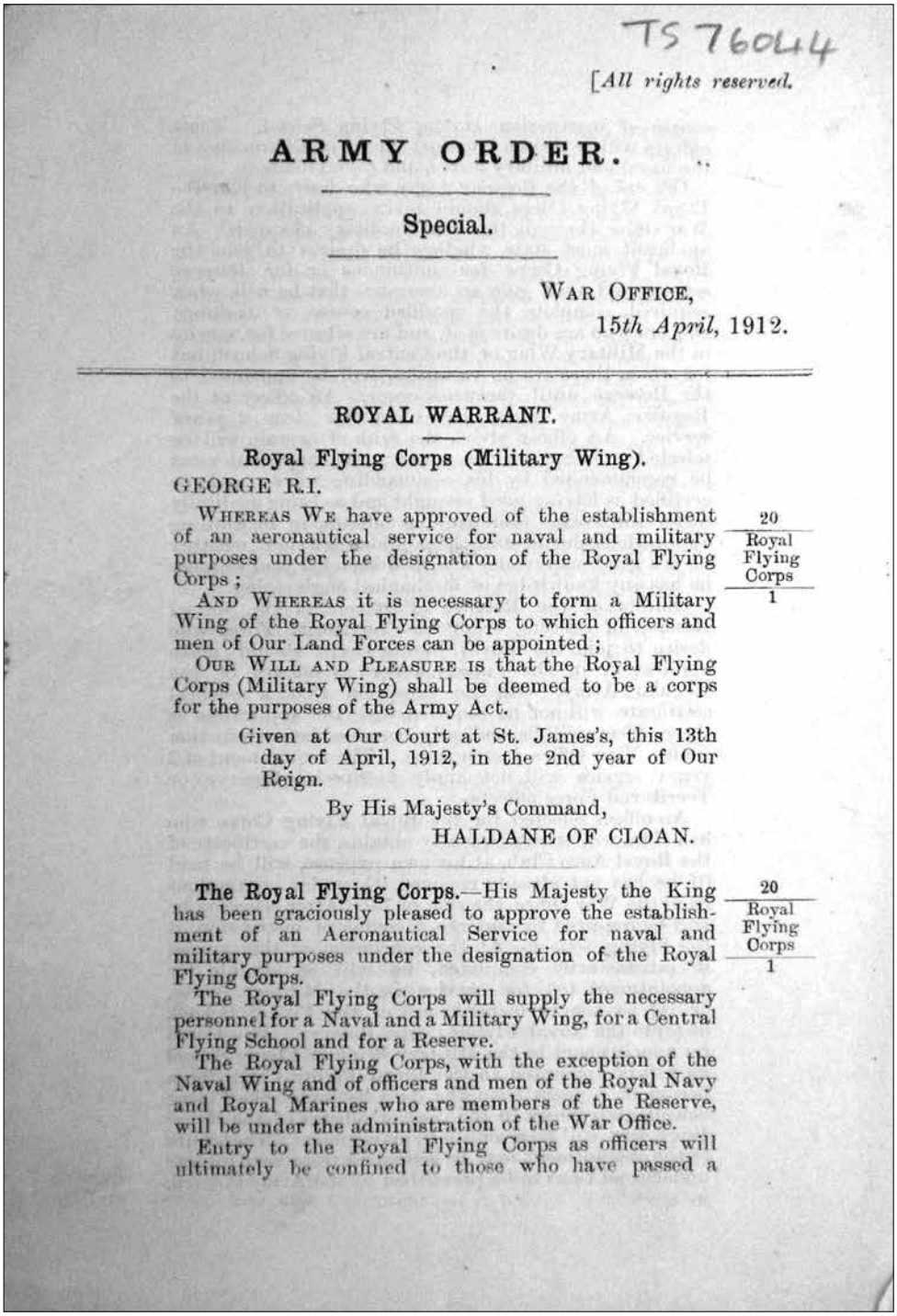
Pre-War Developments



TS 76044

ARMY ORDER.

Special.

WAR OFFICE,
15th April, 1912.

ROYAL WARRANT.

Royal Flying Corps (Military Wing).

GEORGE R.I.

20 Royal Flying Corps 1

WHEREAS WE have approved of the establishment of an aeronautical service for naval and military purposes under the designation of the Royal Flying Corps;

AND WHEREAS it is necessary to form a Military Wing of the Royal Flying Corps to which officers and men of Our Land Forces can be appointed;

OUR WILL AND PLEASURE IS that the Royal Flying Corps (Military Wing) shall be deemed to be a corps for the purposes of the Army Act.

Given at Our Court at St. James's, this 13th day of April, 1912, in the 2nd year of Our Reign.

By His Majesty's Command,
HALDANE OF CLOAN.

20 Royal Flying Corps 1

The Royal Flying Corps.—His Majesty the King has been graciously pleased to approve the establishment of an Aeronautical Service for naval and military purposes under the designation of the Royal Flying Corps.

The Royal Flying Corps will supply the necessary personnel for a Naval and a Military Wing, for a Central Flying School and for a Reserve.

The Royal Flying Corps, with the exception of the Naval Wing and of officers and men of the Royal Navy and Royal Marines who are members of the Reserve, will be under the administration of the War Office.

Entry to the Royal Flying Corps as officers will ultimately be confined to those who have passed a

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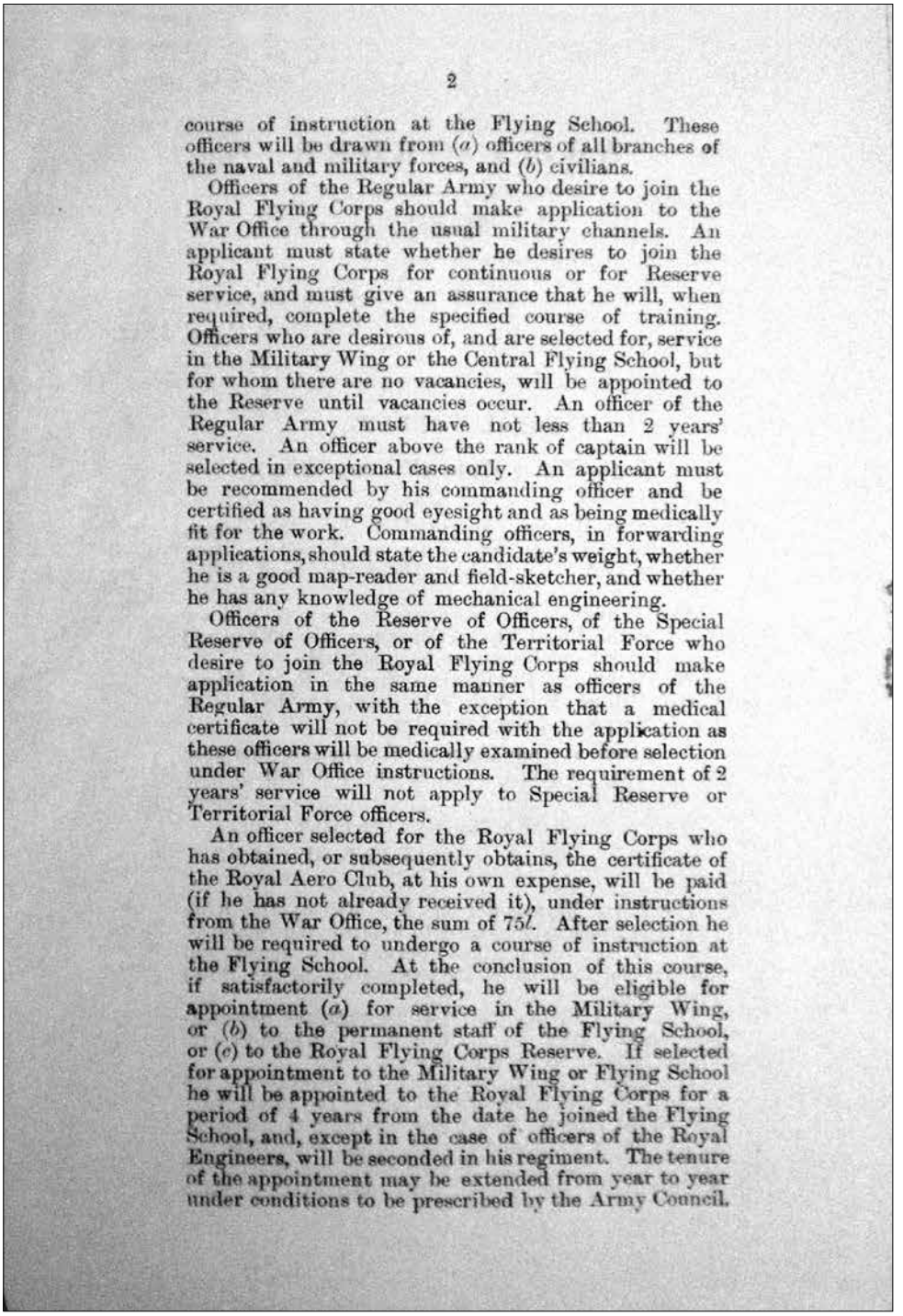

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course of instruction at the Flying School. These officers will be drawn from (*a*) officers of all branches of the naval and military forces, and (*b*) civilians.

Officers of the Regular Army who desire to join the Royal Flying Corps should make application to the War Office through the usual military channels. An applicant must state whether he desires to join the Royal Flying Corps for continuous or for Reserve service, and must give an assurance that he will, when required, complete the specified course of training. Officers who are desirous of, and are selected for, service in the Military Wing or the Central Flying School, but for whom there are no vacancies, will be appointed to the Reserve until vacancies occur. An officer of the Regular Army must have not less than 2 years' service. An officer above the rank of captain will be selected in exceptional cases only. An applicant must be recommended by his commanding officer and be certified as having good eyesight and as being medically fit for the work. Commanding officers, in forwarding applications, should state the candidate's weight, whether he is a good map-reader and field-sketcher, and whether he has any knowledge of mechanical engineering.

Officers of the Reserve of Officers, of the Special Reserve of Officers, or of the Territorial Force who desire to join the Royal Flying Corps should make application in the same manner as officers of the Regular Army, with the exception that a medical certificate will not be required with the application as these officers will be medically examined before selection under War Office instructions. The requirement of 2 years' service will not apply to Special Reserve or Territorial Force officers.

An officer selected for the Royal Flying Corps who has obtained, or subsequently obtains, the certificate of the Royal Aero Club, at his own expense, will be paid (if he has not already received it), under instructions from the War Office, the sum of 75*l*. After selection he will be required to undergo a course of instruction at the Flying School. At the conclusion of this course, if satisfactorily completed, he will be eligible for appointment (*a*) for service in the Military Wing, or (*b*) to the permanent staff of the Flying School, or (*c*) to the Royal Flying Corps Reserve. If selected for appointment to the Military Wing or Flying School he will be appointed to the Royal Flying Corps for a period of 4 years from the date he joined the Flying School, and, except in the case of officers of the Royal Engineers, will be seconded in his regiment. The tenure of the appointment may be extended from year to year under conditions to be prescribed by the Army Council.

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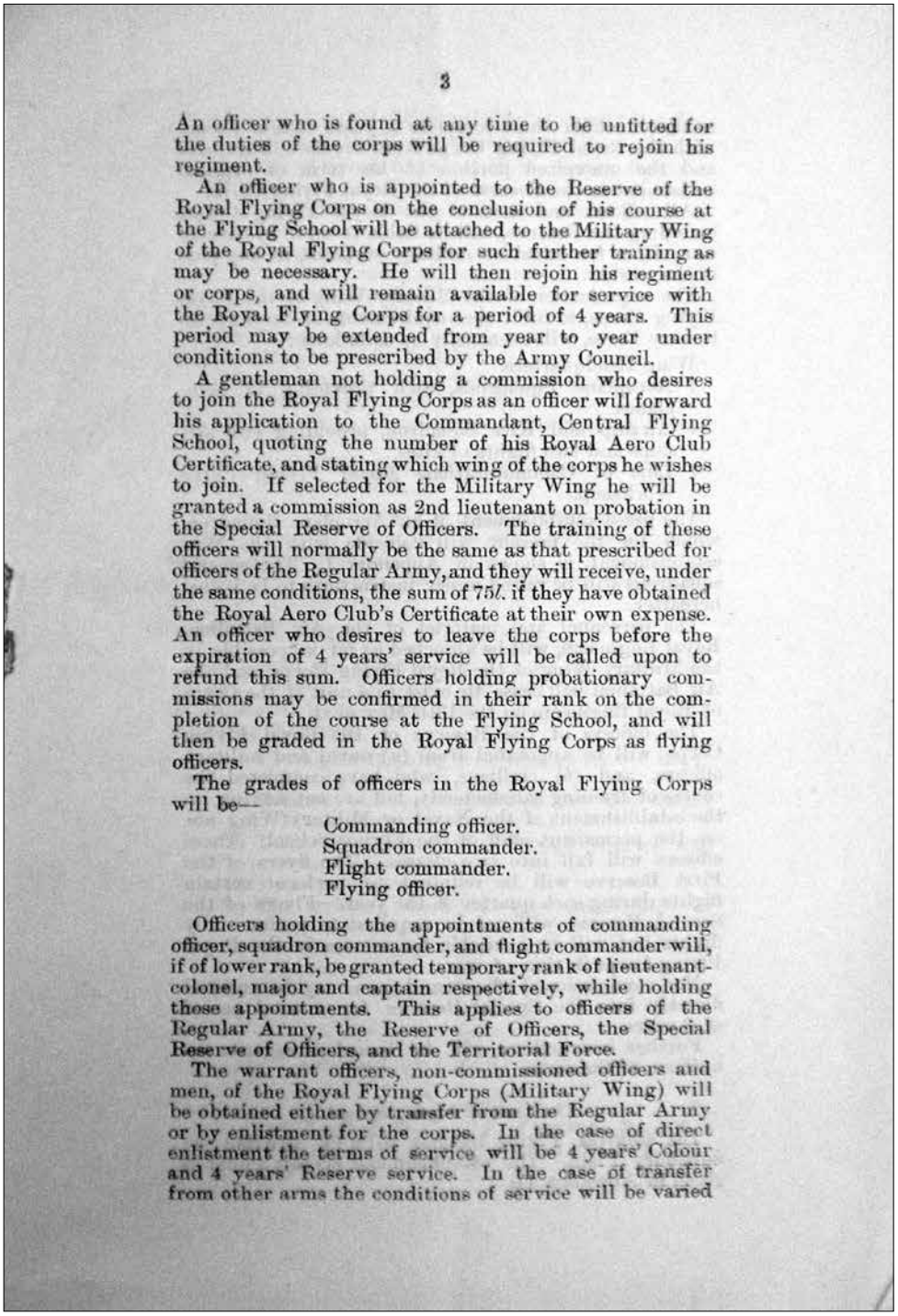

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An officer who is found at any time to be unfitted for the duties of the corps will be required to rejoin his regiment.

An officer who is appointed to the Reserve of the Royal Flying Corps on the conclusion of his course at the Flying School will be attached to the Military Wing of the Royal Flying Corps for such further training as may be necessary. He will then rejoin his regiment or corps, and will remain available for service with the Royal Flying Corps for a period of 4 years. This period may be extended from year to year under conditions to be prescribed by the Army Council.

A gentleman not holding a commission who desires to join the Royal Flying Corps as an officer will forward his application to the Commandant, Central Flying School, quoting the number of his Royal Aero Club Certificate, and stating which wing of the corps he wishes to join. If selected for the Military Wing he will be granted a commission as 2nd lieutenant on probation in the Special Reserve of Officers. The training of these officers will normally be the same as that prescribed for officers of the Regular Army, and they will receive, under the same conditions, the sum of 75*l.* if they have obtained the Royal Aero Club's Certificate at their own expense. An officer who desires to leave the corps before the expiration of 4 years' service will be called upon to refund this sum. Officers holding probationary commissions may be confirmed in their rank on the completion of the course at the Flying School, and will then be graded in the Royal Flying Corps as flying officers.

The grades of officers in the Royal Flying Corps will be—

Commanding officer.
Squadron commander.
Flight commander.
Flying officer.

Officers holding the appointments of commanding officer, squadron commander, and flight commander will, if of lower rank, be granted temporary rank of lieutenant-colonel, major and captain respectively, while holding those appointments. This applies to officers of the Regular Army, the Reserve of Officers, the Special Reserve of Officers, and the Territorial Force.

The warrant officers, non-commissioned officers and men, of the Royal Flying Corps (Military Wing) will be obtained either by transfer from the Regular Army or by enlistment for the corps. In the case of direct enlistment the terms of service will be 4 years' Colour and 4 years' Reserve service. In the case of transfer from other arms the conditions of service will be varied

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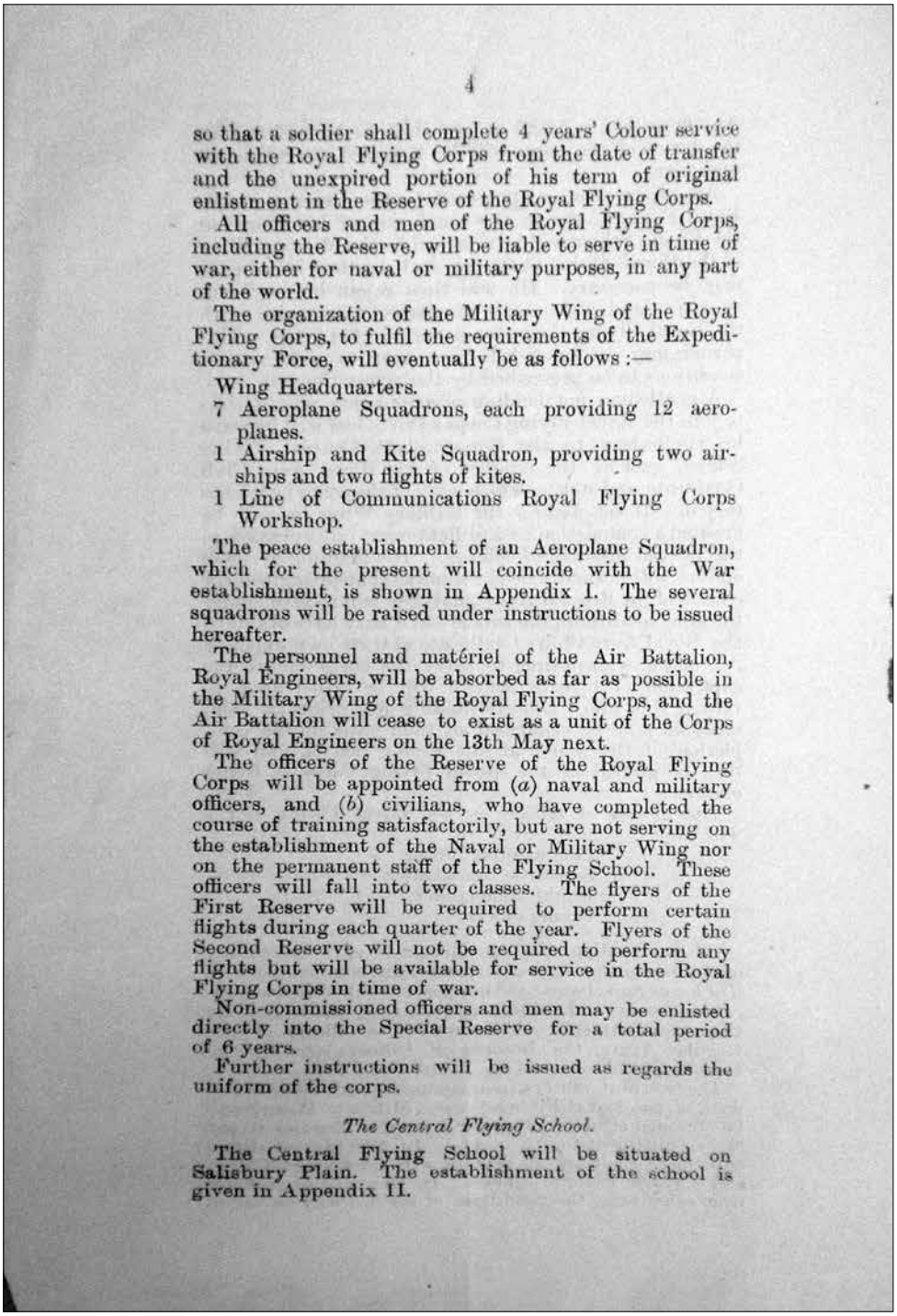

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so that a soldier shall complete 4 years' Colour service with the Royal Flying Corps from the date of transfer and the unexpired portion of his term of original enlistment in the Reserve of the Royal Flying Corps.

All officers and men of the Royal Flying Corps, including the Reserve, will be liable to serve in time of war, either for naval or military purposes, in any part of the world.

The organization of the Military Wing of the Royal Flying Corps, to fulfil the requirements of the Expeditionary Force, will eventually be as follows :—

Wing Headquarters.
7 Aeroplane Squadrons, each providing 12 aeroplanes.
1 Airship and Kite Squadron, providing two airships and two flights of kites.
1 Line of Communications Royal Flying Corps Workshop.

The peace establishment of an Aeroplane Squadron, which for the present will coincide with the War establishment, is shown in Appendix I. The several squadrons will be raised under instructions to be issued hereafter.

The personnel and matériel of the Air Battalion, Royal Engineers, will be absorbed as far as possible in the Military Wing of the Royal Flying Corps, and the Air Battalion will cease to exist as a unit of the Corps of Royal Engineers on the 13th May next.

The officers of the Reserve of the Royal Flying Corps will be appointed from (*a*) naval and military officers, and (*b*) civilians, who have completed the course of training satisfactorily, but are not serving on the establishment of the Naval or Military Wing nor on the permanent staff of the Flying School. These officers will fall into two classes. The flyers of the First Reserve will be required to perform certain flights during each quarter of the year. Flyers of the Second Reserve will not be required to perform any flights but will be available for service in the Royal Flying Corps in time of war.

Non-commissioned officers and men may be enlisted directly into the Special Reserve for a total period of 6 years.

Further instructions will be issued as regards the uniform of the corps.

The Central Flying School.

The Central Flying School will be situated on Salisbury Plain. The establishment of the school is given in Appendix II.

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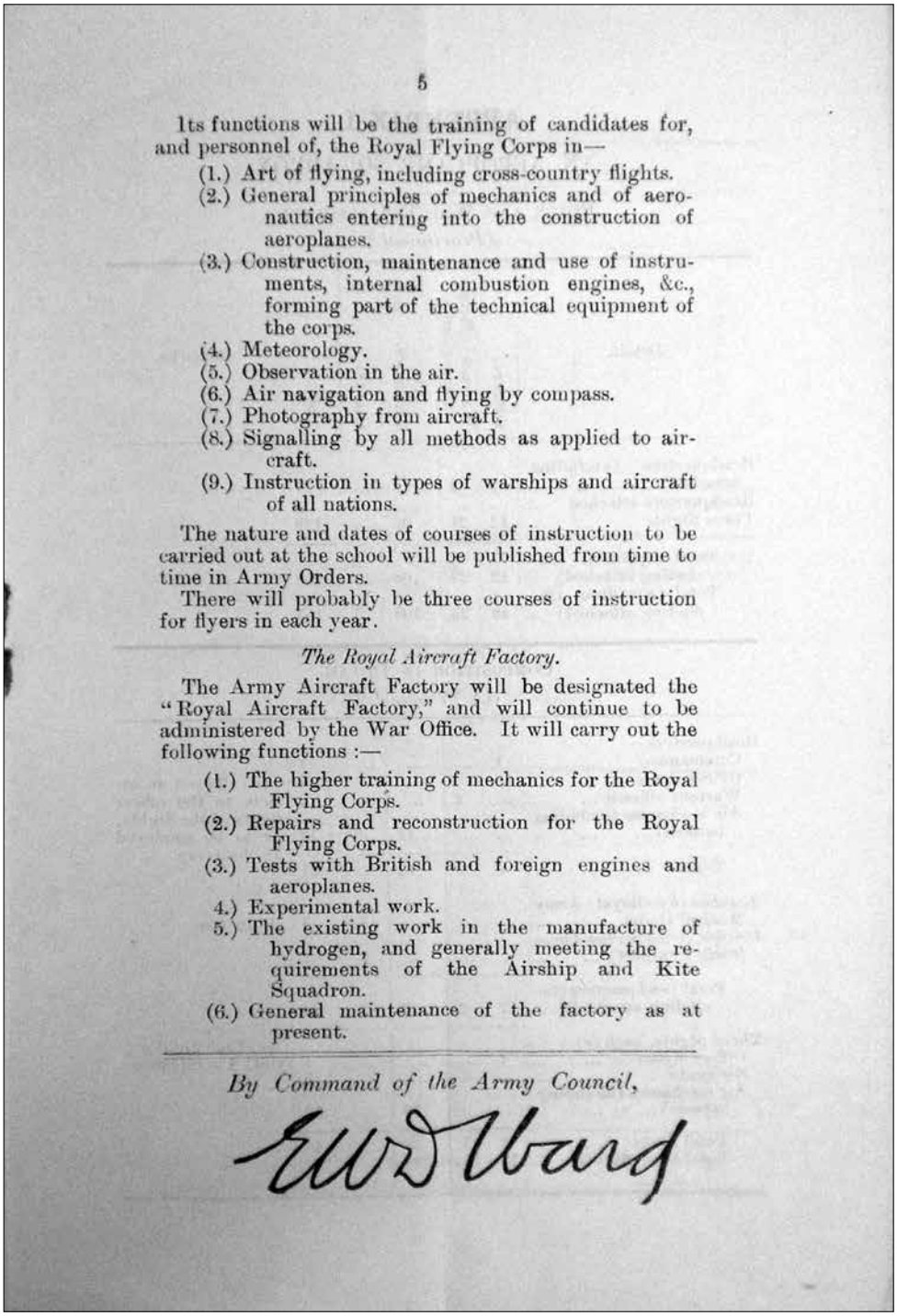

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Its functions will be the training of candidates for, and personnel of, the Royal Flying Corps in—

(1.) Art of flying, including cross-country flights.
(2.) General principles of mechanics and of aeronautics entering into the construction of aeroplanes.
(3.) Construction, maintenance and use of instruments, internal combustion engines, &c., forming part of the technical equipment of the corps.
(4.) Meteorology.
(5.) Observation in the air.
(6.) Air navigation and flying by compass.
(7.) Photography from aircraft.
(8.) Signalling by all methods as applied to aircraft.
(9.) Instruction in types of warships and aircraft of all nations.

The nature and dates of courses of instruction to be carried out at the school will be published from time to time in Army Orders.

There will probably be three courses of instruction for flyers in each year.

The Royal Aircraft Factory.

The Army Aircraft Factory will be designated the "Royal Aircraft Factory," and will continue to be administered by the War Office. It will carry out the following functions :—

(1.) The higher training of mechanics for the Royal Flying Corps.
(2.) Repairs and reconstruction for the Royal Flying Corps.
(3.) Tests with British and foreign engines and aeroplanes.
4.) Experimental work.
5.) The existing work in the manufacture of hydrogen, and generally meeting the requirements of the Airship and Kite Squadron.
(6.) General maintenance of the factory as at present.

By Command of the Army Council,

E W D Ward

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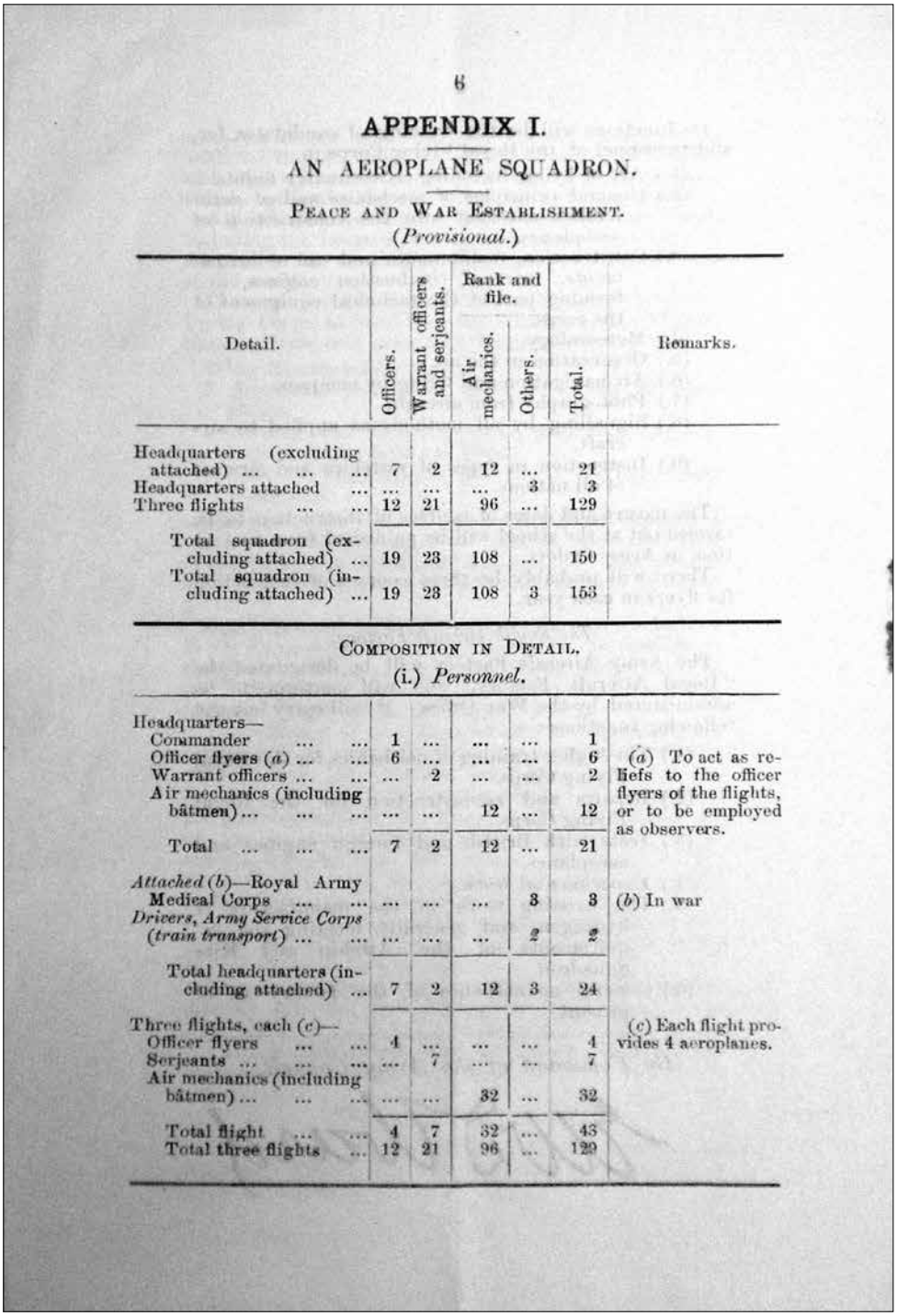

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APPENDIX I.

AN AEROPLANE SQUADRON.

PEACE AND WAR ESTABLISHMENT.

(*Provisional.*)

Detail.	Officers.	Warrant officers and serjeants.	Rank and file. Air mechanics.	Rank and file. Others.	Total.	Remarks.
Headquarters (excluding attached)	7	2	12	...	21	
Headquarters attached ...	...	...	...	3	3	
Three flights	12	21	96	...	129	
Total squadron (excluding attached) ...	19	23	108	...	150	
Total squadron (including attached) ...	19	23	108	3	153	

COMPOSITION IN DETAIL.

(i.) *Personnel.*

Headquarters—						
Commander	1	...	...	...	1	
Officer flyers (*a*)	6	...	...	...	6	(*a*) To act as reliefs to the officer flyers of the flights, or to be employed as observers.
Warrant officers	...	2	...	...	2	
Air mechanics (including bâtmen)	...	...	12	...	12	
Total	7	2	12	...	21	
Attached (*b*)—Royal Army Medical Corps	...	...	...	3	3	(*b*) In war
Drivers, Army Service Corps (train transport)	...	...	...	2	2	
Total headquarters (including attached) ...	7	2	12	3	24	
Three flights, each (*c*)—						
Officer flyers	4	...	...	...	4	(*c*) Each flight provides 4 aeroplanes.
Serjeants	...	7	...	...	7	
Air mechanics (including bâtmen)	...	...	32	...	32	
Total flight	4	7	32	...	43	
Total three flights ...	12	21	96	...	129	

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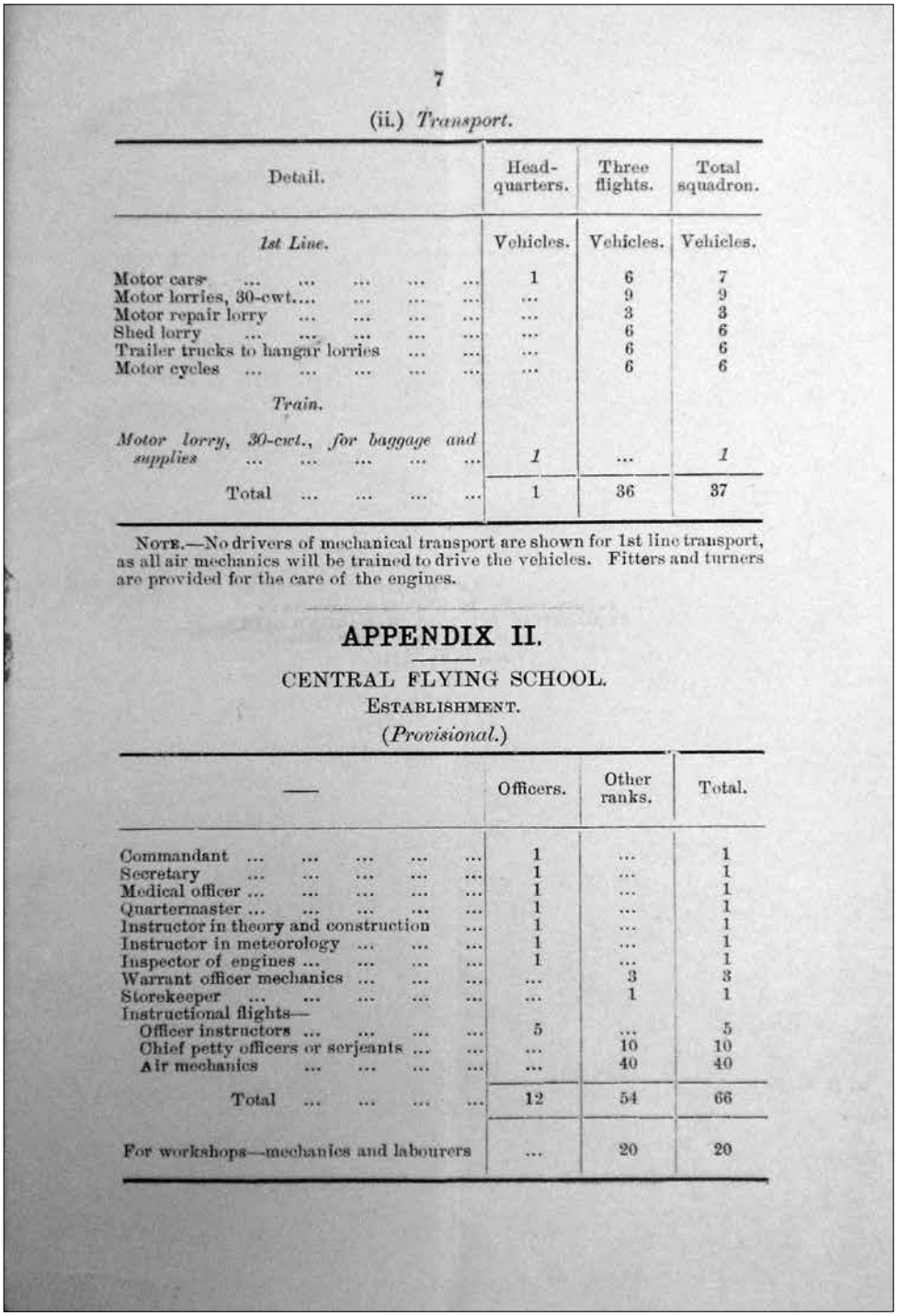

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(ii.) *Transport.*

Detail.	Head-quarters.	Three flights.	Total squadron.
1st Line.	Vehicles.	Vehicles.	Vehicles.
Motor cars	1	6	7
Motor lorries, 30-cwt....	...	9	9
Motor repair lorry	...	3	3
Shed lorry	...	6	6
Trailer trucks to hangar lorries	...	6	6
Motor cycles	...	6	6
Train.			
Motor lorry, 30-cwt., for baggage and supplies	*1*	...	*1*
Total	1	36	37

NOTE.—No drivers of mechanical transport are shown for 1st line transport, as all air mechanics will be trained to drive the vehicles. Fitters and turners are provided for the care of the engines.

APPENDIX II.

CENTRAL FLYING SCHOOL.

ESTABLISHMENT.

(*Provisional.*)

——	Officers.	Other ranks.	Total.
Commandant	1	...	1
Secretary	1	...	1
Medical officer	1	...	1
Quartermaster	1	...	1
Instructor in theory and construction ...	1	...	1
Instructor in meteorology	1	...	1
Inspector of engines	1	...	1
Warrant officer mechanics	...	3	3
Storekeeper	...	1	1
Instructional flights—			
Officer instructors	5	...	5
Chief petty officers or serjeants	...	10	10
Air mechanics	...	40	40
Total	12	54	66
For workshops—mechanics and labourers	...	20	20

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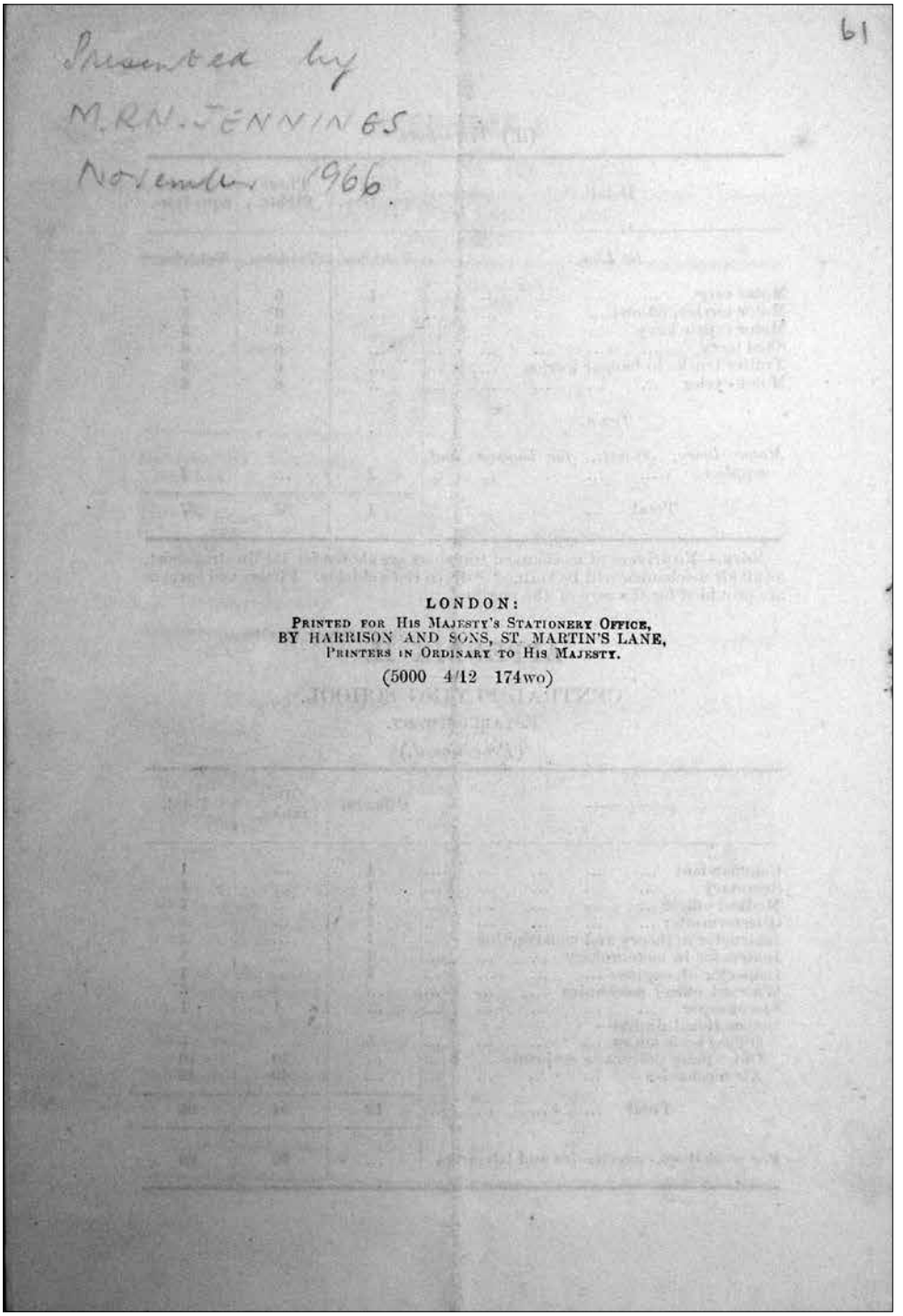

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Major General Sir Frederick Hugh Sykes

Sir Frederick Sykes

By Doctor David Jordan

Sykes was born on 23 July 1877, and there was little sign in his early years that he would become a significant figure in British military history. Although an intelligent child, the death of his father (when Sykes was 2) meant that his education was curtailed at age 15 as there was a need for him to seek work, rather than attend University. He spent two years in France, largely with the aim of learning the language well enough to embark upon a diplomatic career, but he in fact began his working life in the tea industry and in shipping. Sykes was moved to volunteer for the Imperial Yeomanry Scouts during the Boer War. Taken prisoner by the Boers, he escaped, and was soon afterwards offered a commission in Lord Roberts' bodyguard. He remained in the army at the end of the South African War, transferring to the 15th Hussars in India in 1902. An erudite soldier, Sykes attended the Staff College in India, and was posted to the Directorate of Operations at the War Office in 1910. He did not assume this post immediately after his departure from his previous job, and used the time to learn to fly. A French-speaker, he observed exercises in France in 1911, and produced some notes for the War Office regarding the use of aircraft. He was convinced that aircraft (and balloons) offered considerable potential for military use, and became something of an advocate for air power. He served as Secretary to the Sub-Committee of the Committee of Imperial Defence on aviation, and was appointed to command the Military Wing of the Royal Flying Corps in 1912. Sykes' vision for air power was demonstrated in two articles in *Army Review* in 1913 and 1914 in which he gave a clear illustration of how he perceived the use of aircraft in future war.

His presumption that he would command the formation in time of war was overtaken by events, though, and he instead served as deputy to David Henderson, often acting as the commander when Henderson returned to London. Sykes was in the unfortunate position that his warm personal relations with the politically-minded General Sir Henry Wilson, coupled with his intelligence, ambition and a personality some found rather prickly led to many of his colleagues mistrusting him. Henderson appears to have been one of these, and when the Admiralty requested an air advisor for the Dardanelles Campaign in 1915, Henderson's decision to send Sykes to fulfil this role may have in part been motivated by the thought that this would keep Sykes away from RFC headquarters for a while, even if the decision to despatch him was entirely logical given Sykes' expertise. The problem for Sykes lay in the fact that while he was away, Henderson stepped down as General Officer Commanding the RFC in France. Sykes did not, therefore, take command of the RFC as he might have expected, with the job instead passing to Trenchard. It is safe to say that Trenchard and Sykes did not enjoy one another's company or rate each other's ideas on air power – a great pity, since it could be argued that the RFC and RAF would have benefitted greatly from the combined ideas and skills of the two men.

On his return from Gallipoli, Sykes moved away from the air service, becoming Director General of Organisation at the War Office, before moving on to become the representative for

the Adjutant General & Quartermaster General on the Supreme War Council at Versailles in November 1917. When Trenchard resigned as Chief of the Air Staff in April 1918, Sykes was chosen to replace him, but he assumed the post in addition to his duties at Versailles. This created conditions in which Trenchard – whose departure was the source of notable political controversy which in turn led to the resignation of the Secretary of State for Air – was able to be brought back into a command position (that of leading the Independent Force) which did not see him have to take orders from his nemesis.

Sykes offered a particularly grand vision for British air power within a wider imperial context after the First World War, but the cost of this was simply beyond the reach of the impoverished finances of the government in the aftermath of the Great War. The new Secretary of State for War and Air, Winston Churchill, found Trenchard's vision of a continuing independent air force rather more affordable, and Sykes was 'moved sideways' to become the Controller-General of Civil Aviation in 1919, with Trenchard returning as head of the RAF. Sykes resigned in 1922 following a clash over a lack of funding. He entered parliament as the Conservative MP for Sheffield Hallam, before leaving the Commons to become Governor of Bombay in 1928. He served as an MP again during the Second World War, but stepped down in 1945. Sykes then largely contented himself with service as a director on the boards of a number of public companies until his death in September 1954.

XIII

MILITARY AVIATION[1]

By MAJOR F H SYKES, 15th Hussars, Royal Flying Corps

We have recently listened to most excellent technical lectures on subjects to do with the actual design of aircraft. I think it may now be of interest to consider the more military aspect, that is to say, the directions in which aircraft will be used and the results to be gained. It is sometimes said that aviation will revolutionize warfare, or even stop it altogether. This, of course, is absurd. The main principles of war have been the same for centuries, and will probably remain so for several more. Its instruments (of which aviation is the latest and to me the most wonderful) it is which vary. That aviation will, however, have a great effect on warfare I am convinced. I hope to show the form which I think this effect will take.

First, let me attempt to reduce to a few words the great principles of war strategy (as against peace strategy or all the preparations made before war breaks out) which the new arm must attempt to serve. They are these:

Strategic Penetration – Child's play: go for the enemy in his centre; hold him on one hand; beat him quickly on the other.

Interception – Walk round and masticate him thoroughly from behind.

Concentration of Superior Force at the Decisive Point – Select the enemy's weakest point, his flank or rear if possible; mass there; and reap the well-earned results.

It sounds very simple. But perhaps the enemy may be trying the same methods on you. Roads may be feet deep in mud, railways broken, bridges blown up, passes blocked, rivers (of course quite unfairly) in flood, transport broken down, supplies lacking, men hungry, cold, worn out, diseased. Such things have been.

Your countrymen, legislative bodies, Press, stock exchange, will take good care that you hear their comments: "Why *doesn't* old Brown-Jones get on"? "What *is* he doing"? "It is all *so* straightforward". "*Can't* the muddlepate see"? "Unless he bags the enemy's Army at once we really *must* send Jones-Brown".

War, like most other things, is simple, unless you know something about it.

But how does this affect military aviation? In this way. The fundamental difficulties of war are much the same now as they were in the days of Caesar. Even aviation will not alter them.

[1] A paper read before the Aeronautical Society of Great Britain.

In the thirteenth century armies were of some 30,000 men, and started real business when a few yards apart. At Waterloo the sides were roughly 120,000 and 90,000. In 1904, at Manchuria, one battle – Mukden – had a frontage of 80 miles, and the actual forces employed in the field numbered about 310,000 each.

In future (except possibly in the case of England) the entire able manhood of the country will take part at one point or another. Yet in all cases, given more or less an equal degree of preparation, both sides labour under much the same difficulties and enjoy similar advantages. The old, old principles prevail. Instruments, however, change. Factors develop. The latest – aerial work – is pushing its way amongst the innumerable concomitants of war. What will be its effect? Will one side gain? Will both gain, and so re-balance one-another? In any case no revolution of methods will occur.

THE GENERAL EFFECT OF AVIATION ON STRATEGY AND TACTICS IN MODERN WARFARE

Before dealing in detail with points which go to make up military aviation, I should like to show as briefly as possible their general result.

In the first place the plans drawn out in peace will require even greater care and brain power devoted to them in order that the preliminary dispositions of troops, that is the "strategical deployment" may be the best possible. An all-round speeding up of the strategic operations may be expected. The sequence: order, counter order, and disorder should be less frequent. If the huge masses of modern Armies are found to have been wrongly placed, no amount of zeal, training, bravery, or mobility can make up. There will be no time for a general re-shuffling. The offensive will increase in advantage over defensive. Leaders must be prompt and correct in decision; troops prepared to make long and rapid movements. Army Corps will take upon themselves more the rôle of naval squadrons – their various positions, strengths, and movements will be generally known.

Efficiency, leadership of men, the greatest mobility, and – other things being equal – the greatest number will win. Hitherto it has been possible for a small, exceedingly mobile and well-handled force by rapid hidden movements sometimes to defeat considerably larger numbers. It was in this way that the splendid daring of Jackson, the American General, had such great results in Shenandoah Valley, in the war between the North and South. Aircraft will, I think, render this line of action practically impossible.

There can be no doubt that unless one side definitely obtains command of the air (and I will touch on this in more detail later), the cards will be more openly displayed for both. The problems of land warfare, which – if I may say so as a soldier – are far more difficult than those with which my brother officers of the Navy have to deal, will tend, owing to aerial developments, to approximate more closely to those of naval operations. I may say that I look forward to this with considerable satisfaction. We shall still have the enormous strains

of mobilization, of supply difficulties, of lines of communication, of weary legs, but the "fog of war", the "hill" behind which Wellington could not see, will, to a certain extent, be quietly and quickly removed.

Jackson said that "to mystify, mislead, and surprise his enemy is a commander's great object in war". Would such a move as Blücher's from Ligny to Waterloo now be possible? The fog of war was about Napoleon. His plans were upset. Again, at Mukden, the Japanese caused the Russians to think their left flank would be turned. Reserves were hurried East to counteract the expected movement. Counter-marching Westwards, they could only be thrown in piecemeal against the true Japanese flank attack. At the time of Mukden the Russians were gradually drawing on their large reserve strength in Europe and becoming adequate to their task; the Japanese were almost at the end of their tether. How might the world's history have been altered had the Russians, possessing command of the air and locating the actual movements of the Japanese reserves, met the flank attack with an outflanking movement?

Owing to the fear of moving troops in a wrong direction and having to countermarch them, there will, I think, be a tendency both in the strategical and tactical stages for commanders to await the reports of their aerial reconnoitres before deciding what to do. Preliminary orders will be issued and confirmed or altered in accordance with the results of reconnaissances. As the strategical merges into the tactical phase, so the character of the reconnaissance work will be modified. Certain long distance flights will still be advisable to discover possible flanking and reserve movements, but the greater number will consist of short flights to ascertain the tactical position and place the information *immediately* in the hands of the commander. But can both sides rely upon obtaining such aerial reports?

So far the results of aerial work have been concerned almost entirely with reconnaissance. In future it is perhaps unfair to assume that one side will have aircraft and not the other. How much will be possible while the enemy is also in possession of an aerial squadron?

Neither Tripoli nor the Balkans is a guide. The Italians had the air to themselves. The Allies also have been free from interference, except that a good deal of shooting has been done from the ground.

COMMAND OF THE AIR

General Grierson has told us that war is impossible without command of the air. I am glad that this statement has caused many people to pause and think. But, if I may say so, though I agree with General Grierson with reference to the war of a few years hence, as regards that of to-day I am not quite so certain. I even hold that command of the air can never really be of the same nature as command of the sea. Neither can the same extent of strategical or tactical freedom in the area of operations be obtained, which might result from the vigorous use of good cavalry.

At sea and on land there are only two dimensions. In the air the third (climbing) is the difficulty. It may, of course, be overcome. We have the precedent of naval evolution from galley to Dreadnought. Weight and speed, the problems of naval designers for centuries, are those of aircraft engineers to-day. The enormous strides which aircraft have made during the last three or four years will, I feel sure, be far greater in the near future. Nevertheless, I feel that the third dimension is a severe stumbling block. A fighting machine, with its passenger, gun, ammunition, and possibly light armour, is a heavy machine. Every attribute is affected. It cannot, for some time, be as fast or easy to handle as an unarmed craft. It will climb more slowly, cause more strain on the pilot, and land with less certainty of remaining whole. The difficulties may be circumvented.

It is sometimes argued that possibly it is most advisable at present to develop primarily the number of high speed machines and the training of fliers to handle them. For the time being it would certainly seem that the fast scouting machine will have various advantages over the heavier type, with the result that, if both sides use it, both sides will know a great deal as to what the opponent is doing. If both sides also have fighting machines, the side upon which this fact has the least moral effect will have an important advantage. A little fighting in the air will, I think, have a far-reaching deterrent effect on the *moral* of the aerial forces of the losing side.

Military aviation is, and must be, dangerous. Those who take it up feel its enormous possibilities for success to their side. They accept its risks. The aircraft of one side will be imbued with greater staying powers, greater determination to fight. This side must be ours. It is this spirit which, creating moral ascendancy, always wins on land or sea. It will do so in the air. Thus again, as usual, we come to the man, the numbers of him available, his patriotism, self-sacrifice, and training.

The indications point, then, to two lines of acting being attempted by aircraft in war. The results of reconnaissance work to date demonstrate that each side must attempt, not only to gain information, but also to frustrate similar hostile effort. Certain aircraft will be employed purely for scouting purposes, others in fighting off the opposing aeroplanes and airships. The attempt to obtain command of the air will probably take place during the strategical concentration and before land hostilities have commenced. It is improbable that superiority once gained will be much affected by fresh machines being sent to the front. The moral effect accruing from original physical success in the air will be too great. The side which loses command of the air will labour under all the disadvantages of defensive action.

THE EFFECT OF AVIATION ON THE EMPLOYMENT OF VARIOUS ARMS

There has been much discussion as to the effect of aviation on the employment of the various arms. Industry is, of course, the arm upon which ultimate success depends. Aviation takes a place with its great auxiliaries. Its alliance is closest with cavalry, and it affects the action of the masses of an Army because it influences the uses to which cavalry is put. Those anxious to

reduce expenditure argue that, as aircraft can reconnoitre well, the value of cavalry has ceased to exist. This, I think, is quite unsound. Aircraft will aid and save the cavalry much unnecessary work. Cavalry, on its side, can help aircraft in many ways. The commander will be fortunate who has the most actively co-operating, highly organized, equipped and trained cavalry and air services. An instance of the value of joint action was afforded during the last manoeuvres, when a patrol discovered the outpost line of a hostile division, and an aeroplane its transport, and thus, though it was not exactly located, the approximate position of the main body.

The value of information is in proportion to the speed with which it is handed in. Under reasonable conditions of weather and country, a general can now within three and a-half hours expect a report as to the approximate strength, formation, and direction of movement of the enemy, if he is within an 80-miles radius. A similar result would take officers' patrols sent out from the strategic cavalry at least three days, while the prospects of acquiring the information would be less. Tactically the aeroplane is ready to undertake a reconnaissance of, say, three hours' duration whether to obtain information of the enemy's position and movements, to ascertain the nature of the ground to the front, flanks, and read of a position, and to find suitable targets for the artillery. It will help in the service of intercommunication, in the co-operation of all arms, and also to supplement the telegraph and telephone services in obtaining news of what is happening during a battle.

Moltke's maxim of "march dispersed, fight concentrated", will be aided; a too early deployment and its attendant loss of strength be obviated. The reports of aircraft will afford a degree of security, a saving of officers, men, and horseflesh, in anxiety and strain on the commander, in mental wear and tear of the infantry and artillery. A weaker cavalry better helped by its aircraft may locate an enemy's cavalry, surprise and fight him on ground best suited to itself, and thus clear the way for the infantry main columns. The cavalry will be available to help the infantry in the decisive battle.

When opposing troops are close together aircraft will probably be detached to work with units such as divisions in order that the information may reach the hands of the subordinate commanders immediately concerned as rapidly as possible.

Lastly, we must always remember the great gain in *moral* which the side with the best air service will obtain. Nevertheless, too much reliance must not be placed on aircraft. The impossibility of work in fog, at night, and in high winds must be borne in mind. Further, the aircraft reconnaissance is essentially a rapid one. It passes and returns, its field of observation is not very detailed. Small bodies of troops will probably soon learn how best to hide themselves in the nearest cover, such as woods, villages, &c.

RECOGNIZING AIRCRAFT

Both with respect to fighting in the air and to firing at them from the ground the recognizing of aircraft is a difficult question. Those who are accustomed to seeing aeroplanes can often tell

to which side or country they belong by their type. A reduction of the number of types used will help in this direction. Tables showing types of both friend and foe, as seen from below, will probably have to be issued to staffs and troops taking the field. In future, possibly, aircraft will tend to develop on nationally characteristic lines in the same way as warships have done, but as yet there is very little guide even in this way. Most British and French aeroplanes are very similar. German ones are certainly already somewhat different and more easily recognizable. The colour of machines, except occasionally in certain lights, cannot be distinguished if they are at a height of over 2,000 feet.

These facts render it a matter of great difficulty to arrange a system of umpiring on manoeuvres, by means of which an indication may be made as to the advantage gained by one or the other side in the question of air superiority. The naval method whereby two ships speak to each other by wireless and decide any point is obviously impossible. Nor does the system of firing a rocket to indicate to an aircraft that it is out of action and will not be allowed to continue its work for a time seem satisfactory. Last year, at all events, our Red and Blue aircraft had to pass one another, and it is a curious fact worth noticing that, owing to the attention of pilots and observers being concentrated purely upon obtaining information as to the position and movement of the hostile land forces, they seldom even saw each other in the air.

On manoeuvres a further condition of unreality is introduced by the fact that aircraft are seldom fired at from the ground. This is probably due to disinclination to shoot owing to the difficulty in distinguishing friend from foe, lack of experience in judging heights (experiments with range-taking instruments to determine the heights of aeroplanes have as yet given poor results), the uncertainty of effecting useful results as against disclosing one's position to the aerial observer, and the possibility of danger to friendly troops by such fire.

ALTITUDES MAINTAINED DURING RECONNAISSANCE

The state of the atmosphere is mainly responsible for the height at which the reconnaissance of aircraft should be carried out. Observation is often difficult owing to the clouds and mist, and there is sometimes a tendency to descend to dangerously low altitudes in order to ensure correct information or verify that already gained. Bullets will probably quickly right this tendency in war. I understand that the Bulgarian fliers think anything under 4,000 feet unsafe from fire. Bullets, however, must not cause fliers to err on the side of caution when *looking* for information. The possibility of shrapnel is no excuse for failure. Once *obtained*, results cannot be too jealously guarded. Pilots must in any case endeavour to take advantage of clouds for concealment while minimizing their hindrance to observation. On a clear day observations can be accurately plotted on a map from an altitude of 4,500 feet, at which height the ground seems to be moving very slowly and reconnaissance is relatively easy.

NOTES ON RECONNAISSANCE

There is no doubt that the work of piloting and observing entails heavy strain. Battling for even 20 minutes with a heavy machine through a difficult wind is an exhausting task, and

commanders must study economy in the use of aircraft at their disposal. As regards wind, I think it is fair to assume that aeroplanes will be able to fly five days out of six at one time or other of the day. The same pilot and observer should always work together if possible. Speaking tubes are useful between the two. For continuous work two officers per aeroplane are advisable. Under present conditions, and for any considerable period even in fair weather, it may be estimated that pilots and observers can only be employed for about three hours during the day, or say ten hours in three days. On completing his task a pilot must, if possible, be given complete rest. If the wind is tricky, the cold intense, or there are other unfavourable circumstances, the above estimate will probably have to be reduced. A reserve of pilots, and possibly of observers, is therefore necessary. This, however, would mean that observers will, as a rule, be officers of the Royal Flying Corps or of other regiments, not staff officers. On the other hand, there has been found a difficulty on the Continent in obtaining really good observation officers other than from those on the Staff.

Much careful training and practice will be required whatever officer is selected; not only is considerable experience in the air in 70 to 80 miles an hour machines necessary, but also a large and sound knowledge of military matters. The observer must know instinctively which facts are of importance and which are useless. The untrained officer is of no use. In my opinion the best staff officers, and as many of them as possible, should be trained and kept in practice for this purpose.

In strategical reconnaissance it is generally a matter of observing the enemy's main body. When they are in column of route it is comparatively easy to recognize their nature and to estimate their strength, while in dry weather the dust they throw up gives an early indication of their presence. The position and movements of the hostile cavalry masses, if discovered, will probably disclose the enemy's intention.

In tactical reconnaissance, on the other hand, troops must be observed after they have left the roads; they are then harder to find, it is most difficult to estimate their strength, and the results must be even more rapidly obtained and communicated. As observers on these occasions, therefore, it is advisable that staff officers, skilled in the work and fully acquainted with the latest reports, should make ascents from time to time in order to gauge matters, watch for movements of reserves or reinforcements, and report immediately to their generals.

Thus strategical reconnaissance is the easier of the two, and will generally give better and more accurate results. Here, too, however, careful and constant practice will be necessary, and, indeed, eventually the training of the observer will probably require even more care than that of the pilot.

Over easy country, that is when there are few but easily distinguished roads and railways, it has been found that the best results are obtained by mapping out a definite course for each aeroplane, for the pilot to find his way and the observer to confine his attention strictly to

observing. But in the case of difficult country, when there are many winding small roads, it is usually better to give a definite objective and let the observer direct the pilot. Over easy country a pilot-observer in a single-seater machine may be able to gather useful information, especially if it is a question of large strategical movements, but over a difficult area important results cannot be expected unless a definite objective only is given him.

NIGHT WORK

The questions of night marches and of the concealment of troops are of much interest to the observer. It would certainly seem that one of the results of the introduction of aircraft will be more night advances and movements, either to make up for delay occasioned during daylight, to escape notice, or for the purpose of tactical reshuffling, necessitated by the reports of the evening reconnaissance. It has been found that, even in wooded country, large bodies of troops can be seen if they are on the move. It is, of course, difficult to report their number, and if halted it is practically impossible to find them. Concealment has been proved to be possible. Various methods of hiding troops must, therefore, be studied, and may on occasion be effective in war. But if forces are to be concealed, and only move at night or in bad weather, there will be much delay. Marches and operations will be greatly impeded. In this, as in so many matters, a compromise will probably be made. It will sometimes be advisable to hide, sometimes to push on and chance being seen. It is a question of generalship. Night marches when troops are weary and short of food are not popular; they entail heavy wear and tear, and, if continued for long, lower the fighting mettle of the men. During last manoeuvres neither side did much in the way of night marches, owing probably to the desire to keep the troops fresh for a final effort. If a night march is to be undertaken no preparations should be made which it will be possible for aircraft to see.

Not much has been done by aeroplanes at night, but such work may, I think, be considered one of the most important duties of airships. It is of considerable difficulty and requires much practice and training. I am afraid, therefore, that the unfortunate soldier must not expect to be free from the baneful influence of aircraft at night. His bivouac cooking fires – when and in what number to use them – will have to be considered, and the fact remembered that they should not be left burning in the morning. The danger to aeroplanes attempting to land at night is still very considerable. Machines sometimes return late, however, and land when it is almost dark with the help of petrol flares. Troops billeted in villages or towns will probably be an uncomfortable problem for the observer. It will undoubtedly be very difficult to estimate their strength.

HANDING IN INFORMATION

Having obtained information, the greatest value must at once be gained from it. To effect this the commander of the aircraft must be in constant touch with the General Staff. His observers should be placed in full possession of all information already gained and movements intended. An aircraft may happen to spot a hostile body in quite an unexpected locality, and, if it appreciates the situation, rightly decide to return and report this before going on to its

allotted task. The freest hand possible should be allowed. It will usually be advisable to send two aircraft if the mission is a very important one.

In selecting a new position for Army or other Headquarters to which aeroplanes are attached, the necessity of having a suitable adjacent landing ground should be given considerable weight. Staff officers could quite easily learn the type of ground required. Routine instructions have already been drawn up.

Owing to the character of the country, it may often be impossible for aeroplanes to land quite close to Headquarters. A considerable advance has been made in methods of dropping messages, but much practice is yet required in this direction. Motor cyclists as despatch carriers are most useful. When the aircraft have inevitably to work from a point distant from Army Headquarters, motor cars are used for observers personally to report to Headquarters for instructions before starting, or on return to supplement written reports by verbal information.

The question of signals from aircraft is a complex one. Lights, puffs, discs, Klaxon horns, &c, have been tried, but the results have so far not been entirely satisfactory.

The employment of an aeroplane for the transmission of intelligence from Army Headquarters to the cavalry division has been found to answer well.

The French are reported to have sent messages a distance of 50 or 60 miles by wireless. The difficulty of receiving, owing to noise, both in airships and aeroplanes, has yet to be overcome, and the interference between stations also restricts its use. If used the necessity for a cipher is obvious, and only a few important messages should be sent.

Many people are astonished at the apparently extraordinary number of accessories required to keep a number of aircraft in the field. Transport, spare parts, tools, sheds, mooring masts, and other absolutely innumerable impediments. On manoeuvres last year some 8 motor cars, 12 light tenders, 10 heavy tenders, and 8 Foden steam lorries were fully employed to keep 2 airships and 14 aeroplanes going. May I here interject a hope that constructors will recognize our difficulties in this respect, and give all the help they can towards some degree of standardization.

During prolonged operations it will be a matter of great difficulty to maintain more than 50 per cent of machines in working order, and even this will necessitate a great quantity of immediately available spare parts and a high degree of training in all concerned. It would, I think, seem probable that no aeroplanes or engines and few pilots and observers will last more than three or four months on active service. Efficient and sufficient repair lorries are essential, though present experience points to the fact that first-aid repairs can only be of the character of replacing damaged parts. More serious damage must be repaired at the flying depôt at

the advanced base. A considerable source of wastage will probably lie in the fact that engine failure will have an inconvenient habit of occurring when a machine is securing its very best information over hostile country! Even the Royal Aircraft Factory cannot help us under these circumstances! The best remedy lies with engine manufacturers, and it is in this direction that we hope for the next great step.

SHEDS

Sheds, if used, require a great deal of transport and personnel. Actually many aeroplanes can remain out at night for short periods if some sort of cover is provided. Sheds will probably only be kept for overhaul purposes. If, however, a shed could be designed which is sufficiently light to permit of one per aeroplane being carried without prohibitive transport, the efficiency of the machines and their detachments would undoubtedly be much increased. A practicable method is to use the present sheds, but only to move the field base every three or four days. The disadvantages of this procedure are that the field base will probably not always be with Army Headquarters as it should be. There may be a tendency to loss of touch and to the waste of valuable time morning and evening.

The weight of airship sheds, of course, renders them quite prohibitive. Mooring masts and a prayer for good weather have to be put up!

TRANSPORT

Even if sheds are not carried, transport (with its own complement of spares) is essential also to permit of the field bases being moved to points convenient to the landing places of the aeroplanes, as otherwise valuable time will be wasted in the aeroplanes having to go some distance to the rear for overhaul, supplies of petrol and oil, food for the men, &c.

The technical personnel at the field bases requires a high degree of training (in addition to a large proportion of physical and mental steel), and must be in sufficient numbers to provide reliefs. The bases have frequently to be moved by day and the overhaul of aircraft to be carried out by night.

TYPES OF AIRCRAFT CONSIDERED BY THE AUTHOR TO BE REQUIRED IMMEDIATELY

To sum up the conclusions to which the many considerations I have tried to place before you lead me, I think we want:

First. For strategical work, a single-seater scout aeroplane with a speed of 90 miles an hour, a landing speed of half that figure, a very high rate of climbing, and a petrol capacity of, say, 300 miles. Good view is also essential.

Second. A two-seater with speeds of 80 and 40, and 200 miles tankage; carry a light weapon, be a good climber, and be capable of landing on bad ground. Good view.

Third. A two-seater fighting machine with speeds of 70 and 40, to carry a gun, ammunition, light armour, and petrol for 200 miles. Again of good climbing powers.

Fourth. A semi-rigid airship of about 250,000 cubic feet capacity, a speed of 55 miles an hour, keep the air for at least six hours. To carry a crew of eight, a light gun and ammunition, wireless, searchlights, &c.

We in England are rather apt not to recognize the capabilities of airships. They have not yet attained to really great speed, but their range of action is very large, observation is easy from them, they can hover silently, carry light armament, drop bombs or explosives, they can fly in quite strong winds, and rise at a rapid rate. The answer to such vessels other than meeting like with like is at present difficult to see. They are a very formidable weapon. It is an unwise satisfaction to shirk such realities.

DREAMS OF THE FUTURE

The types I have mentioned are those wanted now. I dream, in the not far distant future, of scouting aeroplanes of 120 miles an hour; fighters to carry pilot and assistant, gunner and observer at a speed of 100 miles; weight-carriers to transport troops, rations and equipment 10 or 12 at a time a distance of 30 miles and make five trips a day. Given four hundred of these and some 20,000 to 24,000 men are landed a double march ahead, with no weariness of the flesh, but rather physically and mentally braced up by a pleasant journey. The navies of the world – I am sorry for them – but, in my dream, they have somewhat to relinquish their present proud position, their rôle is that of floating defence; the air service – built up from joint fortresses, arsenals, dockyards, Government offices, factories of war material, are protected from the air by an elaborate system of … I don't think I will tell you that yet. How extraordinarily interesting it all is!

But for England to maintain her political weight in the world these possibilities, though at present still dreams, must be looked into, worked at, grappled with, until the Army and Navy and public understand at least their dangers. We are so slow at taking up a new thing. Is it that our national imagination is sluggish – that we are wanting in mental alertness? The phrase "The slowness of great strength" is out of date. "Strong in courage and knowledge, quick and certain in action", must take its place.

The Aeronautical Society is doing all it can to help. But many more channels for the rapid dissemination of knowledge on aerial subjects are required. If I may say so, I think that if the Royal Flying Corps had done nothing else (and it is doing a good deal), the fact of its having brought the two services into joint action would be quite sufficient justification for its existence. The public must now be brought into partnership. In France the aerial services have the solid backing of consistent popular opinion. We cannot do without it in this country. With it we can and will take the foremost place in the air as now on the sea. All rests eventually

on the public. It must not be allowed to shirk its responsibility. Information as regards developments in aircraft designs and employment by land or sea, progress in the formation and training of the Royal Flying Corps, lessons learnt in aerial reconnaissance, meteorology, wireless, and the vast number of other kindred subjects must be put in their possession. As a help in this direction we hope shortly to start a Royal Flying Corps journal. Hearty hospitality will be extended in this to articles on subjects in connection with service aviation.

I am not pessimistic as to the question of interest in aeronautics coming. It will come, but it must be made by us all to come quickly.

Transcribed by RAF CAPS from The Army Review, July 1913.

An electronic version of this document, along with a follow-up paper on the same subject, published in 1914 by The Army Review, is available at:

http://www.airpowerstudies.co.uk/apps/documents/

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47. *Extracts from Admiralty Circular Letter CW.13964/14 of 1 July 1914 'Royal Naval Air Service – Organisation' (Adm. 1/8378)*

[It will be noted that although this letter does once refer to the Royal Naval Air Service 'forming the Naval Wing of the Royal Flying Corps' there is a strong suggestion of separatism, particularly in the statement that 'it will form part of the Military Branch of the Royal Navy'. Presumably Mr. Churchill, who had very recently expressed strong views against separation (See No. 46), failed to notice the implications; or possibly the letter was not submitted to him for approval. Unfortunately the paper carrying the signature of the approving officer has not survived. The actual act of separation from the Royal Flying Corps did not take place until just over a year later – shortly after Churchill had left the Admiralty (See No. 72).]

The following regulations are to be substituted for those provisionally issued in the Admiralty Circular Latter No.22 of 15th July 1912.[i]

The Royal Naval Air Service will form part of the Military Branch of the Royal Navy, and the various ranks will be added to the list of officers of the Military Branch in Art. 169 of the King's Regulations. They will not, however, be entitled to assume the charge and command of a ship unless they belong to one of the existing ranks in the Military Branch and are expressly authorised to do so by superior authority.

A.- GENERAL ADMINISTRATION

The Royal Navy Air Service, forming the Naval Wing of the Royal Flying Corps, will comprise all naval aircraft and personnel, either for active or reserve service, and will be administered by the Admiralty.

It will consist of:-

The Air Department, Admiralty.
The Central Air Office.
The Royal Naval Flying School.
The Royal Naval Air Stations.
All seaplanes, aeroplanes, airships, seaplane ships, balloons, kites, and any other type of aircraft that may from time to time be employed for naval purposes.

When Naval Air Stations are established at places on the coast where Coast Guard Stations exist, the Coast Guard duties will be taken over and performed by the officers and men of the Royal Naval Air Service. Until the Royal Naval Air Service is more fully developed such ratings as are necessary will be lent from the Coastguard for these duties.

All ranks and ratings of the Royal Naval Air Service will be borne on the books of one of H.M. Ships, and will serve under the provisions of the Naval Discipline Act accordingly.

[i] No.16.

The Military Wing and its Reserve, and the Central Flying School will be administered by the War Office. A portion of the staff of the Central Flying School will be drawn from the Naval Wing.

B. – OFFICERS

(1) Application for Enrolment

Officers serving afloat who desire to join the Royal Naval Air Service should forward their applications through the usual Service channels. Officers of the Royal Marines serving at Headquarters will forward their applications through their Commandant.

Officers of the Royal Naval Reserve or the Royal Naval Volunteer Reserve, when not serving afloat, should forward their applications through the Admiral Commanding Coast Guard and Reserves.

Officers on the Retired and Emergency Lists, or on Half-Pay, should communicate direct with the Secretary of the Admiralty. The application must contain the following details: -

[Not reproduced]

(2) *Application for Enrolment by Civilians*

Civilians will be eligible for direct entry into the Naval Wing as officers under the terms of the special regulations on the subject. All such officers will be appointed as Flight Sub-Lieutenants, Royal Navy, on entry, but they will be on probation until they have qualified in all respects.

(3) Selection

Selections will be made by the Admiralty from time to time from the roster kept at the Air Department.

Officers of the Royal Navy on the active list will not be eligible for selection until they have completed one year's service as commissioned officers, or in the case of warrant officers until they have received confirmation of their rank.

Sub Lieutenants will be required to possess their watch-keeping and engine room certificates. Officers of the Royal Marines will not be selected until they have completed their courses.

(4) Conditions of Service

An officer appointed to the Royal Naval Air Service, who has obtained or subsequently obtains the airship or aeroplane pilot's certificate of the Royal Aero Club at his own expense, will be refunded the sum of £75., or such lesser fee as he has been charged for his tuition. Such payment will not be made until after a reasonable period of probation and will depend upon a satisfactory report being received from the Commanding Officer under whom the

officer is training. Should he resign or retire within four years of the date on which he was selected, he will be liable to refund this sum, less one quarter such sum for every completed year of service.

* * *

All applicants who are selected will, as a rule, be required to graduate at one of the Royal Flying Corps Instructional Establishments before being appointed to the Royal Naval Air Service, and if there is no vacancy for them for active service after completing their course they may be placed in the reserve until a vacancy occurs.

All Officers in the Royal Naval Air Service will be liable to be detailed for any branch of the Service, *i.e.*, Seaplane, Aeroplane, Airship, Seaplane Ship or Kite work, or for constructional or administrative work in connection with aircraft in general, and they may be required to serve either afloat or on shore at home or abroad. In time of war they are liable to serve for either naval or military purposes.

Every encouragement will be given to officers to make themselves acquainted with all branches of Air work. As soon as circumstances permit, it will be a general principle that airship officers are taken from those who have served in other branches of the Royal Naval Air Service.

The period of service in the Royal Naval Air Service for officers drawn from the active list, Royal Navy, must be limited by their flying efficiency, and will not, as a general rule according to present experience, exceed a duration of four years, dating from the time of selection. A certain number will, however, be selected to fill the higher posts in the Air Service. Those officers who are not selected for these higher posts will return to their ordinary duties in the Fleet after the above period, but may be reappointed subsequently for further duty in the Air Service at the discretion of the Admiralty.

Other Officers will pass into the Reserve at the expiration of four years, unless their term of service is extended or renewed. On the completion of one year's service they may, if considered suitable, be permitted to extend their original engagement to a total of six years; after 4 years' service to 8 years; after 6 years' service to 10 years; or alternatively they may be permitted to renew their engagement on its completion in the ordinary course.

Any officer who at any time is found to be unfitted for the duties of the Royal Naval Air Service will be liable to discharge therefrom, and those officers who belong to other branches of the Royal Naval Forces may be required to revert to their ordinary duties. This will not necessarily indicate that any blame is attributable to the officer.

Service of Naval Officers in the Royal Naval Air Service (not including the Reserve) will count in all respects as service in a ship of war at sea.

(5) *Rank in the Royal Naval Air Service*

Officers of the Royal Naval Air Service will be graded in the following ranks, and will take rank and command accordingly:-

Wing Captain with relative rank of Captain, R.N.

Wing Commander with the relative rank of Commander, R.N.

Squadron Commander (when in command) with the relative rank of Lieutenant-Commander

Squadron Commander (when not in command) with relative ranks of Lieutenant over 4 years' seniority (but senior to all Flight Commanders). On attaining 8 years' seniority in the relative rank of Lieutenant these Officers will rank with Lieutenant Commanders, R.N.

Flight Commander with relative rank of Lieutenant, R.N., over 4 years' seniority.

Flight Commander with relative rank of Sub-Lieutenant, R.N.

Warrant Officer, 1st Grade with relative rank of Commissioned Warrant Officer, R.N.

Warrant Officer, 2nd Grade with relative rank of Warrant Officer, R.N.

Specialist Officers. Officers employed on specialist duties, particularly gunnery, torpedo, or engineering, will be graded in the above ranks and will be instructed in the special air work which concerns them, and will be denoted by the letter (G), (T), (N), or (E) &c. As far as practicable officers in the Royal Naval Air Service will be selected to go through the specialist courses with a view to filling these posts.

Specialist Officers will not draw their specialist allowances.

In the initial stages it is necessary to form an arbitrary seniority list. Officers are to rank in accordance with this list, which has been, as far as possible, based on air experience. Some exceptions have been made on account of the relative age and seniority of officers prior to their entry into the Naval Wing. Subsequent to the date of this letter all entries to the Royal Naval Air Service will be graded from date of transfer or appointment to the rank of Flight Lieutenant or Flight Sub-Lieutenant. All promotions will be by selection, but as a rule no Flight Lieutenant will be promoted to Flight Commander unless he has served for at least two years as a Flight Lieutenant, and no Flight Commander will be promoted to Squadron Commander unless he has served at least one year as a Flight Commander.

As regards discipline, officers on the Official List of the Royal Naval Air Service shall rank with each other and command in the order in which they stand on that List, and each officer, so

long as he remains on that List, shall be subordinate to every officer who stands higher than his own, whatever may be their respective positions in the other branches of the Royal Navy.

Further, no officer (whether he was originally an officer of the Royal Naval Forces or not) while he is on the Air Service List shall ever assume any charge or command whatsoever except that which may appertain to the Air Service, or relate to the officers or men thereof, unless he receives express authority to assume such charge or command either from the Admiralty or, in case of emergency, from the Senior Naval Officer present. In any such case he shall rank and command in the order in which his name stands in the Official List of officers of his original Branch in the Royal Navy.

The names of officers of the Royal Navy who are selected for employment in the Royal Navy Air Service will be shown in the Official Navy List in italics in the Seniority List of the Branch to which they belong, and similarly when they revert to their original Branch their names will be shown in italics in the list of officers of the Royal Naval Air Service in the Navy List.

Officers entered direct from civil life will hold a position of entire equality in the Royal Naval Air Service in every respect with officers of the Royal Navy or Royal Marines who are of the same grade and seniority. In order to identify them closely with the Royal Navy and for their general instruction they will be embarked in a ship of war for a definite period each year. Their rates of pay will not be affected during this period, except that they will not receive flying pay.

Medical officers who may be employed in the Naval Wing will not be graded, but will be subject to the special instructions which have been issued.

* * *

Naval Officers who already belong to the Military Branch will wear the uniform of their rank with the addition of an eagle on the sleeves above the distinctive lace.

Other Naval Officers who join the Royal Naval Air Service will wear their naval uniform with the distinctive lace of their relative rank in the Military Branch, and an eagle on the sleeves above the cuffs.

Others who join the Royal Naval Air Service will wear the uniform of their corresponding rank in the Military Branch of the Royal Navy with the exception that the anchor on buttons, cap badge, epaulettes, and sword belt will be replaced by an eagle.

During preliminary courses of instruction whilst under training Officers will not be required to alter their uniform in any respect.

Officers who may hold a higher rank in their original branch than that which they have been granted in the Naval Air Service will continue to wear the uniform of such higher rank

or relative rank (modified as above), but this will not entitle them to any higher position in regard to the duties of the Royal Naval Air Service than that which they are entitled to by their position in the Air Service List of Seniority.

The description of the flying dress and of the special working dress will be issued subsequently.

The uniform for all men graded in the Royal Naval Air Service will be the naval uniform of their rating with the following alterations in regard to badges: -

[Alterations not reproduced]

APPENDIX I

AIR OFFICERS

Whilst employed upon the duties of the Royal Naval Air Service, Officers whose names are upon this list rank and take command in the order that their names stand on the list.

Whilst Officers from the Royal Navy are so employed, their names are specially in *italics* on the list of their rank in the Royal Navy in order to indicate that their naval rank is in abeyance.

The first Royal Naval Air Service Seniority List had been framed on an arbitrary basis. All Officers who may subsequently enter the Royal Naval Air Service will, on being first graded, be placed at the bottom of the list of Flight Lieutenant, with the exception that if any Officers are entered for some particular duty a temporary grade of a higher nature may be given to them to give them the necessary authority and precedence.

Promotion from grade to grade will be by selection and not by seniority. The seniority in the Naval Air Service Grade, as regards Officers now on the list, will count as from the date of this Circular Letter. Time served previously in grades of the same name will not count as seniority.

[The Seniority List is not reproduced in full. Captain Sueter's name came first, followed by those of six Wing Commanders – O. Schwann, E.A.D. Masterman, F.R. Scarlett, E.M. Maitland, N.F. Usborne and C. R. Samson. Among the more junior officers appeared A.M. Longmore, R.H. Clark-Hall, C.L. Courtney, F.W. Bowhill and G.R. Bromet, all of whom achieved high rank later in the Royal Air Force. Appendix II, not reproduced, gave 'Regulations for the Special Entry of Officers into the Royal Naval Air Service for a limited number of years'.]

48. *Memorandum by Captain Murry F. Sueter, Director, Air Department, Admiralty, dated 9 July 1914 and Addressed to the Junior Officer of his Department.*

(Air 1/185)

It has come to my notice that some of the Air Officers are not in complete agreement with the new scheme for the Royal Naval Air Service.

This scheme has now been approved by the Board and has received the sanction of His Majesty The King. Should any of the Air Officers not feel prepared to do their utmost to make the scheme a success and so to build up the Naval Air Service, I will be prepared – much as I shall regret the necessity – to submit their names to the Board for their services to be discontinued in the Air Department.

To make the Naval Air Service a success it is imperative that small personal objections should be put aside, and that the work of every individual be conducted in strict accordance with the principles of policy which have been entrusted to my hands as Director.

Every Officer should weigh carefully whether he is prepared to remain in the Air Service or whether he prefers to go back to the sea service, but if he elects to remain it will be taken as an expression of this willingness to make every endeavour to build up the Air Service and hasten its development on the lines of policy which have now been definitely laid down, and not in accordance with his personal bias towards a policy which has been definitely rejected.

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