

BRISTOL FIGHTER

in action



DON GREER



Aircraft Number 137
squadron/signal publications

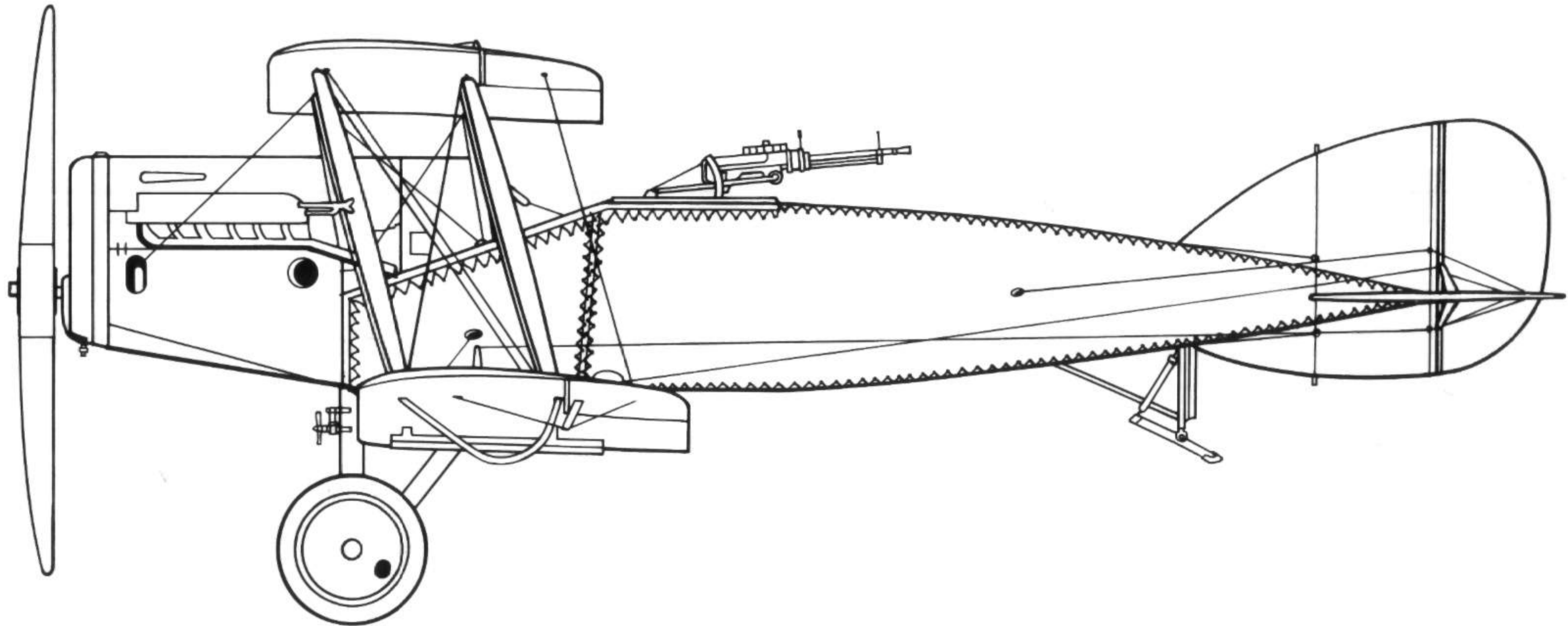
Bristol Fighter

By Peter Cooksley

in Action

Color By Don Greer & Tom Tullis

Illustrated by Joe Sewell



Aircraft Number 137
squadron/signal publications



The gunner/observer of a Royal Flying Corps Bristol F.2B engages a German Pfalz DIII fighter over the Western Front during 1918. The Bristol Fighter was perhaps the best two-seat fighter of the First World War.

COPYRIGHT 1993 SQUADRON/SIGNAL PUBLICATIONS, INC.

1115 CROWLEY DRIVE CARROLLTON, TEXAS 75011-5010

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form by means electrical, mechanical or otherwise, without written permission of the publisher.

ISBN 0-89747-301-9

If you have any photographs of aircraft, armor, soldiers or ships of any nation, particularly wartime snapshots, why not share them with us and help make Squadron/Signal's books all the more interesting and complete in the future. Any photograph sent to us will be copied and the original returned. The donor will be fully credited for any photos used. Please send them to:

Squadron/Signal Publications, Inc.
1115 Crowley Drive.
Carrollton, TX 75011-5010

Acknowledgments

Those photographs in this work that were not drawn from the Author's personal collection were taken from the following sources to which a sincere thanks are given.

John Blake
V.J. Garwood
Leo Opdyke
J M Bruce/G S Leslie Collection

Chaz Bowyer
K.M. Malso
Bruce Robertson
A.G. Wilson

“Bristol”

This Bristol F.2B (C-4611) was the tenth of a batch of 300 F.2Bs built by the British & Colonial Aircraft Company (Bristols) with Rolls-Royce Falcon engines. C4729, an identical aircraft from the same production batch was sent to the British Aviation Mission, in Washington D.C. for the United States Air Service (USAS).



P. R. M. 651.

Introduction

In 1916 it became clear that a replacement for the BE2 series of reconnaissance aircraft was urgently needed. As a result, two designs were produced, the RE8 by the Royal Aircraft Factory and the R.2A by Bristols. The latter design was unusual in that it had the wooden box-type fuselage mounted in between the upper and lower wings (known as a mid-gap mounting) to minimize the restricted view over the upper wing which was a problem faced by the pilot in a more conventional layout. A second, revised variant which was powered by a 150 hp Hispano-Suiza engine with unequal-span wings was designated the R.2B. This, in turn, gave way to a variant with the new Rolls-Royce Falcon I engine.

This new aircraft was later redesignated as the F.2A, since the new design was now considered a fighter/reconnaissance type and an order for two prototypes (serials A3303-A3304) and fifty production variants (A3305 thru A3354) was placed by the War Office. The chief feature of this variant was a straight upper longeron coupled with two tall side-mounted "ear" radiators, and in this form the aircraft made its first flight on 9 September 1916. This was closely followed by the first flight of the second prototype, which was powered by a 150 hp Hispano-Suiza engine with a circular nose mounted radiator and was equipped with a tail skid built into the base of the rudder. Within a short time it was determined that the side mounted radiators obscured the pilot's forward view and A3303 was rebuilt with a nose mounted circular radiator and a deeper nose cowling. The armament at this time consisted of a single Vickers .303 machine gun synchronized to fire through the propeller. It was intended to

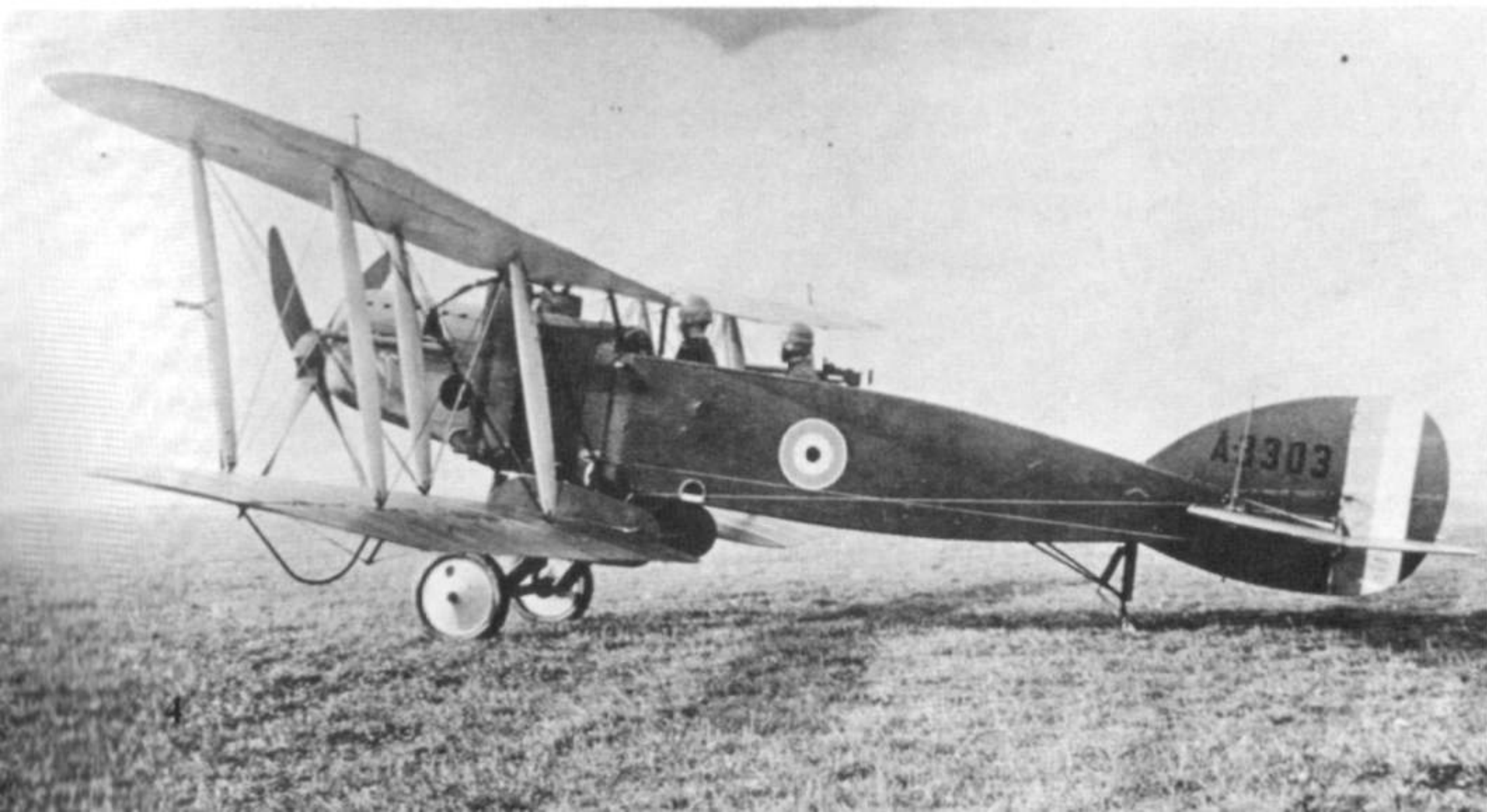
fit the observer's cockpit with a single Lewis gun, however, the mounting had yet to be decided. The first prototype underwent official tests between 16 and 18 October 1916, and was tested with both a four and two blade propeller.

The fifty production Falcon I powered F.2As were delivered to No 48 Squadron RFC during December of 1916. These aircraft were fitted with a Scraff ring in the rear cockpit for a .303 Lewis machine gun and had the armor plated pilot's seat used on the prototypes deleted. No 48 Squadron deployed to France in March of 1917 after a period of training at Rendcombe. The Squadron did not see action until the Battle of Arras in April of 1917, in order to achieve maximum surprise. These aircraft; however, used standard two seat fighter tactics which favored the gunner and, as a result, the squadron's first patrol of six aircraft which crossed the front lines on 5 April, was savagely mauled by the Albatross D IIIs flown by Manfred von Richthofen and four other pilots of *Jagdstaffel 11*, and only two of the Bristols survived.

Even with this poor showing, a further two hundred F.2As were ordered. These aircraft were modified with longer span tailplanes and a distinct slope to the upper longeron in the region of the cockpit. The first 150 aircraft were powered by the Falcon I and the next fifty (serials A7251- 7300) being powered by the 220 hp Falcon II engine which were fitted with radiator shutters to help control the temperature of the engine. These machines were designated as the Bristol F.2B and this became the main production variant of the aircraft that became known to the pilots of the Royal Flying Corps as the Bristol Fighter.

The prototype Bristol F.2A Fighter (A3303) on the landing ground at the Central Flying School at Upavon during September of 1916. The aircraft is in the original form with twin side mounted (flank) radiators and end plates on the lower wing roots.

The first F.2A prototype (A3303) at the experimental armament center at Orfordness after it was modified with a frontal radiator. The end plates have been removed from the lower wing roots on the lower center section remains uncovered.



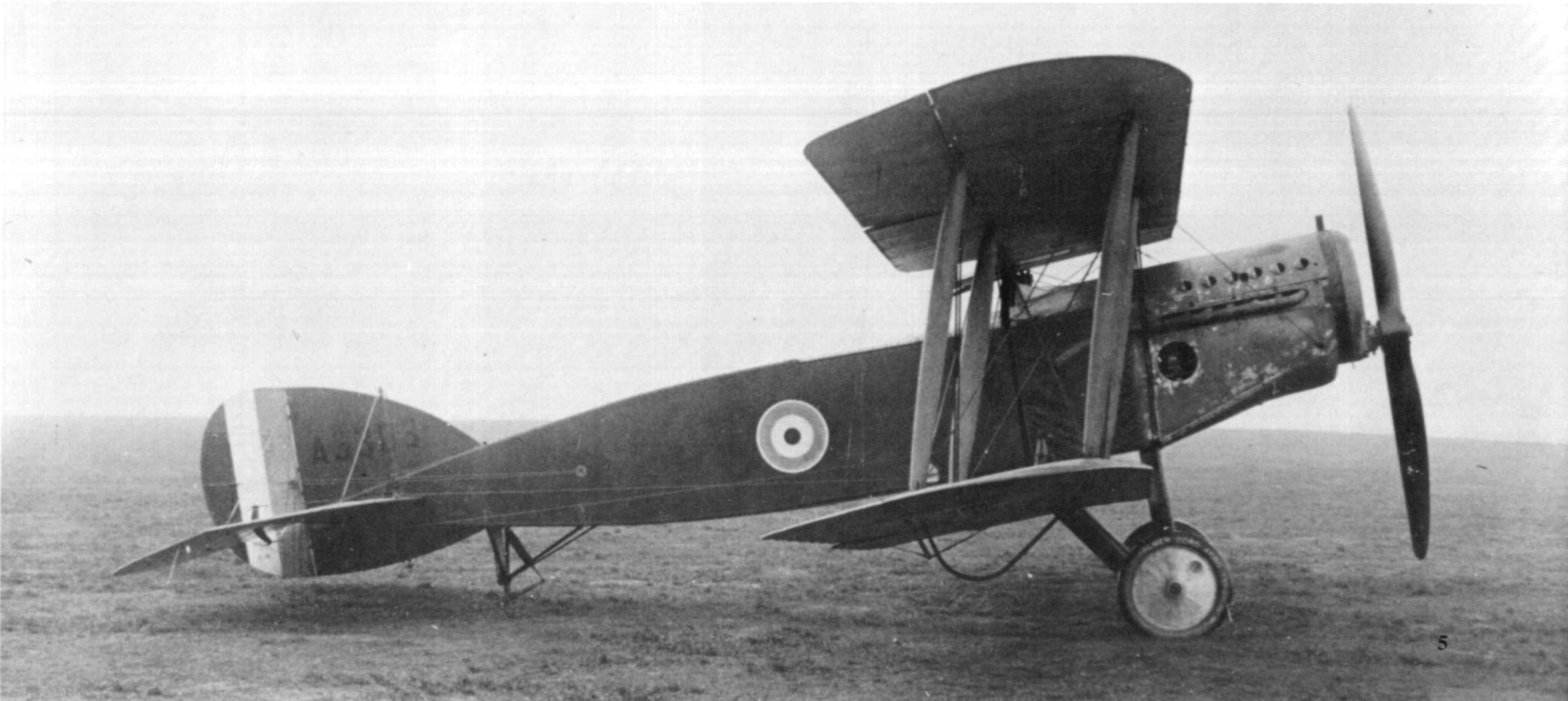


The second F.2A prototype at Filton in December of 1916 has a Scarff ring in the rear cockpit and a circular radiator. The gap in the lower wing center section is covered and the forward fuselage longerons are sloped bringing the aircraft up to F.2B standard.



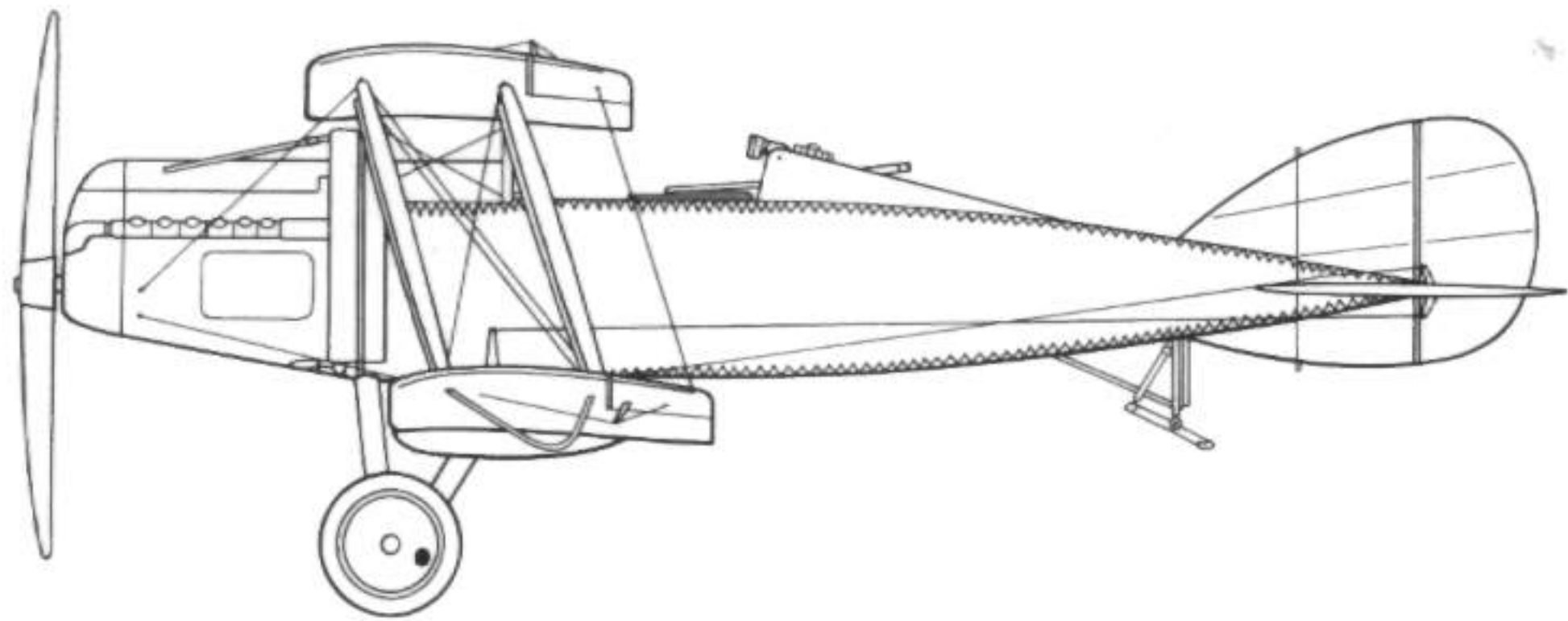
The F.2A prototype (A3303) is prepared for take off at Orfordness. A gun ring mount has been fitted for the observer and the serial number on the fin is outlined in white. The aircraft was used in an attempt to intercept German Gotha raiders on 7 July 1917.

A3303 on the grass at Upavon after it was modified with the round radiator and deeper cowling. At this time the aircraft had no gun mounting in the observer's cockpit. It has also been fitted with a two blade propeller in place of the earlier four blade propeller.

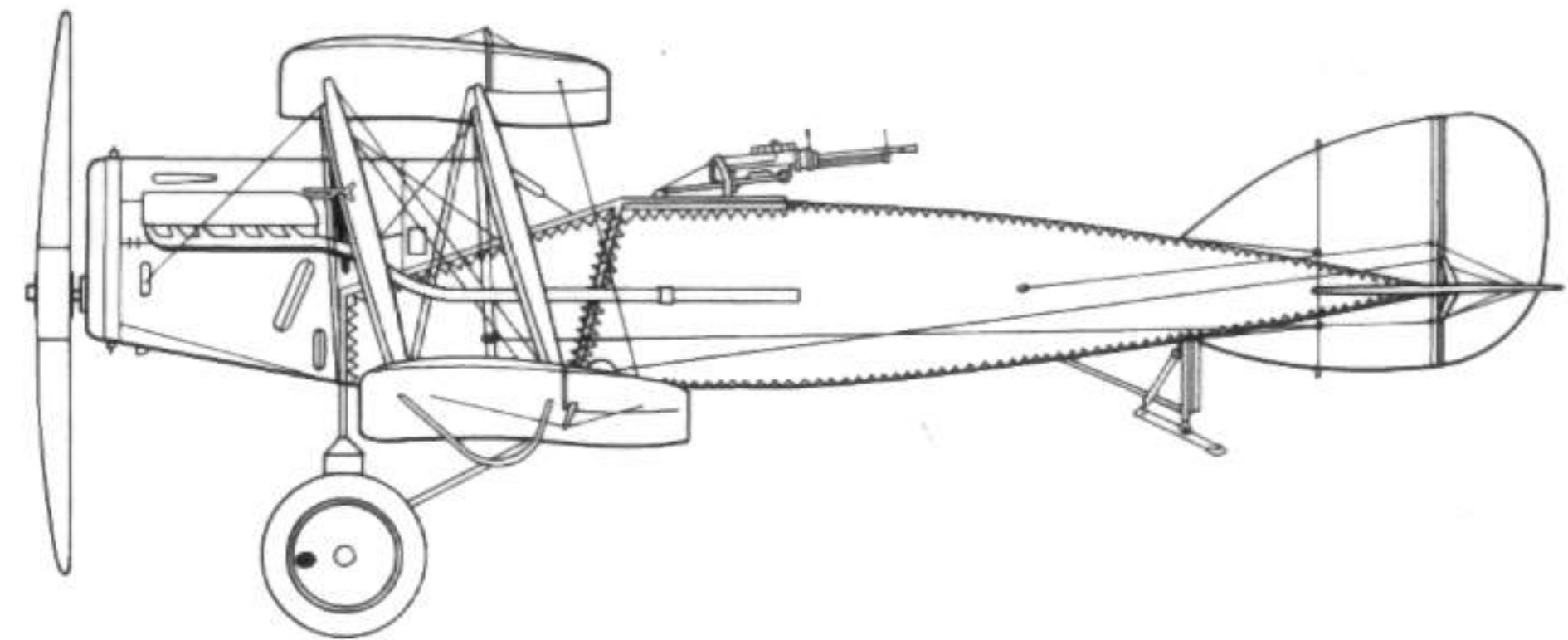


Development

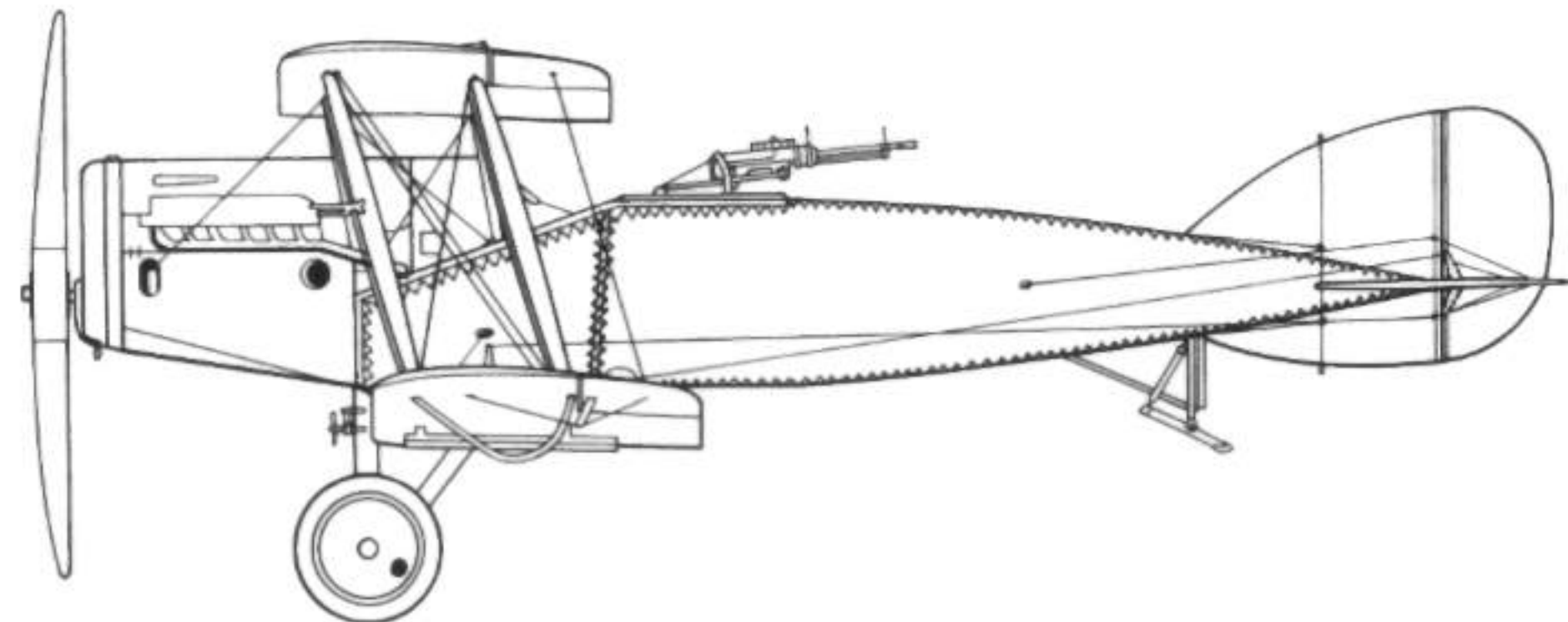
F.2A



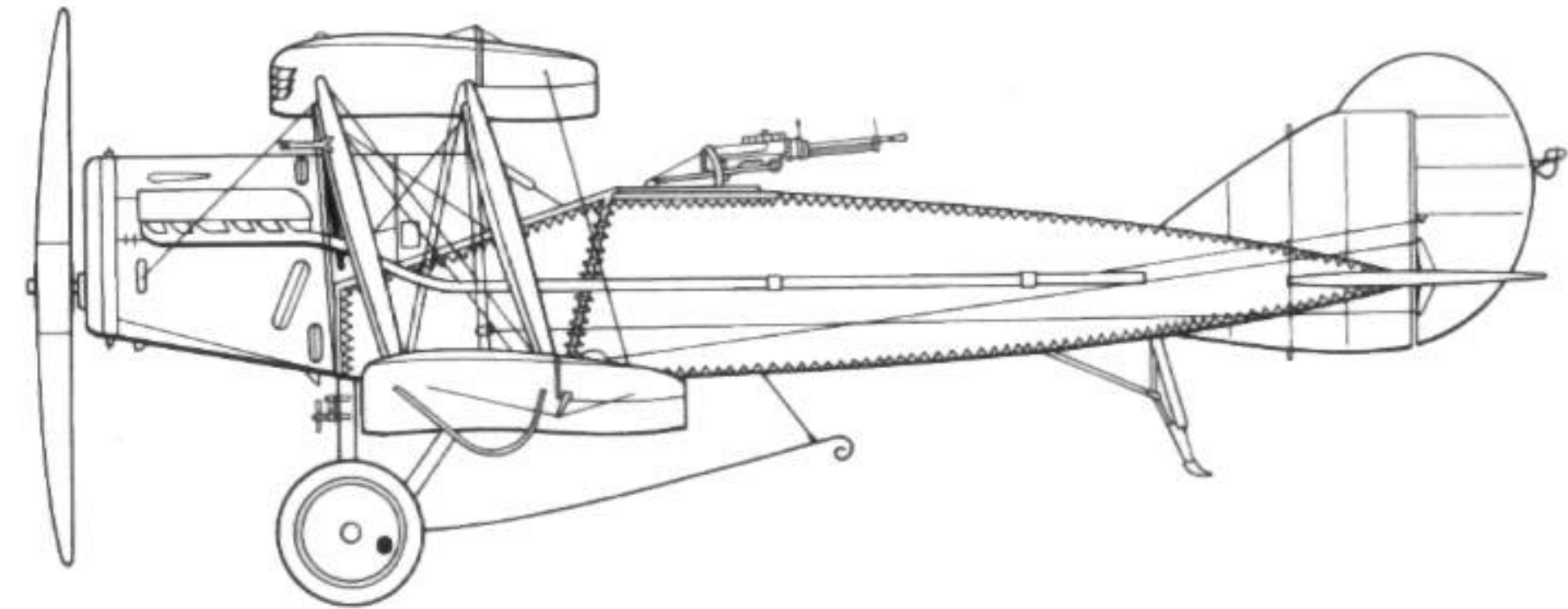
F.2B Mk II



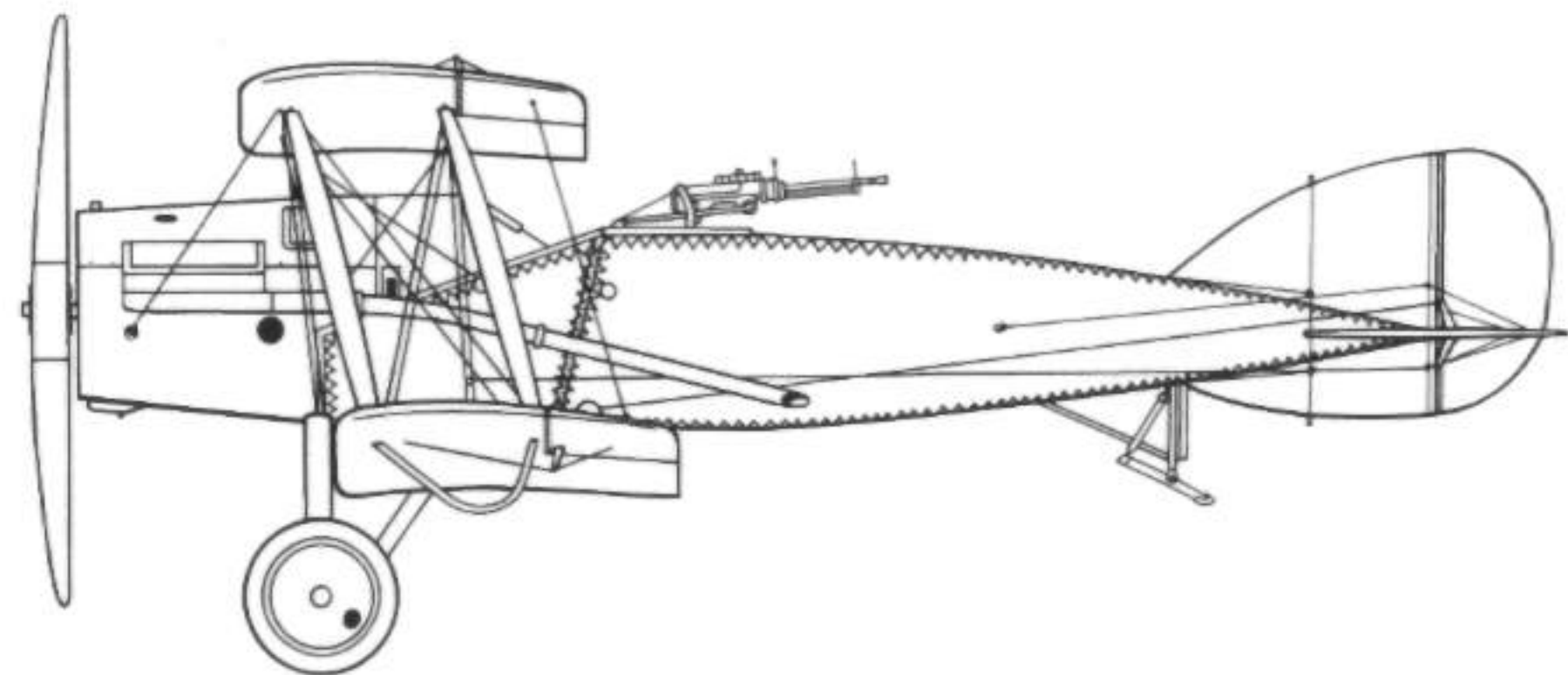
F.2B Mk I



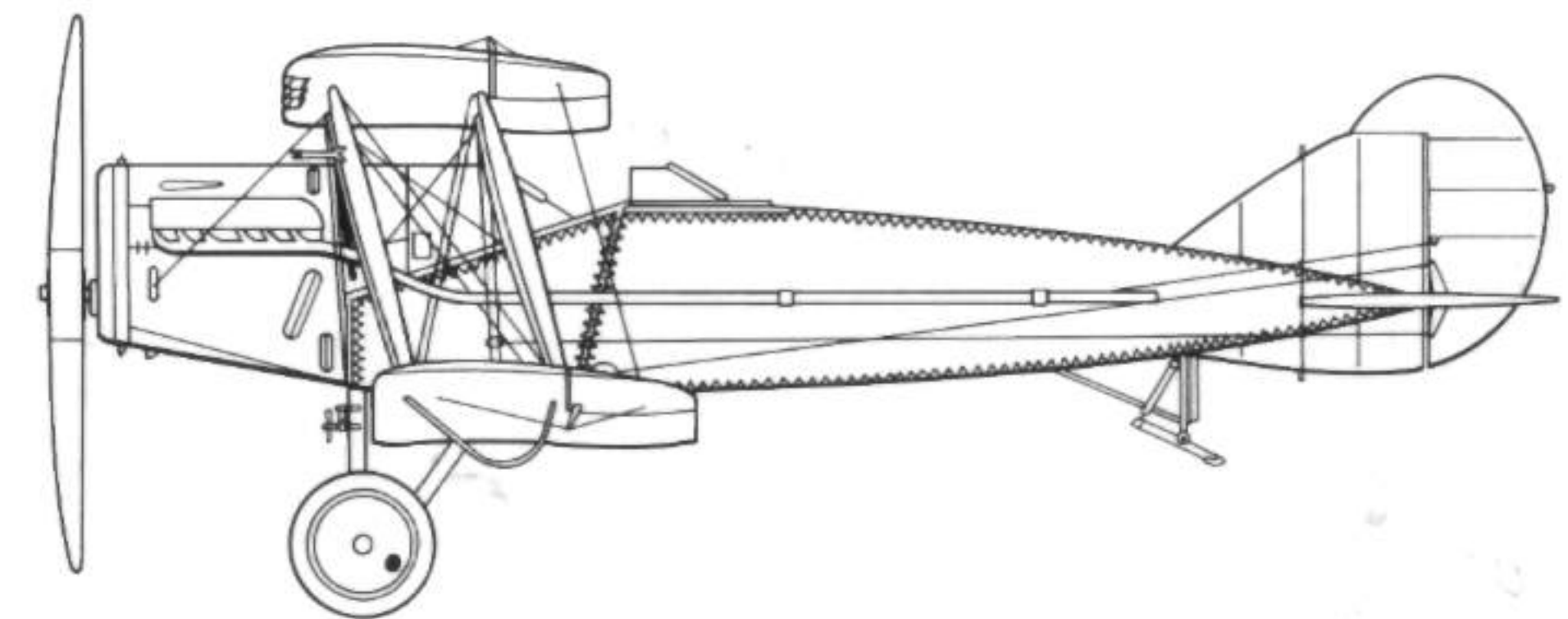
F.2B Mk IV



F.2B Sunbeam Arab



F.2B Mk IV Trainer



Bristol F.2B

As production of the F.2B increased in tempo during the mid-Summer of 1917, additional Royal Flying Corps squadrons were formed or re-equipped with the new Bristol fighter, including Nos 48, 62, 88, 11, 20 and 22. The production F.2B featured a reduced chord tailplane with longer span elevators. These were later changed to use the elevators of the F.2A with the tailplane of the F.2B and this arrangement was retained for all wartime F.2Bs.

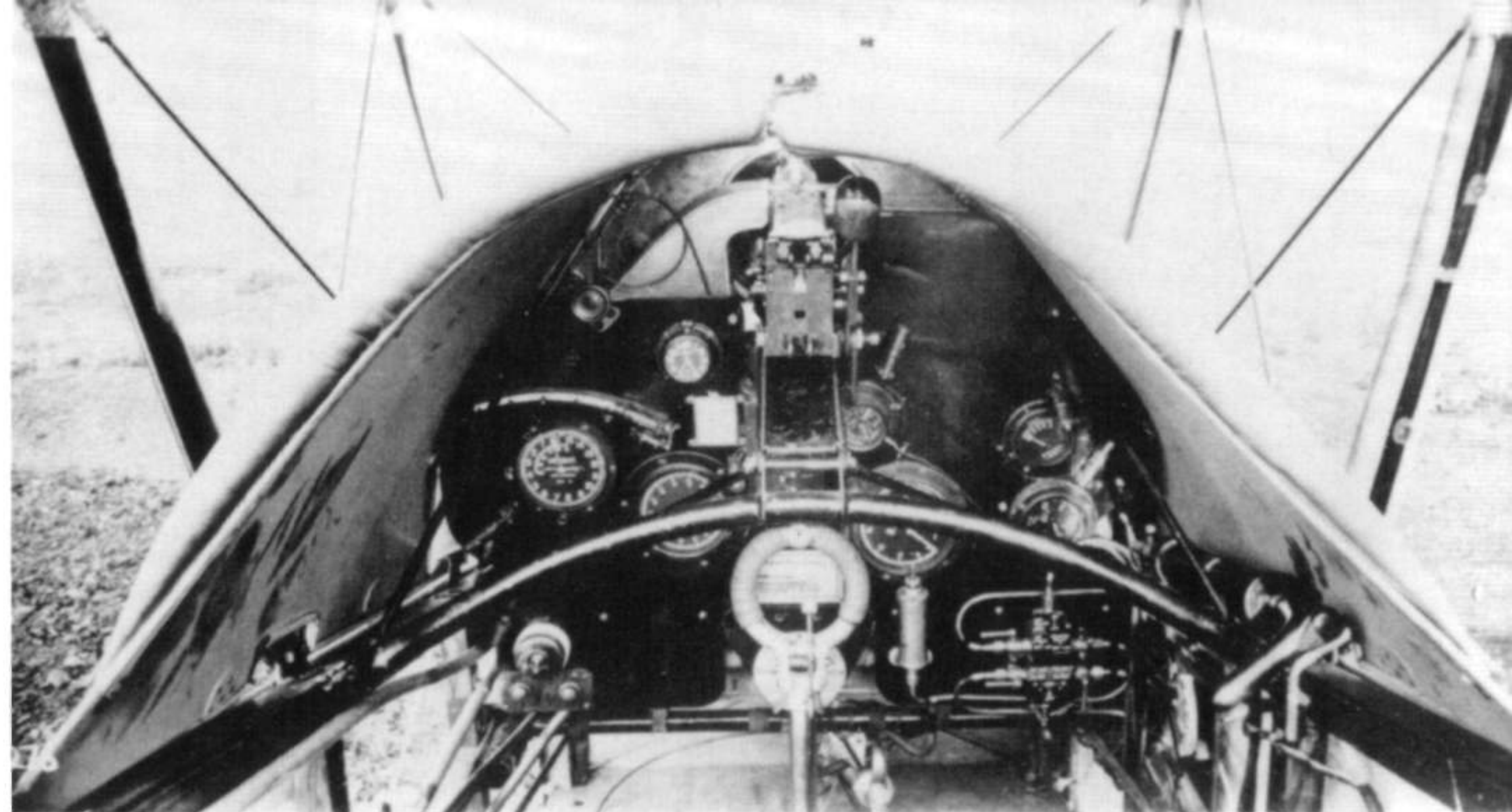
The F.2B benefited from the lessons learned from the first combat use of the F.2A variants. When introduced in combat they were flown in action using single seat fighter tactics, which immediately proved successful.

The aircraft was armed with a single synchronised .303 Vickers machine gun with 963 rounds of ammunition in the nose for the pilot and a .303 Lewis machine gun for the observer with seven 97 round ammunition drums. Some aircraft were upgunned in the field with an additional Lewis gun mounted over the wing to augment the forward firepower and twin Lewis guns in the rear cockpit mounted on a Scarff ring.

The increased production rate at Bristols for the F.2B resulted in a shortage of engines since Rolls-Royce was unable to keep pace with the demand for Falcon engines. As a result, alternative engines were examined and tested; including the Siddeley Puma, Hispano-Suiza 200 hp, Hispano-Suiza 300 hp and the 200 hp Sunbeam Arab. The Sunbeam Arab being finally chosen, although others continued to be tested since the Arab equipped variants proved to be somewhat under-powered. The installation of the Arab engine altered the nose contours and exhaust stack arrangement.

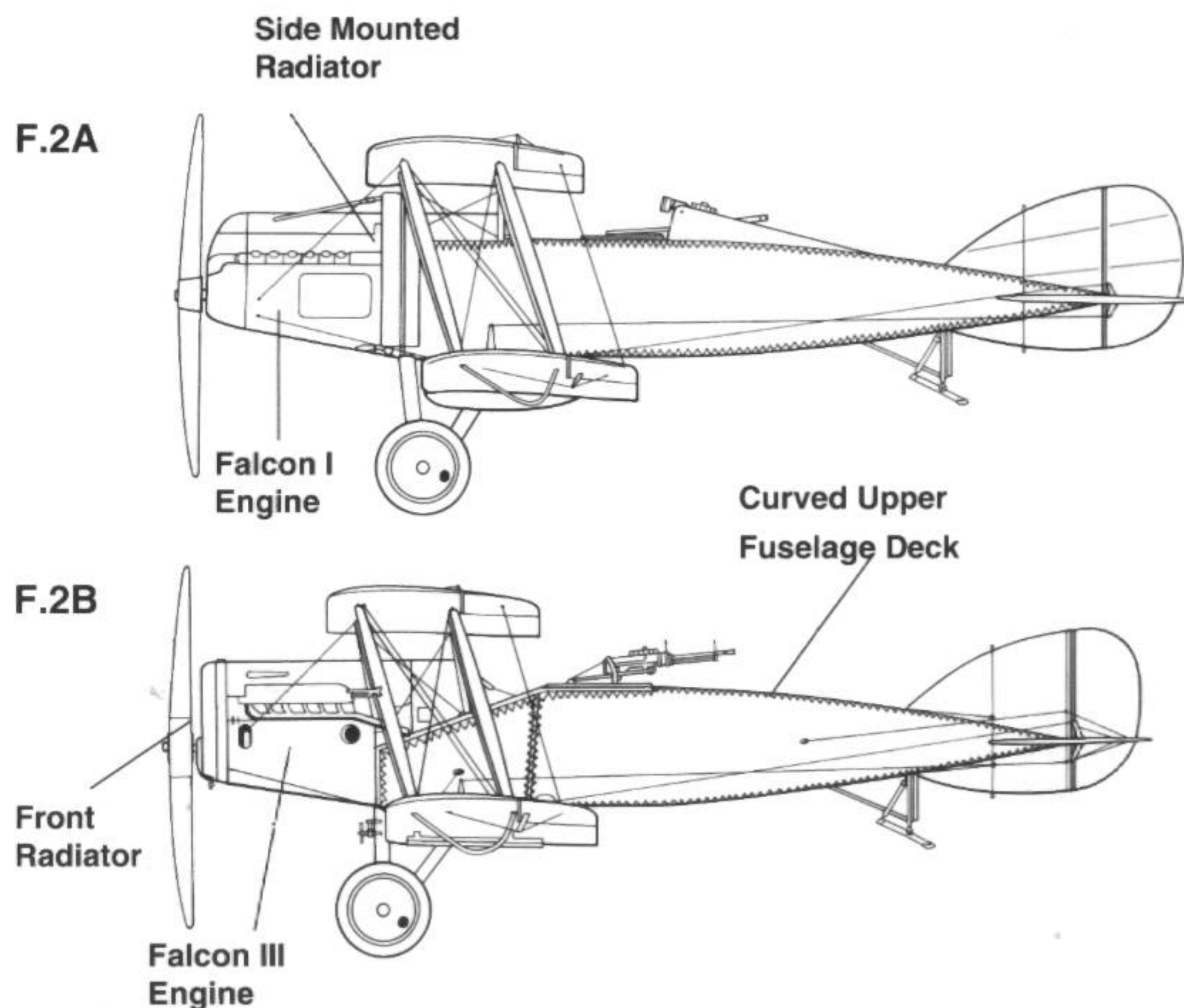
Before the end of the First World War, the Bristol fighter was to see service in various theaters of war, including with No 139 in Italy and No 67 (Australian) Squadron in the

This F.2B (A7106) was powered by a 190 hp Rolls Royce Falcon I engine and was part of the first production batch. This contract was for two hundred F.2Bs, 150 with Falcon I engines and fifty with the 220 hp Falcon II engine.



The instrument panel of a Bristol F.2B (there was more than one layout). The large instrument on the left is the altimeter, above this is the curved inclinometer and below it was the magneto switch. To the left and right of the Vickers gun breach are the air speed indicator and engine revolution counter respectively. To the left and above is the clock. The fuel pressure gauges are at the extreme right.

Fuselage Development

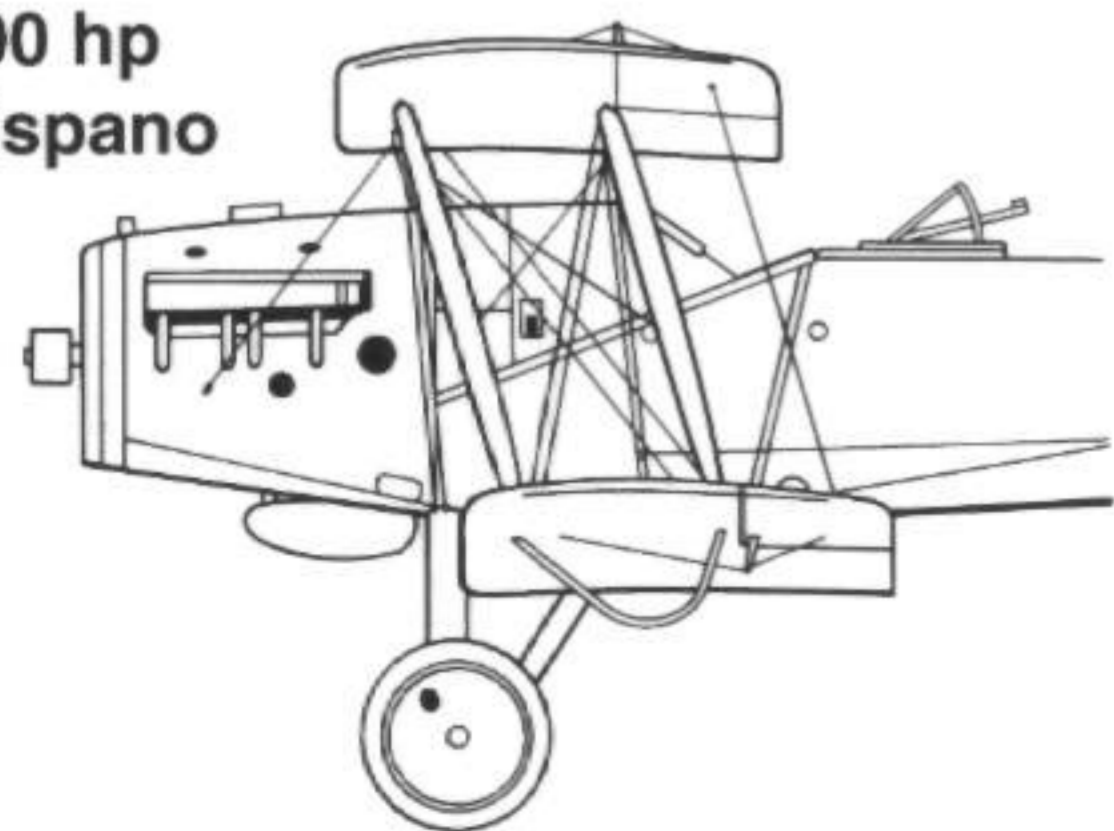




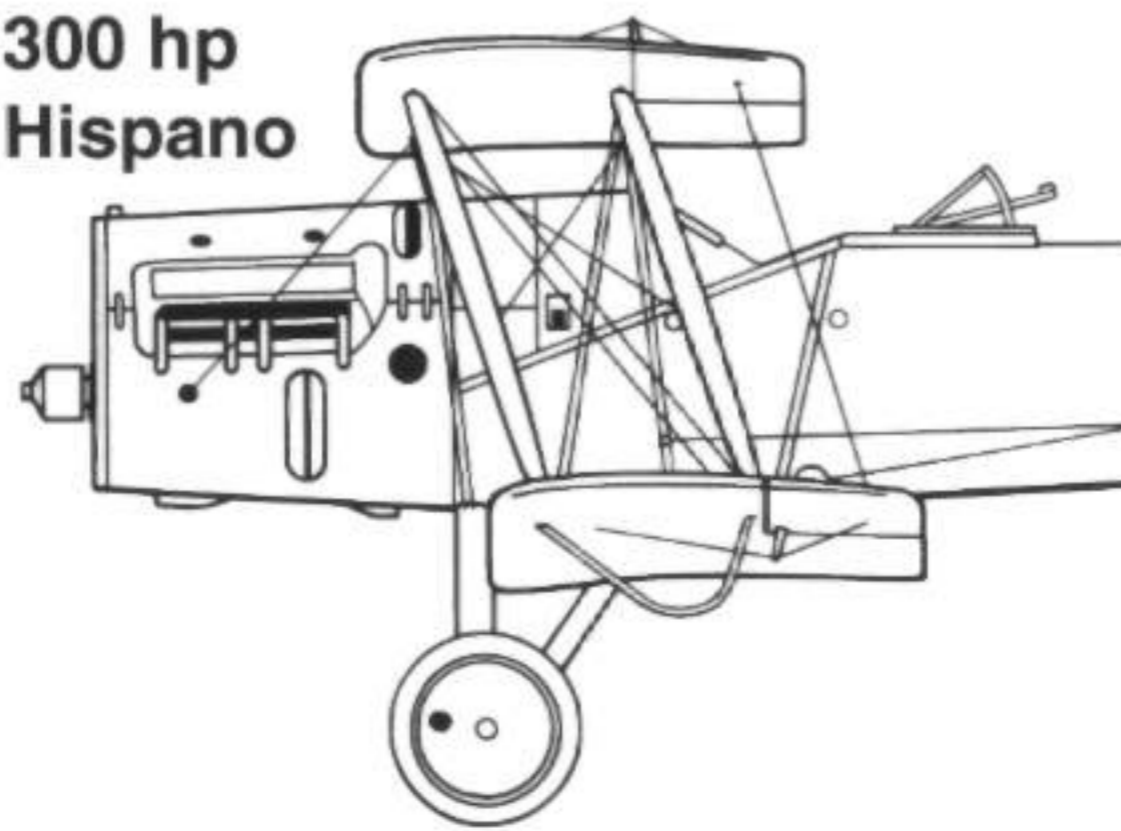
This early production F.2A on the landing ground at Ayr, Scotland during April of 1917 was from the first production batch. It was powered by a 190 hp Falcon I engine. The aircraft was lost in action later this same month.

Power Plant Options

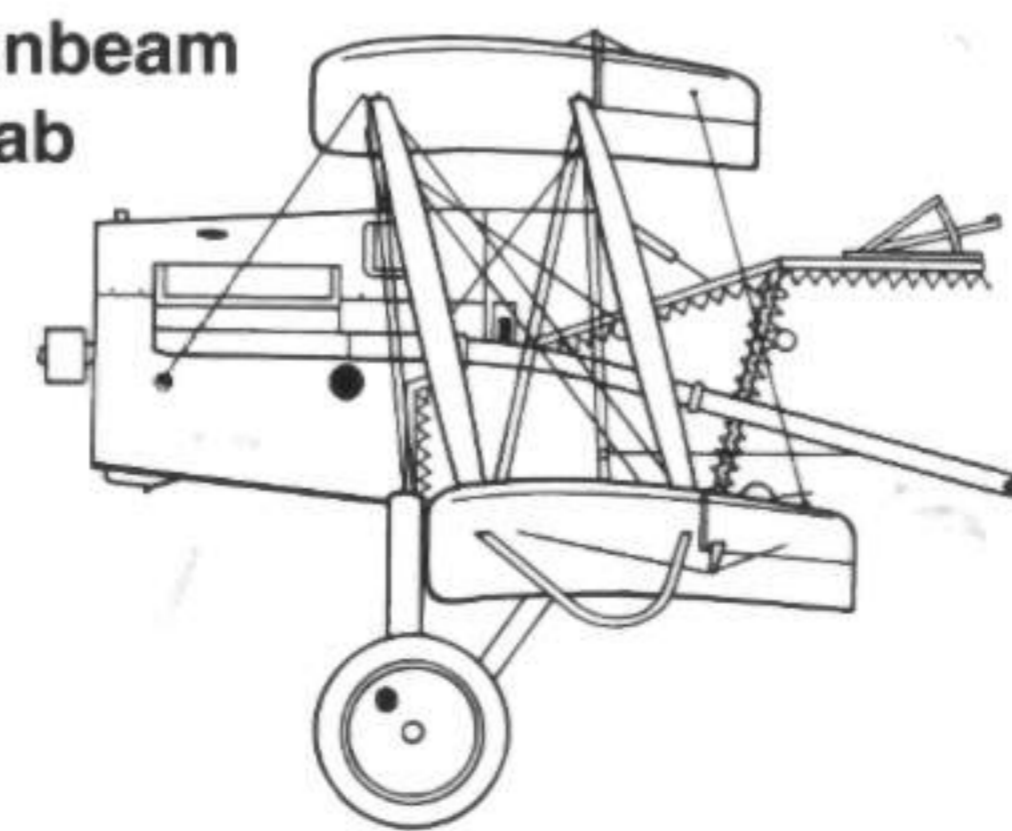
200 hp
Hispano



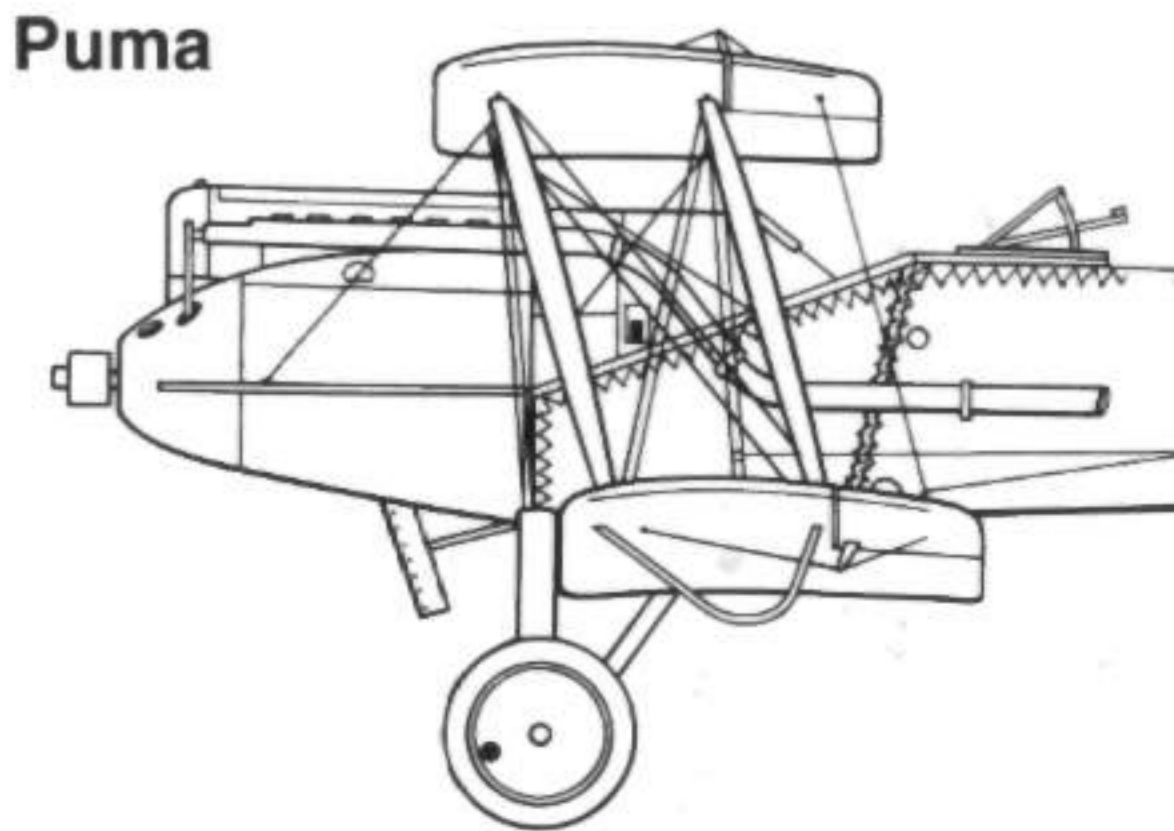
300 hp
Hispano



Sunbeam
Arab



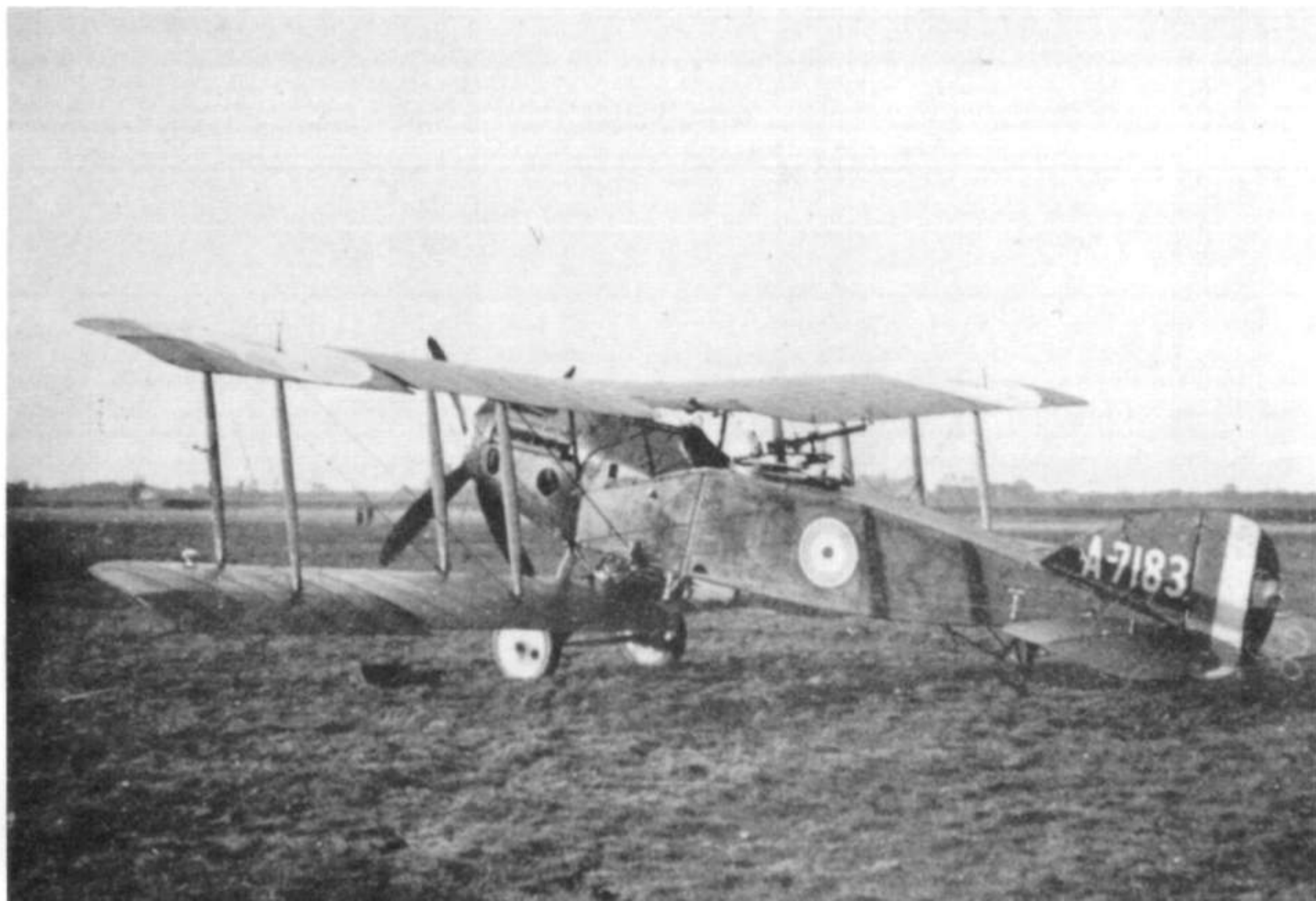
Puma



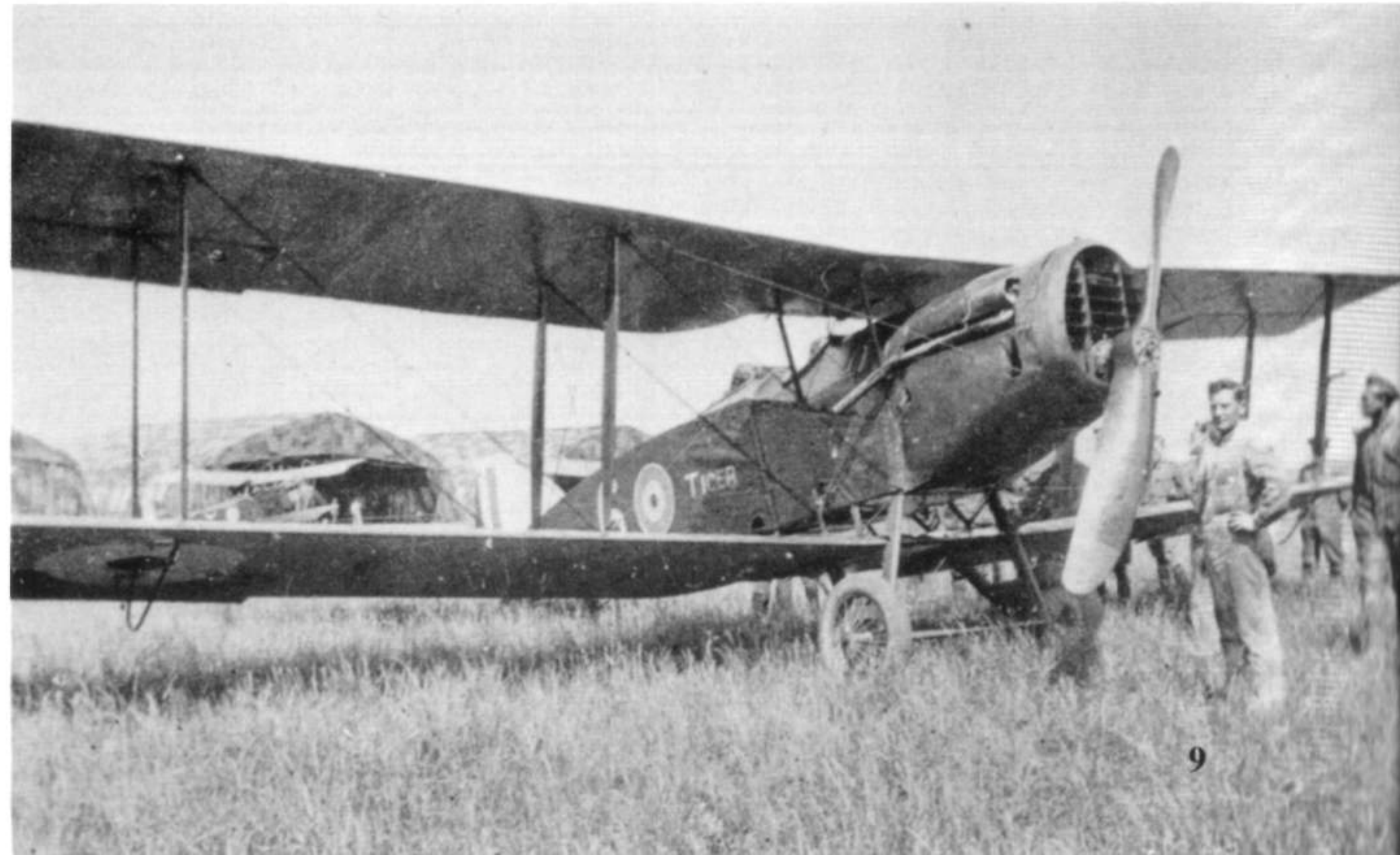


At one time this F.2B (A-7107) served with No 48 Squadron in France. It later flew with the Wireless Training School at Biggin Hill, doing pioneer experimental radio work .

Another F.2B from the first production batch, A7183 carried navigation lights above the lower wing outboard of the struts and on the rudder trailing edge. The aircraft was at Orfordness in February of 1918.



This F.2B (A7238) carries the name *TIGER* on the fuselage in White. The aircraft, has no wheel cover over the starboard wheel. It served at Rendcombe during July of 1918 and was later transferred to No 44 Training Squadron in September of that same year.





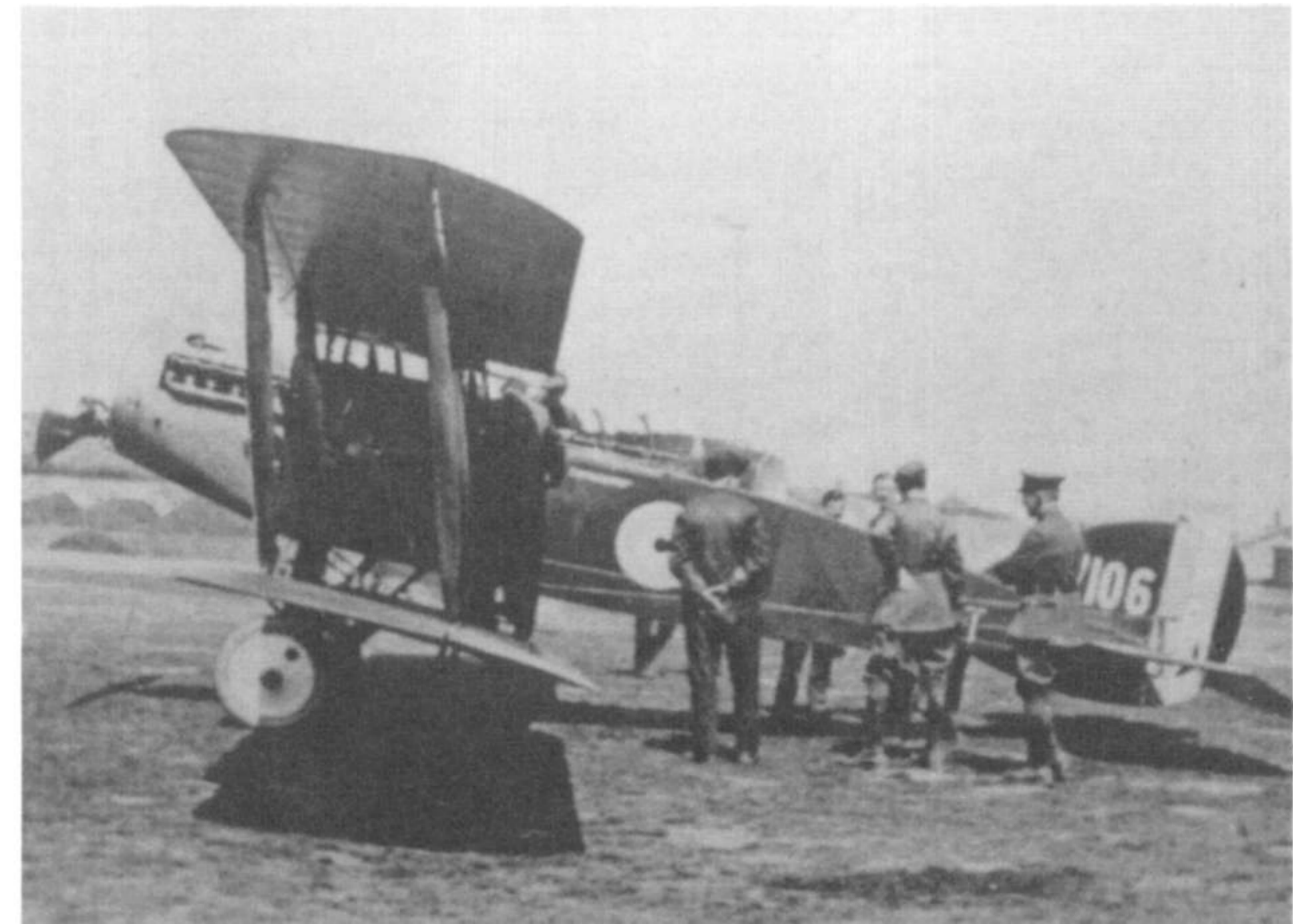
Middle East. Nos 33, 36, 39, 76 and 141 Squadrons used Bristol Fighters for home defense duties.

F.2Bs used by home defense units as nightfighters were modified in a number of ways. Some were fitted with navigation lights on the lower wing tips and rudders, Holt flare brackets beneath each lower wing tip and illuminated gun sights. Other nightfighters were fitted with additional forward firing machine guns. One aircraft of No 39 Home Defense Squadron had two Lewis guns fitted over the wing in addition to its normal single Vickers gun and twin Lewis guns for the observer.

By November of 1918 over 5,500 Bristol fighters, mainly F.2Bs, had been ordered and, of these, 3,101 had been taken into the RFC and RAF. Although the Armistice led to cancellation of some orders, the "Biff" as it was known to wartime airmen, continued to be manufactured until September of 1919, with a total of 4,747 being produced.

(Left) The 230 hp Sunbeam Arab engine differed from the Falcon in a number of ways including the use of front, side mounted radiator shutters and a revised exhaust system with a long down sloping exhaust stack..

This Falcon I powered F.2B (A7106) was built by the Bristols and is known to have been at No 8 Aircraft Acceptance Park, at Lympne during 1917. At one it had been assigned to No 48 Squadron, Royal Flying Corps (RFC) in France.



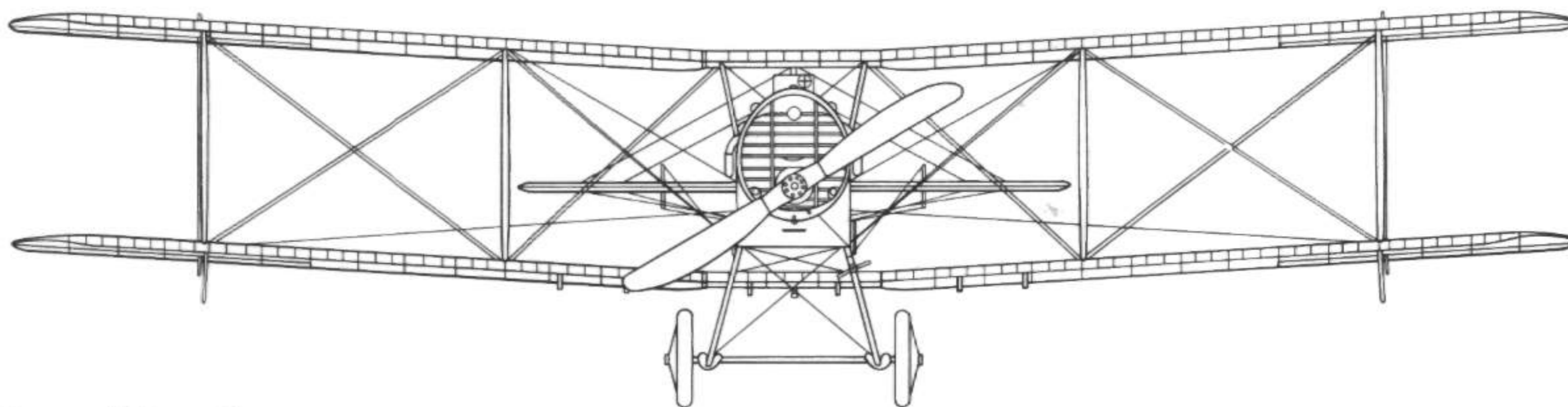
This F.2B (C9837) was the second of a batch manufactured by the Gloucestershire Aircraft Company. It came to this untimely end at Sarrewen, while assigned to No 12 Squadron and flown by LT Hughes. The aircraft had previously been assigned to another Squadron where it had been coded C-4.



Navigation lights are installed on the lower wing tips of this F.2B. The toned down national markings indicate that this F.2B was being used in the night fighter role and assigned to a home defense unit.

A group of officers inspect a Bristol F.2B of No 39 (Home Defense) Squadron at North Weald, Essex. The squadron was based here to intercept German Gotha bombers. The officer looking into the observer's cockpit is GEN T. C. R. Biggins, General Officer Commanding (GOC) of No 6 Brigade

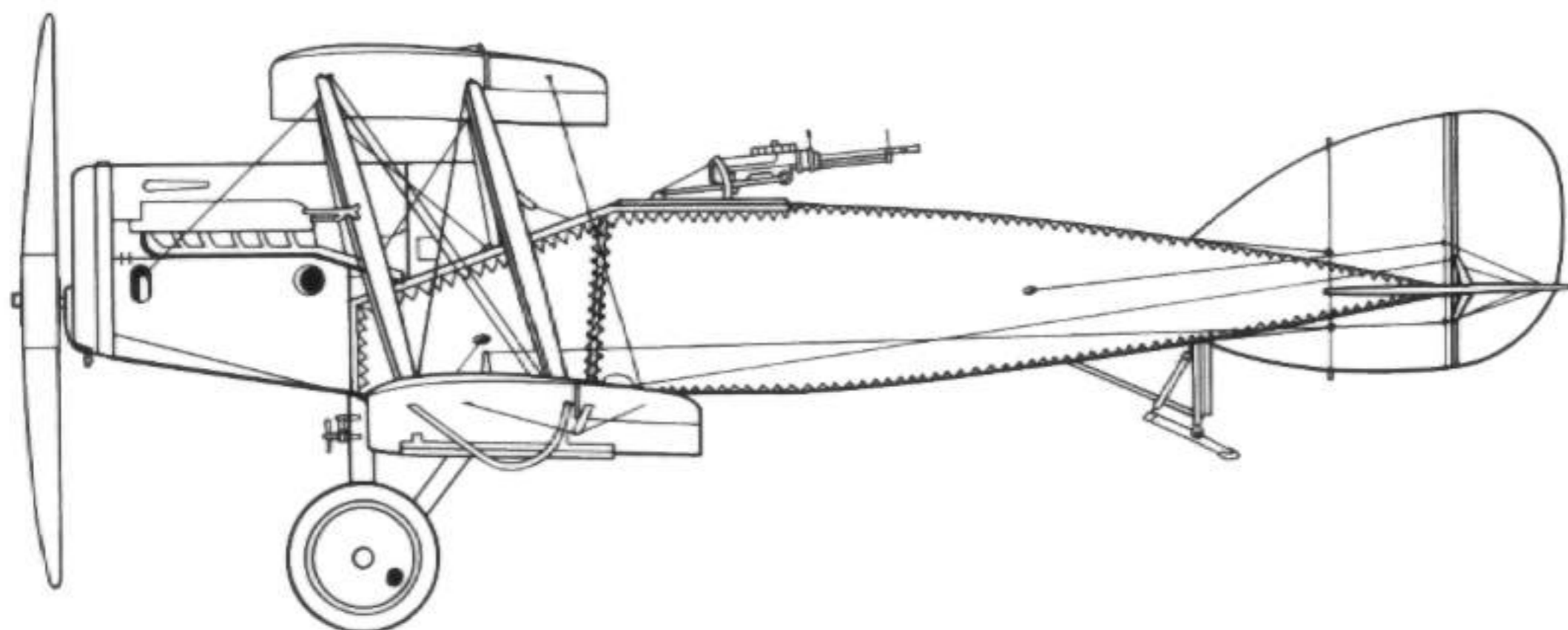
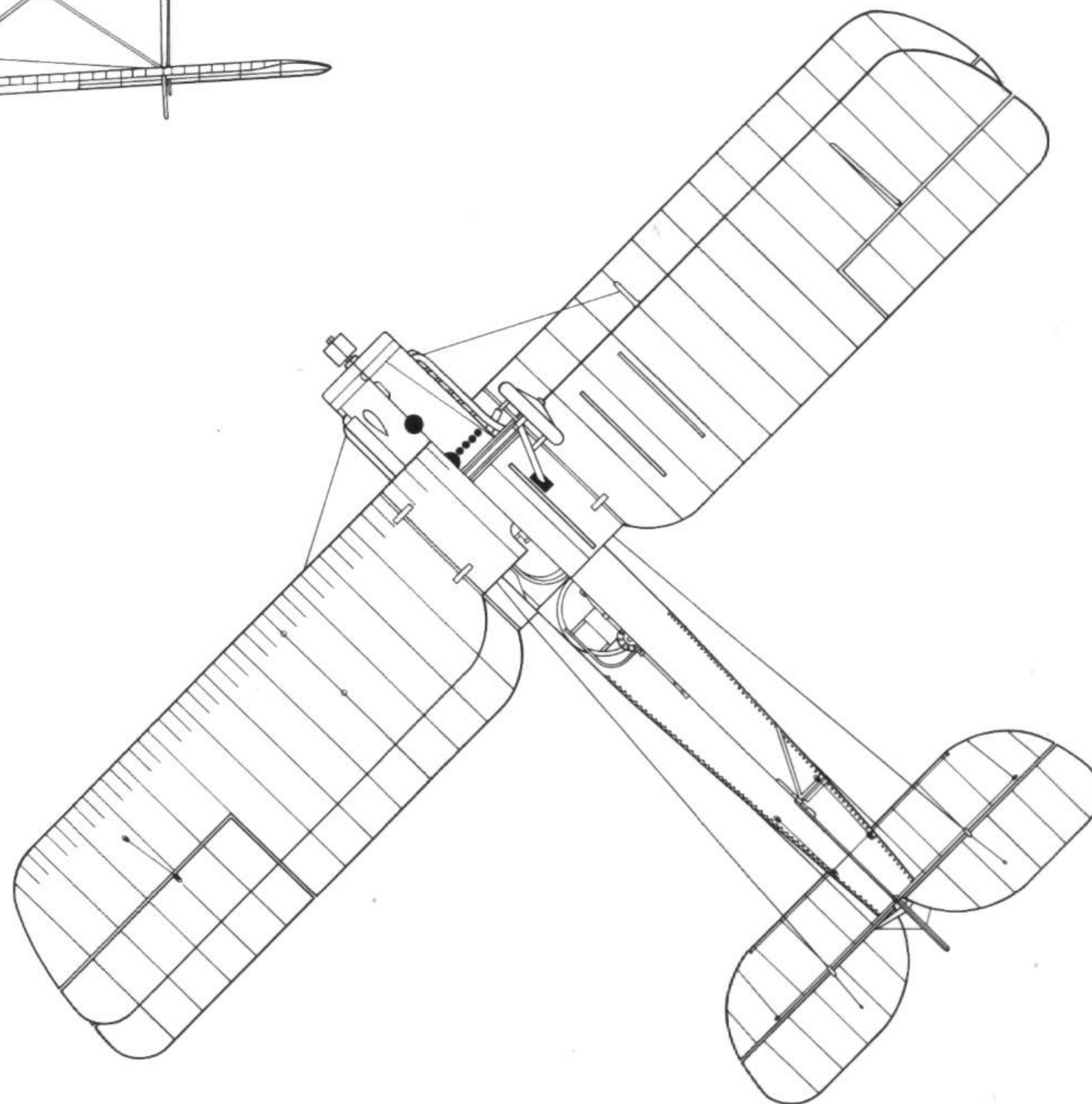


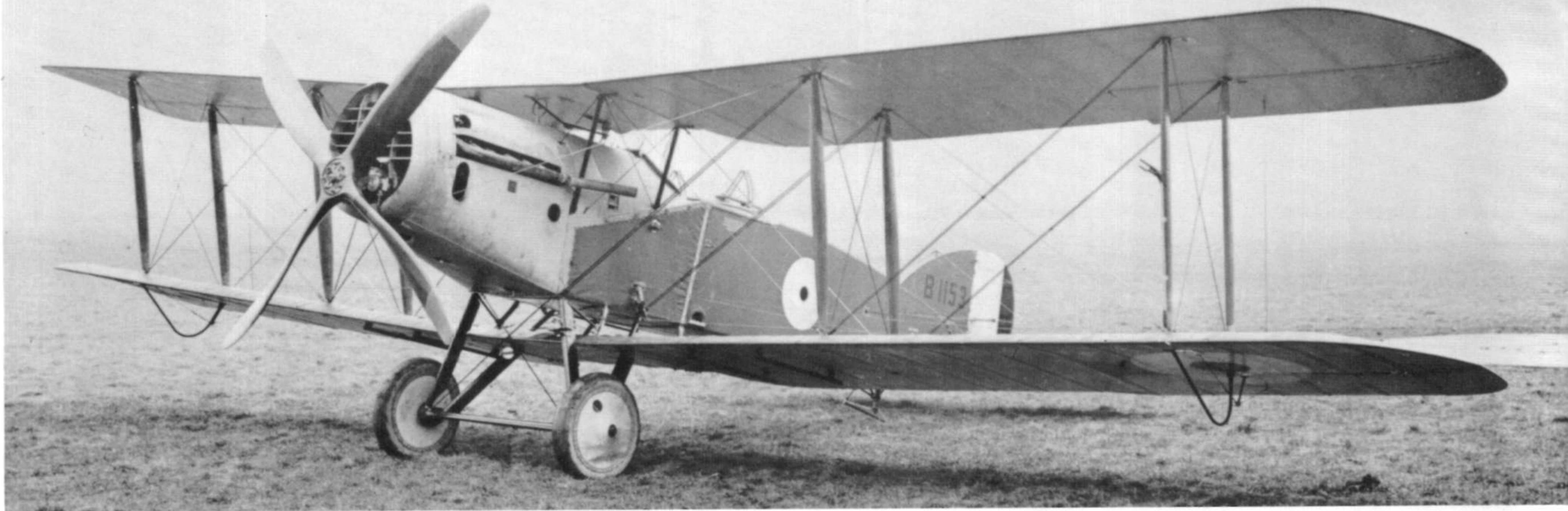


Specification

Bristol F.2B

| | |
|------------------------|--|
| Wingspan | 39 feet 3 inches (11.96 m) |
| Length | 25 feet 10 inches (7.87 m) |
| Height | 9 feet 9 inches (2.97 m) |
| Empty Weight | 1,934 pounds (877 kg) |
| Maximum Weight | 2,779 pounds (1,260 kg) |
| Powerplant | One 275 hp Rolls Royce Falcon III liquid cooled engine |
| Armament | One forward firing .303 Vickers machine gun and one/two .303 Lewis machine guns in rear cockpit. |
| Speed | 113 mph (181.8 kph) |
| Service Ceiling | 20,000 feet (6,096 m) |
| Endurance | 3 hours |
| Crew | Two |





This F.2B (B1153) was powered by a 220 hp liquid cooled 12 cylinder Rolls-Royce Falcon II engine driving a four blade propeller. The fork shaped device on the outboard inter-plane strut is the pitot tube.

F.2B B1134 was assigned to No 35 Squadron after having served with No 48 Squadron which had received the type in March of 1917. The stripe on the fuselage side and individual aircraft number was in White.

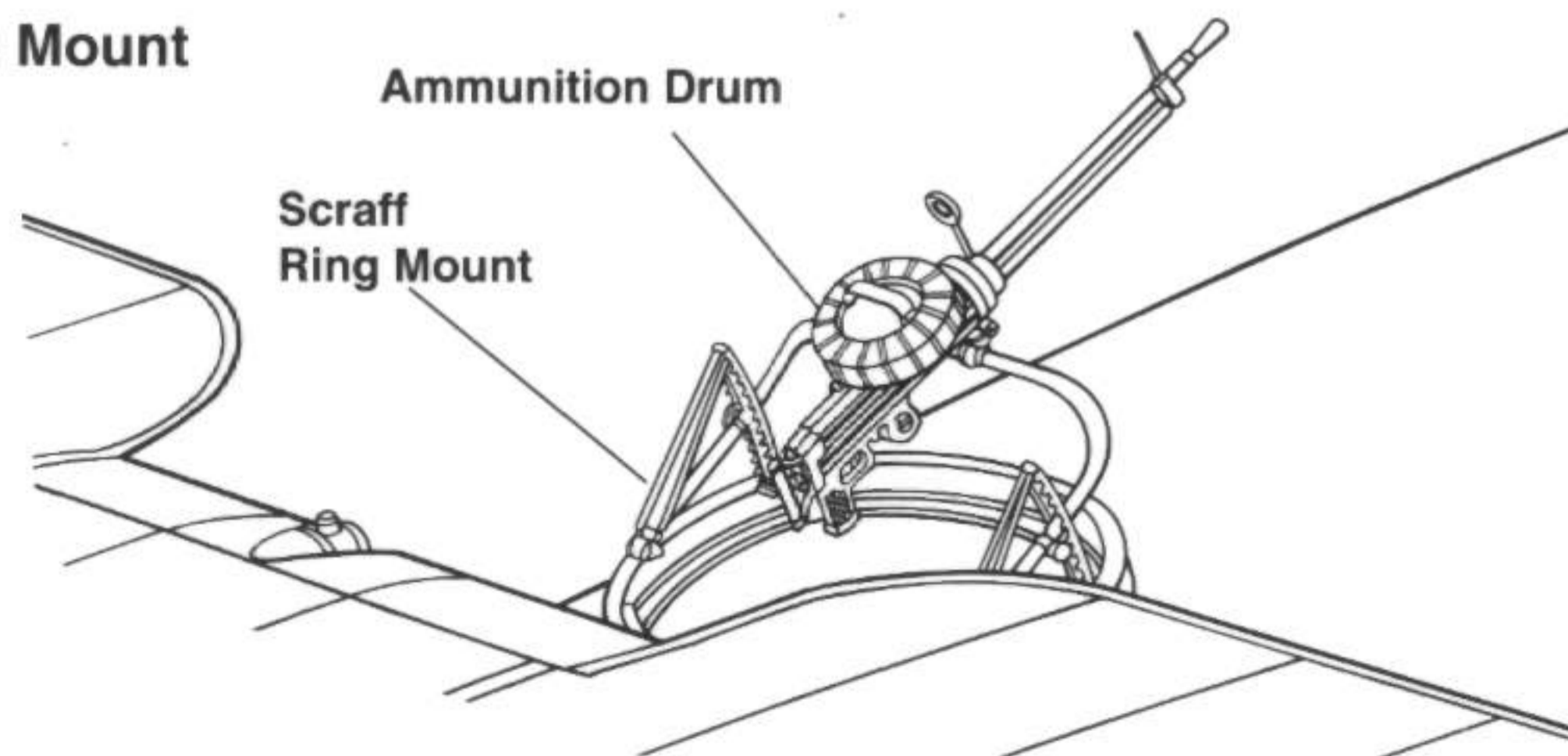




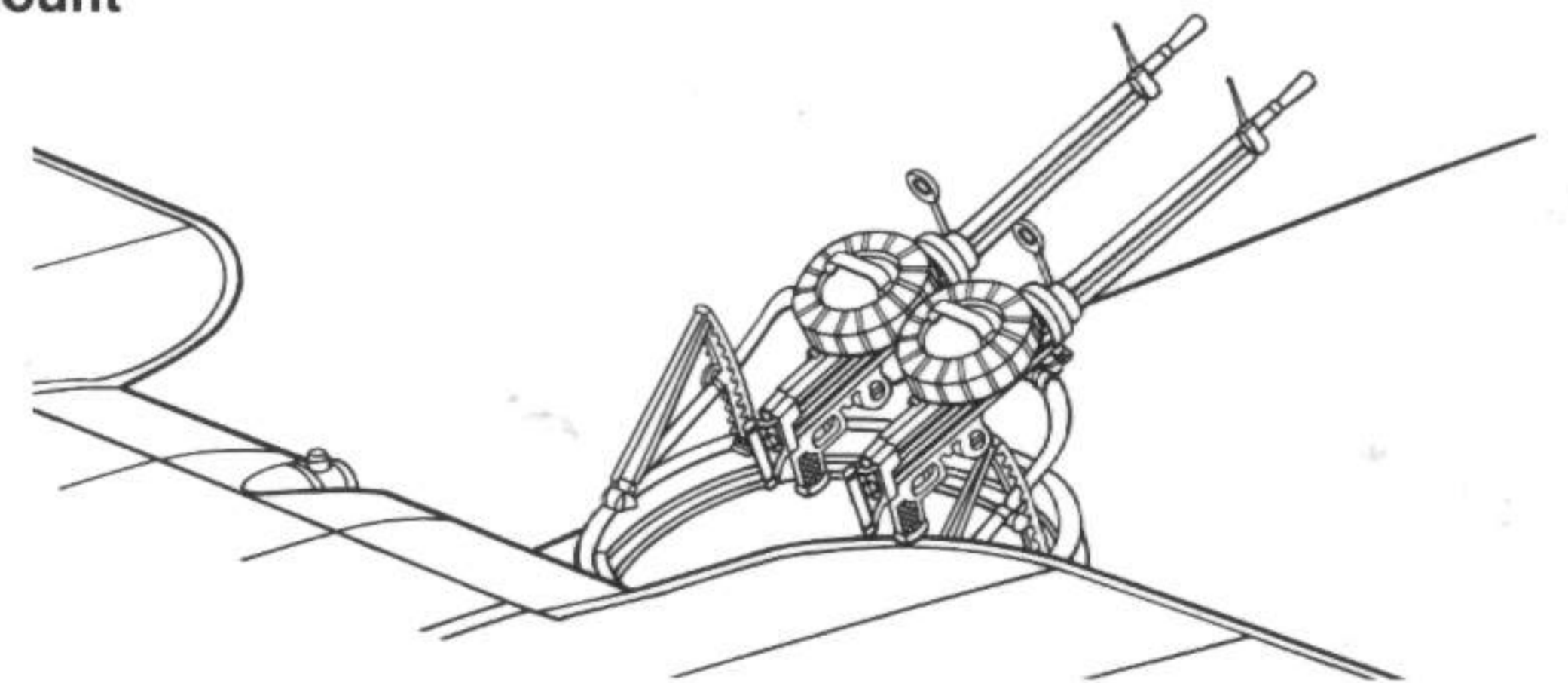
This F.2B has twin .303 inch Lewis machine guns mounted above the upper wing center section and a twin Lewis mount in the observer cockpit. It is believed that this F.2B was a night fighter assigned to No 39 (Home Defense) Squadron.

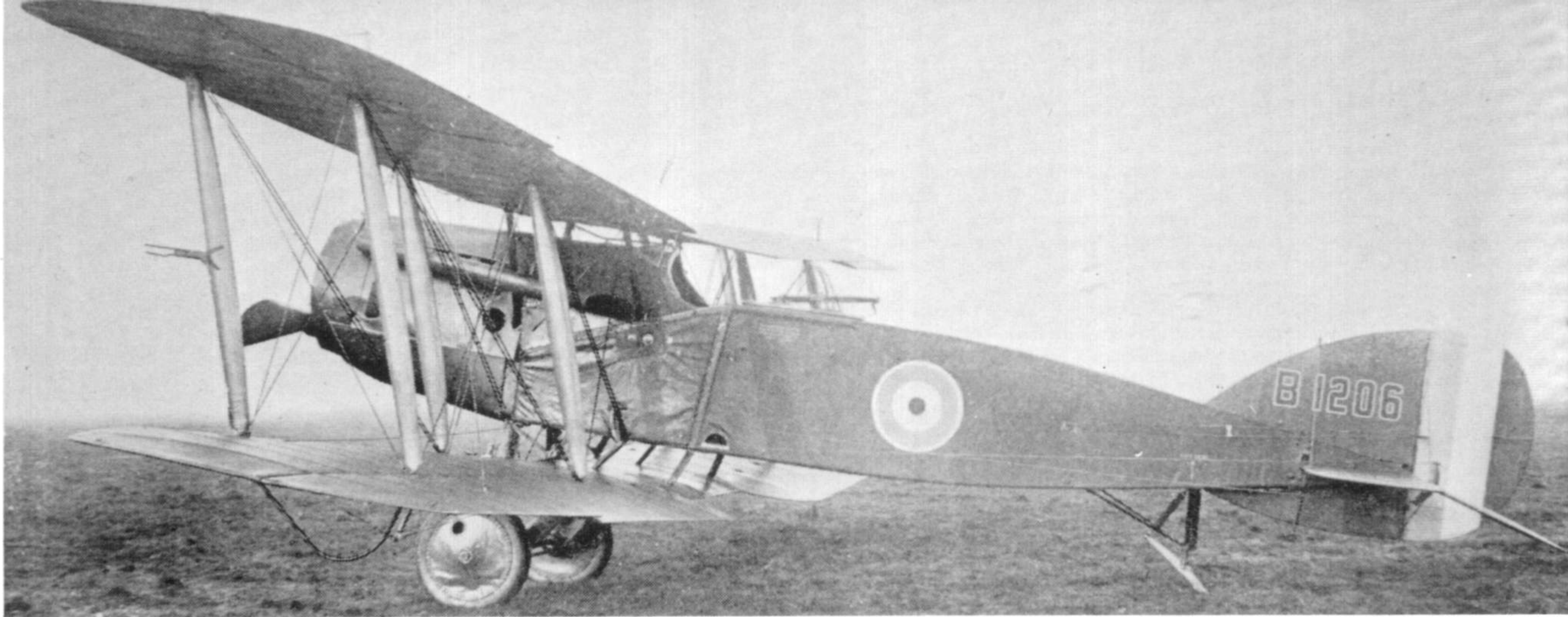
Rear Cockpit Lewis Gun Mounts

Single Mount



Twin Mount

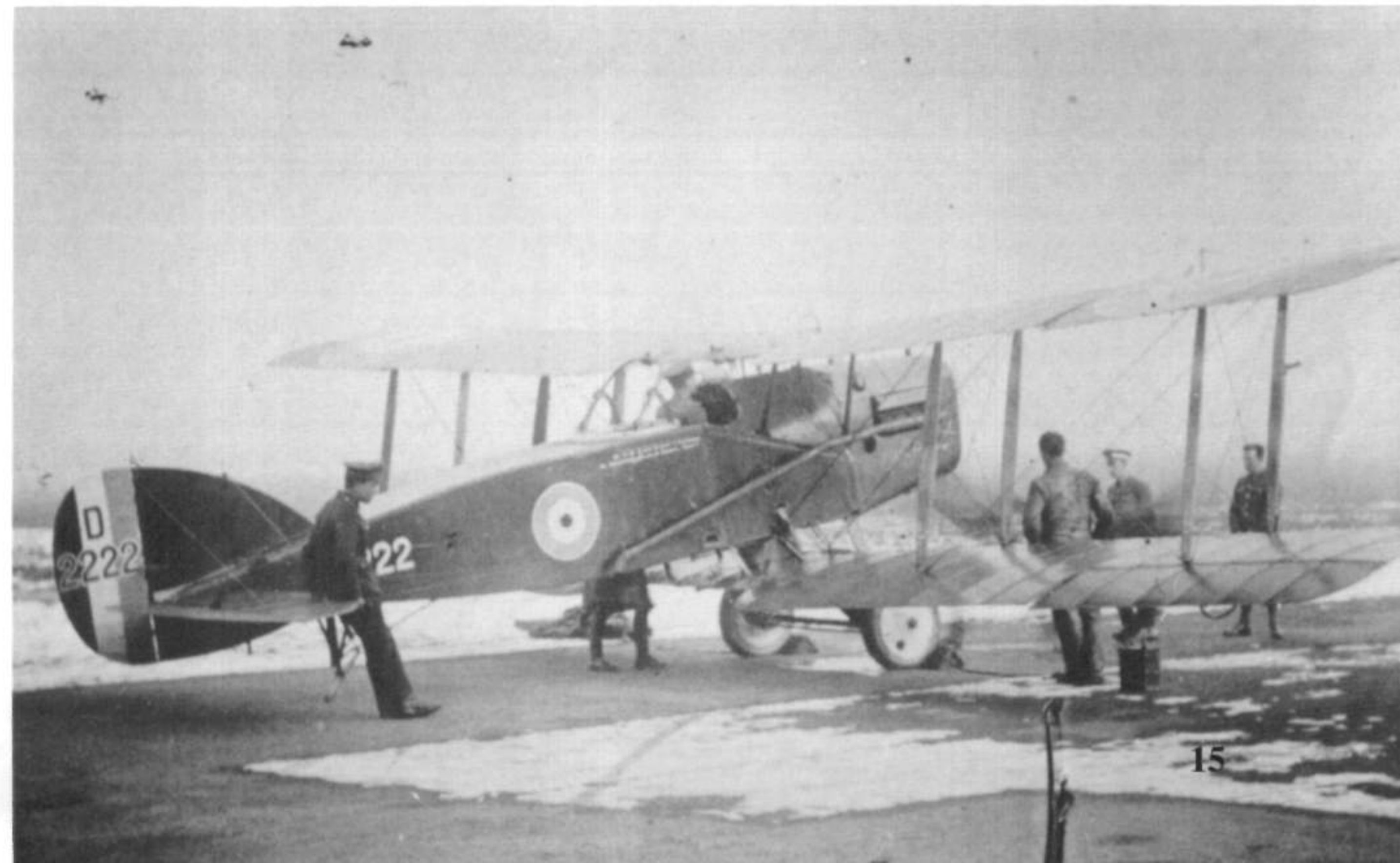




The shape of the cowling on this F.2B (B1206) indicates that it was powered by the 230 hp Siddeley Puma liquid cooled engine. The serial on the fin was in Black with a thin White outline.

While a ground crewman holds its tail down, the pilot of this F.2B (D2222) runs up the engine. The aircraft was fitted with a 200 hp Sunbeam Arab engine and it was one of a batch of F.2Bs built by the National Aircraft Factory at Altree, Liverpool.

Carrying the individual aircraft number A1 on the fuselage in White, this F.2B was operated by "M" flight of the Long Range Artillery Spotters. The aircraft built by Gloucestershire Aircraft and was powered by a 204 hp Sunbeam Arab engine.



Combat

After the unsuccessful debut of the F.2A, the tactics for the new Bristol machine were changed to those used by single-seat fighter aircraft. When this was done with the introduction of the F.2B, the type soon achieved a remarkable degree of success. So many were ordered that the supply of Falcon III engines could not keep pace with the demand and Sunbeam Arab engines began to be fitted as alternatives, although these were far from satisfactory.

By the Spring of 1918, the F.2B's reputation was such that allegedly enemy fighter pilots were reluctant to attack more than two at a time. In the Royal Flying Corps, it earned a reputation for robust construction, although this was not altogether justified. Not long after its service introduction, the mixed-timber used in the construction of the compression struts in the lower wing soon revealed a tendency to collapse. To solve this problem, steps were taken for strengthening these struts with the aid of external braces. On the production lines, spruce second, third and fourth compression ribs were specified, reverting to the construction methods used with the earlier F.2A.

Although the Bristol F.2B is normally associated with operations over the Western Front, they were also used in England as night fighters in the home defense role. One unit in particular, No 38 (HD) Squadron scored several kills over Gotha bombers at night. The F.2B underwent many armament combinations mainly on aircraft within the Home Defense squadrons. Various .303 inch Lewis machine gun mounts were added above the wing center section and twin mounts in the rear cockpit were common. The F.2B also saw service in Palestine and Italy and small numbers were also used as trainers and for early wireless (radio)

This F.2B (D7966) was issued to No 139 Squadron, Royal Flying Corps on 16 August 1918. The aircraft was lost in combat with Austrian forces some seven days later and the crew, LTs C.E.G. Gill and T. Newey were taken prisoners of war.

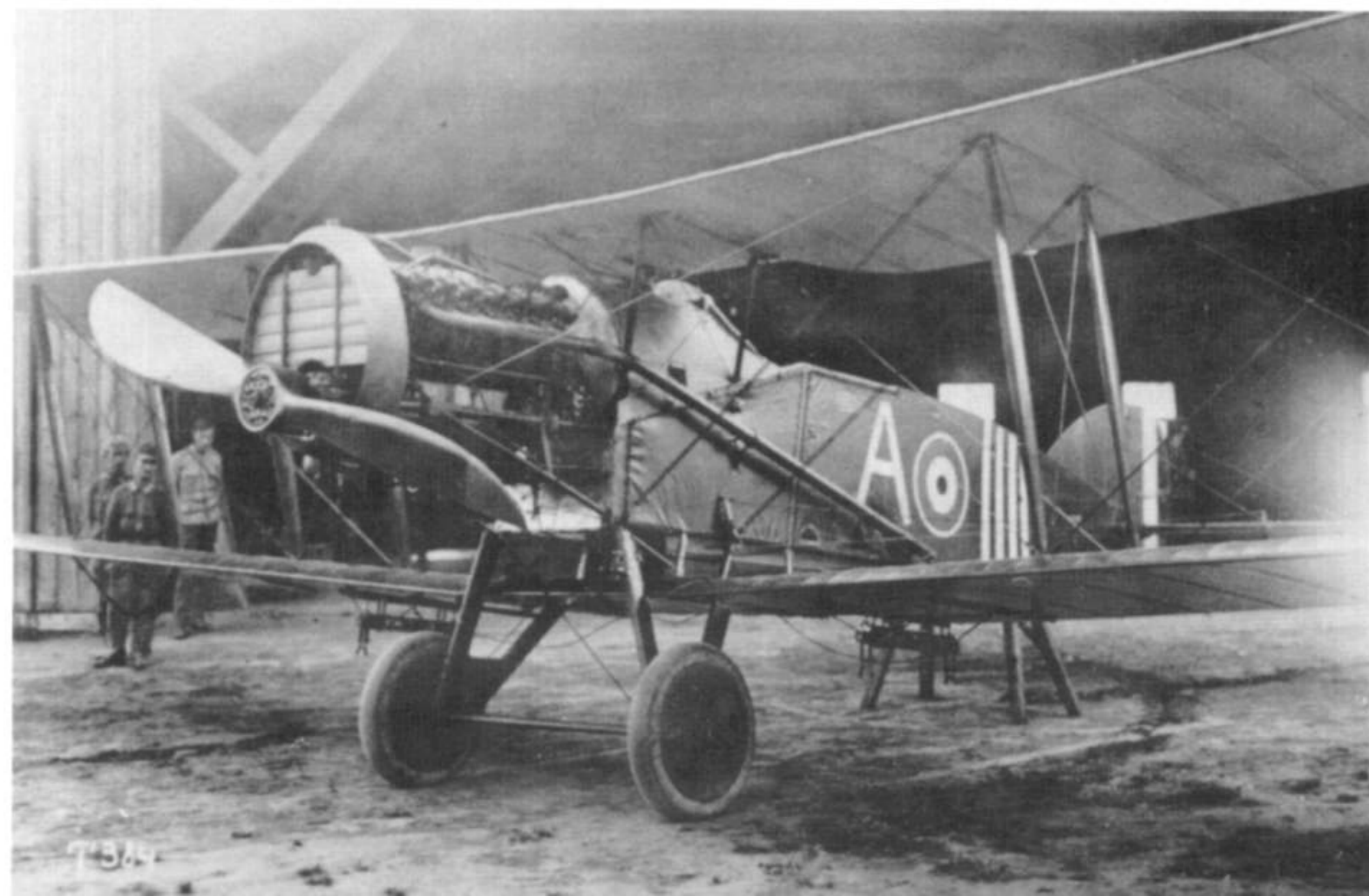
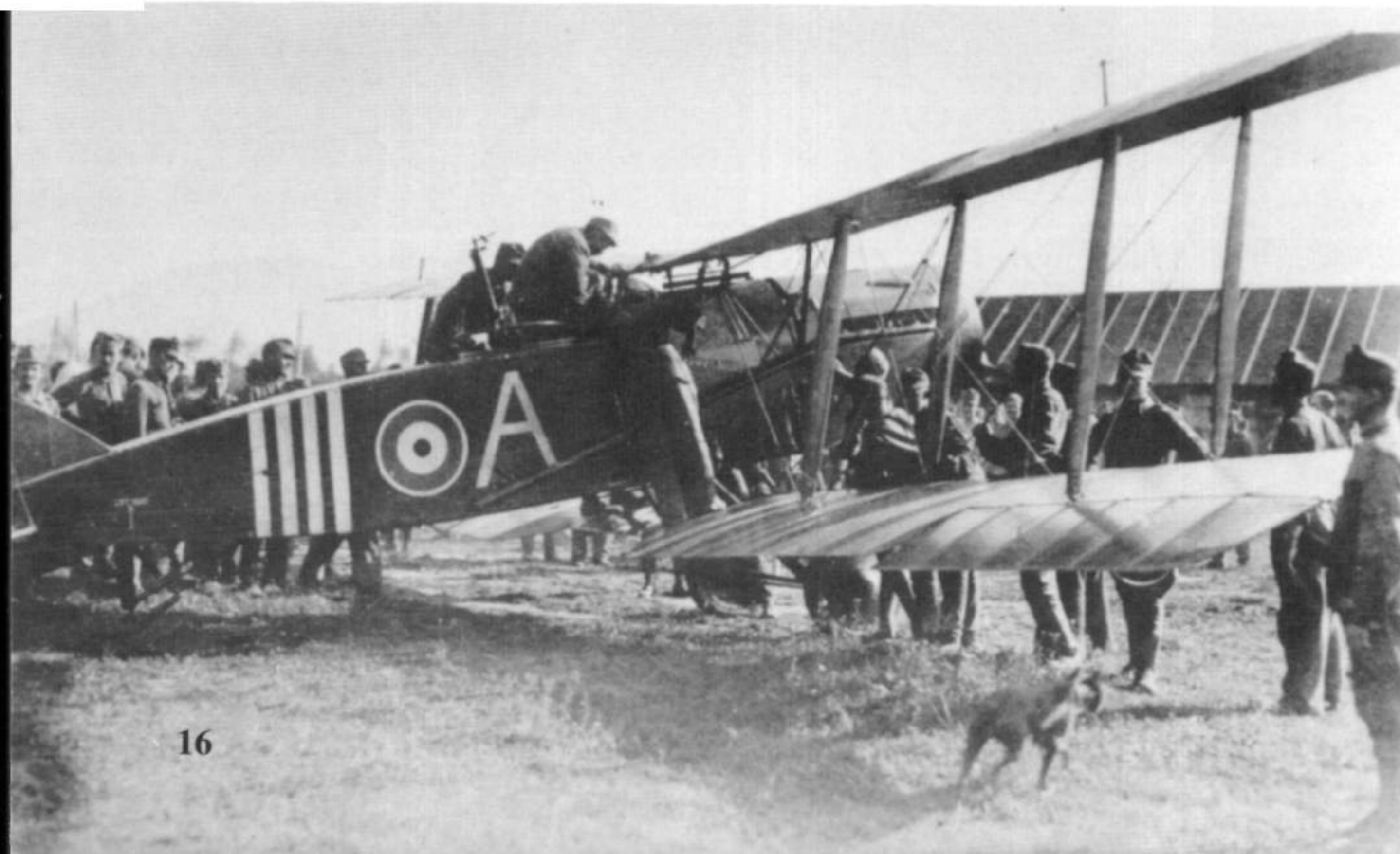


This F.2B (C-4814) of No 19 Squadron carries an early style of squadron recognition markings. The aircraft was assigned to "A" Flight was at La Bellevue in March of 1918 and took part in operations to counter the German offensive that started that same month.

experiments.

Two-seater fighters were seldom associated with top fighter pilots during the First World War, but the F.2B was an exception to that rule. Canadian Air Service pilot LT A.E. McKeever of No 11 Squadron soon began to be regarded as an ace among Bristol Fighter exponents. He and his regular observer, SGT (later LT) L.F.Powell scored their first victory on 26 June 1917 (although there were two missions a few days earlier that may have gained them victories that were never confirmed). By the end of the year, the pair had accounted for

The small hole in the top of the radiator is the gun port for the pilot's .303 Vickers machine gun. The white stripes around the rear fuselage were recognition markings used by No 139 Squadron in Italy during late 1918.

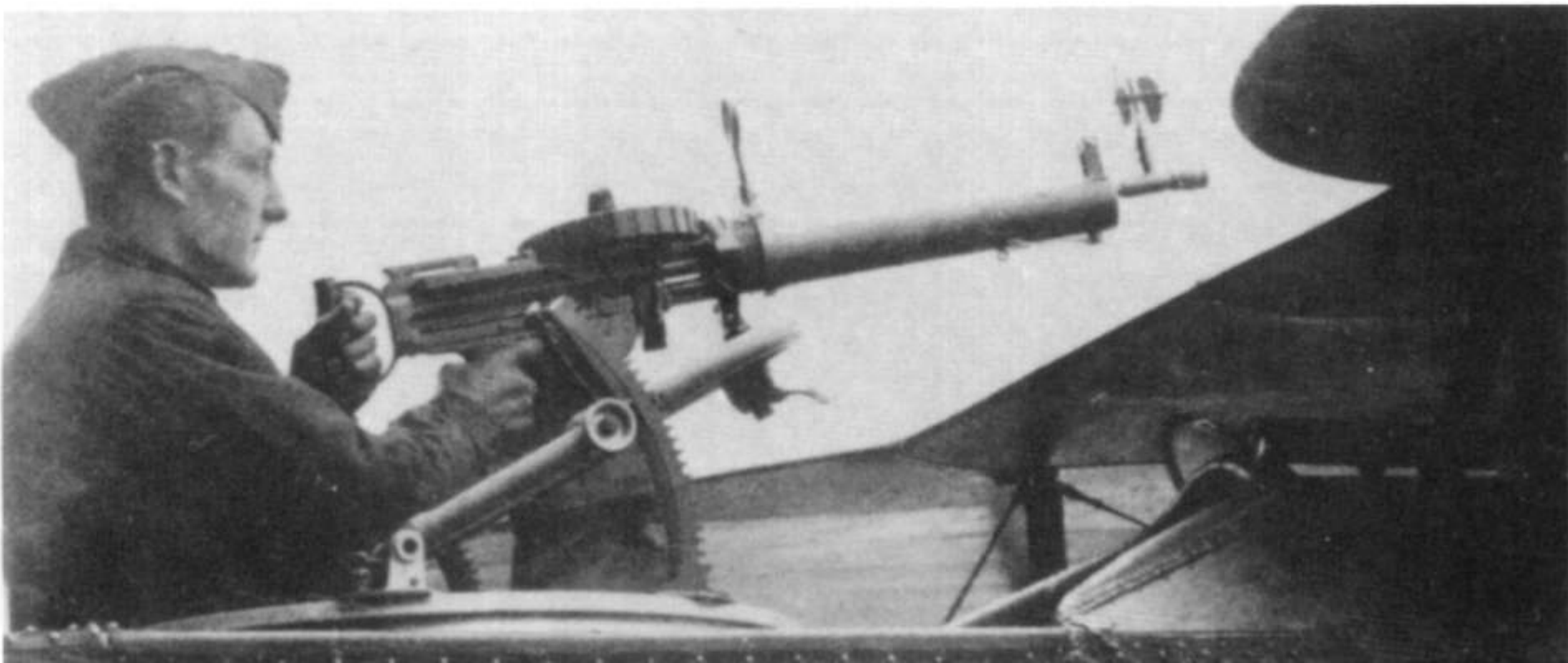




To solve the engine shortage problem, an number of F.2Bs were tested during the war years with different engines. This F.2B (B1200) at the experimental establishment at Marlesham Beath in September of 1918 was powered by a 200 hp Wolsey Viper liquid cooled engine.

Australian CAPT Ross Smith, who later became a long distance flyer, mans the forward cockpit of an F.2B of No 1 (Australian) Squadron, while his gunner LT E A Mustard, mans the twin .303 Lewis machine guns in the rear cockpit.

This Royal Flying Corps gunner demonstrates the use of a .303 inch Lewis machine gun in the rear cockpit of an F.2B. The gun is mounted on a Scraff ring mount and is equipped with a Norman sight. The gunner carried seven ninety-seven round drum magazines in the rear cockpit.

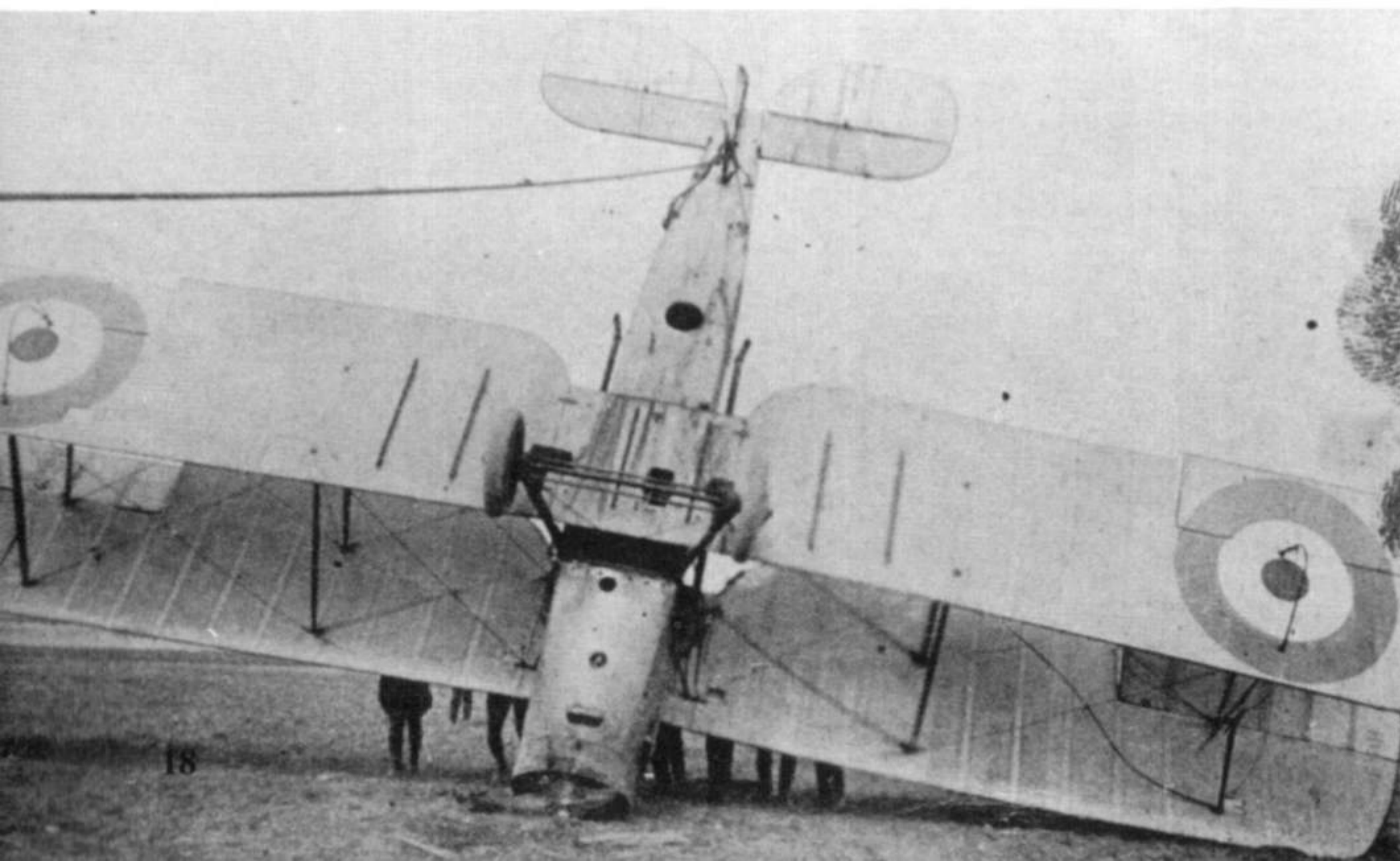




This F.2B of No 98 Squadron's Long Range Reconnaissance flight nosed over after losing a wheel on landing. The hole in the underside of the fuselage is the opening for the vertical camera which was controlled by the observer/gunner.

This Bristol F.2B (F4844) is a factory-fresh machine from a production batch of seven hundred produced by Bristol during the war years. After the war, some of these aircraft which were later entered on the British Civil Register.

twenty-eight enemy aircraft between them. McKeever later returned to England as an instructor; however, with the formation of No 1 Squadron, Canadian Air Force, McKeever was appointed as its commanding officer and he adopted as his personal aircraft a Bristol Fighter (F4336). This machine later went with him when he returned to Canada after the Armistice. The aircraft was later entered on the Canadian Civil Register as G-CYBC.



This F.2B of No 111 Squadron had the fabric on the rear fuselage pulled lose. The squadron operated a detachment of Bristol F.2Bs from Sarona, Palestine during late 1917.

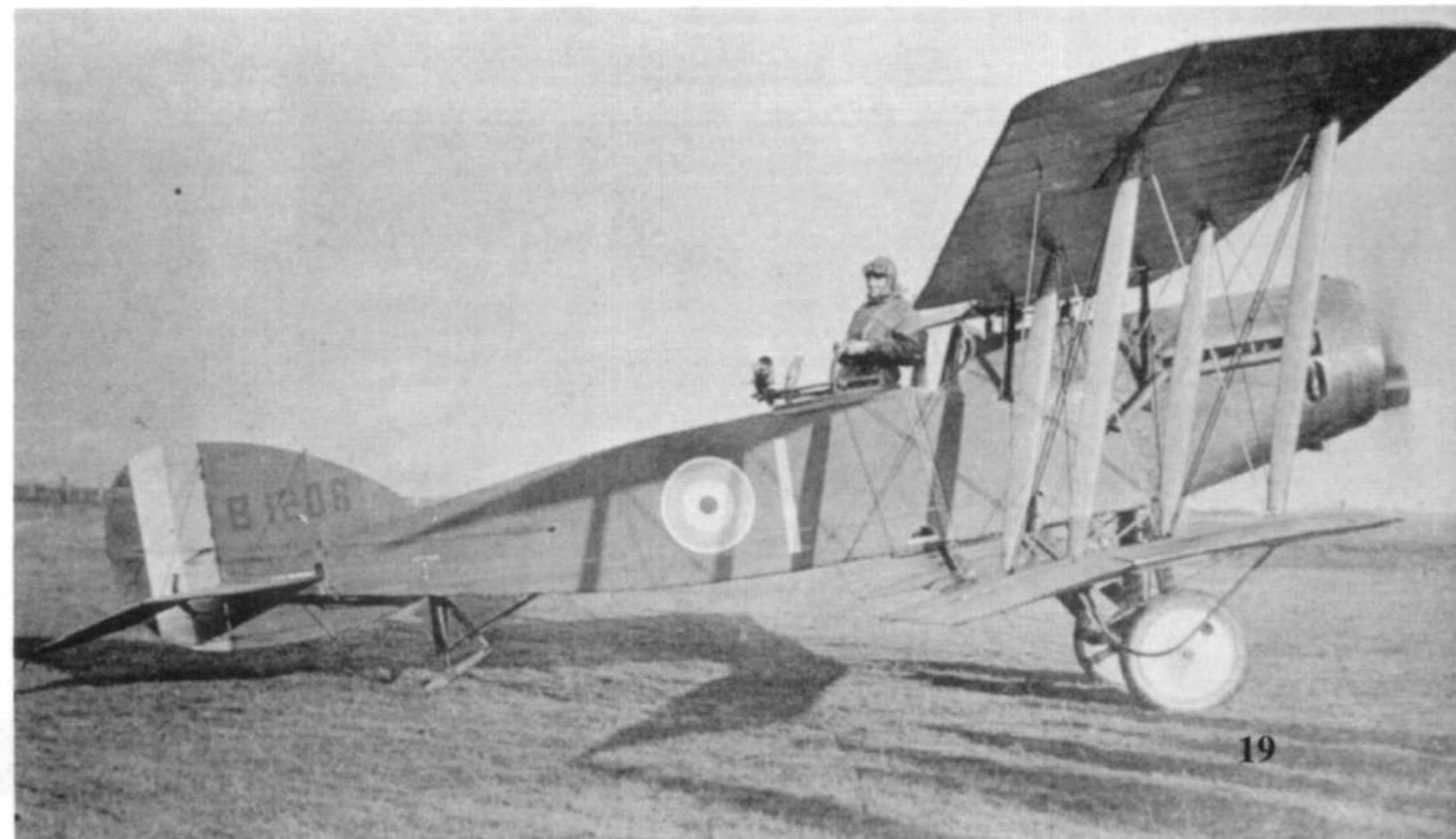
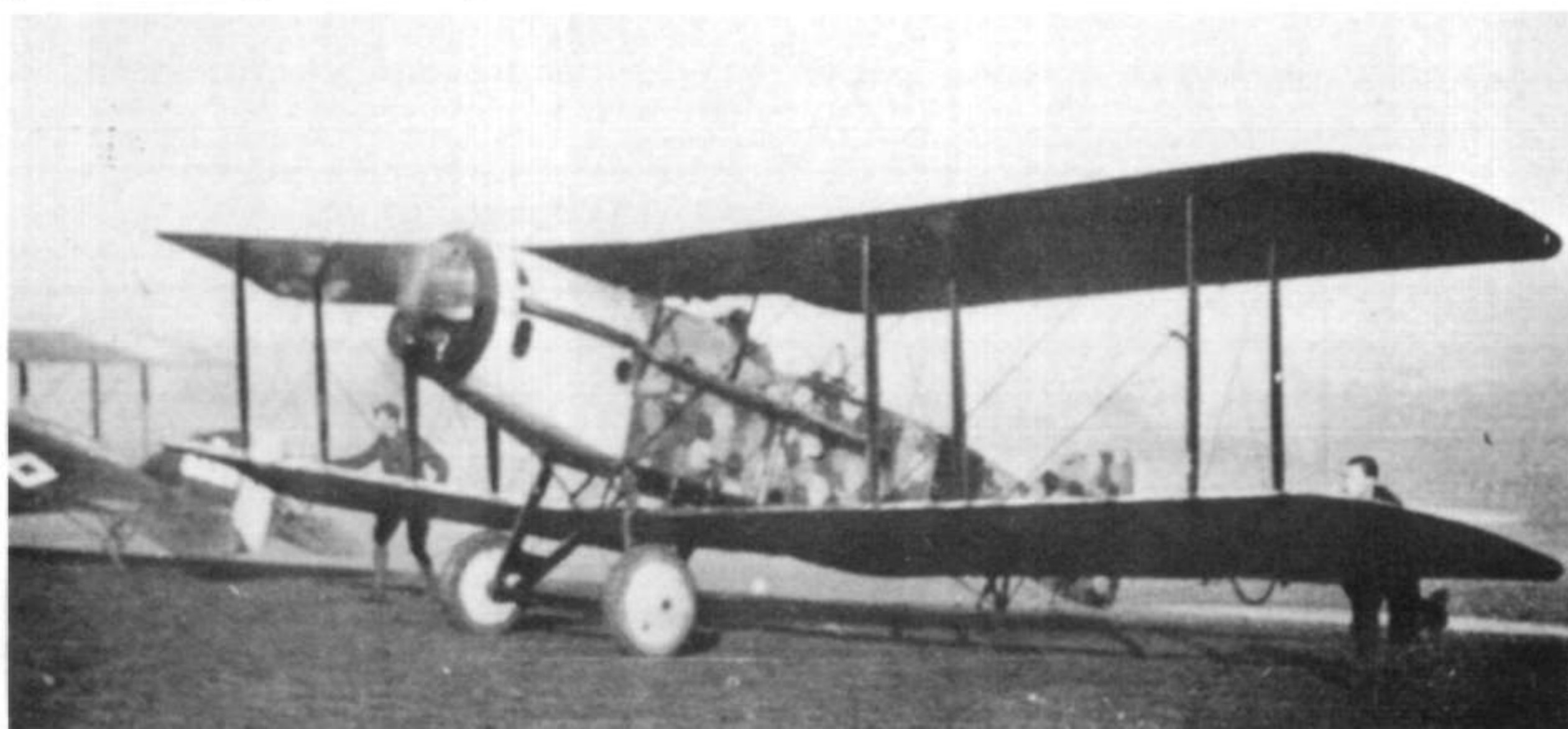


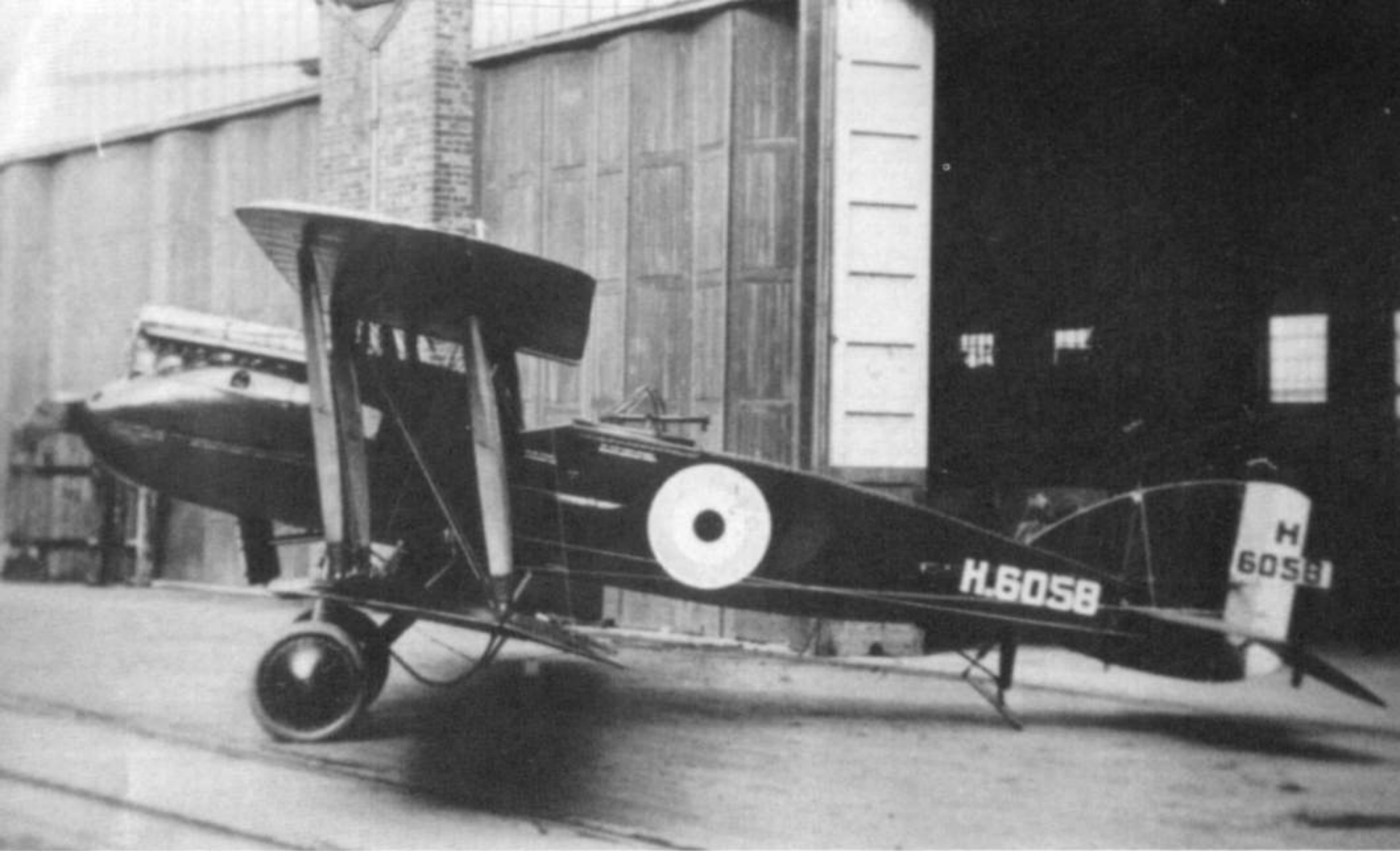


This presentation aircraft named *BURGATE* was flown in France by "L" Flight on long distance artillery spotting duties. The unit was attached to the 1st Wing at Aulnoy. The aircraft was later attached to No 141 (Home Defense) Squadron.

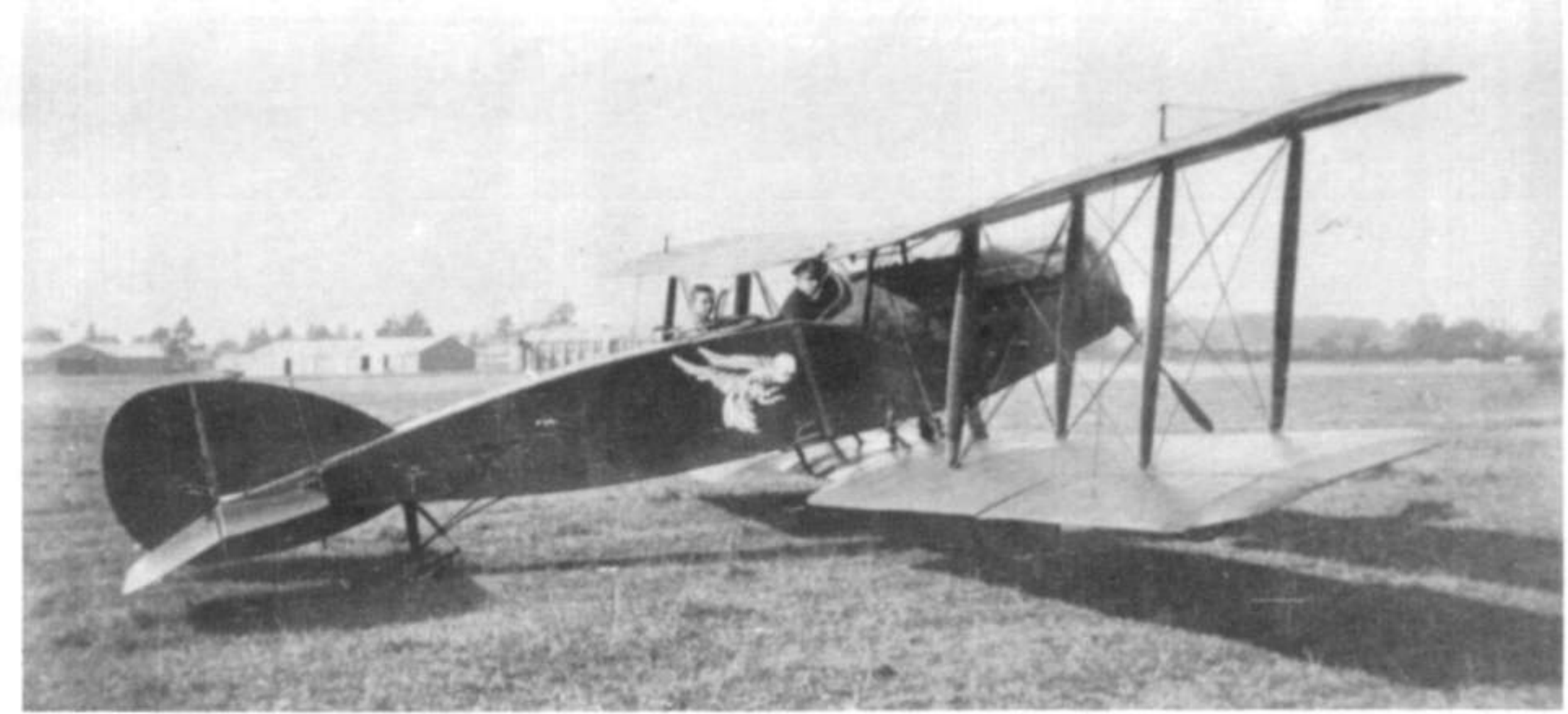
It is uncertain whether the White marking just forward of the fuselage roundel on this F.2B (B1208) is the recognition marking of No 20 Squadron or the aircraft's side number (1).

This Bristol Fighter was reportedly assigned to No 141 (Home Defense) Squadron. It is unclear why the aircraft had the fuselage and fin covered in what appears to be German printed Lozenge camouflage fabric.





This F.2B (H6058) was fitted with a 240 hp Siddeley Puma engine and was, along with F.2B (H6055) were the only F.2Bs known to have been built by the Austin Motor Company, although a batch of six hundred were ordered on 25 September 1918.



This ex-Royal Air Force Bristol F.2A was interned by neutral Holland during the First World War. It was later to feature in "Cellon" aircraft cellulose covering advertisements.

This F.2B was on the landing ground at Malincourt on the day that the First World War ended, 11 November 1918. The aircraft was powered by a Sunbeam Arab liquid cooled engine and was assigned to "B" Flight of No 8 Squadron.



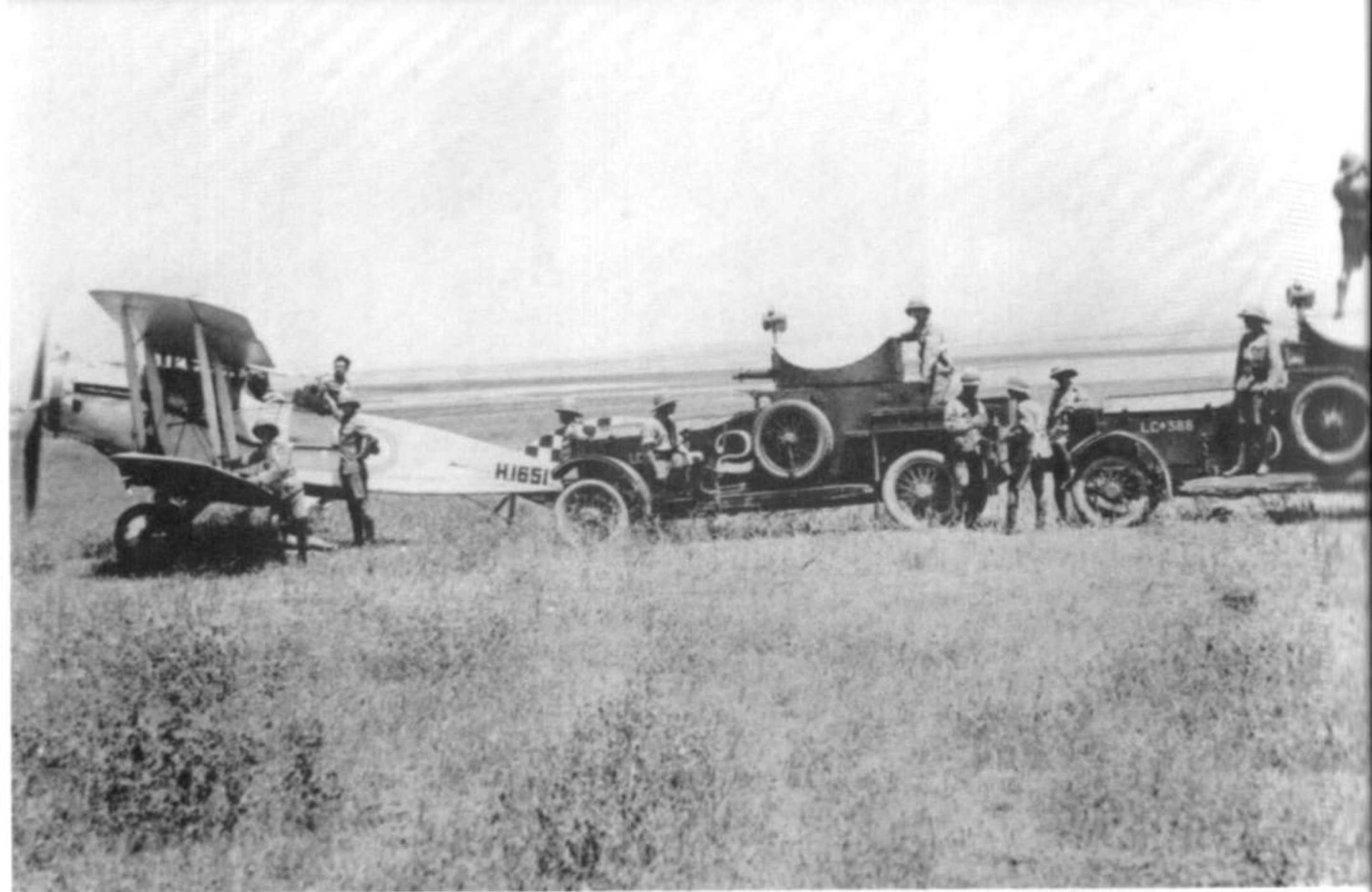
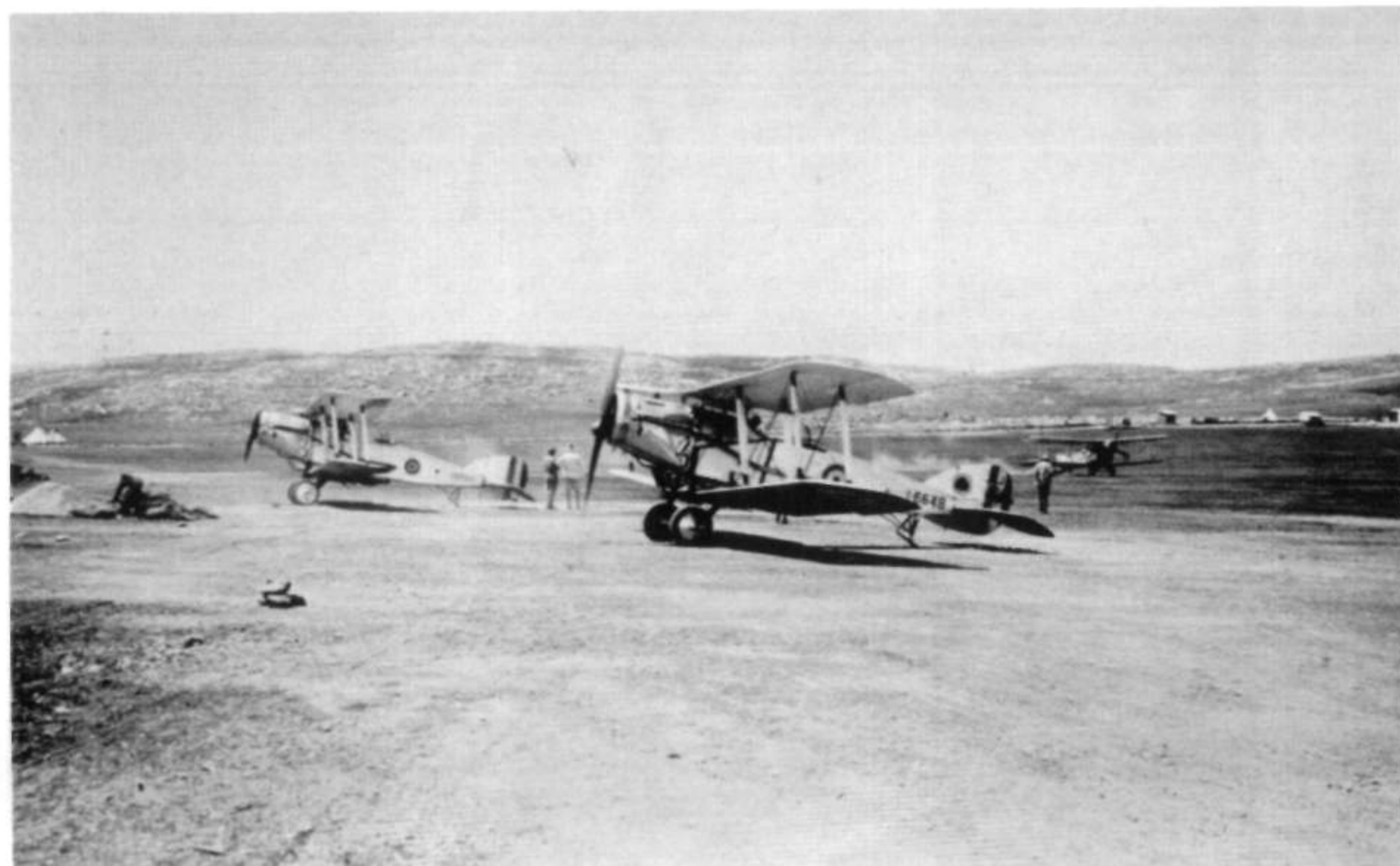
F.2B Mk II

With the end of the “war to end all wars”, as the First World War was commonly called and believed to be, the Bristol F.2B underwent a change of role. No longer capable of the firstline fighter mission, the Royal Air Force began using the aircraft in its many overseas commitments as an Army Co-operation two-seater reconnaissance and close support aircraft. To meet the requirements of this new mission, a number of modifications were incorporated into the F.2B.

In a five year long rebuilding program, some 415 aircraft were reconditioned by Bristol and issued to RAF units in such locations as Iraq, the northwest frontier of India and Baluchistan. These areas were patrolled by F.2Bs and to make the aircraft fit for desert use an enlarged radiator with an increased number of radiator shutters, improved cooling systems and “fatter” tires to cope with the harsh conditions at desert landing fields (later oleo undercarriages) were installed. As with other F.2A, the Mk II had the capability of carrying up to twelve 20 pound Cooper fragmentation bombs on racks installed under the lower wings.

Other Mk IIs served with four home based Army Co-operation squadrons which were formed with “Brisfits”, as the type was now popularly known. A number of these aircraft were usually fitted with message retrieval hooks mounted under the fuselage. These hooks could be lowered to snag messages strung between two poles by ground units that were not equipped with radio equipment.

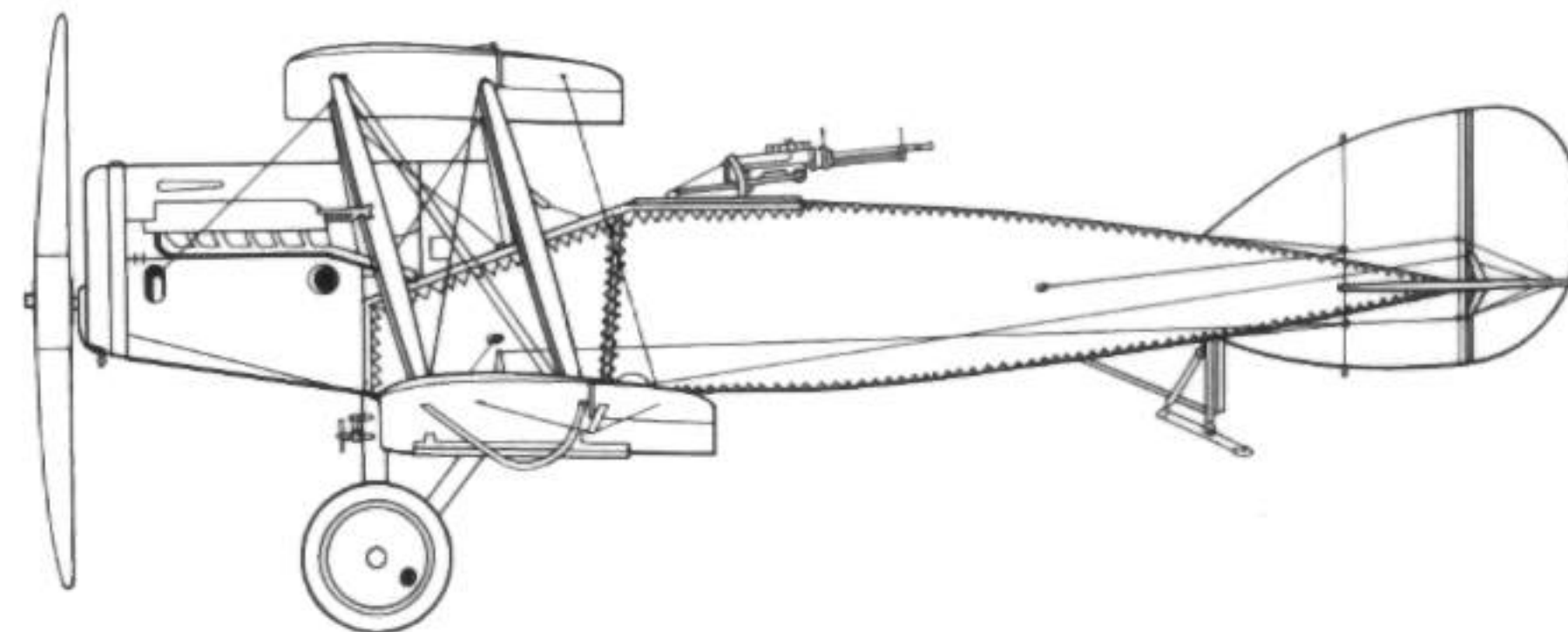
These F.2Bs (J6648 and J6683) are assigned to No 14 Squadron, Royal Air Force and were based at Jerusalem, in Palestine during May of 1924. The aircraft in the foreground carries the unit’s distinctive marking on the vertical fin.



Two Royal Air Force armored cars join this Bristol F.2A Mk II (H1651) of No 208 Squadron at a desert landing ground probably in the Dardanelles area during 1924. For desert patrols, aircraft and armored cars worked in close co-operation and the RAF had its own armored car force.

Fuselage Development

F.2B Mk I

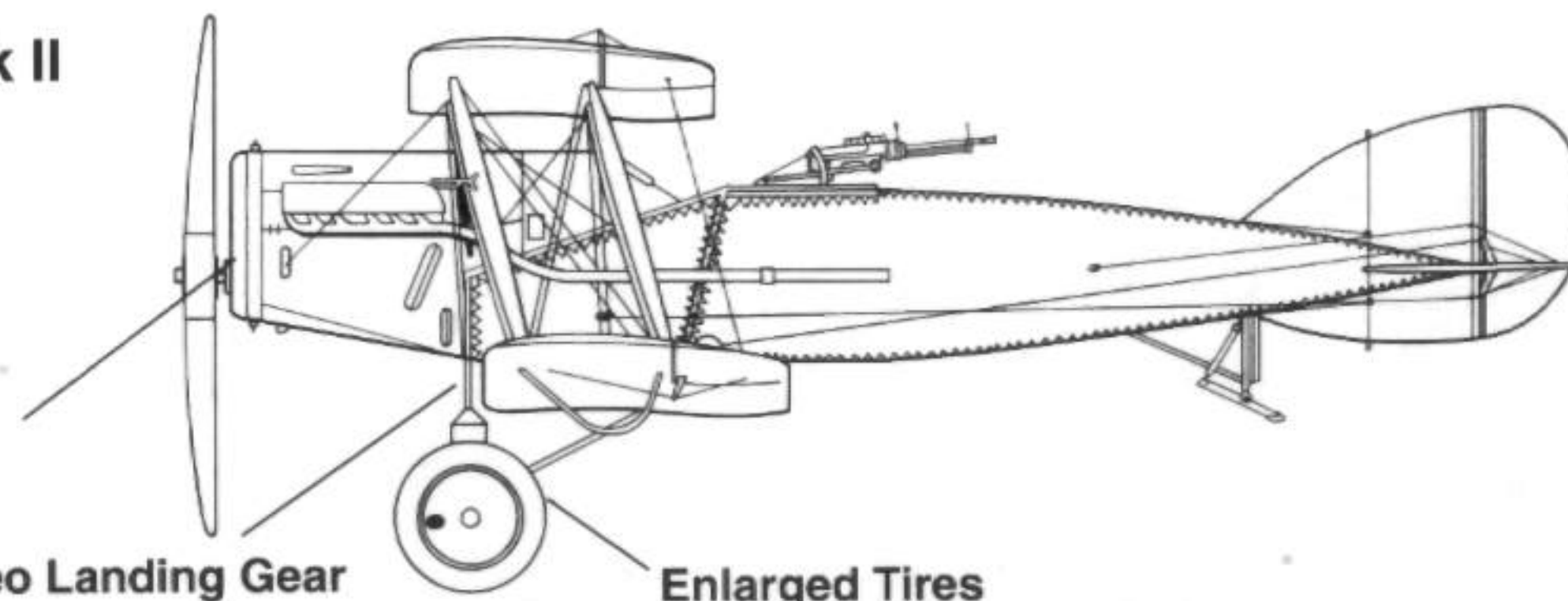


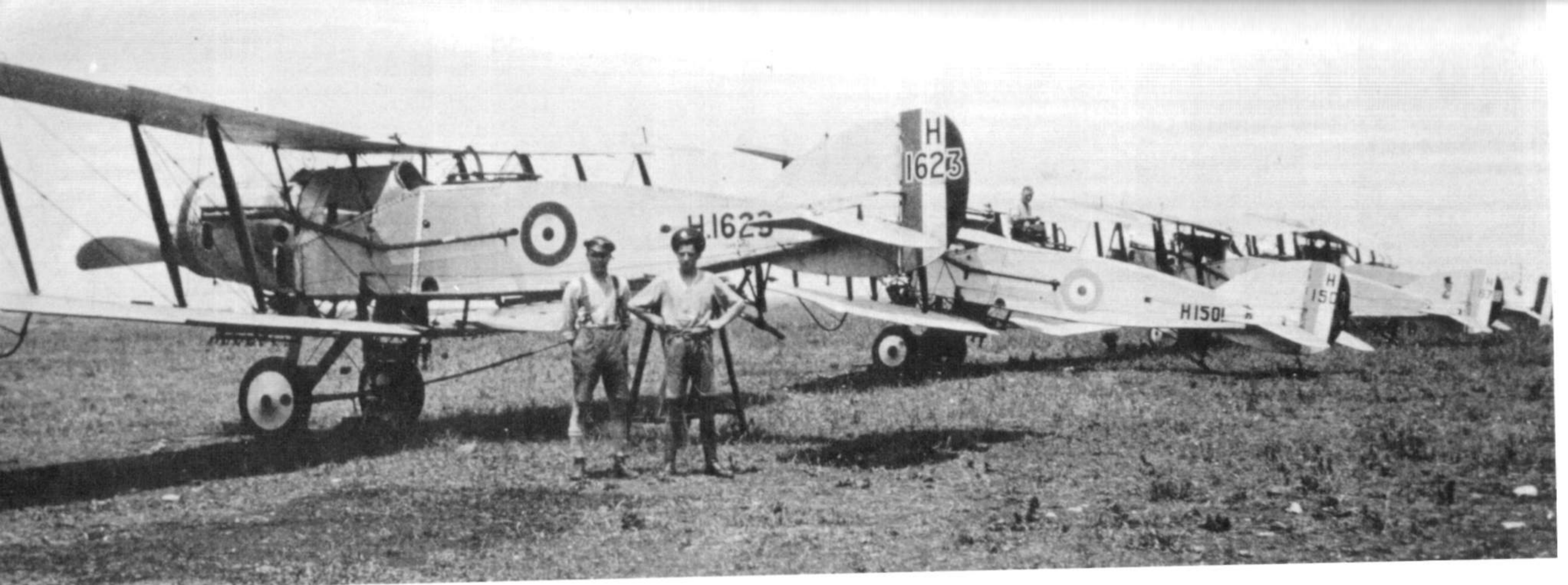
F.2B Mk II (Late)

Tropical Radiator

Oleo Landing Gear

Enlarged Tires

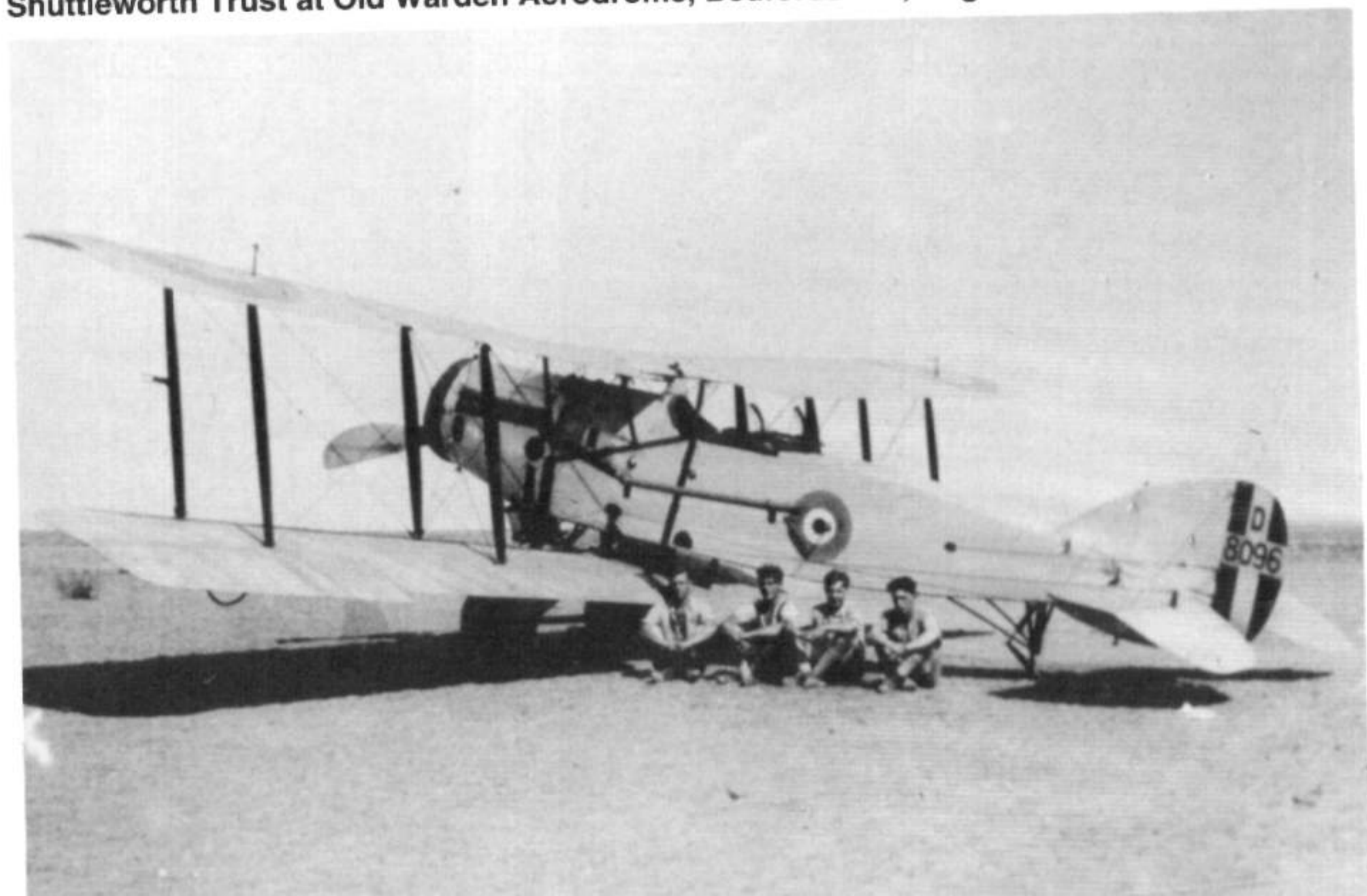




These F.2Bs (H1623, H1501 and H1672) of No 208 Squadron lack the squadron's distinctive marking on the vertical fin. The aircraft were based at San Stephano and are believed to have been assigned to "C" Flight. H1623 is equipped with a message pick-up hook on the fuselage underside.

F.2B Mk II (D8096) on the desert landing ground at San Stephano during the late 1920s. This is the serial number carried by the air worthy Bristol F.2B owned and flown by the Shuttleworth Trust at Old Warden Aerodrome, Bedfordshire, England.

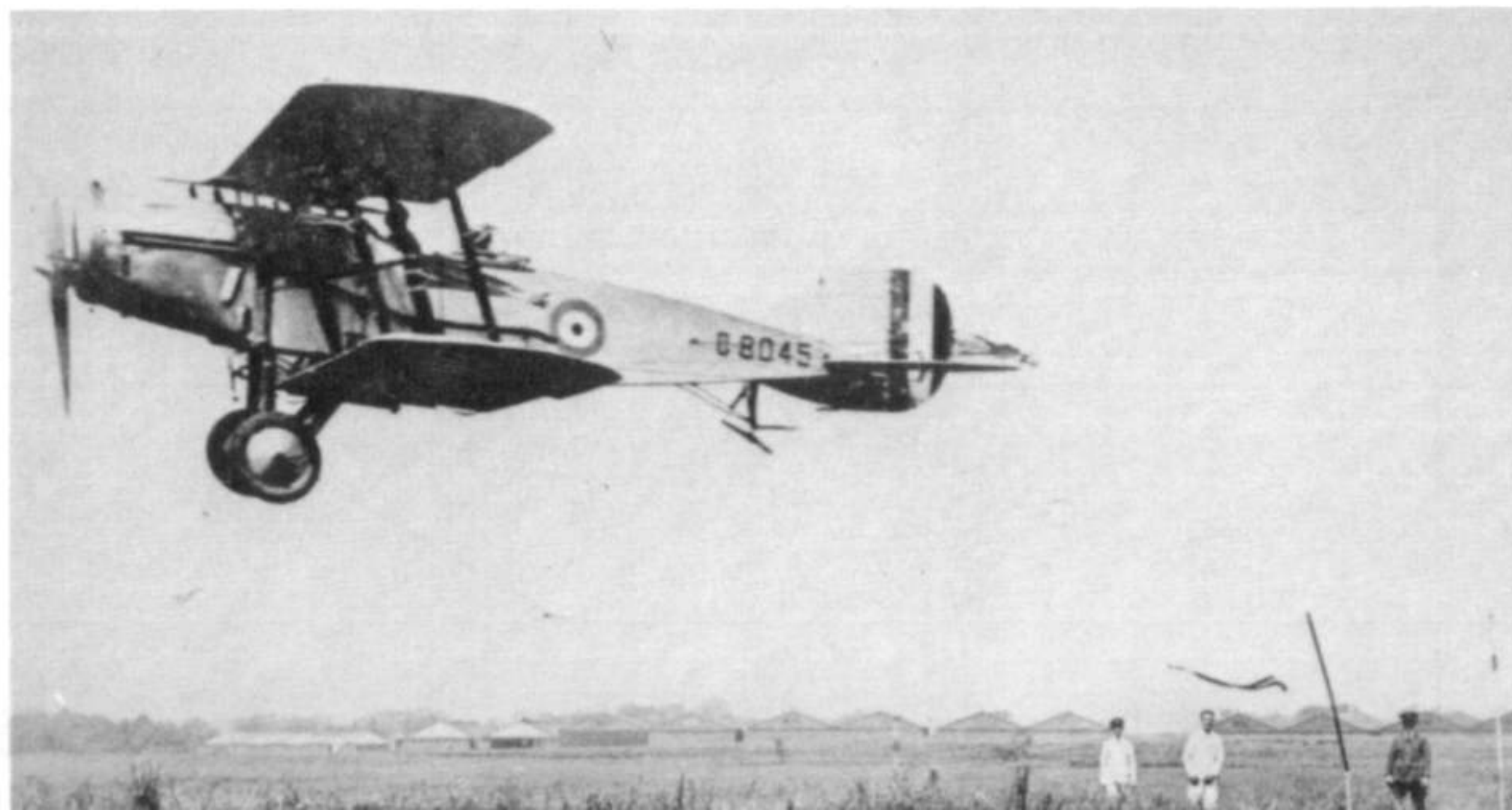
This F.2B Mk II (E4970) on the grass at Lympe, England during 1926, was the last aircraft out of a production batch of seven hundred. The aircraft has a Natural Metal cowling and Silver doped fabric surfaces.



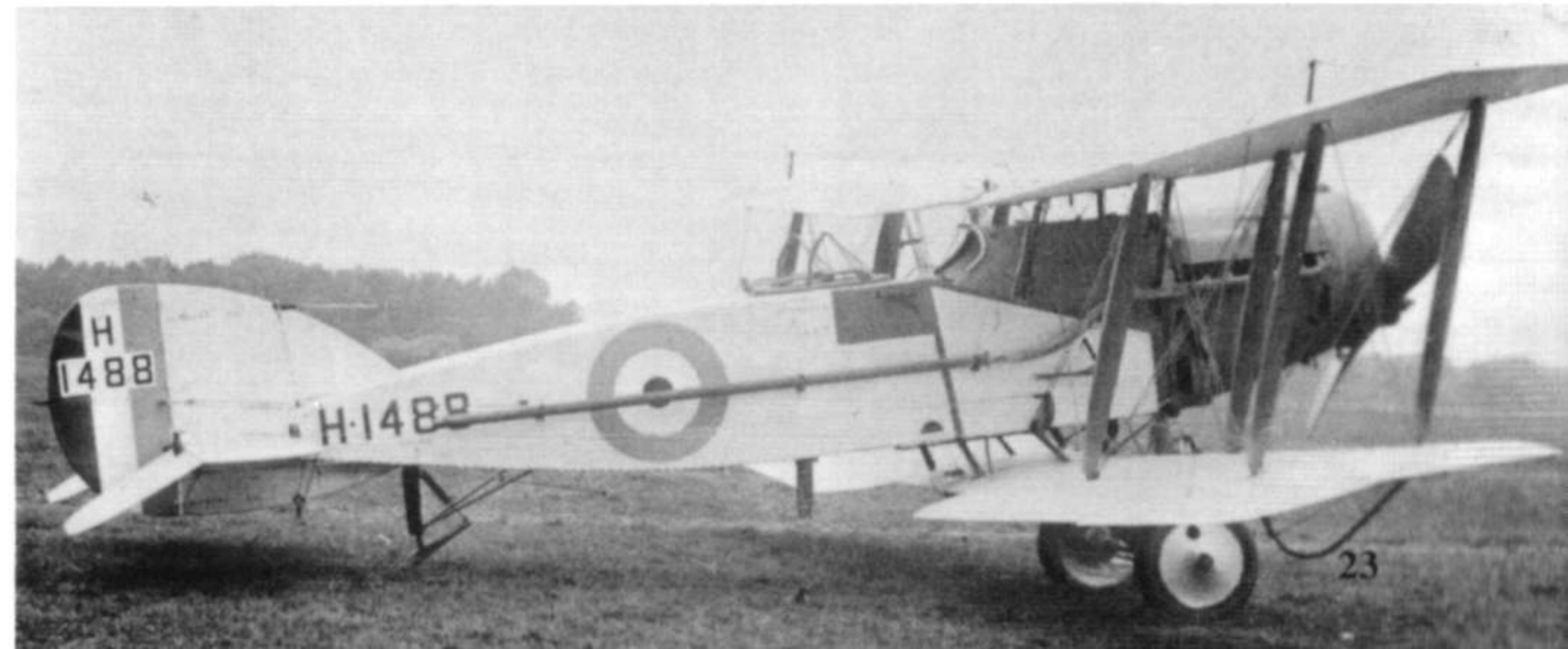


The original identity of this F.2B Mk II being used as a ground instructional airframe (serial 213M) is lost, but since the style of markings did not begin until 1921, it is safe to assume that this machine was used for ground crew training during the 1920s.

An F.2B Mk II (D8045) of No 5 Flying Training School demonstrates the art of picking up a message suspended from a line between the two posts set up to the right with the aid of the message pick-up hook. The hook was mounted on the fuselage underside between the landing gear legs.



This F.2B Mk II (H.1488) is known to have flown with both Nos 4 and 106 Squadrons, Royal Air Force during 1921 before going to No 1 School of Target Towing during 1925. It was lost in an accident while being flown by FLT LT Gemmel.



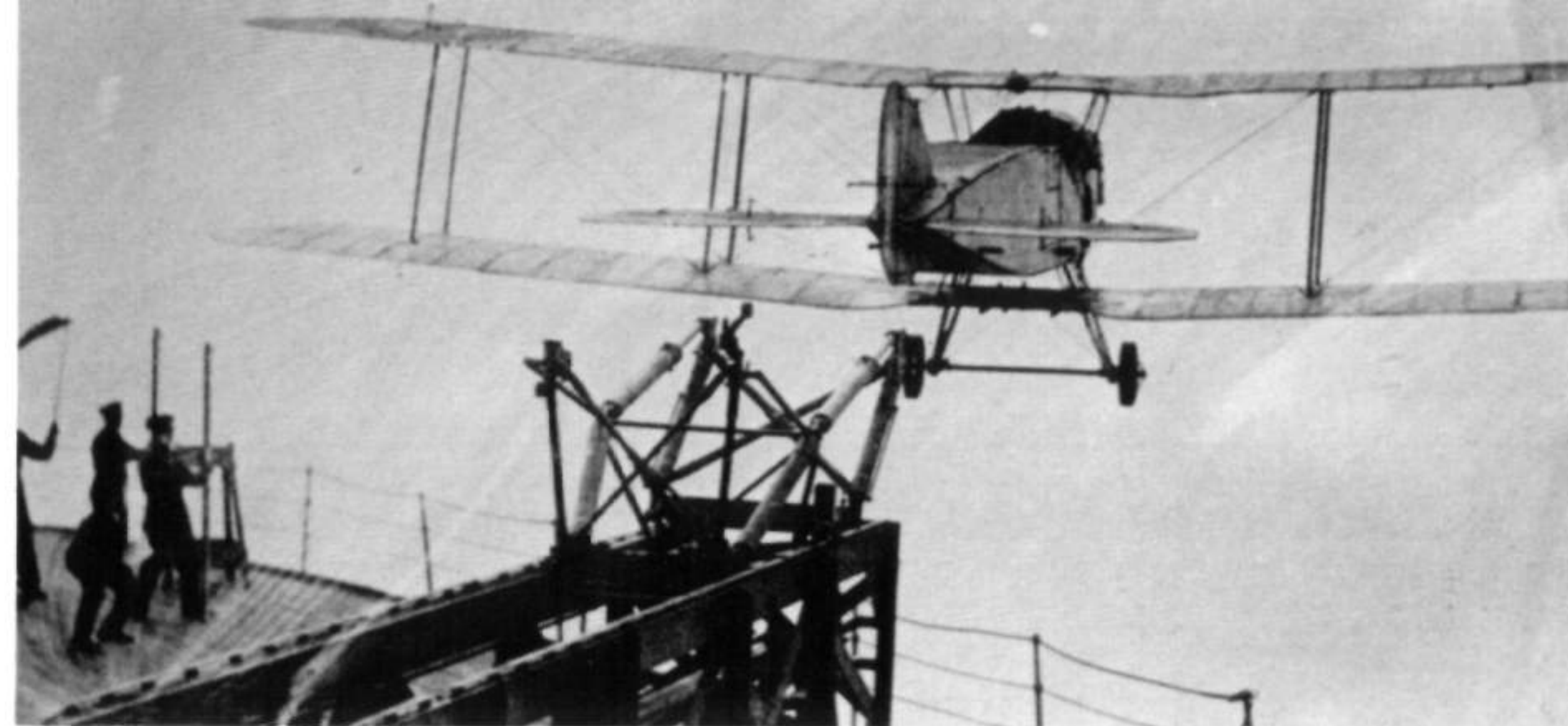
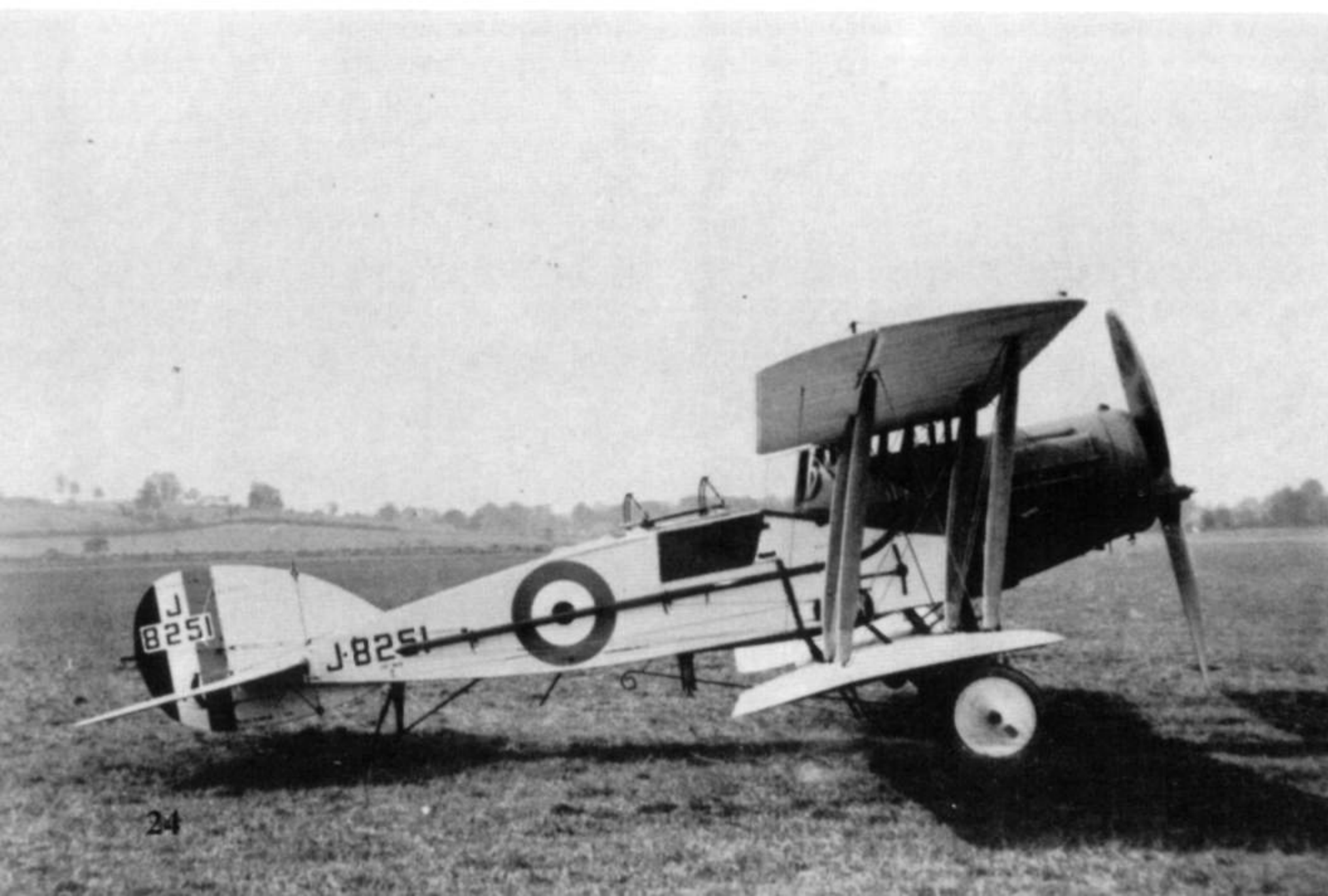
F.2B Mk III/IV

In 1926, a new strengthened variant of the Bristol F.2B, which was capable of lifting heavier loads was introduced under the designation Bristol F.2B Mk III. A number of existing aircraft were rebuilt to this standard, with the final thirty Mk IIIs produced being stripped of their armament and fitted with dual controls to serve as trainers.

These were followed by fifty F.2B Mk IVs which were Mk II or Mk III airframes rebuilt with Handley-Page upper wing leading edge slots, a strengthened undercarriage, revised upper fin and a balanced rudder.

A number of these were further modified with dual controls for use as trainers. The trainers were chiefly associated with the Oxford and Cambridge University Air Squadrons which used the type to replace the earlier trainer modifications of F.2Bs which had an additional fuel tank installed under the lower fuselage. The Mk IV trainers served from July 1928 until 1931 with a small number passing into civil use.

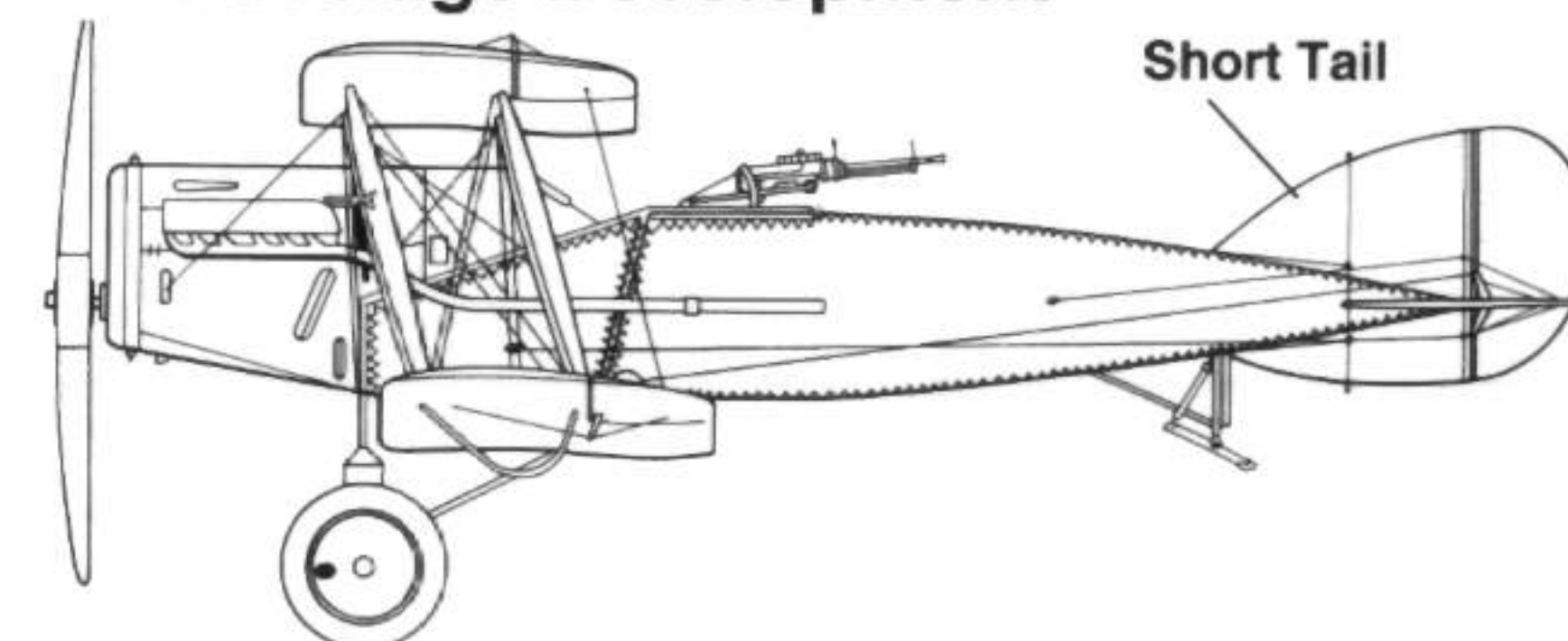
A late production Bristol F.2B Mk III fully equipped for the Army Co-operation role with a message pick-up hook under the fuselage. The aircraft was attached to a home based unit and was one of a small production batch of fifty machines. Mk IIIs were rebuilt Mk I and Mk II airframes, strengthened to handle higher loads.



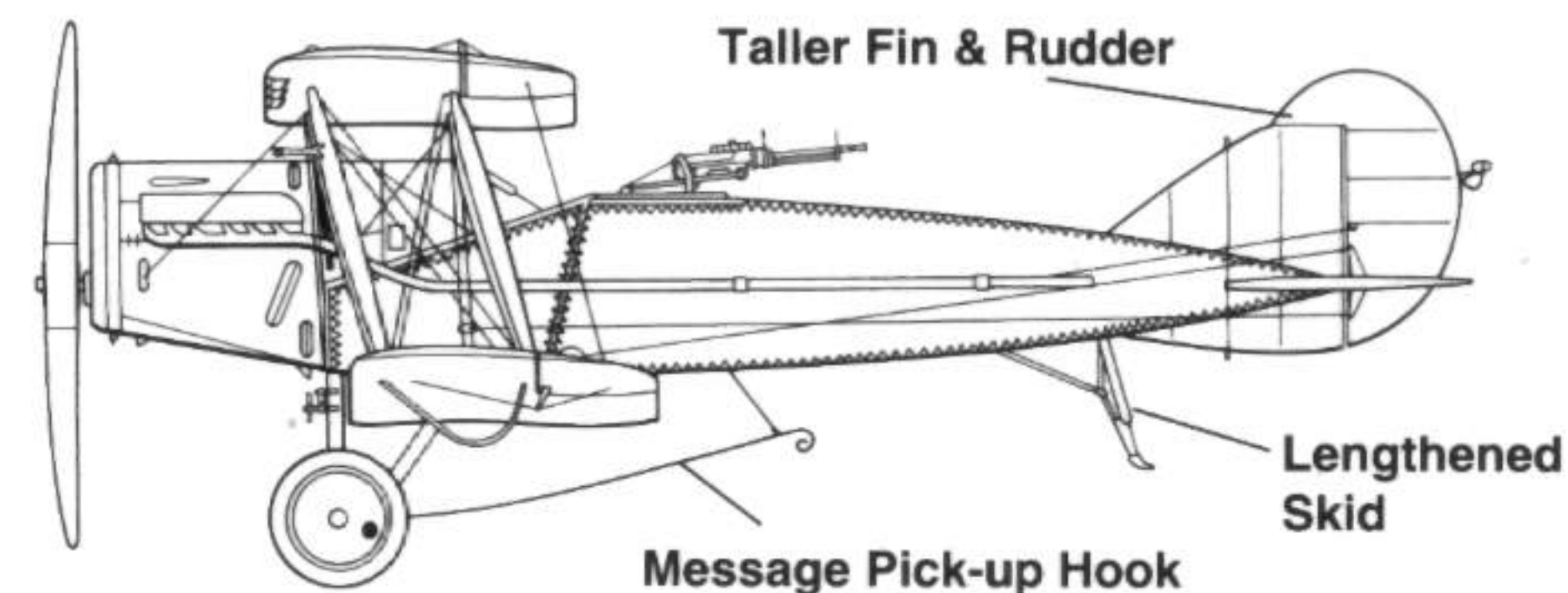
Catapult launches from warships were experimented with at the end of 1918 with an engineless airframe. Similar trials were made from HMS ARK ROYAL on 27 March 1930 using a F.2B Mk IV airframe that was stripped of its Scarff ring rear gun mount and tires.

Fuselage Development

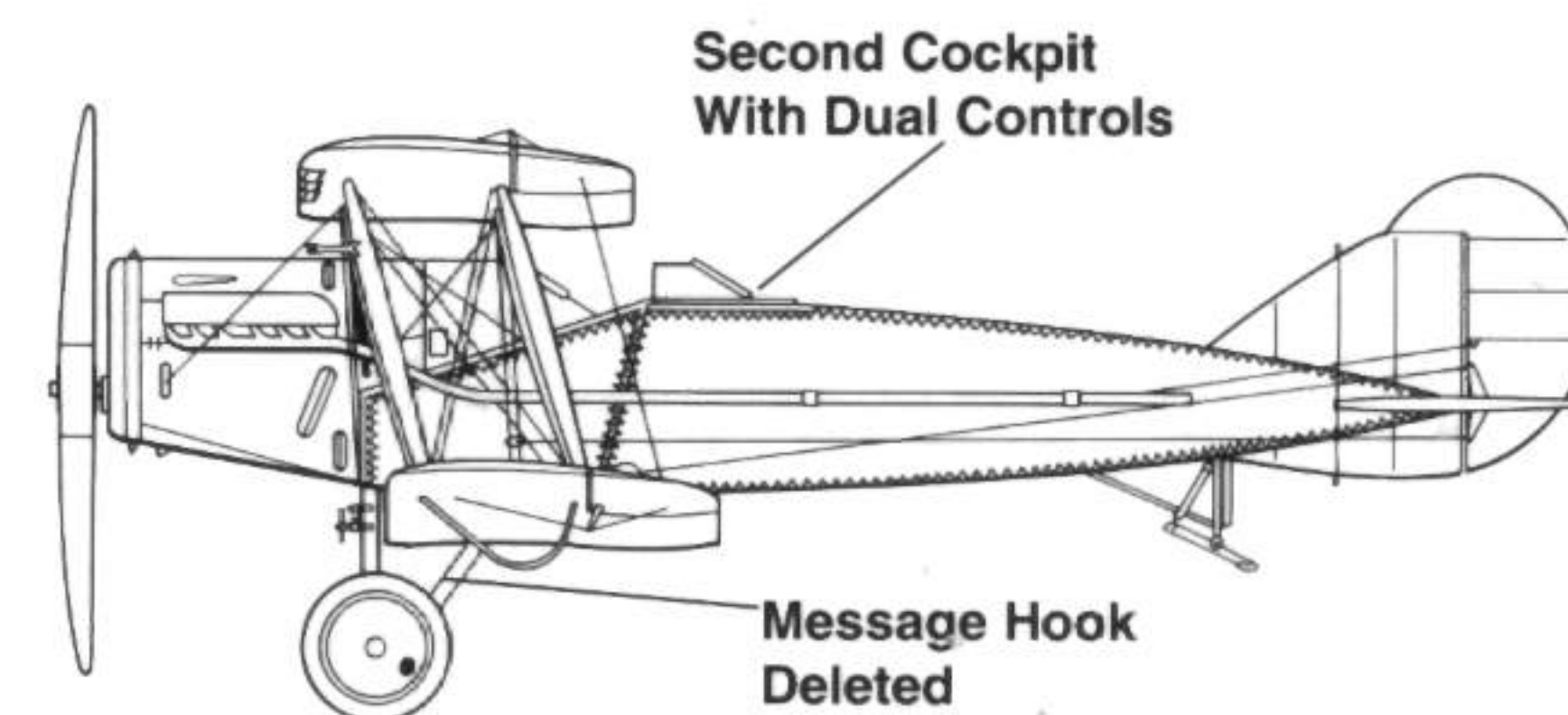
F.2B Mk II



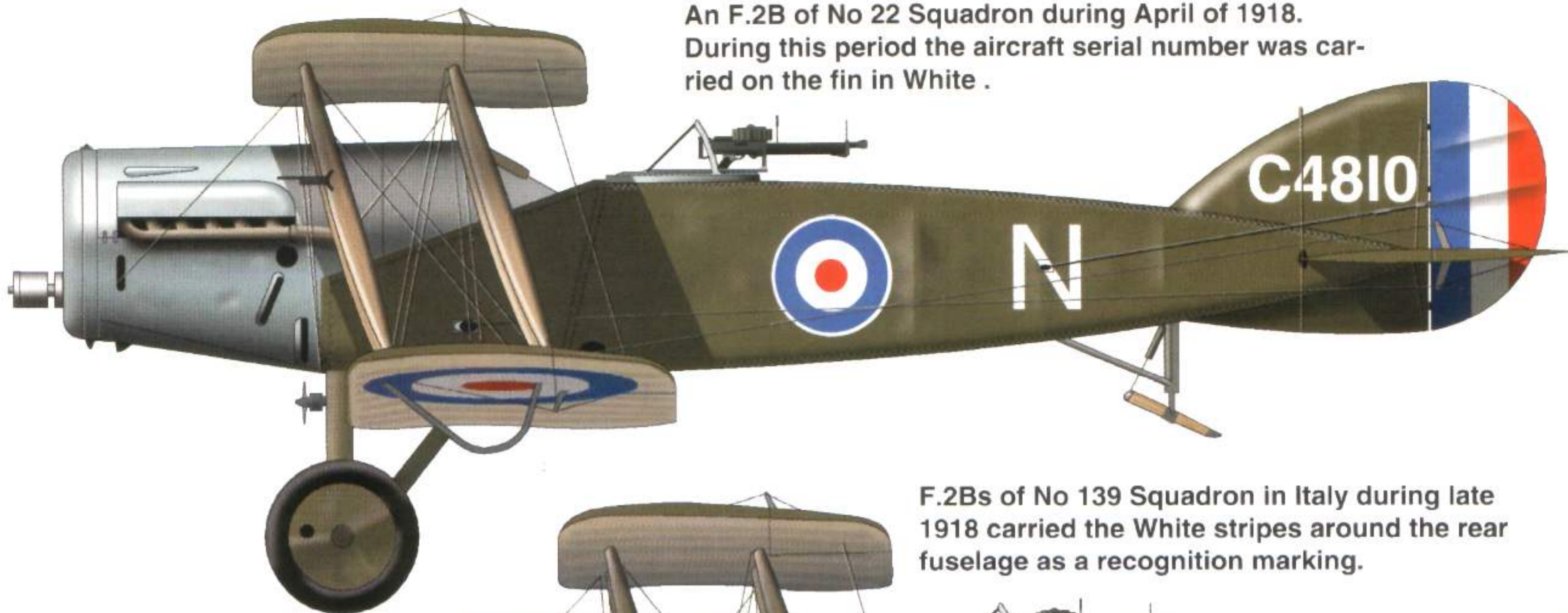
F.2B Mk IV



F.2B Mk IV Trainer



An F.2B of No 22 Squadron during April of 1918. During this period the aircraft serial number was carried on the fin in White .



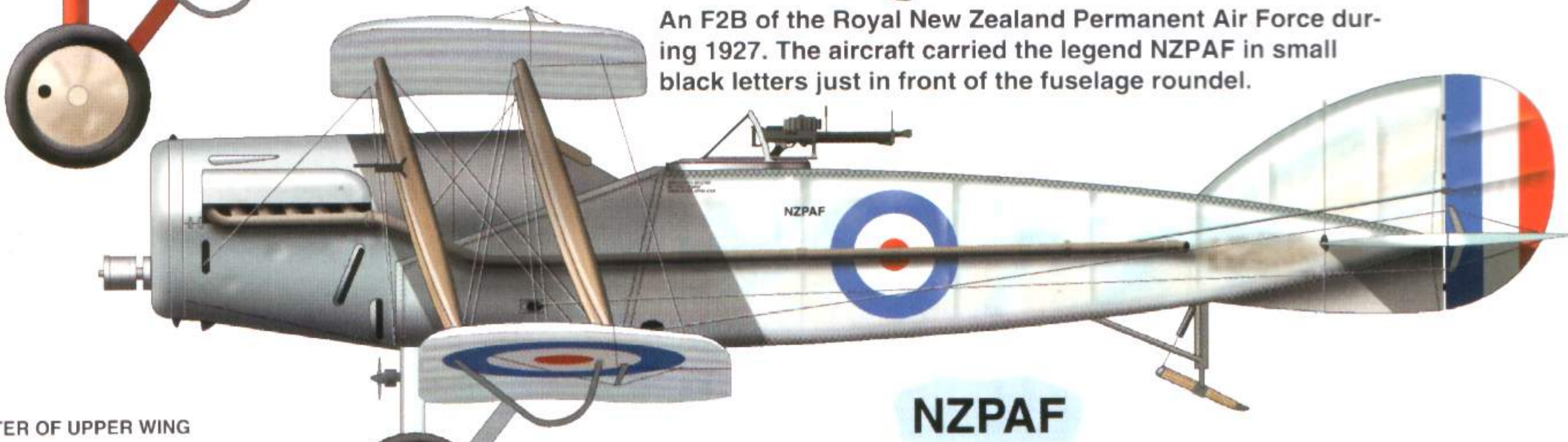
F.2Bs of No 139 Squadron in Italy during late 1918 carried the White stripes around the rear fuselage as a recognition marking.



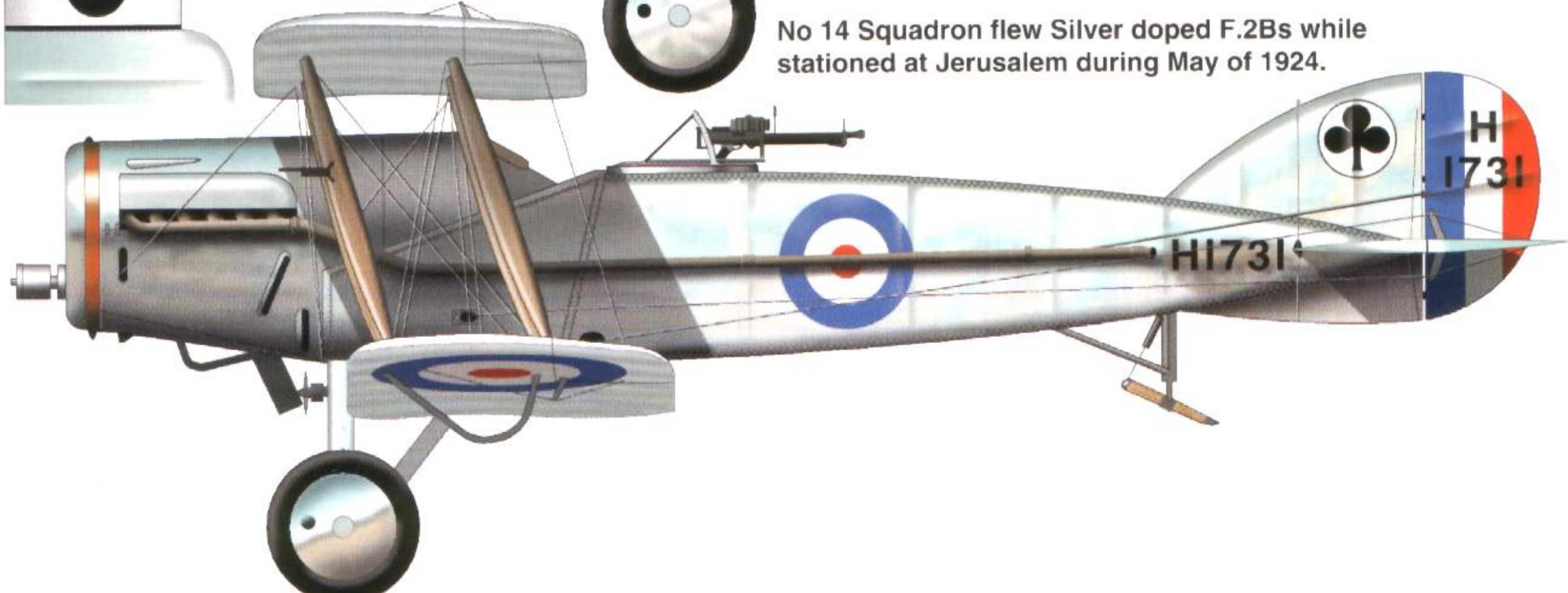
This F.2B of No 7 Training School at Netheravon, England was known as the Crocodile.



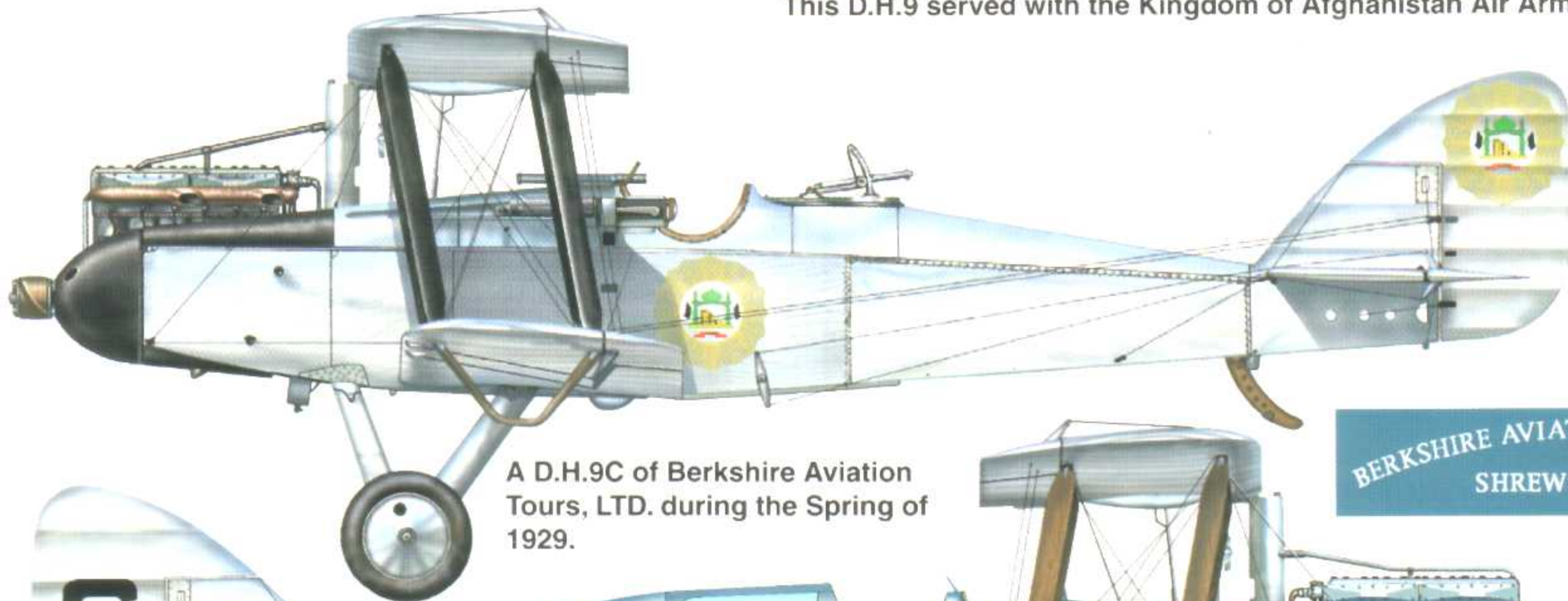
An F2B of the Royal New Zealand Permanent Air Force during 1927. The aircraft carried the legend NZPAF in small black letters just in front of the fuselage roundel.



No 14 Squadron flew Silver doped F.2Bs while stationed at Jerusalem during May of 1924.

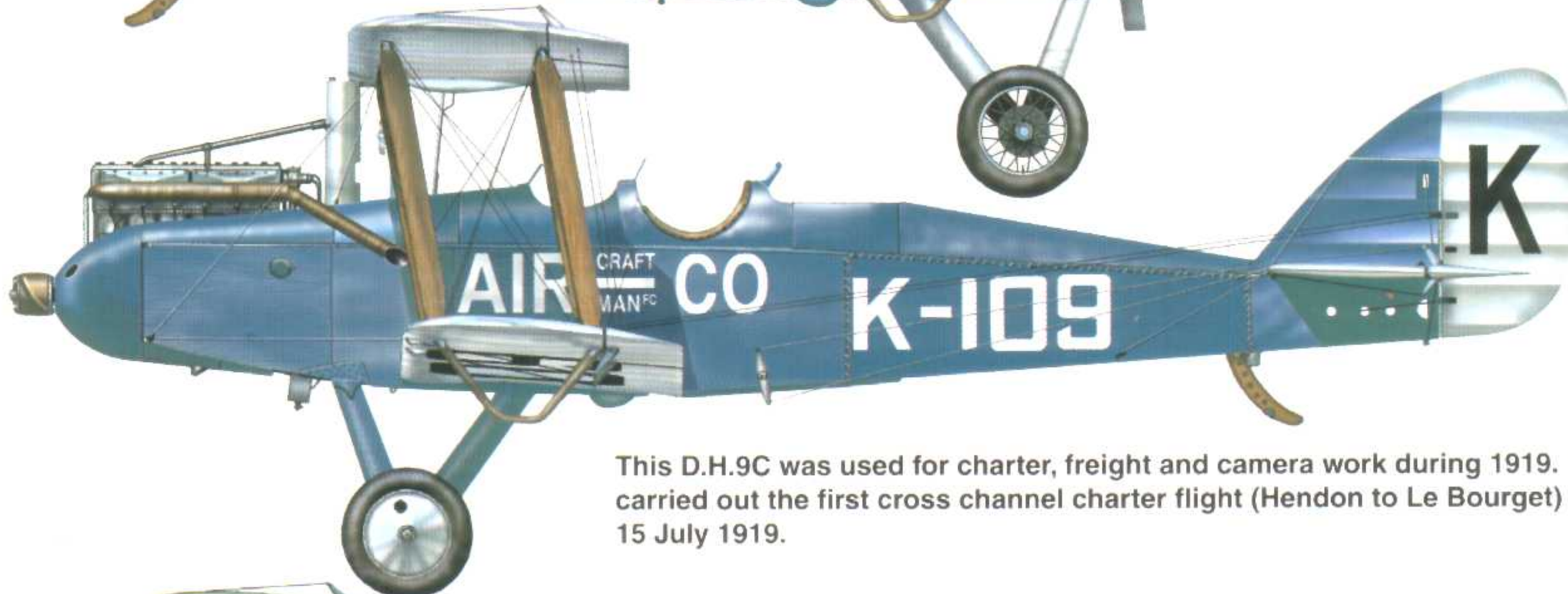


This D.H.9 served with the Kingdom of Afghanistan Air Arm during 1924.



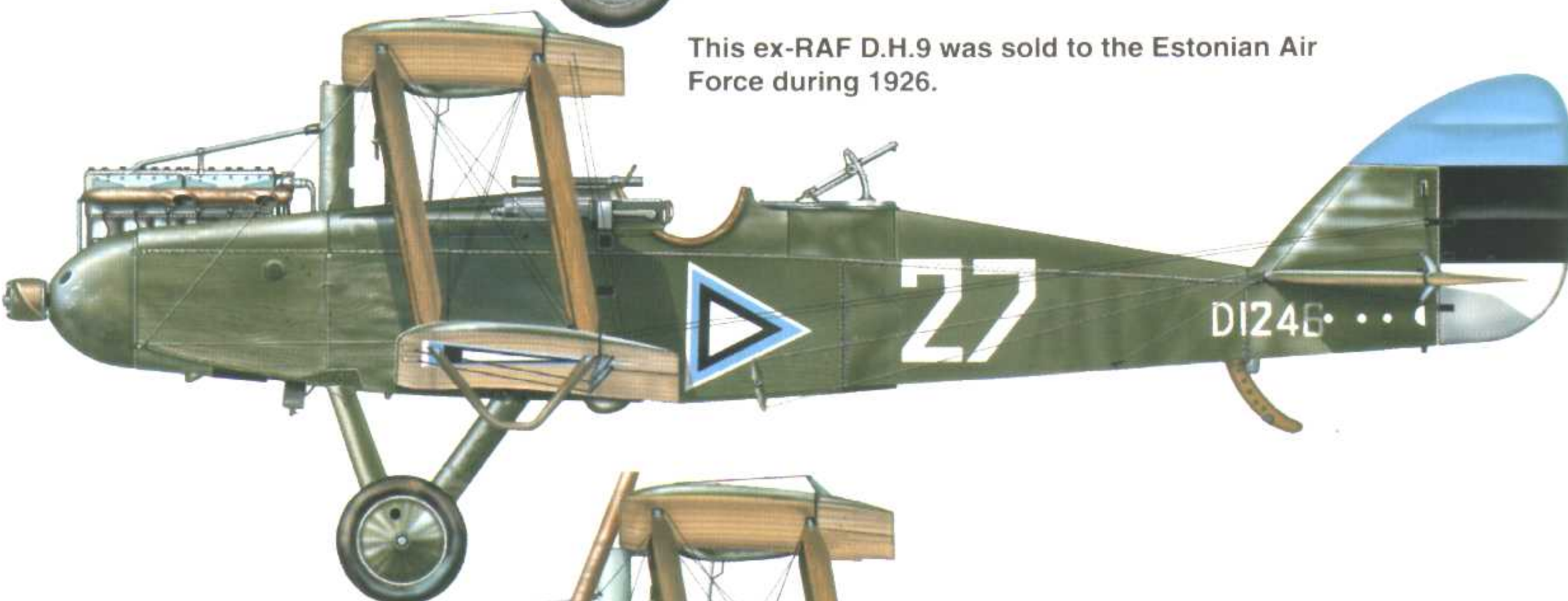
A D.H.9C of Berkshire Aviation Tours, LTD. during the Spring of 1929.

BERKSHIRE AVIATION TOURS, Ltd.
SHREWSBURY

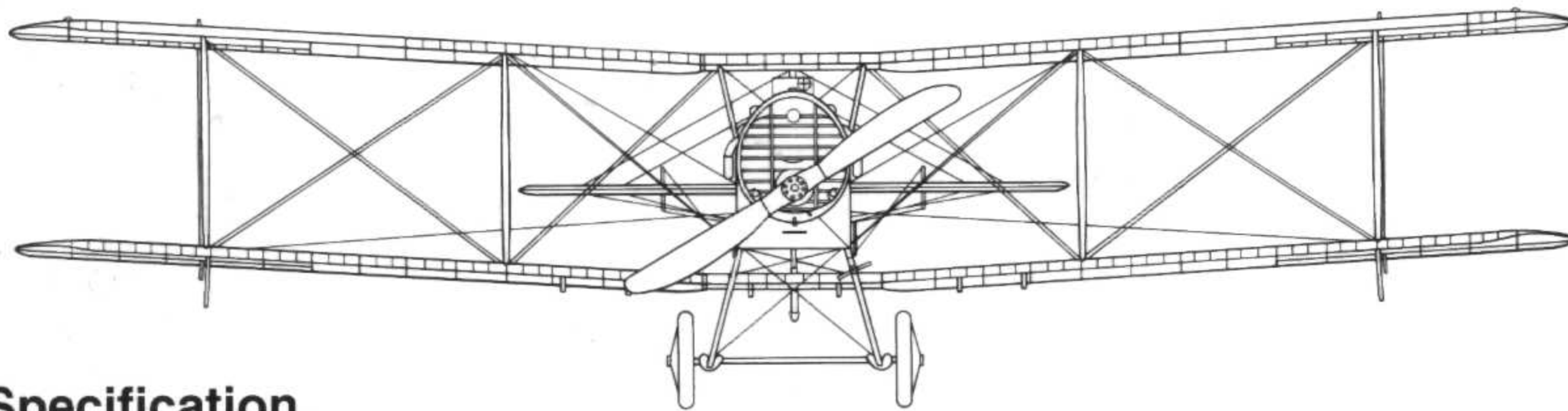


This D.H.9C was used for charter, freight and camera work during 1919. It carried out the first cross channel charter flight (Hendon to Le Bourget) on 15 July 1919.

This ex-RAF D.H.9 was sold to the Estonian Air Force during 1926.



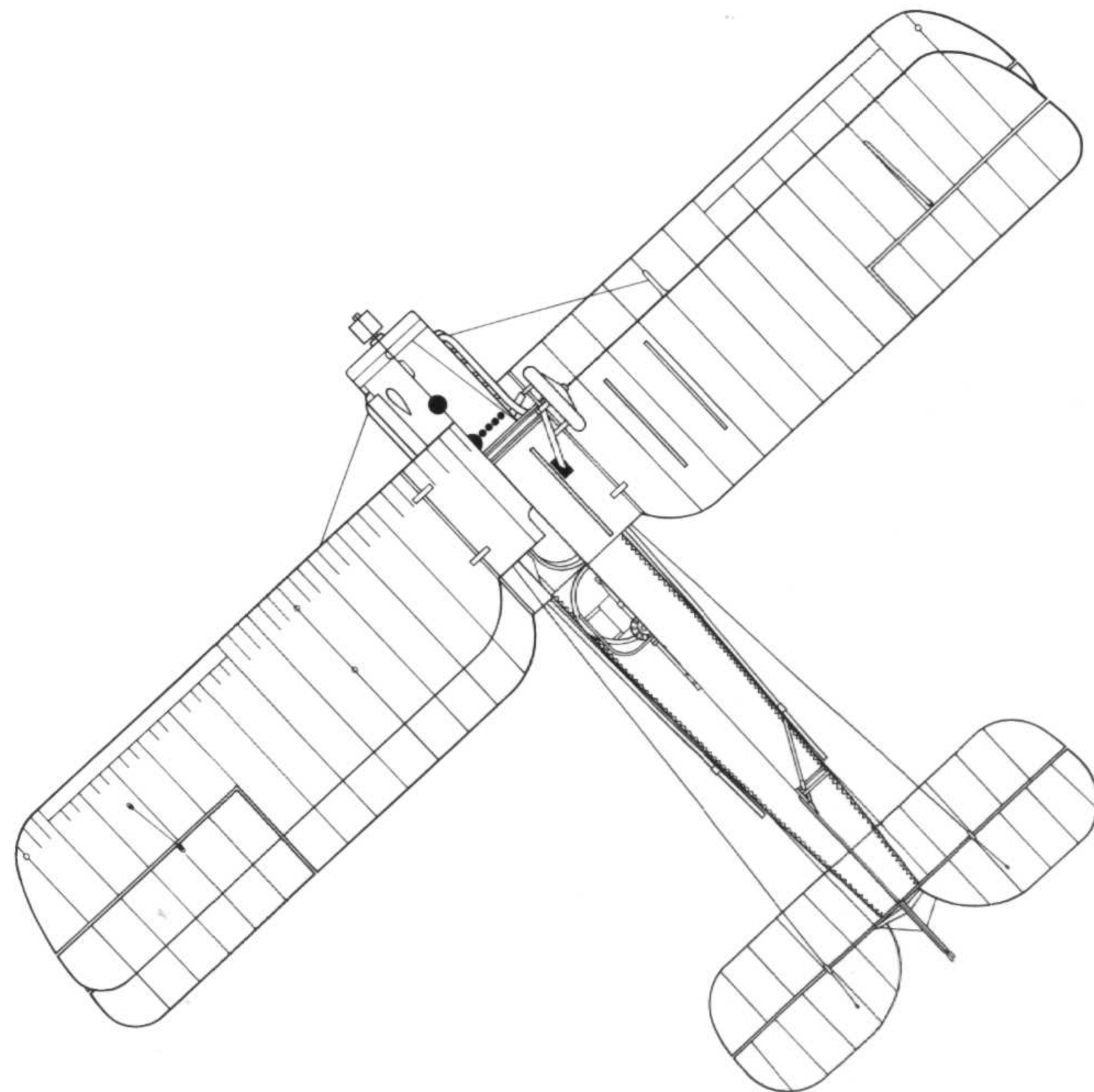
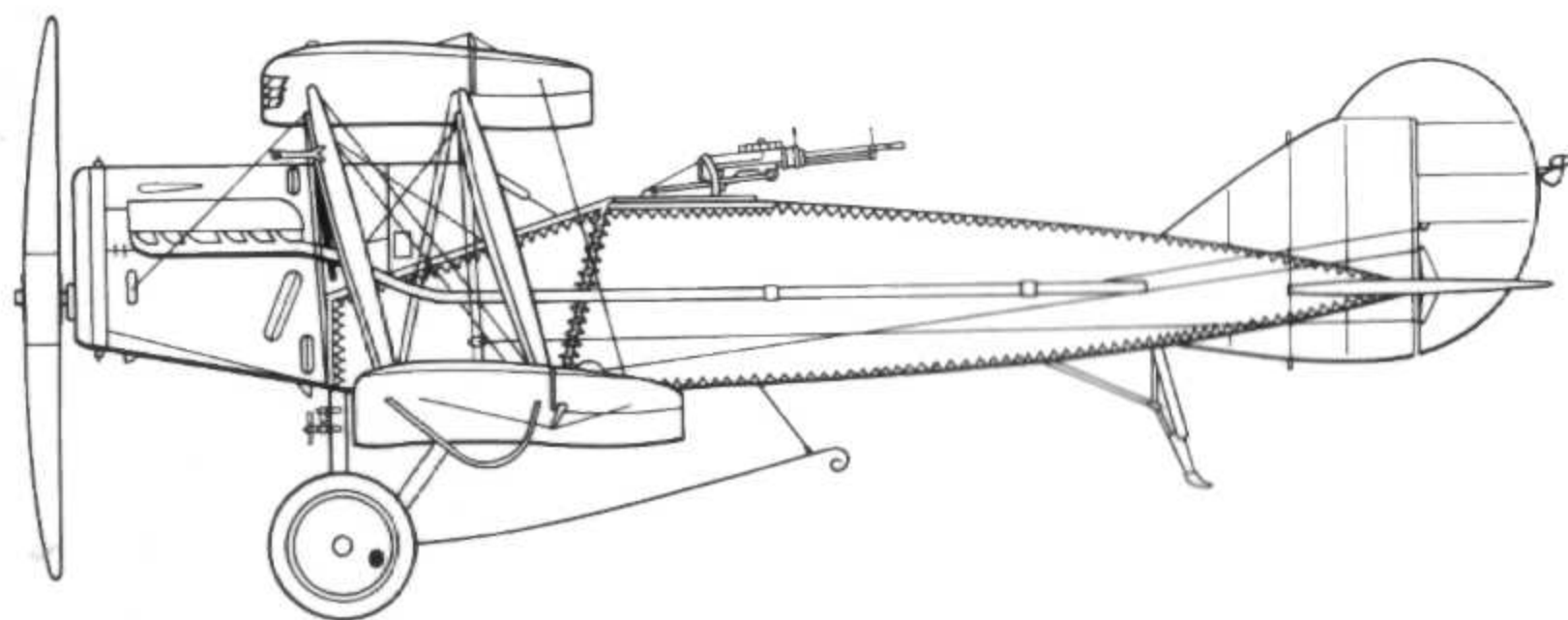
An Australian Air Force D.H.9 flown by Flight Officer V.H. Thornton and Sergeant H. G. Hay. The aircraft was involved in a mid-air collision with another D.H.9 on 21 April 1927 during a review for the Duke of York (King George VI).



Specification

Bristol F.2B Mk IV

| | |
|------------------------|--|
| Wingspan | 39 feet 3 inches (11.96 m) |
| Length | 25 feet 10 inches (7.87 m) |
| Height | 9 feet 9 inches (2.97 m) |
| Empty Weight | 2,200 pounds (998 kg) |
| Maximum Weight | 3,340 pounds (1,515 kg) |
| Powerplant | One 275 hp Rolls Royce Falcon III liquid cooled engine |
| Armament | One forward firing .303 Vickers machine gun and one/two .303 Lewis machine guns and two 112 pound bombs. |
| Speed | 110 mph (177 kph) |
| Service Ceiling | 20,000 feet (6,096 m) |
| Endurance | 3 hours |
| Crew | Two |



U.S. Bristols

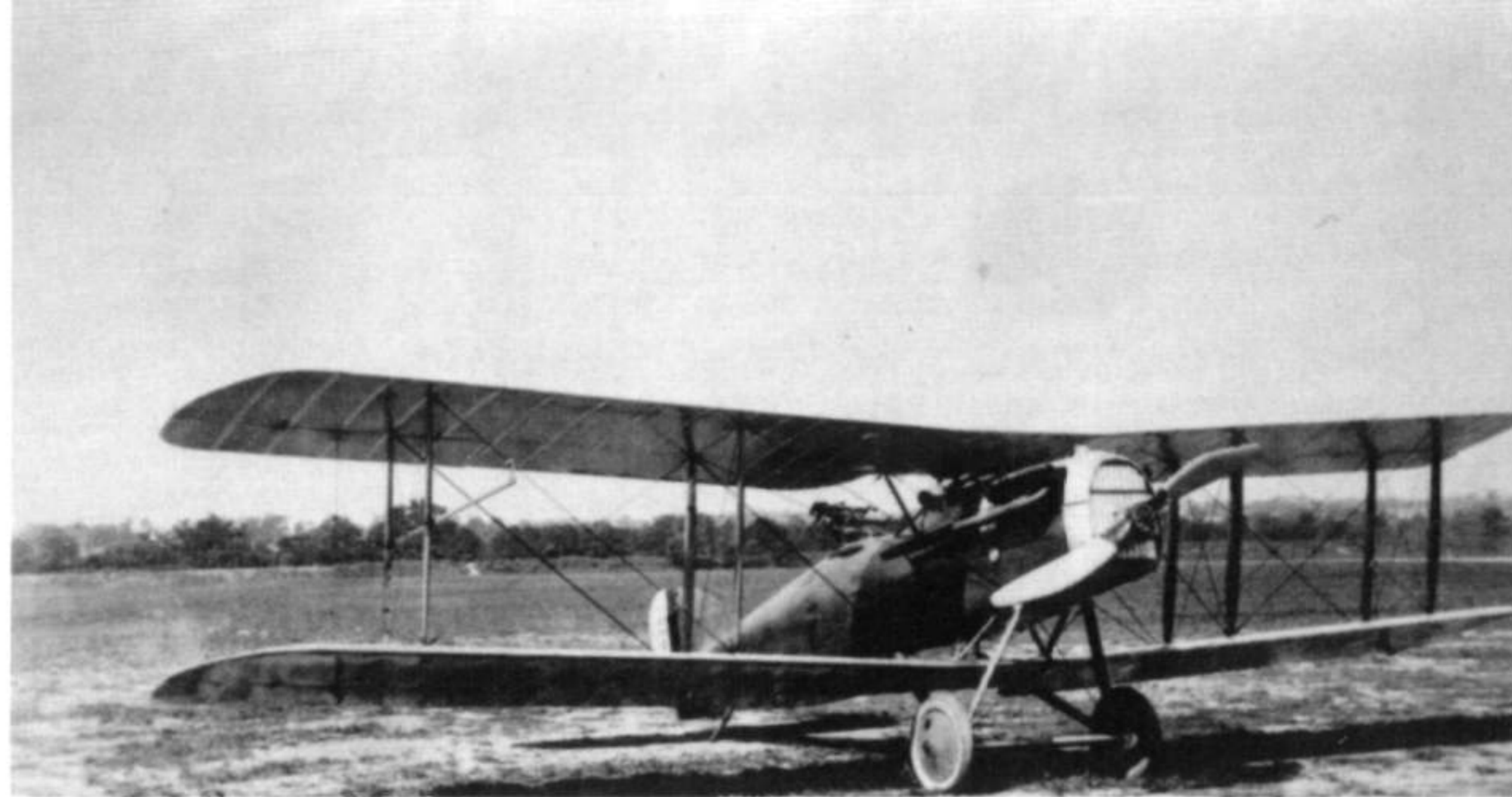
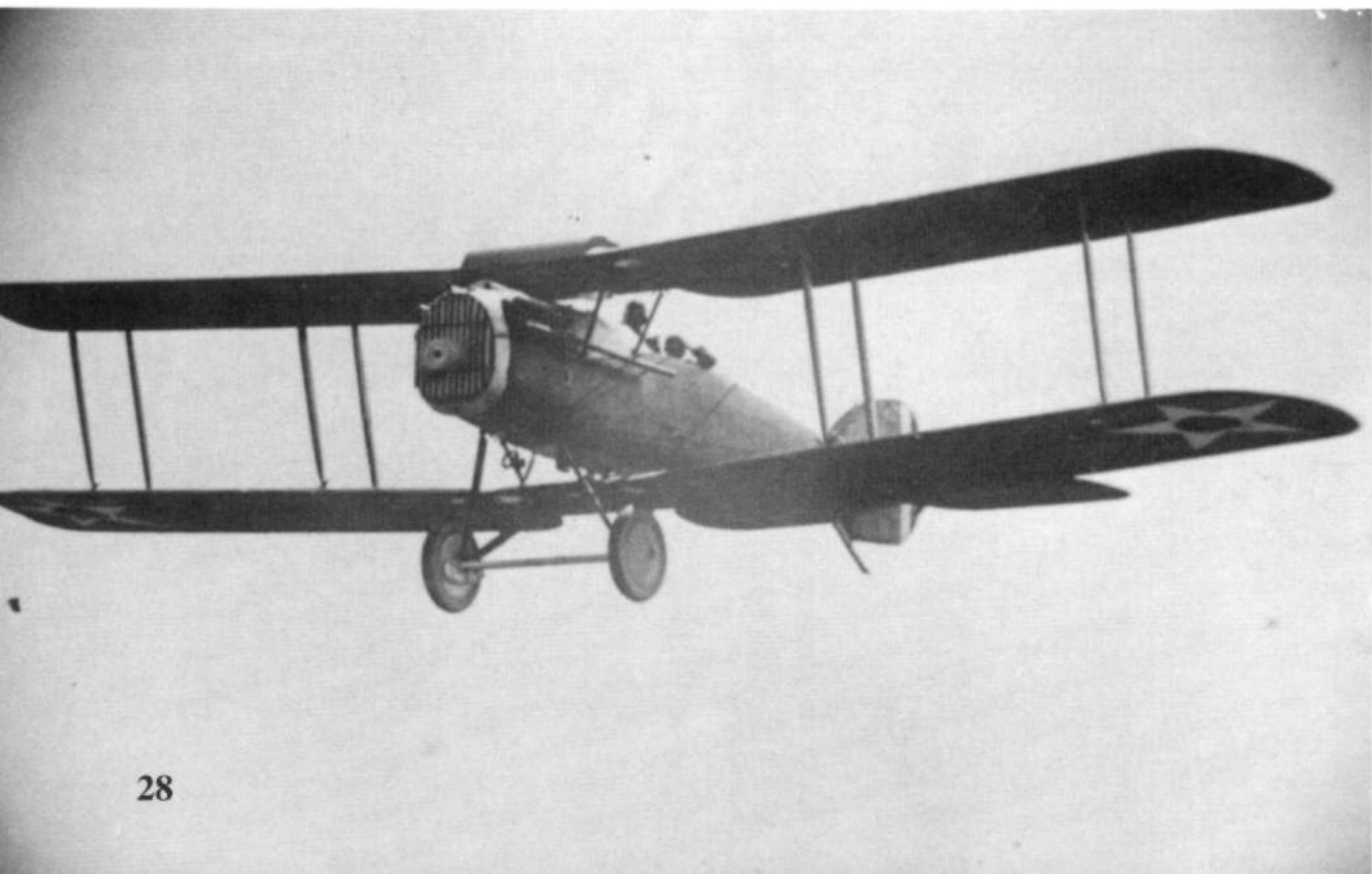
On the personal recommendation of GEN Perishing, plans were proposed for the construction of the Bristol F.2B in the United States. These aircraft were intended to be powered by the 200 hp Hispano-Suiza engine and a pattern aircraft (serial A7207) arrived at the Smithsonian Institute, Washington D.C. on 1 August 1917. Unfortunately for the program, COL V.E. Clark, redesigned the aircraft so that the 400 hp Liberty engine could be installed. This engine turned out to be totally unsuitable and led to a great many problems with early U.S. built F.2Bs.

At this same time, a contract for 1,000 aircraft had been placed with the Fisher Body Corporation, but this was soon reallocated to the Curtiss Aeroplane & Motor Company and the number of aircraft on order doubled to some 2,000 aircraft. The first aircraft, designated the O-1, was delivered on 25 January 1918, although it did not fly until 5 March. In all, twenty-five production O-1s were delivered, with an additional two prototypes, before the contract was cancelled. The cancellation came after two crashes that were found to be due to faulty workmanship and another that was blamed on pilot error. These crashes had unjustly given the F.2B a bad reputation in the United States.

While these events were taking place, the original pattern aircraft (A7207) had been re-fitted with the only existing American-built 300 hp Hispano-Suiza engine (being redesignated the P-30) while a second British-built pattern aircraft had arrived (being designated the P-37). This aircraft was fitted with a 280 hp Liberty 8 engine.

A proposal to fit four F.2Bs with Liberty 8 engines for comparison with a similar number of aircraft powered by Hispano-Suiza engines (to be known as B-2s and B-1s respec-

The XB-1A on a test flight during 1921. This aircraft was a Bristol F.2B airframe powered by a 300 hp Hispano-Suiza engine. The XB-1A was built by the Dayton-Wright company for the United States Air Service and featured an enlarged fuel tank over the upper wing center section.



This XB-1A on the grass at McCook Field where the semi-monocoque fuselage for the type was developed, lacked the enlarged fuel tank over the upper wing center. This XB-1A was known to have been serialled 90.

tively) was not proceeded with, but it was not long before engineers at McCook Field were carrying out trials with these engines mounted on semi-monocoque fuselages, those with the Liberty engines being known as B-4s (later XB-2) and those powered by the Hispano engines were designated as B-3s (later XB-1). Because of the unreliable nature of the Liberty engine, the B-4 variant was soon abandoned and plans to have it armed with twin Browning machine guns were never carried out. Work proceeded on the XB-1 which was to be armed with twin Marlin machine guns for the pilot.

Unfortunately, before the tests could be completed, the original model was damaged in a storm necessitating a complete rebuilding program during which Browning machine guns were fitted in place of the Marlin guns and the new designation XB-1A adopted. Following tests at McCook Field in early July of 1919 a small production program was started.

This XB-1A, No 151, carries its serial number A.S. 94108 on the fuselage side and had an enlarged fuel tank over the upper wing center section. The XB-1A was to be armed with twin forward firing Browning machine guns in the fuselage upper decking.



Despite these set-backs, including the rendering obsolete of some 1,400 production drawings by redesigns that were later deemed unnecessary soon after the first F.2B pattern aircraft had arrived in the United States, the program continued. One reason the program was continued was that the P-30 had gained an unofficial altitude record. This record flight had taken place on 18 November 1918 when MAJ Schroeder had flown A7207 to a height of 29,000 feet over Dayton, Ohio. During this flight, its 300 hp Hispano-Suiza engine functioned faultlessly. Although a record, official confirmation for the flight was never requested.

The intended role of the XB-1A was that of a night observation aircraft and to meet this requirement an enlarged center section fuel tank was fitted in the upper wing. Forty were produced by the Dayton-Wright company and the majority of these were powered by 300 hp Wright "B" engines, although a few were experimentally powered by such engines as the 350 hp Packard 1A-1327 and aircraft serial A.S. 64156 which had a Curtiss D-12 engine. All aircraft retained the semi-monocoque veneer fuselage construction and production was completed during 1920.

The XB-1A carried twin .303 inch Lewis machine guns in the rear cockpit for the observer. The aircraft carried its serial, S.C. 40125, its designation, XB-1A, and P90 on the rudder in Black lettering over the rudder stripes.



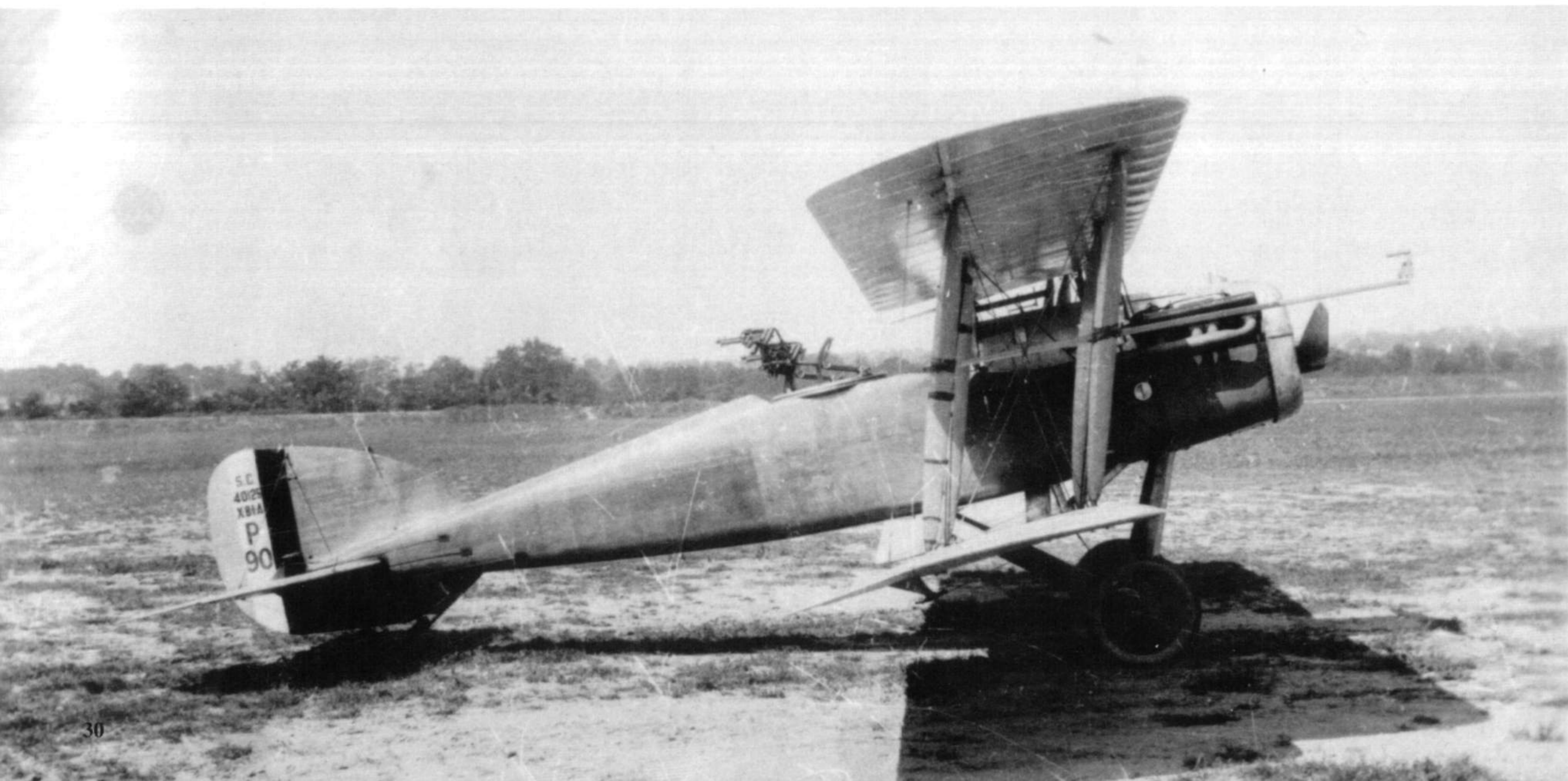
This XB-1A (serial A.S. 64158) was powered by a 300 hp Wright H (license built Hispano) liquid cooled engine and had the contractor number 179.





B-1A (A.S. 64156) has the serial number repeated on the rudder in small Black letters across the rudder stripes. The aircraft was fitted with a 420 hp Curtiss D.12 liquid cooled engine.

This XB-1A had the serial number A.S.6300 painted on the fuselage side in Black. It is known that the aircraft had the contractor number 179. American built F.2Bs never saw action and most were used in experimental work.

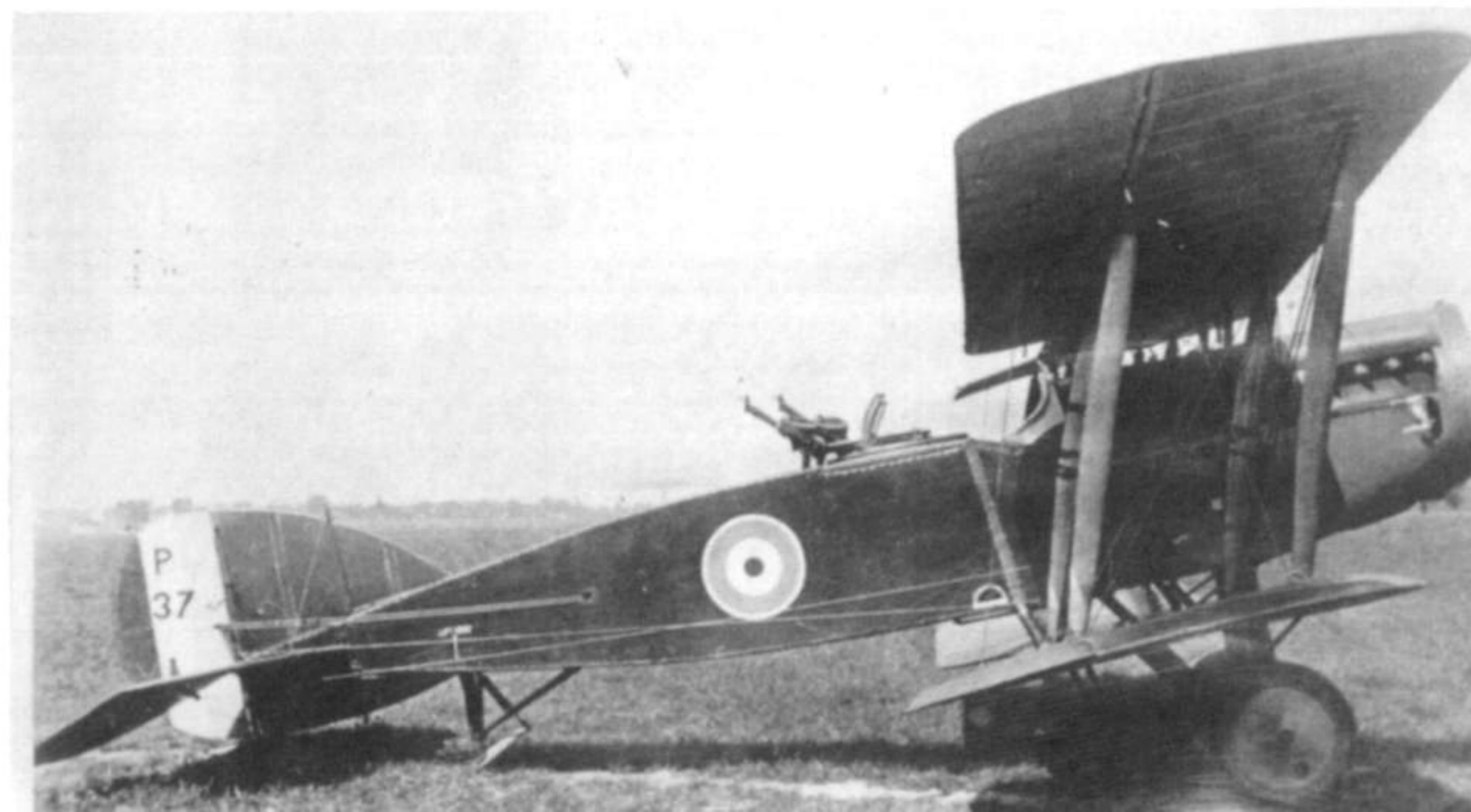




The P-30 was originally an F.2B (serial A7203) which was re-engined with a 300 hp Hispano-Suiza engine. The aircraft set a new altitude record over Dayton, Ohio on 18 November 1918, while based at McCook Field.

This Curtiss-built 0-1 on the ramp at McCook field on 3 March 1918 was powered by a 400 hp Liberty engine. The flank radiators were, at one time, experimentally switched for a single radiator mounted above the upper wing center section.

The second F.2B to be sent to the U.S. was re-engined with a 290 hp Liberty 8 engine. The P37 still carried British national markings at McCook Field during the Summer of 1918. The aircraft was destroyed before trials could be carried out.



Foreign Service

Following the Armistice a number of surplus Bristol F.2Bs were sold abroad. During 1922, five reconditioned airframes were sold to Norway while eight Rolls Royce Falcon powered aircraft were purchased by the Irish Free State. These were followed by an additional six new production aircraft during 1925.

A country in urgent need of military aircraft during this period, was Poland, which was emerging as an independent state and engaged in a war with neighboring Russia. To meet Poland's immediate requirements over one hundred Bristol F.2Bs were ordered for delivery during 1920. The first machines of the type going into action on 14 August. Eventually three Polish squadrons were equipped with F.2Bs and mainly used in the reconnaissance role.

Two years later Greece bought six standard Bristol F.2Bs and in 1923 Belgium bought fifteen machines powered by 300 hp Hispano-Suiza engines. These were purchased from the Aircraft Disposal company and were followed by sixteen new production machines bought directly from Bristols. These had the same power plants but were configured with Frise type ailerons and oleo undercarriages. A license was also obtained to construct the F.2B in Belgium and forty were produced during 1925. These were modified with horn-balanced rudders but were otherwise similar to the earlier aircraft and some were used for the training role.

Other F.2Bs in the post-war years went to Canada and New Zealand. Small number also were used by China (for service with Sun Yat Sen's rebel air force). Mexico obtained a number of aircraft (reportedly ten) while the pair originally obtained by Spain (6510 and 6512) were later augmented by ten additional aircraft, all being fitted with oleo type undercarriages, Frise ailerons and 300 hp Hispano-Suiza engines.

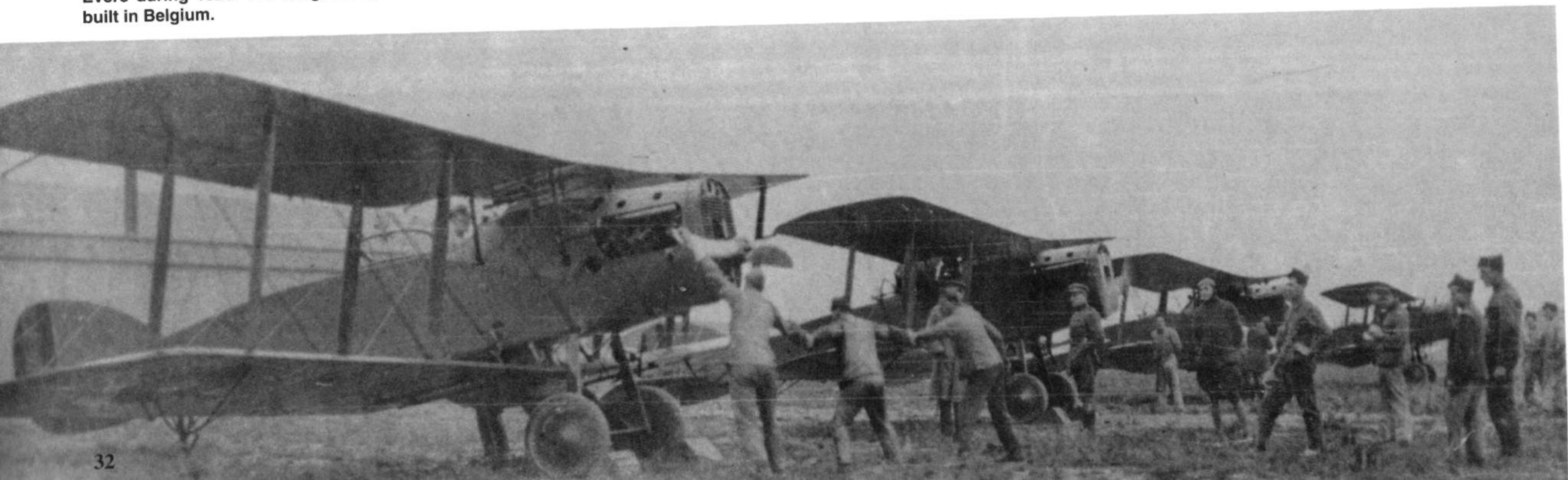
The majority of Bristol Fighters which were purchased by foreign air forces were

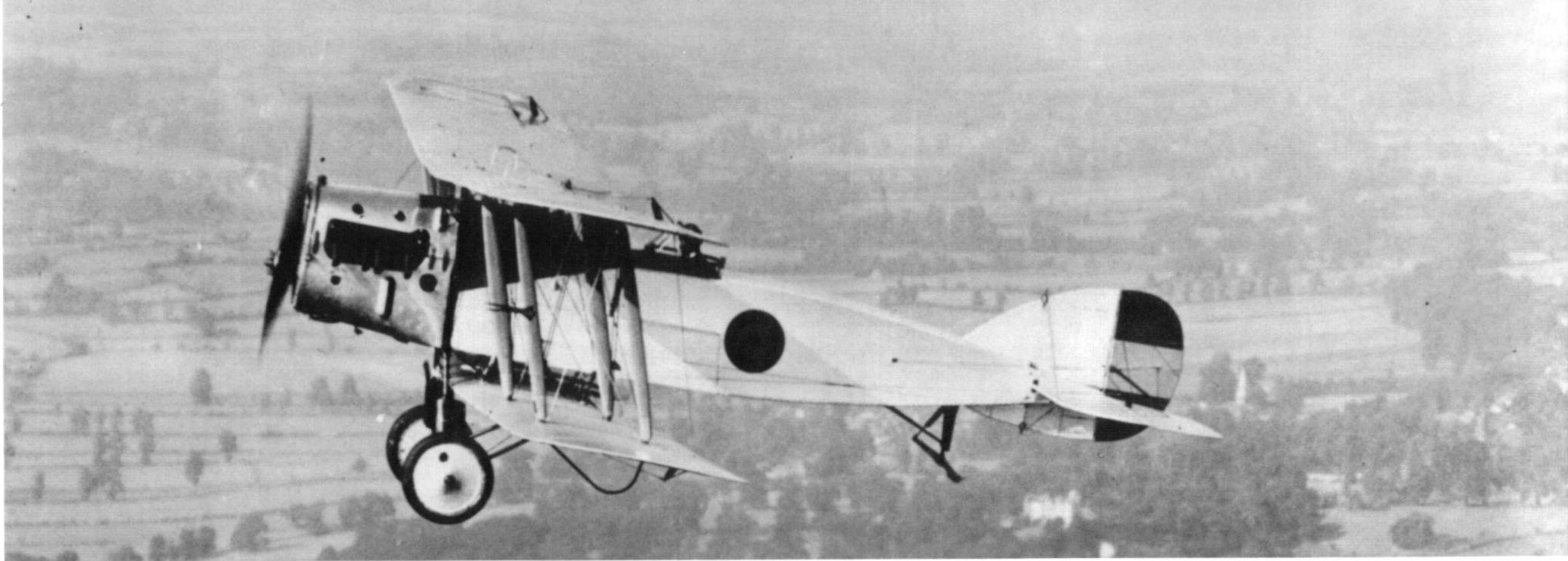
A line up of Hispano Suiza powered F.2Bs of the Belgian Air Force on their home base of Evere during 1920. The Belgians operated a total of 71 Bristol Fighters including forty built in Belgium.



This Bristol F.2B powered by a 260 hp Falcon III engine was delivered to the Irish Free State Air Corps on 20 October 1925. The national markings under the wings are 20 inches wide and consist of equal width Green, White and Orange (inboard) bands. The rudder stripes are Green, White and Orange (left to right).

standard F.2Bs. The longest lived of these were the two examples that continued to serve with the Royal New Zealand Air Force until one year before the outbreak of the Second World War!



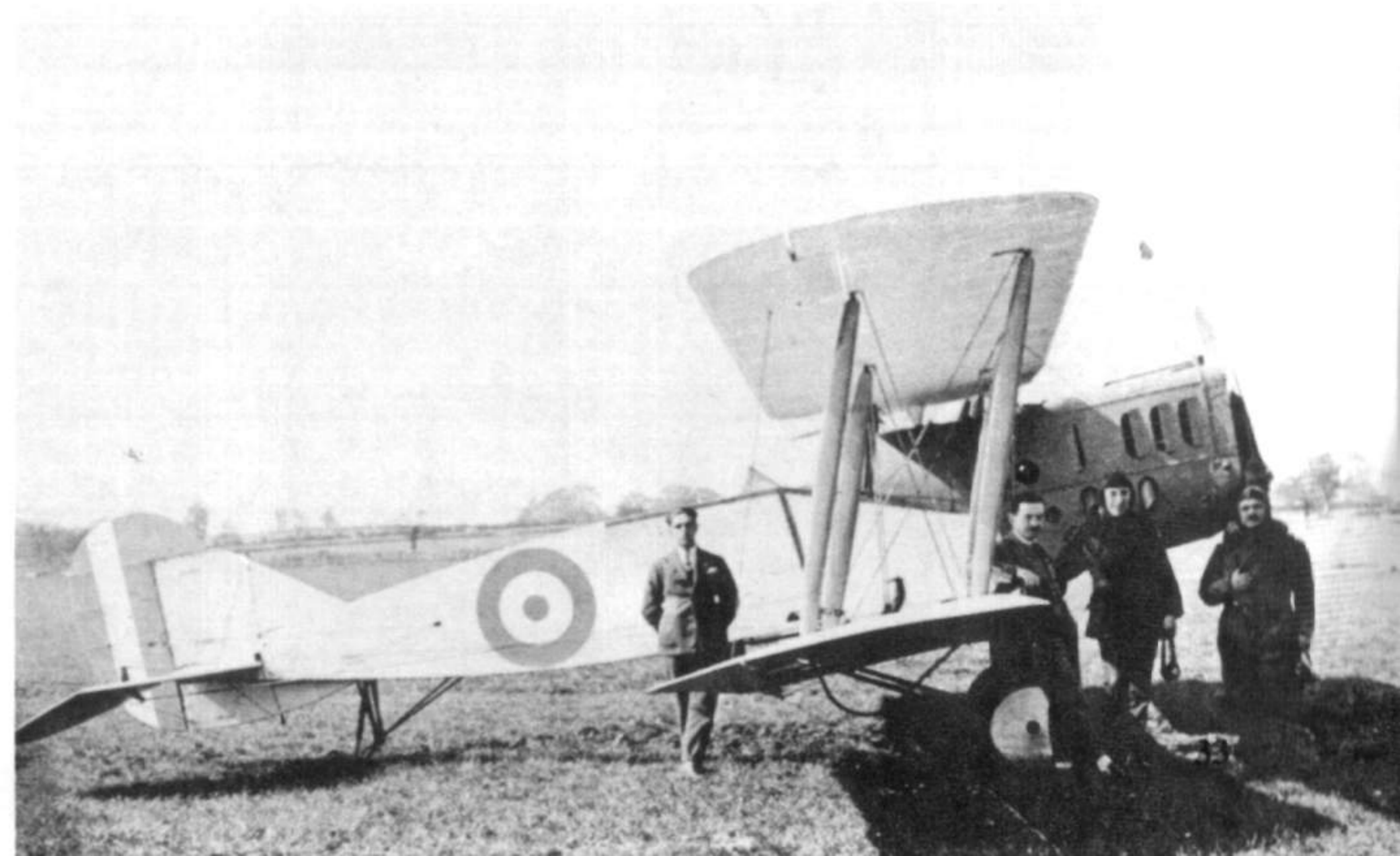


6510 was one of a pair of F.2Bs with revised controls and oleo landing gear that were supplied to Spain between July and October of 1924 (the other being 6511). Later the total of Spanish Bristols were increased to twelve by the purchase of another ten aircraft (serials 6512-6521).

This Polish F.2B (2071) has large wing national markings and a smaller fuselage insignia. The aircraft has a large White triangle on the fin and the rudder is believed to have been either Gray or clear dope.



This Bristol F.2B Mk IV was also known as the Puma School variant. The aircraft was supplied to the Royal Hellenic (Greek) Navy at Phaleron Bay, Greece, during 1925.



Post-War Service

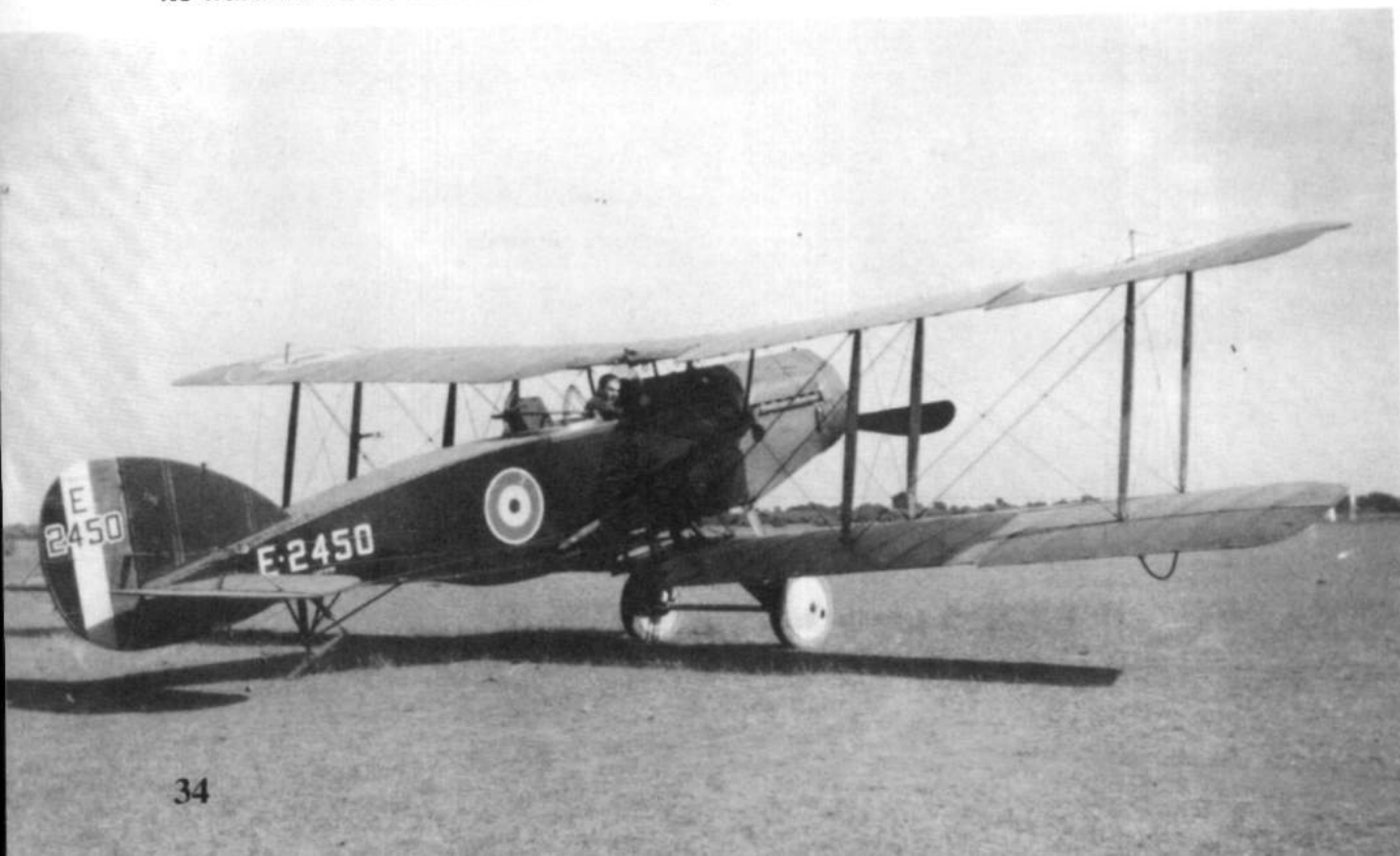
With the establishment of the Royal Air Force on a peacetime basis, the Bristol F.2B was adopted to be the service's standard Army Co-operation machine. First tested in December of 1919, the F.2B Mk II was modified to carry a wide range of desert equipment and had a cooling system suitable for tropical climates. A total of over four hundred similar aircraft were subsequently issued to overseas RAF squadrons, operating in such areas as Palestine, Egypt, India and Turkey.

At home four units were equipped with F-2Bs for work in collaboration with the Army. One unit was tasked with communication duties and was the only F.2B unit based in the British Isles that was equipped for the spectacular role of picking up messages suspended between two poles on the ground for collection by aircraft.

Although the envisaged use of the Bristol F.2B as a carrier based aircraft was abandoned, tests were carried out aboard HMS EAGLE and one aircraft (F4453) made a number of deck landings aboard the carrier.

Production continued until 1920, with all subsequent F.2B variants (Mk III and IV) being conversions from earlier production machines. The Royal Air Force finally retired its last F.2B during 1932.

This F.2B was built by Bristol and powered by a Rolls-Royce Falcon III engine. The F.2B (E2450) was flown by No 31 Squadron at Lahore, India after 1918, although it still carried its wartime PC 10 Dark Green camouflage scheme.



This Falcon III powered F.2B was experimentally fitted with a steel Leitner-Watts four blade propeller in place of the standard two blade wooden unit.



An F.2B runs up its engine on the grass at Splch during early 1919. E2297 was flown by No 7 Squadron after having been relinquished by No 20 Squadron, which was preparing to leave for India. This same F.2B had been flown earlier by No 31 Squadron.



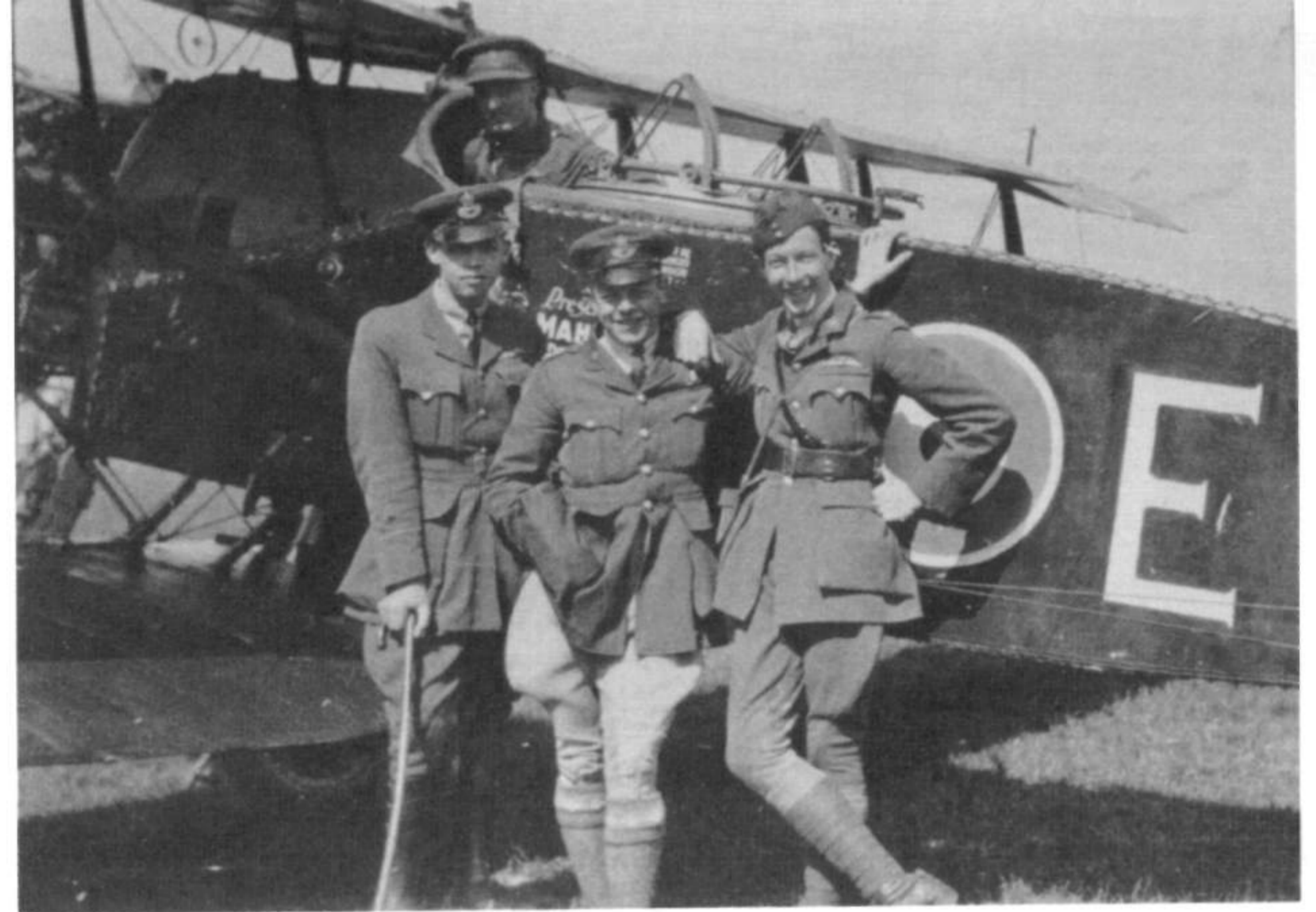
CAPT Jones (left) of No 7 Squadron poses with his observer in front of their Bristol F.2B Fighter at Cologne during March of 1919. The aircraft is equipped with bomb racks under the wings.

This aircraft was the first F.2B (F4796) to arrive at Colinstownin, Ireland. It replaced the Royal Aircraft Factory RE8s that No 106 Squadron had previously flown.





Bristol F.2B (F4766) on the snow covered field at Quetta during 1929 had previously been aircraft "H" of No 5 Squadron between November of 1927 and July of 1928. It later served with No 20 Squadron (November 1930 - March 1931).



Three officers pose along side this F.2B (F4440) of No 18 Squadron during 1919. The aircraft carried the legend *Presented by the MAHARAJAH OF BAHADUR, Sir Rameswar Singh of Darbhanga* who was then attached to No 18 Squadron.

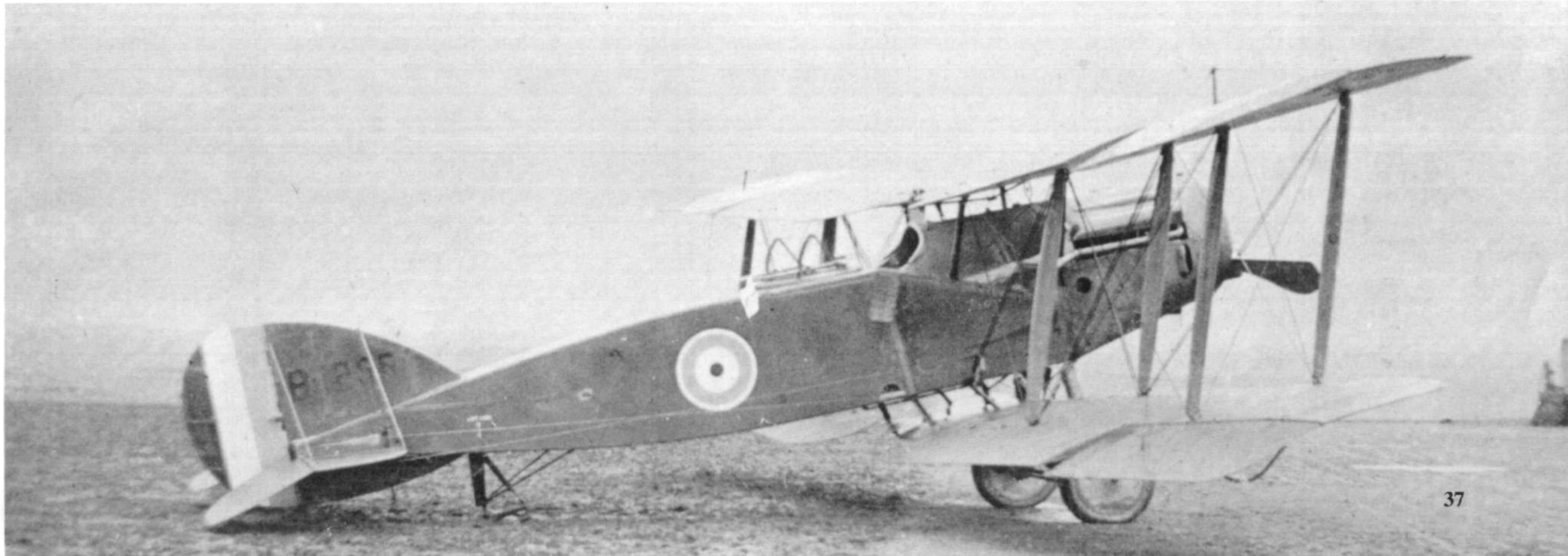
Aircraft side number B4 was No 12 Squadron's presentation aircraft (E22SS). It carried the legend **ALRESFORD RURAL DISTRICT** on the fuselage side in White. The crash occurred at Purefoy.

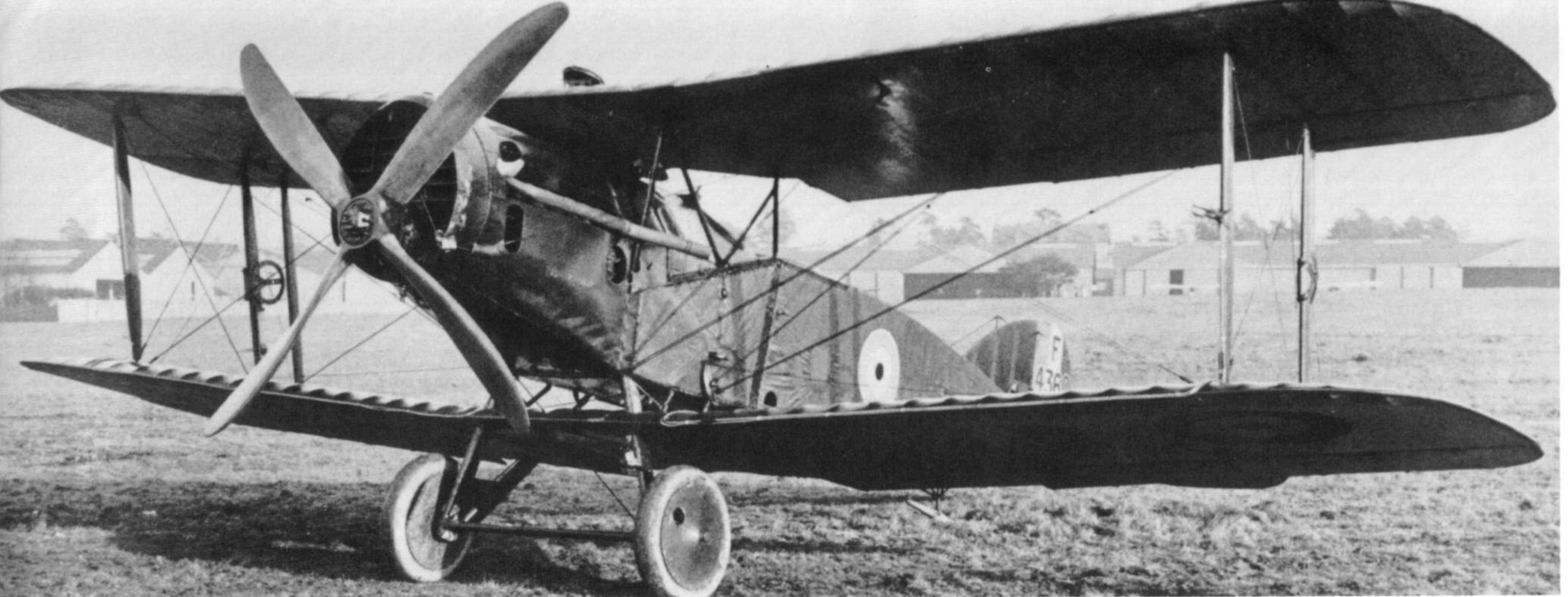




Ground crews reposition this F.2B (C4692) on the landing ground at Marske. The aircraft appears to have a camera-gun mounted above the upper wing center section and is equipped with a four blade propeller.

B1296 was a fairly early production F.2B powered by a Falcon III engine which survived in service long enough to be transferred to the training command. The F.2B became aircraft 9 at No 38 Training Squadron at Rendcombe.





This F.2B (F4360) on the grass at the Royal Aircraft Establishment, Farnborough, on 25 January 1923, was experimentally fitted with single-bay wings with a span of 30 feet 11 1/2 inches. It had previously served with No 2 Squadron, RAF.

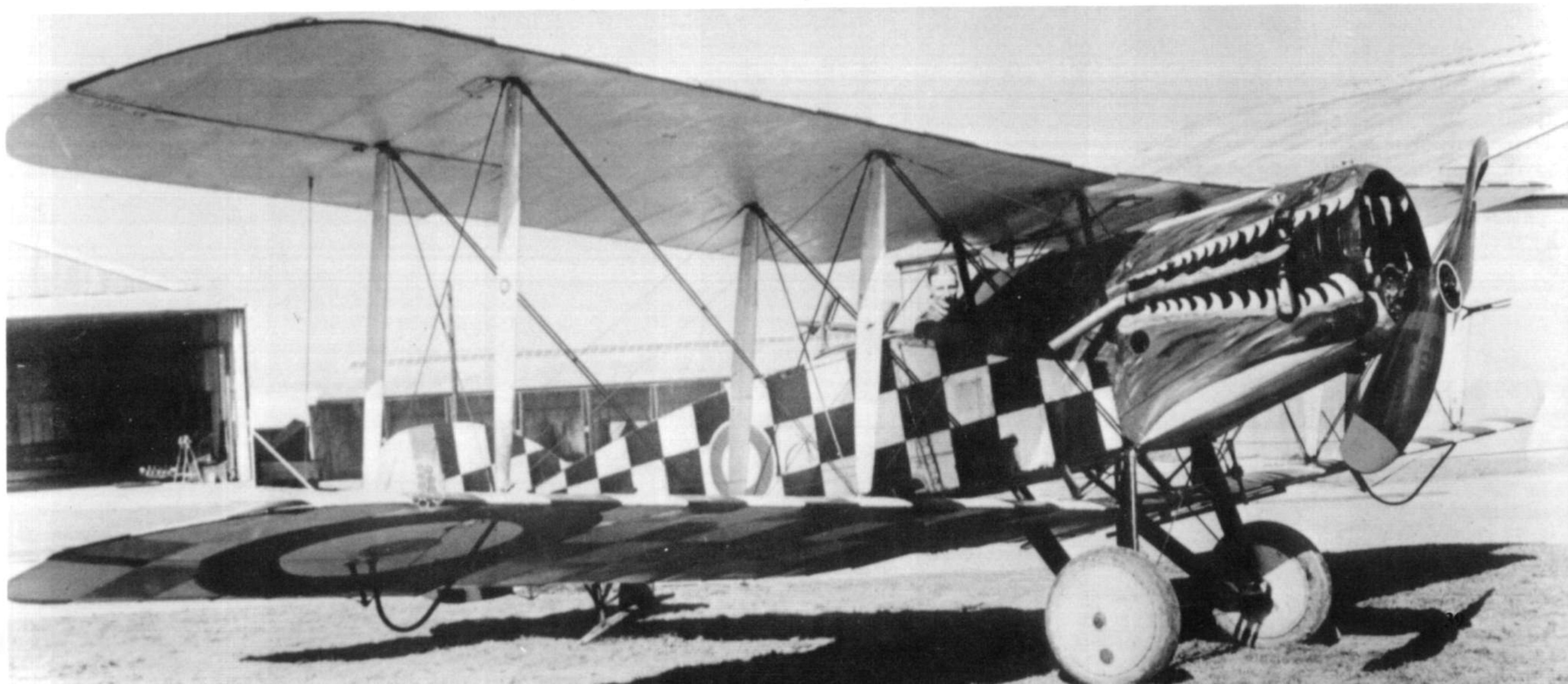
This F.2B (C4695) carried a Red and White checkerboard nose marking while attached to the No 4 (Auxiliary) School of Air Gunnery. The individual aircraft number on the fuselage, 76, and the serial on the fin was in White.





Fermoy, in Southern Ireland (Eire) was the home base of this F.2B (H1441) which carried this bizarre color scheme.

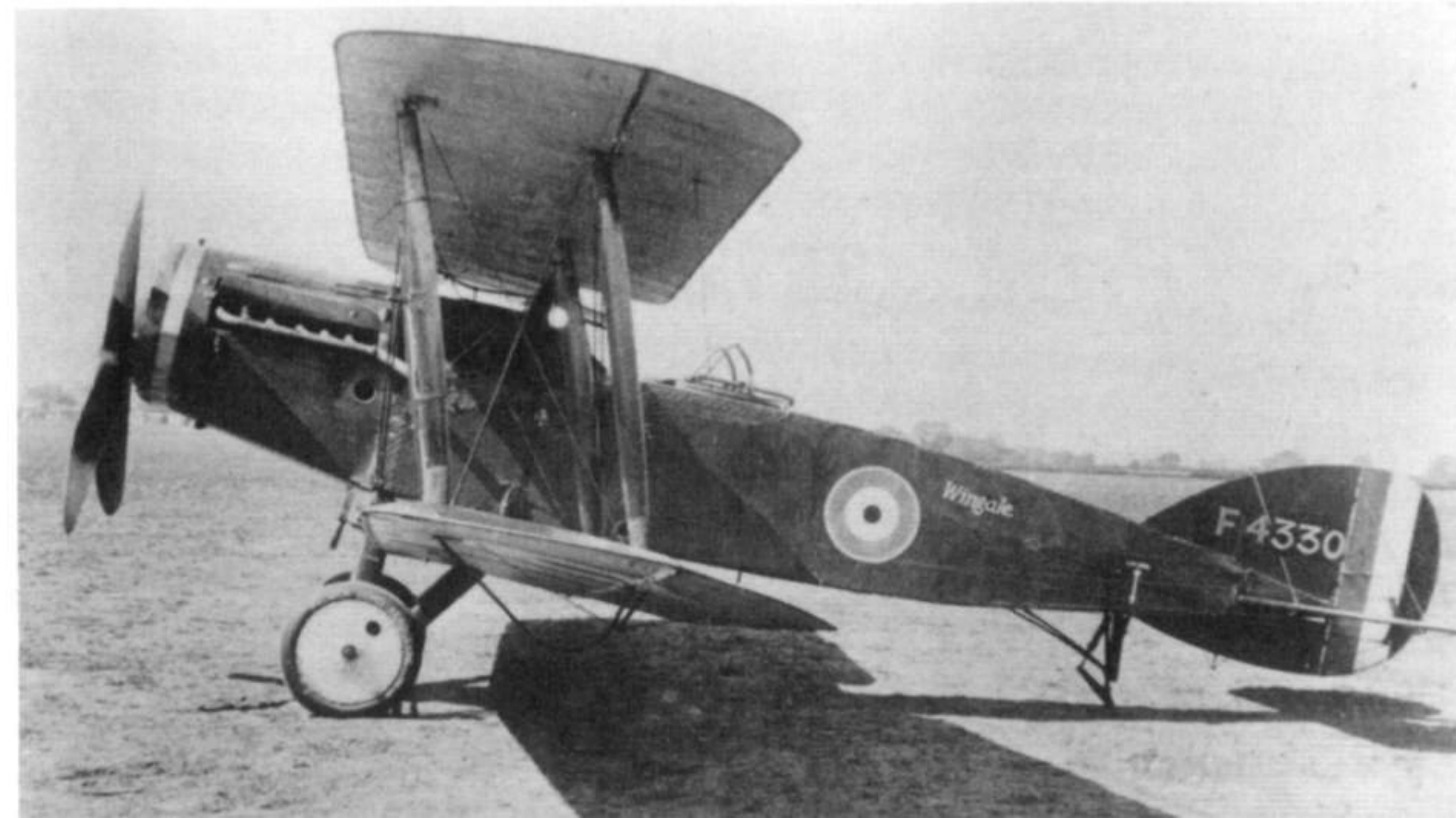
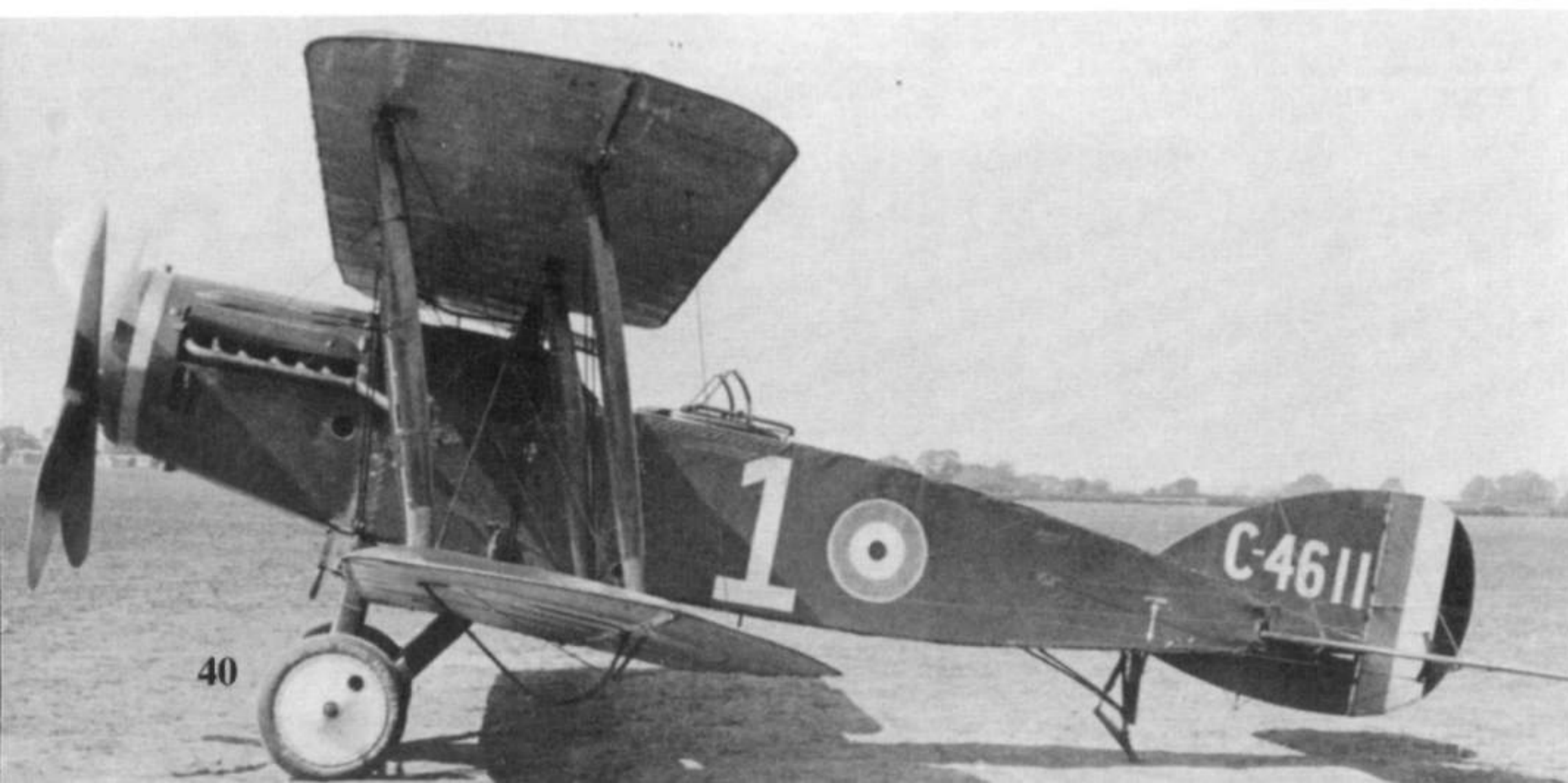
Known as "The Crocodile", this F.2B (C4879) flew with No 7 Training School, RAF from Netheravon, England. The aircraft carried a Red & White checkerboard pattern on the fuselage and had a Green nose with a Red and White mouth.

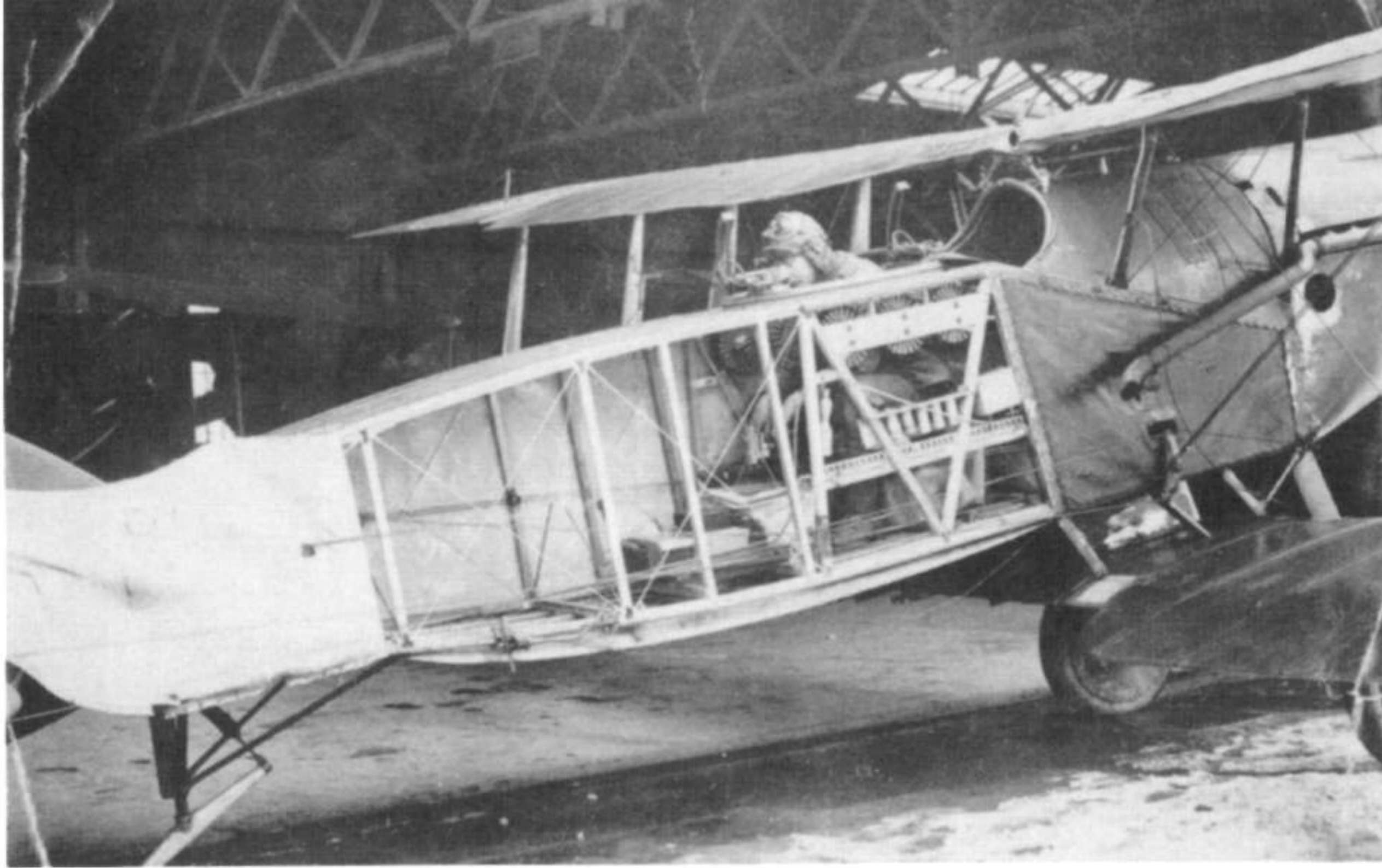




This F.2B was modified with three bay wings and flown at the Experimental Establishment at Farnborough. The aircraft was involved in trials with the three-bay wing which had an aspect ratio of 9.78.

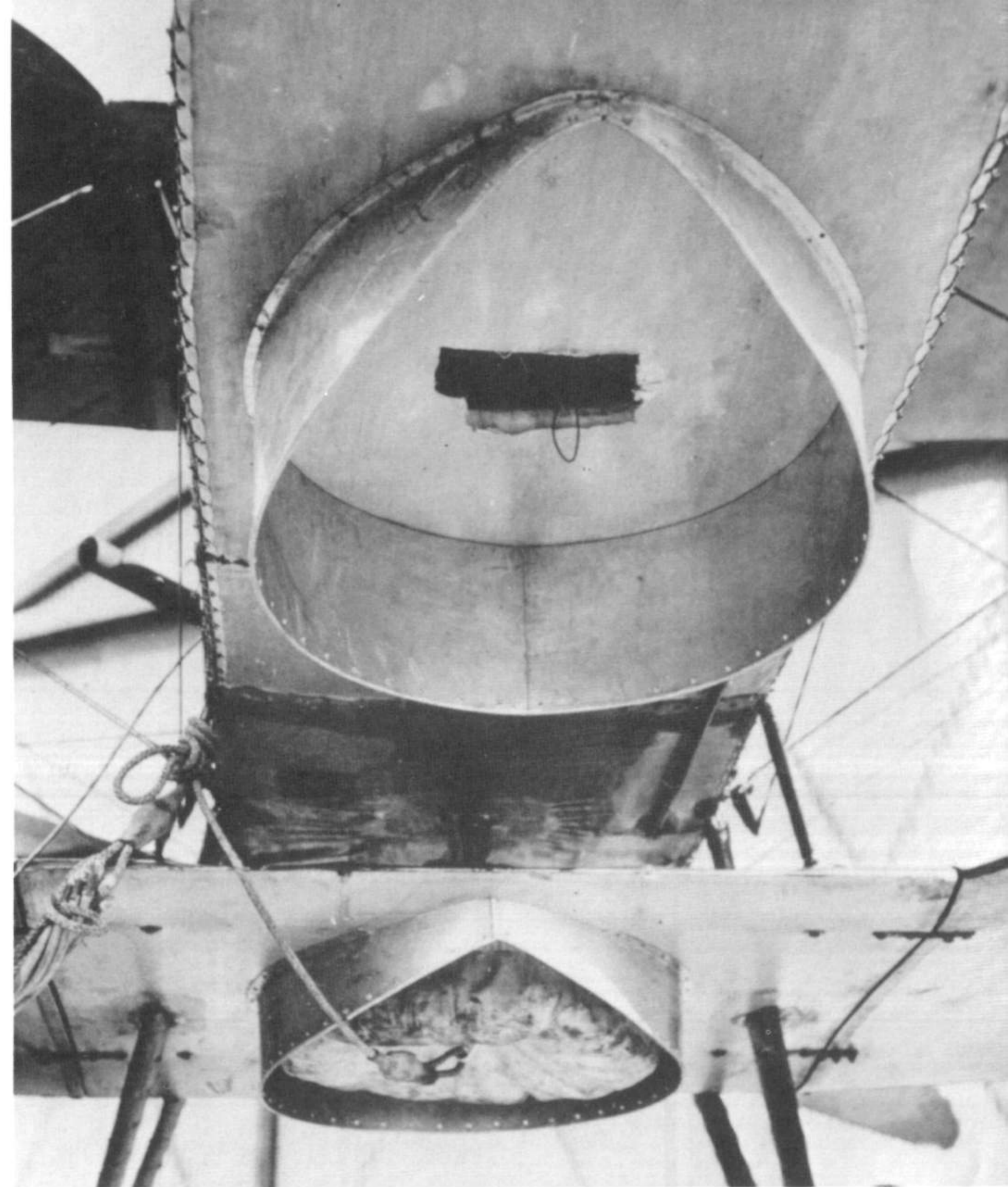
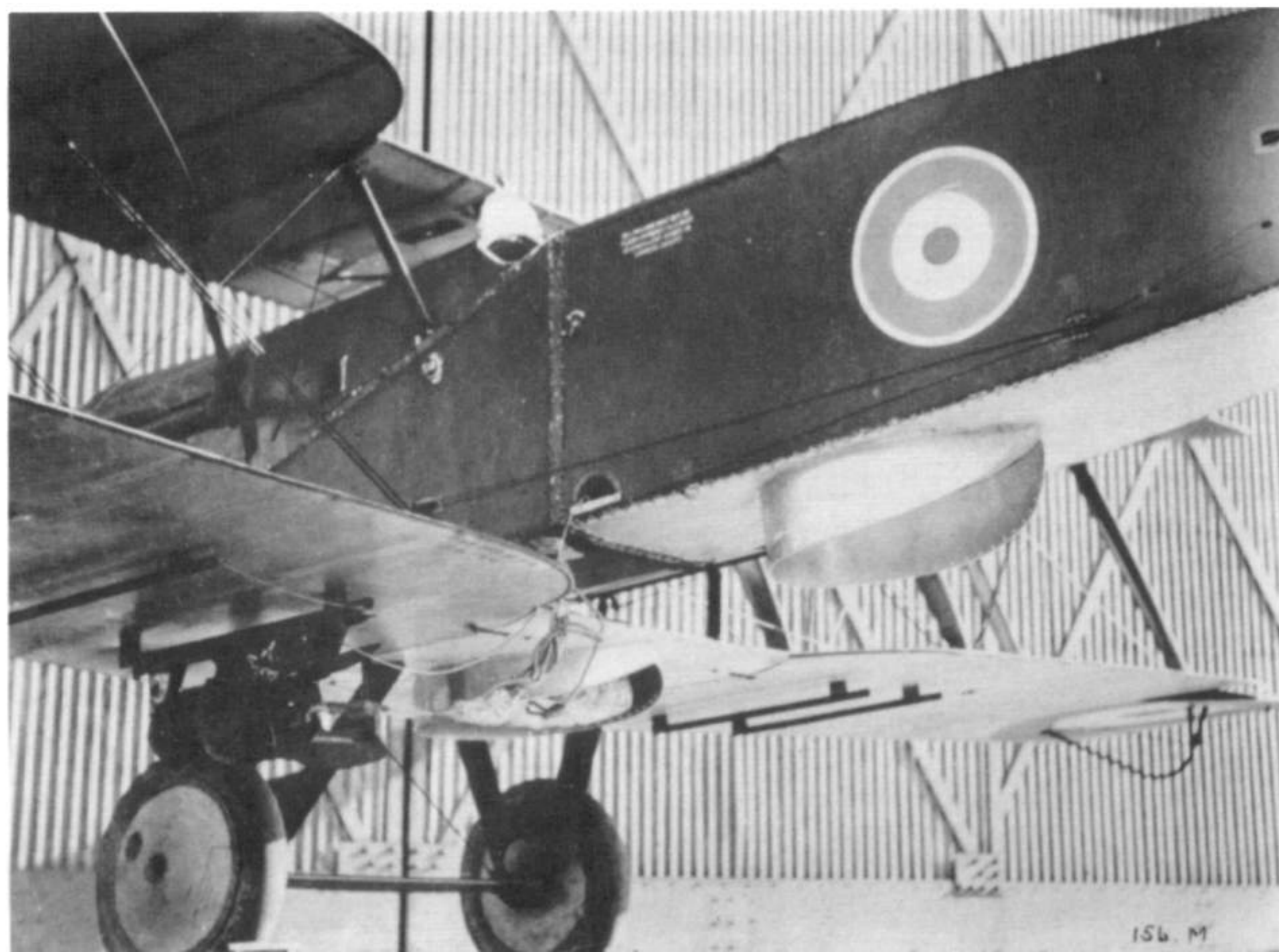
F.2B (C4611, left) was at one time repainted to represent a presentation aircraft (F4330) which was purchased by Wingate, Durham. It is known that a presentation F.2B with the serial F4330 served with Nos 20 and 105 Squadrons, RAF after November of 1918.





This F.2B has had the fabric removed from the fuselage, revealing the interior of the rear cockpit. The round objects on either side of the gunner are ninety round .303 inch ammunition cans for the Lewis machine gun.

This F.2B was used in experimental work with the Calthorp A-1 parachute. The parachutes were stored in externally mounted bins on the fuselage underside and static line operated.



The external stowage of the Calthorp A-1 parachute was necessary due to its static line operation. The two bins each held a single parachute, one for the pilot and one for the observer. The rope running from the parachute to the cockpit was attached to the crewman's harness.

Civil and Preserved Bristol F.2Bs

After the First World War a number of F.2Bs were transferred to the British Civil Register. These aircraft were used for many years and a number featured highly unusual modifications.

One Bristol Fighter (D8096) remains airworthy in England. This aircraft entered service with the Royal Flying Corps (RFC) in June of 1918. It was later converted to F.2B Mk II standards and was redelivered to the RAF on 30 October 1925. It is believed that the aircraft served with No 208 Squadron in Turkey during the late 1920s.

It was again modified, this time to Mk III trainer standards and returned to RAF service on 21 March 1931. Finally, during 1933/34 the aircraft was sold to CAPT C. P. B. Ogilvie, an ex-RFC pilot, and given the civil registration G-AEPH(although the aircraft never actually flew with this marking). The aircraft was stored during the Second World War and was discovered in a garage in Watford, along with an original engine and a stock of spare parts, Later it was acquired by the Shuttleworth Collection and arrangements for its restoration

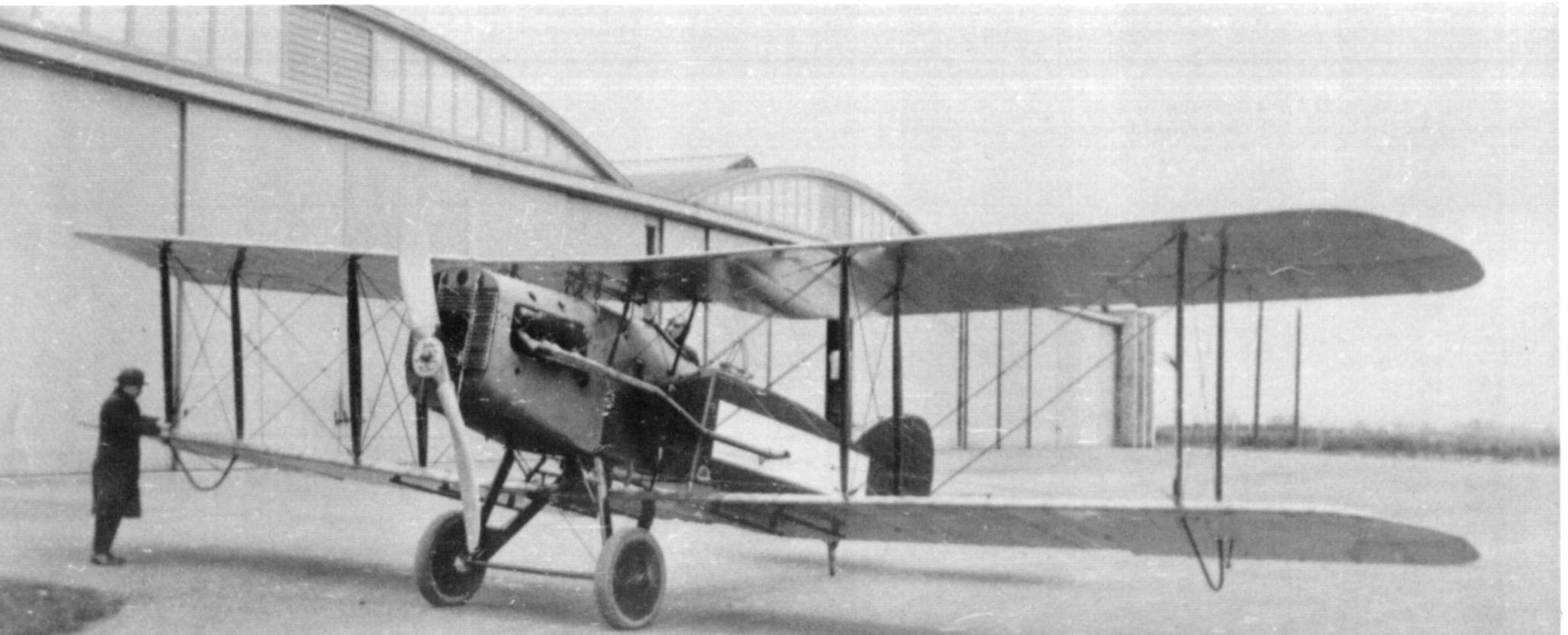
were begun. Rolls-Royce agreed to overhaul the engine and, during 1950 Bristol began the task of bringing the aircraft back to airworthy condition.

On 13 February 1951, Bristol's chief test pilot, A.J. Pegg made the first flight in the restored aircraft and it was shown to the public on 6 May 1951. Since that time D8096 has been a regular on the British air show circuit. During 1981 it was given a complete overhaul, including repainting in its original PC.10 wartime camouflage scheme. Even though there are many hours left on the original engine, a spare is available in the event it is needed to keep this last flying F.2B airworthy.

Imperial War Museum F.2B

Another Bristol F.2B is on display as part of the Imperial War Museum' collection of famous British warbirds at Lambeth. E2581 is currently not airworthy but is restored to display condition with the markings of No 39 (Home Defense) Squadron, which was based at North Weald, Essex, during the First World War. E2581 was flown by the unit during its active service and did see combat. It made its last flight during April of 1920

This Sunbeam Arab-powered F.2B, although retaining its full military configuration, is in the process of having its civil registration painted on the fuselage side against a White background, probably for ferry purposes.

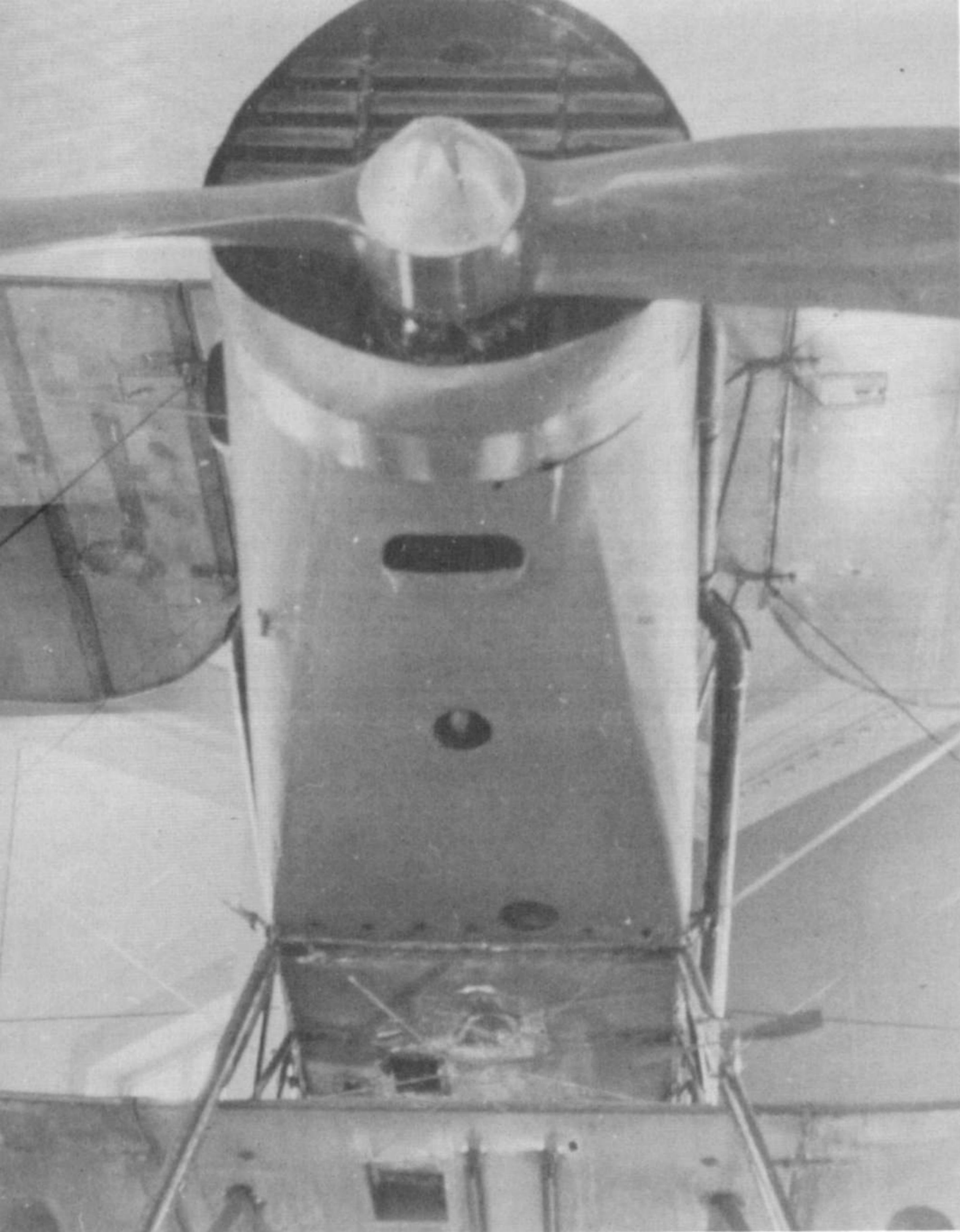




This F.2B at Waddon, Croydon during September of 1921 has been converted to a three seat touring aircraft (c/n6110). The aircraft carries a Spanish civil registration and represents one of several unusual conversions of surplus F.2Bs that were common on the civil market during the immediate post First World War period. The aircraft carries the Bristol company logo on the vertical fin in White. The registration is believed to have been Black against a White background.

This F.2B (E2581) is preserved by the Imperial War Museum, in London, England. The aircraft is not airworthy but it retains the First World War PC.10 camouflage and unit markings It carried during its active service with No 39 (Home Defense) Squadron when the unit was flying from North Weald, Essex. The aircraft was later used by various Communications and Headquarters Flights throughout the immediate post-war period until making its last flight during April of 1920. The aircraft is currently on display at the Imperial War Museum just outside London.

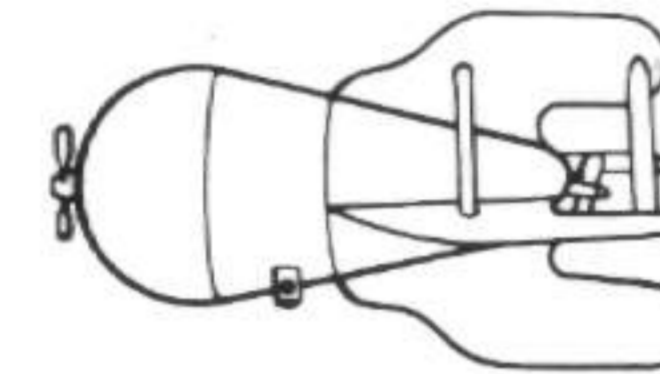




F.2B Bombs

Cooper 20 Pound Fragmentation Bomb

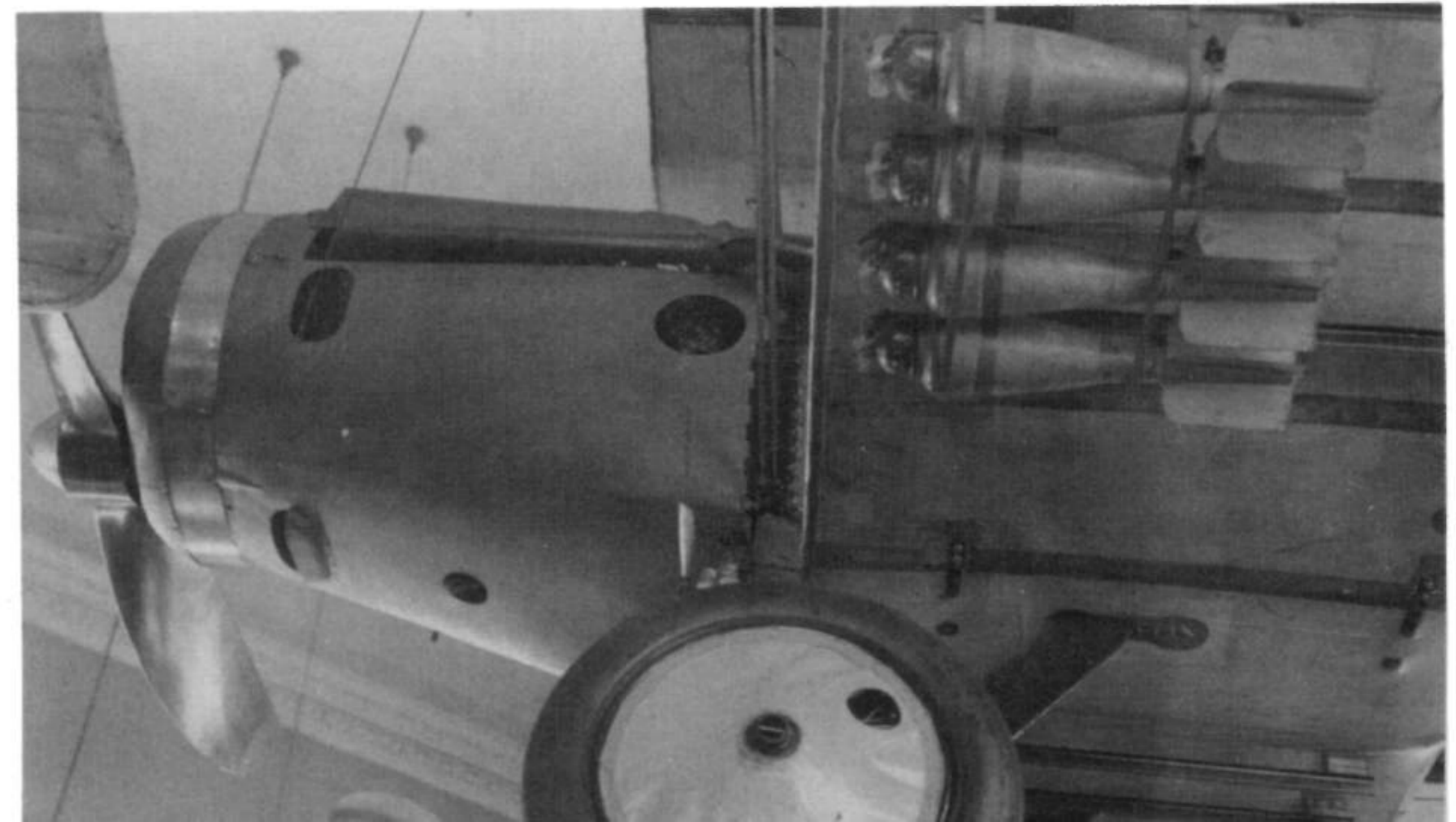
(Up to eight on under wing bomb racks, four per wing.)



112 Pound General Purpose Bomb

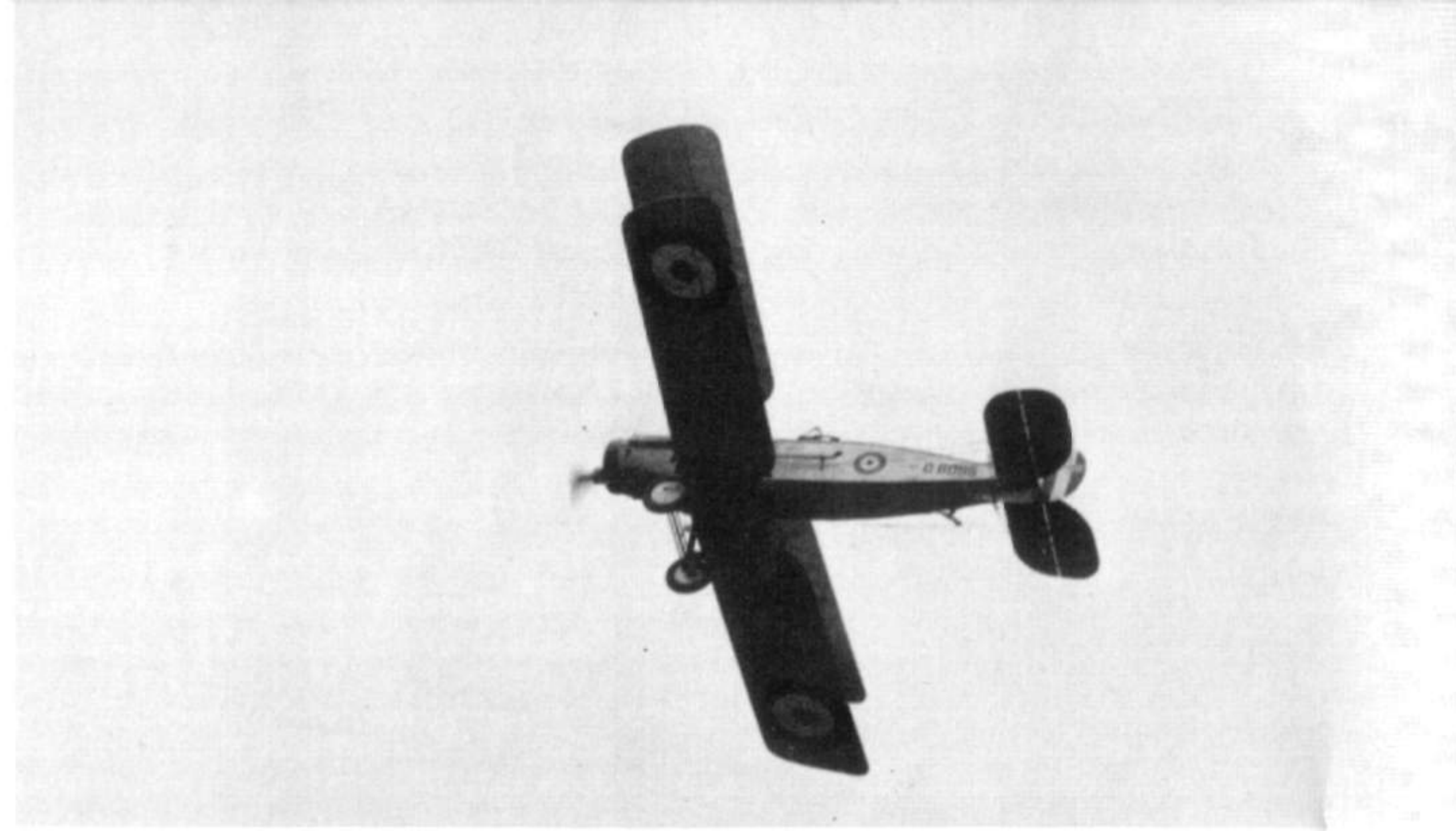
(Two under wing center section)

The Imperial War Museum's F.2B. (E2581) is configured with bomb racks under the wing for 20 pound Cooper fragmentation bombs and could also carry two 110 pound bombs for the close support mission. These bombs were developed during the First World War and were used by a variety of Royal Flying Corps aircraft. The aircraft was recovered and freshly doped in a PC10 camouflage color during 1984.



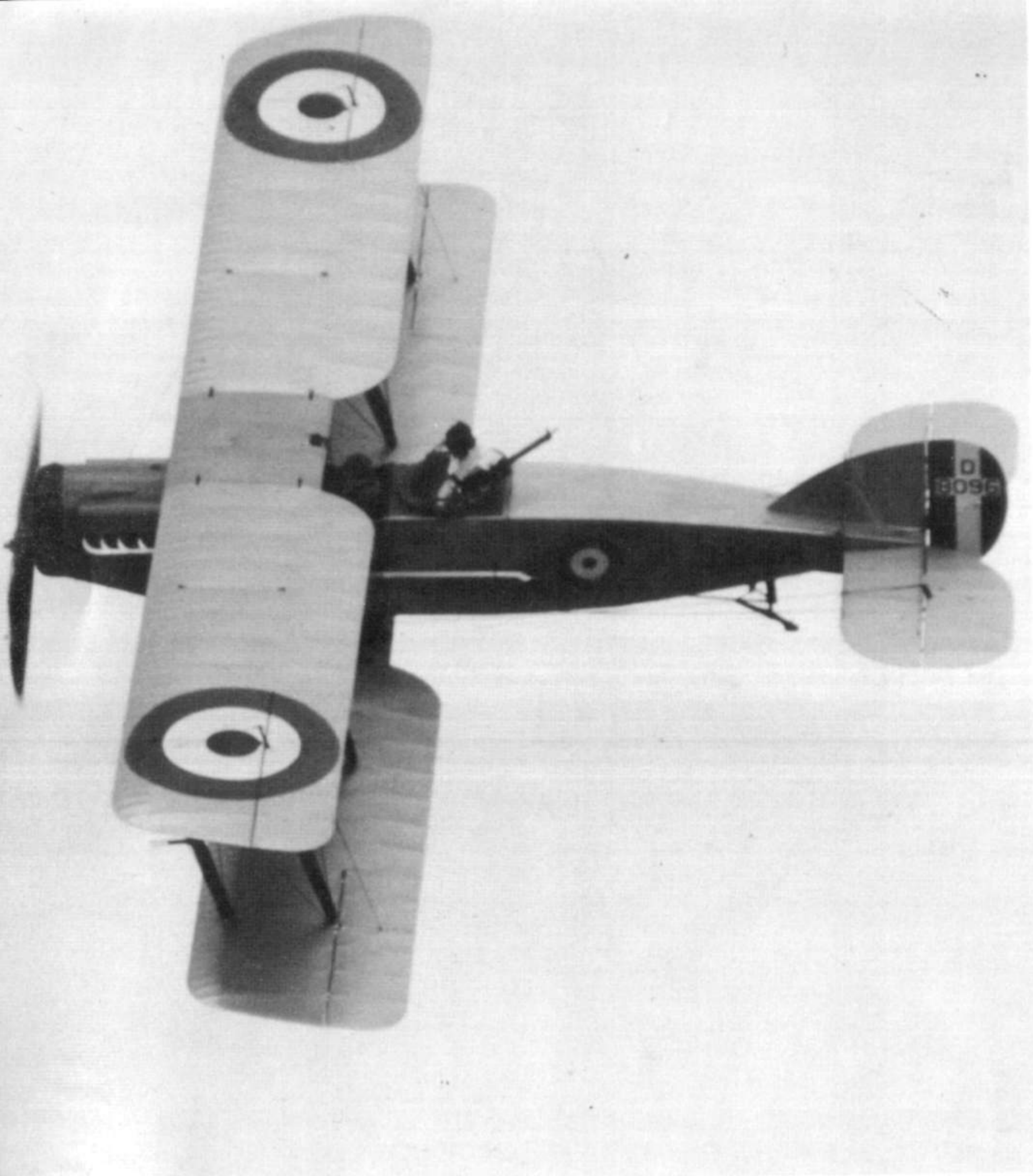
E.2581 was powered by a Rolly Royce Falcon III liquid cooled engine. The small hole in the middle of the upper nose is the gun port for the pilot's .303 Vickers machine gun. This preserved aircraft is unusual in that it has a small spinner on the propeller hub which carries a copper star design.

(Right) D8096 is the only remaining airworthy Bristol F.2B in the world and belongs to the Shuttleworth Collection. For many years it flew in the color scheme carried by F.2Bs during the late 1920s, overall Silver Dope with Gray cowlings. The serial was carried on the rear fuselage in Black and across the rudder stripes in Black outlined in White. There is a flight restriction on the aircraft, it can not be flown single seat without putting ballast in the rear cockpit to make up for the weight of the second crewman. This display was put on at Bedfordshire, England during the 1970s.



The Shuttleworth trust's F.2B (D8096) on display at an air show. The lettering below the gunner's cockpit was carried by all F.2B variants and warns against flying the aircraft without an observer or the equivalent weight in the rear cockpit to preserve the aircraft's center of gravity.





D9086 was restored to flying condition by Bristol during 1950. The aircraft had previously been owned by CAPT C. P. B Ogilive who bought it during 1933/34. The F.2B originally entered service during June of 1918 and went through several rebuilds seeing service as both a Mk II and Mk III. Today the aircraft is flying in its original wartime PC 10 finish.

The Shuttleworth Collection's airworthy Bristol F.2B (D.8096) carried an overall Silver dope finish for many years and is a regular on the British air show circuit. This flying display was put on over Bedfordshire, England during the 1970s. The aircraft was overhauled during 1981 and repainted in First World War PC.10 camouflage.

RAF Museum F.2B Display

Another F.2B is on permanent display in the Royal Air Force Museum at Hendon, just outside London as part of the Museum's First World War collection. This aircraft was rebuilt from the parts of six aircraft that were found near a barn at RAF Weston-on-the-Green, Oxfordshire. One of the airframes was acquired by the RAF Museum and formed the basis for restoration. During 1979, the airframe was moved to the museum's restoration facility at Cardinton and a collection of F.2B components was started. It was decided that the aircraft would be restored to represent E2466, an F.2B flown by CAPT W.F. J. Harvey of No 22 Squadron, who provided detailed notes on his aircraft.

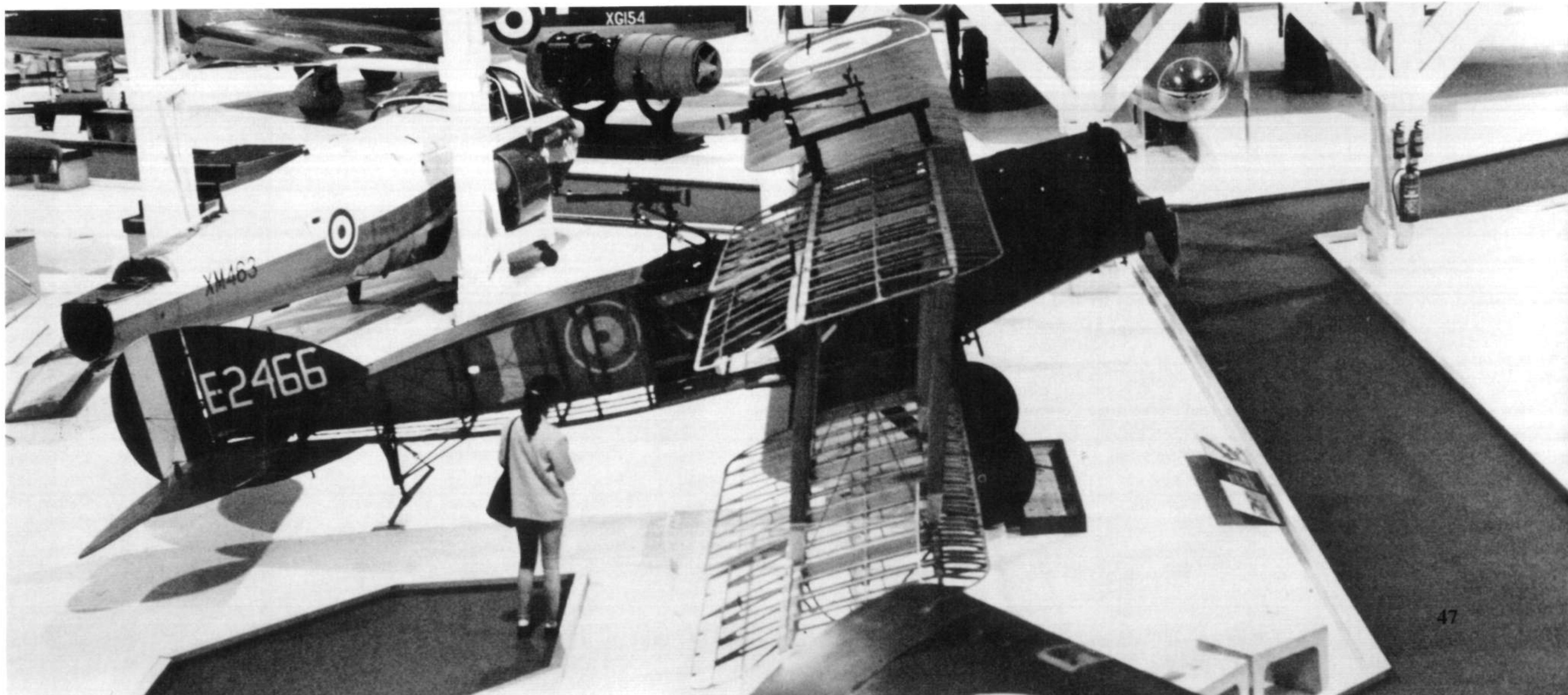
Copies of the original Bristol drawings were used to assist in the restoration. The museum found that acquisition of an original Rolls-Royce Falcon engine was impossible. Using a 275 hp Falcon III on loan from the Shuttleworth Collection as a pattern, a replica was made in metal. Along with the engine, a new radiator, cowling, and oil tank were manufactured in the restoration facility.

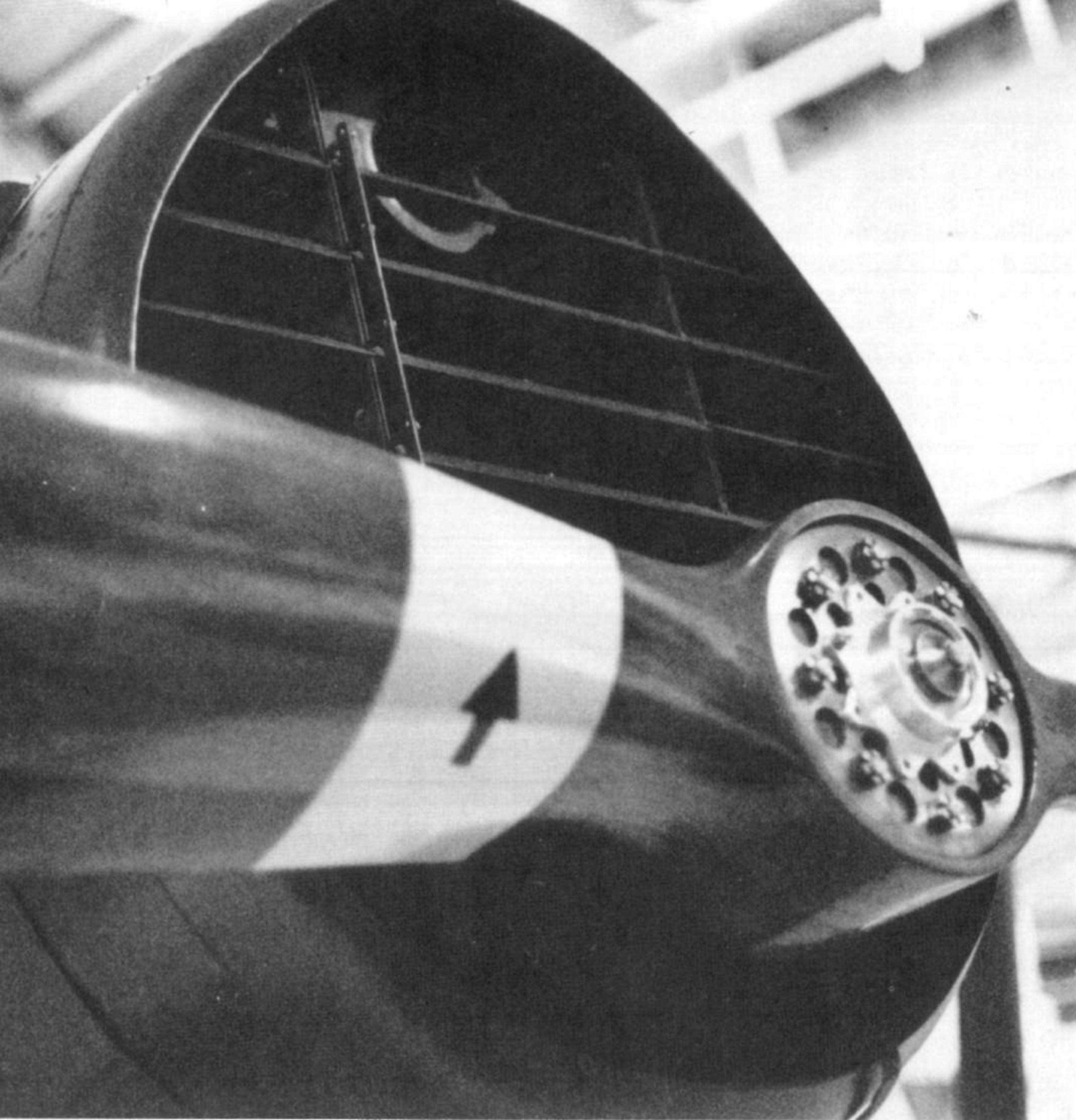
The museum was able to locate original sets of wings and these were found to be in very good condition with little of the wood needing to be replaced. The wings were completely disassembled and checked to ensure that all joints were sound. The tailplane was original as was the fin and rudder.

One departure from the original F.2B was the tires, since actual tires proved to be impossible to obtain and larger size tires had to be used for the display aircraft. The aircraft is finished in the colors and markings of CAPT Harvey's aircraft as well as his kill markings (which include the destruction of three observation balloons).

For display, part of the fuselage fabric was left off to reveal the aircraft's interior. E2466 had a armament modification and carried an additional .303 inch Lewis machine gun installed on the upper wing center section. This gun was added for use in balloon busting missions. The rest of the armament is identical to early F.2Bs with a single forward firing Vickers machine gun in the cowling and a single Lewis gun in the rear cockpit.

E2466 is displayed partially uncovered at the RAF Museum, London . The uncovered wings show the method of construction using ribs and stringers that was common on First World War aircraft. The extra Lewis gun mounted above the upper wing center section was a field modification done by No 22 Squadron for the balloon busting missions.



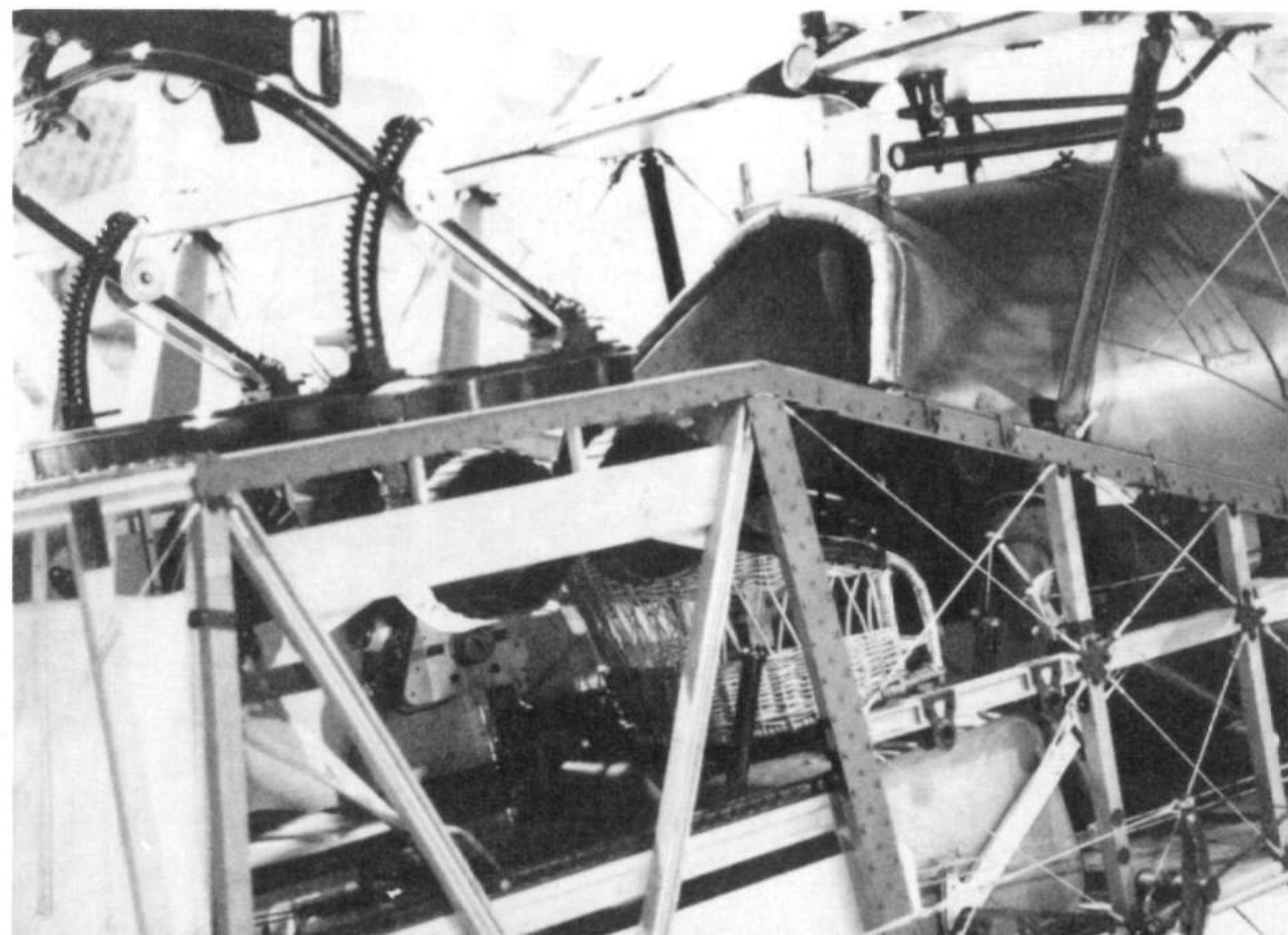


The propeller hub and radiator of the Royal Air Force Museum's F.2B. The light colored band is very pale Blue with a Black arrow showing the direction of the propeller's rotation. The hole is the gun port for the .303 Vickers machine gun. The engine in this aircraft is a replica copied from a Falcon III borrowed from the Shuttleworth Collection. The radiator and cowling are new, remanufactured from original Bristol factory drawings by the museum restoration team.



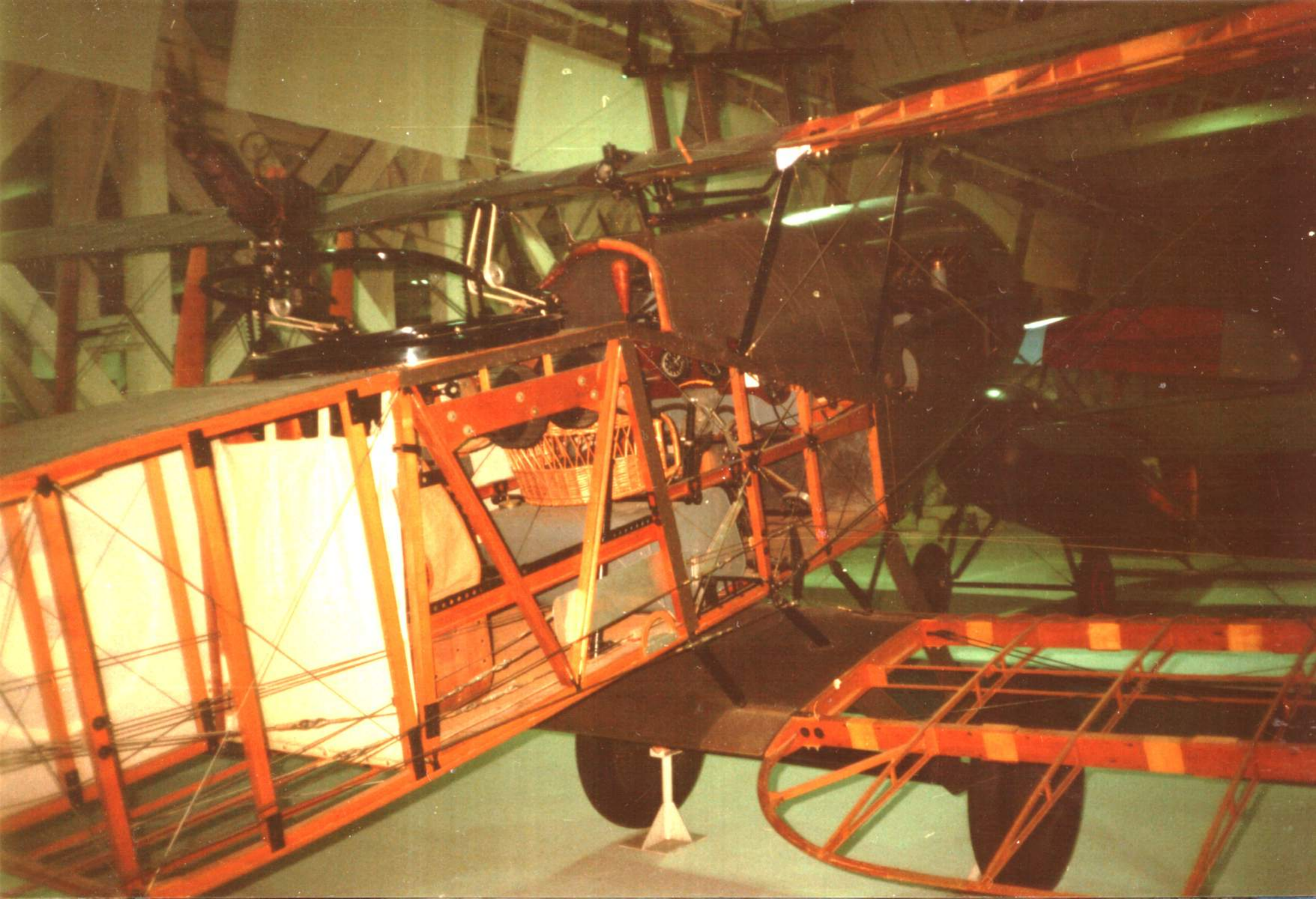
The tail unit of E2466 shows the pushrods and pulleys of the elevator and rudder controls, along with the bracing wires that run from the vertical fin to the horizontal stabilizer. E2466 is on permanent display at the Royal Air Force Museum, Hendon, London.

Some of the internal details visible on this F.2B forward fuselage are the pilot's Aldis sight for the forward firing Vickers machine gun, basket seats and the Scarff ring gun mount for the observer's Lewis machine gun.

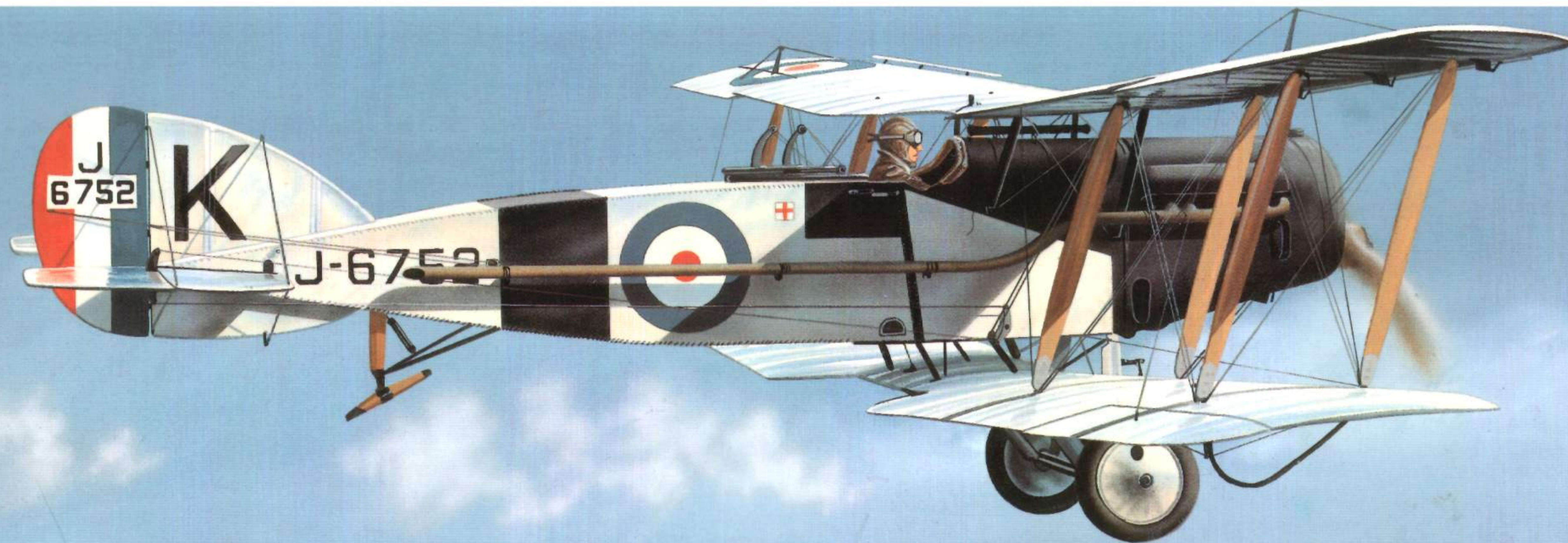
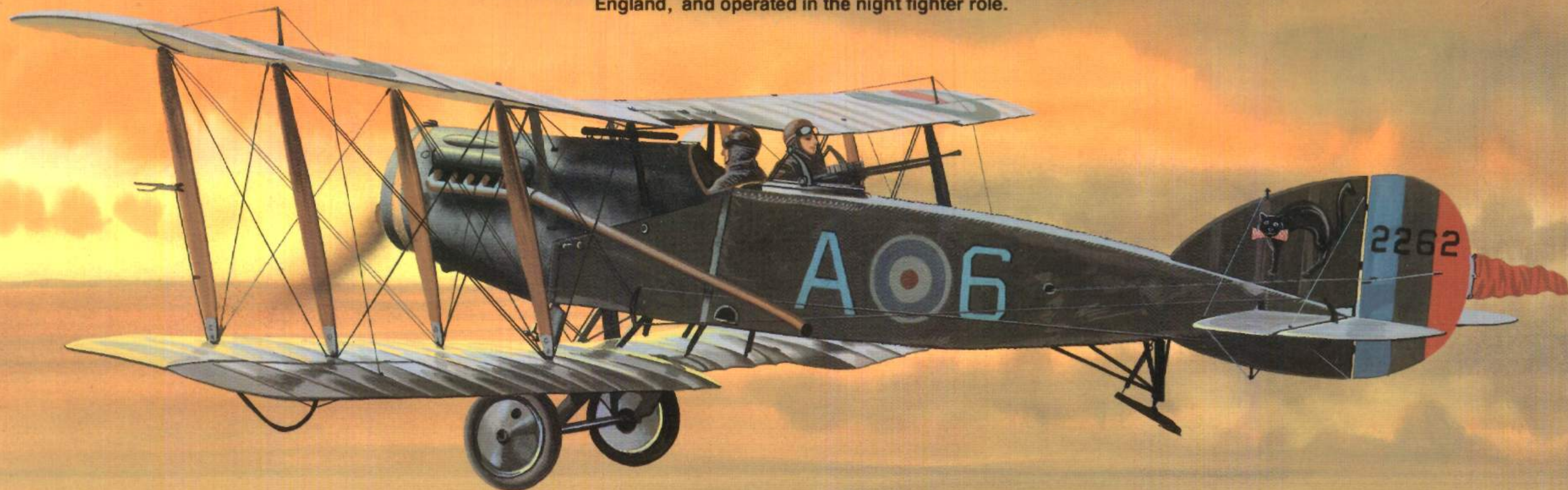




On display at the RAF Museum outside London, this F.2B has the fabric on the fuselage and lower wing removed to show the interior of the aircraft. The guns are .303 inch Lewis machine guns, the one over the wing being a modification done at the squadron.



A Bristol F.2B of No 39 (Home Defense) Squadron during late 1918. The aircraft was based at North Weald in Essex , England, and operated in the night fighter role.



This Bristol Fighter Mk IV of No 20 Squadron was based at Peshawar, India during 1930.

ISBN 0-89747-301-9