

# PROFILE PUBLICATIONS

## The Sopwith Pup

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# The Sopwith Pup



by J. M. Bruce

*The black and white striped Monosoupape-powered Pup flown by Captain Foote of the Gosport School of Special Flying.*

(Photo: via K. M. Molson)

On 9th February 1916 the experimental department of the Sopwith Aviation Co., Ltd., passed the prototype of a single-seat fighting scout that had been designed by Herbert Smith, whose 1½-Strutter two-seater was then in production. The new single-seater bore a distinct resemblance to the 1½-Strutter but was appreciably smaller and was powered by an 80-h.p. rotary engine. It was a military development of a little single-seater that had been built in 1915 as a personal transport and aerobatic aircraft for Harry Hawker, the Sopwith company's test pilot. To the flying services the new scout was so obviously an offspring of the 1½-Strutter that it was unofficially named the Pup.

In his delightful book *The Clouds Remember* Oliver Stewart wrote of the Pup from personal operational experience, and his description of the aircraft is one of the best ever to appear in print. Of its name he has this to say:

A minor comedy of officialism was enacted with the Pup. Those in high places were grieved to observe this name "Pup"; they regarded it as undignified, frivolous, slangy, unofficial and Heaven knows what else. So they found time, during the fury and trouble of war, to sit down and pen an order which called upon all officers and men to note that the Sopwith Pup was not the Sopwith Pup, but the Sopwith Scout Mark Something-or-Other, and it demanded that on all future occasions the aeroplane should be referred to under that title and none other. Everybody read the order and marvelled, and then referred to the machine as the Sopwith Pup. So another, more peremptory, order came out drawing the attention of all units to this prevalence of incorrect nomenclature. The aeroplane was in future always to be described as the Sopwith Scout Mark Something-or-Other. So I suppose that and the perverse state of mind of the fighting forces when it came to language, both good and bad, accounts for the fact that the aeroplane has ever after been known exclusively as the Sopwith Pup.

In 1916 the Sopwith company were contractors to the Admiralty, and the first Pups were delivered to the Royal Naval Air Service. The first prototype was given the official serial number 3691 and five more were built, numbered 9496, 9497, and 9898-9900. It is not known which type of engine was installed in 3691, but the other five R.N.A.S. prototypes had the 80-h.p. Clerget. A Pup, possibly No. 3691 itself, was sent to Naval "A" Fighting Squadron at Furnes late in May 1916. It was an immediate success: its performance on only 80-h.p. was remarkable, its handling qualities impeccable.



*A very early Pup, possibly 3691 itself, at the R.N.A.S. station, Dunkerque. Although a Sopwith-built aircraft, it has the red, white and blue stripes on the elevators that almost invariably distinguished the products of the Beardmore company.*

(Photo: E. F. Cheesman)

*The first Standard-built Pup, A626, in German hands after its capture on 5th January 1917. The thick-framed windscreen had been removed and replaced by padding on the rear end of the Vickers gun.*

(Photo: Egon Krueger)





A635 of No. 66 Squadron was also captured intact by the Germans and is here seen with the elevator control cables and air-speed indicator leads disconnected. The squadron marking has been somewhat roughly applied, and the proportions of the fuselage rounder are interesting. (Photo: Egon Krueger)

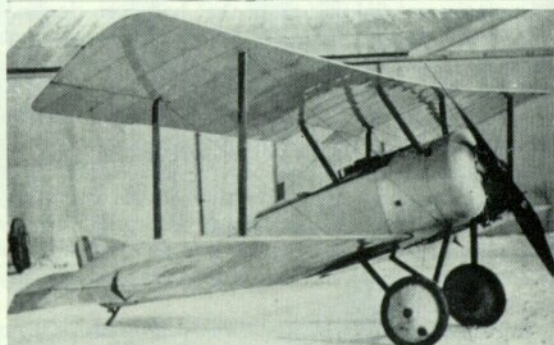
Below: A7325 was aircraft 1 of No. 46 Squadron, R.F.C., and is seen here with its pilot, Captain Marchant.

The Admiralty placed contracts with the Sopwith company and with William Beardmore & Co. From the serial number of the first Beardmore-built Pup the Admiralty took its official designation for the aircraft: Sopwith Type 9901. Like the prototypes, the first eleven Pups of the first Beardmore batch had the 80-h.p. Clerget; but all the remainder had the 80-h.p. Le Rhône, the engine that was to power the majority of Pups.

In construction and appearance the Pup was of classic simplicity. The fuselage was the usual wire-braced wooden box girder that was so typical of the period; the longerons were of ash, the spacers of spruce. The mainplanes had spruce spars and ribs, with the profiles of the wing tips formed of steel tubing; the trailing edges were of special-section steel tubing. In the tail unit steel tubing was extensively used, the fin, rudder and elevators being made wholly of it; all joints were brazed. In the tailplane only the rear spar and tips were made of steel tubing; the leading edge, ribs, riblets and compression members were all of wood.

Tanks for 18½ gallons of petrol and 5 gallons of oil were mounted within the fuselage immediately above and behind the engine. The Pup that was tested at Central Flying School on 21st October 1916 consumed six gallons of petrol per hour at 8,000 ft. with the engine running at 1,175 r.p.m. Consumption of the castor-oil lubricant was no less than ten pints per hour.

The engine cowling and fuselage panels immediately behind it were of aluminium sheet; the fuselage top



This Le Rhône Pup of Central Flying School had the lower part of its engine cowling removed. Cable bracing replaced the standard Rafwires, a Lewis gun was mounted on the fuselage, and all fabric surfaces were doped white.

decking about the cockpit was covered with plywood. All other parts of the airframe were fabric-covered, but some Pups had parts of their centre sections

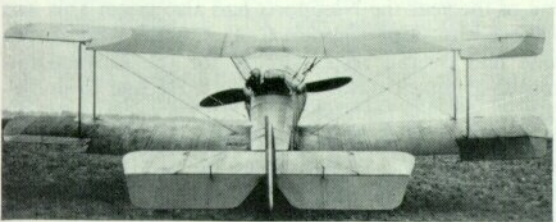
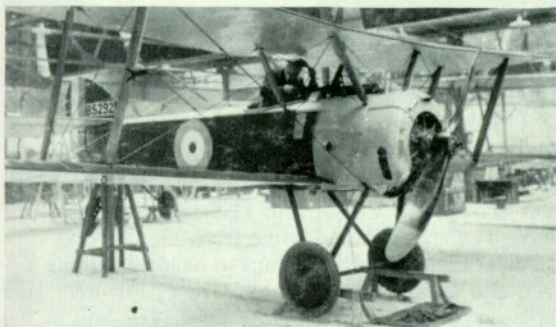
Left: The installation of the 100-h.p. Gnôme Monosoupape, here seen on a Whitehead-built Pup. Right: Fuselage detail of Whitehead-built, Monosoupape-powered Pup. The hydraulic lead and trigger motor of the Constantinesco C.C. synchronising mechanism can be seen.



*Pup with 80-h.p. Gnôme engine, photographed at Martlesham Heath.  
(Photo: Imperial War Museum)*



Below: *Whitehead Pup B5292 fully assembled.*

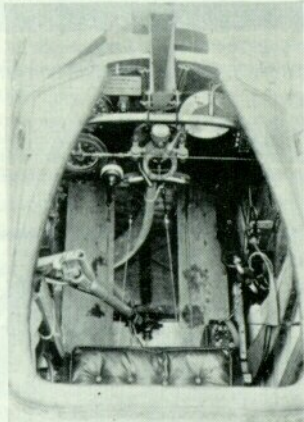


*Monosoupape-powered Pup A653 with Vickers gun offset to port.*

covered with transparent material to improve the pilot's upward view.

A single Vickers gun constituted the armament of most Pups. It was mounted centrally on top of the fuselage immediately ahead of the cockpit. A padded

*Detail of the Whitehead-built Pup B5292 with cowling not yet fitted to its 100-h.p. Gnôme Monosoupape engine. Dangling between the forward legs of the undercarriage is the cable that held the cowling in place. Right: Cockpit of Whitehead-built Pup.*



windscreen was attached to the rear of the gun by four short stays. Some operational pilots preferred to discard this windscreen altogether and padded the rear end of the gun for facial protection; others preferred a wide windscreen at the forward end of the cockpit opening. On the early production Pups the gun was synchronised by means of the Sopwith-Kauper interrupter gear, and was fired by the depression of a short lever that projected horizontally rearwards from the underside of the part of the gun that was inside the cockpit. On later aircraft the Scarff-Dibovski or Constantinesco C.C. synchronising mechanisms were standardised.

The Admiralty specified eight Le Prieur rockets as an alternative to the Vickers gun, but in some instances (e.g., *N5186*) the Pup had both the gun and the rockets. It is doubtful whether the rocket-equipped Pups saw much operational use; certainly no record of any action in which they figured has yet been found.

First deliveries of production Pups went to the R.N.A.S.; aircraft of the Sopwith-built batch *N5180-N5199* were with No. 2 Squadron R.N.A.S. in September 1916; *N5182* was then with the Dover Defence Flight. Ten had been completed by the end of that month. On 26th September 1916 the first Beardmore-built Pup (No. *9901*) made its maiden flight. The second followed on 23rd October and deliveries continued until 29th June 1917, when the last Beardmore-built Pup, *N6459*, was accepted by the R.N.A.S. The Pups ordered from the Standard Motor Co., Ltd., began to come along in December 1916, those built by Whitehead Aircraft Ltd. in January 1917. The Standard and Whitehead Pups were intended for the R.F.C., but the first Standard-built aircraft, *A626*, was transferred to the R.N.A.S., allocated to No. 8 (Naval) Squadron, and captured intact by the Germans on 5th January 1917. This Pup was exhaustively tested by the Germans and gave them an early indication of what they might expect from the type.

The Pups of No. 1 (Naval) Wing at Dunkerque scored some early successes. On 24th September 1916 Flight Sub-Lt. S. J. Goble took off two minutes after German aircraft had bombed Dunkerque, caught an L.V.G. two-seater near Ghisteltes and shot it down in flames. No. 1 Wing's Pups and Nieuports shot down eight enemy aircraft between 24th September and 23rd October 1916.



One of the Beardmore-built Pups of "C" Squadron, R.N.A.S., Imbros, armed with Vickers and Lewis guns.

As the bitter struggle on the Somme that had begun on 1st July 1916 dragged into the autumn the R.F.C. found itself in difficulties. Three new squadrons had come from England, but of these No. 19 had the B.E.12, which proved to be virtually useless. Of the five squadrons brought into the Somme area from the north, two had been transferred elsewhere by October; and all the remaining units had suffered many casualties. On 17th October it was decided to form an R.N.A.S. squadron that would be sent to the Somme area to assist the R.F.C.; the new squadron was to be formed from the R.N.A.S. units then at Dunkerque.

The product of this exercise was the celebrated No. 8 Squadron, R.N.A.S., or "Naval Eight" as it came to be called. The personnel went to Vert Galand aerodrome within days of the decision to create the unit; its first aircraft arrived on 26th October, and the

squadron's first patrol was flown on 3rd November. Its initial equipment consisted of one flight of Nieuport Scouts, one of Sopwith 1½-Strutters, and one of Pups. The six Pups had come from No. 1 Wing.

Naval Eight proved the Pups to be ideal fighting aircraft and wanted more of them. The 1½-Strutters were replaced by Pups on 16th November 1916, and by the end of the year the Nieuports had also gone. This was achieved by Wing Captain C. L. Lambe, who at that time had overall responsibility for the Dover-Dunkerque group of naval air stations. He had to undertake to provide the 80-h.p. Le Rhône engines for the Pups. Some came from crashed Nieuports; some he begged from the French naval air service; all were overhauled at Dunkerque and sent to Dover to be installed in the Pup airframes.

Between 3rd November and the end of 1917 the



Left: June 1917. Squadron Commander F. J. Rutland flies a Sopwith 9901 from a small platform on H.M.S. Yarmouth. Right: The first landing made by Squadron Commander E. H. Dunning on the forward deck of H.M.S. Furious, 2nd August 1917.

(Photo: Real Photographs)

Left: Dunning's second successful landing on Furious, 7th August. This is the same aircraft (note white tip on lower starboard aileron) but on this occasion it carried a Lewis gun and was fitted with rope toggles under the lower wings and fuselage. (Photo: Imperial War Museum). Right: Dunning's third landing, just before his fatal plunge over Furious' starboard bow. Note the aircraft has rope toggles but no Lewis gun; the lower starboard aileron is uniformly doped khaki-green overall. This is in fact N6452.



Pups of Naval Eight shot down twenty enemy aircraft. Three of these were accounted for by Flight Sub-Lt. D. M. B. Galbraith. The Squadron was withdrawn on 31st January 1917 for re-equipment with Sopwith Triplanes.

Other Pup Squadrons were operational by that time No. 54 Squadron, R.F.C., had reached France on Christmas Eve 1916; No. 3 (Naval) Squadron replaced Naval Eight on 1st February 1917. On 6th March, No. 66 Squadron, R.F.C., arrived on the western front, and No. 46 Squadron exchanged its Nieuport 12 two-seaters for Pups in April. At various times in 1917 the Pup was also flown by R.N.A.S. Squadrons Nos. 2, 4, 9, 11 and 12.

For all its lightness of construction the Pup proved to be a formidable fighter in the early months of 1917. On 11th April Flight Sub-Lt. J. S. T. Fall of No. 3 (Naval) Squadron shot down two Albatros scouts and a Halberstadt single-seater in the course of a single fight near Cambrai. The duties of No. 4 (Naval) Squadron consisted of providing offensive patrols and escorts for R.N.A.S. aircraft operating from Dunkerque, and the unit was also responsible for the protection of surface craft against air attack. At 6.25 a.m. on 12th May 1917 seven Pups of No. 4 (Naval) Squadron encountered a formation of Albatros fighters near Zeebrugge and shot down five of them.

Among those who flew the Pup operationally was Lt. (later Major) J. T. B. McCudden during a three-week period of attachment to No. 66 Squadron. He had flown Pups in England, where he had armed his with a Lewis gun on the centre section for the purpose of attacking the Gotha bombers whose attacks on London were starting in the early summer of 1917. McCudden found that a Pup, properly handled, could be a match for the Albatros D III, and wrote:

I realised that the Sopwith could outmanoeuvre any Albatros, no matter how good the pilot was . . . when it came to manœuvring, the Sopwith Scout would turn twice to an Albatros' once.

It was because the Pup retained its remarkable manœuvrability at altitude that it survived in France until the end of 1917. By the autumn of that year its performance and armament had been surpassed. In September No. 66 Squadron added a Lewis gun to at least six of their Pups (*B2162, B2168, B2176, B2182, B2185 and B2221*); and in the following month some pilots of No. 54 Squadron fitted a Lewis gun on the centre section. This had to be discarded, however, for the Pup centre section was not stressed to take the gun.

Although the end of 1917 saw the Pup's withdrawal from the western front, production of the little Sopwith was then only approaching its maximum. The greatest output was reached in the first quarter of 1918, when 500 Pups passed inspection. Most of these late-production Pups went to training units, where the type was immensely popular. Production continued almost up to the time of the Armistice: according to official statistics 32 Pups passed inspection in the final quarter of 1918.

The Pup had been introduced to Home Defence duties in July 1917. On the 10th of that month No. 46 Squadron was withdrawn from France and sent to



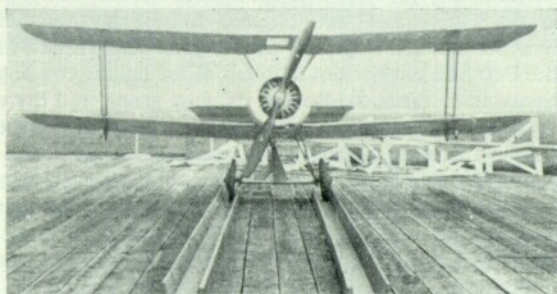
Night-flying Pup with partly obliterated national markings, fitted with navigation lights. (Photo: via C. A. Nepean Bishop)

Sutton's Farm, Essex. This was done in deference to a demand made by the public in England for improved air defences after the second major bombing attack on London of 7th July 1917, when twenty-one Gothas dropped 72 bombs on the capital, killing 57 people and



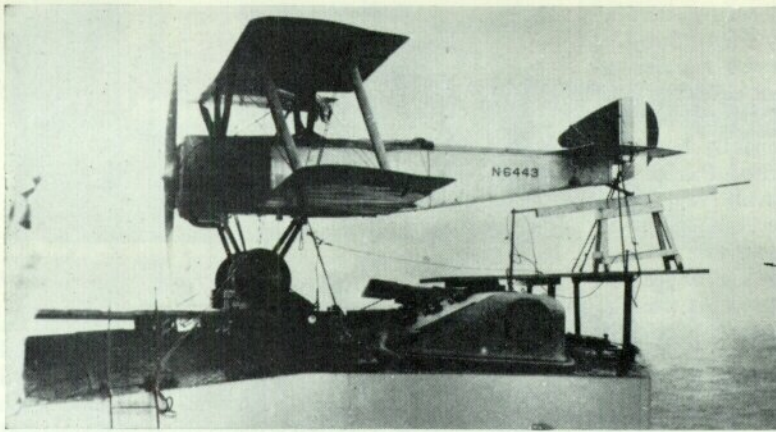
Probably used in experiments in taking off from ships, this Beardmore-built Pup had two grooved wheels under each lower wing.

Below: The same aircraft on an experimental dummy deck at the Isle of Grain. The wooden troughs were intended to keep the take-off straight. This photograph is dated 7th September 1917.



Below: Shipboard use of the wooden troughs seen in the preceding illustration. Believed to be aboard H.M.S. Pegasus. (Photo: F. Cable)





This Beardmore-built Sopwith 9901 was flown on its acceptance test on 30th May 1917 by A. Dukinfield Jones; at that time it had engine no. 6683 and airscrew no. 1225. It was delivered to Turnhouse for service aboard H.M.S. *Manxman*. In this photograph N6443 is seen aboard the battle cruiser H.M.S. *Tiger* on a small platform built on to a gun turret; its tail skid rests on the Tail Guide Trestle. (Photo: F. Cable)

Below: One of the prototype Pups, 9497 (marked N9497) was used in early deck-landing experiments and is here seen with its arrester hook lowered, approaching the dummy deck at the Isle of Grain. The airscrew guard can just be distinguished.



injuring 193. But the Gothas never returned to London in daylight, the Pups of No. 46 Squadron never engaged one, and the unit returned to France at the end of August.

Pup squadrons were formed specifically for Home Defence purposes: No. 112 at Throwley on 30th July 1917, No. 61 at Rochford three days later. On 12th August sixteen Pups of the latter unit took off to attack ten Gothas that had flown over the east coast, but the bombers had the height of the Pups and only a few of the Sopwiths managed to catch up with the German formation forty miles from the English coast. Owing to petrol shortage and gun troubles such combats as took place were brief and inconclusive.

Flight Lt. H. S. Kerby of the R.N.A.S., flying a Pup from Walmer, attacked a Gotha that was lagging about 4,000 ft. below the main formation and forced it down on to the sea. On 21st August Kerby was again successful. Flying Pup N6440, he shot down a Gotha off Margate.

The official history implies that the Home Defence version of the Pup was powered by the 100-h.p. Gnôme Monosoupape engine, but it is doubtful whether all such Pups had that engine. This variant of the Pup had the bottom segment of the engine cowling removed to assist the flow of exhaust gases, and there were four slots in the starboard upper quadrant of the cowling. A more open cowling was fitted to the Monosoupape engine of Pup A653; this aircraft was unusual in having its Vickers gun mounted on the port upper longeron instead of in the usual central position. With the Monosoupape the Pup's rate of climb was improved and 1,000 ft. were added to its ceiling.

A few Pups were fitted with the 80-h.p. Gnôme engine: B5949, B5950 and B5980, thus powered, were in use at Cranwell in February 1918; and N6202 also had this engine. It is believed that a Gnôme Pup was tested at Martlesham Heath, but the test report has yet to be discovered.

On 5th February 1917 the Grand Fleet Aircraft Committee that had been set up by Admiral Beatty presented a report in which, *inter alia*, it recommended that Pups should replace Sopwith Baby seaplanes in the aircraft carrier H.M.S. *Campania*; it had earlier been decided that this change should be made in H.M.S. *Manxman*. The Committee further recom-

mended that certain light cruisers and other ships should be equipped to carry Pups. These recommendations were made with a view to providing the Fleet with a potentially effective anti-Zeppelin weapon. A shipboard version of the Pup was produced; it had a modified centre section with a central opening to permit a machine gun to be fired upwards. A Lewis gun was mounted on a tripod in front of the cockpit. Alternatively or additionally, eight Le Prieur rockets could be carried.

This association with the Fleet led to a considerable number of modifications to the Pup. The first shipboard aircraft were fitted with an air bag in the rear fuselage to serve as emergency flotation gear. This was not very effective, as Flight Commander F. J. Rutland found on 29th April 1917. He had taken off from *Manxman* to patrol an area where Zeppelins were expected; compass trouble prevented him from regaining his ship before his petrol gave out; after ditching a few miles off the Danish coast his Pup floated for only twenty minutes.

As a result of Rutland's experience the Mark I Emergency Flotation Bags were designed. These were attached to the undersides of the lower wings, against which they lay flat while deflated. They were tested on 23rd June 1917, the subject aircraft being 9901. The Pup was moored off the Isle of Grain, and after six hours was still afloat.

Ditching trials were conducted at the Isle of Grain with a Pup that had a jettisonable undercarriage. On the first attempt the Pup overturned on striking the water, but later attempts were successful after a hydrovane had been fitted under the fuselage and a duralumin plate on the tailskid.

Rutland pioneered the flying of Pups from small

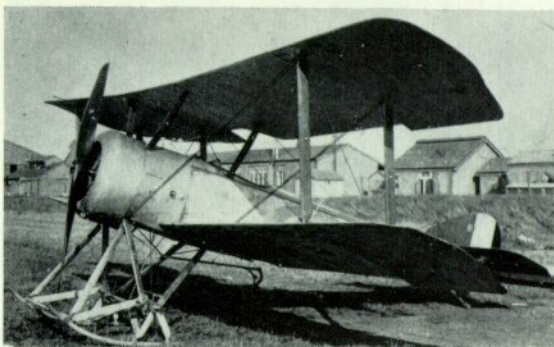
platforms aboard cruisers. In June 1917 he flew a Pup from the light cruiser H.M.S. *Yarmouth*, which had been fitted with a platform above the conning tower and forecandle gun: the platform gave a take-off run of twenty feet. On 21st August Flight Sub-Lt. B. A. Smart made his first take-off from *Yarmouth* to shoot down the Zeppelin L.23. He ditched near H.M.S. *Prince* and was rescued by her boat; as they were in enemy waters his Pup was abandoned.

H.M.S. *Yarmouth* had had to steam into wind to launch her Pup. As an improvement over the fixed platform, Lt. Commander C. H. B. Gowan suggested that a platform built on to a ship's gun turret could be turned into the "felt" wind while the ship maintained her course and the aircraft flown off. This was tried on the battle cruiser H.M.S. *Repulse*, and on 1st October 1917 Rutland flew a Pup from a platform on "B" turret, which was trained 42° on the starboard bow into a felt wind of 31.5 m.p.h. He repeated the feat eight days later, when the platform had been transferred to an after turret. As a consequence, it was decided on 17th October that all light cruisers and battle cruisers should carry fighting aeroplanes, provided that their gun armament was not interfered with.

The Admiralty had been interested in the possibility of launching aeroplanes by catapults before the war began but did not pursue the idea actively until 1916, when tenders were invited for the construction of catapults. To the design of Mr. R. F. Carey a catapult was made by the Waygood-Otis company and erected at Hendon in 1917. Two Pups of the first Beardmore batch, 9948 and 9949, were delivered direct to Hendon for catapult tests; one source states that tests of the Carey catapult, using a Pup, were conducted in October 1917. The official history does not mention the Pup in this connection, but implies that the first successful launch was of the Avro 504H. The catapult was not developed, partly because Pups could be flown from the small platforms on board ship.

When H.M.S. *Furious*, which had five Pups in her complement; joined the Fleet at Scapa Flow in July 1917, the first wartime attempts at landing-on were made. *Furious* had at that time only one flight deck, ahead of the funnel and superstructure, which was intended for take-offs only. Landing-on could only be accomplished by an aircraft with the Pup's superb controllability, for it entailed flying alongside, crabbing inboard until the aircraft was over the ship's forward deck, and then touching down.

The first deck landing was made in this way by Squadron Commander E. H. Dunning on 2nd August 1917. This showed that the deck party could assist in bringing down the aircraft manually (the relative speed between Pup and ship was very small), consequently rope toggles were fitted under the lower wings and fuselage. With these handling aids fitted and a Lewis gun mounted, Dunning made a second landing on 7th August, but his Pup was blown back after touching down and damaged its elevators. He changed to N6452 for his third attempt, but this time he was too far forward and waded the deck party away. His engine choked when he opened the throttle; the Pup stalled and fell over *Furious*' starboard bow;

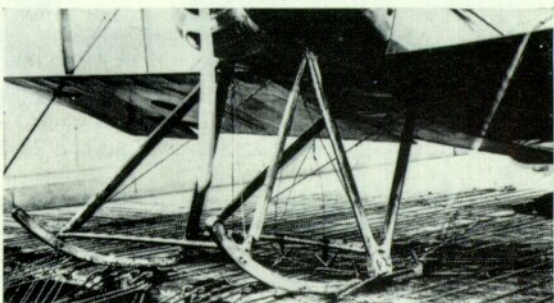


*Beardmore-built Pup with sprung skids in place of wheels and an arrester hook for athwartships cables.*

(Photo: Imperial War Museum)



*This Pup had rigid skids with flexible forward extensions, three V-shaped horns for fore-and-aft arrester cables, and a hook for athwartships cables.*



*Sopwith 9901a Pup aboard H.M.S. *Furious*, the arrester cables having been engaged by the horns on the undercarriage.*

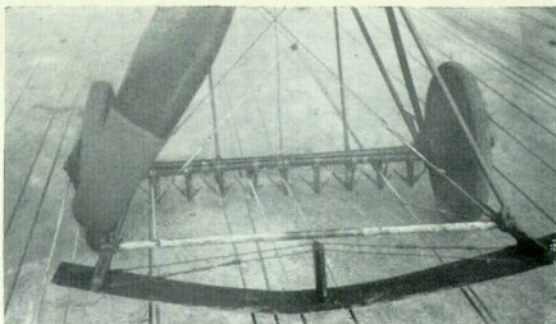
(Photo: Imperial War Museum)

Dunning drowned. On 17th October it was decided to fit *Furious* with a 284-ft. after landing-on deck.

This led in turn to much experimental work with undercarriages and arrester gears in which Pups were used extensively. The undercarriage wheels were replaced by wooden skids in order to decelerate the aircraft after touch-down; various arrangements of arrester cables, both fore-and-aft and athwartships, were tried.

The work was initiated at the Isle of Grain under Squadron Commander H. R. Busted, using a dummy deck laid out on the aerodrome. One of the Pups employed was No. 9497, one of the prototypes, which was flown with wheels, airscrew guard, and a large hook designed to engage athwartships arrester cables. At least one Pup had sprung skids and a hook pivoted under the aircraft's centre of gravity; another had fixed skids with a pronounced curve, horns to engage fore-and-aft cables and an aft-mounted hook for athwartships cables. Ultimately a rigid skid under-





*Pup with wheel undercarriage, multiple horns under the spreader bar, and airscrew guard cum hydrofoil. Flown by Lt.-Col. R. Bell Davies, V.C., D.S.O., in deck-landing trials aboard H.M.S. Argus, 23rd October 1918.*

carriage was standardised, each skid having two pairs of horns. This version of the Pup had the Admiralty designation Sopwith 9901a; ten were with units of the Grand Fleet on 31st October 1918.

Unfortunately, although the experiments at Grain had been successfully pursued, it was found that landing a lightly-loaded Pup on the after deck of H.M.S. *Furious* with the ship steaming at something like 30 kt. was almost an impossibility. The funnel and superstructure of the ship created so much turbulence that an alarming proportion of landings ended in crashes, and operational use of *Furious*' landing-on-deck was abandoned.

Better results were obtained in October 1918 with H.M.S. *Argus*, which had a flush flying deck without any superstructure. A Pup fitted with nine V-shaped horns under the spreader bar of its wheel undercarriage and a curved guard under the airscrew was successfully landed on *Argus* by Lt. Arnold and Lt.-Col. R. Bell-Davies, V.C., D.S.O., on 22nd and 23rd October.

An extensively modified version of the Pup was built by Beardmore as the W.B. III; the prototype was the converted Beardmore-built Pup No. 9950. This had folding wings without stagger and a slightly lengthened fuselage. The undercarriage of the first thirteen production W.B. IIIs (N6100–N6112) could fold into the underside of the fuselage to conserve space aboard ship; in this form the aircraft had the official designation S.B.3F. All the other W.B. IIIs (N6113–N6129 and N6680–N6749) had a jettisonable undercarriage and were designated S.B.3D. The suffix letters F and D indicated the type of undercarriage fitted, and signified Folding and Dropping respectively. In the R.N.A.S. the W.B. III was usually known as the Beardmore folding Pup. The modifications impaired the handling qualities, however, and the W.B. III was not popular. Some apparently went to Japan.

Away from the main theatre of war the Pup was used operationally only by the R.N.A.S. in the Mediterranean area, where a few were flown by "C" Squadron at Imbros and "F" Squadron at Amberkoj and Marian. There can be little doubt that the 79 Pups that were sent to the Middle East Brigade were used for training purposes at No. 5 Fighting School, Heliopolis: B6043 is known to have been on the strength of that unit.



*One of the Pups given to Australia under the Imperial Gift scheme, A4-9 was originally C530. It is here seen fitted with a camera gun.* (Photo: via R. Waugh)

A late series of trials in which a Pup was used were conducted in the autumn of 1918. A Pup and a Salamander were painted in experimental camouflage schemes and, flying at 1,500–2,000 ft., were observed by other aircraft at 5,000–7,000 ft. The record of these trials is in an official Confidential Information Memorandum dated October 1918.

A few Pups were supplied to some of the Allies. As a gift from the British Government N6204 was sent to Russia in 1917, and in the following year N6470 and

*Production:* Serial numbers were allotted as follows for 1,896 Pups ordered under official contracts:

Sopwith Aviation Co., Ltd., Canbury Park Road, Kingston-on-Thames. 3691, 9496–9497, 9898–9900; N5180–N5199; N6160–N6209; N6460–N6529 (N6480–N6529 not built). William Beardmore & Co., Ltd., Dalmuir, Dunbartonshire. 9901–9950; N6430–N6459.

The Standard Motor Co., Ltd., Cash's Lane, Coventry. A626–A675; A7301–A7350; B1701–B1850; B5901–B6150; C201–C550.

Whitehead Aircraft Ltd., Richmond. A6150–A6249; B2151–B2250; B5251–B5400; B7481–B7580; C1451–C1550; C3707–C3776; D4011–D4210.

Known A.R.D. rebuilds: B804, B4128.

*Service use:* France—R.F.C. Squadrons Nos. 46, 54, 66; Special Duty Flight. R.N.A.S. "A" Squadron at Furnes; No. 1 Wing, Dunkerque; Naval Squadrons Nos. 2, 3, 4, 8, 9, 11 and 12; Seaplane Defence Flight at St. Pol. Italy—One Pup with No. 66 Squadron. Home Defence—R.F.C. Squadrons Nos. 46, 61 and 112; R.N.A.S. stations Dover, Manston, Port Victoria, Great Yarmouth, Walmer. Mediterranean—"C" Squadron, R.N.A.S., Imbros; "F" Squadron, R.N.A.S., Amberkoj and Marian. *Shipboard use*—Aircraft carriers *Furious*, *Campania*, *Manxman*, *Vindex* and *Argus*; light cruisers *Caledon*, *Cassandra*, *Cordelia*, *Dublin* and *Yarmouth*; battle cruisers *Repulse* and *Tiger*.

*Examples of Pups used by operational units:*

No. 46 Sqn. R.F.C.—A673, A7325 (aircraft 1), A7348 (3), B1733, B1795, B1843.

No. 54 Sqn. R.F.C.—A639, A672, A6183, A6215, B1730, B1792.

No. 66 Sqn. R.F.C.—A6181, A7314, B1710, B1732, B1745, B1846.

No. 112 Sqn. R.F.C.—B1772, B5910.

No. 2 Sqn. R.N.A.S.—N5181, N5187.

No. 3 Sqn. R.N.A.S.—N5185, N6160, N6163, N6174, N6203, N6465.

No. 4 Sqn. R.N.A.S.—B1818, N6168, N6184, N6185, N6468, N6469.

No. 8 Sqn. R.N.A.S.—3691, 9898, N5182, N5190, N5196, N5198.

No. 9 Sqn. R.N.A.S.—N6167.

No. 11 Sqn. R.N.A.S.—9899, N6167, N6174, N6184, N6192, N6199.

No. 12 Sqn. R.N.A.S.—B1816, B1817, N6167, N6182, N6467.

"C" Sqn. R.N.A.S.—9942, N6432, N6433 (9942 and N6432 known to have been used by "F" Squadron also).

H.M.S. *Furious*—N6452, N6453, N6454.

H.M.S. *Tiger*—N6443.

H.M.S. *Manxman* (allocated)—9913, 9943, 9945, N6431, N6444, N6455.

H.M.S. *Vindex* (allocated)—9921, N6457, N6458.



Although G-EAVX (ex B1807) had an 80-h.p. Le Rhône engine it was fitted with the Monosoupape-type cowling; it also had a head-rest behind the cockpit. This photograph was taken at Hendon; the occasion was the 1921 Aerial Derby, 16th July 1921. (Photo: "Flight" International)

N6471 were given to the Greek Government. The fates of these Pups are unknown. On 1st March 1917 A6164 made a forced landing in neutral Holland and was used for a time by the Netherlands air service as La41, later S212.

Two Pups were reported to be on the strength of the U.S. Navy on 1st November 1919. These may have been the aircraft that had the U.S. Navy designating numbers A-5655 and A-5656, to which the 130-h.p. Clerget engine is improbably attributed in one U.S. document.

The Pup was officially declared obsolete in the R.A.F. in December 1918 and rapidly disappeared. Possibly the last in official service was B7565, which was still flying at the R.A.F., Farnborough, in December 1922. In its last months of R.A.F. service the Pup had been so much sought after by officers for use as a personal aircraft that it is surprising that no more than eight were given civil registrations. It seems that in the U.K. none survived later than 1924, when G-EBFJ (ex C242) was scrapped.

At least eleven Pups were given to Australia as part of the Imperial Gift in 1919. These aircraft, C521-C528 and C530-C532, became A4-1 to A4-11 of the R.A.A.F. Another Pup that went to Australia was C476, which became G-AUCK and VH-UCK. It was still flying in 1944, powered by a five-cylinder radial engine, and was finally dismantled on 21st September 1945.

The last word on the Pup is best left to Oliver Stewart:

The perfect flying machine. This is the term which the Sopwith triplane nearly fulfilled and which the Sopwith Pup did fulfil. As a military aircraft it had certain shortcomings, but as a flying machine—a machine which gave a high return in speed and climb for a given expenditure of horse-power, which had well-balanced, powerful controls, which was stable enough but not too stable, which was sensitive enough without being too sensitive, and which obeyed its pilot in a way that eventually secured his lasting admiration and affection—the Sopwith Pup was and still is without superior.

#### SPECIFICATION

Power: 80-h.p. Le Rhône 9C; 80-h.p. Clerget; 80-h.p. Gnôme; 100-h.p. Gnôme Monosoupape.

Dimensions: Span 26 ft. 6 in.; length 19 ft. 3½ in.; height 9 ft. 5 in.; chord 5 ft. 1½ in.; gap 4 ft. 4½ in.; stagger 1 ft. 6 in.; dihedral 3°; incidence 1° 30'; span of tail 10 ft. 1 in.; incidence of tailplane 1° 30' with Le Rhône engine, 2° 30' with Monosoupape; wheel track 4 ft. 7 in.; tyres, Palmer 700 × 75 mm.; airscrew diameter 8 ft. 6.4 in. (Le Rhône). Areas: Wings and ailerons 254 sq. ft.; ailerons, each 5.5 sq. ft.; tailplane 23 sq. ft.; elevators 11.8 sq. ft.; fin 3.5 sq. ft.; rudder 4.5 sq. ft.

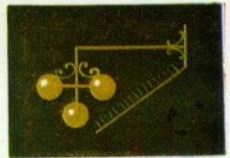
Armament: One fixed 0.303-in. Vickers machine gun with Sopwith-Kauper, Scarff-Dibovski or Constantinesco C.C. synchronising gear, Aldis and ring-and-bead sights. The shipboard version of the Pup had one 0.303-in. Lewis machine gun on a tripod in front of the cockpit, firing upwards through the centre section. R.N.A.S. Pups could be armed with eight Le Prieur rockets, in addition to or in place of the machine gun. For ground-attack duties R.F.C. Pups could carry a small load of 25-lb. bombs.

#### WEIGHTS AND PERFORMANCE

Engine	Le Rhône		Monosoupape	
	M.31	M.95	M.95A	M.95A
No. of trial report ...	M.31	M.95	M.95A	M.95A
Date of trial report ...	21st Oct. 1917	April 1917	May 1917	
Type of airscrew used on trial ...	Lang L.P.1020	Vickers 57		
Weights (lb.):				
Empty ...	787	856		
Military load ...	260	260		
Fuel and oil ...	178	181		
Loaded ...	1,225	1,297		
Max. speed (m.p.h.):				
At ground level ...	111.5	—	110	110
At 6,500 ft. ...	106.5	105	107	107
At 10,000 ft. ...	104.5	101.5	104	104
At 15,000 ft. ...	94	94.5	100	100
Climb to:	m. s.	m. s.	m. s.	m. s.
6,500 ft. ...	8 0	7 10	7 5	7 5
10,000 ft. ...	14 25	13 0	12 25	12 25
15,000 ft. ...	30 6	26 55	23 25	23 25
Service ceiling (feet)	17,500	18,000	18,500	18,500
Endurance (hours) ...	3	1½	1½	1½

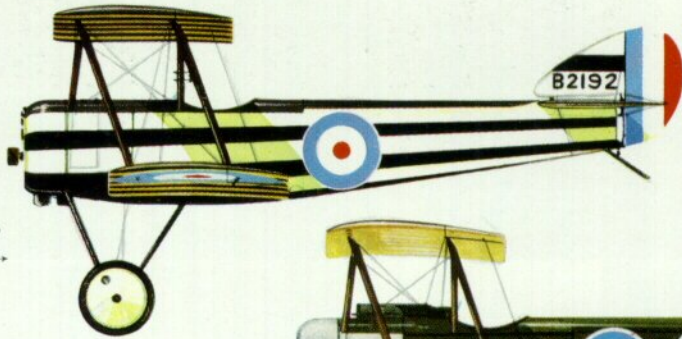


Sopwith Pup,  
No. 112 (Home Defence)  
Night Fighter Squadron,  
Throwley, U.K. 1917.



Personal  
'Uncle' Emblem.

Sopwith Pup,  
100 h.p. Gnome Monosoupape,  
Go'sport School of Special Flying,  
1917. Flown by Captain Foote. →



Sopwith Pup, No. 46 Squadron,  
Izel-le-Hameau, France, 1917 →



Sopwith Pup,  
No. 46 Squadron,  
Izel-le-Hameau,  
France, 1917  
←

Sopwith Pup,  
No. 46 Squadron,  
Izel-le-Hameau, France, 1917  
(serial unknown). ↓



Sopwith Pup equipped with sprung  
skid undercarriage used for deck  
landing trials on the aircraft carrier  
H.M.S. *Furious*, R.N.A.S. 1917.

Tailplane marking  
of R.N.A.S. Pup. ↓

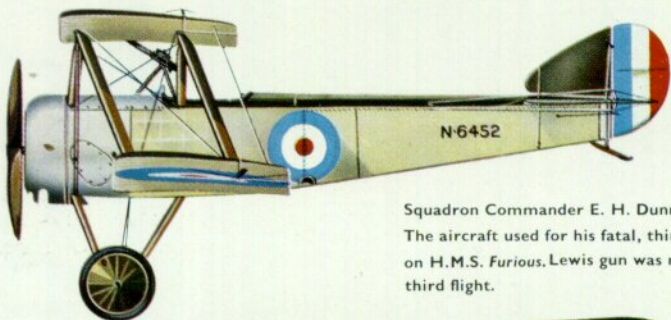
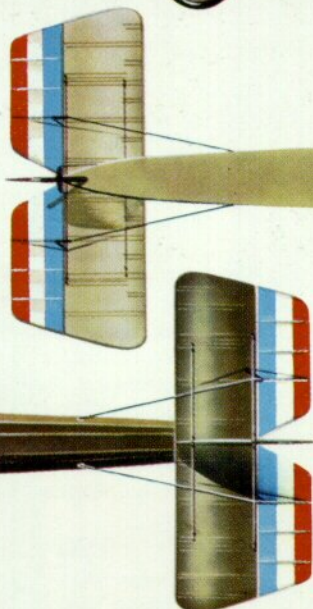
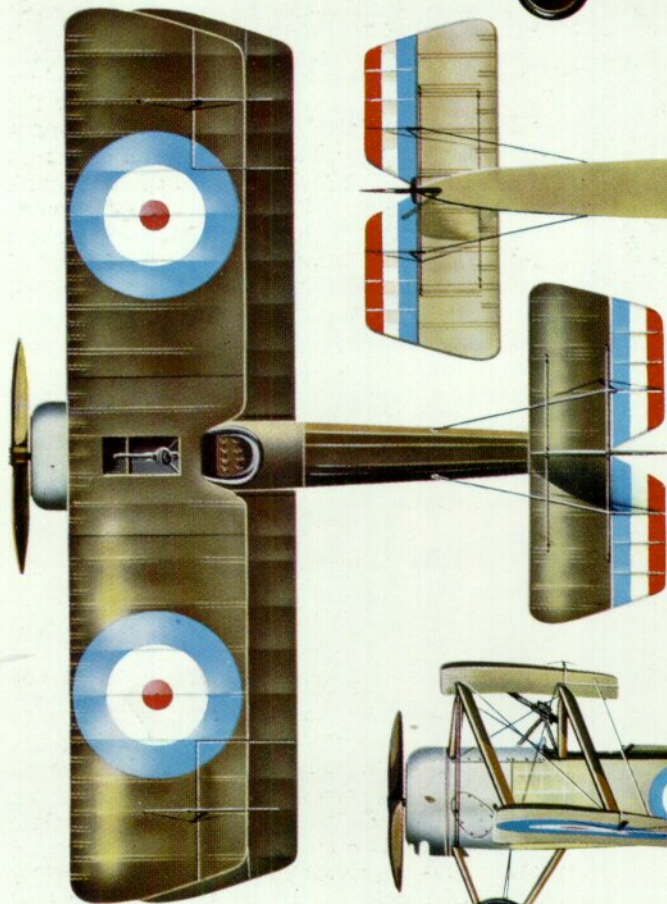
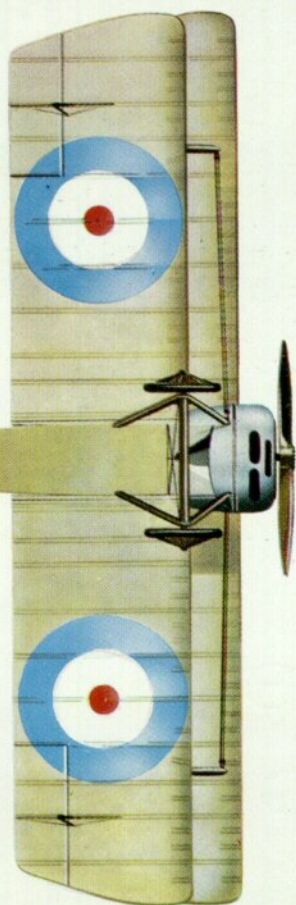
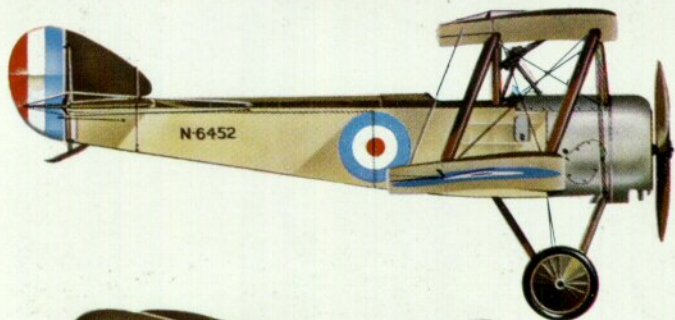


Sopwith Pup of the Japanese Army  
Air Force, used in the Home Islands  
and at Vladivostock. Also used by the  
Japanese Naval Air Force. →



'Deaths Head'  
wheel detail.





Squadron Commander E. H. Dunning's Naval Pup. The aircraft used for his fatal, third attempt to land on H.M.S. *Furious*. Lewis gun was not mounted on third flight.

