

Research Notes on the
Hawker Tomtit
Compiled by John Griffin
Part 1/1

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Hawker
Tomtit

J. McNulty
ex-JG.



RC 2453 #139

Hawker Tom Tit at Camp Borden



RC 2454



Hawker Tomtit

Serial 139

J. Berby photo



RE 11623-4
P.C. 2500:

Hawker Tempest.

RE 11623-4



Photos
J McNulty
(2 negs different)
exposures

Hawker Tomtit #140

Ottawa 7 Apr 1940



These copied on RCAF
RE 64-964

Master Photo Book
Touitit XX



Photos
J. Mc Nulty

#139 Hawker Tomtit

Camp Gordon.

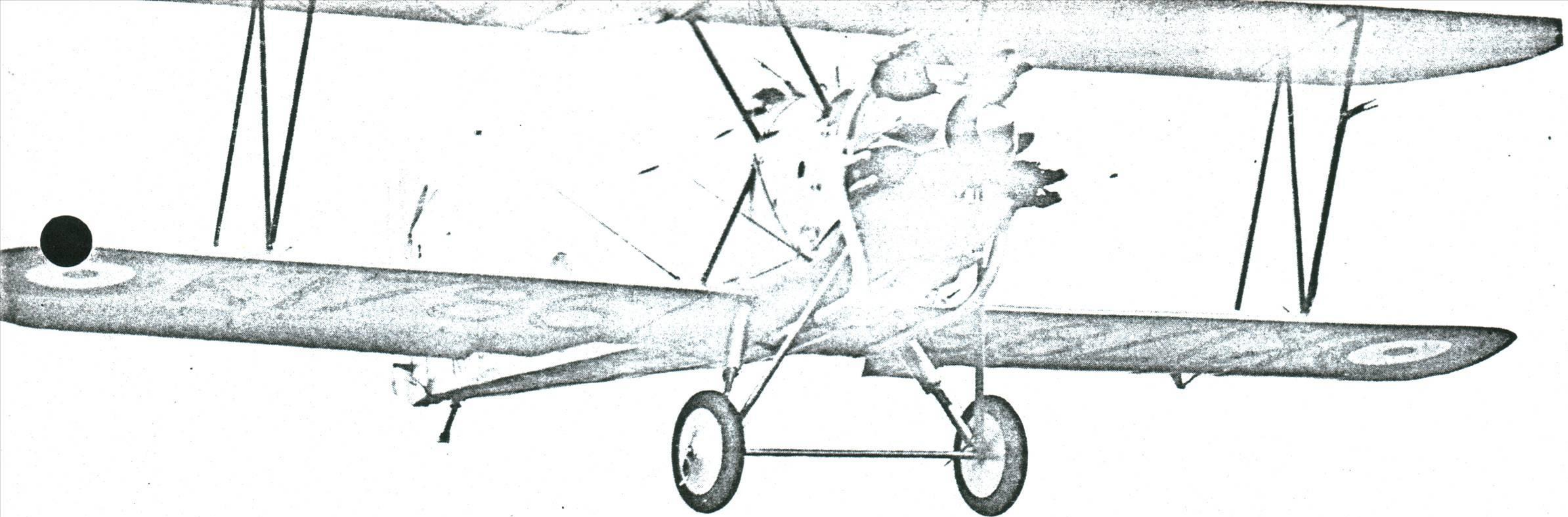


Hawker Tom Tit

HC 8141



HC 8132



TOMTIT

Hawker Tomtit K1786 belongs to the Shuttleworth Collection, at Old Warden Aerodrome in Bedfordshire, UK, where many veteran aircraft are maintained and flown.

Describing its structure is Bert Hayward, Hangar Foreman of Hawker Siddeley's Experimental Flight Section at Dunsfold. He was Harry Hawker's personal mechanic and recently celebrated his half-century with the company.

Neil Williams, who contributes the handling notes, is a professional test pilot and UK Team Captain in the World Aerobatic Championships.

Pre-flight Bert Hayward

WHENEVER I SEE an air show with veteran aircraft taking part, I wonder whether the spectators realise the amount of effort and patience it involves to maintain these fine old timers. I sincerely hope they do, because keeping them in flying trim needs a keen interest and—most important—experience.

Let me show you round the Hawker Tomtit, a small single bay biplane built in 1928 for the Royal Air Force as a light trainer. All the main components, such as mainplanes, centre section, fuselage and empennage, are of metal construction with fabric covering, and they are so designed that items can be replaced quickly and easily. The fuselage fabric unlaces underneath. Any part of the metal structure can be dismantled merely by removing bolts or tubular rivets.

The 150 hp Armstrong Siddeley Mongoose engine is very neatly cowled in, with its cylinder heads just protruding; you can easily detach the cowling by unlocking the Fairey fasteners, this method of securing panels being used throughout the aircraft. More cowlings cover the fuselage top and sides as far back as the front cockpit. By removing all these, the front fuselage can be serviced, and access gained to the mains fuel and oil tanks on inspection checks.

The main fuel tank (24 gallons) is neatly faired in on the top longerons, forward of the front cockpit, with

the oil tank (3 gallons) directly underneath it. Another fuel tank (22 gallons) is fitted in the centre section; it can be removed quite easily. Because the aircraft is a biplane you have metal interplane struts, a set of rigging streamline wires—and, very important, a rigging diagram. Rigging is an interesting exercise, especially if you have not tried it before.

Instructor and pupil communicate by means of Gosport tubes. These are double flexible tubes, with a mouthpiece at one end and a Y fitting at the other connecting into the helmet earpieces. Seat-type parachutes are used in the adjustable seats, complete with Sutton harness for security. Oh, by the way you will need warm clothing in the air; the fact that you are feeling the winds and seeing all around just makes this type of flying worthwhile.

The undercarriage is fixed, you will notice, damped by two vertical oleo legs and two radius rods and rigged by streamline wires. Very simple, and works well.

At the rear end of the aircraft we have a tail skid, not a wheel, coupled up with the rudder bar. So we operate the Tomtit from grass fields only, where the skid can have its desired manoeuvring and braking effect. Two persons can, with ease, move the aircraft around on the skid trolley. The tailplane is adjustable, by means of a worm gear attached to its underside, and this in turn is actuated by cables and handwheels from each cockpit.

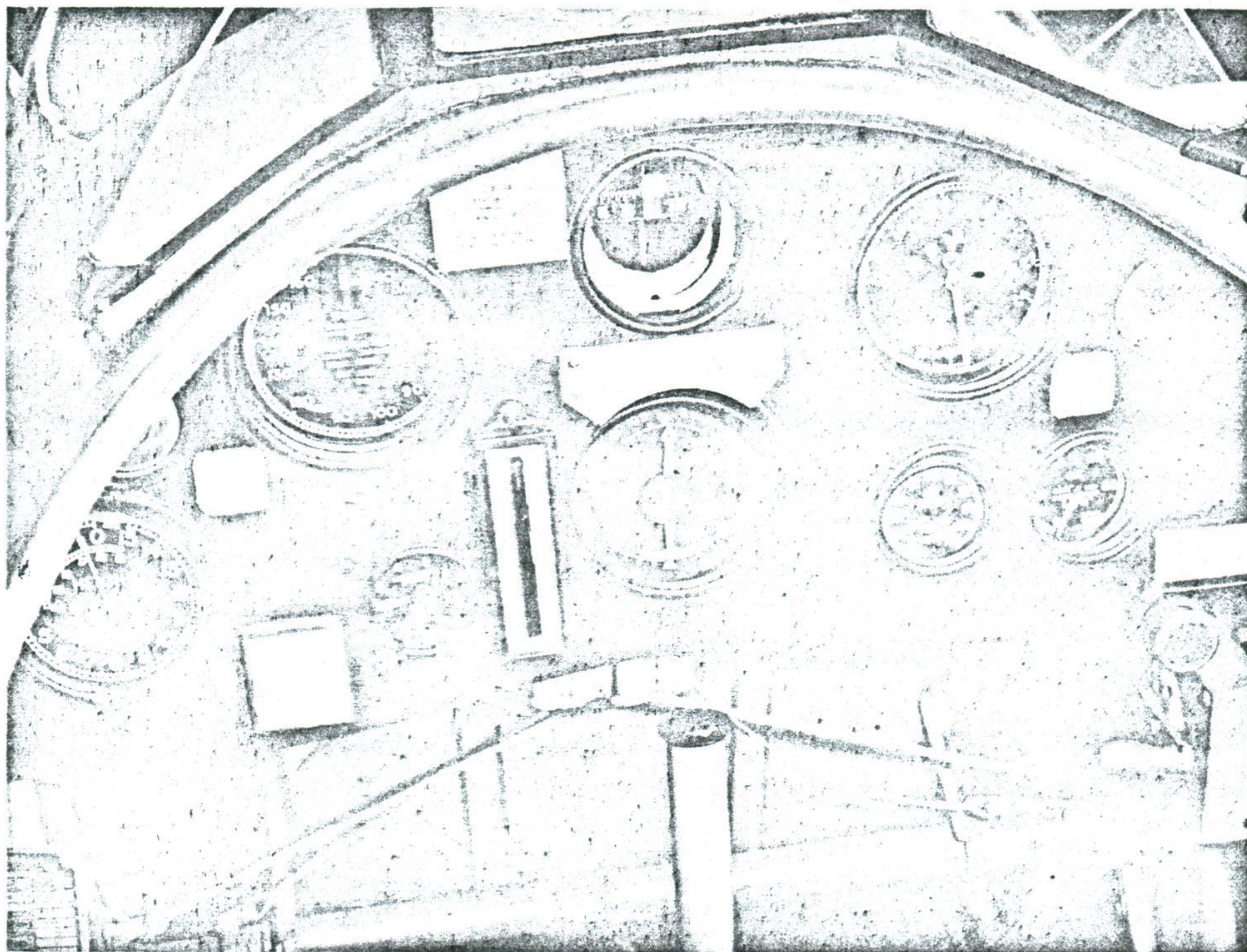
Now, what about starting up, and has this got its

moments? Well yes, it has. The more starts you make, the better you become at it.

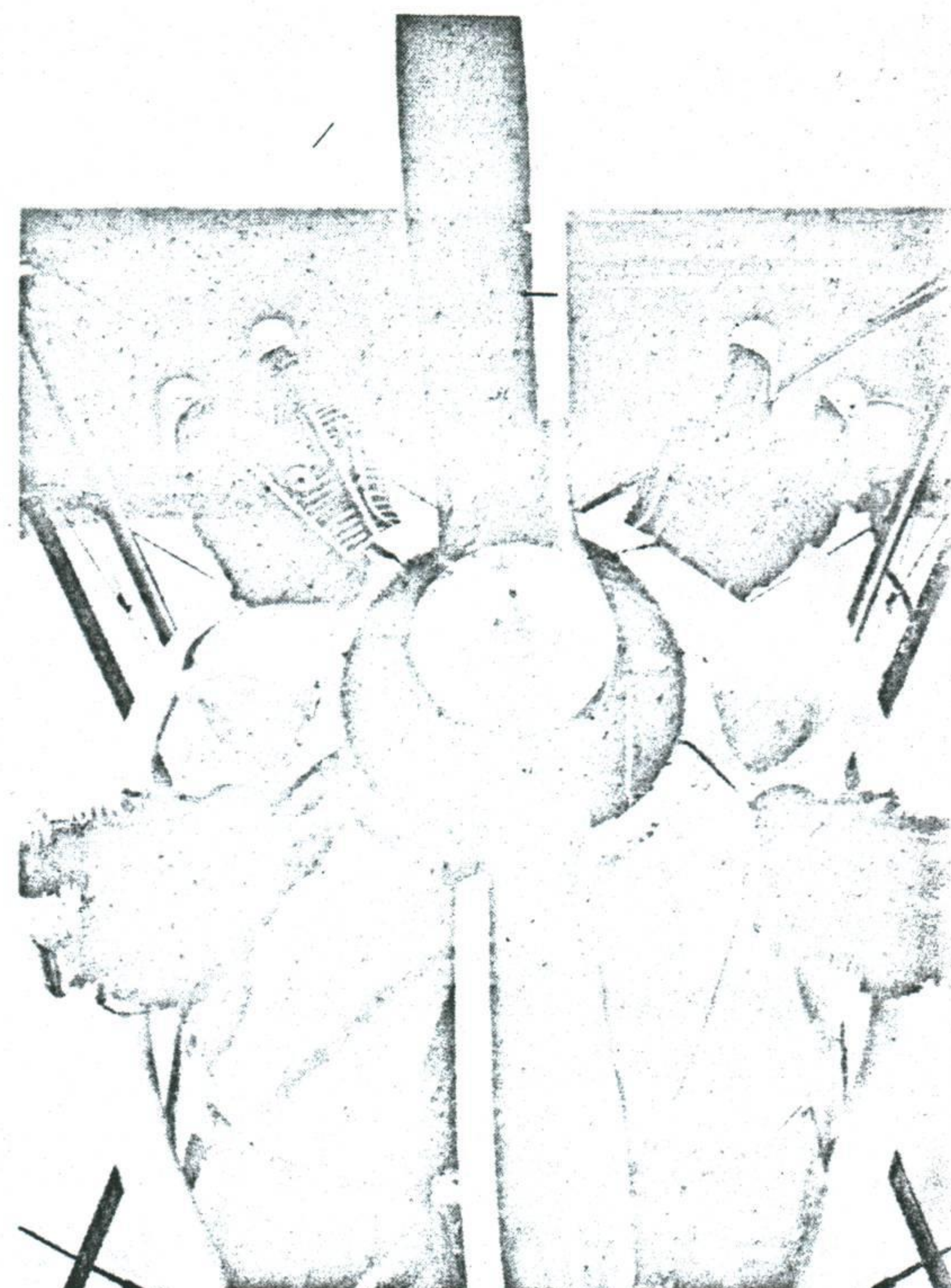
Having satisfied yourself that all cowlings are secure, chocks in position, no foreign bodies lying around in front of the aircraft, petrol and oil OK, and the front seat harness secured away from the flying controls, get settled in the rear cockpit. Make a survey of the instruments, switches and cocks. All switches OFF, fuel cocks ON for priming: the fitter turns the propeller over slowly while you give the Ki-gas primer pump some four or five strokes, and don't forget to screw the pump down afterwards, otherwise fuel will filter through to the cylinders from the main tank and upset the running.

Have the propeller set at the top of the compression stroke, advance the throttle lever to about one-quarter open, and when given the 'all clear' turn all switches ON (not forgetting those in the front cockpit). Then, with the stick held back, wind the hand starter magneto vigorously—and to your surprise the engine fires. During the warm-up you will have time to run over the pilot's notes.

Having serviced all the Tomtits from the word 'go', I get a tremendous kick from discussing these machines with the not-so-old pilots who were almost certainly not born when they were in their heyday. I listen to the inevitable eulogies—marvellous, real flying, quite different from aeroplanes today. How right they are!

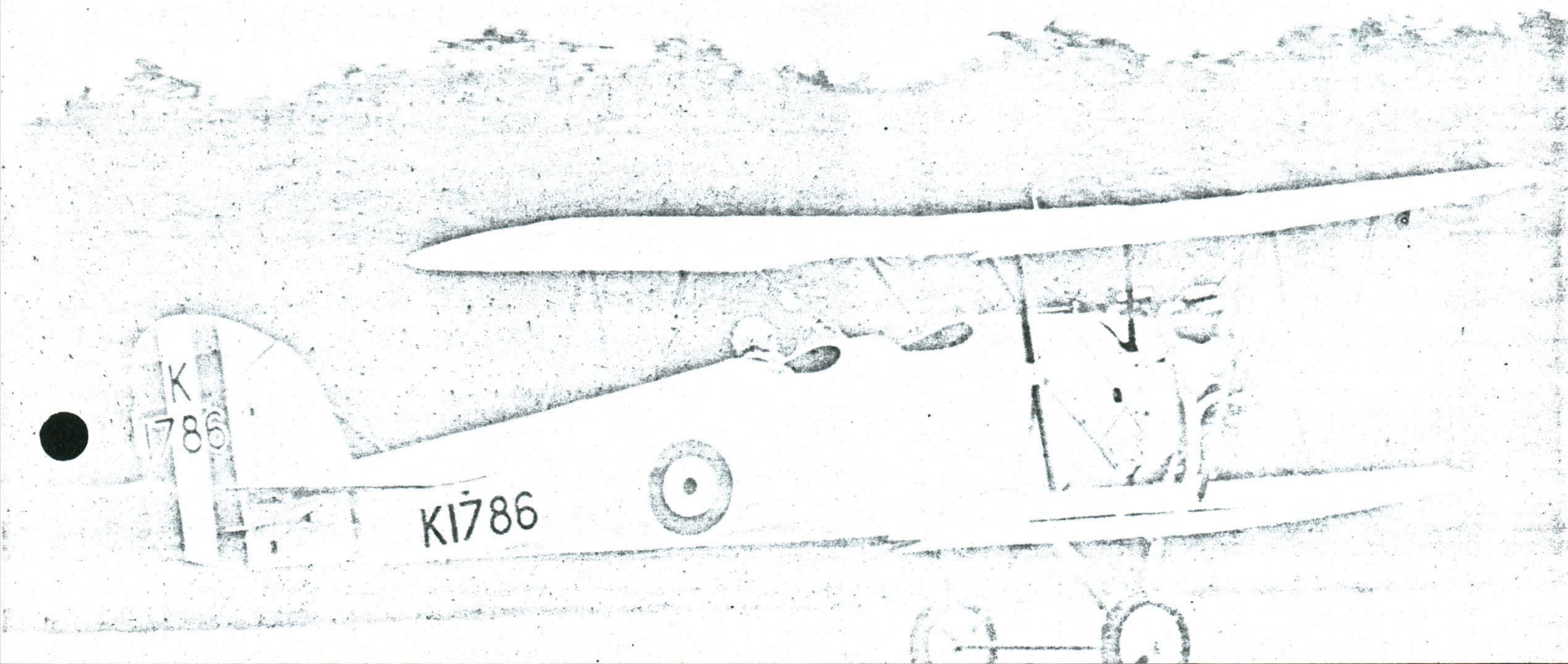


ABOVE LEFT: Gyro instruments on the Tomtit's panel are minimal, though adequate for the cloud flying of the '30s. Note glass-tube inclinometer



ABOVE RIGHT: Projecting cylinders of the 150 hp Mongoose radial, before the days of Townsend and NACA cowlings, are a major drag source. But they help to keep diving speeds within limits

BELOW: Head to the left, Neil Williams watches the grass at Old Warden as Tomtit settles gracefully into a three-point attitude



Handling Neil Williams

The aircraft was taken over from another pilot with the engine running.

Entry This was by means of a foot slot in the side of the fuselage and a step on the lower port mainplane. The straps were a conventional Sutton harness and the seat was adjustable for height. There were no brakes or flaps. The cockpit was large and roomy, and the view ahead was dominated by two large cylinders protruding through the cowling. Instrumentation was adequate, and it was pleasing to see the large ASI and altimeter of the period.

Taxying The aeroplane responded easily to rudder and bursts of power, and handled better than a Tiger Moth on the ground. The nose had to be swung from side to side in order to see ahead, and the engine behaved perfectly. There are few sounds in aviation as pleasant as a smooth running radial engine.

Trimming was effected by a wheel and sliding indicator for elevator trim. There was no rudder or aileron trim, nor were these necessary.

Take-off Full power was applied and the aircraft accelerated quickly with practically no tendency to swing. It was slightly nose heavy, so the tail was raised very slowly. The under-carriage damped out the vibration from the rather rough grass airfield, and the aircraft was eased off at 55 mph. The controls were very nicely harmonised and balanced and the aircraft was pleasantly stable about all three axes.

Flight The purpose of the flight was to familiarise the pilot with the aircraft, prior to the possibility of displaying it, and to position it so that photographers on the ground could get some pictures.

Two strong impressions were immediately apparent: the light and responsive handling, which positively demanded that the aircraft should be at least mildly aerobatted, and the noise in which the deep bellowing note of the engine blended with the whine of the wires.

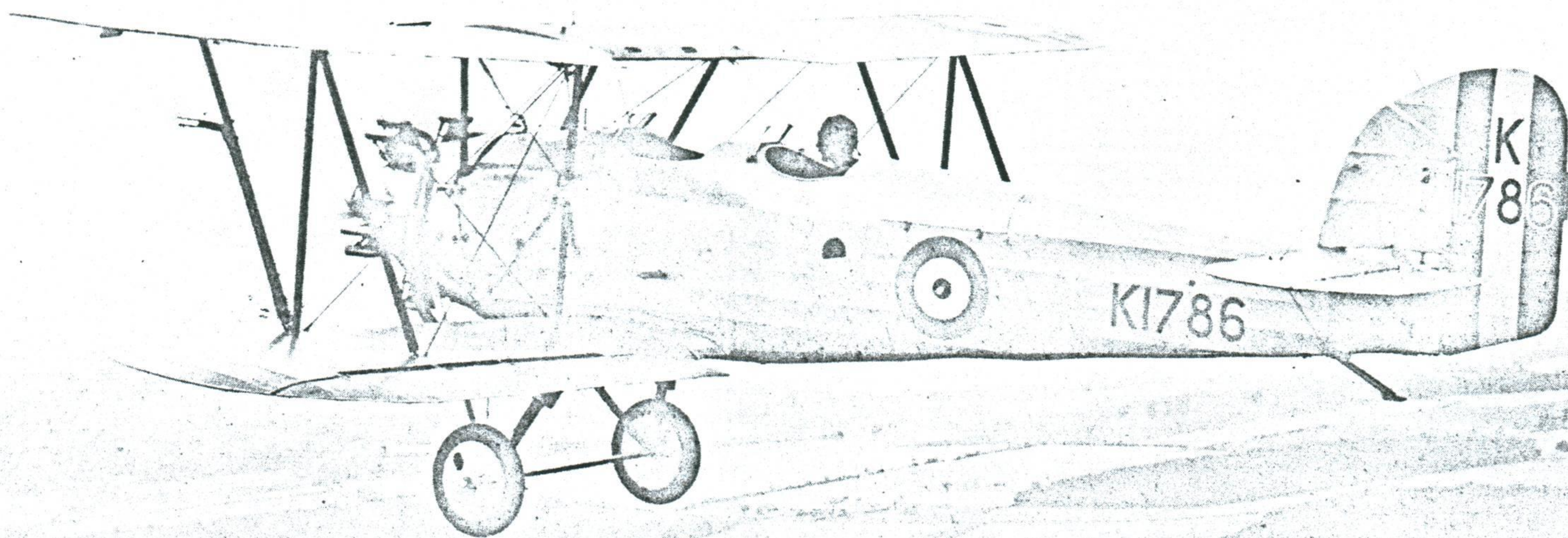
The performance, on 150 hp, was remarkable; the aircraft would easily climb 500 ft in a wing-over, providing a strong contrast with the heavier, although more powerful Avro Tutor. Loops and barrel rolls were effortless, from an entry speed of 120 mph, and the aeroplane would turn comfortably within the perimeter of the rather small airfield at Old Warden.

The aircraft was climbed to a safe height and was stalled power off. The engine note died to a whisper with the throttle closed and the aircraft stalled at 42 mph, with a very gentle nose drop. It was again brought to the stall, and a one turn spin to the left was carried out. Recovery was precise and the aircraft's behaviour was completely docile.

The ailerons gave a slightly better rate of roll than the Tiger Moth and were smoother, and slightly lighter in operation. Although the ailerons were almost full span they were only fitted to the lower wing.

Landing A glide approach was made at 55 mph and from this speed the aircraft could be comfortably rounded out and three pointed. The landing run was a little longer than a Tiger and directional control was good on the ground, although the view ahead was non-existent.

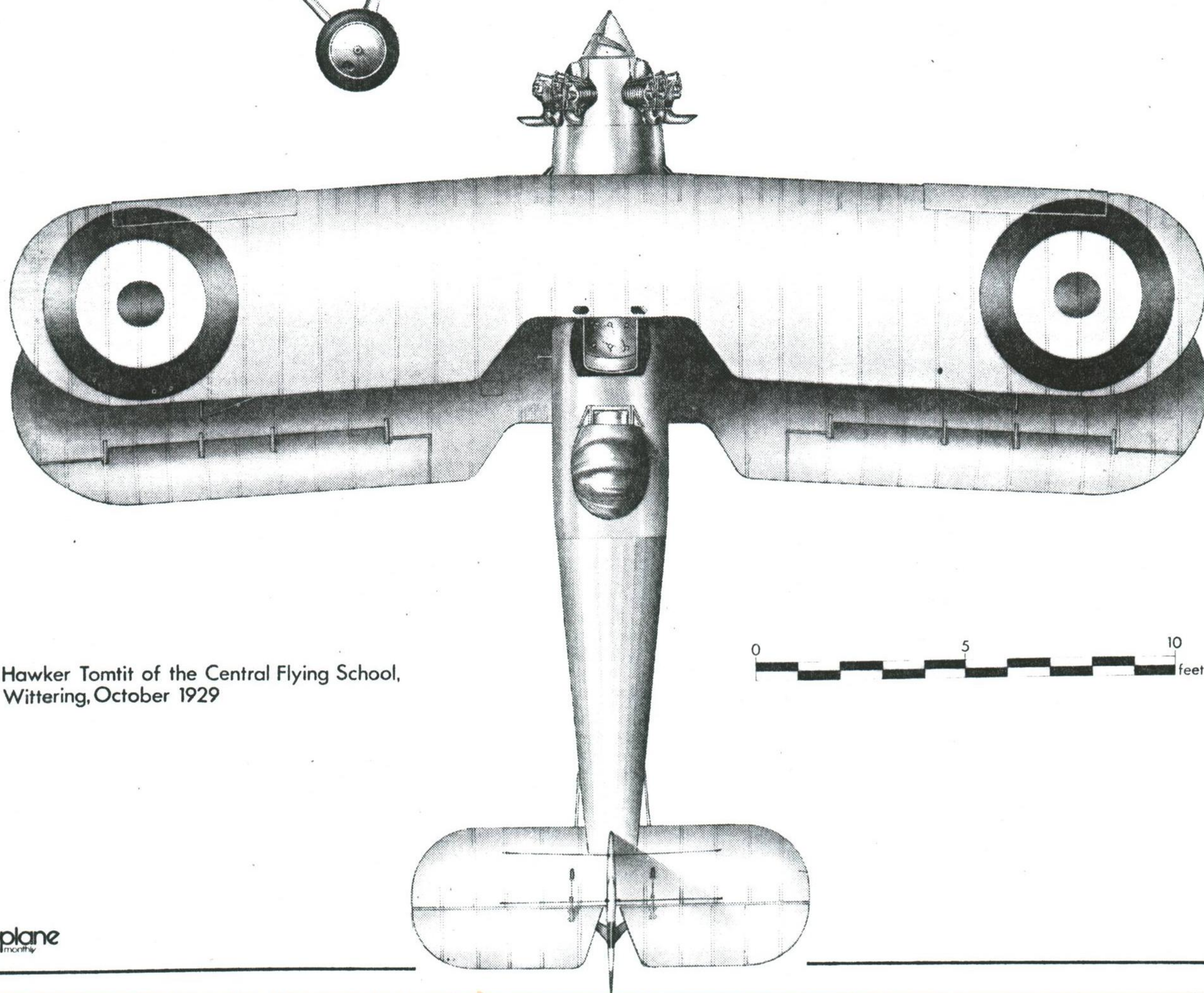
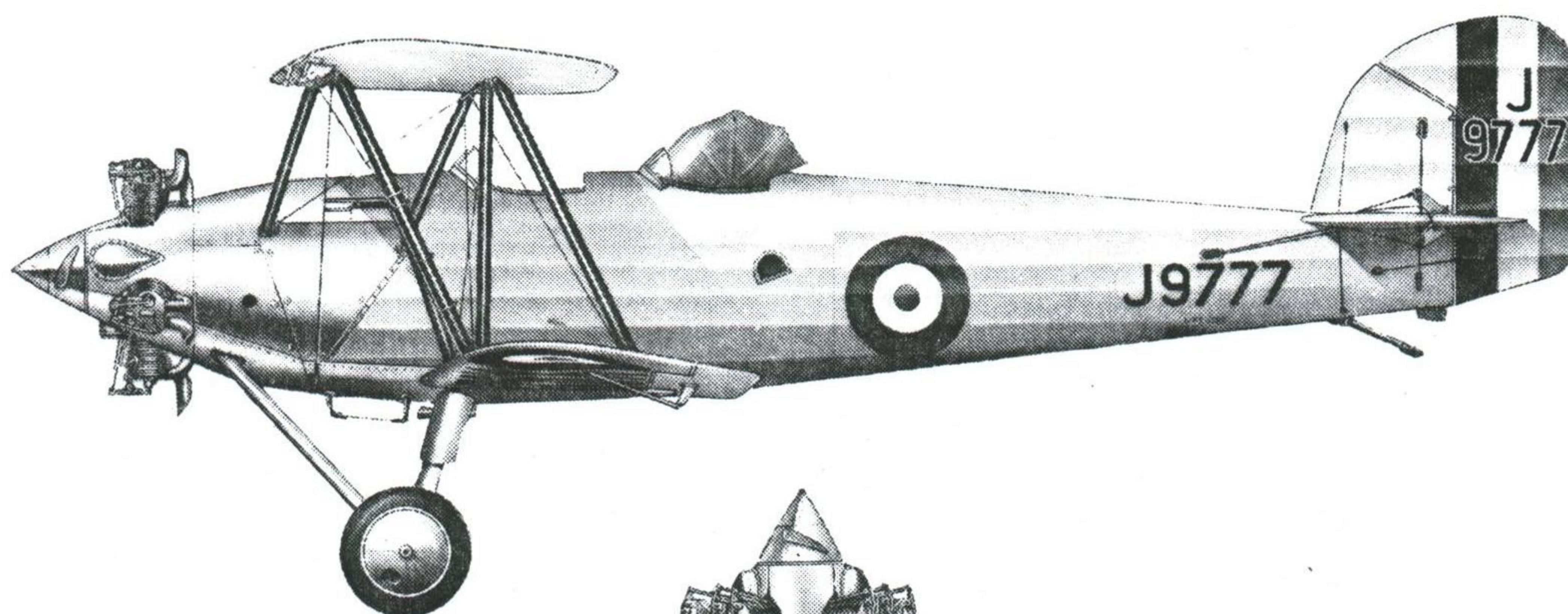
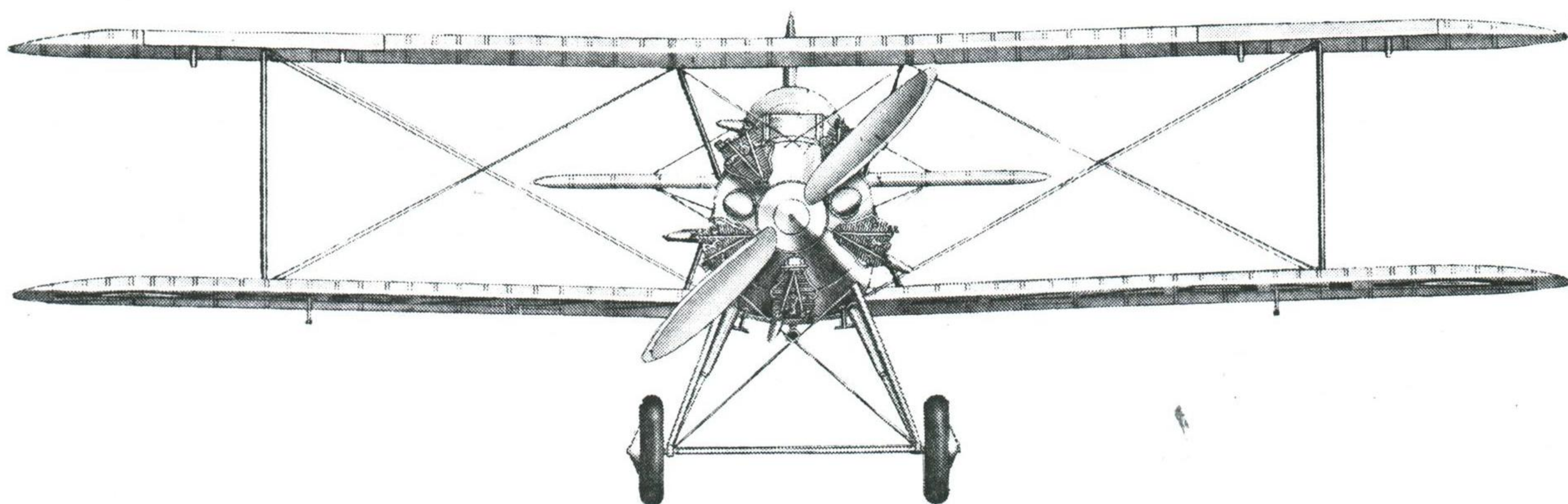
Conclusion The Tomtit is a delightful little aeroplane and in its day must have been a great favourite. It is far superior to a Tiger Moth for sheer fun, and is completely docile and viceless. I am personally very grateful for having the opportunity to fly it.



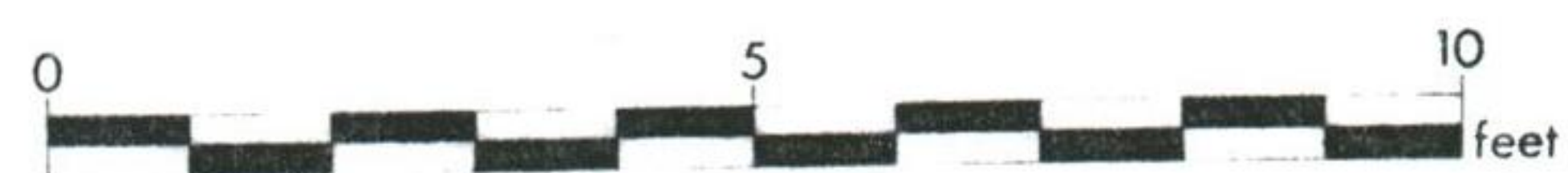


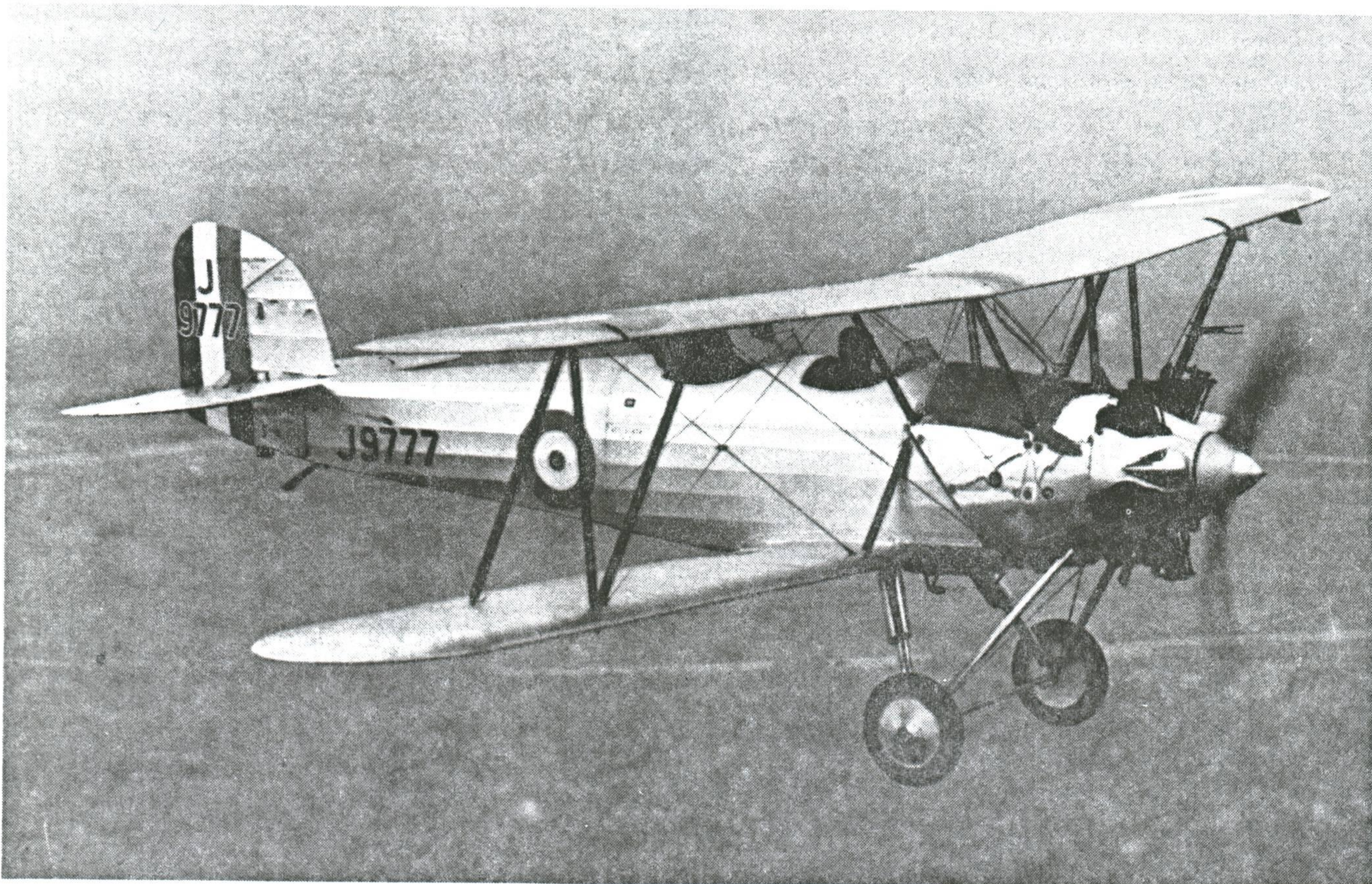
"Tomtit" training machine at Camp Borden.

MADE IN CANADA
JULY 1918
J. B. BAILEY



Hawker Tomtit of the Central Flying School,
Wittering, October 1929





Flight

By 1927 it was apparent, even to the Air Ministry, that the days of the ancient Avro 504N (or "Lynx Avro") were numbered as the RAF's standard basic trainer. Their specification for a replacement reflected two radical changes in policy. For operating economy the new trainer was first to be designed around the lower-powered Armstrong Siddeley Mongoose air-cooled radial which used only five of the seven Lynx cylinders and gave 150 instead of 240 h.p. Secondly, in the light of new technology and the ever-growing number of all-metal fighter and bomber aircraft then coming into service, the 504N's time-honoured wooden structure was to be abandoned in favour of a metal airframe. This was also in line with the proposed phasing out of the RAF's "chippie riggers".

The Tomtit, Hawker's interpretation of this specification and brainchild of Sidney Camm, used the system of

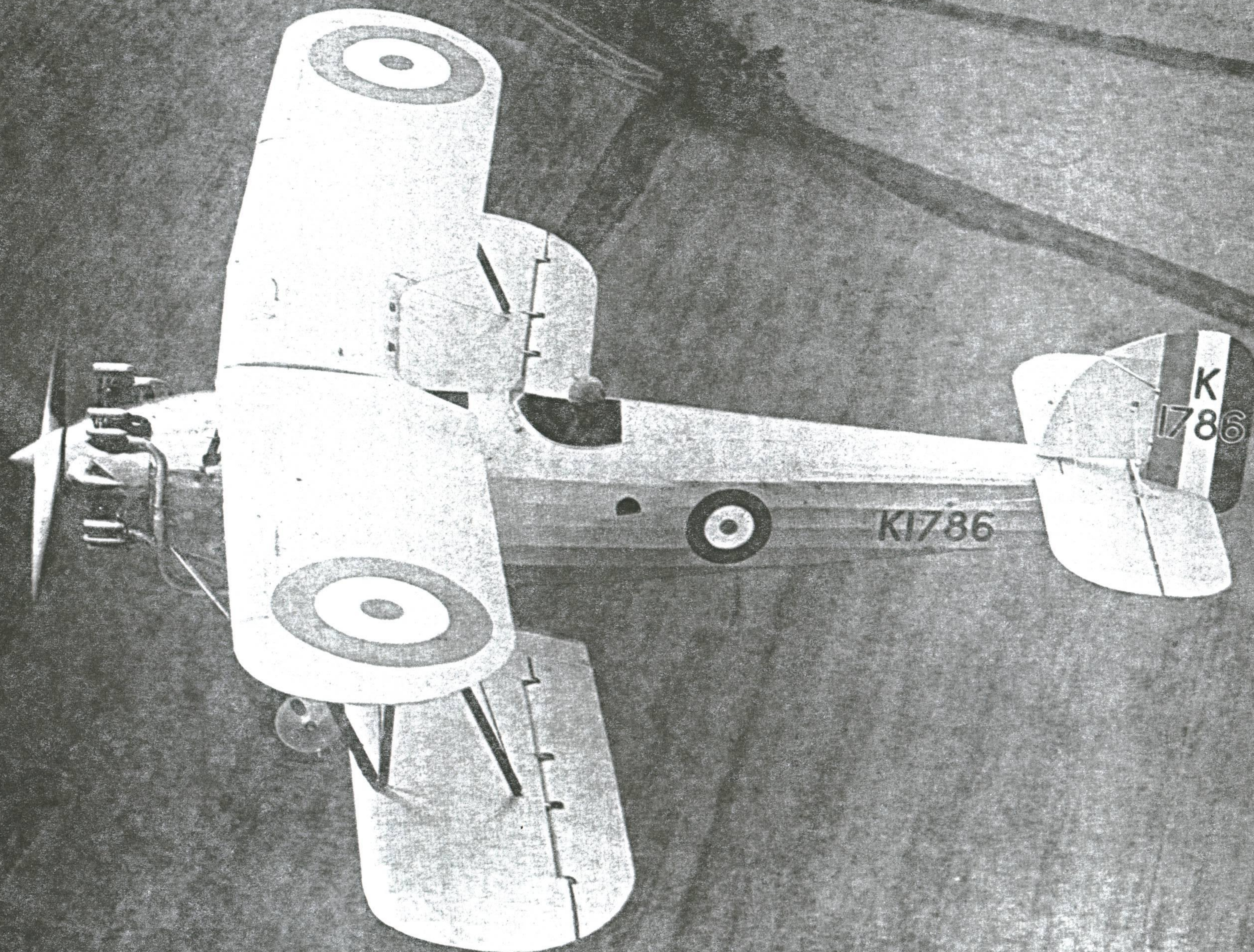
After serving with the CFS, Tomtit J9777, above, was destroyed in a take-off collision with Siskin J9190 on July 14, 1931, while with No 3 FTS. TOM HAMILL'S colour plate features the sole surviving Tomtit, K1786/G-AFTA, now with the Shuttleworth Trust.

RAF PISTON TRAINERS No5 HAWKER TOMTIT

A. J. JACKSON records the history of the aircraft which vied with the Avro Tutor to succeed the RAF's 504N, and also recounts the lives of the Tomtits which joined the British Civil Register

steel and duralumin tubular construction that was being standardised in the new generation of Hart and Fury variants then going into large scale production. It was a two-seat, fabric covered biplane with Frise ailerons on the lower mainplane only; Handley Page automatic wing slots; and all the centre section struts well forward of the front cockpit for ease of escape by parachute. An innovation of far-reaching significance was the Reid and Sigrist blind flying panel, incorporating the newly available Reid turn and bank indicator, which enabled the Tomtit to be used for instrument flying instruction "under the hood".

The unregistered private venture prototype, powered by a 150 h.p. Mongoose IIIC and painted silver with RAF roundels and rudder stripes, was first flown at Brooklands by Hawker's chief test pilot, P. W. S. "George" Bulman in November 1928. It was a sheer delight in aerobatics, enthusiastically approved in Martlesham trials, and it was no surprise when, three months later, an order was placed for ten production machines for the Royal Air Force. The prototype was exhibited at the July 1929 Olympia Aero Show, London, in a new Cellon metallised aluminium and pale blue finish before



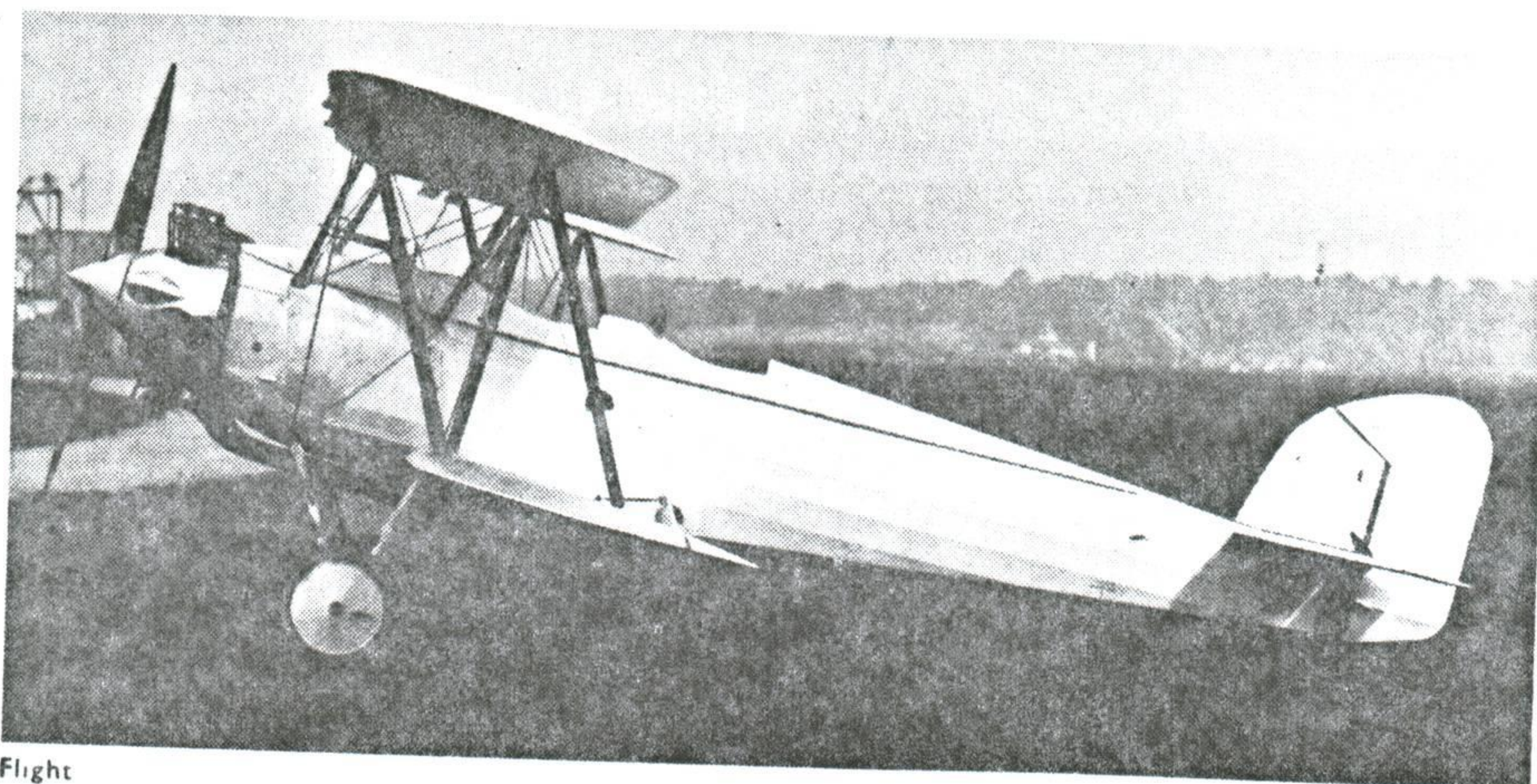
Right, Tomtit prototype J9772 in its pale blue and silver Aero Show finish, July 1929. Below right, J9774 from the first production batch, photographed in October 1929.

being taken on Air Ministry charge as J9772 to complete its Service evaluation. It later joined most of the production Tomtits, J9773-J9782, at No 3 Flying Training School, Grantham.

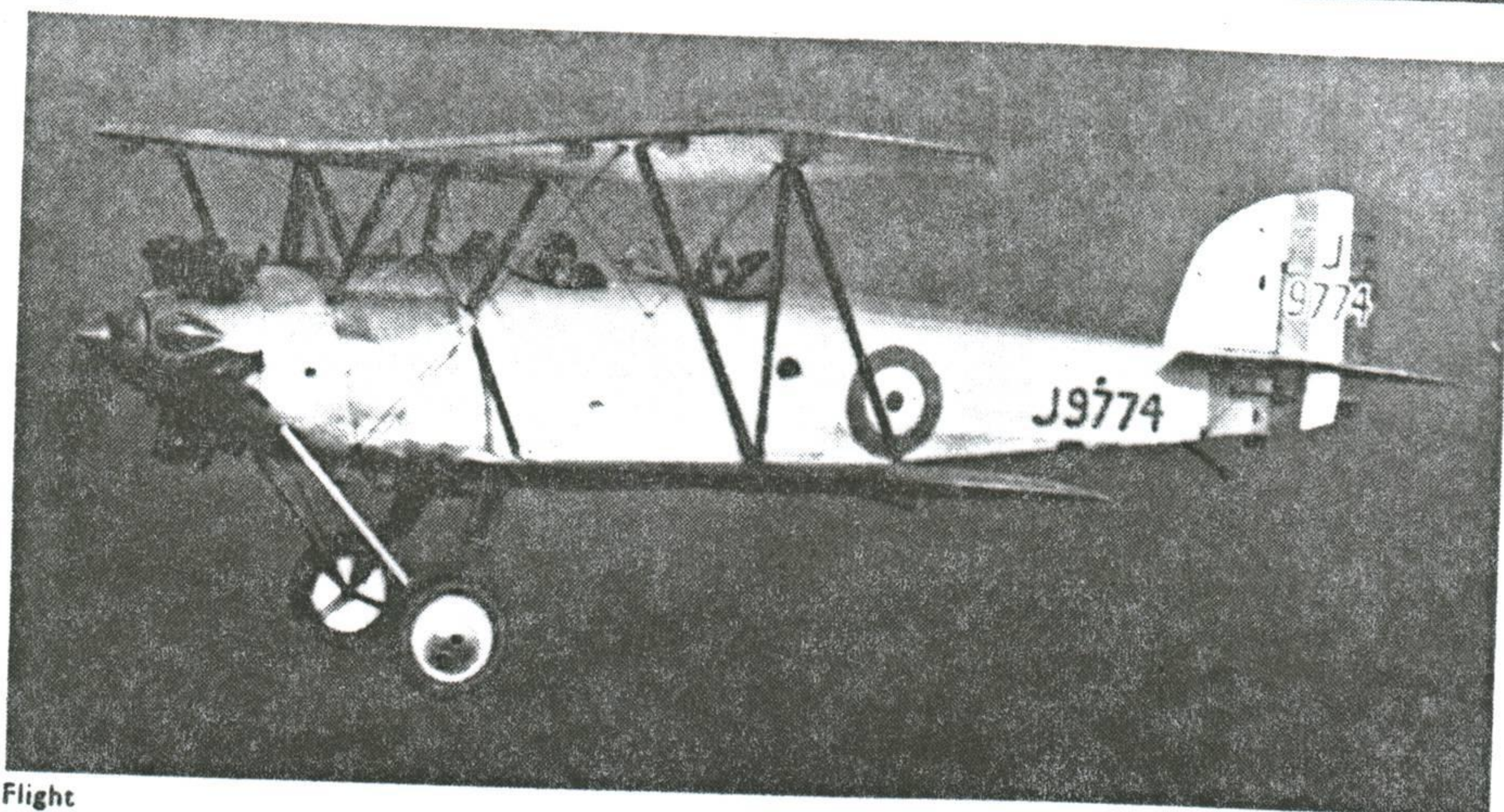
Despite this auspicious start, Hawkers received only two meagre follow-up orders, one later in 1929 for six aircraft, K1448-K1453; and one in 1930 for eight more machines, K1779-K1786, to make a grand total of 25 Tomtits for the RAF. This was a great disappointment to the company, but was the direct result of the high cost of its sophisticated structure and equipment during one of our earlier bouts of trade depression and financial stringency. As a result the cheaper and less complicated Tiger Moth was adopted instead.

In July 1930 the first five of the second production batch, K1448-K1452, joined nine already in use at No 3 FTS. Here pilots completed 60 hours flying in Tomtits before being cleared to fly the School's all-metal, radial-engined Armstrong Whitworth Siskin single seaters. The prototype was transferred to No 24 (Communications) Squadron at Hendon in 1930 to be used on the Air Ministry's blind flying equipment development programme until replaced by K1782 in 1931. This was flown occasionally by HRH the Prince of Wales, with Sqn Ldr D. S. Don, CO of the Squadron, as safety pilot. K1453, used initially for demonstrations at Brooklands before a purchasing commission from the Canadian Department of National Defence, became maid-of-all-work at

Flight



Flight

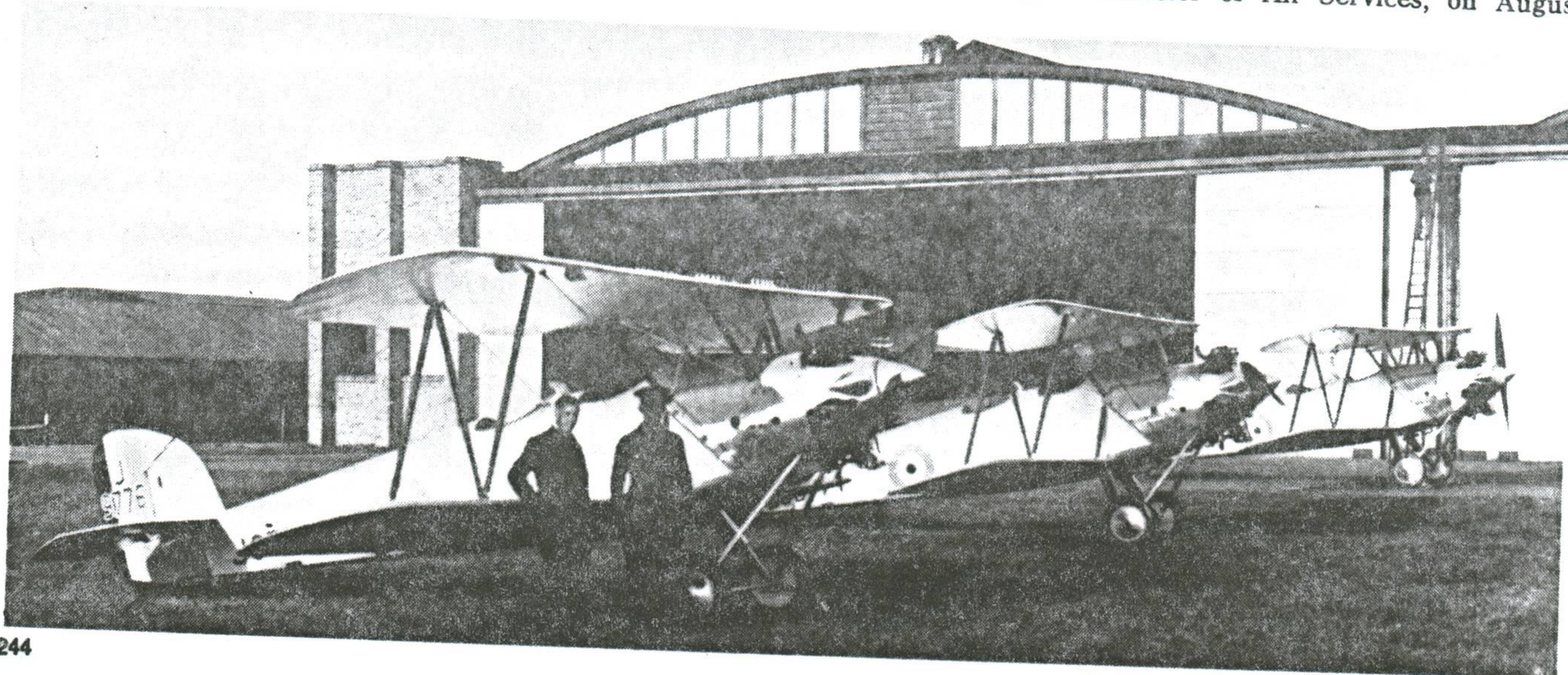


Flight

the RAE, Farnborough, during 1930-1935; K1780 went to No 2 FTS, Digby; K1783 to "C" Flight, Fleet Air Arm, Gosport; while J9780, K1450 and K1785 were evaluated briefly by the Central Flying School, Wittering.

The final military Tomtits comprised just six aircraft, two ordered

by the Canadian Department of National Defence in January 1930 after satisfactory demonstrations by K1453 at Brooklands; and four for the New Zealand Permanent Air Force, the order for which was announced by Wg Cdr S. Grant-Dalton, Director of Air Services, on August



Right, the Fleet Air Arm's Tomtit, K1783, with the badge of "C" Flight, Gosport, on its fin. Below right, the fourth aircraft, J9775, with blind flying hood in position, at Brooklands in 1929 prior to delivery.

20, 1930, at a quoted price of £1,660 per aircraft.

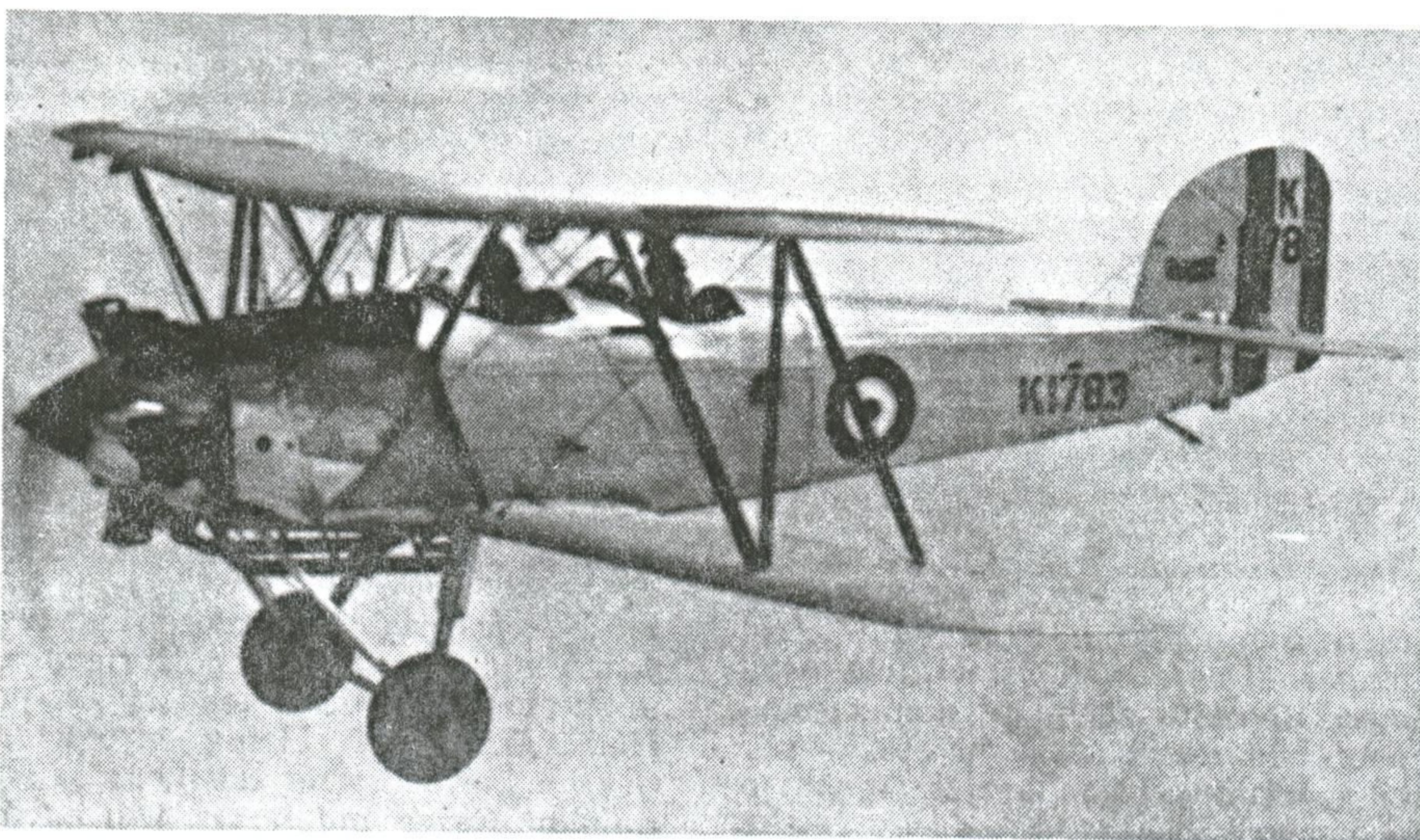
The Canadian Tomtits were test flown at Brooklands with RCAF serial numbers 139 and 140 and issued with British export Certificates of Airworthiness on June 14, 1930, having been officially taken on charge on May 15. They differed from standard in having 155 h.p. Mongoose IIIA instead of IIIC engines and were built with split instead of cross-axle undercarriages to prevent nosing-over in deep snow during winter training on skis at Camp Borden. They remained robustly serviceable in extremes of weather conditions until 1939, when they were down-graded to instructional airframes at No 7 (General Purpose) Squadron at Rockcliffe.

The four New Zealand Tomtits arrived by sea at Lyttleton, near Christchurch, NZ, on February 24, 1931. They were assembled at Wigram and spent their entire working lives there as advanced trainers. No serial numbers were carried at this stage, so that the identity of the first to fly, in the hands of Sqn Ldr J. L. Findlay on March 10, 1931, is not known. Eventually constructor's numbers 50-53 were painted on their fins to serve as serials. They had a two-fold training role, first to provide refresher flying for members of the New Zealand Territorial Air Force, and second to give further instruction to young club pilots who had learned on D.H. Moths before being sent solo on Bristol Fighters or Gloster Grebes.

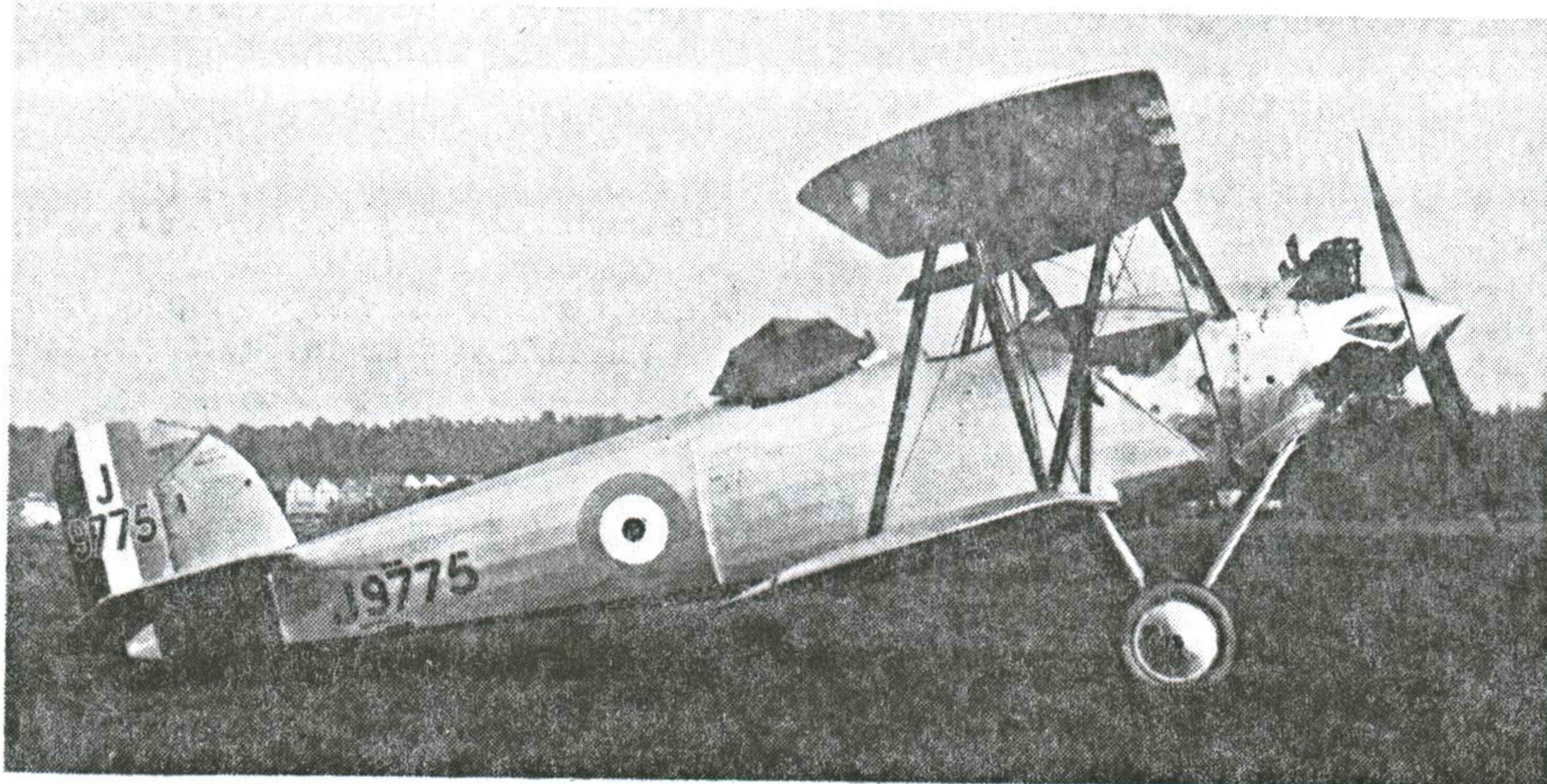
After the NZPAF became the RNZAF in February 1934, three of the four Tomtits usually led large Air Force formations at air displays, the last on Anzac Day, April 25, 1939, when they headed a formation of 15 aircraft over Christchurch. One of the few occasions when a Tomtit left the Wigram circuit was in June 1936, when "50" flew the length of the country to Auckland and back. The same machine also made a return trip to Wellington in the following November to participate in night Army Co-operation exercises.

At least two were still flying in 1939 but, at the beginning of the Second World War, Technical Training Centres were set up at Otahuhu,

Left, three Tomtits of No 3 FTS lined up at RAF Grantham. Right, RCAF Tomtit 139 with ski-equipped split undercarriage at Camp Borden in the 1930s.



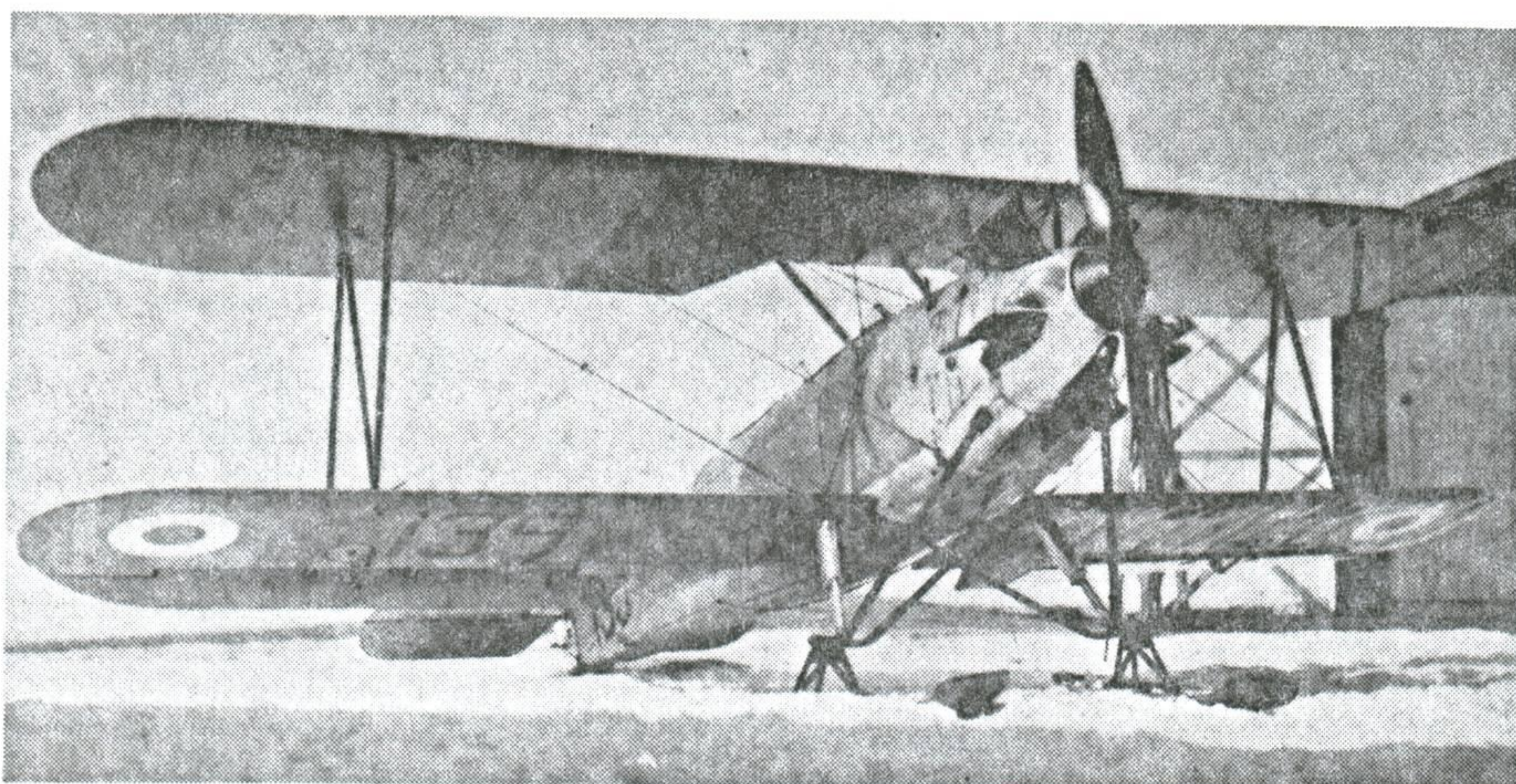
Bruce Robertson



Flight

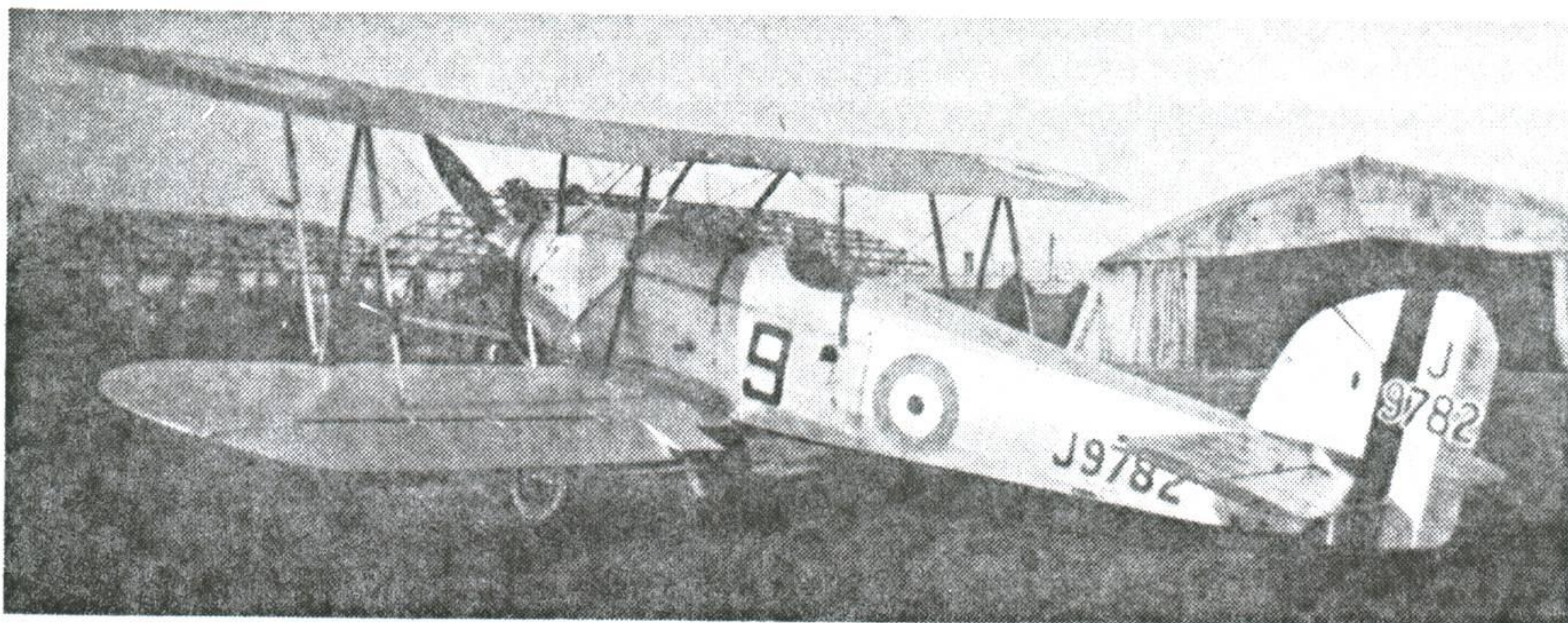
Hutt, Addington and Hillside with a motley collection of airframes for ground instruction, each with one Tomtit. Two were later transferred to Technical Training Schools at RNZAF Rongotai and Wairarapa, and one to the Air Training Corps at Murchison. All were scrapped in 1943.

K. M. Molson



Civil Tomtits

With its neat lines and impressive aerobatic capability, the manufacturers thought there would be a potential market for the Tomtit among sporting pilots and offered it with the well-known 115 h.p. Cirrus Hermes I four-cylinder, inverted, in-line engine,



J9782 as a communications aircraft of No 9 (Bomber) Squadron at the North Coates Fitties armament practice camp in 1929.

then commonly used in light aeroplanes. It was well established commercially with adequate product support, and relieved the private owner of specialised radial engine maintenance and operating procedures.

First of five Tomtits built purely as civil aeroplanes, the Hermes-powered G-AASI held spectators spellbound when first thrown about the Brooklands sky by test pilot P. E. G. Sayer in 1930. Martlesham trials, however, found it rather underpowered and lacking the crisp control responses of the standard Mongoose version. Nevertheless, G-AASI flew continuously with

the Hermes engine for more than two years, and its aerobatic performances in the hands of the legendary Brooklands School of Flying instructor, George Lowdell, and Hawker's pilots Bulman, Sayer and Lucas, will never be forgotten.

The second and third civil Tomtits, G-AALL and G-ABAX, had the 155 h.p. Mongoose IIIA, as fitted to the Canadian model, and both competed in the King's Cup Race staged at Hanworth on July 5, 1930. G-AALL was entered by HRH the Prince of Wales, averaged 118.4 m.p.h. over the 750 mile course to Newcastle and

back, and came 18th piloted by Sqn Ldr D. S. Don. G-ABAX, entered and flown by the Hon F. E. Guest, did even better for a training aeroplane and came 12th in a field of 88 competitors at an average speed of 125.5 m.p.h. After the race G-ABAX and G-AALL were purchased outright by the Hon F. E. Guest and Miss Diana Guest respectively, the engine in the latter being changed for the standard Mongoose IIIC.

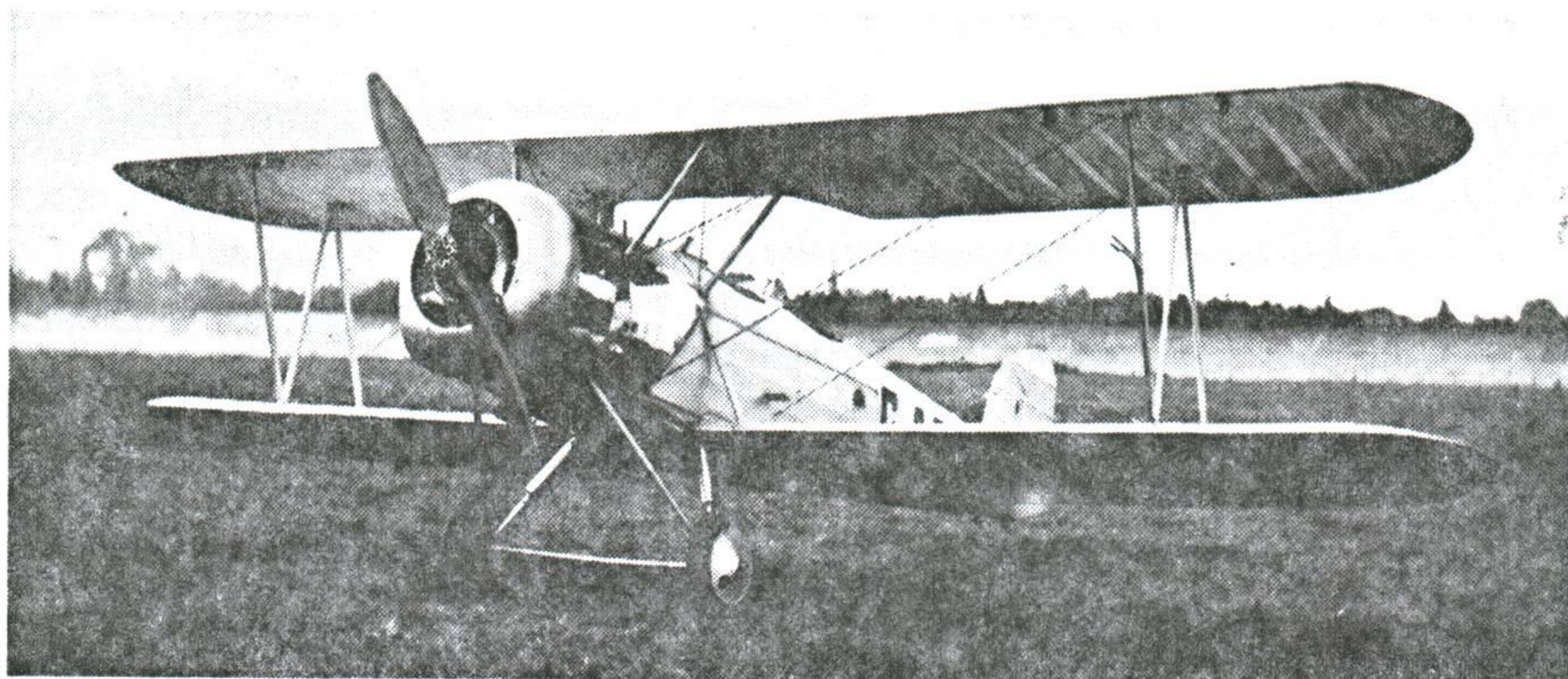
The last two purely civil Tomtits were G-ABII and 'OD, the latter to be used as a flying testbed for Sir William Morris' new Wolseley nine-cylinder radial, the first of which, the 150 h.p. A.R.2, was delivered to Brooklands in May 1931. First flown by P. G. Lucas on July 24, the performance of the Wolseley in G-ABOD augured well for its future. Development was rapid and G-ABOD flew again on August 11 with the A.R.7 version, piloted by P. E. G. Sayer, and on September 1 with the first really successful model, the 185 h.p. A.R.9.

After starting from scratch in the *Morning Post* Air Race at Heston on May 21, 1932, Fg Off E. C. T. Edwards came 8th in G-AALL. This aircraft later competed for the King's Cup against G-ABII, but the pilots, the Hon F. E. Guest and Sqn Ldr W. Helmore, were unlucky and retired.

When the H. G. Hawker Engineering Co Ltd was reorganised in 1933 as Hawker Aircraft Ltd to handle large scale production of Fury and Hart variants, interest in the Tomtit ceased. G-AASI, G-ABAX and 'OD were then sold off to Reid and Sigrist Ltd for use by the Brooklands School of Flying. By this time the Wolseley A.R.9 had completed more than 50 hours test flying in G-ABOD and a decision had been made to put it into limited production. Thus, to speed up development work, Wolseley Motors Ltd purchased all three machines and ferried them to their factory aerodrome at Castle Bromwich, Birmingham, to be re-engined.

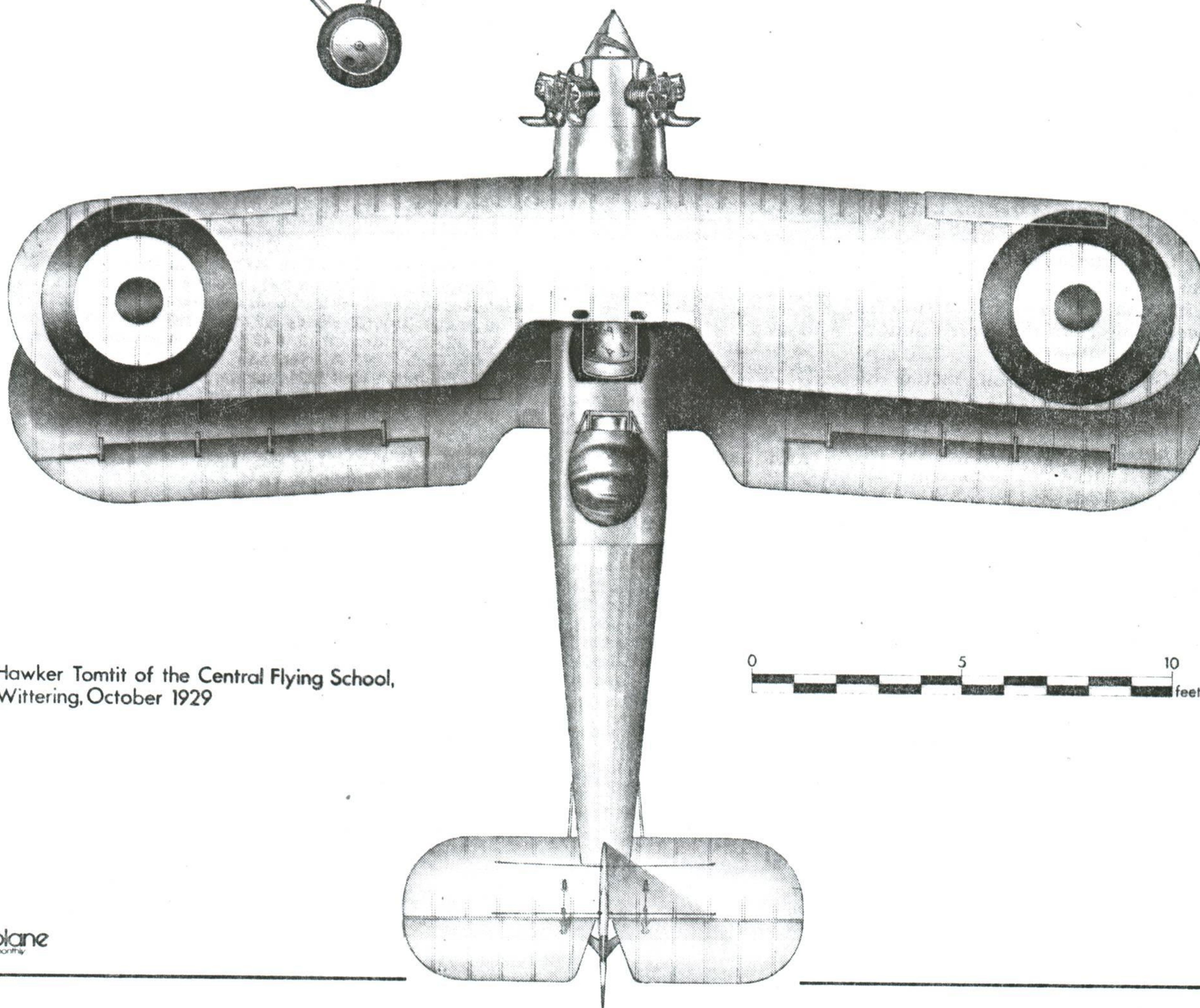
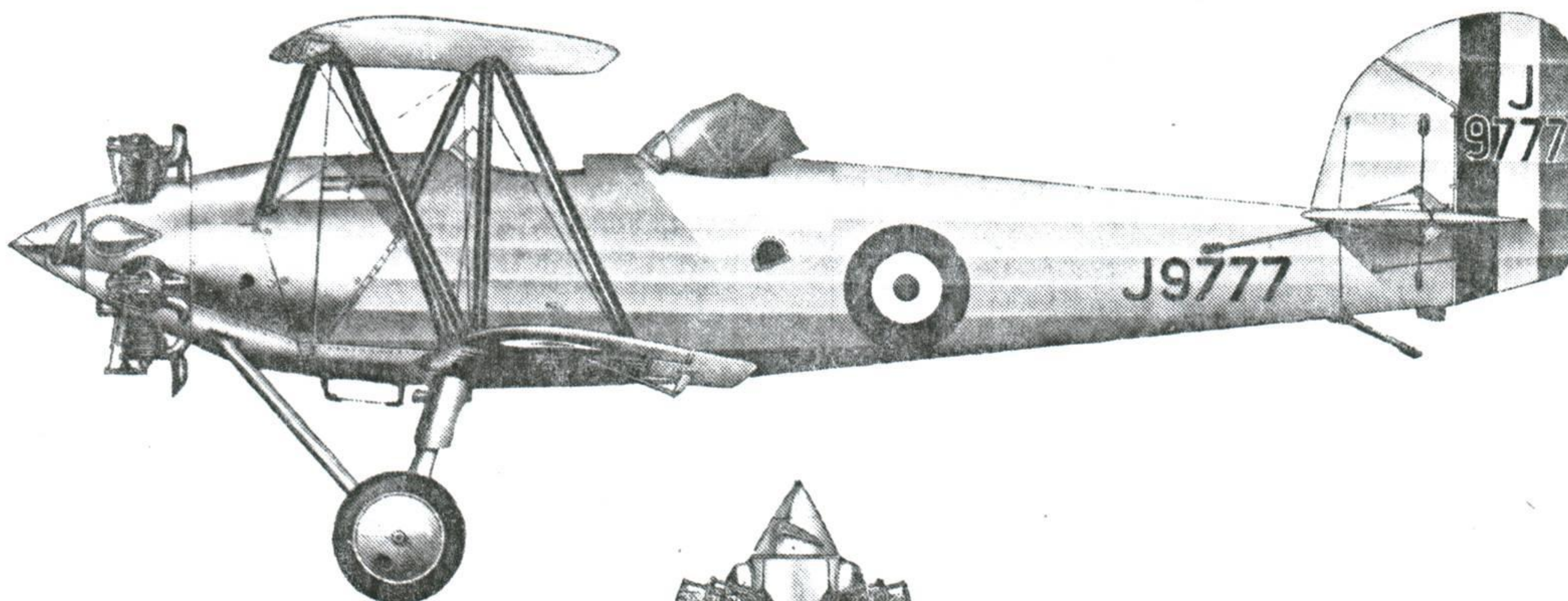
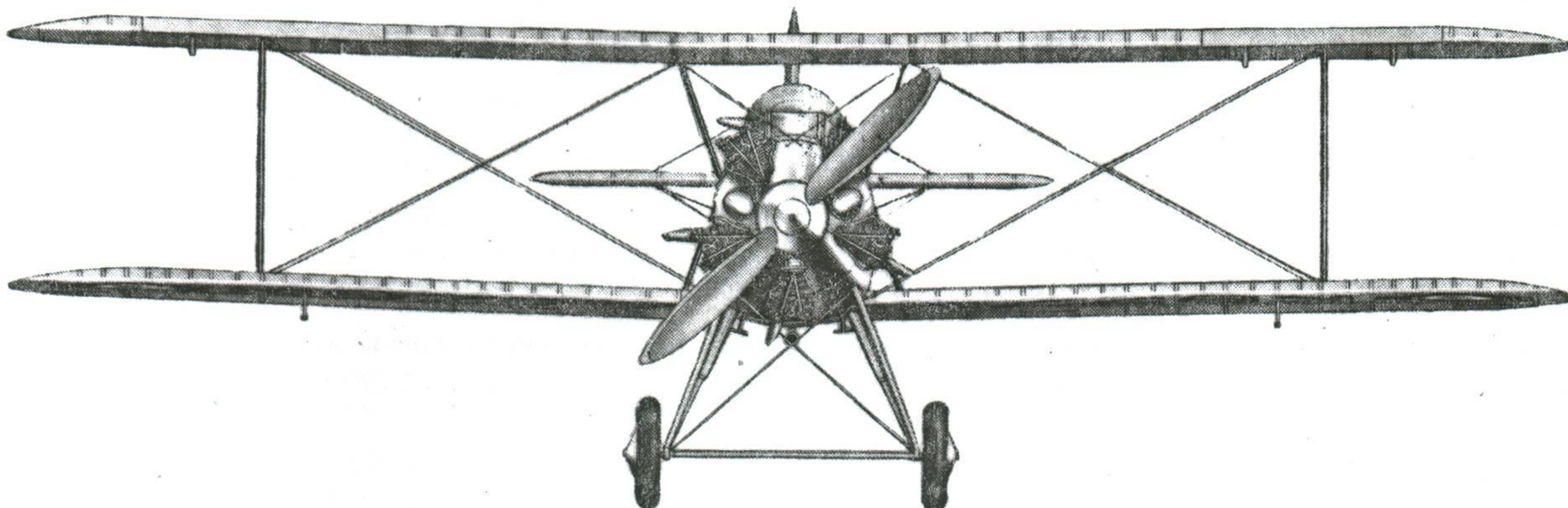
In those days the hallmark of a good engine or airframe was a good performance in the King's Cup Race, and all three lined up for the start of the 1933 event at Hatfield on July 9,

Above left, G-ABOD at Brooklands in 1938 with the Wolseley Aquarius engine. Left, once owned by Alex Henshaw, this Tomtit originally flew as K1784, and began its short civil career with the Leicestershire Aero Club in 1939.



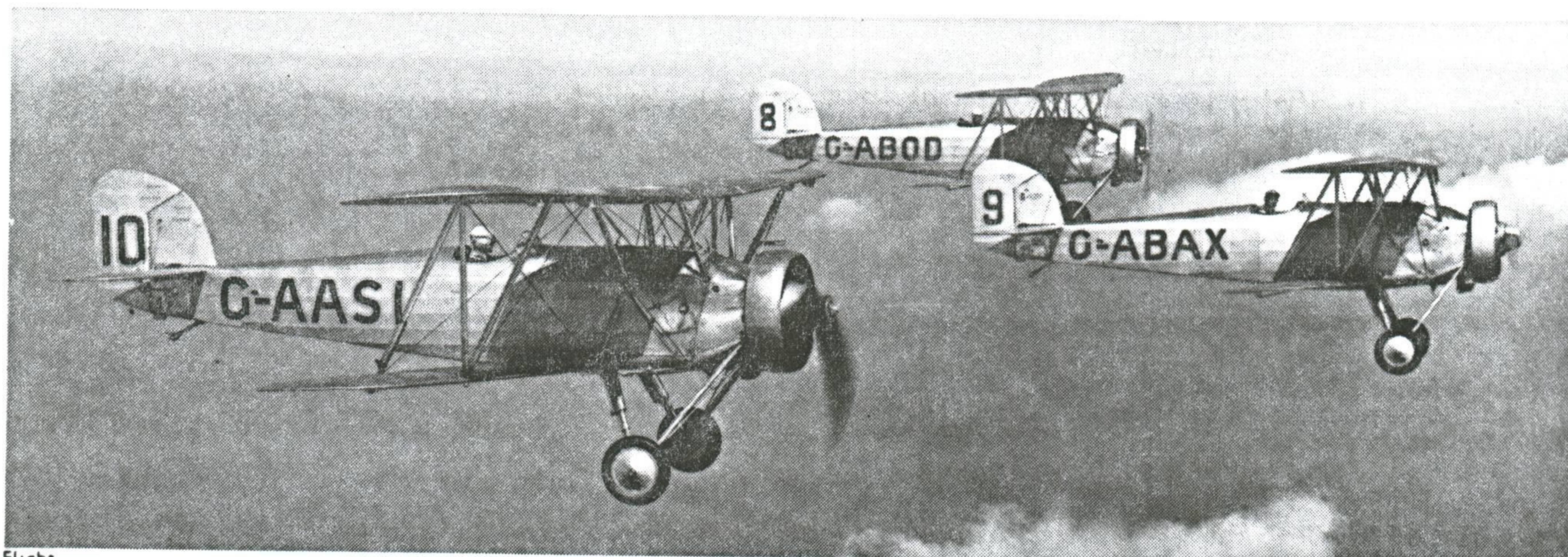
E. J. Riding





Hawker Tomtit of the Central Flying School,
Wittering, October 1929





Flight

with their A.R.9s enclosed in Townend rings. They were flown respectively by Messrs Lowdell, Bulman and Sayer, and averaged 137 m.p.h. but could not beat the handicapper, and fared no better the following year when 'SI' and 'AX' were fitted with geared A.R.9 Mk.IAs and flown by W. H. Sutcliffe and Wg Cdr J. W. Woodhouse. George Lowdell flew G-ABOD with a direct drive A.R.9 Mk.IIA but was forced to land only two miles from Hatfield. As consolation he came second in the Heston-Newcastle Race in the following month. In February 1934 he was appointed chief test pilot to Wolseley Motors Ltd. G-AASI was sold to J. G. Hopcroft at Hatfield in April 1936, and came second in the Heston-Isle of Man Race on May 30 at an average speed of 107 m.p.h., flown by C. F. Hughesdon.

In the ensuing years various trial engine installations and SU carburettor development trials were undertaken at Castle Bromwich. A 225 h.p. Wolseley Aries had been tested in 1935, and in 1938 G-ABOD, with a 170 h.p. Wolseley Aquarius in an NACA cowling, became personal mount of Hawker's test pilot William Humble. Its A.R.9-powered stablemates spent the last pre-war year with the Tollerton Aero Club, Nottingham. G-ABII, which had served inconspicuously as its maker's communications machine for some 12 years (the last few in wartime camouflage), continued in the same role with Gloster Aircraft Ltd from 1943 and survived the war to fly again privately at Fair Oaks.

Surplus stocks

After replacement by Avro Tutors in 1932, the RAF's Tomtits at No 3 FTS, Grantham, were posted to training schools and fighter squadrons for communications purposes. In 1935 the survivors were declared obsolete, and when put up for civilian disposal

Hawker Tomtit data

Specification (with 150 h.p. Mongoose IIC engine)

Span 28ft 6in. Length 23ft 8in. Wing area 238 sq. ft. Tare weight 1,100lb. All-up weight 2,100lb. Maximum speed 124 m.p.h. Cruise 105 m.p.h. Initial climb 1,000 ft/min. Range 350 miles.

Production

Prototype

One private venture prototype, c/n H.T.1, on Air Ministry charge 1929 under Contract 878972/28 as J9772 for Martlesham trials; No3 FTS, Grantham 1929-30; No 24 Squadron, Hendon 1930-31.

First production batch

Ten aircraft, c/n 2-8, 10, 11 and 13, built 1929 to Contract 910623/29:

J9773 Martlesham handling trials 1929; No3 FTS 1930. J9774-J9776 No3 FTS 1930. J9777 CFS, Wittering 1929; No3 FTS 1930, destroyed in take-off collision with Siskin IIIA J9190 at Spittlegate 14.7.31. J9778-J9779 No3 FTS 1930. J9780 CFS, Wittering 1929; civil as G-AEXC*, Herts and Essex Aero Club, Broxbourne 8.38, scrapped during war. J9781 no information. J9782 No9 Squadron, Upavon 1929; No3 FTS 1930; civil as G-AFFL**, H. D. Rankin, Southend; broken up 9.39.

Second production batch

Six aircraft, c/n 14-19, built 1929-30 to Contract 910623/29:

K1448 No3 FTS, struck off charge 20.1.31. K1449 No3 FTS, s.o.c. 17.3.32. K1450 No3 FTS 1930; CFS, Wittering, coded 'N'. K1451 No3 FTS; civil as G-AEVO**, L. C. Stanynought, Gatwick 12.37; C. Plumridge, Redhill 10.38; burned at Redhill 1947. K1452 damaged at Andover 7.11.32 in ground collision with Boulton and Paul Sidstrand J9769. K1453 RAE, Farnborough, s.o.c. 3.7.35.

Third production batch

Eight aircraft, c/n believed 20, 21, 24-26 and 28-30 built 1930 to Contract 27634/30:

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* Civil conversion by L. J. Anderson, Hanworth; ** by C. B. Field, Kingswood Knoll, Surrey; † by the Leicestershire Aero Club, Braunstone.

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Five aircraft, c/n 9, 12, 27, 54 and 55 (31-39 not used), to private Works Order, all registered initially to the H.G. Hawker Engineering Co Ltd:

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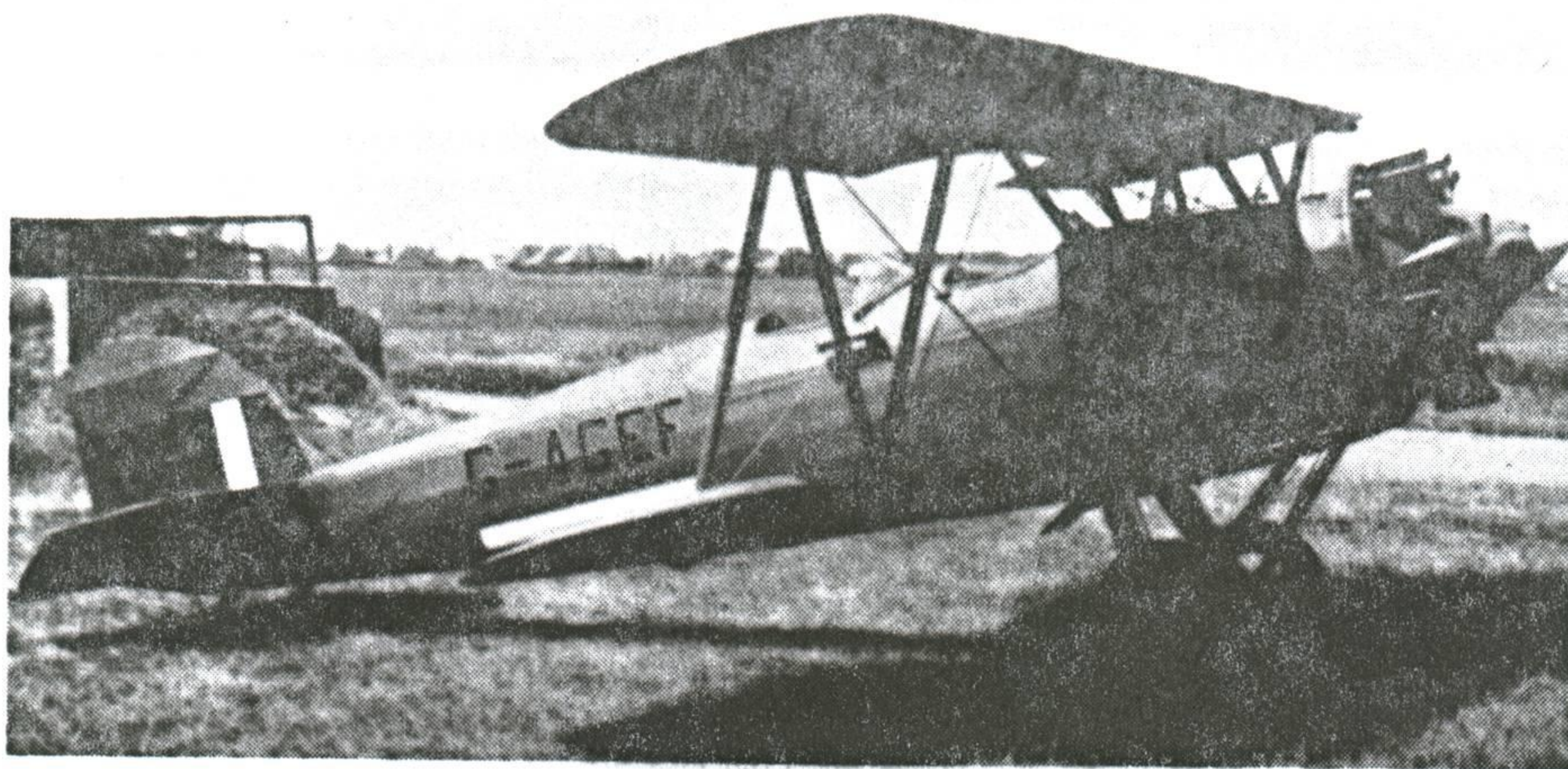
Canadian Tomtits

Two aircraft, fuselage numbers 41H/26482 and 26483, possibly c/n 22-23, on RCAF charge 15.5.30, export Cs. of A. 14.6.30, instructional airframes at Rockcliffe 1939, serials A-130 and A-131, s.o.c. 24.7.43 and 12.5.43 respectively.

New Zealand Tomtits

Four aircraft, c/n 50-53, export Cs. of A. 23.1.31, erected at NZPAF Wigram 3.31, scrapped at Nelson 1943:

50, c/n 50, to Technical Training Centre, Addington 1939 as instructional airframe INST.10; to RNZAF Rongotai 8.40. 51, c/n 51, to TTC, Hutt 1939 as INST.8. 52, c/n 52, to TTC, Hillside 1939 as INST.11; to RNZAF Wairarapa 8.40. 53, c/n 53, to No1 TTC, Otahuhu 1940 as INST.13; to ATC, Murchison 1943.



Left, Messrs Bulman, Sayer and Lowdell on their way from Brooklands to Hatfield for the 1933 King's Cup Race. Above, the one-time Gosport Tomtit in wartime camouflage at Castle Bromwich as G-AGEF.

acceptable tenders were received from L. J. Anderson at Hanworth; C. B. Field, Kingswood Knoll, Surrey; the Leicestershire Aero Club, Braunstone; and Southern Aircraft and Motors Ltd, Gatwick. The first to appear in civil colours was the erstwhile K1782, which, as G-AEES, became well known as the aerobatic machine with Tom Campbell Black's British Empire Air Display, 1936-1937, flown by Jock

Bonar. G-AEXC was with the Herts and Essex Aero Club, Broxbourne, 1938-1939; and a fleet of four, G-AFIB, 'KB, 'TA and 'VV, was operated by the Leicestershire Aero Club. Mill owner H. D. Rankin flew his private G-AFFL at Southend, but at the outbreak of war it was wantonly smashed up and dumped in a small garage. The remains of C. Plumridge's G-AEVO survived until 1947, when they were burned in a field adjacent to Redhill Aerodrome.

Six Tomtits, G-ABII, the four Leicester machines and G-AGEF (once K1783 of "C" Flight, Gosport) were unique in wartime because they all flew on manufacturers' communica-

tions duties as camouflaged civil aeroplanes and somehow managed to avoid impressment. G-AFVV and its successors, G-AFIB and 'TA, were used mainly as the personal mounts of Alex Henshaw when he was a Spitfire test pilot at the Castle Bromwich Aeroplane Factory, landing sometimes being made in a paddock at the bottom of his garden at Hampton. When withdrawn from service, the hulk of G-AFIB was used as a road block to obstruct an unguarded entrance to the airfield.

After the loss of G-ABII in an accident at Cowes in 1948, the only serviceable Tomtit was G-AFTA, once K1786, the last production machine. Its Spitfire windscreen and streamlined headrest were a legacy of its Henshaw ownership, and after a spell at Chalgrove in 1948 with R. C. S. Allen, it was acquired by Hawker's chief test pilot, Neville Duke, who raced and aerobatted it until it was purchased by Hawker Aircraft Ltd in July 1950. Thereafter it was maintained in supra-immaculate condition in blue and gold as a flying museum piece alongside their Hart G-ABMR and Hurricane G-AMAU. Based at Dunsfold, it appeared every year at any air display where biplane nostalgia was appreciated, but was eventually donated to the Shuttleworth Trust for whom they resprayed it in its original RAF colours as K1786. It is, of course, well known at Old Warden and still airworthy.

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Tel. 01-581 2668/9

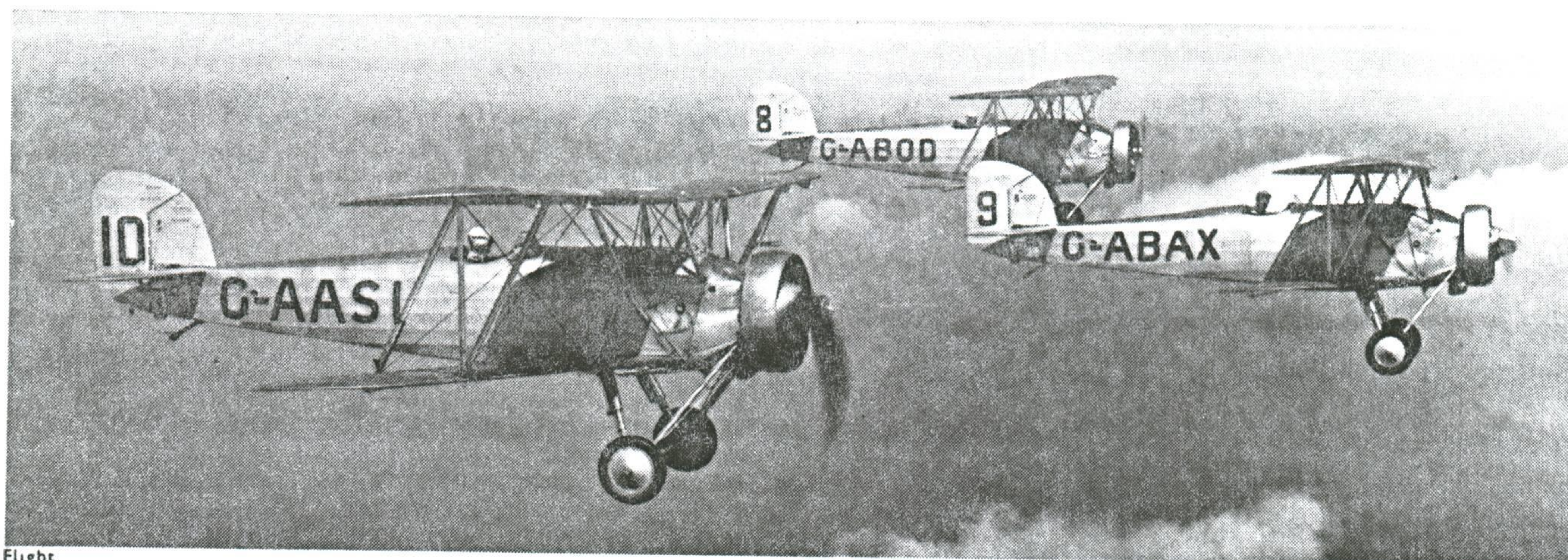
Please reserve place(s) at £49.75 per person on the Flight one day Paris Air Show charter. I enclose a deposit of £15 (non-returnable if cancelled) or being the full amount.

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Flight

with their A.R.9s enclosed in Townend rings. They were flown respectively by Messrs Lowdell, Bulman and Sayer, and averaged 137 m.p.h. but could not beat the handicapper, and fared no better the following year when 'SI' and 'AX' were fitted with geared A.R.9 Mk.IAs and flown by W. H. Sutcliffe and Wg Cdr J. W. Woodhouse. George Lowdell flew G-ABOD with a direct drive A.R.9 Mk.IIA but was forced to land only two miles from Hatfield. As consolation he came second in the Heston-Newcastle Race in the following month. In February 1934 he was appointed chief test pilot to Wolseley Motors Ltd. G-AASI was sold to J. G. Hopcroft at Hatfield in April 1936, and came second in the Heston-Isle of Man Race on May 30 at an average speed of 107 m.p.h., flown by C. F. Hughesdon.

In the ensuing years various trial engine installations and SU carburettor development trials were undertaken at Castle Bromwich. A 225 h.p. Wolseley Aries had been tested in 1935, and in 1938 G-ABOD, with a 170 h.p. Wolseley Aquarius in an NACA cowling, became personal mount of Hawker's test pilot William Humble. Its A.R.9-powered stablemates spent the last pre-war year with the Tollerton Aero Club, Nottingham. G-ABII, which had served inconspicuously as its maker's communications machine for some 12 years (the last few in wartime camouflage), continued in the same role with Gloster Aircraft Ltd from 1943 and survived the war to fly again privately at Fairoaks.

Surplus stocks

After replacement by Avro Tutors in 1932, the RAF's Tomtits at No 3 FTS, Grantham, were posted to training schools and fighter squadrons for communications purposes. In 1935 the survivors were declared obsolete, and when put up for civilian disposal

Hawker Tomtit data

Specification (with 150 h.p. Mongoose IIC engine)

Span 28ft 6in. Length 23ft 8in. Wing area 238 sq. ft. Tare weight 1,100lb. All-up weight 2,100lb. Maximum speed 124 m.p.h. Cruise 105 m.p.h. Initial climb 1,000 ft/min. Range 350 miles.

Production

Prototype

One private venture prototype, c/n H.T.1, on Air Ministry charge 1929 under Contract 878972/28 as J9772 for Martlesham trials; No3 FTS, Grantham 1929-30; No 24 Squadron, Hendon 1930-31.

First production batch

Ten aircraft, c/n 2-8, 10, 11 and 13, built 1929 to Contract 910623/29:

J9773 Martlesham handling trials 1929; No3 FTS 1930. J9774-J9776 No3 FTS 1930. J9777 CFS, Wittering 1929; No3 FTS 1930, destroyed in take-off collision with Siskin IIIA J9190 at Spittlegate 14.7.31. J9778-J9779 No3 FTS 1930. J9780 CFS, Wittering 1929; civil as G-AEXC*, Herts and Essex Aero Club, Broxbourne 8.38, scrapped during war. J9781 no information. J9782 No9 Squadron, Upavon 1929; No3 FTS 1930; civil as G-AFFL**, H. D. Rankin, Southend; broken up 9.39.

Second production batch

Six aircraft, c/n 14-19, built 1929-30 to Contract 910623/29:

K1448 No3 FTS, struck off charge 20.1.31. K1449 No3 FTS, s.o.c. 17.3.32. K1450 No3 FTS 1930; CFS, Wittering, coded "N". K1451 No3 FTS; civil as G-AEVO**, L. C. Stanynought, Gatwick 12.37; C. Plumridge, Redhill 10.38; burned at Redhill 1947. K1452 damaged at Andover 7.11.32 in ground collision with Boulton and Paul Sidstrand J9769. K1453 RAE, Farnborough, s.o.c. 3.7.35.

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G-AFTA was the final Tomtit to be built, and was flown by Hawker test pilot Neville Duke for a while. Note the exposed cylinders and crankcase fairing and the attractive vintage look of the aircraft

HAWKER TOMTIT

Not many were built, but the Tomtit contributed to the colourful pre-war era of light aviation

Built as a contender for an Avro 504N trainer replacement, the Tomtit biplane was first flown by Paul Bulman in November 1928 from Brooklands Airfield, site of the world-famous motor-racing circuit. Although wood was much used for aircraft construction when the Tomtit was being designed, the RAF was becoming wary of wood at that time and so the Tomtit had an all-metal frame of mixed steel and duralumin, with the usual fabric covering. In keeping with the era, the Tomtit had two open tandem cockpits and a cross-axle undercarriage, and its uncowed Armstrong Siddeley Mongoose radial engine gave the machine a delightful vintage appearance by later, more aerodynamic, standards! Other features on the Tomtit were Handley Page slots in the top wings, and a Reid and Sigrist blind-flying panel. The prototype impressed observers at the 1929 Olympia Aero Show, and, as J9972, its evaluation by the A&AEE at Martlesham Heath for the RAF was very successful. Going to No 24 Sqn in 1930 for research and development work, J9772 was the first Tomtit taken on by the RAF, and eventually 24 machines joined the service.

In 1930 Hawker built a version aimed at the civil market with a 105 hp Cirrus Hermes engine, much lower powered than the relatively beefy 150 hp Mongoose; this machine was evaluated at Martlesham Heath but not surprisingly G-AASI was found to be underpowered. Five Tomtits were built for civil use, one of them being

the Cirrus-engined G-AASI, and, by 1935, the RAF considered the Tomtit obsolete and sold some to civil users. In the meantime the Tomtit became known for its racing work, but with unremarkable results in the King's Cup events although it did better in some other races. G-ABAX and 'ALL came 12th and 18th in the 1930 King's Cup, flown, respectively, by the Rt Hon Frederick E. Guest and Sqn Ldr D.S. Don; Guest, incidentally, had been Secretary of State for Air in 1921-22. No Tomtits took part in the 1931 King's Cup, but the following year G-ABII and 'ALL both retired from the race.

Strange as it may seem nowadays for a car manufacturer, the Austin Rover Group has aero engines in its ancestry because one of its forebears, Wolseley Motors, designed a range of small radials in the early thirties. Fitted with Wolseley A.R.9 engines, Tomtits G-ABAX, 'ASI and 'BOD were entered for the 1933 King's Cup Race, but without success. These Wolseley-powered machines were entered the following year, with 'ASI coming seventh in the hands of Wilfred H. Sutcliffe, Chief Instructor of the Midland Aero Club. In 1934 Wolseley recruited a well-known Tomtit pilot as Chief Test Pilot, in the form of George E. Lowdell, but this car firm abandoned aero engines in 1936.

The final Tomtit to be built (G-AFTA) survived WW2 and, for a while, was flown by Hawker test pilot Neville Duke; G-AFTA then joined the Shuttleworth Collection in 1960, and later on reverted to

its original serial K1786. Intended for service use rather than for clubs and private owners, the Hawker Tomtit was one of numerous light aircraft from the drawing boards of Great Britain's once-fertile light aircraft industry. ■

TECHNICAL DATA – HAWKER TOMTIT

Type Two-seat light biplane.

Wings: Metal structure with fabric covering.

Tail unit: As above.

Fuselage: As above.

Accommodation: Tandem open cockpits.

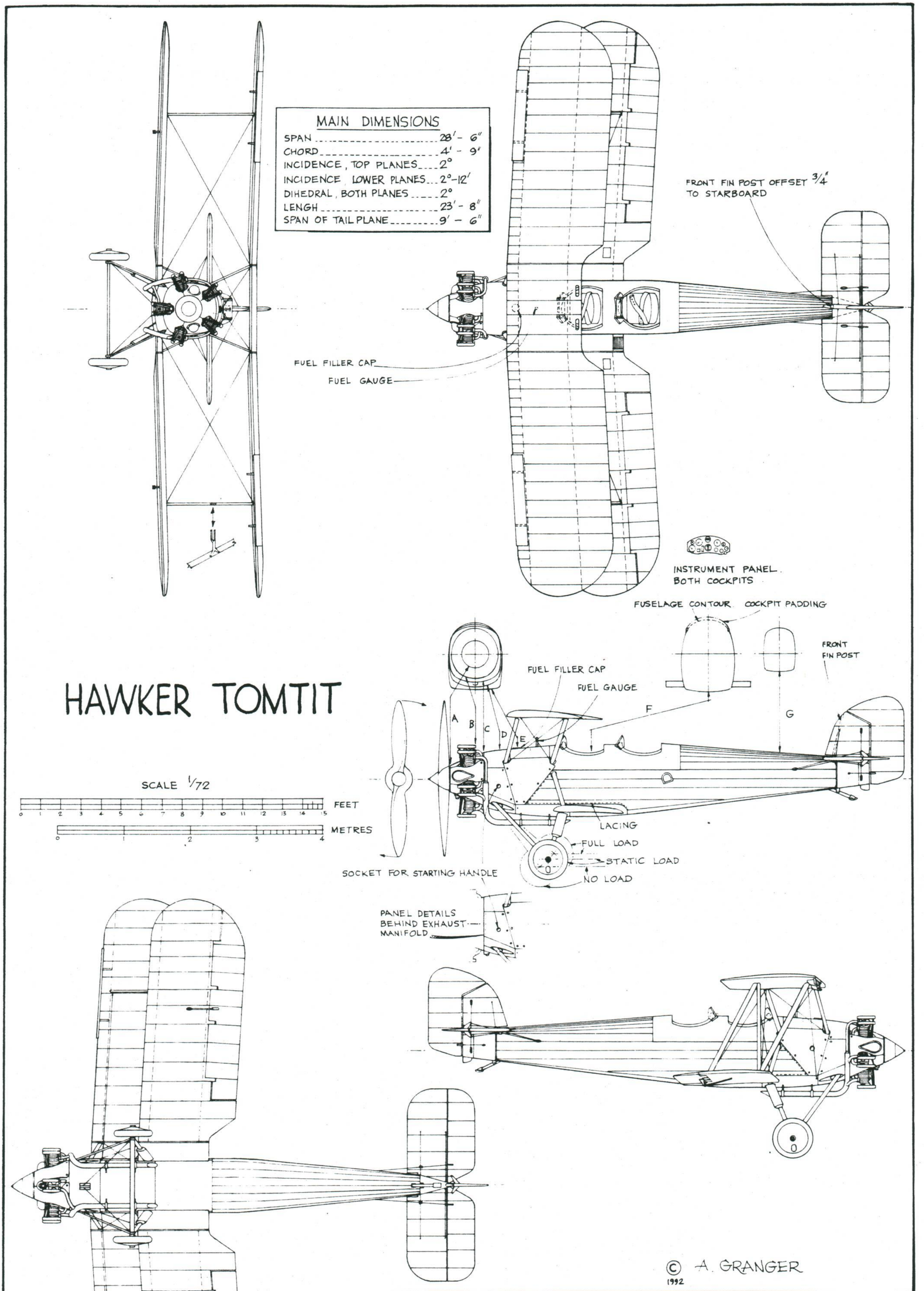
Engine: Armstrong Siddeley Mongoose five-cylinder unsupercharged radial engine driving two-blade fixed-pitch propeller. Bore and stroke are 127 mm and 139.7 mm respectively (8.85 litres). Maximum output 150 hp. Other engines also used.

Landing gear: Fixed cross-axle type. Tailskid.

Dimensions: Span 28 ft 6.625 in (8.70 m), length (Mongoose) 23 ft 8 in (7.21 m), wing area 237.8 ft² (22.09 m²).

Weight: Empty 1,100 lb (499 kg), loaded (Mongoose) 1,750 lb (794 kg).

Performance (Mongoose): Maximum speed 124 mph (200 kph).



HAWKER TOMTIT MONGOOSE, 2-seat open Biplane.

Span, 23'6"; chord, 4'9", W. area, 238 sq. ft.

Length, land, 23'8"; ski, 23'8"; sea, N.A.

Length reduction by removing rud. & elev., 2'9".

Height, land, 9'; ski, 9'; sea, N.A.

Height on beaching gear, N.A.

Height less wings, C.S. or emponnage, 6'9".

Max. width of top C.S., 4'4".

Max. length wings folded, N.A.

Max. width of u/c, land, 5'10"; sea, N.A.

Overall width of beaching gear, N.A.

Span of tailplane, 9'6".

Fuselage length, 19'1"; width, 4'4", depth 3'6". ϕ

H.P. of engine, 155 @ 1850; 165 @ 2035.

Gross wt., land, 1851; ski, 1851; sea, N.A.

Bare wt., land, 1239; ski, 1339; sea, N.A.

Max. disposable load, land, 612; ski, 512; sea, N.A.

(Aerobatic all up wt., land, 1851; ski, 1851, sea, N.A.)

Gas, 24 gals. in fuselage, 185 lbs; oil, 3 gals. 29 lbs.

Consumption, fuel, 12.2 gals/hr; Oil, 2 pt/hr.

Airscrew, Watts 900/2, 2360 mm. dia.

Performance, T.S. 130; Cr. 100 @ 1650.

Land u/c

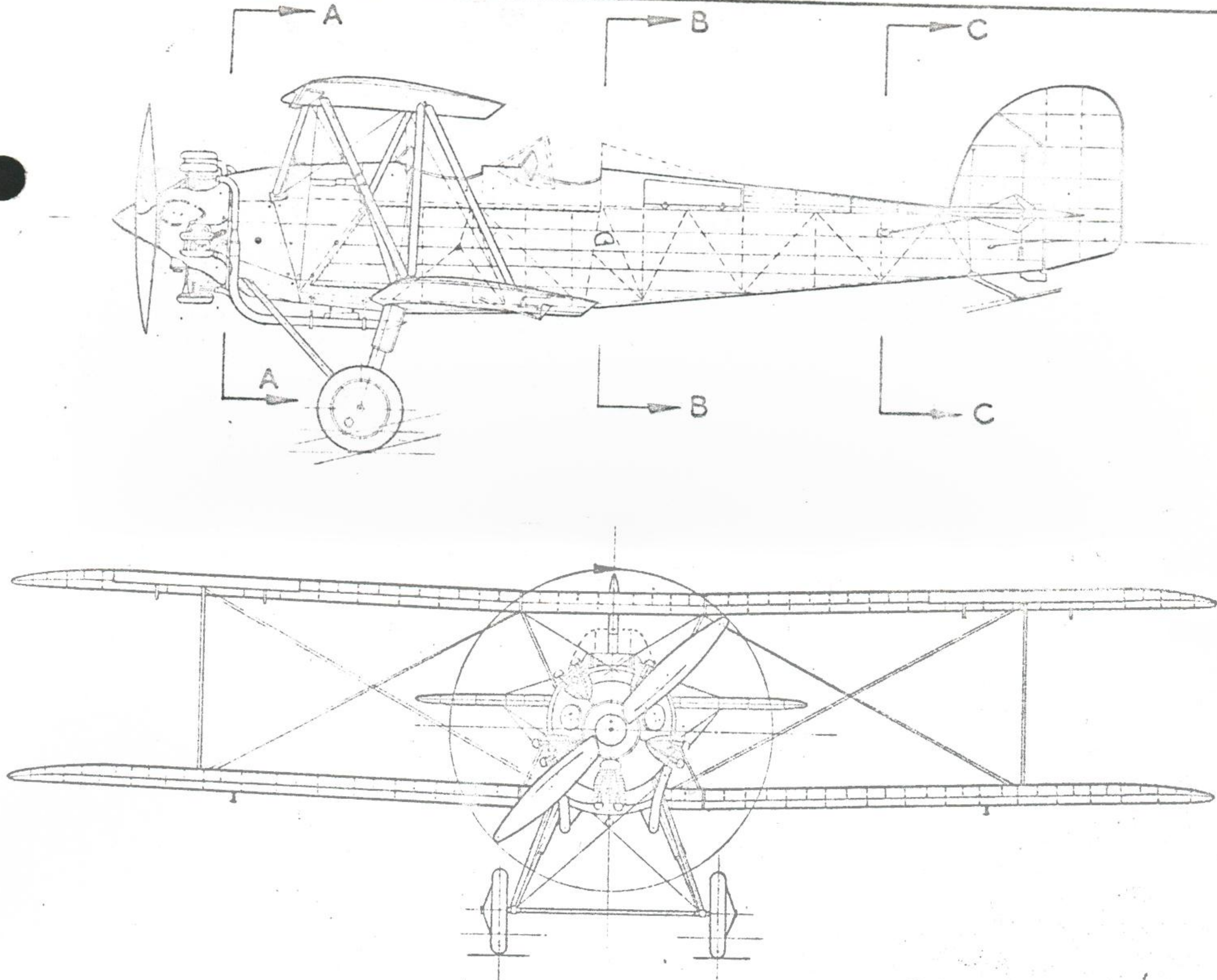
Main ski, shoe, C.R.#2; Ped. C.R.#2; total wt.c/w cables, 61 lbs. each

Tail ski, RCAF 4721, wt. 3 lbs.

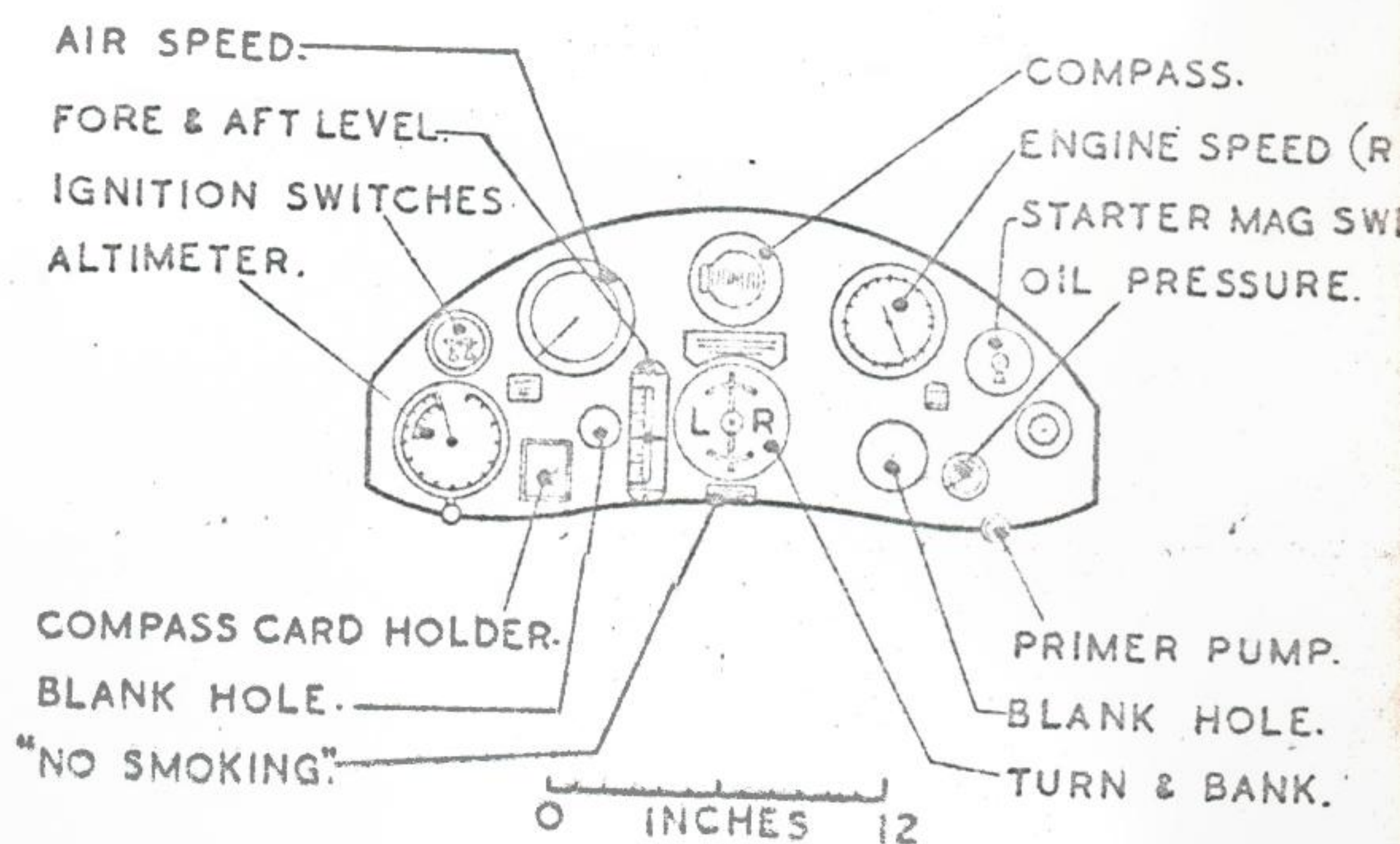
Floats, N.A.

Seat, wt. 6 lbs.

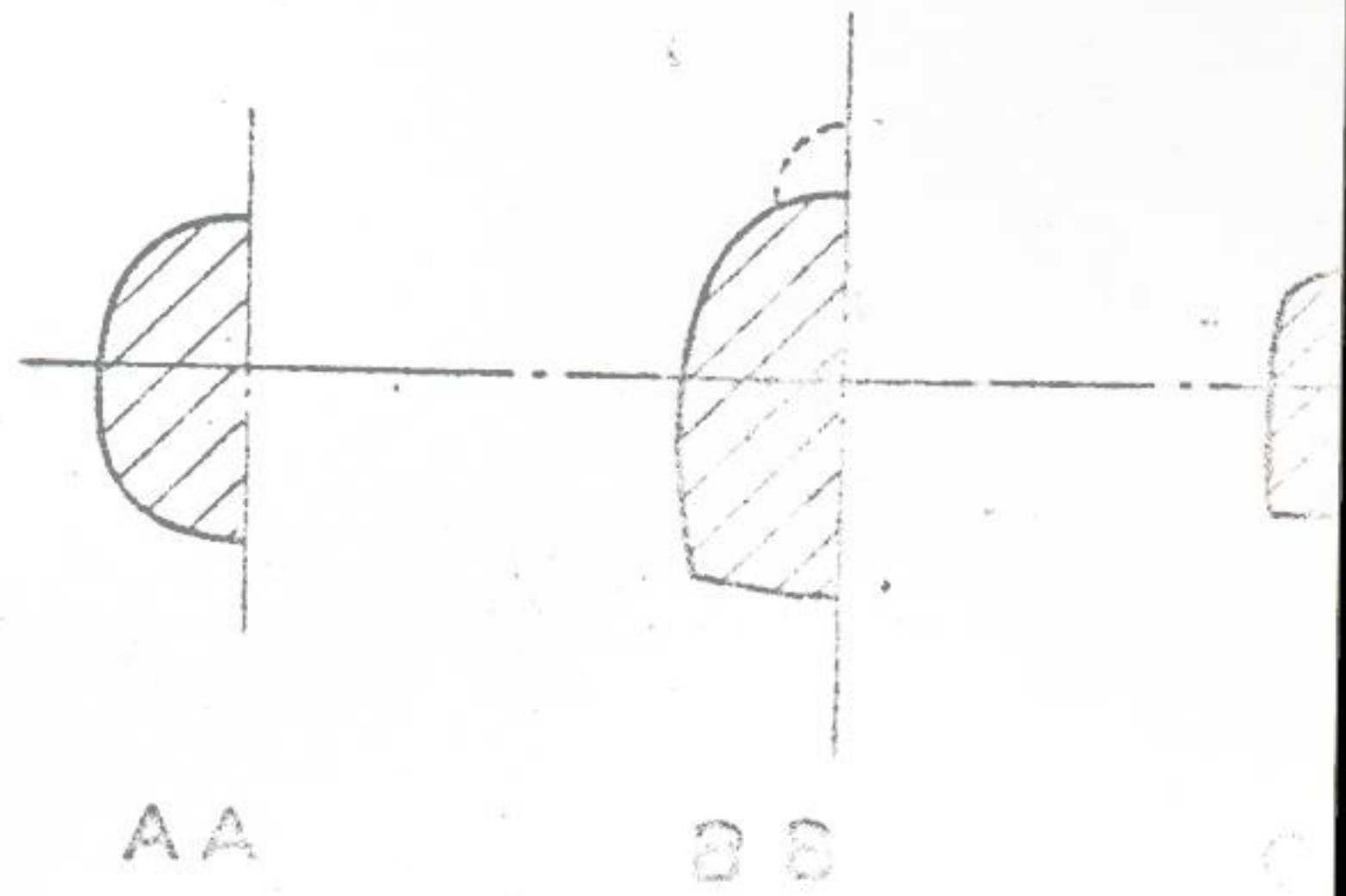
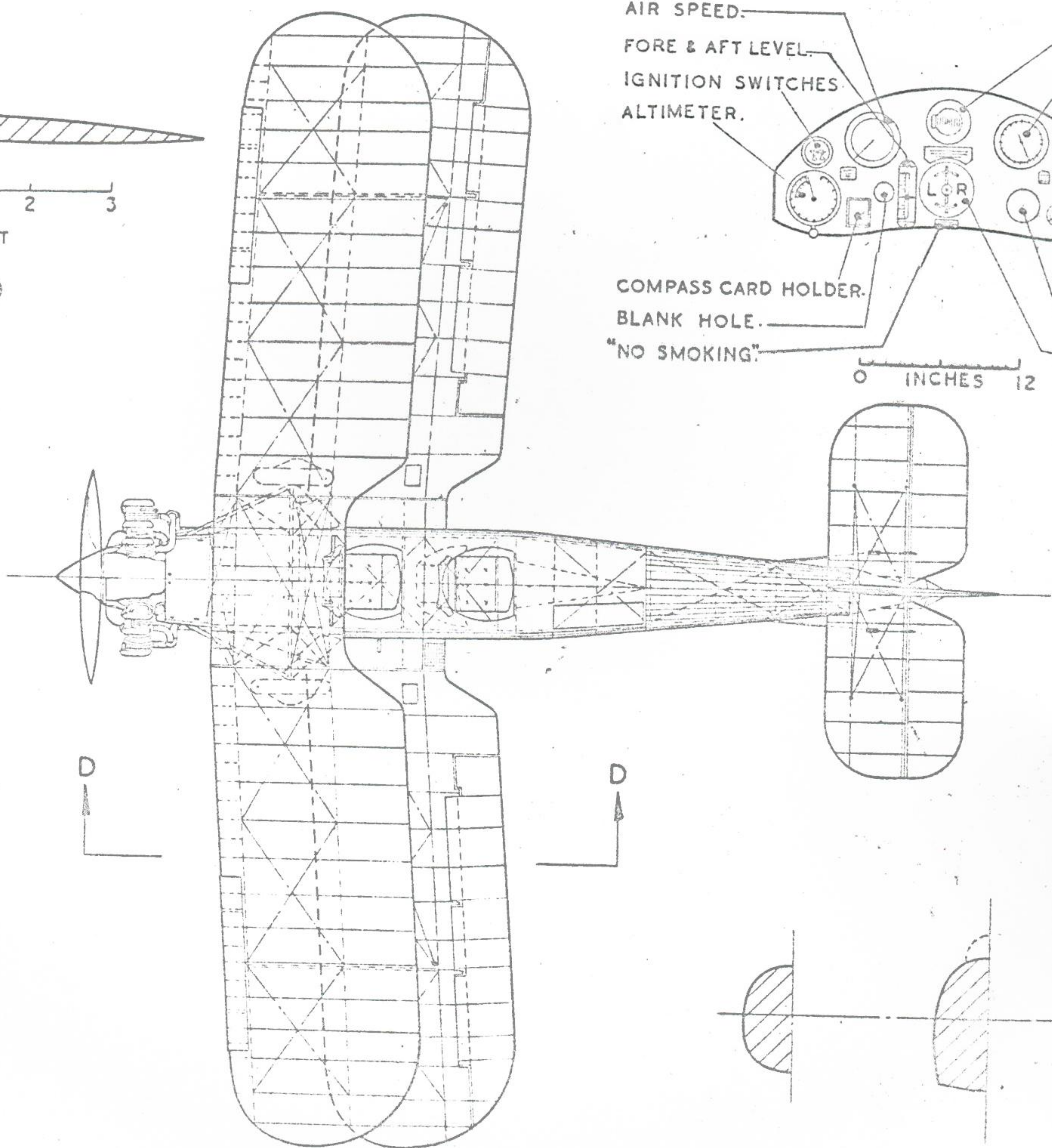
ϕ Includes bottom stub centre section.



INSTRUMENT PANEL.



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Hawker Tomtit

TECHNICAL DATA

Description: Two-seat elementary trainer. All metal construction with fabric covering

Manufacturer: H. G. Hawker Engineering Co., Ltd.
Kingston Surrey

Power Plant: One 150 h.p. Armstrong Siddeley Mongoose III C

Dimensions: Span 28 ft 6 in Length 23 ft 8 in Height 8 ft 8 in

Weights: Empty 1100 lbs Loaded 1750 lbs

Performance: Max speed 124 mph at 10000 ft; 102 mph at 10,000 ft
Initial climb 1000 ft/min; 14 1/2 mins to 10,000 ft. Range 350 miles
Service ceiling 19,500 ft.

Armament: N/A

SQUADRON ALLOCATIONS

Canada:

Overseas: