

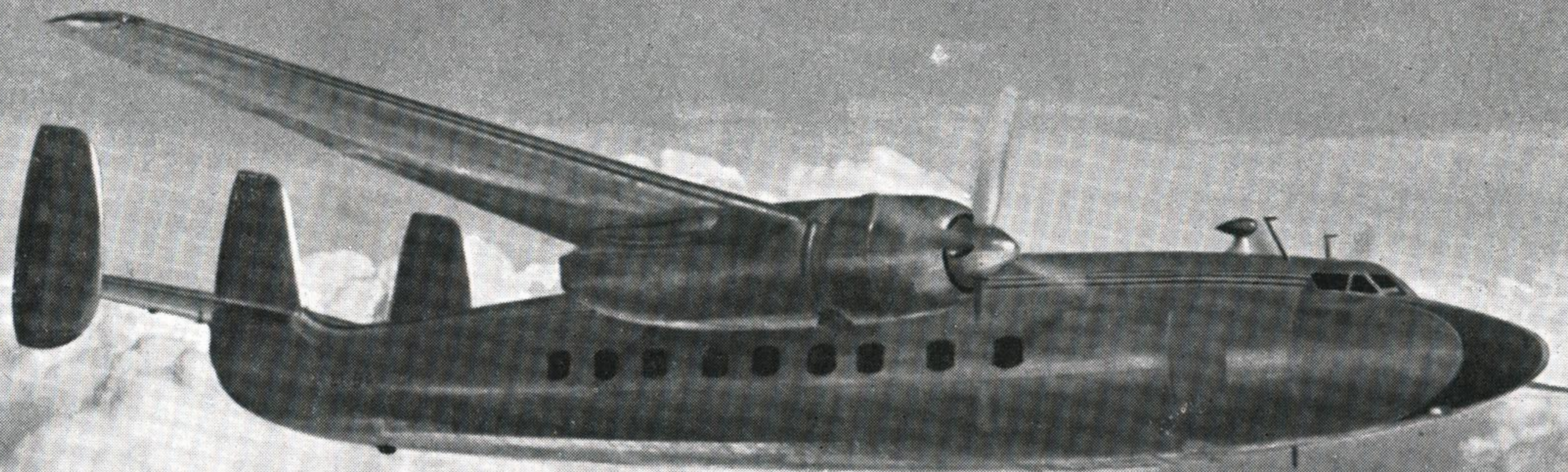
THE INTER



SERVICES

AIRCRAFT RECOGNITION

Journal



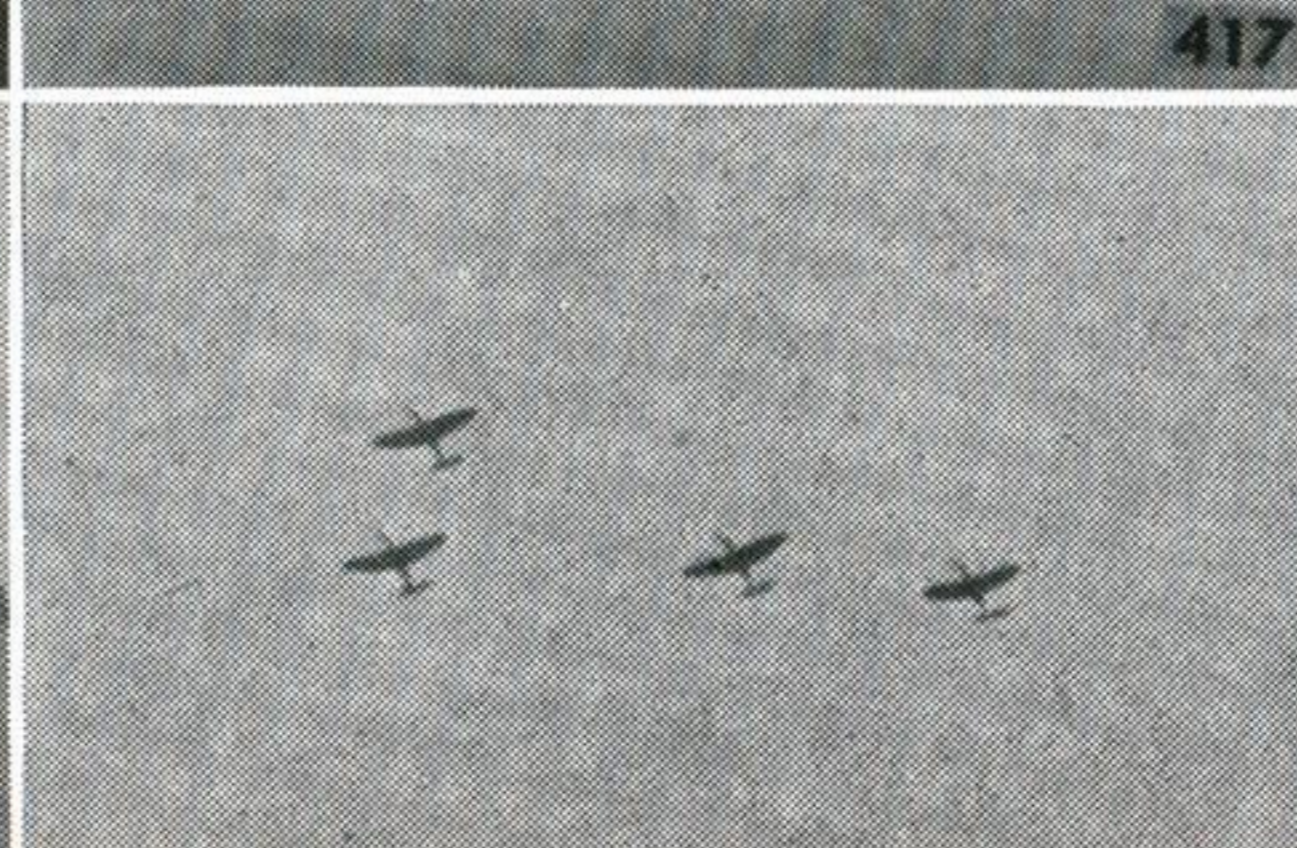
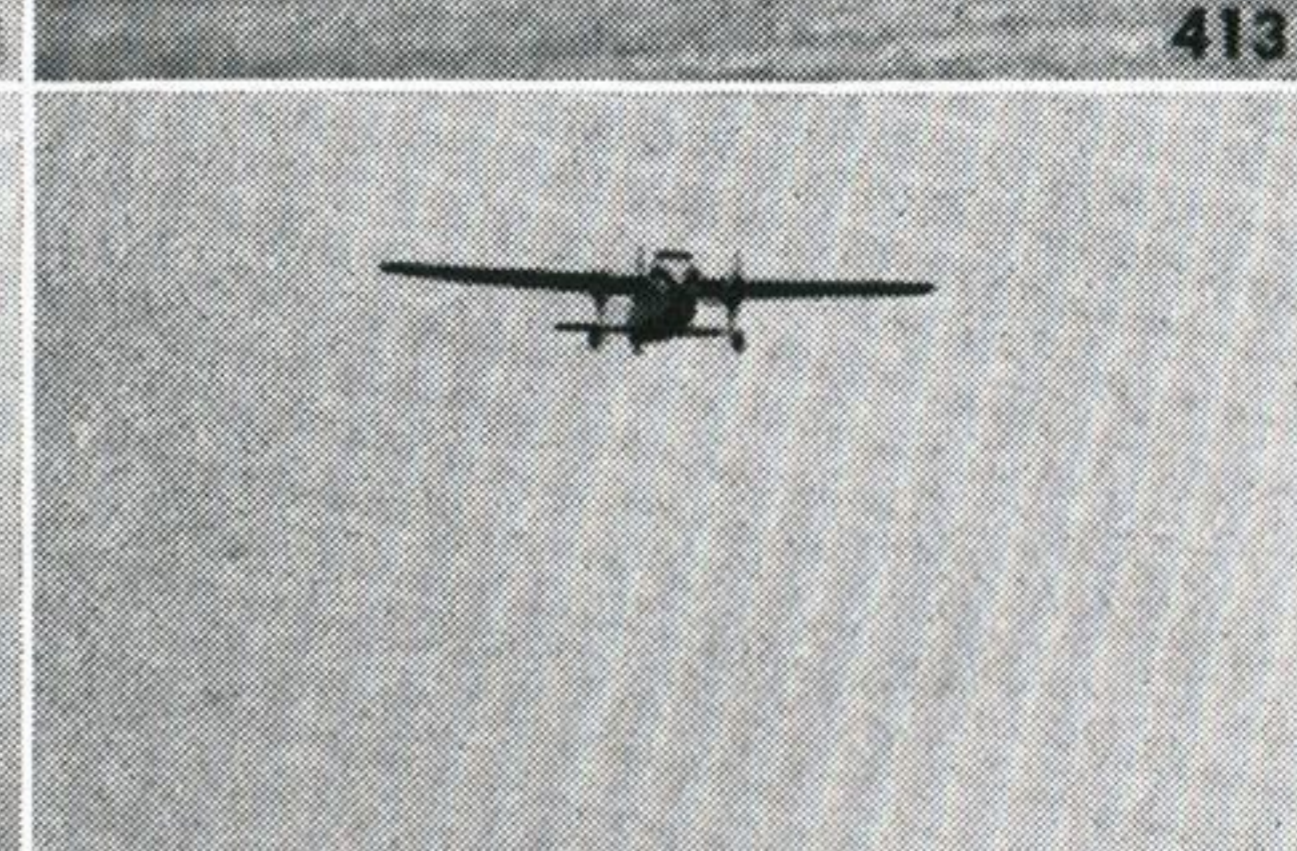
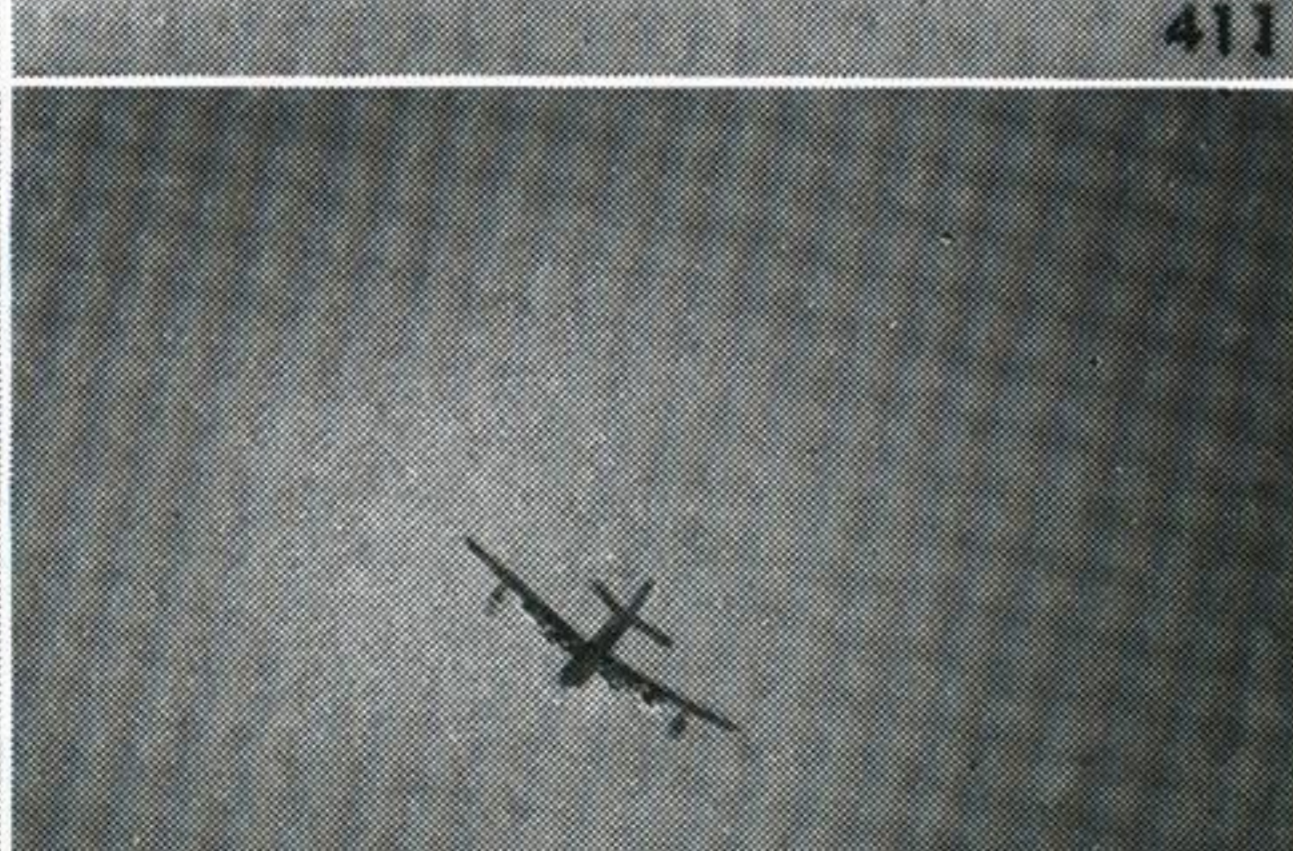
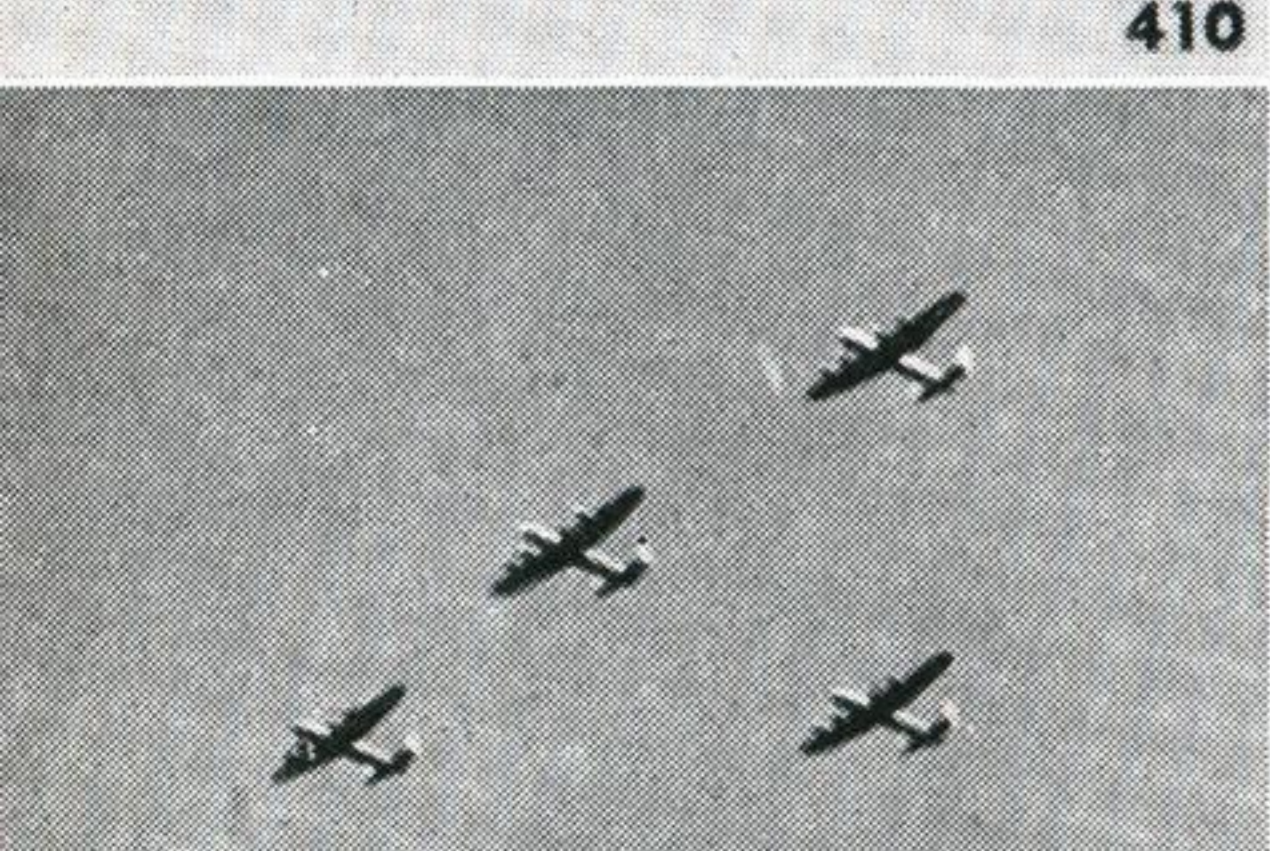
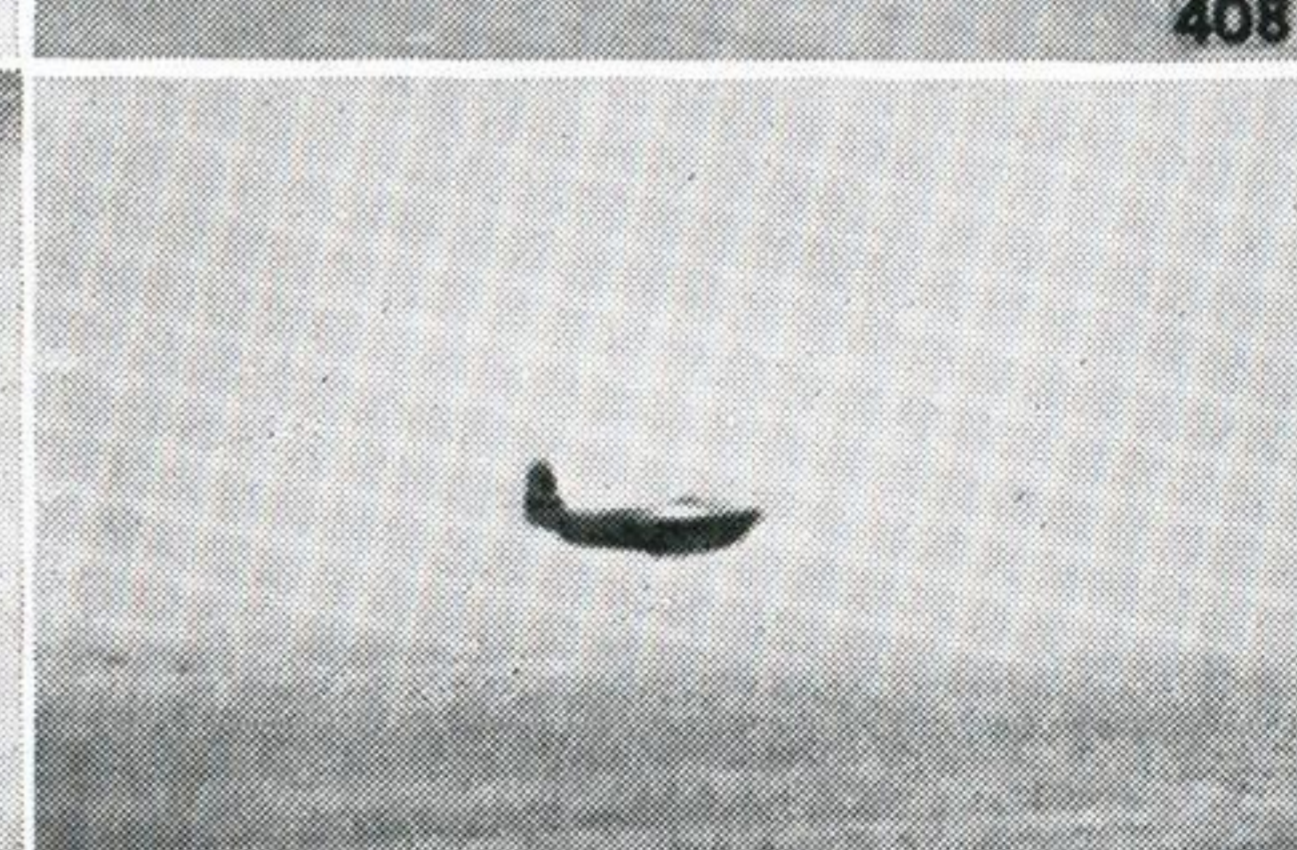
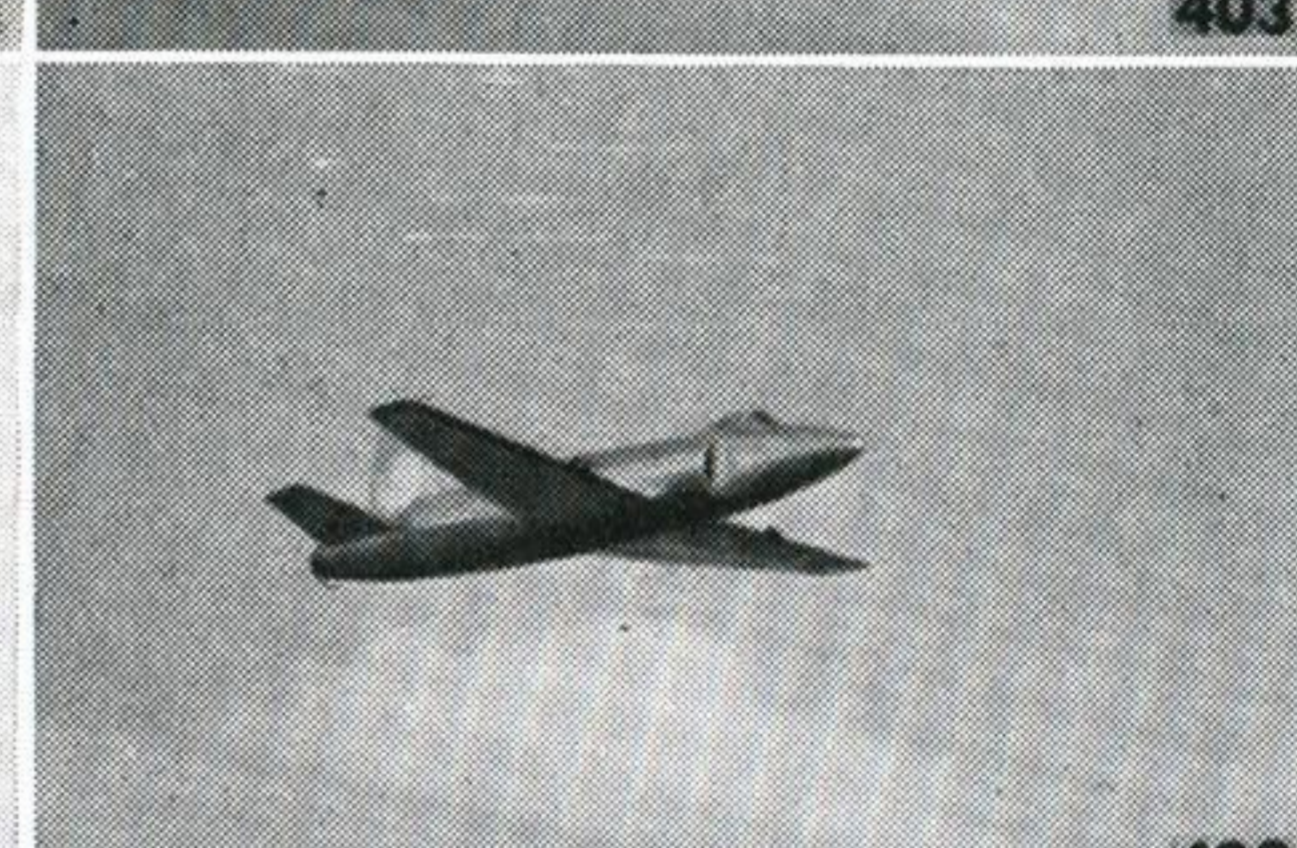
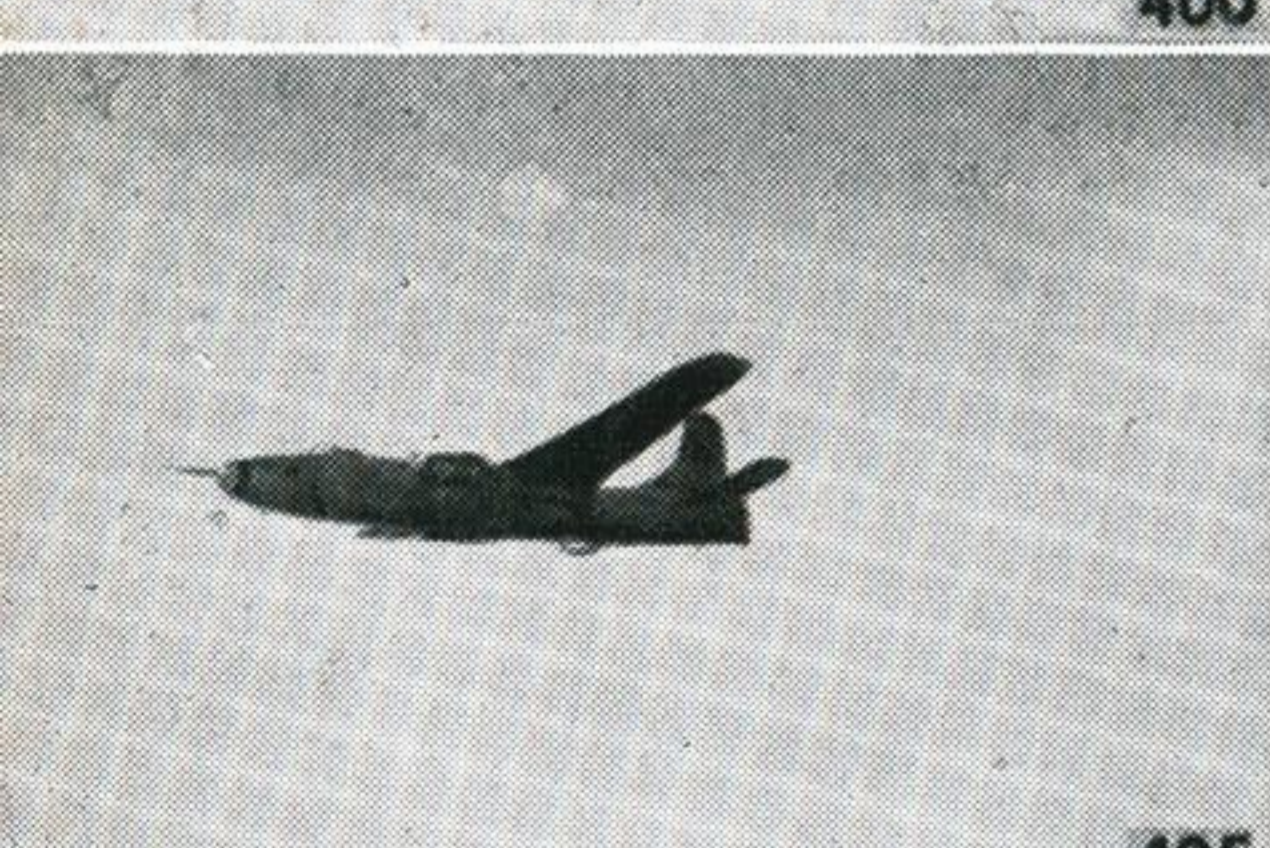
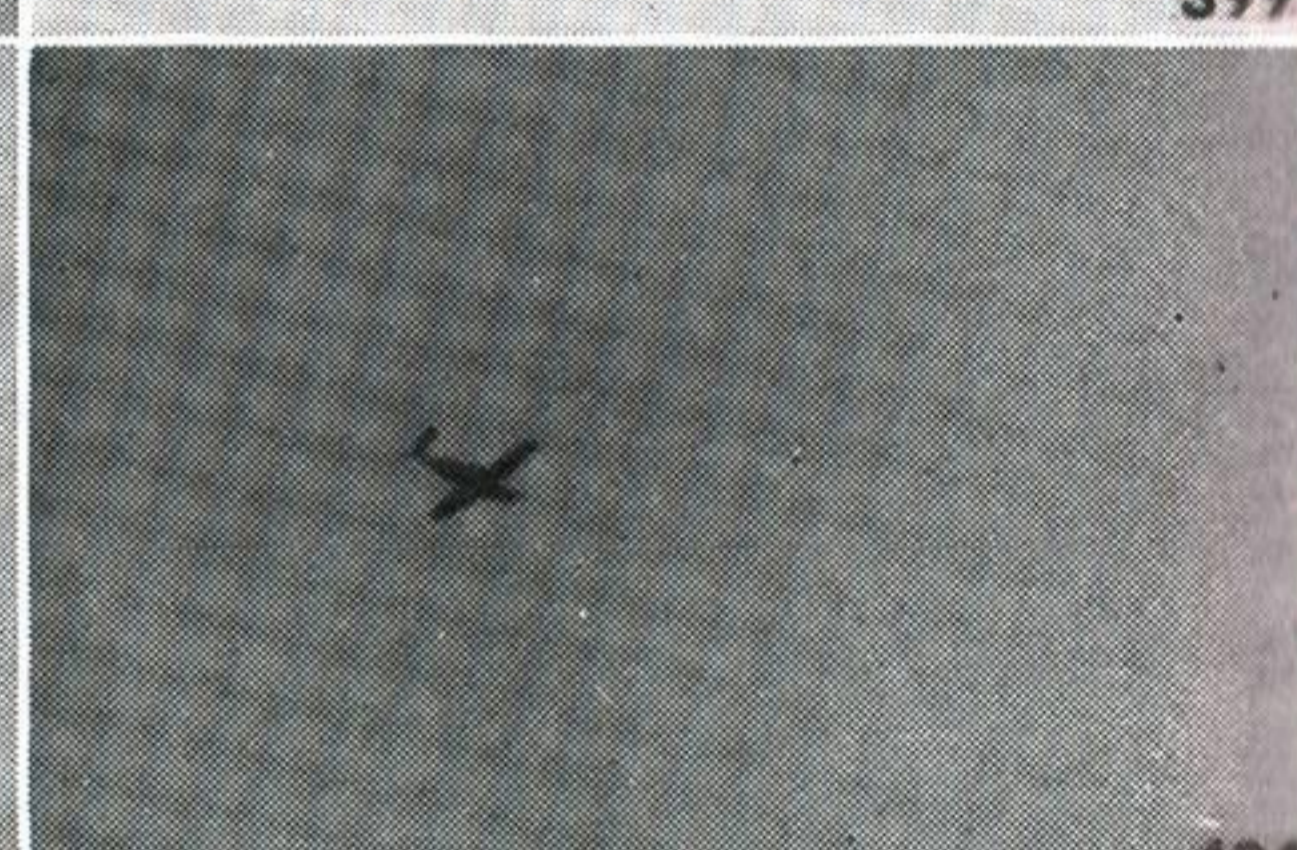
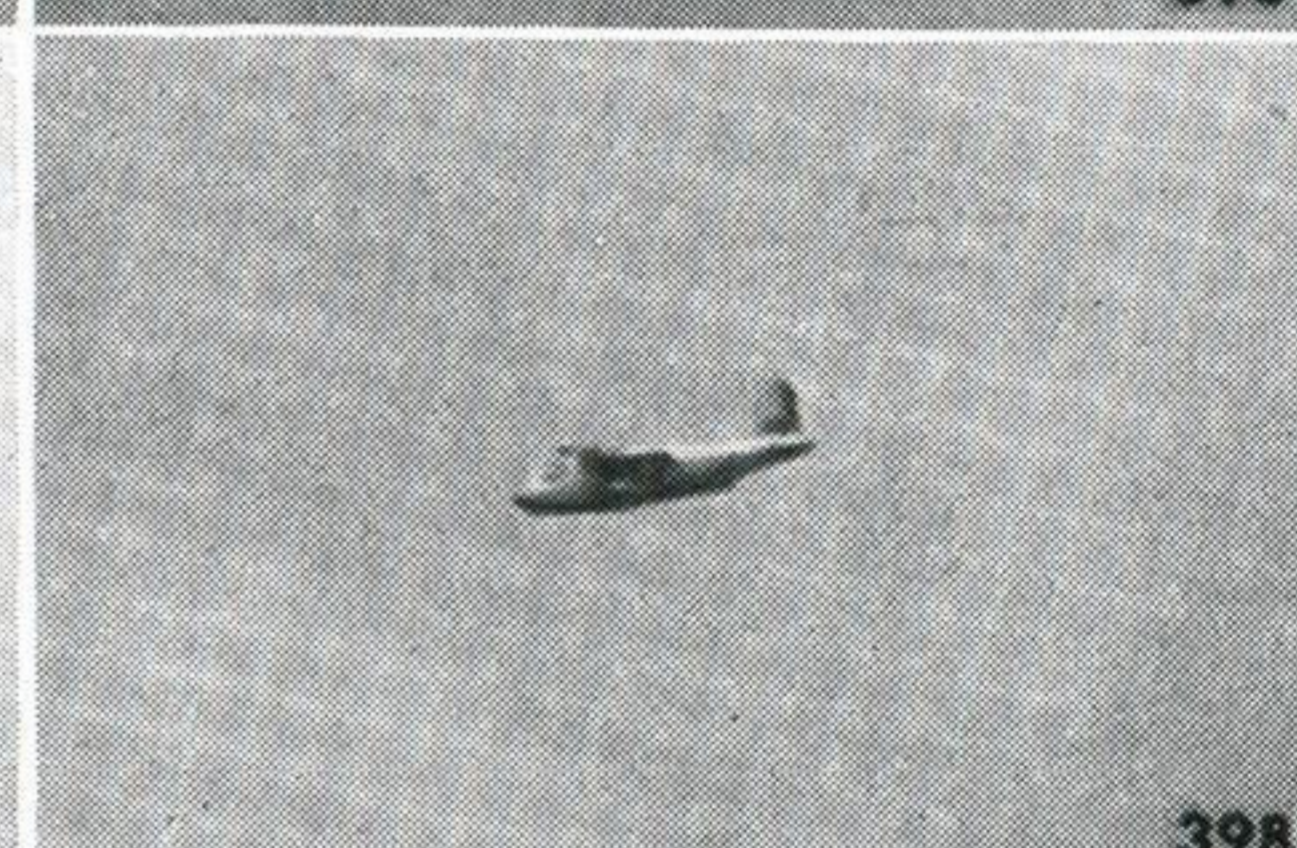
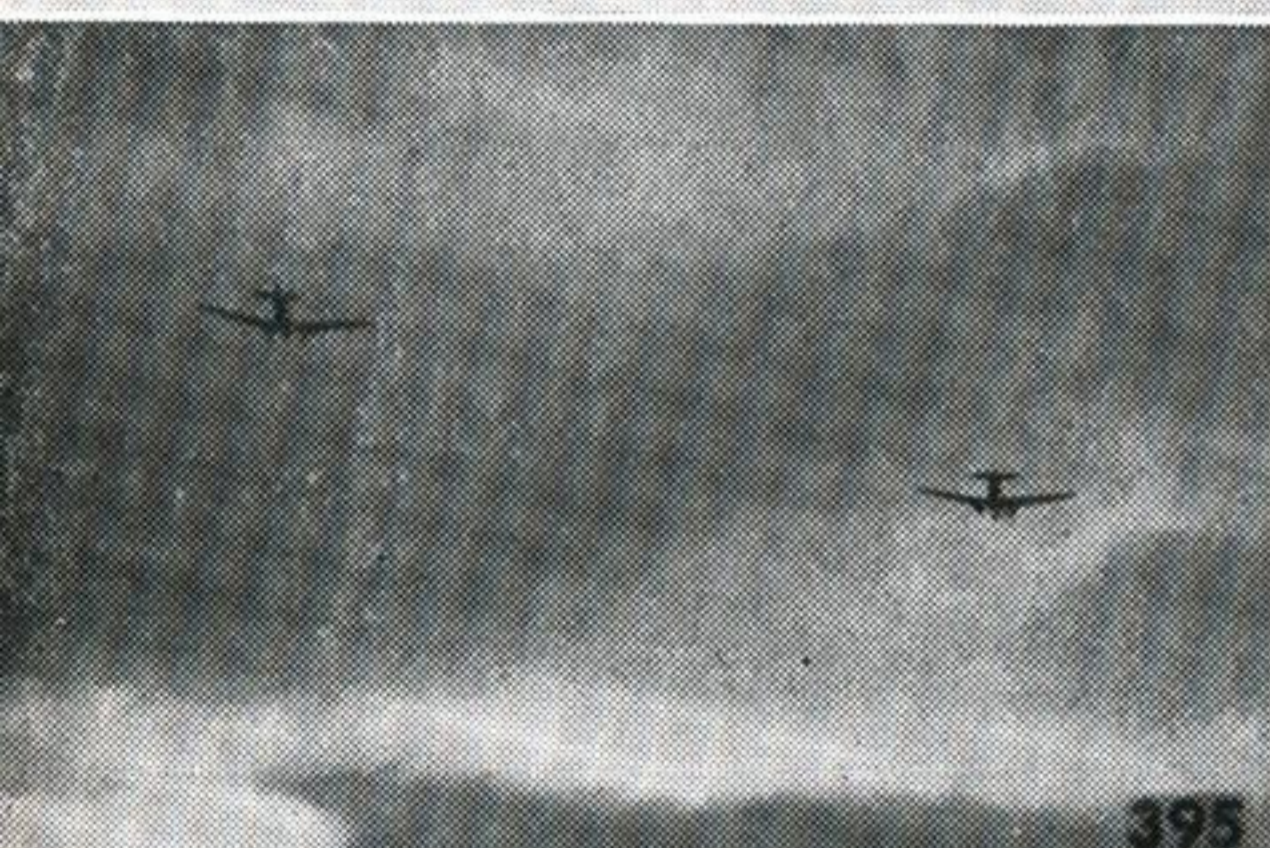
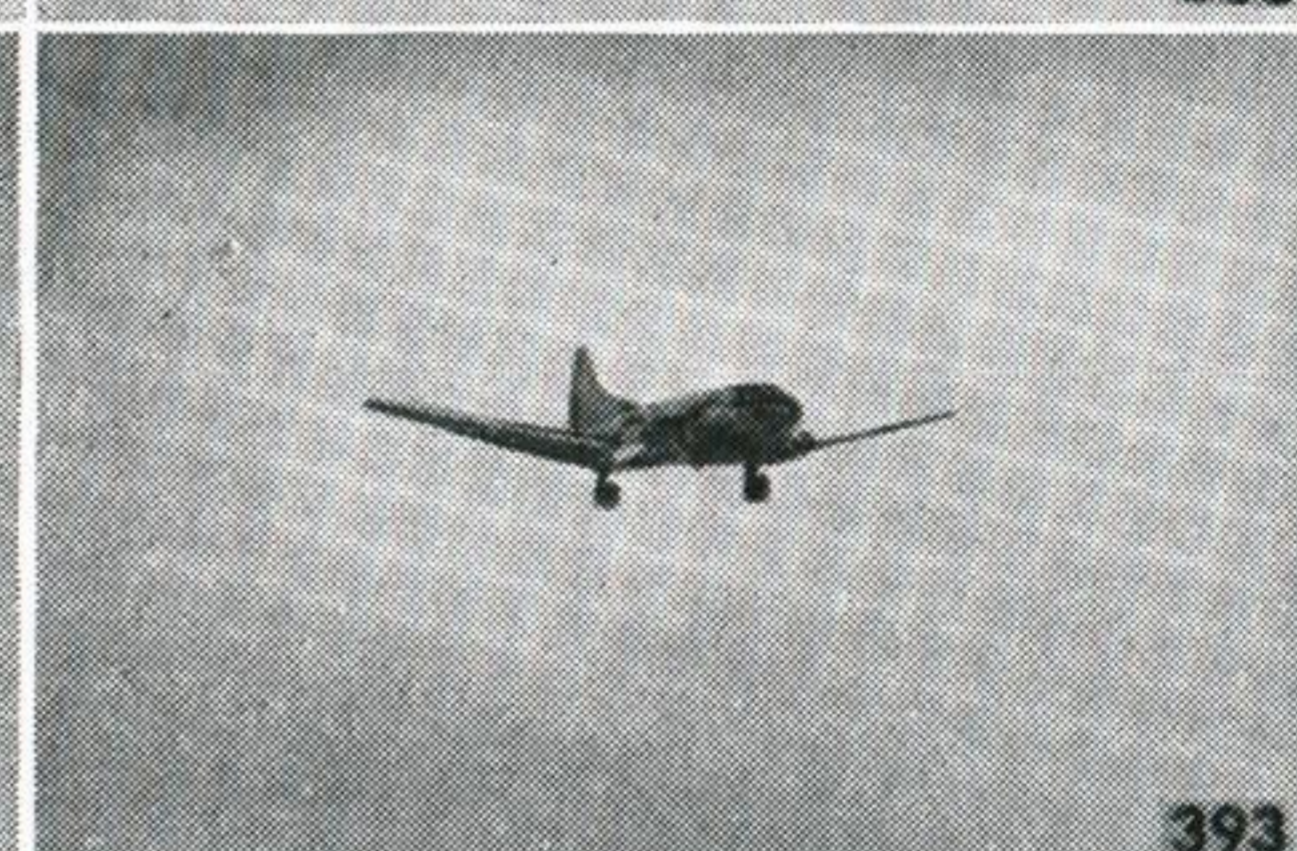
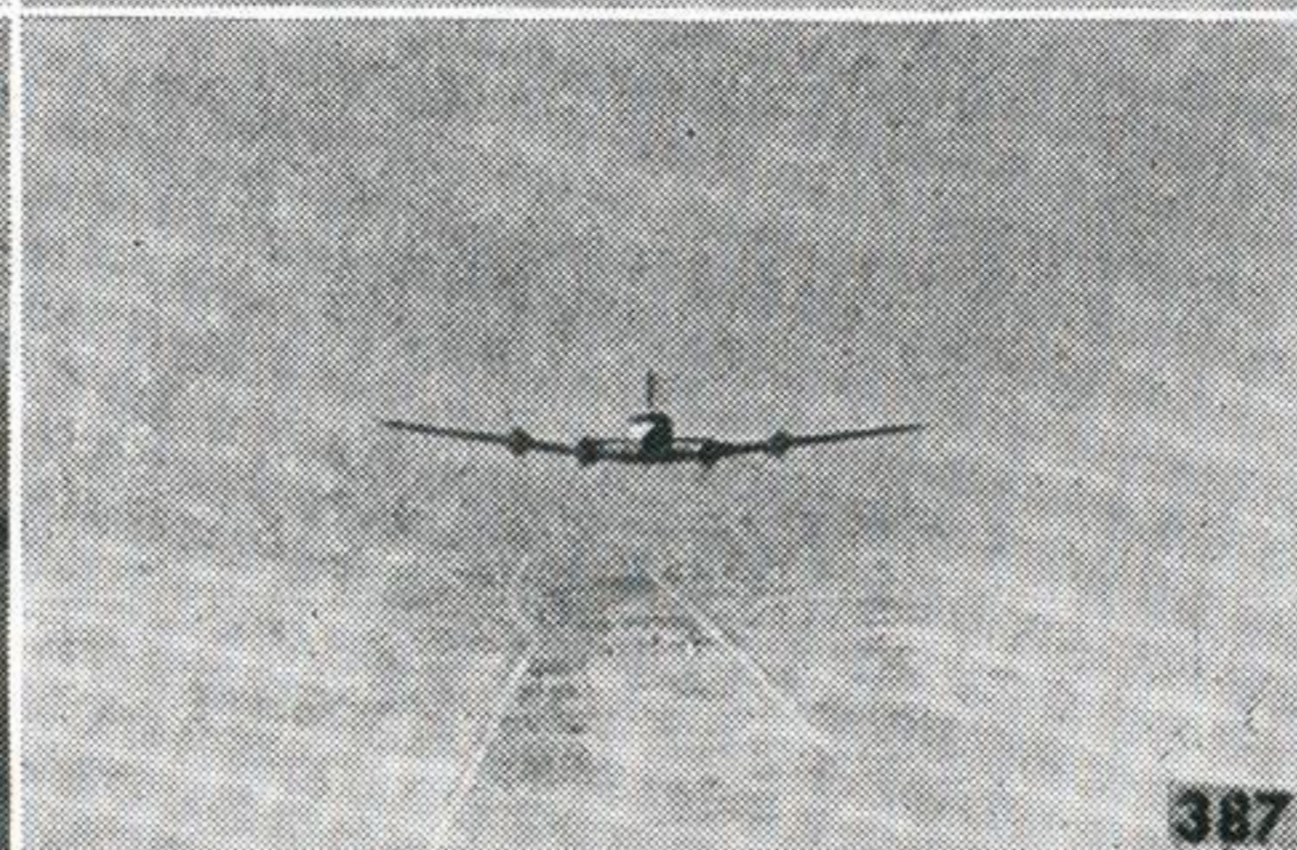
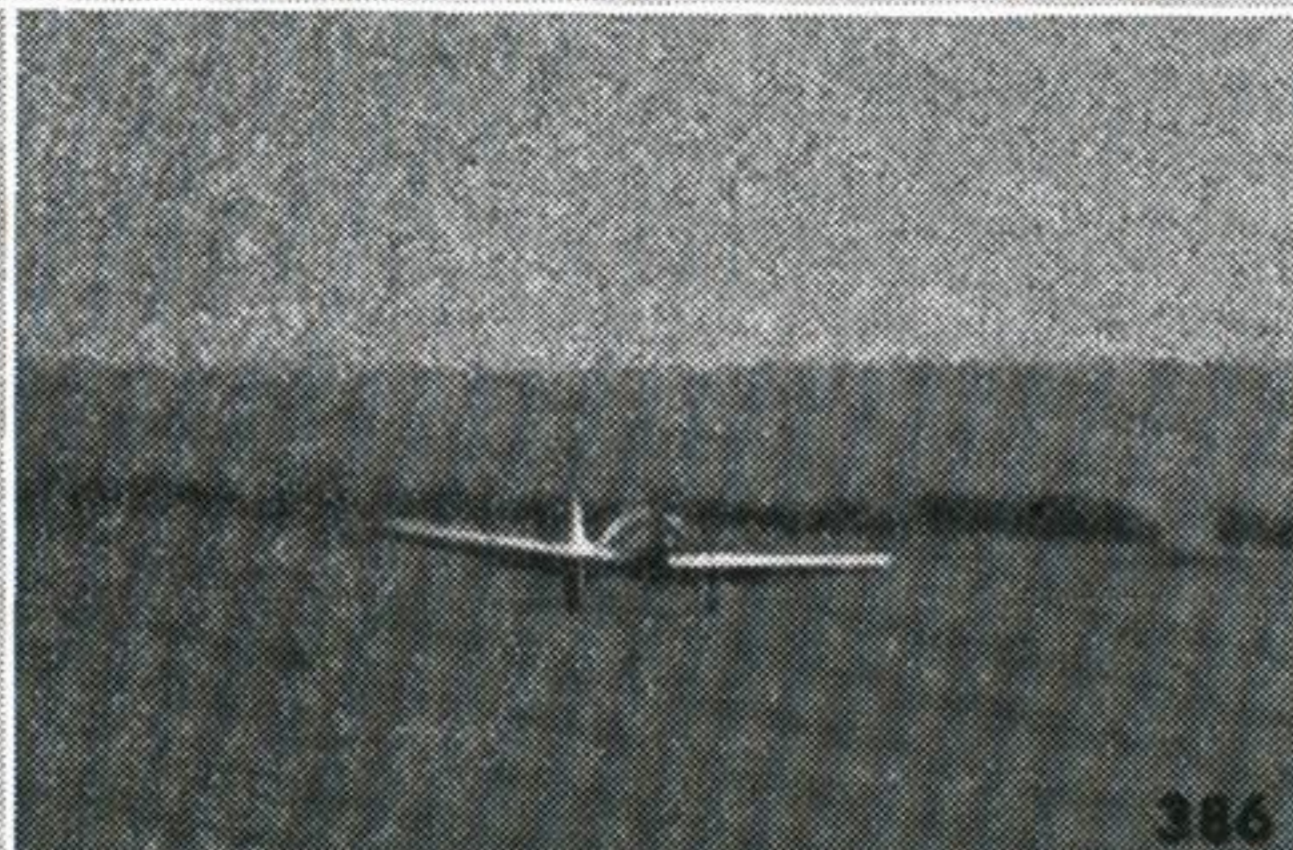
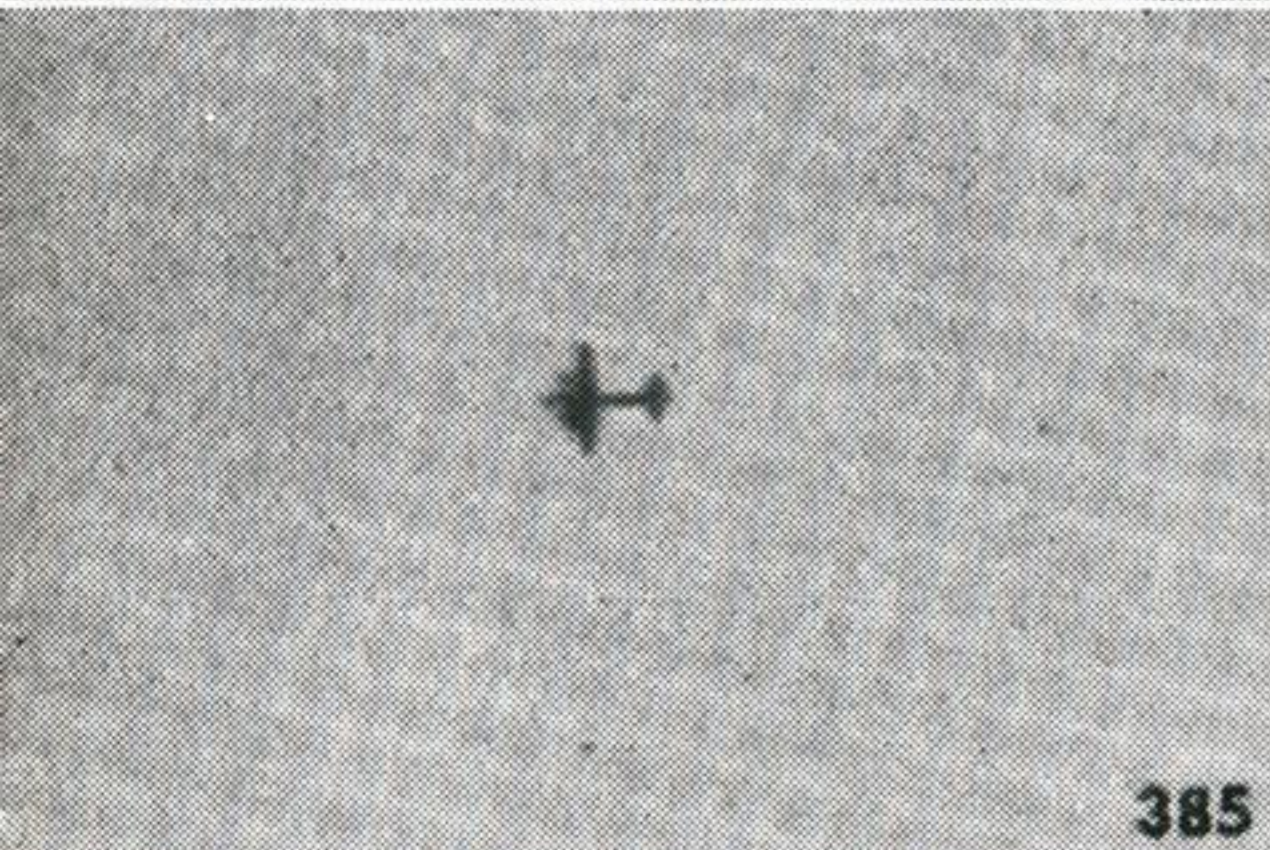
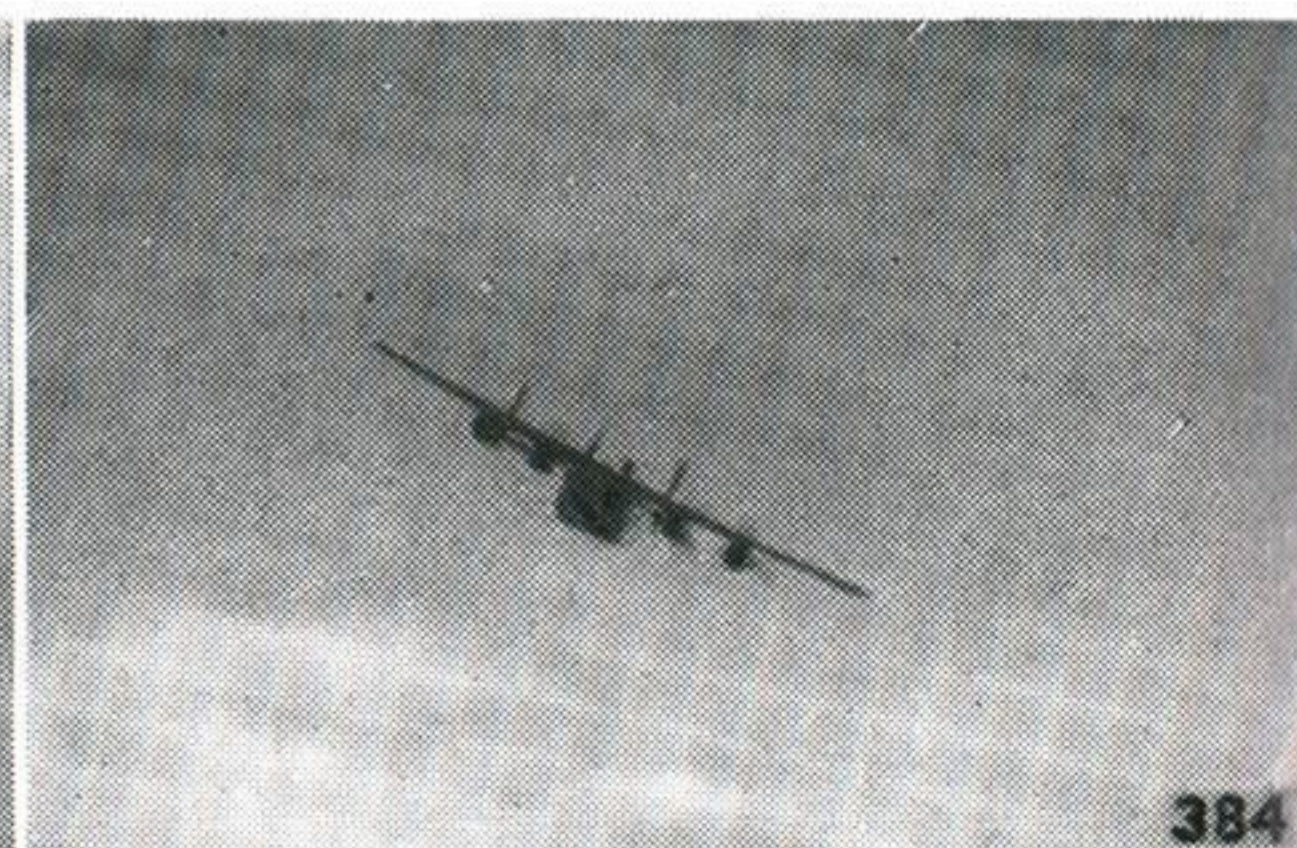
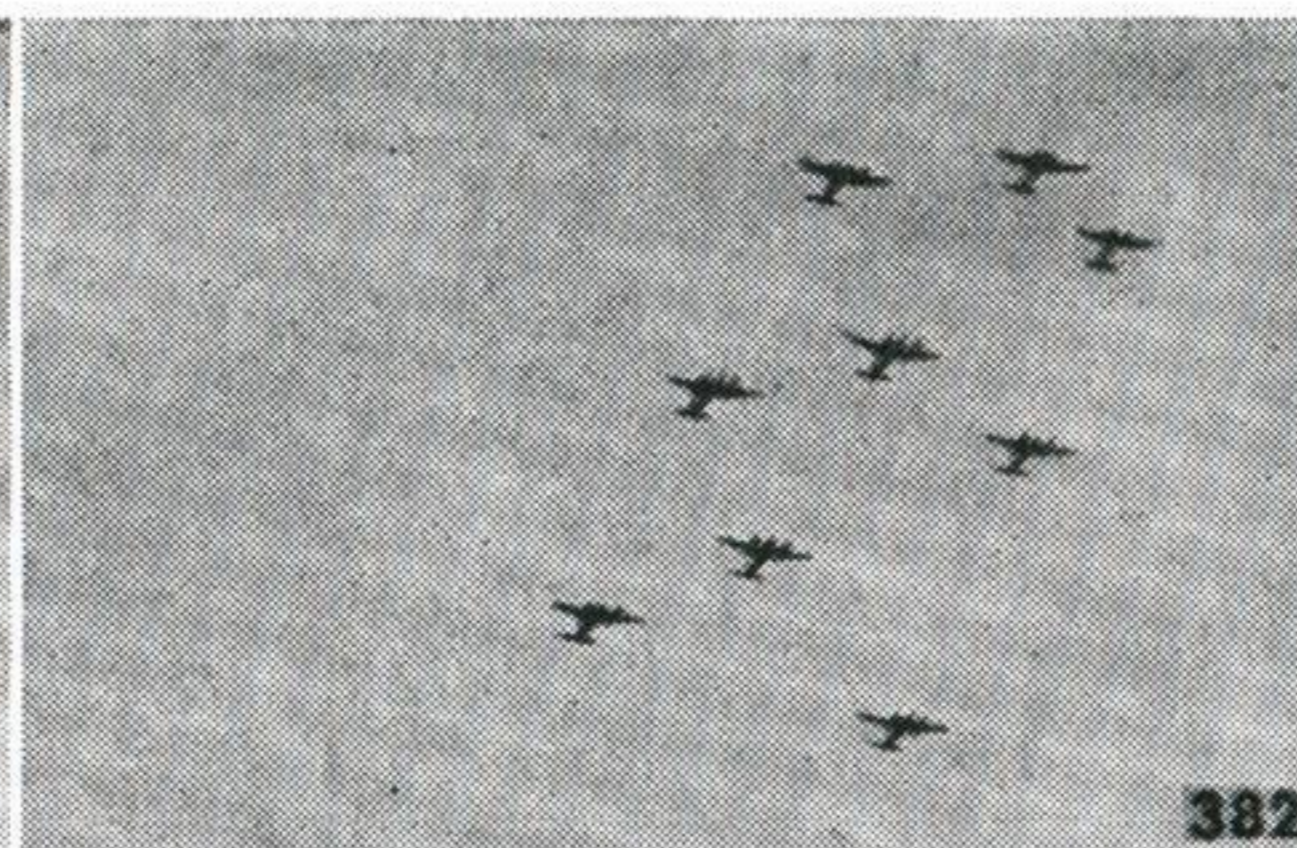
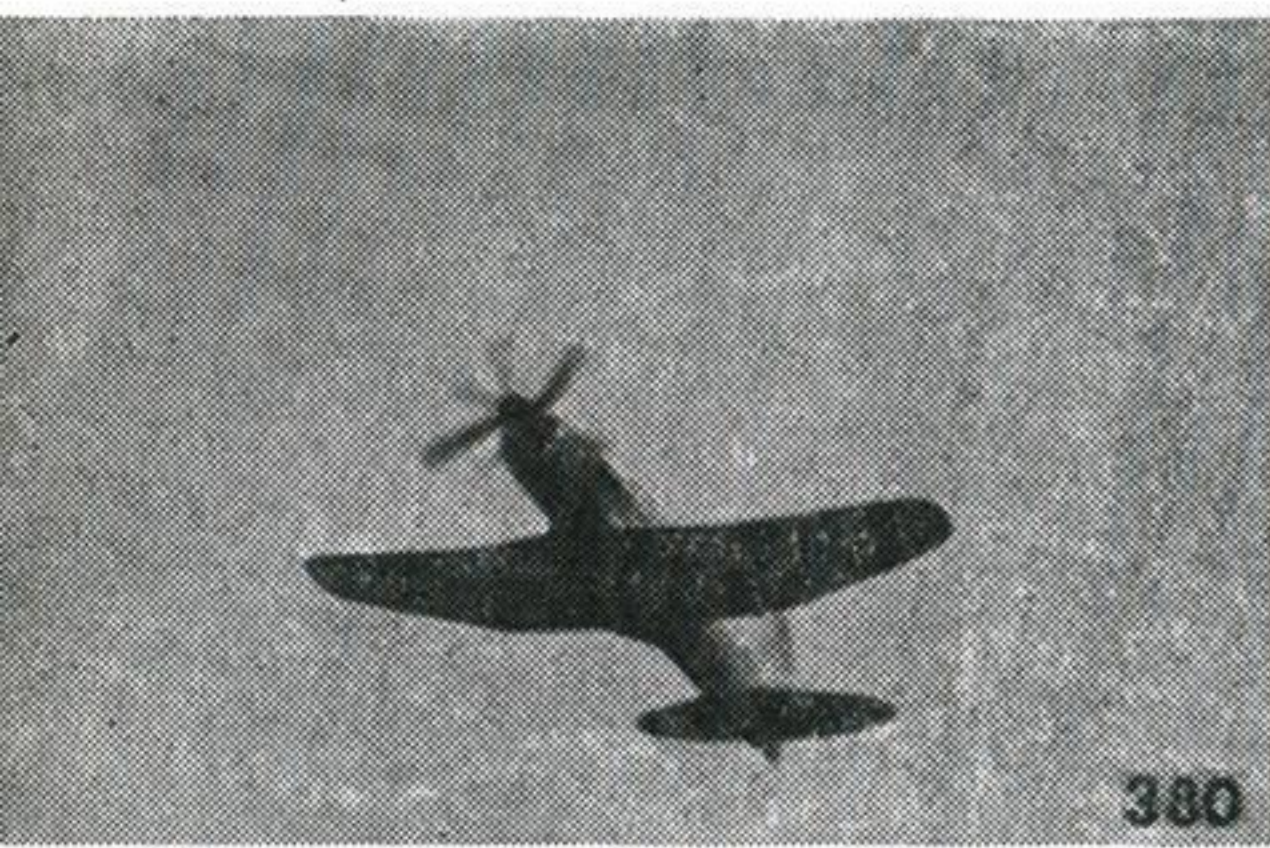
New Series

DECEMBER 1947

Volume 2. No. 5

ADVANCED SPOTTING

Recognition Test No. 51



THE INTER



SERVICES

AIRCRAFT RECOGNITION JOURNAL

(NEW SERIES)

Editorial

ON THE RUNWAY

RUNWAY CONTROLLERS (Air Traffic Control) now have to number aircraft recognition among their qualifications. Were we very rude we should say "about time too", but as we desire to preserve our reputation we won't say it.

The Air Traffic Control Service was originally designed, during the early part of the war, to make easier and safer the task of handling large numbers of aircraft and to render aid to all aircraft in trouble. It was, and is, in fact, a safety service.

During the war there was little time to teach aircraft recognition to runway controllers, and, although many of them became first-rate spotters, it was in the hard school of practical experience. Now that they are to undertake active training in the subject, we extend to them a hearty welcome. In the near future we intend to run an issue of the *Journal* specially devoted to the air traffic control angle.

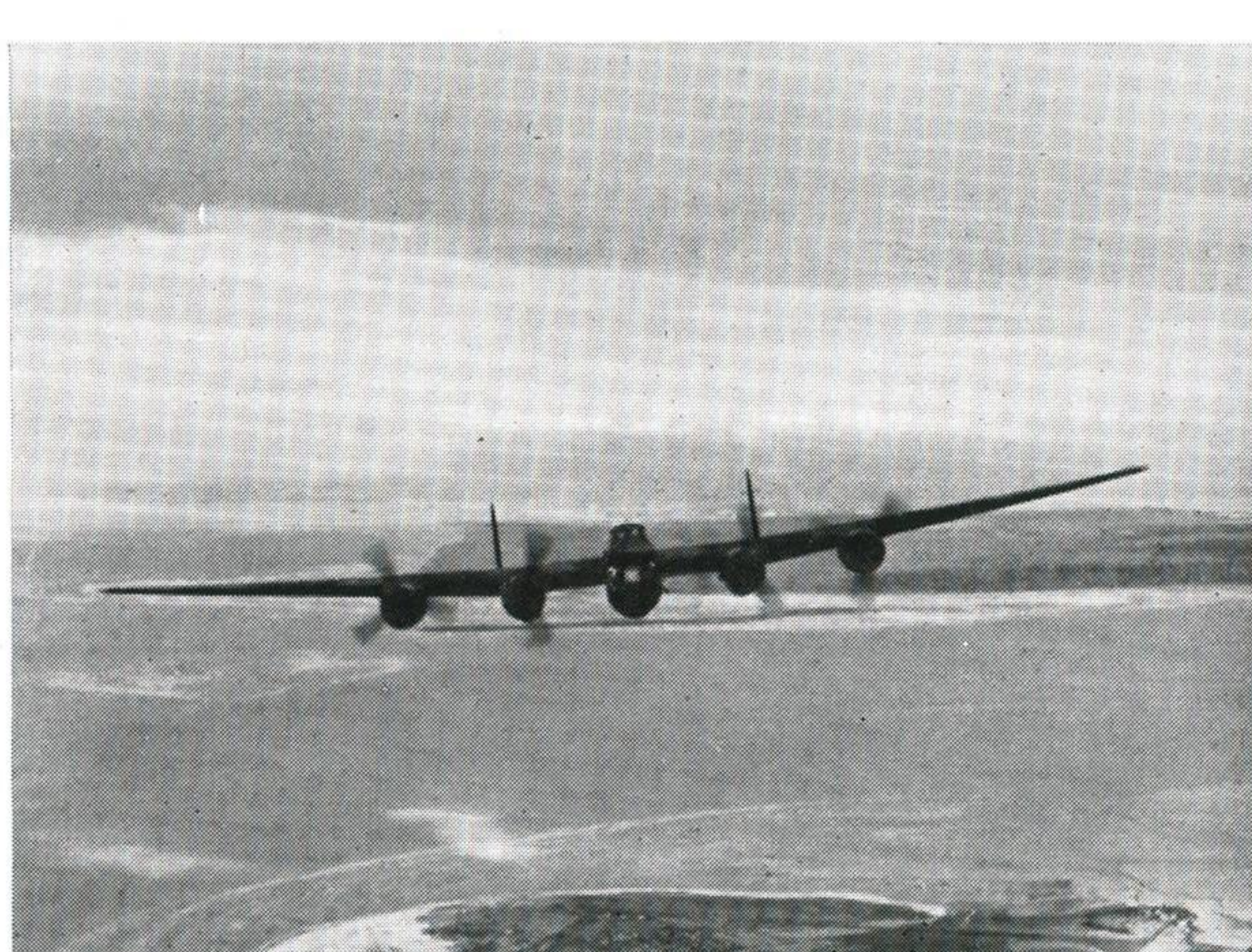
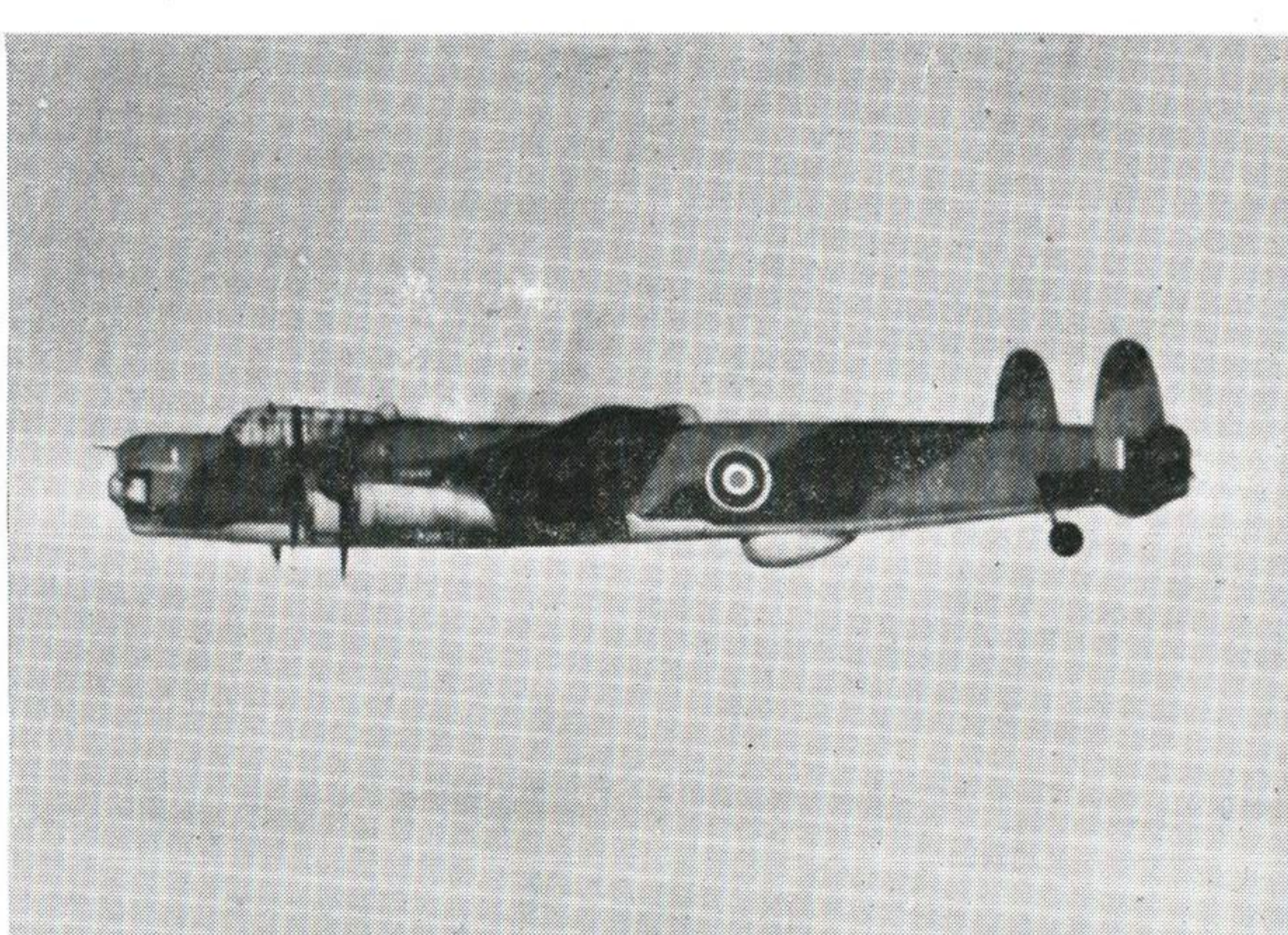
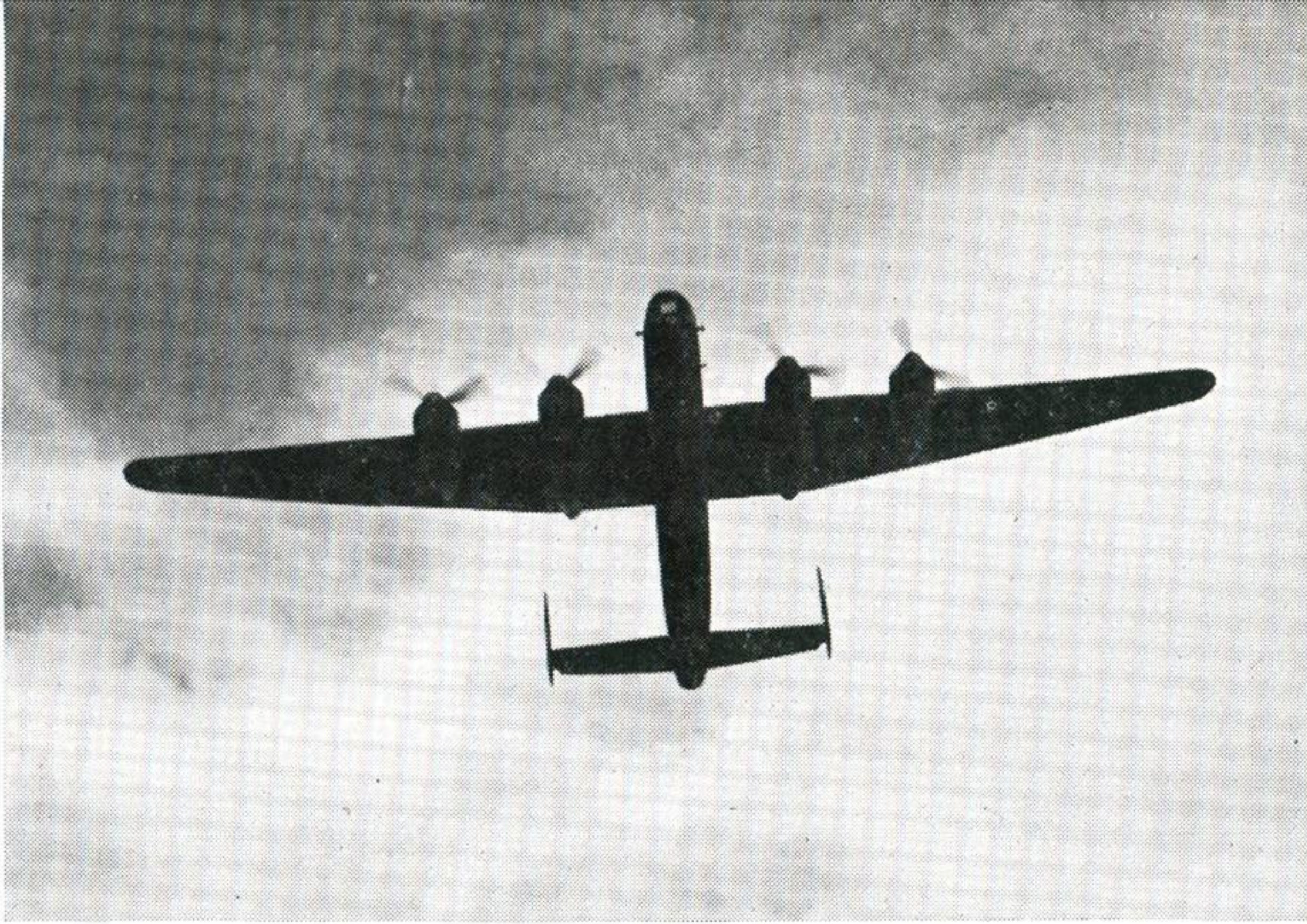
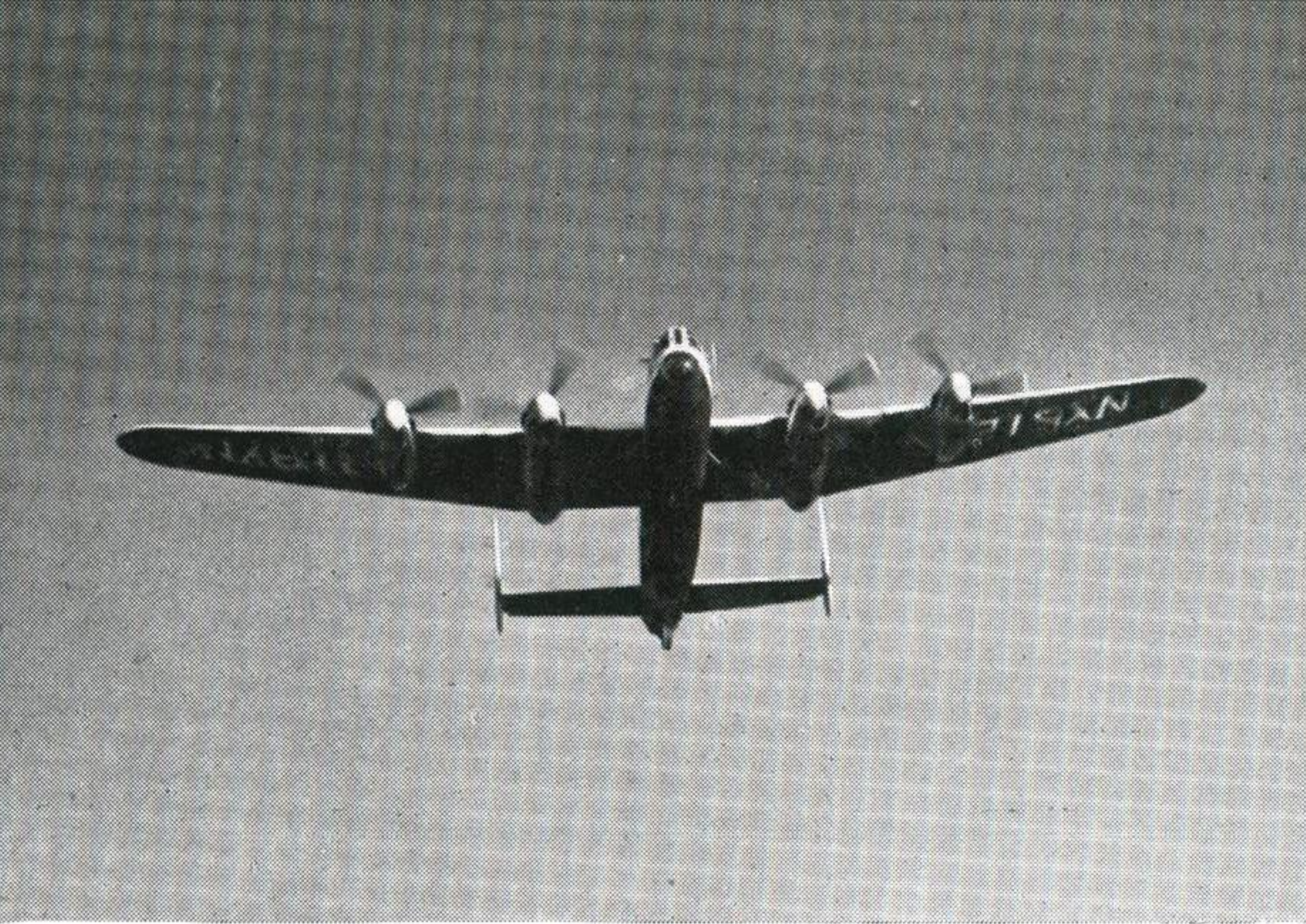
A good many war-time incidents in Flying Control, as it was then called, involved recognition of aircraft. Generally these turned out all right in the end, but could have ended in tragedy. An incident involving a Fairchild Argus and a Noorduyne Norseman was one such. The weather, as usual, was clamping. The circuit was full of odd aircraft including several strangers to the station plus the Argus, which called for an emergency landing. The airfield controller (now called runway controller) was instructed by the duty control officer to "give everyone else a red until the Argus is down". The runway controller replied "What's an Argus, sir?". "High-wing job with struts—he's down wind now!" was the reply. Unknown to the control officer or the runway controller a Norseman had since joined the circuit. You can guess the rest. The runway controller picked out the Norseman in a flash, stuck a green on it—to its crew's immense delight—and in they came. The runway controller reported to the control officer "Argus down okay" and proceeded to let the rest in. Fortunately the Argus was able to come straight in, in its turn, unbalked and no harm done, but it might have been very different. And that sort of thing can happen in peace-time too.

Another story we are never tired of retailing is the one about a control officer on the air-strip in Germany during the later stages of the war who, failing to recognize a Focke-Wulf F.W.190 approaching to land down-wind, gave it all the reds he could lay his hands on. It landed just the same, and, as if that was not enough the control officer rang his duty crew and said "look after that Mustang which has just landed down-wind!" As many readers know, he received—and very deservedly too—the M.H.D.O.I.F.

This too could have been serious had the pilot's intention been anything but to surrender. There were other incidents of enemy aircraft approaching, wheels out, flaps down, unrecognized, as if to land, and when comfortably within range beating hell out of everything within reach.

In quoting these examples, we do not in any way belittle the excellent work of controlling done by flying control staffs during the war. But we do wish to throw into relief, as much as possible, the possibilities of trouble which can occur, even in peace-time, through a moment or two's hesitation: when the lives of aircrews, and possibly of others, can depend on accurate and immediate recognition. To be able to recognize aircraft is one of the hundred and one ways in which air traffic control staffs can make for greater efficiency in their branch of the Service.

It is said, and not without truth, that air traffic control is one of the most interesting jobs of all in the Royal Air Force. Certainly it functions in the very nerve-centre of all air activity which is, after all, the main purpose of any air force. Control staffs are therefore in a unique position to study and get on familiar terms with aircraft and flying operations, and not only to get to know aircraft individually but to absorb the atmosphere and to understand what we might call the "habits" of aircraft. We know of many people in the various recognition services who would give much for even a short spell in such a position. There will, really, be no excuse for runway controllers to be anything but first-rate spotters.



What's the Difference?—I. Avro Lancaster (left), Avro Lincoln (right). Lincolns and Lancasters are both in service in the Royal Air Force and, coming from the same stable, have many common characteristics. They also have many different characteristics. Considering details: the wing of the Lincoln is longer, actually and relatively, than that of the Lancaster and because of narrower wing chord and small tips, the wing tends to look more spiky—more pointed. Positioned well forward on the fuselage, it gives in consequence a somewhat hunched forward aspect to the Lincoln. There is a small amount of dihedral on the outer panels of the wing only. The Lincoln's fuselage is also proportionately narrower and longer than that of its elder brother. As to noses, the Lincoln's "chin" recedes, that of the Lancaster is decidedly aggressive. The motors of the Lincoln are in neat cylindrical cowlings. Those of the Lancaster have many intakes, scoops, etc., and are less neat. There are numerous other minor details which you will be able to compare for yourself, but in general, the Avro Lincoln is a larger, leaner, more angular and less elegant machine than the Lancaster.

After you have learned your lessons, try the spotting test at the side. The answers are given on the back page.

Lancaster span 102 ft. Lincoln span 120 ft.

What's the Difference?—2.

Hawker Tempest VI (left), Sea Fury X (right). First of all, beware of external tanks. Disregard them. We might also disregard the wing shape for the purpose of distinguishing

between these two fighters for they are almost identical.

The most noticeable differences are in the motors and the tail units. The Tempest VI in-line liquid-cooled motor has an enormous beard-like radiator beneath it, whereas the Sea Fury X has a close-cowled radial motor. Views in which the fins and rudders are discernible enable one to pick out the Tempest because of its exceptionally large fin fairing. Its rudder also extends below the level of the fuselage and is faired by a small keel-surface. In the case of the Sea Fury, the bottom of the rudder is trimmed upward at a sharp angle to accommodate the deck-landing hook.

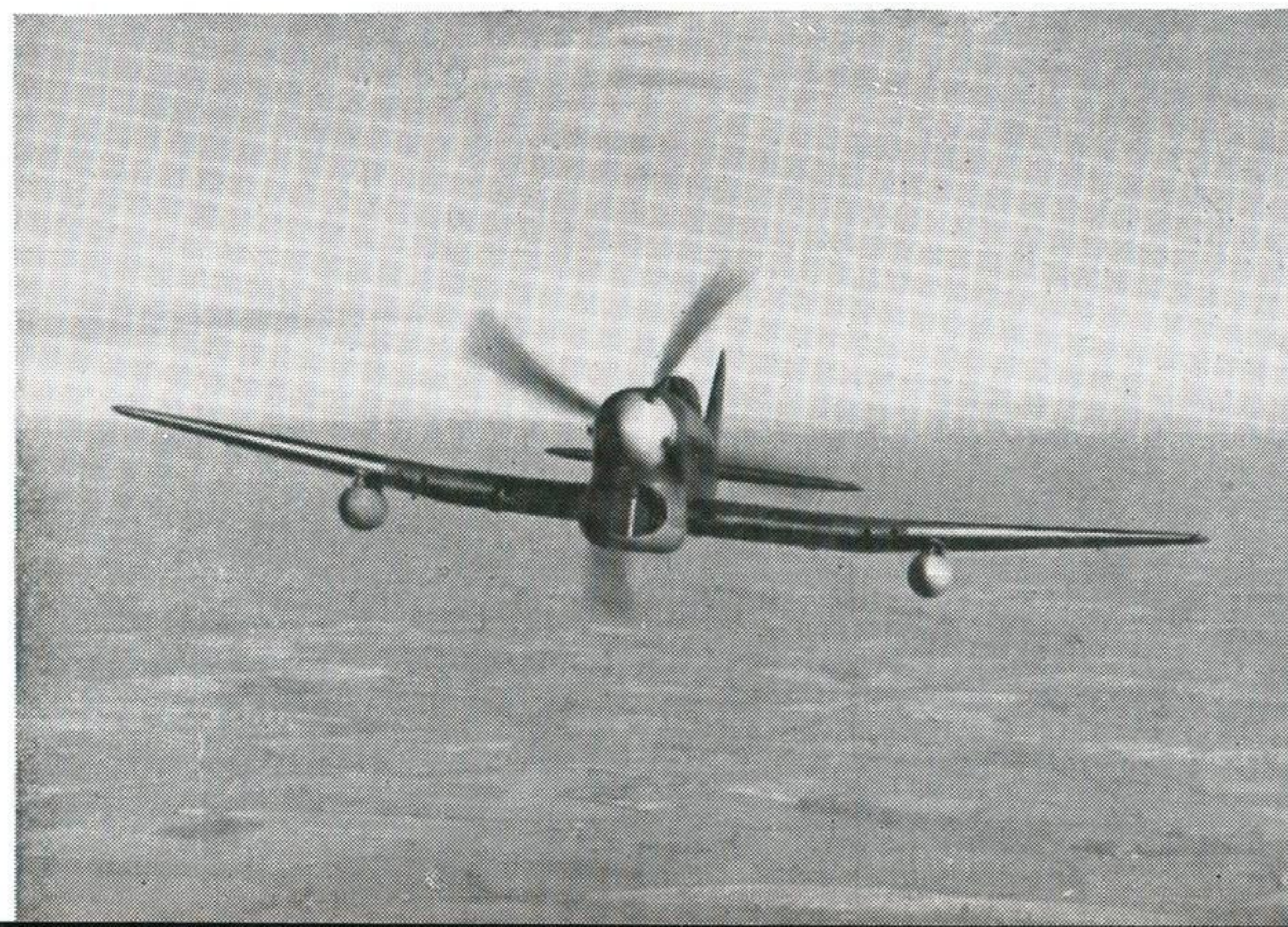
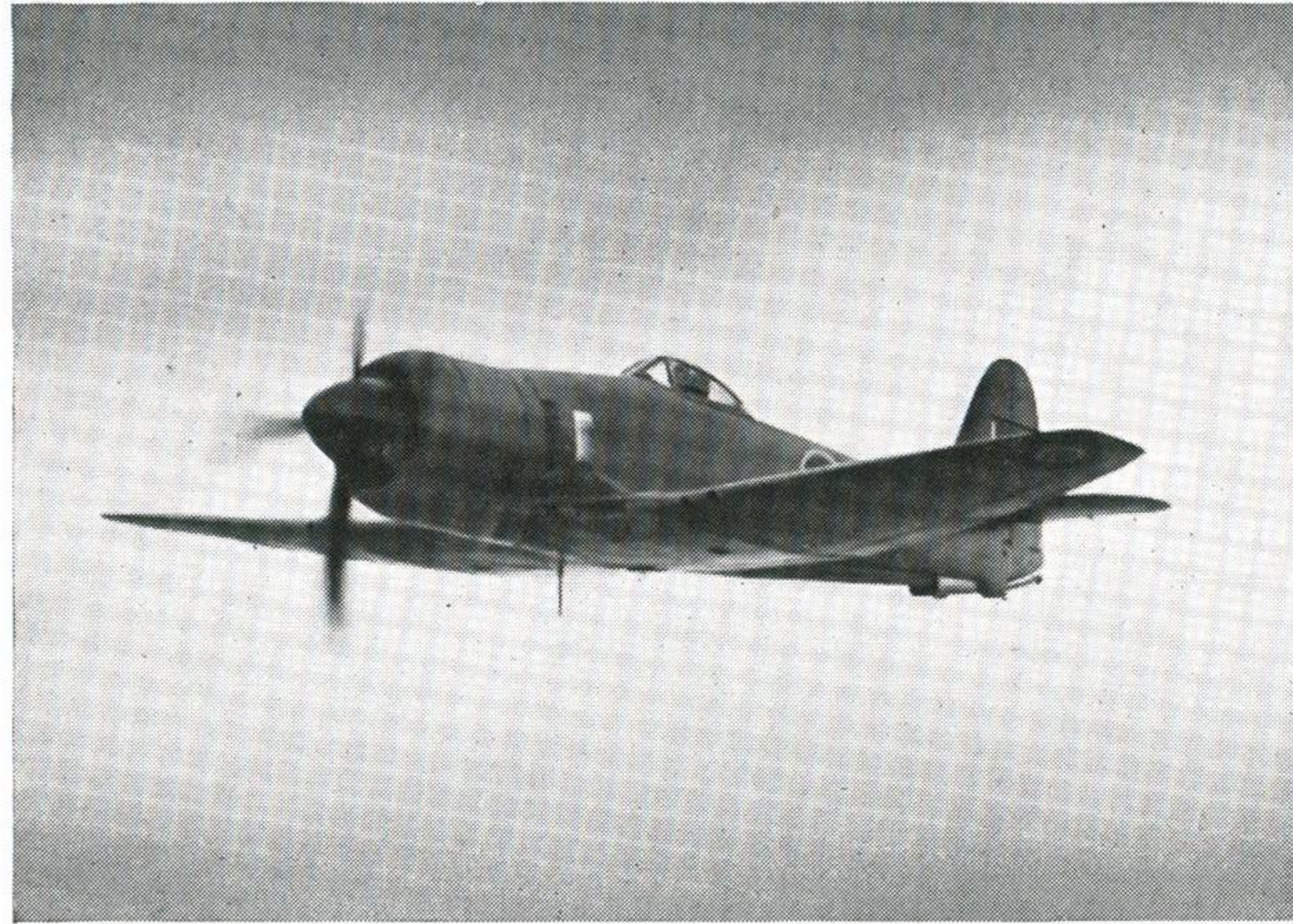
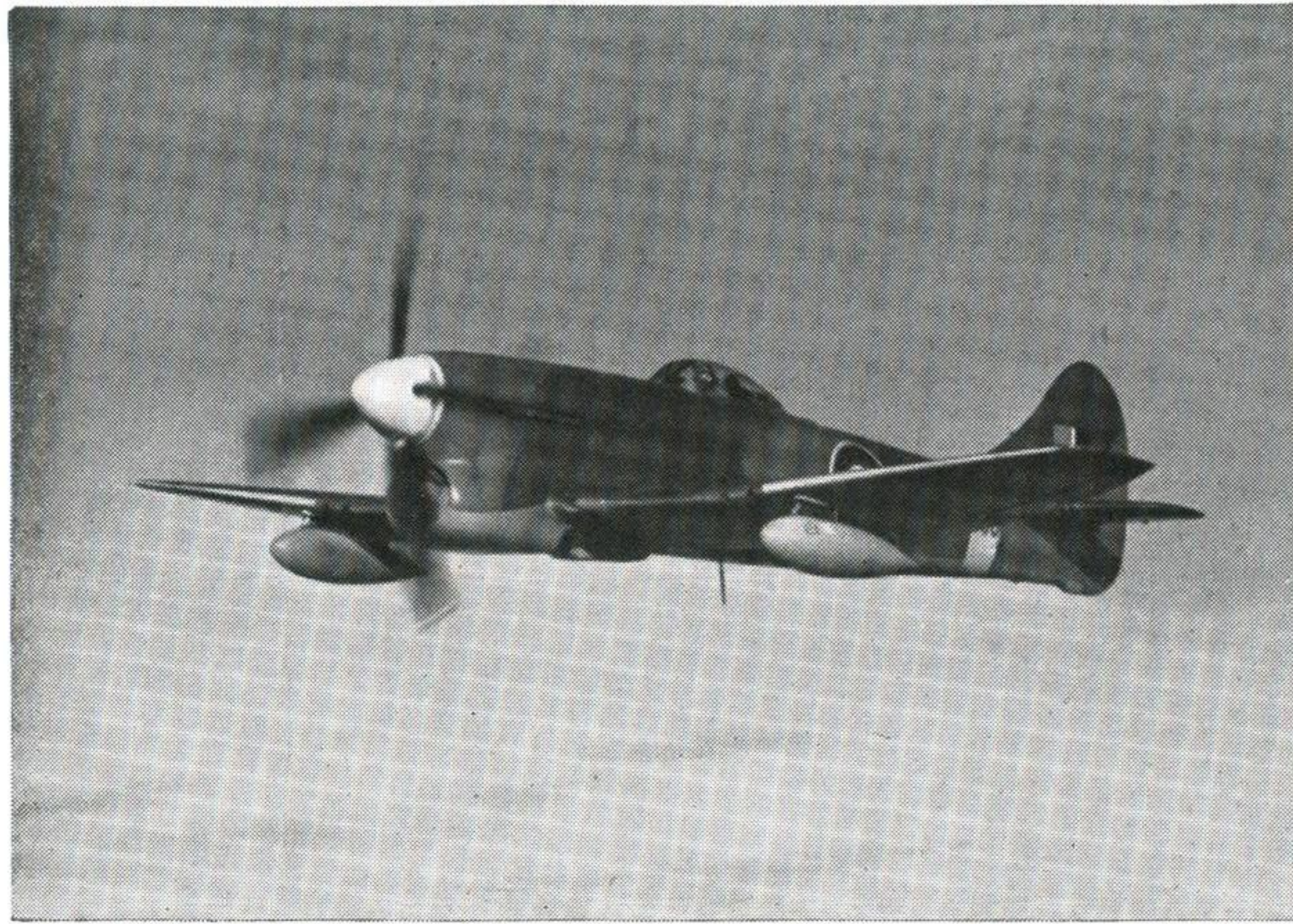
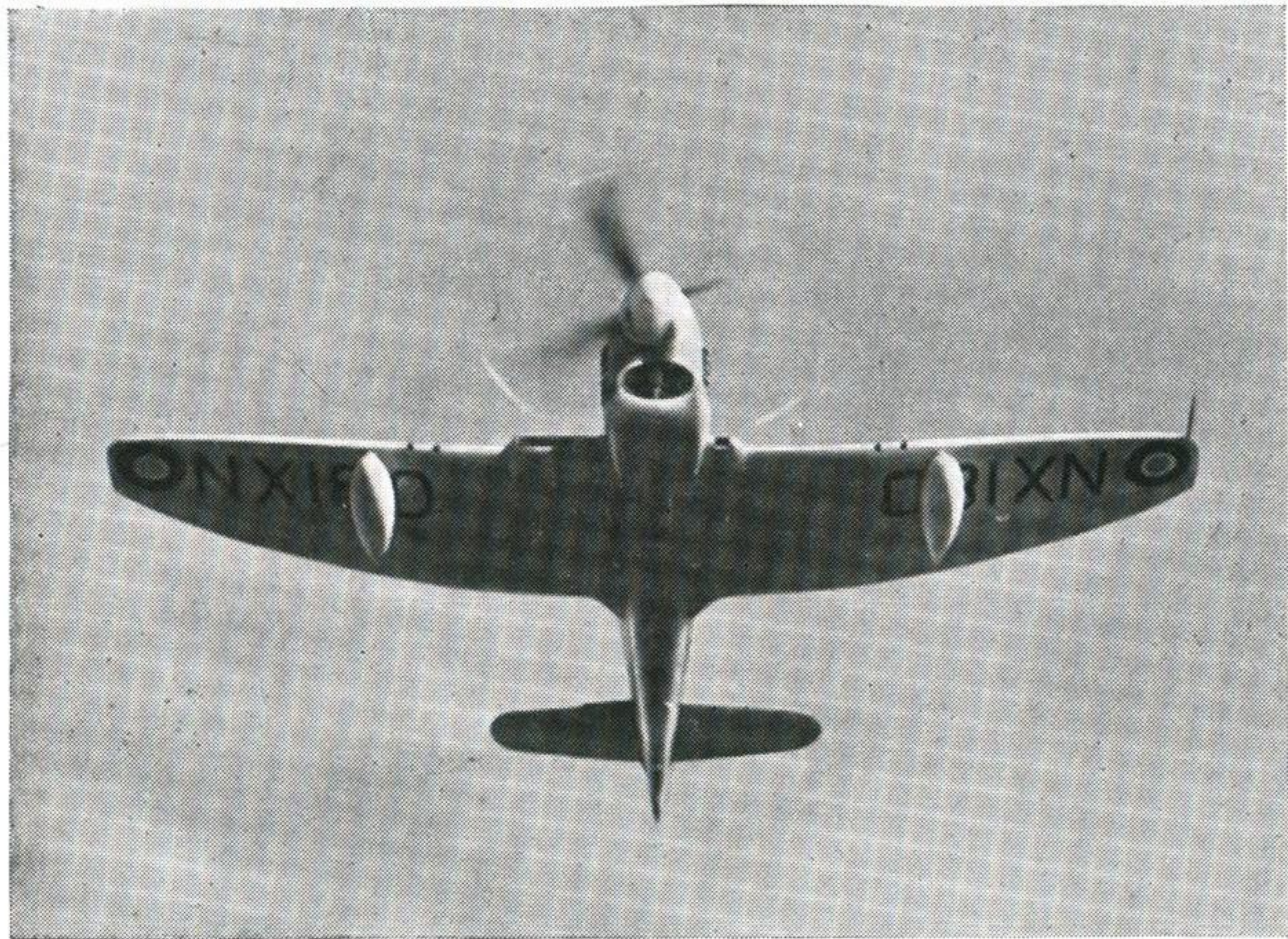
In fuselage form, the Sea Fury X is rather more humped, for the purpose of improving deck-landing view. The Tempest has "straight through" lines.

Amongst minor detail, it will be observed that intake systems at wing roots are disproportionate and on opposite sides of the motor. The spinner of the Tempest VI is high, that of the Sea Fury X is, naturally, mid.

The test results are on the back page.

Tempest VI span 41 ft. 0 ins.

Sea Fury X span 38 ft. 4 ins.





FAIREY FIREFLY Mk. IV

LONG RANGE NAVAL RECONNAISSANCE FIGHTER
(ONE ROLLS ROYCE GRIFFON 74 MOTOR)

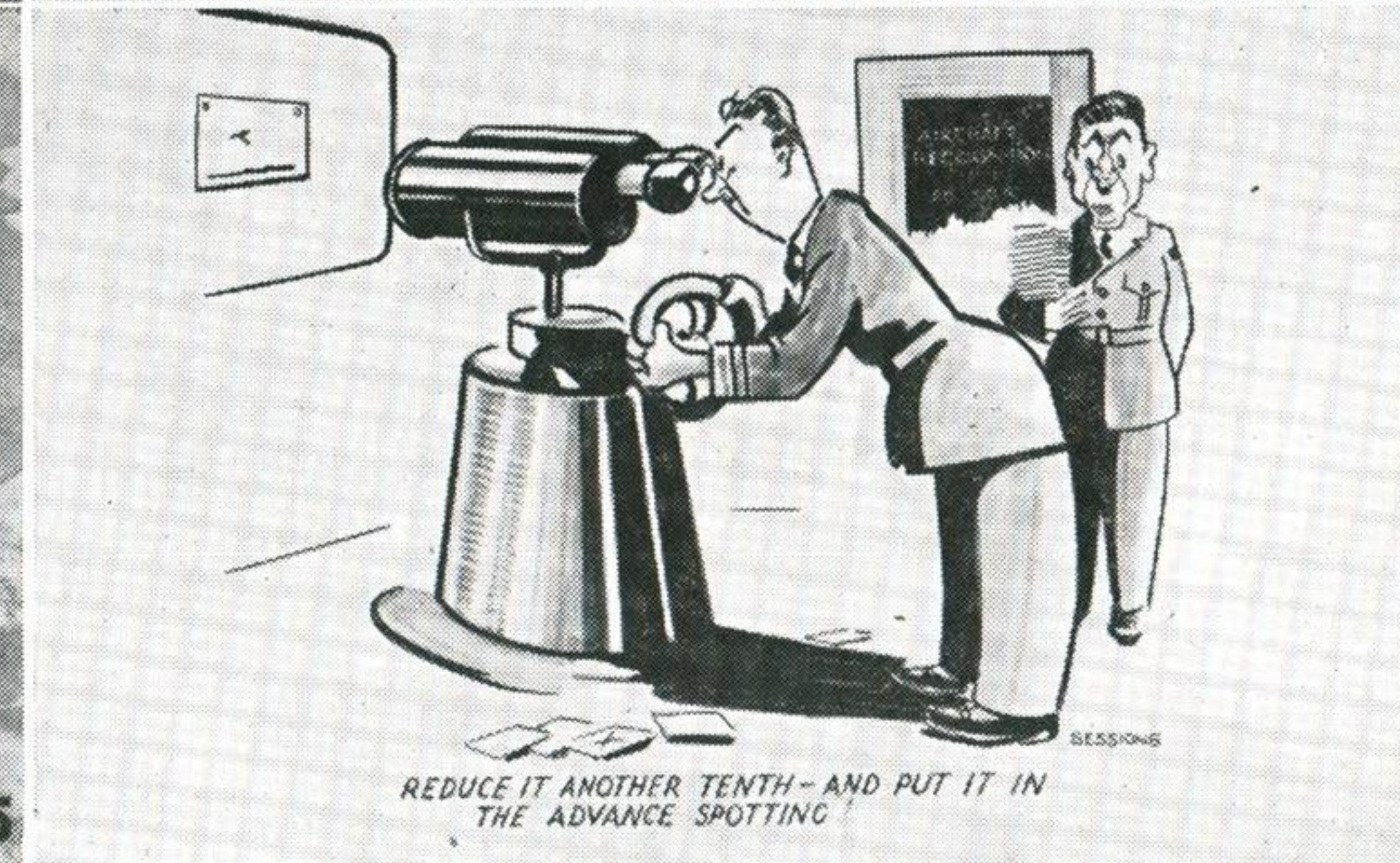
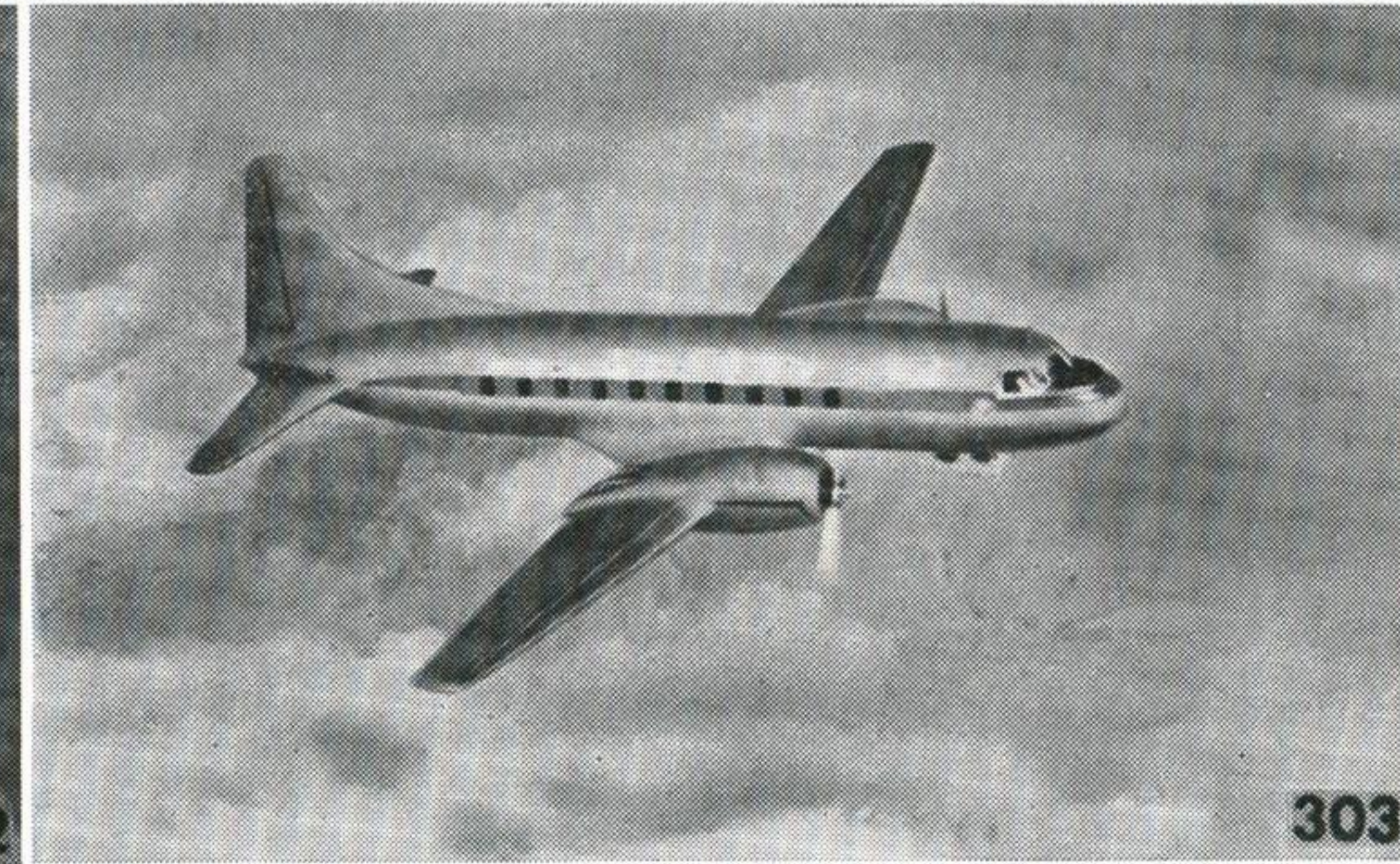
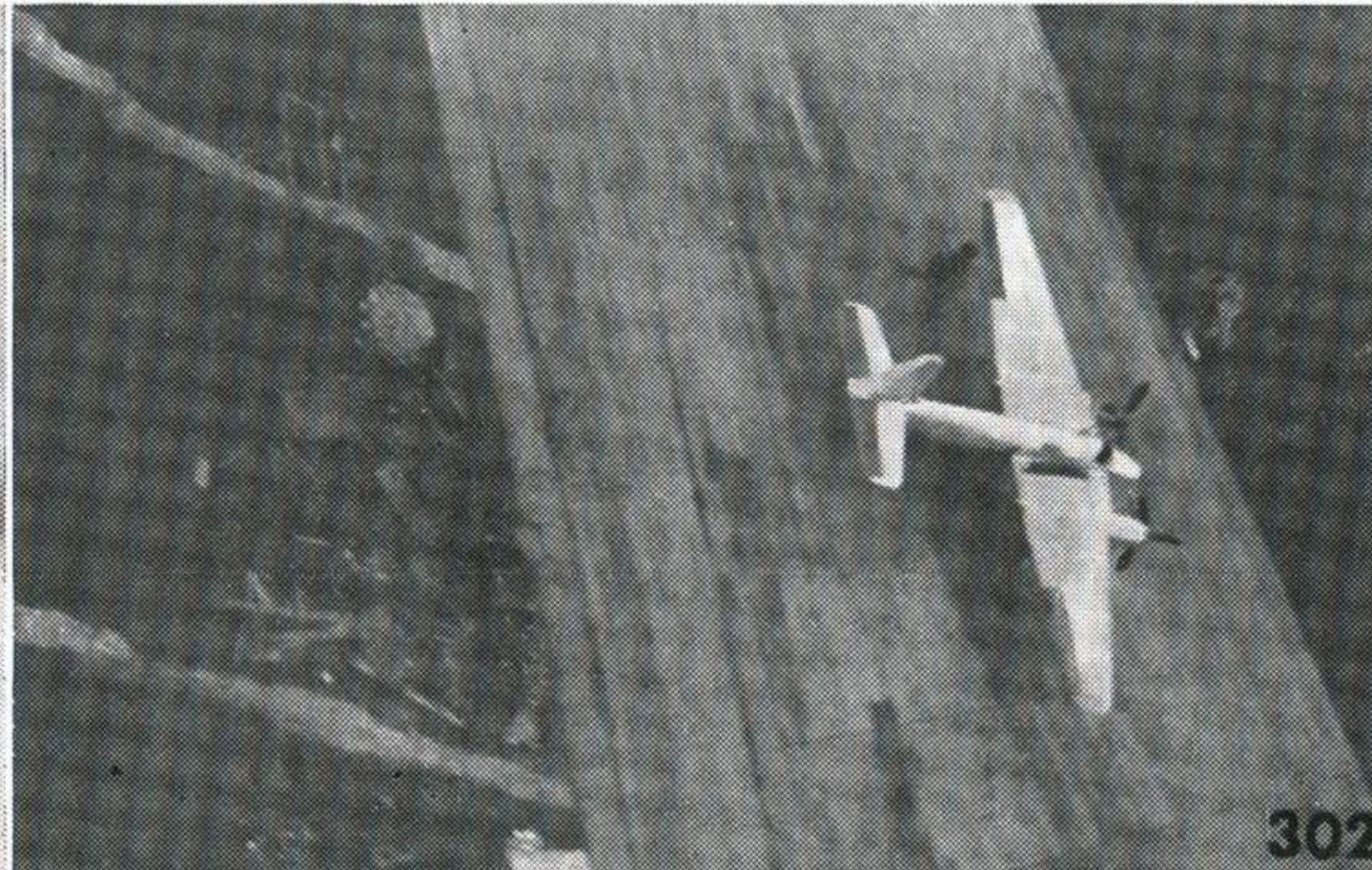
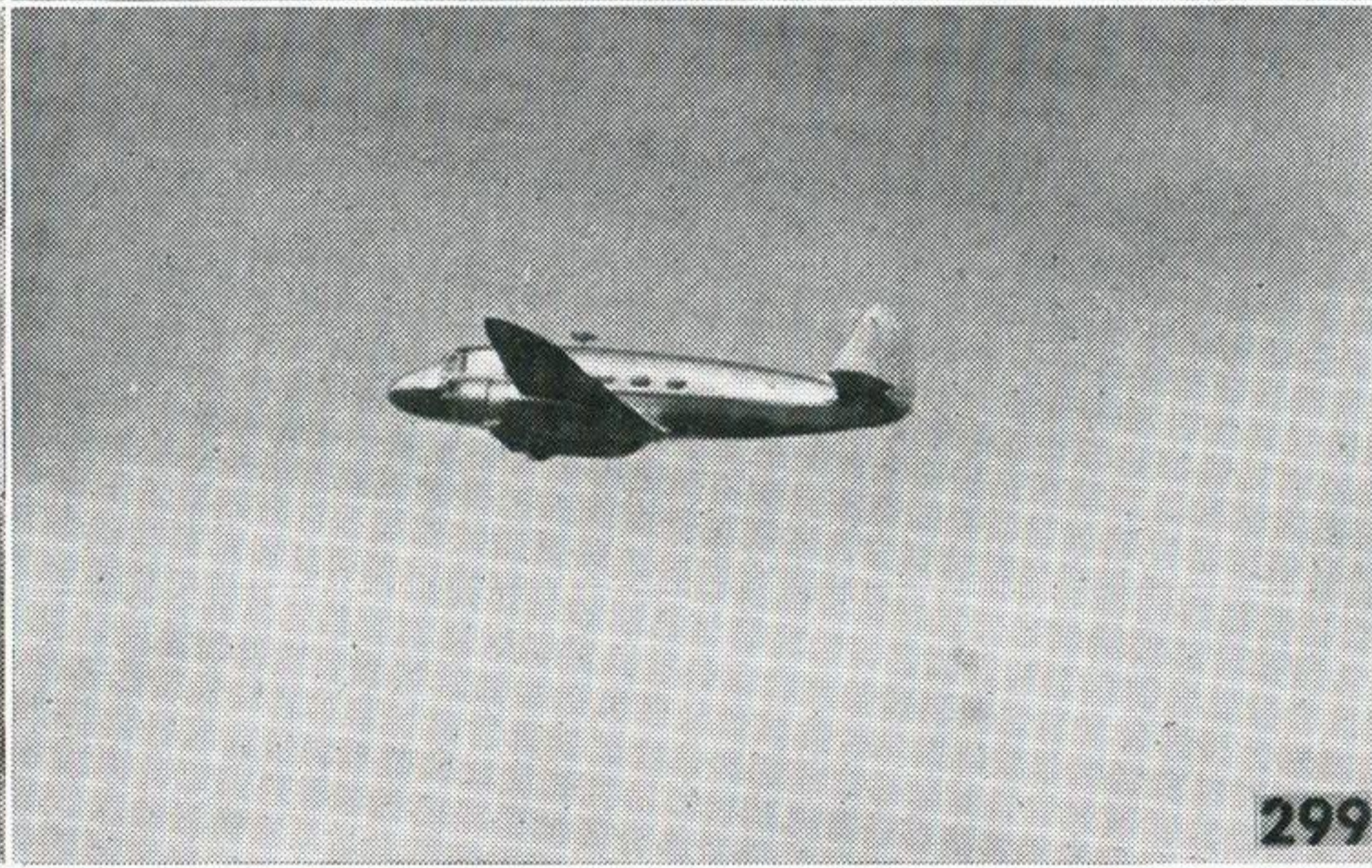
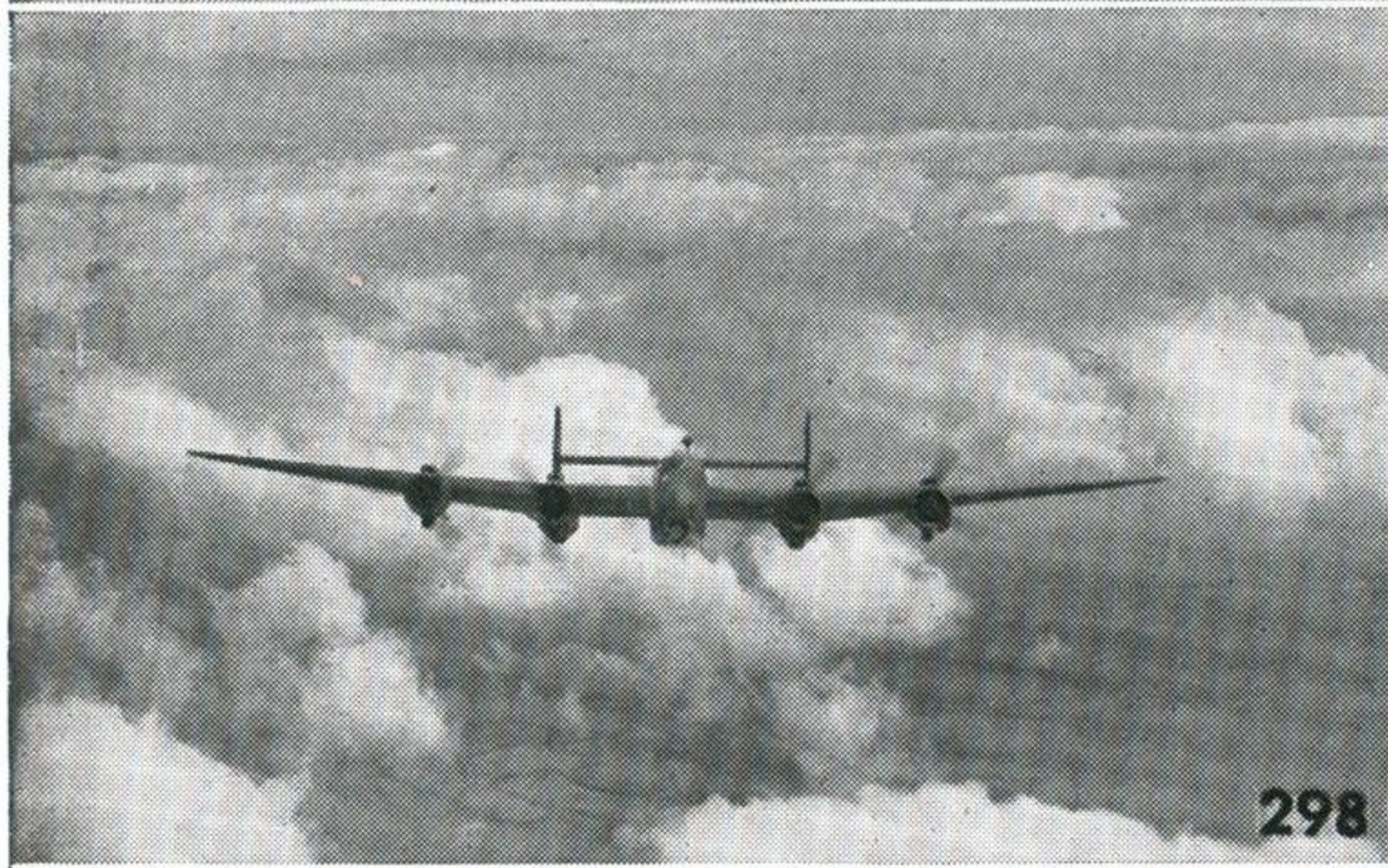
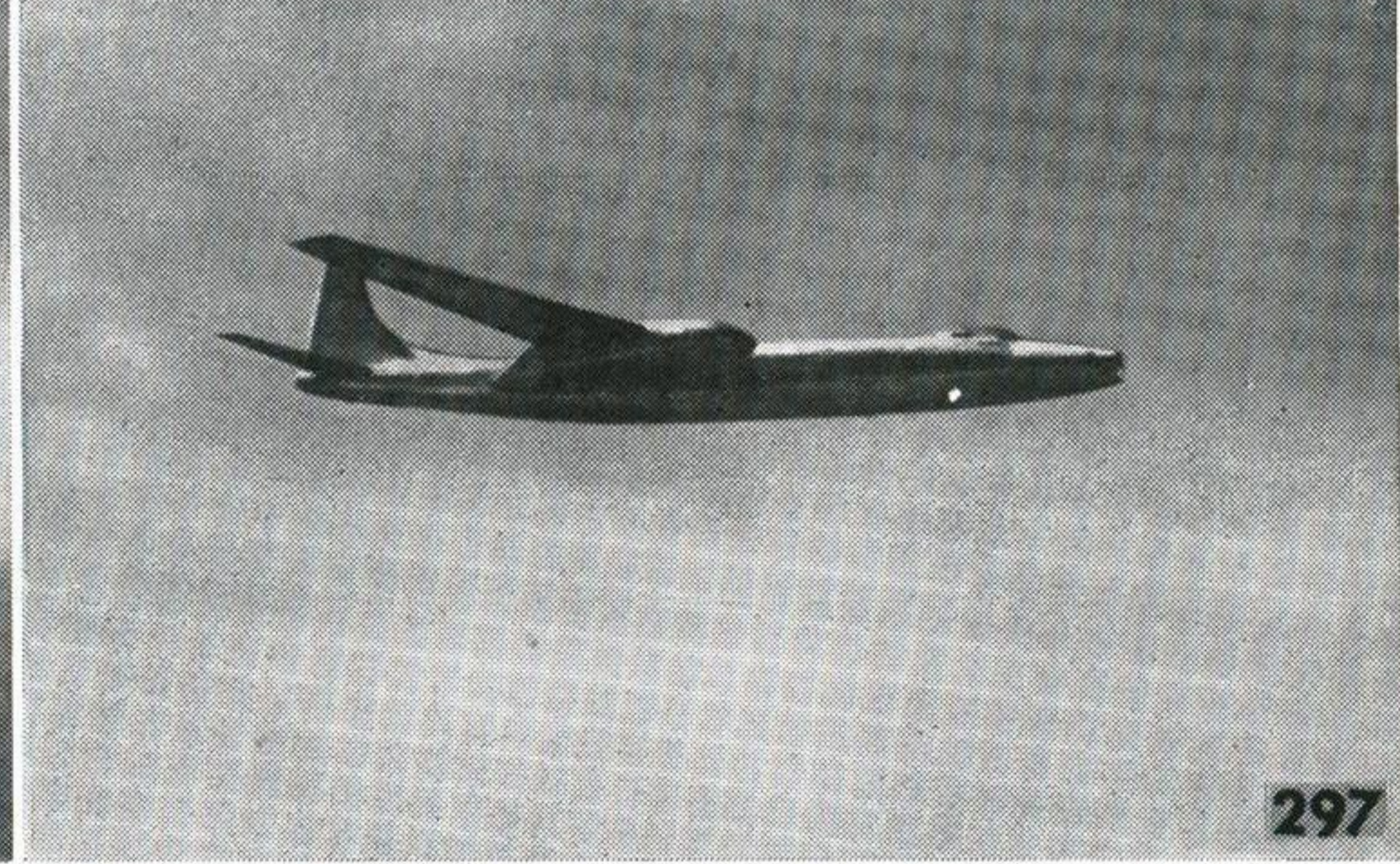
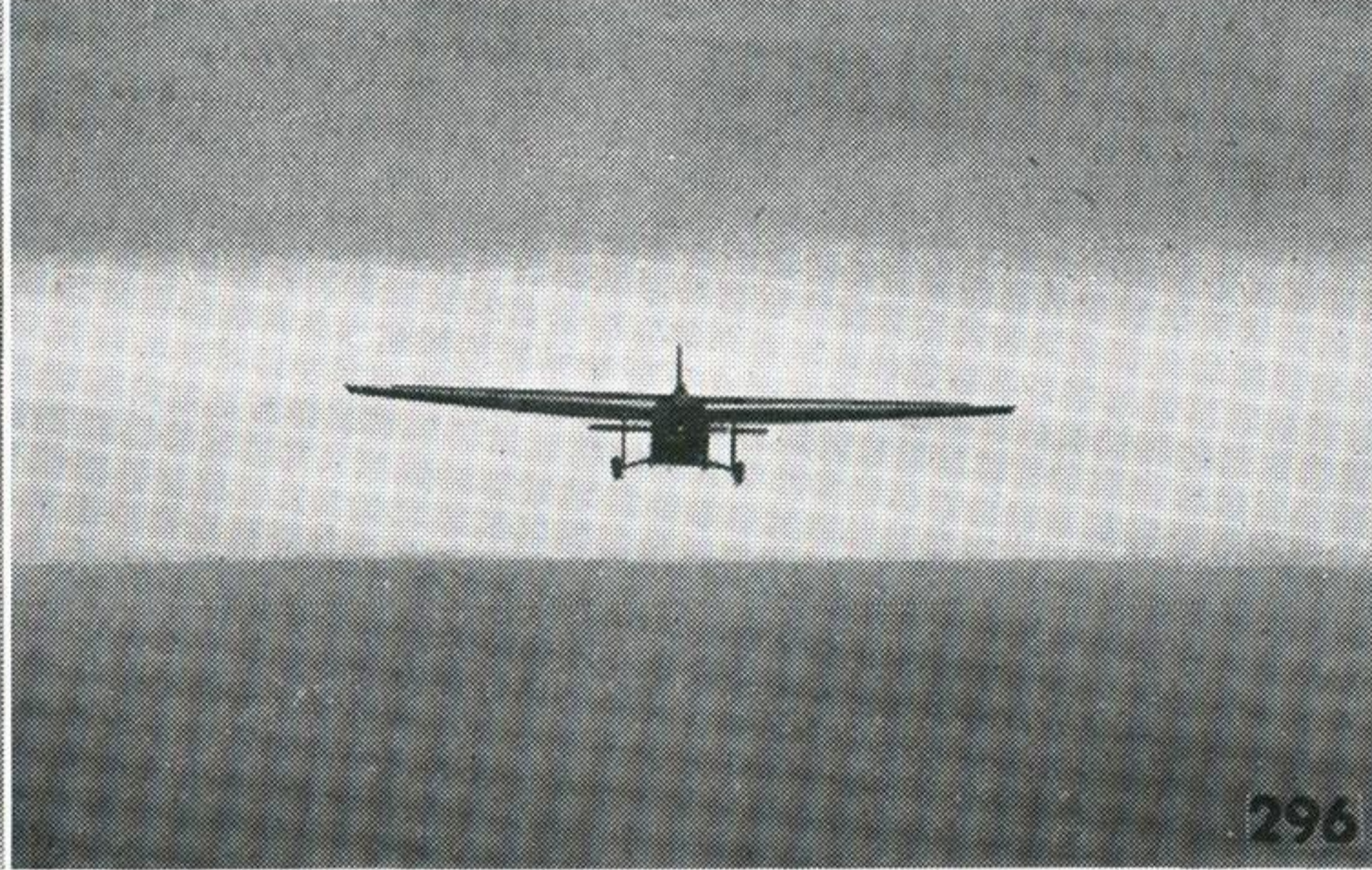
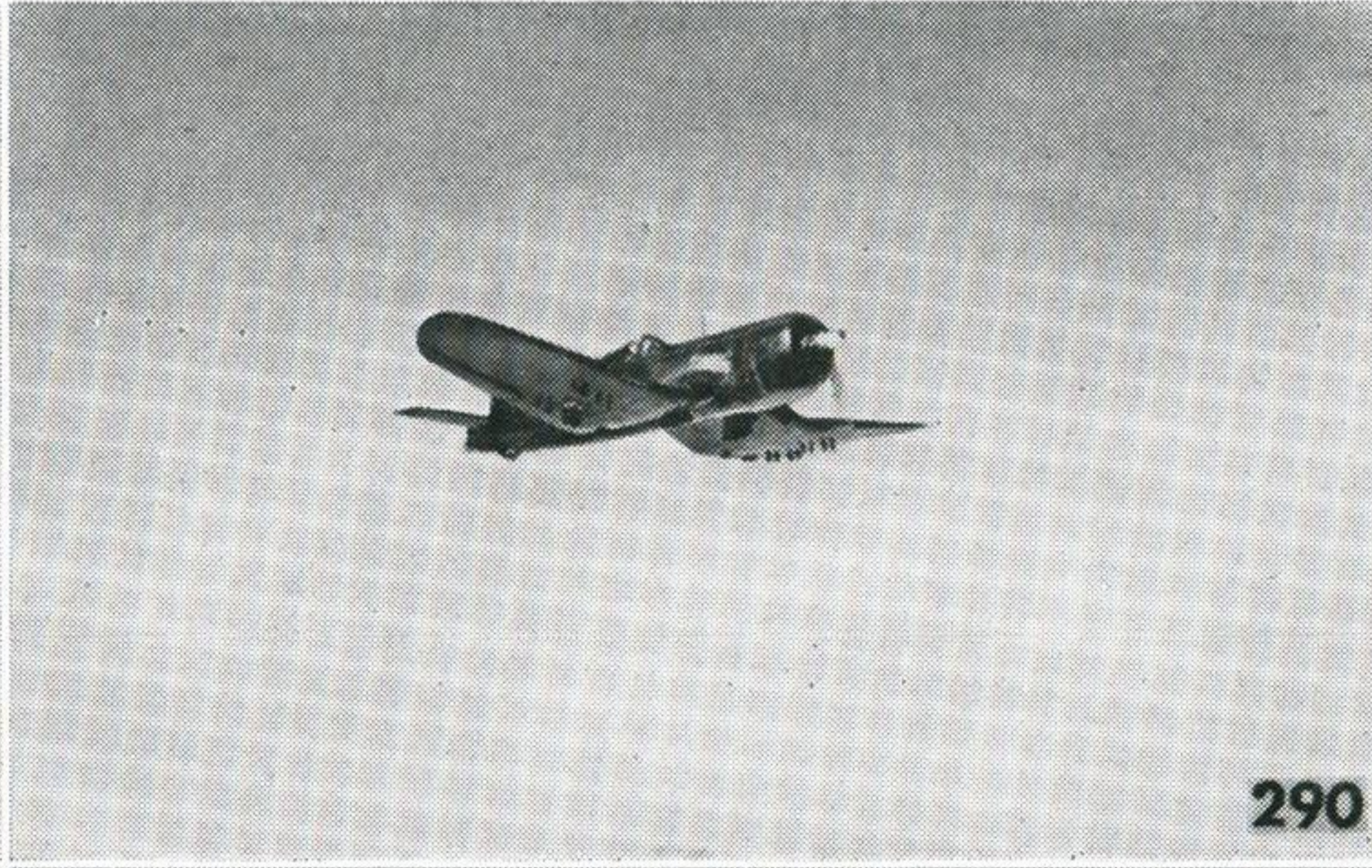
Maximum Speed 386 m.p.h. at 14,000 ft. Range 735 miles
Span 41 ft. 2 ins. Length 37 ft. 11 ins.

CHARACTERISTICS :

THE FIREFLY IV is one of the fairly numerous aircraft which have the near-elliptical wing-shape. In this case, however, it is made easily distinguishable by the large number of accessories embellishing the leading edge. From right to left these are : long-range tank, gun apertures (sealed up), landing light, wing root radiators, more gun apertures, and radome. Other main characteristics include a short nose, a bulging front cockpit, a forward-set back-swept tailplane, a large rudder clear of the tailplane, in front of which is a large "switch back" fin. Note smaller details such as deck-accelerator hooks at leading edge root, and sunken deck-hook in its belly. Fairey Fireflies IV are in service with the Royal Navy, The Royal Canadian Navy and the Royal Netherlands Navy.

ELEMENTARY SPOTTING

Recognition Test No. 52





RECOGNITION AND RADLETT—II.

LAST month we mentioned lessons in head-on recognition, so this month we have reproduced two comparable shots of two of the troublesome aircraft. These are the Hastings I and the Tudor VII (top row). By and large the Tudor VII appears the more finely cut of the two. As to detail, the Tudor's wing dihedral angle is very pronounced, possibly some is "flexed in" in flight: that of the Hastings is almost negligible, except for what is built into the wing. In the picture, it is possible to see that the Hastings wing is thicker, but one would probably miss this point in actual spotting. Motors in the Tudor seem more slenderly formed than in the Hastings. The same applies to fuselages. To sum up then, one must get an impression of greater sleekness and slenderness, and a larger wing dihedral angle, when thinking of Tudors in relation to Hastings, in head-on shots.

Other interesting four-motor types were the Avro/Bristol and the Avro/De Havilland combinations, represented respectively by the Theseus Lincoln and the Ghost Lancastrian. We were always impressed by the lines of the Lancastrian and, although we know it is not so, it does *look* as though it were made for turbojets. Its fine "speed" lines are quite in keeping with the sleekness of the Ghosts. The inner airscrews and motors always look dreadfully out of place. By contrast prop-jets seem rather fitting for the more grim and ugly Lincoln. Both aircraft, however, are simply hacks for these two new power units.

By way of digressing for a moment; the Theseus propeller-turbine is in a class of power-plant which is being developed for aircraft speeds up to about 500 m.p.h.—up to which point it is more efficient than a straight turbojet such as the Ghost. The propeller-turbine is, in principle, very much like the turbojet, in as much as it generates large quantities of hot high-pressure gas; but, instead of ejecting the gases in a jet stream and using the reaction to propel itself and the aeroplane, all the gases are fed through a turbine wheel which is connected to a propeller which does the propelling. Both types of engine are notable for their smoothness in running.

The Short Solent, above (Four Bristol Hercules radials) was first observed at a distance, flying past Radlett, apparently waiting for time. Side-on it is fairly easily recognizable from other Short boats by its sweep-down over the nose and its large fin fairing. It is the only Short boat with that particular combination of features. Head-on it is not easy: tail on one sees the slight dihedral angle in its tail-plane. It flew with just as much unconcerned dignity and grace—so characteristic of all Short flying boats—on three and then on two motors. We thought we saw a number of faces peering from its windows as it flew low.

The Cunliffe-Owen Concordia, one of Britain's new feeder line transports, is a very neat low-wing monoplane, with two underslung Alvis Leonides radials, in clean cylindrical cowlings. There is a fairish dihedral angle to the wing. In the particular model flown at Radlett, motor noise was unmistakable, which, though helpful in recognition of the prototype, will probably be less so in later models. Its fin and rudder appear to lean forward: there is a sizable cut-out in the elevators. (See photo below.)

The De Havilland Chipmunk (one D.H. Gipsy Major), designed and built by De Havillands of Canada, is now being made in considerable numbers. This shapely little two-seat trainer, bearing hallmarks of its origin, has been designed specially for training, either naval, military, or civil. De Havillands say it is the logical successor to the world-famous Tiger Moth. They could add "worthy" too. Its main characteristics for recognition are: low wing with dihedral angle from roots, a fixed undercarriage, a D.H. cut to its wings and tail assembly. (See photo below.)

Amongst the new aircraft in the private owner class was the Newbury Eon and the Portsmouth Aviation Aerocar (see bottom row). The Eon (one Blackburn Cirrus Minor in-line motor) with a fixed tricycle undercarriage. Its deep, short fuselage will carry three passengers. One of its most noticeable recognition characteristics is the "sugar loaf" fin and rudder well in advance of the tail plane. In our shot we show you its plan form.

The Aerocar (two Blackburn Cirrus Major in-line motors on the front ends of its booms) also has a tricycle undercarriage. It will carry four or five passengers, and, unlike some aircraft pictured by artists whilst under construction, this one does look very much like the adverts. said it would. Twin booms, hexagonal fins and rudders, a large body—one could hardly call it a fuselage—"hung" from the wing, have, together, produced a very easily recognizable aircraft.

Well, those were some of the main recognition points. There were among many interesting exhibits, other noteworthy aircraft, including the new Heston Air Observation Post aircraft (Spec. No. A.2/45) and the Scottish Aviation A.4/45. Rotating wing aircraft were represented by the Cierva W.9 and the Fairey Gyrodyne. Both are still in the experimental stage. Austers presented the Auster AOP Mk. VI and there were many gliders by Martin Hearn and by Slingsby. But all of these, and others, we shall discuss later on.

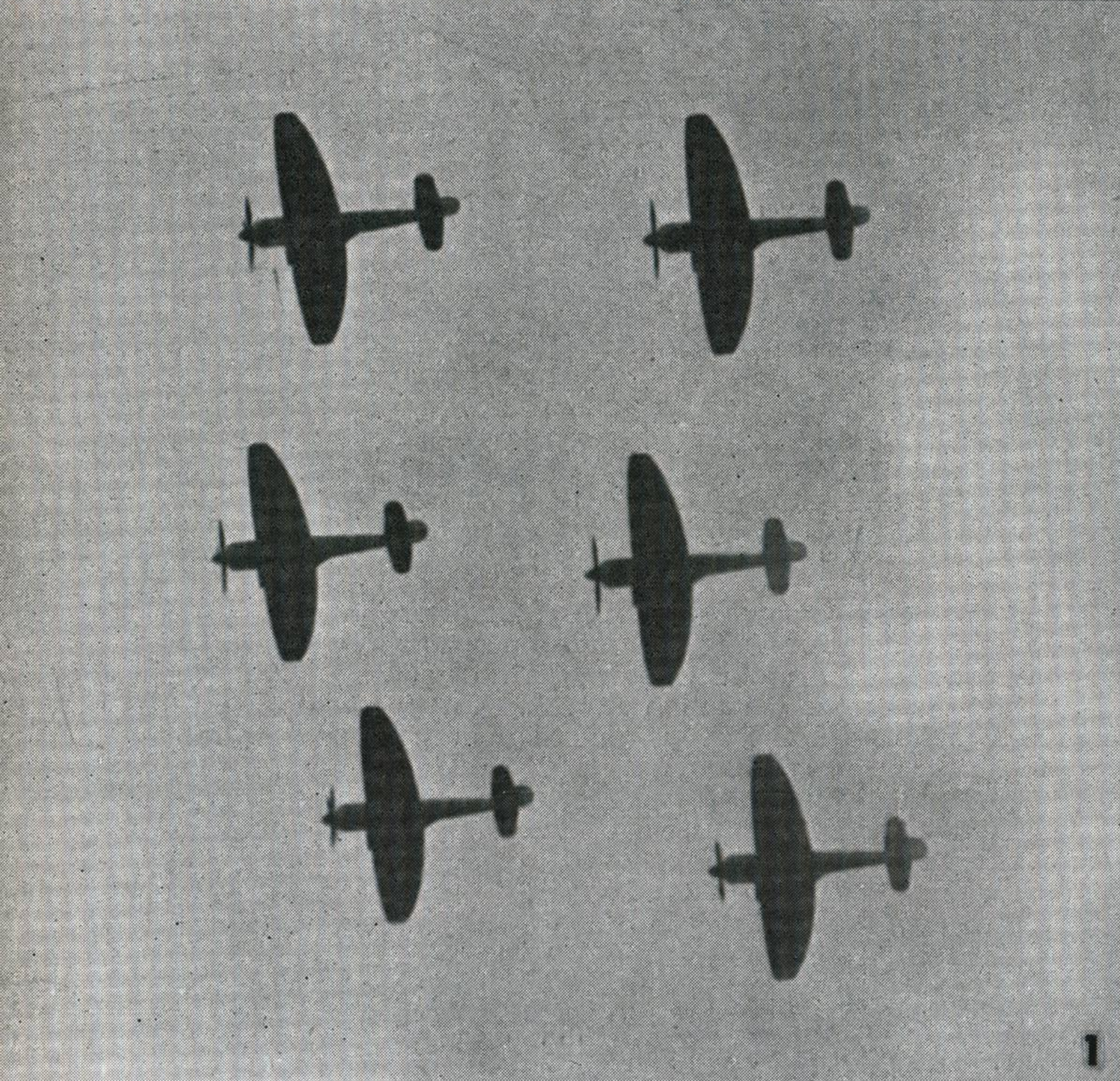
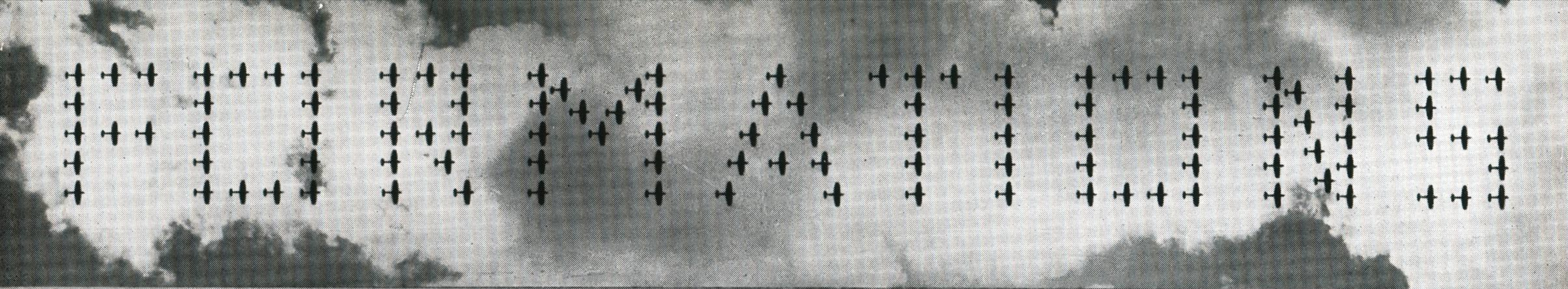


The Bristol 170 Wayfarer with extended and rounded wingtips.

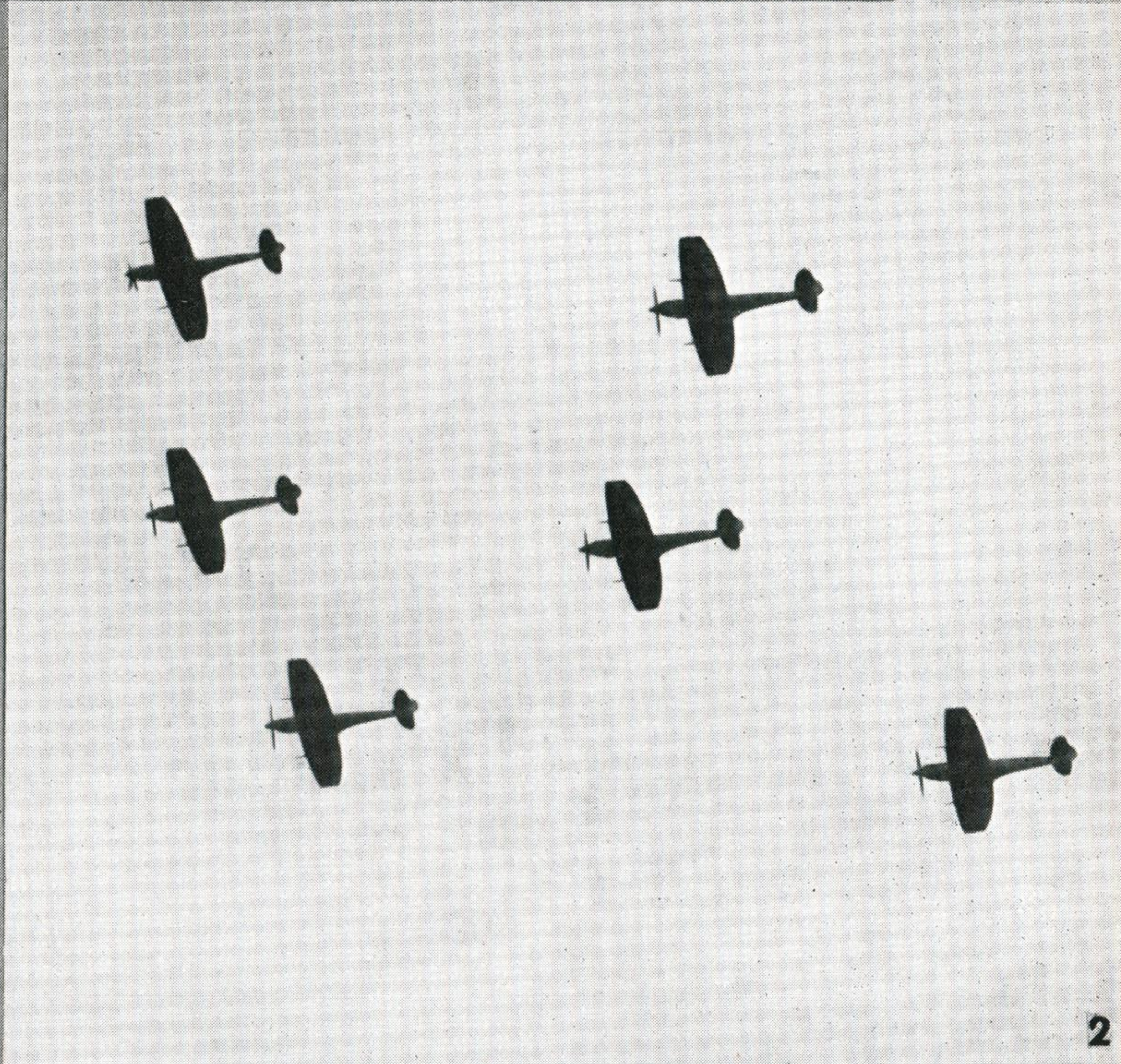
That the Exhibition was a great success from all points of view there seems little doubt. We went with the idea that we should be able to further recognition. Certainly we learned many lessons, and one in particular. We realized that as spotters, as instructors of spotters, above all as enthusiasts, we must not just passively learn our lessons about aircraft but actively further the cause of aviation—particularly of British aviation: our recognition training takes us beyond the mere looking at aircraft and of recognizing them in the narrow sense: it enables us to take the broader view and to get everyone to recognize the true value of British aircraft, the contribution they make, and can still further make, to the well-being of our country and to the British Empire: their contribution to the prosperity of mankind in general, and, above all, towards peace upon earth.

Photos—(top row): Hastings I, Tudor VII, Theseus Lincoln, Solent, Ghost Lancastrian: (bottom row): Concordia, Chipmunk, Eon, Autocar, Cierva W.9.

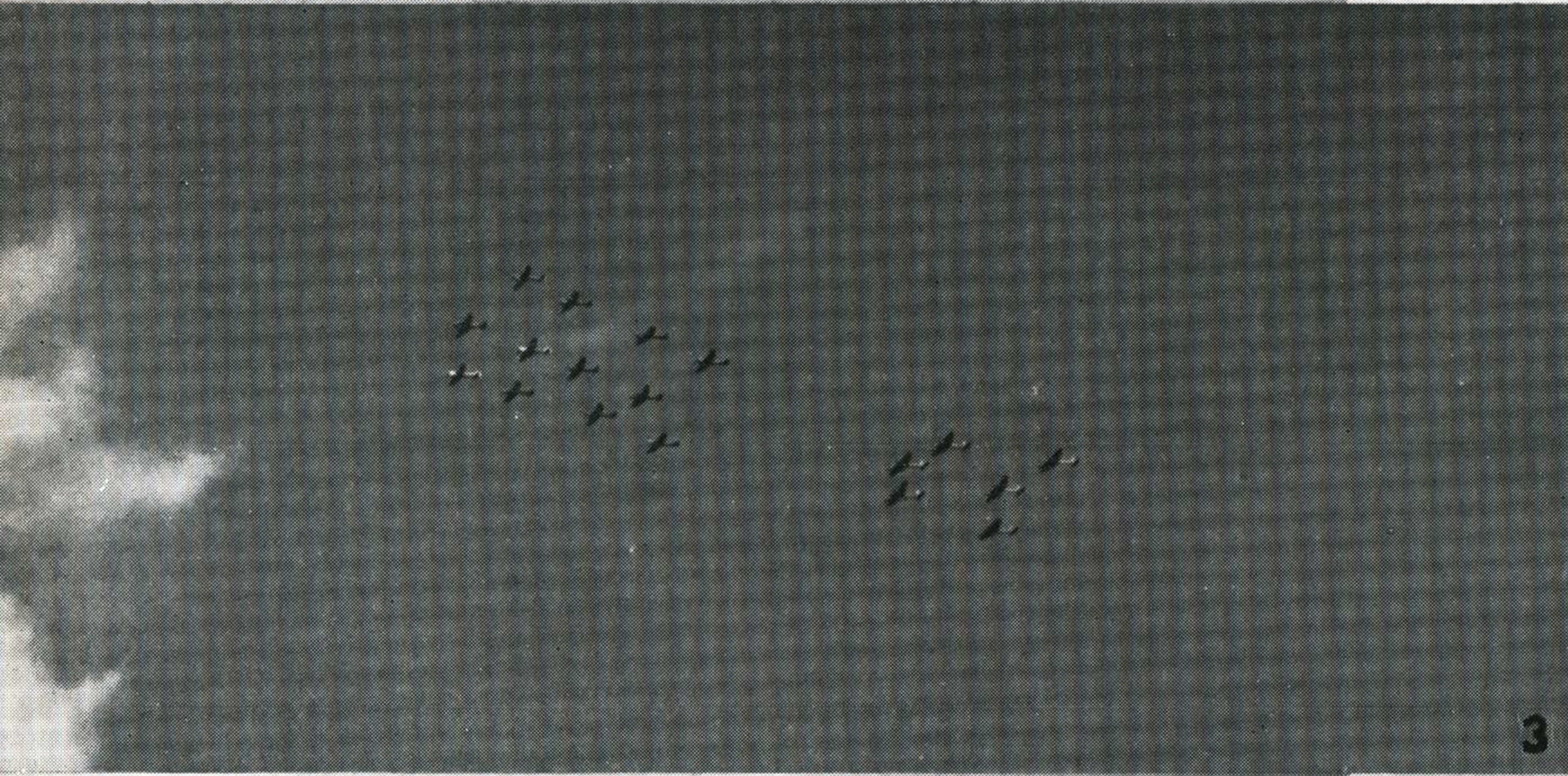




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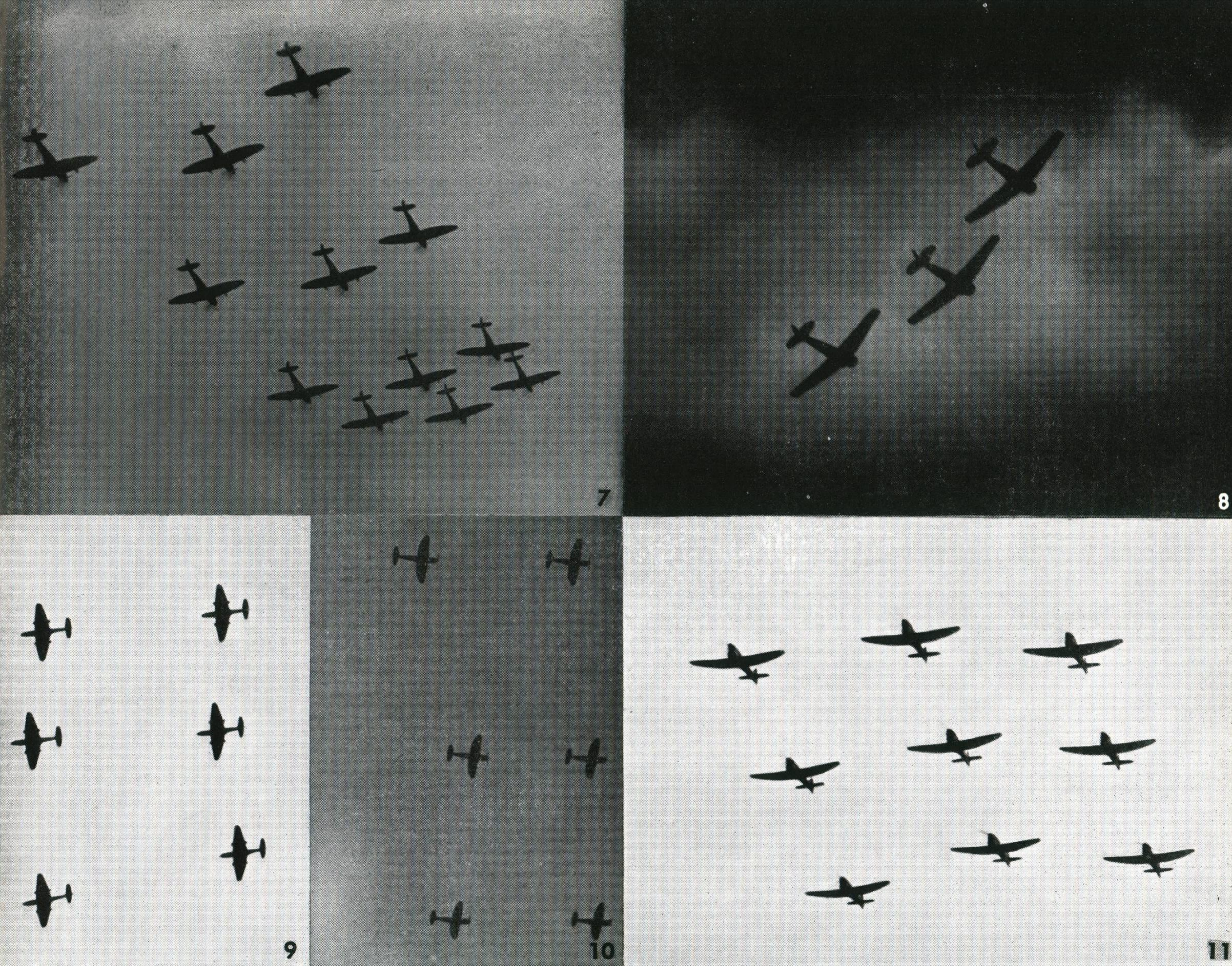
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6



FORMATION SPOTTING

If you can spot all these correctly straight off—good show! If you can't, get clued up.

Ground to air formation spotting is, generally speaking, a little easier than spotting isolated aircraft. For one thing, the mass of the formation is easier to pick-up at a distance and usually gives plenty of warning of its approach by a steadily rising deep-throated roar of motors, though not always. Closer in, individual aircraft—assuming them to be, as they usually are, all of one type to a formation—present themselves in just as many slightly different aspects as there are aircraft in the formation. This is an excellent thing, because what is not clearly seen on one aircraft, may be seen on another. This is true of quite small formations, as you can see in most of the examples shown here.

The largest individual feature of any of the aircraft illustrated is the wing shape, but, since they nearly all have elliptical or near-elliptical wings it will be necessary to consider not only differences in the elliptical shapes but other details as well.

Here are a few clues :—

Formation 1. An elliptical wing with small blunt tips, fillets at roots—an intake at the starboard wing leading edge root—a blunt nose—a radial engine—an equi-tapered tailplane well in advance of the rudder.

Formation 2. Another elliptical wing plan more clipped than the previous ones—wing root fillets—single wing guns—a short, pointed nose possibly a rear view fuselage (that is, no step-down in the fuselage over the cockpit) though this is not certain—an elliptical tailplane (reverse of wing)—an extremely fine tapered fuselage.

Formation 3. There are two formations here : both will have to be recognized largely from complete impressions, though careful observation will disclose one or two features. The front formation seems to have clumsy elliptical wings and from the lighter coloured aircraft it would appear that they have large fin fairings. The rear formations seem to have the wings right up front, and two motors and the nose of the fuselage appear more or less in a close group. They, too, have large fin fairings and a fairly low set tailplane.

Formation 4. Three very long narrow noses, three very severely squared-off forward tapered wings and three wide span tailplanes which might also be squared-off.

Formation 5. A shortish nose—an elliptical wing—small blunt tips—perhaps wing-tanks (beware!), no root intakes—equi-tapered tailplane on advance of rudder (look at the last on the right!).

Formation 6. Elliptical wings with dihedral—quite a lot. Longish blunt noses—long fuselages—tailplanes apparently sweeping back—not very large.

Formation 7. Short noses, some with contra-props—elliptical wing, very small blunt tips, root fillets at trailing edge—two guns on each wing—elliptical tailplane, reversed form to wing. The extreme left machine shows signs of a step-down over the cockpit.

Formation 8. A long nose—a near-elliptical wing made-up of straight edges, small curved tips—projections, perhaps nacelles, at ends of centre sections—tailplane well back, slight straight sweep back to leading edges, curved trailing edge.

Formation 9. Long blunt nose, elliptical wing with straight tapered leading edges—apparently deep thick-set fuselage, back swept tailplane something like a “wing-nut”.

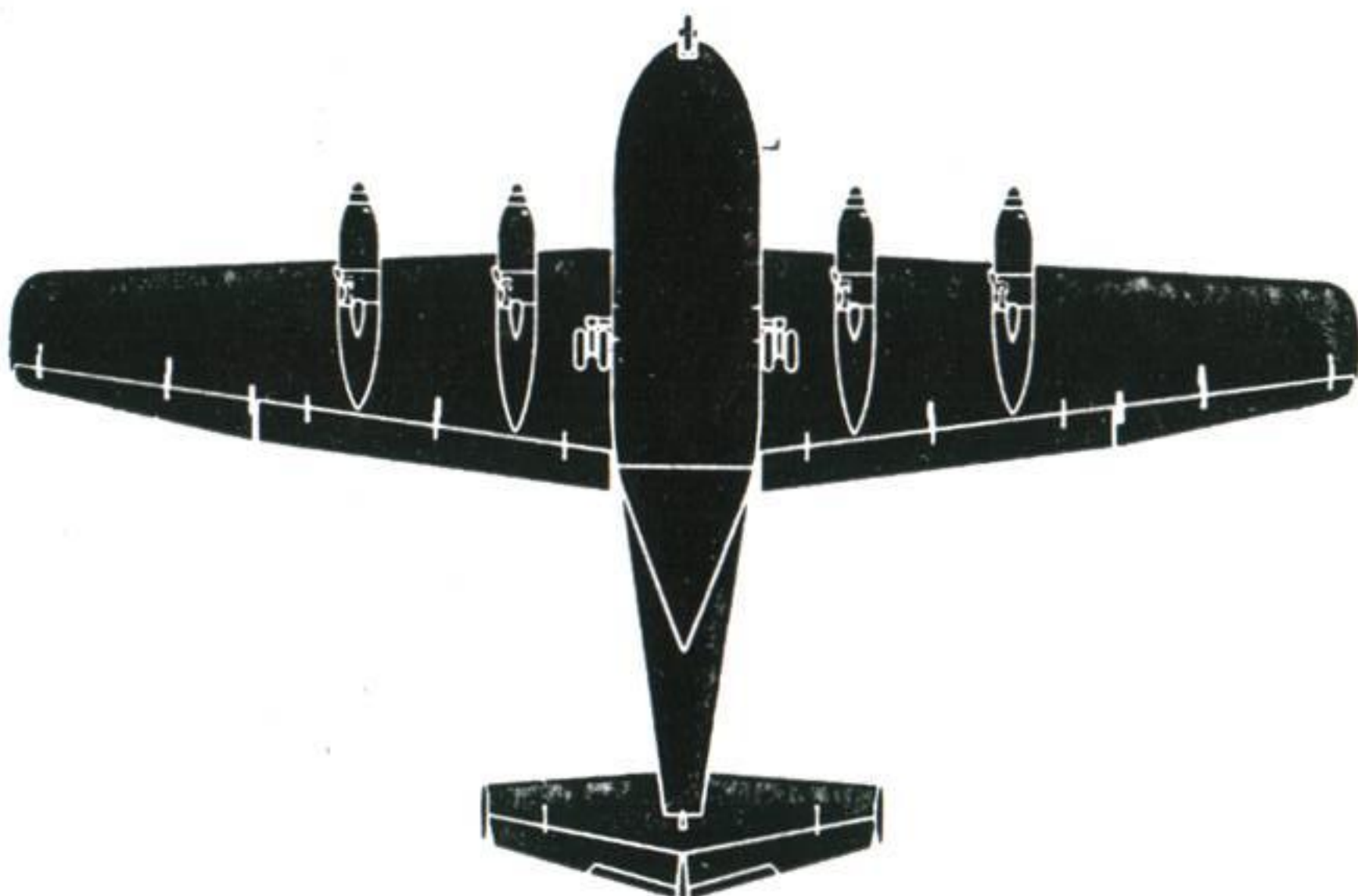
Formation 10. Short blunt noses, short fattish fuselages—wide span wing, apparently a straight trailing edge, some dihedral, blunt wing tips—back swept “wing-nut” tailplane.

Formation 11. A high spinner and a deep radiator beneath it—apparently a fairly short nose—elliptical wing with straight centre-section and dihedral in the outer panels—a high and forward-set straight tapered tailplane—isn't that a big fin fairing too? Yes it is.

The answers are :—1—Tempest II, 2—Spitfire XVI (Spitfire will do), 3—Tempests V or VI (Tempest will do) and Hornets, 4—P-51 Mustangs, 5—Tempest V, 6—P-47 Thunderbolts, 7—Spitfires Mk. 21. This type of elliptical wing is fitted only to Spitfires Mk. 21 and above. The Mk. 22 has the rear-view hood and so has the Mk. 24. The Mk. 23 was abandoned, 8—Harvards, 9—Meteors Mk. III, 10—P-47 Thunderbolts, 11—Tempests V or VI.

For those who are interested, the aircraft in the heading **FORMATION** are “clipped Spits”. It was quite a job forming them up and getting them against the right clouds—it took over three hours. In the end we cut a stencil.

MILES MERCHANTMAN



British Civil Transport

4 Gypsy Queen Motors. Span: 66 ft. 6 ins.

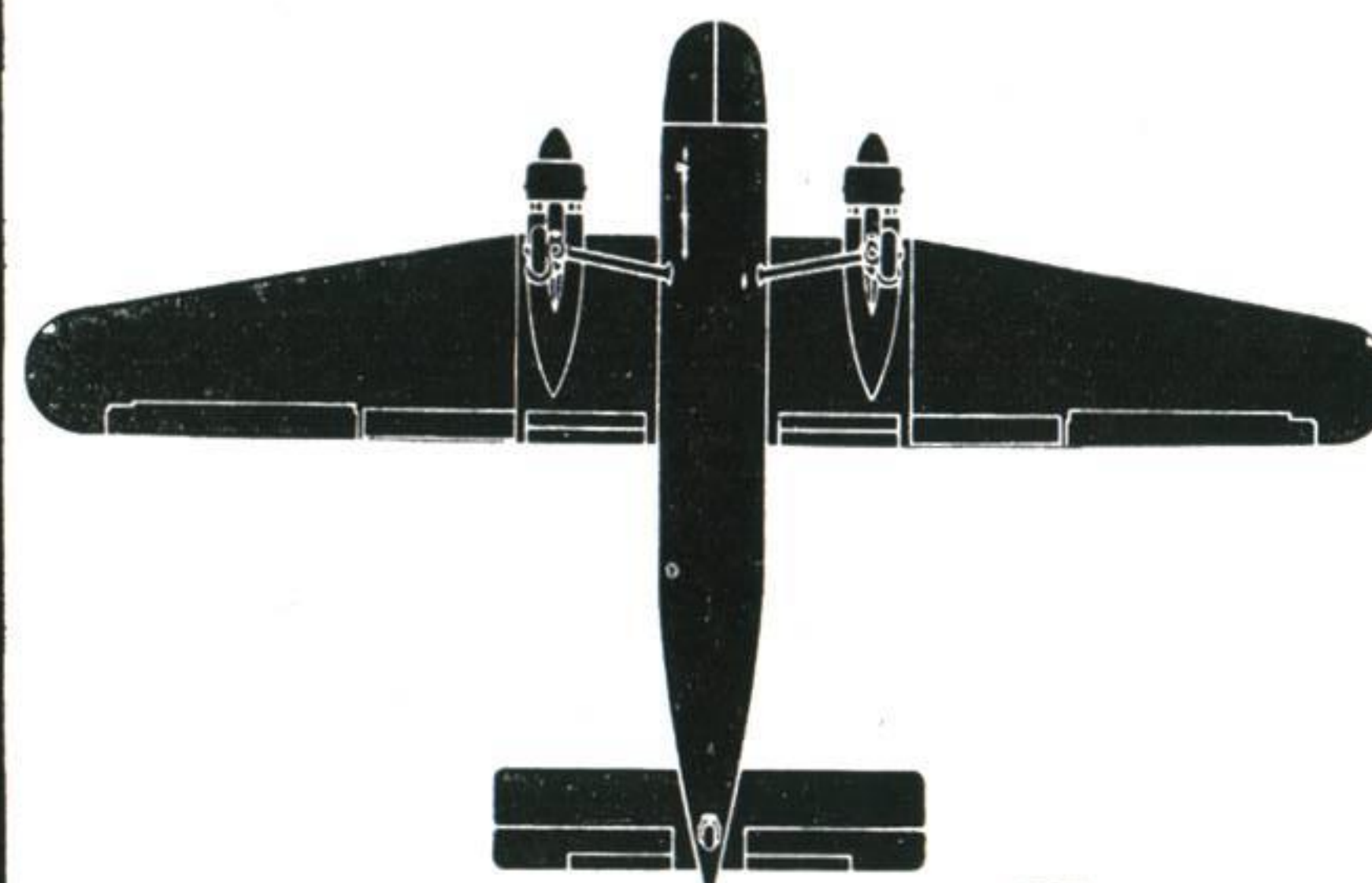


MERCHANTMAN MAKE-UP: High, wide span, angular, wing and four underslung motors: box-like body: broad tail-boom: forward swept angular tailplane: three fins and rudders: extensive dorsal fairing to centre fin. Max. Speed 157 m.p.h.

FREIGHTER FEATURES: High wing: straight centre-section, swept back outer sections: two underslung radials: fixed undercarriage, bluff nose, cockpit on top: high angular fin and rudder. Generally, big and bulky. Max. Speed 221 m.p.h.



BRISTOL FREIGHTER XIE



British Civil Transport

Two Hercules Radials Span: 108 ft.

SOLUTIONS TO RECOGNITION TESTS IN THIS ISSUE:

FRONT COVER: *Airspeed Ambassador*

No. 51 (ADVANCED)

- 380. Wyvern
- 381. MIG Jet Fighter
- 382. Mosquitoes
- 383. Pirate F6U-1
- 384. Marathon
- 385. Fortress II
- 386. Chipmunk
- 387. Skymaster
- 388. Tudor IV
- 389. IL-10
- 390. PE-2
- 391. Dakota
- 392. Tudor IV
- 393. Martin 202
- 394. XB-46
- 395. Dakotas
- 396. Merchantman

- 397. Chipmunk
- 398. Sandringham
- 399. YAK-8
- 400. SHCHE-2
- 401. XB-48
- 402. Tigercat F7F-3N, and (beyond) Bearcat
- 403. Sikorsky S-51
- 404. Bonanza
- 405. P4M-1 Mercator
- 406. Valetta
- 406. Lockheed 12
- 408. E10/44
- 409. XF2R-1
- 410. Tempest V or VI
- 411. Tempest V or VI
- 412. Concordia
- 413. SR A/1
- 414. XB-46
- 415. Lancasters
- 416. Shetland I
- 417. Hermes V (model)
- 418. Bristol Freighter XI
- 419. Liberator C-87
- 420. Sturgeon
- 421. Banshee
- 422. Spitfires
- 423. XBTM-1 Mauler
- 424. DH 108

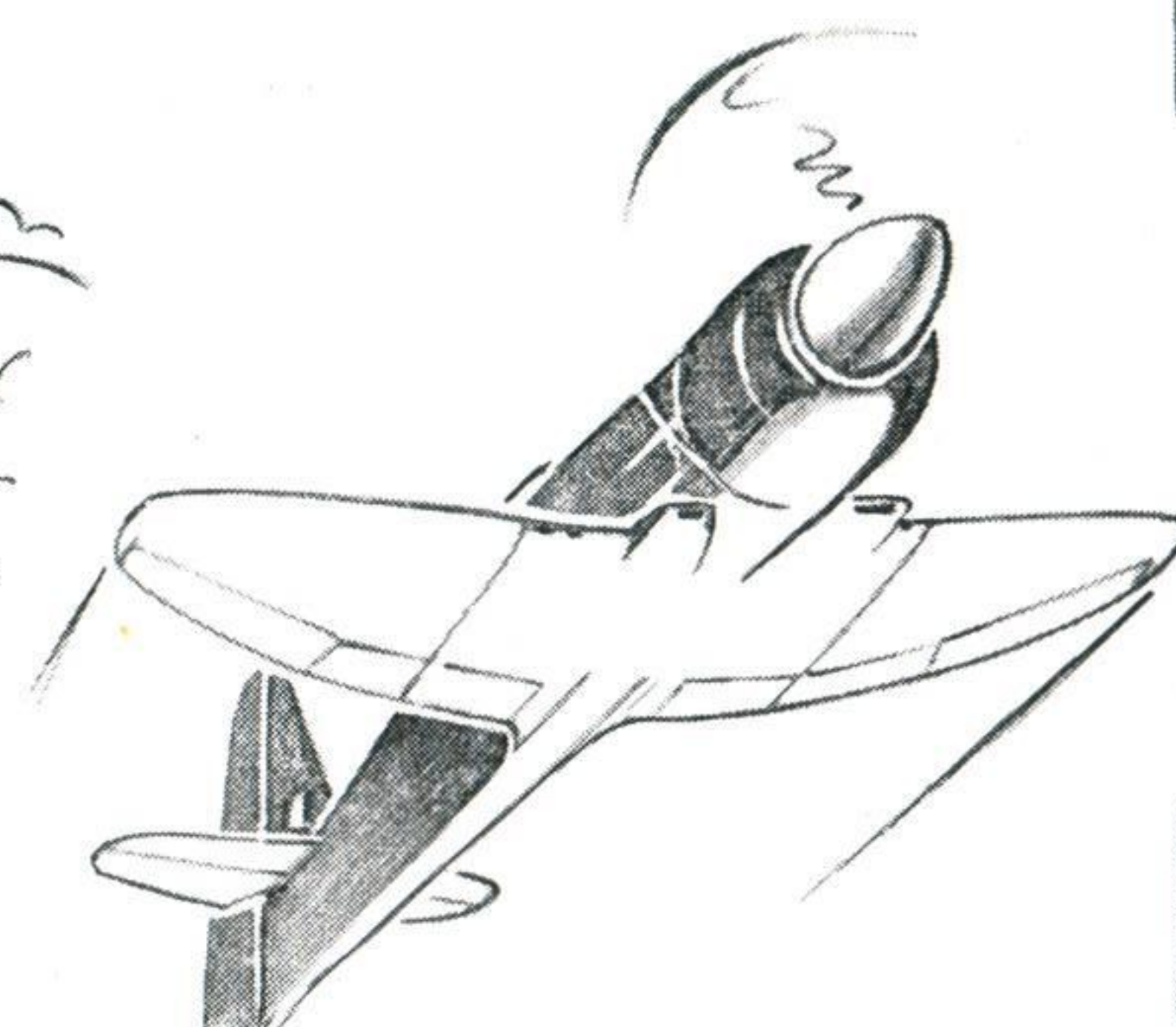
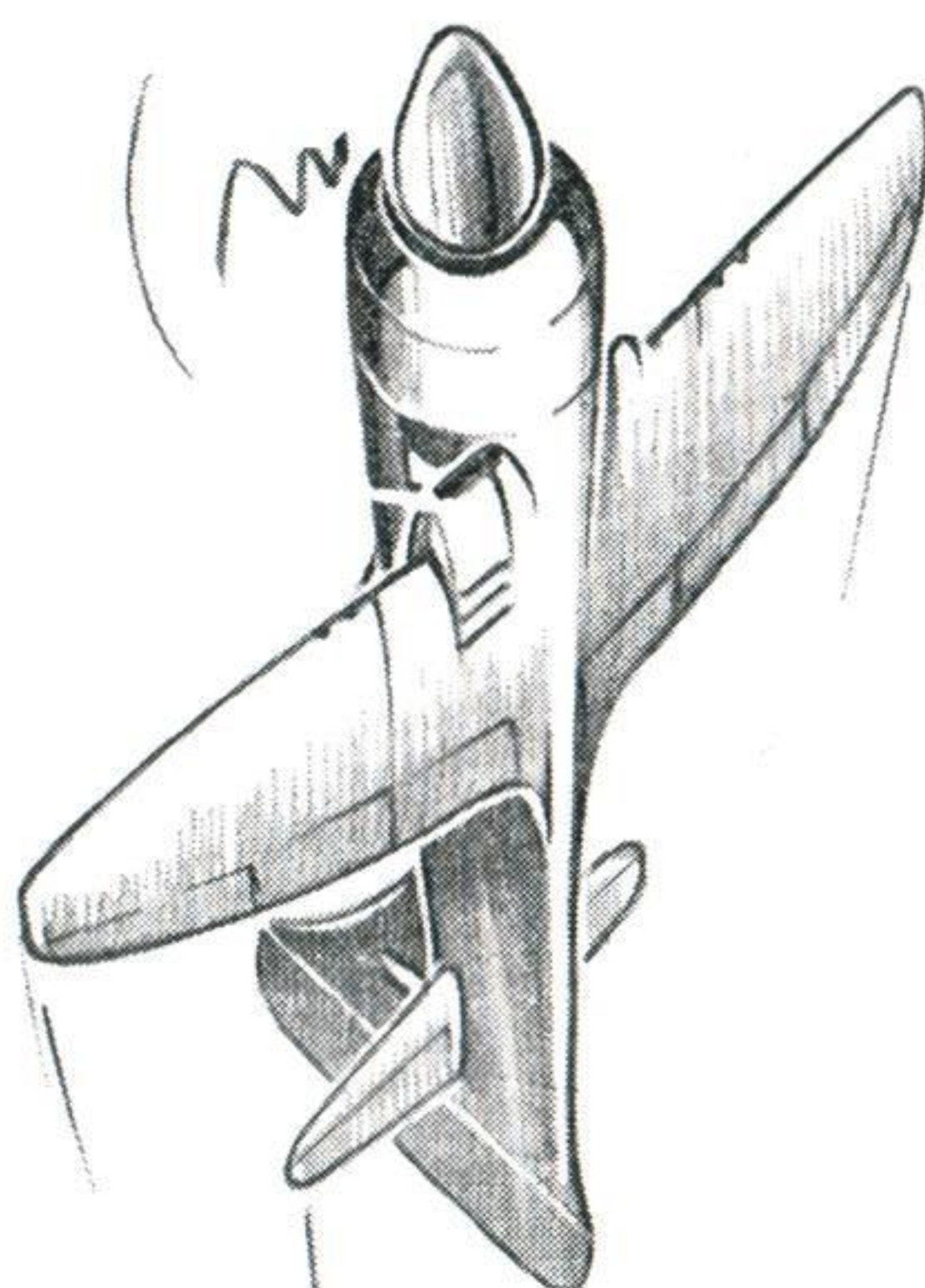
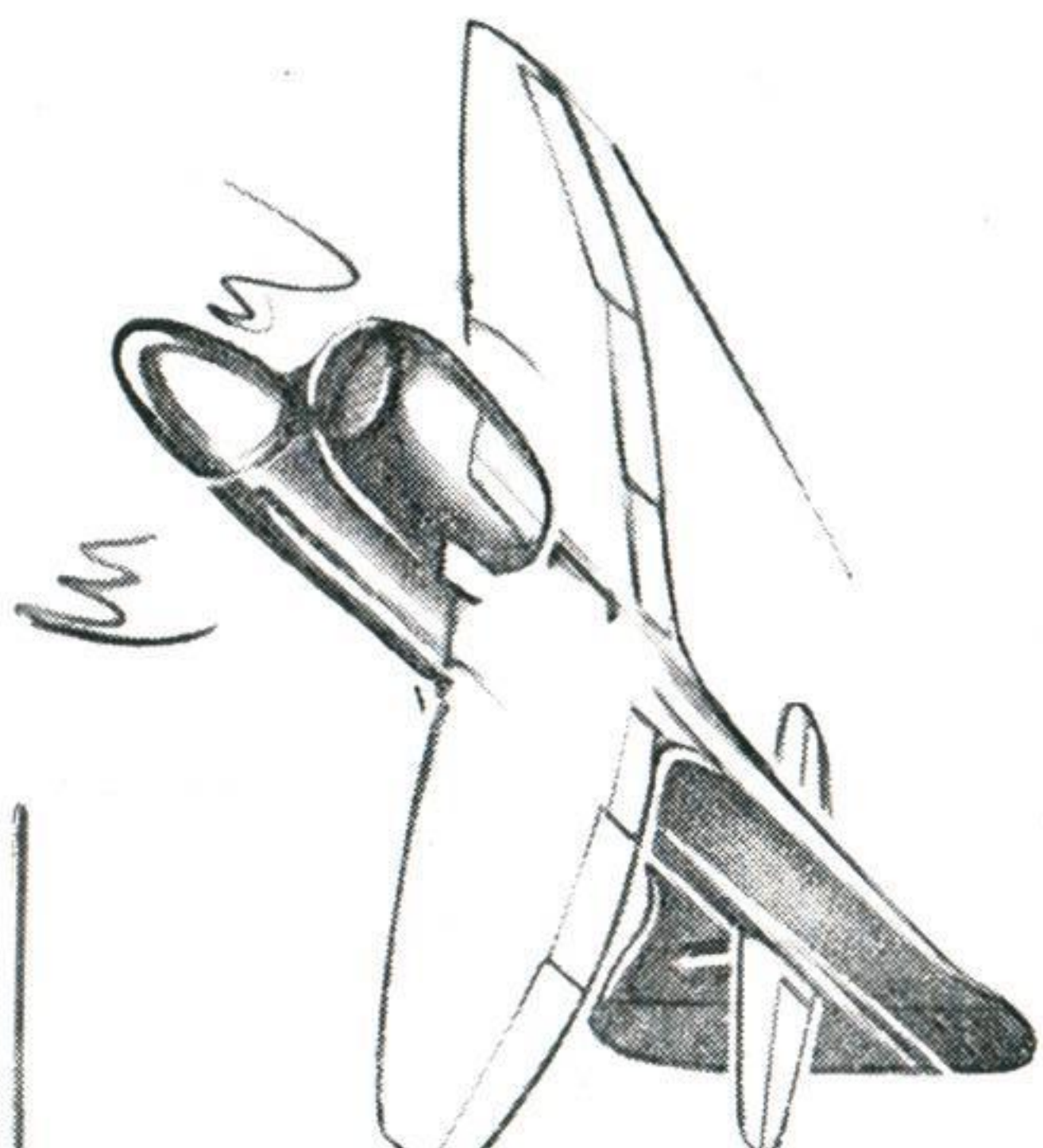
No. 52 (ELEMENTARY)

- 289. XB-48
- 290. Corsair F4U-4
- 291. Globe Swift
- 292. Meteor IV
- 293. Banshee
- 294. Mosquito XVI
- 295. Prentice
- 296. Hamilcar
- 297. XB.46
- 293. Halifax A IX
- 299. Concordia
- 300. Hoverfly II
- 301. Attacker E10/44
- 302. Sturgeon
- 303. Convaire 240
- 304. Yak 9
- 305. Bearcat

What's the Difference?—1: (top to bottom) (1) Lanc., (2) Linc., (3) Linc., (4) Lanc., (5) Linc., (6) Lanc., (7) Linc., (8) Lanc., (9) Lincs., (10) Linc. (11) Linc., (12) Lanc.

What's the Difference?—2: (top to bottom) (1) Sea Fury, (2) Temp., (3) Sea Fury, (4) Temp., (5) Sea Fury, (6) Temp., (7) Sea Fury, (8) Temp., (9) Sea Fury, (10) Temp., (11) Sea Fury, (12) Temp.

AS WE SEE THEM: The Hawker Tempests VI and II, and the Sea Fury X are a troublesome trio and could cause us quite a lot of worry if we didn't make sure of the differences between them. The larger features are (left to right): Tempest VI: in-line engine with large radiator beneath, small symmetrical wing root intakes either side of radiator, large fin-fairing. The Tempest II has a radial engine and asymmetrical wing root intakes either side of engine—largest on the starboard side. It also has a large fin-fairing. The Sea Fury X has a radial engine and asymmetrical intakes, the largest being on the port side. Its fin and rudder is taller and narrower—"sugar-loaf" shape roughly. The tailplane has a small vee cut-out. The fuselage is slightly humped with the rear-view hood situated on the top of the hump. Both the Tempest II and VI have deep "straight-through" fuselages. (See page 53 for photos of Tempest VI and Sea Fury X.)



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