

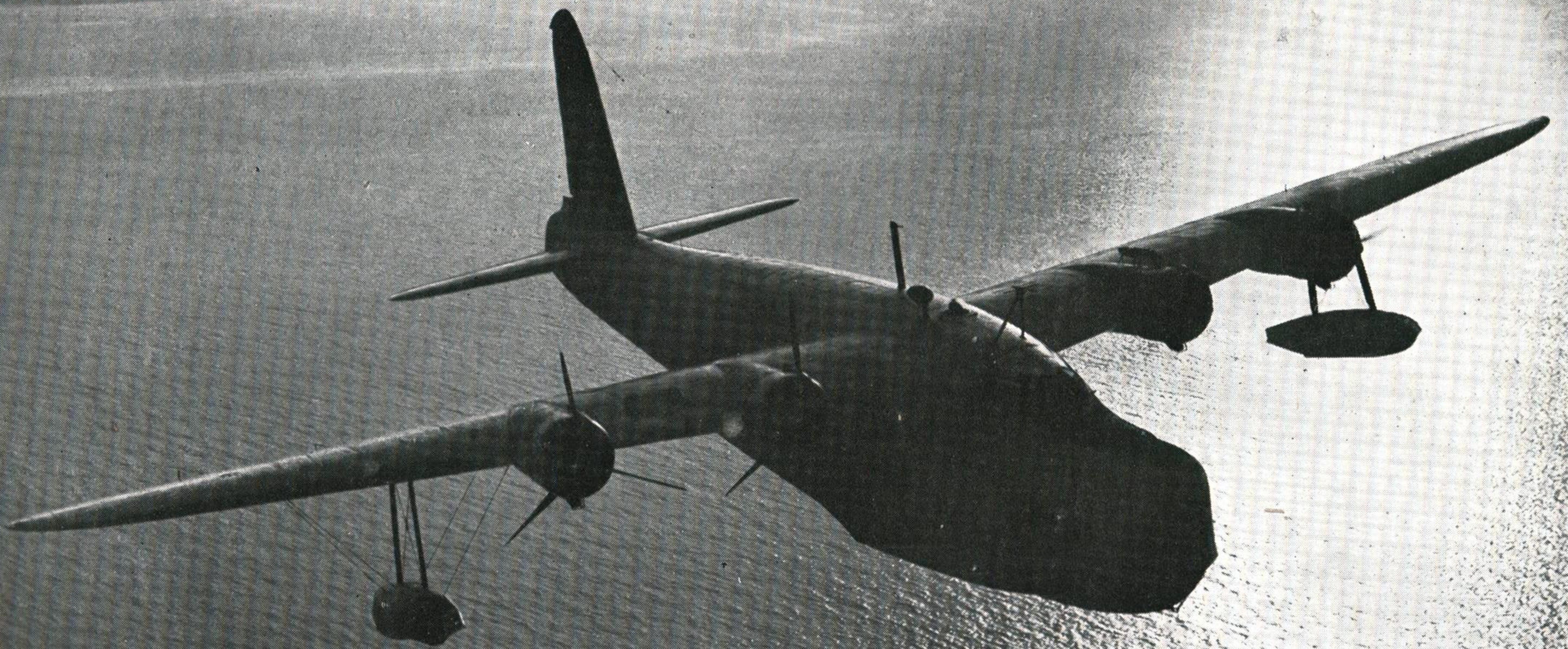
THE INTER



SERVICES

# AIRCRAFT RECOGNITION

*Journal*



New Series

JULY-AUGUST 1947

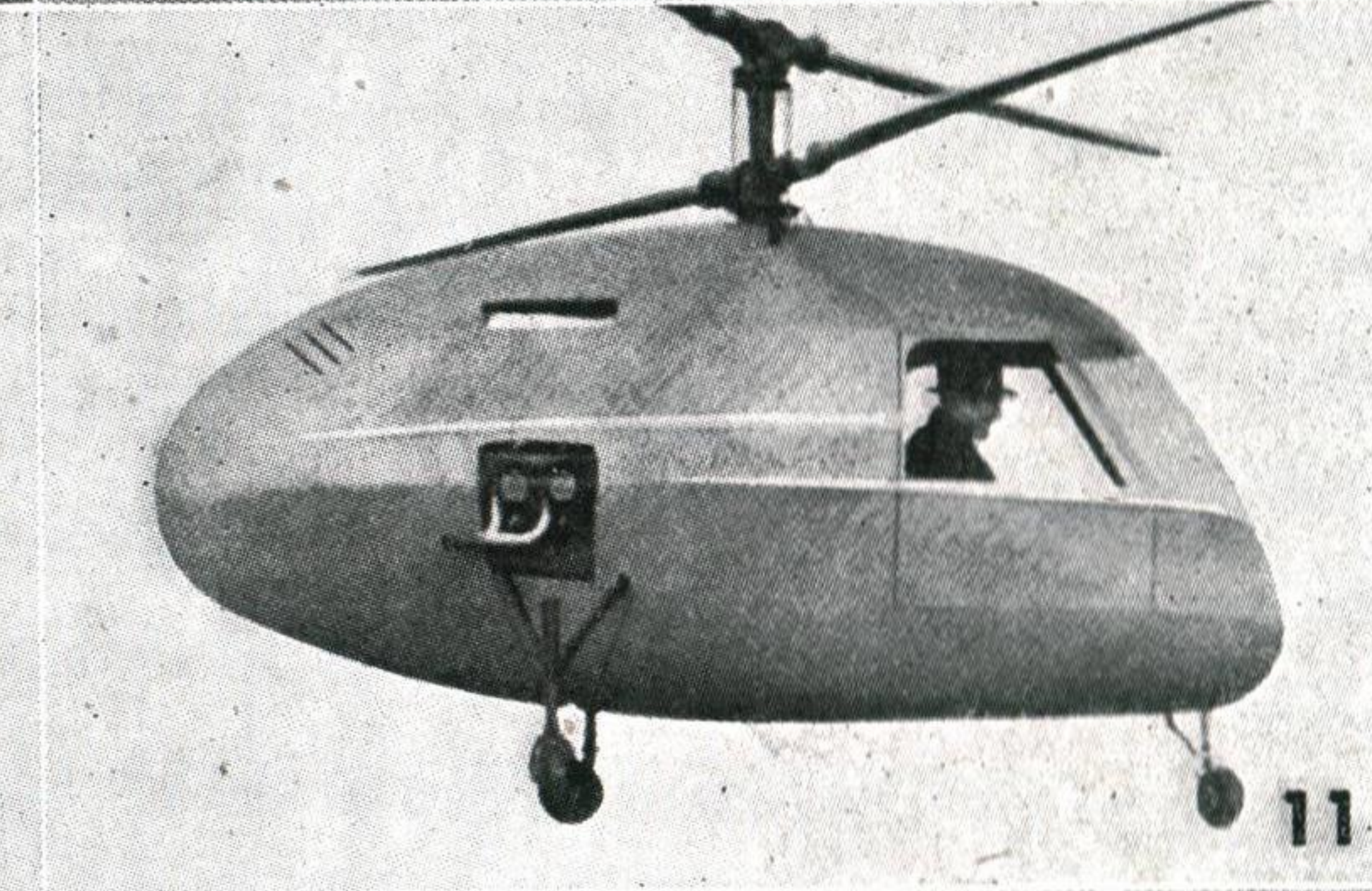
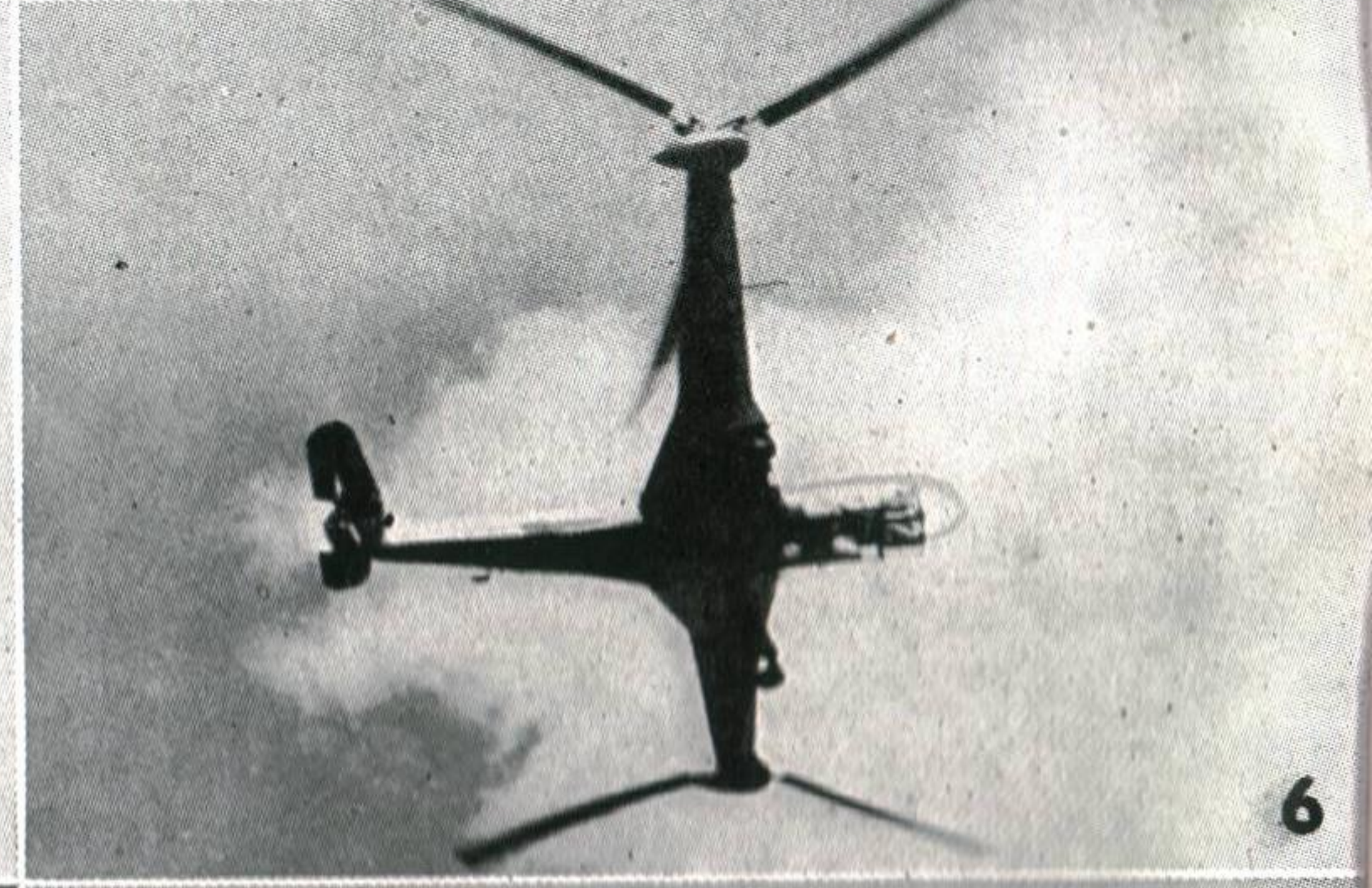
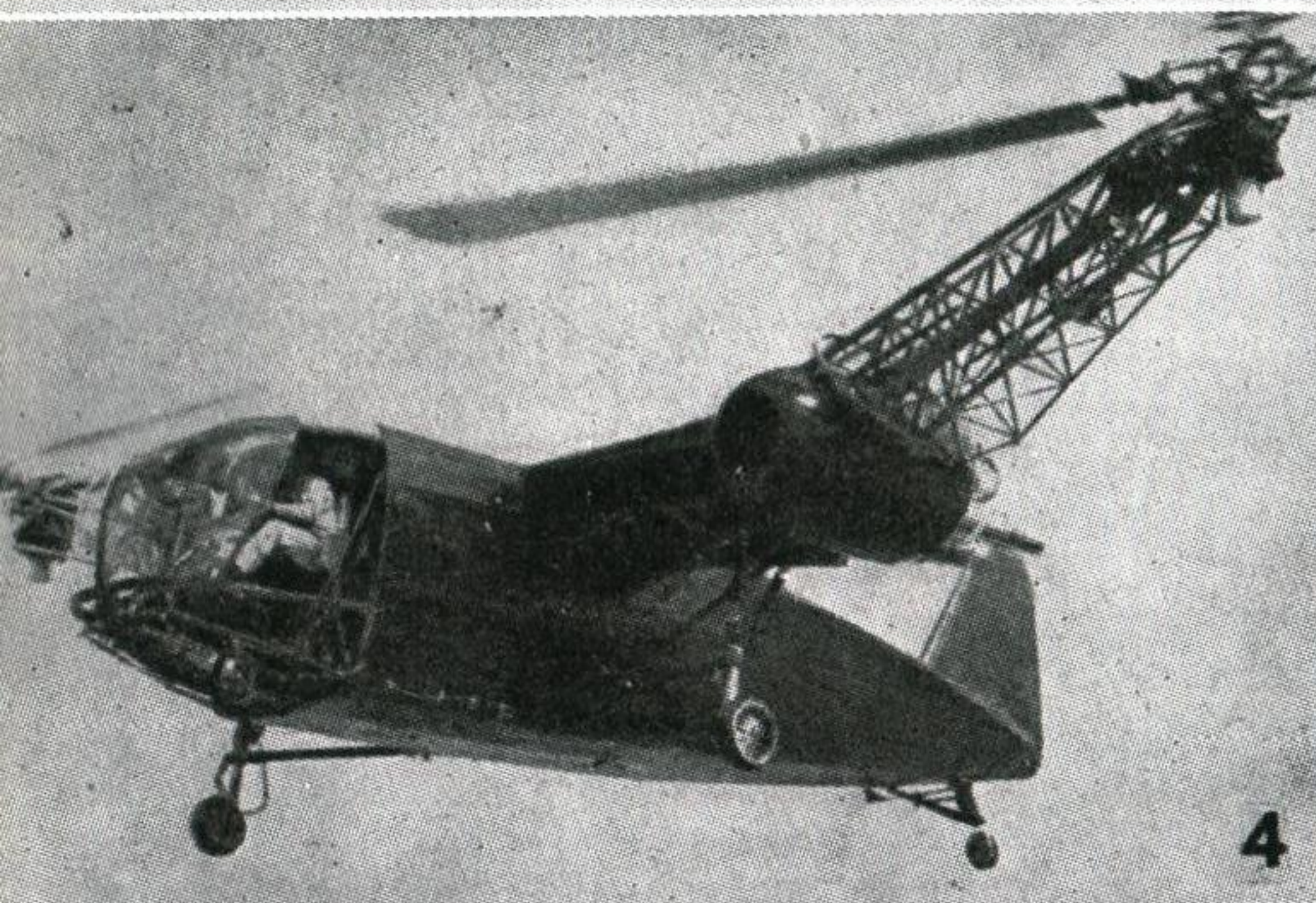
Volume 2. No. 1

*How's your Helispotter Copting?*

*How's your Spelicopter Hopping?*

*Well — can you spot these?*

When first we saw this selection of helicopters we were well and truly shaken. It was not so much their outlandish outlines, nor the fact that there were so many of them; it was, simply, that we could recognize just four of them with certainty. We hope we are alone in our ignorance, which, by the way, is no longer blissful, though we fear helicopter spotting (got it!) is, to some extent, neglected. This test removed our illusions; we hope it does the same for you. If you need them, the answers are on the back page.





THE INTER

SERVICES

# AIRCRAFT RECOGNITION JOURNAL

(NEW SERIES)

## Recognizing helicopters

**T**ODAY there are nearly one hundred different designs of rotating wing aircraft in all stages of development, from the drawing board to mass-production, cluttering up the workshops of the world's aviation industries and not a few backyards. As befits the largest industry, America can claim 70 per cent of them. We have seven or eight of them, and so has France. We know also of two Russian types.

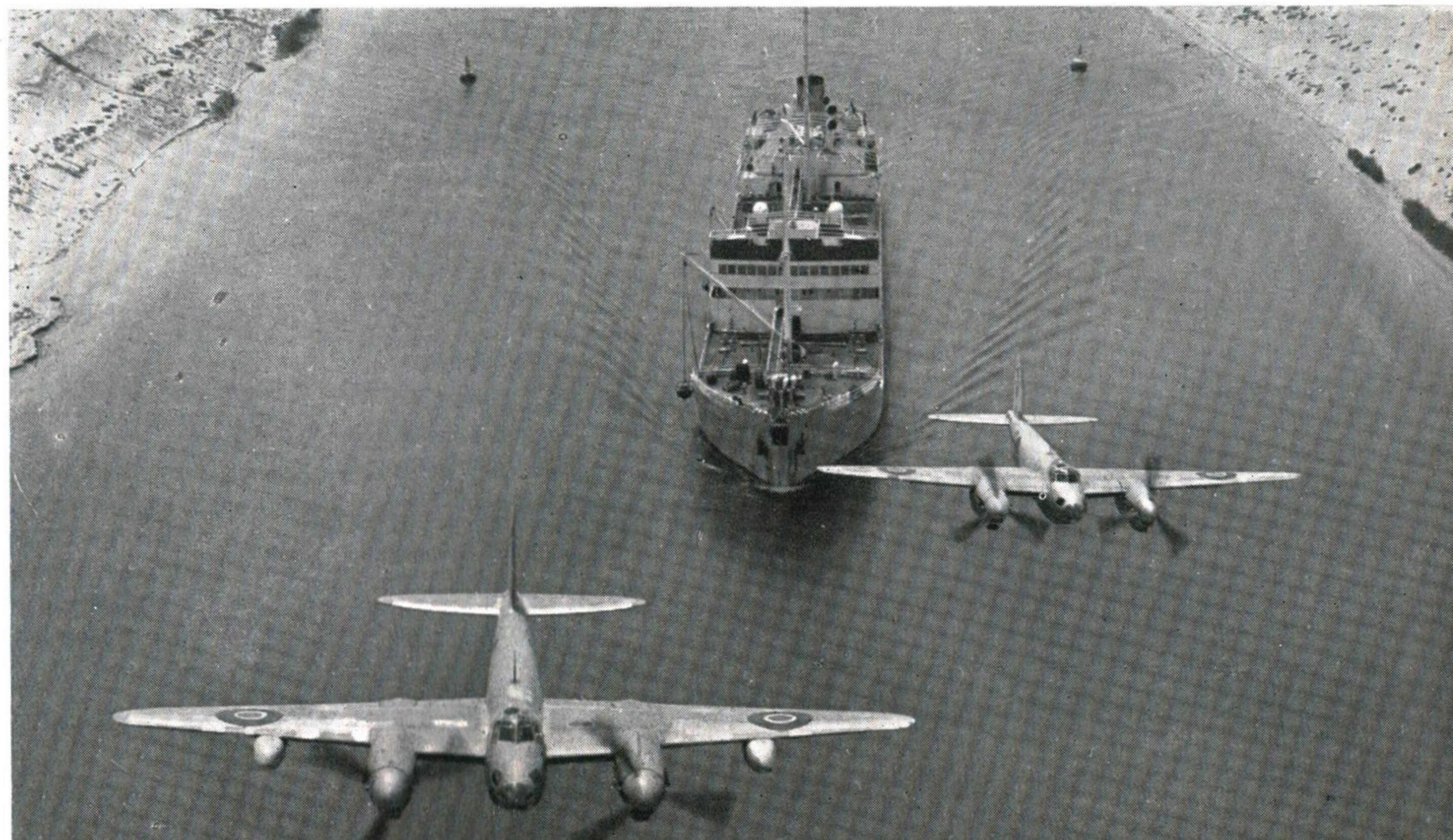
In our selection, opposite, Great Britain is represented by the Weir W.9 only. There are no pictures of other British types available at present. This does not imply that helicopter development in this country is being neglected. Bristols are about to test fly the Hafner-Bristol 171, and Faireys have the FB-1 (gyrodyne) project. There is the Weir W.11 Airhorse, and there are other designs. In addition Westland Aircraft are shortly to mass-produce the Sikorsky S-51 in this country. The Sikorsky R-4 Hoverfly is in *service* with the Royal Air Force, as is the R-6, Hoverfly II.

Structurally, the helicopter, if we are to judge it by some we see today, is emerging from the shapeless stage. Designs range from the small single-seater to the multi-seater and freighter. Some of the world's air forces are experimenting with helicopters though their military possibilities are not yet clear. Airline operators are beginning to judge them suitable for feeder-line and suburban airlines. Their rescue work is well known. Helicopters are up and coming.

The time seems ripe, then, to take them more seriously recognitionally. Helispott . . . helicopter spotting is a bit difficult to say as well as to do. *Hellispotting* might overcome the first difficulty; it is certain that a little study will solve the second.

We shall feature helicopters fairly regularly hereafter.

**Canal Pilotage.** *These two Mosquitoes P.R. Mk. 34 of No. 13 Squadron can almost claim to be passing through, rather than over, the Suez Canal. The sluggish tanker, doing every one of four knots, must envy their swift and easy passage of this famous waterway, which could be at something approaching one hundred times its own speed. The foreshortened view of these aircraft has, to some extent, neutralized the characteristic forward tapers of their wings. Those of the leader appear equally tapered and they are practically reversed in number two. The swollen belly, characteristic of the Mk. 34 carrying some of its cameras, is just discernible in number two. (Crown Copyright Photo).*



## COMING SOON

### Great Britain

A Meteor V, featuring underslung engine nacelles and lowered tailplane, thinner aerofoil section and swept back wing (this report is unconfirmed).

A development of the Mk. 23 Mosquito to be known as the Mosquito T.R.Mk.37.

A Mosquito Mk. 39 for target towing.

Attackers. Two more prototypes are under construction with deck-arrester hooks and RATOG among other things.

A twin engine jet commercial transport by A. V. Roe (Canada).

### Italy

Macchi M.B.312 twin engine trainer, Isotta Fraschini "Delta" R.C.40 air cooled vee type in-line motors.

Piaggio P.127c long range transport low/midwing monoplane.

### U.S.

First production P-80Bs thin wing models.

The Boeing XB-47 (Six J-35 turbo-jets). Four engines in pairs in nacelles, one at each wing tip. It has swept-back wings.

North American XP-86. Test flights about September. A new version of the Fairchild C-82 Packet with redesigned nose, tailbooms and more powerful motors.

The Bell XS-2 supersonic research rocket powered single-seater similar to XS-1 but having swept wings.

A new absolute speed record by P-80—says Lockheed.

A new absolute speed record by a P-84—says Republic.

The Northrop XP-89.

The Lockheed XP-90.

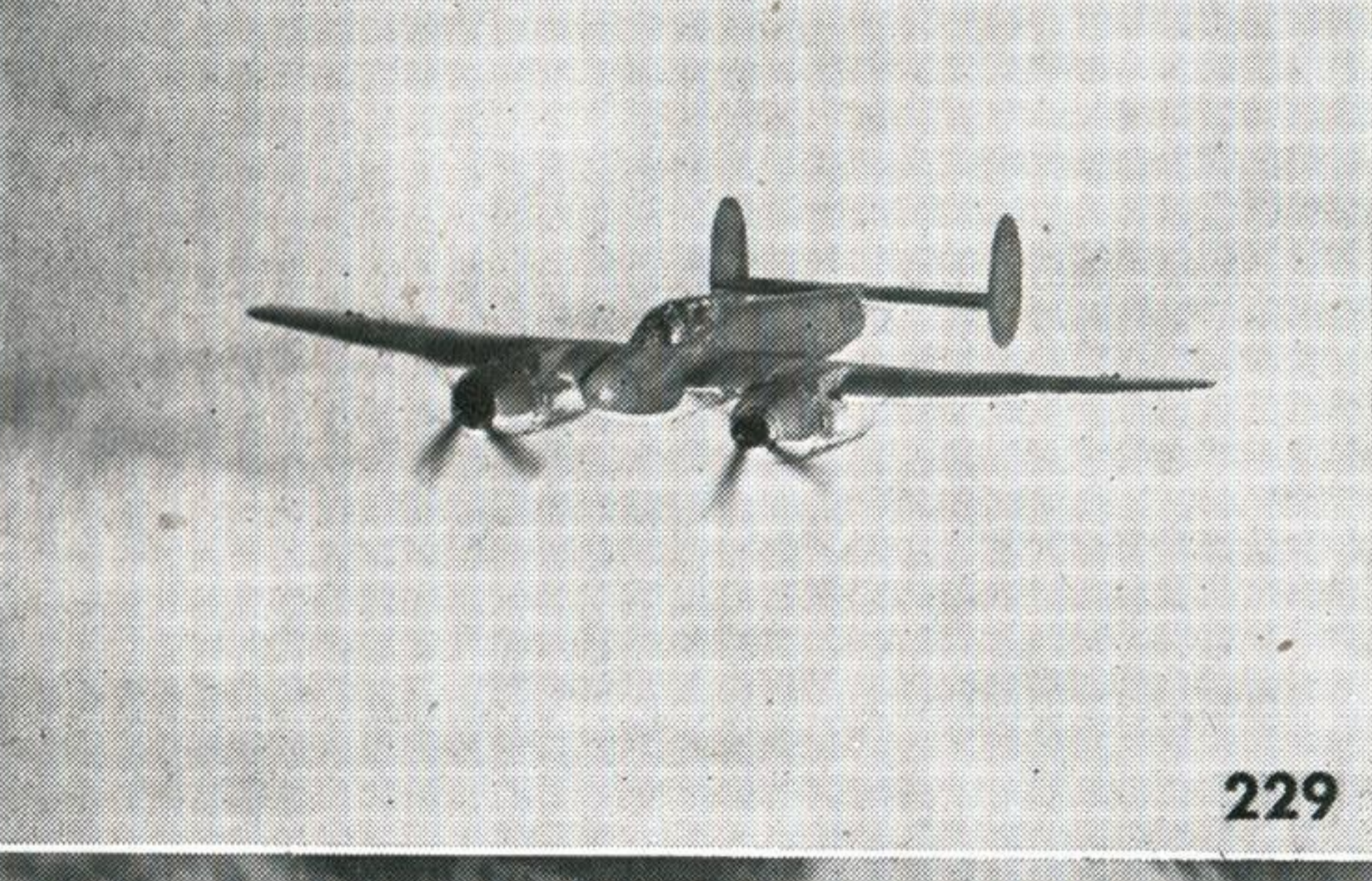
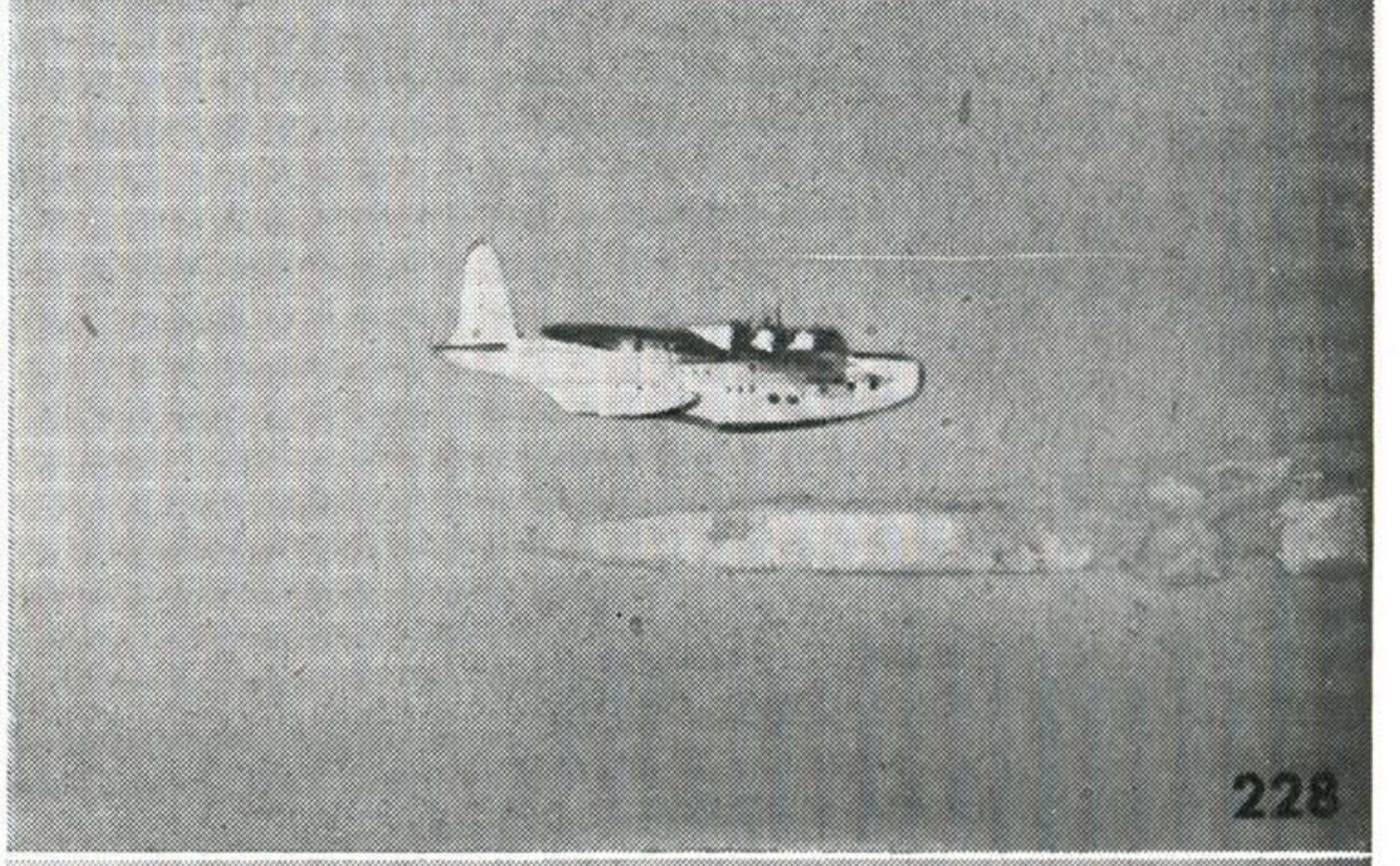
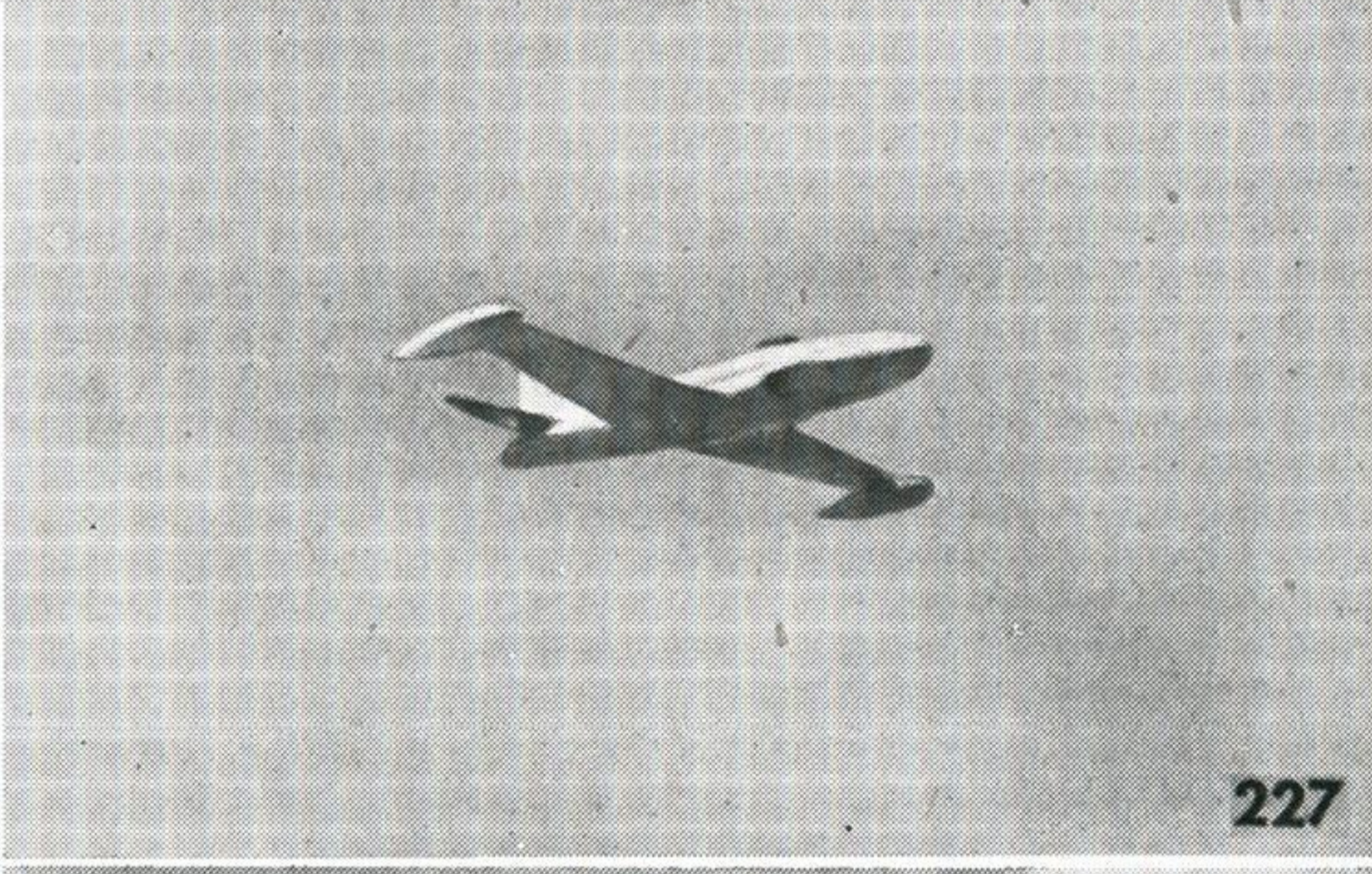
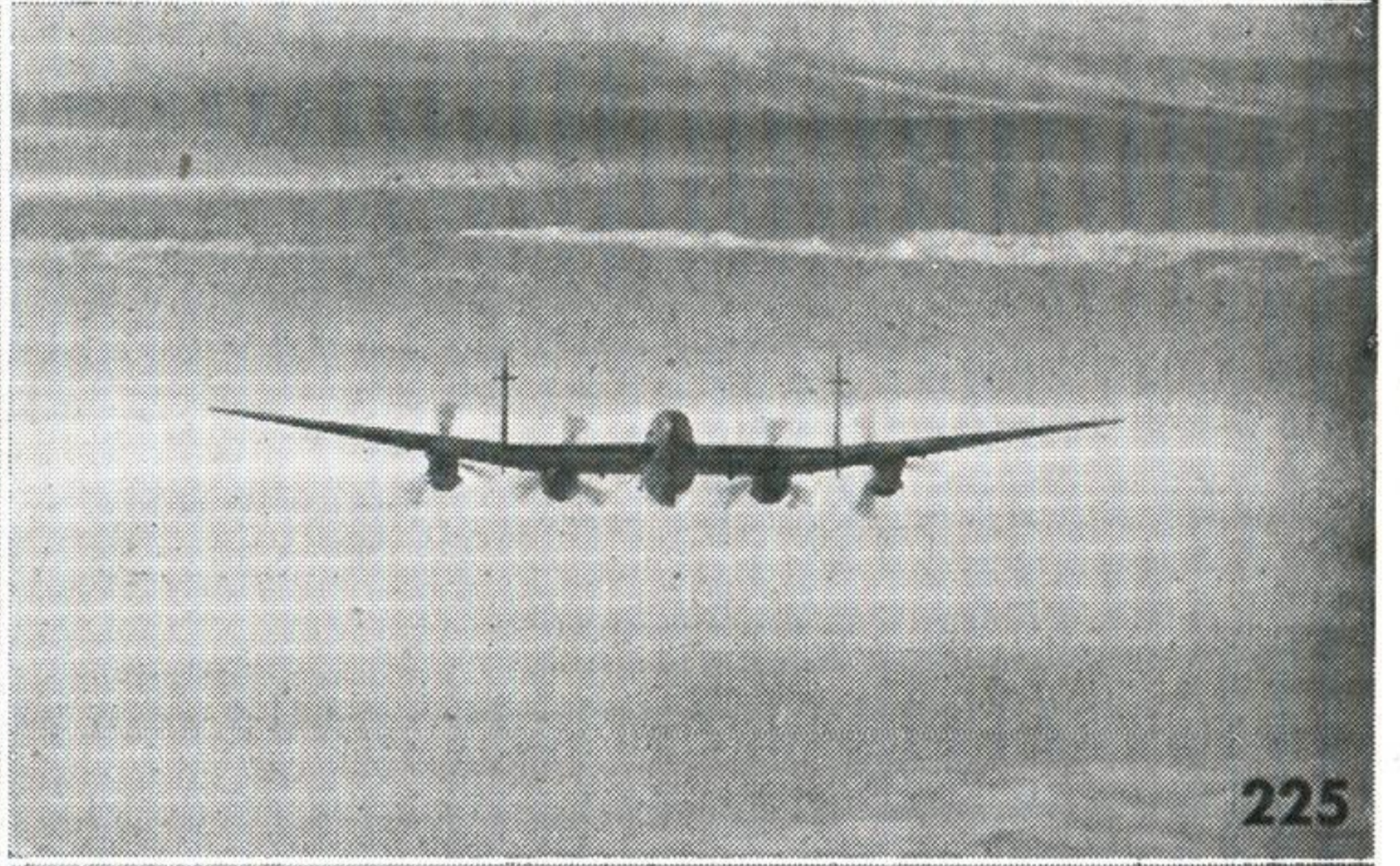
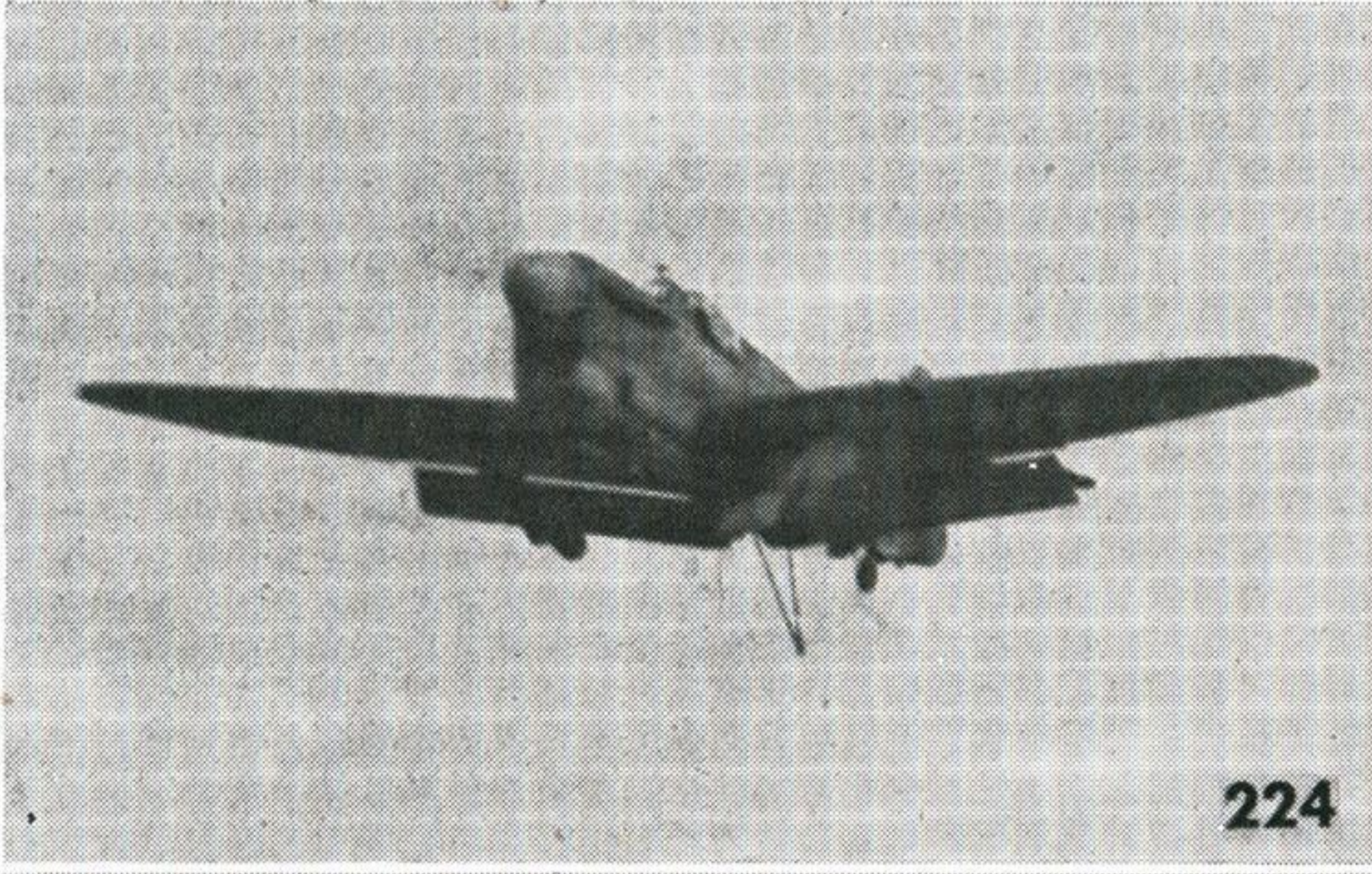
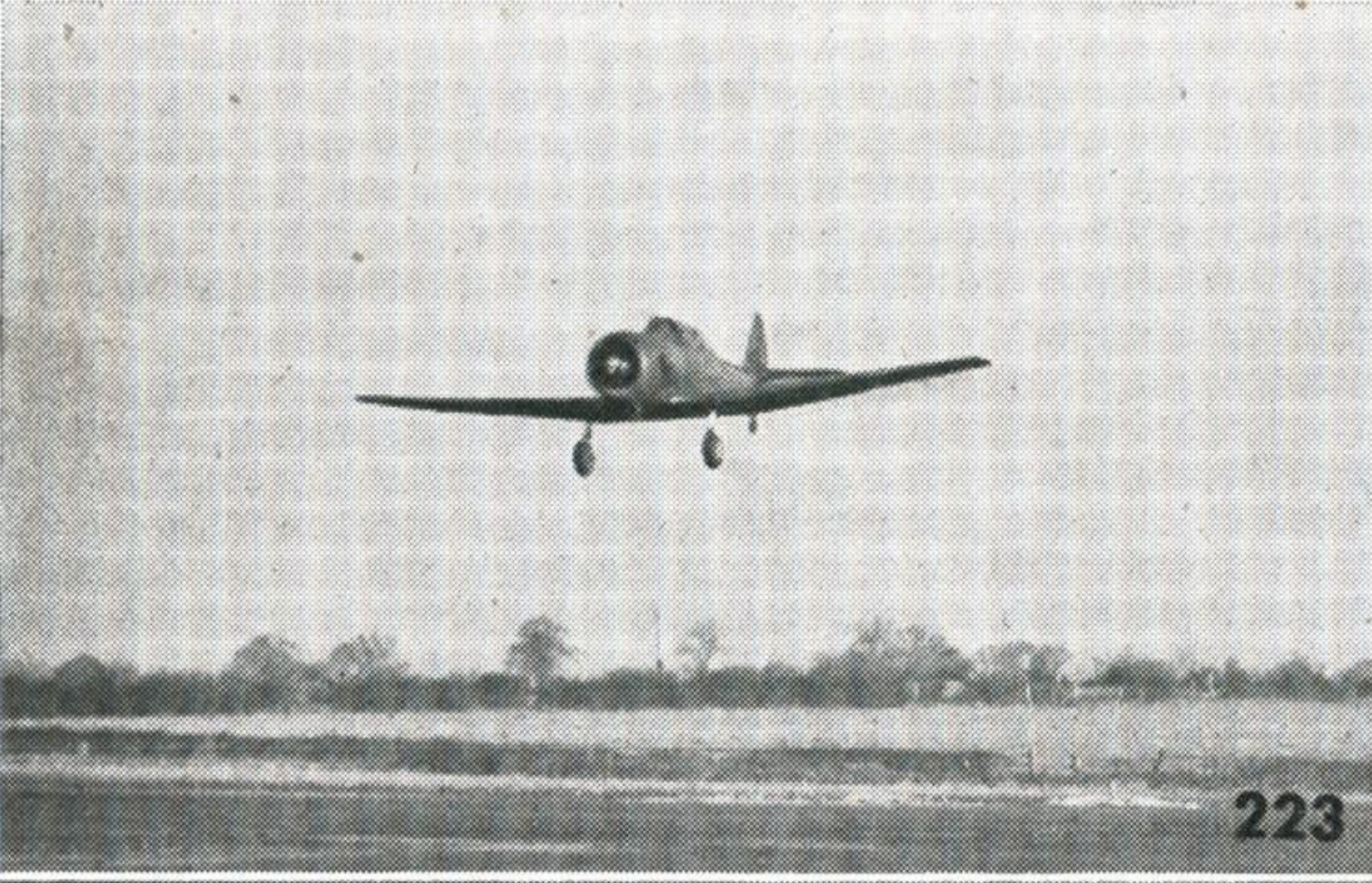
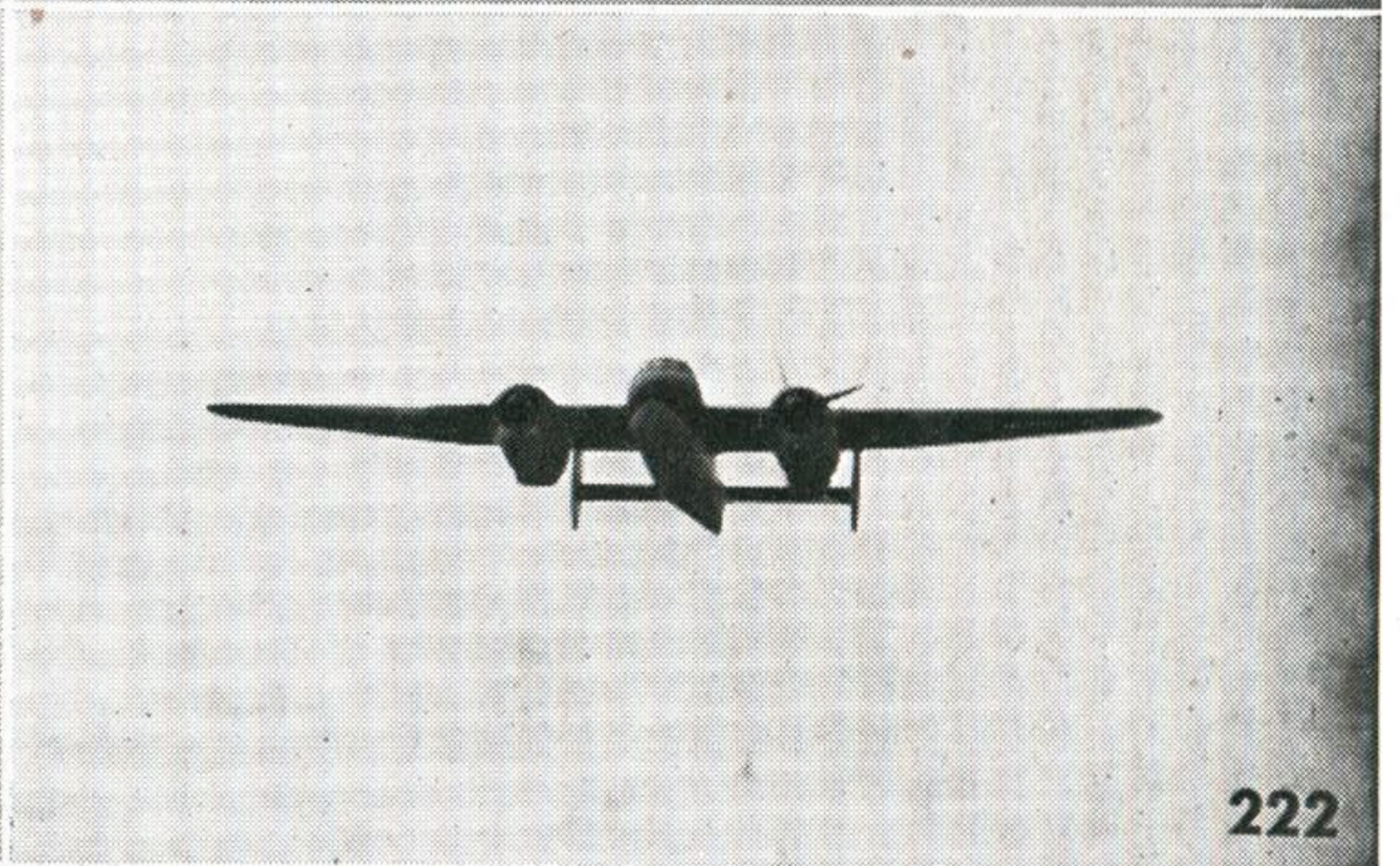
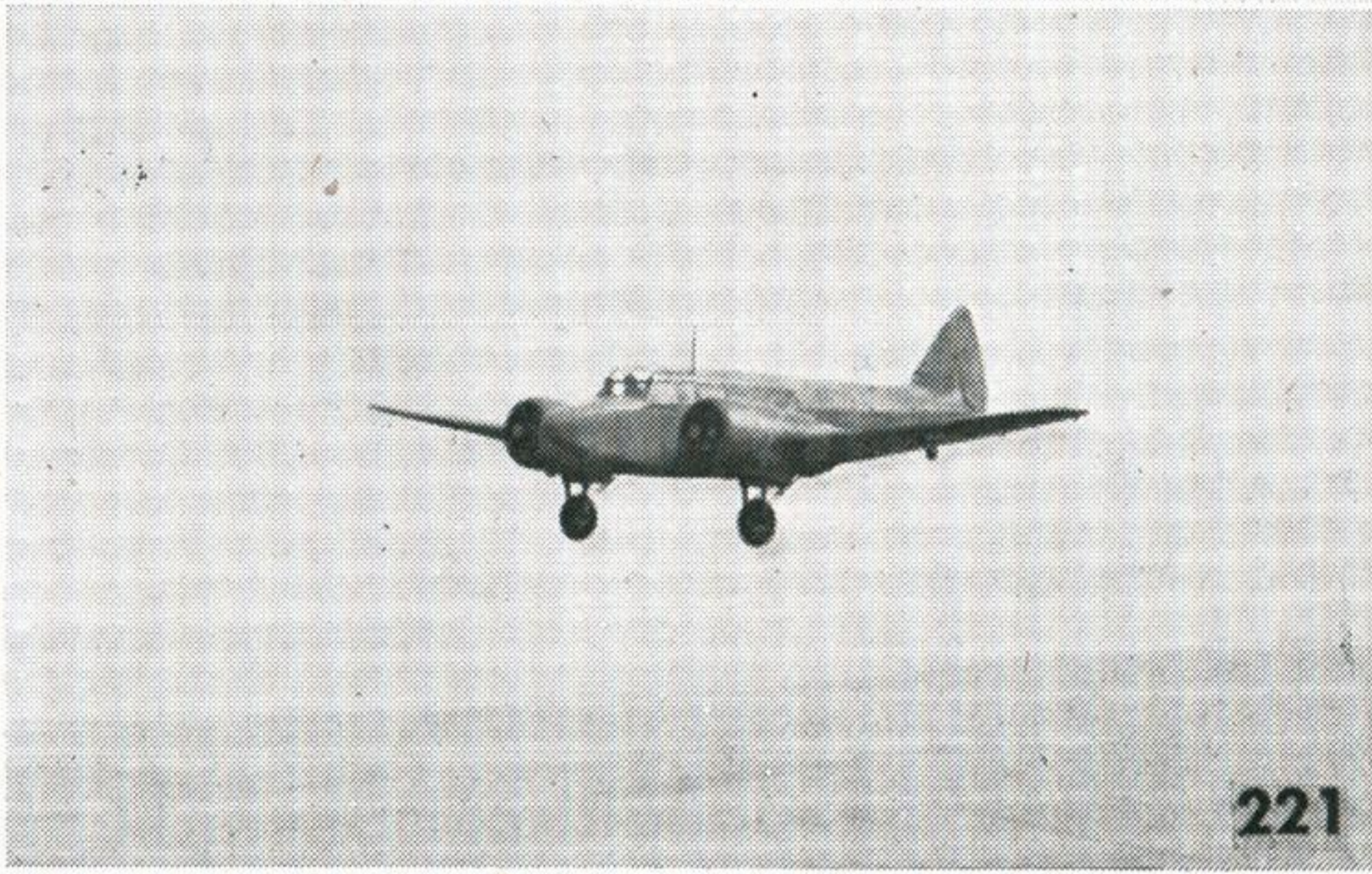
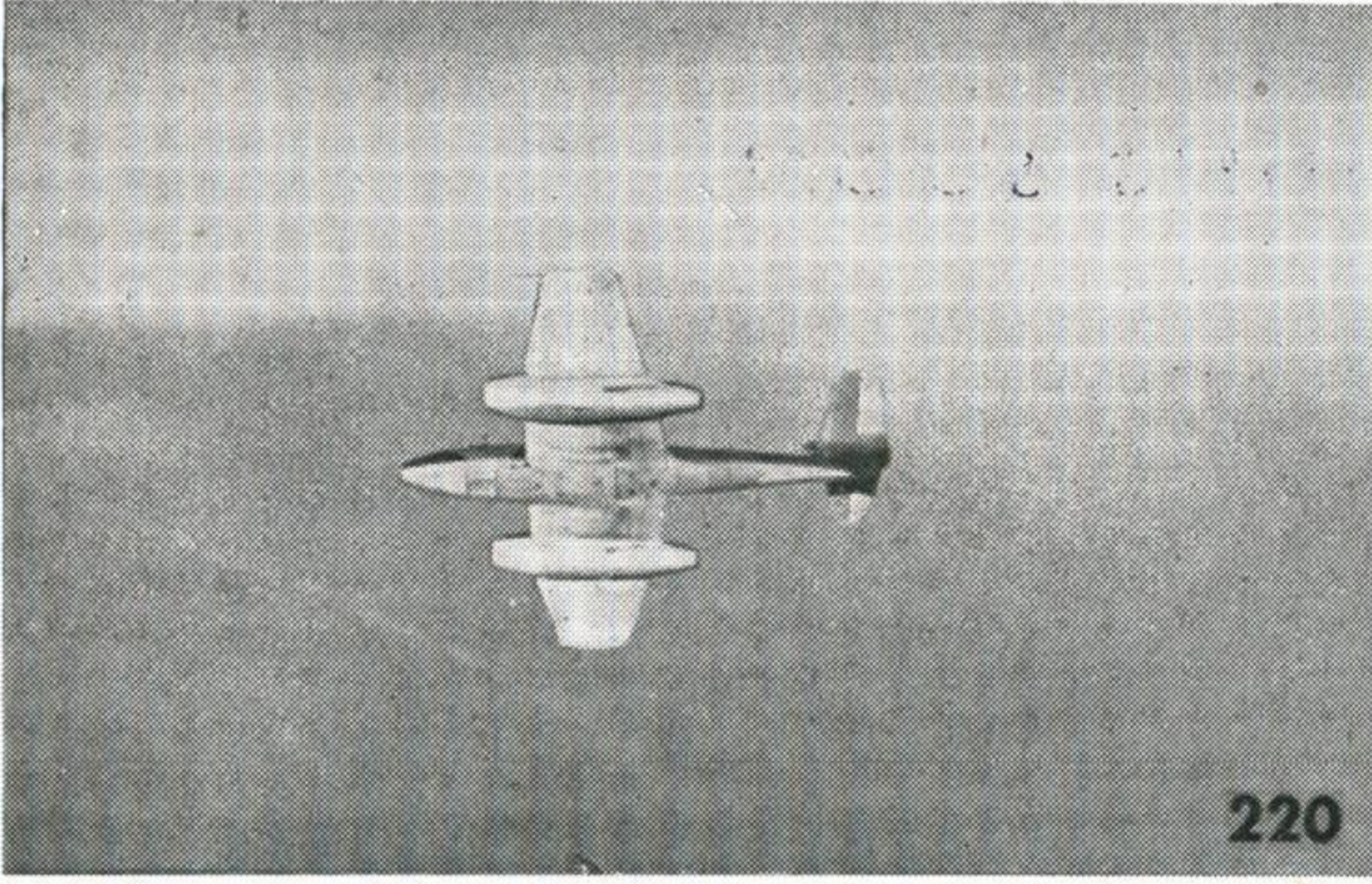
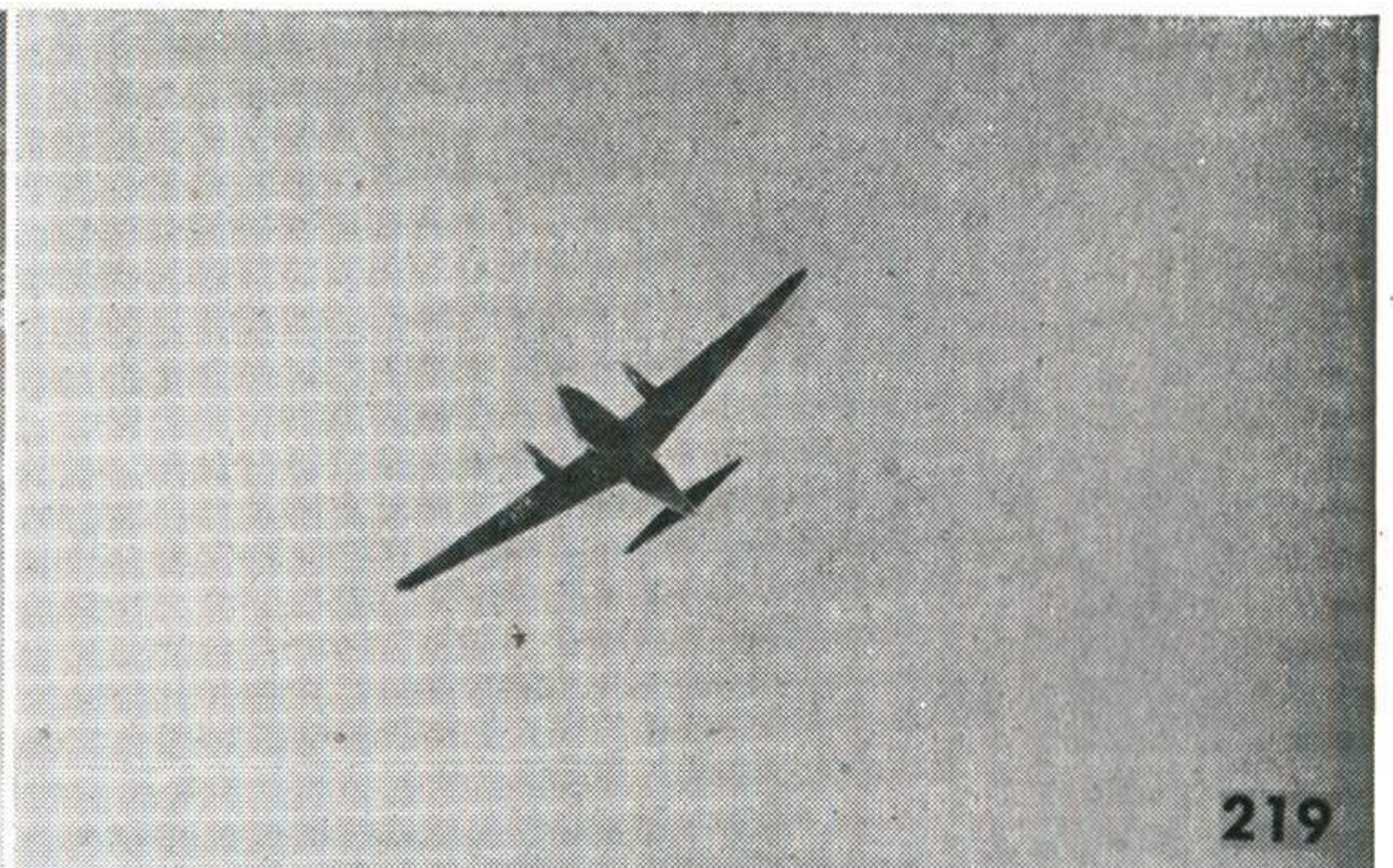
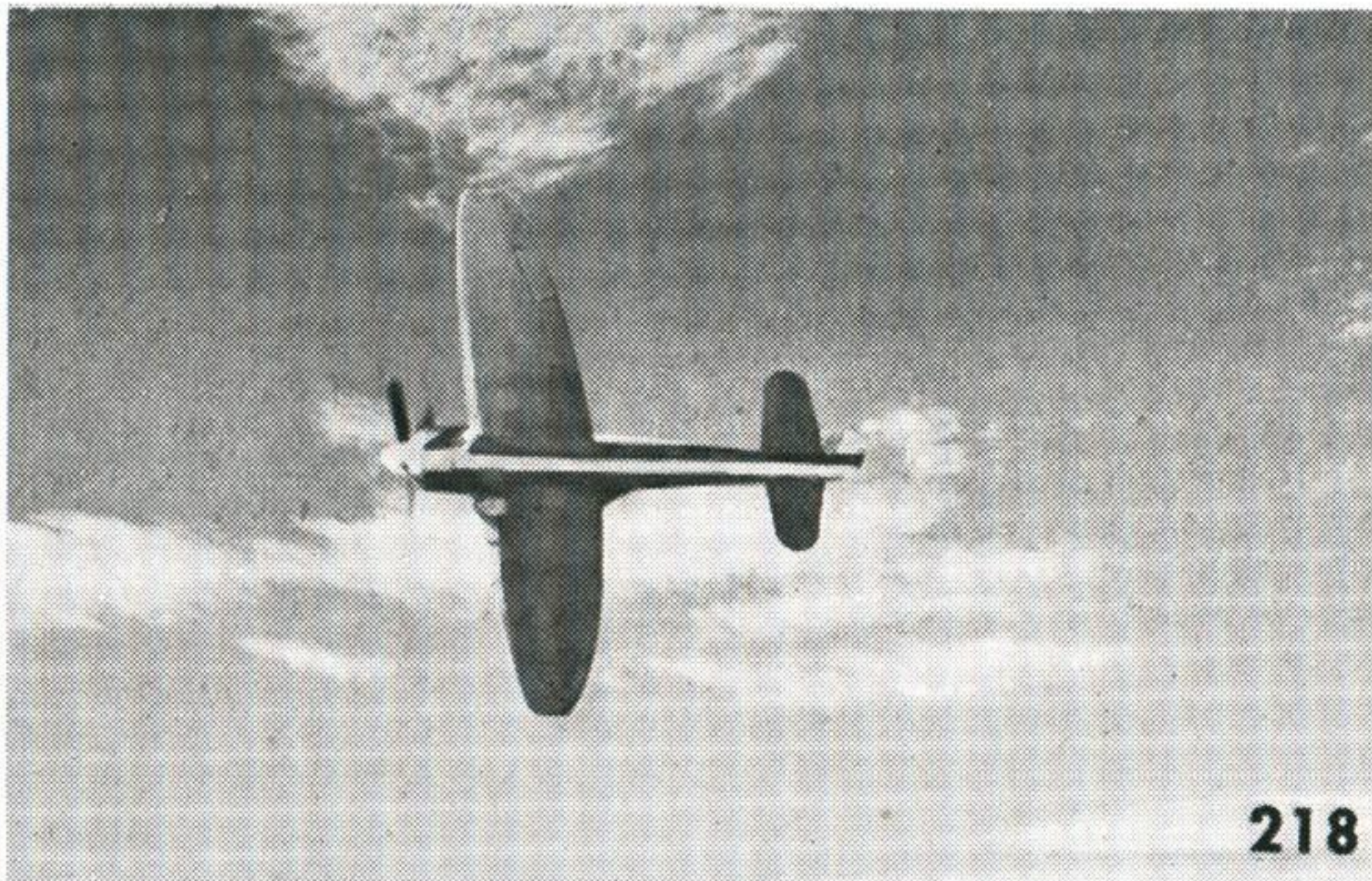
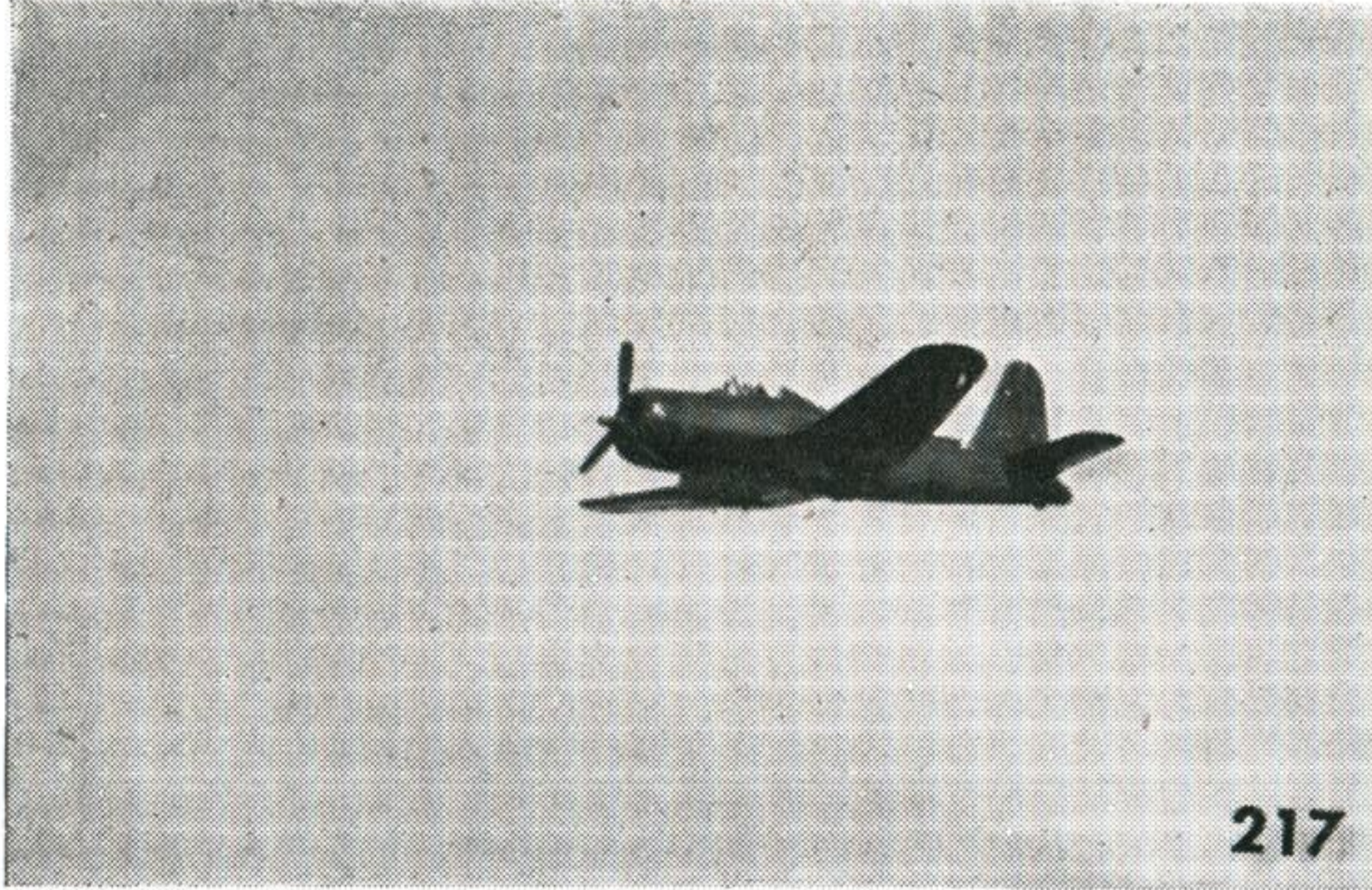
The Republic XP-91.

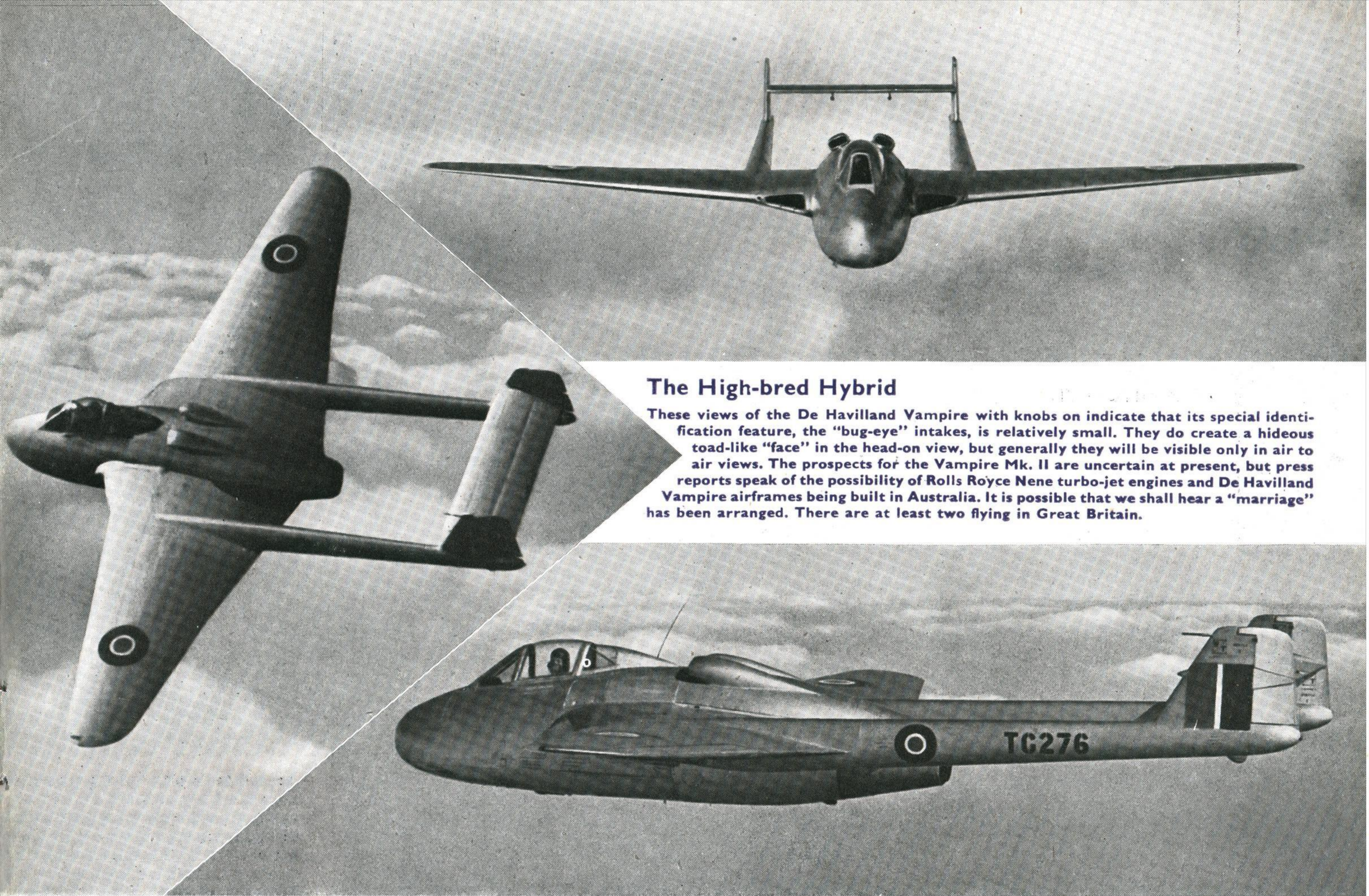
The Consolidated XP-92.

} No other data publishable

The Curtiss Wright CW.32 four-engined high-wing cargo transport monoplane.

Northrop XS-4 experimental tailless transonic type arrow-head wings powered by two TG-180 turbo-jets.

























### The High-bred Hybrid

These views of the De Havilland Vampire with knobs on indicate that its special identification feature, the "bug-eye" intakes, is relatively small. They do create a hideous toad-like "face" in the head-on view, but generally they will be visible only in air to air views. The prospects for the Vampire Mk. II are uncertain at present, but press reports speak of the possibility of Rolls Royce Nene turbo-jet engines and De Havilland Vampire airframes being built in Australia. It is possible that we shall hear a "marriage" has been arranged. There are at least two flying in Great Britain.

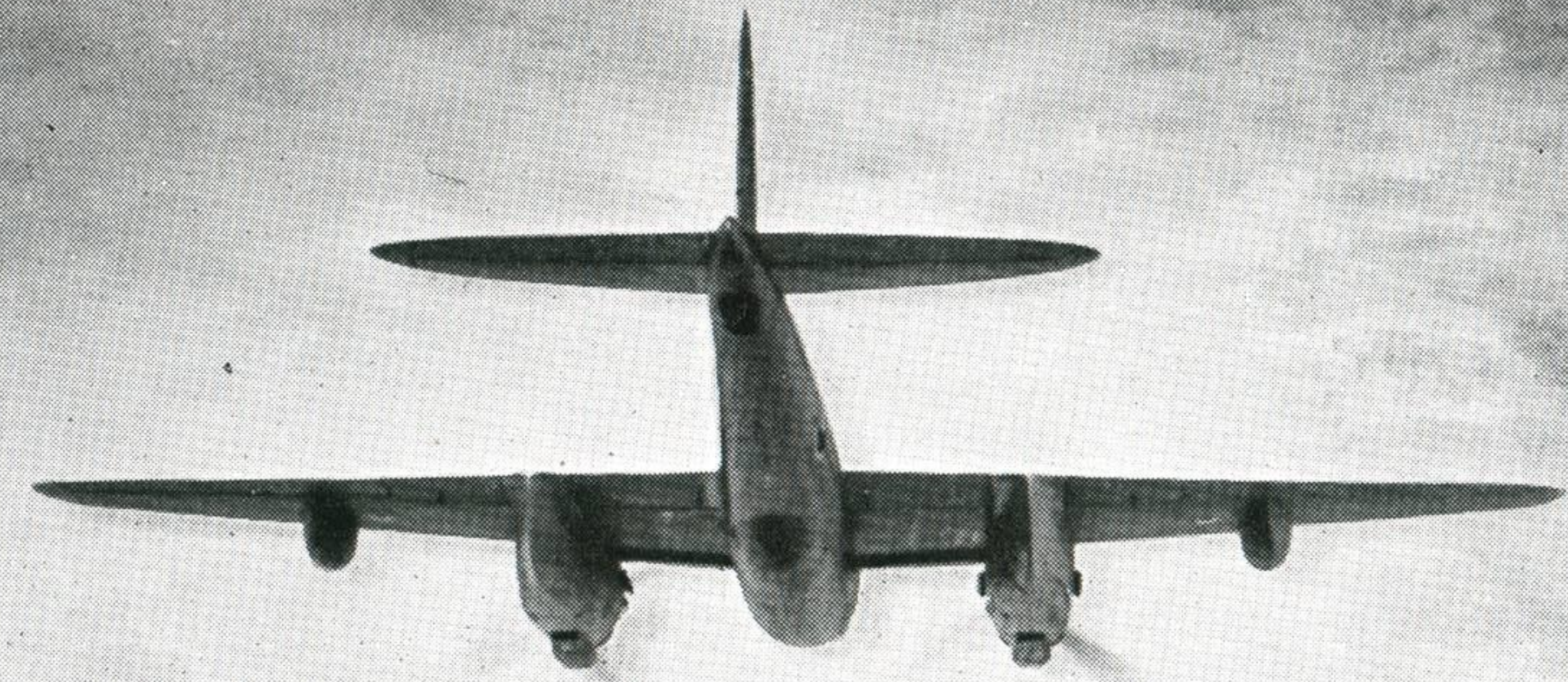
## SILLOGRAPHS

Recognition Test No. 41

 262	 263	 264	 265	 266
 267	 268	 269	 270	 271
 272	 273	 274	 275	 276
 277	 278	 279	 280	 281

# CLOSE SUPPORT

## Types



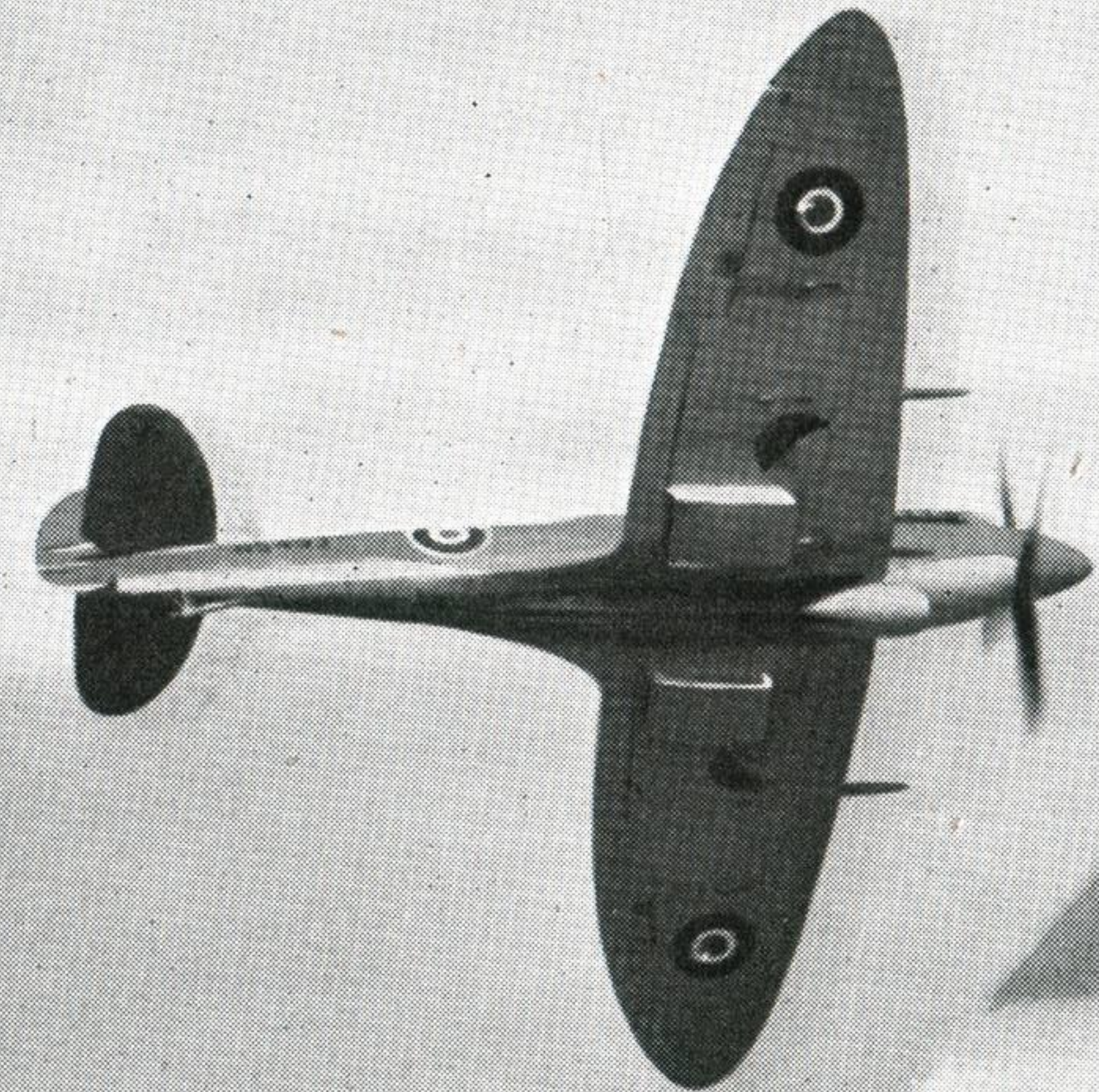
MOSQUITO XVI



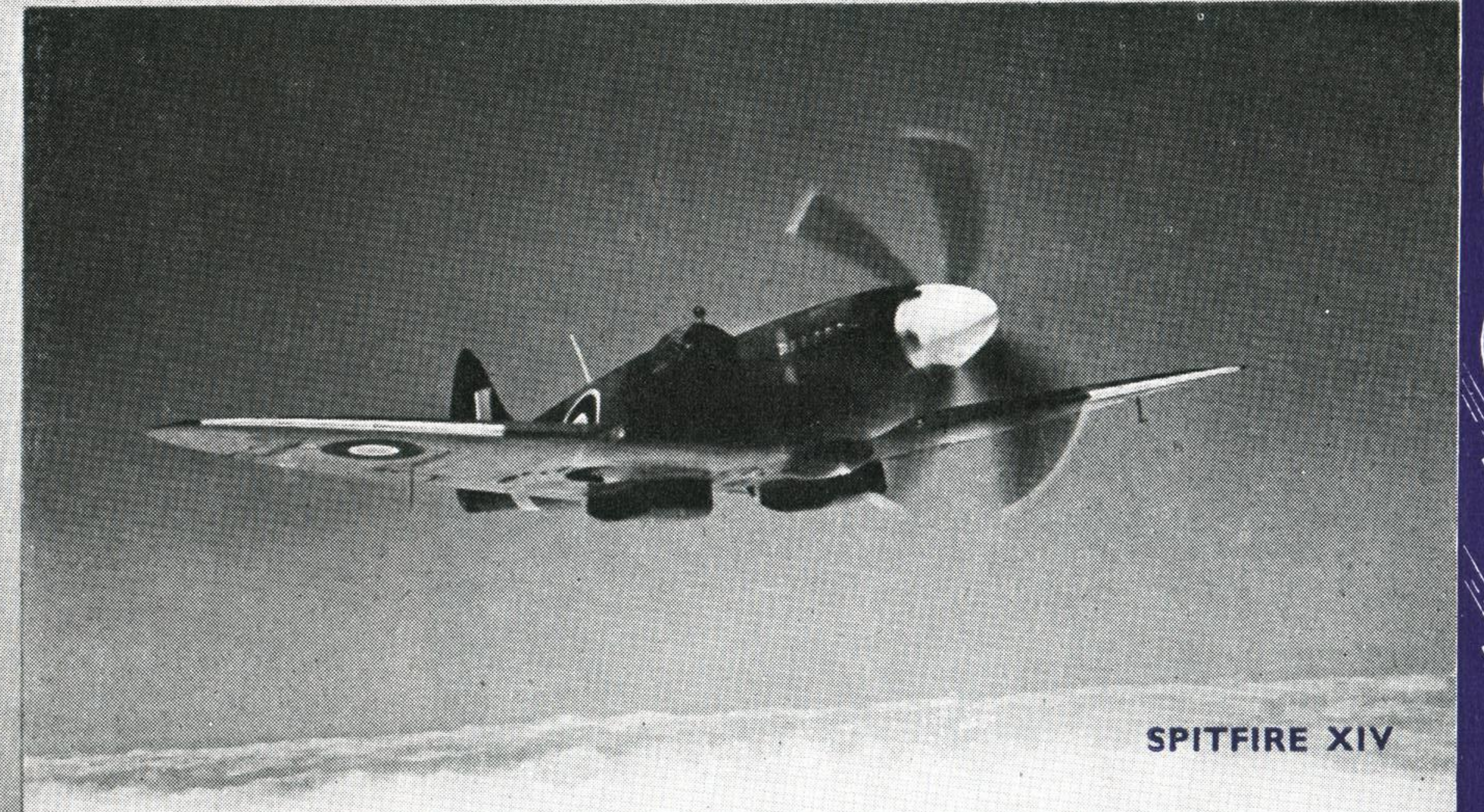
VAMPIRE I



LINCOLN II

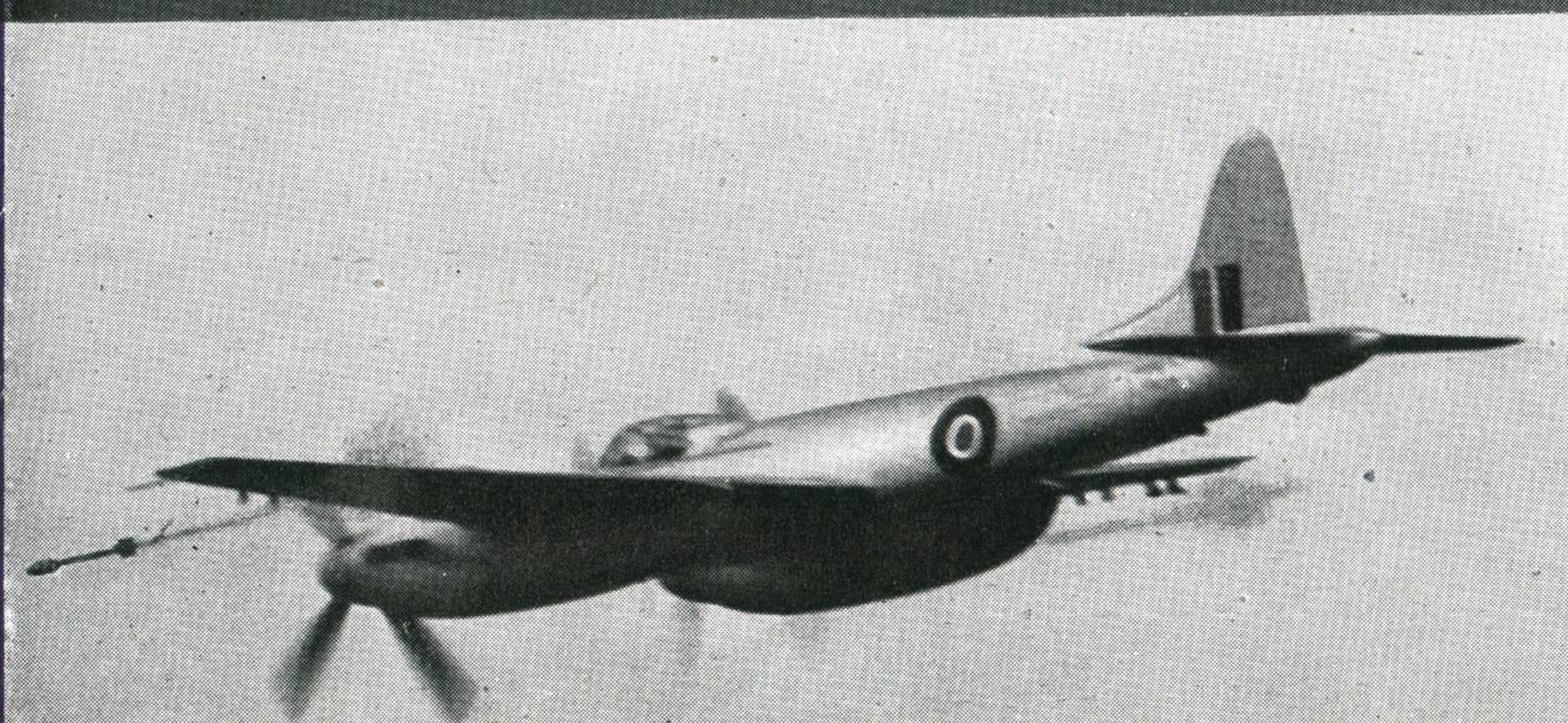


SEAFIRE XVII



SPITFIRE XIV

As well as helping out the ground forces, close support also means getting uncomfortably close to the enemy's guns. For fighters, low cunning in approach and breakaway is practised; though medium and heavy bombers, being higher up, can't wriggle their way out so easily. These facts were made clear in the close support demonstration illustrated here. Ground strafing attacks were made by Spitfires XIV, Meteors and Vampires. Tempests V made skip- and dive-bombing attacks. A Tempest II played hell with a small wood with Napalm (incendiary) bombs (see background picture). Tempests V, Seafires XVII, Fireflies I, Meteors and Sea Hornets made dive-rocket attacks, whilst Lincolns devastated targets marked by pathfinder Mosquitoes XVI. Other Mosquitoes XVI attacked targets whilst under ground control.



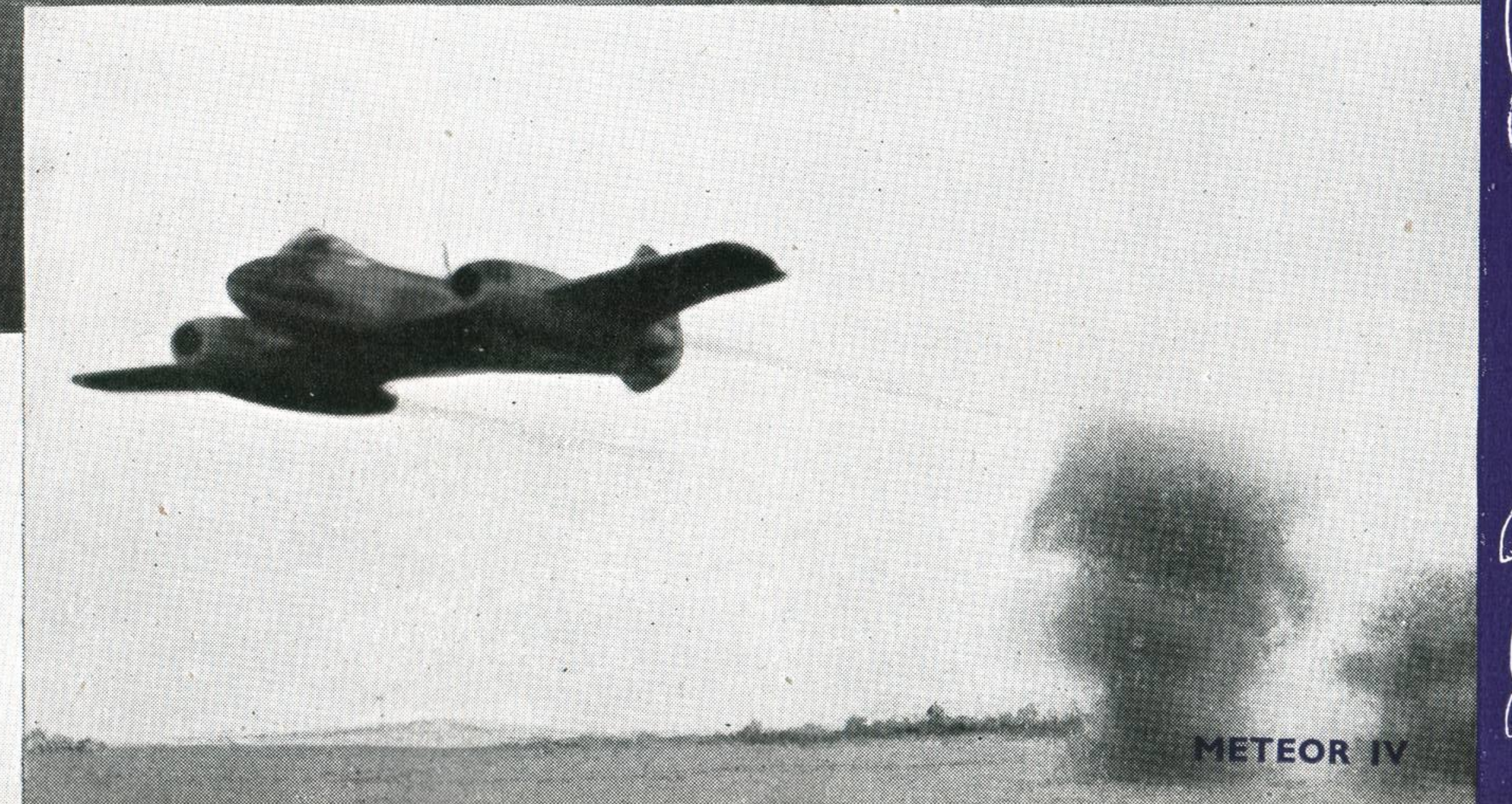
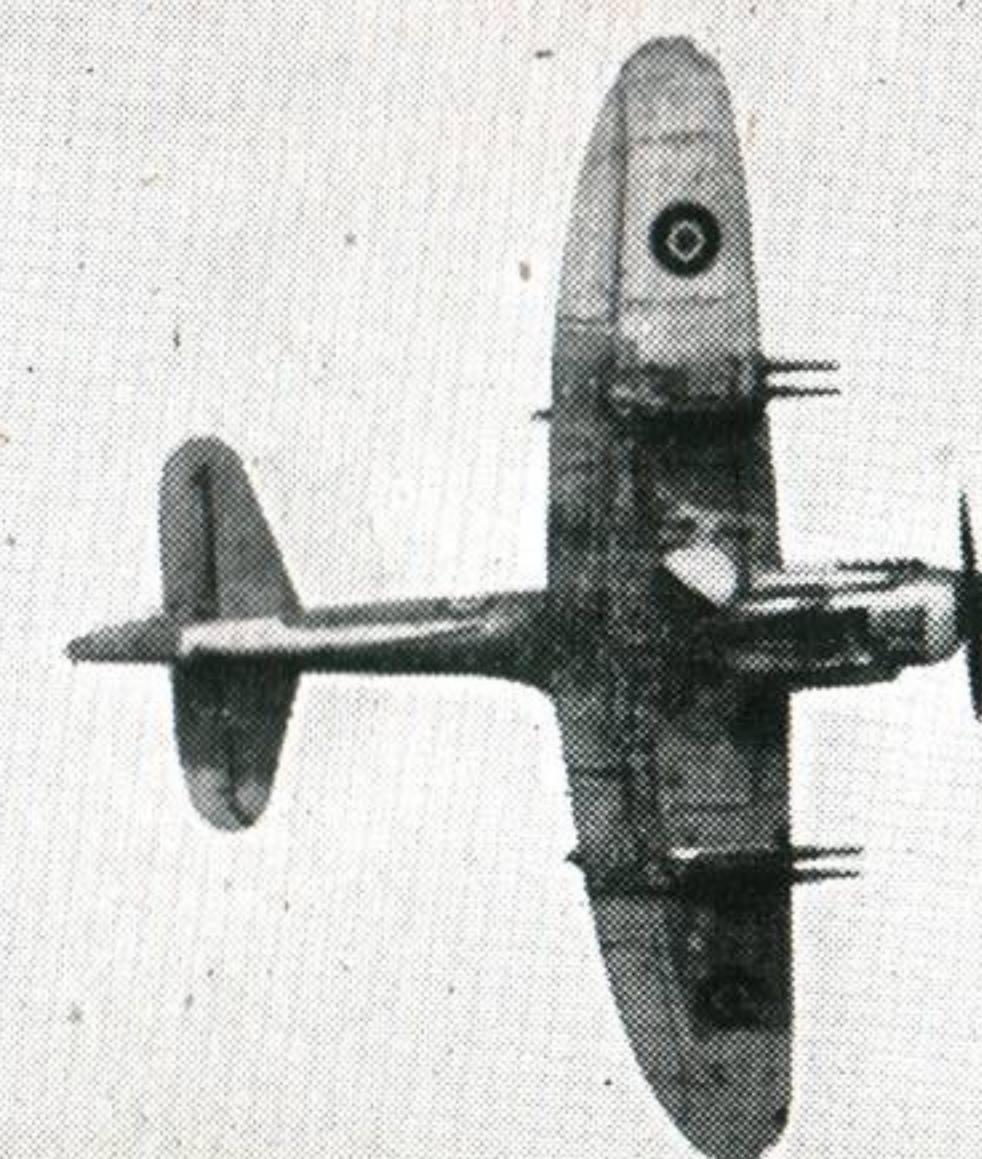
HORNET 20



TEMPEST V



FIREFLY I



METEOR IV

# AMERICAN MILITARY TRENDS

by Sgt. H. B. COTTEE

**A**LTHOUGH very little may yet be said about the new aircraft being prepared for the Royal Navy and the Royal Air Force in this country, we may profit from a study of the present general design trends in the military aircraft of the U.S.A. The two countries have followed a broadly similar line of aircraft development for many years, and although their tactical problems are widely divergent, their aircraft have sometimes been surprisingly alike in general layout.

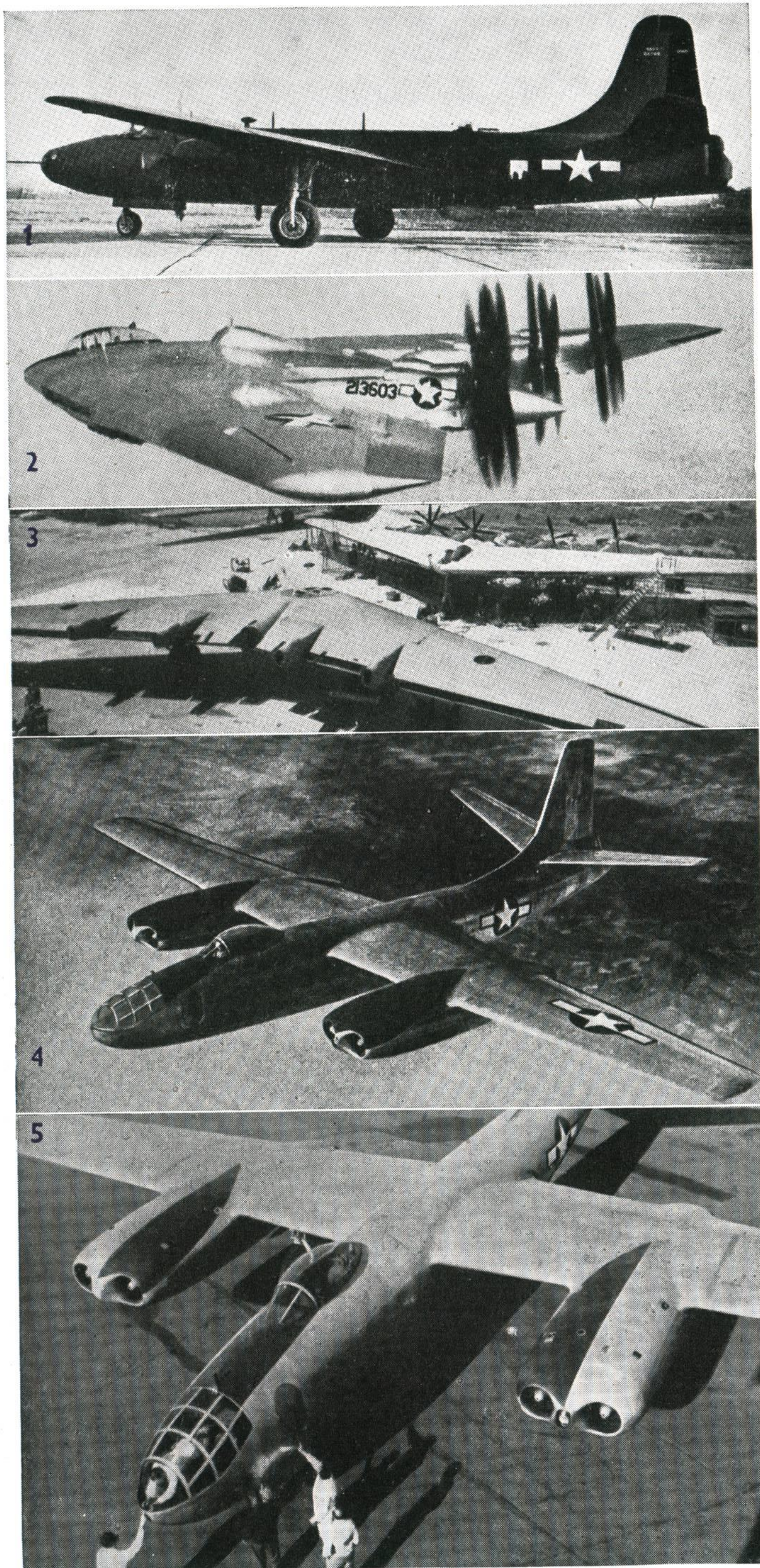
The performance and outline of America's newest aircraft are dictated chiefly by the limitations imposed by available power plants. Three main prime movers at present lead the field, namely: the 3,500 h.p. Pratt and Whitney R-4360 Wasp Major, probably the last we shall see of high-powered piston engines; the 4,000 lb. static thrust General Electric J-35-GE (or TG-180) turbo-jet; and the Westinghouse 24C turbo-jet. It is interesting to note that both the latter engines are of the axial-flow type, whereas the centrifugal compressor is predominantly used in Britain, although this state of affairs may soon change if the Metro Vick series come up to expectations. The Saro SR/A1 flying boat fighter has two Metro Vick units.

The Wasp Major, last of a dying breed, powers the new, lightened B-50 Superfortress, the XB-35 "Wing", the XB-36 "Flying Salami", and the Martin AM-1 Mauler, in addition to several less important aircraft. The Mauler, incidentally, is an example of the U.S. Navy's emphasis on single-seat carrier-borne attack bombers, and the AM-1, together with the Douglas AD-1 Skyraider, is to be built in some numbers.

A striving for "super-duper-bombers" is exemplified by the Convair XB-36, Boeing B-50 and Northrop XB-35 and, of these, only the B-50 is in full production, 133 having been ordered. A service-test batch of YB-35s is to be built by Northrop, and an order for production B-35s is expected; but the exact fate of the XB-36 is not yet certain. Production is planned for this aircraft, but it would seem to be extremely costly in dollars and man-hours when one considers the expendable nature of military aircraft. Whatever may be claimed in favour of these sky giants, it is offset by the huge target they present to ground or airborne gunners and to guided missiles.

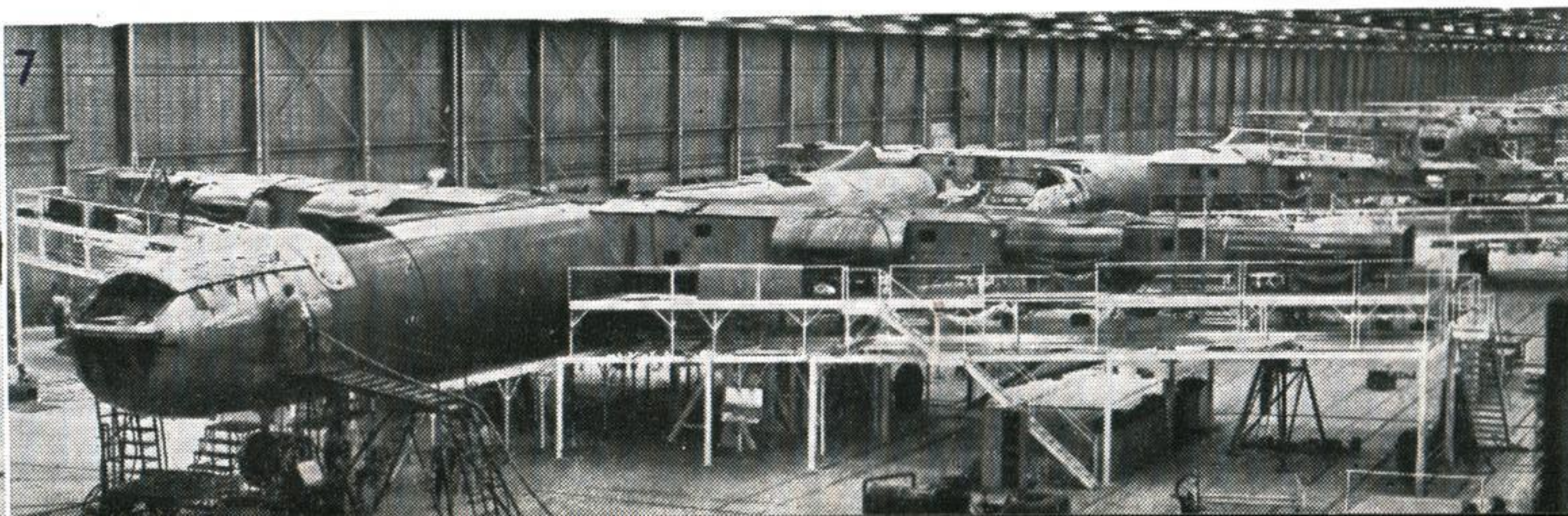
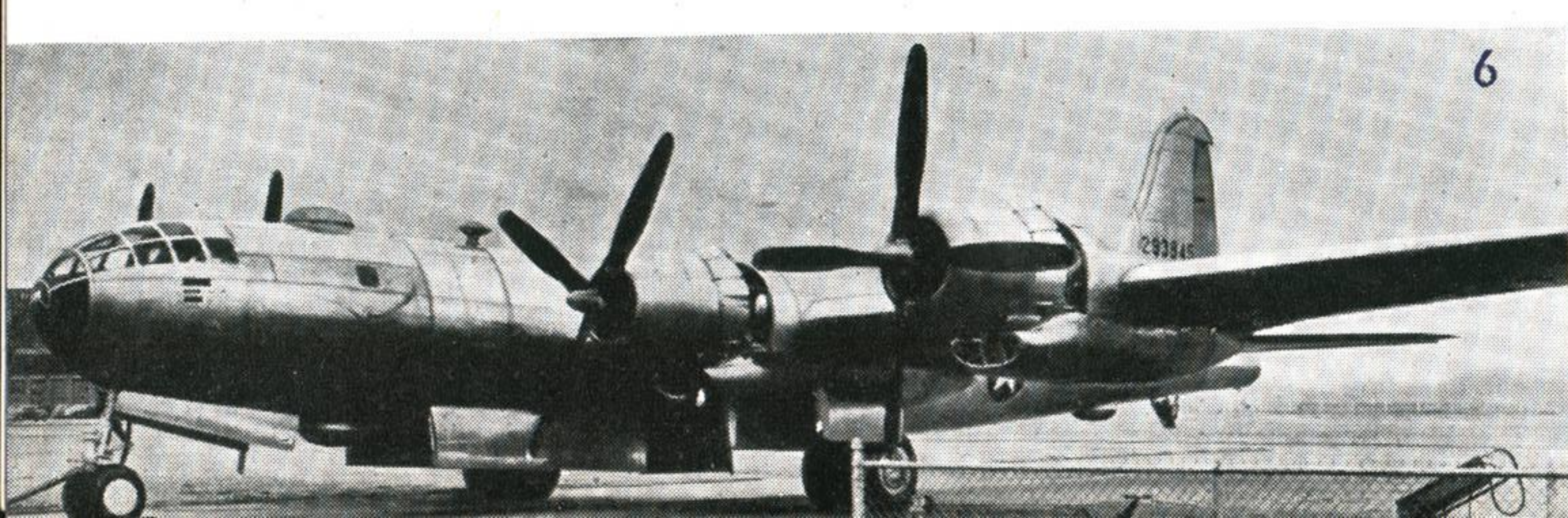
To balance the bomber strength, four new high-speed, medium-size aircraft are in existence. Of these, the North American XB-45 and Consolidated XB-46 have both flown, and the Boeing XB-47 and Martin XB-48 are not far behind. All these bombers are fitted with J-35-A or -GE turbo-jets. The first two aircraft are remarkably similar in outline. Both have a long slim fuselage surmounted by a tall, faired fin and rudder and dihedral tailplane. Their slim laminar-flow wings each have two jet units in a "twin-pack" installation. At least 86 B-45 bombers have been ordered and a similar quantity of B-46s may possibly be built.

An even more powerful jet bomber nearing completion in the U.S.A. is the Northrop YB-49, a development of the XB-35, powered by eight J-35 turbo-jets giving a total thrust of 32,000 lb. At maximum speed there will be something over 40,000 h.p.



1. Martin XP4M-1  
2. Northrop XB-35  
3. Northrop XB-35s in building  
4. North American XB-45  
5. North American XB-45  
6. Boeing B-50 Superfortress

3. Northrop XB-35s in building  
4. North American XB-45  
7. Consolidated XB-36s on the line  
8. Martin XB-48





16



15

available—enough to keep a large ship cruising at a fair rate of knots. We hesitate to consider the fuel consumption. The jet units on the YB-49 are mounted in two quadruple sets in the wing, each set being flanked by vertical fins for directional stability in lieu of the airscrew “solidity” of its progenitor. As an aeronautical achievement, the Northrop “wings” are unique. Both the XB-35 and YB-49 command attention from military and aeronautical points of view.

A modern version of a very old idea appears in the McDonnell Parasite, (Westinghouse 24C turbo-jet). This aircraft, small and fast, is to be carried on the XB-36 for that large bomber’s defence. Reminds us of the one about “big fleas have little fleas . . .”

Two more fighters with this new Westinghouse turbo-jet are the McDonnell XP-88 and Lockheed XP-90, both having the veils of secrecy still wrapped around them. Jets have certainly taken the U.S. aircraft world by storm, and in the North American XP-86 we shall be seeing the J-35-GE in use again. This little fighter is a swept-wing version of the XFJ-1, the latter having been ordered by the U.S. Navy to the tune of 40 or more aircraft.

New names and numbers for the U.S. Navy include the Grumman XTB 3F-1 torpedo-bomber, which has a Double Wasp radial motor in the nose and a Westinghouse 24C in the tail. This aircraft will probably conform to latest U.S. Navy practice by changing its number to XAF-1. A new jet fighter is also being developed by Grumman and will almost certainly take the number XF9F-1. The McDonnell company are working on a new version of the FD-1 Phantom carrier fighter which will see life as the XF2D-1; but as yet we can only hazard a guess at the exact configuration of these embryo fighters.

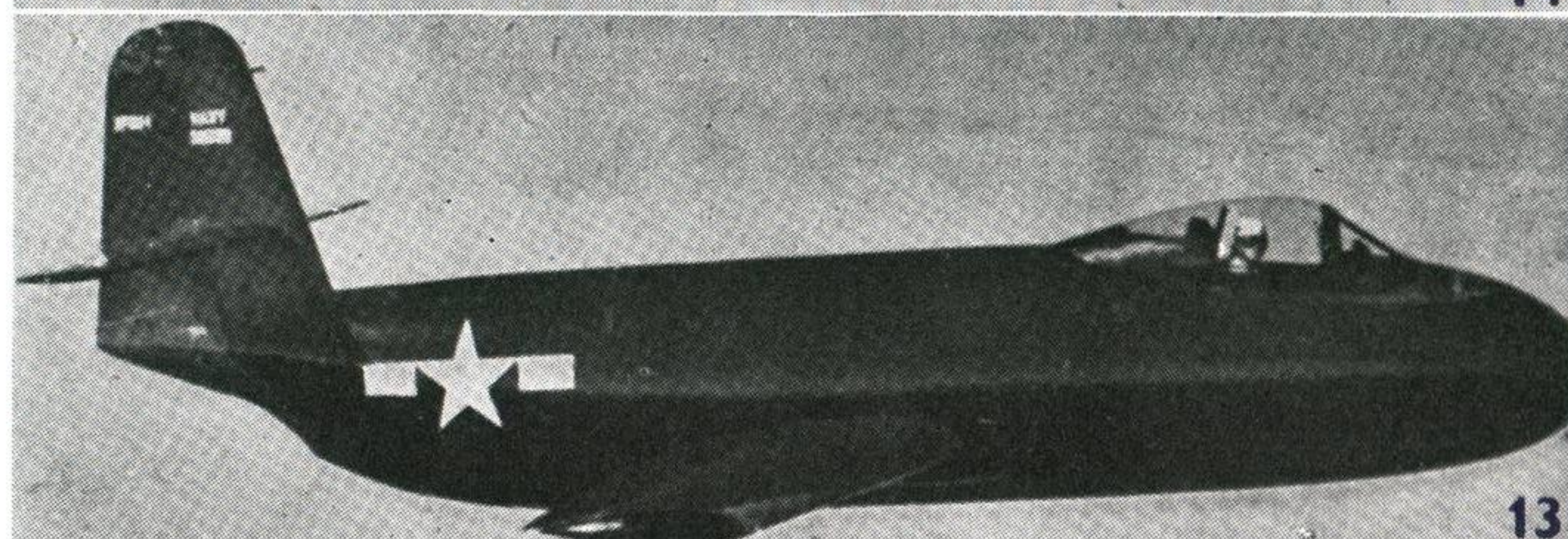
More important at present than all these new projects and prototypes are the current service aircraft. The types most profuse in American skies at present include the Shooting Star (still in full production), the Thunderjet (a large batch ordered), Twin Mustang (in service in large numbers), Superfortress (B-50 production, plus 3,000 B-29 types still airworthy), Packet (small series production), and the Navy’s Bearcats, Tigercats, Corsairs, Neptunes, Mariners, Maulers and Skyraiders, which are all flying in some numbers. The Corsair is in large-scale squadron service and a further 250 have recently been ordered.

Other new types, including the Chance-Vought XF5U-1 Skimmer and XF6U-1 Pirate, and the Martin XP4M-1 are under development for the Navy; but these can be reserved for serious study in future years—probably 1948-49-50.

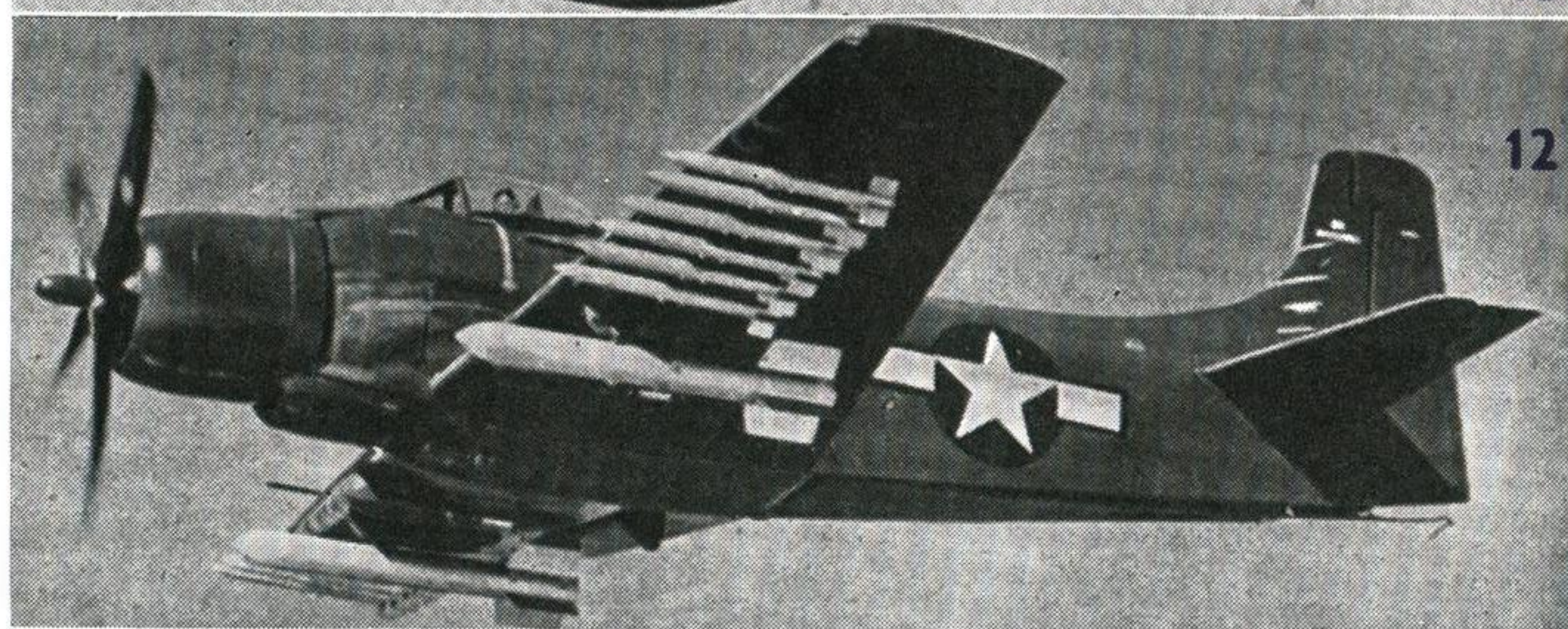
Well, spotter, there are a few of your new headaches; so keep your peepers peeled. But remember that the aeronautical scene is constantly changing and, in the words of our trans-Atlantic cousins, “you ain’t seen nothin’ yet”.



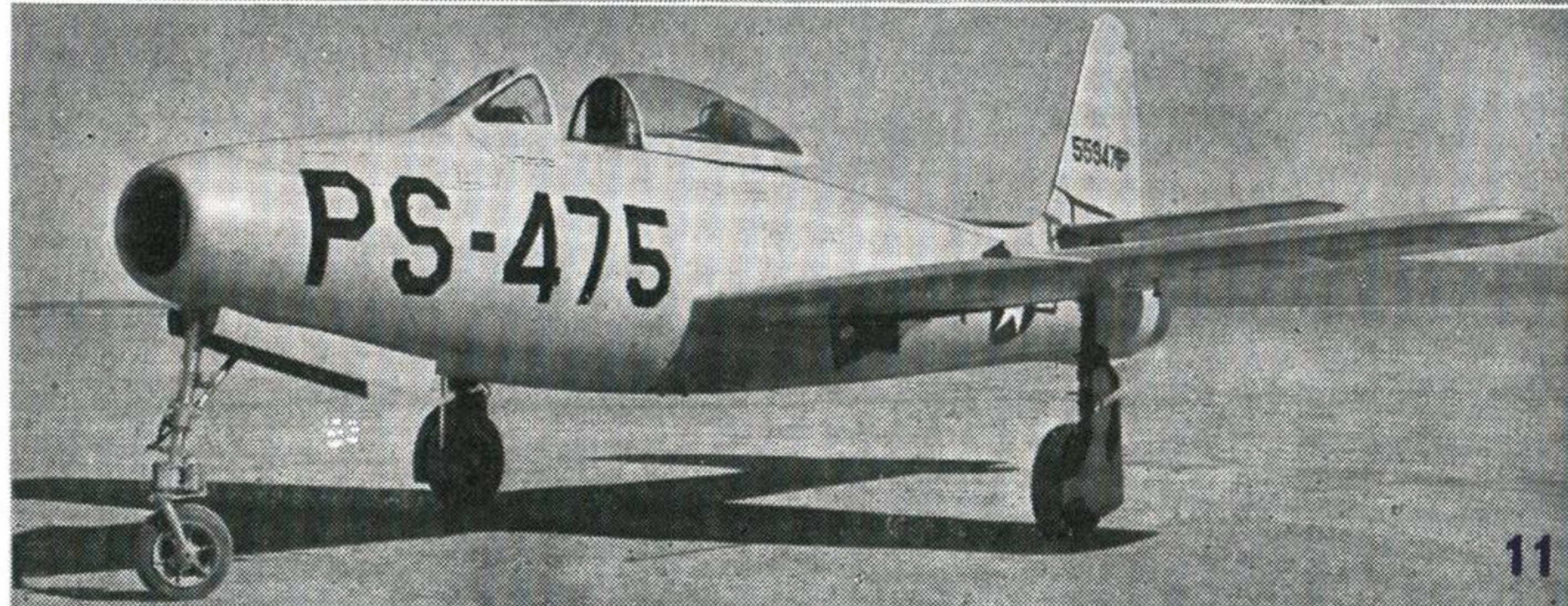
14



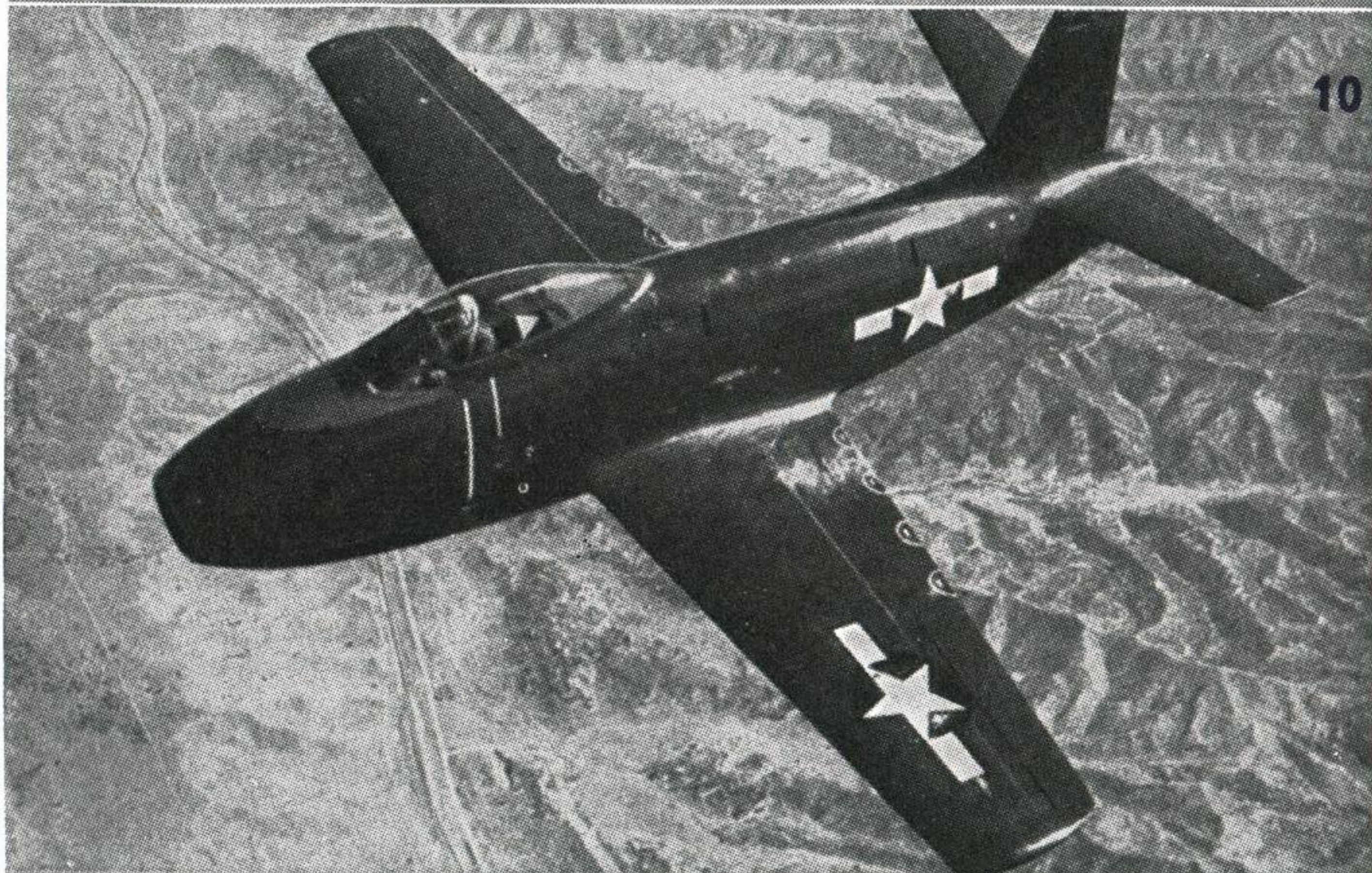
13



12



11



10

9. Martin AM-1 Mauler

10. Chance Vought XFJ-1

11. Republic XP-84 Thunderjet

12. Douglas AD-1 Skyraider

13. Chance Vought XF6U-1 Pirate

14. Consolidated Convair XB-36

15. Consolidated Vultee XB-46

16. Consolidated Vultee XB-46

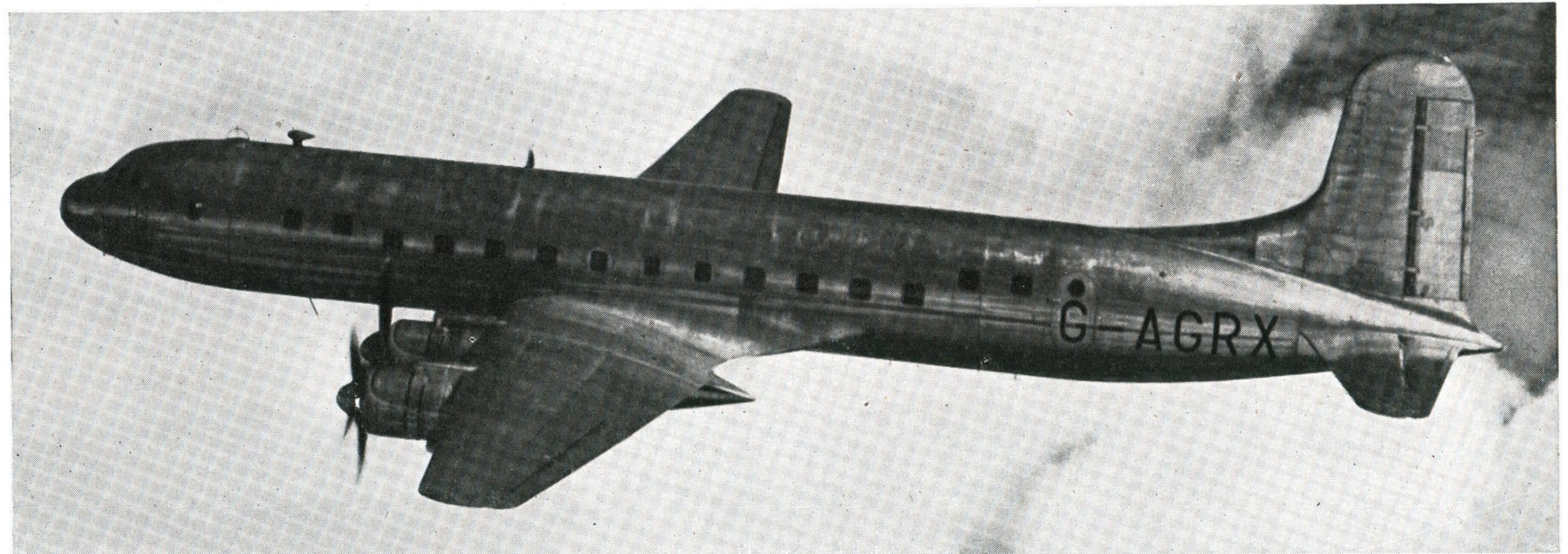
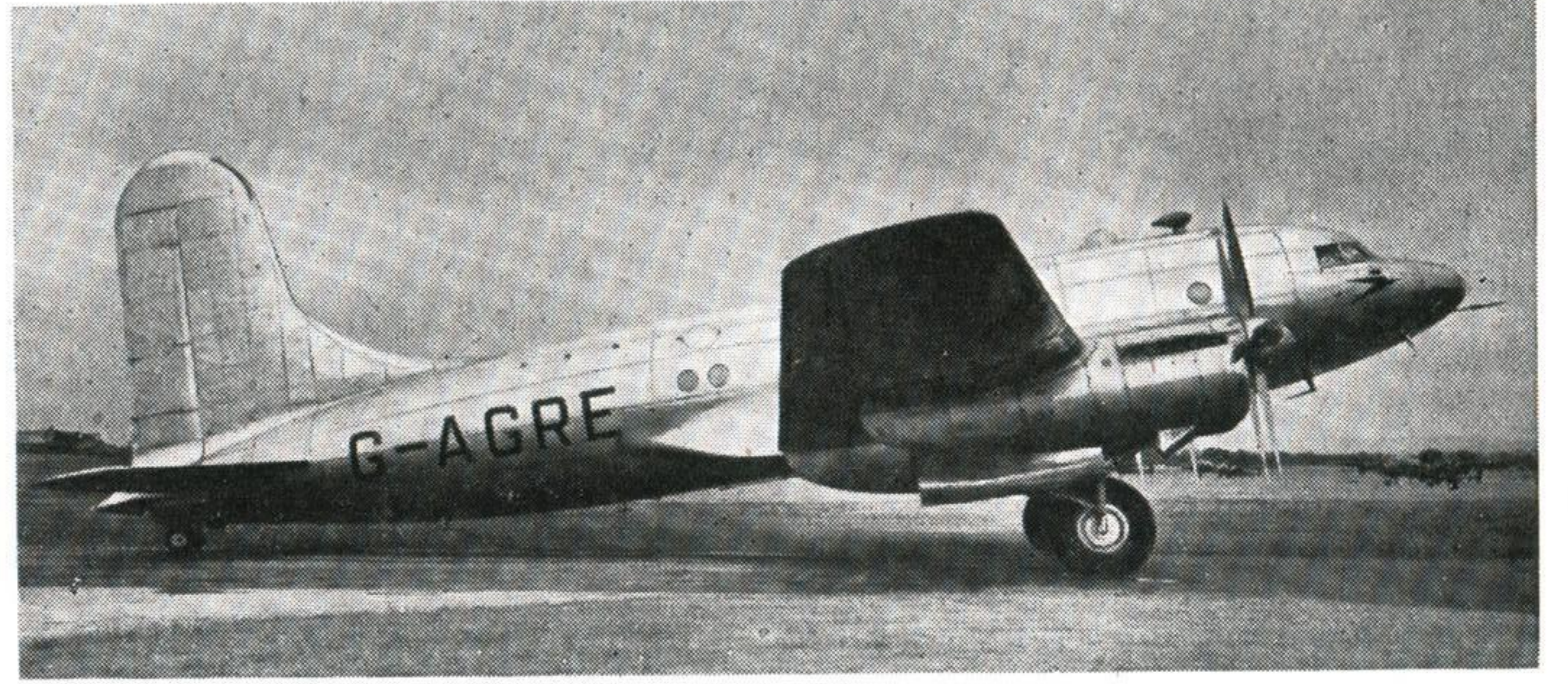
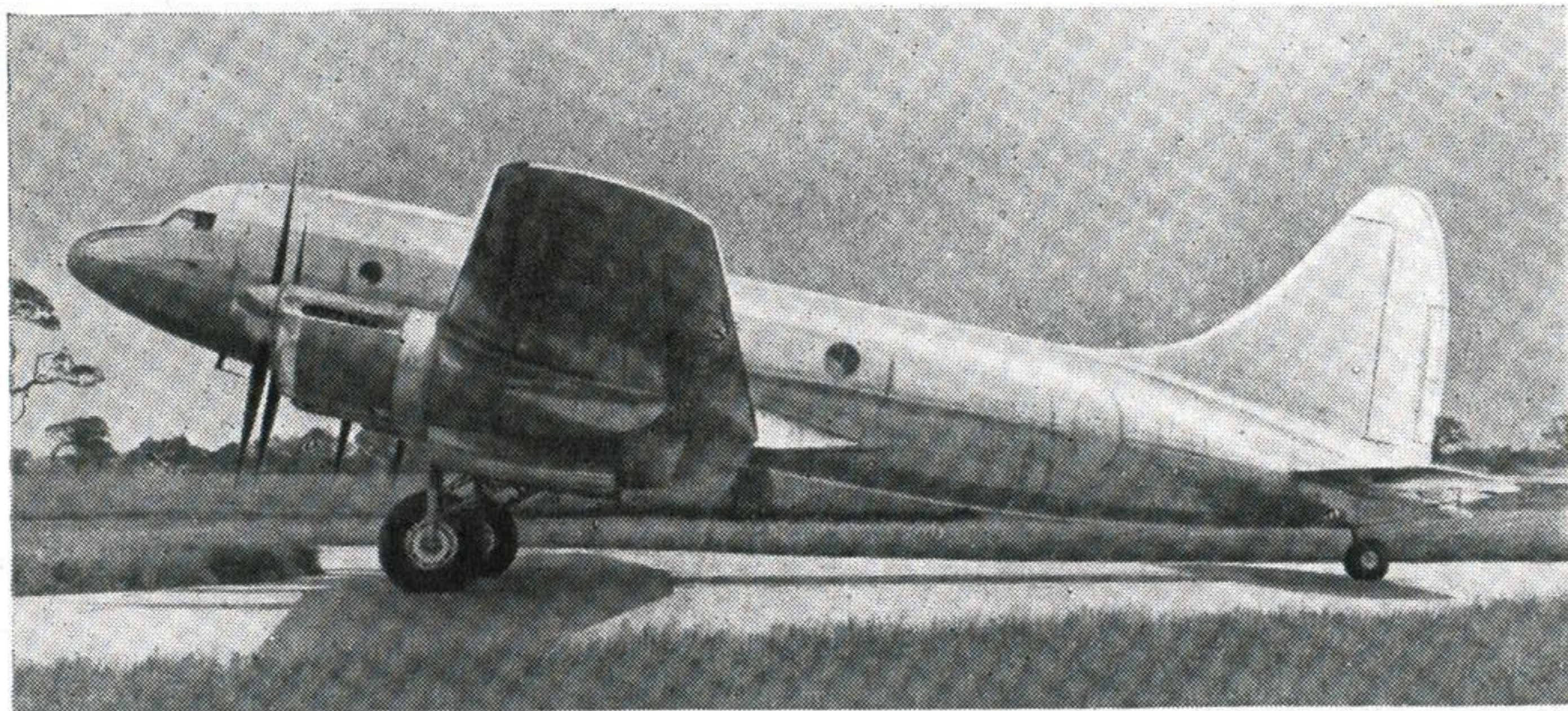


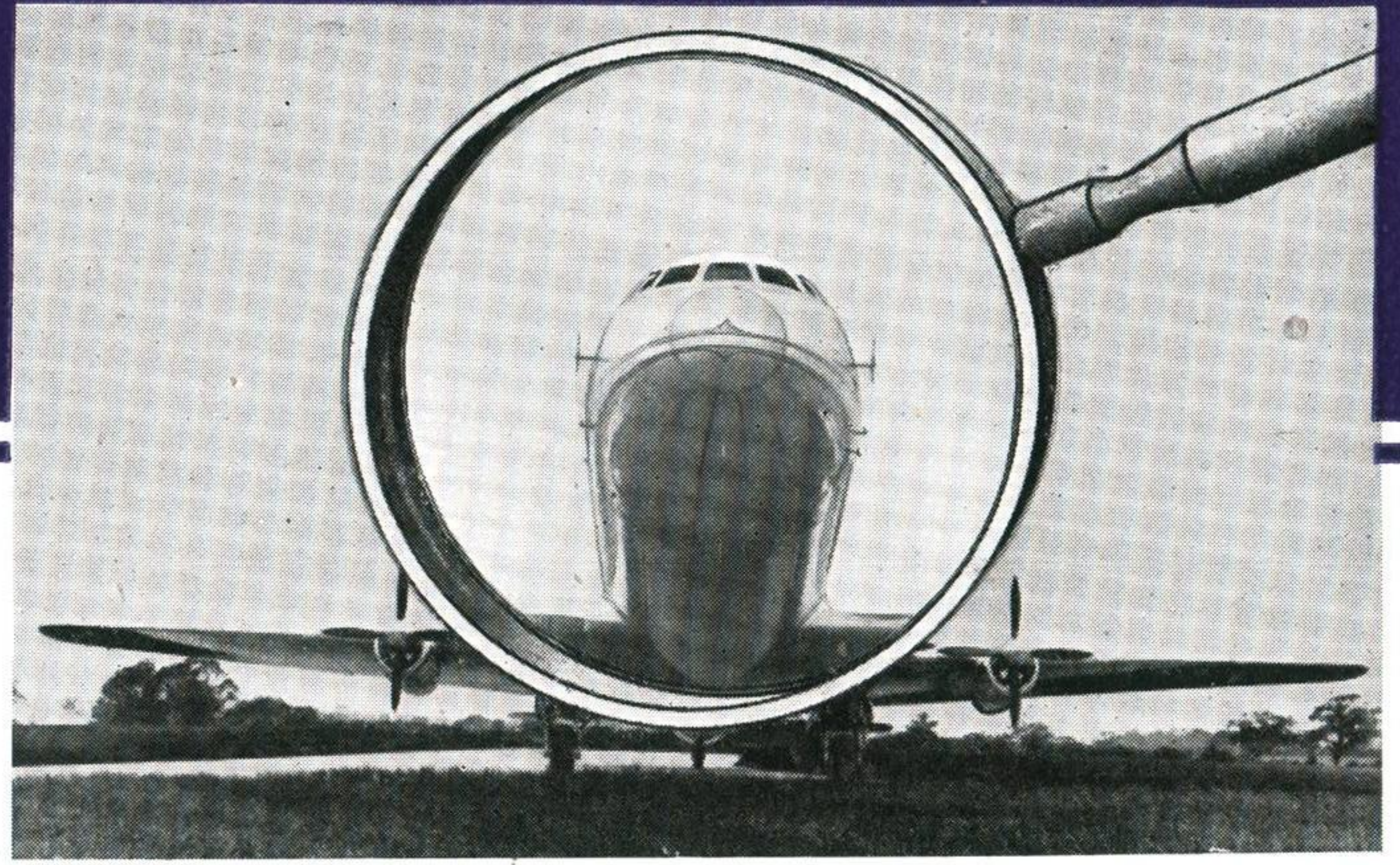
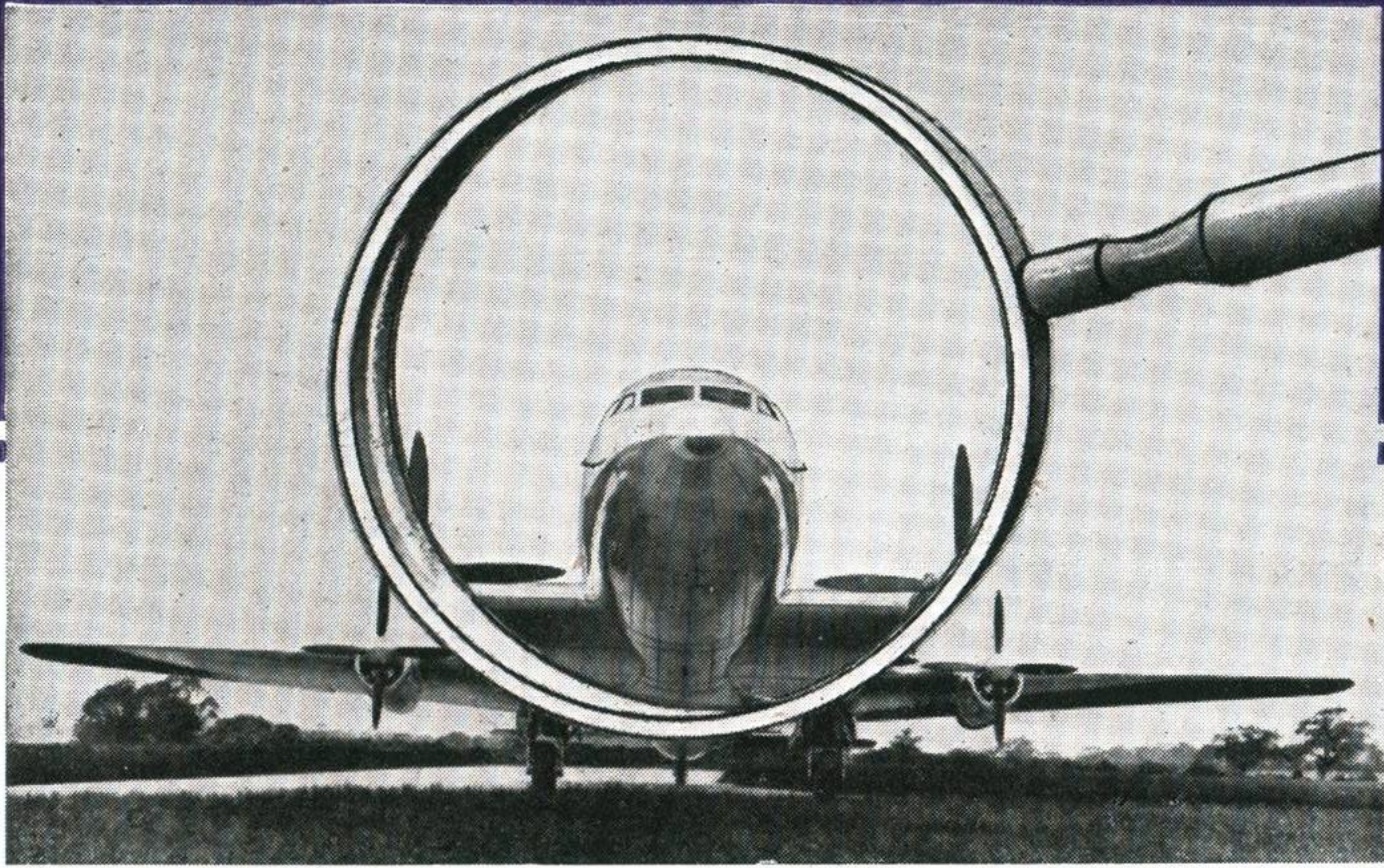
8



9

# The TUDORS





AVRO TUDORS have been in the news, often the headlines, for some time now, and we are all anxious to see these fine machines joining the circuits of the world's airports. Like every other worthwhile aeroplane they have had, and are having their so called teething troubles, technical, operational and others.

Altogether there are eight different Tudors envisaged; they are the Marks I to VIII. There are yet further variations of some of these to suit the requirements of customers. For example, there are three different interior arrangements for the Mark II.

As far as we are concerned recognitionally, the Tudor group can be divided into two main classes—the Marks I (short fuselage), and II (long fuselage) serving as basic examples of each class. Marks I, III, IV, and VIII (Avro type No. 688) are of the shorter class, although the Mark IV has a six foot longer nose than its brothers. The customer in this case is British South American Airways. The Marks II, V, VI, and VII (type No. 589) are basically of the longer type and can, justifiably, be called the "Tubular Tudors." Military versions of the Mark II probably will be built in both Canada and Australia.

The short nose variety are powered by Merlins of 1,740 h.p. with the exception of the Mark VIII which is probably to have Rolls Royce Nene turbo-jets. The longer Marks II, V and VI will also have Merlins. The Mark VII has Bristol Hercules radials.

All Tudors have the high "sugar loaf" shape fin and rudder, as distinct from that of the first prototypes of each class. They all have had much larger wing-root fillets fitted too. The longer models have had their inner nacelles extended (see photos) well beyond the trailing edge of the wing, adding one more distinguishing feature to a distinguished looking aeroplane.

Our pictures show, at top and bottom of the opposite page, the Mark VII being test flown. Notice the radials. Incidentally Charles Brown took these excellent shots when the Mark VII was going from Boscombe Down to Manchester. In the centre are the two basic types side by side in the first and second prototype stages. The later models are on the right. Finally, above, are close-ups of the two basic types to show you (as if you didn't know) that it is possible to distinguish them in dead head-on views by the difference in windscreen panelling, among other small details. Mark I is on the left. The wing-span of all marks, so far as is known at present, is 120 feet.

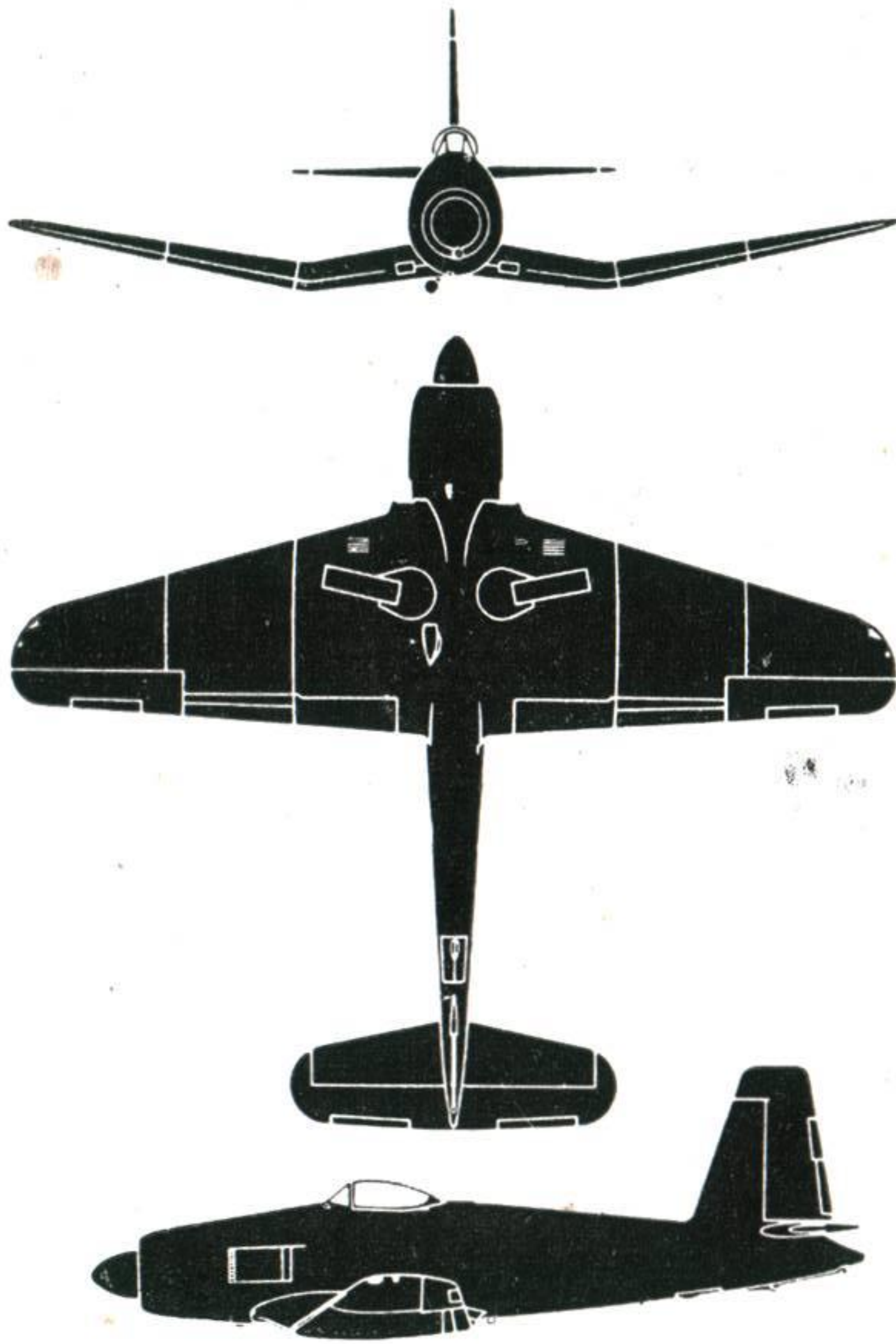
## ADVANCED SPOTTING

Recognition Test No. 42



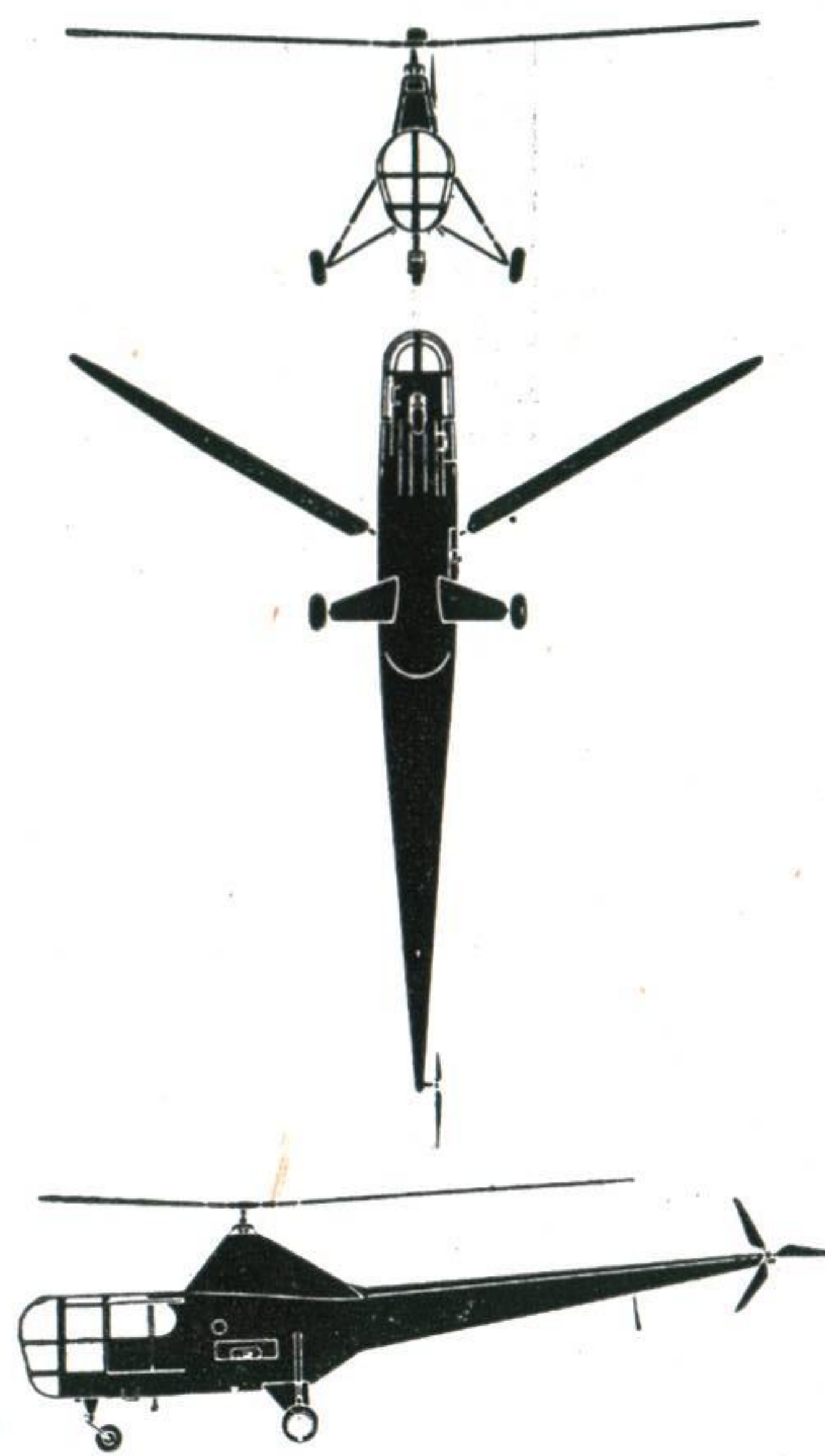
# NEW and REVISED SILHOUETTES

**BLACKBURN S28/43**



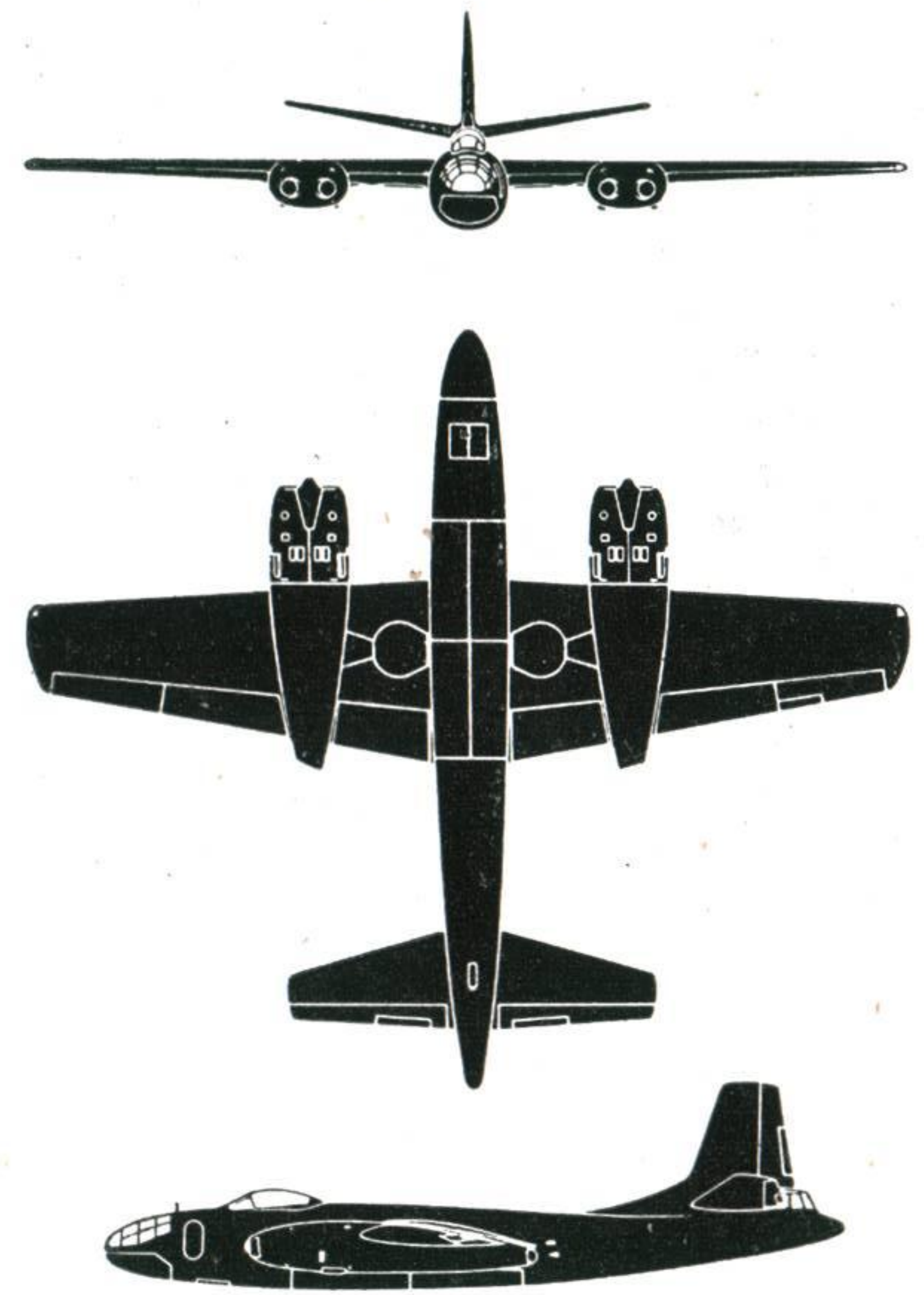
British Torpedo-Fighter  
1 Centaurus Radial Span 45 ft. 0 ins.  
New Silhouette

**SIKORSKY S-51**



American Helicopter  
1 Pratt & Whitney Radial Rotor Diameter 48 ft.  
New Silhouette

**MARTIN XB-45**



American Bomber  
4 G.E. J-35 Turbo-jets Span 89 ft. 6 ins.  
New Silhouette

FRONT COVER : Short "Hythe" (Photo : Charles Brown)

## SOLUTIONS TO RECOGNITION TESTS IN THIS ISSUE :

### No. 40 (ELEMENTARY SPOTTING)

- |                    |                     |
|--------------------|---------------------|
| 217. Fireball FR-1 | 226. York           |
| 218. Tempest II    | 227. P-80           |
| 219. Dove          | 228. Hythe          |
| 220. Meteor IV     | 229. Brigand        |
| 221. Oxford        | 230. Viking I       |
| 222. Buckmaster    | 231. Packet C-82    |
| 223. Harvard II    | 232. Lancaster VII  |
| 224. Firefly I     | 233. Hastings       |
| 225. Lancastrian   | 234. Junkers Ju 290 |

### SPELICOPTER HOPPING

- |                        |                           |
|------------------------|---------------------------|
| 1. Cierva W.9          | 9. United Helicopters     |
| 2. Piasecki PV-3       | UH-4 Commuter             |
| 3. Piasecki XHRP-1     | 10. Sikorsky R-4 Hoverfly |
| 4. McDonnell XHJD-1    | 11. Bendix Model K        |
| 5. Bell 47B            | 12. Landgraf H-2          |
| 6. Platt-le-Page XR-1A | 13. Sikorsky S-52         |
| 7. Sikorsky S.51       | 14. Firestone G & A XR-9B |
| 8. Bratukhin Omega     | 15. Sikorsky R-5          |

### No. 41 (SILLOGRAPHS)

- |                        |                     |
|------------------------|---------------------|
| 262. P-82 Twin Mustang | 272. Tudor II       |
| 263. Sea Hornet        | 273. Hirtenberg     |
| 264. Firefly I         | 274. Brigand        |
| 265. Catalina          | 275. Blackburn B-48 |
| 266. Chrislea Ace      | 276. Hermes         |
| 267. Aerovan           | 277. Grumman F7F-3N |
| 268. Viking            | 278. Oxford         |
| 269. Lodestar          | 279. Ju 290         |
| 270. Northrop XB-35    | 280. Ju 188         |
| 271. Seabee            | 281. Saab Scandia   |

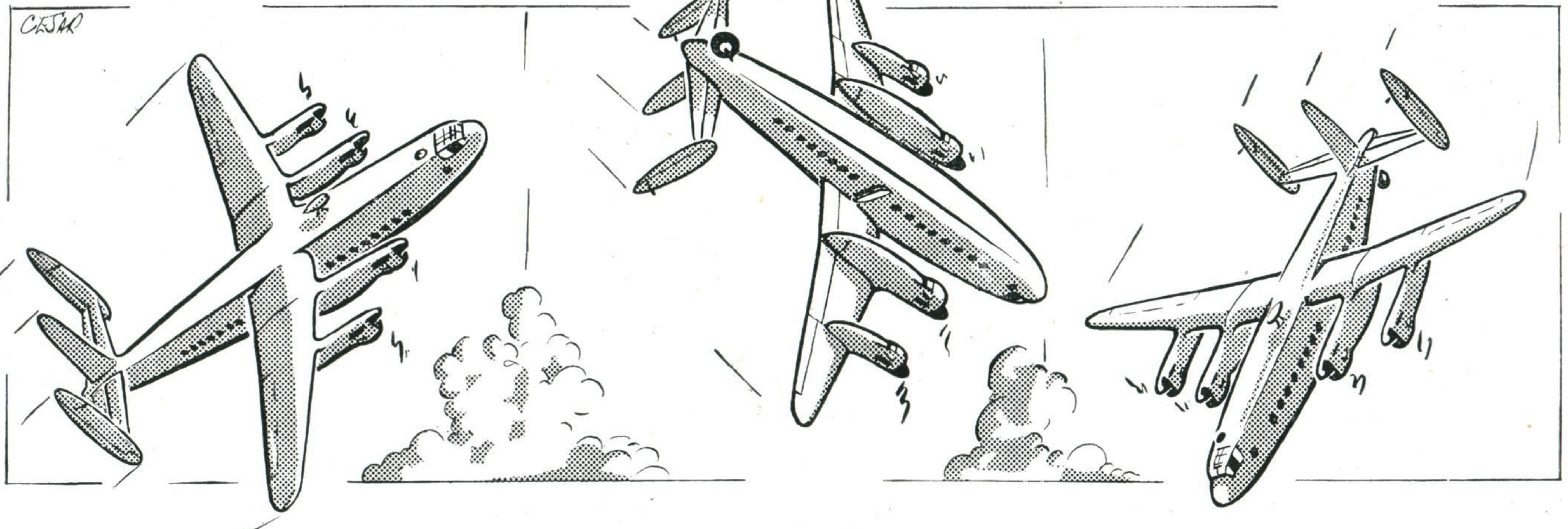
### No. 42 (ADVANCED SPOTTING)

- |                             |                           |
|-----------------------------|---------------------------|
| 272. C-82 Packet            | 285. Potez 63             |
| 273. Sea Vampire            | 286. North American XB-45 |
| 274. PE-3                   | 287. Caudron Goeland      |
| 275. Wayfarer               | 288. Martin XPBM-1        |
| 276. LI-2 (Dakota)          | 289. Me. 262              |
| 277. B-29                   | 290. Sea Otter            |
| 278. Seafires and Firefly I | 291. Ju 290               |
| 279. Lancaster VII          | 292. Hermes               |
| 280. Dove                   | 293. Cons. Convair 240    |
| 281. FD-1 Phantom           | 294. Fireball FR-1        |
| 282. Seafire 47             | 295. Brigand              |
| 283. Viking I               | 296. Firefly I            |
| 284. Wellington X           |                           |

## RECCABSURDITY

Avro York

No. 4



The Inter-Services Aircraft Recognition Journal is a monthly publication, prepared and produced by Air Ministry, S.T.1 (e), in collaboration with the Ministry of Supply, R.T.P.13 (b). The subject matter is decided by an Editorial Committee consisting of the following members—AIR MINISTRY : S.T.1 (e), Wing Commander G. G. N. Barrett, A.F.C. (Chairman), Flight Lieutenant C. E. Sargeant (Secretary and Editor); T.O.5, Squadron Leader W. G. James, A.F.C.; A.D.I. (Tech), Flight Lieutenant J. L. Newton; Central School of Aircraft Recognition, Flight Lieutenant D. A. V. Nicolson, D.F.M.; ROYAL NAVY: Lieutenant (A) J. A. O'Dwyer, D.F.M., R.N.V.R.; ARMY: Captain F. J. B. Crosse, R.A.; MINISTRY OF SUPPLY: R.T.P.13 (b), Mr. A. E. Dollery; ROYAL OBSERVER CORPS: Observer Commander R. R. Poole; AIR TRAINING CORPS: Mr. J. A. Coubrough, Civilian Instructor.