

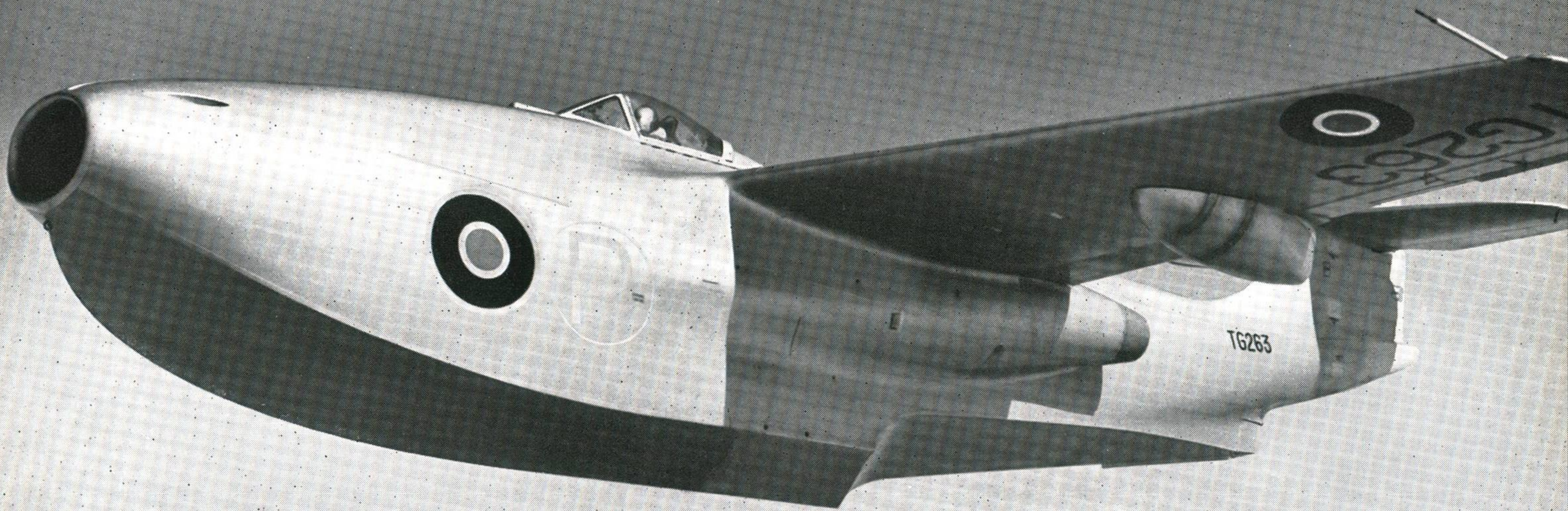
THE INTER



SERVICES

# AIRCRAFT RECOGNITION

*Journal*



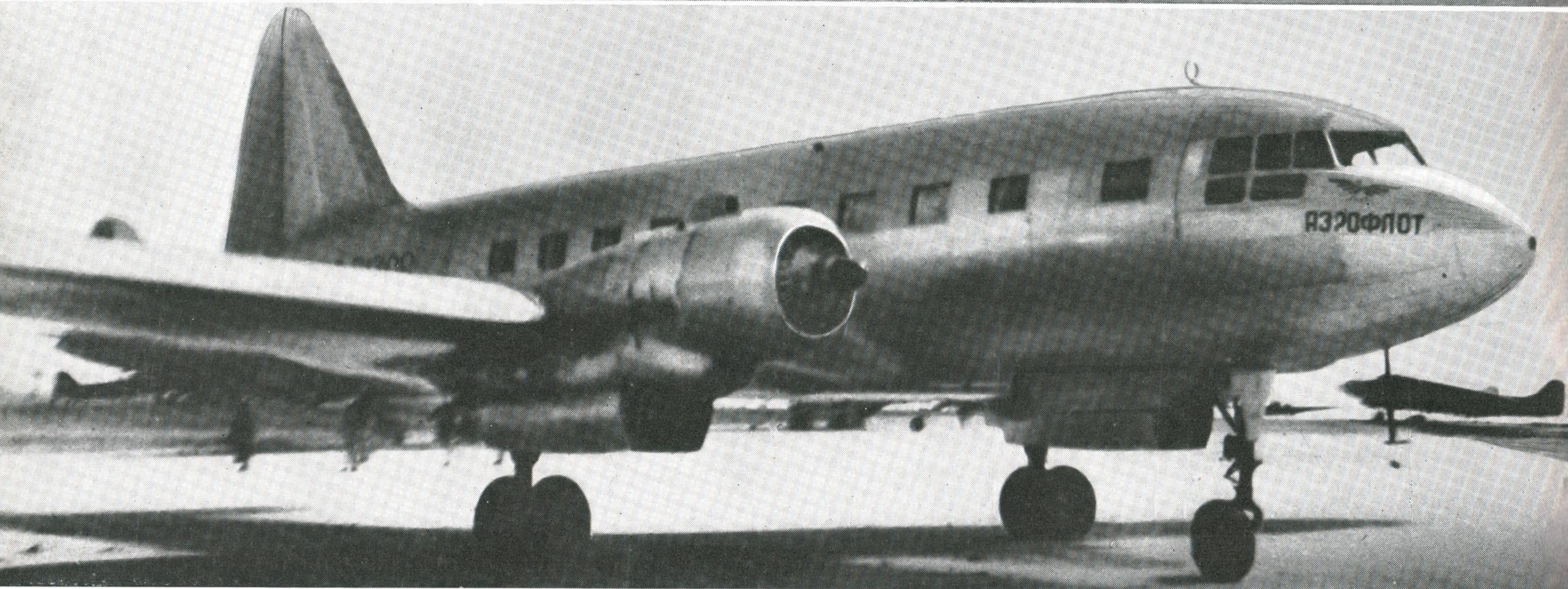
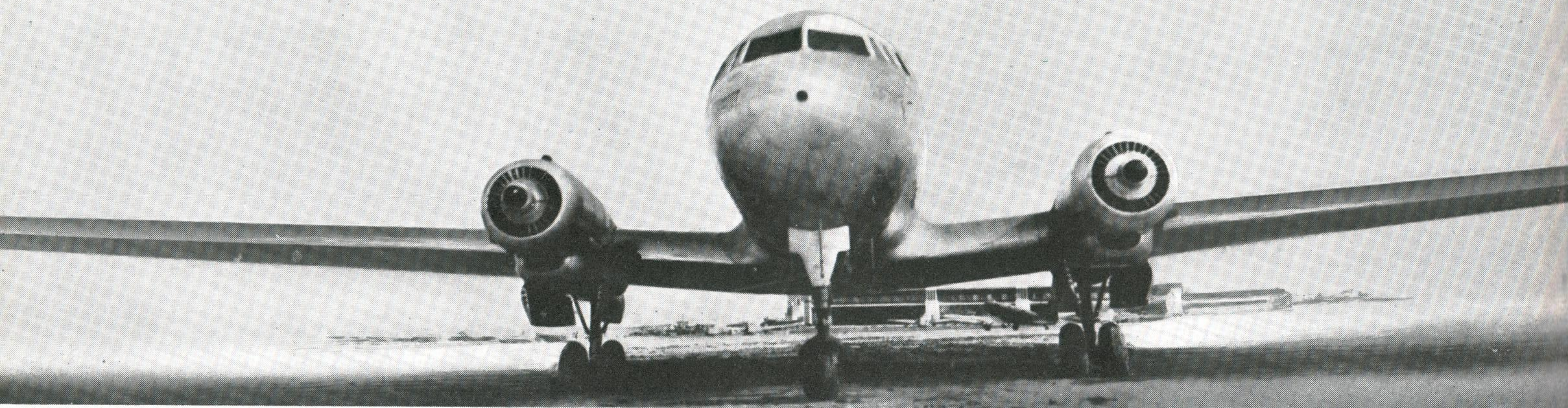
New Series

OCTOBER 1947

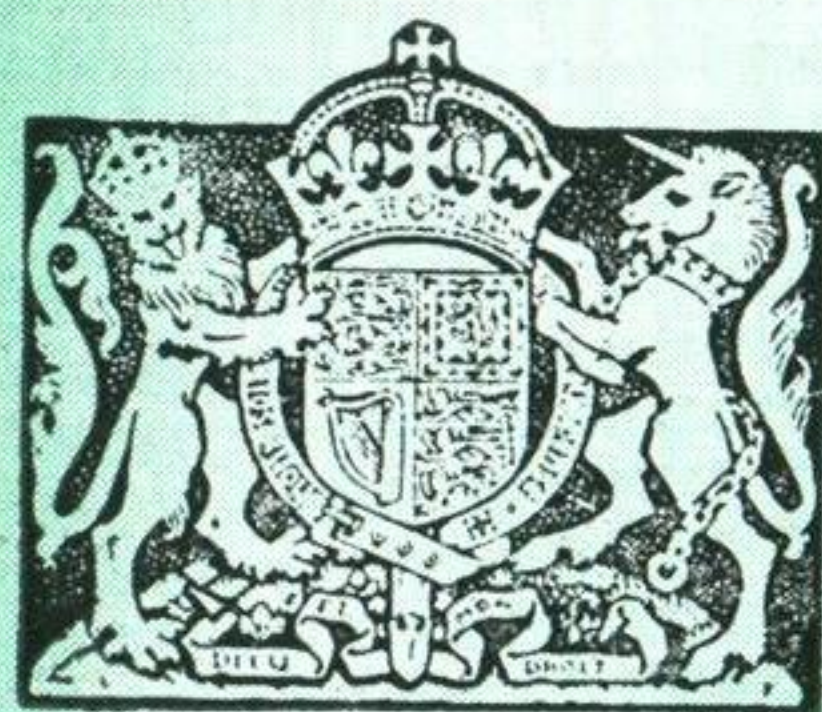
Volume 2. No. 3

# Sergei Slyuskin's

# IL-12



THE INTER



SERVICES

# AIRCRAFT RECOGNITION JOURNAL

(NEW SERIES)

## Editorial

IT seems likely, in the near future, that with the decrease of manpower in the Services, the subject of aircraft recognition may become more self-taught than hitherto. By nature it lends itself very well to such treatment. It is a fact that with a minimum of good instruction and adequate literature a great deal can be accomplished by the individual recognition trainee himself. This was, in fact, the case during the war, when many highly efficient observers and spotters were largely self-taught.

Self-teaching demands enthusiasm and interest in the subject. In aircraft recognition there is plenty to arouse interest and enthusiasm, for the subject is very broad in scope. It involves two distinct lines of action which should not be confused. One is the acquisition of a knowledge of aircraft and their background; the other is the training of the senses to quick reaction on sighting aircraft. The first is a matter of study. The second is a matter of practice—practical spotting, actual or synthetic.

A peculiarity of the subject is that there is a fair amount of preliminary spade work—mugging up if you prefer to call it that—and at times the task may seem well-nigh impossible. Actually it never is. Indeed, by continued application the stage is reached—and quite suddenly, too—when it is borne upon the student that he has passed the critical point; he has, one might say, “clicked.” It isn’t a case of free wheeling from then on, but at least the back of the job is broken. Expert spotters will tell you that having passed the critical point in study, individual aircraft require less arduous attention and can be appreciated in a minimum of time. The great thing is to pass that critical point.

There are some who demand the latest aircraft upon which to practice spotting. But while this is conducive to interest and enthusiasm—and we do make a point of publishing the latest possible pictures and information as they are available—it is a fallacy to suppose that it is entirely necessary; for it is possible to keep one’s power of observation at maximum efficiency by spotting everything that crosses the sky. The key to success is to “keep on keeping at it.” Even though one may get rather tired of the Tempests, or Vampires or Meteors, or whatever you see day after day, it is necessary just to keep on pegging away at them. He who would master aircraft recognition must spot all aircraft as specks afar; watch them intently until overhead, observing their changing appearance; watch them disappear into the distance; spot them in good visibility or bad, daylight or dusk; spot them even at night. He must make a habit of watching every aircraft which passes; must listen to it—for although sound identification by itself is unreliable, sound and viewing together are most helpful. Spotting is nothing more than a habit. So get this habit! Get into the groove and stay in it!

*The Journal* is shortly to start a series of articles called *Hints on Teaching Aircraft Recognition*. Intended primarily for instructors, this will be of equal value and importance to trainees. *The Journal* will then become a source of material, a book of reference, and an instructional manual all in one. The skies provide the practical and all-important pace-quickenng spotting practice. If, then, it comes to the point of less time available for classroom instruction, there is no reason why the high standard of aircraft recognition already achieved should not be maintained indefinitely.

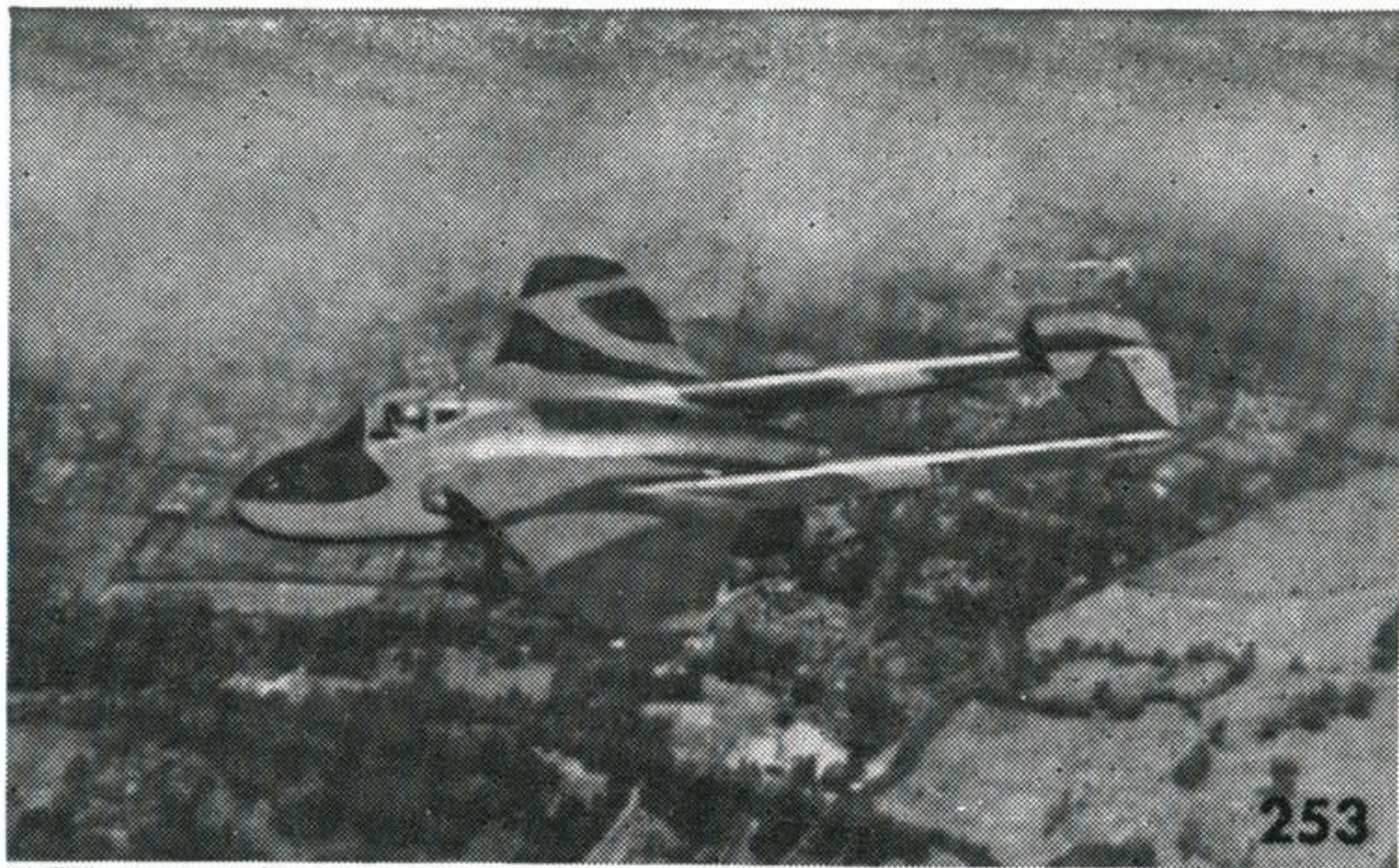
IN the same class as the Vickers Viking, the IL-12 is in series production for Russia’s internal air lines—Aeroflot. It is an all-metal aircraft although control surfaces are fabric covered. Designed by Ilyushin—of Stormovik fame—it carries at least one tell-tale point of that design. Major General Sergei Shvetsov designed the engines. They are ASH-82 producing about 1,800 h.p. each for take-off. They are two-row 14-cylinder radials mounted high and have fairly large intakes beneath them. What appear to be fans behind the four-bladed airscrews are shutters; they are believed to be thermostatically controlled.

The provisional silhouette of the aircraft—see Volume I, page 120 of *The Journal*—indicates a straight centre section to the wing: it is obvious, however, from these pictures that the dihedral angle, which is quite sharp, starts from the wing root. Fairly large wing root fillets are fitted. The wing has a rectangular centre section and the outer panels are almost equally tapered. The tail plane has swept-back leading edges and is mounted on the fuselage centre line. It is quite

small. The fin and rudder—see also IL-4—is, broadly, of equilateral triangle shape. The fuselage, in keeping with modern practice, is basically tubular with nose and tail cones. The cockpit seems to be very well lighted by panels of perspex—or whatever the Russians use for perspex. It sports a tricycle undercarriage which has small double wheels.

By modern standards the IL-12 is a very presentable aircraft, with performance to match. The cruising speed range is 217 to 233 m.p.h. and it will do 1,240 miles non-stop. The single-engine performance is also reported to be good. The crew is four or five. Twenty-seven passengers can be carried or three tons of freight or mails.

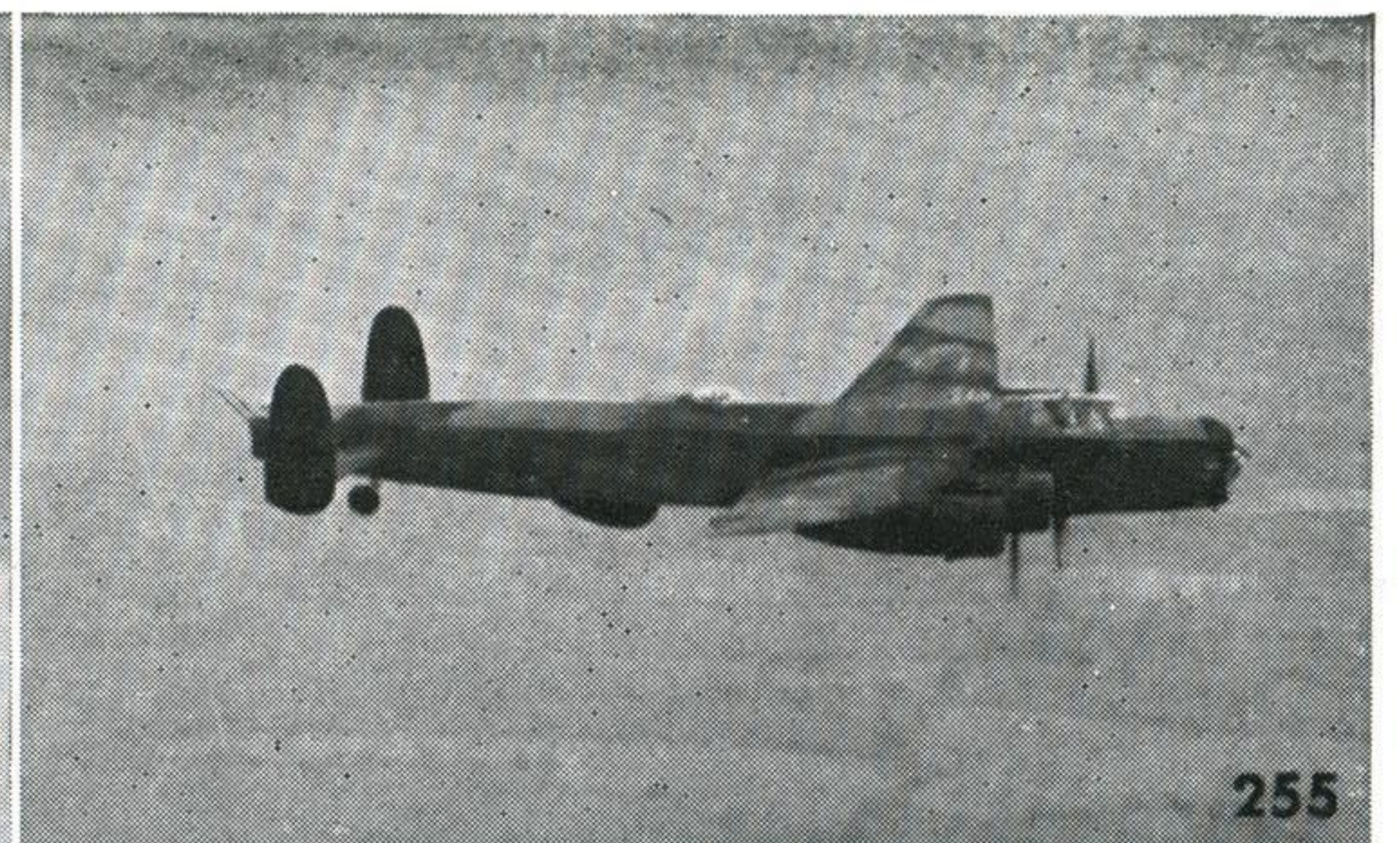
The IL-12 first flew in 1946 and the fact that it is now flying—inside Russia—in some numbers and many more are being produced, would seem to indicate one of two things: it was a winner from the start, or that the Russians feel it is time to replace the LI-2 (Dakota), of which there are a large number in service. Some can be seen in the background of the accompanying pictures.



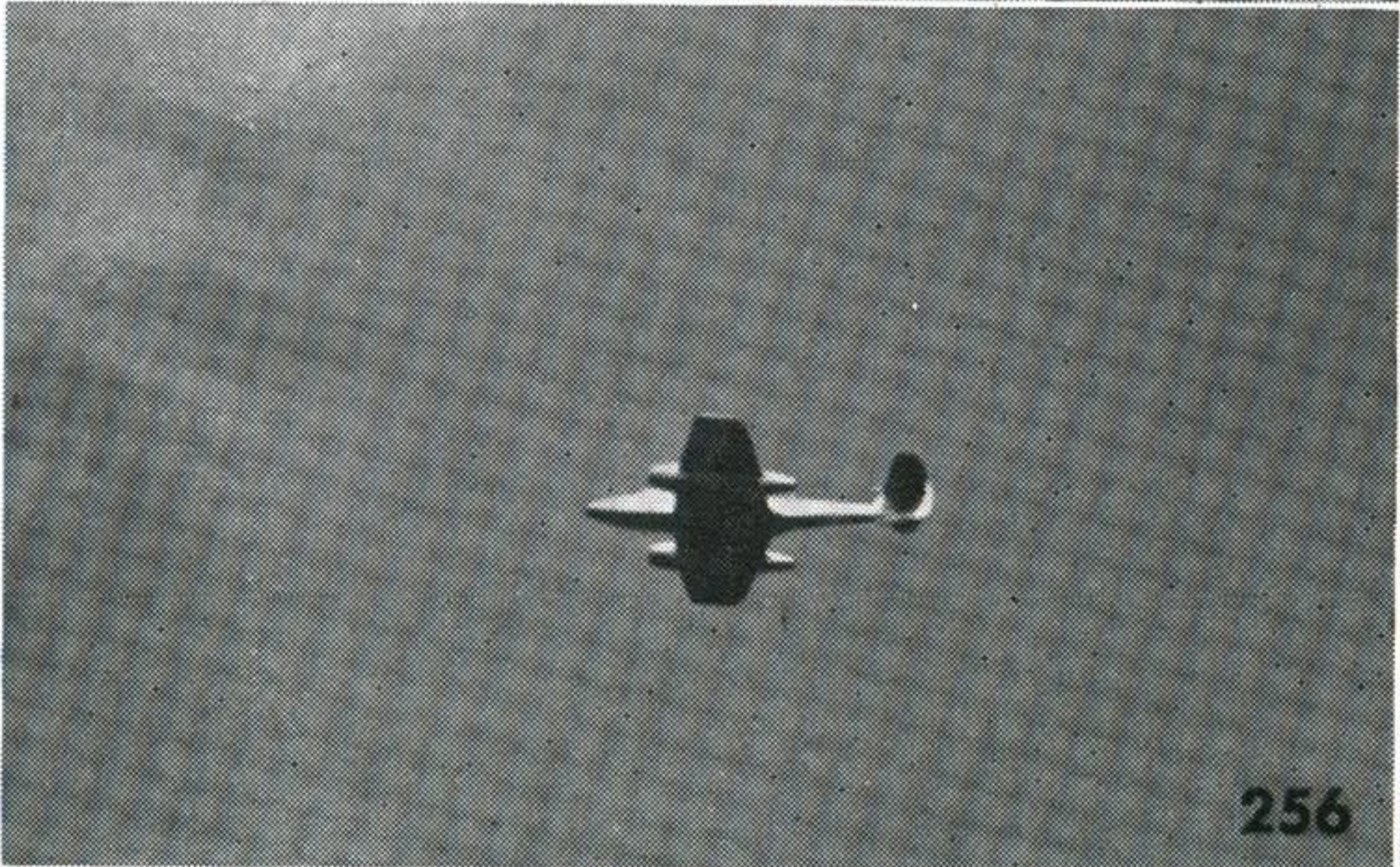
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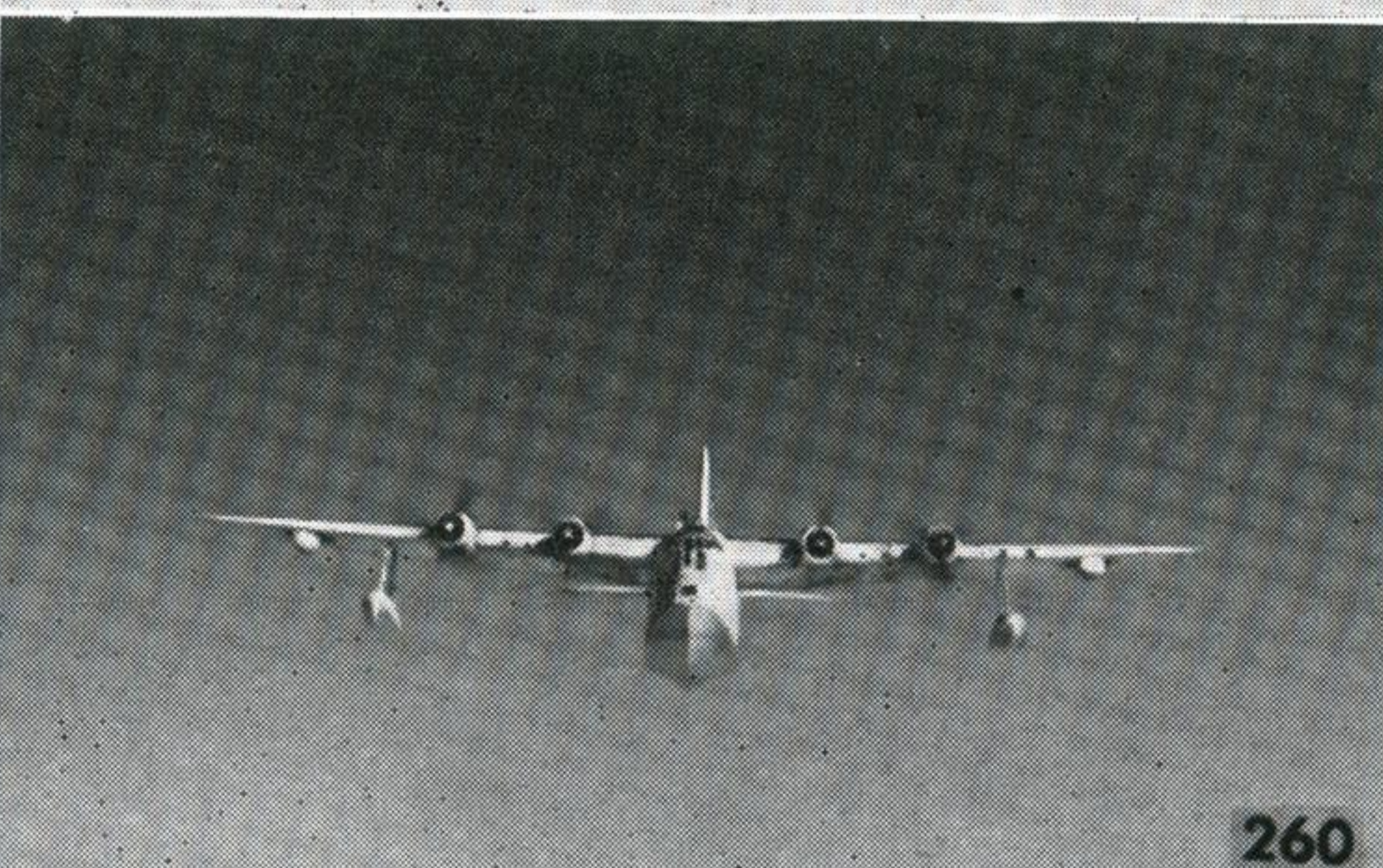
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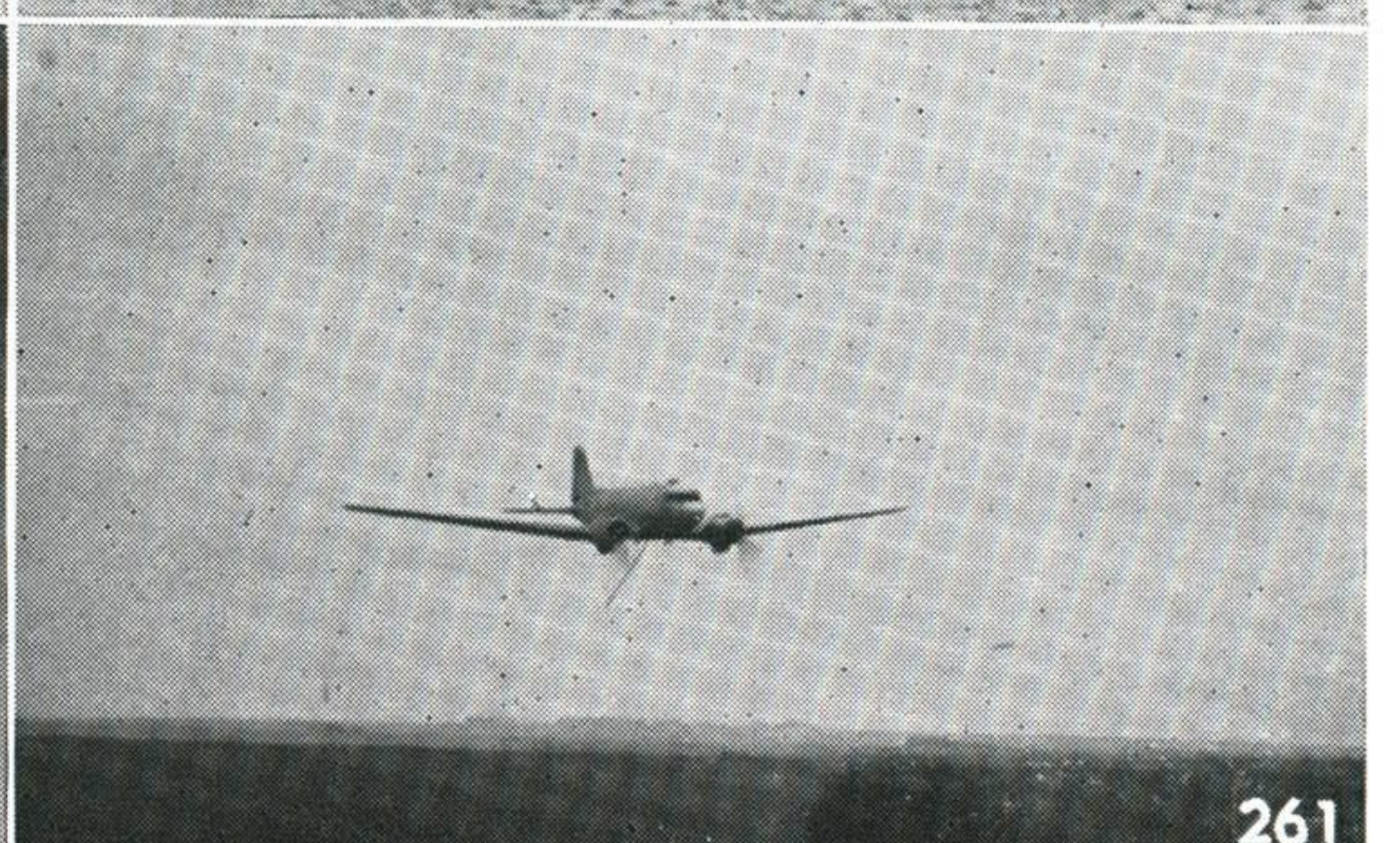
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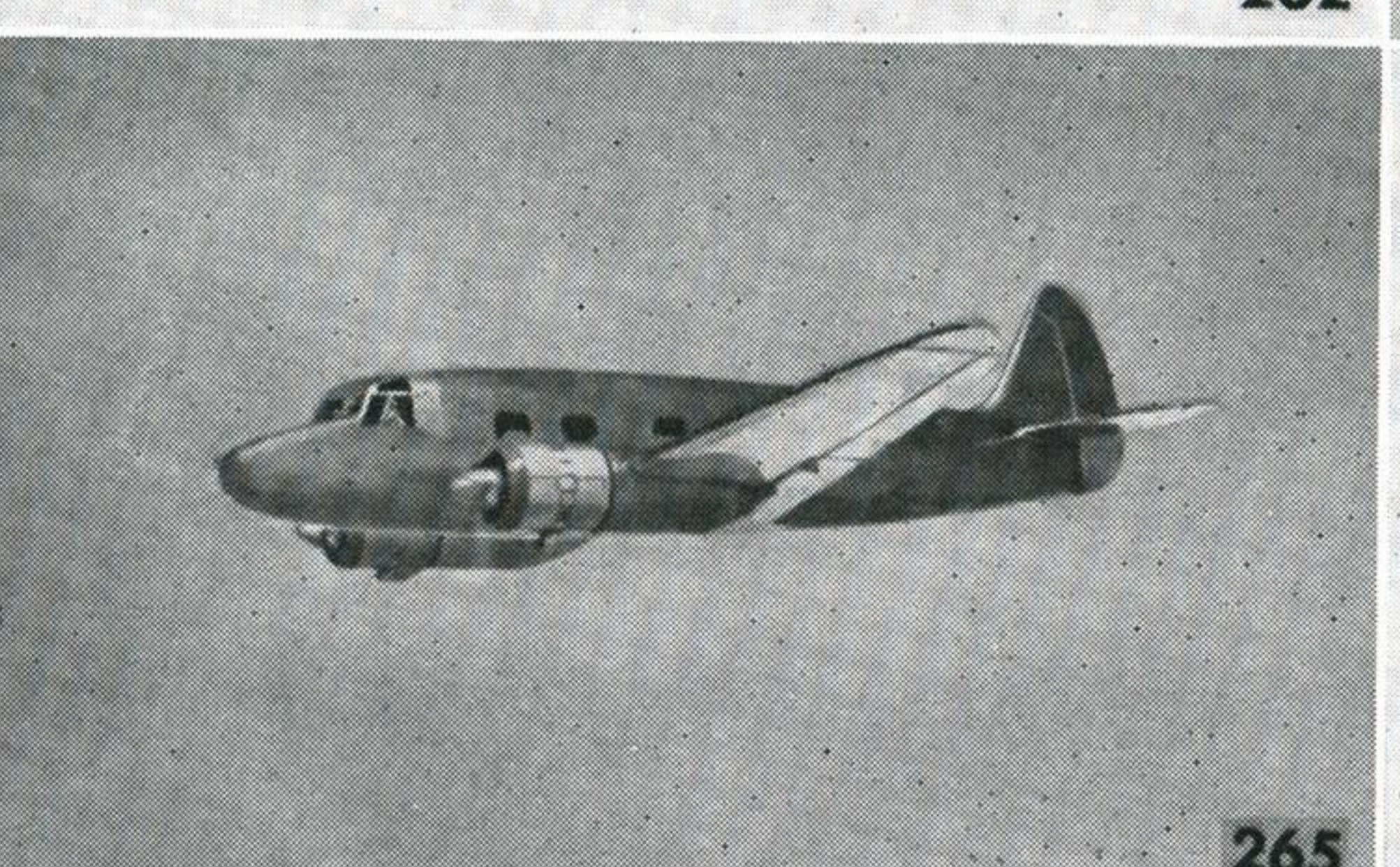
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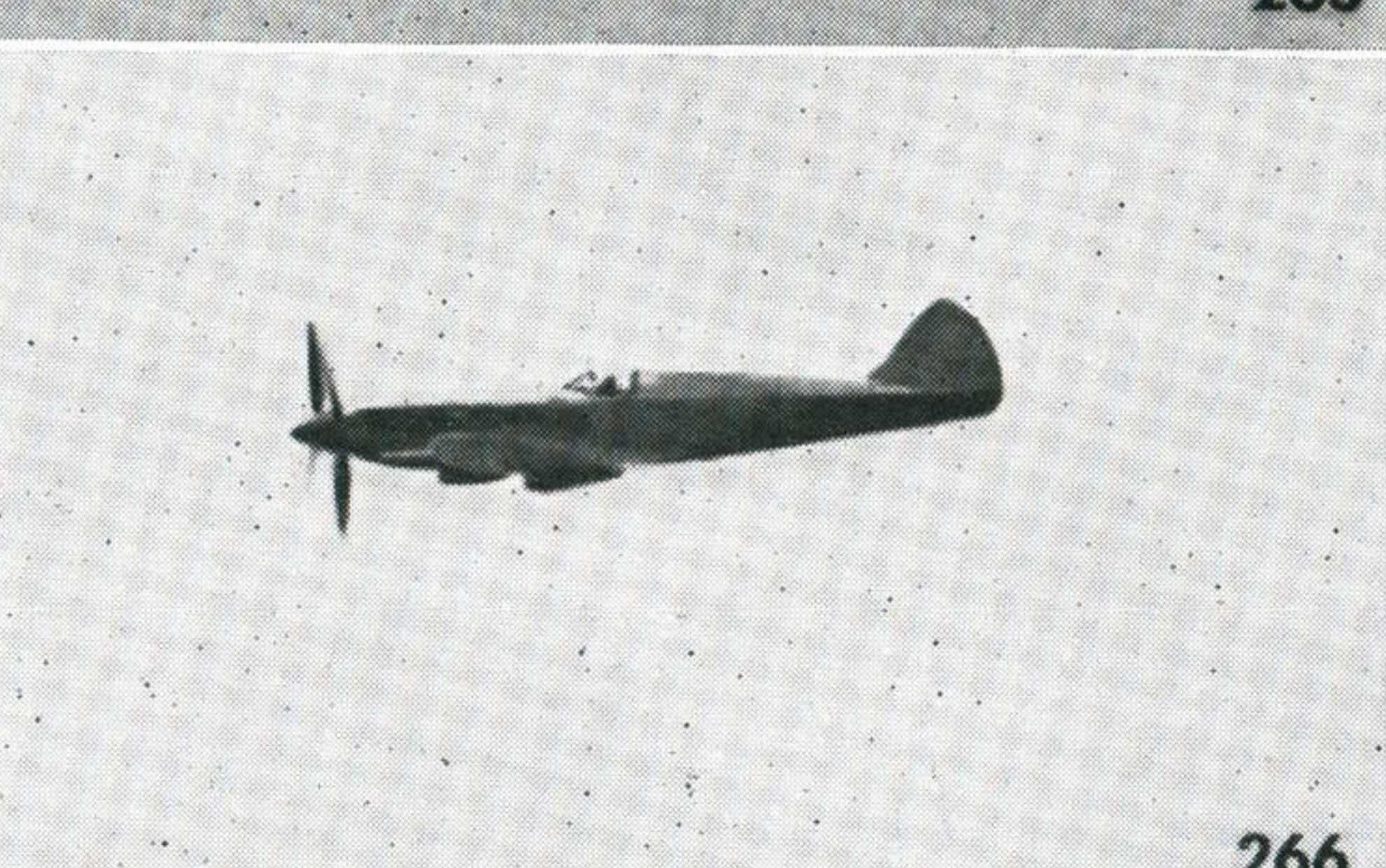
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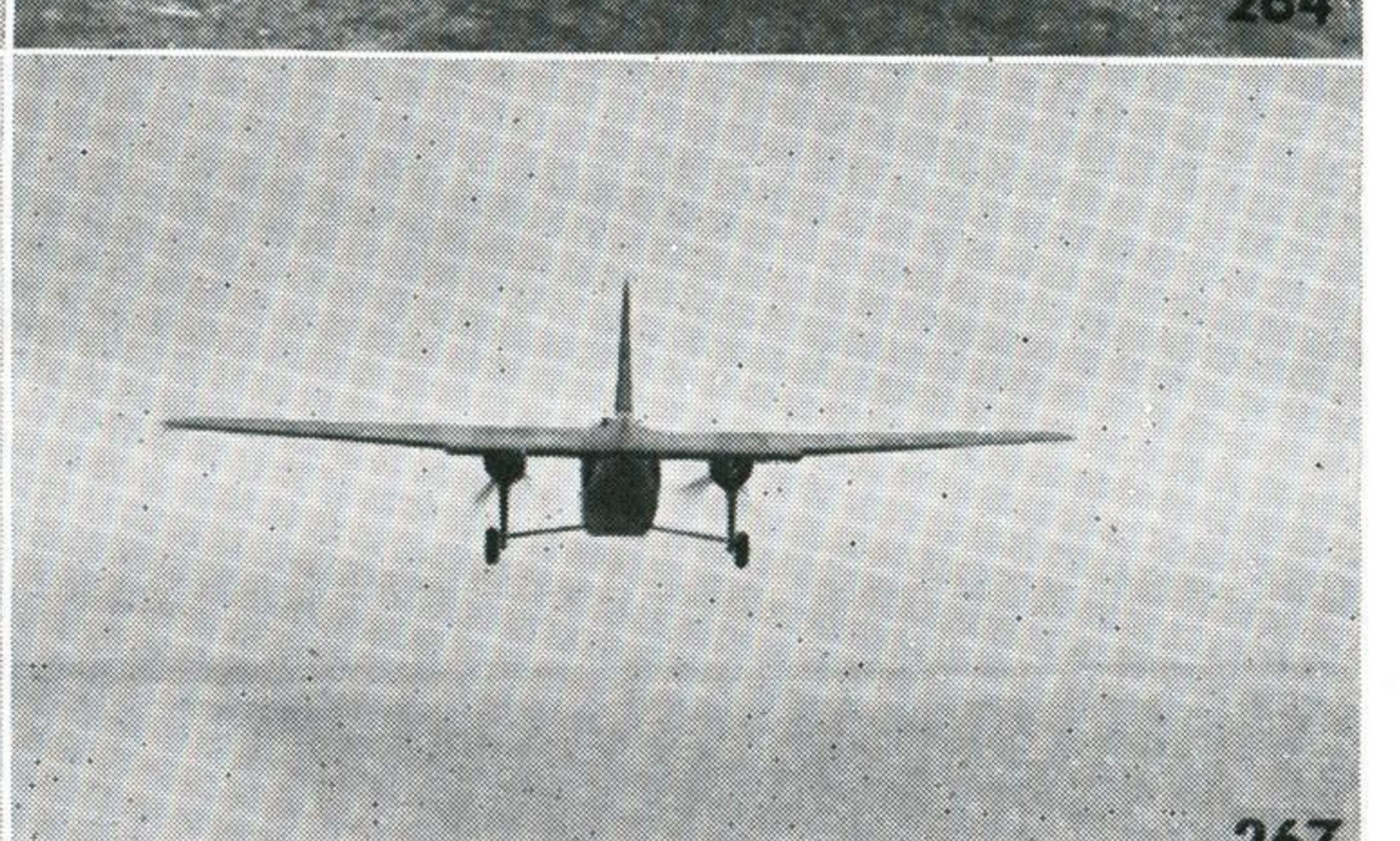
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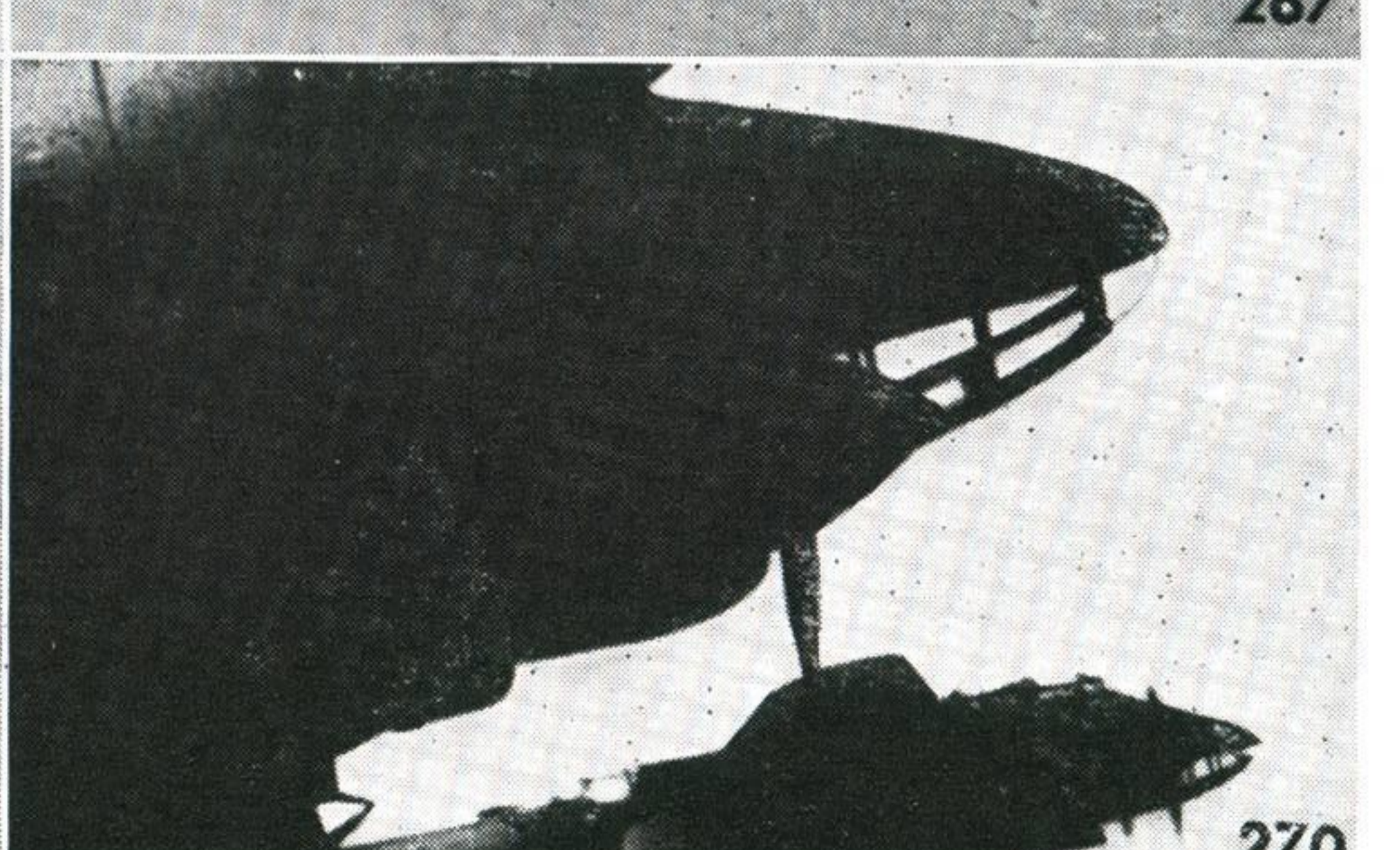
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# ELEMENTARY SPOTTING

Recognition Test No. 45

# XP progress



The undermentioned information on U.S. XP (Experimental Pursuit) aircraft has been culled from U.S. Press reports, and should not be taken as being official.

**The McDonnell XP-85**, parasite fighter for the B-36, is said to have swept wings and a dihedral in the tailplane. It is also said to have a barrel-like fuselage which contains the Westinghouse 24C turbojet which is expected to whip it up to more than 650 m.p.h. One report says the XP-85 will drop out of the B-36 bomb bay with wings folded. This seems, to say the least, a very picturesque way of doing it; we feel, however, the report should be treated with reserve. The B-36 is reported as able to carry up to three fighters and also to recover them. Can you picture a B-36 on the circuit with its own fighters on *its* circuit—Or do we take it too far?

**The North American XP-86**, of which we have so far seen pictures only of the U.S. Navy version, the XFJ-1, is said to be a swept-wing version of that aircraft. There is no news of any other radical change in structure. Like the XFJ-1 it is powered by a single turbojet—the G.E.J-35—in its fat, also barrel-like fuselage. It is hoped that better than 650 m.p.h. will result.

**The Curtiss XP-87**, which, if artists' impressions are reliable, looks something like our Meteor, has four jet units mounted in pairs on the wings (XB-45, 46 fashion). It is classed as an all-weather fighter and will carry a crew of two. Four Westinghouse 24C turbojets power it, and over 700 m.p.h. is the hope and wish of its designers, builders and sponsors.

**The McDonnell XP-88** is in the Interceptor class. Some idea of it is given in the artist's impression shown at the heading. This is not claimed to be completely accurate. Slenderness of fuselage and well-swept wing and tail surfaces to delay onset of compressibility, adequately sum it up recognitionally. Note the vee tail form too. Power comes from the two Westinghouse 24C turbojet units in the belly, exhausting beneath the fuselage

at the trailing edge of the wing. It is hoped that a speed approaching 700 m.p.h. will be attained. It may fly this year.

**The Northrop XP-89**, presumably another interceptor, is powered by twin J-35 turbojet units. It is also said to have remote control turrets. A speed in excess of 550 m.p.h. is the aim.

**The Lockheed XP-90** is said to be in the supersonic class of interceptors. In addition to two Westinghouse 25C turbojets, it is boosted by two rocket motors. The turbojets are used for cruising and the rockets for take-off and fast climb. Supersonic speeds are the aim.

**The Republic XP-91**, another interceptor, is said to be powered by a special J-35 turbojet and also four rocket motors for take-off and fast climb to operating altitude, plus two smaller ones for acceleration through sonic speed regions.

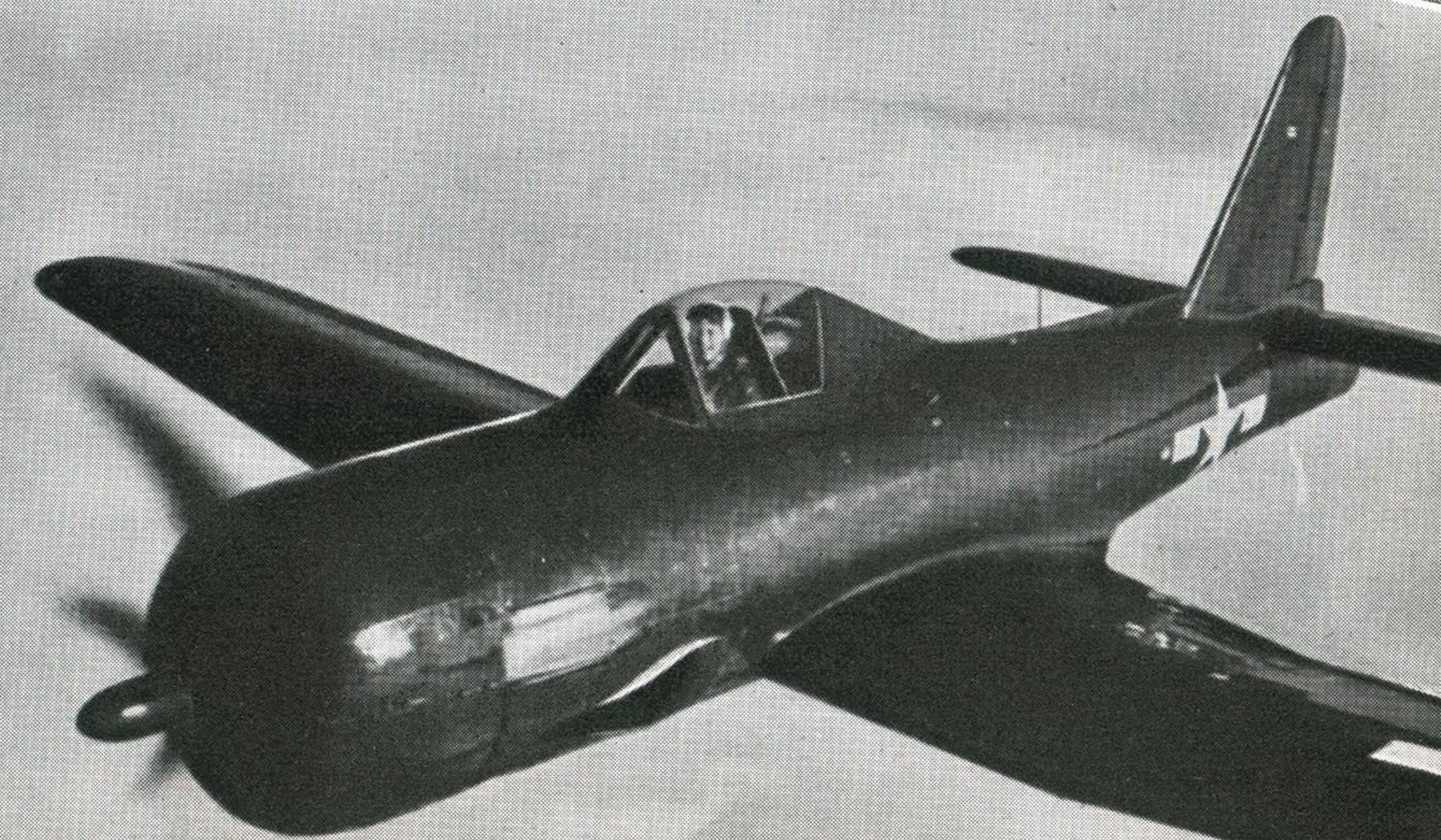
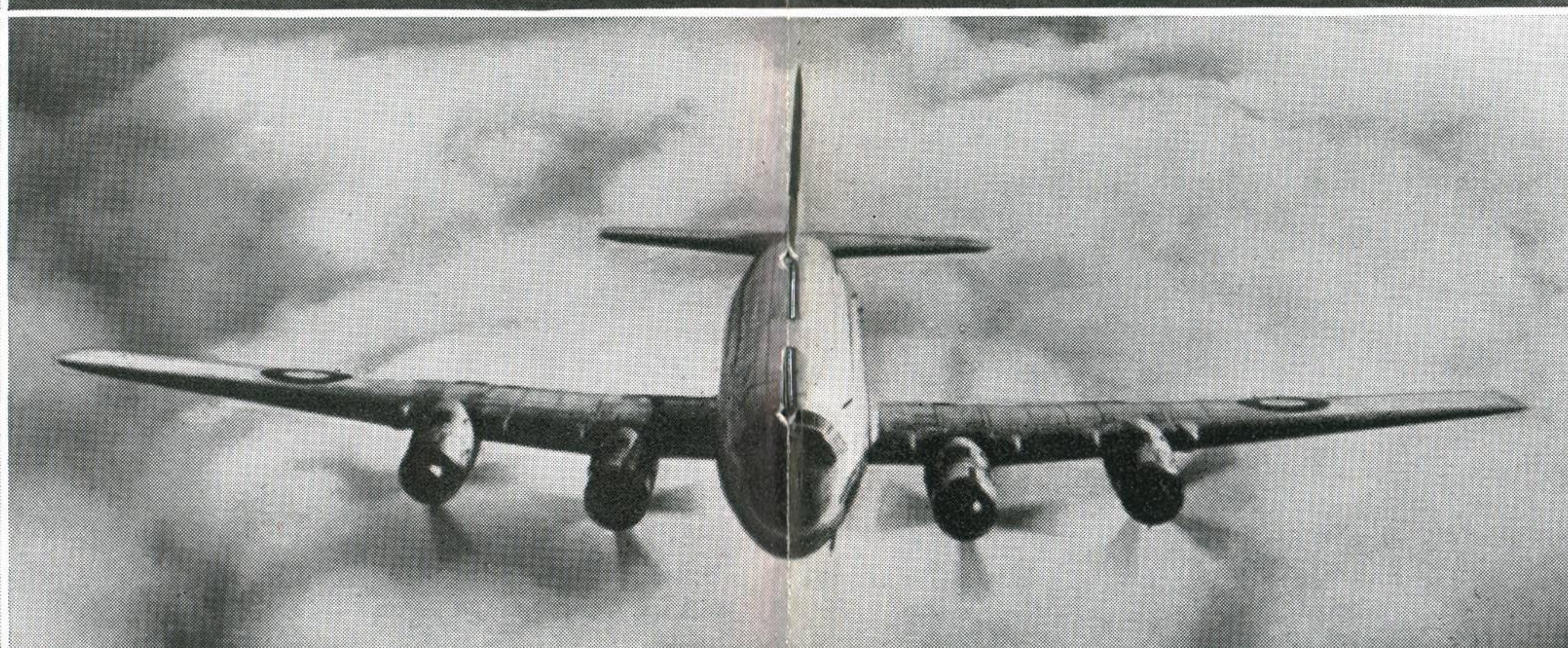
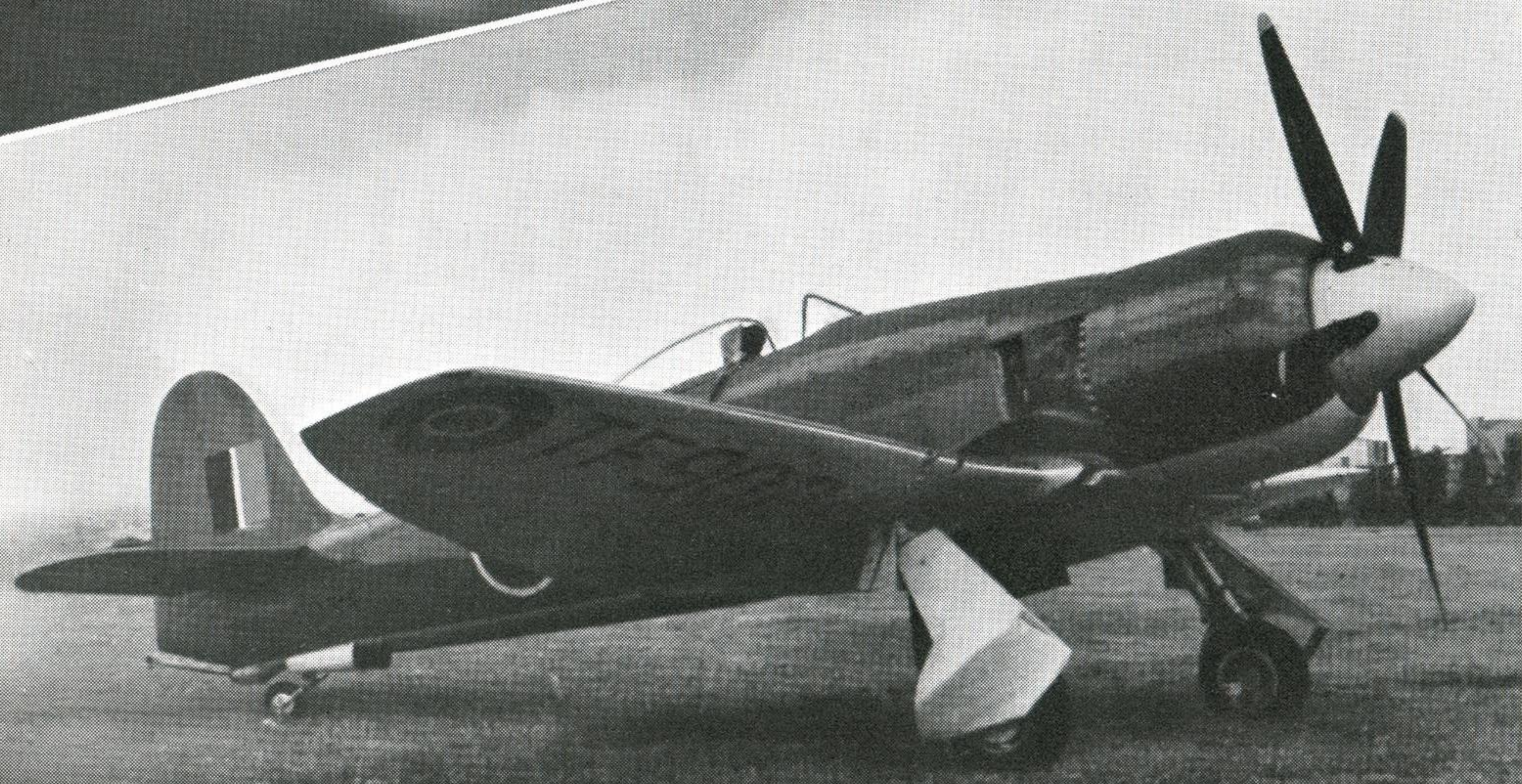
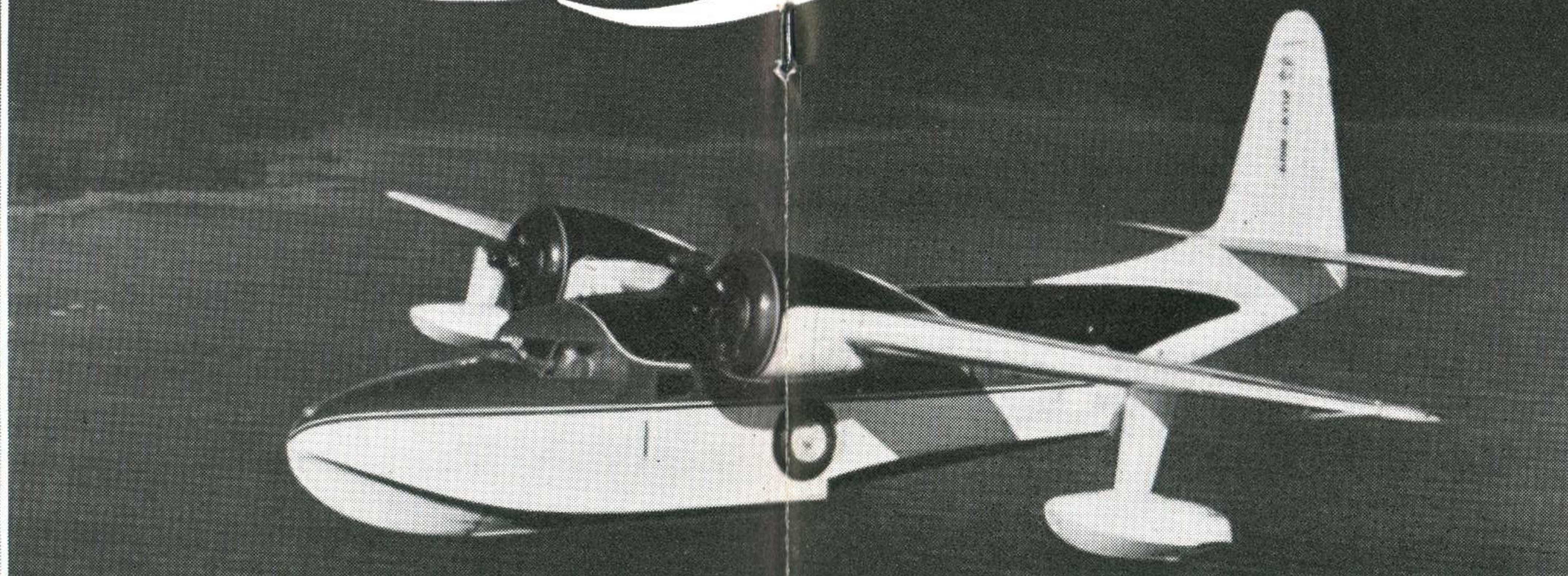
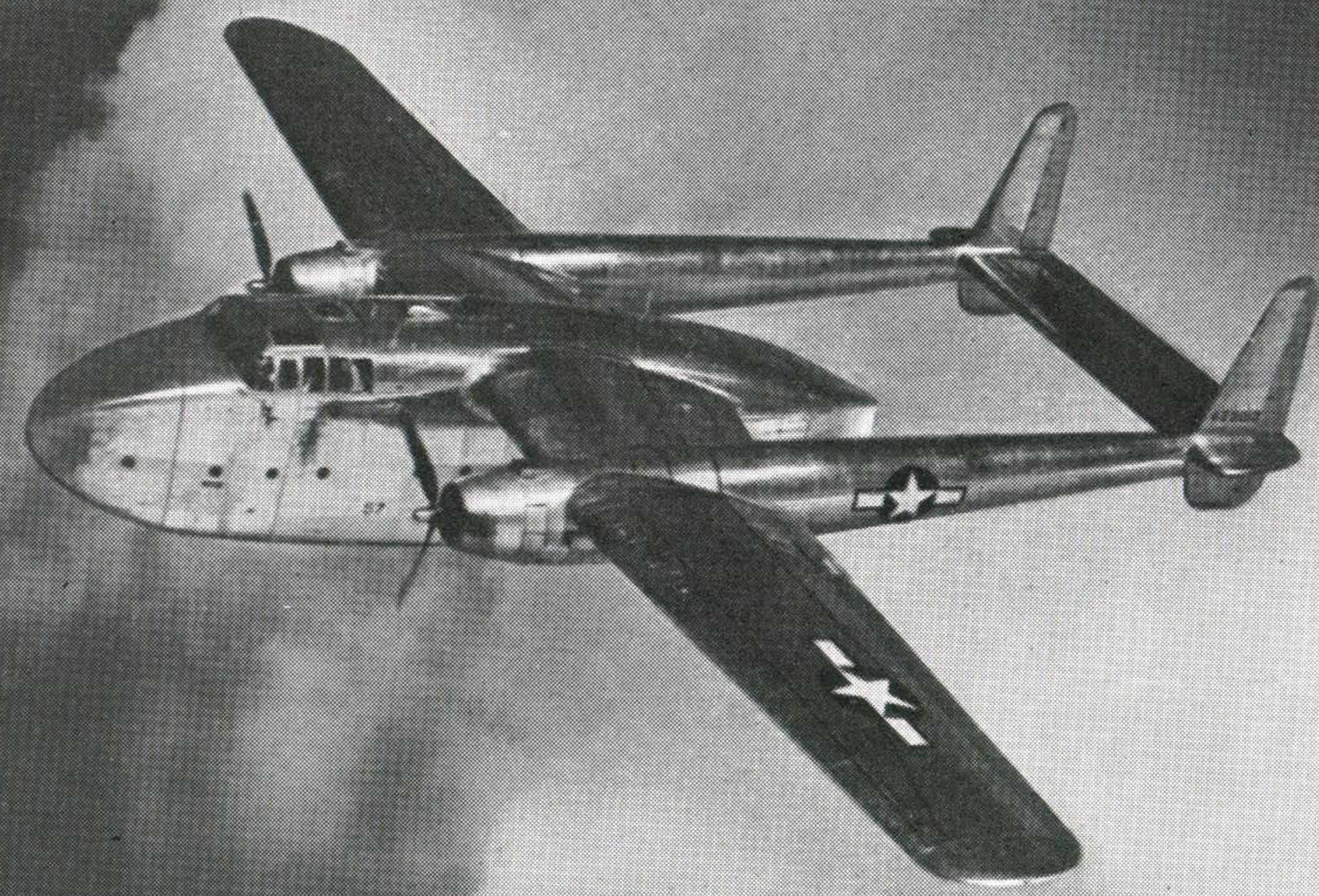
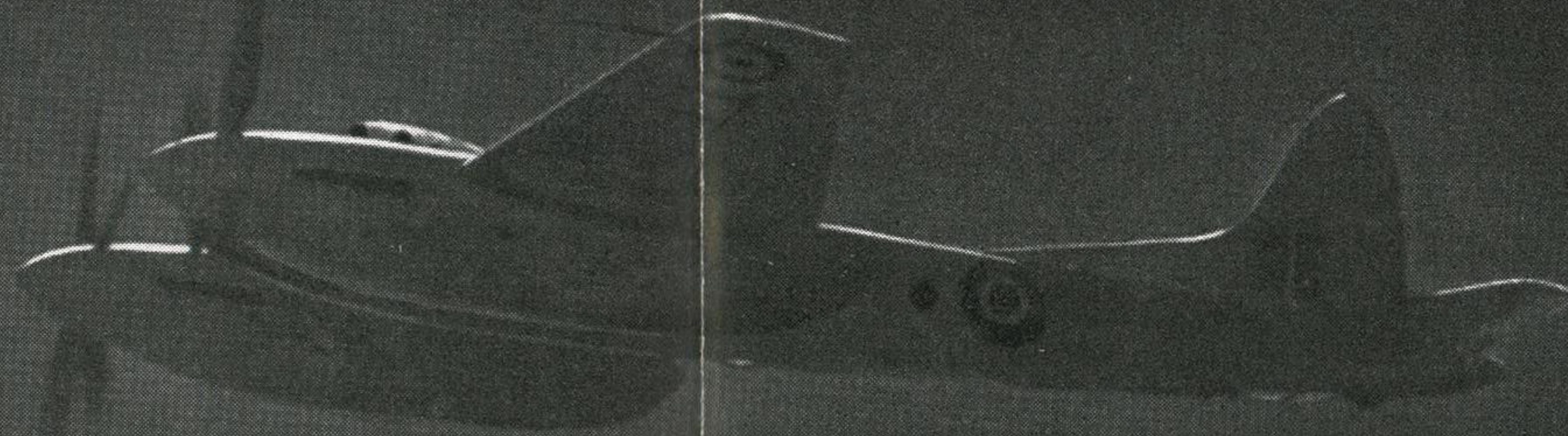
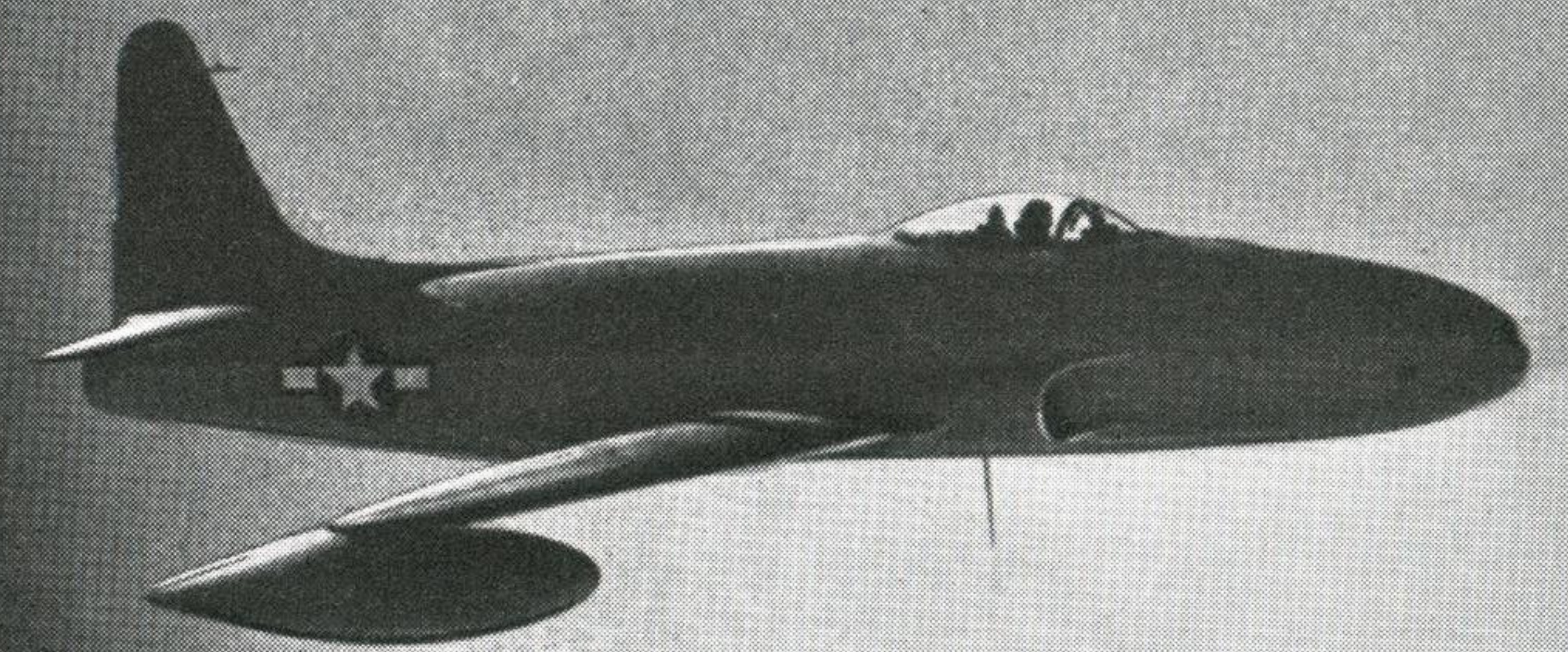
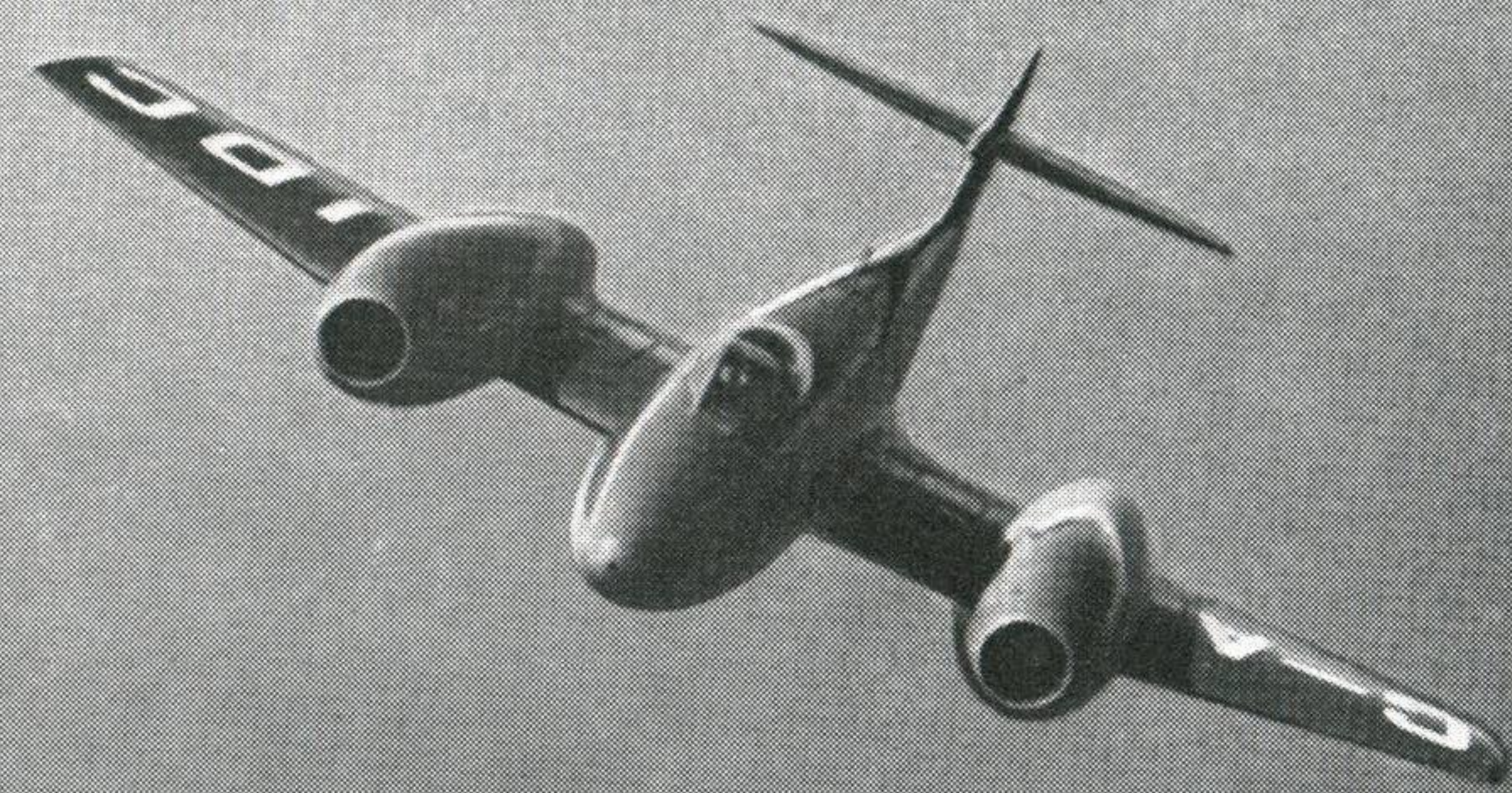
**The Convair XP-92** is said to be the fastest of all. It uses a single Westinghouse 19B turbojet for cruising and a battery of liquid fuel rockets to accelerate into the supersonic speed regions. The turbojet is probably the secondary power unit, the rockets providing the main power. Supersonic speeds are expected.

This collection of experimental aircraft seems to be very comprehensive in the use of power plants. Ranging from single jets, twin jets and jet-power augmented by rockets, to rocket power pure and simple, they should, between them, provide American designers and constructors with an enormous amount of data on transonic and supersonic aerodynamics, and on the behaviour of structures in these speed regions, as well as giving the U.S.A.A.F. a good line on tactics at what are colossal speeds for manœuvring, not to mention fighting, aircraft.

**The Douglas D-558 "Skystreak,"** transonic research aircraft, although not of the XP family is nevertheless pressing on with its experimental flying and gathering valuable data relative transonic and supersonic flight. As we go to press it bids fair to putting the P-80 absolute air speed record—so far unconfirmed by the F.A.I.—into the shade, with a speed beyond the 650 m.p.h. mark. Among the special problems to be tackled with this aircraft are those of excessive vibration at very high speeds; flutter characteristics of the flying surfaces; and heat resisting finishes to the interior and exterior of the machine, to cope with the heat generated by high speed flight, and from its G.E. J-35 turbojet.



# Aircraft in the News



(Top row, left to right)—The Gloster Meteor IV (Span 37 ft. 2 ins.) in civil garb, which recently made a 4,000 mile European tour (2 Rolls-Royce Derwent V jet engines); The De Havilland Sea Hornet XX (Span 45 ft.) now in production (2 Rolls-Royce Merlin engines); The Lockheed P-80B (Span 38 ft. 10 ins.) the latest P-80 to go into service with the USAAF (Allison turbojet). (Middle row, left to right)—The Fairchild C-82 Packet (Span 106 ft. 5 ins.) freighter and paratroop transport (2 Pratt and Whitney Double Wasp radials); The Grumman Mallard (Span 66 ft. 8 ins.) 8-10 passengers amphibian (2 Pratt and Whitney Wasp Radials); The Lockheed Constitution (Span 189 ft.) which rumour says, may, after all, go into production (4 Pratt and Whitney Wasp Major Radials). (Bottom row, left to right)—The Hawker Sea Fury X (Span 38 ft. 5 ins.) now in production for the Royal Navy (One Bristol Centaurus XVIII); The Handley Page Hastings (Span 113 ft.) passenger or cargo transport; The Ryan XFR-4 (Span 40 ft.) U.S. Navy experimental interceptor (One Westinghouse 24C turbojet and one Wright Cyclone radial).

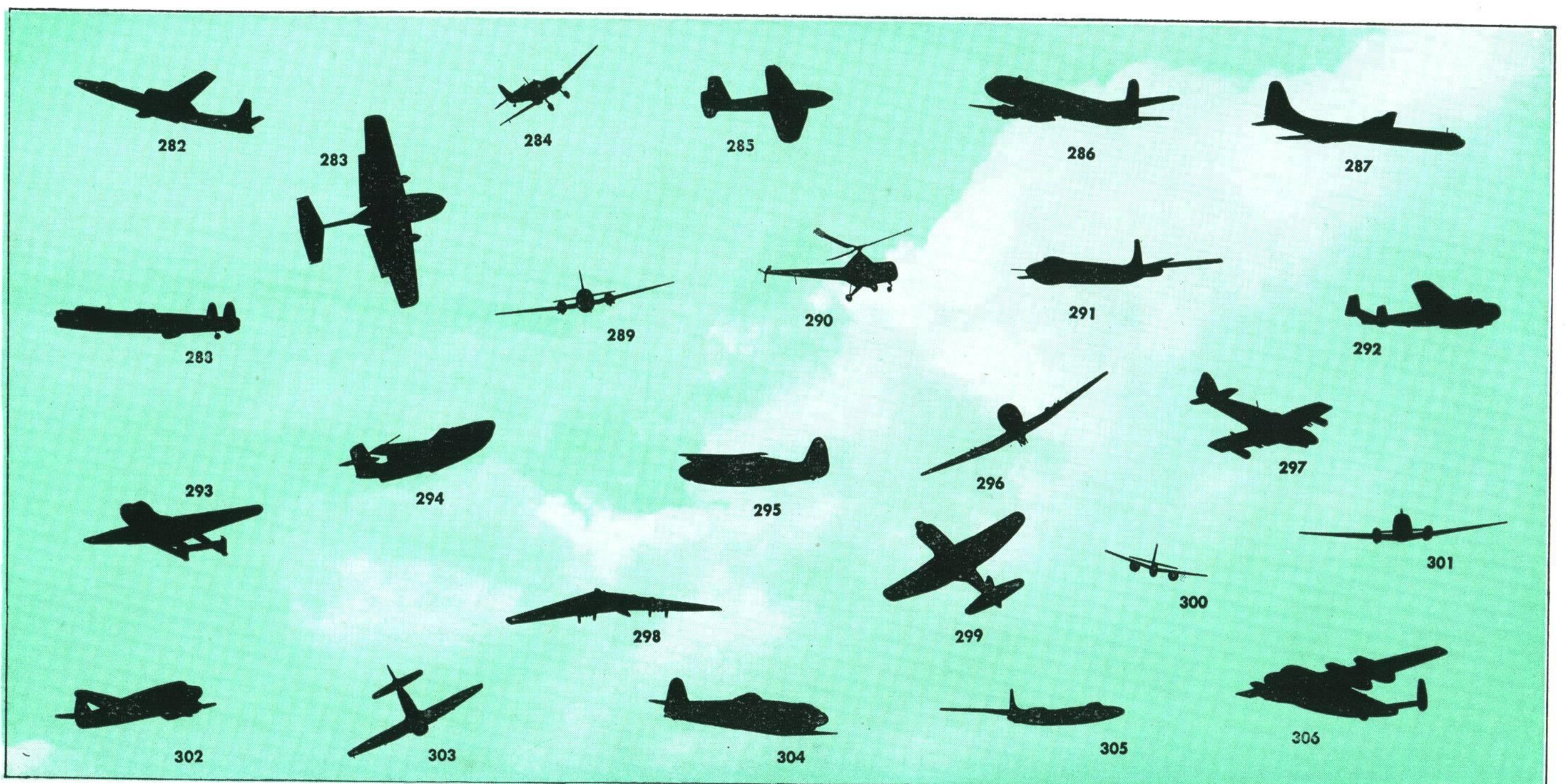
# ADVANCED SPOTTING

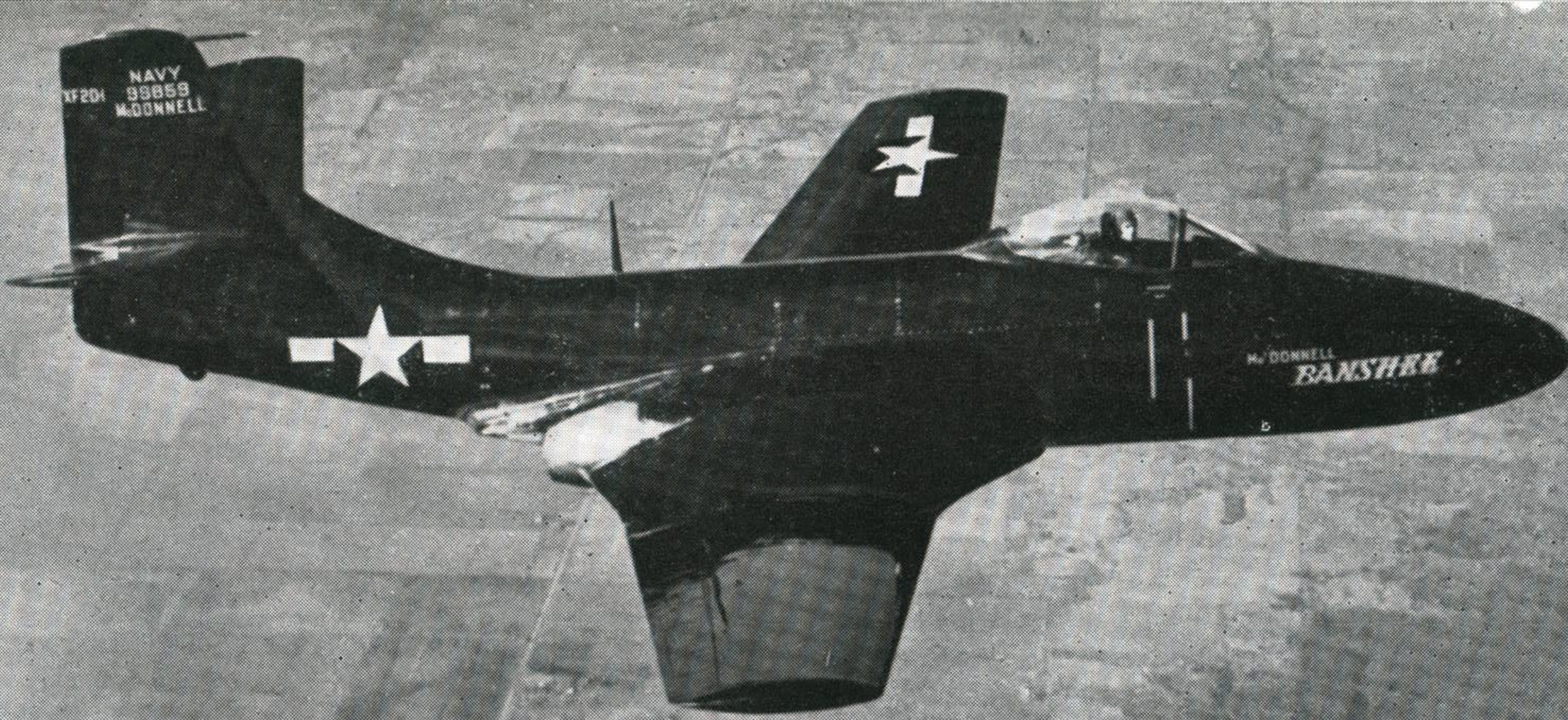
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# SILLOGRAPHS

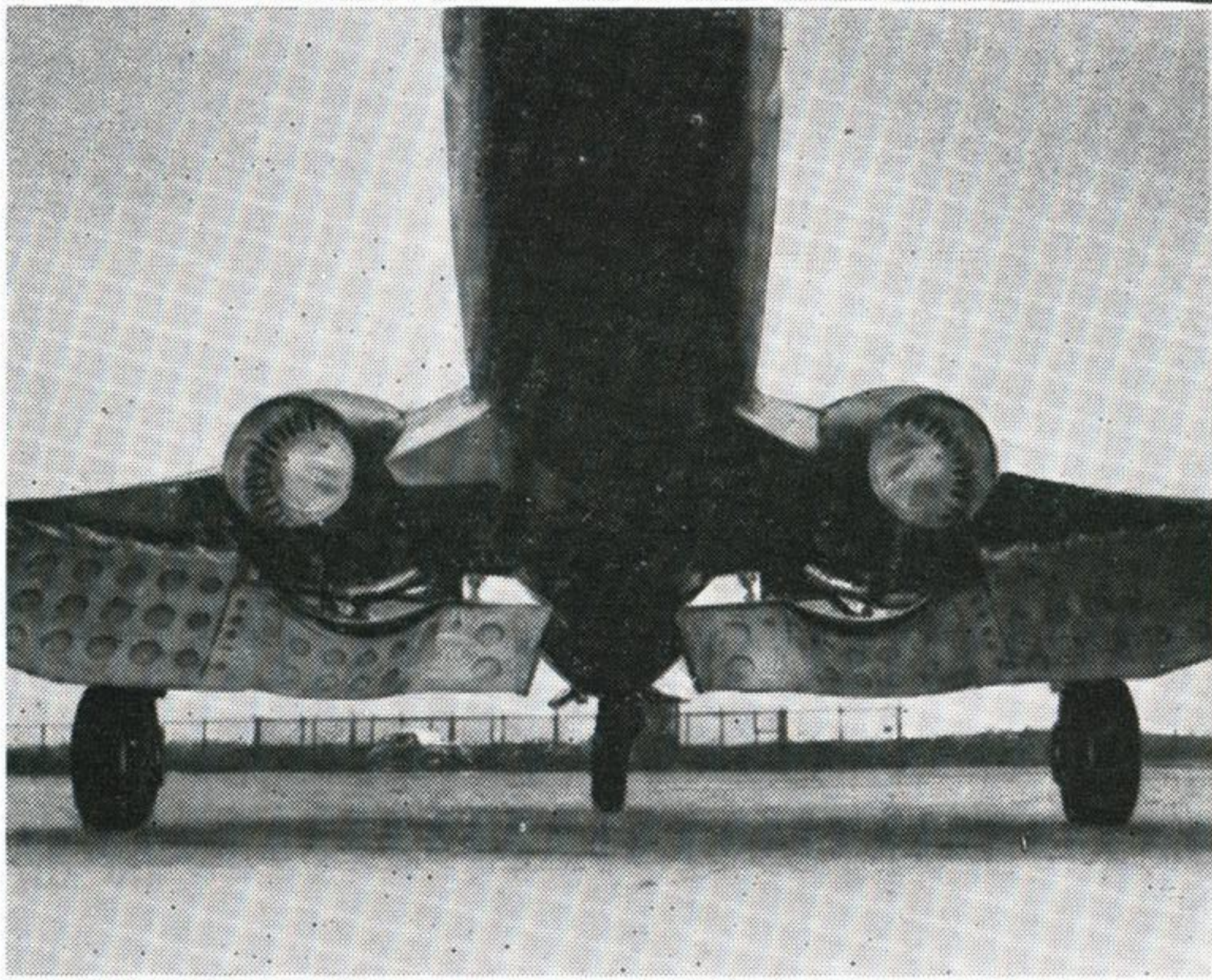
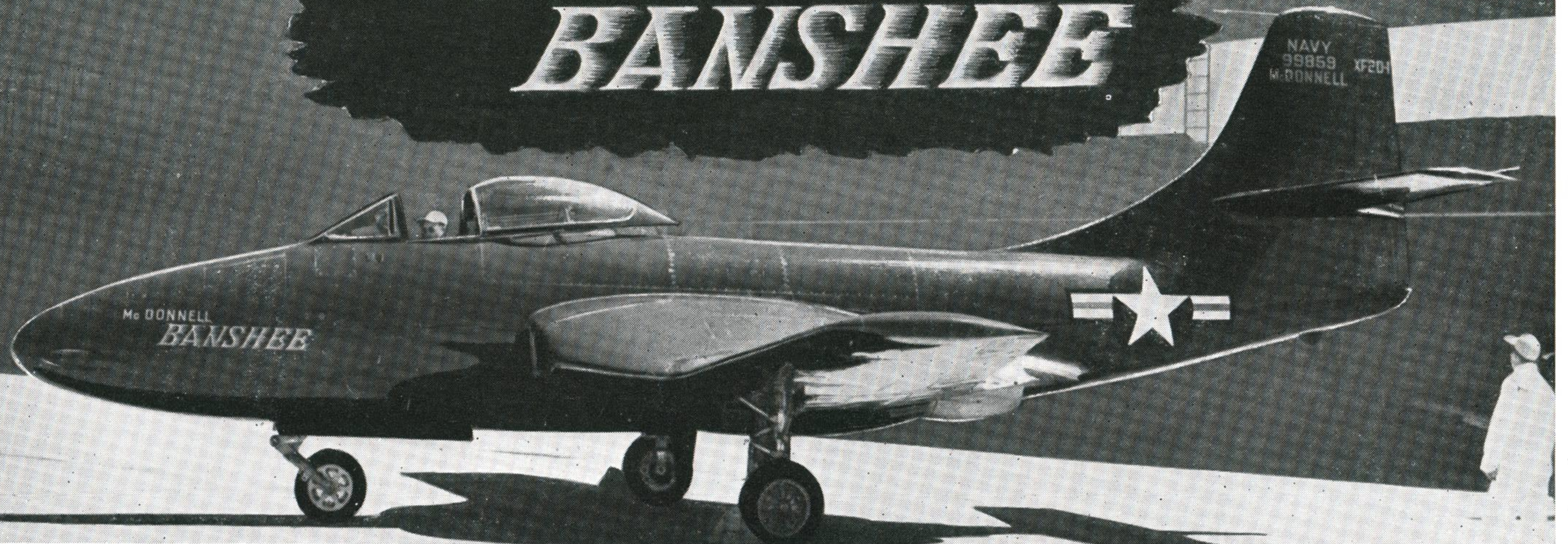
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Mc DONNELL

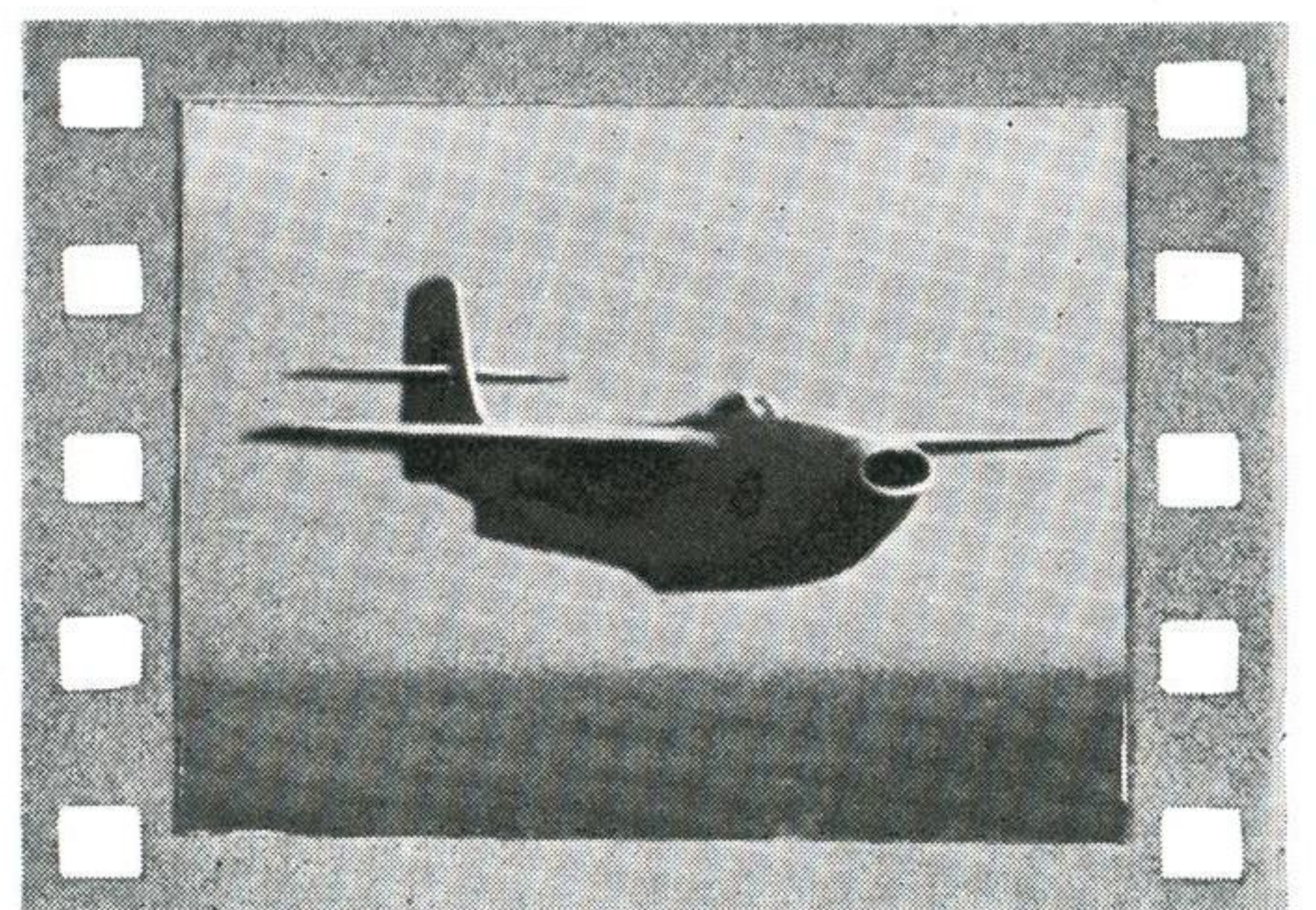
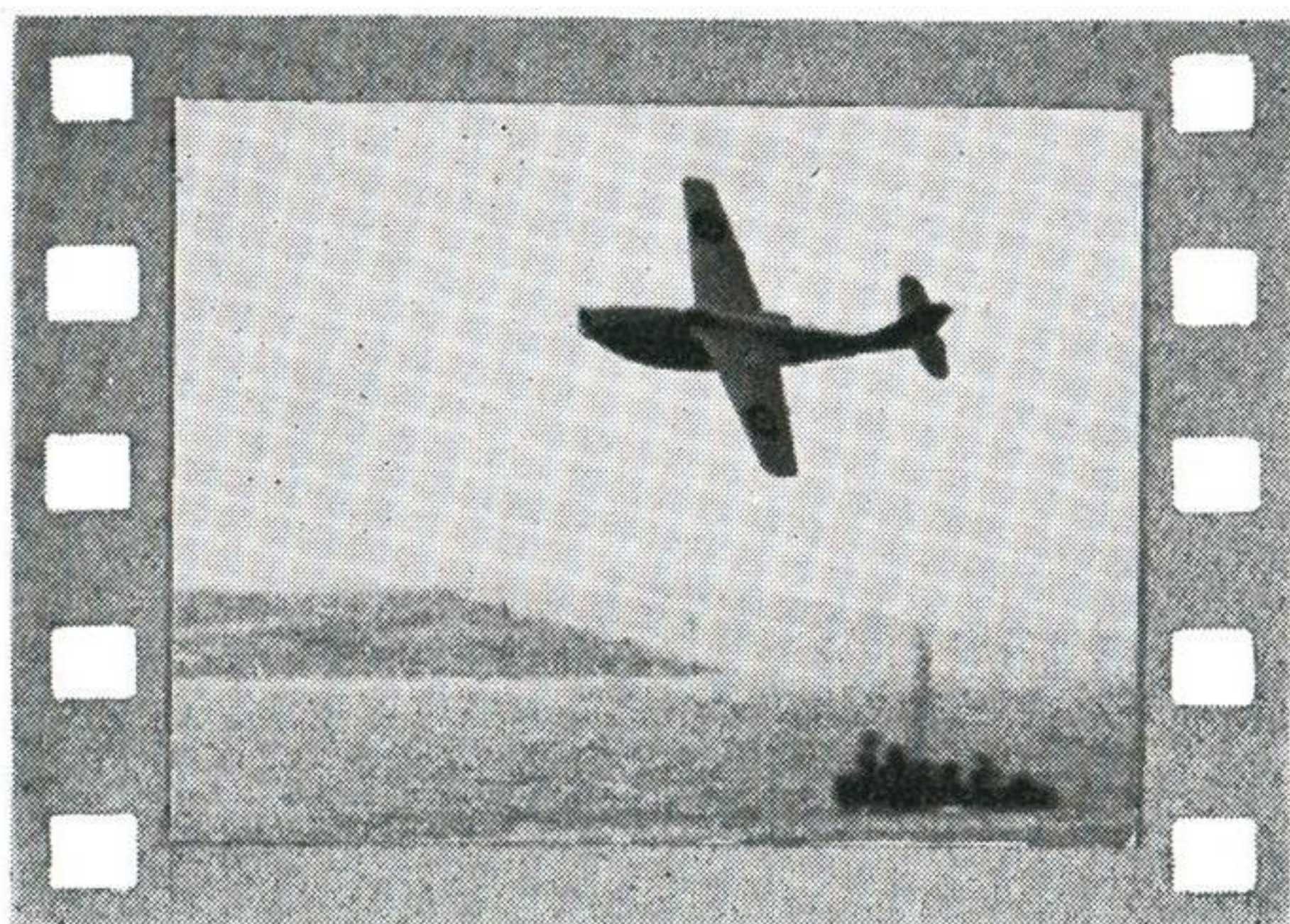
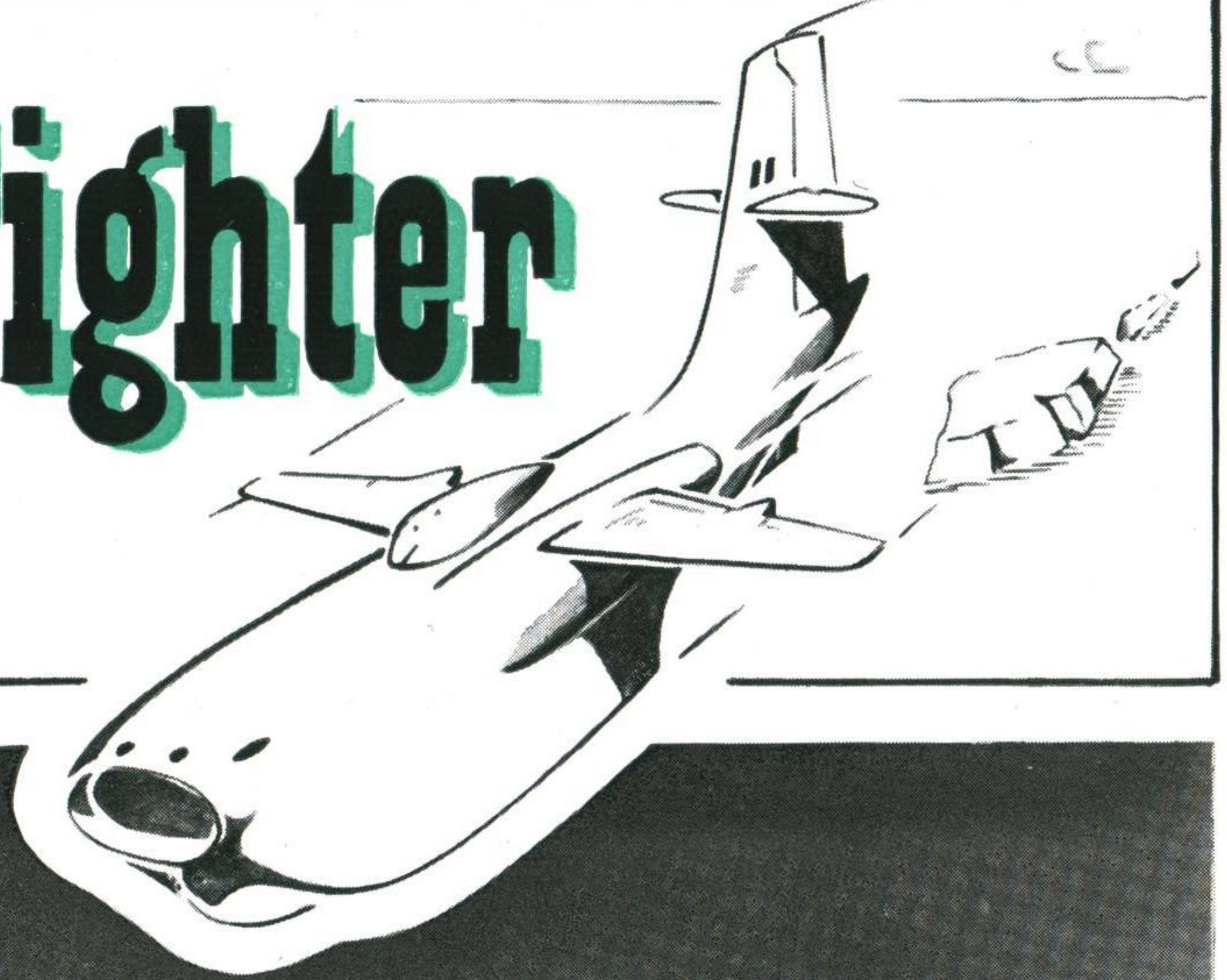
**BANSHEE**



The U.S. Navy's first carrier based, all-jet fighter to go into service, it incorporates the lessons learned in the Phantom, which aircraft it very much resembles (look right!). Two Westinghouse 24C turbojets in the wing roots, a swollen centre section, large intakes in front and the jet nozzles at the trailing edge, together with the forward sweep of the trailing edge, produce a most distinctive wing in all aspects. The fin fairing and high angle of dihedral in the tailplane also make for easy recognition. "Catapultable" and with every mod. con. for Naval operation it will "kneel down" for stowing and for jet running-up on deck. The makers claim a top speed of 600 m.p.h. for it and an initial rate of climb of 9,000 ft. per minute. Its span is 41 ft. 6 ins. and it is 39 ft. in length.



# SARO Jet Fighter



**W**ELL, Spotters, at the invitation of Messrs. Saunders-Roe Ltd., we went down to Cowes, I.O.W., on your behalf and saw Britain's—and the world's—first jet-propelled flying-boat fighter put through its paces by test pilot Geoffrey Tyson.

#### The Set-up

It was an exceptionally fine day, blue sky with white flecks of cloud very high up, just a ripple on the sea—in fact just the day. Leaning over the rail of the ship as it moved very slowly along the shores of the island, at peace with everyone—even the printer—we were suddenly startled by the familiar whining roar of jet-engines from somewhere ahead of us.

Quickly gaining a vantage-point, we were just in time to see—projecting from the head of a huge glistening wake of white water and steam—a small wing growing rapidly smaller as it departed from us. That, in fact, was the first I saw of the Saunders-Roe S.R./A.1. It had lain quietly on the water almost unnoticed until we were close upon it. It was as though our ship had startled into flight some giant aquatic bird.

It took about eleven seconds to get clear of the water, then lifted clean and climbed rapidly. Describing a great climbing circle round our ship the S.R./A.1 headed into the blue and was lost to sight and sound.

#### The Show

But not for long. In a few minutes—with an overwhelming onrush of sound—that magnificent tearing, screaming, reverberating thunder of jet-engines and riven atmosphere—down it came upon us! Flashing past at something like 400 m.p.h. it swept up in a great graceful arc around the blue sky, wings glistening as it turned quickly for another run down on us.

There were two launches available for photographers. They lay off 200 yards from the ship and for the next 30 minutes Geoffrey Tyson treated us to a display of “beating-up” of the best possible type and style—a performance, in fact, that one never before associated with flying boats. He also included four take-offs and four landings for our special benefit. The film boys exposed yards of “footage” and the photographers clicked away merrily, among them being our very good friend Mr. Charles E. Brown, who gave us the two larger pictures on these pages, as well as the one on the cover. We hereby acknowledge them with our grateful thanks.

The first clear view we had of the S.R./A.1 was from behind, and the first thing we noticed was the high-riding fin and rudder. The second was the short span of wing—actually it is only 46 ft. Next time it flashed by—at 50 yds. distance—we were struck (almost literally) by the depth of the hull; in fact it at once called to mind the “Lerwick.” In other respects, too, it reminded me of that earlier Saunders-Roe type, that is, in the cut of the wings and of the fin and rudder.

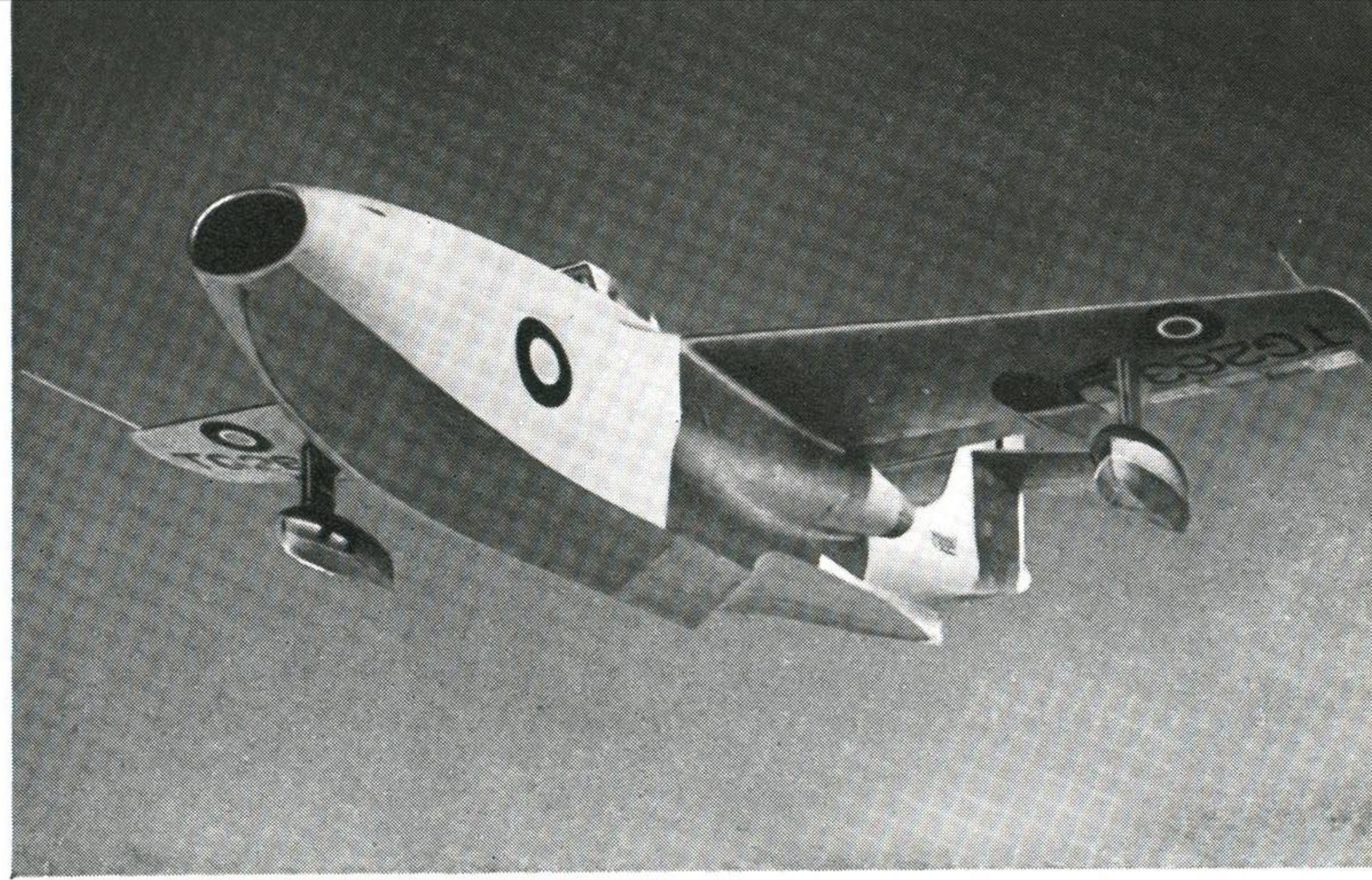
#### Hot Springs

In taking off the S.R./A.1 keeps its nose well up. This helps to keep spray clear of the intake, but it causes the jets to beat very fiercely upon the water when the throttles are opened, sending up great clouds of steam and water. Add to this the wake made by its movement through the water and the thunder of the Metrovick Beryls, and from the spectacular point of view alone the take-off is most impressive. The floats are retracted as soon as the ailerons get enough “bite”, for control.

It is said, in alighting, that the S.R./A.1 approaches at about 125 m.p.h. Gliding just over the water like a swallow it just touches with the main step at about 85 m.p.h. A plume of spray spurts from the step, growing quite large, then quickly dies away as the speed drops rapidly and the little boat finally comes to rest. It sits quite deep in the water, with its tail well down. Mooring is automatic.

#### The Facts

The question everyone asks is, “What happens if it ships seawater through the intake?” Dr. D. M. Smith, the designer of the Metrovick turbojets, was ready for that one and pointed out that (a) the boat was not intended for work on rough seas, and (b) the



spraying of salt water into the intake of a Beryl on the test bench had had little or no effect upon performance, though some salt deposit remained on the turbine blades. This was easily washed off by a fresh-water spray.

It is interesting to note, too, that the designers (Mr. Henry Knowler is the chief designer) have incorporated an extensible shield inside the intake which will extend about nine inches—forming quite a “snout.” It extends when the floats are lowered. It was not functioning when our pictures were taken.

The jet-units fitted in the S.R./A.1 are two Metrovick (F2/4) “Beryl” axial-flow turbines of 3,300 lbs. static thrust. (All Metrovick jet engines are to be named after precious stones.) The jet units are housed inside the hull just aft of, and below, the wing—about a foot above the water. More powerful Beryls are coming later, up to 3,850 lbs. S.T., they say.

#### The Idea

It was the Pacific War which gave rise to this specification for a fighter flying-boat, where it was found that the acquisition of landing strips was costly in men and materials. The idea was that a fighter flying-boat powered by jets would be able to operate from any sheltered stretch of water or even from the surface of the sea, and be able to cope with any Jap fighter in service. The atom bombs on Japan, of course, put an end to any chance of trying out this tactical theory, but the idea was considered worth pursuing.

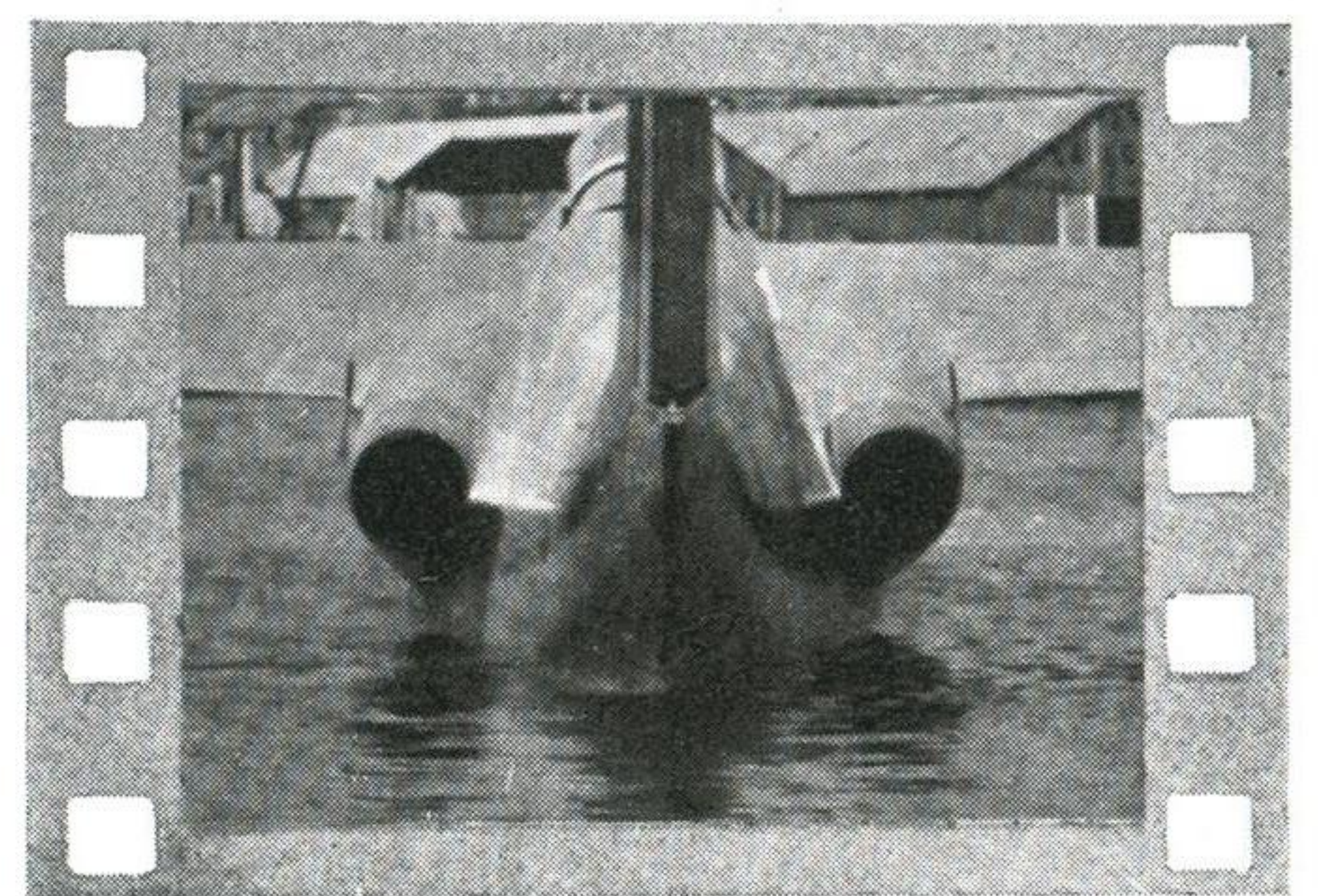
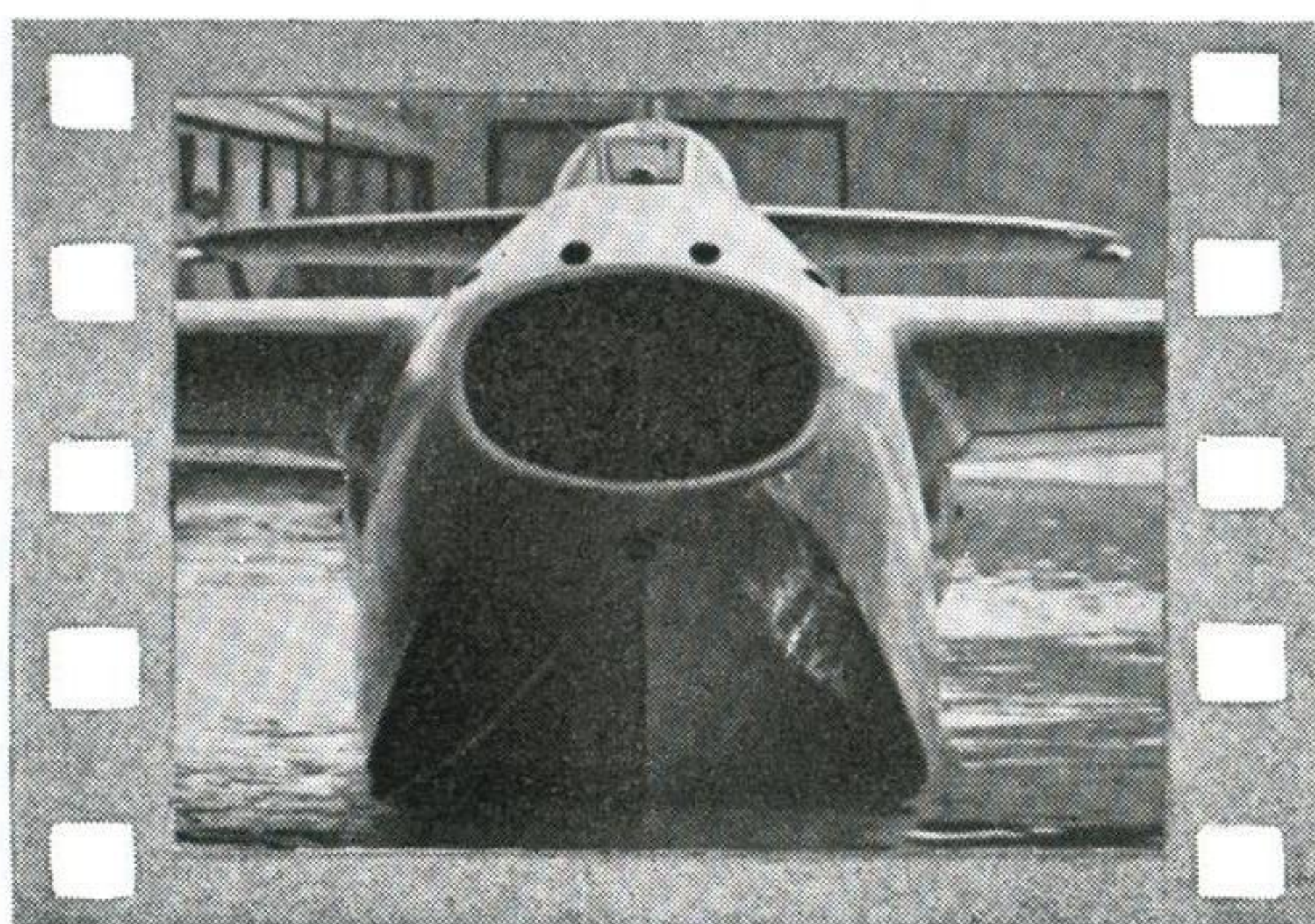
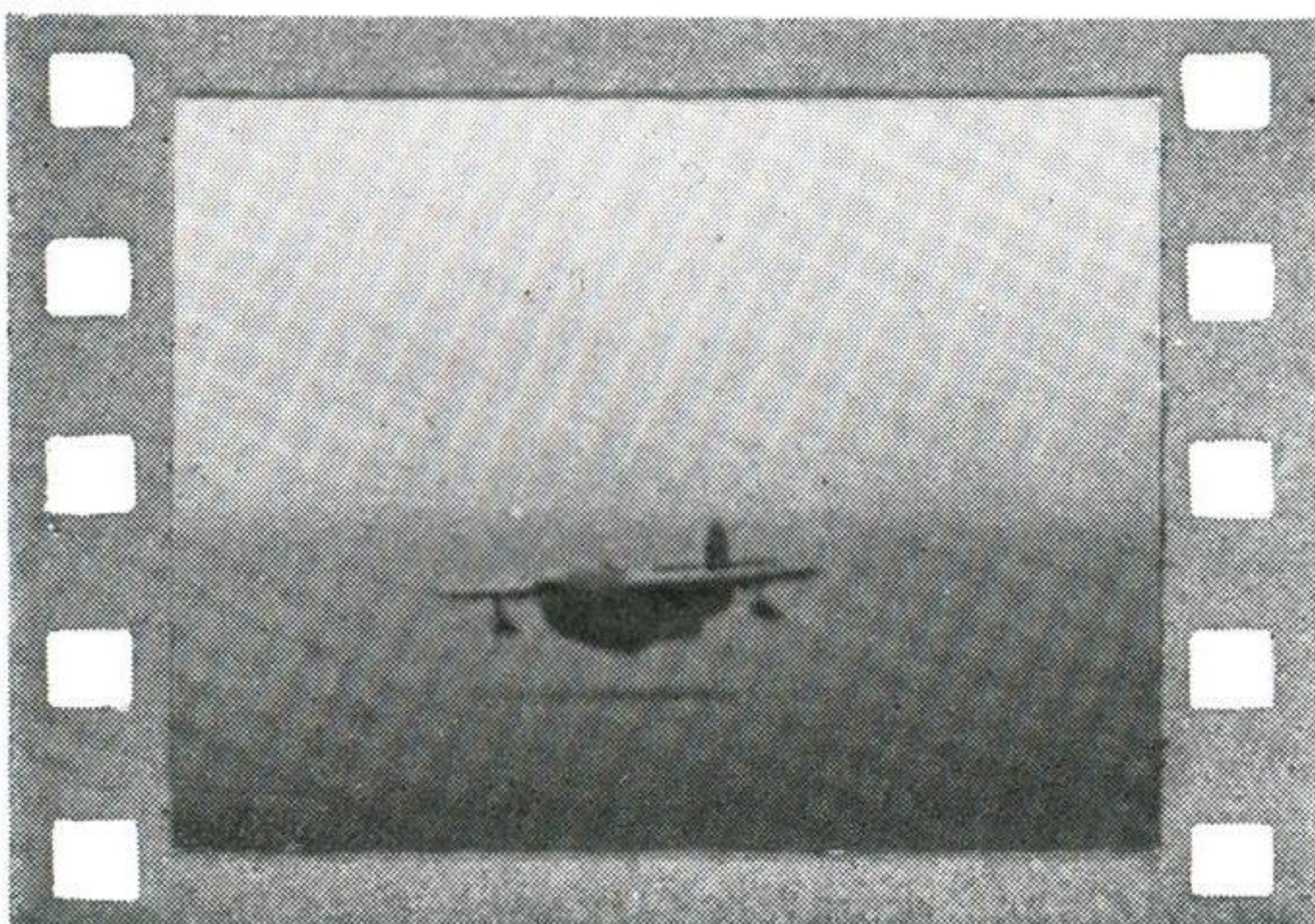
Three prototype S.R./A.1's have been ordered by the Ministry of Supply for experimental purposes, and we understand that they will all be very much alike, that is so far as recognition goes. The dimensions are as follows: Span 46 ft., length 50 ft., height over-all 17 ft.

When it is remembered that the span of the Hawker Hurricane is 40 ft., some idea of the size and proportions of this flying-boat fighter can be gained. A silhouette appears on page 36.

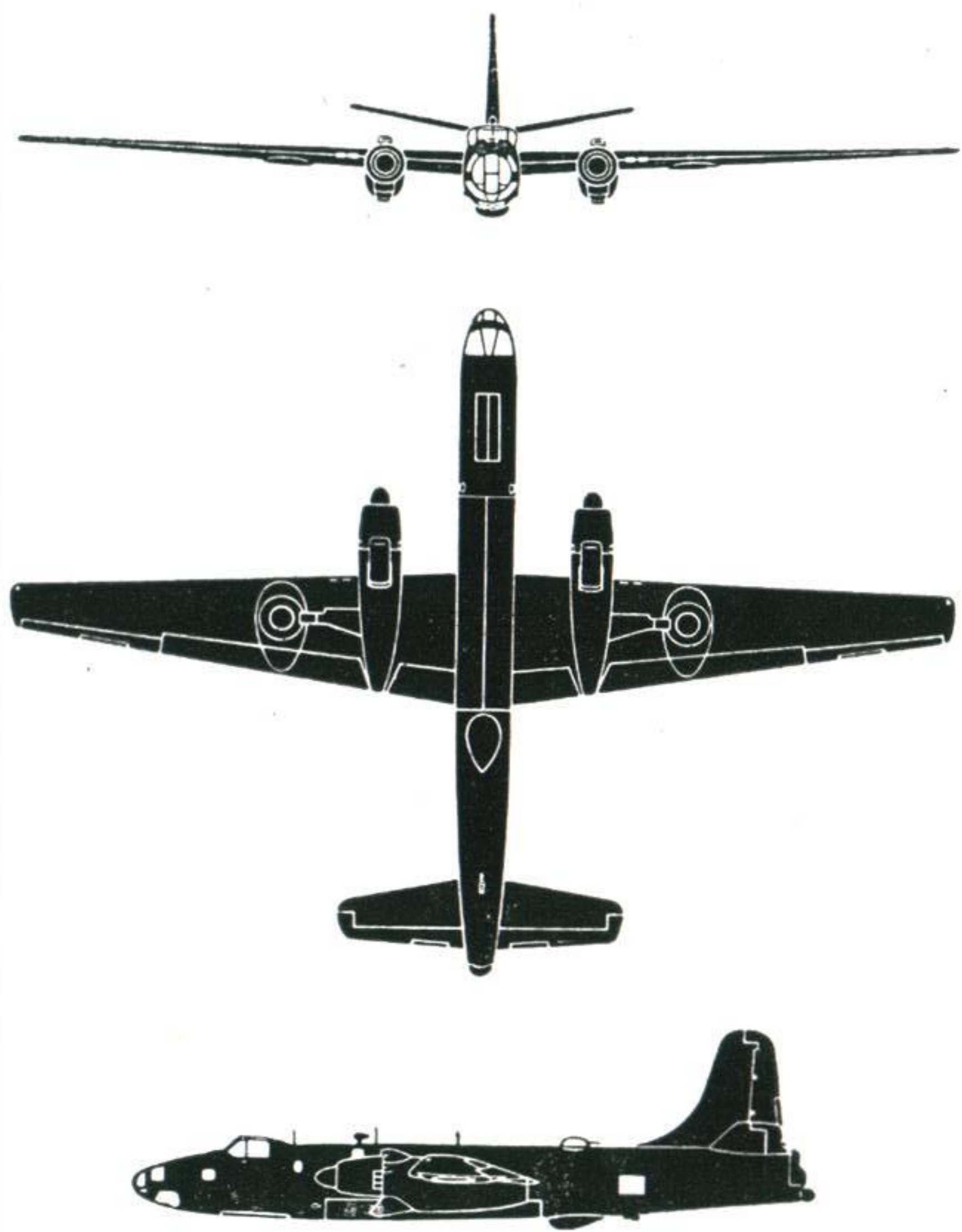
From our own angle the Saunders-Roe S.R./A.1 has many points worthy of recognition. It has a minimum amount of wing (the area is 415 sq. ft.). Its hull form is distinctive, being deep and heavy-jowled forward. The third point is the high swept-up tail unit. Minor points include the floats, which form bulges on the wing, extending over the trailing-edges. External tanks can be blistered to the wings as well. These will be inboard of the floats. The jet nozzles are a relatively small but valuable recognition feature in some views; particularly from beneath.

All in all we were about to write that, recognitionally, it was in the “piece of cake” class, because it is unique at present, but Consolidated-Vultee are developing a jet flying boat and it is said to resemble the A.1. And from what we have seen published of the new Russian jet fighter, it seems to bear some resemblance to that aircraft.

We hope that neither the designers nor the builders will mind our saying so—but it does remind us very much of a frantic goldfish. Don't you think so?



MARTIN XP4M-1



American Recce/Bomber  
2 Wasp Major. 2 J-35 Turbojets.  
Span 114 ft.  
New Silhouette

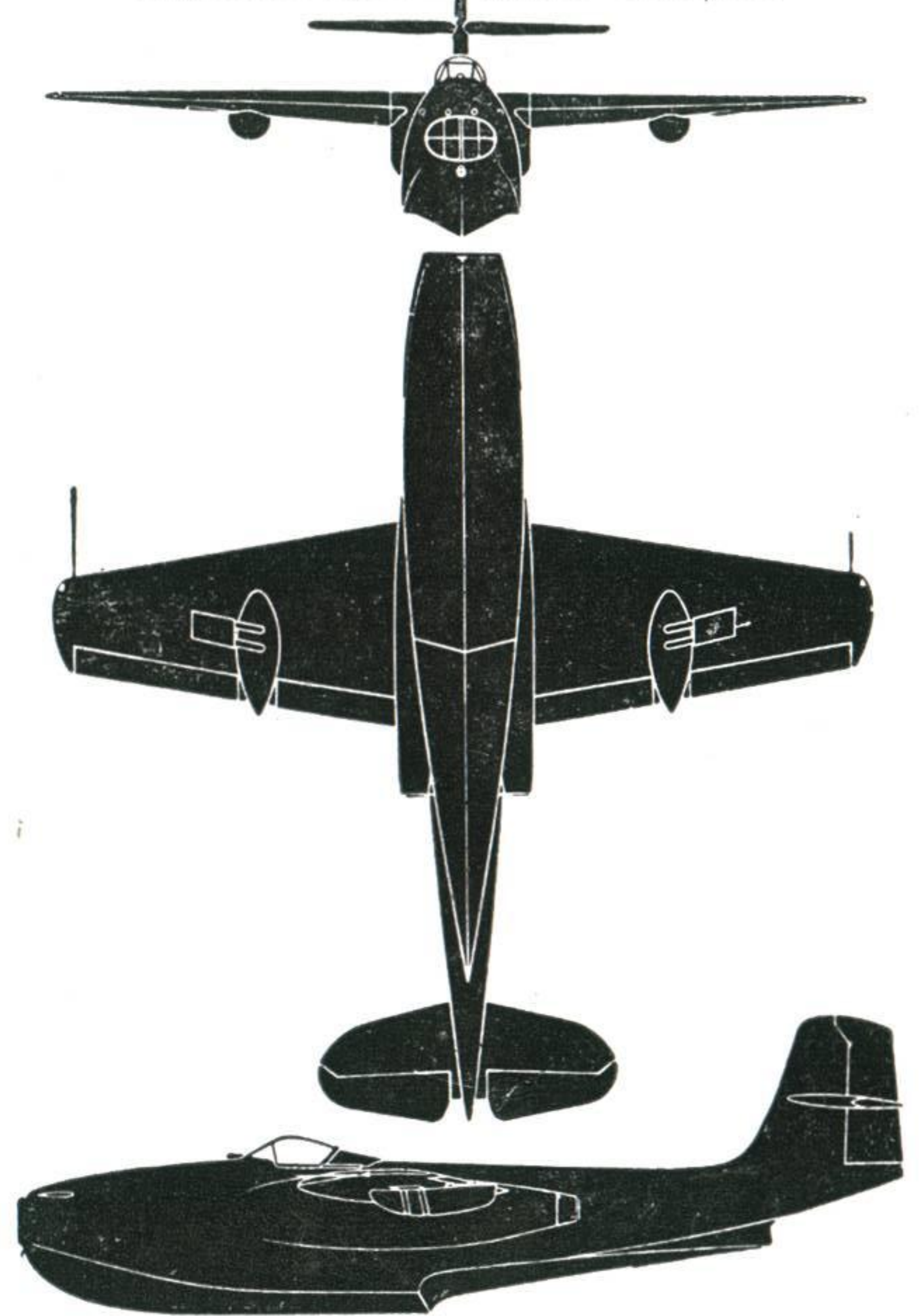


Main characteristics of the Martin XP4M-1 are: wide span narrow chord wing, blunt wing and tail surface tips, high fin and rudder with small fin fairing. The lower intakes behind engines retract. Top speed 398 m.p.h.

Those of the S.R. A1 include short span sharply tapered wing, retracting wing floats, high set fin and rudder with tailplane halfway up, deep but slender hull form and jet nozzles emerging aft of, and beneath, wing.



SAUNDERS-ROE S.R./A1



British Experimental Fighter  
2 Beryl Turbojets. Span 46 ft.  
New Silhouette

FRONT COVER : Saunders-Roe S.R./A1. (Photo by Charles E. Brown)

SOLUTIONS TO RECOGNITION TESTS IN THIS ISSUE :

No. 45 (ELEMENTARY SPOTTING)

- |                    |                     |
|--------------------|---------------------|
| 253. Vampire I     | 262. C-54 Skymaster |
| 254. Firebrand V   | 263. Vampire II     |
| 255. Lincoln II    | 264. Constellation  |
| 256. Meteor IV     | 265. Concordia      |
| 257. Sikorsky S-51 | 266. Spitfire 21    |
| 258. C-82 Packet   | 267. Wayfarer       |
| 259. Dove          | 268. P-80A          |
| 260. Sunderland V  | 269. Hythe          |
| 261. Dakota        | 270. TU-2           |

No. 46 (ADVANCED SPOTTING)

- |                      |                      |
|----------------------|----------------------|
| 330. Lancaster VII   | 343. Tempest II      |
| 331. Prentice        | 344. Mosquito        |
| 332. Bell YR-13      | 345. S.R./A1         |
| 333. Hornet          | 346. Meteor IV       |
| 334. Grumman Widgeon | 347. Tempest VI      |
| 335. Lincoln         | 348. Viking          |
| 336. Halifax A.IX    | 349. P-80 A          |
| 337. C-54 Skymaster  | 350. Vampire         |
| 338. Fury            | 351. P-84 Thunderjet |
| 339. Bell 47         | 352. Spitfire IX     |
| 340. Brigand         | 353. Halifax A.IX    |
| 341. York            | 354. Spitfire 21     |
| 342. Spitfire        |                      |

No. 47 (SILLOGRAPHS)

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|-------------------------|---------------------------|
| 282. Consolidated XB-45 | 295. Merganser            |
| 283. Aerovan            | 296. Firebrand T.F. Mk. V |
| 284. Seafire XVIII      | 297. Firefly IV           |
| 285. Blackburn S.28/43  | 298. Northrop XB-49       |
| 286. Tudor VII          | 299. Wyvern T.F. I        |
| 287. Convair XB-36      | 300. Grumman F7F-1        |
| 288. Lincoln II         | 301. Dove                 |
| 289. Viking             | 302. Concordia            |
| 290. Sikorsky S-51      | 303. Tempest V            |
| 291. Martin XB-48       | 304. Sea Fury X           |
| 292. SAAB B.18 (Sweden) | 305. Consolidated XB-46   |
| 293. Vampire            | 306. Marathon             |
| 294. S.R./A1            |                           |

**AS WE SEE IT.** The production Percival Prentice has suffered a number of mods. since the prototype stage. The most notable of all are the turning up of the wing tips and a large "bite" out of the tailplane. The tailplane has also had anti-spin fairings fitted. Another prominent feature is the large "3 berth" cabin for carrying an instructor and two pupils. The wing form is of characteristic Percival shape—wide span, rounded tips, but in this case turned up. A fixed undercarriage completes the recognition tally. The motor can be either a D.H. Gypsy Queen 32 of 250 h.p. or a Gypsy Queen 51 of 295 h.p. The span is 46 ft.

