

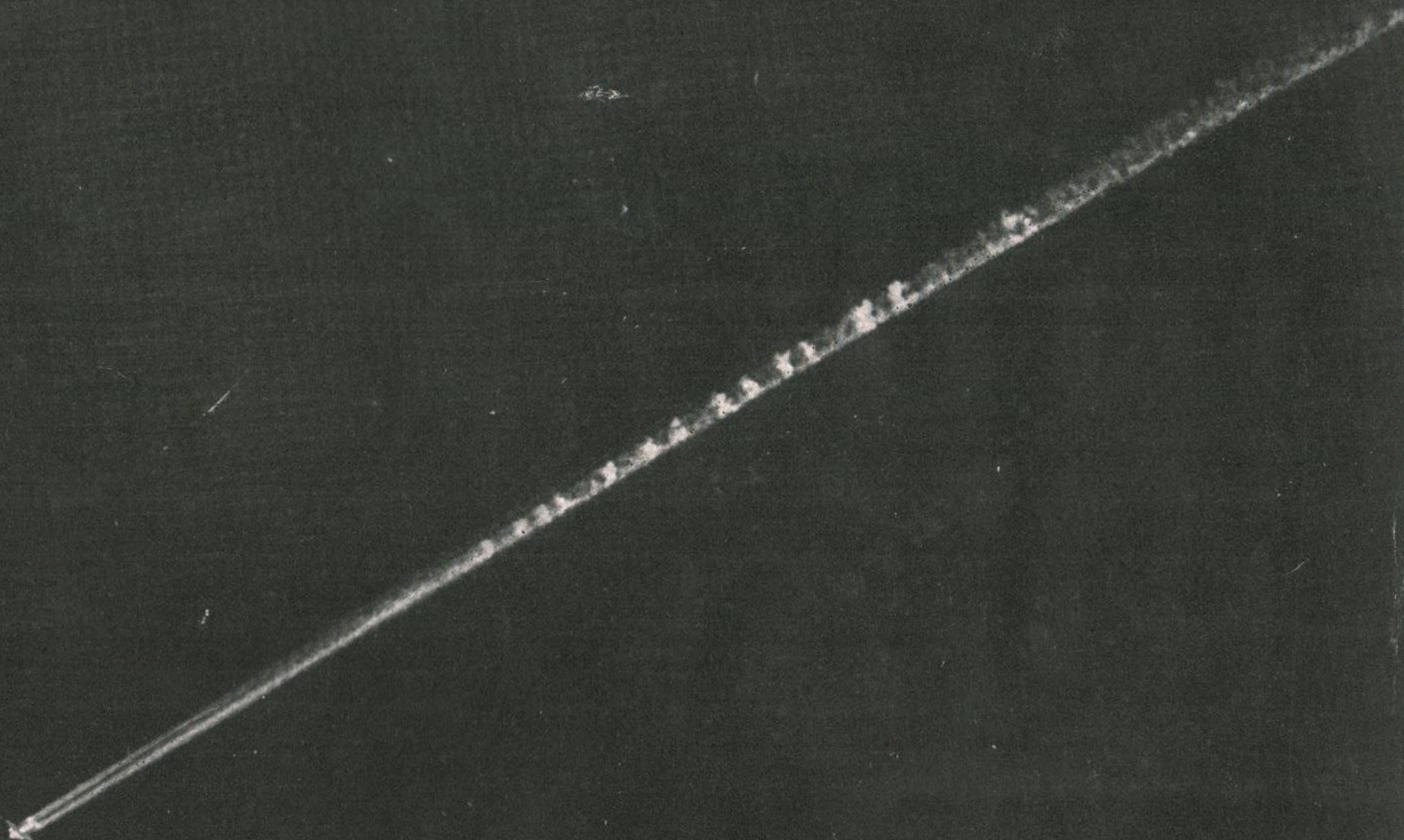
JOINT



SERVICES

RECOGNITION

Journal



Vol. II JULY 1956 No. 7



How far is aircraft recognition (as distinct from location) aided by contrails is a question frequently debated. This view of a Shackleton making a trail may help to provide the answer. The experts will find it interesting to compare it with the contrail portrayed on the cover photograph which is also that of a Shackleton.



JOINT

SERVICES

RECOGNITION JOURNAL

The *Joint Services Recognition Journal* is a monthly publication prepared and produced by the Assistant Chief of the Air Staff (Training), Air Ministry, in collaboration with the Ministry of Supply—Controller of Aircraft—Air Technical Publications. Contributions and correspondence should be addressed to the Editor, *Joint Services Recognition Journal*, Air Ministry, Richmond Terrace, Whitehall, London, S.W.1. The *Journal* is produced solely for official use and cannot be sold to members of the public. Applications for copies, which can only be accepted from the Services and other official bodies, should be submitted through the normal official publications supply channels and not to the Editorial Office or direct to the Air Ministry.

| Feature | Page |
|--|-----------|
| Contrails | 169 & 170 |
| The TU-104 Camel | 171 |
| The Fleet's Lit Up ! | 172 |
| Close-up—Seamew | 174 |
| The Dassault Line | 176 |
| Mystères | 178 |
| Briefs | 180 |
| Ap-Prentice-Ship | 181 |
| Camel (<i>Centrespread</i>) | 182 |
| Skyhawk: The Bantam Bomber | 184 |
| Bristol Freighter | 186 |
| Advanced "Seasearch" No. 3 | 187 |
| Family Gathering (<i>Fletchers, Sumners and Gearings</i>) | 188 |
| In Passing | 192 |
| Small Fry | 193 |
| Saracen | 194 |
| Solutions to Tests and Exercises | 196 |

THE TU-104 CAMEL

THE principle of allocating code names to Soviet aircraft is, in essence, a good one. Not only are such names far simpler to say and easier to remember than a cryptic collection of letters and figures, but they do give us a definite label which we can tie on to new types before the designation number is known. Furthermore, in the interests of simple reporting, the shorter and more succinct that name the better it will be assimilated. The latest addition is that sleek Soviet jet airliner the TU-104, which has been dubbed "Camel."

From a military standpoint the principal value of the Camel visits must be that they will have given some idea of the capabilities of one of the two most prominent Soviet jet bombers (incidentally confirming our report in the January issue that Tupolev was the probable designer of the Badger); while from a civil aspect (which seems of more immediate concern) we now know for certain that a potential international airliner exists which could enter competition, in certain spheres, with our own Comet. One may assume that where operating experience is concerned, de Havilland have a good head start, but whether they will retain it is another matter.

One less comforting point which the visits of the TU-104 have driven home to us is that Soviet aero-engine development may be at least equal to, if not ahead of, that in this country. Expert opinion has placed the power of the Camel's two turbojets at something approaching 15,000 lb. thrust apiece. The only comparable British engine is the de Havilland Gyron, still being flown experimentally in one of the Sperrin test-beds. Engines comparable to those in the Camel, on the other hand, are also used to power the twin-jet Badger and the four-jet Bison bombers, both of which are in quantity production for the Soviet Air Force.

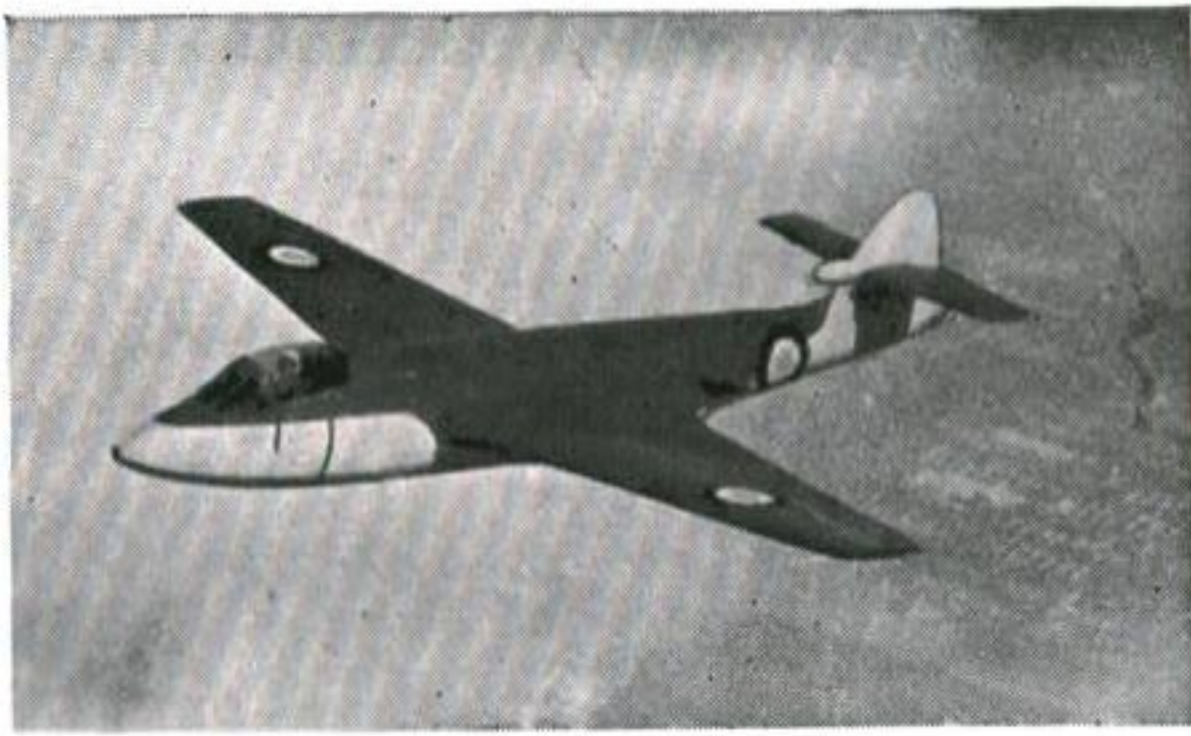
However, that is enough of intelligence; let us now consider the recognition features of the new arrival. You would expect a civil development of a successful bomber design to be even more streamlined and good-looking than its original: in this case you would be disappointed. To give

Andrei Tupolev his due, his Badger bomber is probably the most aerodynamically beautiful military aeroplane flying in the world to-day. But in developing it into the Camel he has rather let its appearance run to seed. The sleek engine mountings which hugged the waisted middle of a slim fuselage now dangle below and slightly away from the fuselage, like a pair of hefty bags under the eyes. Gone is the beautiful pencil slimness of the Badger's delicate fuselage: the Camel shows a decided "spare tyre" round its middle. Gone is the rakish fin-mounted tailplane of the Badger which gave that machine such a perfect flying finish: now it is down on the rear fuselage like any other Tom, Dick or Harry's.

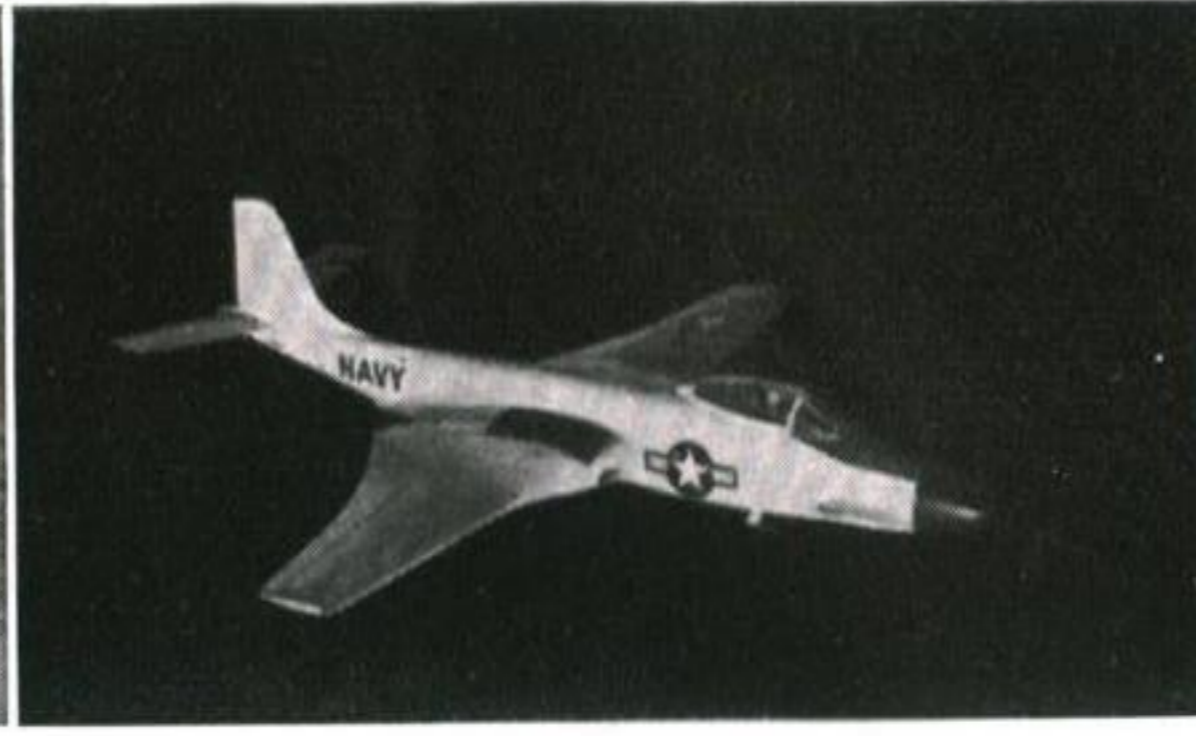


But lest we have built up a picture of a fat, ugly, bloated monster that can scarce get its ungainly bulk off the runway, let us hasten to explain that this ugliness is purely comparative. It is only with its military parent that the Camel suffers in comparison. Taken on its own it is a very good-looking and, no doubt, competent aircraft that can command plenty of admiration, even from its possible competitors.

We have prepared a special centrespread this month designed to give an intimate first acquaintance with this Camel. Further appearances are guaranteed.



SEAHAWK



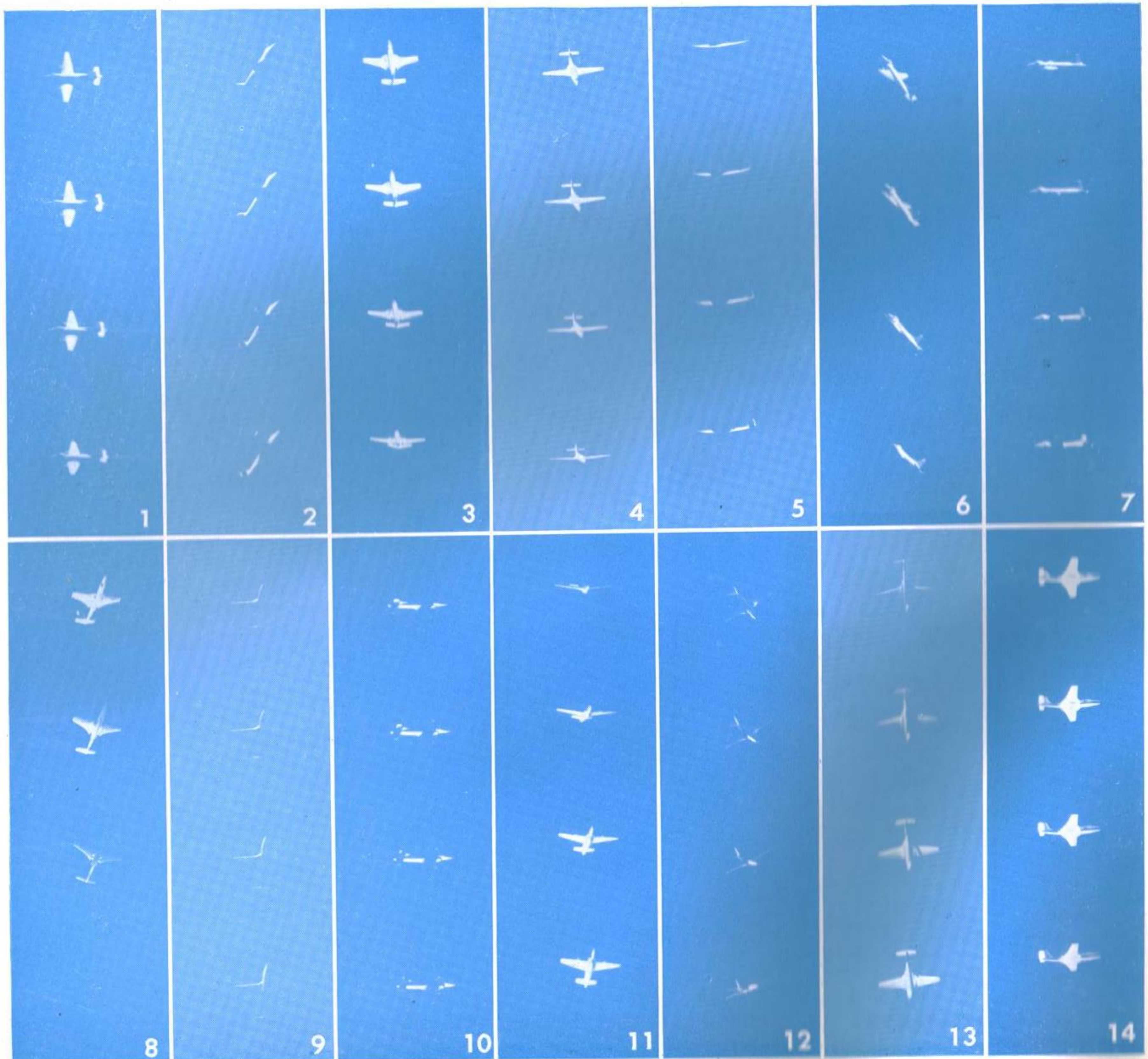
BANSHEE

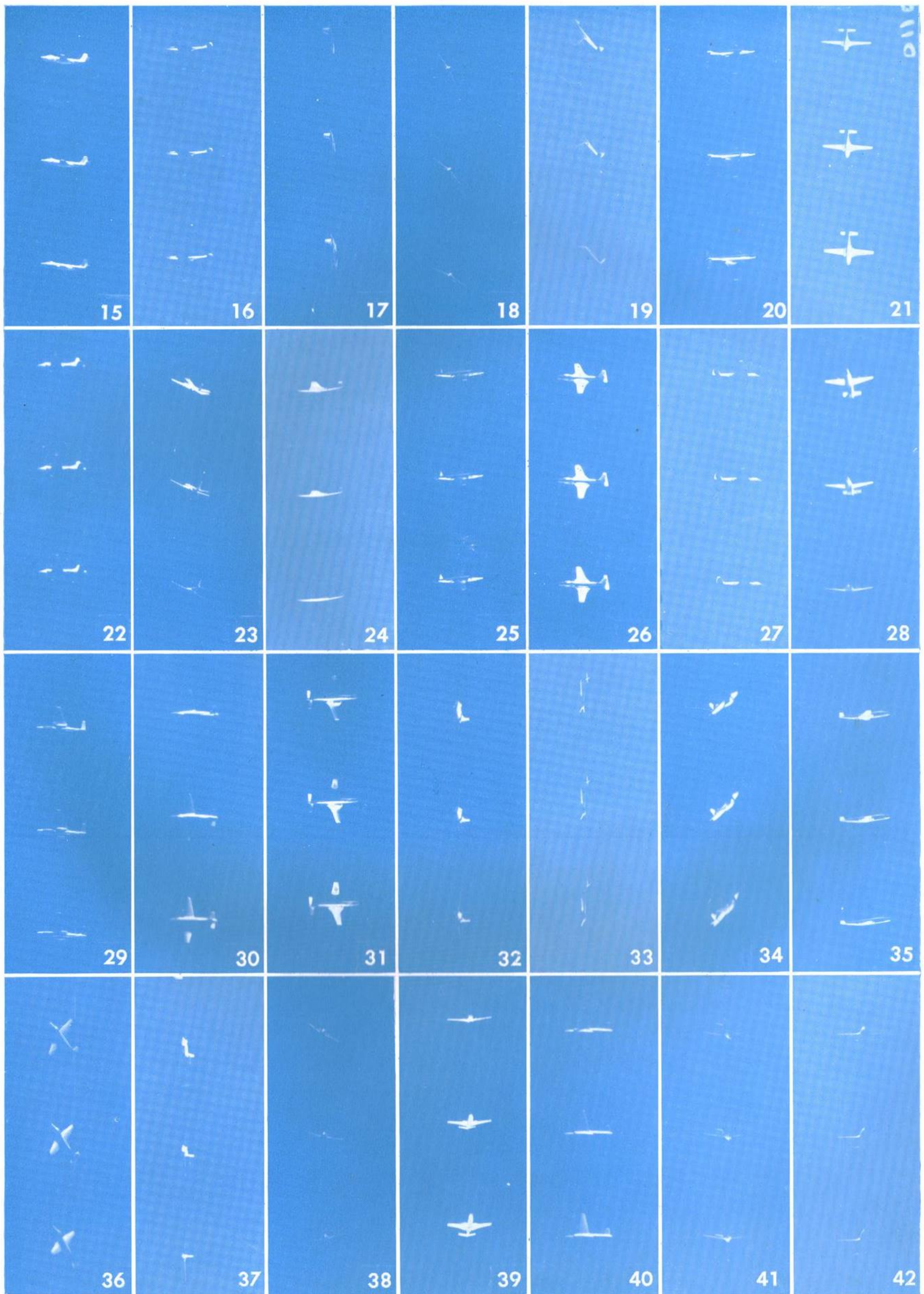


ATTACKER

The Fleet's lit up!

Given a clear sky and bags of sunlight, aircraft at a fair height become a problem not only to locate, but to identify. As likely as not the sun will try odd tricks with them, lighting up one section of the aircraft while plunging others into shadow. What can be seen, however, is generally sufficient to plant in the trained observer's mind the "ghost" of the unseen remainder, enabling him to complete his identification. To reach this peak of recognition ability, constant practice at spotting this type of target is essential.





The Short Seamew AS Mk. 1

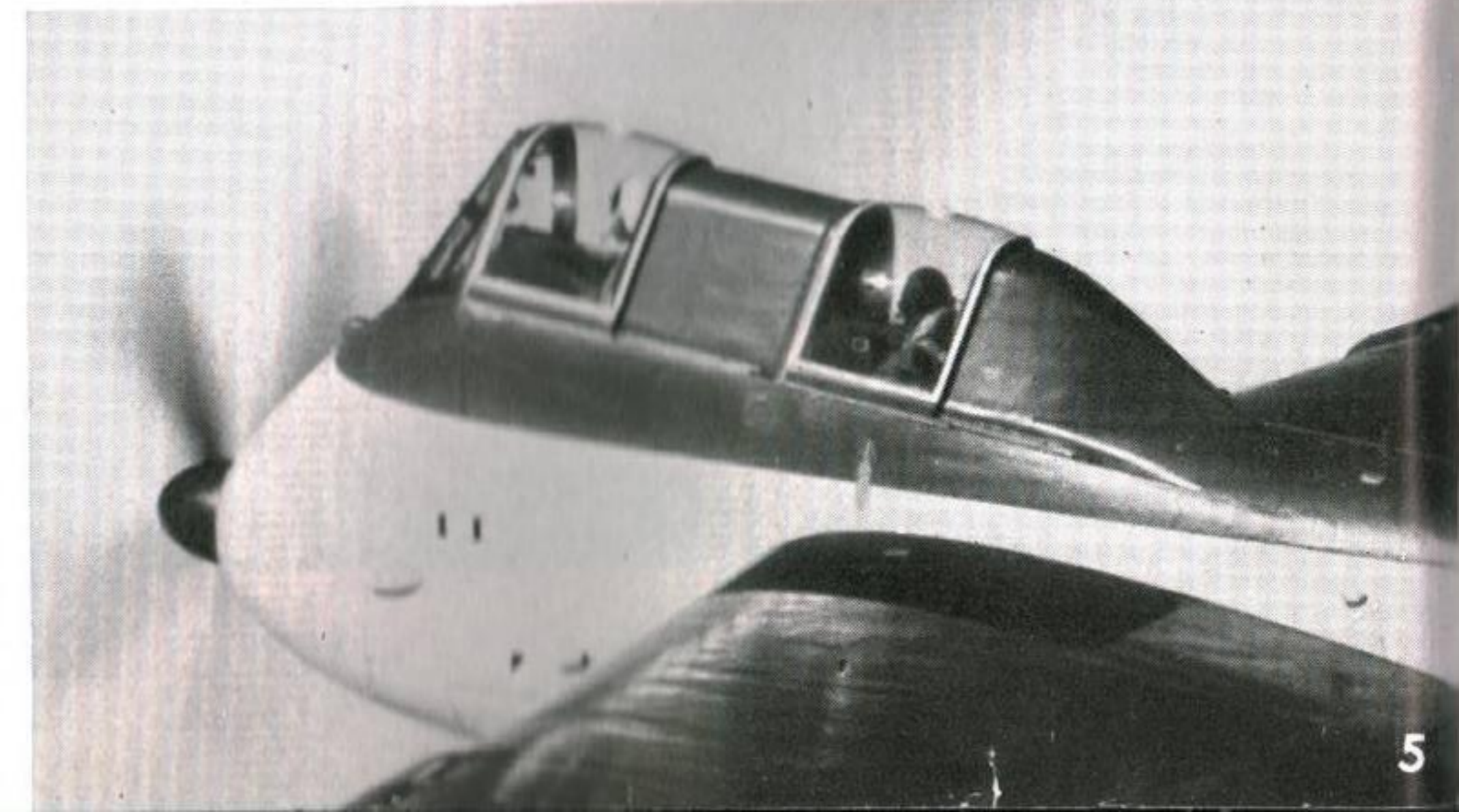
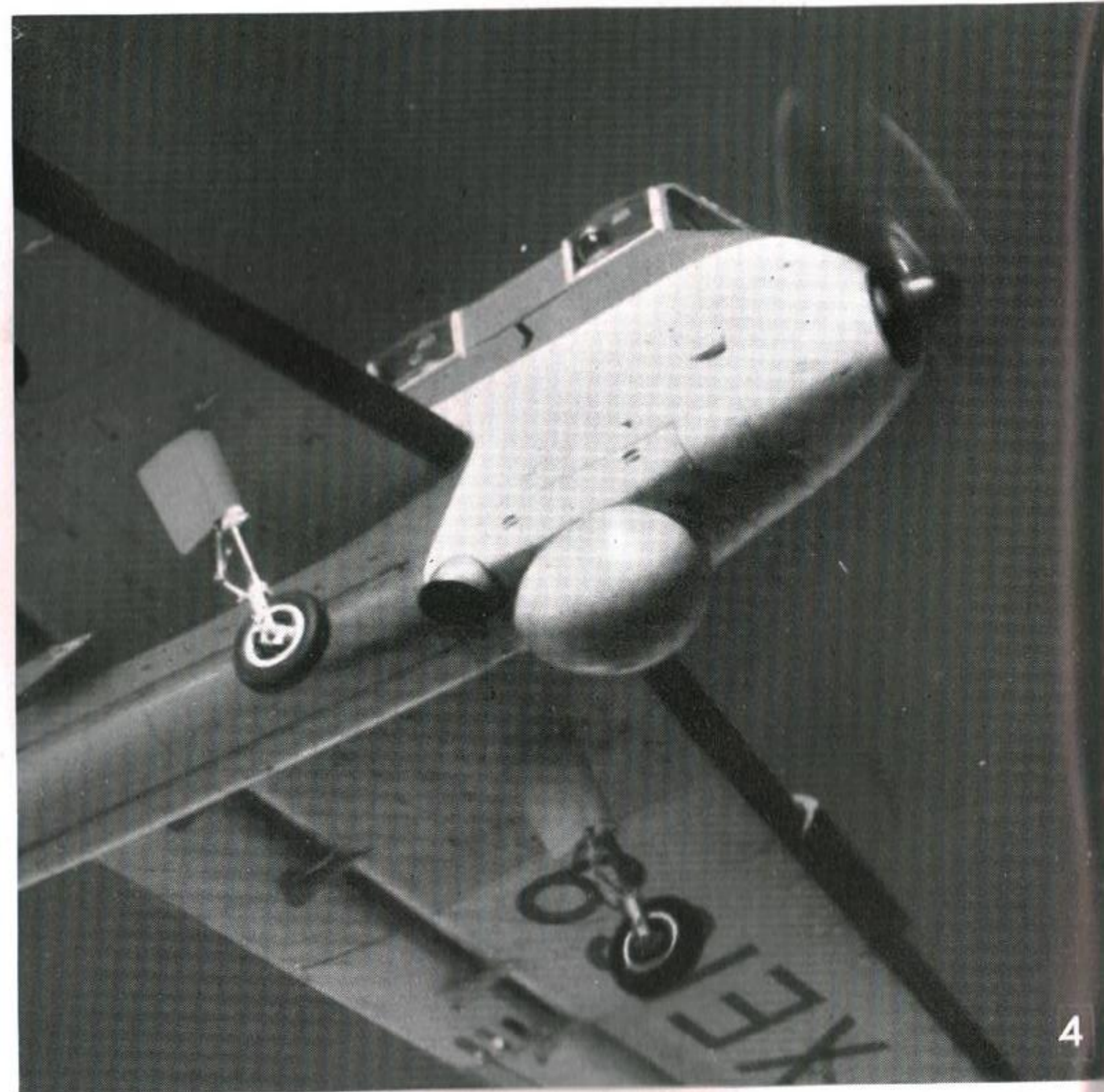
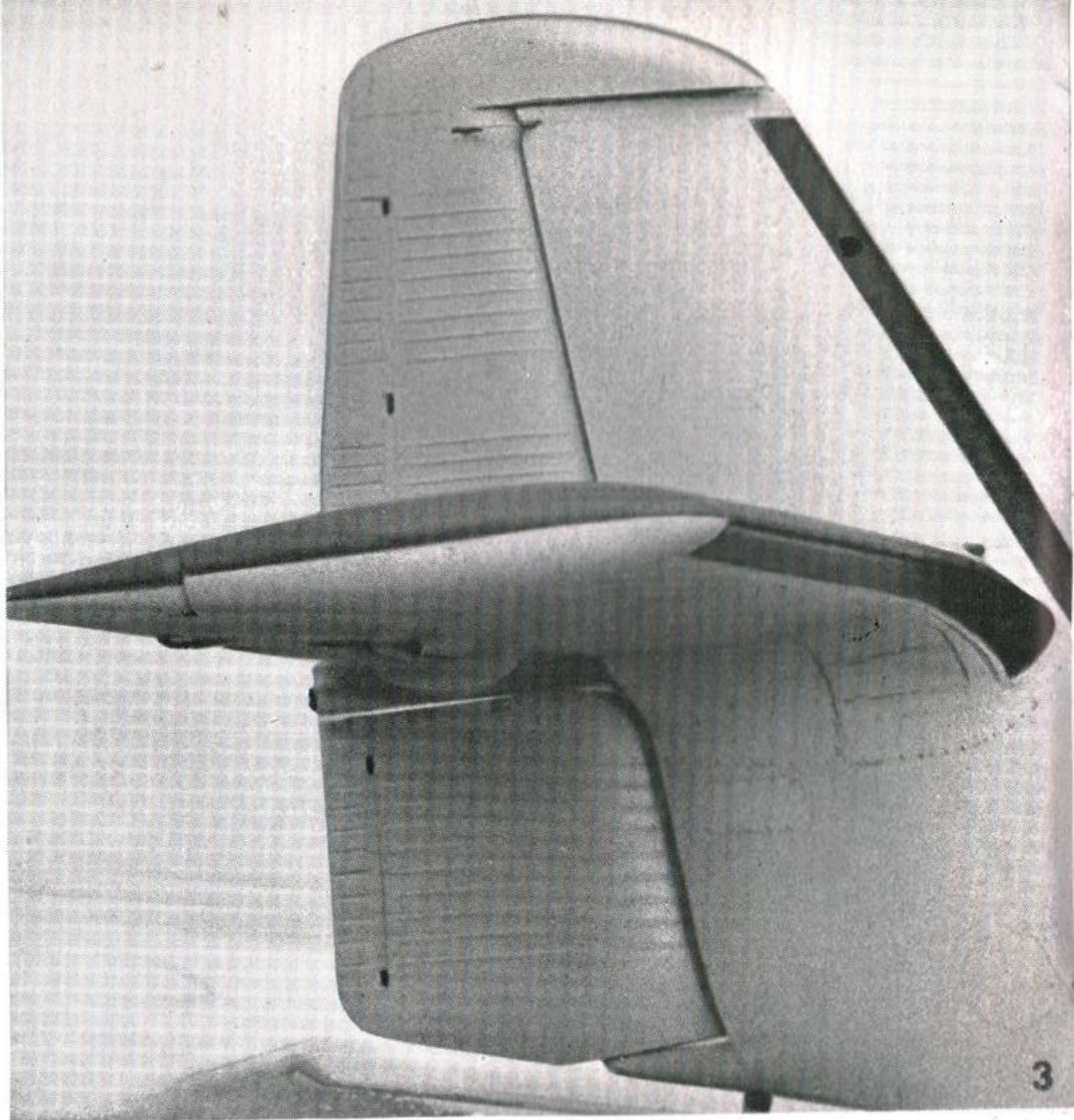
ANTI-SUBMARINE RECONNAISSANCE AIRCRAFT

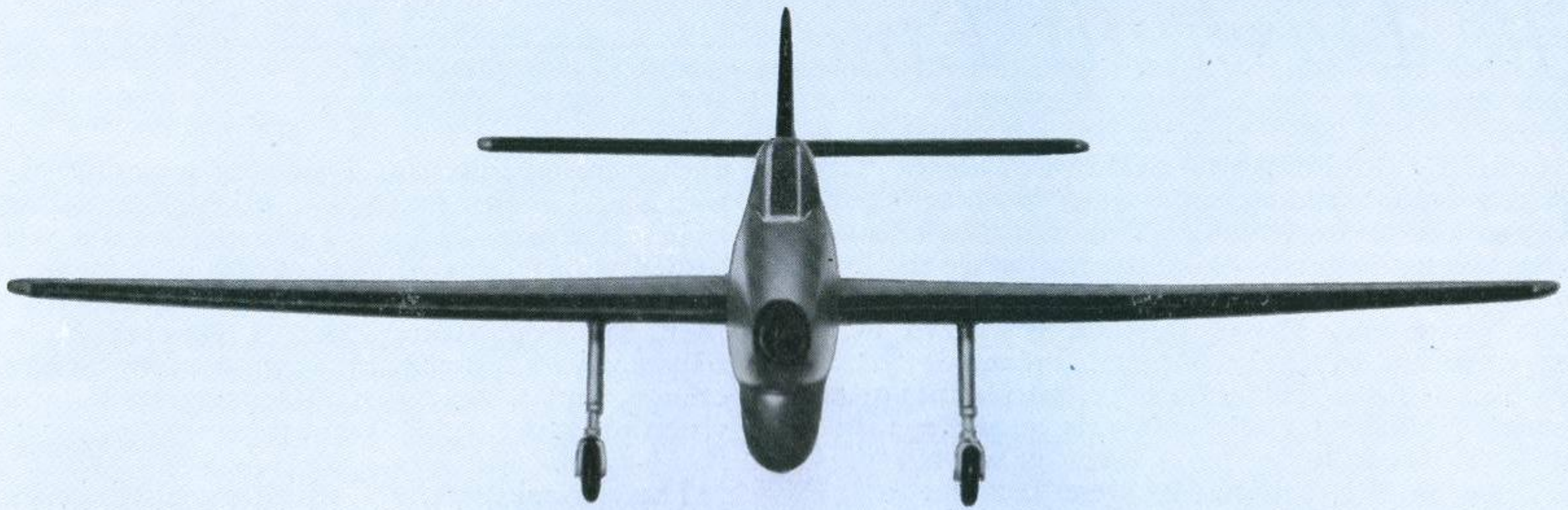
Views 1 and 5. Portrait of a gargoyle. These views show up the two crew seats in tandem and the mid-position of the plank-like wing. In View 1 the semi-trousered fixed undercarriage is illustrated, together with the radar bump under the nose. Notice the tiny spinner for the Armstrong-Siddeley Mamba turboprop. Both these views, but especially No. 5, give a first-rate idea of the splendid all-round and downward view of the pilot from the front cockpit. The slimness and depth of the fuselage is brought out most in the head-on view opposite.

View 2. Tale of a tail. The tailplane is quite baldly a rectangle and nothing else; but see how the fin and rudder assembly has a marked "kicked-up" appearance from this viewpoint. It seems to be much more up in the air than on the side elevation on the opposite page. The fixed tailwheel can be seen, and part of the arrester hook.

View 3. The fin and rudder in more intimate study. Rather a nondescript shape, with the tailplane just about halfway up. The arrester hook can just be seen at the foot of the picture.

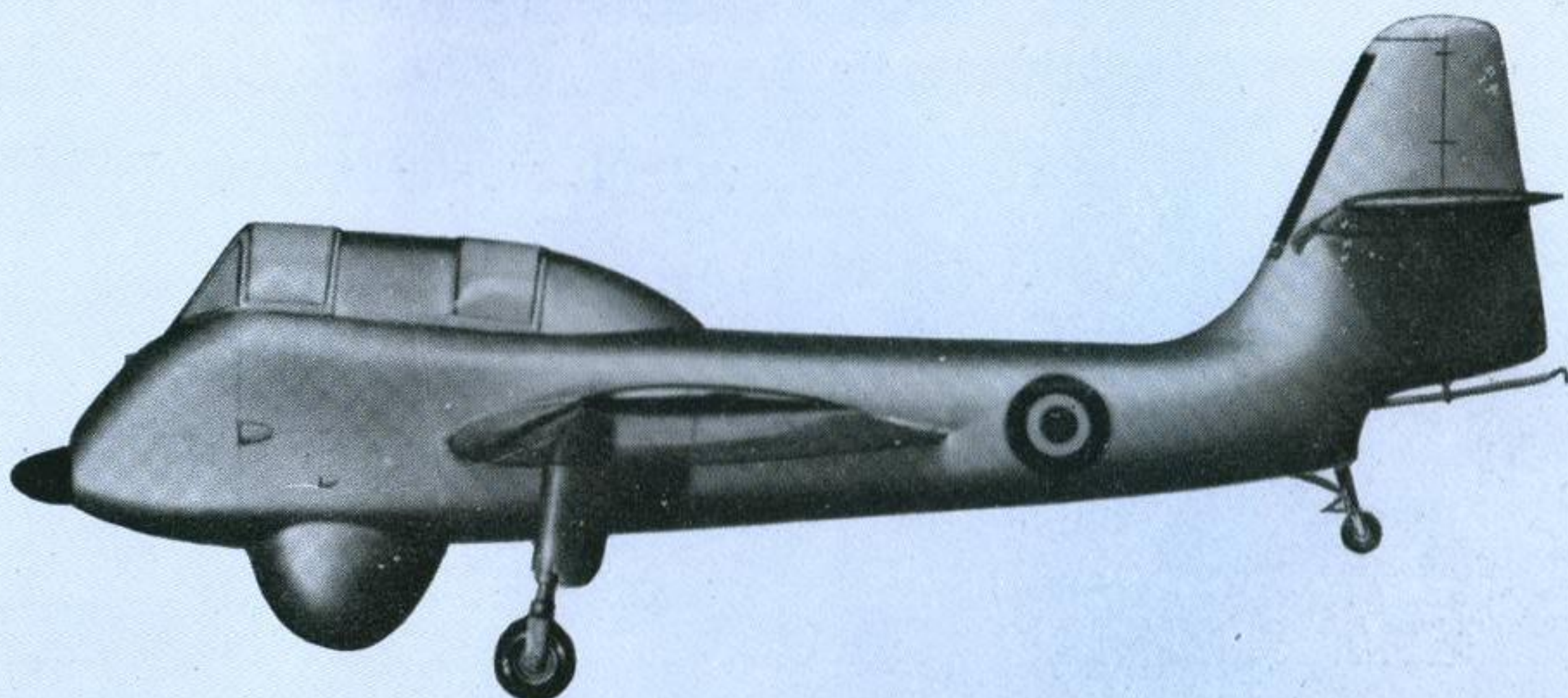
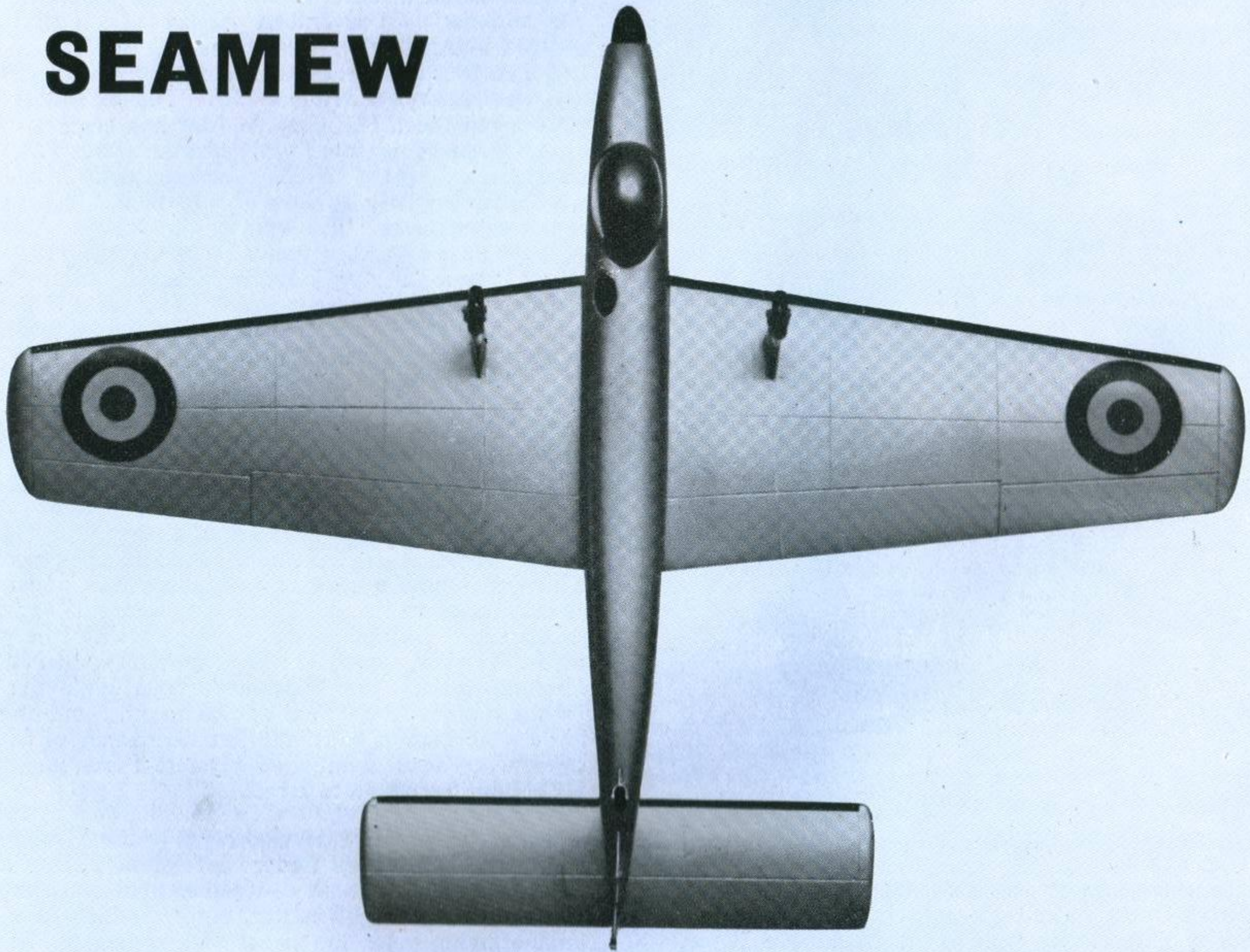
View 4. Worm's eye view—or submariner's eye view. This gives a complementary picture of the pilot's downward viewpoint, and also displays the equal taper of the wings. The fixed main undercarriage is again in evidence, and just behind the radome can be seen the orifice for the Mamba engine. Leading-edge slats, which can be seen in Views 1 and 5, are in evidence here too.





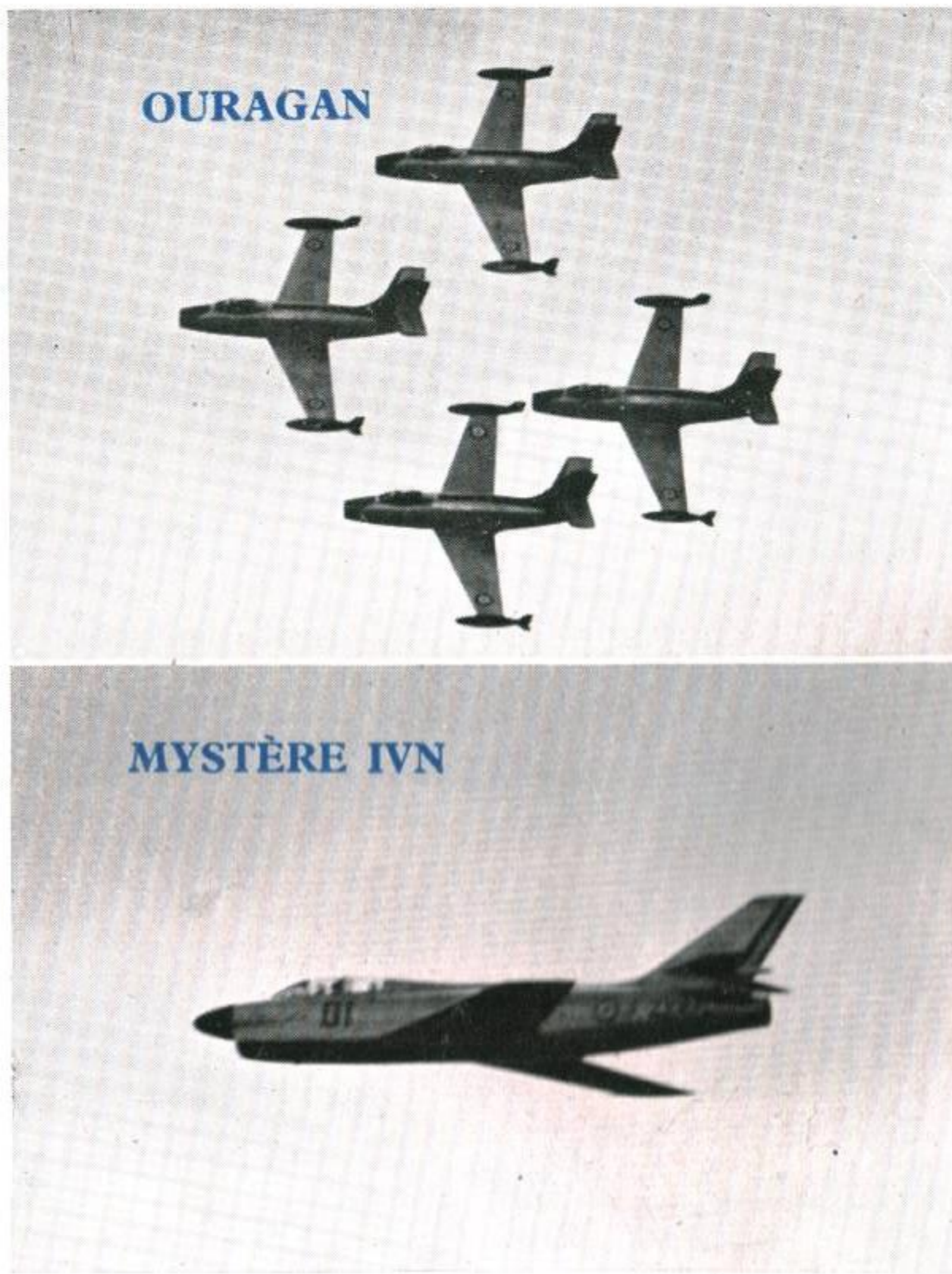
Close-up—

SEAMEW



The Dassault Line

NO SINGLE AIRCRAFT COMPANY can have made such an outstanding contribution to France's present position in world aviation as La Générale Aéronautique Marcel Dassault. After the war, while the French air forces were largely "making do" with licence-built de Havilland Vampires, Marcel Dassault got down to producing what was not only the first French-designed jet fighter, but the first such fighter to be ordered into quantity production. Utilizing a British power plant (a 5,000 lb. thrust Rolls-Royce Nene 102), three prototypes of this fighter, the M.D.450 *Ouragan*, were constructed. The first made its maiden flight on 28th February, 1949, followed five months later on 22nd July by the second machine. The third, with a more powerful Nene engine, first flew on 2nd June, 1950.



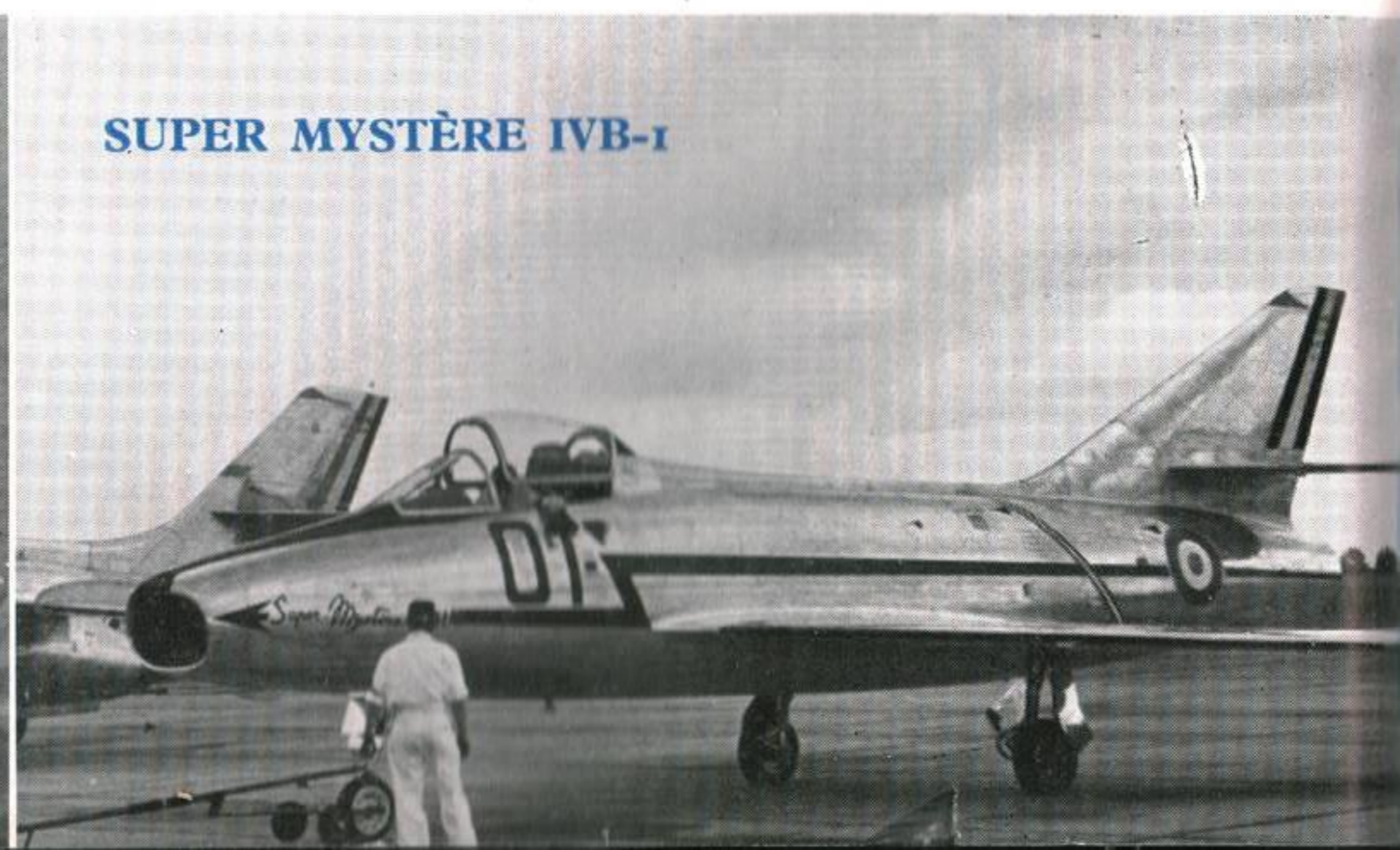
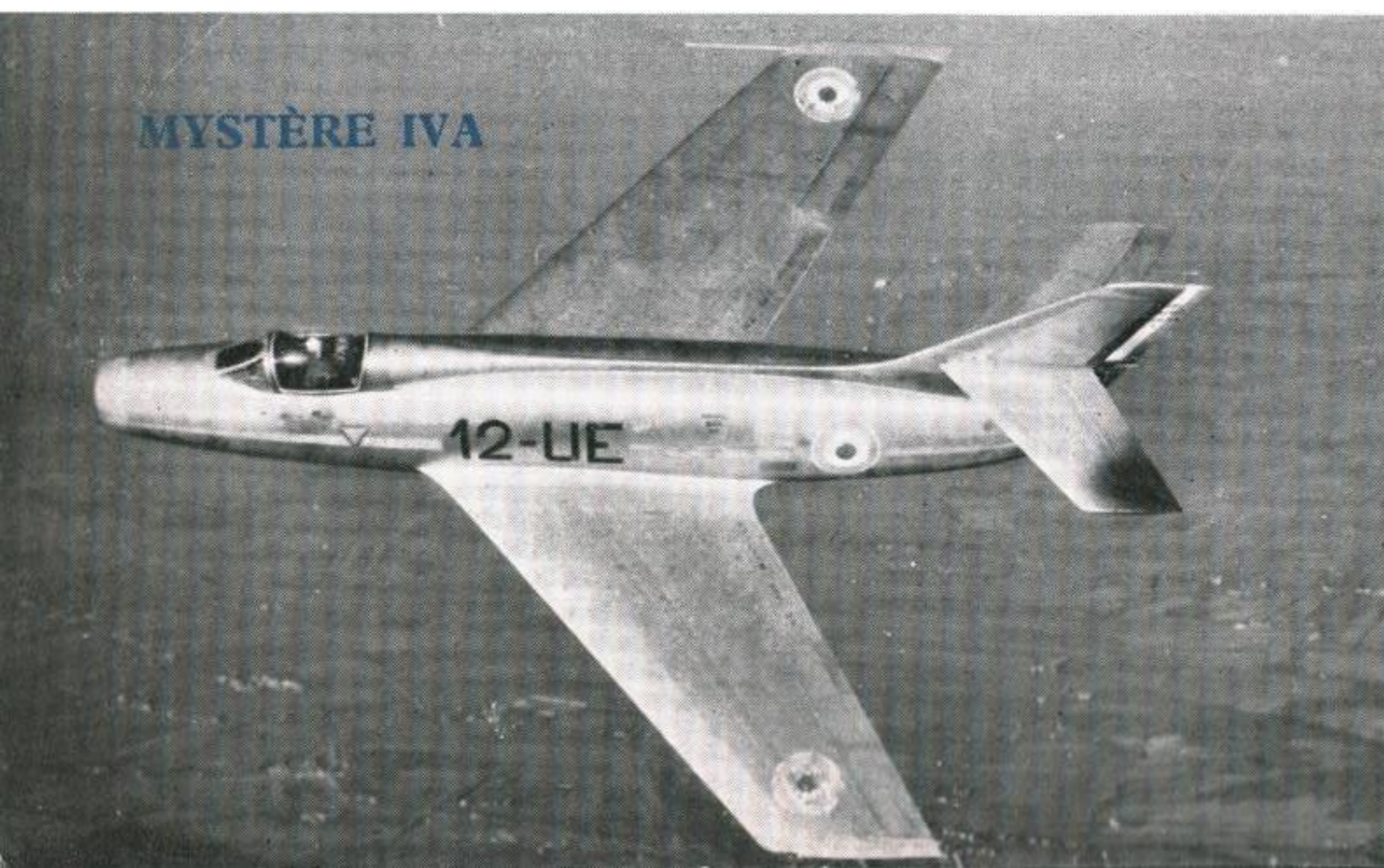
These three prototypes were followed by twelve pre-production *Ouragans* and 350 production machines. Nearly a hundred of the latter went to the Indian Air Force, who know them as *Toofanis*. Various production and pre-production aircraft were used for research: one for after-

burner testing, two for armament experiments, and one with lateral intakes for the evaluation of an M.D.451 project to be called the *Aladin*. (This latter version was not proceeded with.) The M.D.450R was a photographic reconnaissance version. Production *Ouragans*, with the Nene 104B, had a normal top speed of just over 580 m.p.h., and a span of 40 ft. Fixed armament was four 20 mm. Hispano cannon, and a variety of underwing loads included provision for two 1,100 lb. bombs.

The original *Mystère I*, which made its maiden flight on 23rd February, 1951, was virtually a standard *Ouragan* airframe with a redesigned, 30 deg. swept wing. The second and third prototypes, designated *Mystère IIA*, flew on 5th April and 2nd July, 1952, respectively, differing only in the installation of the higher-powered Rolls-Royce Tay turbojet. Of seventeen pre-production *Mystère IIA*s ordered in April, 1951, three retained the Tay engine, but had their four 20 mm. cannon replaced by two 30 mm. guns, and were re-styled *Mystère IIB*. The remaining fourteen were given the S.N.E.C.M.A. Atar 101 engine, two of the aircraft also being fitted with afterburners. For squadron service, the Armée de l'Air ordered 150 *Mystère IIC*s, which had an Atar 101D-3 giving them a 658 m.p.h. top speed at sea level. The span of the *Mystère IIC* is 38 ft. A two-seat all-weather variant—the *Mystère III*—flew for the first time on 18th July, 1953, having lateral intakes in order to make over nose room for radar gear. Development of the Mark III was, however, shelved in favour of the more advanced *Mystère IVN*.

The *Mystère IV*, developed alongside the II, took to the air for the first time on 28th September, 1952. Although externally similar to its progenitor, the *Mystère IV* was in fact a complete redesign, with a sharper-sweep wing and a flattish, oval-section fuselage. Recognition of its capabilities came in April, 1953, in the form of an order for 225 *Mystère IVA*s under the Off-Shore Procurement programme. This order now stands at 325, about half of which have already been completed. The first 75 were still Tay-powered; subsequent machines were equipped with the 7,720 lb. thrust Verdon, which is the Tay built under licence by Hispano-Suiza. The Verdon turbojet gives the *Mystère IVA* a top sea-level speed of 696 m.p.h., and the aircraft has a wing span of 36 ft. and fixed armament of two 30 mm. cannon. A small number of *Mystère IVA*s, and also some *IIC*s, have been sold to Israel.

Several progressive developments of the *Mystère IV* have been, and still are, under development, including the *Mystère IVB* single-seat all-weather fighter and the *Mystère IVN* two-seater night fighter, both of which have an Avon engine giving 9,500 lb. thrust with re-heat. The *IVB* has a lengthened rear fuselage (to 44 ft.) to accommodate its "pressure cooker", and a lipped intake similar to the



F-86E Sabre. The IVB, which is now in quantity production, made its first flight on 16th December, 1953, and its public debut at the 21st Salon d'Aéronautique in June, 1955, between which dates—in February, 1954, to be exact—it had “gone supersonic” on the level.

The all-weather Mystère IVN, distinguished in appearance by its “Sabre D” radar nose, is credited with a very good performance over a long range, endurance being about three hours. It has tandem seating, and its RA.7R Avon gives it a top speed not far short of the 700 m.p.h. mark. A feature of the Mystère IVN is the formidable array of offensive weapons: in addition to the fixed armament, which may be either two 30 mm. cannon or an under-fuselage tray carrying 52 unguided air/air missiles, provision is made for rocket pods carrying a total of 128 projectiles. A later version, the *Mystère IVN-2*, is believed to incorporate increased outer-wing sweep and to employ an RA.14 Avon as its power unit.

Next along the line is the supersonic *Super Mystère IVB-1*, which features a 45 deg. swept wing, reducing the span still further to 33 ft., a very sharply-swept large-area fin, a fuselage “spine” and a longer, flatter nose and intake à la Super Sabre. (Indeed, it is noticeable how—outwardly, at any rate—the development of the Mystère series

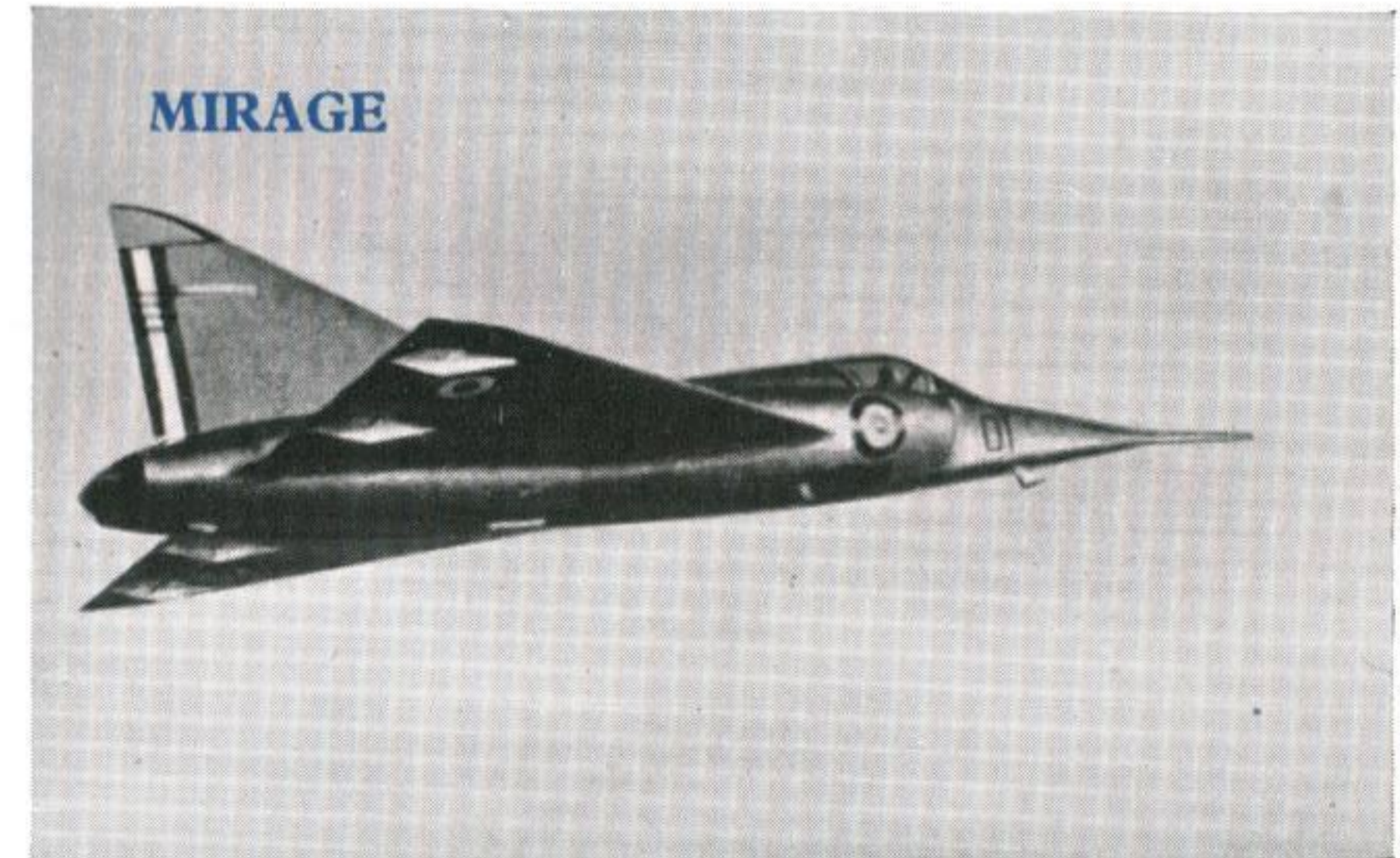
XXII is a prototype light-weight interceptor and ground support aircraft with a 45 deg. swept wing, and also armed with the DEFA cannon. Its power plant is to be a pair of Turboméca Gabizo turbojets mounted side by side, though for initial flight tests this summer it will have licence-built Armstrong-Siddeley Vipers. With external fuel tanks it is said to have a range of 1,380 miles. The *Mystère XXIV* is generally similar to the *XXII*, but is to have the Atar 101G engine; this machine is being developed as a private venture.



MYSTÈRE XXII

appears to have followed that of the Sabre; even the progenitors of each, the Ouragan and the FJ-1 Fury, are not so very dissimilar.) The *Super Mystère IVB-1*, at present in pre-series production, is powered by a Rolls-Royce Avon RA.21 with re-heat. Production machines—of which nearly four hundred have been ordered, and which will be designated *IVB-2*—will have the S.N.E.C.M.A. Atar 101G turbojet (giving 9,700 lb. thrust with re-heat), and should start to reach the squadrons during 1957. Armament of the *Super Mystère* will be two 30 mm. DEFA cannon, and provision for the carriage of guided weapons is a possibility. This aircraft has frequently exceeded the speed of sound in level flight.

Other Mystère variants in varying stages of development and design are the *XXII*, *XXIV* and *XXVI*. The *Mystère*



MIRAGE

The *Mystère XXVI*, along with the Bréguet *Taon*, is being produced to meet a NATO specification for a light-weight tactical fighter. It is a twin-engined, swept-wing aircraft, and three prototypes have been ordered, one of which is expected to fly this year. Power will be provided by the Bristol Orpheus engine, although a carrier-based version, with Viper engines, has been ordered by the French Navy.

Finally, mention must be made of the M.D.550. This aeroplane breaks away from earlier Dassault designs in several ways, chief of which is seen in the employment for the first time of a delta wing form. The aircraft also makes a break with the name *Mystère*, and has been given the name *Mirage*. The twin-engined delta (licence-built Vipers) was designed to a French Air Ministry specification for a light fighter (it weighs 5 tons!), and two prototypes are being built. The first of these made its maiden flight on 25th June, 1955, and has since completed its company flight tests. Trials at the air force test centre are now well under way. It is planned to incorporate an SEPR booster rocket to bring the top speed up to Mach 1.7—which will be going some. No production plans have been announced for the *Mirage* at the time of writing. K.G.M.

This article has been prepared from Press information. It does not reflect official views or opinions nor are the facts and figures quoted necessarily confirmed officially.

Over the page you will find a lesson on what are perhaps, at the moment, the two principal *Mystère* variants with whose recognition we need be concerned—the *IIC* and the *IVB*.

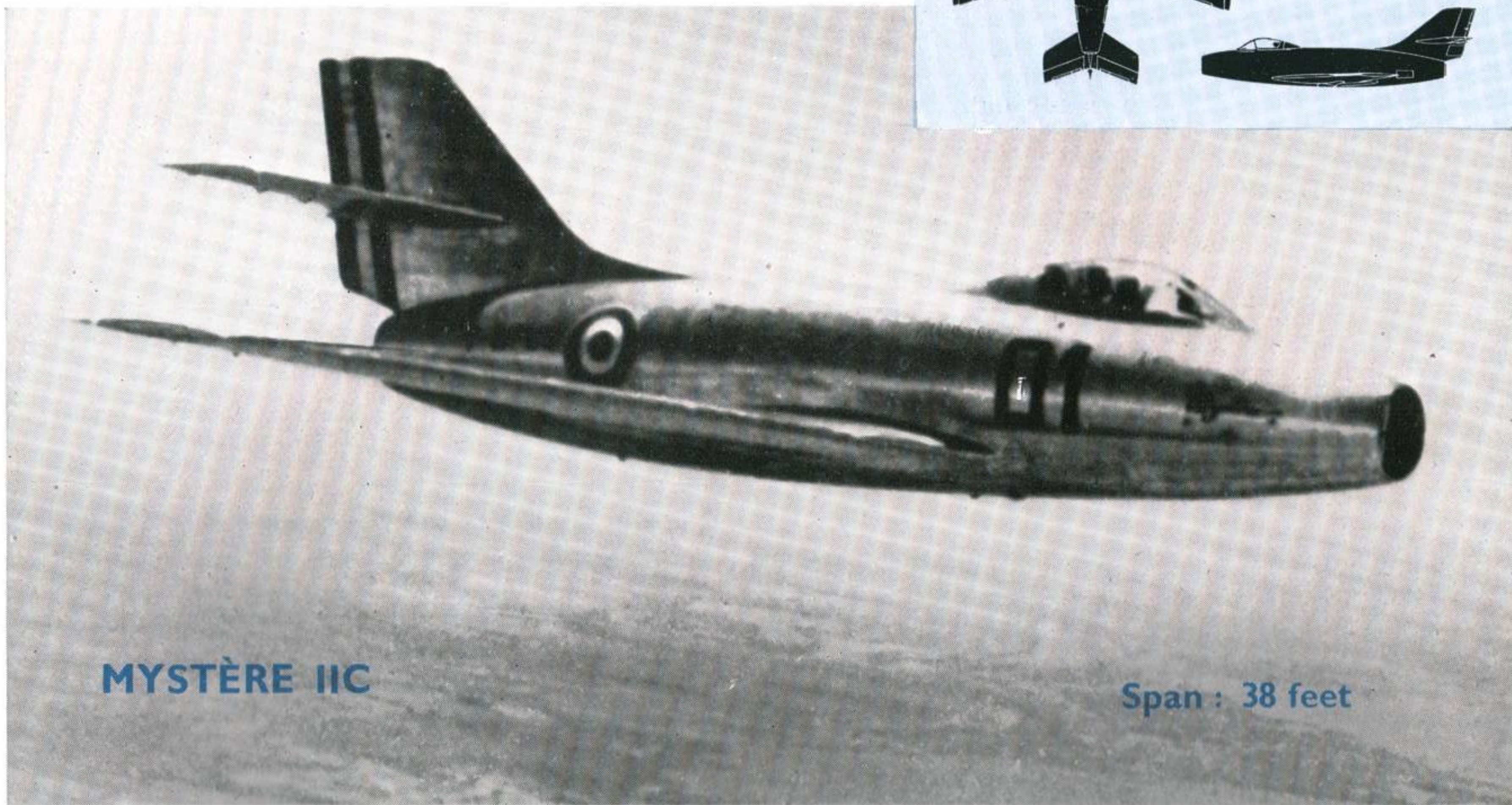
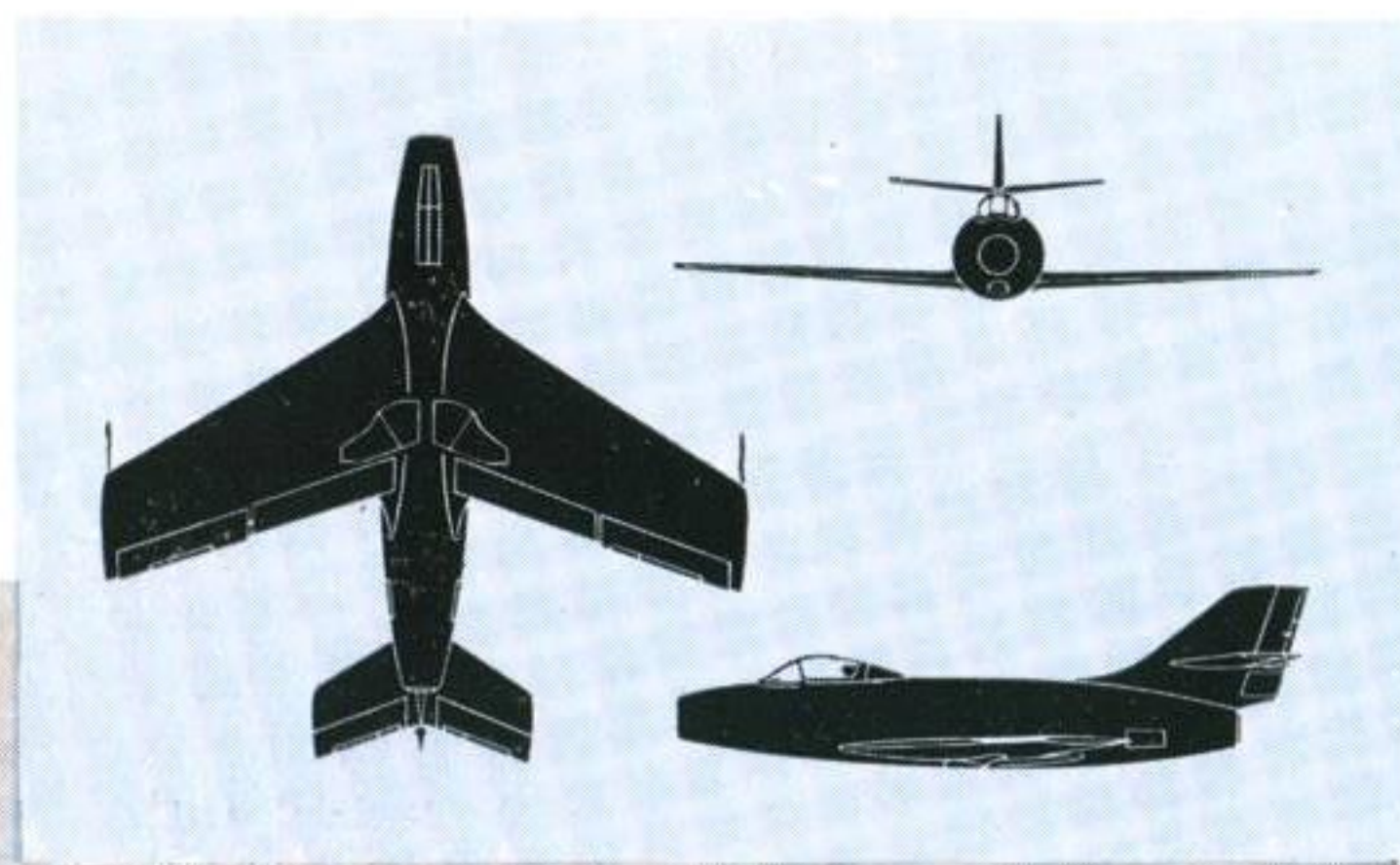


MYSTÈRE IIC



MYSTÈRE IVB

MYSTÈRES



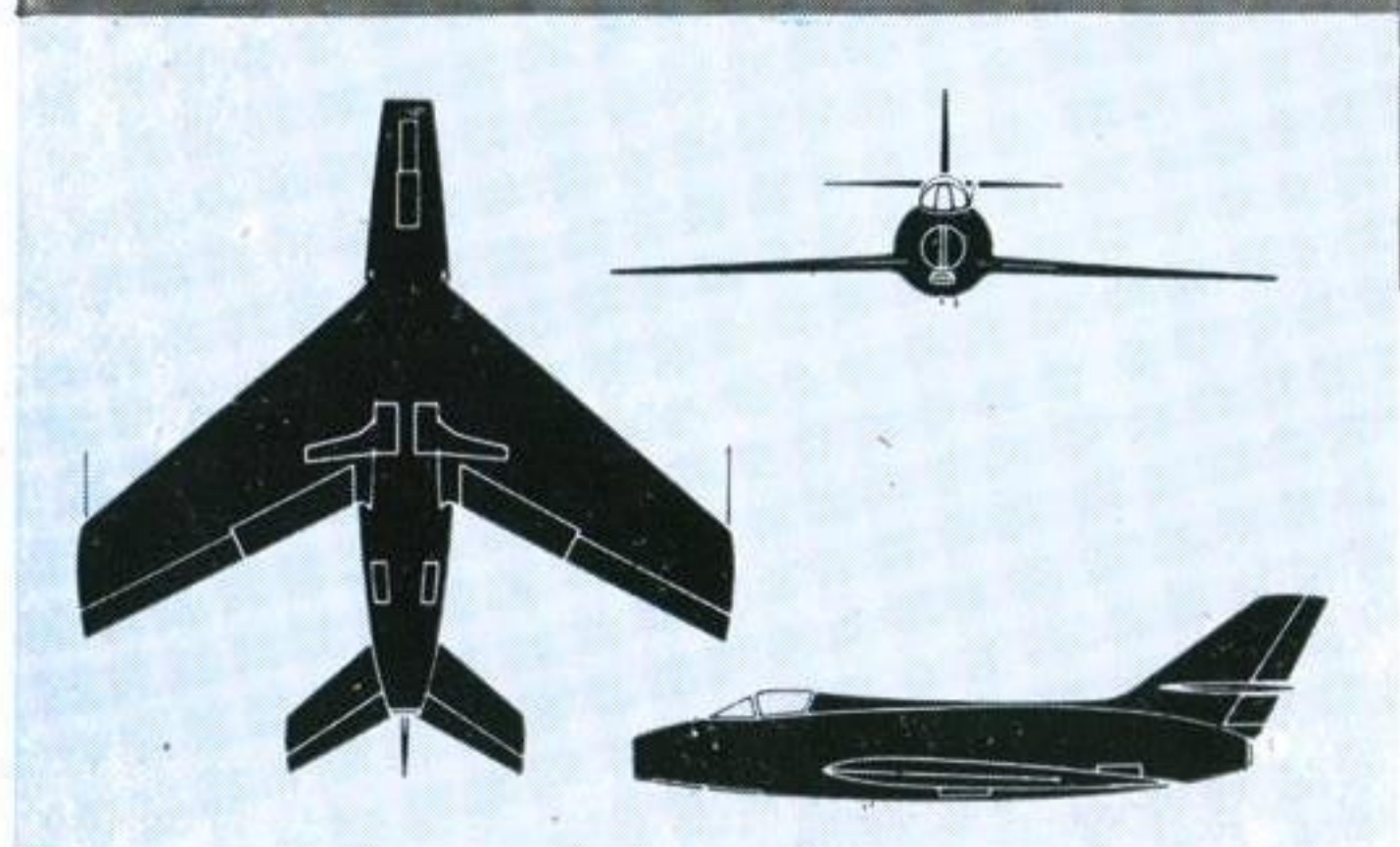
MYSTÈRE IIC

Span : 38 feet

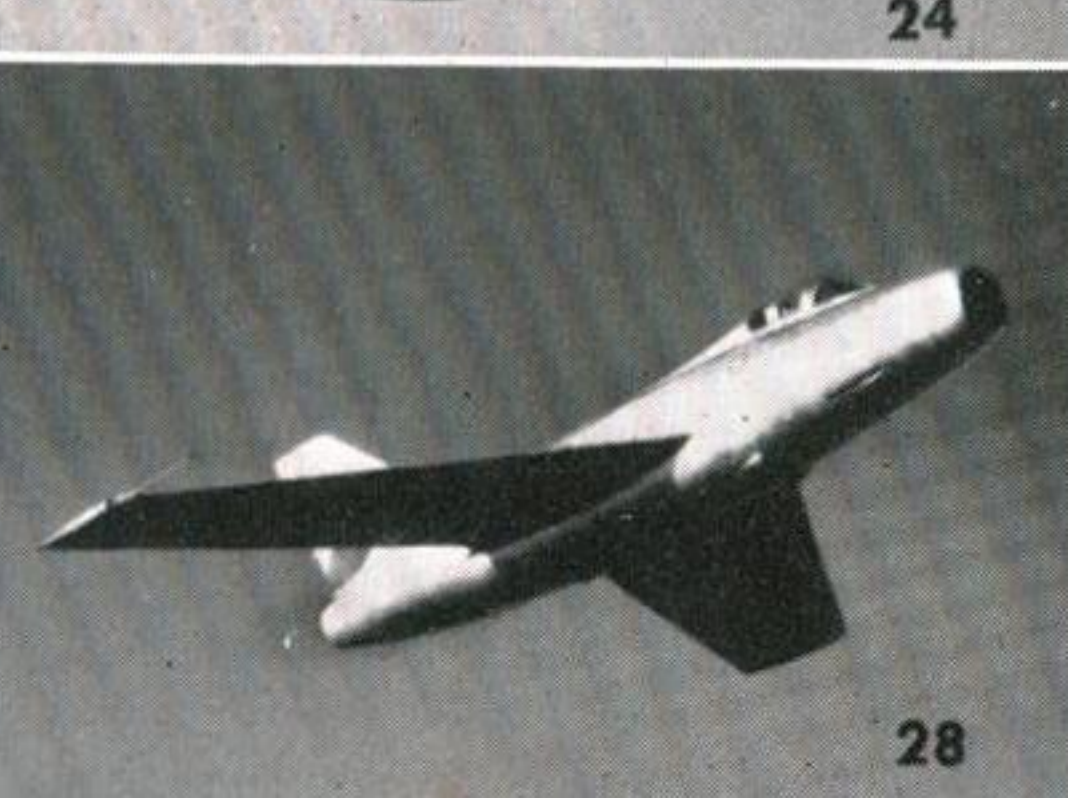
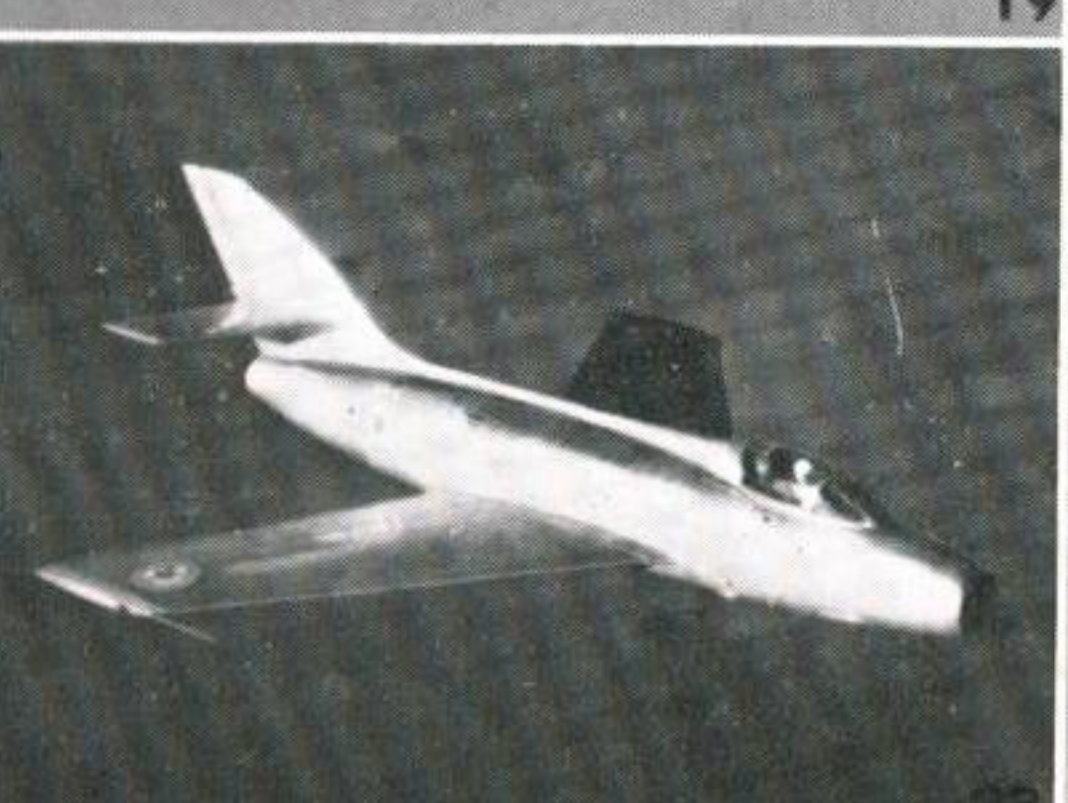
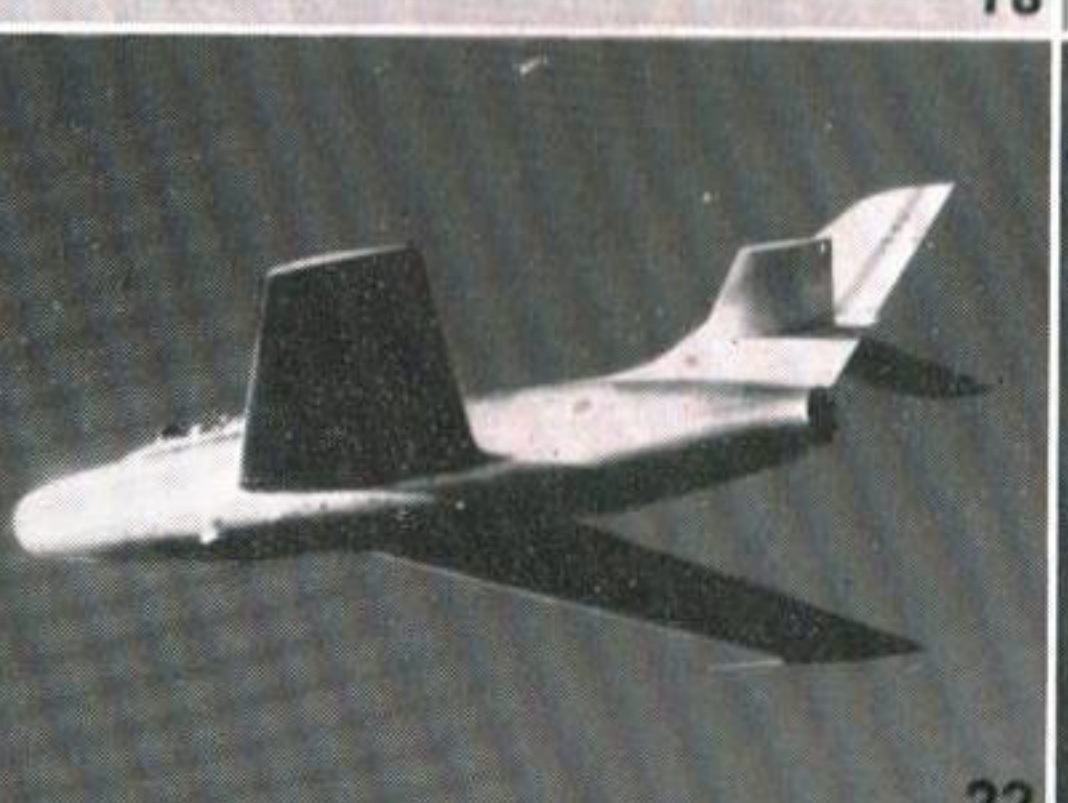
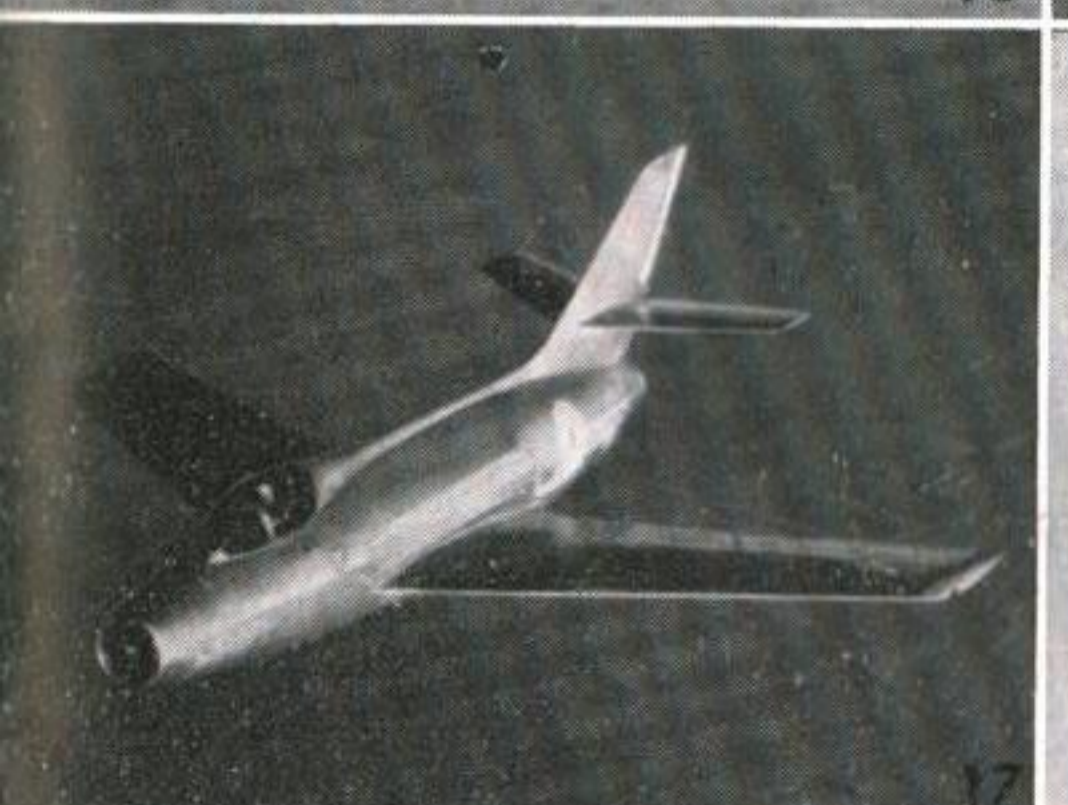
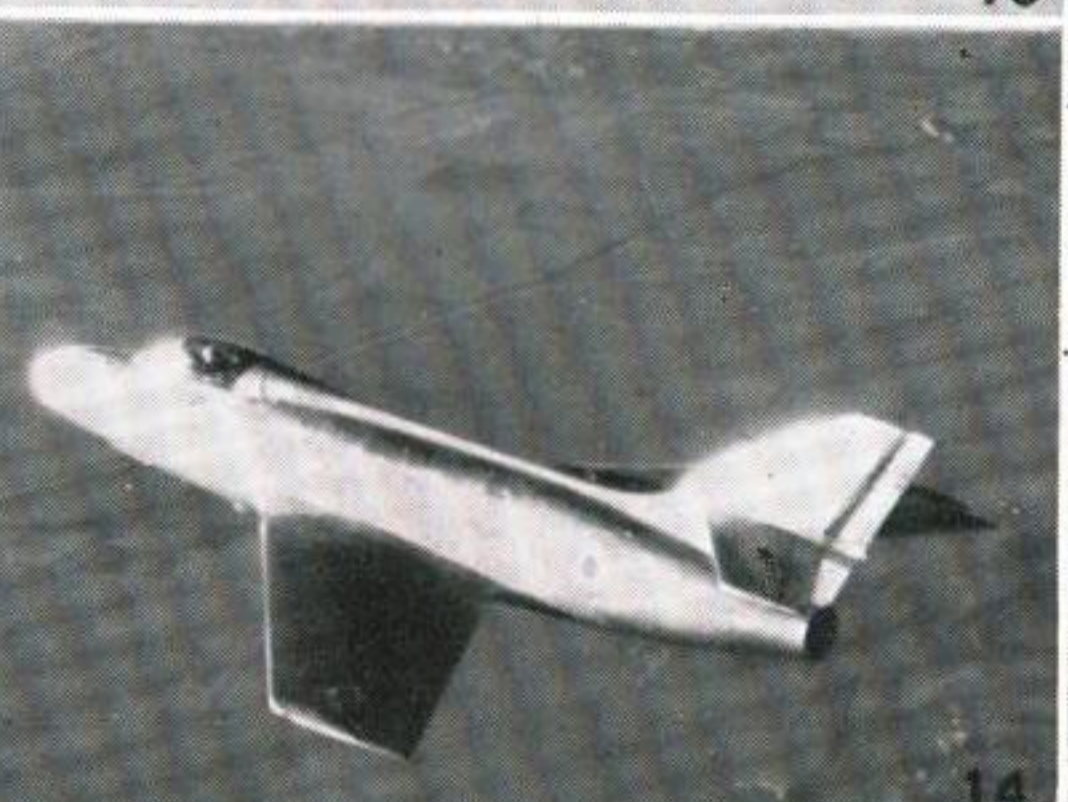
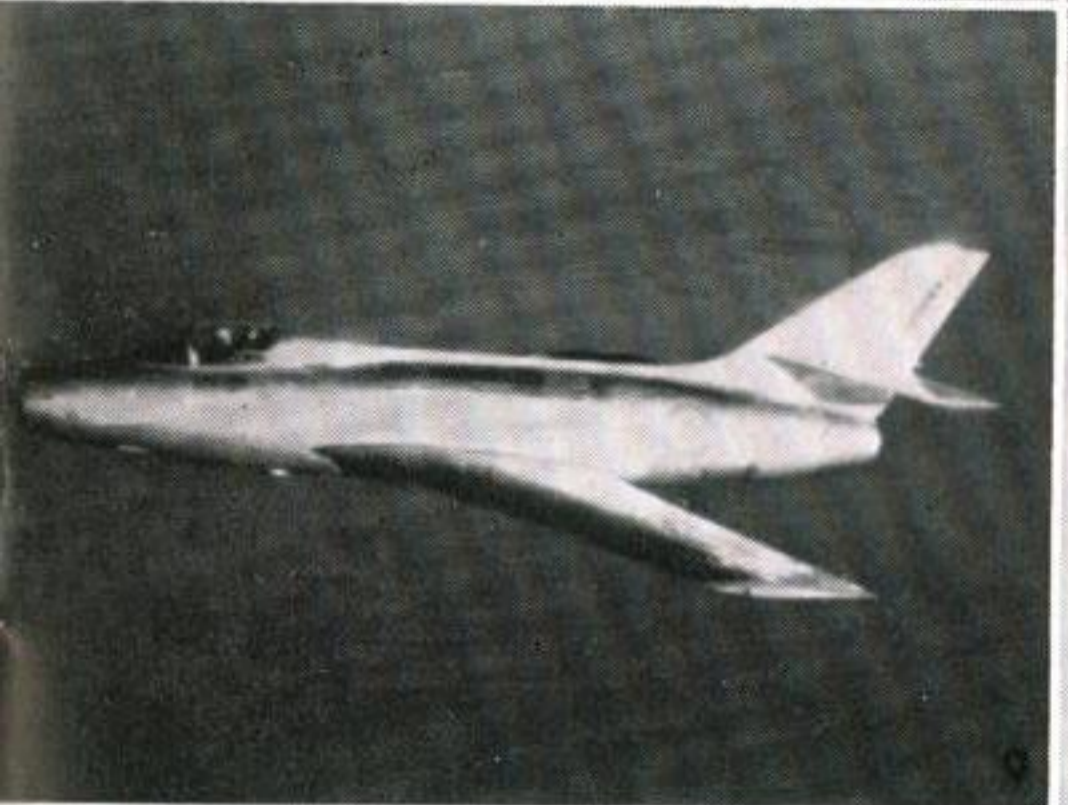


MYSTÈRE IVA

Span : 36 feet



The Dassault Mystère, in common with so many present-day interceptors, is little more than a flying blow-torch. These two are the Mystère IIC, and the Mystère IVA which succeeds it. There are quite a few differences between them—features such as wing sweep, fin and rudder shape, etc.—and by learning to separate one from the other in this exercise you will, in the process, get to know them both quite well.



Briefs

A collection of items of news and interest which may help your recognition.

Skywarriors in Service

First fleet deliveries of high-speed, long-range Douglas A3D-1 Skywarriors have now been made. The Skywarrior, according to a U.S. Navy announcement, can take off from a carrier in one ocean, complete a mid-continent bombing mission, and fly on to land on another carrier in another ocean. The Skywarrior is rated in the 600-700 m.p.h. class, and carries a crew of three.

* * *

Huntin', Shootin', and Fission

It was recently disclosed that the Convair Division of General Dynamics Corporation have been awarded a contract to develop an airframe for a nuclear-powered aeroplane. This is a direct result of an earlier contract, awarded in 1951, under which Convair have for some time been conducting flight tests in a B-36 bomber equipped with an atomic reactor (though the reactor does not in this instance power the aircraft).

* * *

Another Kitten

First delivery is expected this summer of a new version of the Grumman Cougar, the F9F-8T two-seat fighter/trainer (see photo). Modifications from the F9F-8 fighter include a new tandem cockpit and a two-foot nose extension. The new machine is in the same category as the Convair TF-102A, a "combat proficiency trainer" which can fulfil both the training and the operational fighting role.



* * *

The Final Firefly

The last of 1,702 Fairey Fireflies, a U Mk. 8 radio-controlled target drone, was formally handed over to the Ministry of Supply by Sir Richard Fairey on 20th April. The Firefly, one of the last war's most versatile aircraft, fought in practically every operational theatre, and was again in evidence (operating from Royal Navy and Royal Australian Navy carriers) during the Korean war. In its time the Firefly has served as day fighter, night fighter, trainer, on anti-submarine and reconnaissance duties, and latterly as a target tower and radio-controlled target drone. In this latter function it remains linked with present-day developments, as target for the Fairey Fireflash and other guided weapons.

JULY 1956

Pods, Pods and More Pods

A third swept-wing, four podded-jet airliner has now been announced to haunt us—the Convair 600 Skylark. As the illustration shows, we are going to have our recognition hands full when this, the Boeing Jet Stratoliner and the Douglas DC-8 are all flying. The Skylark, however, unlike its two contemporaries, is designed only for medium-range duties, though a cruising speed of 609 m.p.h. is claimed.



* * *

The Queen's Flight

The following statement was made by the Secretary of State for Air in the Commons on the 18th April: "The Queen's Flight at present consists of three Vickers Vikings and one de Havilland Heron. Helicopters are borrowed from service units as required. These arrangements have been under review and it has been decided that the Vikings should be replaced by two Herons, making a total of three Herons. It is proposed to add two helicopters. With these aircraft the Queen's Flight will be equipped to undertake short-range flight requirements. For longer flights aircraft will continue to be provided by the Corporations. Her Majesty the Queen has been graciously pleased to approve these proposals."



"Overhead . . . wun fife . . . miles six . . . miles seven miles ate . . . east, wun at wun, F.D.2, out."

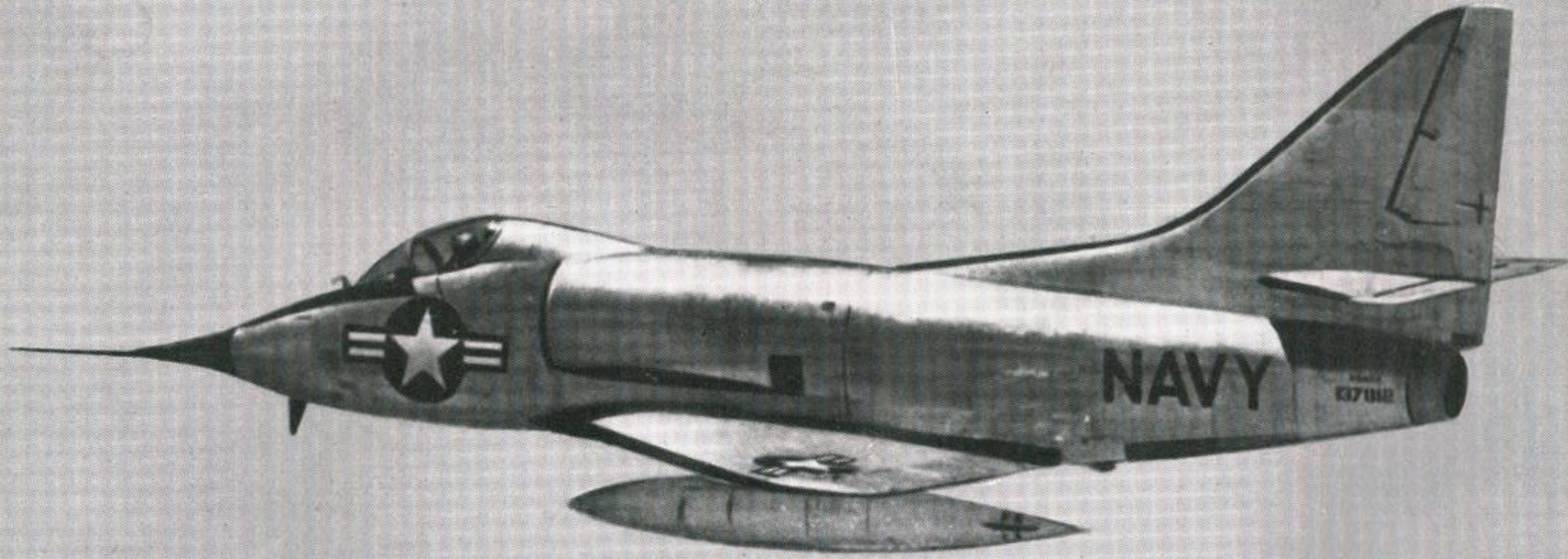
Camel



The Tupolev "Camel" during its visit to London Airport in March this year. The clean lines, inherited from the parent "Badger" bomber, are well exhibited in the large picture above and also in the smaller views. A hint of B-29 ancestry can be seen in the nose panel. (It will be remembered that Tupolev rebuilt a B-29 under his own designation of TU-4—now known as "Bull.") Approximate dimensions of the Camel are: wing span, 115 feet, overall length, 130 feet.

SKYHAWK

The Bantam Bomber



If appearance is any guide, the Douglas A4D-1 Skyhawk is an aeroplane we would much rather stay friends with than oppose. One of the most hostile-looking aircraft flying to-day, the Skyhawk is a carrier-based killer with an atomic sting in its repertoire, and well merits its nickname, for it spans only 27 feet. The Skyhawk is unusual among current delta-wing aircraft in that its delta does not dominate the machine; furthermore, it boasts a "conventional" tail unit of which the

tailplane is a small repeat of the wing shape. The chief distinctive feature of the Skyhawk is the "round-shouldered" look given it by its two enormous bulging intakes which, as it were, peer over the pilot's shoulder. From these the eye is led straight into, up and over a very tall domineering fin which looks like a ship in full sail. The exercise will drive home the essential "feel" of this distinctive little buzzer.



1



2



3



4



5



6



7



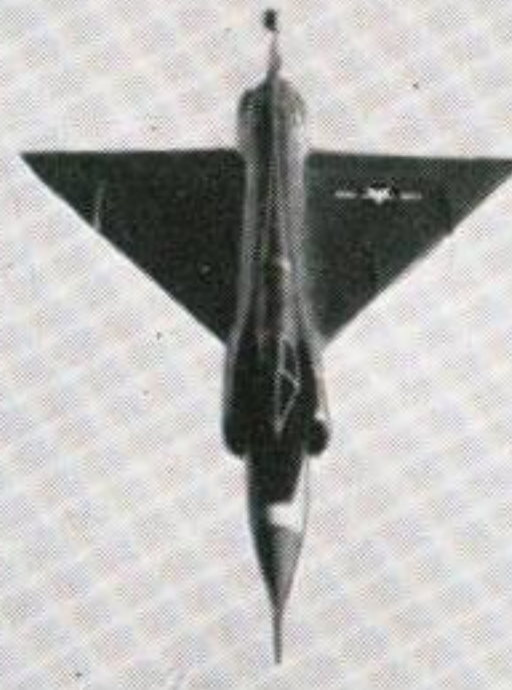
8



9



10



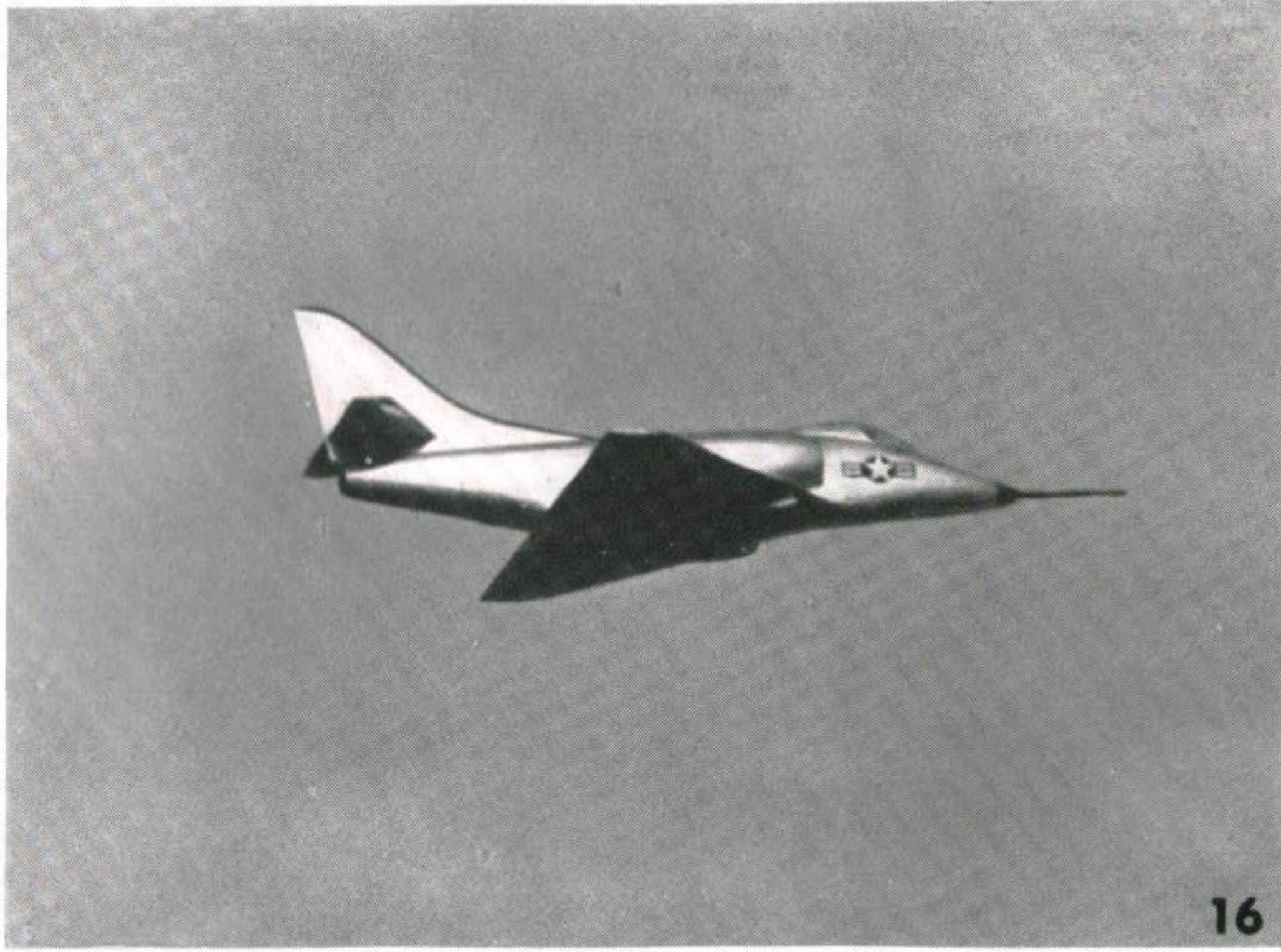
11



12



13



16



14



15



17



18



19



20



21



22



25



23



24



26



27



28



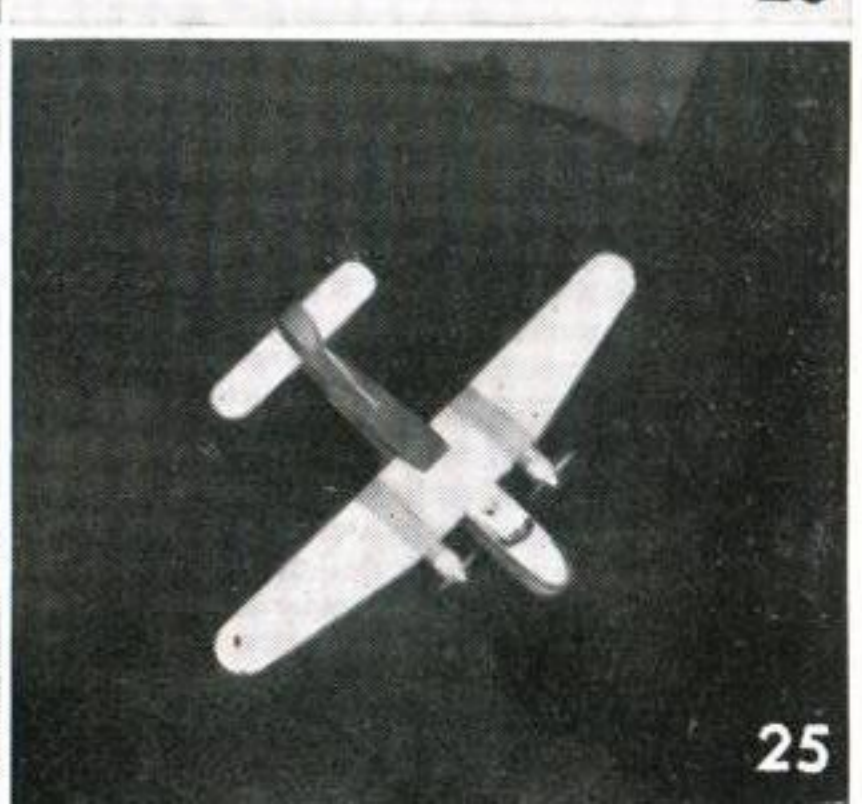
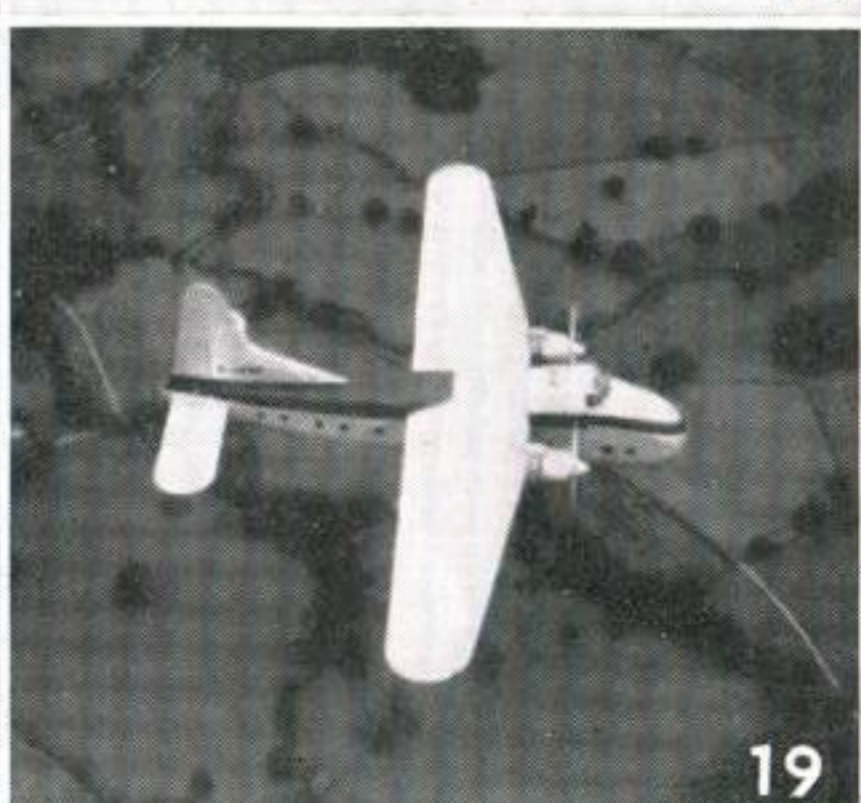
29



30

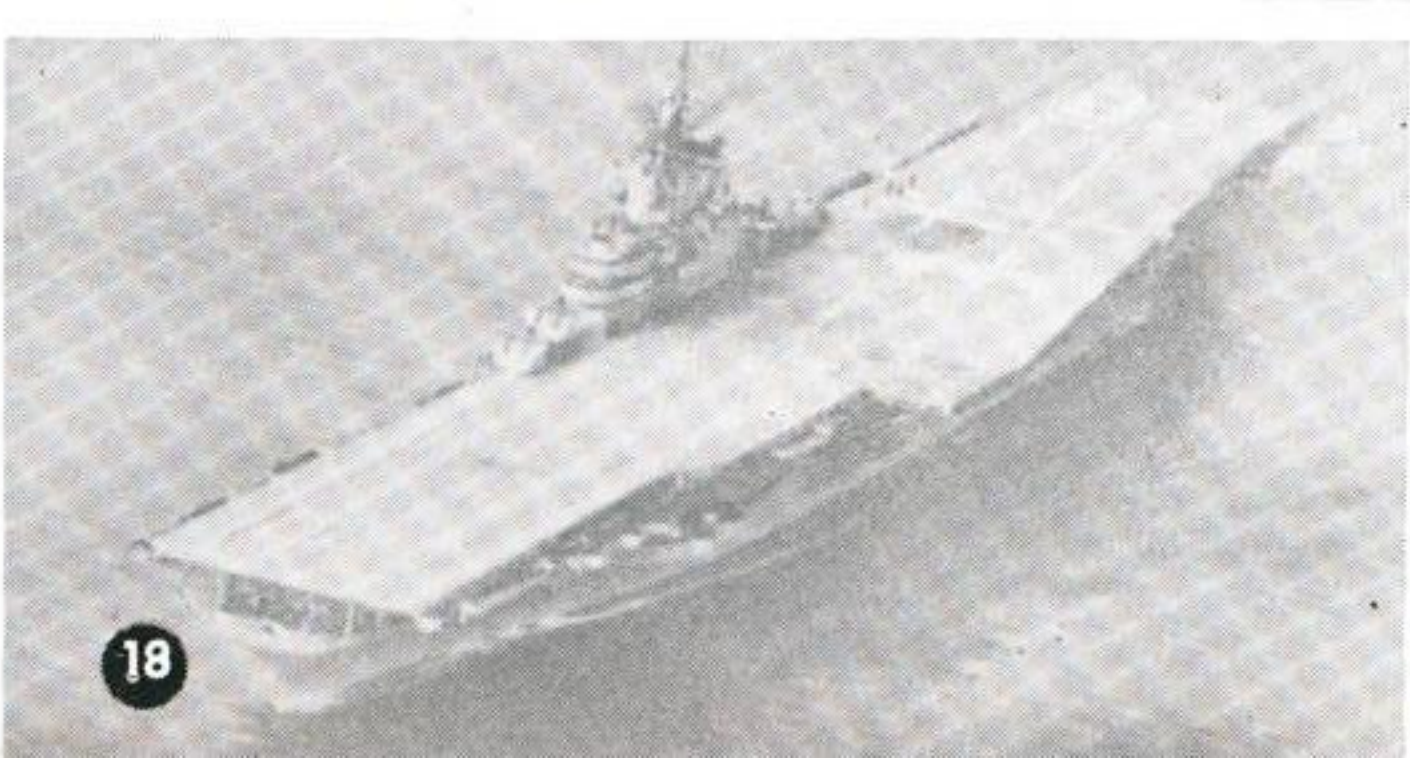
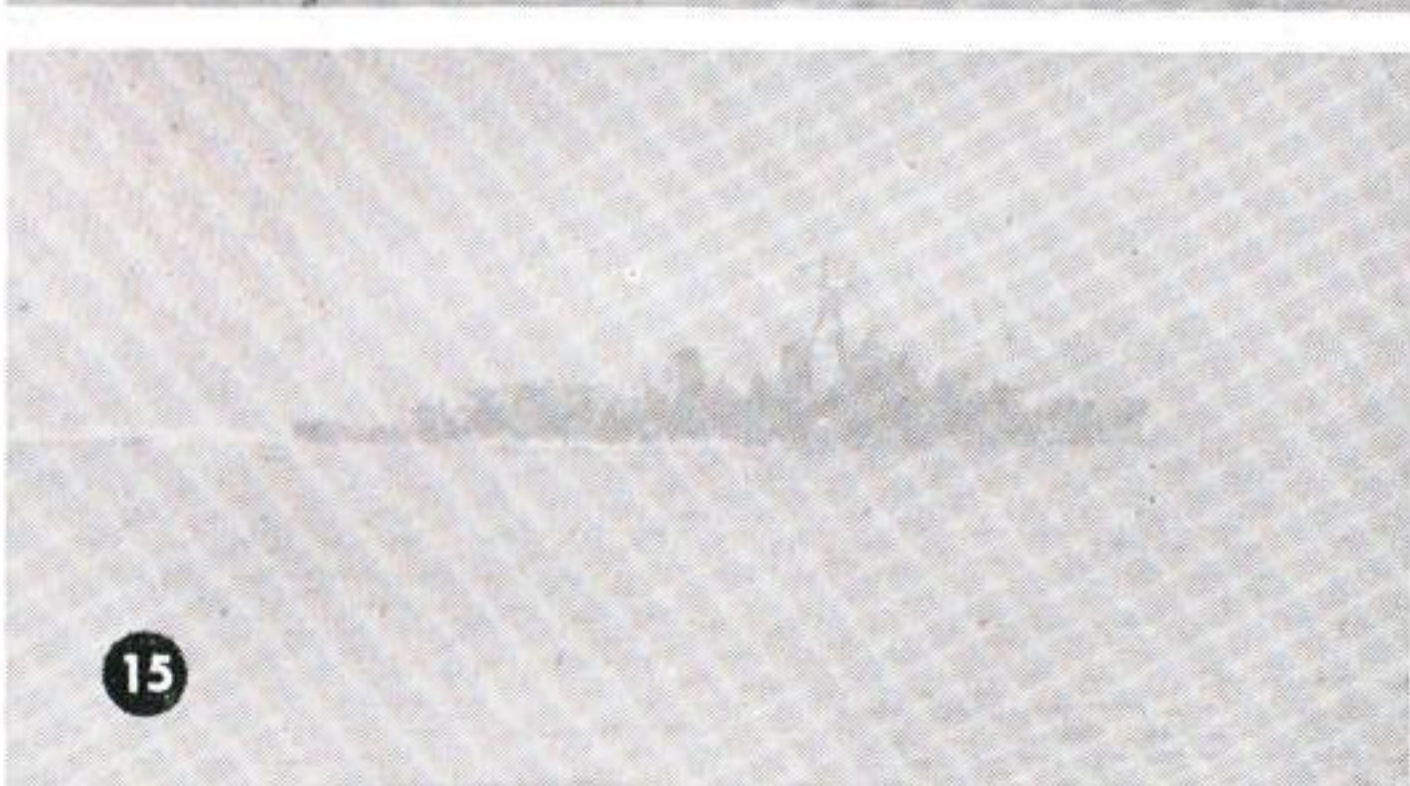
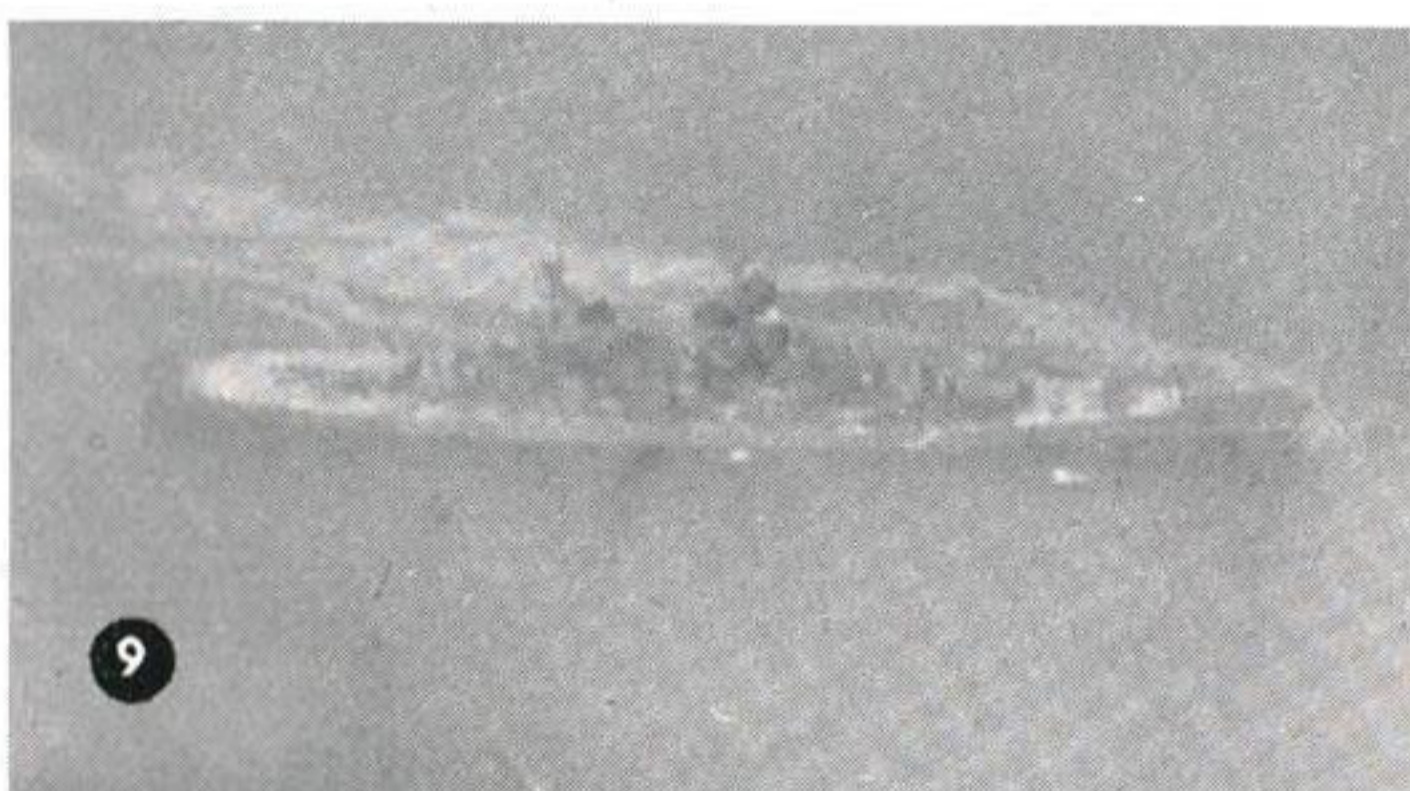
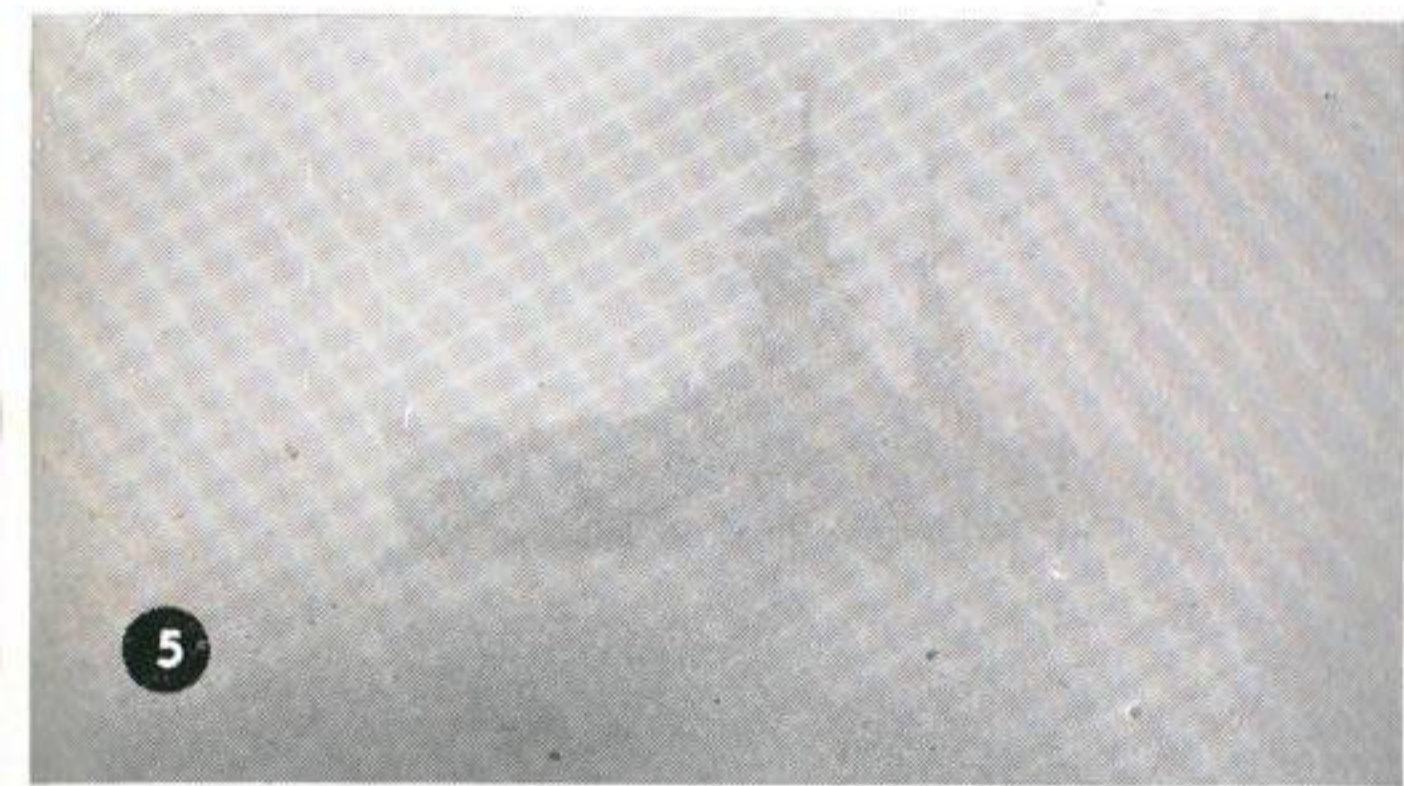
BRISTOL FREIGHTER

Like the Beverley, the Bristol Freighter is in a recognition class of its own. With its broad, high wing, bull nose and cavernous body, there just isn't anything else like it, except another Freighter. It is nevertheless in sufficiently widespread use to warrant attention for itself alone. This exercise is concerned with the Freighter 32, which is rather more rounded than its forerunners, particularly in the fin and rudder, which sports a large fuselage fairing absent on earlier models. List the target numbers, find a few easy views and confirm them with the key, then progress to less obvious targets. Write down "Freighter 32" each time you identify one for certain.



ADVANCED "SEASEARCH" No. 3

A further selection of dim views and small views have been collected together in the third of this series of ship tests for the more advanced student. Practice at recognition in all kinds of circumstances is essential, and this presentation is designed to afford such practice. Follow the scoring system suggested for the previous two tests in this series.



Family Gathering

The three main classes of U.S. destroyer have all been separately featured in the "Journal" within the last 12 months. This month they are all seen together; let us take a final look round their different recognition points.

From the key photographs the general similarity of the three types is at once apparent. The rather frail-looking hulls with deck line sheer; the slim, well separated capped funnels; tripod masts of a distinctive pattern and gun turrets which seem a little too large for their surroundings are characteristics which at once class these ships as Americans. Those who know these destroyers at sea will agree that no photographs can do full justice to the national hallmark which stamps them all. How to tell them apart? First came the Fletchers, introducing the flash-deck hull. The single-gun turrets are conspicuous, but watch out for those ships converted to Escort Destroyers with removal of some of the guns. Sumners came next and are fitted with the twin five-inch gun turret. The Gearing Class are almost identical—in fact an extra 14 ft. between the funnels is the only external difference, and these ships are still somewhat loosely classed as "Sumner Long Hulls". Certain Gearings have been converted for either Escort or Radar Picket duties; these variations are shown in the key pictures. It may help you to remember their order of appearance by the mnemonic "Father Fletcher, Son Sumner, and Grandson Gearing."



Fletcher

The single-gun turret armament is a good clue. Some ships may still have five turrets—two forward and three aft. Modernised versions have one after turret removed (as in key photo).

| | | |
|--------------|----|---|
| DISPLACEMENT | .. | 2,940 tons |
| LENGTH | .. | 376 ft. |
| BEAM | .. | 40 ft. |
| DRAUGHT | .. | 18 ft. |
| ARMAMENT | .. | Four or five 5-in. guns in single turrets |

★ ★ ★

Converted Fletcher

In the Escort Destroyer version, three of the five turrets have been removed, and an A/S weapon fitted in "B" gun position.

| | | |
|--------------|----|----------------------------------|
| DISPLACEMENT | .. | 2,940 tons |
| LENGTH | .. | 376 ft. |
| BEAM | .. | 40 ft. |
| DRAUGHT | .. | 18 ft. |
| ARMAMENT | .. | Two 5-in. guns in single turrets |

★ ★ ★

Sumner

Distinguished from the Fletchers by their twin turrets, and from the Gearings by their more closely-placed funnels.

| | | |
|--------------|----|------------------|
| DISPLACEMENT | .. | 3,300 tons |
| LENGTH | .. | 376 ft. |
| BEAM | .. | 41 ft. |
| ARMAMENT | .. | Three twin 5-in. |

Gearing

Similar to the Sumner class, but with funnels further apart. Note the continuous superstructure along the length of the deck.

DISPLACEMENT .. 3,500 tons
LENGTH 390 ft.
BEAM 41 ft.
ARMAMENT .. Three twin 5-in.

★ ★ ★



Converted Gearing (Radar Picket)

The first type of Radar Picket conversion has a tripod mainmast, forward of the after funnel.

DISPLACEMENT .. 3,500 tons
LENGTH 390 ft.
BEAM 41 ft.
ARMAMENT .. Three twin 5-in.

★ ★ ★

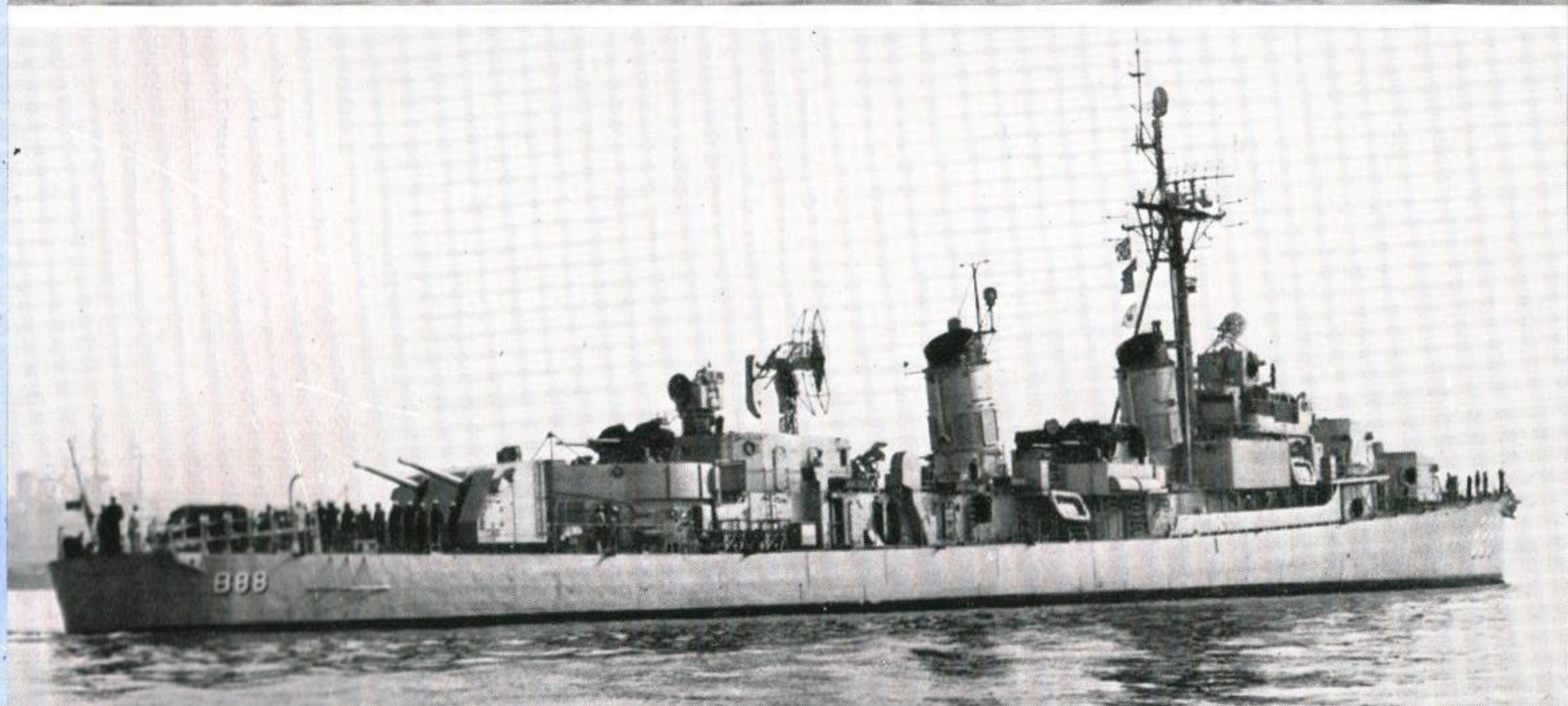


Converted Gearing (Radar Picket)

The mainmast does not appear in later ships of the class converted to Radar Picket. There is, however, an elaborate radar display aft.

DISPLACEMENT .. 3,500 tons
LENGTH 390 ft.
BEAM 41 ft.
ARMAMENT .. Three twin 5-in.

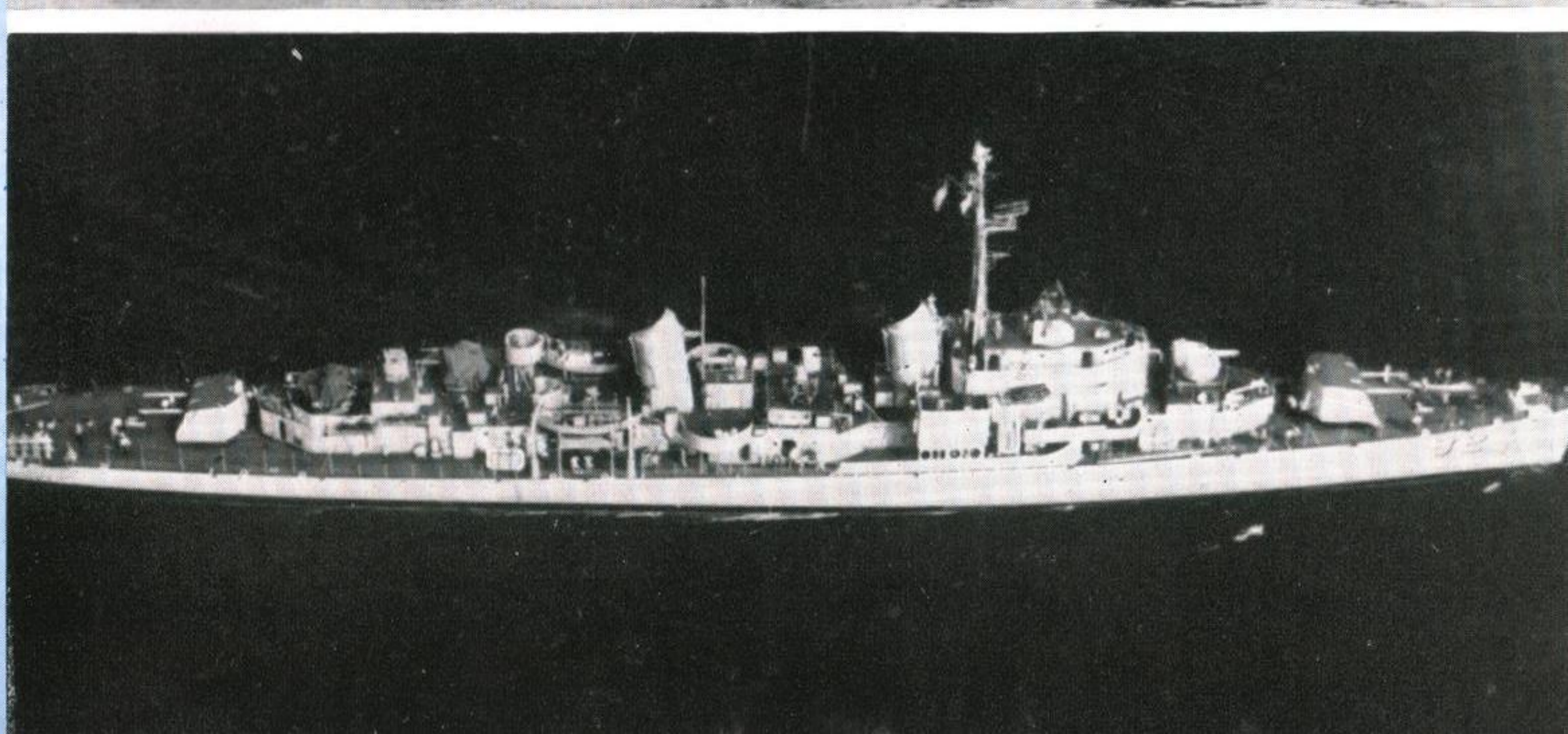
★ ★ ★

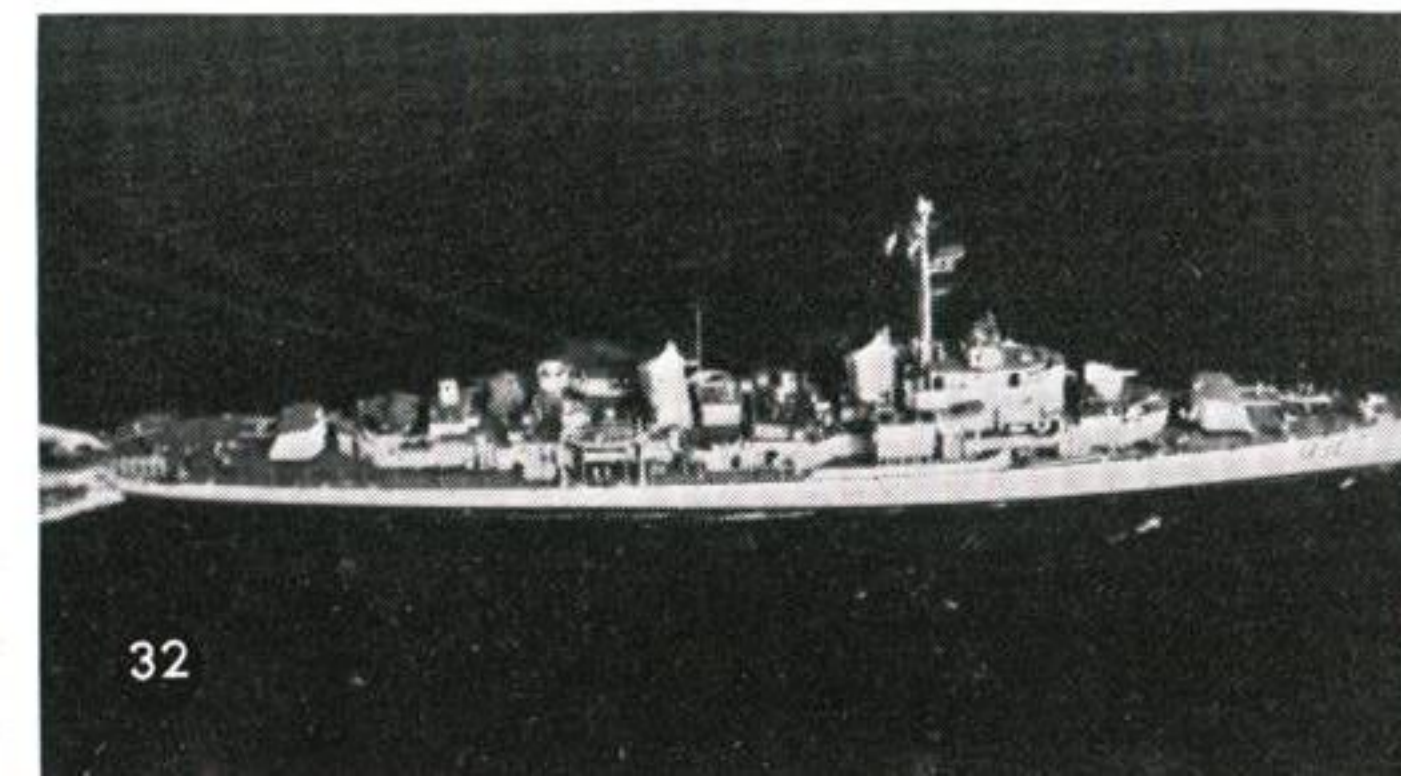
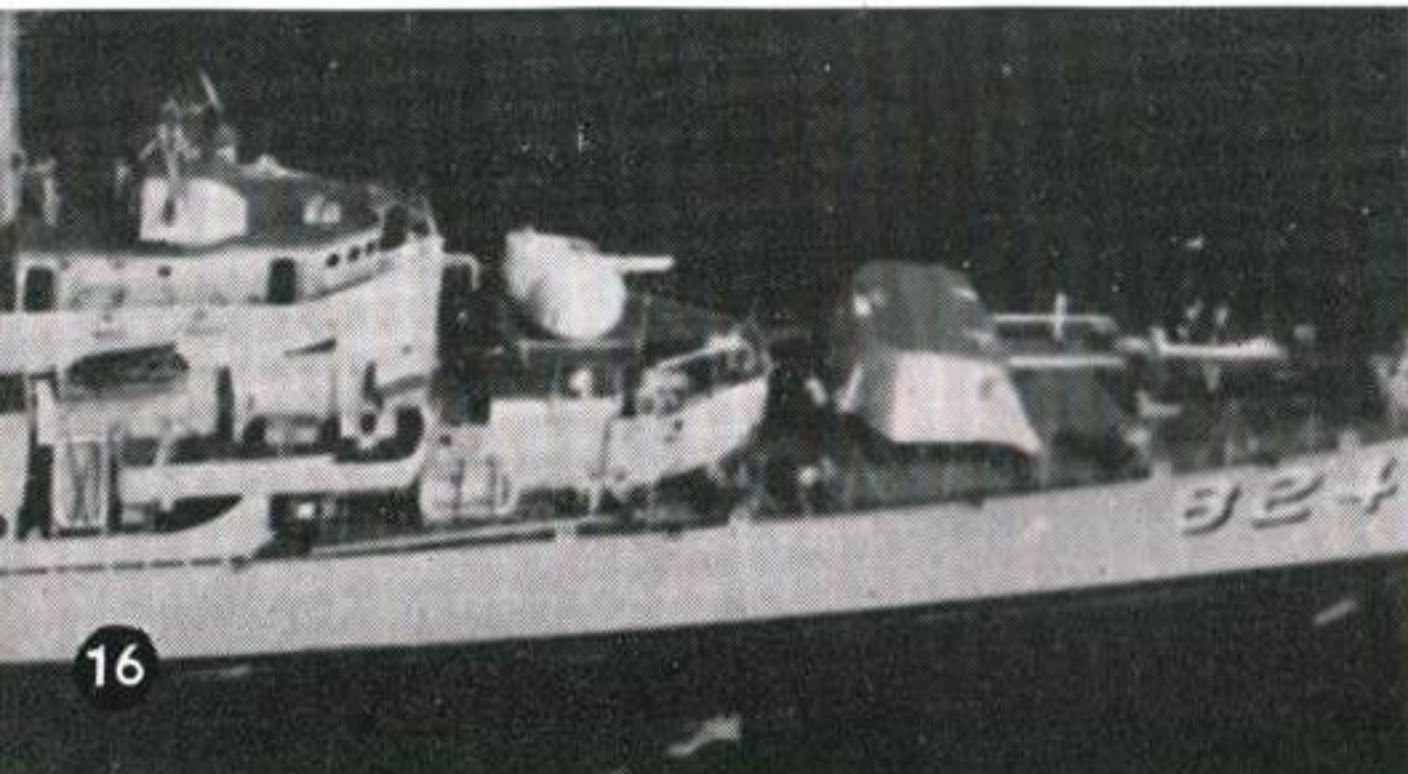
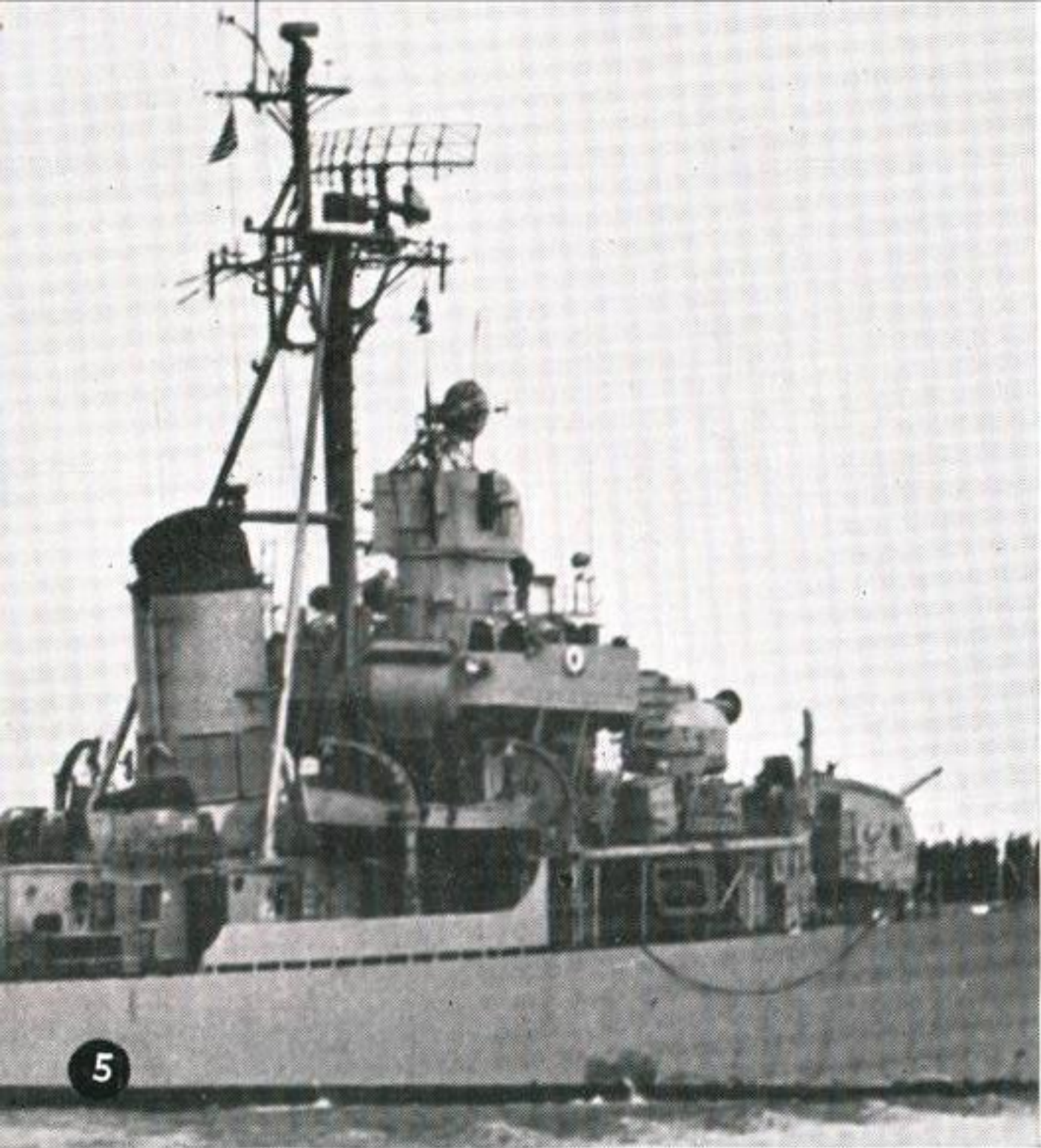


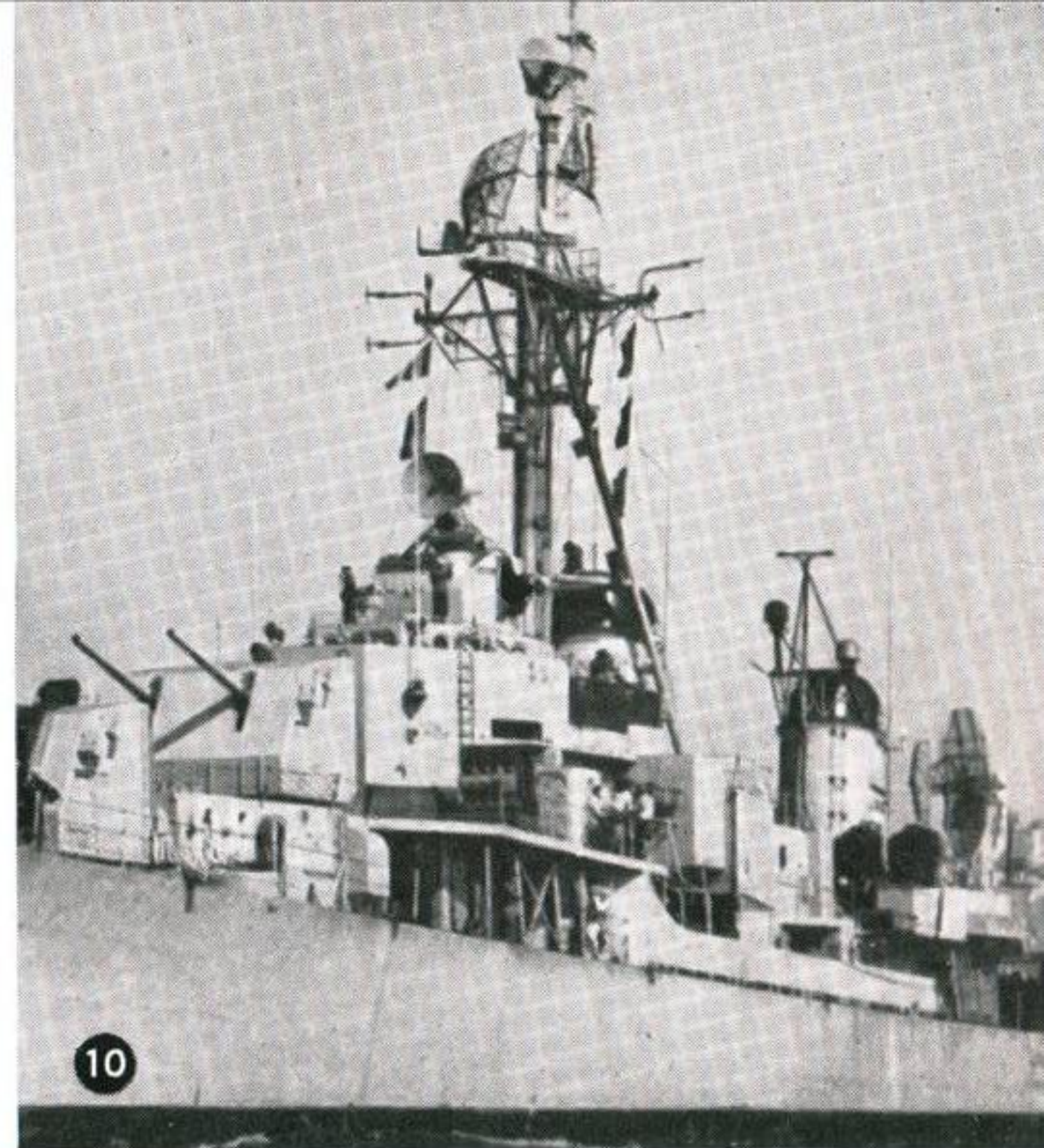
Converted Gearing (Escort)

As in the Fletcher conversion the Gearing Escort Destroyer has an A/S weapon in place of the gun turret in "B" position.

DISPLACEMENT .. 3,500 tons
LENGTH 390 ft.
BEAM 41 ft.
ARMAMENT .. Two twin 5-in.







In Passing . . .

True or False ?

The picture under this heading last month was of the starboard engine and under-belly of the Avro CF-100 Mk. 4, showing the gun-pack. The photograph had previously appeared in our "Close-up" of the CF-100 in the March number of the *Journal*. We have since learned that the "bristles" under the gun-pack are not, as we stated, an air-brake, but probably a deflector for links or empty ammunition cases. This month's snippet is only a nose, but it is a special kind of nose and it belongs to a well-known aircraft. What is the name of the aircraft, and what is special about this particular nose ?



* * *

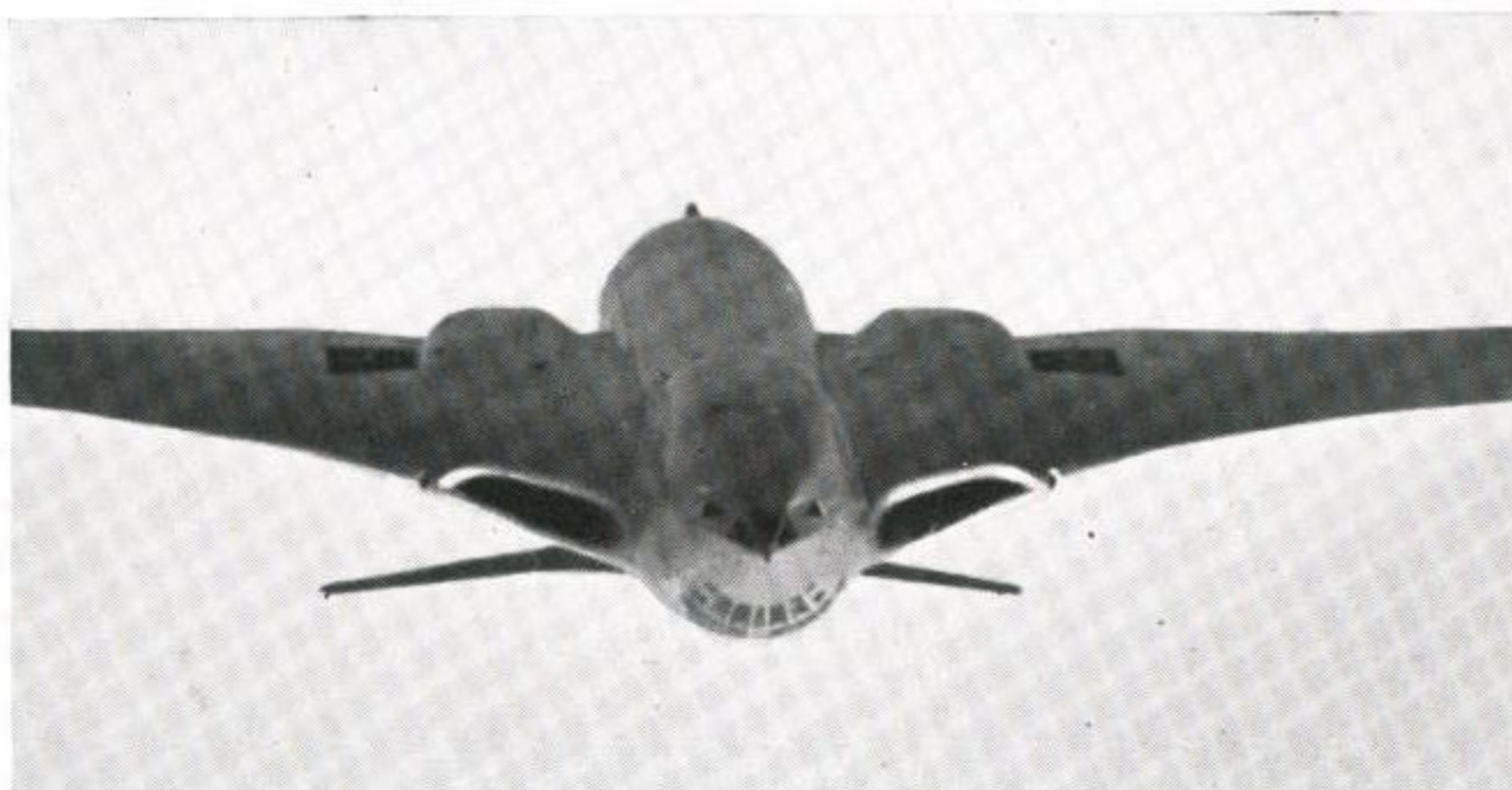
Mahomet and the Mountain

Emergency airports which fly to the aircraft are evidently not so far in the future as we may think, judging by this story in a recent issue of "Republic Aviation News". The pilot of a FICON Thunderflash was making a routine hook-up to his GRB-36 "mother" plane—an operation normally carried out at a speed exceeding 200 m.p.h. and requiring great skill by both sides. As he was manoeuvring into position a warning light in the Thunderflash's cockpit indicated a possible hydraulic failure. The pilot immediately signalled that the hook-up would have to be made without further co-ordination, and the Thunderflash was hauled safely up into the belly of the carrier plane. The Thunderflashes which have been modified for FICON have, incidentally, been redesignated RF-84K.

* * *

Odd Bat

An unconventional aircraft in an even less conventional attitude. What is it? (Answer next month.)



Not Likely

We understand that there is no truth in the rumour that the TU-104 "Camel" is to be the guest of honour at this year's S.B.A.C. Display in September.

BOOK REVIEW

"World Aircraft Recognition Manual", by C. H. GIBBS-SMITH and L. E. BRADFORD. 7½ in. by 5½ in., 269 pp. Published by Putnam at 15s.

To those who assiduously read his "Comparison Studies" and other contributions to this *Journal*, Charles Gibbs-Smith needs no introduction from us. His associate in this present work is also well known as the originator of many of the three-view G. A. drawings in "Jane's All the World's Aircraft".

In his previous Aircraft Recognition Manual the author classified his aircraft into seven categories, according to size and speed. In this book he has reached what must be the limit in simplicity of classification; the book is split into four sections governed by the type of wing employed: delta, swept, straight and rotary. Within that framework the aircraft are grouped as far as possible into types similar in general configuration. Much that is not pure recognition (phonetic alphabets, foreign designation systems, etc.) has been discarded, and the presentation of the basic essentials has been improved, not least by the employment of better quality paper.

In his introduction to the new volume the author makes several points, with some of which we agree ("the craft of recognition is distinct from the absorbing study of aircraft and aeronautics in general") and with some of which we are bound to disagree ("testing with silhouettes and photos of such (front) views is very often nothing but a useless academic exercise, quite divorced from reality"). The author declares that the great rule in the optical and psychological approach to recognition is to "learn the object as large as possible"—an injunction with which we heartily agree—but regrettably the economics of book production seem to have prevented his putting this theory into practice as much as could be desired. Otherwise the photographs and silhouettes could in plenty of cases be enlarged to fill twice their present area; as it is we are left with vast expanses of white paper throughout the book. This may also explain why some aircraft are represented by four-view silhouettes and some only by three views.

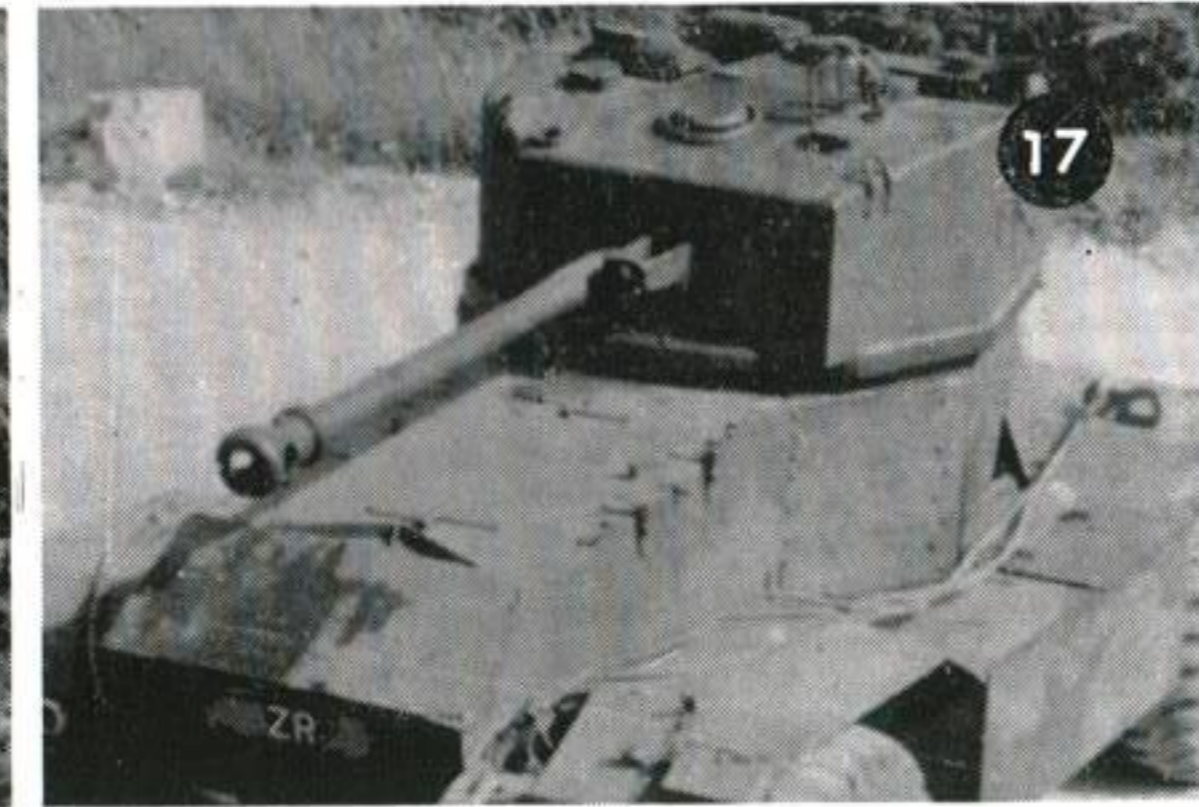
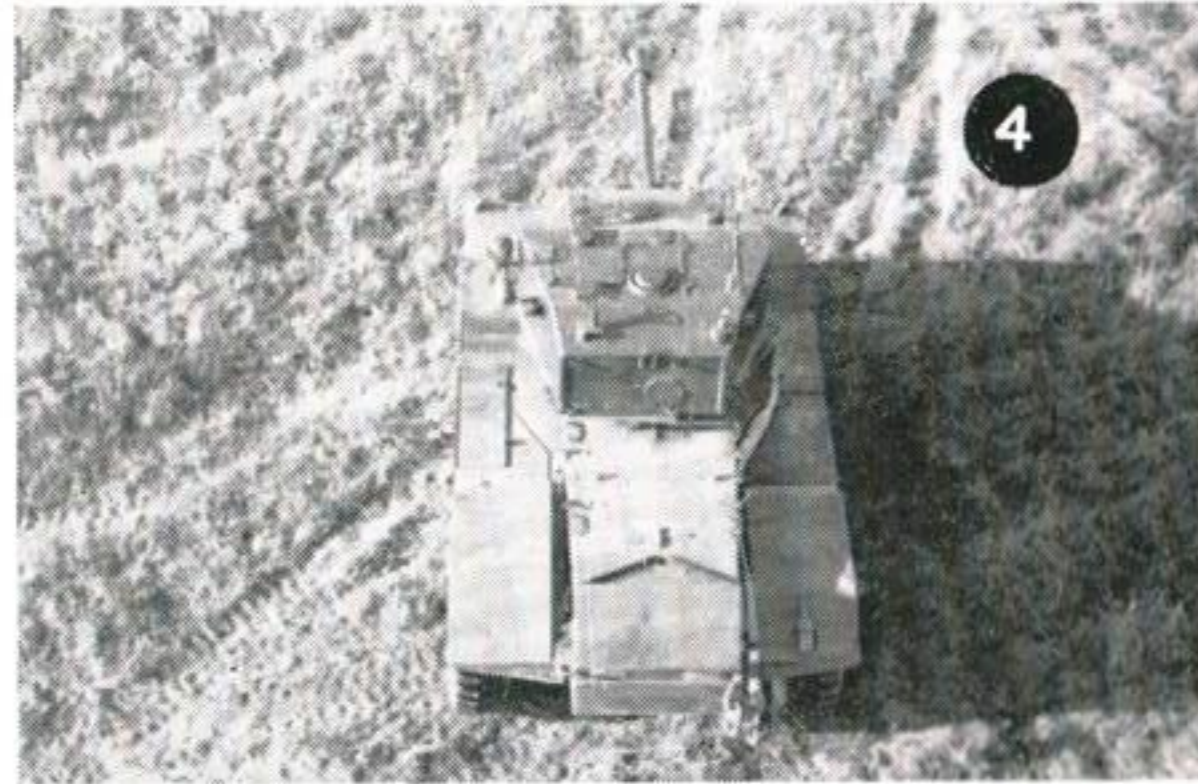
These things apart, the new volume can truthfully be said to be "bigger and better" than its predecessor. The technical information (including, where necessary, a summary of variants) has been kept to a decent minimum, and the descriptive narrative is in Mr. Gibbs-Smith's customary picturesque style. (Who else would think to describe the Cutlass as a "slippery snake's head shooting out of a cumbersome chrysalis"?) This book is not quite such a good fit in the pocket as its predecessor, but every student of recognition should get one, even if it means having his suit altered.

K.G.M.

JOURNALS, PHOTOGRAPHS AND RECOGNITION MATERIAL

Many enquiries are received from readers who wish to obtain copies of *Journals*, photographs or other recognition material shown or listed in this publication. We regret that it is not possible to supply these from the Editorial Office. Applications from the Services and other official bodies for copies of the *Journal* and for recognition charts, diagrams, etc., should be addressed through the normal official publications channels, and not direct to the Editorial Office or to the Air Ministry. The *Journal* is not on sale to the public. We also regret that we have no facilities for supplying photographs or technical information. No photographs belong to the Editorial Office, and those which are kindly loaned by various firms and others cannot be offered for sale.

SMALL FRY



A test in smaller vehicles from several countries

SARACEN



Length
16 ft. 4 in.

Height
8 ft.

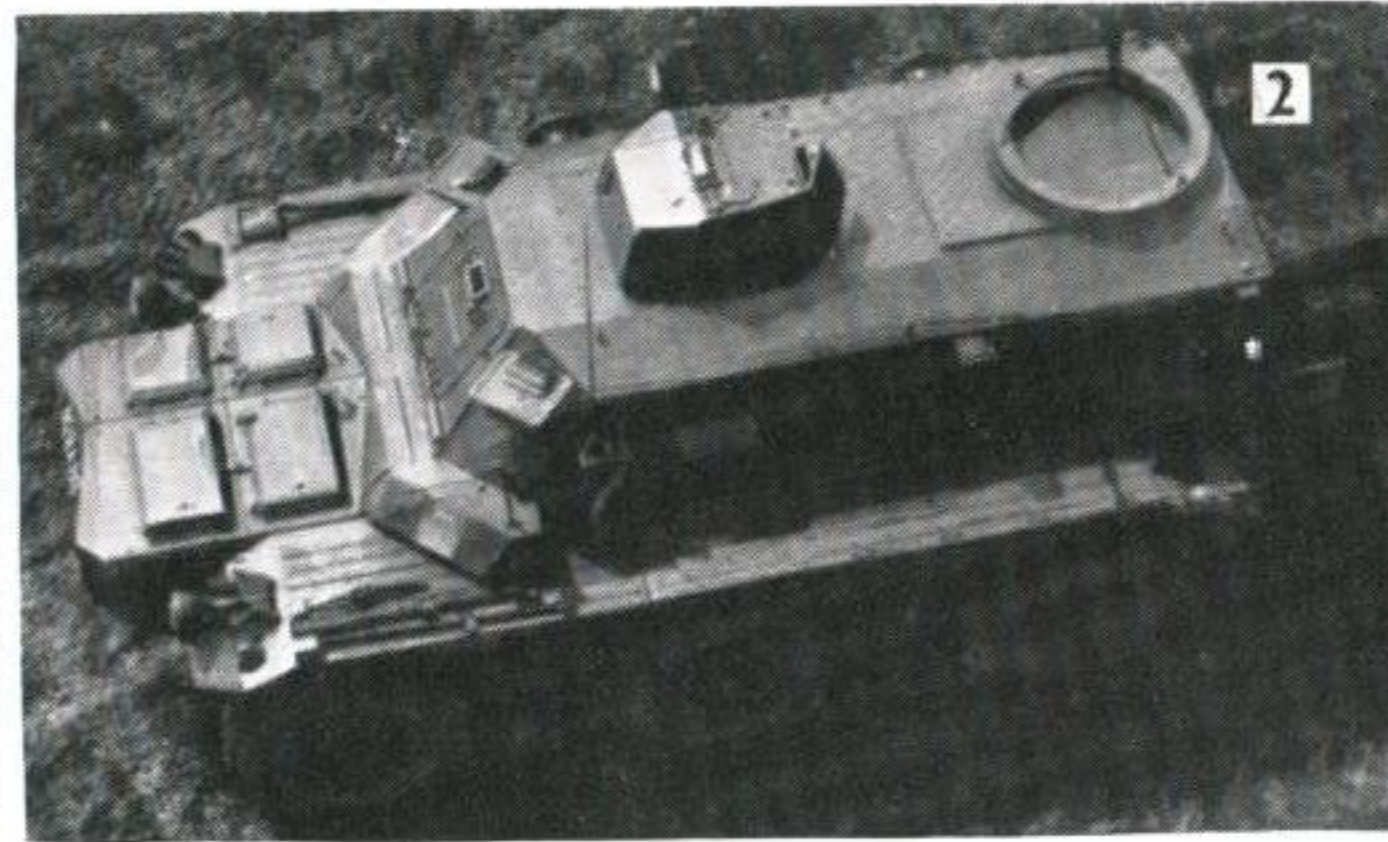
Width
8 ft. 3 in.

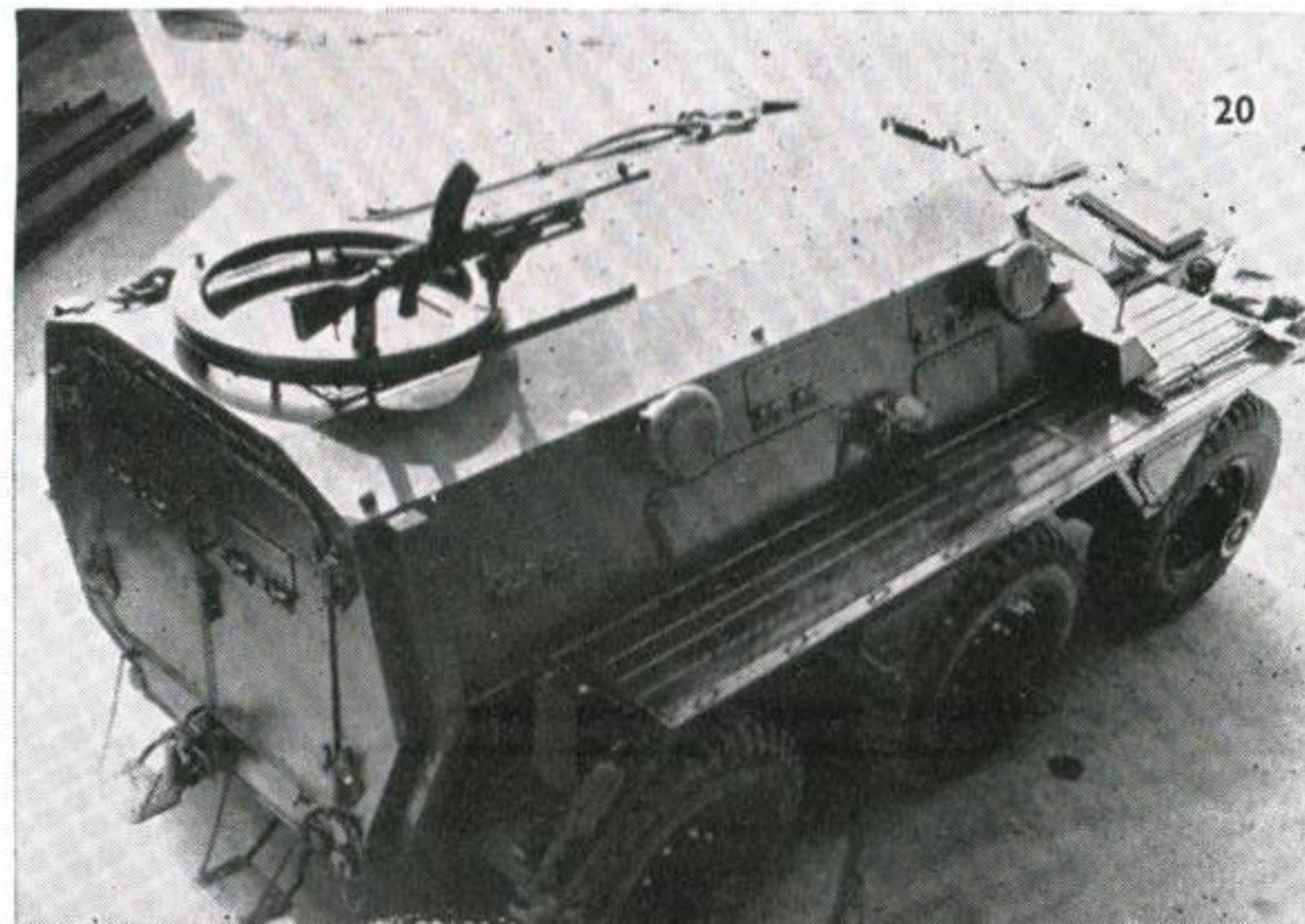
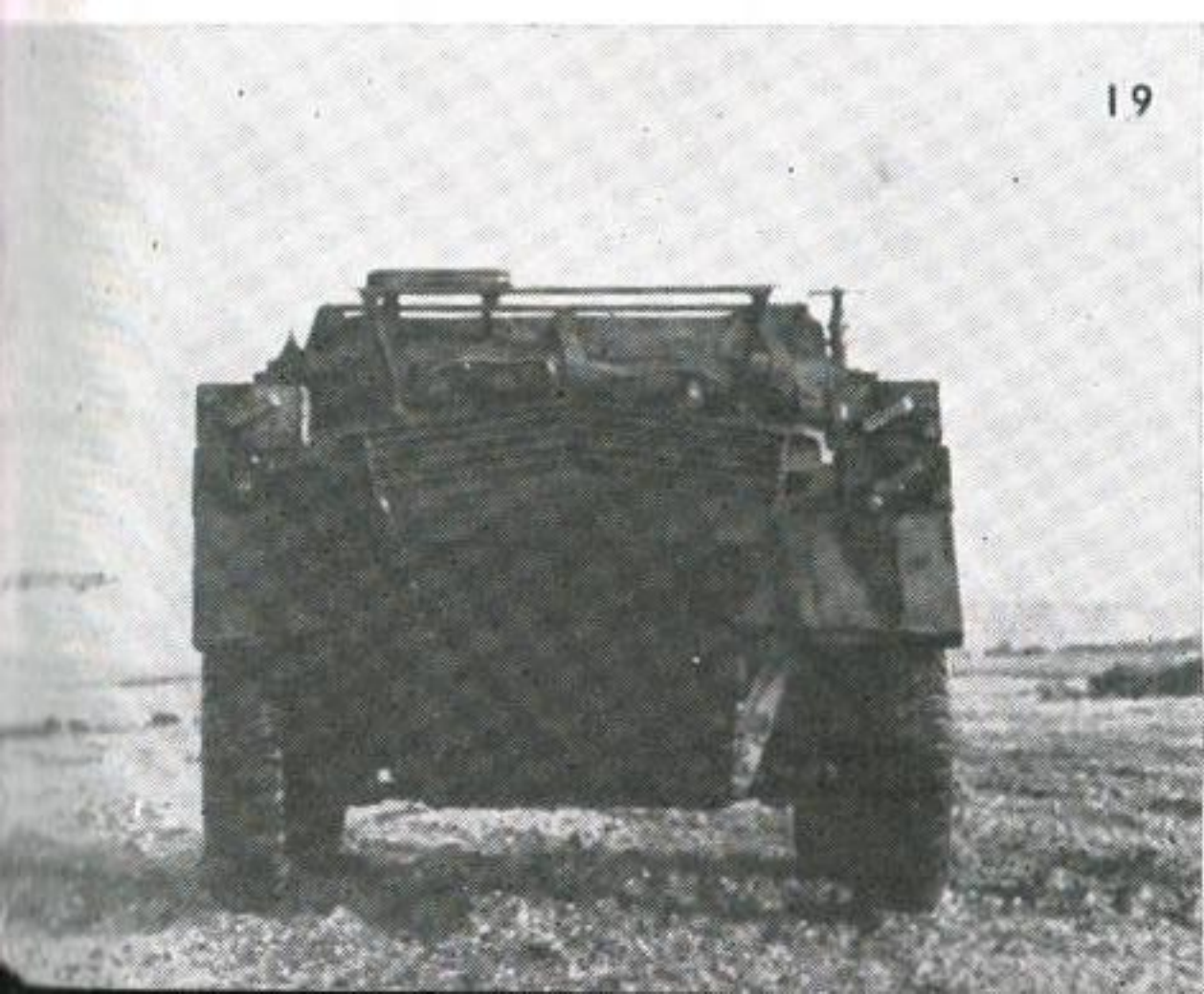
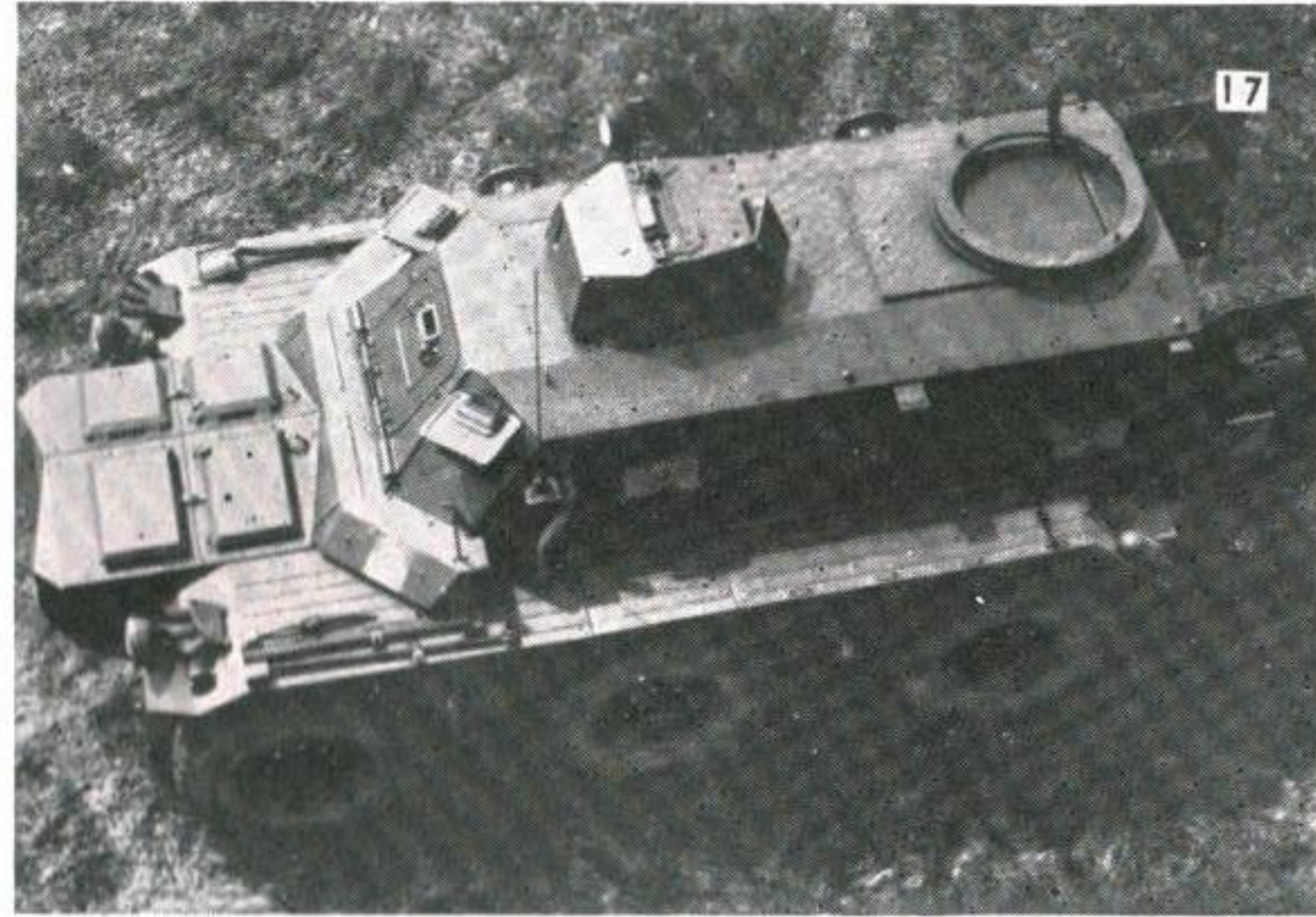
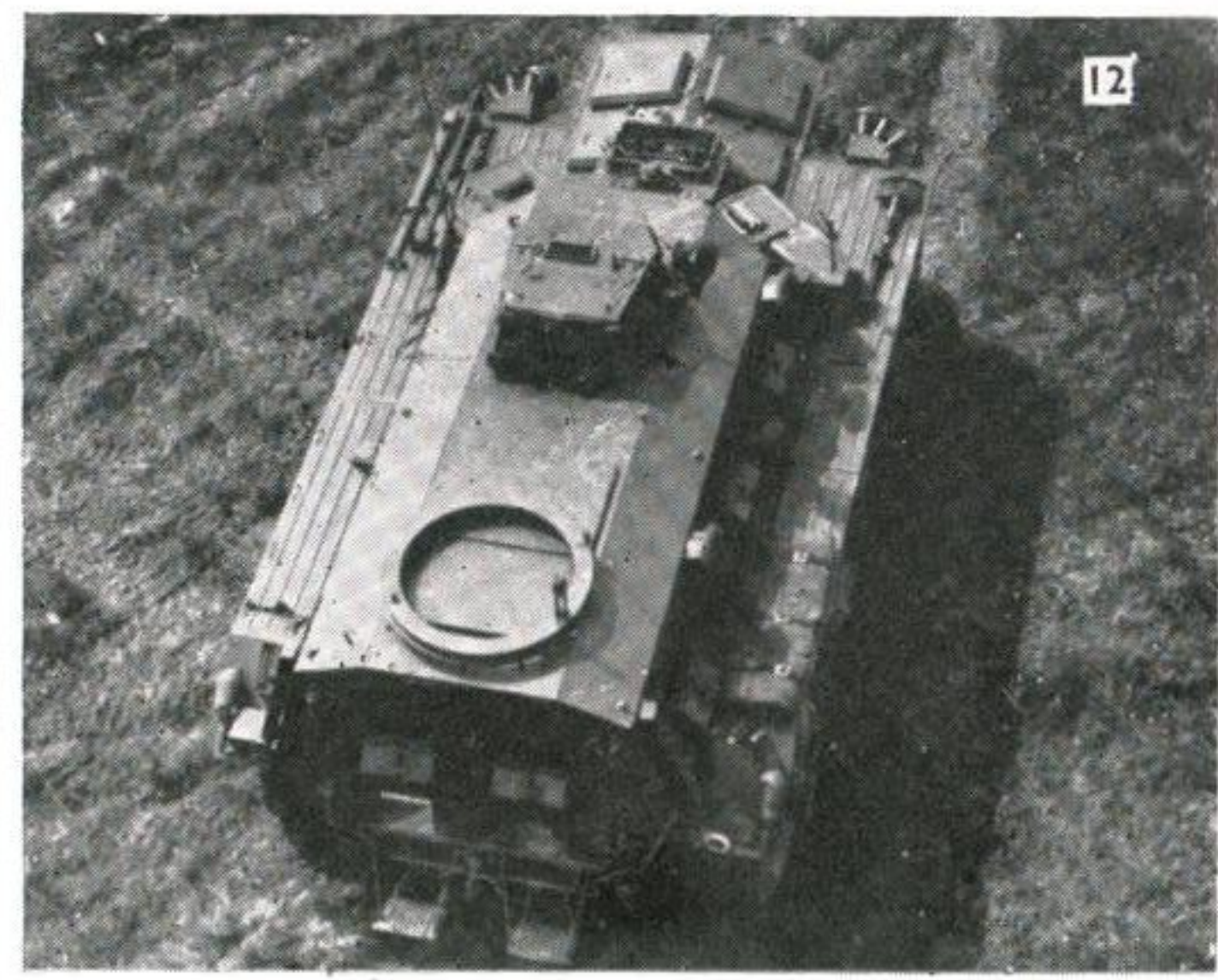
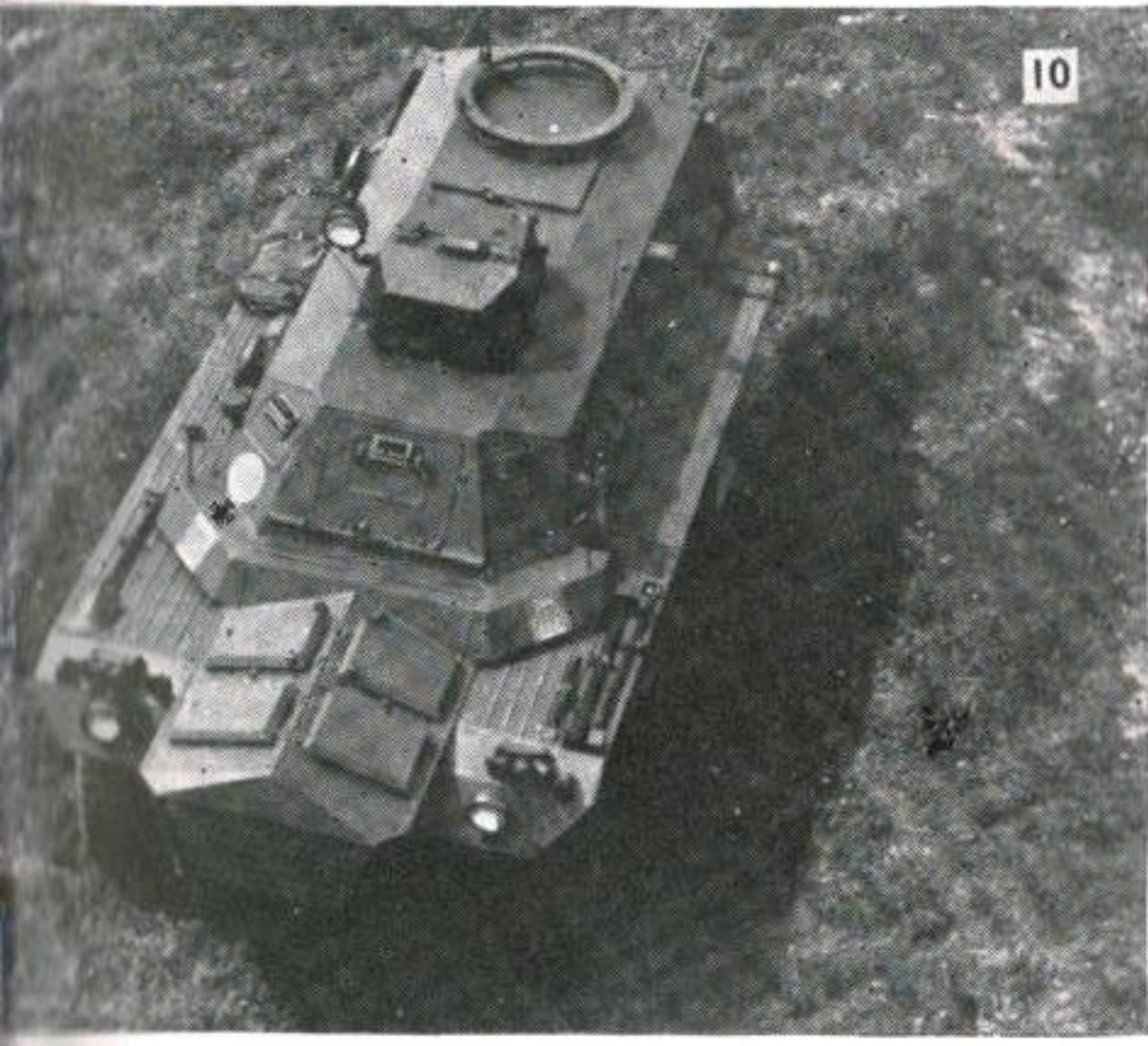
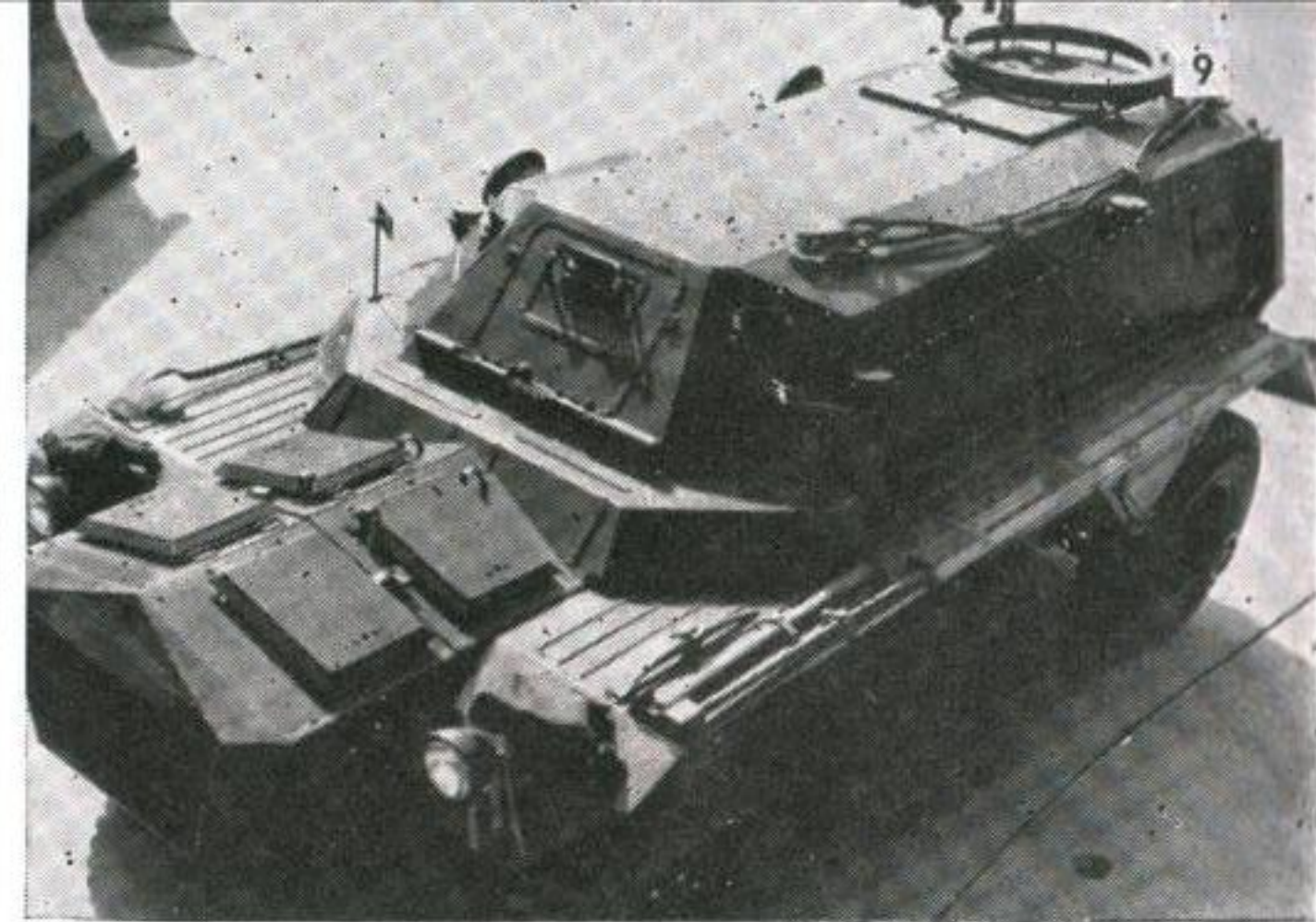
Weight (loaded)
10 tons

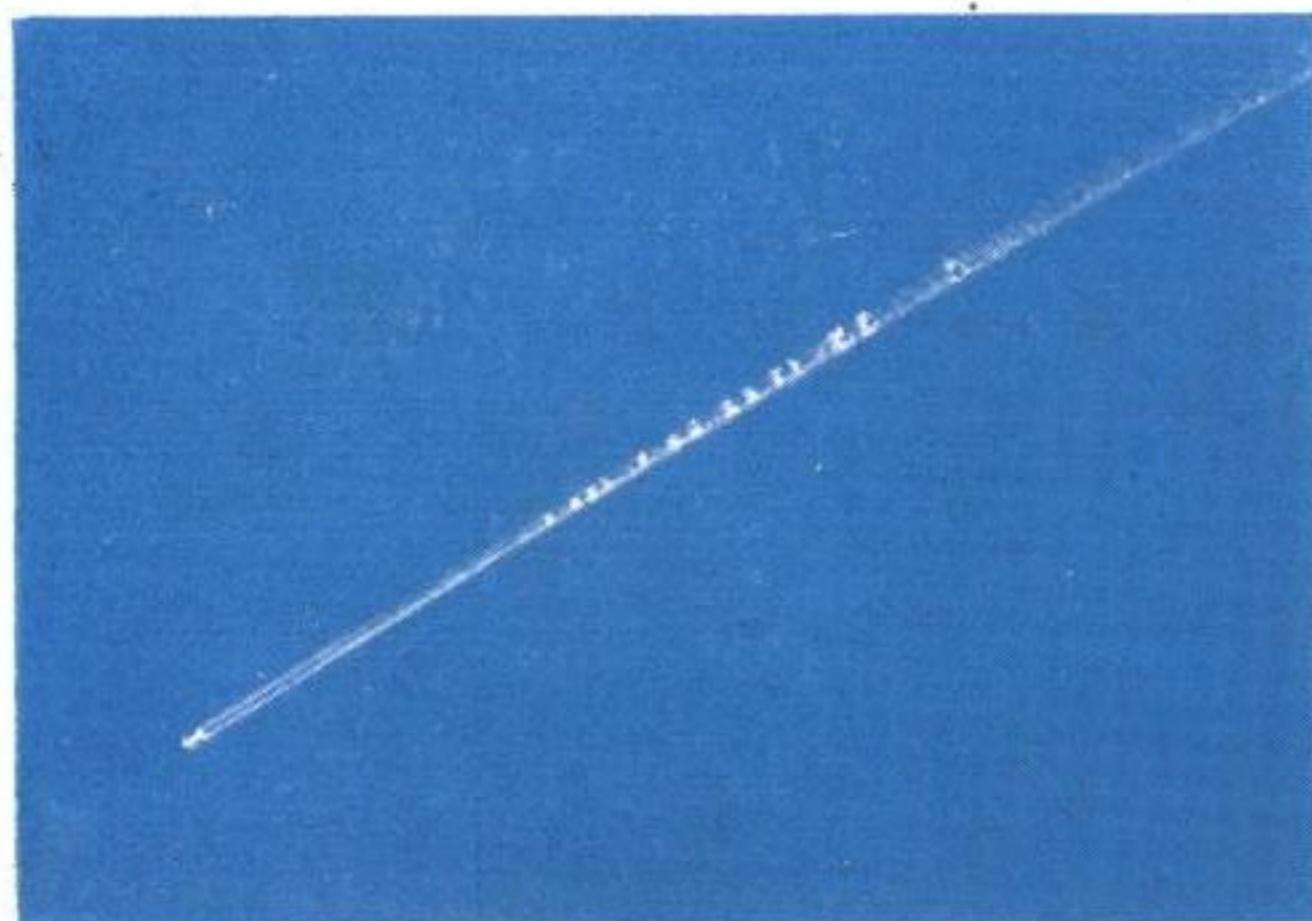
Crew—Two (Commander/Gunner and Driver)

The Saracen is the new British wheeled Armoured Personnel Carrier. The vehicle is armoured to protect the crew and passengers against small-arms fire and shell splinters. The armour includes overhead cover, which is considered essential under modern conditions of warfare. As well as being used as an armoured personnel carrier for armoured car regiments and motor battalions, it is used in several other roles. In the APC role it has a crew of two and can carry ten passengers or one ton of stores; in subsidiary roles it can be used as an armoured command vehicle, ambulance, engineer reconnaissance and store-carrying vehicle. The Saracen is noted for its high speed and large radius of action. Its cross-country performance, which is extremely good, is made

possible by independent suspension and all-wheel drive on its six wheels. The vehicle armament includes a .30 Browning, a Bren .303 LMG, and multi-barrel smoke dischargers. Main recognition features of the Saracen are a turret for the vehicle commander; a 6 by 6 suspension; engine at the front of the vehicle with two large raised louvres on each side; an AA mounting ring at rear of the vehicle (on the roof); two armoured fan cowls on the upper right side; and two exit doors for troops at the rear. It should be mentioned that one or two views in this exercise show the prototype Saracen, which did not mount the commander's turret. Watch out for jokers—or in this case should it be Crusaders?







Cover Picture: Our cover this month makes an interesting contrail study. Another picture of the same "trail-blazer" is on the inside front cover. Both were taken by the *Journal's* photographer, Mr. L. Hammond. (Other examples of Mr. Hammond's work include the magnificent pictures of the "Camel" in this month's centrespread.) The aircraft forming the trail is a Shackleton.

FAMILY GATHERING

1. Converted Gearing (Radar Picket)
2. Converted Fletcher (Escort)
3. Converted Fletcher (Escort)
4. Gearing
5. Converted Fletcher (Escort)
6. Gearing
7. Fletcher
8. Converted Gearing (Radar Picket)
9. Fletcher
10. Converted Gearing (Radar Picket)
(Single-mast version)
11. Converted Gearing (Radar Picket)
(Single-mast version)
12. Gearing
13. Converted Gearing (Radar Picket)
14. Converted Gearing (Radar Picket)
(Single-mast version)
15. Gearing
16. Converted Gearing (Escort)
17. Converted Fletcher (Escort)
18. Fletcher
19. Converted Fletcher (Escort)
20. Converted Gearing (Radar Picket)
21. Converted Fletcher (Escort)
22. Converted Fletcher (Escort)
23. Converted Gearing (Radar Picket)
24. Gearing
25. Fletcher
26. Converted Gearing (Radar Picket)
27. Gearing
28. Converted Fletcher (Escort)
29. Converted Gearing (Radar Picket)
(Single-mast version)
30. Converted Gearing (Radar Picket)
31. Converted Gearing (Radar Picket)
(Single-mast version)
32. Converted Gearing (Escort)
33. Sumner
34. Fletcher
35. Sumner
36. Sumner

SKYHAWK

All are **Skyhawks** except Nos. 11, 19 and 28, which are **Convair F-102A**.

MYSTÈRES

All are **Mystère IV A** except Nos. 1, 4, 13, 15, 16, 20 and 25, which are **Mystère II C**.

ADVANCED "SEASEARCH" No. 3

1. American Destroyer, *Gearing Class* (Radar Picket)
2. French Cruiser, *Gloire Class*
3. American Cruiser, *Oregon City Class*
4. American Fleet Carrier, *Improved Essex Class*
5. Russian Cruiser, *Sverdlov Class*
6. American Fleet Carrier, *Midway Class*
7. Russian Destroyer, *Skory Class*
8. British Fleet Carrier, *Centaur Class*
9. American Battleship, *Iowa Class*
10. Russian Cruiser, *Sverdlov Class*
11. American Cruiser, *Baltimore Class*
12. Russian Destroyer, *Skory Class*
13. Russian Cruiser, *Sverdlov Class*
14. British Fleet Carrier, *Centaur Class*
15. American Destroyer, *Fletcher Class*
16. American Fleet Carrier, *Improved Essex Class*
17. Russian Cruiser, *Sverdlov Class*
18. American Fleet Carrier, *Essex Class*
19. Russian Destroyer, *Skory Class*

FREIGHTER 32

All are **Bristol Freighter 32**, except Nos. 3, 10, 13, 17, 21 and 22, which are **Freighter 31**.

PRENTICE

All are **Prentice T Mk. 1** except:--
No. 8. **Chipmunk**
No. 11. **Proctor**

THE FLEET'S LIT UP!

- | | | |
|---------------------|---------------------|---------------------|
| 1. Attacker | 15. Banshee | 29. Banshee |
| 2. Seahawk | 16. Seahawk | 30. Attacker |
| 3. Banshee | 17. Banshee | 31. Banshee |
| 4. Seahawk | 18. Attacker | 32. Attacker |
| 5. Seahawk | 19. Seahawk | 33. Seahawk |
| 6. Attacker | 20. Banshee | 34. Attacker |
| 7. Attacker | 21. Seahawk | 35. Banshee |
| 8. Banshee | 22. Attacker | 36. Attacker |
| 9. Seahawk | 23. Banshee | 37. Seahawk |
| 10. Attacker | 24. Seahawk | 38. Attacker |
| 11. Attacker | 25. Banshee | 39. Banshee |
| 12. Banshee | 26. Banshee | 40. Attacker |
| 13. Seahawk | 27. Seahawk | 41. Attacker |
| 14. Banshee | 28. Attacker | 42. Seahawk |

SARACEN

All are **Saracens** except:--

- No. 18. **M-75 (American)**
No. 19. **Daimler Scout car**
No. 21. **Daimler Armoured Car**

SMALL FRY

- | | |
|------------------------------------|---|
| 1. British, Daimler Armoured Car | 11. British, Saracen Armoured Personnel Carrier |
| 2. British, A.E.C. Armoured Car | 12. British, A.E.C. Armoured Car |
| 3. British, Daimler Armoured Car | 13. British, Ferret Mk. 2 Scout Car |
| 4. British, A.E.C. Armoured Car | 14. British, Daimler Armoured Car |
| 5. French, Panhard Armoured Car | 15. Russian, BA-64 Armoured Car |
| 6. British, Daimler Armoured Car | 16. British, Daimler Armoured Car |
| 7. British, Ferret Mk. 2 Scout Car | 17. British, A.E.C. Armoured Car |
| 8. Russian, BA-64 Armoured Car | 18. British, Ferret Mk. 2 Scout Car |
| 9. British, Daimler Armoured Car | |
| 10. British, A.E.C. Armoured Car | |

Still Going Strong

CATALINA

The Convair (originally Consolidated) PBV-5A Catalina amphibian saw extensive service during the war and is one of a rapidly diminishing number of "old faithfuls" from those days which are still active to-day. Over two thousand Catalinas were built, in Canada as well as in the United States; some have been "demobbed" and, as commercial flying-boats, have had the waist gun blisters and nose turret removed. Wing span of the Catalina is 104 feet.

