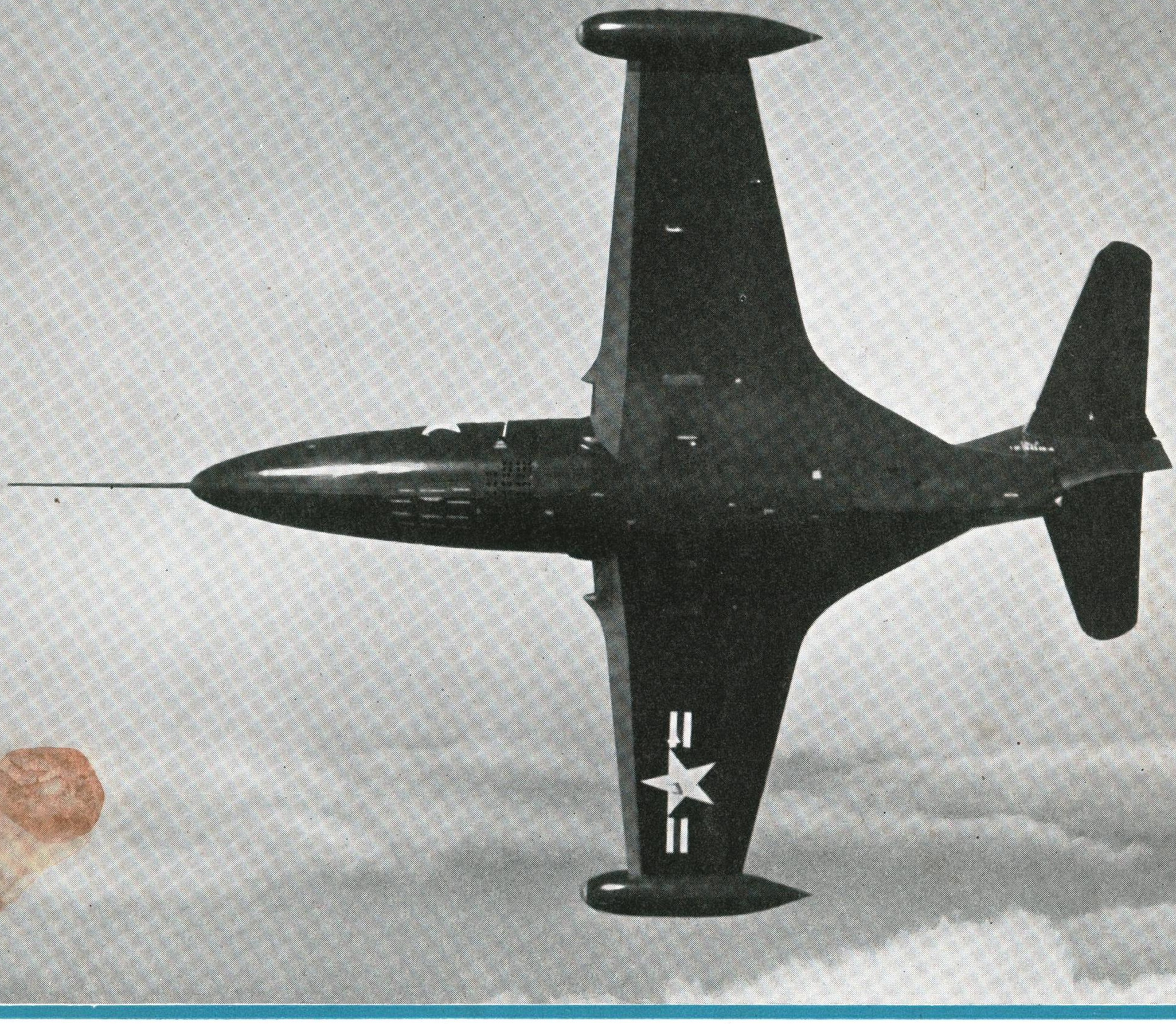
JOINT SERVICES

RECOGNITION *Journal*



Vol. 6 AUGUST 1951 No. 8



WASHINGTON

Royal Air Force Bomber by Boeing

AUGUST 1951 Vol. 6. No. 8

JOINT SERVICES

RECOGNITION JOURNAL

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FORCING ATTENTION TO SHAPE

IN addition to the methods which we mentioned last month, those outlined here are also worthy of consideration because they demonstrate the important recognition teaching principle of forcing attention to shape.

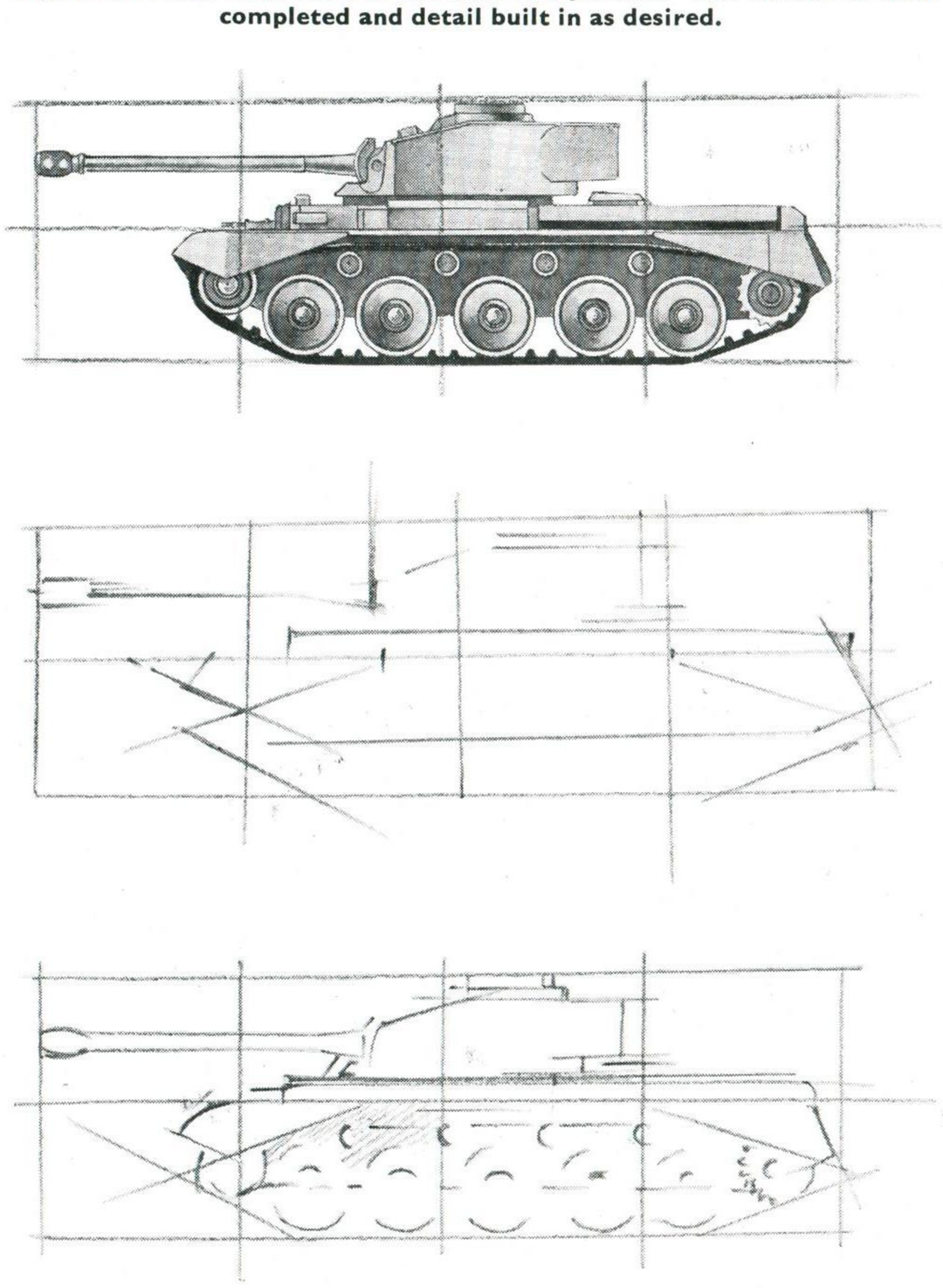
First, the time-honoured one of preparing a scrapbook. We have previously given space to this matter, but no harm will come of stressing its value now that tank and ship shapes loom large. The usefulness of such a collection is not so much in the complete work of reference, as in the act of collecting. For, in order to select and arrange views of the objects, the collector is forced to go through a continuous process of discriminating, comparing, and identifying their shapes.

Some collections we have seen have been labours of love and monuments to patience and perfection. Admirable and useful as such works may be to some, they are not suited to Service conditions if they are cumbersome. Such collections must be severely practical and it is important that they should be within easily-managed proportions. Since the greatest training value lies in the act of collecting, we suggest that a succession of small, streamlined—even expendable—collections may be of greater teaching value than one weighty volume. The way to achieve this would be to concentrate upon one small group of objects at a time.

The second method is that of drawing. We have previously concerned ourselves with this training aid also, but no harm will come of stressing its value in respect of tanks and ships. The method we prescribe here will enable even those who deny skill at drawing to obtain a reasonably accurate and instructive outline sketch fairly easily. Incidentally, the side view is chosen because it gives the most information about the character of the object, although any other non-perspective view can be so constructed and reproduced.

Both the methods we have described have their limitations, but are useful as spare-time preoccupations. Both demand concentration upon shape to achieve results. Encouragement in these activities should be given by instructors, stressing the point that they are most efficient when used as a means to an end rather than as an end in themselves.

All shapes, however complex they may appear to be, can be related to some simple geometric figure. We relate this side view of the Comet tank to a rectangle which is then "gridded." The "grid" is redrawn, preferably larger, and some main lines of the tank are plotted. The outline is then completed and detail built in as desired.

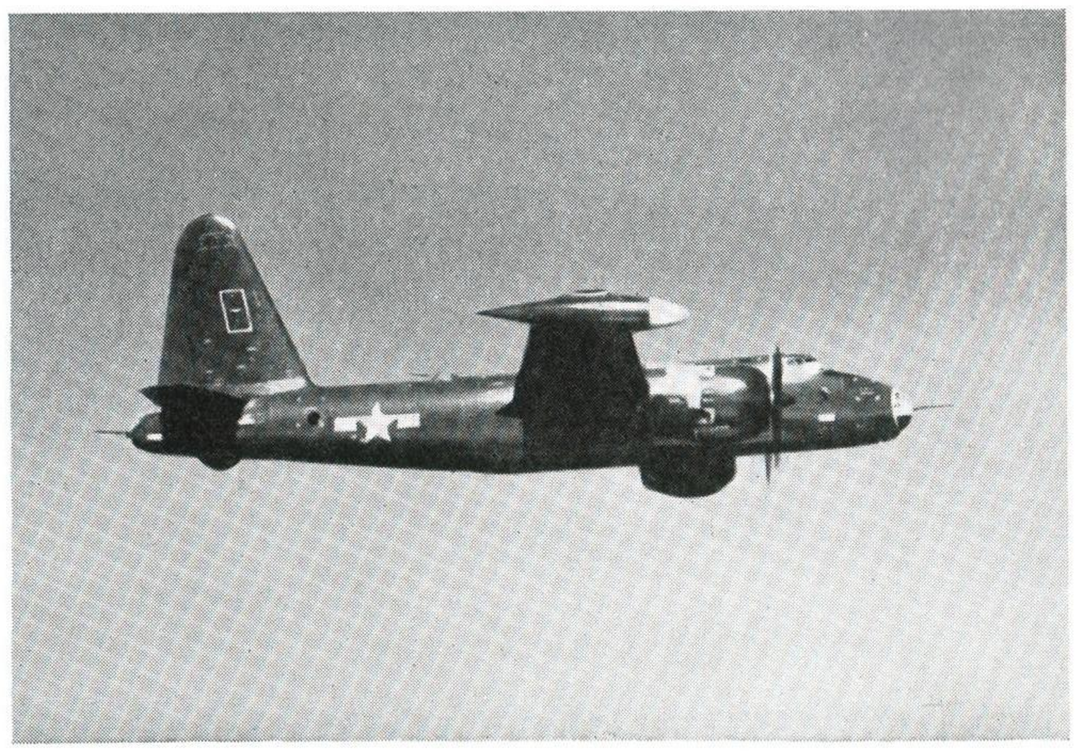


EARLY WARNING!

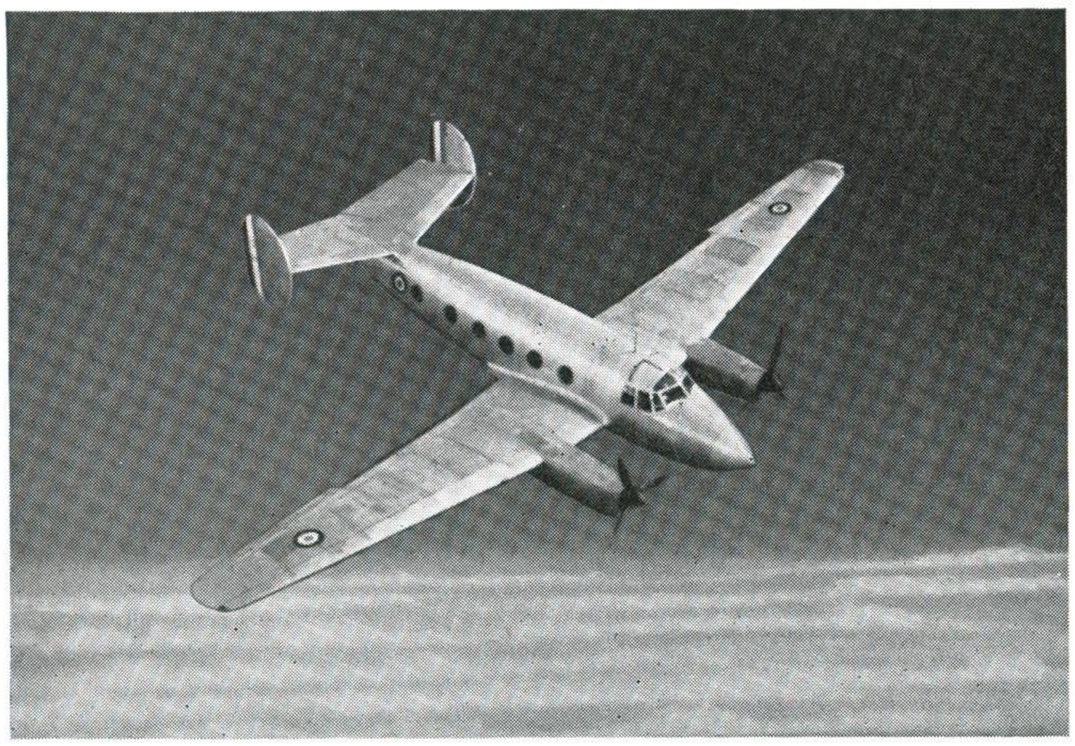
More new and modified aircraft which are worth watching



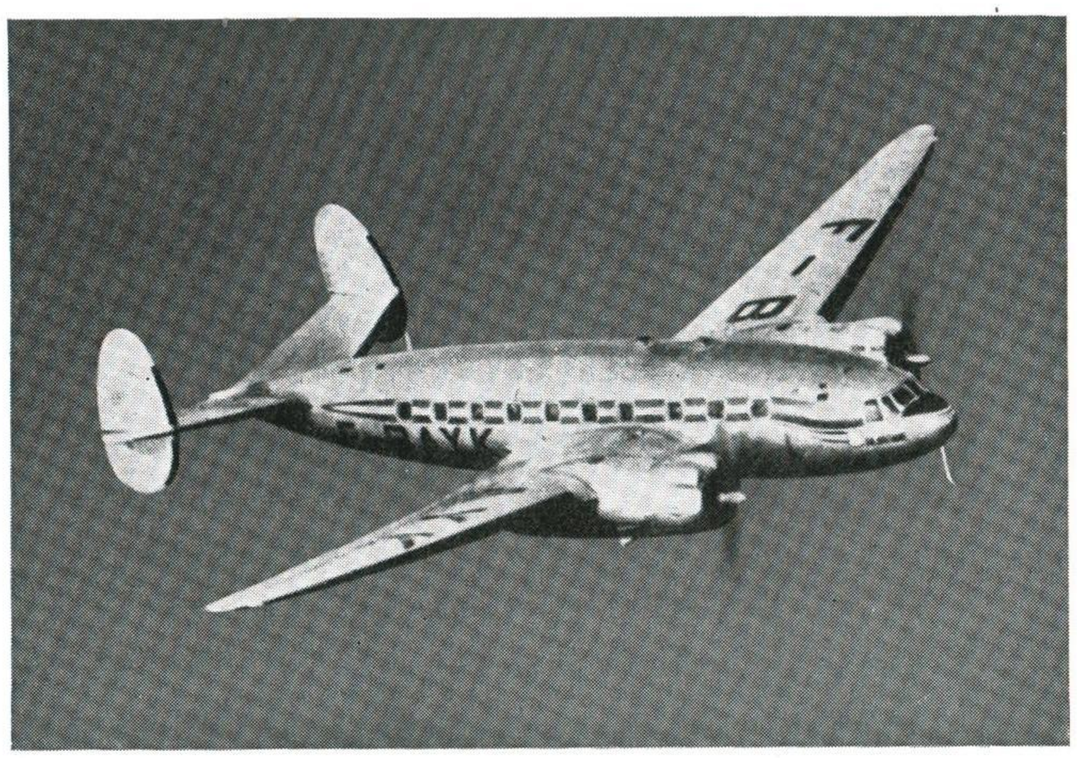
Surprise Packet, the C-119C, has new Wright Cyclone engines, extended " dorsal fairing " fins along the booms and a bogie undercarriage. Streamlined bulges accommodate the extra bulk of the wheels. Span : 109 ft. 3 ins.



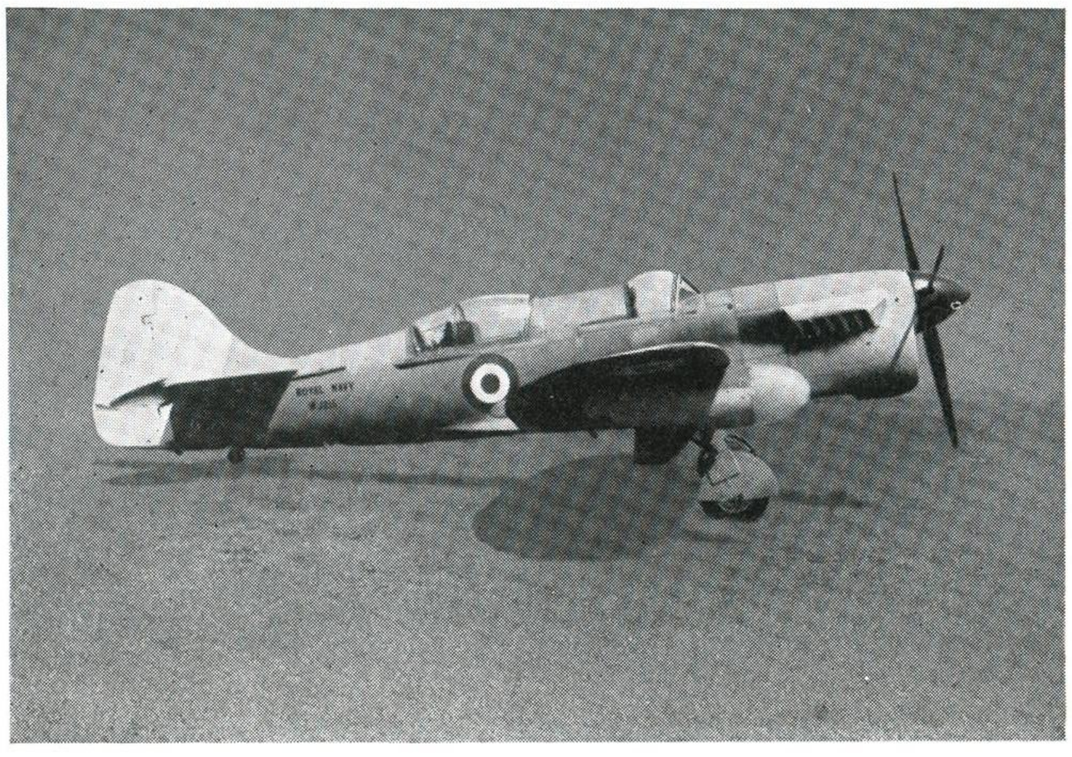
Nosier Neptune is what we assume from the modified radome of the P2V-5. Other changes are 2 Wright R-3350 compound engines with larger " ins and outs ", and a nose turret. The Royal Air Force is to have this version of the Neptune. Span : 100 ft.



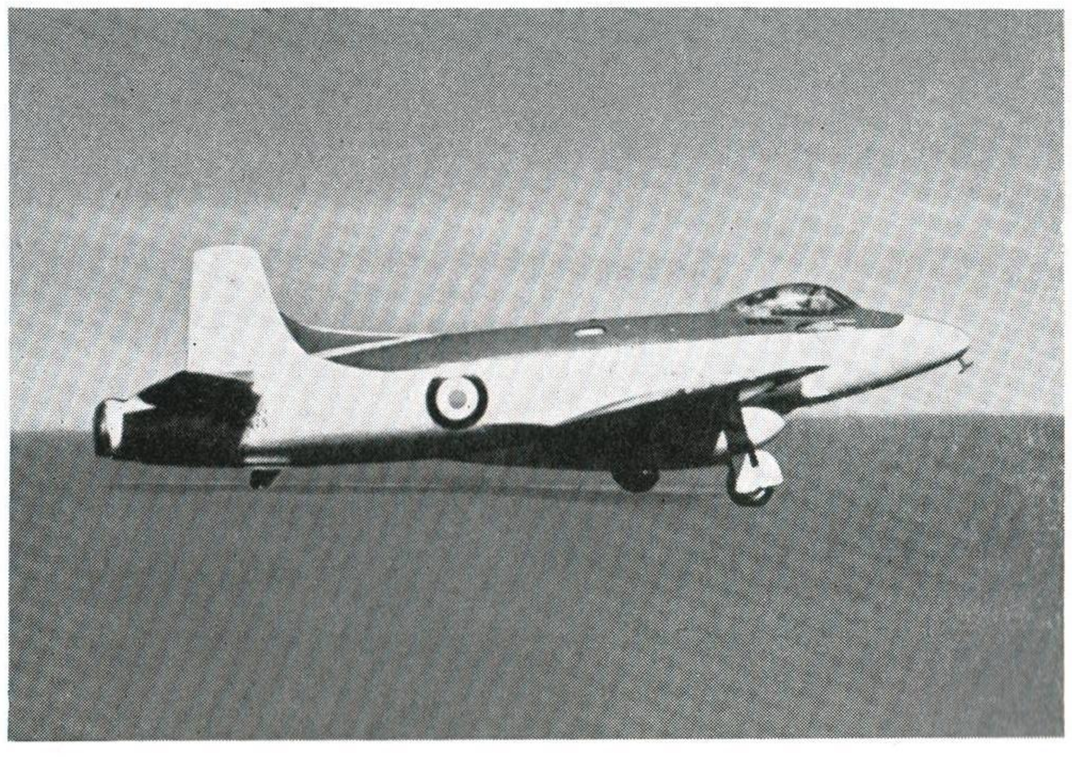
French Transport Dassault MD 315 Flamant is a promising light military transport, liaison aircraft or ambulance. It is in full production and many are already in service. Engines are 2 Renault inverted vees. Span : 66 ft. 8 ins.



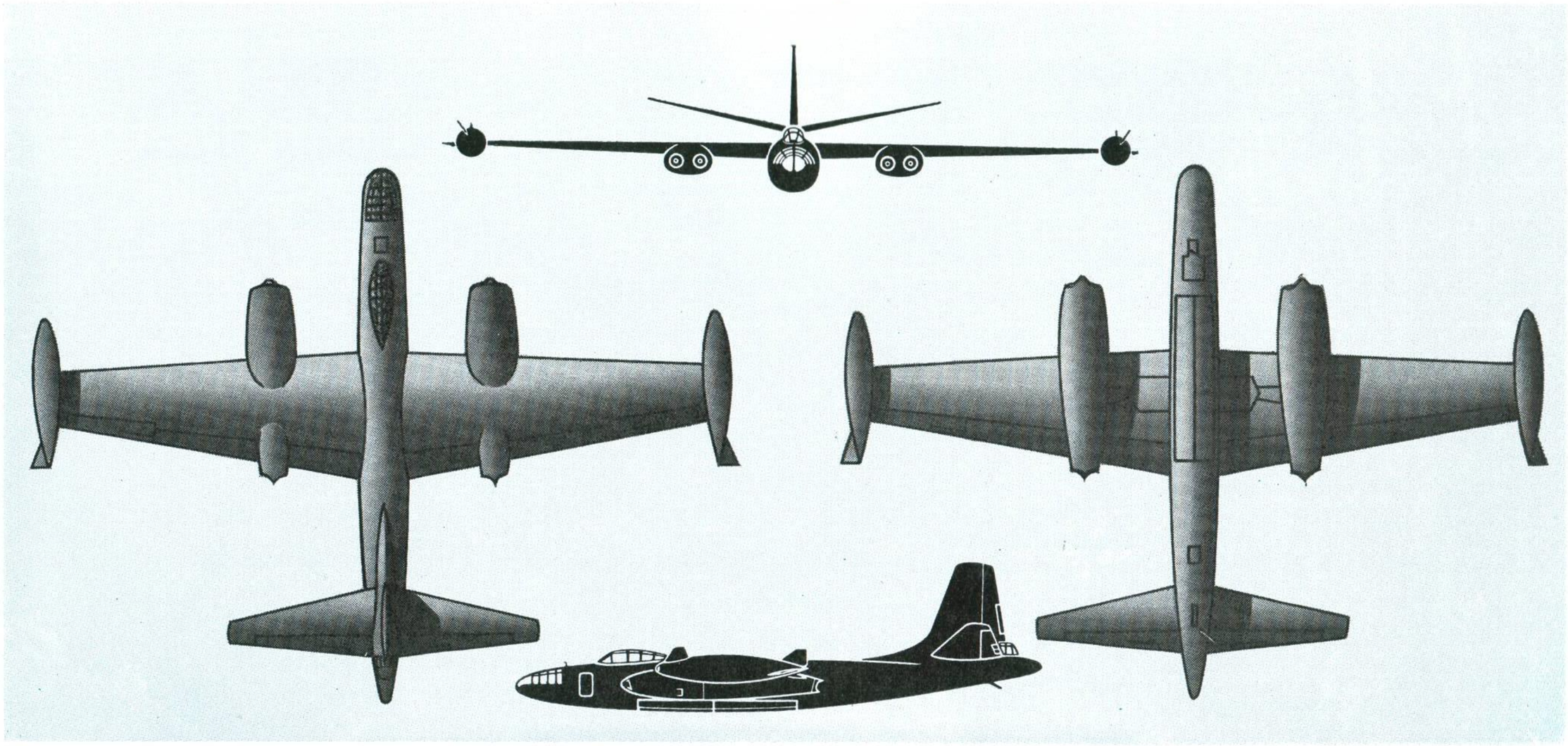
Double Dihedral (wing and tail) distinguishes the SO 30P Bretagne civil transport now in production ; some, it is reported, for Air France. The Bretagne is powered by Pratt & Whitney radials. Span : 88 ft. 2 ins.



Stand-In until the Gannets arrive in force is the Firefly AS Mk. 7. A rear " bubble " hood has been added and a Mk. 1 type elliptical wing substituted. Engine is a Griffon with an annular cowling and peculiar, shrouded exhaust pipes. Span : 44 ft. 6 ins.



Attacker Attachment. A dorsal fin fairing adorns the production Attacker. An interim jet fighter for the Royal Navy, the first squadron of F Mk. 1's is being formed as we go to press. Note how the dark camouflage tends to disrupt outline shape in this picture. Span : 36 ft. 11 ins.



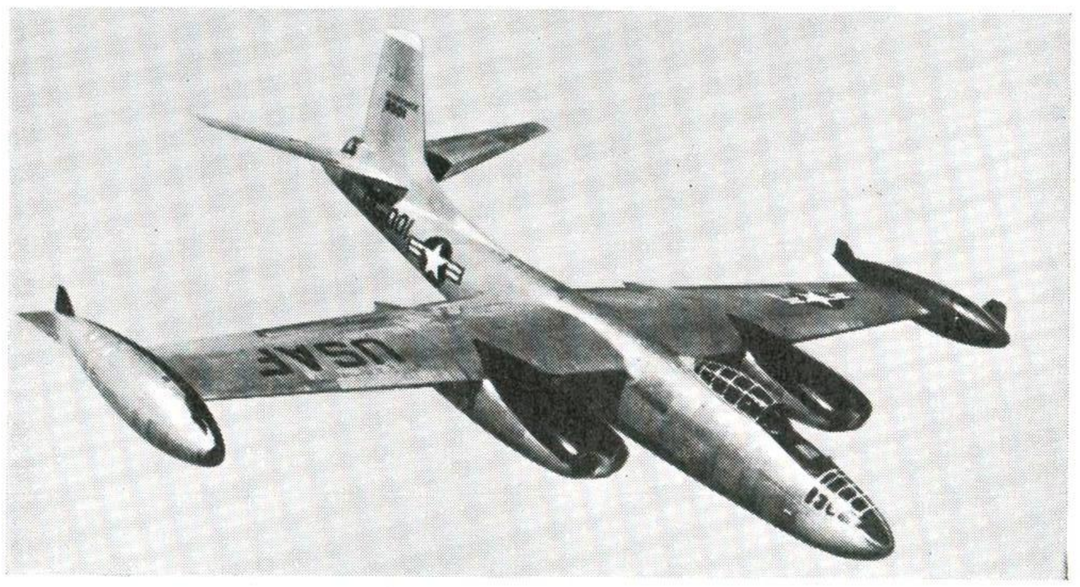
CHARACTER STUDY—NORTH AMERICAN B-45C TORNADO

THE North American B-45 Tornado is a sleek jet bomber with the smoothest belly in the business. It is a high shoulder-wing twin-engined type—from the visual point of view—with single fin and rudder. It is an aircraft whose character lies distinctively in its engine nacelles and their smooth harmony with the rest of the machine.

The fuselage is long, smooth and is set in a permanent curve-up at both ends which makes her look as if she is always in a shallow swallow dive. This effect is due to the long uninterrupted underside curve starting with the nose and sweeping down to the bomb bays and up to the tail. The upper line of the pointed nose does not taper sufficiently to contradict this " both-ends-up " look, and the tail unit is further sent up in the air by the long dorsal fin. The top line of the fuselage is almost invisibly broken by the cockpit canopy and is unbroken elsewhere.

The tail unit is built up into a high, angular and bold affair with a Welsh-hat profile. A slightly curved top to the fin and rudder has sharp angles fore and aft, and the trailing edge plunges straight into the gun pulpit in the tail—a small glasshouse and motor-cycle side-car affair projecting well astern. Tailplane is straight tapered, blunt tipped and large, with pronounced dihedral.

The wings of the Tornado sprout boldly and broad from the fuselage with no dihedral. There is very slight leading-edge taper and pronounced trailing edge taper,



ending in broad, slightly rounded tips, generally obscured by tip-tanks. The wings make a distinctive and harmonious pattern with the tailplane, the tapers being complementary.

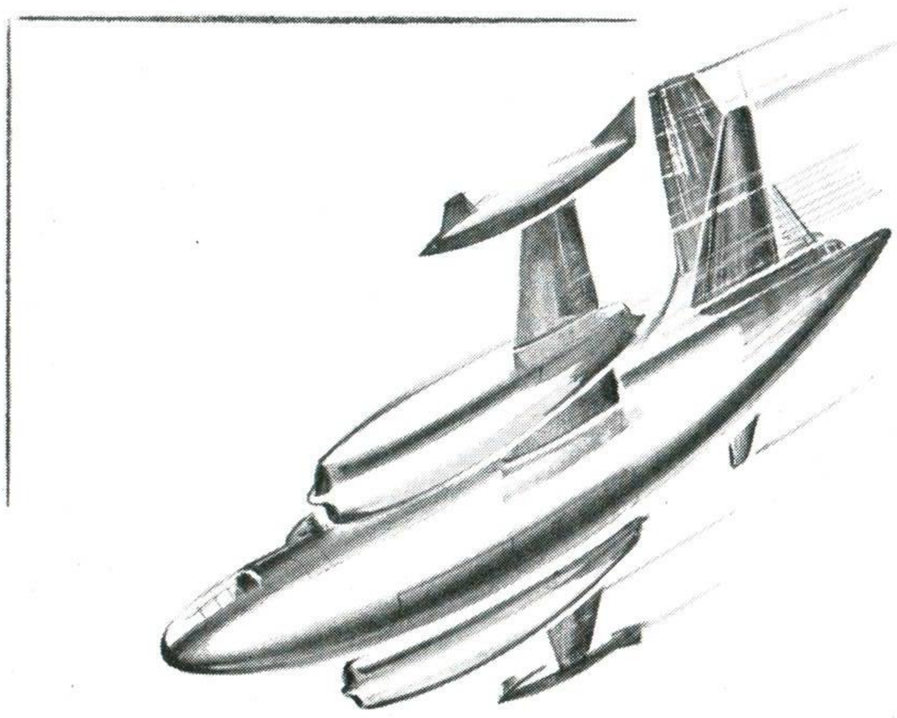
Last of all, and most important of all, there are the two great flat engine nacelles, each holding two jet motors, which hug the underside of the wings, and shoot smoothly far out in front of the leading edge. At the rear there is a small protrusion made by the jet pipes. The nacelles are of very distinctive shape, being flattened and broad, with side-view taper towards the nose. In plan view they dwarf the fuselage : in side view they echo it.

Principal data is as follows :

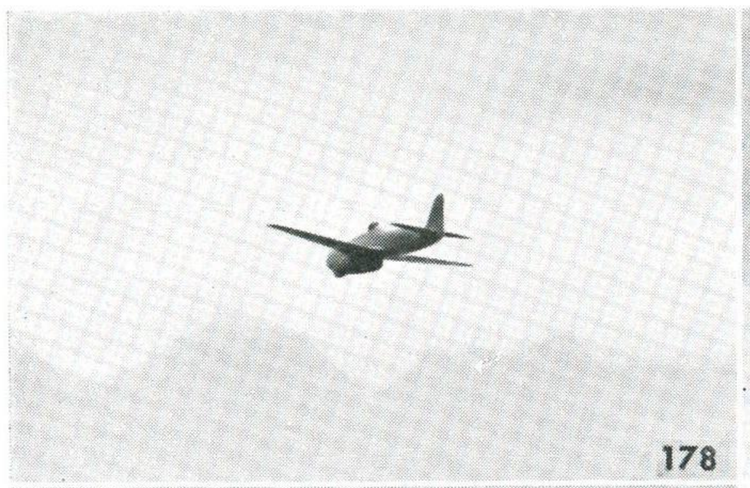
Span : 89 ft. Length : 76 ft.
Engines : 4 General Electric J-47 turbojets
Armament : two .5 in. guns in tail.
Speed : 550 m.p.h.
Prototype first flew 1947.
Function : light bomber.
Maker : North American.

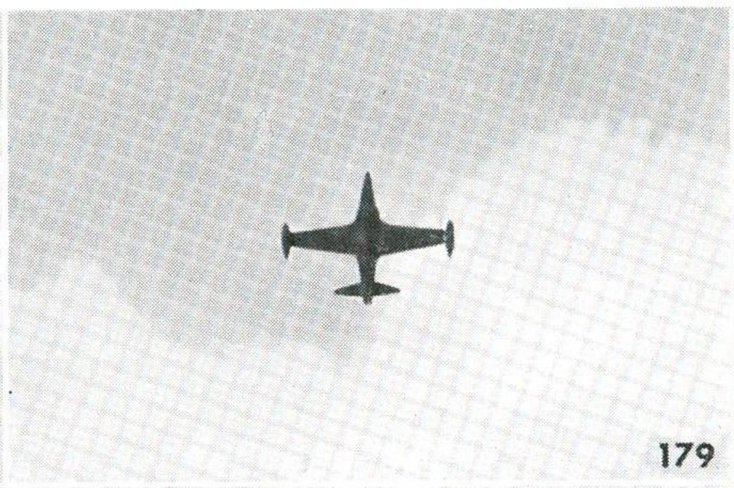
C. H. GIBBS-SMITH

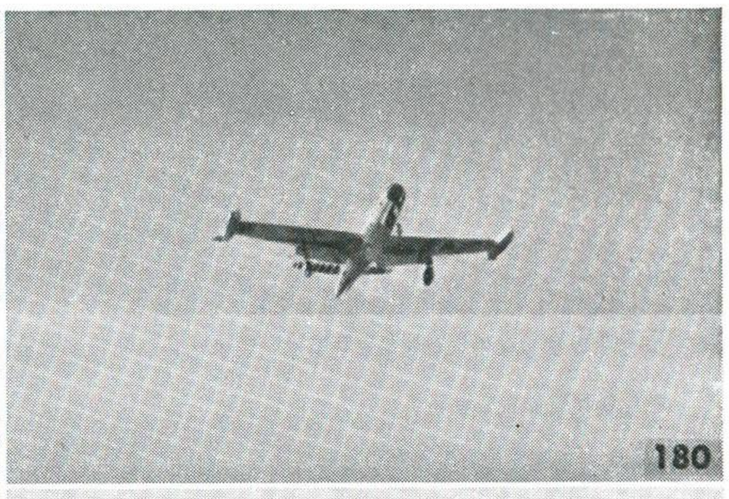
. . . the smoothest belly in the business



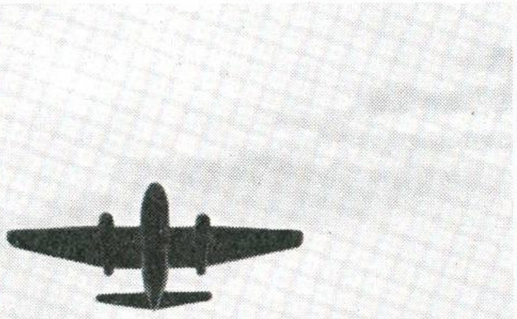
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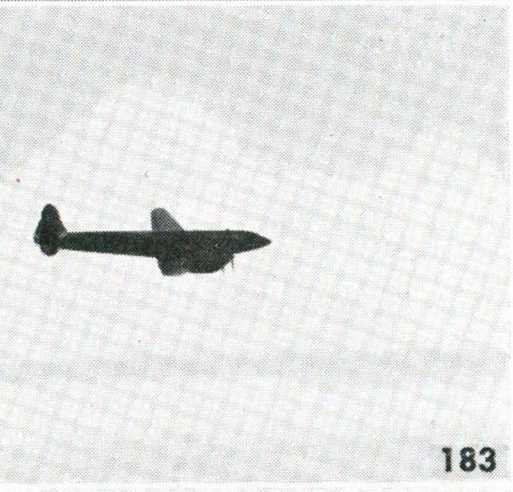

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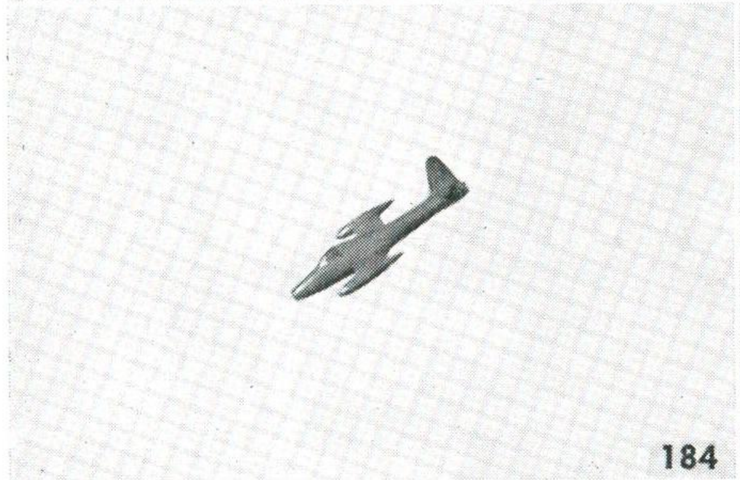

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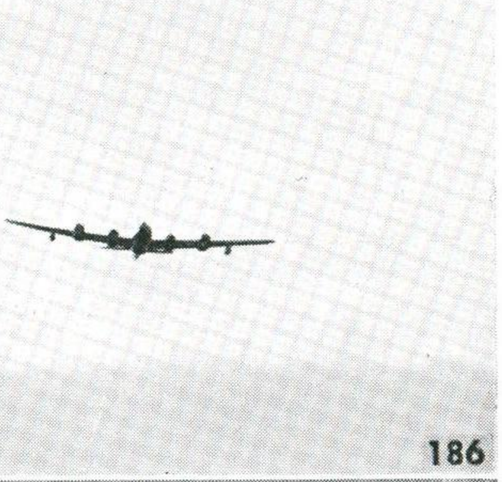

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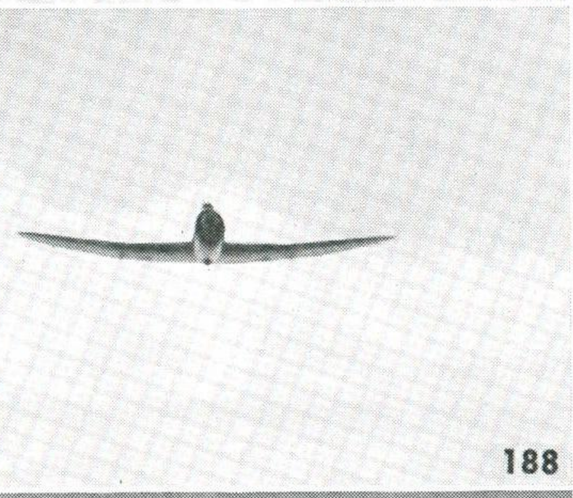

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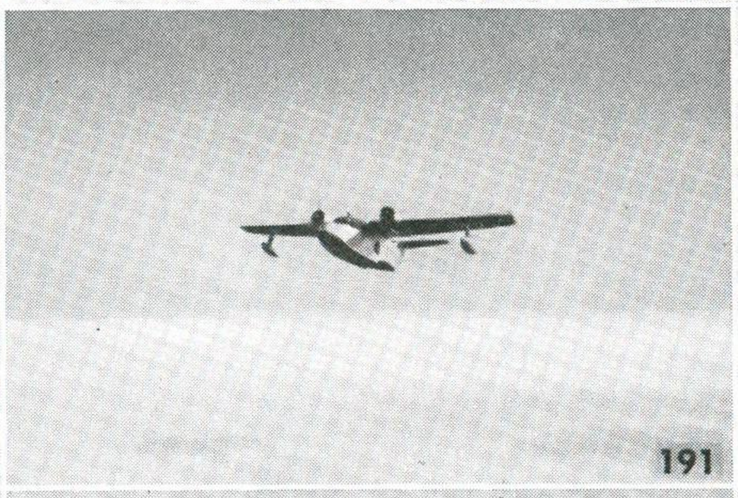

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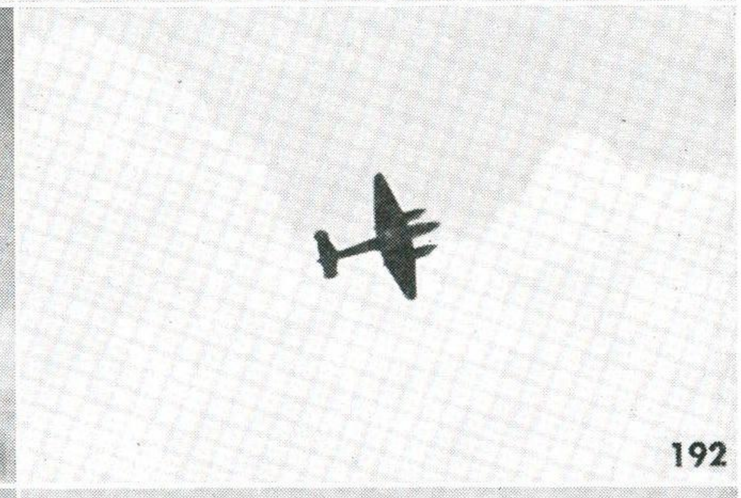

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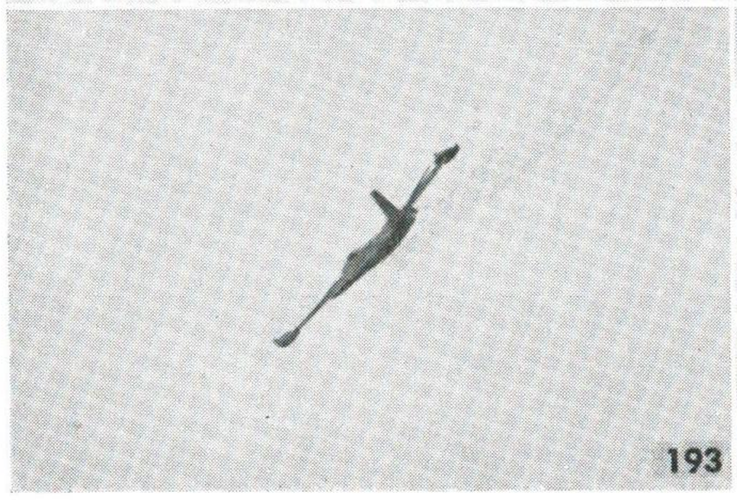

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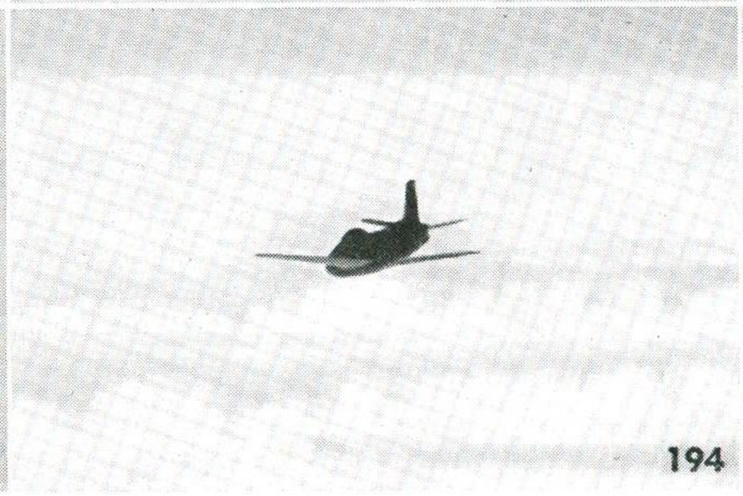

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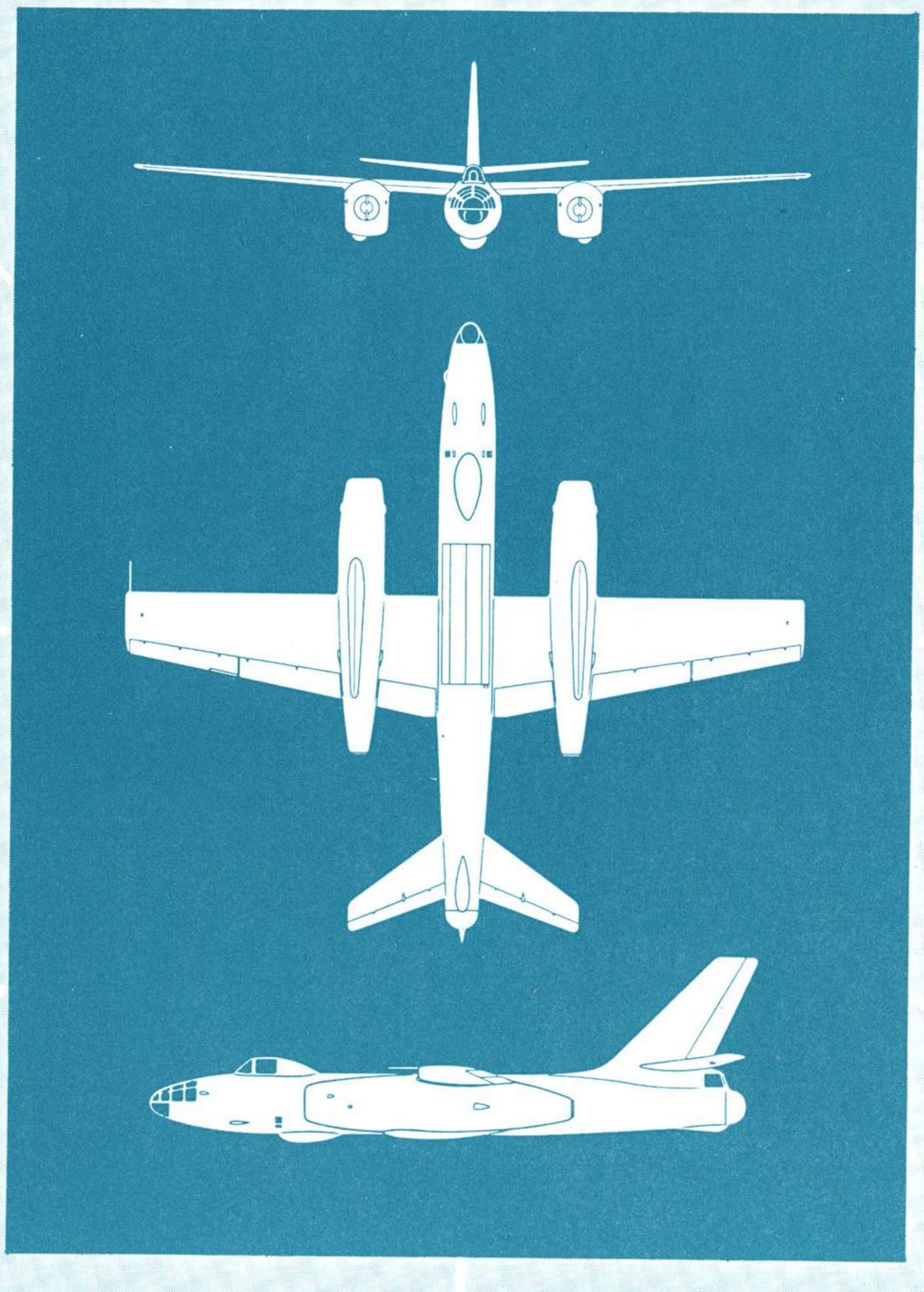
TWIN JET SOVIET BOMBER

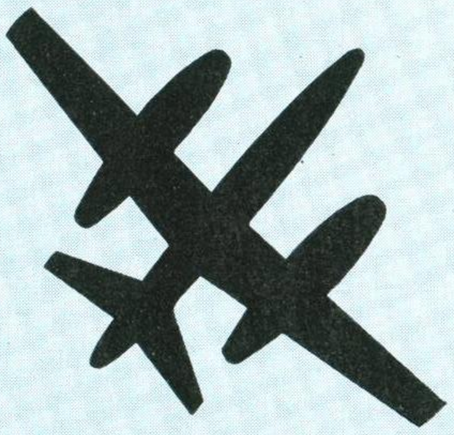
First impressions of a 'twin type' jet bomber in service in the S.A.F. in some numbers. It should not require much recognition teaching. The close-coupled wing and tail—apart from their distinctive cuts—together with the prominent nacelles, make a distinctive airframe shape. The wing-span is thought to be between 65 and 75 feet.



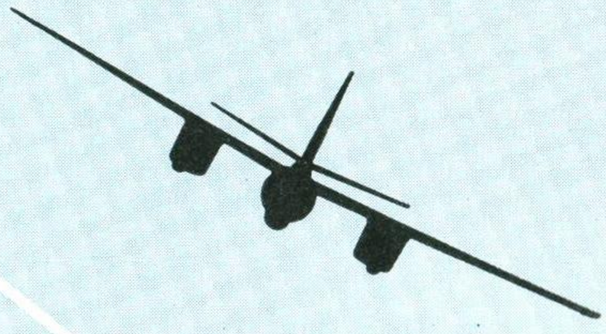


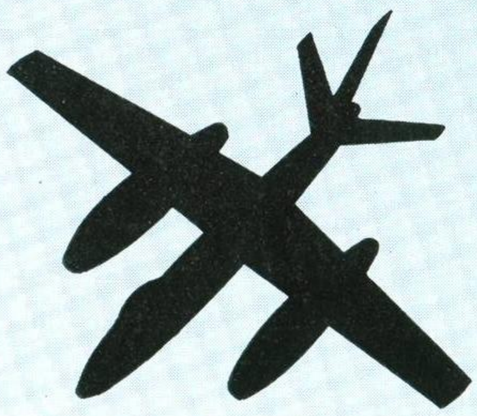


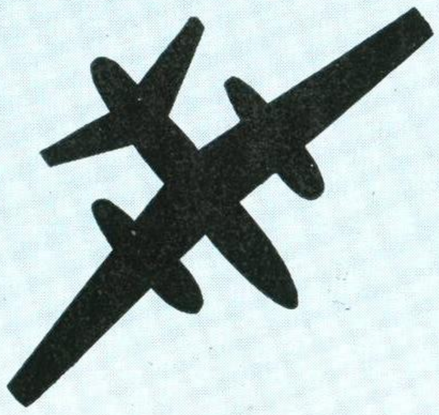












The Comet

A CHARACTER SKETCH

by C. H. GIBBS-SMITH

THE COMET is a rather stumpy, box-like vehicle with the following distinctive hall-marks : (1) a high-set turret with steep " forehead ", mounted on (2) a high flat deck with (3) a prominent vertical box-front above the glacis-plate and (4) a suspension of five bold road wheels and four top-rollers, with idler and rear sprocket slightly masked by small " skirtlets ".

TURRET. The turret is a vertical-sided feature slightly tapered towards the rear, with the addition of a large rear locker which results in exaggerated overhang. The vertical sides are a combination of curves and angles and the flat top, giving on to the flat sloping forehead, shows a sharp surrounding rim. The top surfaces are broken by a jumble of small shapes (periscopes, bomb thrower, etc.) and the prominent cupola offset to left. The mantlet, if it was not so often shrouded, is seen to be of very peculiar form. The 77 mm. gun and the machine-gun project out of a flat back-plate recessed behind two bold knuckles. The turret then has a protruding lip which thrusts out beneath the mantlet. The muzzle-break is almost ovaloid with two circular baffle outlets.

HULL. The hull stands up bold and angular, its most striking feature being the vertical box-like front above the glacis-plate : although there are various excrescences both on top and sides, this angular front is very prominent. A shallow glacis-plate slopes away below it and ends nearly flush with the idlers. There is a shallow nose-plate set back at only a slight angle (which catches a lot of light) and a lower nose-plate folded underneath in deep shadow. The rear deck is flat and only slightly disturbed by the intake louvre set close in to the turret. The outlet louvre is clapped on to the back of the hull like a large vertical-sided box, and throws the tail plates into shadow. A large locker sprouts out on each side amidships and lies across the track guards.

SUSPENSION. The suspension consists of five bold road wheels, set close together and scooped out around the hubs to throw strong shadows ; four small top rollers ; a rear sprocket and front idler smaller than the road wheels ; and the very distinctive " skirtlets ", semi-triangular affairs which partly mask the sprocket and idler. The sprocket is mounted slightly lower than the idler. A peculiar visual point about the suspension is that the two skirtlets tend, optically, to give the whole vehicle a " bent down " appearance at both ends. (It should, however, be remembered that skirting plates are never a certain recognition by themselves as they may become detached.)

* * *

From any view in which the suspension is visible, whether near or far, from ground or air, the Comet has a strongly marked character. For the suspension, taken in optical combination with the turret and hull, can quickly differentiate it from other tanks.

Whatever the angle of view the suspension has very good recognition markers : the five bold and closely packed road wheels (actually the central wheel stands slightly separated from the others), their scooped out construction which gives deep shadows, and the half-radius gap between them and the track guard above. These features, with or without the bent down, arched, or semi-enclosed " feeling " at both ends, due to the skirtlets, can be picked up at great distances and even from high oblique viewpoints. Top rollers can be forgotten where " snap " recognition is involved.

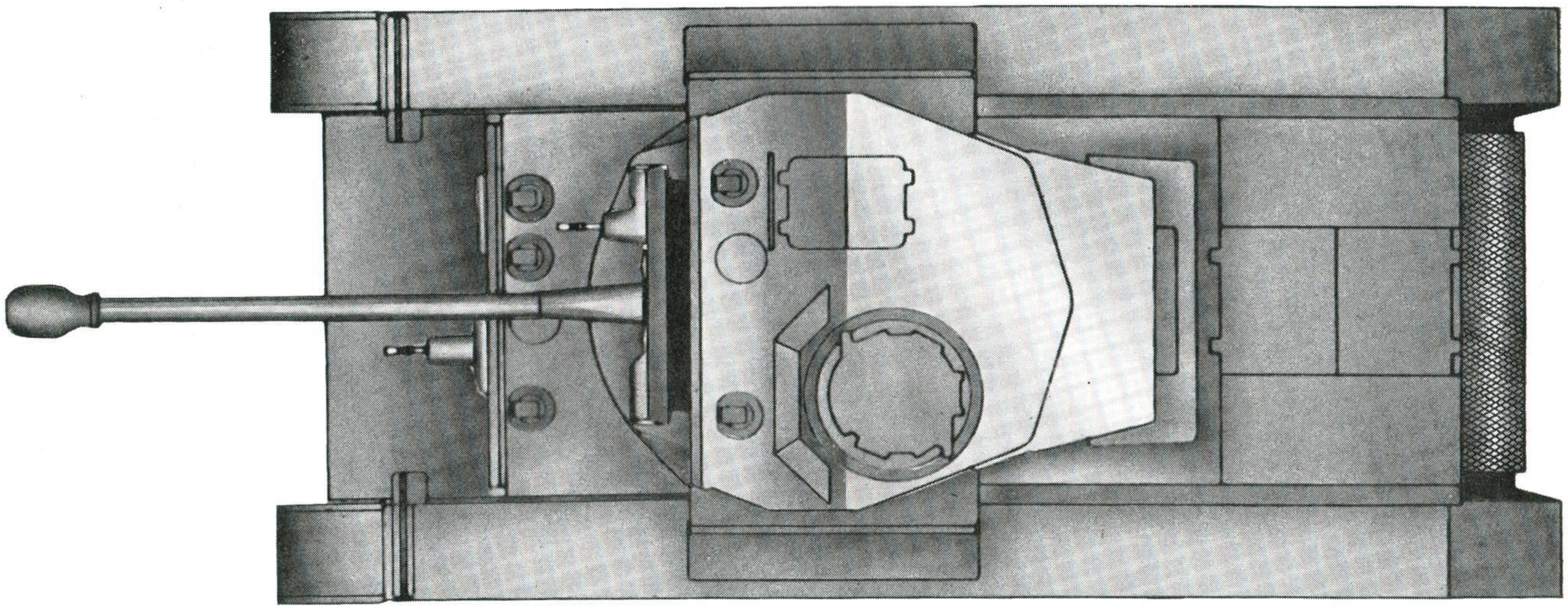
Then, along with these suspension features, is the flat, box-like structure of the vehicle as a whole. Note the large number of sharp angles, rims, and flat surfaces (not forgetting that the whole turret-top looks flat, as well as the curved sides, in many lights) ; and the angles mostly approximate to right-angles. If the front of the Comet is visible, again from any height or distance, the box-like end of the deck and the shallow glacis-plate stand out clear cut and definite ; as do the deck sides. From the rear, unless camouflaged, there is the flat rear deck and the vertical flat " box " of the air outlet louvres to add to the overall box-like appearance.

So for quick recognition from land or air, go for the flat box-like shapes, surfaces and angles of the turret and hull, and the tightly organized suspension with the bold scooped-out road wheels.



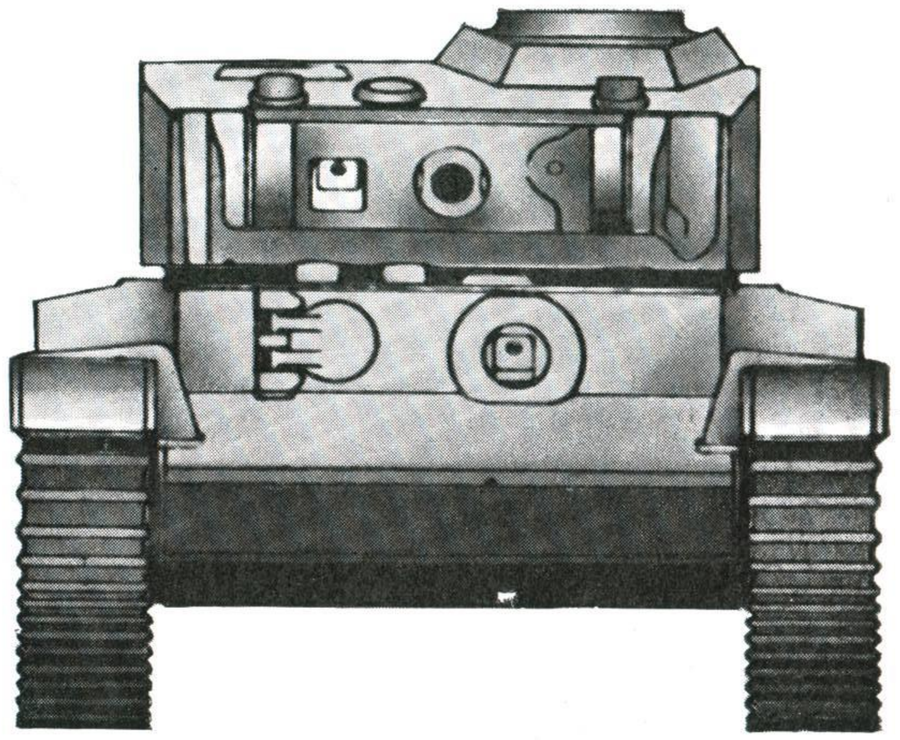


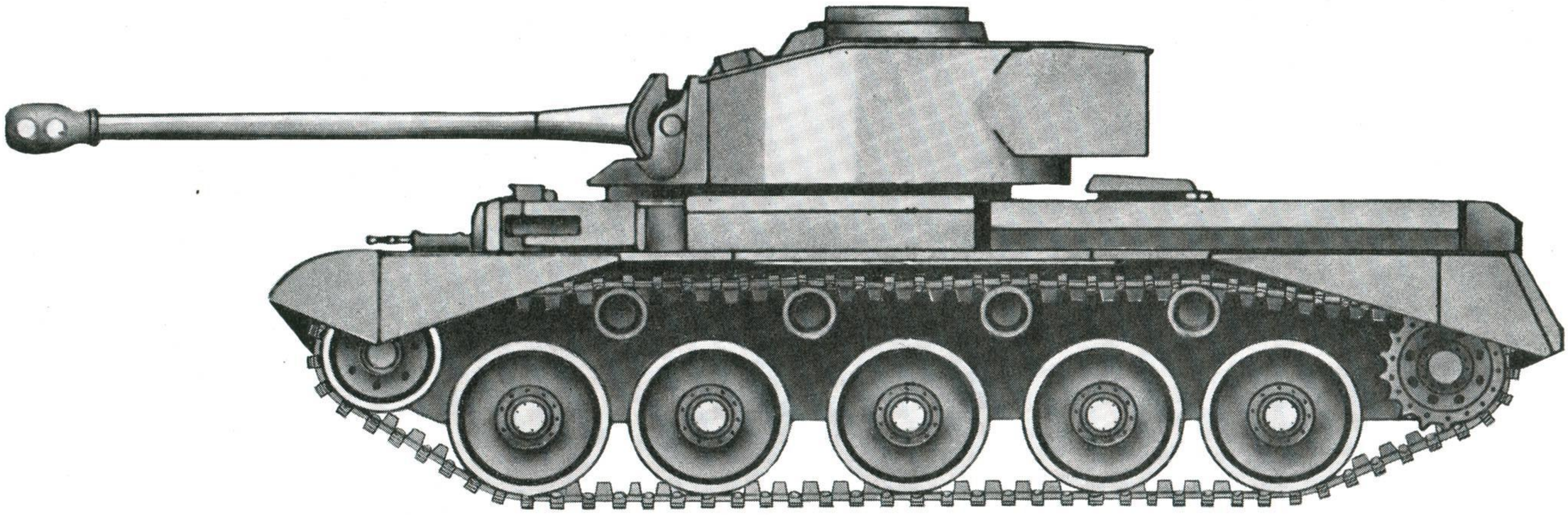


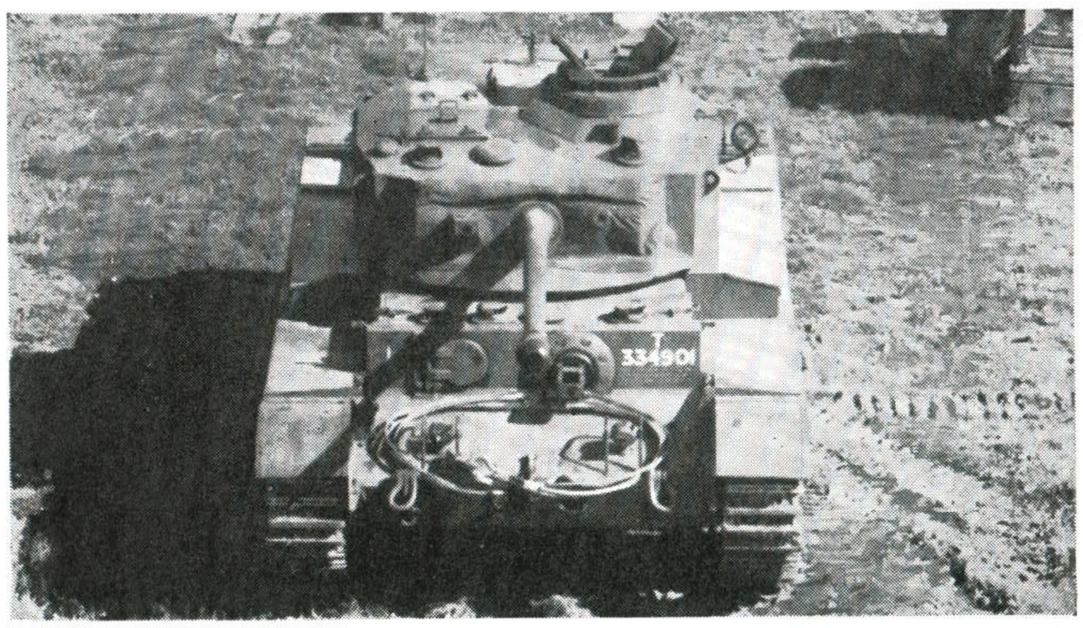


TECHNICAL DATA:

Weight : 33 tons.
Armament : One 77 mm. gun and two 7.92 mm. MG.
Crew : Five
Speed : 32 m.p.h.
Radius of action : 123 miles
Length excl. gun : 21 ft.
Width overall : 10 ft.
Height : 8 ft. 9 ins.
Track width : 1 ft. 6 ins.

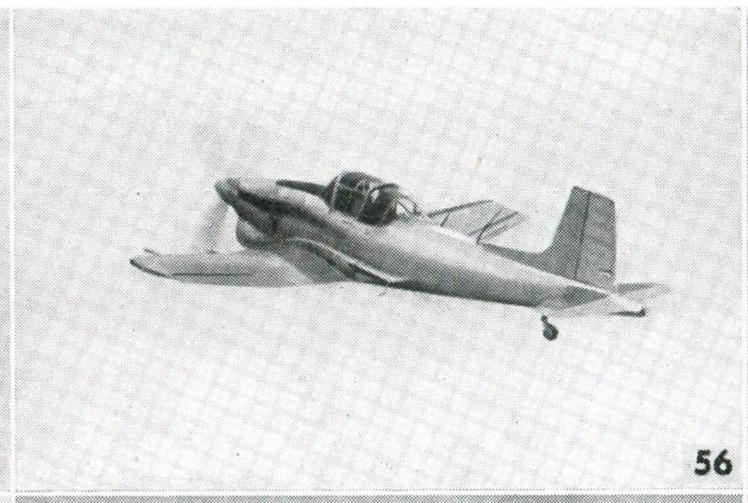






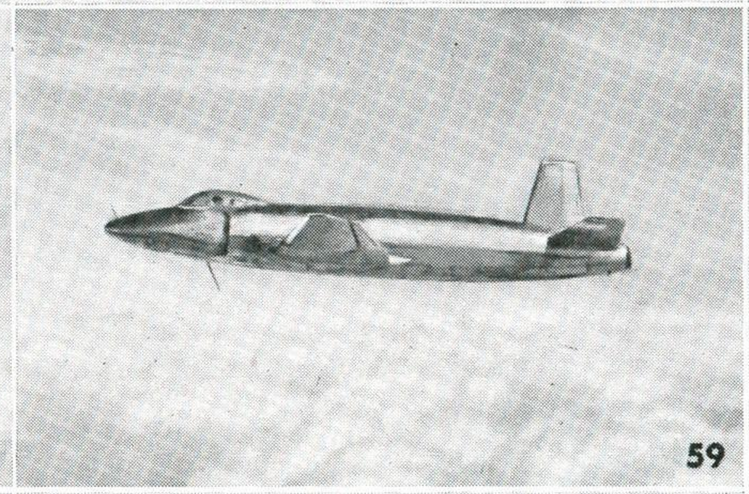


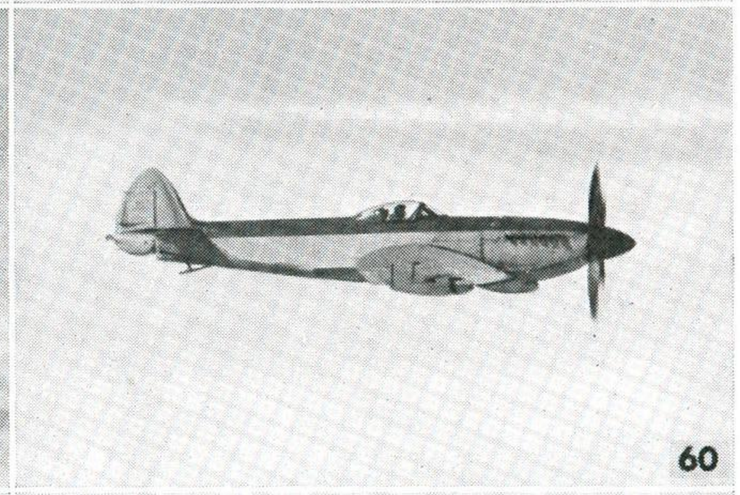

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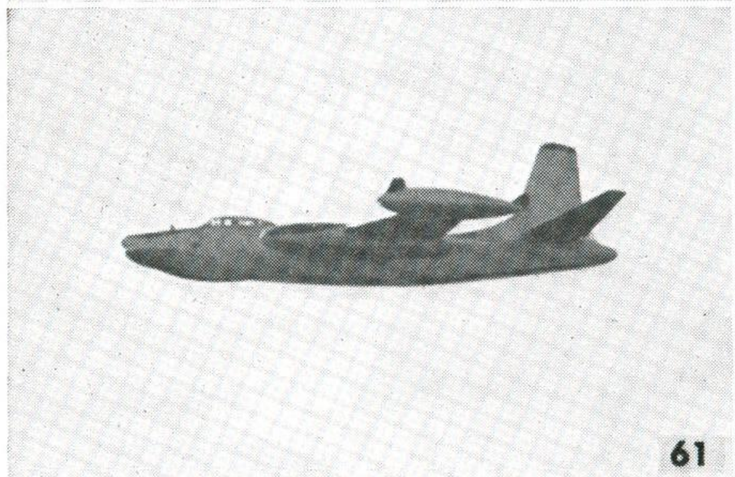

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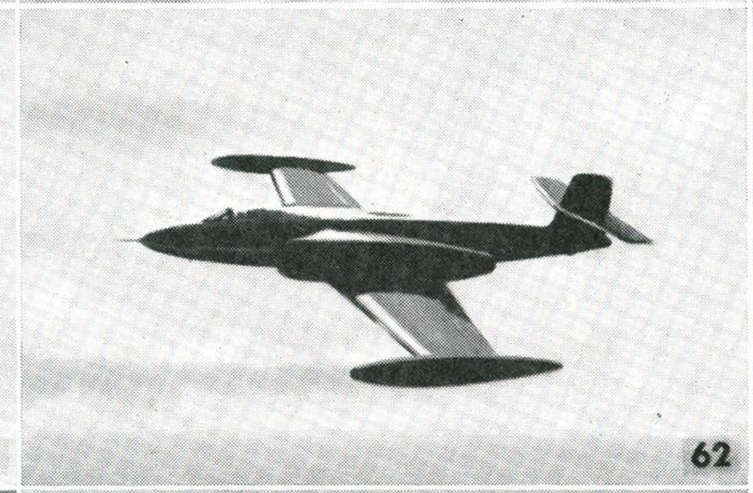

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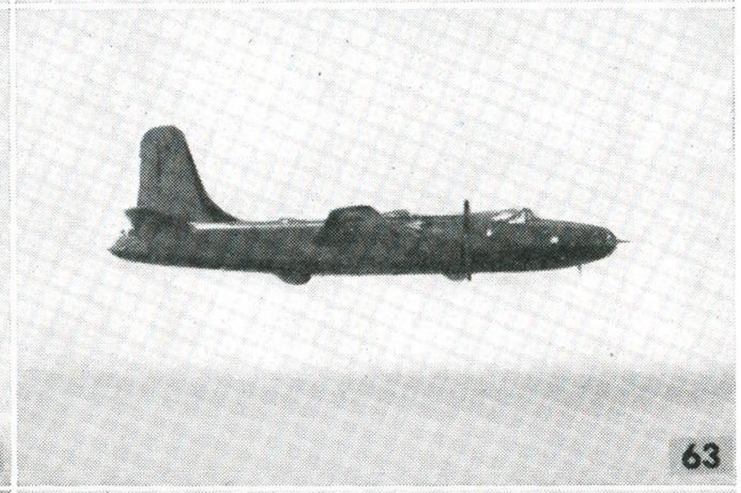

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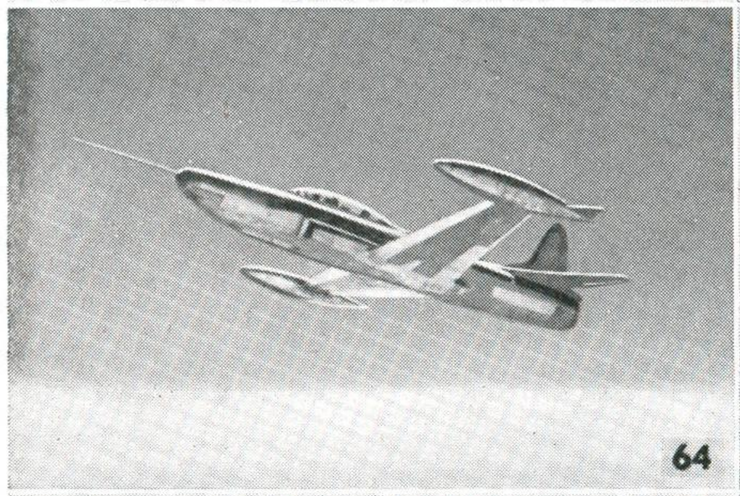

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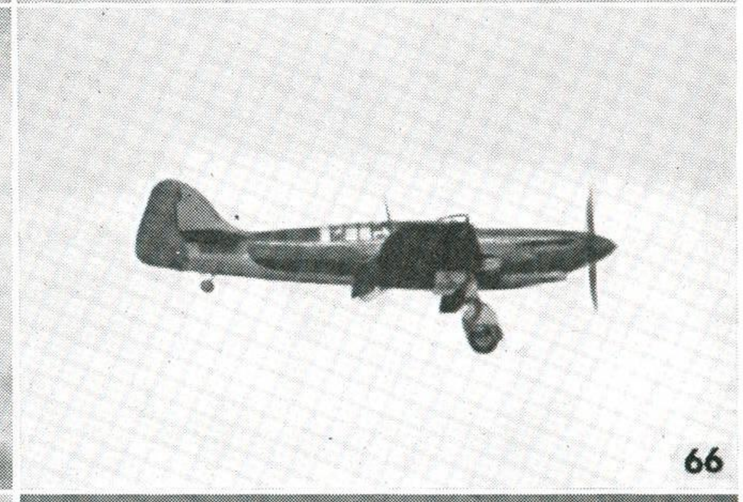

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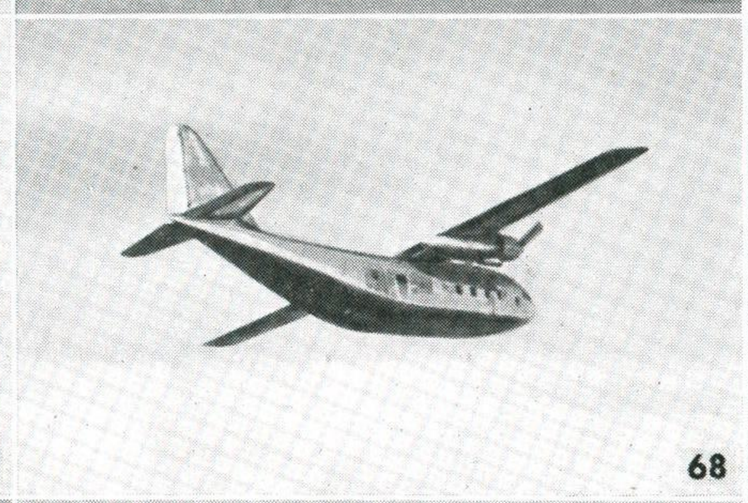

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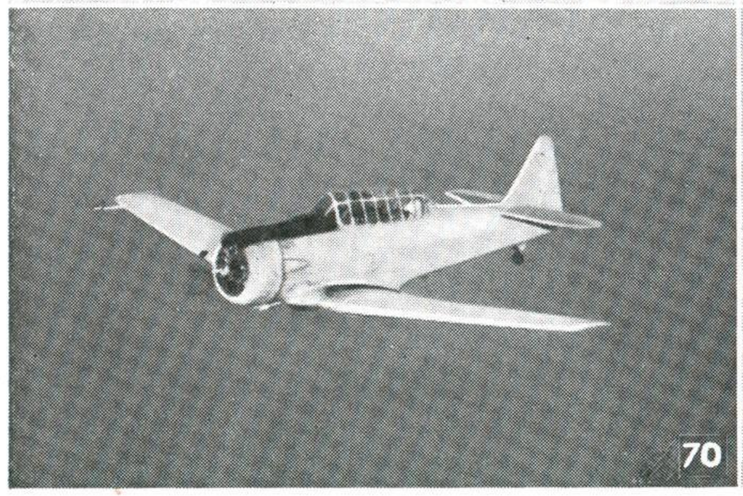

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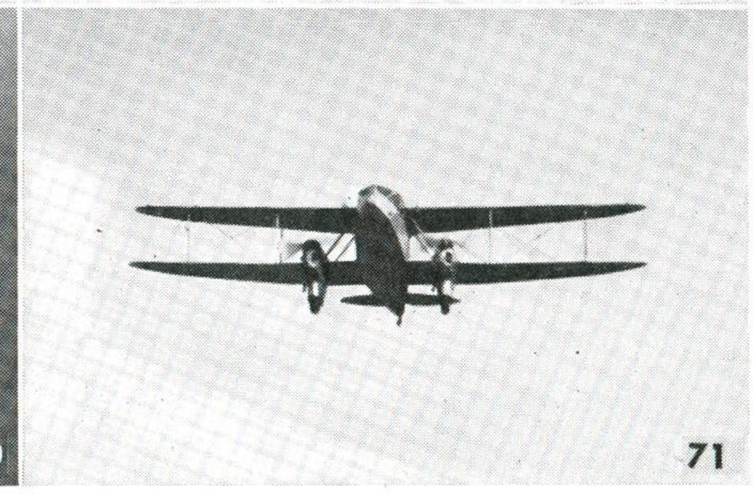

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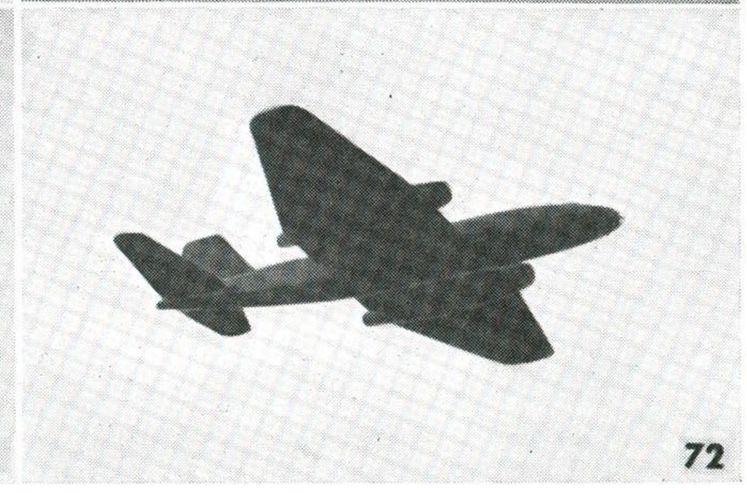

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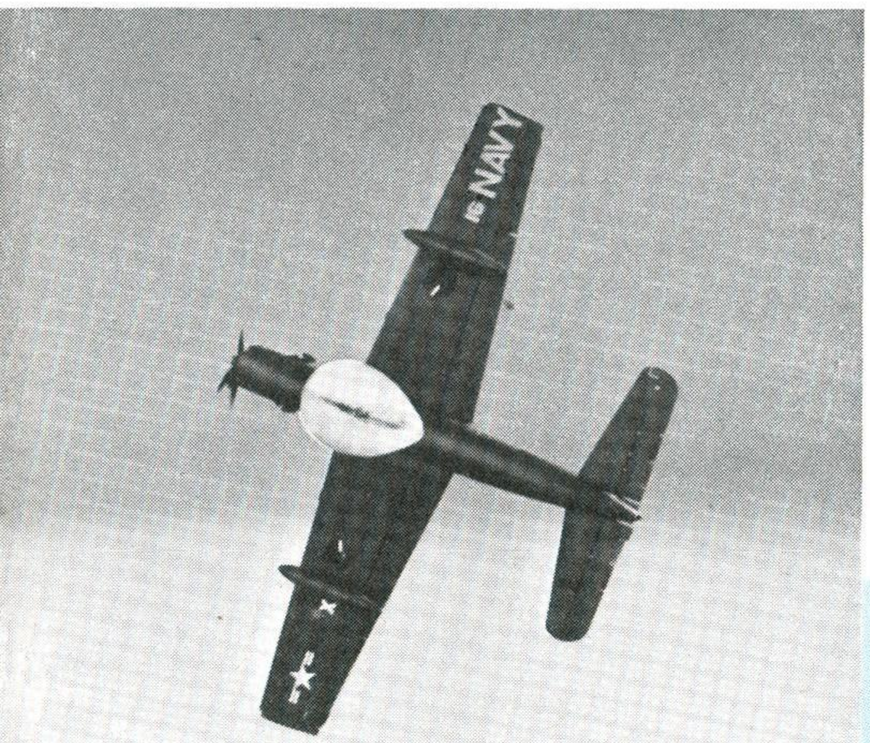

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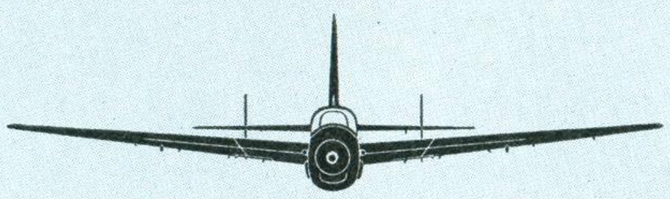
Guardians of the U.S. Navy—Grumman AF-2 S and W

The Grumman AF-2 Guardian is basically a conventional single-engine mid-wing monoplane. From it are derived two anti-submarine aircraft which work together; the "W" does the searching, the "S" the sinking. Each carries appropriate equipment as illustrated. There are two versions of the basic aeroplane flying: the early production model has a narrow fin with rounded top, more squared wing tips, and is devoid of auxiliary finlets. The silhouette shows the basic, later version.

(Photos by courtesy of Harold G. Martin).

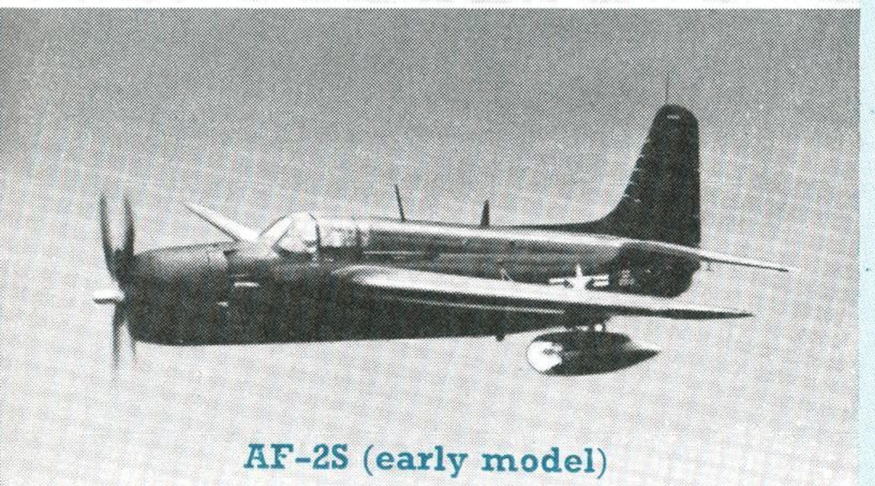


AF-2W (later model)

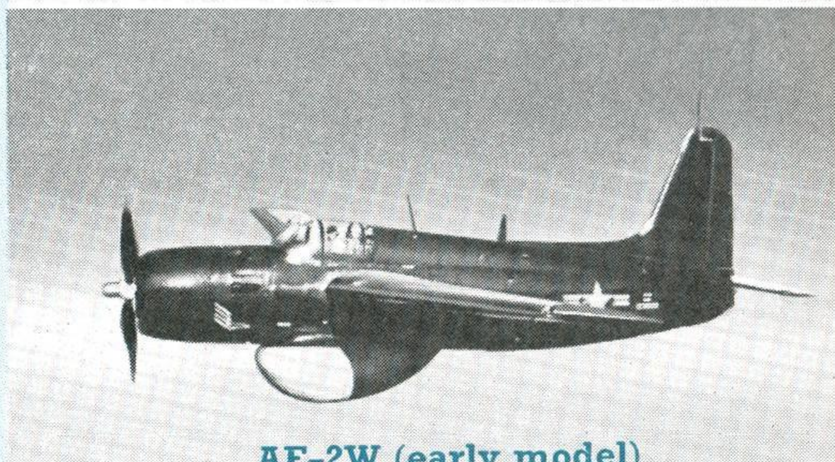


Wing span: 60 ft. (appr.)

Length: 43 ft. 3 ins. (appr.)



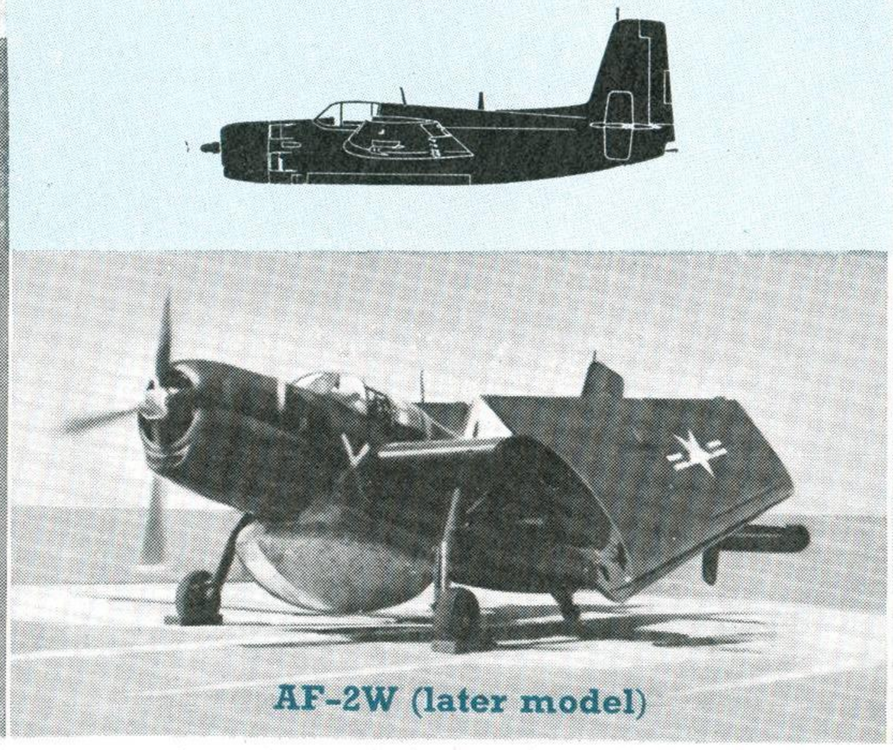
AF-2S (early model)



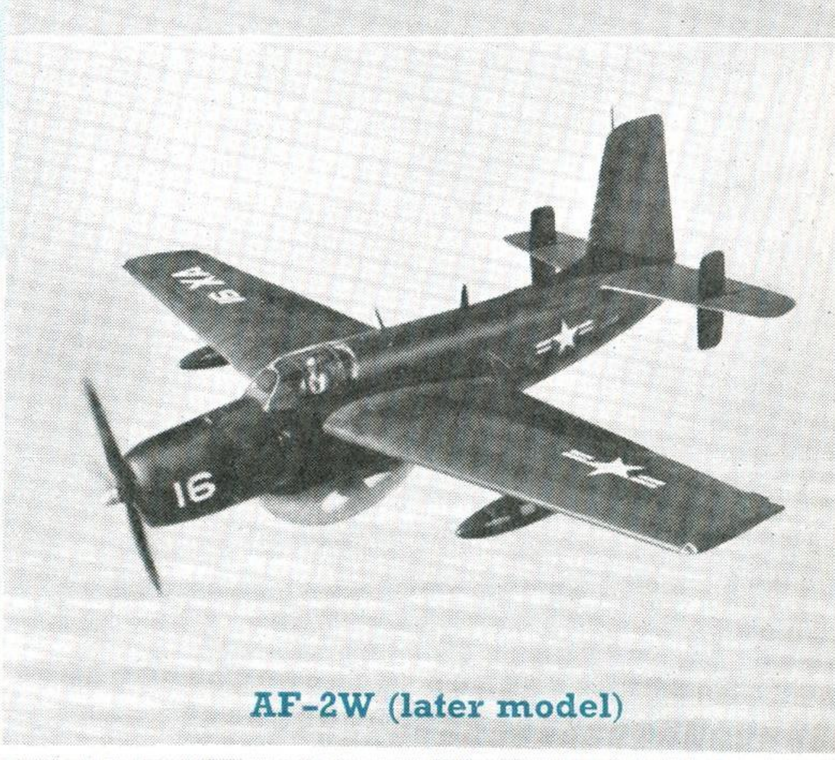
AF-2W (early model)



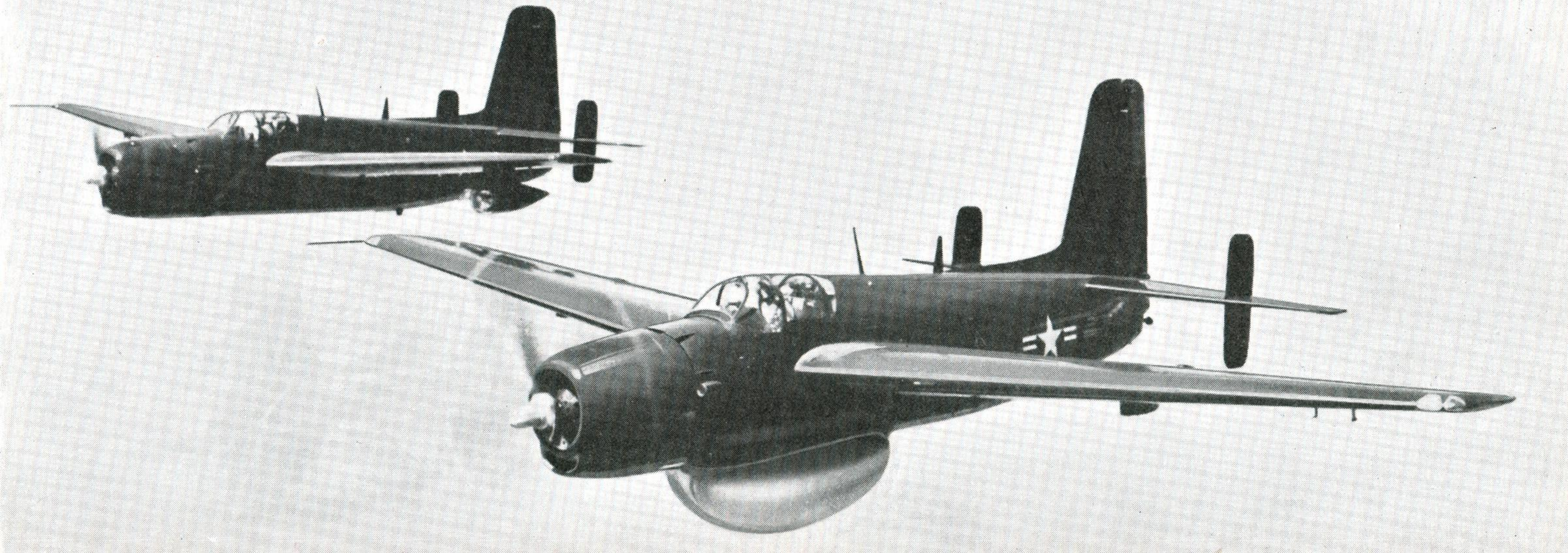
AF-2S (early model)



AF-2W (later model)

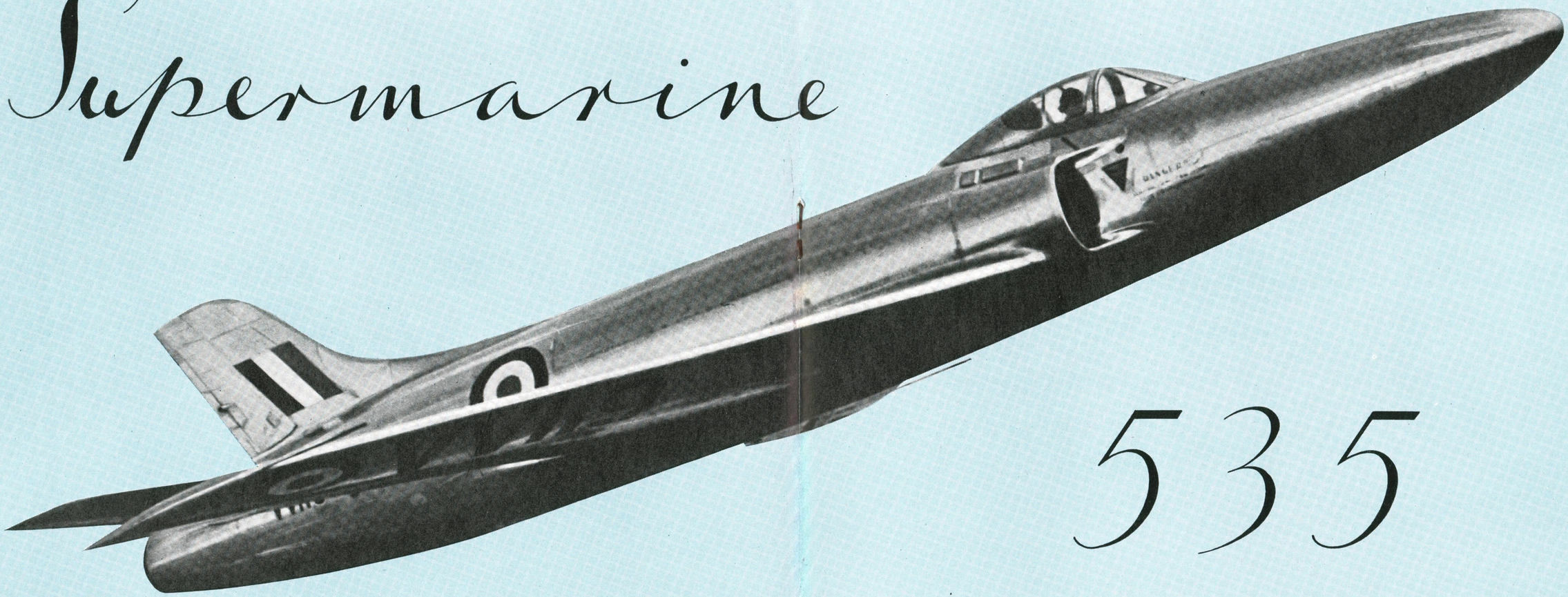


AF-2W (later model)

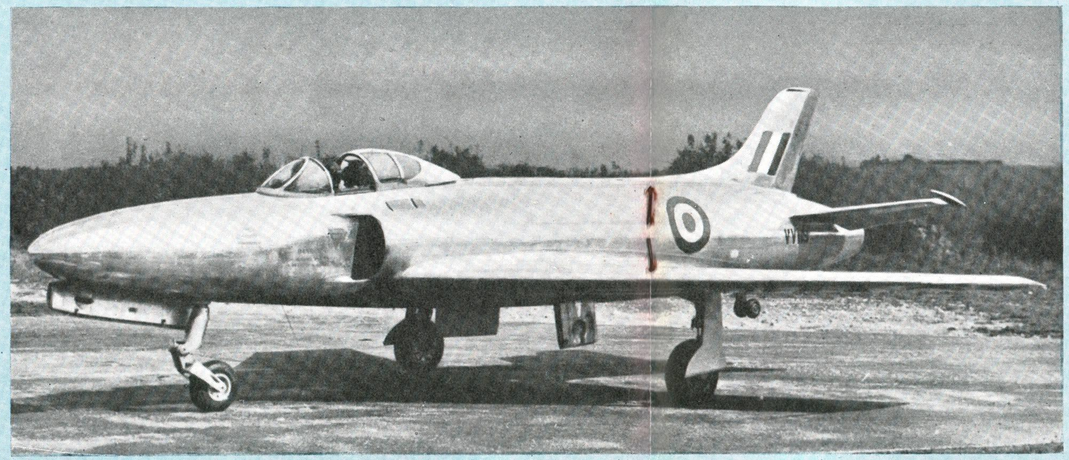


Supermarine

535



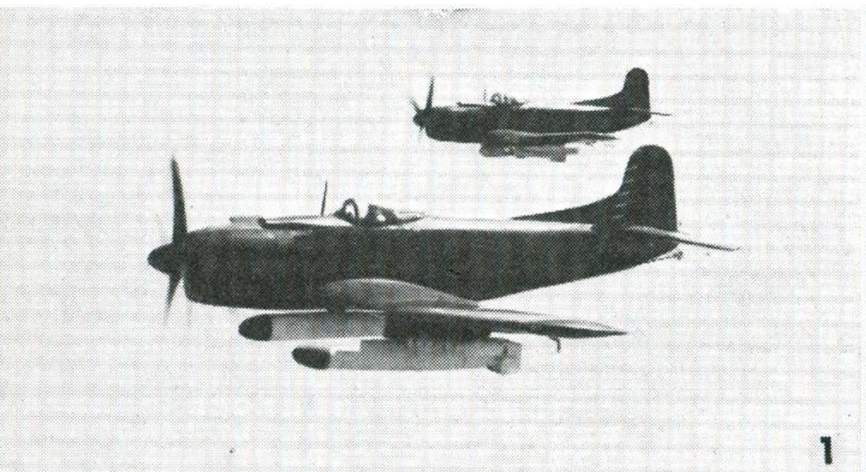
The Supermarine "535" has been flying for a year. These views show the new fin fairing recently fitted. Shape characteristics common to the Attacker and the Vickers "510" will also be observed. Vickers-Armstrongs recently announced that they are producing a swept-wing fighter for the Royal Air Force, named the Swift, though at time of going to press its relationship to the "535" is not known.

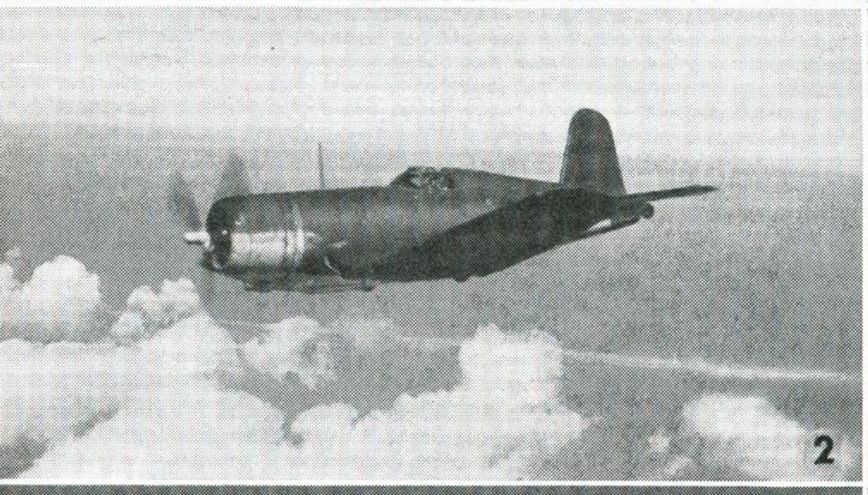


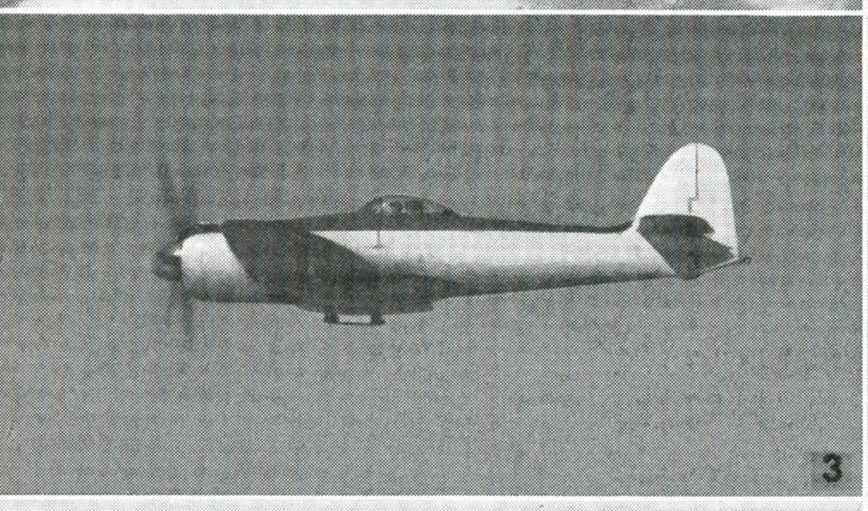


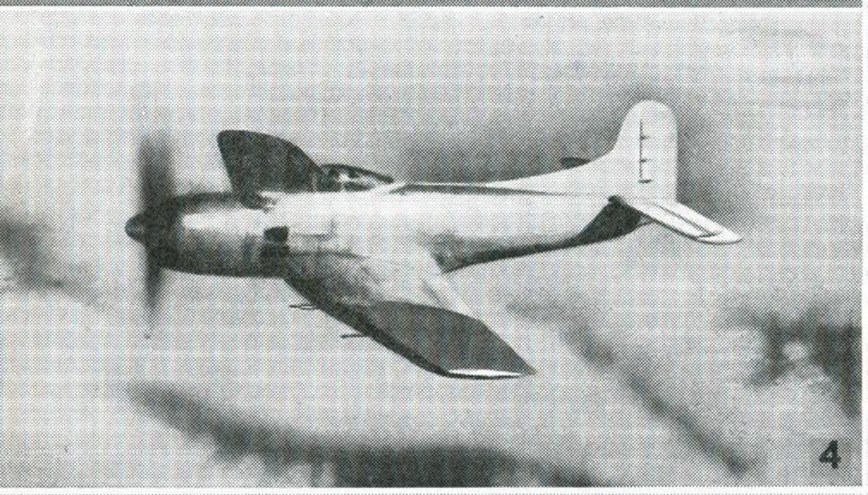
'SINGLE (Radial) TYPE' TUTOR

With the aid of the three-view silhouette key on page 184 deduce the identity of each aircraft in the 52 photographs and sillographs, and list your results. Ensure correct identity by as many points as possible before checking your list with the results given on the rear cover. Instructors can improve the scope of this " Tutor " by preparing additional sheets for deduction by students.


1


2

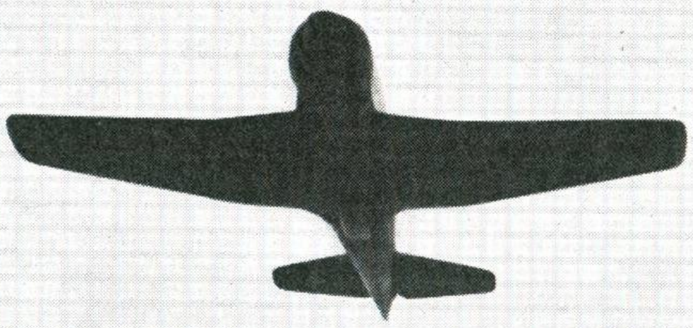

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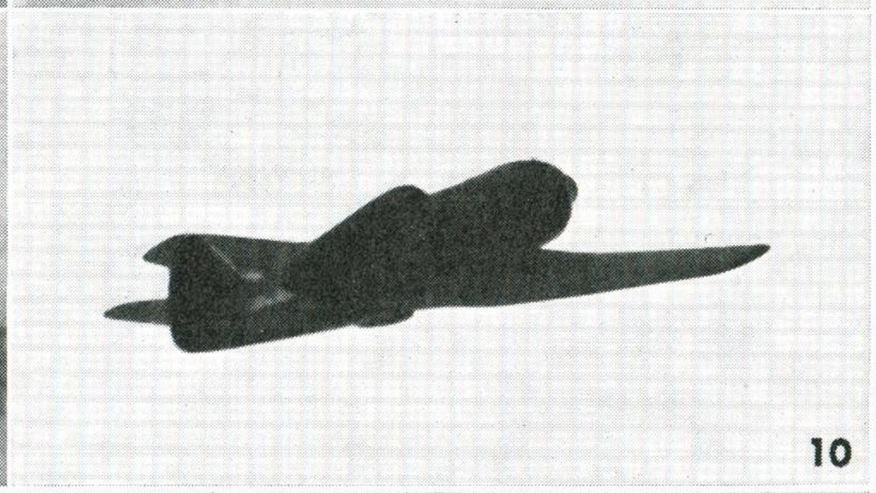

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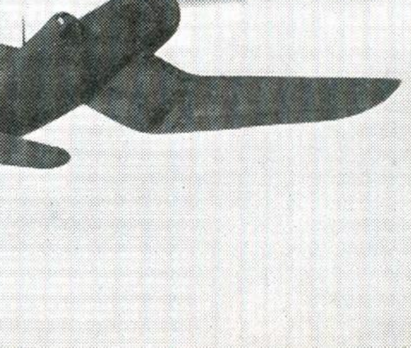

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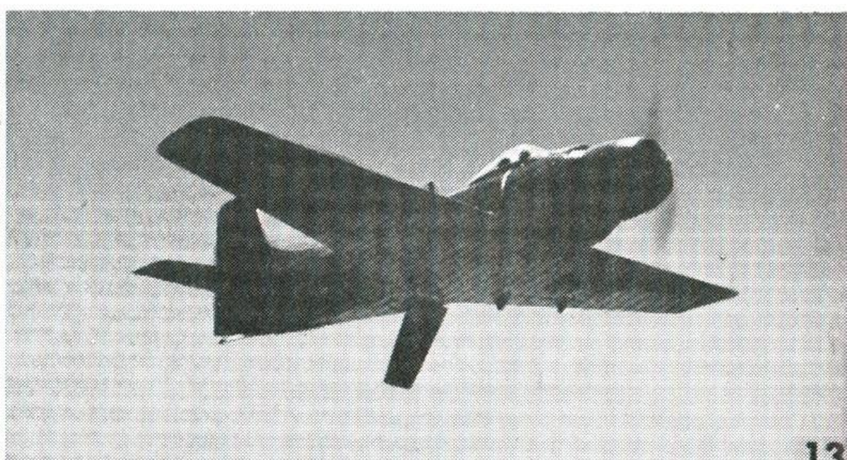

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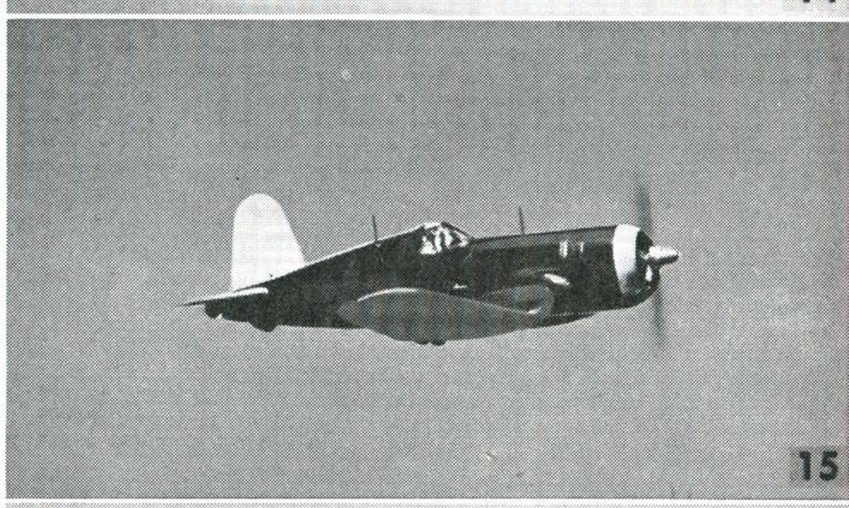
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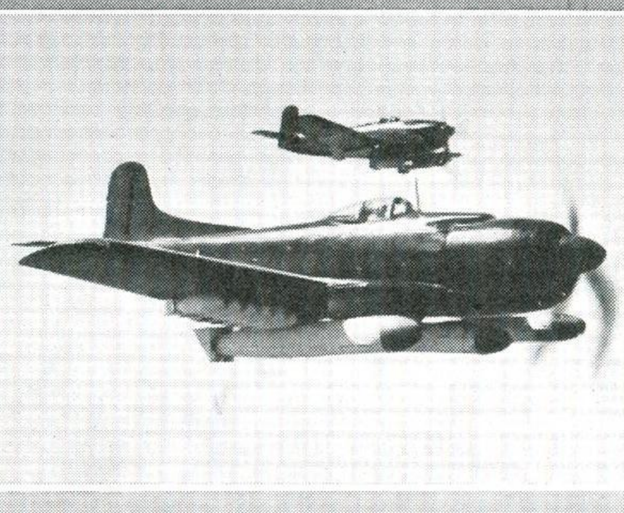

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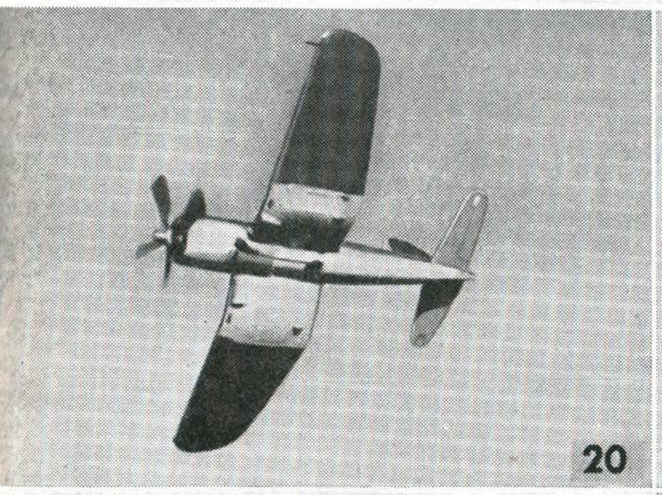

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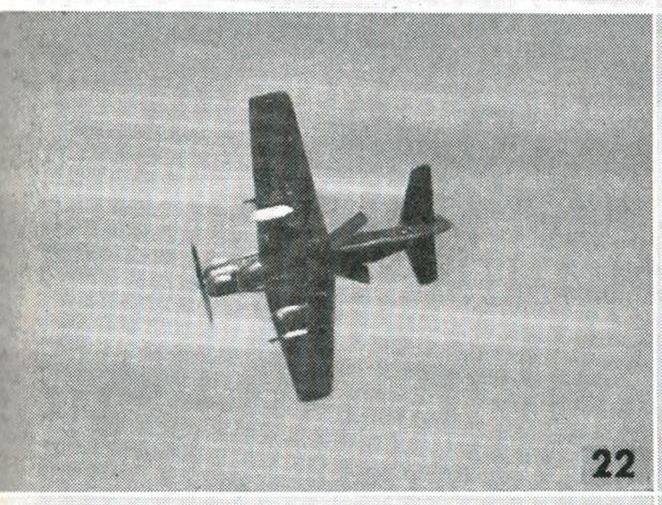

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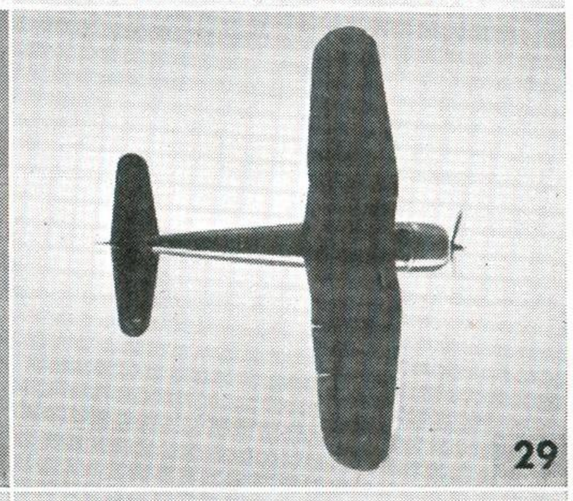

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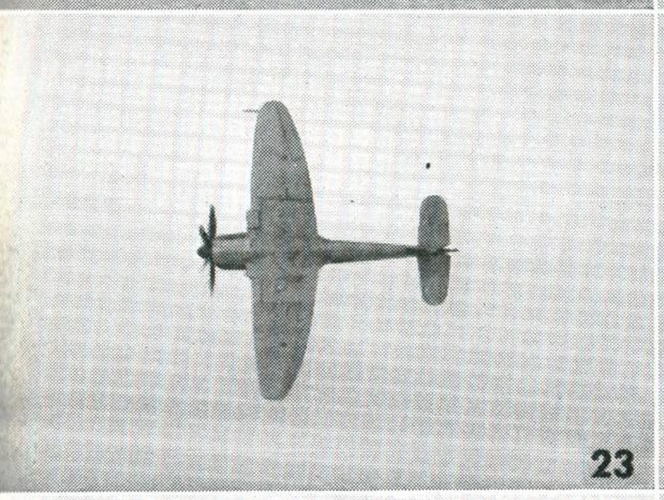

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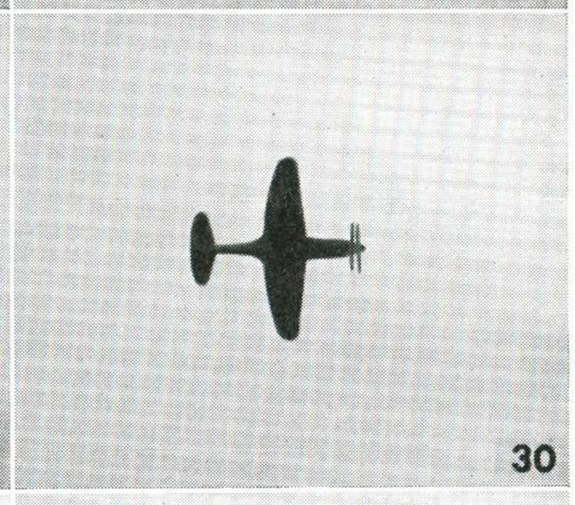

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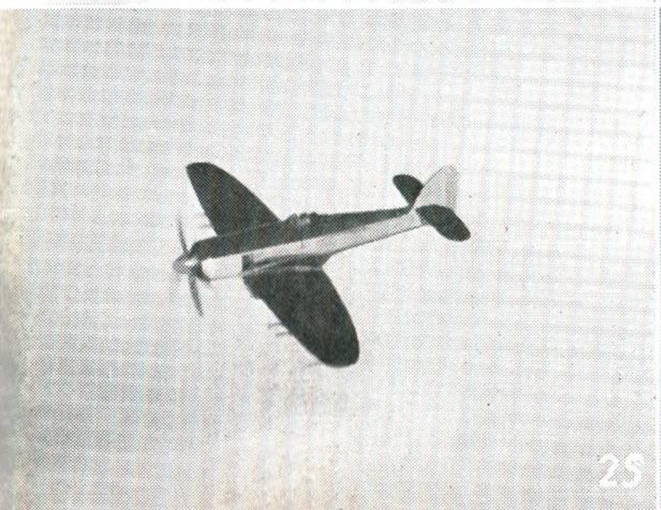

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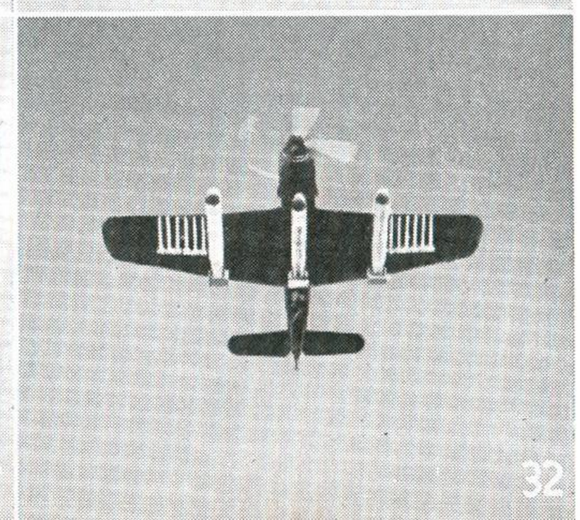

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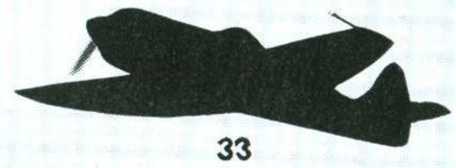

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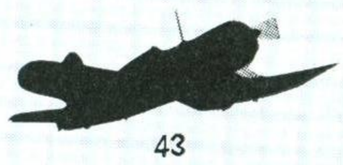

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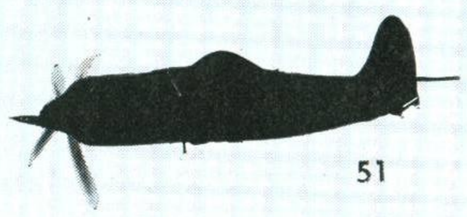

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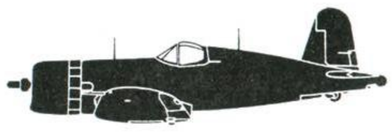

48


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52





CORSAIR
(F4U-4)
Span : 41 ft.





LA-9
Span : 34 ft. 9 in.



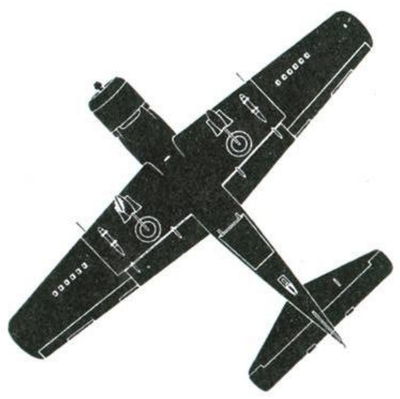


SEAFURY
(F Mk. 10)
Span : 38 ft. 5 ins.

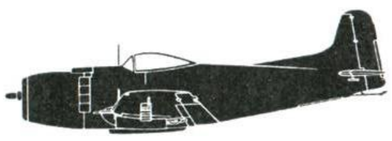
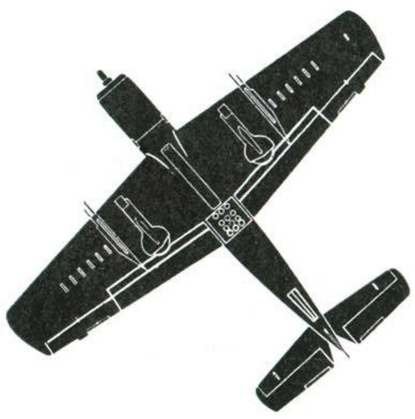




WYVERN
(TF Mk.2)
Span : 44 ft.

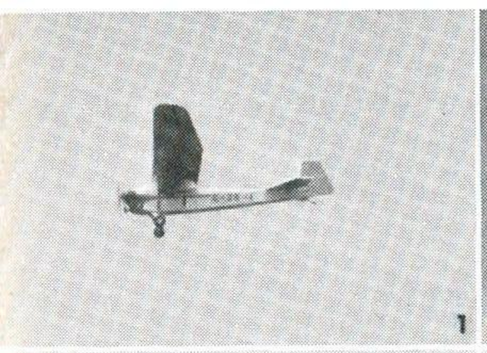



SKYRAIDER
(AD-2)
Span : 50 ft.

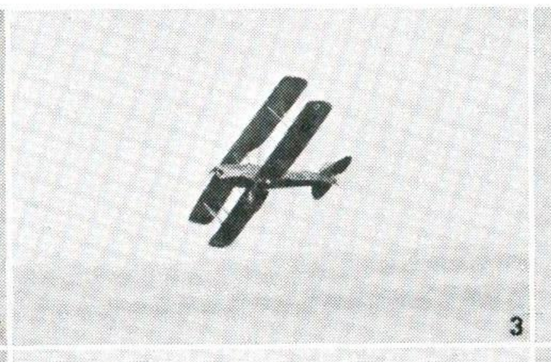



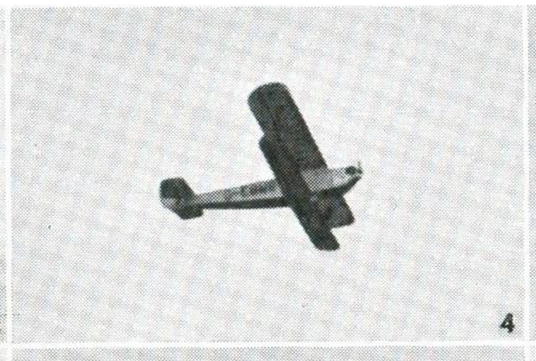

MAULER
(AM-1)
Span : 50 ft.

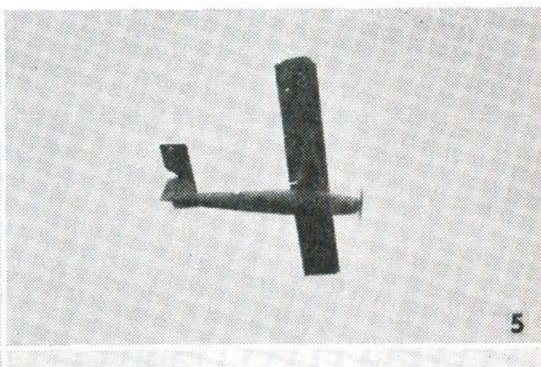
Light Types seen over Great Britain

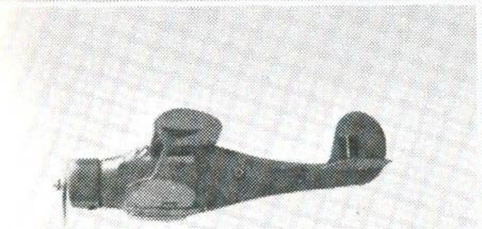

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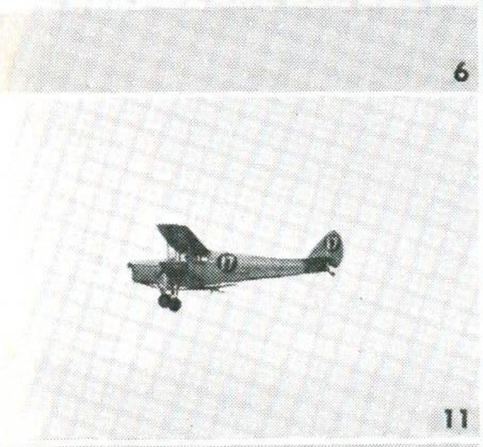

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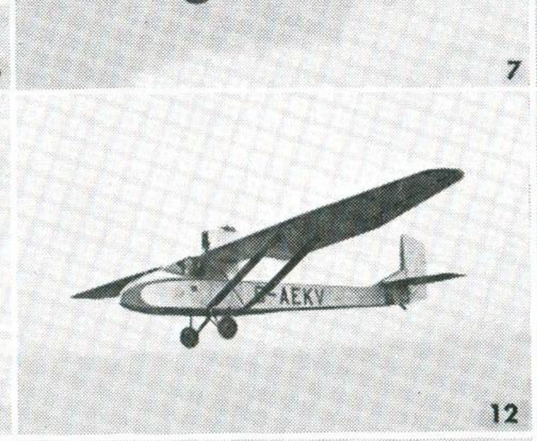

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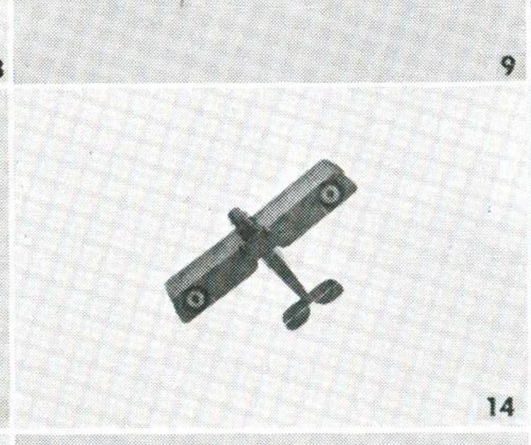

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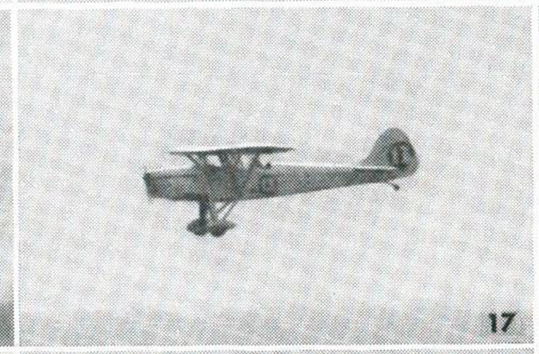
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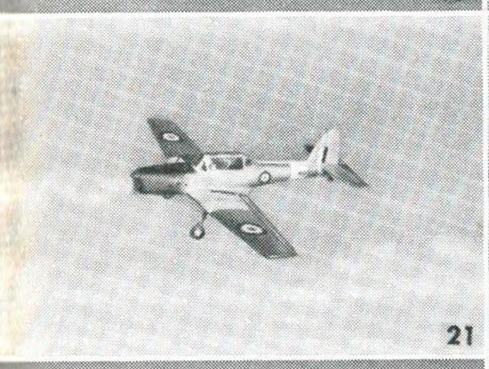

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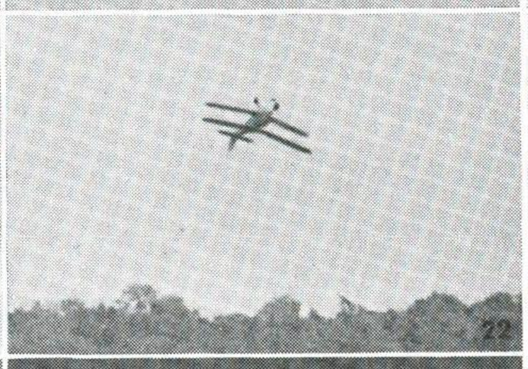

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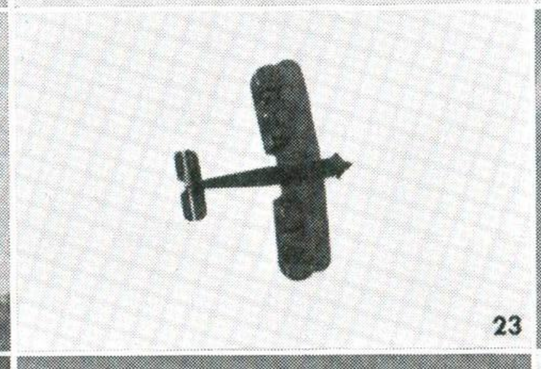

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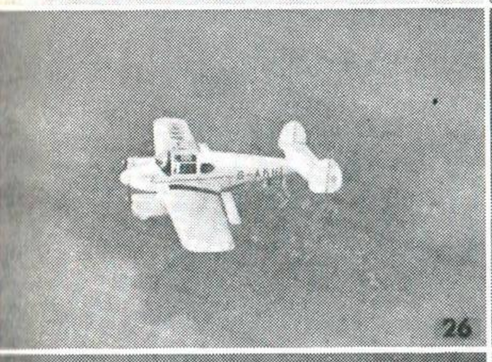

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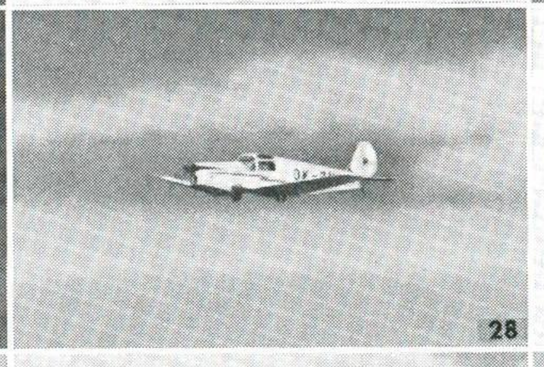

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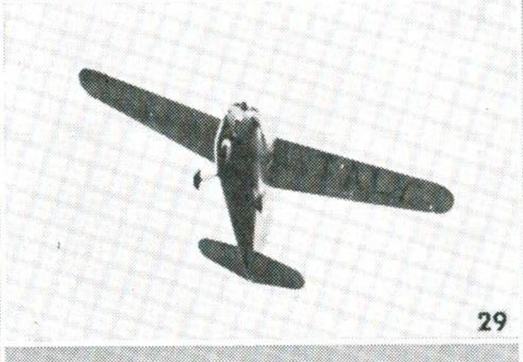

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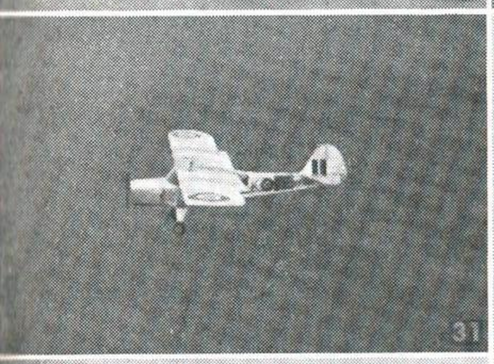


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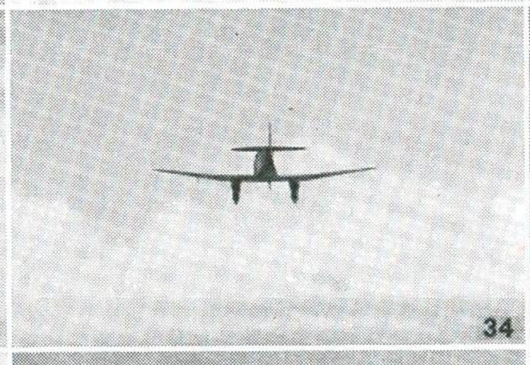

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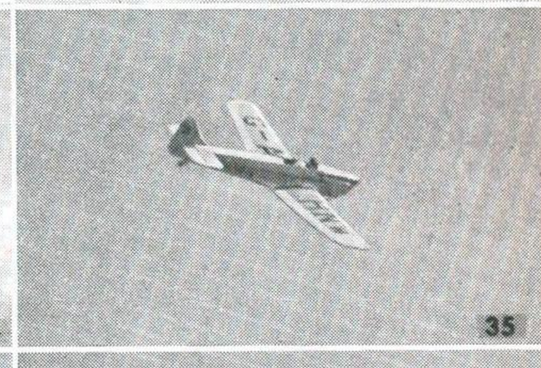

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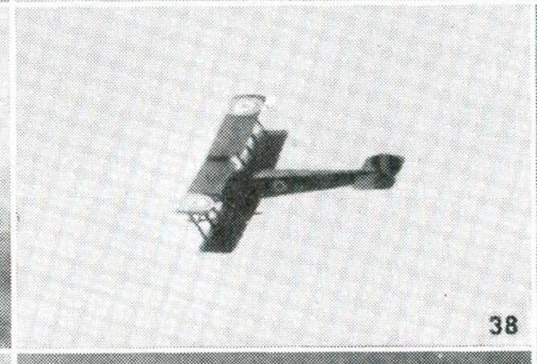

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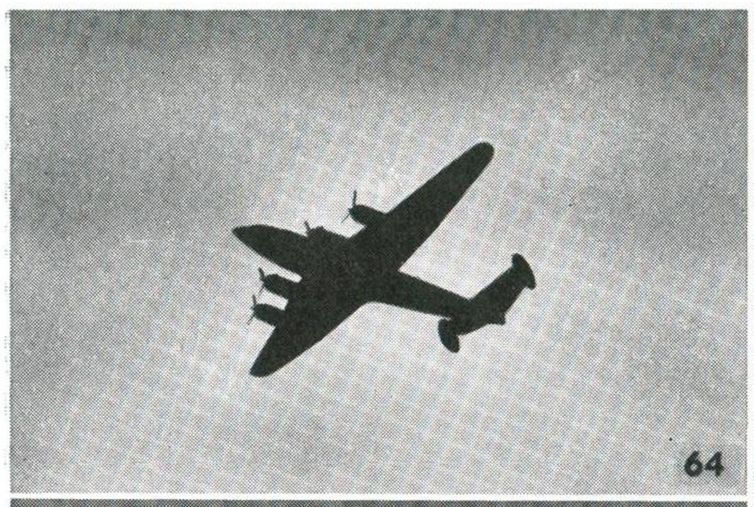
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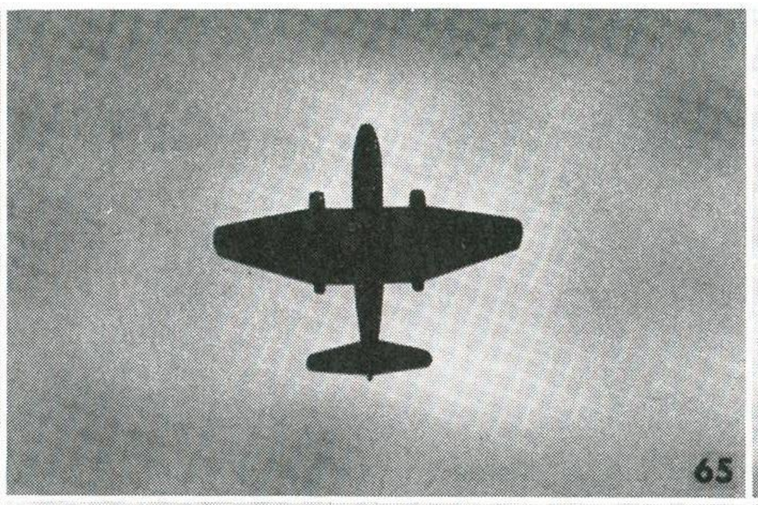
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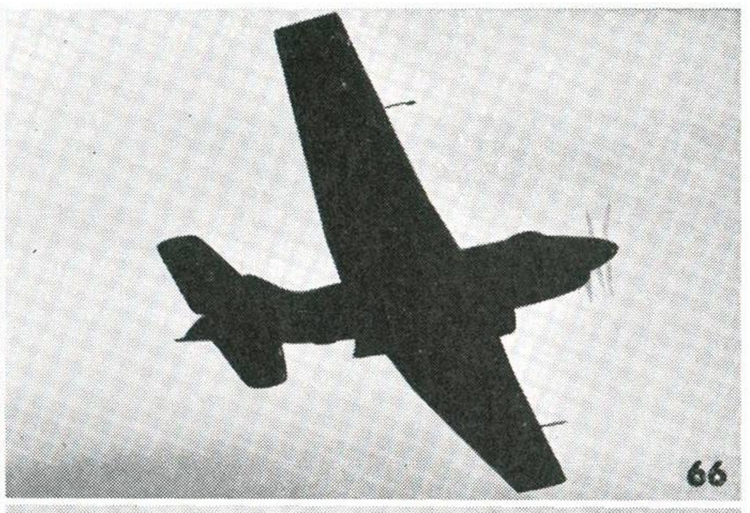
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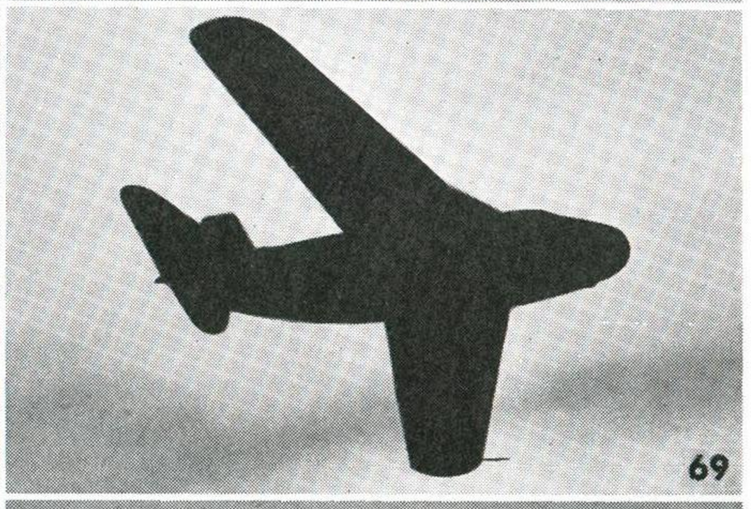

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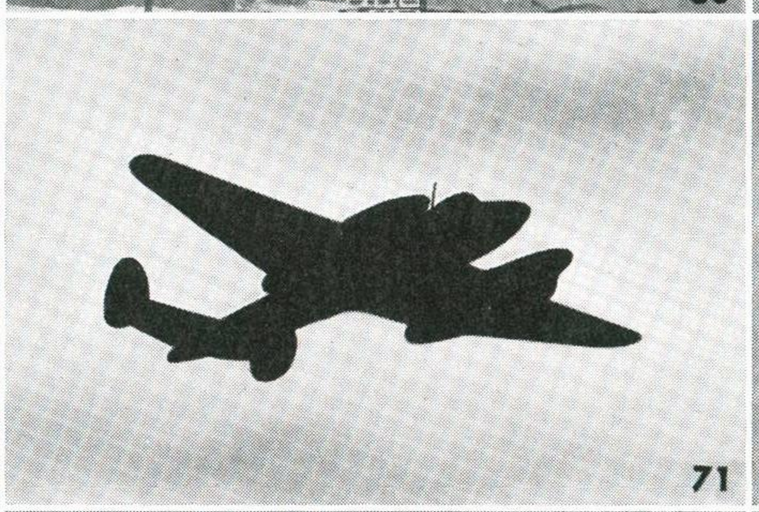

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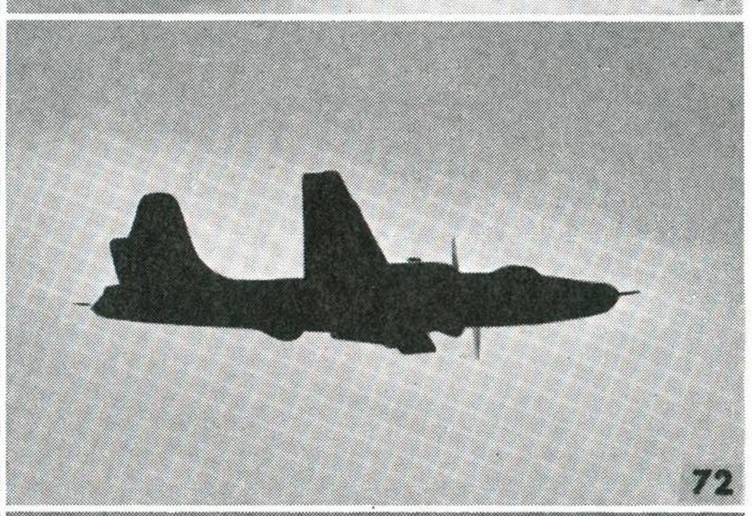

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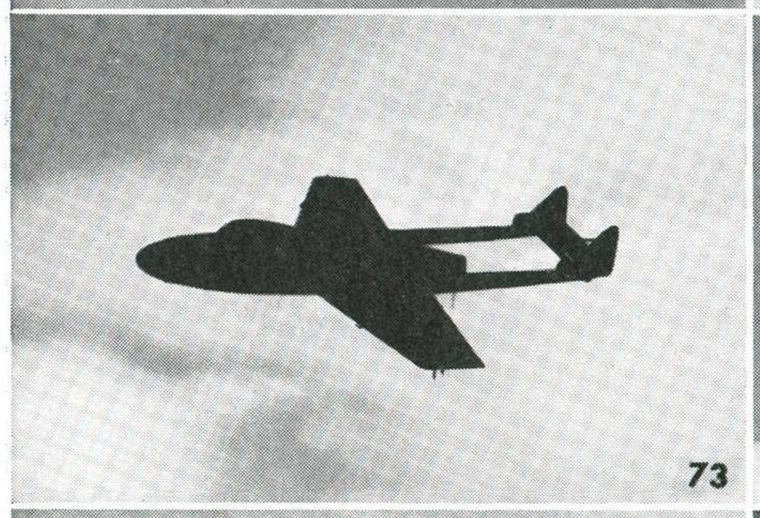

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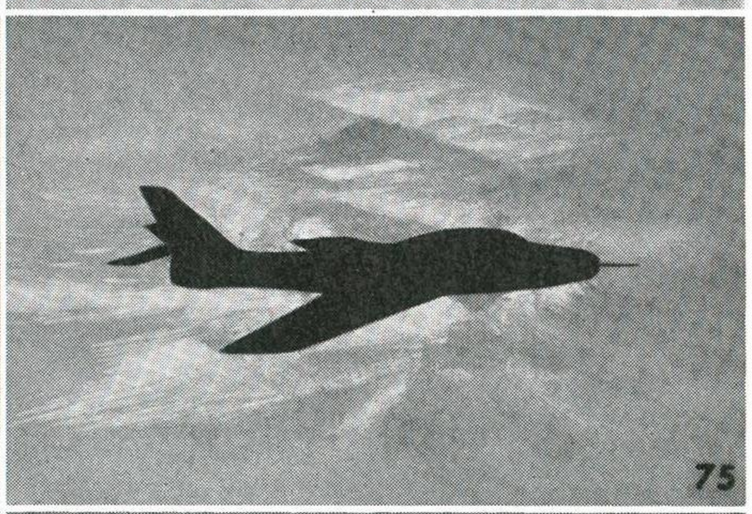

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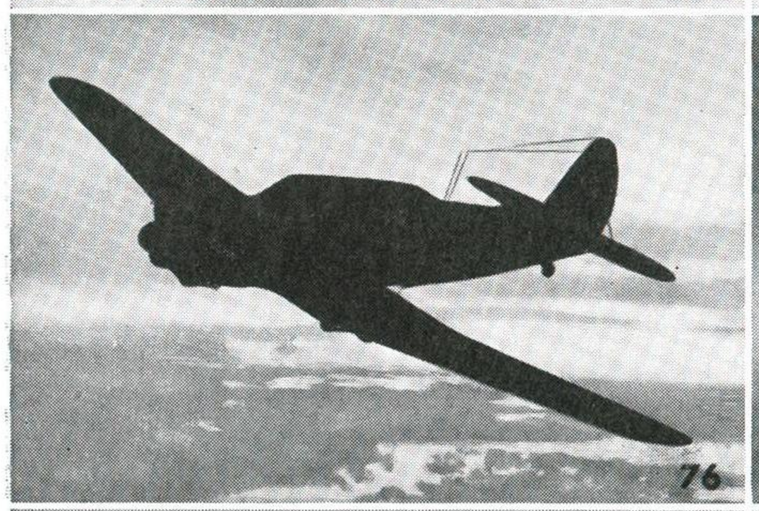

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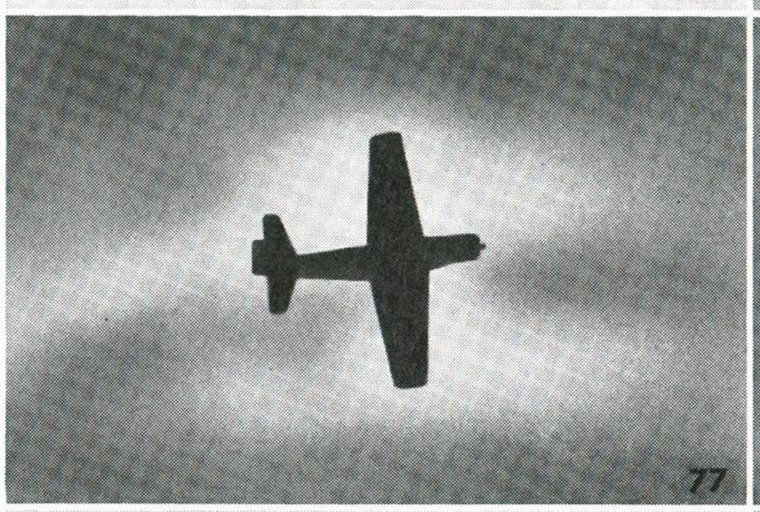

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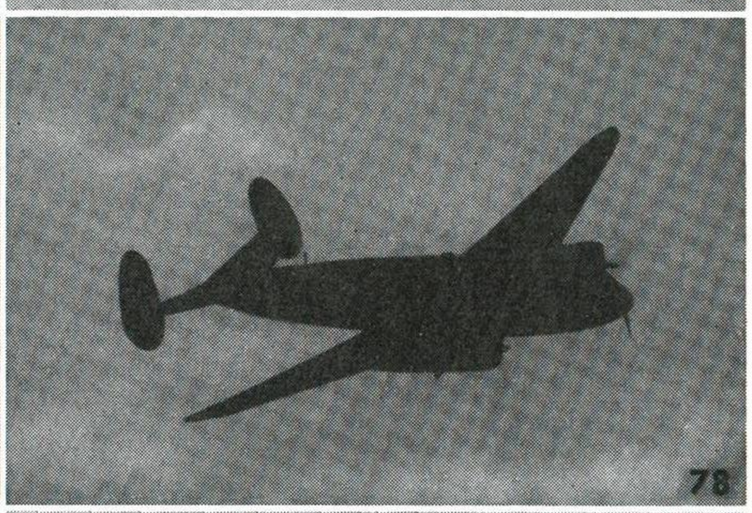

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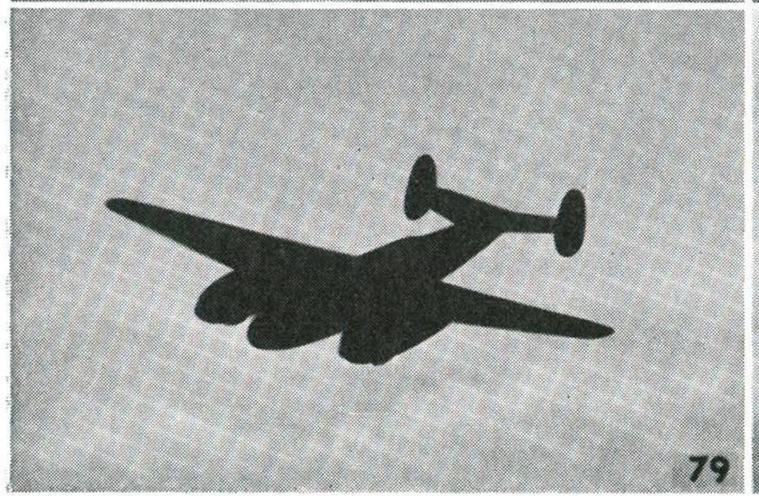

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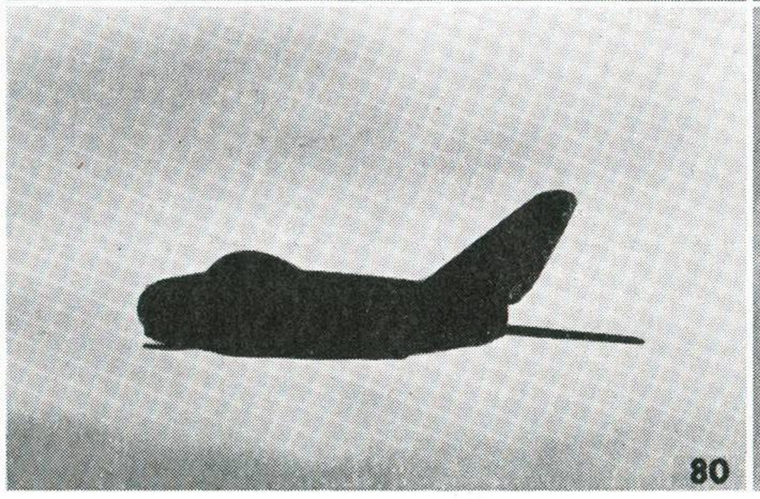

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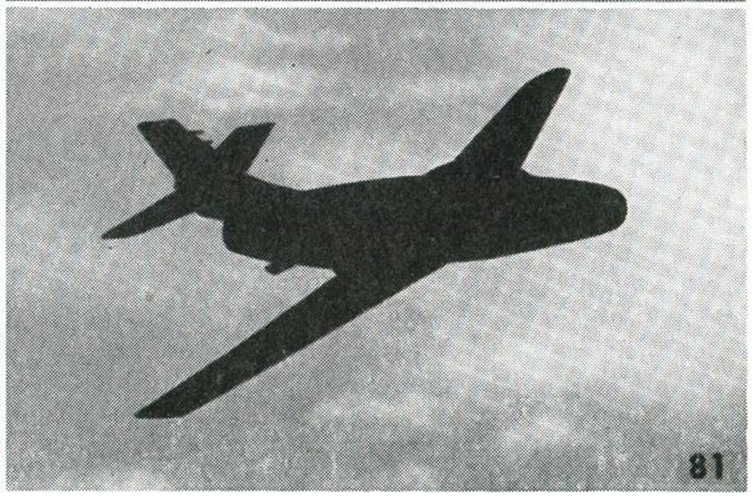

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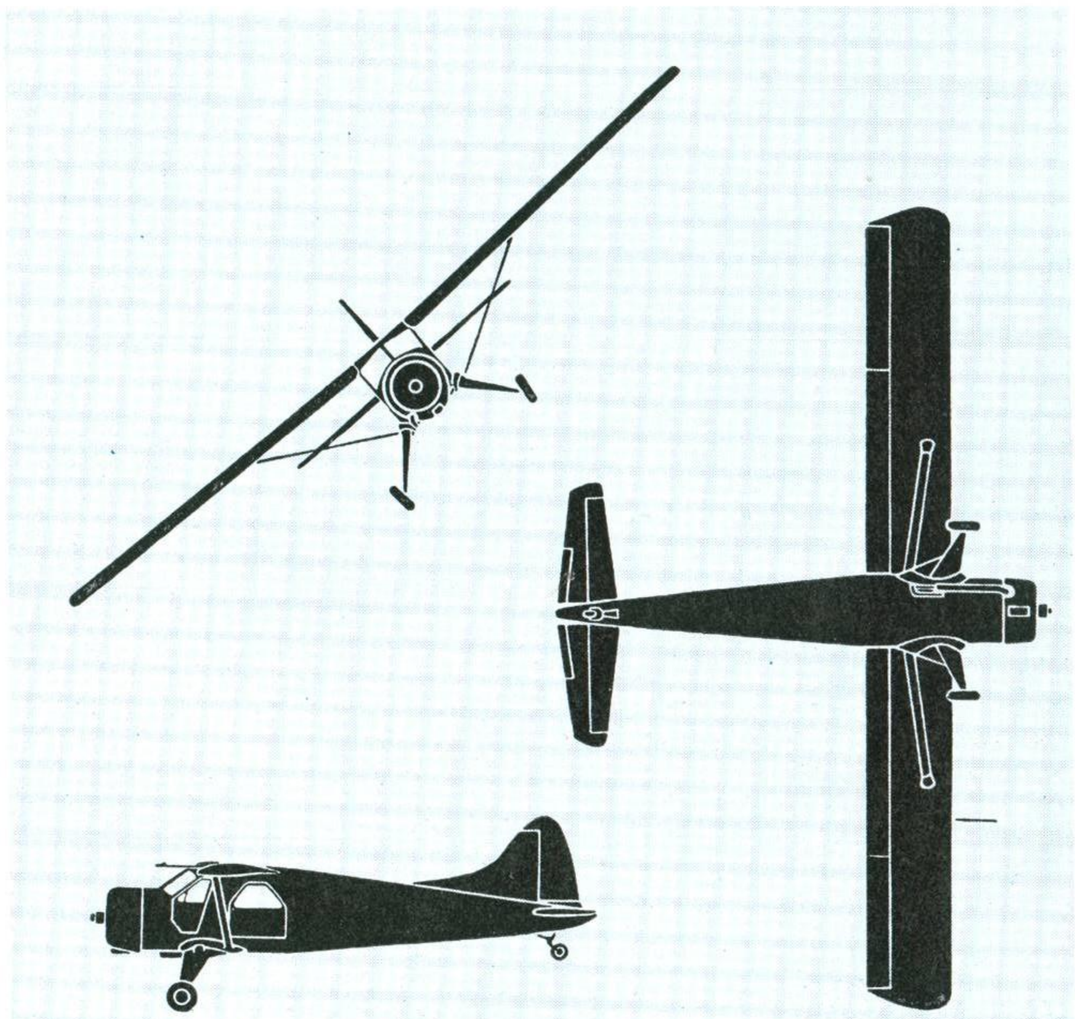

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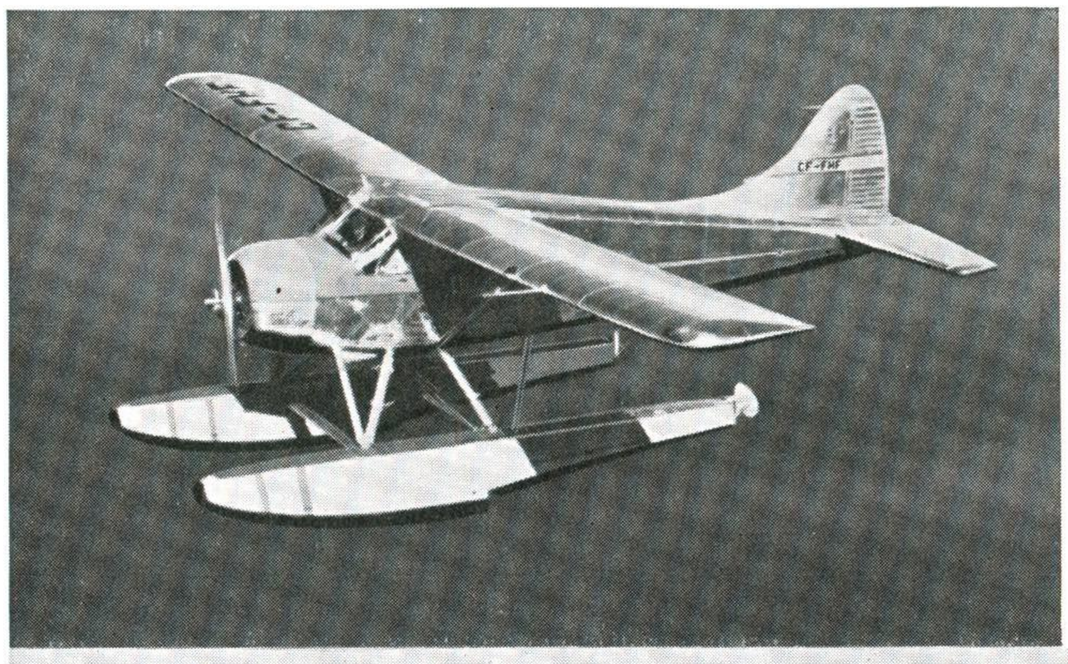
SILLOGRAPHS

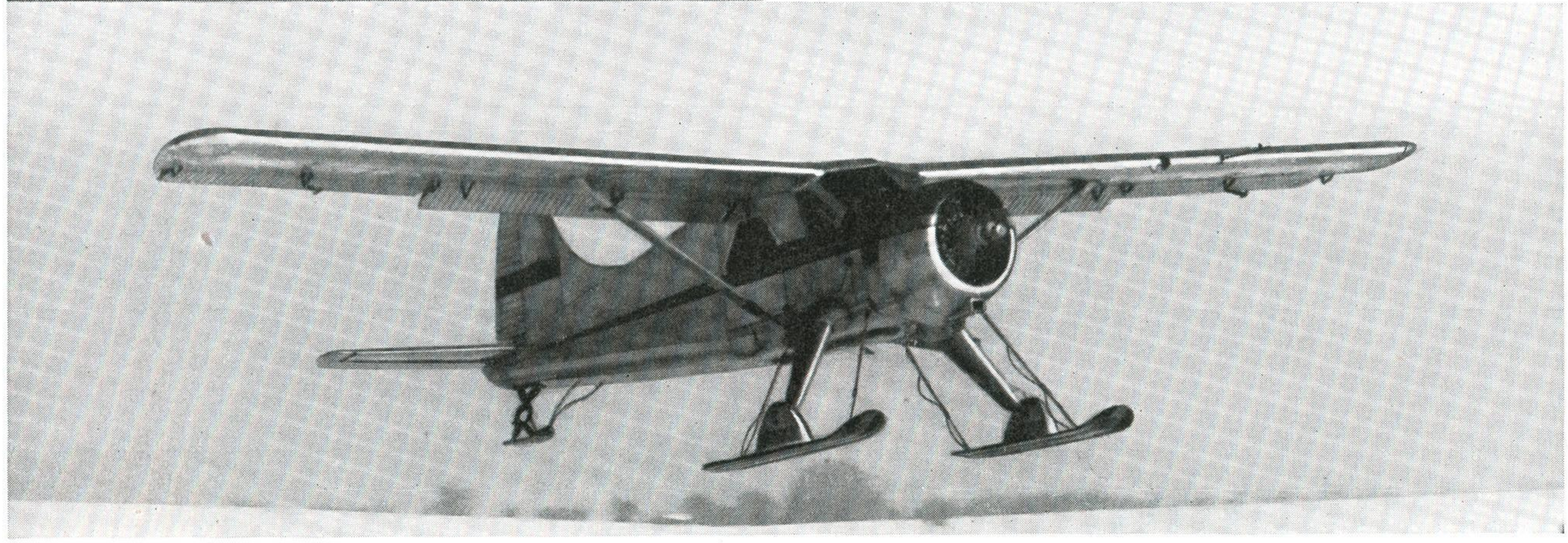
BEAVERS IN SERVICE



These views of the three versions of this high-winged, snub-nosed, slab-sided, utility transport, now in military and civil service, speak clearly of its prospective preoccupations. Distinctive shapes include its inherited fin, "beaver-board" wing and a fixed undercarriage. The U.S.A.F. wheeled version is called the L-20. The De Havilland DHC-2 Beaver has a Pratt & Whitney radial engine. Wing span : 48 ft.









Terminological Inexactitudes

We have been called to account over the differences between the B-50B and the B-50D. The main external differences—which are very small—between these two versions of the Superfortress are in the details of the perspex nose structure, which render it practically impossible to tell a "B" from a "D." The B-50D has an optically flat bomb aimer's panel and is minus certain paneling struts. Both may wear wing tanks, as may the RB-50B. It is sometimes possible to identify an RB-50B reconnaissance version, however, by the extra blisters growing on the underside of the rear fuselage. Illustrations 2 and 4 on page 106, May *Journal*, which are described on the rear cover as B-50D's are, as their blisters happen to show, RB-50B's. Spotting shots 16 and 127 on pages 111 and 117 respectively are correctly identified in the solutions as RB-50B's. But not to worry chaps! Most needs ought to be satisfied if the B-50 can be identified simply as a B-50.

New Recognition Material

LARGE SILHOUETTES

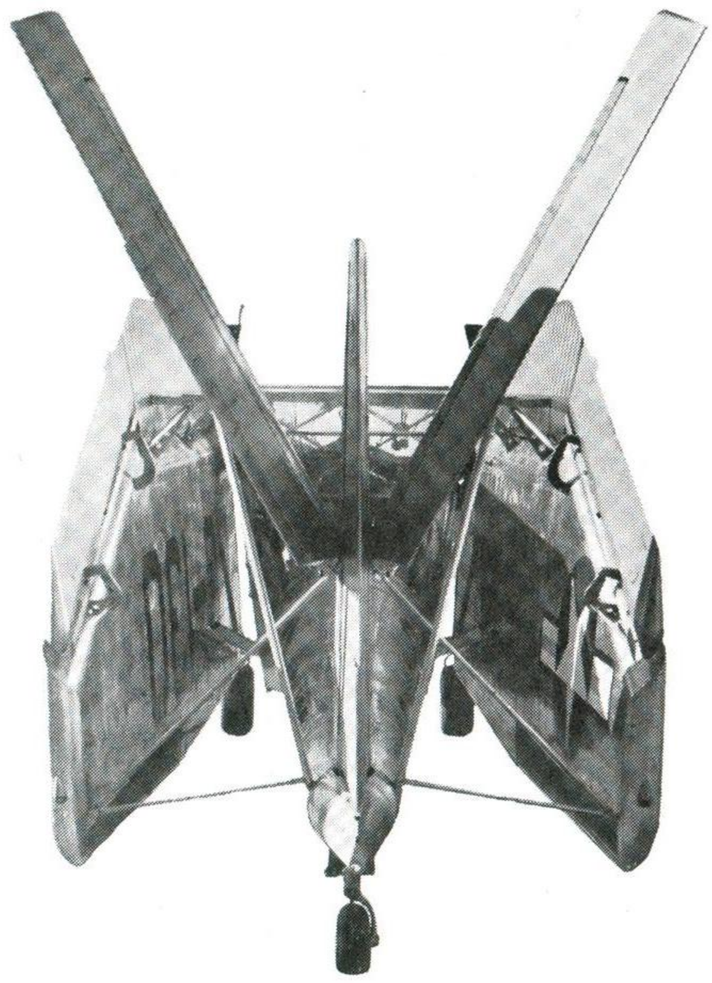
A.D. 4775 F-86A Sabre
5189 B-36D

Errata

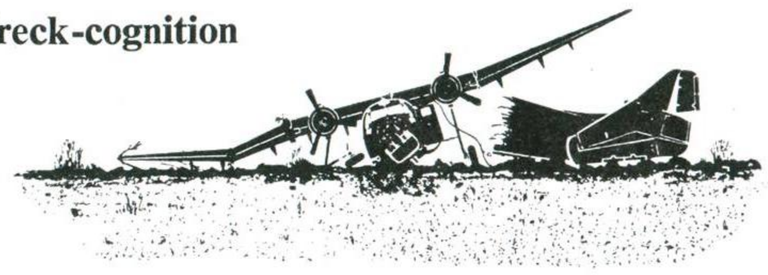
May *Journal* p. 120, Elementary No. 5 read Athena T Mk.2, June *Journal* p. 143, Douglas DC-4 read Douglas DC-6, July *Journal* p. 168, Tank Test Nos. 7, 14 and 17 read Cromwell (British).

What the "L"

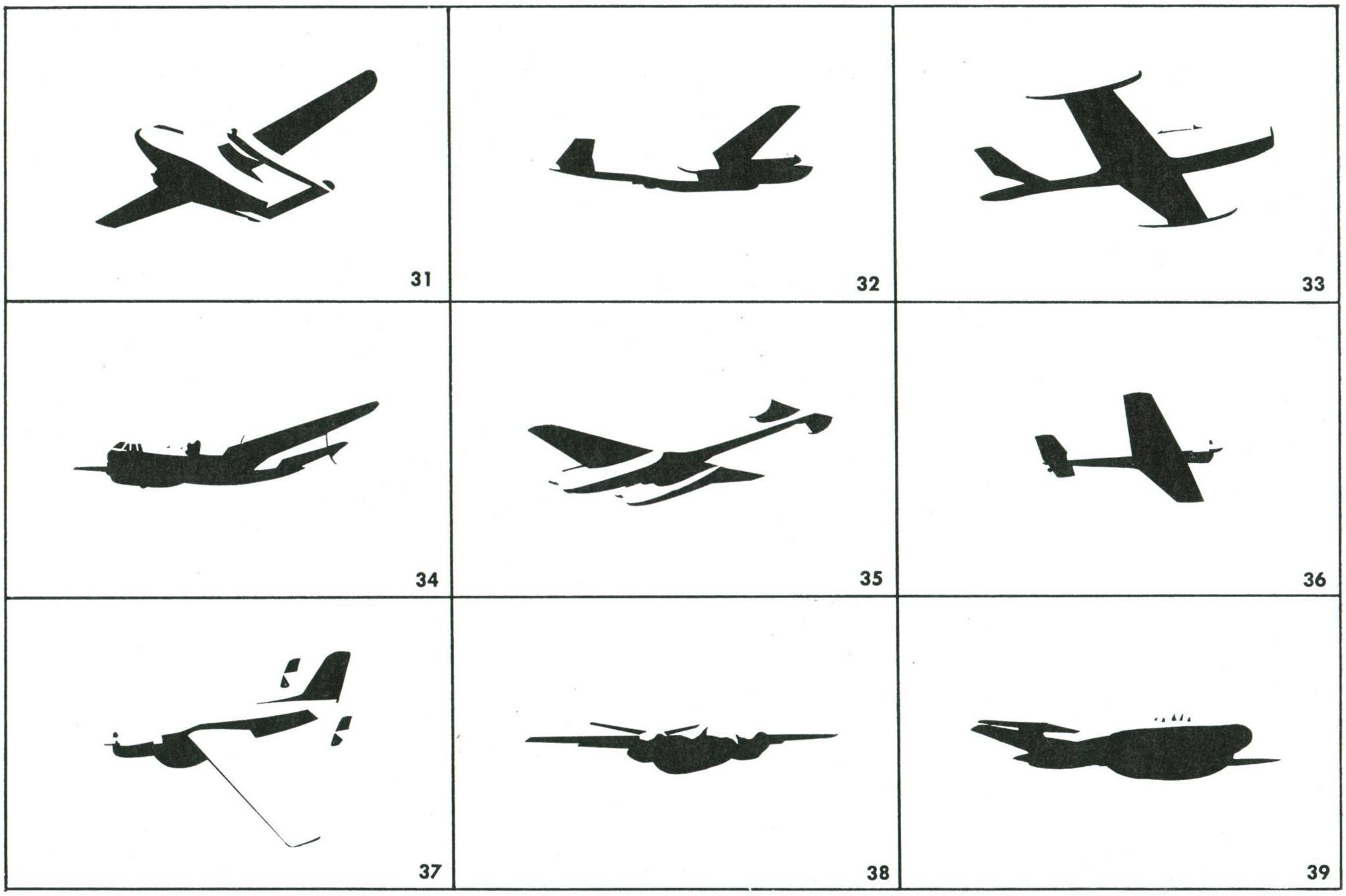
An unusual mess for an aeroplane to get into deliberately. It is in fact an L-13 trussed for transport in the belly of a Packet.



Wreck-cognition

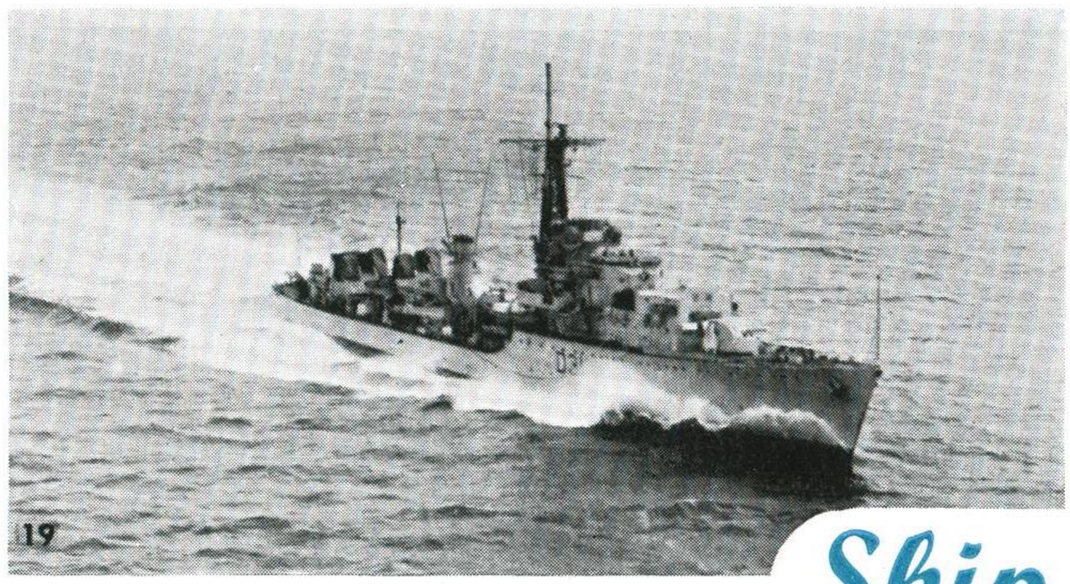


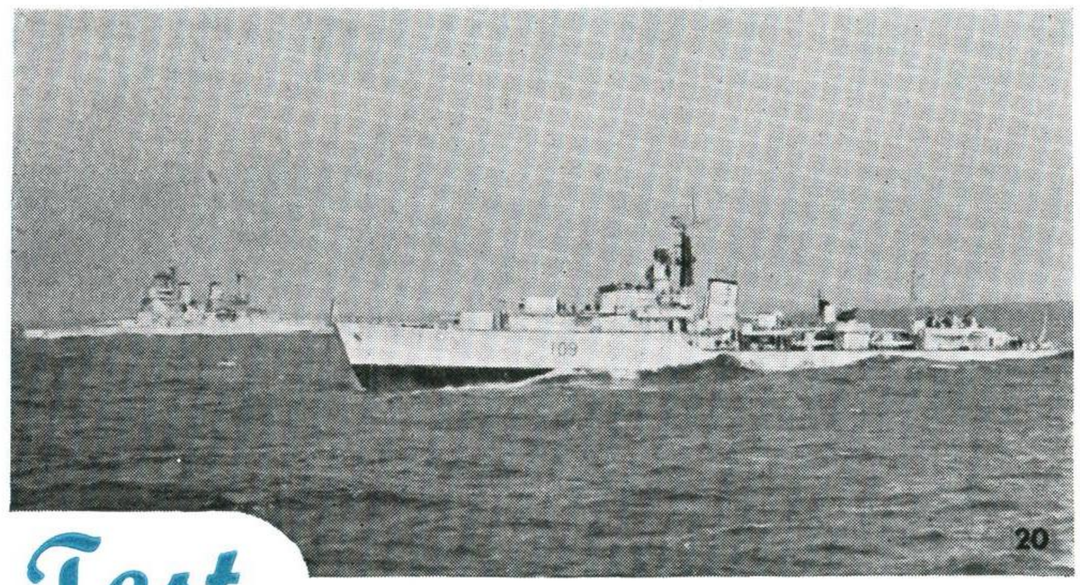
(Answer on rear cover)



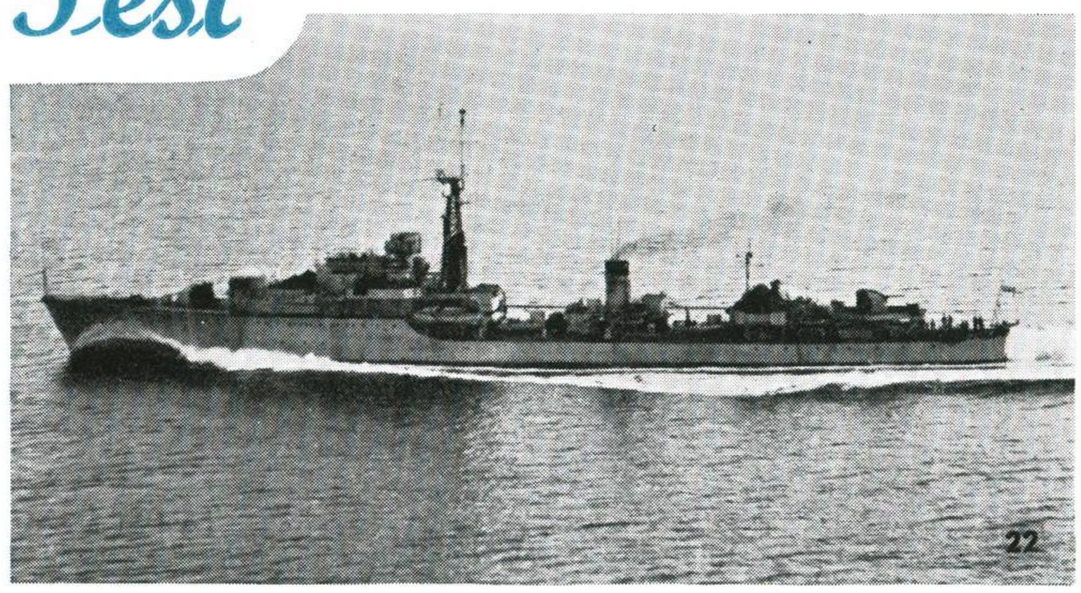
SEMI-SILLOGRAPHS

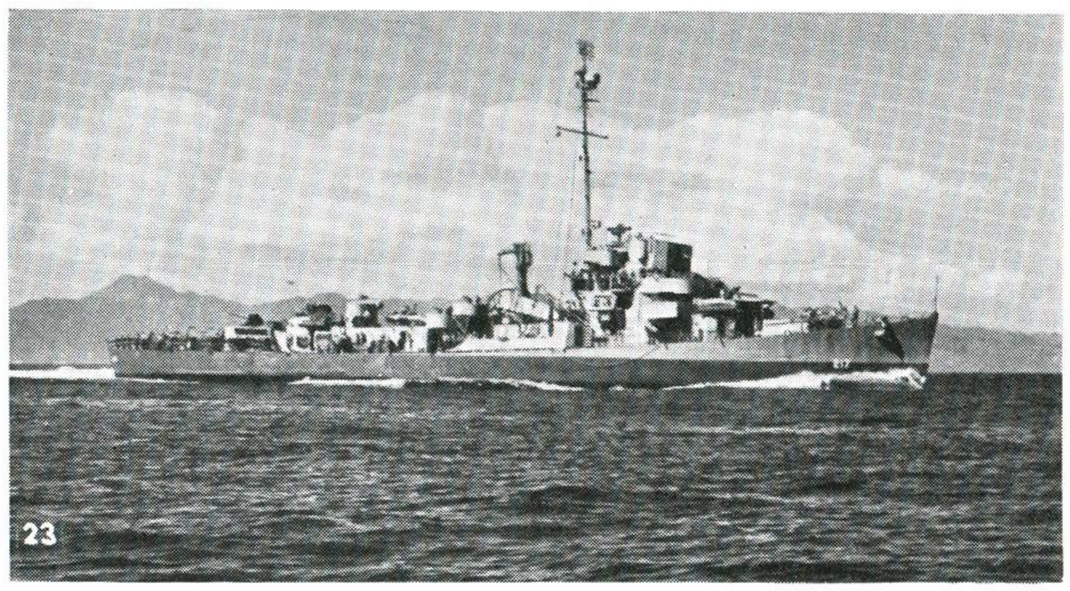
Ship Test

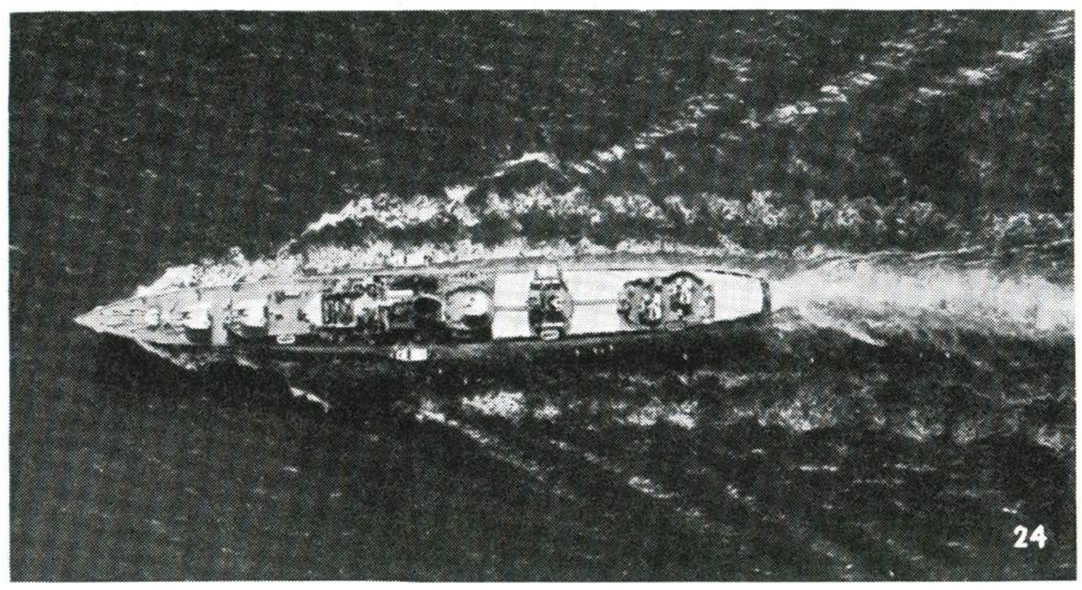

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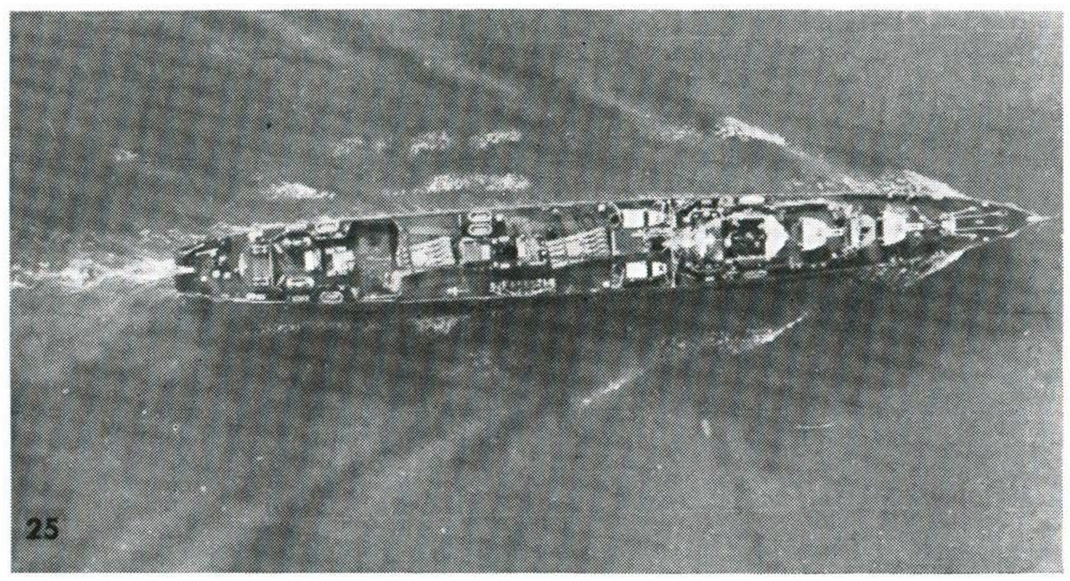

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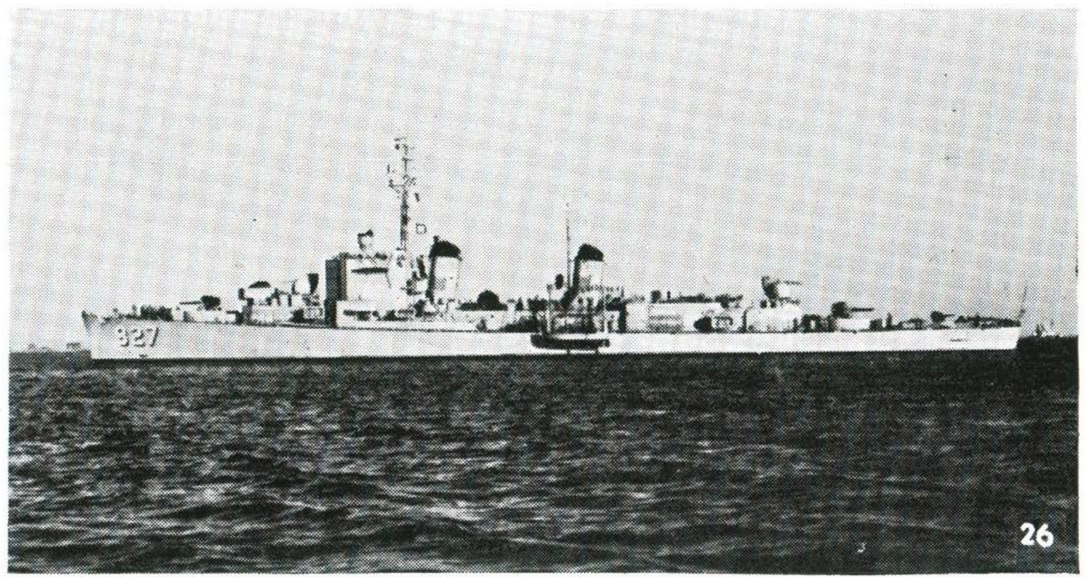

21


22

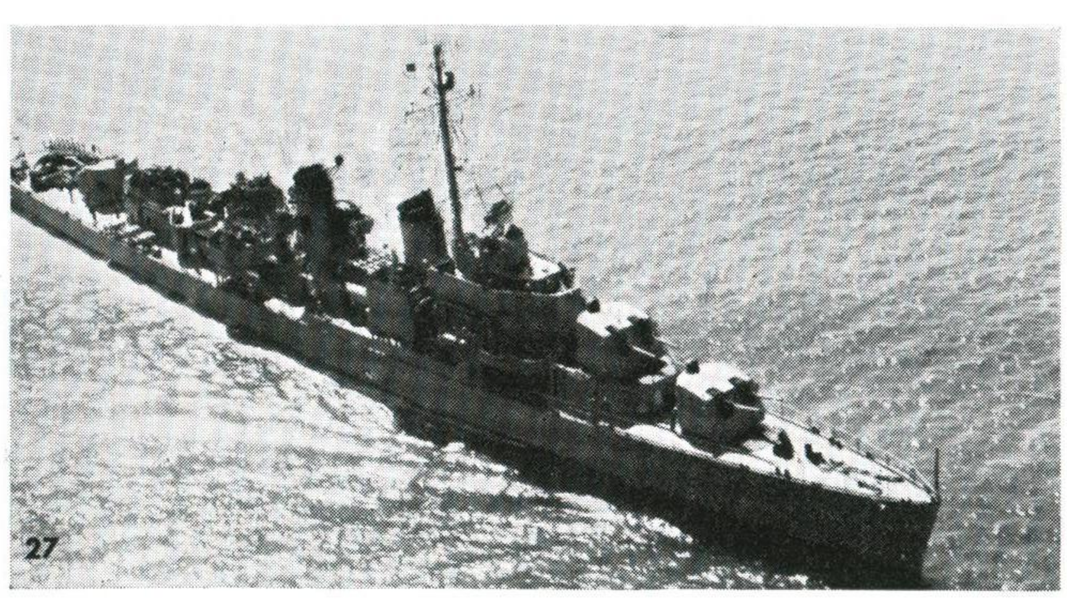

23

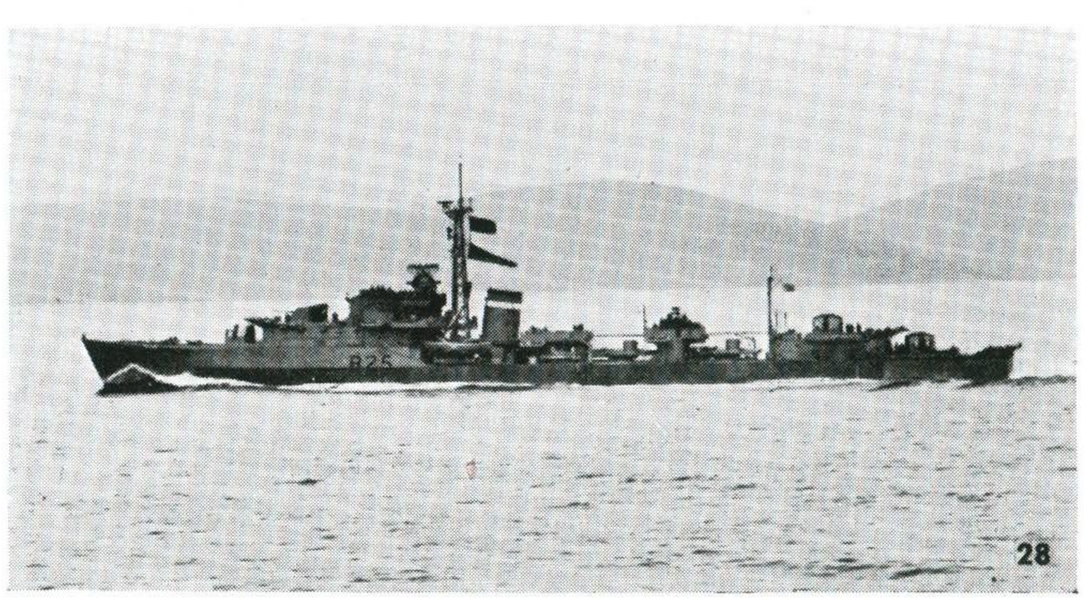

24


25



26

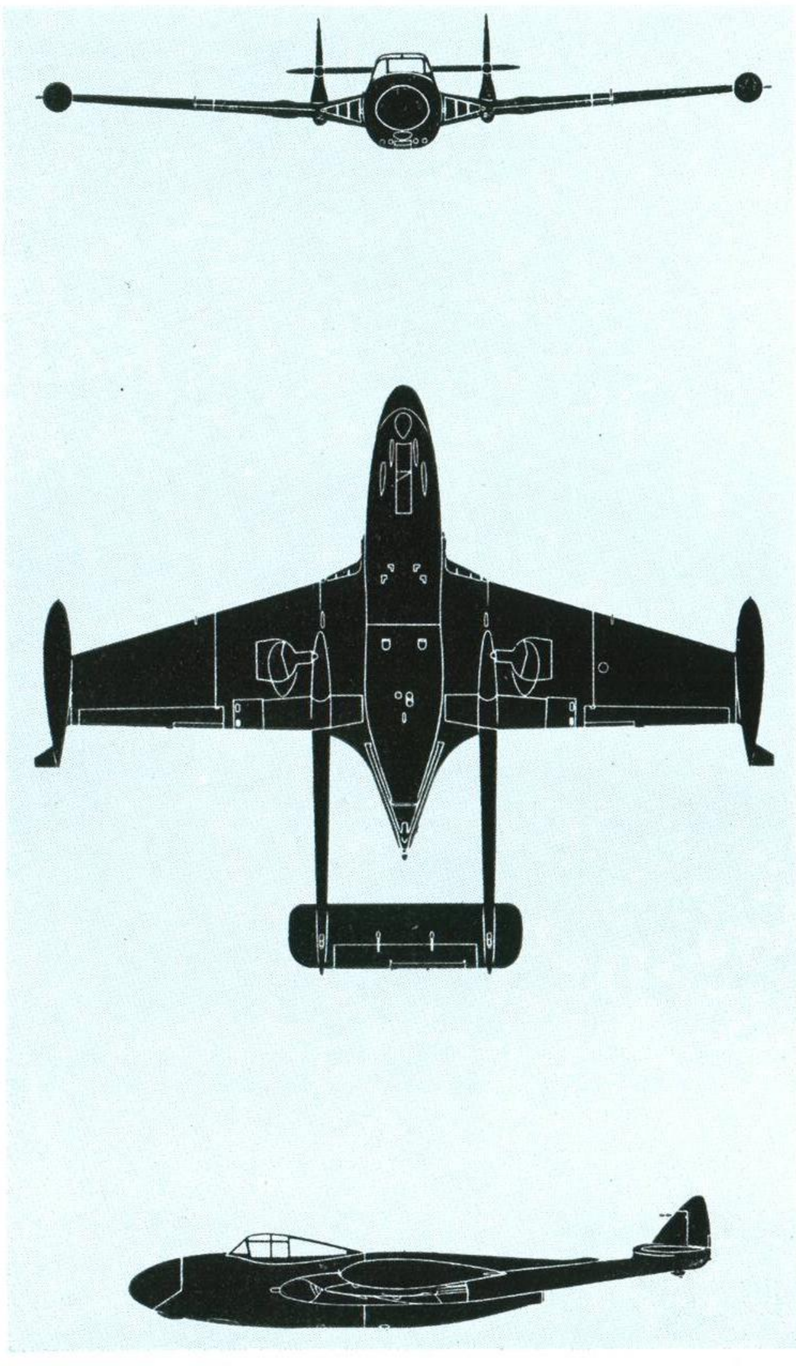

27



28

SEA VENOM 20 IN PRODUCTION

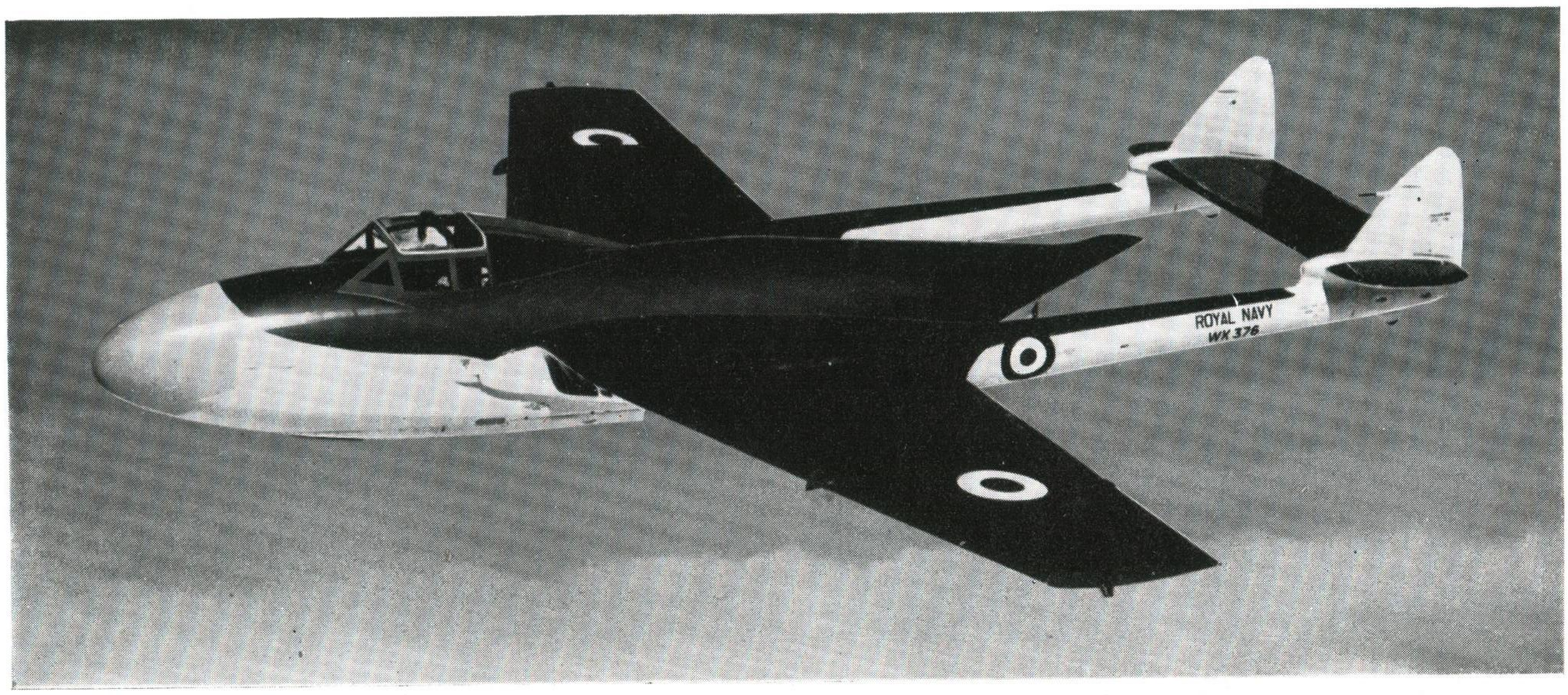




This all-weather day and night fighter is in production for the Royal Navy. Of Vampire "pod and boom" style, it combines nose radar, larger cockpit, and deck-hook in a lengthened fuselage which juts far ahead of the wing and almost spikes the tailplane behind. Aside from the deck-hook and fairing, the aircraft is similar in all other respects to the R.A.F.'s Venom NF Mk. 2. Top camouflage on this version produces the impression that the aeroplane is wearing a tail-coat.

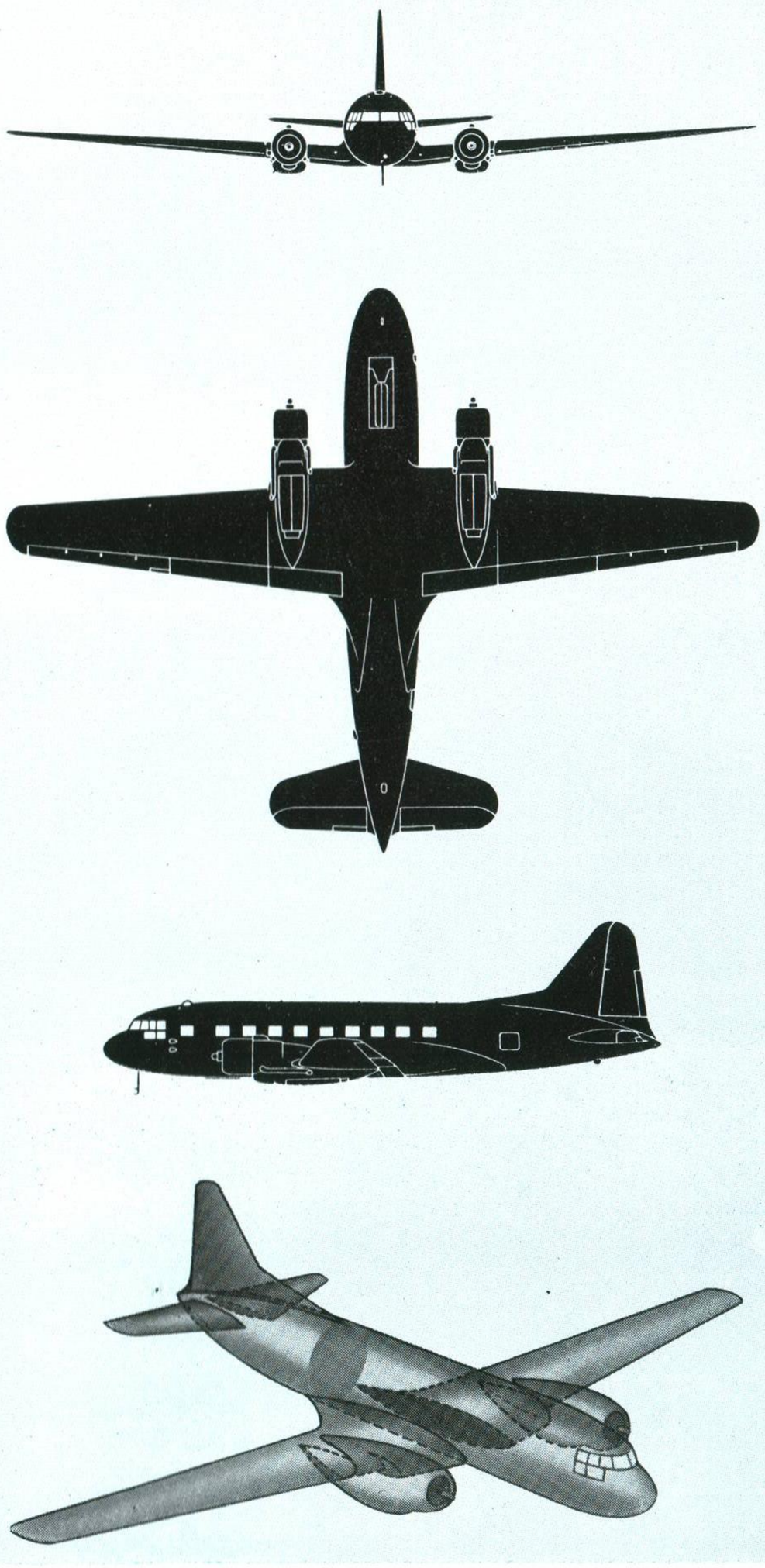
Technical Data:

Span: 41 ft. 9 ins. Length: 33 ft. 7 ins. Engine: One D.H. Ghost.
Armanent: 4 20 mm. cannon. No performance data available.



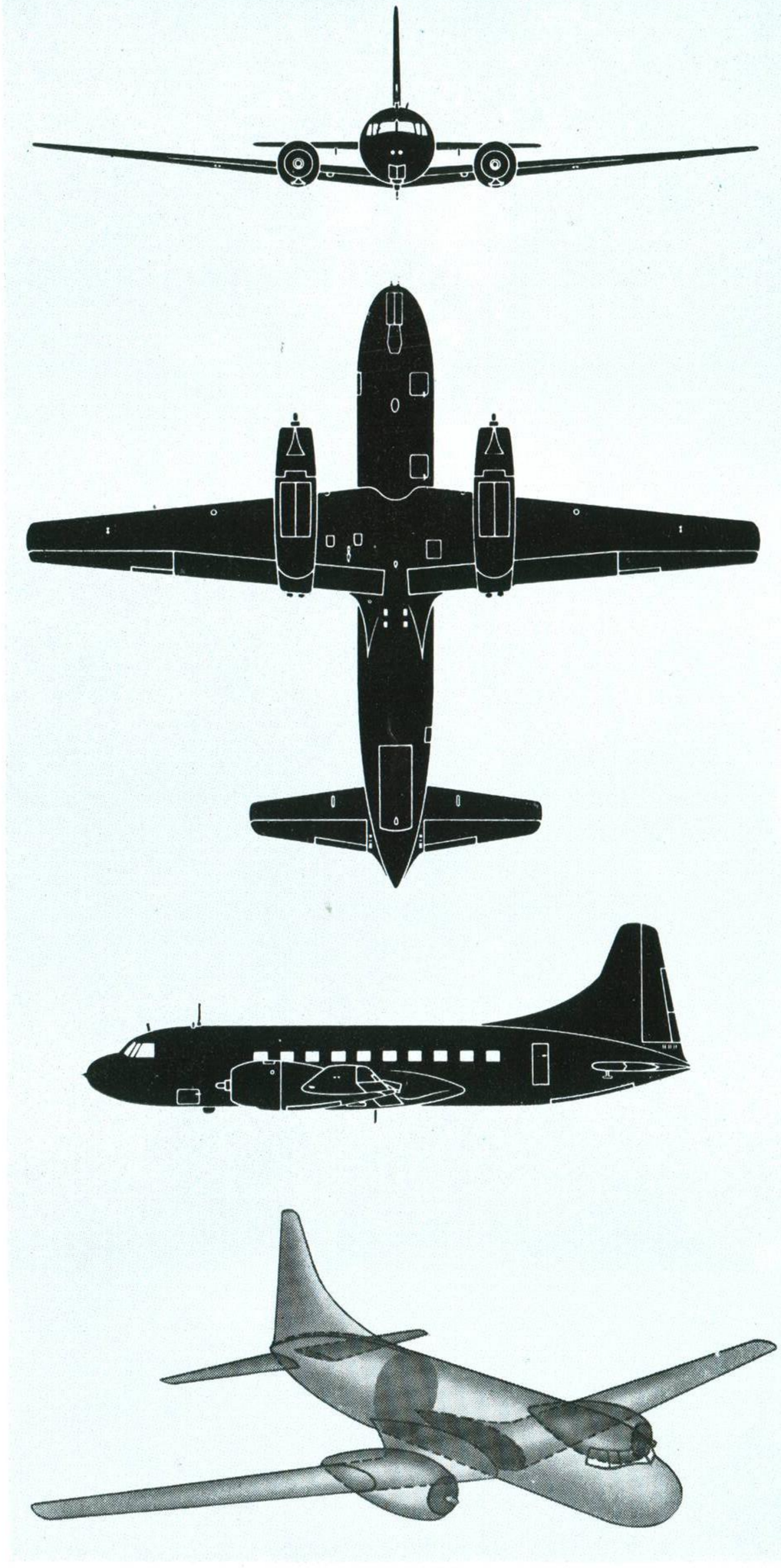
SILHOUETTE TO SOLID

IL-12



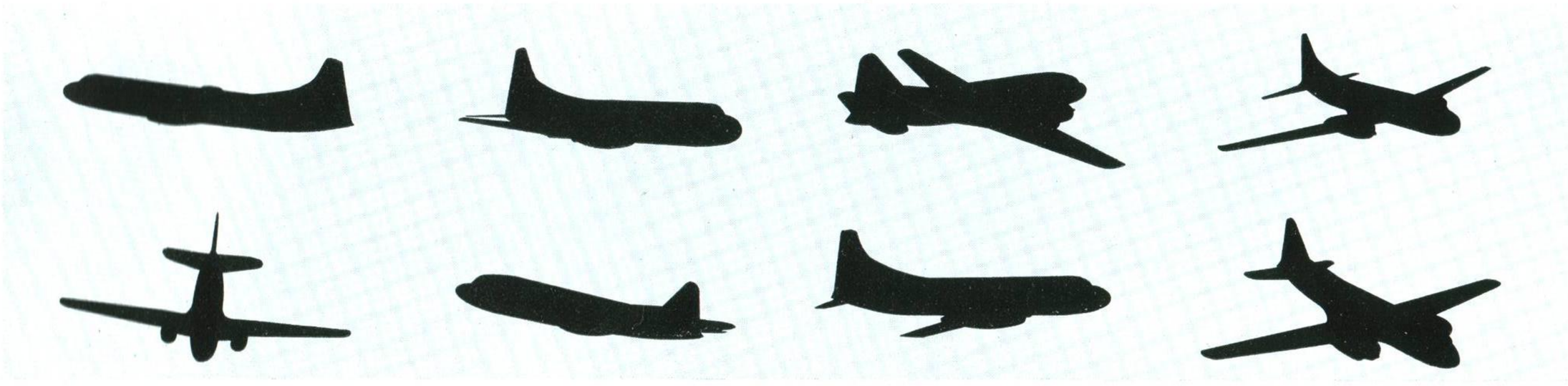
Span: 100 ft. Length: 74 ft. 3 ins.

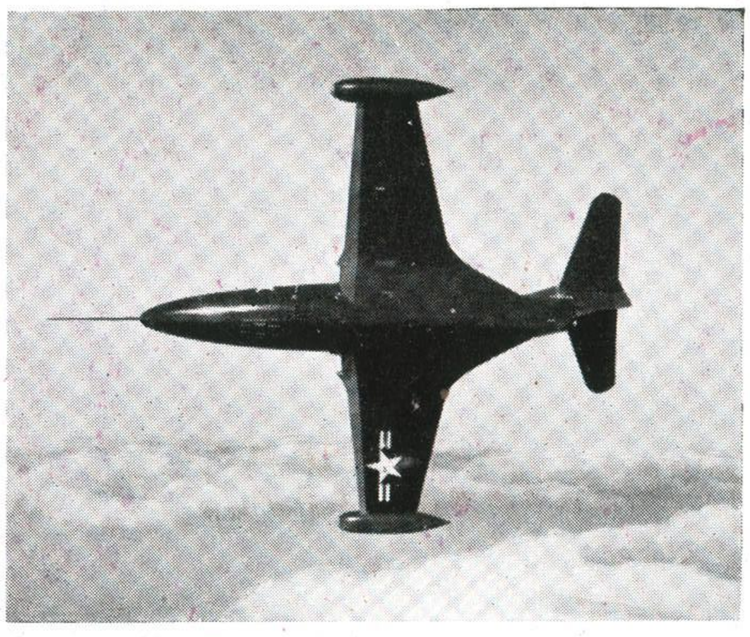
CONVAIR-LINER



Span : 91 ft. 9 ins. Length : 74 ft. 8 ins.

Solve these Sillographs with the aid of the diagrams above (Answers on rear cover)





Cover Photo: The Grumman F9F-5 Panther. The main visible difference between this version and the earlier productions is in the shape of the summit of the fin. See illustrations below.



SHIP TEST (DESTROYERS)

19 British Weapon Class
20 British Improved Battle Class (KG V in background)
21 American Allen M. Sumner Class
22 British Weapon Class
23 American Buckley Class
24 British Improved Battle Class
25 British Weapon Class
26 American Carpenter Class
27 American Allen M. Sumner Class
28 British " C " Group " CA " Class

IL-12 and CONVAIR-LINER SILLOGRAPHS

Top: Convair-Liner, Convair-Liner, IL-12, Convair-Liner.
Bottom: IL-12, IL-12, Convair-Liner, IL-12.

SOLUTIONS TO RECOGNITION TESTS IN THIS EDITION:

If you are unable to recognise any ship, tank or aircraft shape in the test illustrations, try to identify it with the aid of silhouettes or other illustrations before checking with the lists below.

ELEMENTARY

55 F7U-1 Cutlass
56 Balliol T Mk.2
57 FJ-1 Fury
58 B-26 Invader
59 Attacker F Mk.1
60 Seafire F Mk.17
61 RB-45C Tornado
62 CF-100 Canuck
63 P4M-1 Mercator
64 Lockheed F-94C
65 Ambassador
66 Firefly FR Mk.4
67 AF-2W Guardian
68 C-123 Avitruc
69 F-86D Sabre
70 Harvard T Mk.2
71 Dragon Rapide
72 Canberra B Mk.2

ADVANCED

178 YAK-15 modified
179 F-80A Shooting Star
180 F-84E Thunderjet
181 MIG-15
182 Canberra B Mk.2
183 SE 161 Languedoc
184 F-84 Thunderjet
185 AD-2 Skyraider
186 B-50D Superfortress
187 F9F-3 Panther
188 AM-1 Mauler
189 MD 450 Ouragan
190 Gannet (Fairey 17)
191 UF-1 Albatross
192 PE-2
193 BR-45C Tornado
194 FJ-1 Fury
195 Balliol T Mk.2

SILLOGRAPHS

64 SE 161 Languedoc
65 Canberra B Mk.2
66 Gannet (Fairey 17)
67 B-45 Tornado
68 C-54 Skymaster
69 Saab J 29
70 LA Jet
71 PE-2
72 P4M-1 Mercator
73 Venom NF Mk.2
74 Tempest FB Mk.6
75 Republic F-84F
76 YAK-18
77 AD-2 Skyraider
78 SO 30P Bretagne
79 TU-2
80 MIG-15
81 MD 450 Ouragan

LIGHT TYPES

1 Motor Tutor
2 Auster Avis
3 Tiger Moth
4 Hawker Cygnet
5 Zaunkönig
6 Traveller (Beech 17)
7 Fairey Primer
8 L-17 Navion
9 Proctor 5
10 Super Ace
11 Hornet Moth
12 B.A.C. Drone
13 Fokker Instructor
14 Bristol Fighter
15 SUC 10 Courlis
16 Beaver
17 Hirtenberg HS 9A
18 Auster Autocar
19 Miles Sparrowhawk
20 Beech Bonanza
21 Chipmunk T Mk.10
22 Stampe SV 4
23 Hawker Tomtit
24 Fairey Junior
25 Auster Autocrat
26 Gemini
27 Nord Norécrin
28 Mraz Sokol
29 Macchi MB308
30 Piper Cub
31 Auster AOP Mk.6
32 Skandinavisk KZ VII
33 Miles Mentor
34 Percival Q 6
35 Hawk Trainer 3
36 Auster AOP Mk.5
37 Blackburn B 2
38 Avro 504
39 Sentinel
40 Messenger
41 Piper Super Cruiser
42 Leopard Moth
43 Aerovan 6
44 SIPA S 111
45 Ercoupe

'SINGLE (Radial) TYPE' TUTOR

1 Mauler
2 Corsair
3 Seafury
4 Mauler
5 Mauler
6 Wyvern
7 Skyraider
8 LA-9
9 Wyvern
10 LA-9
11 Seafury
12 Corsair
13 Skyraider
14 Wyvern
15 Corsair
16 Mauler
17 Skyraider
18 Seafury
19 Mauler
20 Corsair
21 LA-9
22 Skyraider
23 Seafury
24 LA-9
25 Seafury
26 Skyraider
27 Skyraider
28 Wyvern
29 Corsair
30 Wyvern
31 Seafury
32 Mauler
33 Seafury
34 Mauler
35 LA-9
36 Corsair
37 Seafury
38 Seafury
39 Skyraider
40 Mauler
41 LA-9
42 Wyvern
43 Corsair
44 Skyraider
45 LA-9
46 Mauler
47 LA-9
48 Corsair
49 Skyraider
50 Wyvern
51 Seafury
52 Mauler

SEMI-SILLOGRAPHS

31 C-119 Packet
32 B-26 Invader
33 F-84 Thunderjet
34 SO 30P Bretagne
35 PE-2
36 P 56 Provost
37 AF-3W Guardian
38 AJ-1 Savage
39 Meteor NF Mk.11

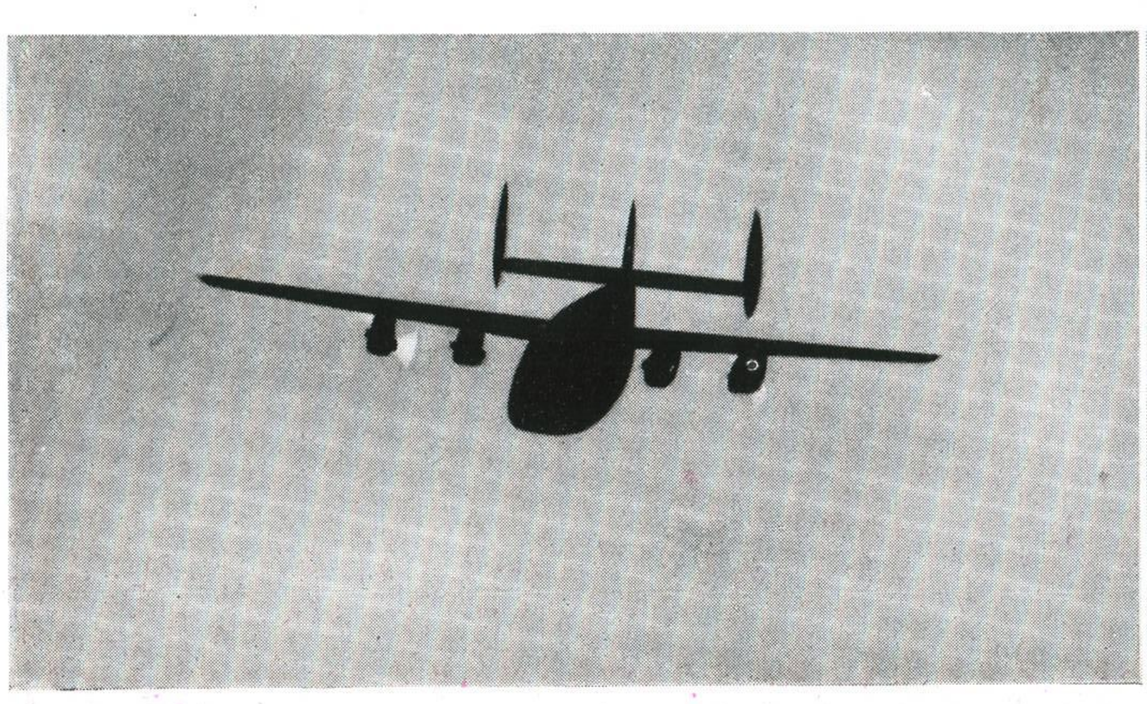
PERPLEXING PAIR

Left: Marathon, right: York.

WRECK-COGNITION

Northrop C-125 Raider

PERPLEXING PAIR





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