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JOINT SERVICES

RECOGNITION *Journal*



Vol. 22 APRIL 1967 No. 4

HARKE

Since the lesson on the Soviet flying crane helicopter Mi-10 Harke published in the April 1966 edition the Mi-10K has appeared.

This features several design changes including visual changes by reduction of landing gear height and an additional cockpit under the front fuselage to enable a second pilot to have an unrestricted view of the underslung load.



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JOINT SERVICES

RECOGNITION JOURNAL

The *Joint Services Recognition Journal* is a monthly publication produced by the Directorate of Flying Training (R.A.F.), Ministry of Defence, and prepared in collaboration with the Admiralty Board, the Army Department and the Ministry of Technology. Applications for copies can only be accepted from the Services or other official bodies, and must be submitted through the normal official publications supply channels—**not** to the Editorial Office or direct to the Ministry of Defence.

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* *Identification Lessons*

Commands of the Royal Air Force—

FLYING TRAINING COMMAND

Military flying training in Britain began at Upavon in June, 1912, only two months after the Royal Flying Corps had been instituted by Royal Warrant. Today the Central Flying School, based at Little Rissington, is one of the key units within RAF Flying Training Command and still has responsibility for the standard of flying instruction throughout the RAF. Flying Training Command came into being in May, 1940.

Main Task

The main task of Flying Training Command is the production of pilots, navigators and air electronics aircrews. Trainees reach "wing" standard either through the Royal Air Force College, Cranwell, or by going to the various training schools in the Command. Flying Training Command is also responsible for University Air Squadron flying training and for training all Air Traffic Control personnel in the RAF.

Pilot training is first carried out on Chipmunk two-seat trainers and the Jet Provost, from which pupils pass on to the Gnat jet trainer, the Varsity, or helicopters according to the operational role for which they have been selected. Navigators are trained in "flying classrooms", the Varsity and Dominie.

The Command is organised into two groups, No. 23 Group, based at Linton-on-Ouse, in Yorkshire, is responsible for pilot training, and No. 25 Group, based at White Waltham, Berkshire, which has responsibility for the Initial Training School, the training of navigators, air electronics aircrew, air traffic controllers and the University Air Squadrons. The Command also has direct responsibility for the Central Flying School, the Royal Air Force College at Cranwell, and the Royal Air Force College of Air Warfare at Manby. The Officers and Aircrew Selection Centre at Biggin Hill, the RAF Staff College, at Bracknell, and the Cadet Training Organisation, the Headquarters of which is at White Waltham, are administratively controlled by HQ Flying Training Command.

RAF Flying Training Command, between 1940 and 1945, trained 100,000 aircrew in the United Kingdom, and in the 20 years from 1945 to 1965, 10,000 pilots and 5,000 navigators, air electronics officers and others were trained. For overseas Air Forces during that post-war period, the Command trained 650 pilots and 70 navigators.

Students selected to fly turbojet aircraft are posted to an advanced training school with Gnat aircraft. Those going to transport or maritime aircraft do a course of similar duration at an Advanced Flying Training School on Varsity aircraft. Potential helicopter pilots go to the Central Flying School, Helicopter Wing, at Tern Hill, Salop for a 22-week course during which 45 hours are flown on the Sioux and 55 hours on the Whirlwind. Before going to squadrons, pilots receive operational conversion training at an Operational Conversion Unit in whichever Command they are destined to join.

In addition to the requirement of the Royal Air Force, training commitments are undertaken for the Royal Navy. At Linton-on-Ouse, Yorks, basic training of naval students is given on Jet Provosts and there is a course on Chipmunks for those who will subsequently undertake helicopter training at a Royal Navy School.

Students of the 18 University Air Squadrons complete a three-year course on Chipmunks during which they fly about 120 hours and undertake ground studies and attend training camps whilst doing their university studies.

Navigator and other Training

From the OASC and the ITS, cadet navigators are posted to an Air Navigation school where they complete basic and advanced courses in parallel with the Flying Training Schools. The basic stage at RAF Gaydon, Warwickshire, lasts 32 weeks and includes flying in Valetta and Varsity aircraft. Cadet navigators are then "streamed", those selected for "high/fast" aircraft such as the medium bomber force, complete the advanced course on the twin-jet Dominie and those for the "low/slow" aircraft continue in the Varsity.

Trainees do not undergo identity training during their tours of duty. With so much to learn time is too limited. However, they will find no better way of training to identify aircraft ships and/or armoured fighting vehicles than the training "machinery" set out in the *Journal*, when the need arises or, perhaps we should say, before the need arises.

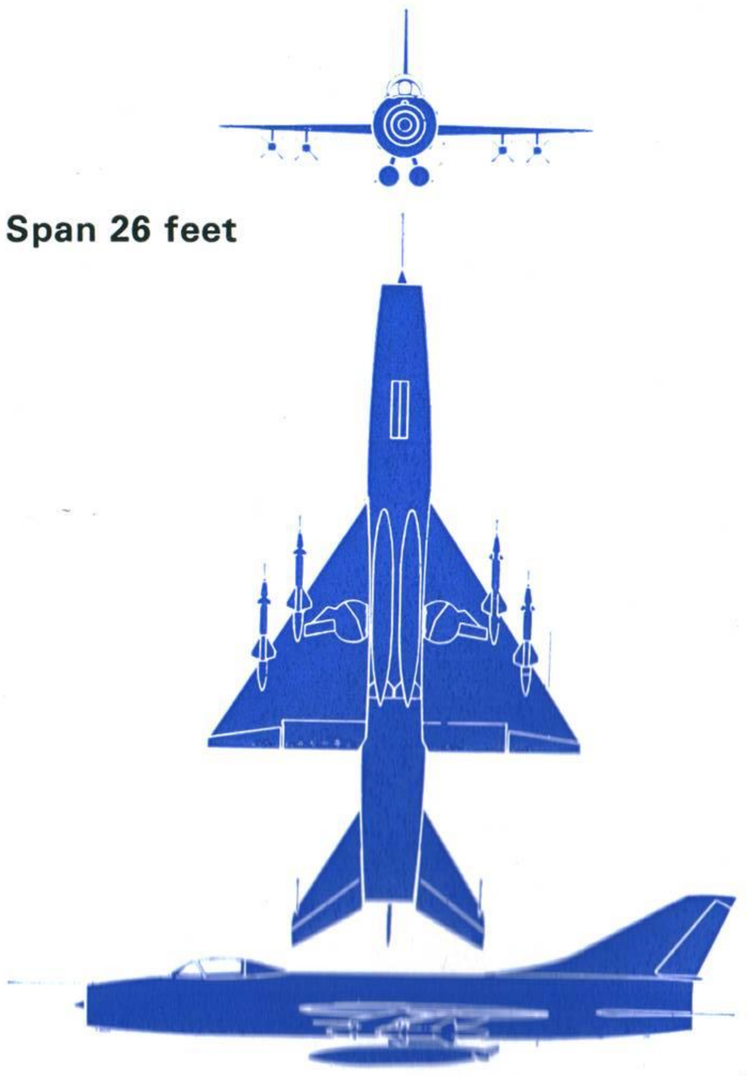
FISHPOTTERY

The Soviet fighter Fishpot has a remarkable similarity with the MiG-21 Fishbed and it appears to have a tail unit similar to that of the Fitter. For these reasons this lesson should be followed strictly in accordance with the instructions on page 91 and the two aircraft mentioned be dismissed from the mind while learning the Fishpot.

Fishpots can carry a variety of stores, including auxiliary fuel tanks, rocket pods and Alkali air-to-air missiles.

Note: The keen sighted will observe two small "knobs" behind the rudder post on some of these views. Later models of the aircraft have only one, centrally placed. This minute feature will not affect anyone's Fishpot identifying skill but it may prevent some from rushing hot-headed, hot-footed or even hot-handed into writing to the Editor.

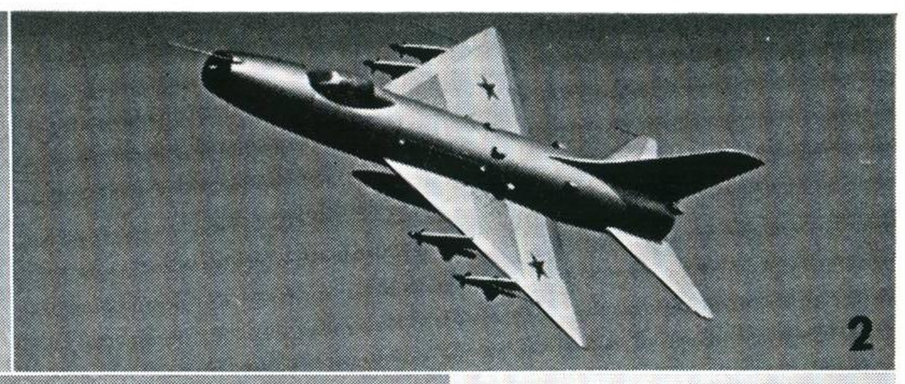
Work to lesson instructions on page 91

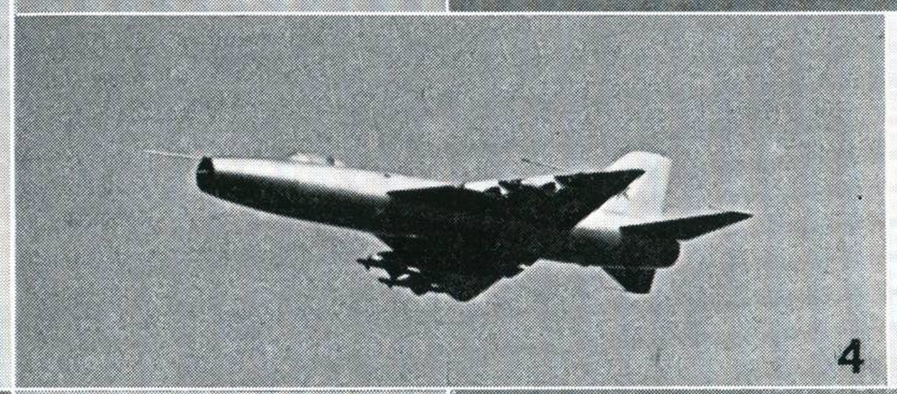


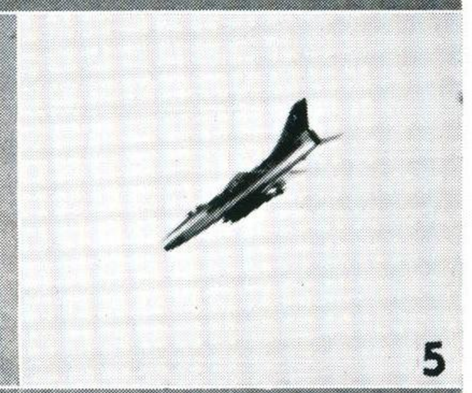
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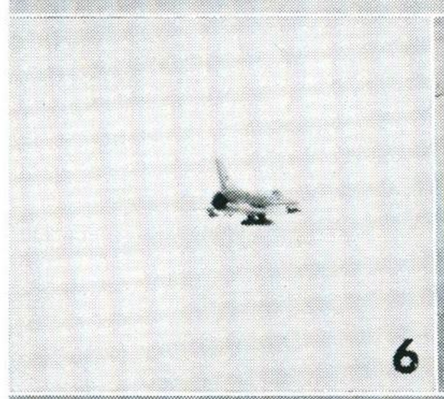

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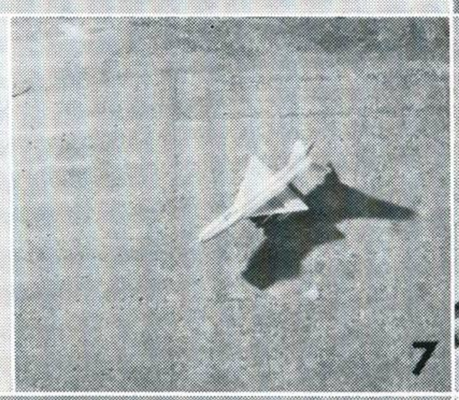

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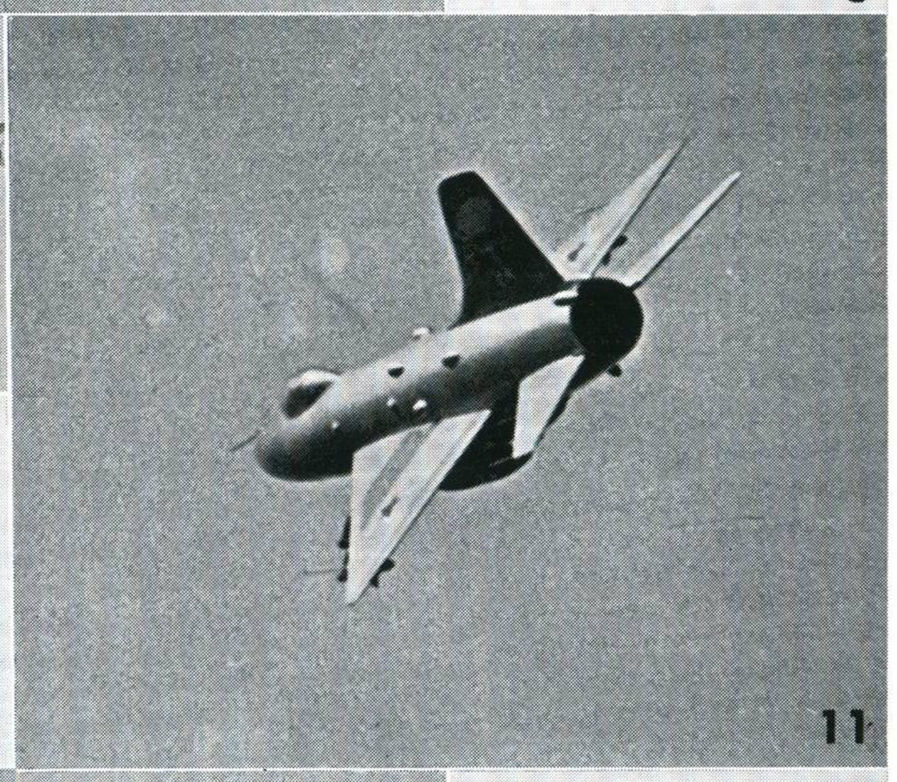

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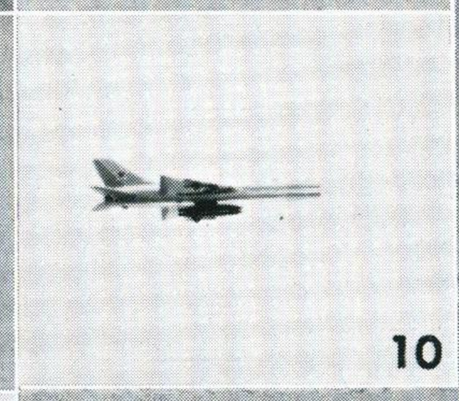

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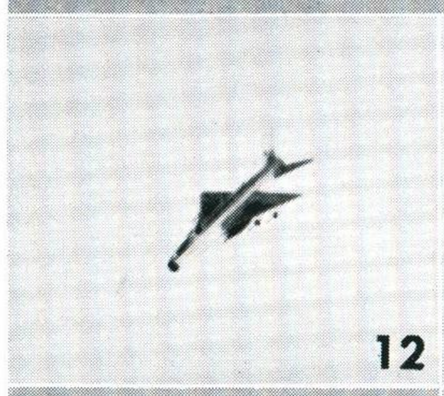

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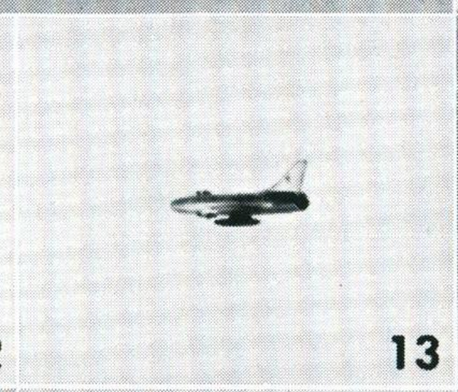

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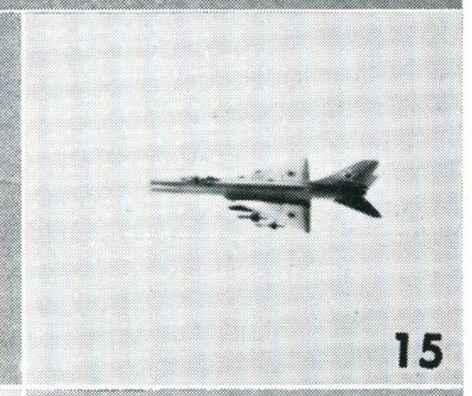

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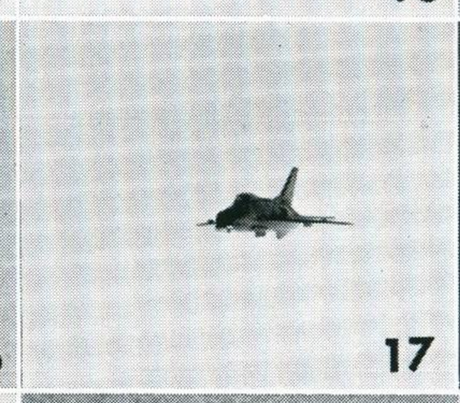

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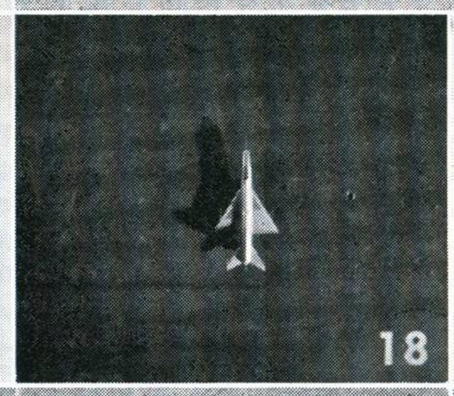

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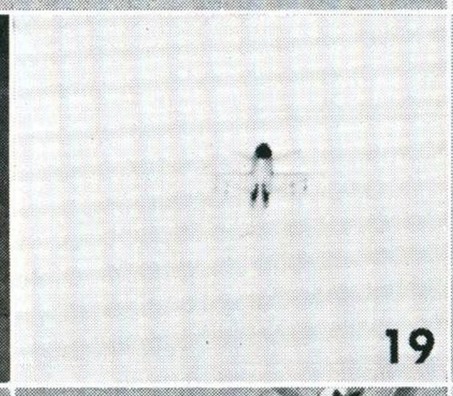

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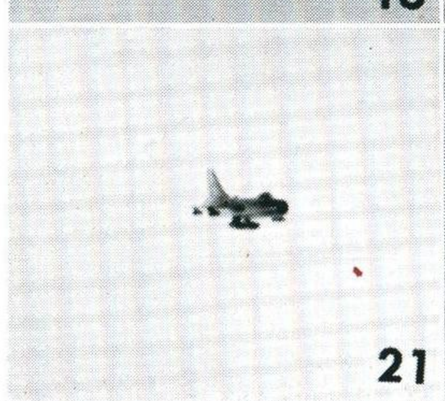

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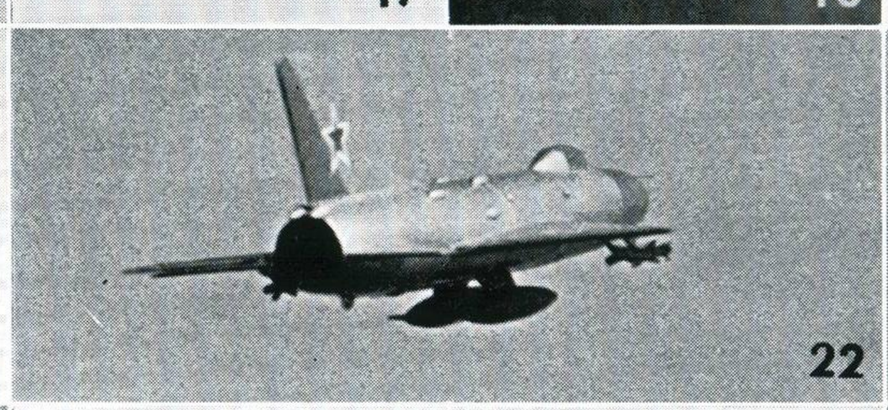

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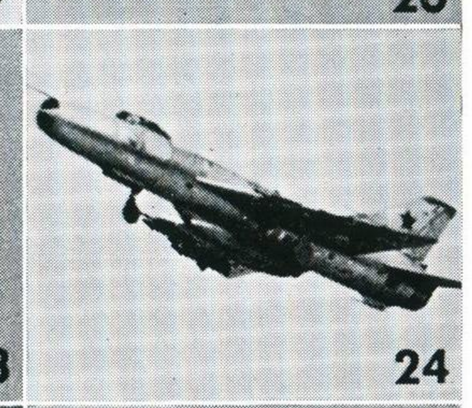

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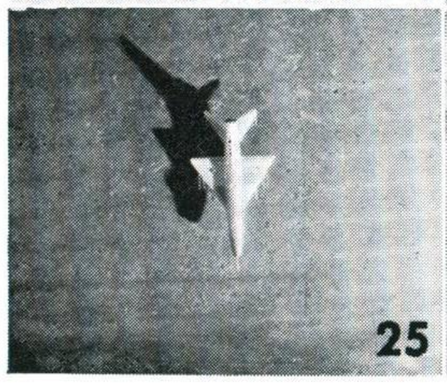

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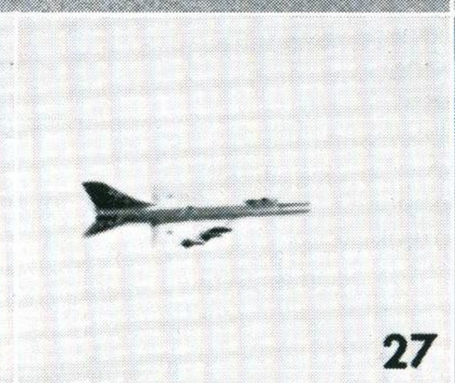

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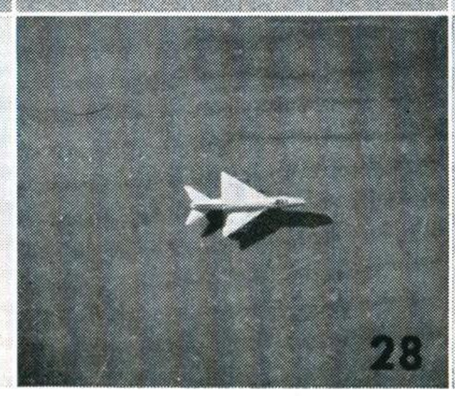

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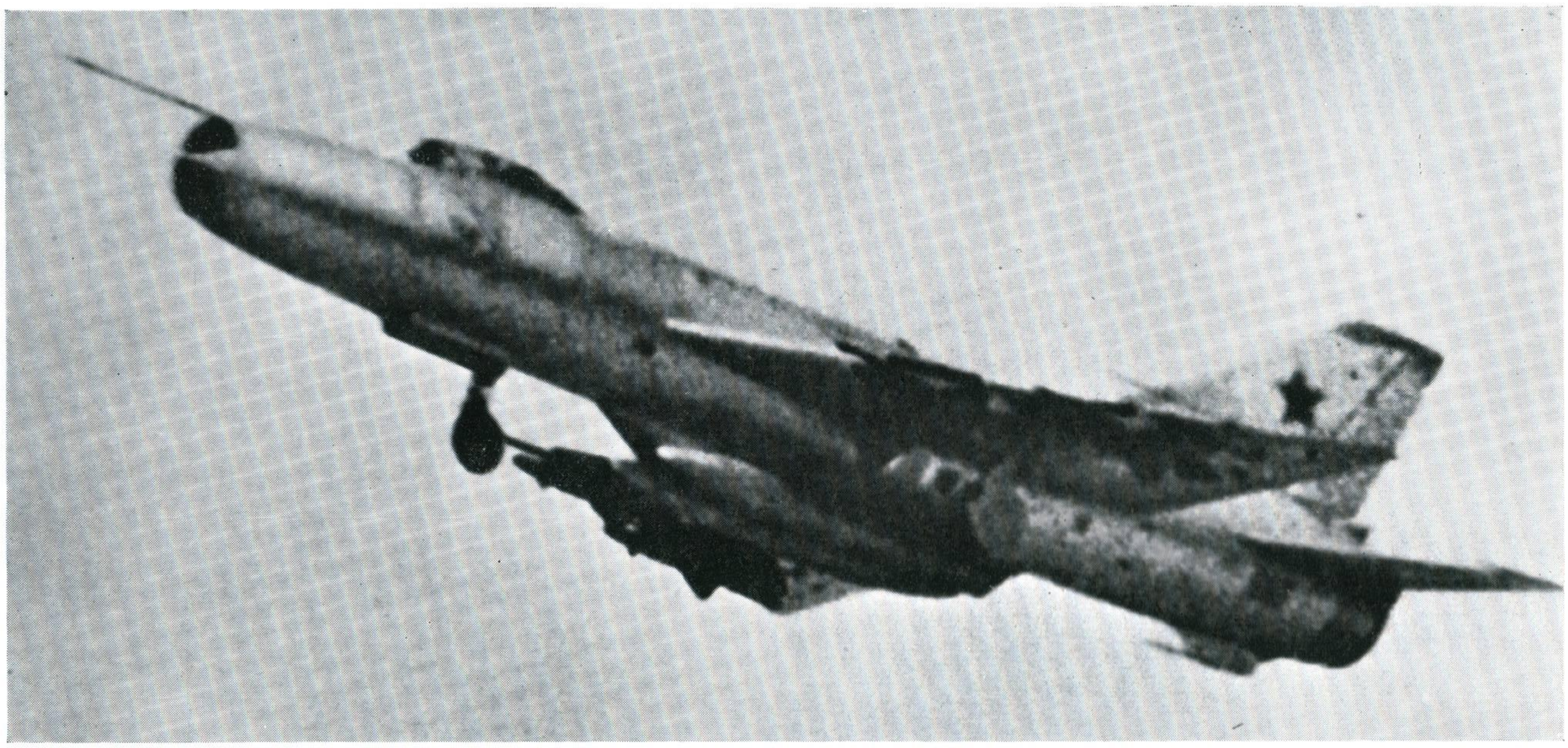

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continued overleaf



FISHPOTTERY *continued*


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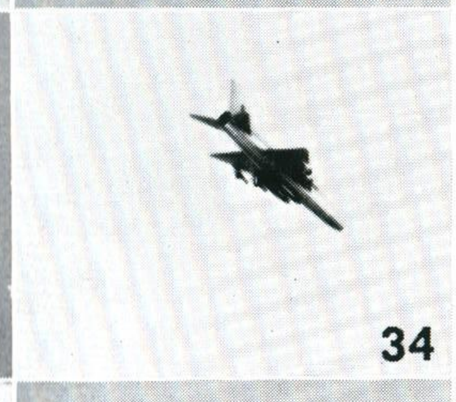

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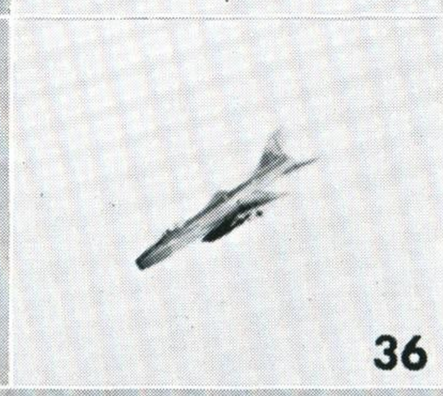

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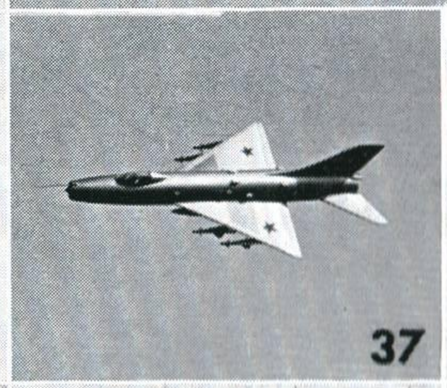

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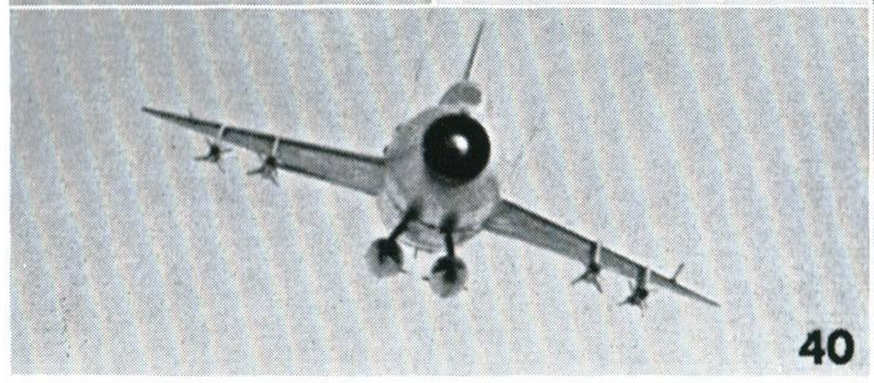

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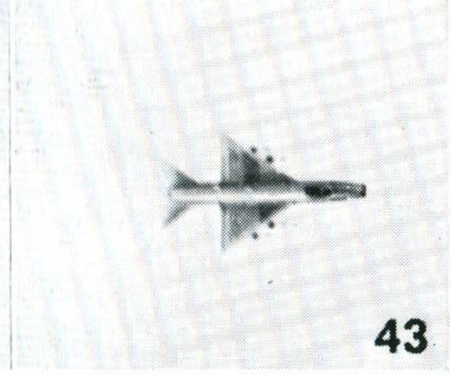

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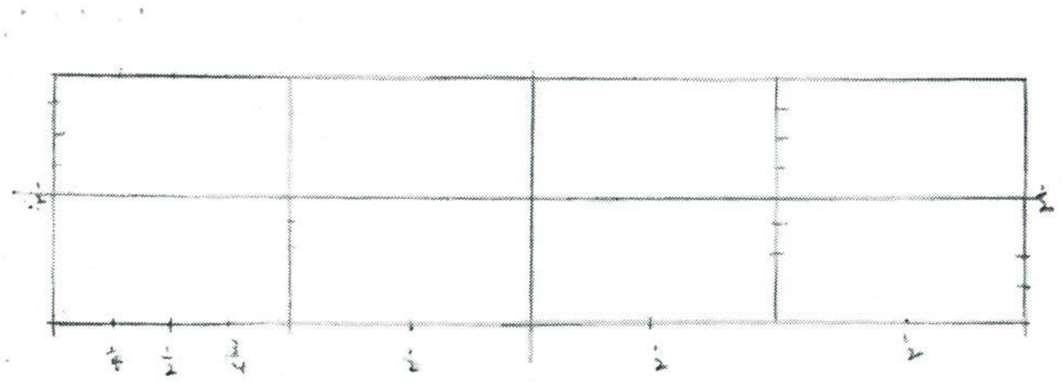

43

solutions on cover

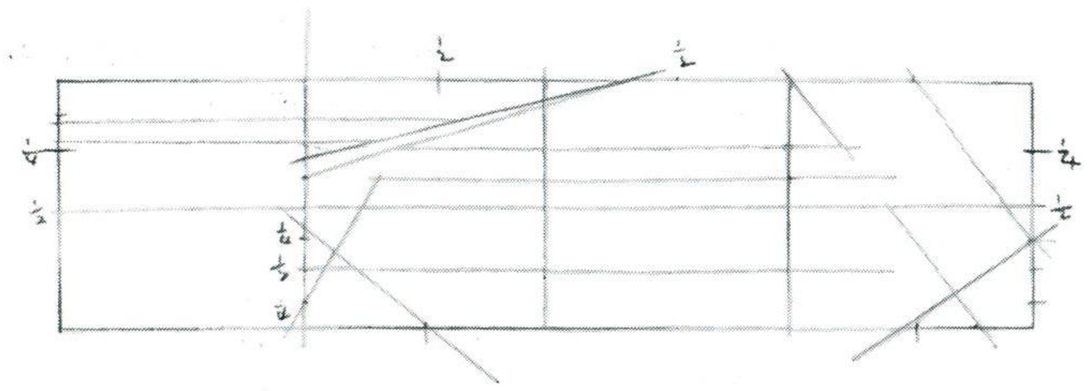
DRAWING TANKS

Drawing a tank helps you to know it intimately but takes too long to be of practical value as an identification training aid when you are confronted with a long list of tanks to learn. It can however, be a pleasant revisionary pastime once you know your tanks and this is a simplified set of construction diagrams on the Russian T-54 Medium Tank. Almost all tanks lend themselves to this kind of basic simplified drawing which is set out in four stages as under:

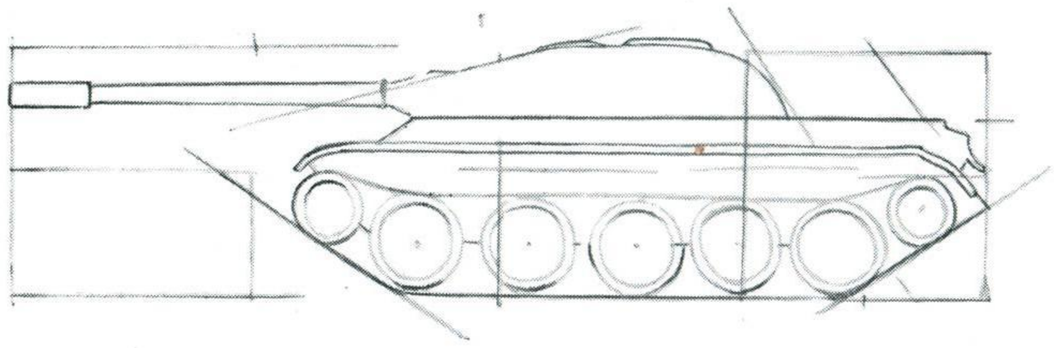
General hints: Trace construction lines very lightly so that they can be easily erased. Watch carefully where a structural line crosses a constructional one.



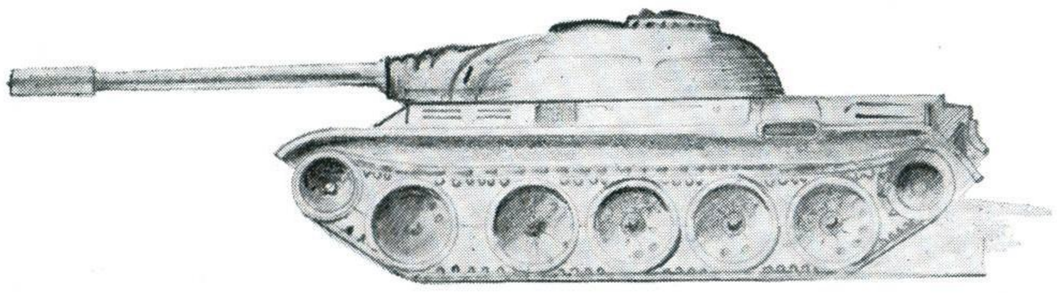
1st Stage: Draw a set of squares of any desired size on which to construct the tank



2nd Stage: Trace in these basic lines of the main structures



3rd Stage: Add these lines from photographs if you wish



4th Stage: Tone to taste—and colour if you wish and add any other details.

Lesson Instructions

To obtain the maximum benefit from the training devices published in this *Journal*, the following procedure should be adopted.

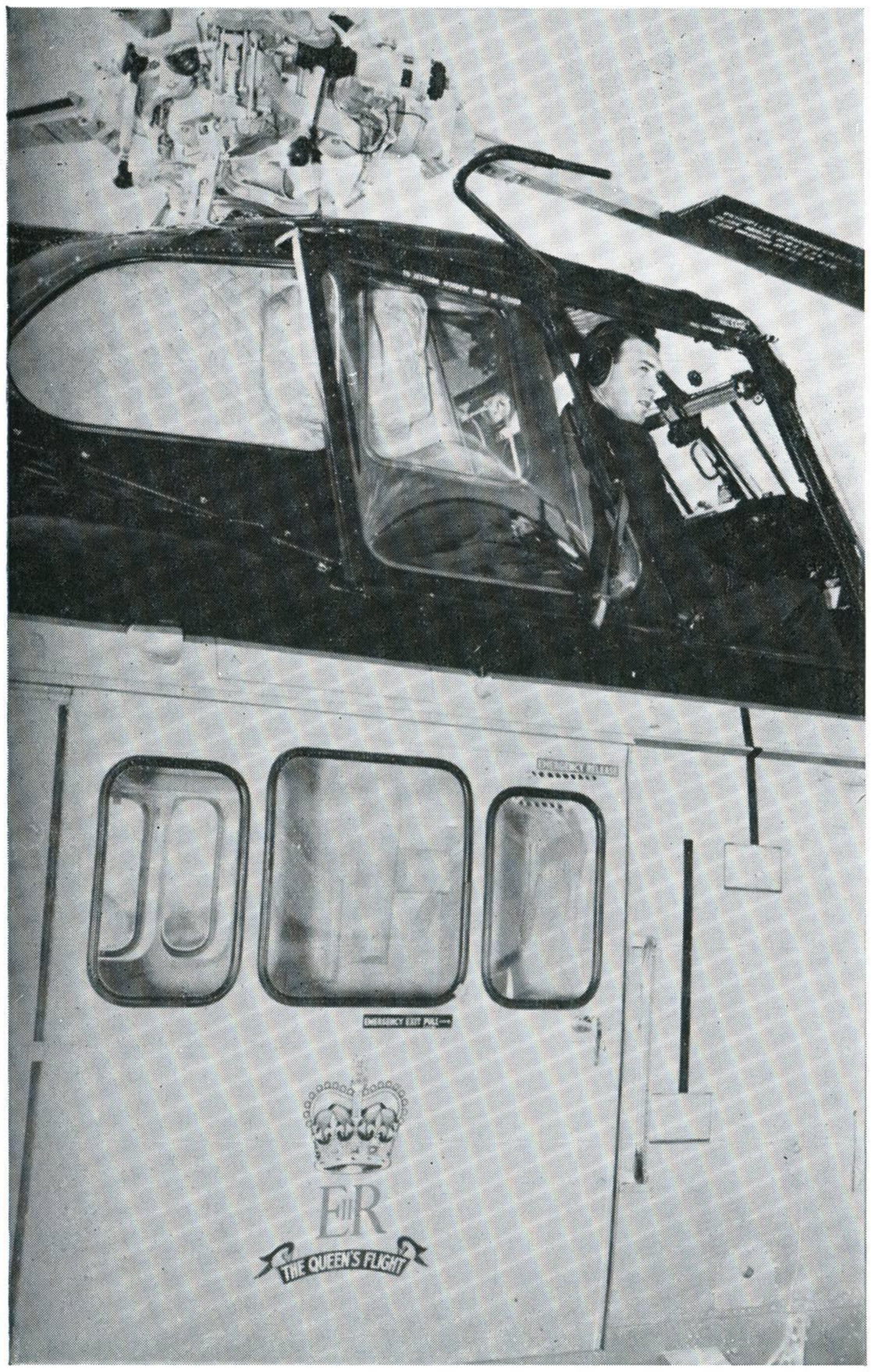
1. **Read the text associated with the lesson.**
2. **Prepare a list of target numbers so as to be able to tackle the targets in any order.**
3. **Identify the target pictures by comparing them with the key views: start with the easy ones so as to gain experience: also use targets already identified to solve the more difficult ones.**
4. **When certain of the identity of a target write down its name *IMMEDIATELY* against the appropriate number on your list. THIS IS IMPORTANT.**
5. **Lessons should not be hurried or given a time limit. So far as beginners are concerned, it is more important to identify accurately than quickly.**
6. **Do not attempt conscious memorising of details, shapes, or names.**

Gebrauchsanweisung für die Typenlehre

Um den größten Nutzen aus den Übungsbildern, die in diesem Heft veröffentlicht werden, zu ziehen, sollte wie folgt verfahren werden.

1. **Den zur Lehre gehörigen Text lesen.**
2. **Eine numerierte Typenliste vorbereiten, in der angesprochene Typen in eine gewisse Ordnung gebracht werden können.**
3. **Typen ansprechen durch Vergleich mit den Hauptansichten (von oben, von unten, von vorne, von hinten und von der Seite). Anfangen mit den einfachen Bildern, um Erfahrung zu bekommen. Die angesprochenen Typen zur Ansprache der schwierigeren benutzen.**
4. **Wichtig: Sobald ein bestimmtes Flugzeugbild mit Sicherheit richtig angesprochen ist, sofort die Typenbezeichung in die entsprechende Stelle der Liste eintragen.**
5. **Bei der Übung nicht beeilen oder eine zeitliche Begrenzung festlegen. Für Anfänger ist es wichtiger, richtig anzusprechen als schnell.**
6. **Nicht mit Einzelheiten, Umrissen, Namen aufhalten.**





The Queen's Flight

When the Queen came to the throne the Royal Flight had Viking C.2 aircraft; two to VVIP standard, one nominally for Royal Staff and another as reserve and servicing aircraft. The last Viking with the Flight left in April 1958. They were replaced by Herons, the first of which, a C.3, was replaced and supplemented by C.4s later. For some years a Devon C.1 was attached to the Flight for transport and for a short period a Chipmunk for training.

For the Royal Visit to the Far East in early 1961, Dakota C.4s KN452 and KN647 were brought up to VVIP standard and joined the Flight. This drew attention to the need for a larger permanent aircraft in the Flight, preferably of British design and manufacture, and this need was met in 1964 when two Andover C.C.2s were delivered, after conversion training had been carried out on the civil HS748 G-ARAY loaned by Hawker Siddeley.

Helicopters were first introduced in October 1954 with the acquisition of Dragonfly H.C.4 XF261. This was replaced temporarily by Whirlwind H.A.R.4 XL111 pending the delivery of the first helicopters specially constructed for the Flight, the two Whirlwind H.C.C.8s XN126 and XN127 which, in turn, were replaced in 1964 by the Gnome-engined H.C.C.12s XR486 and XR487.

Heron C.4 with an Andover C.C.2 (below), all of The Queen's Flight.



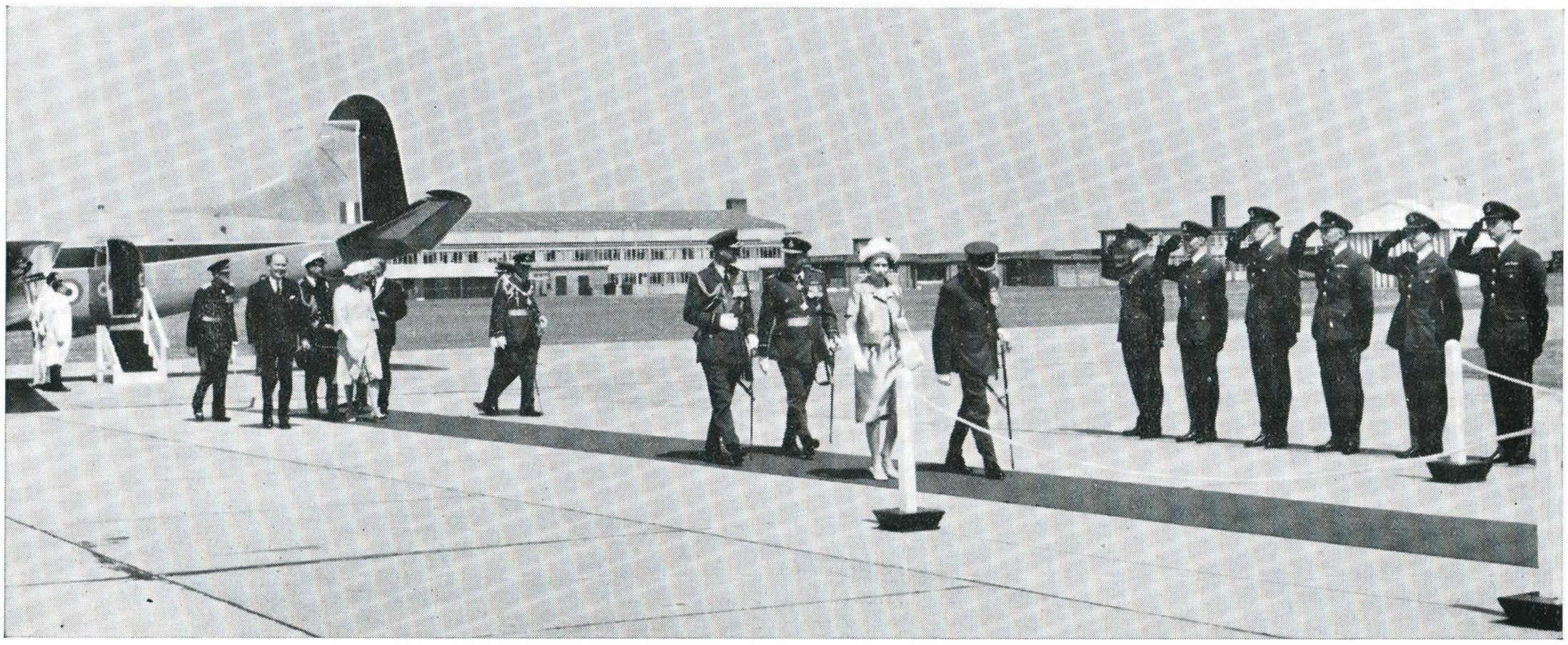


The current equipment of The Queen's Flight is two Andover C.C.2s, XS789 and XS790 (the latter shown above); two Whirlwind H.C.C.12s (example below) and two Heron C.4s (example at right). They are all stationed at R.A.F. Benson, Oxfordshire.





A Royal occasion; H.M. The Queen visiting a R.A.F. Station by a Heron of The Queen's Flight.



H M S AIRCRAFT CARRIER 'ARK ROYAL'



HMS Ark Royal was laid down at Cammell Lairds Birkenhead, as far back as 1943; she was first commissioned in 1955.

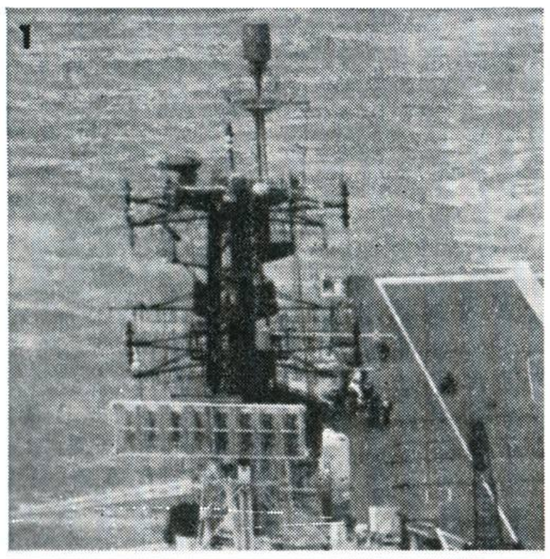
She was refitted in 1959, again in 1961 and is at present undergoing a three years' reconstruction which it is estimated will cost some £30,000,000.

Of 43,340 tons standard displacement, she has a length of 810 feet overall and an extreme breadth of 164 feet over the flight deck. Steam turbines drive four screws to give a service speed of 31·5 knots. She was the first British carrier to have steam catapults and the first to have a side lift, but the latter was removed later.

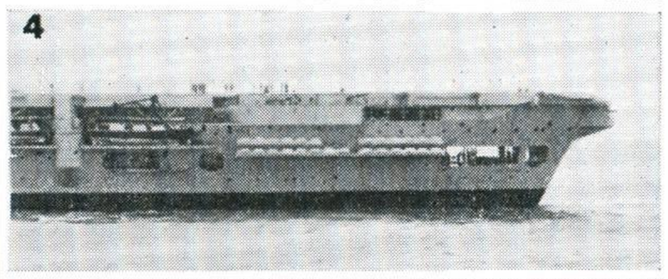
"Ark Royal" carried about 40 aircraft and 8 helicopters, but this may be modified during her present reconstruction. Her full complement was about 1,700 or up to 2,300 with full air squadrons.

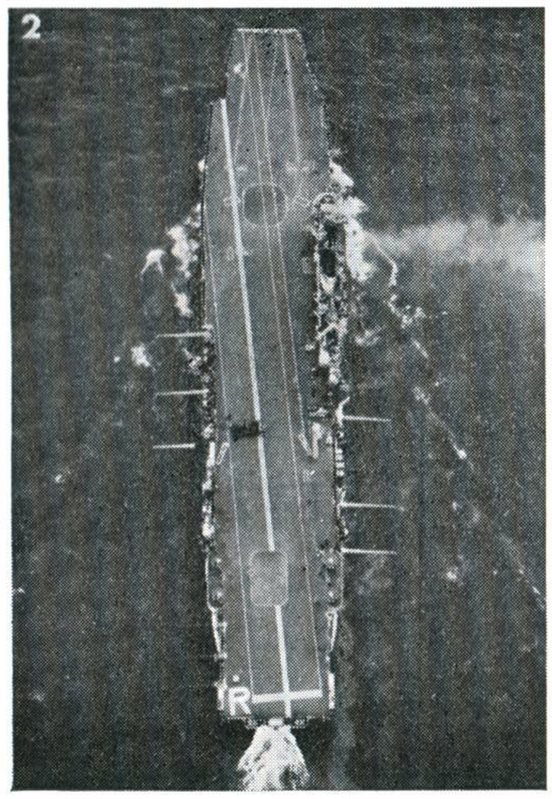
There are a number of features which distinguish the Ark Royal from other carriers, but these you can find out for yourself by carrying out the lesson instructions on page 91.

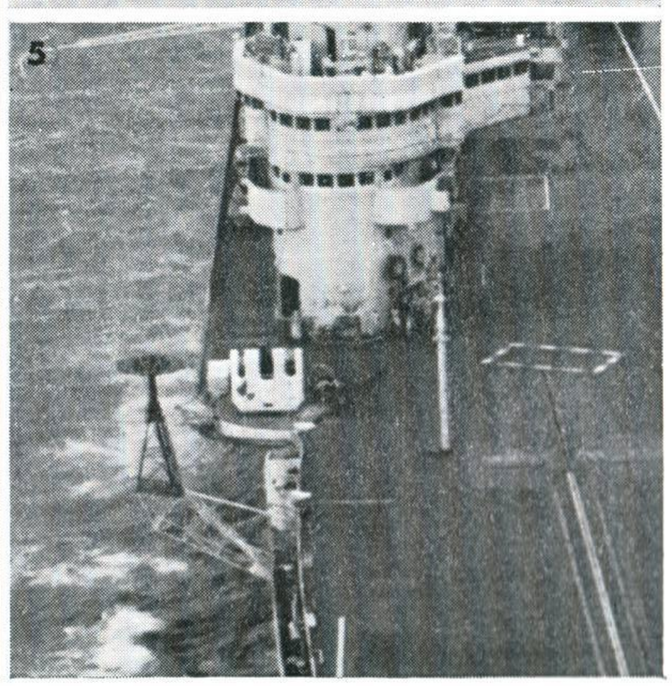


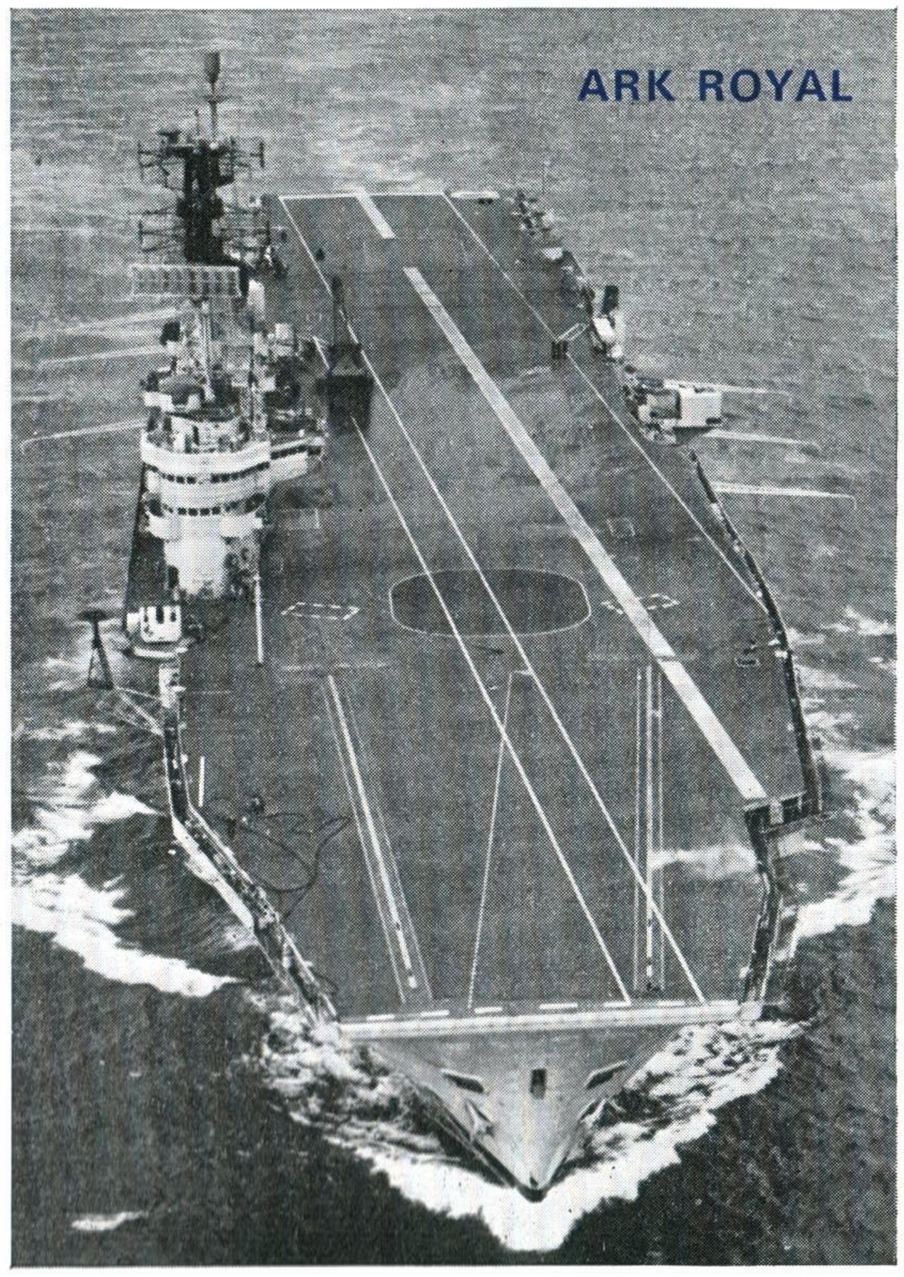












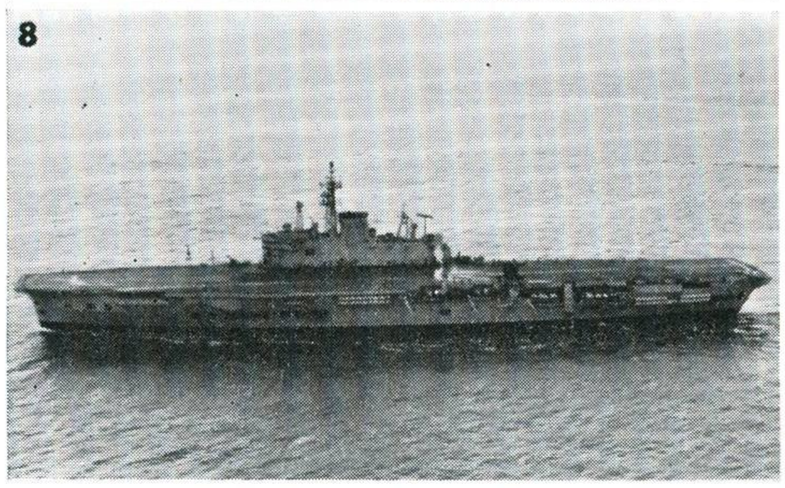
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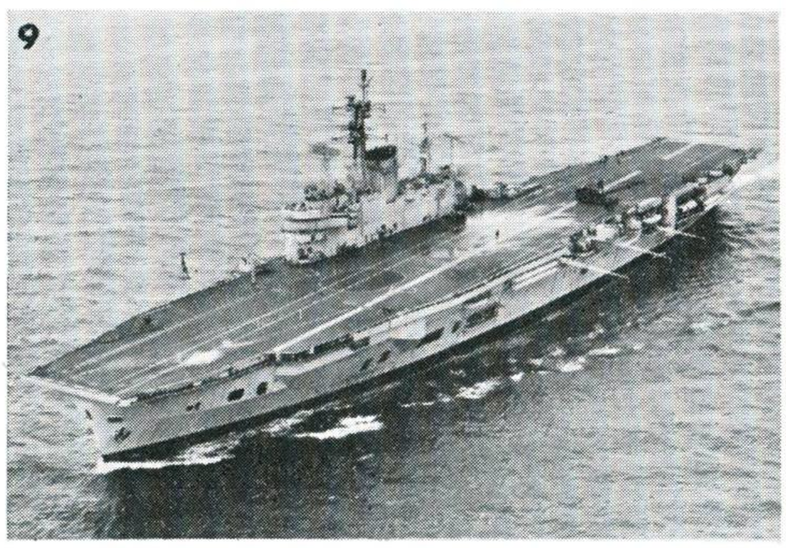
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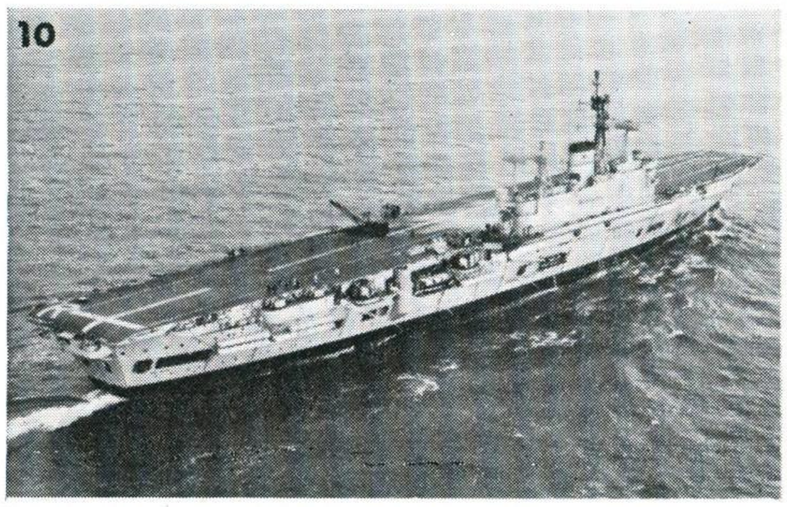
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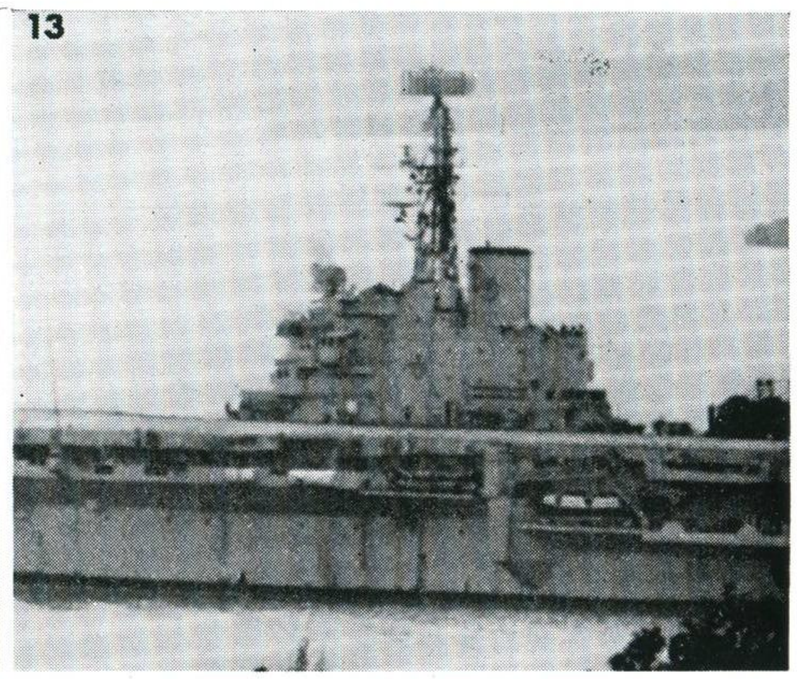
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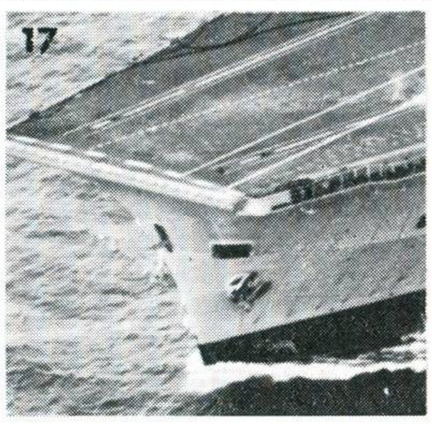
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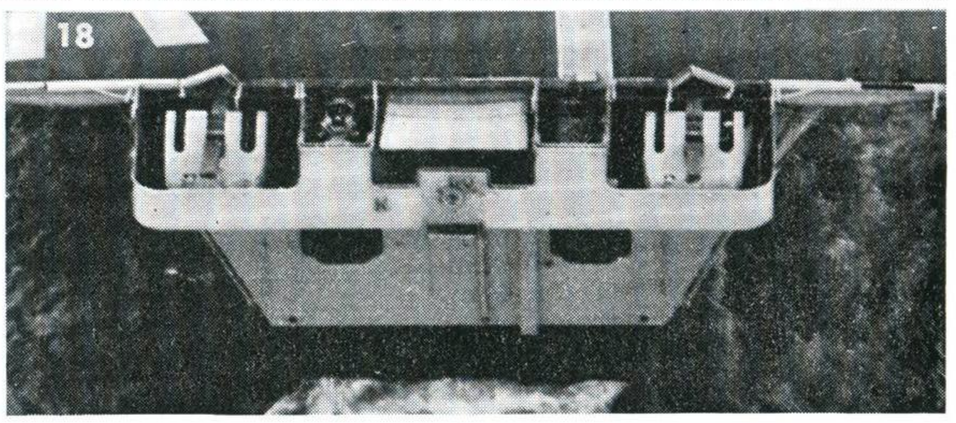
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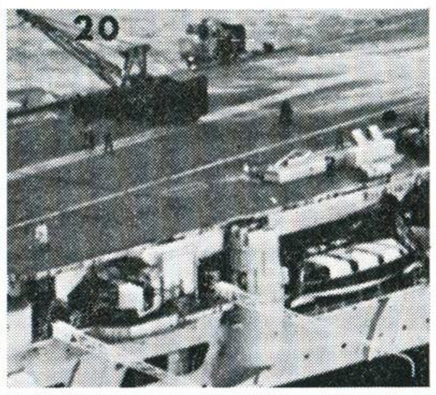
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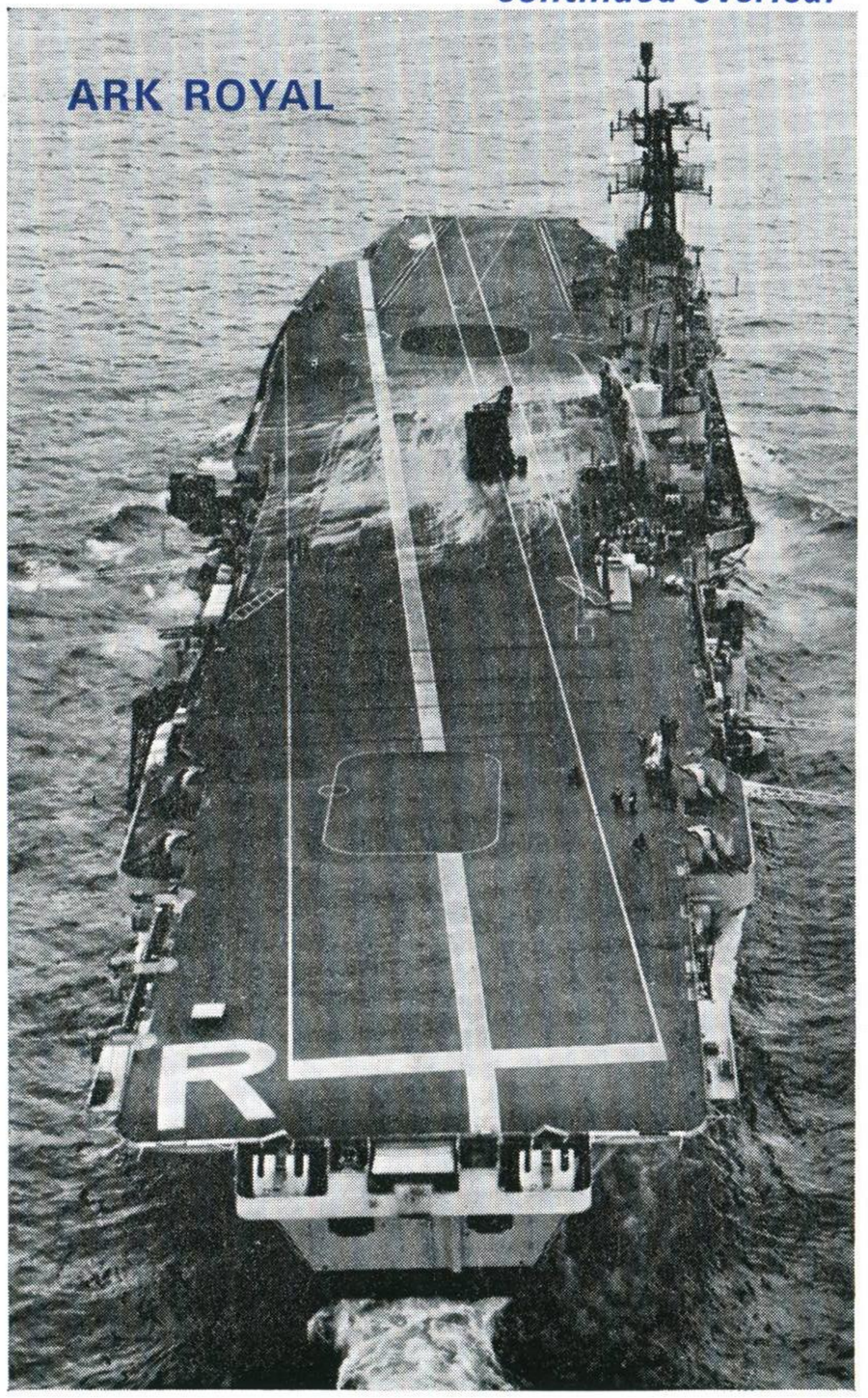


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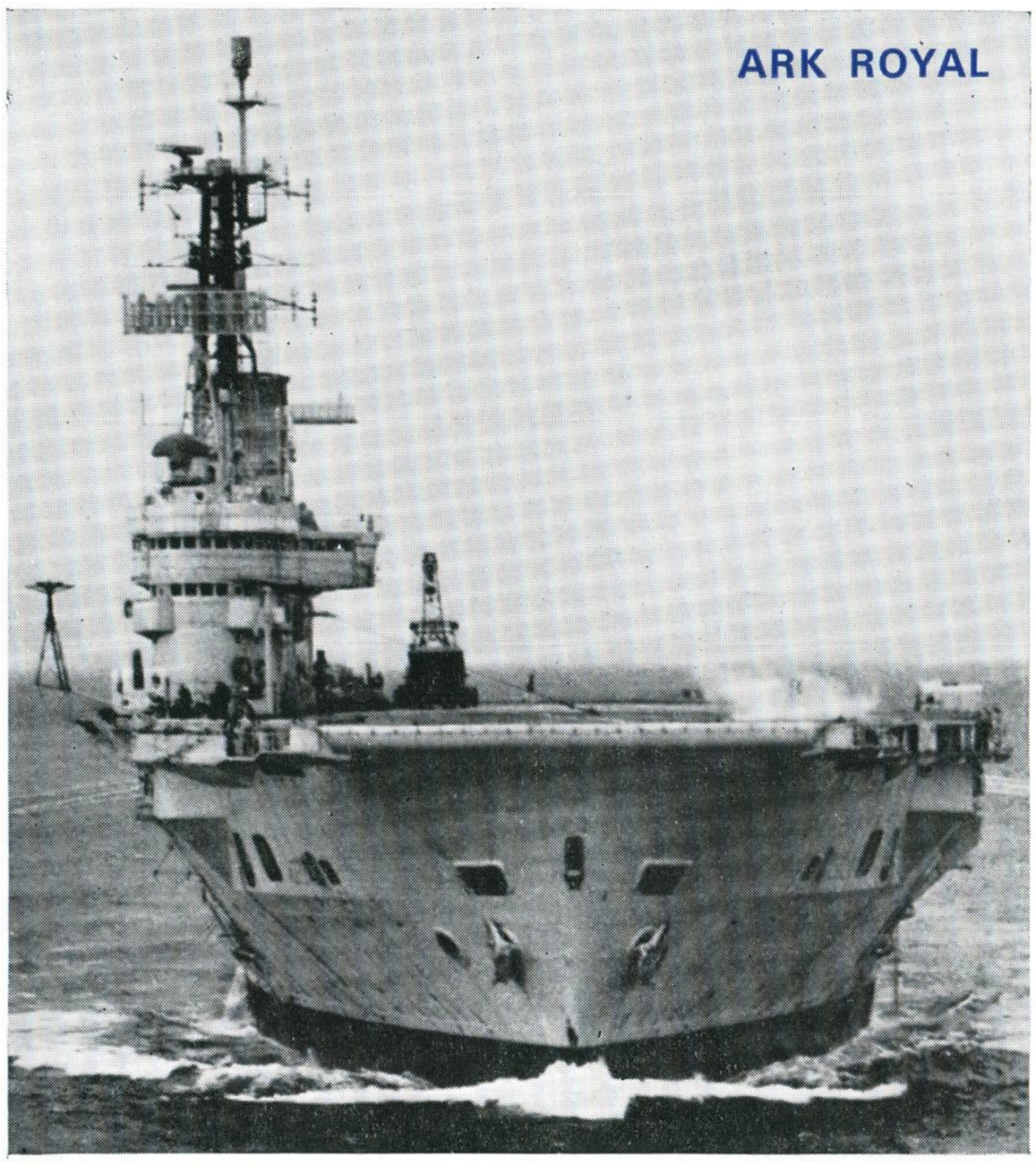


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ARK ROYAL



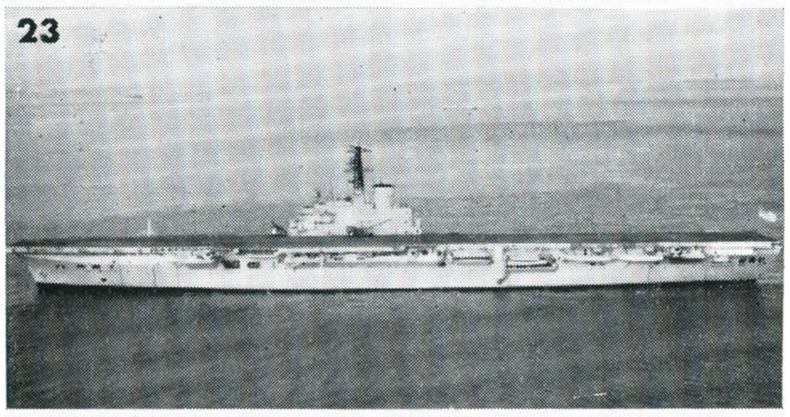
ARK ROYAL



ARK ROYAL *continued*



22



23



24



25





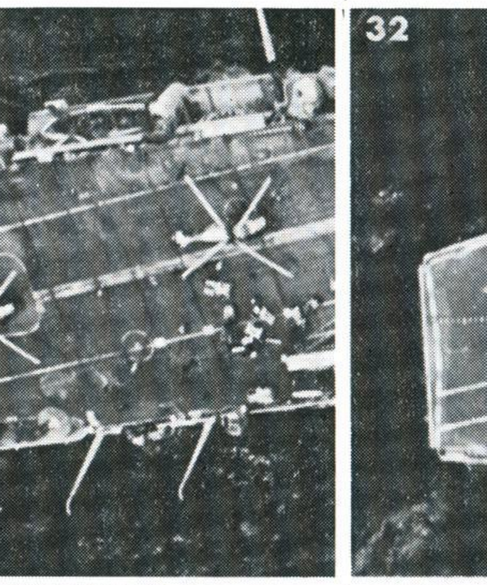
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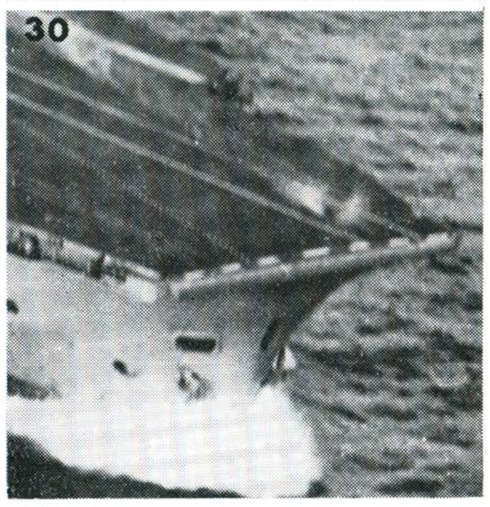
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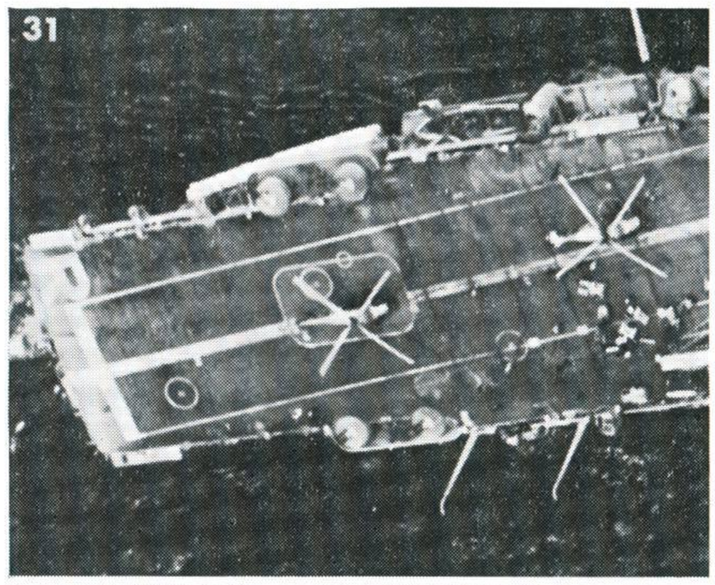
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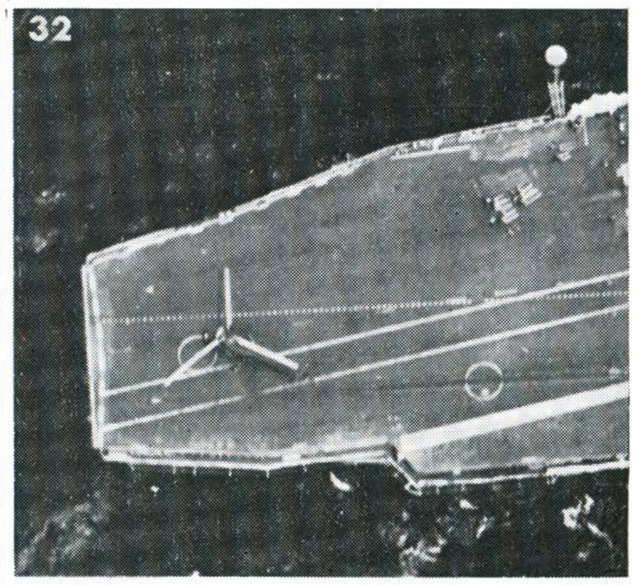
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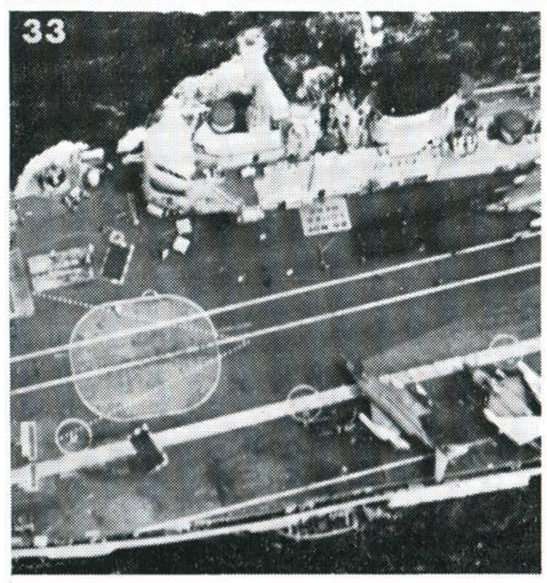
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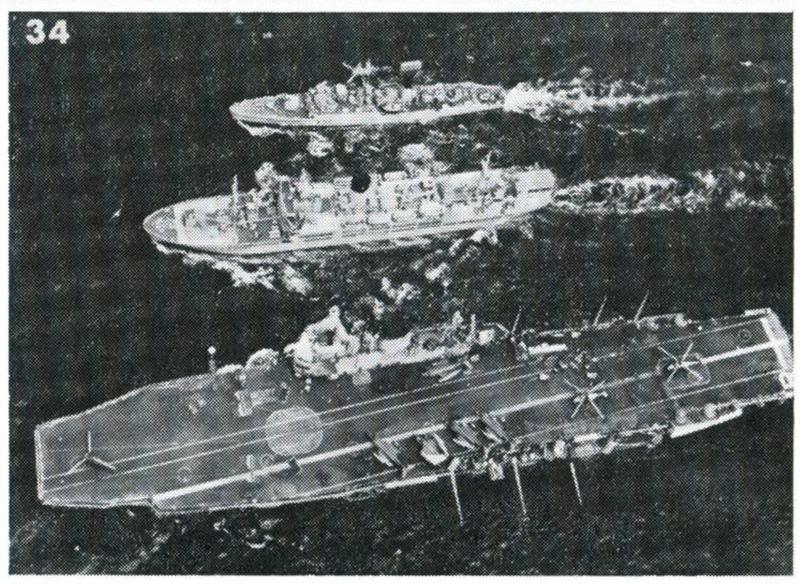
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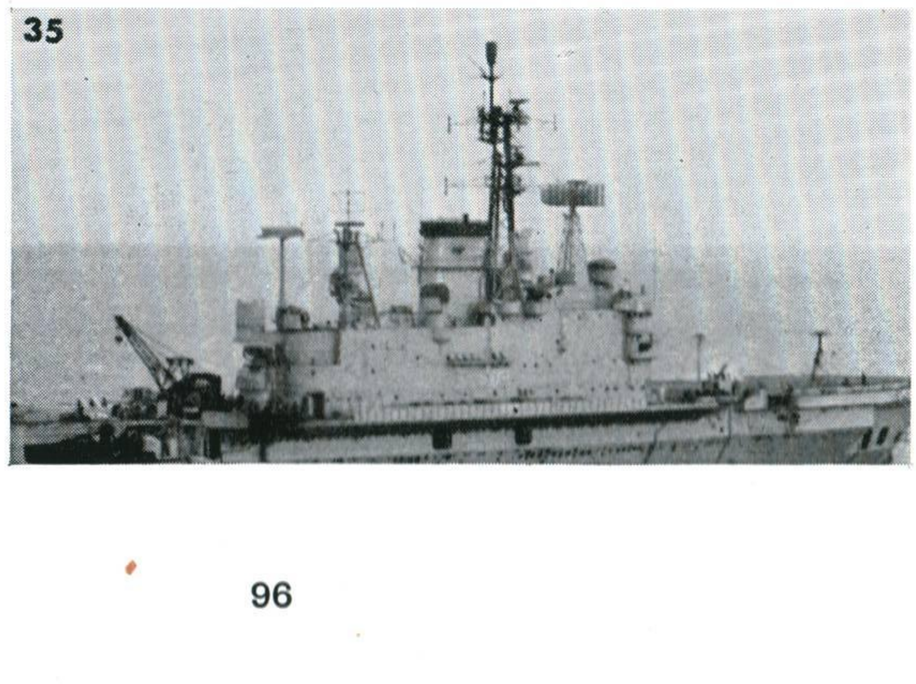
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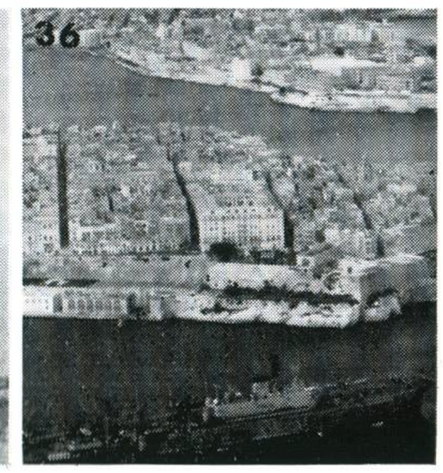
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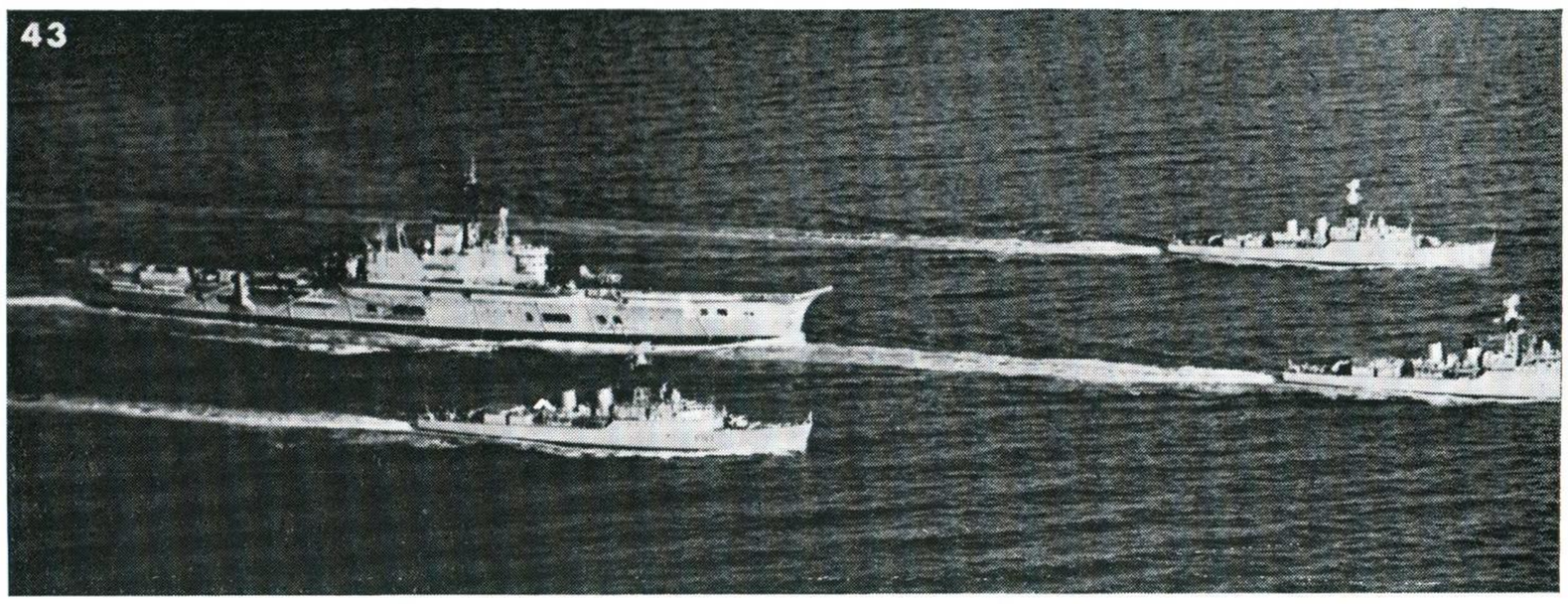
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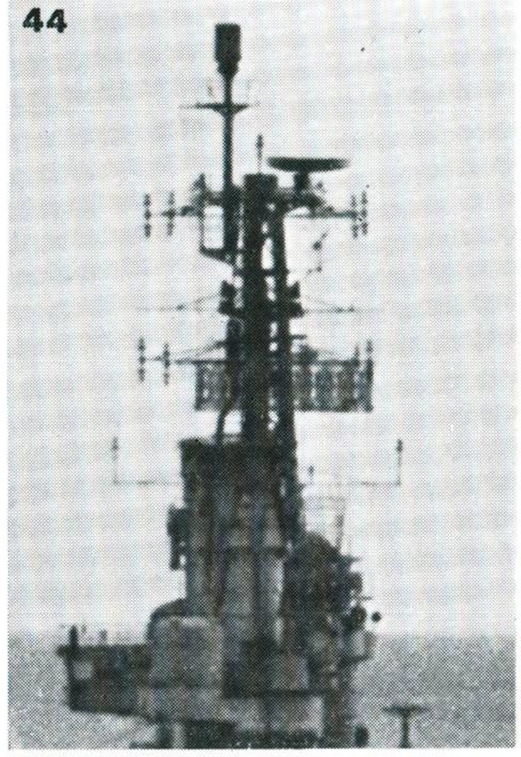
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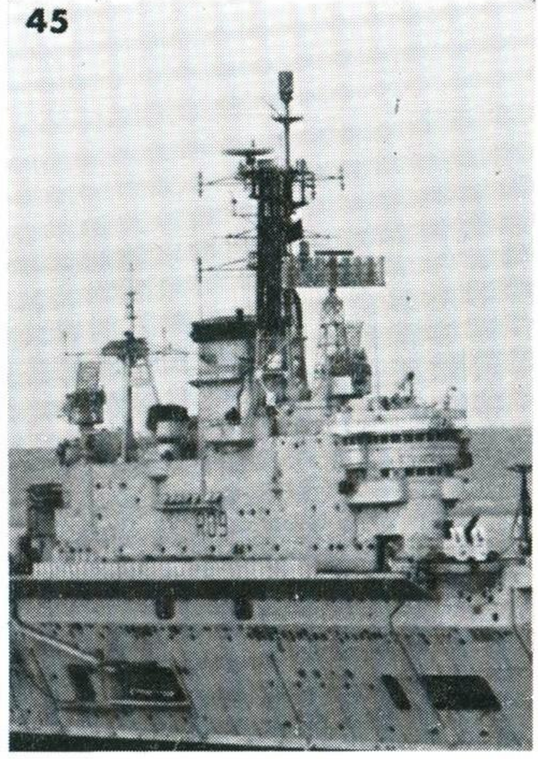
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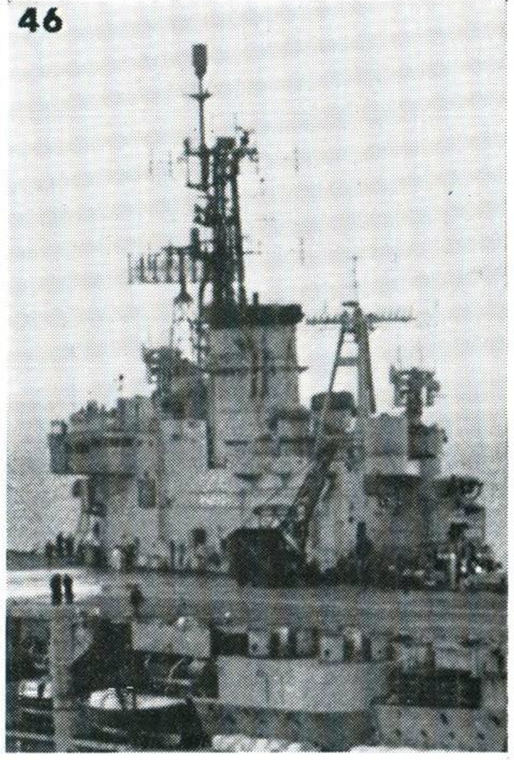
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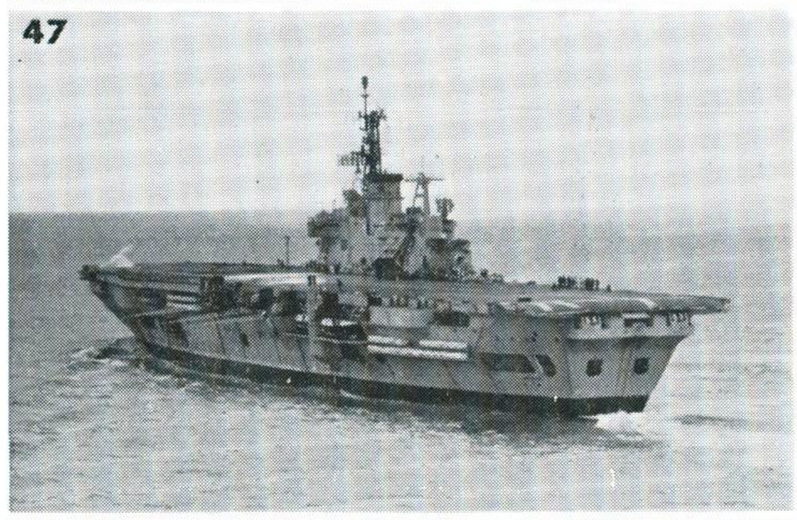
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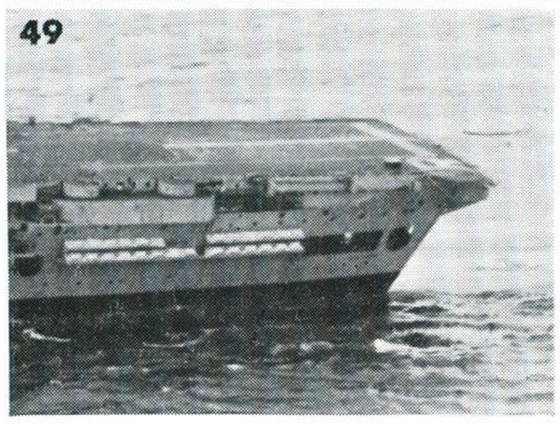
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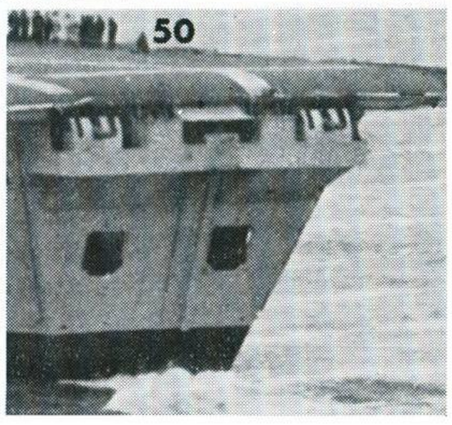
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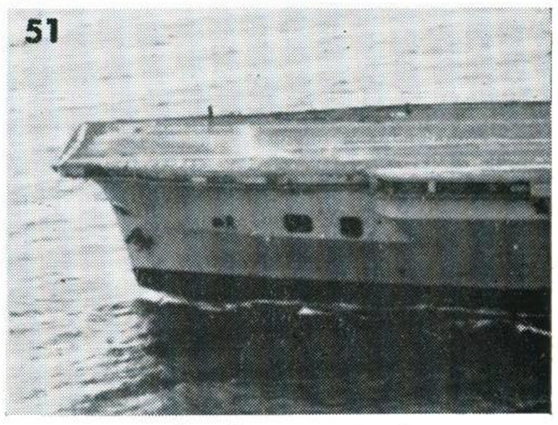
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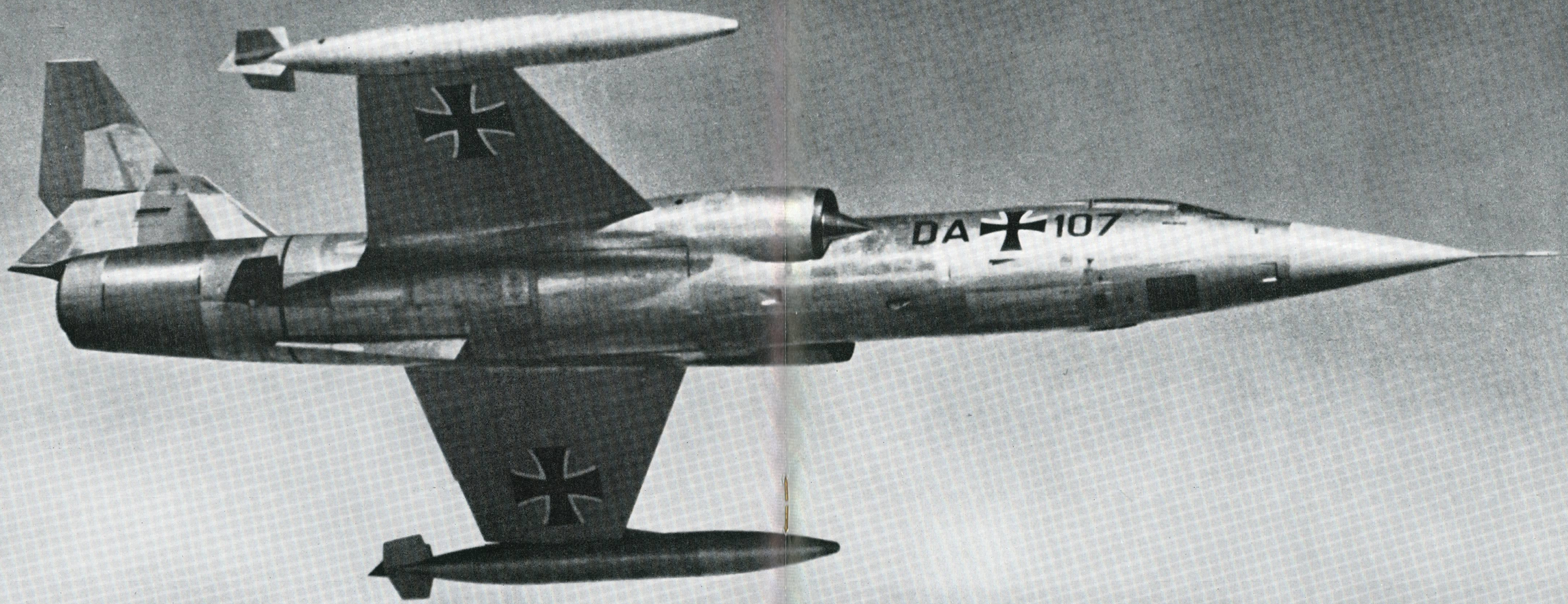


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ARK ROYAL



Starfighter





F-104 STARFIGHTER

Several variants of the Lockheed F-104 Starfighter have evolved but the major production variant is the 'G model and its sub-variants, the CF-104 (Canada) and F-104J (Japan). However, for the purposes of an identification lesson, it can be said that the three silhouette forms show the extent of the variations.

The F-104C and 'G are both multi-mission aircraft. The F-104C was the first to carry underwing stores and it had provision for a flight refuelling boom on the port side of the forward fuselage. The F-104G is stressed for low-level operations, has sophisticated radar equipment (NASARR) and improved performance. It also features the large rudder originally developed for the F-104B (first two-seat trainer variant) and also standard on *all* variants from F-104D. For the interceptor role it carries two or four AIM-9B Sidewinder AAMs.

The TF-104G is a two-seat tandem operational trainer. Basically similar to F-104G, it carries NASARR equipment and retains partial weapons capability. It has a lengthened cockpit canopy, another external difference being that M-61 Vulcan cannon is deleted. Outwardly similar are F-104B, F-104D, F-104DJ (Japan), CF-104D (Canada) and F-104F (first two-seater supplied to Luftwaffe).

The Starfighter is in service with the U.S.A.F., the Air Forces of West Germany, Belgium, Holland, Italy, Japan, Denmark, Norway, Spain, Greece, Jordan, Turkey, and Nationalist China. Pakistan reportedly has some.

Span 22 feet







1

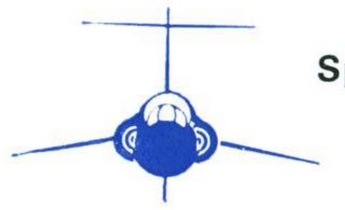


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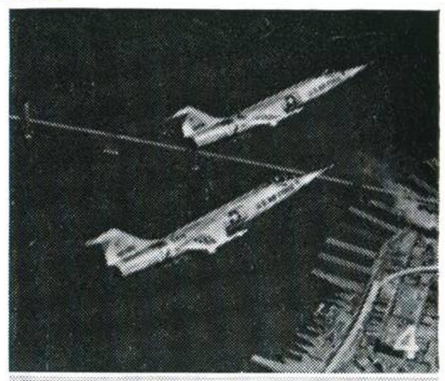
3

Span 22 feet





2-seater

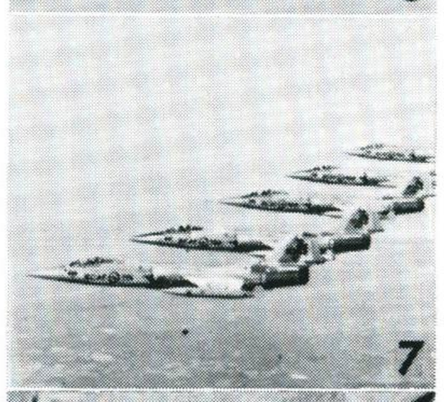


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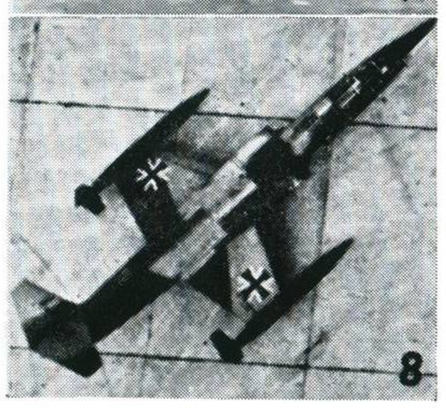
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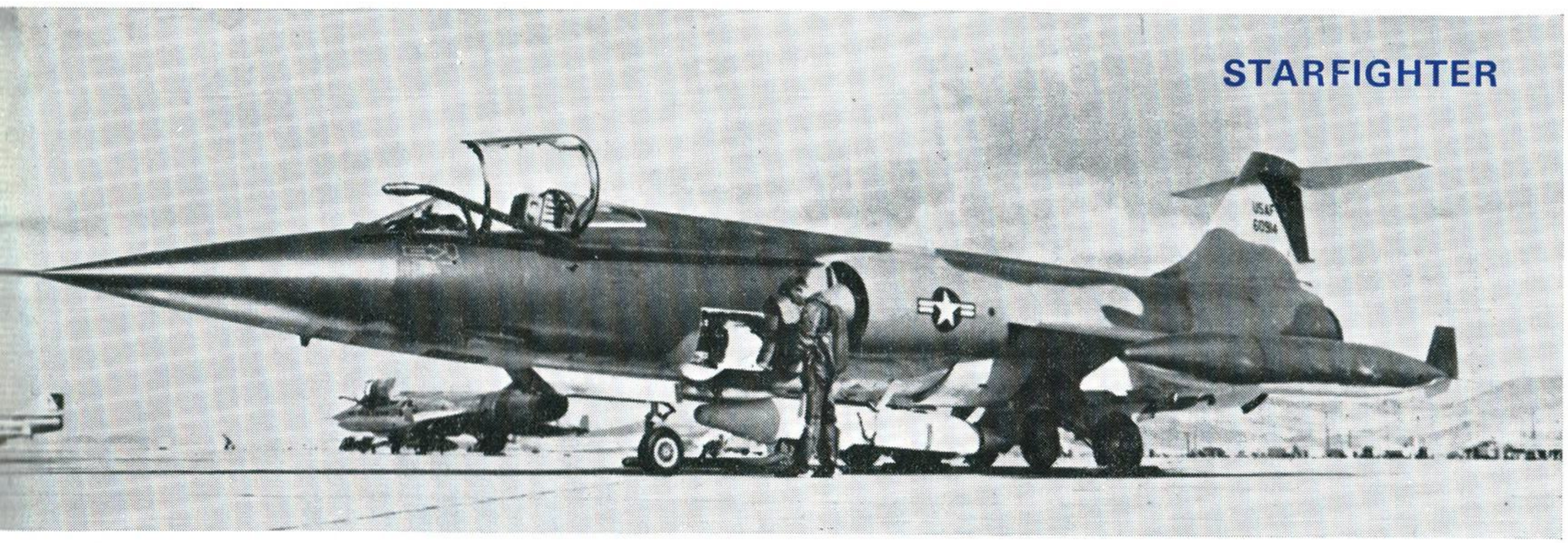
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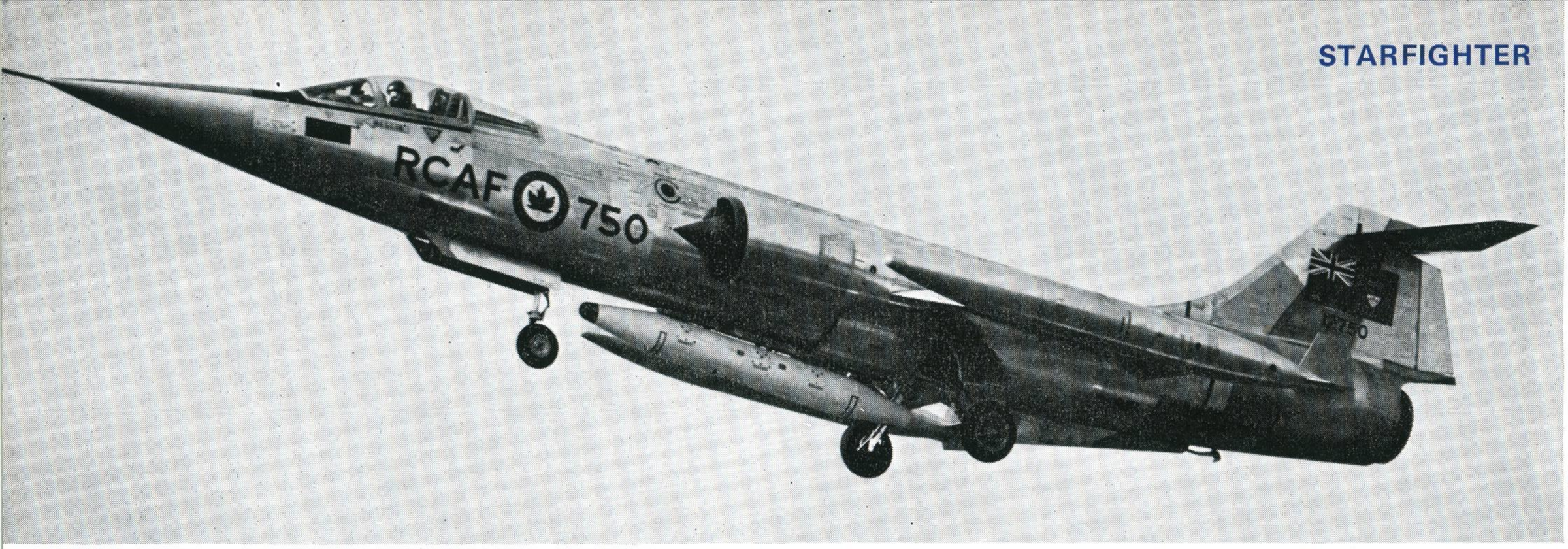
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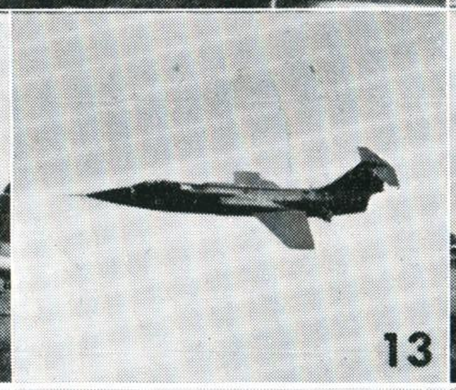
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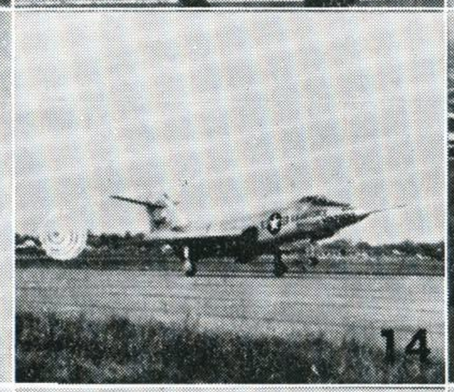

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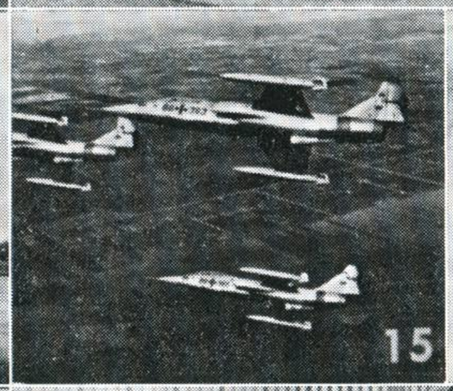

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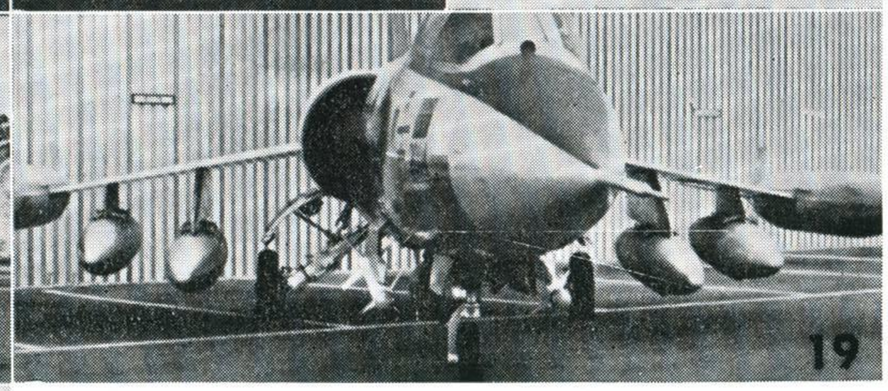

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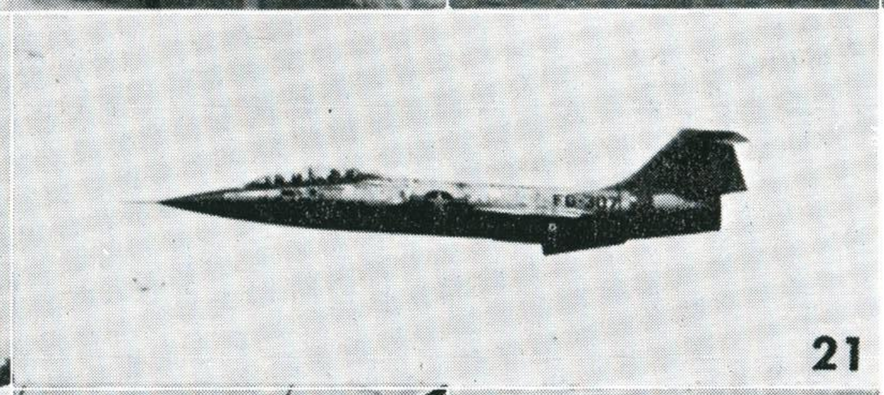

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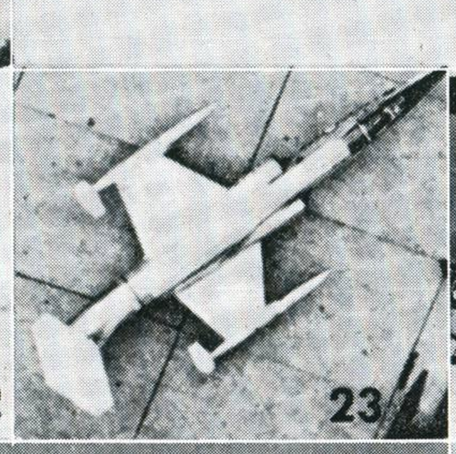

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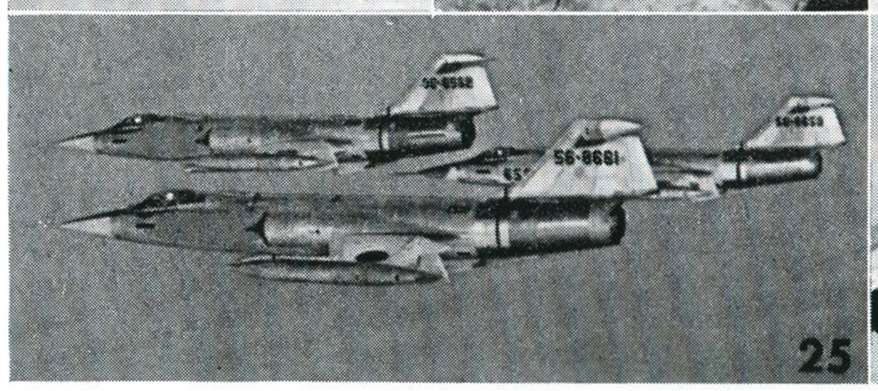

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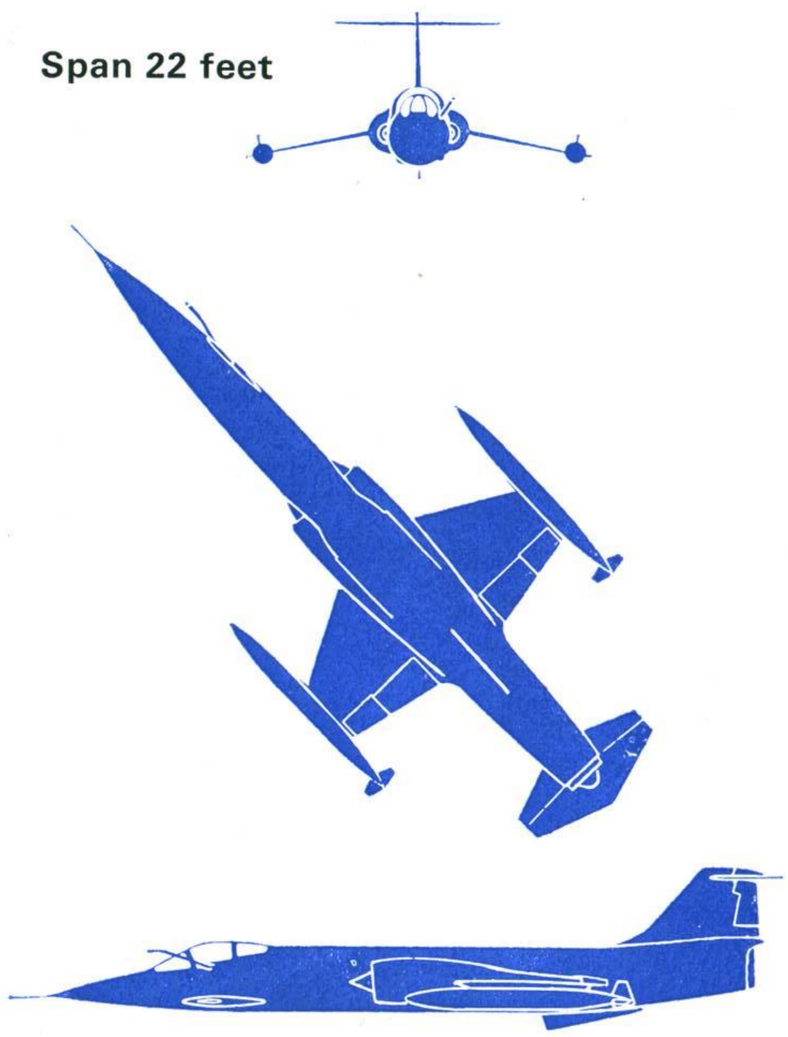

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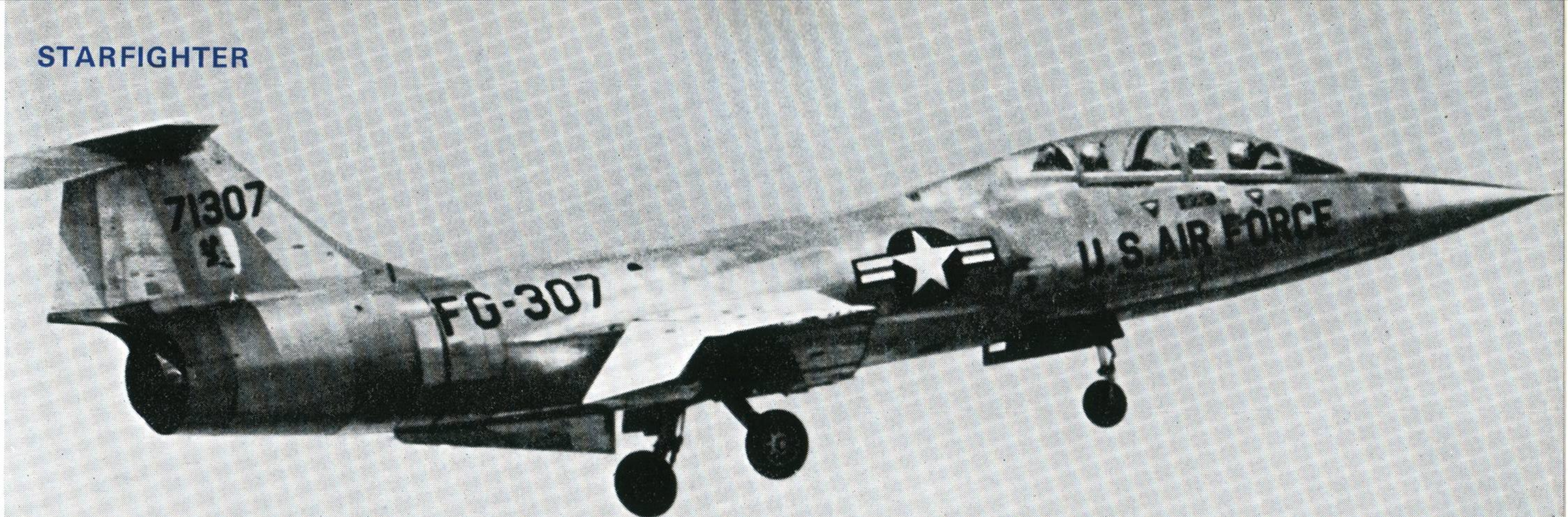


26

Span 22 feet

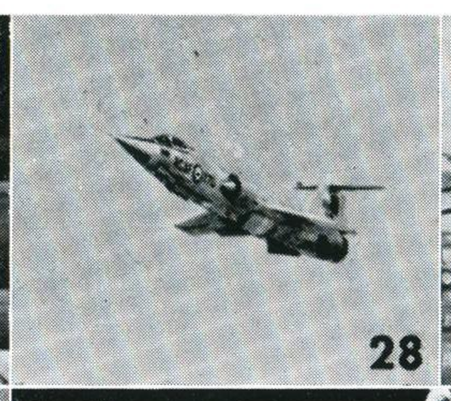


STARFIGHTER

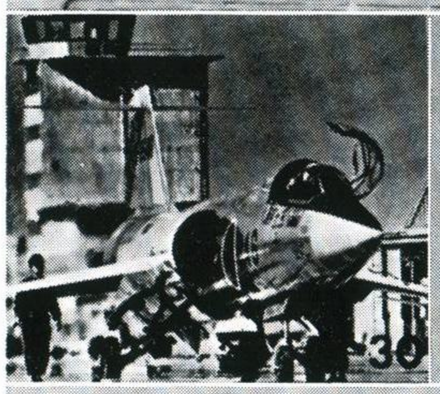


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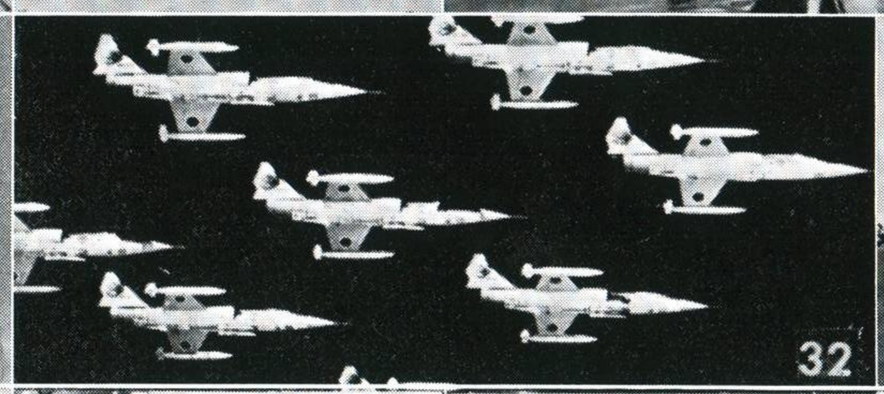






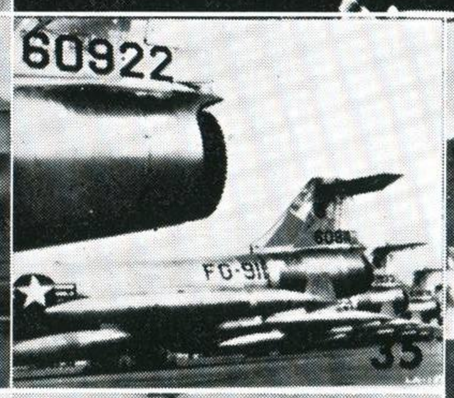


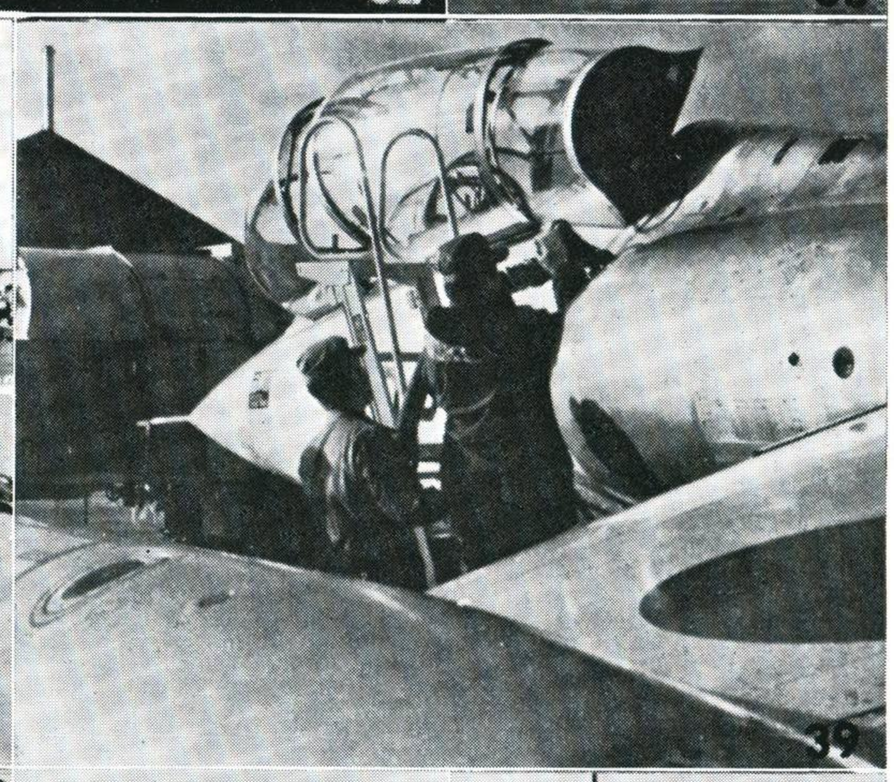




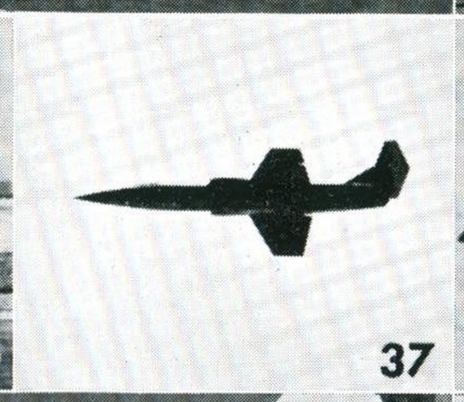












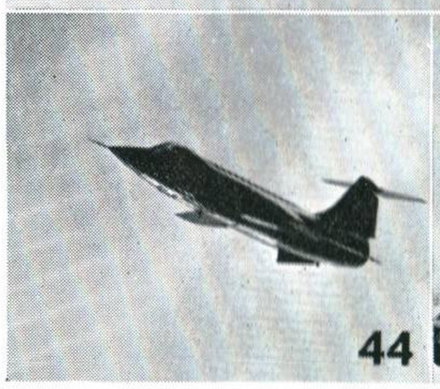




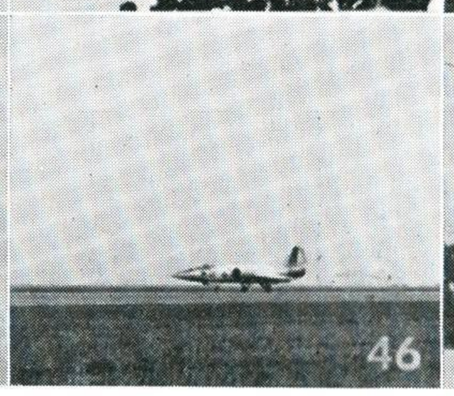














VIJAYATA

The Vickers 37-ton battle tank is an Anglo-Indian vehicle developed by the Indian Government and Vickers Ltd. The requirement was drawn up by the Indian Army while Vickers designed it, built prototypes and also manufactured a batch of pre-production vehicles at Newcastle-upon-Tyne. Moreover, they helped to build the factory where the tank is now being manufactured in India. The Indian Army has named it the "Vijayata".

continued overleaf

VICKERS 37 TON BATTLE TANK

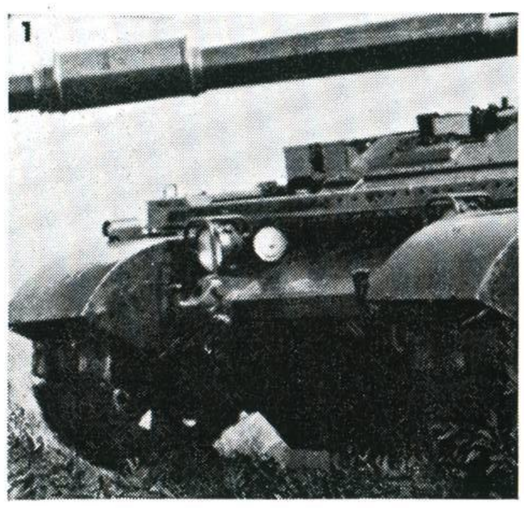


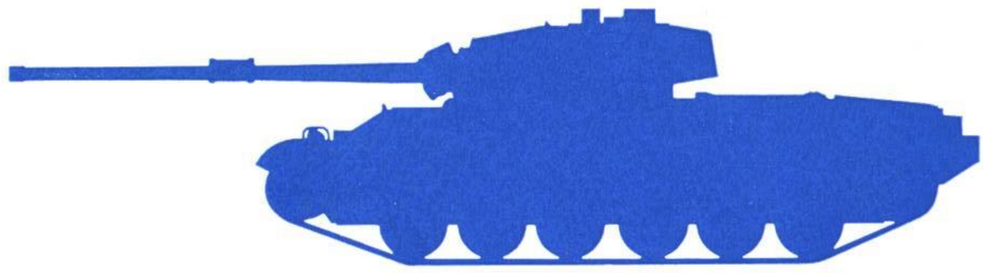






VICKERS 37 TON BATTLE TANK

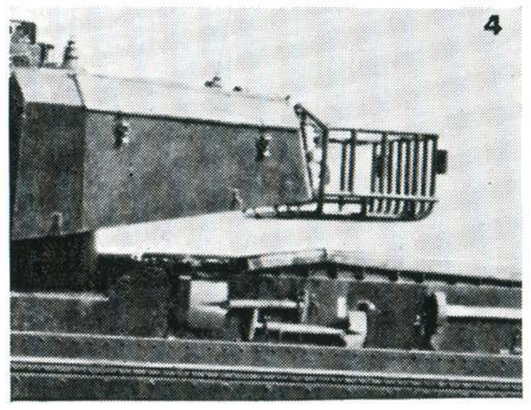


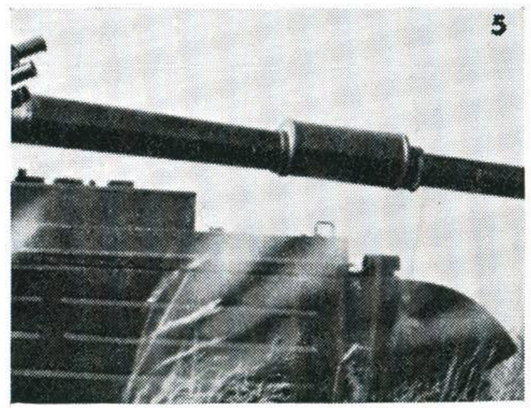


Externally the Vickers 37-tonner bears some resemblance to the Centurion and it is armed with the same 105-mm. gun. However, it is considerably lighter and, therefore, more mobile. It is also lower which helps to give it a long, sleek silhouette.

Mechanically the Vickers tank is similar in some respects to the Chieftain. In particular, it has the same type of Leyland L.60 diesel engine and the same transmission. The suspension is, however, peculiar to it and consists of six road wheels per side independently sprung by means of torsion bars.

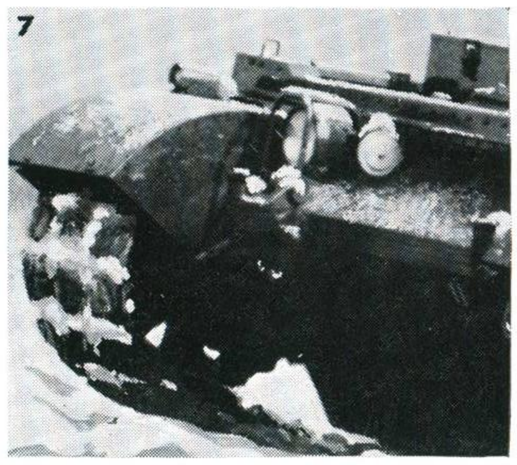
Unlike all other contemporary battle tanks, the Vickers 37-tonner has a welded turret and, except for the Swedish S-tank, is the only one to carry permanently a collapsible flotation screen. This enables it to cross rivers without assistance but the flotation screen did not appear on some of the early models. *Lesson instructions on page 91.*

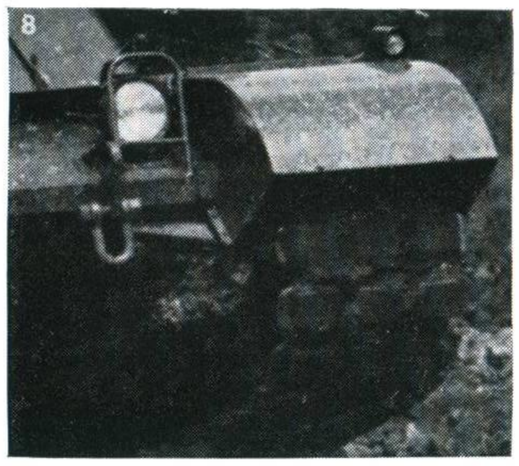


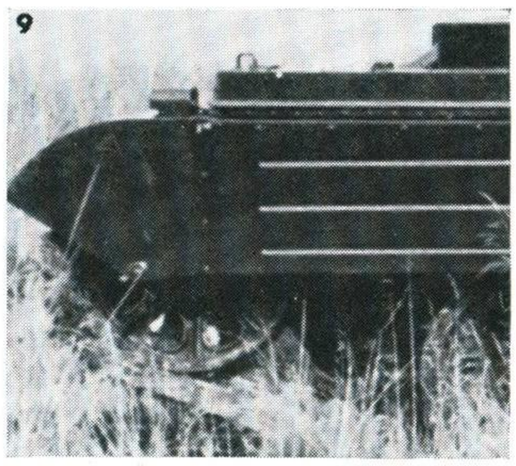


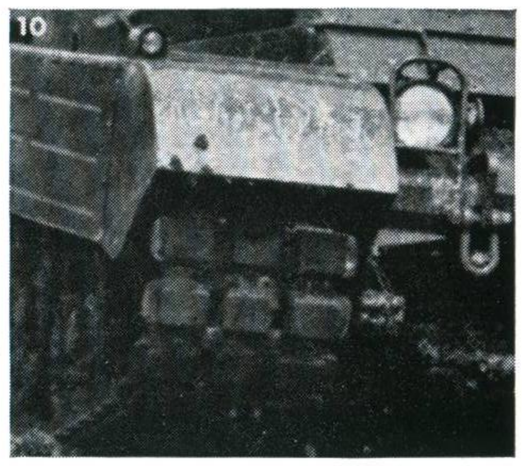


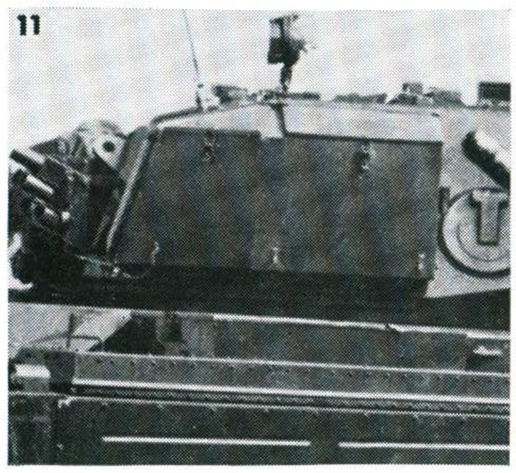


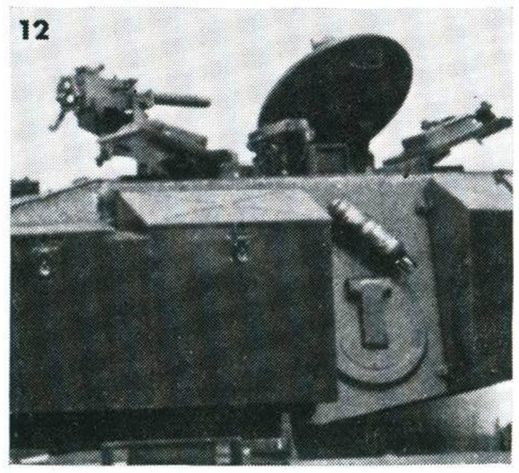

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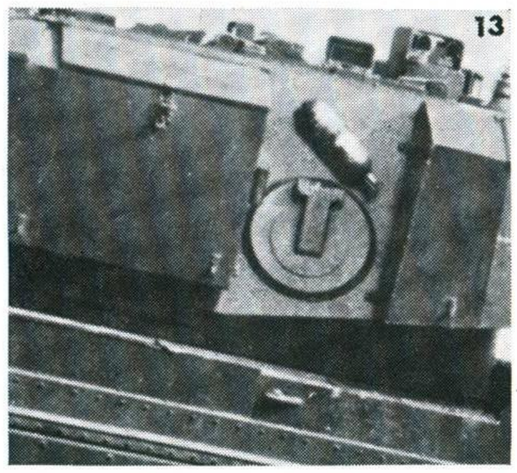

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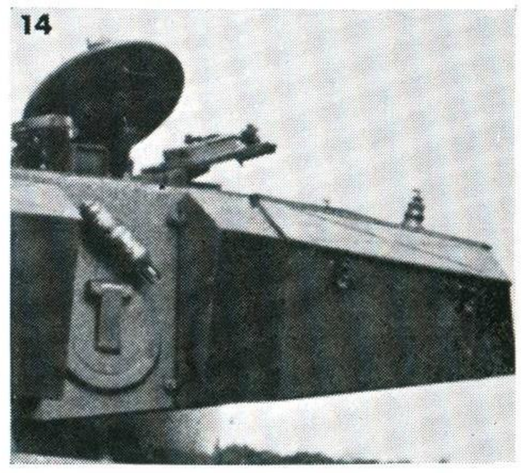

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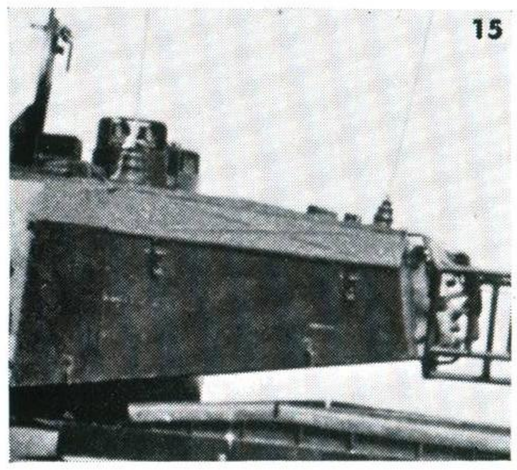

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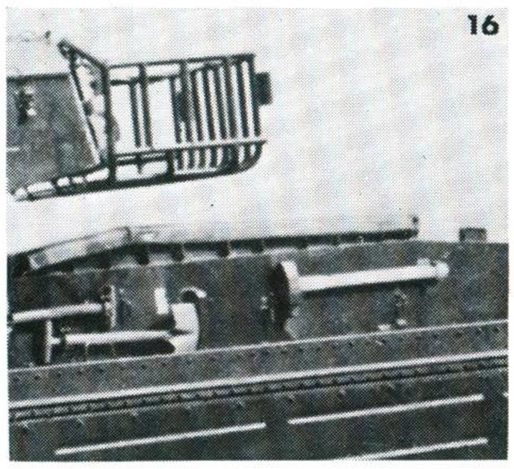

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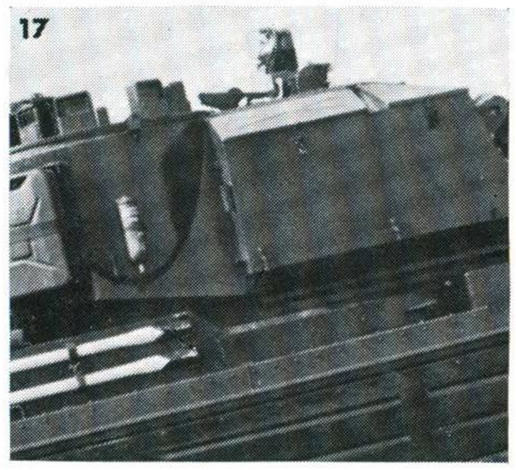

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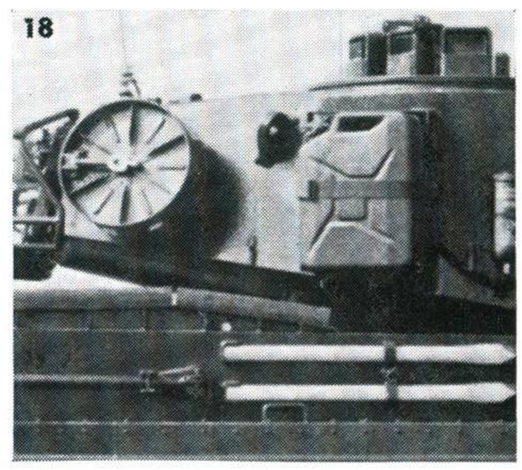

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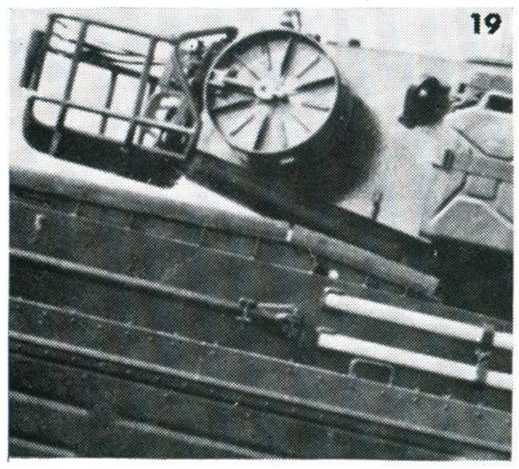

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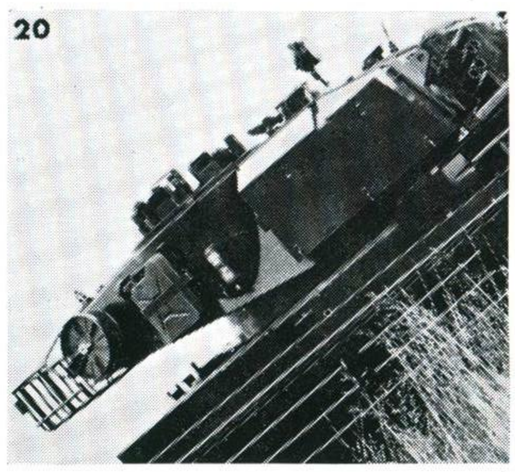

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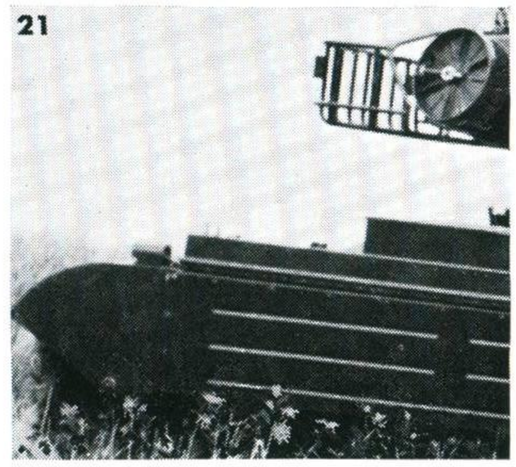

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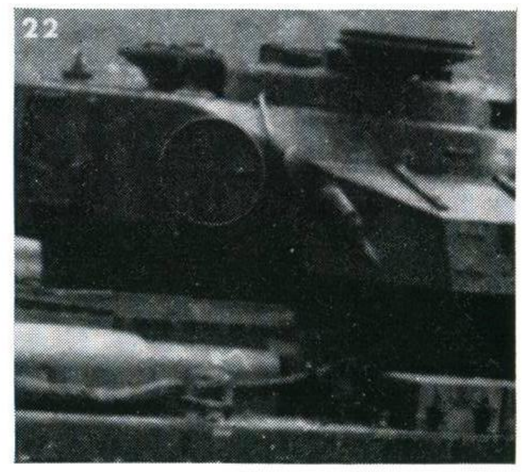

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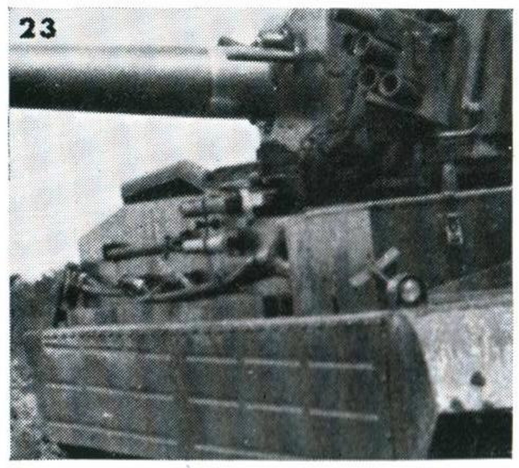

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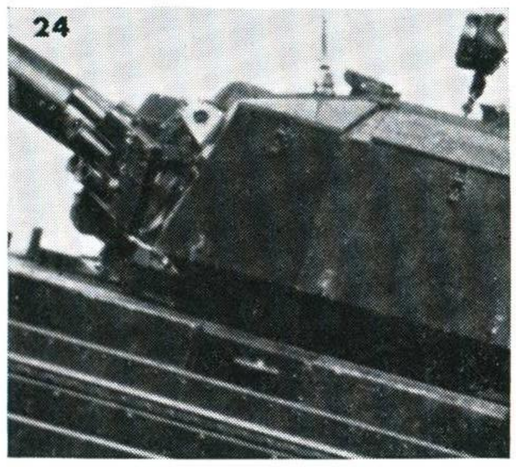

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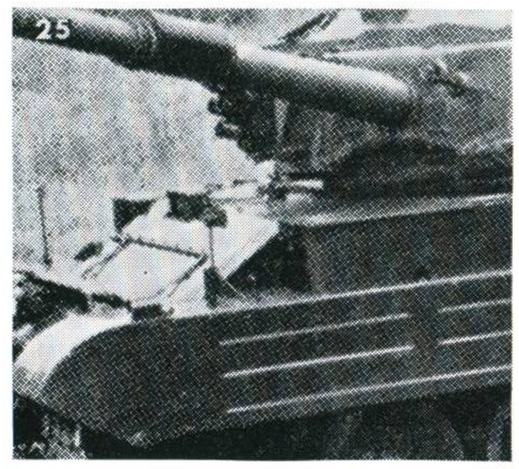

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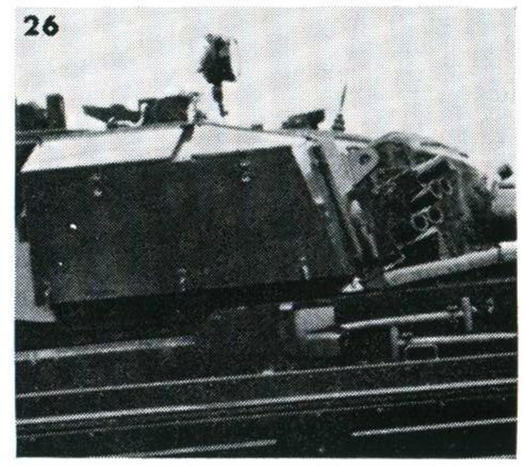

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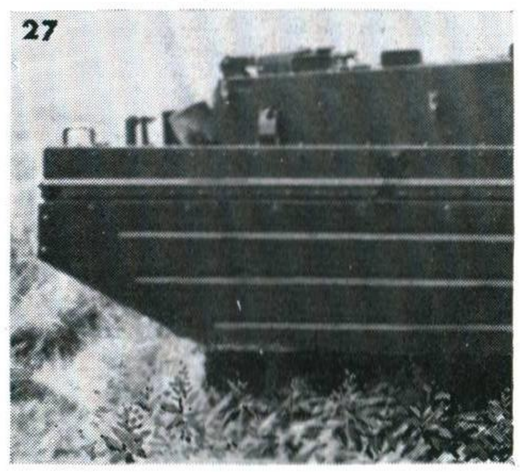

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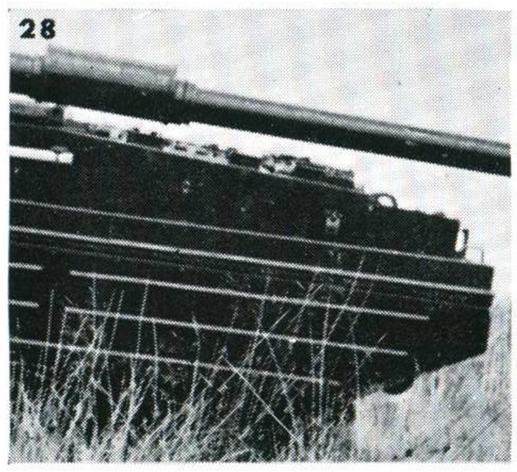

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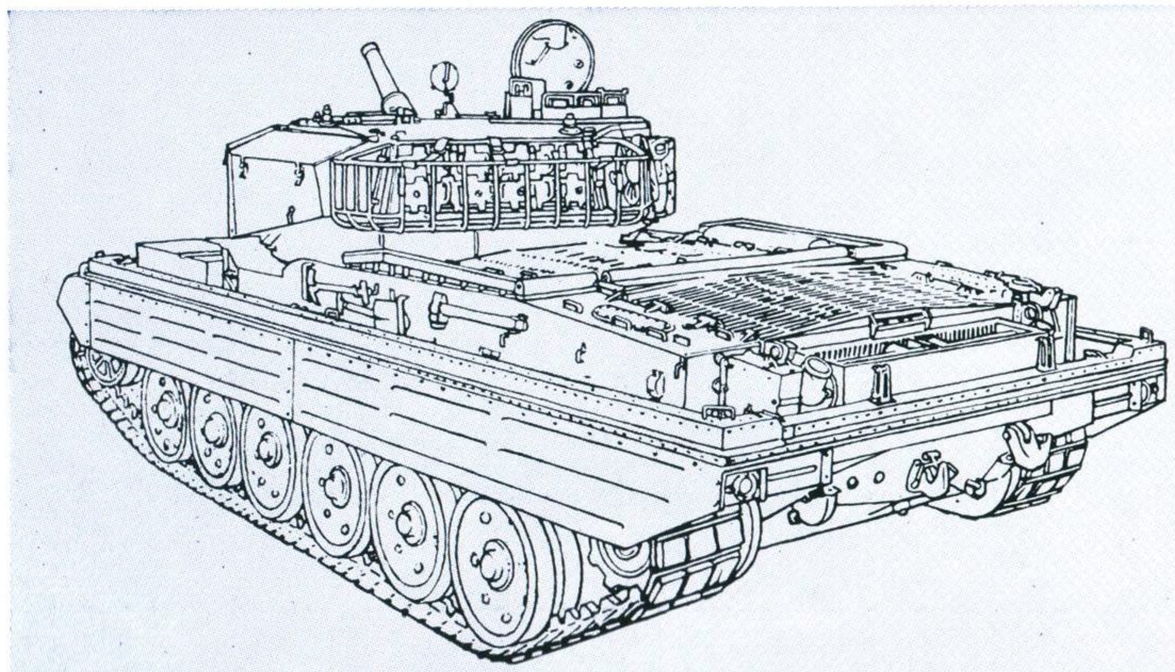

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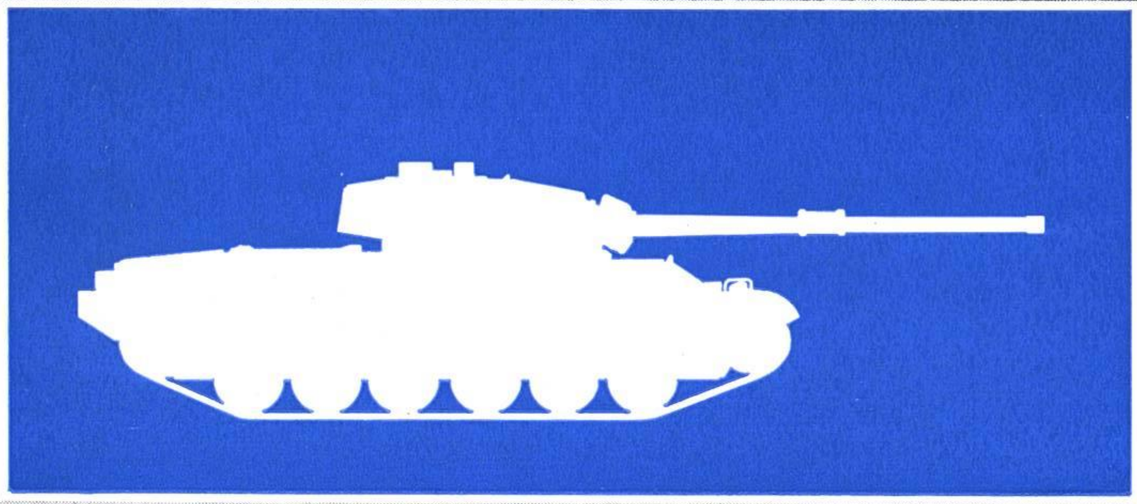

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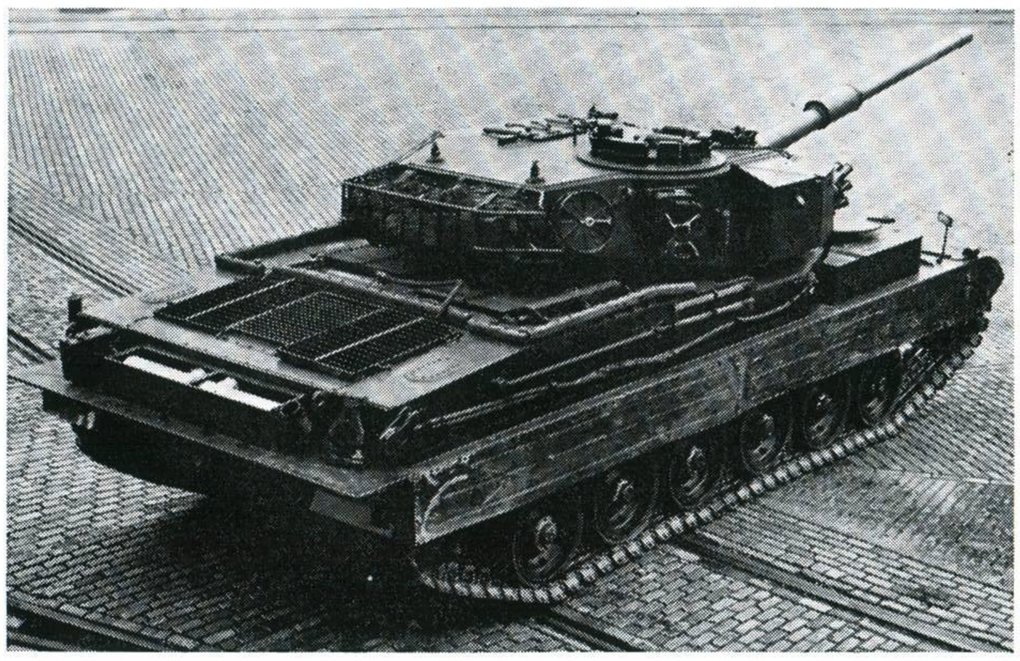
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VICKERS 37 TON BATTLE TANK

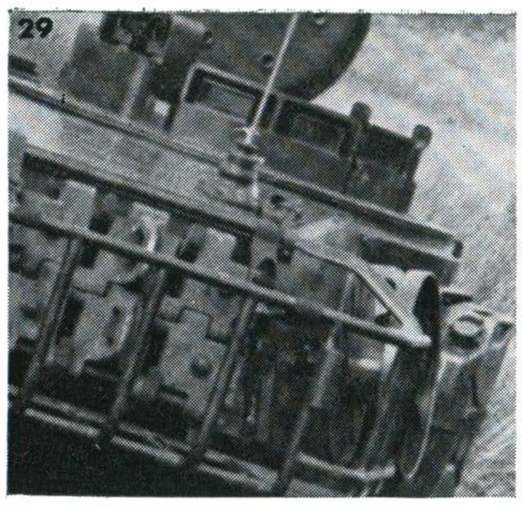


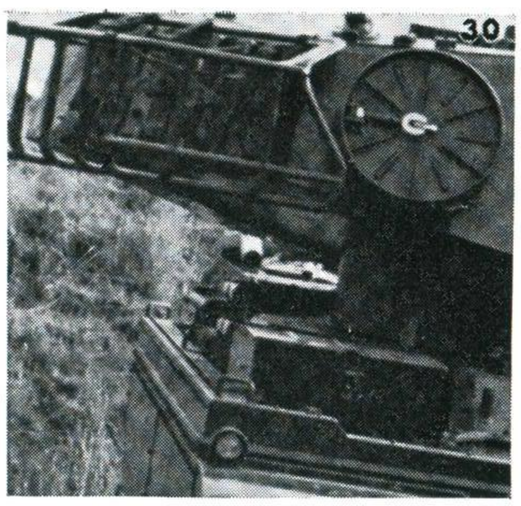


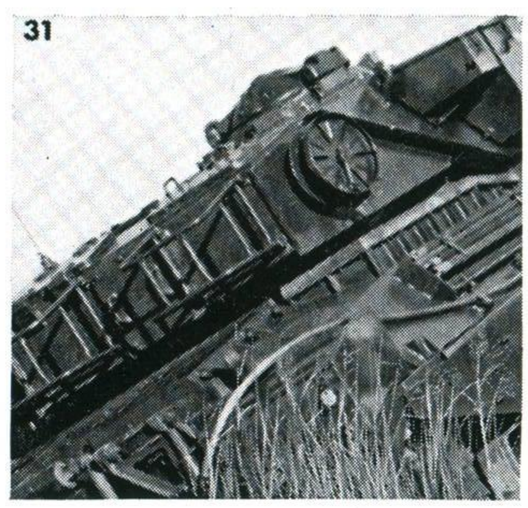


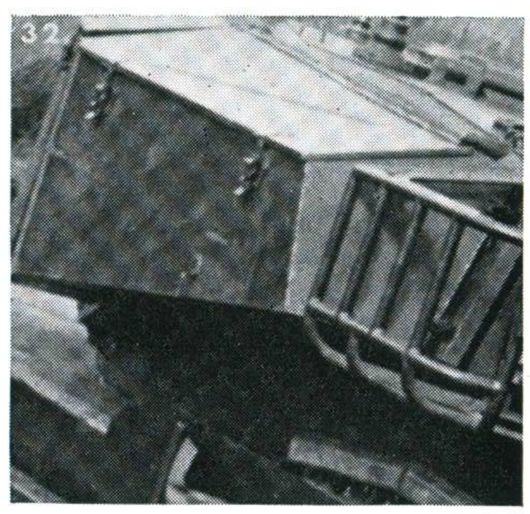
The prototype vehicle without the flotation screen fittings on the track guard.

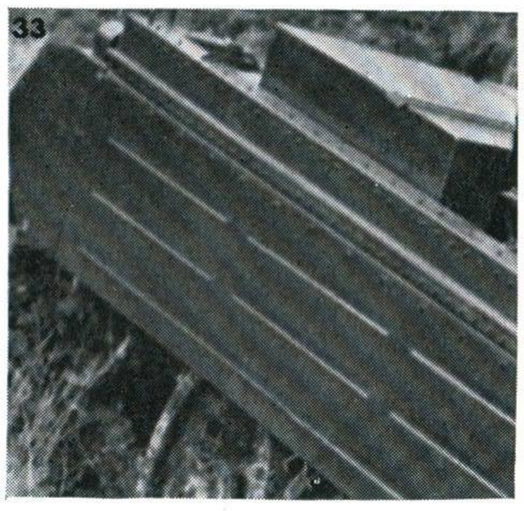


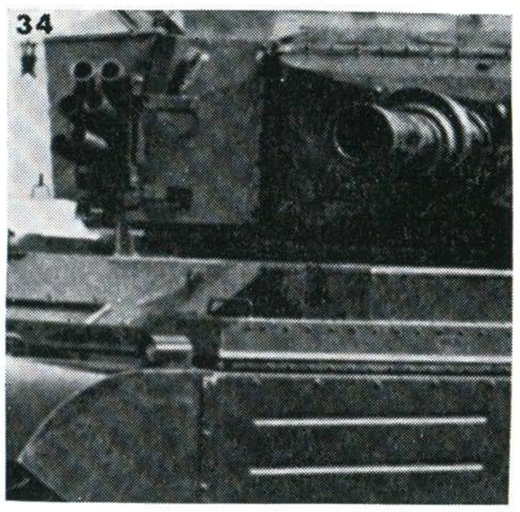

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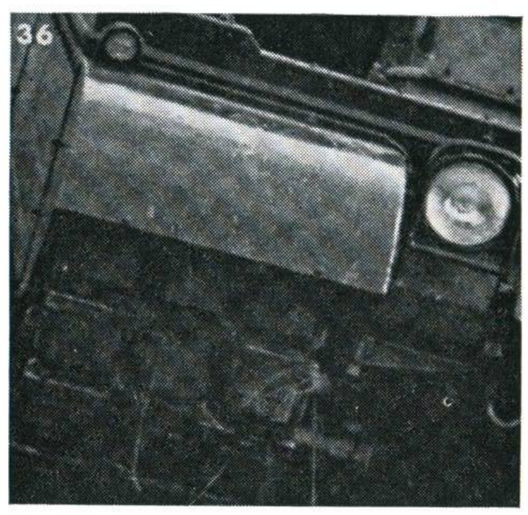

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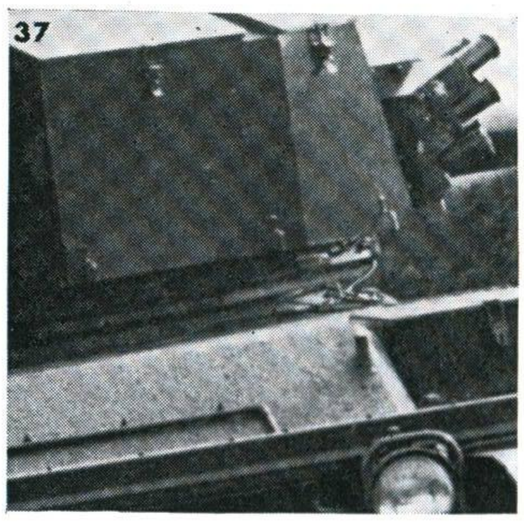

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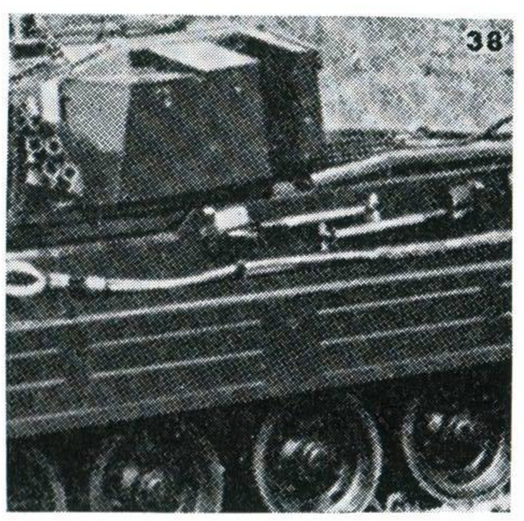

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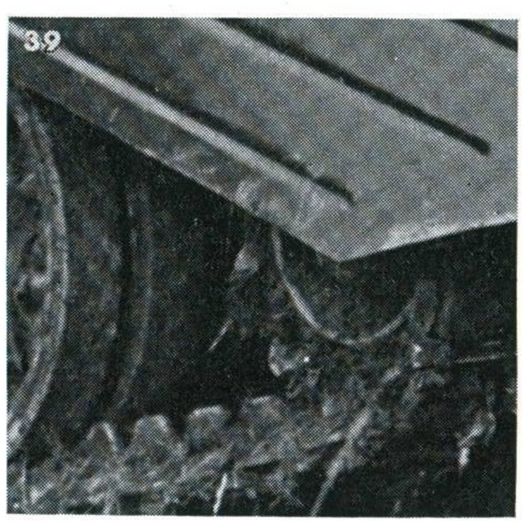

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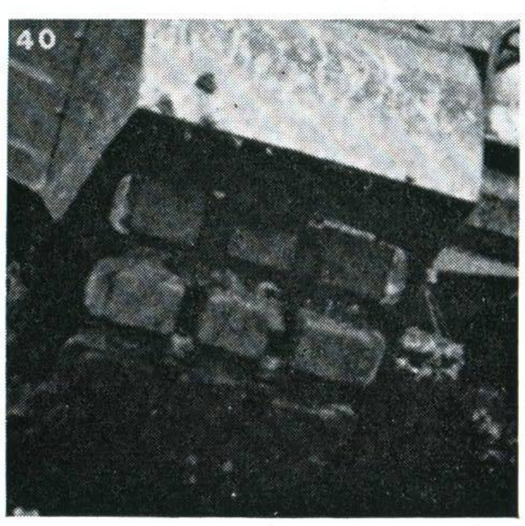

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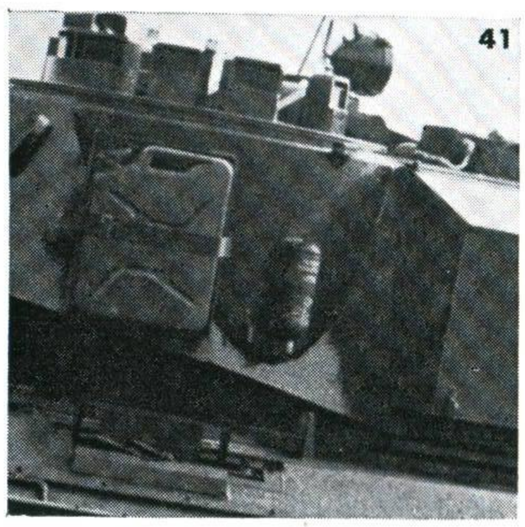

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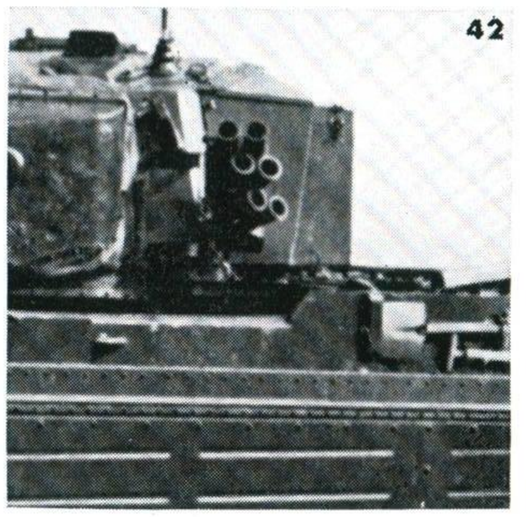

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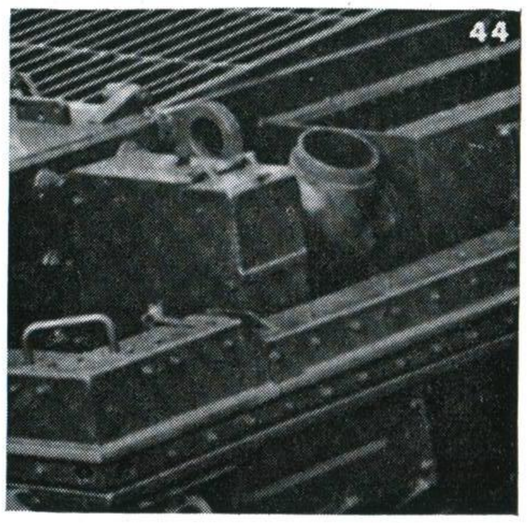

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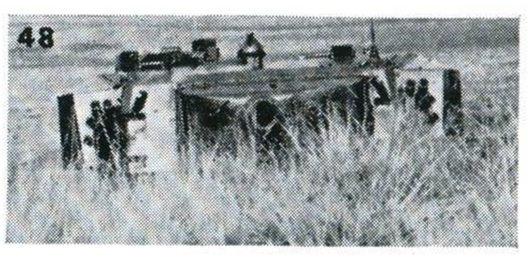

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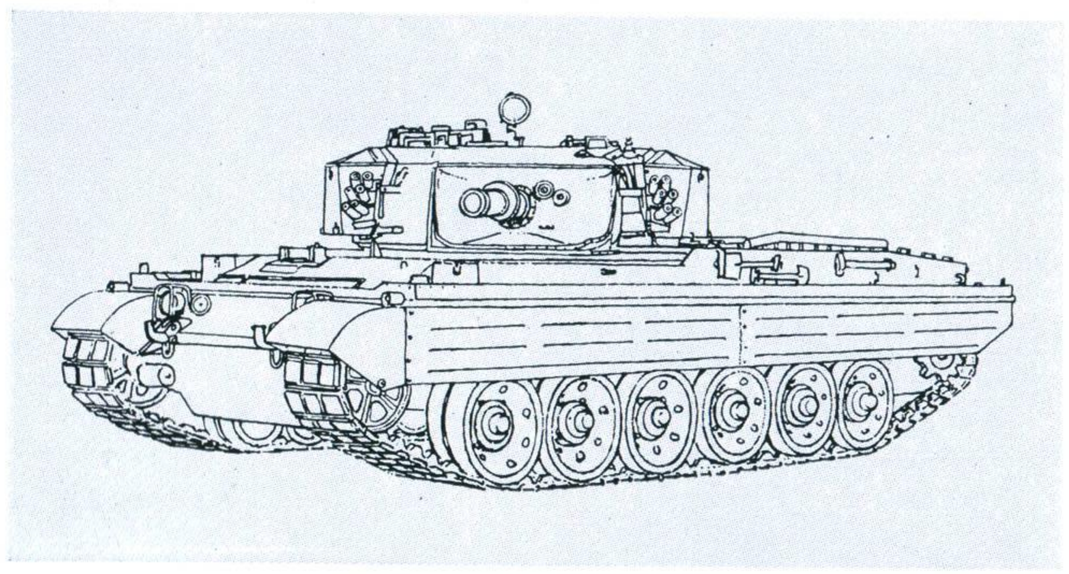

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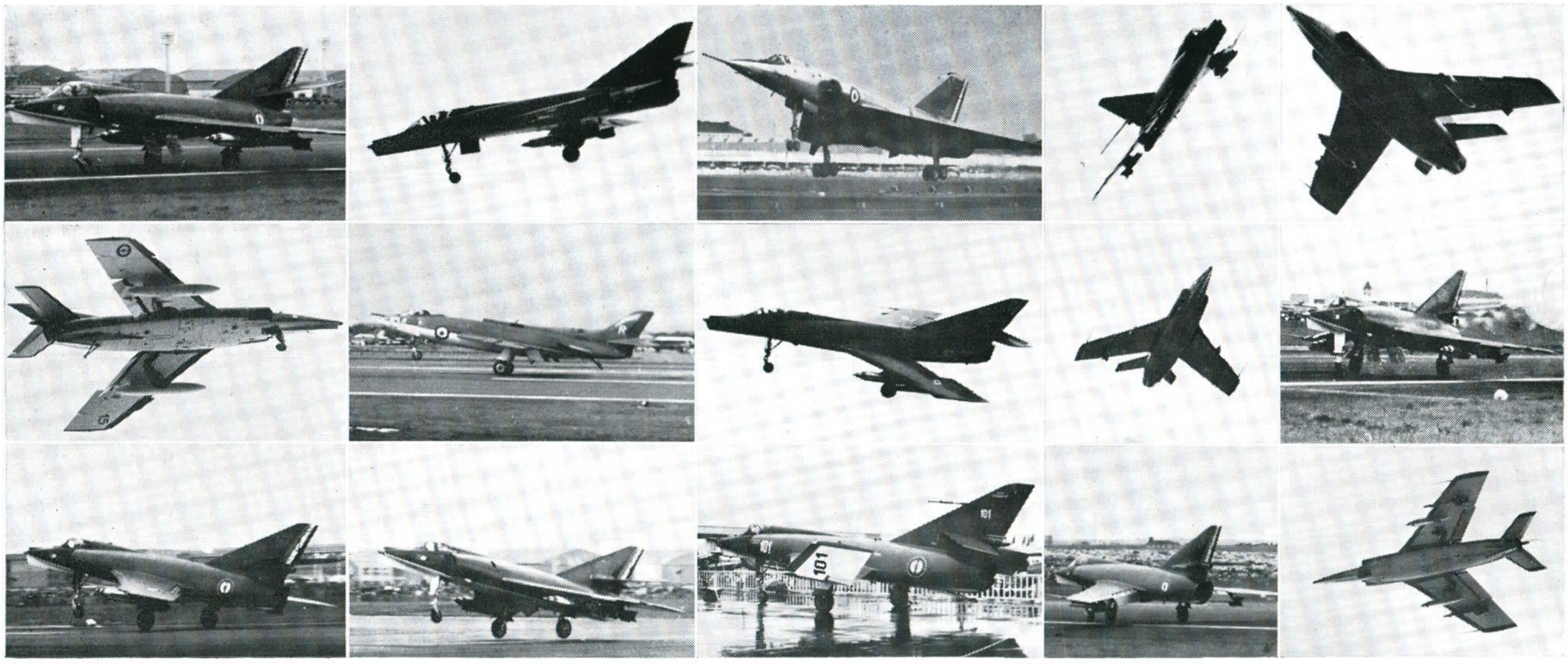


solutions on the cover

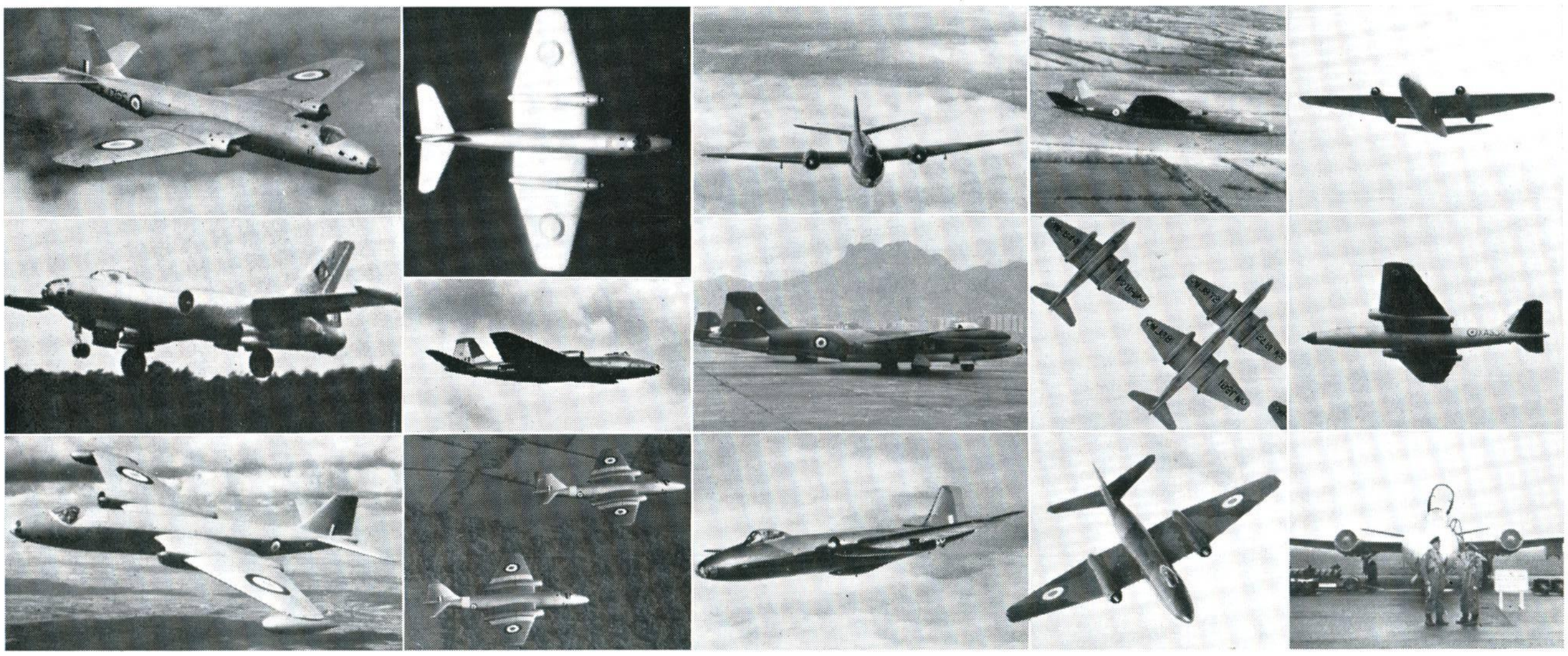
TEST PAPERS

Fashion a grid to the pattern of a lesson and mark with a cross the position of any pictures that do not conform to the subject heading.

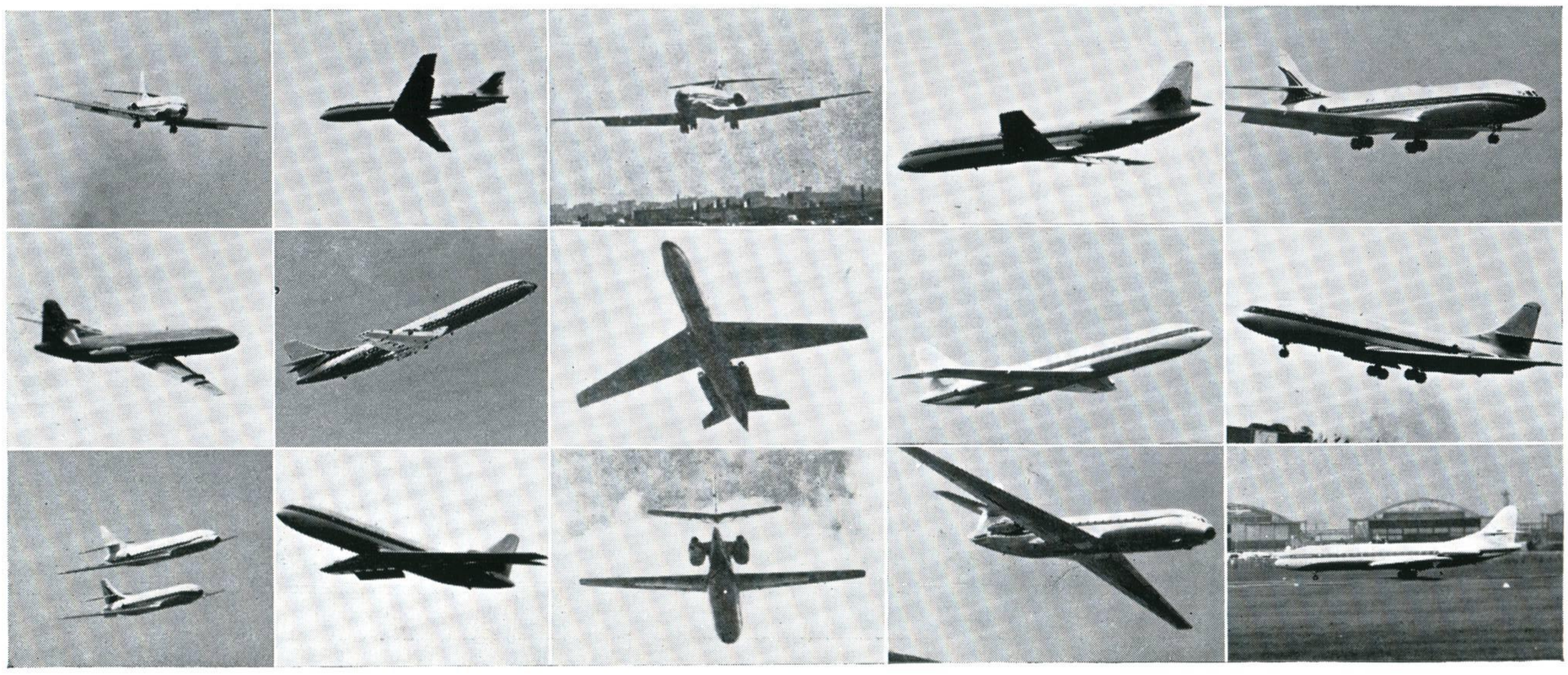
ÉTENDARD ?



CANBERRA ?



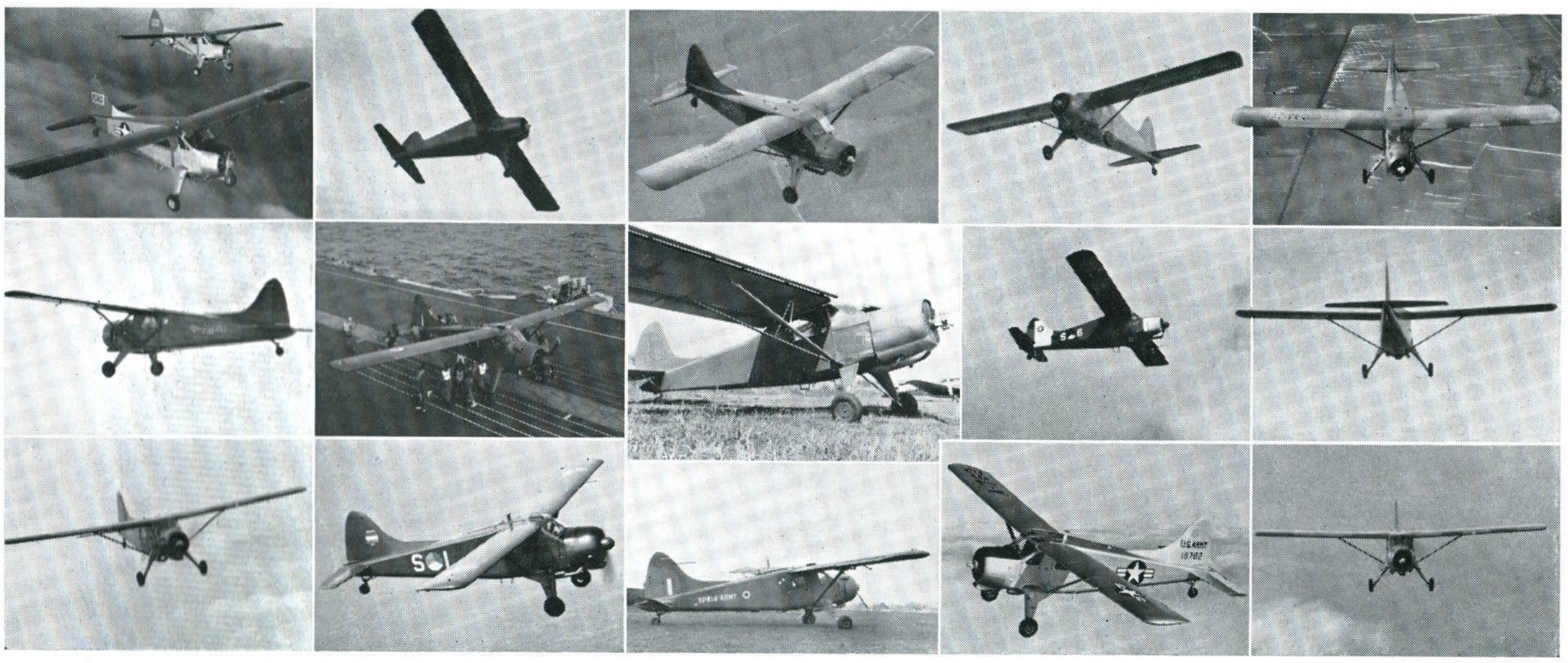
CARAVELLE ?



ALOUETTE III ?

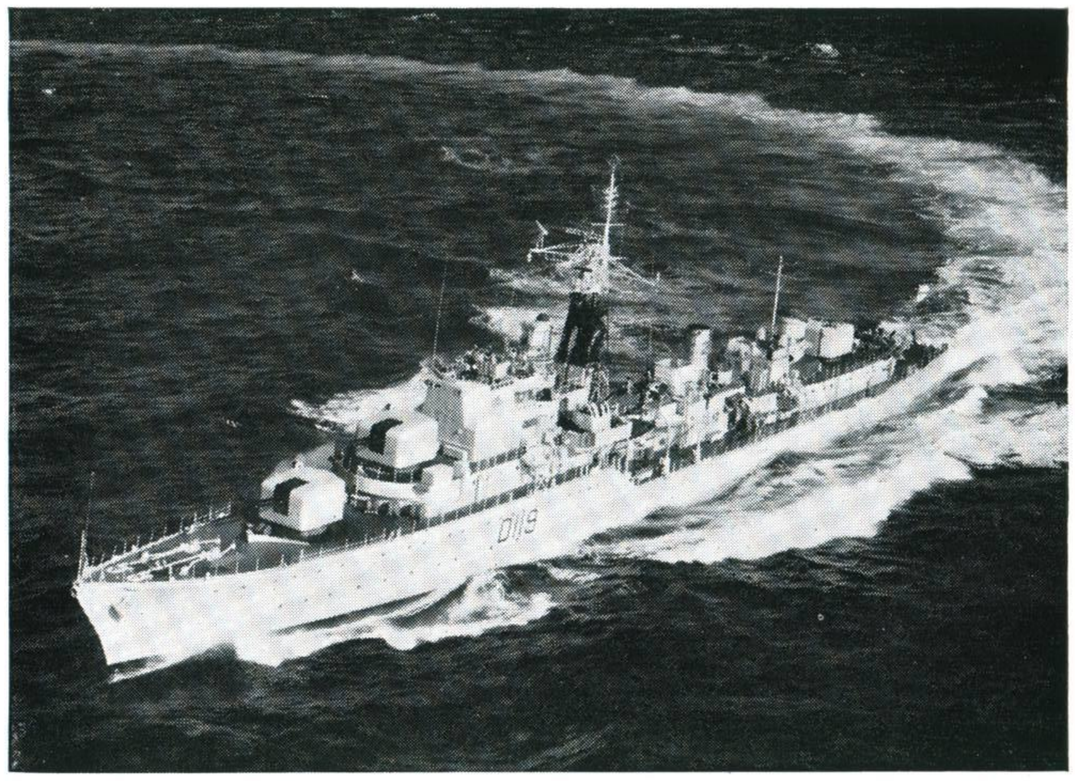


BEAVER ?



WHIRLWIND ?





Cover Photo: H.M. Destroyer *Delight*. One of the eight ships of the "Daring" Class which were a war-time design but incorporating features of the "Weapon" and "Battle" Classes with subsequent improvements, When completed they were the largest destroyers ever built for the Royal Navy, and in the opinion of some, the ugliest. 2,800 tons standard displacement, 390 feet overall, their geared turbines of an advanced design give a speed of 34 knots. *Delight* carries 6 × 4·5-inch guns in twin turrets and during a large refit in 1963–1964 her torpedo tubes were removed. The first funnel is within the lattice foremast and the very small second funnel is set well abaft amidships. A lesson on the "Daring" will appear in due course.

What are they? Last month Whitley. Further photographs in this series are held over for the time being.

Tips that Pass in the Slype: In the January edition we published a photograph on page 2 of a Shackleton and a Submarine. Our caption said it was an "A" Class Submarine. We are glad to have had a considerable number of letters from readers pointing out that it is an "O" or "P" Class, which is, of course, correct, Our apologies.

CORRECTION

In the Albion/Bulwark lesson published in the February edition of the *Journal* two targets were cross identified as follows:

Target No. 1 was identified as Bulwark whereas it is Albion.
Target No. 13 was identified as Albion and should have been given as Bulwark.

SOLUTIONS TO TESTS AND EXERCISES

Page 88

FISHPOTTERY

All targets are **Fishpots** except No. 17 which is a **Fishbed** and No. 29* which is a **Mirage III.**

Page 94

ARK ROYAL

All targets are **Ark Royal** except No. 13 which is **Albion** and No. 23 which is **Bulwark.**

Page 98

STARFIGHTER

All targets are **Starfighters** except No. 14 which is a **Voodoo** and No. 31 which is a **Freedom Fighter.**

1 F-104G
2 F-104C
3 F-104G
4 F-104C
5 F-104G
6 F-104G
7 F-104G (RCAF CF-104)
8 F-104G (Luftwaffe)
9 TF-104G (Jap. AF F-104J)
10 F-104C
11 F-104G (Jap. AF F-104J)
12 F-104G (Dutch AF)
13 F-104G
14 Joker (Voodoo)
15 F-104F (Luftwaffe)
16 F-104
17 F-104G (RCAF)
18 F-104G (Dutch AF)
19 F-104G
20 F-104G (Jap. AF)
21 F-104D
22 F-104A
23 F-104G (RCAF)
24 F-104G (Jap. AF)
25 F-104G (Jap. AF)
26 F-104D
27 F-104G (Luftwaffe)
28 F-104G (RCAF)
29 TF-104G (Jap. AF)
30 F-104G (Jap. AF)
31 Joker (Northrop F-5)
32 F-104G (Jap. AF)
33 F-104G (Dutch AF)
34 F-104C
35 F-104C
36 F-104G (Jap. AF)
37 F-104C
38 F-104G (Jap. AF)
39 TF-104G (Jap. AF)
40 F-104A
41 F-104G (Jap. AF)
42 TF-104G
43 F-104C
44 F-104G
45 F-104G (Luftwaffe)
46 F-104G
47 F-104G (Jap. AF)

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VICKERS 37 TON TANK

All targets are **Vickers 37 Ton Tanks** except No. 22 which is a **Centurion** and No. 31 which is a **Chieftain.**

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TEST PAPERS

ÉTENDARD?

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CANBERRA?

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CARAVELLE?

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ALOUETTE III?

			*	

BEAVER?

		*		

WHIRLWIND?

				*

* JOKERS



The Hawker Siddeley Harrier V/STOL close support/reconnaissance aircraft pictured for the first time in operational service camouflage. The Harrier, now in production for the Royal Air Force, is designed to spend most of its active service operating from dispersed areas. These cab-rank stations offer the front line Army immediate air support of bombs, rockets, and/or cannons. Film from photographic reconnaissance penetrations, carried out at high speed low level, can be returned direct to the front line operations centre by the Harrier, utilising its vertical landing capabilities.

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