

07

JOINT



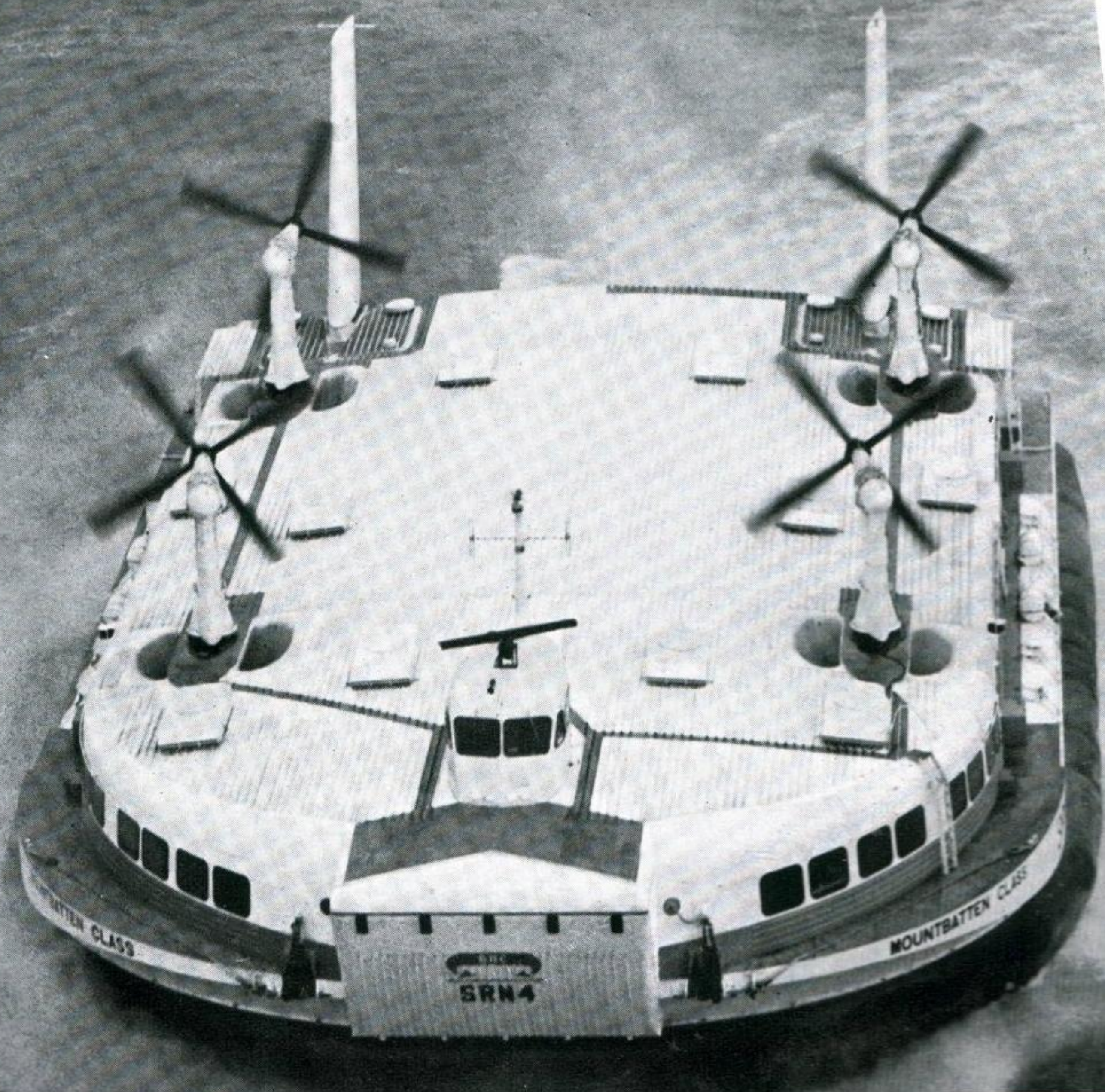
SERVICES

# RECOGNITION

*Journal*



Vol. 23 JULY 1968 No. 7



*The first 165-ton "Mountbatten" (SR.N4) Class hovercraft, launched from BHC's East Cowes slipway, Isle of Wight in February*



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.

The Journal is produced solely for official use and must not be sold to members of the public. Contributions and correspondence should be addressed to the Editor, *Joint Services Recognition Journal*, Ministry of Defence, Room 409, Old War Office Building, Whitehall, London, S.W.1.

Feature	Page
Sikorsky CH-53A, Sea Stallion ( <i>cover</i> ) ... ..	169
SR.N4 "Mountbatten" Class ... ..	170
The New Merchantmen ( <i>editorial</i> ) ... ..	171
Cessna 411 ... ..	172
Test Papers: Dreadnought and G Class Submarine — Lesson Instructions ... ..	173
* Bell UH-1, Iroquois ... ..	174
* Hound (Mi-4) ... ..	178
H.M.S. <i>Valiant</i> ... ..	182
R.A.F. Airships ... ..	184
* Northrop F-5A ... ..	186
* Chieftain Tank ... ..	190
Solutions to Tests and Exercises — Testing Time	196

\* *Identification Lessons*

## THE NEW MERCHANTMEN

For some years new hovercraft have skimmed around the waterways, swamps, snowfields and other normally inaccessible regions in various parts of the world on trial for commercial and military purposes. Some operate regular services for passengers.

Now, the largest one so far built, the SRN4, is in public service between Dover and Boulogne. Other hovercraft of this type are on the stocks and should soon be in service.

This novel form of transport means new subjects to recognise, but these craft create no greater identity training problems than ships, tanks or aircraft and there should be no misgivings on the part of anyone needing to train to identify hovercraft.

### **The SRN4**

Reduced to basics the SRN4 resembles a flat iron in form. In essence it consists of a system of watertight boxes surrounded by the rubber curtain in which the air cushion is created. On top of the "boxes" is the main deck for carrying freight and passengers. This is enclosed in a hull on top of which are four airscrews on swivel-mounted pylons driven by four marine Proteus gas turbines.

The turbines provide propulsion and also drive the lifting fans. The latter produce the pressure cushion which hoists the vehicle clear of the surface thus providing its frictionless "track" as air "escapes" beneath the edges of the curtain. The speed of the SRN4 is very high compared with those of normal seagoing vessels, being in the region of 75 knots. While these vehicles are operationally sparse, speed will be a fairly obvious feature by which it can be spotted (though not necessarily identified). But when many such craft are operating—and there are many hundreds building throughout the world—the need for identification will become more important. The SRN4 is by far the largest commercial hovercraft in regular service and for a time it will be unique.

### **The Future of Hovercraft**

It goes without saying that a vehicle of such high speed and carrying potential (the SRN4, for example, will carry 350 passengers and 30 cars or, alternatively, 800 passengers) would be useful militarily. The fact that they do not have the physi-

cal contact with the surface over which they travel means easier passage and navigation. The military future for hovercraft would seem good but its commercial uses are likely to develop more quickly.

There is no theoretical reason why hovercraft could not be built up to a mile in length, i.e. five times longer than say the recent RMS *Queen Mary*. Indeed the larger they come the proportionally greater load they can carry. Hovercraft longer than the SRN4 are almost certain to be built within the next few years. Sophistication of control machinery and design generally will also improve performance not only in terms of high speed but also in terms of manoeuvrability and sea-keeping ability. One can picture huge ocean-going hovercraft ignoring normal docking facilities and coming to rest on any convenient area on the shore or for that matter, inland, if suitable approaches can be made.

### **Our Part**

Whilst it is part of our business to consider the development of hovercraft, it is more to the point to provide readers with the means of training to identify them as soon as they become operational. In due course a trainer on the SRN4 will appear in the *Journal*.

We have already said there is nothing particularly difficult about learning to identify these craft if the job is tackled correctly, i.e. by the use of good trainers. Such trainers exploit the inherent ability of everyone to learn to identify whole groups or classes of objects and people. Here we might re-quote from Dr. Allan's report on the trials of the Sargeant System of Identity Training. "Obviously the human organism possesses a mental mechanism capable of carrying out perceptual organisation without the aid of lectures or formal instruction, otherwise there would be none of the spontaneous recognition skills of every day life such as the ability to recognise faces and objects. The problem is now to stimulate this perceptual organising capacity into action". The properly constituted identity trainer sets this mechanism in motion.

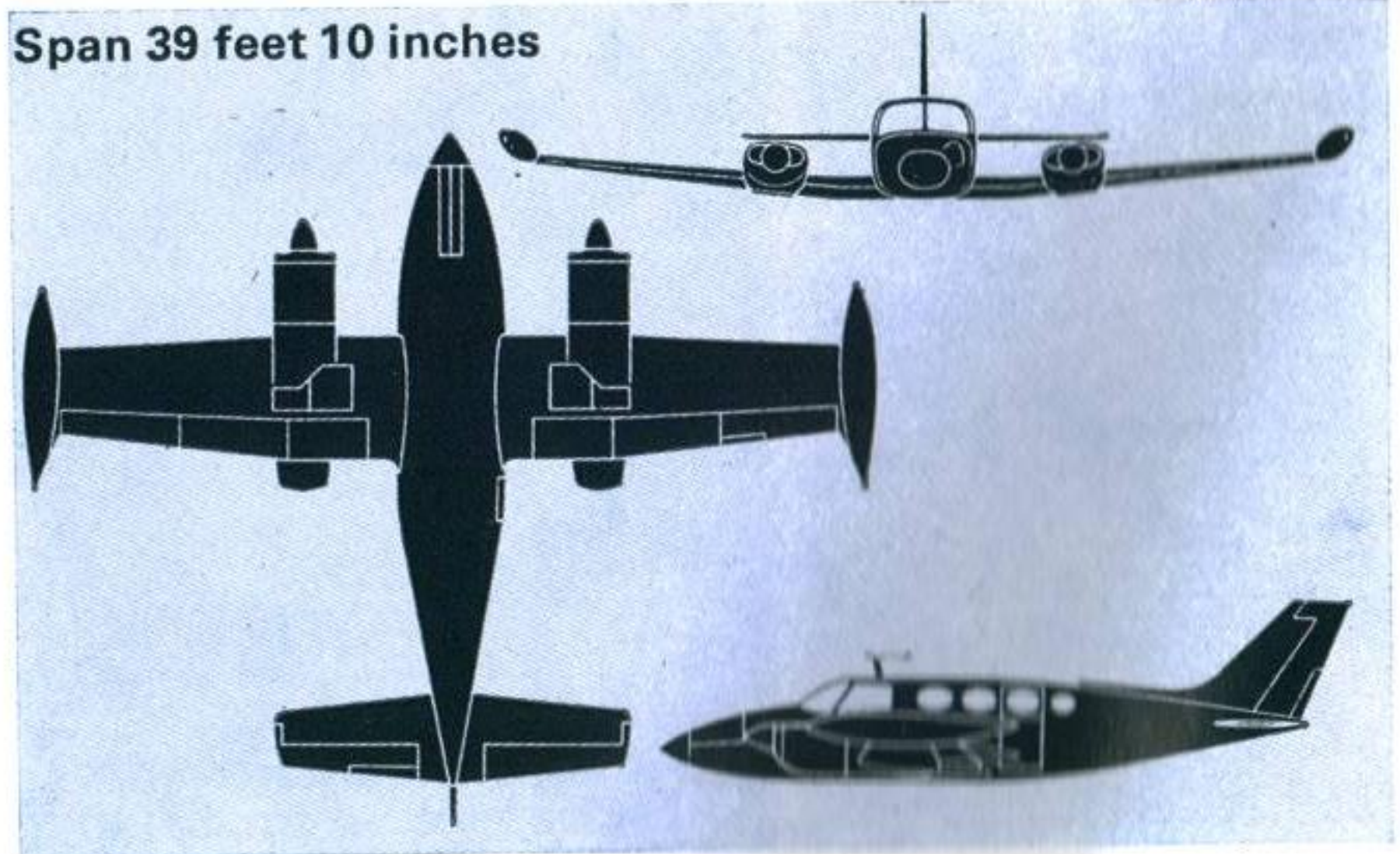
The supply of information about the objects on which identity training is required is not part of our function except to a very limited degree. This may seem, and is, regrettable, but the ability to identify is a skill—and is only learned by "doing" not by memorising data.

# CESSNA 411

The Cessna 411 medium twin six-to-eight seat business aircraft first flew in July 1962 and has been followed by a pressurised version, the 421. Closely related and generally similar to the Model 411 are the Models 401 and 402. However, they are lighter (and cheaper), the 401 being an executive aircraft, while the 402 has a redesigned interior for use as a nine-seat commuter or for light freighting.



Span 39 feet 10 inches

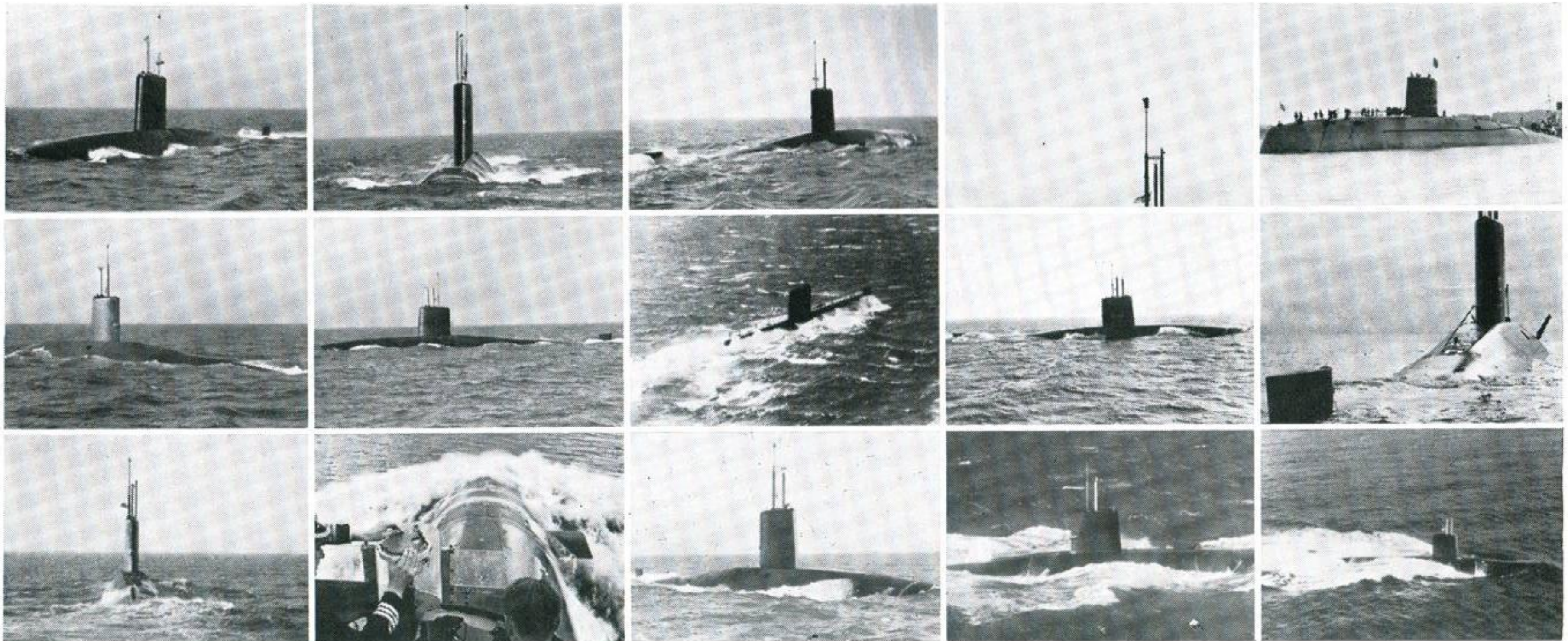


Something to show how good you are—or ar'n't—at identifying these submarines

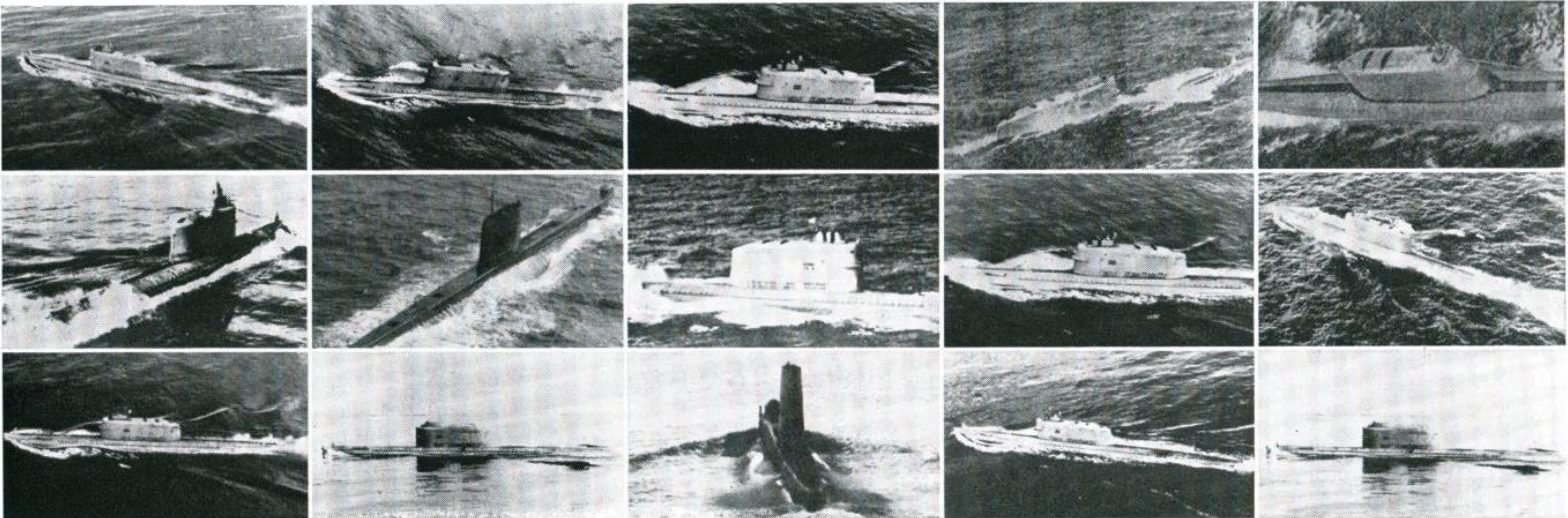
## TEST PAPERS

*Solutions on the cover*

### DREADNOUGHT?



### G CLASS SUBMARINE?



**Lesson Instructions** Identity Training is a matter of "doing", not of gathering information. Submit to the instructions given below in every lesson and the ability to identify will become automatic.

- |  |  |
|--|--|
| <ol style="list-style-type: none"> <li>1. Read the text associated with the lesson.</li> <li>2. Prepare a list of target numbers so as to be able to tackle the targets in any order.</li> <li>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.</li> <li>4. When certain of the identity of a target write down its name <b>IMMEDIATELY</b> against the appropriate number on your list. <b>THIS IS IMPORTANT.</b></li> <li>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.</li> <li>6. Do not attempt conscious memorising of details, shapes, or names. The procedure will take care of that. Do not attempt to do it without the key too soon, wait until it is self-evident.</li> </ol> | <ol style="list-style-type: none"> <li>1. Lire le texte correspondant à la leçon.</li> <li>2. Préparer une liste de numéros de cible, de façon à pouvoir prendre les cibles dans n'importe quel ordre.</li> <li>3. Identifier les photos de la cible en les comparant avec les vues-clé: commencer par les plus faciles de manière à gagner de l'expérience: se servir aussi de cibles déjà identifiées pour trouver les plus difficiles.</li> <li>4. Quand vous serez certain de l'identité d'une cible, notez son nom immédiatement en face du numéro correspondant sur votre liste. <b>CECI EST IMPORTANT.</b></li> <li>5. Les leçons ne devront pas être précipitées ou d'une durée limitée à l'avance. En ce qui concerne les débutants, il est plus important d'identifier avec précision que rapidement.</li> <li>6. Ne pas s'efforcer d'apprendre par cœur les détails, les formes ou les noms.</li> </ol> |
|--|--|

AGUSTA-BELL AB-204B (AUSTRIAN AIR FORCE)



## BELL UH-1 IROQUOIS

This American-designed helicopter is in service with the air arms of many nations besides the United States, and it exists in several versions, viz: UH-1A and 'B (casualty evacuation), UH-1D and 'H (utility), UH-1E (assault support), and UH-1F (missile site support). The UH-1A, 'B, 'E and 'F models are basically similar but the UH-1D and 'H differ in having a lengthened cabin.

The Iroquois (pronounced "Irrowkwa") is the most

widely-used American helicopter in Vietnam, and the UH-1B version, also known as the Model 204B, is built under licence in Italy—by Agusta, as the AB-204B—and in Japan; in West Germany the UH-1D, or Model 205, is being produced. The latest version of the Iroquois, the UH-1H, has a maximum speed of 138 m.p.h., a normal range of 327 miles and maximum inclined climb rate of 1,760 ft./min.

*continued overleaf*

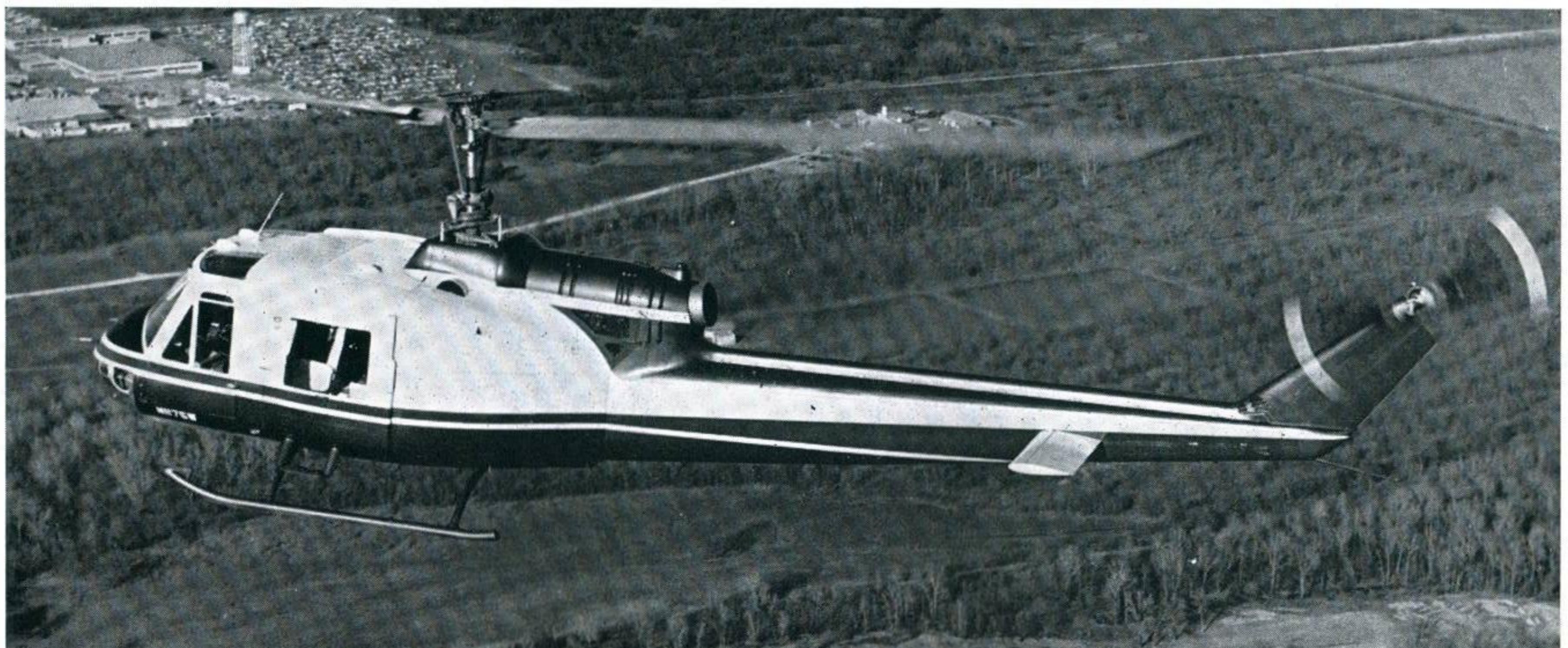
## UH-1A IROQUOIS



Fuselage length (UH-1H) 42 feet



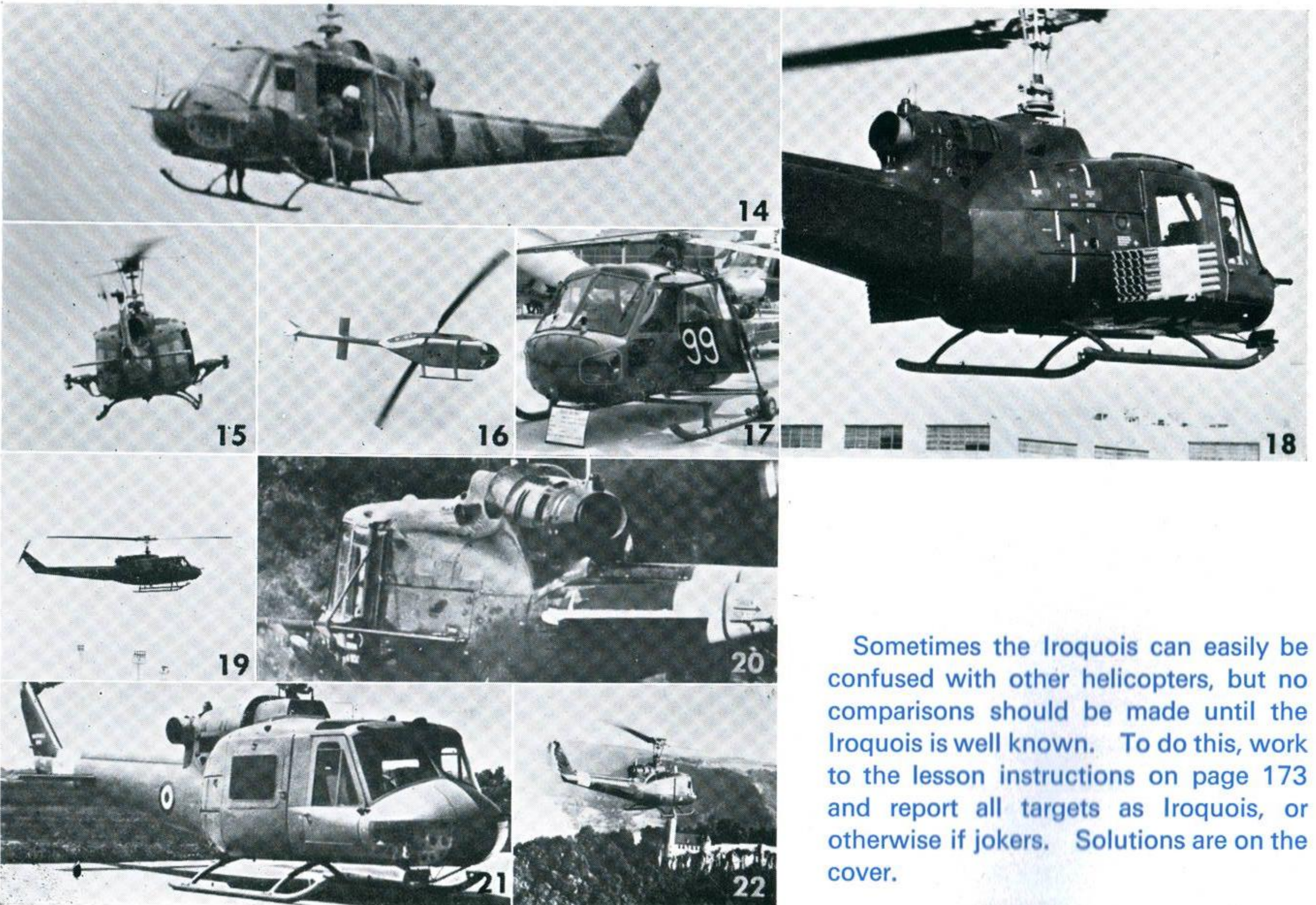
BELL MODEL 204B



AGUSTA-BELL 204-B  
(R. NETHERLANDS N.A.S.)

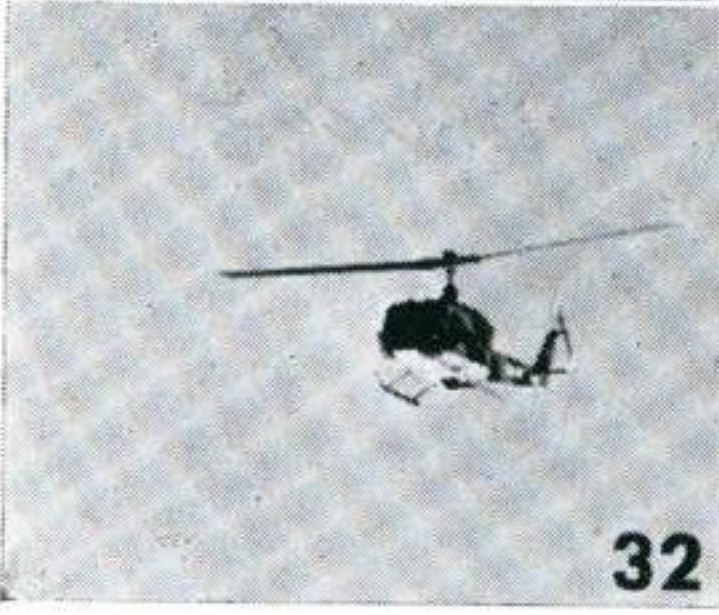
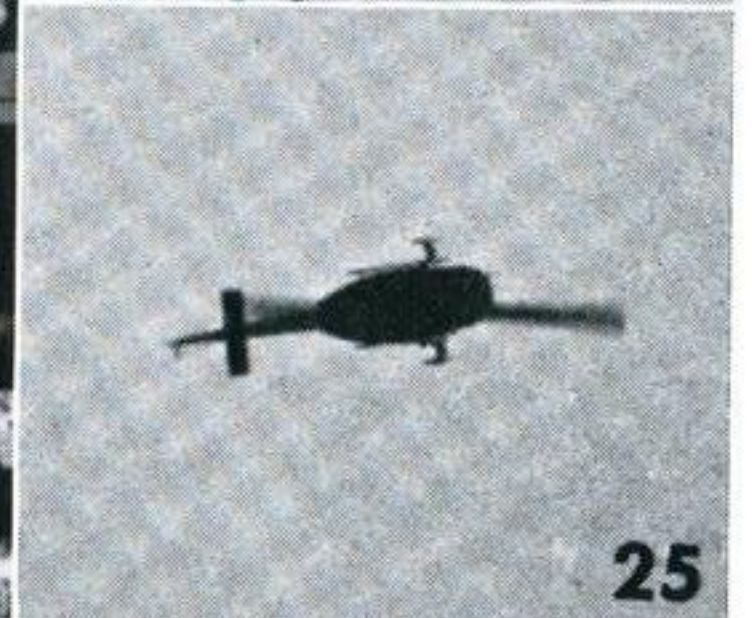
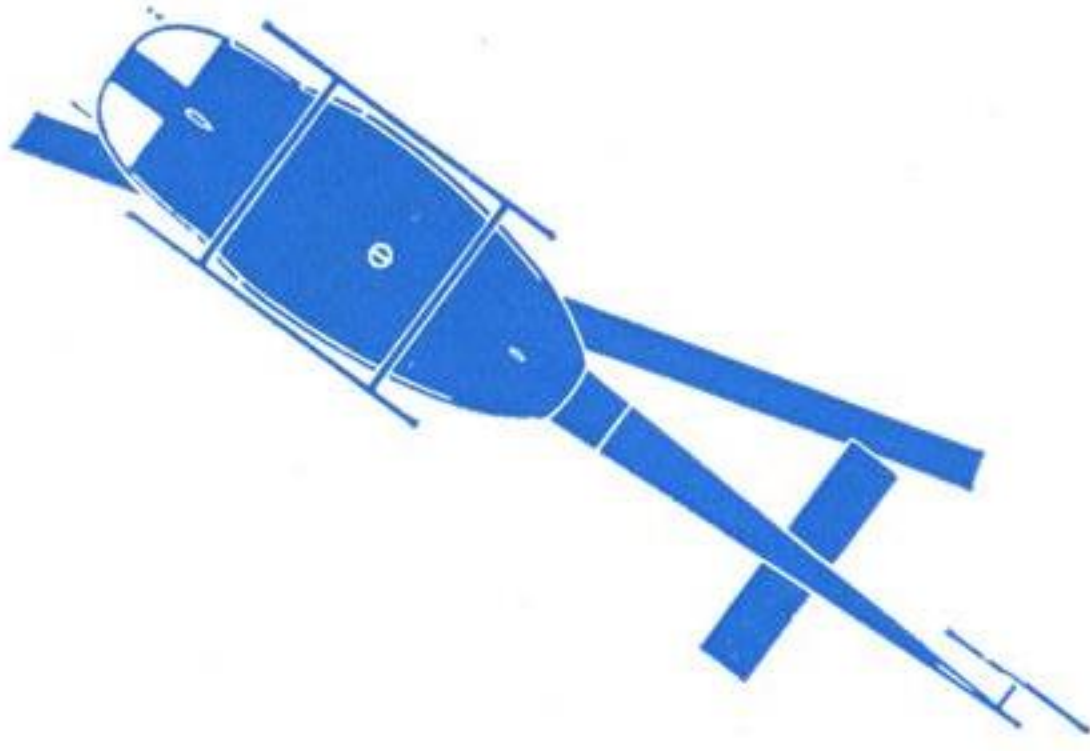


BELL UH-1 IROQUOIS *continued*



Sometimes the Iroquois can easily be confused with other helicopters, but no comparisons should be made until the Iroquois is well known. To do this, work to the lesson instructions on page 173 and report all targets as Iroquois, or otherwise if jokers. Solutions are on the cover.

Fuselage length (UH-1H) 44 feet



**IROQUOIS UH-18**





KEY



KEY

## HOUD (Mi-4)

Russia's Mil Mi-4, or Hound as it is known in the West, first went into production in 1962 and is widely used in both military and civil roles. The military version normally has a gondola for the navigator (see silhouette), and is intended, among other things, for tactical assault. Civil versions include the 10-passenger Mi-4P and the agricultural Mi-4S. The standard Mi-4 has a crew of three and carries up to 14 troops, 3,525 lb. of freight, a Jeep-type vehicle or a 76-mm. anti-tank gun. Hound has been exported to many countries, including Albania, Austria, Belgium, Bulgaria, Cuba, Czechoslovakia, Egypt, Italy, India, Indonesia, Switzerland and Syria. China is manufacturing it under licence.

*continued overleaf*

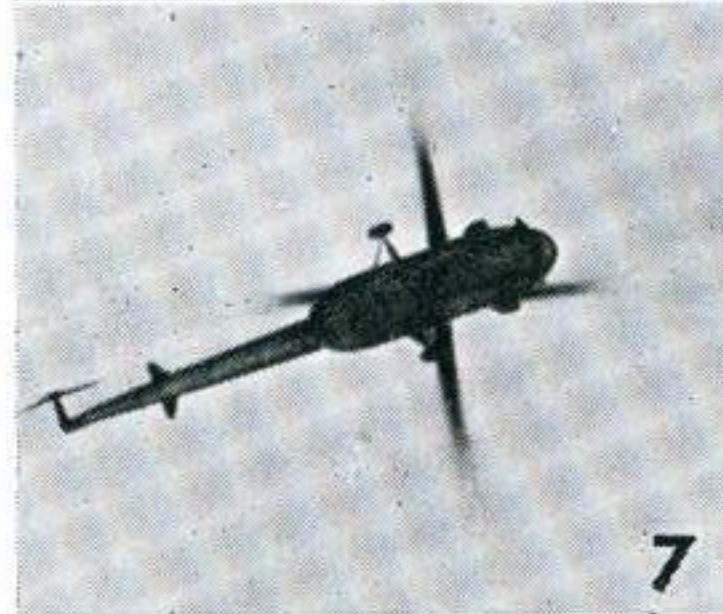
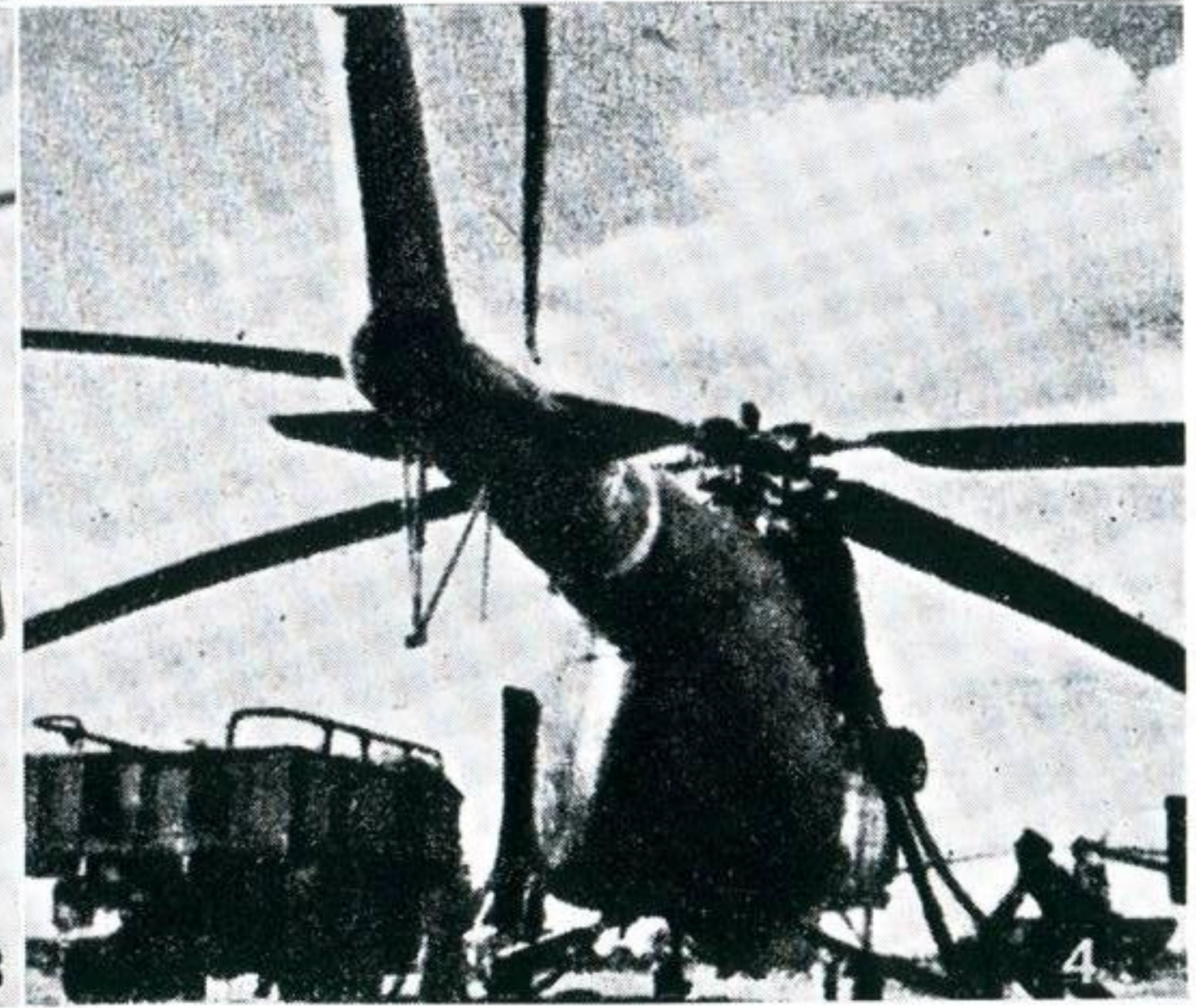
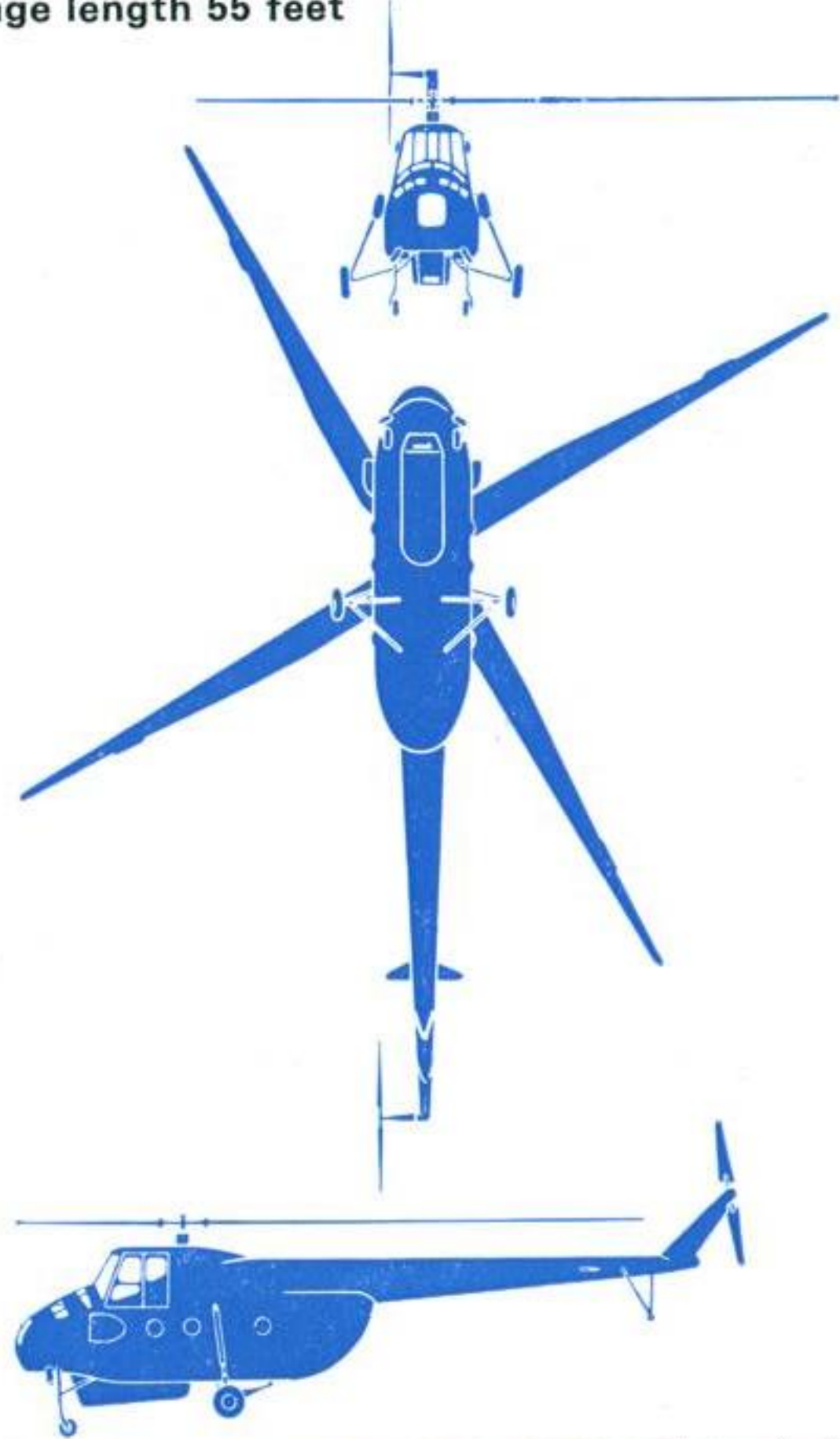
*Lesson instructions on page 173*

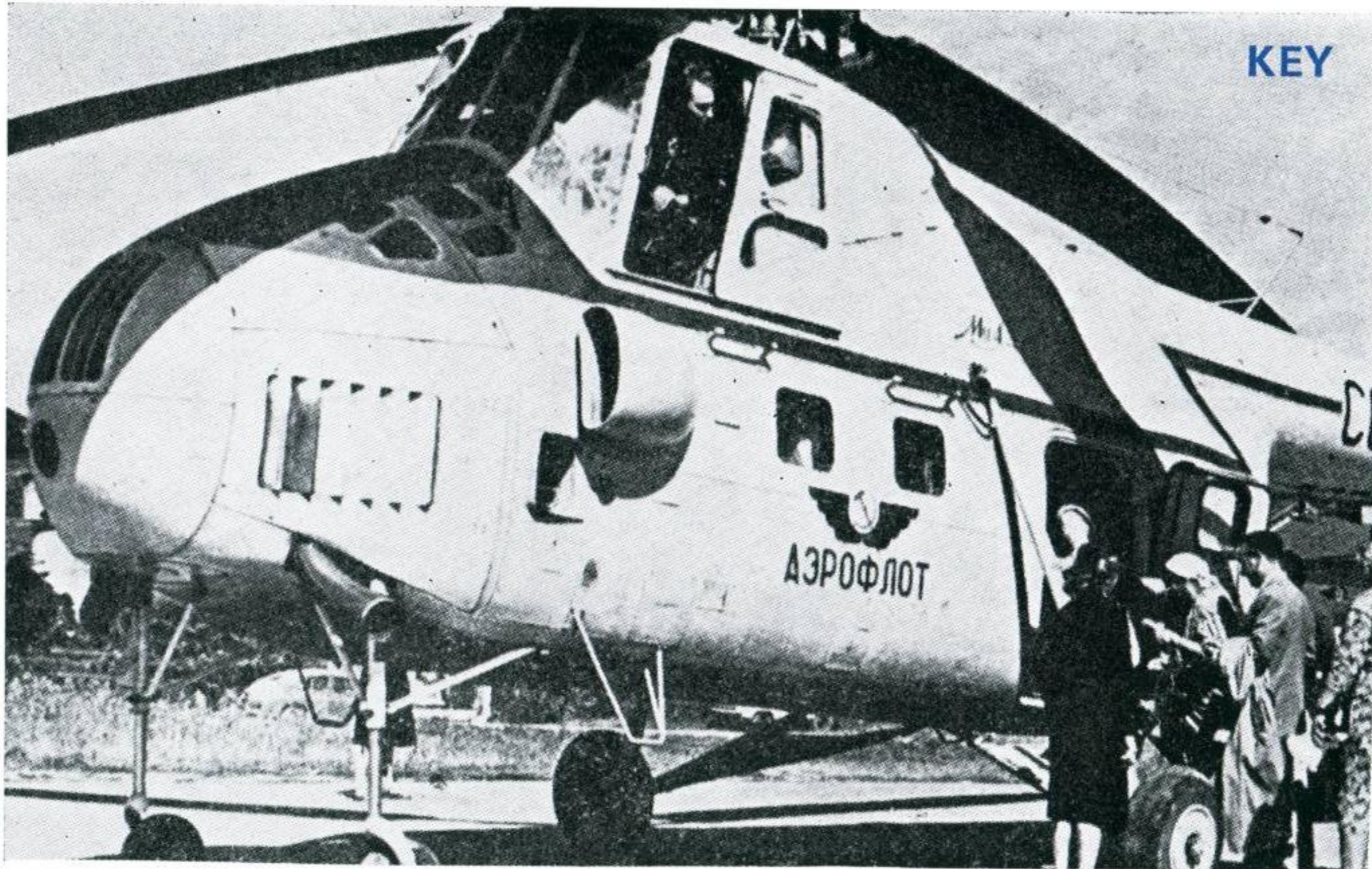
*Solutions on the cover*



KEY

Fuselage length 55 feet



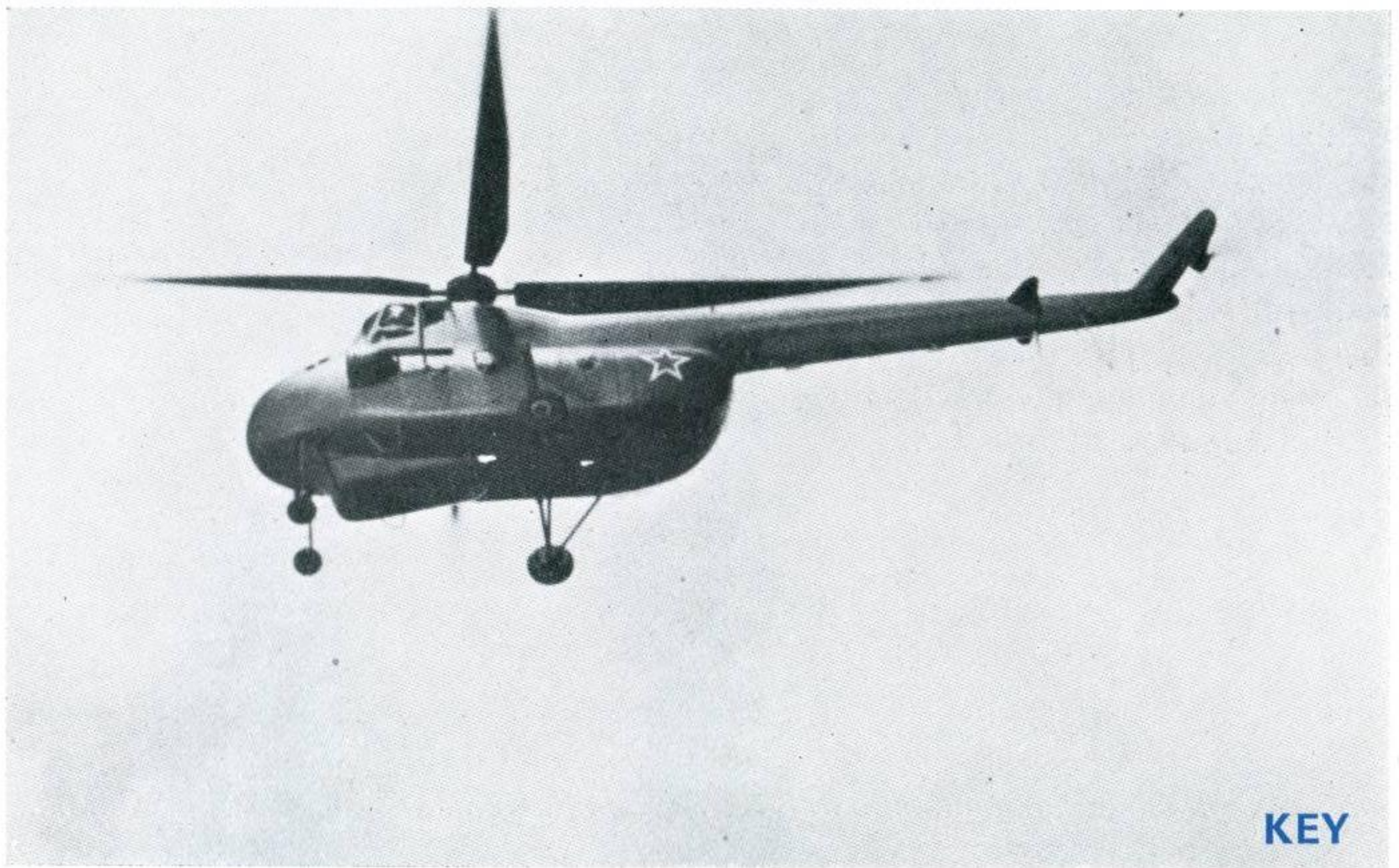
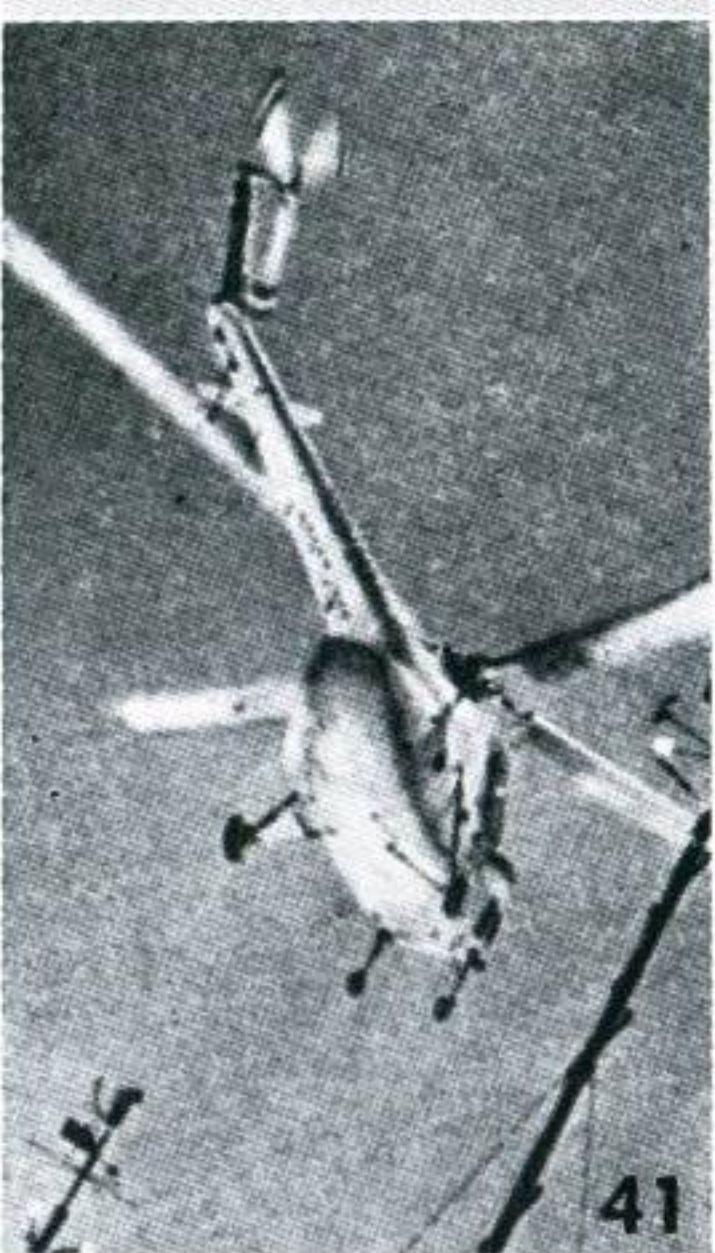
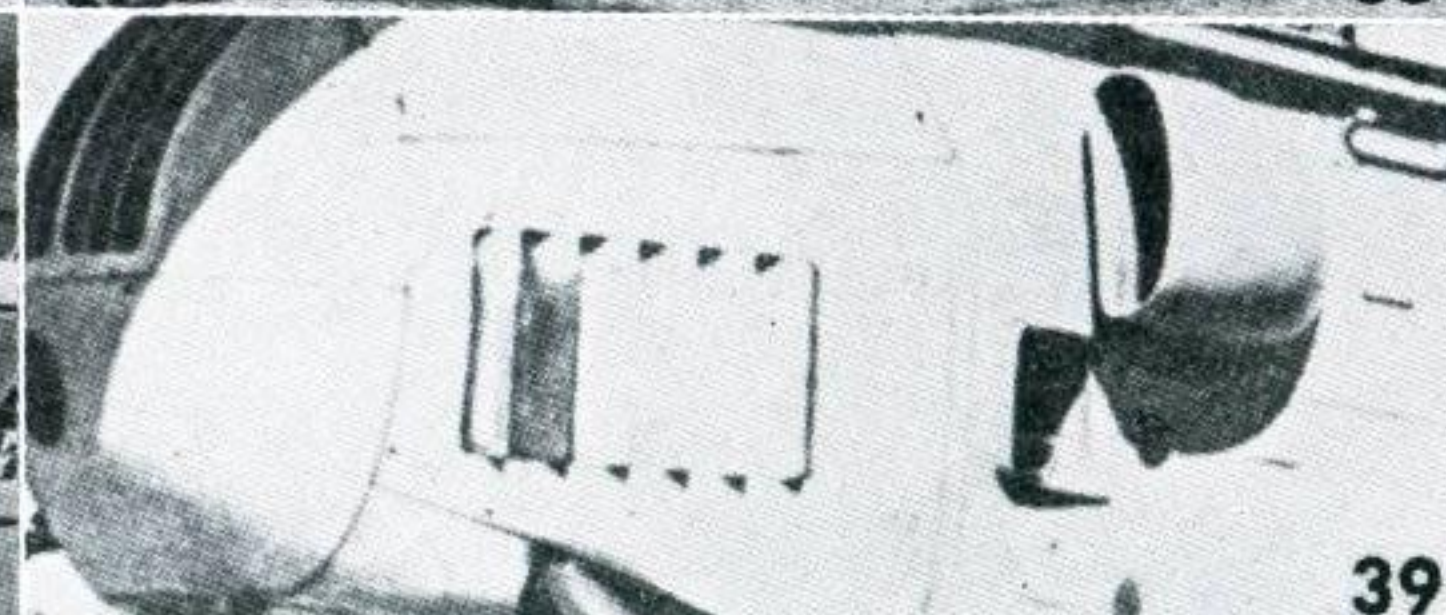


**HOUND (Mi-4)** *continued*



From some angles Hound is very similar to such other helicopters as the Wasp and Whirlwind, so it needs to be learned carefully. To do this, work to the lesson instructions on page 173 and report all targets as Hound—or otherwise if jokers. Solutions on the cover.

Fuselage length 55 feet

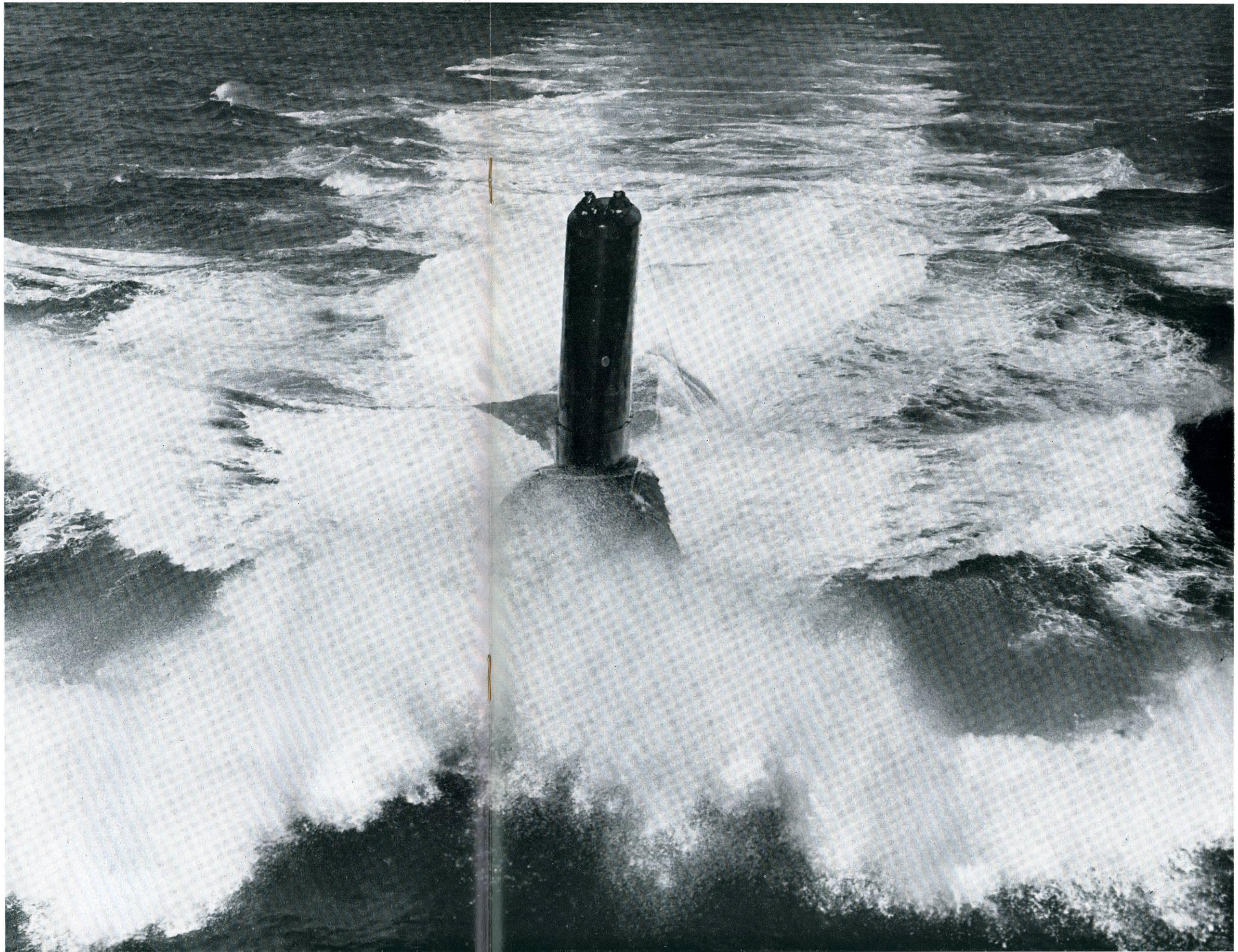


## H.M.S. VALIANT

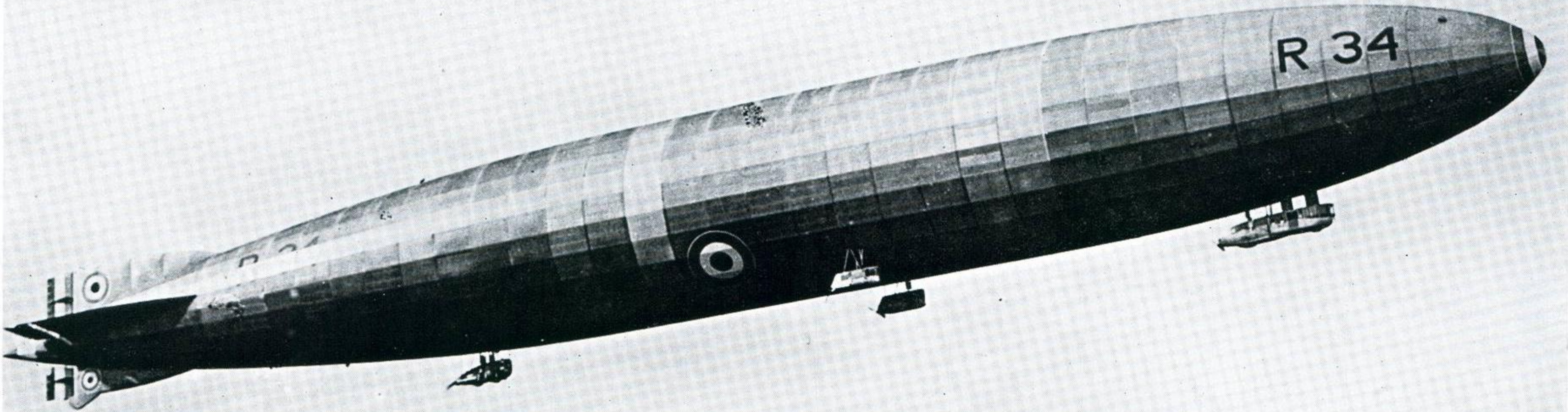
It has been said that a real submariner is never happy unless he is submerged—in sea water, of course. It has also been said somewhat sweepingly from time to time that one would never see submarines in war so why bother to train to identify them anyway. The fact is that they are seen in wartime. There is also a need in normal times to identify them.

We have also heard the saw that it is too difficult to try to learn them as "they all look alike", show very little of themselves and their "fins" (formerly called the conning tower) are so alike as to be indistinguishable one from another. If you look at the trainers on submarines in the following *Journals* you will see that there are variations in hulls, fins and details. If you train with the lessons you will find these variations are considerable, significant and distinguishable enough to leave you in no doubt as to the identity of the vessel. It is our business to make you see that. Also to make you aware that you have built in machinery enabling you to identify them if you train correctly.

You cannot *train* to identify from a single picture such as this. You can admire it, study it, talk about it—even frame it and hang it up. But that will not teach you to know it amongst fifty other submarines. It will make a valuable key to add to our previous lesson in the August 1967 *Journal*.



R.A.F. Fiftieth Anniversary Souvenir Feature

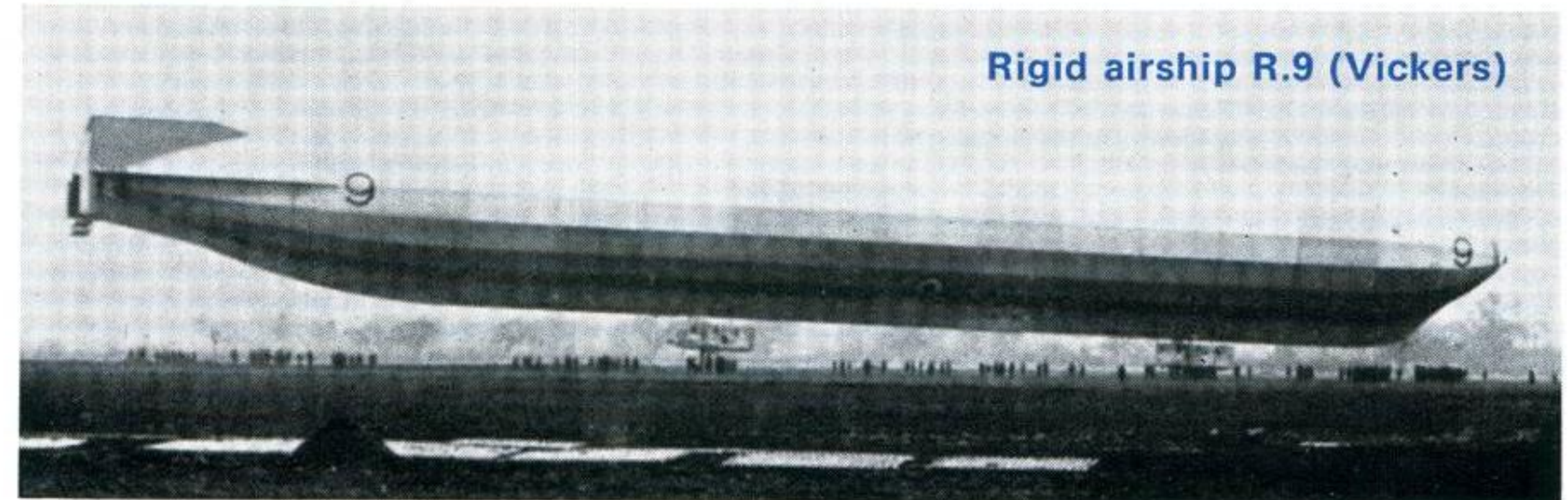


Rigid airship R.34 (built by Beardmores) made the first airship crossing of the Atlantic in 1919

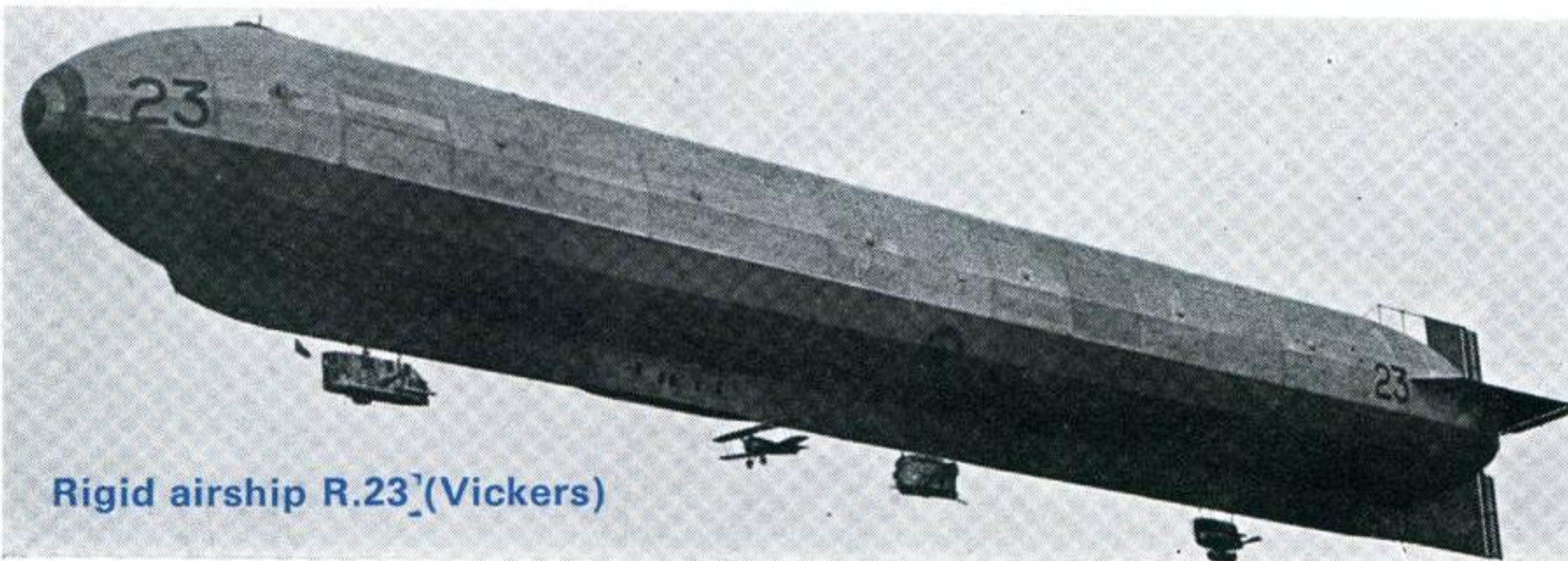
R.A.F. AIRSHIPS

Lighter-than-air craft were still an important facet of air power in 1918, when the R.A.F. was formed. By the end of the year over 100 airships were in British service, although they remained under Naval control until December 1919, thereafter coming under R.A.F. control. For economy reasons, the Airship Branch of the Service was closed down in the early 1920s but it later re-formed only to be closed down in 1930 when airship development in this country was abruptly ended by the R.101 disaster.

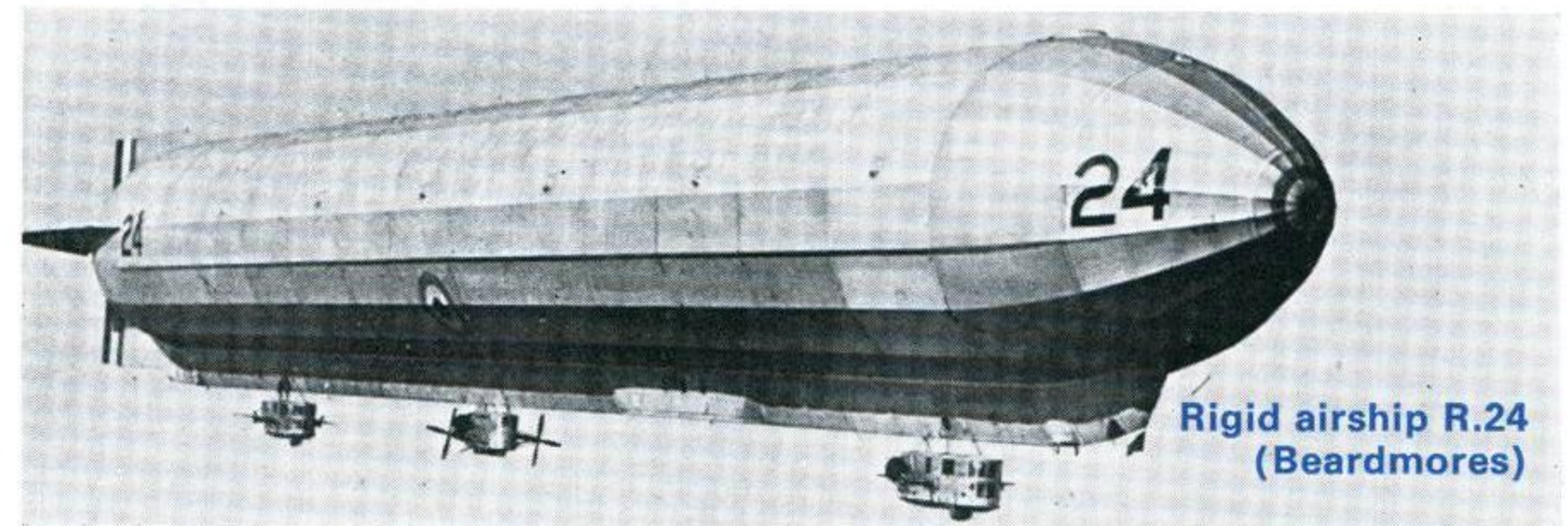
Our photographs portray some of the airships used by the R.A.F. and its predecessors. Incidentally, their makers names outlived the lives of these huge craft.



Rigid airship R.9 (Vickers)

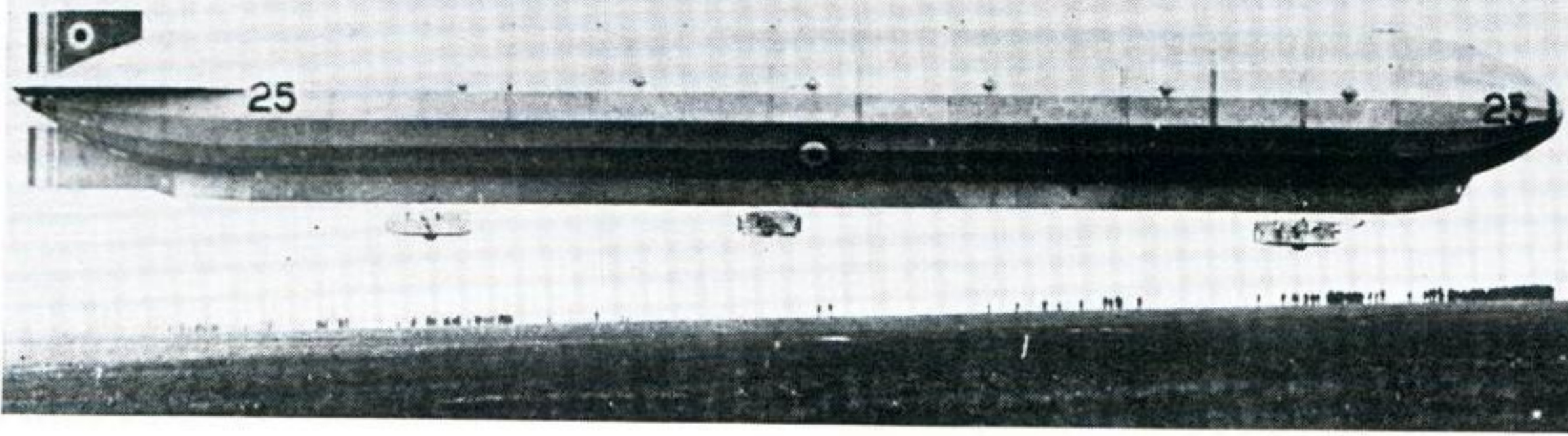


Rigid airship R.23 (Vickers)

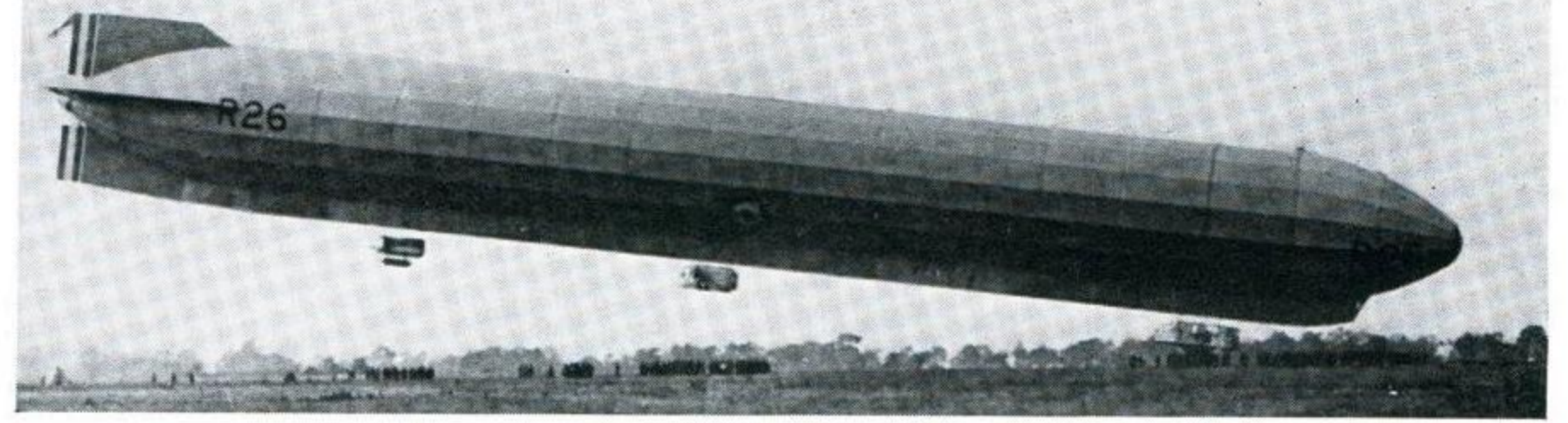


Rigid airship R.24 (Beardmores)

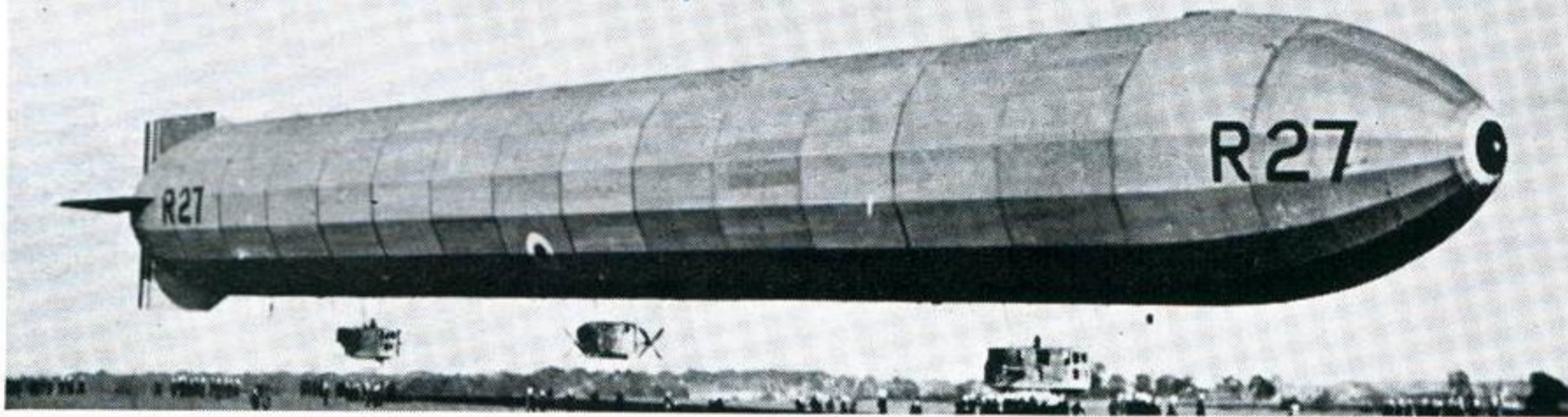
Rigid airship R.25 (Armstrong Whitworth)



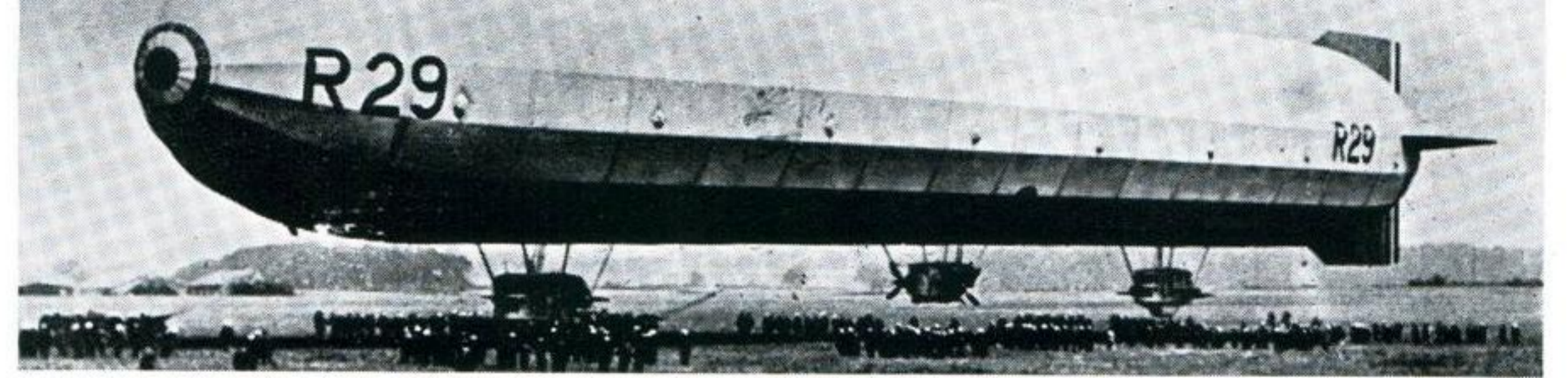
Rigid airship R.26 (Vickers)



Rigid airship R.27 (Beardmores)



Rigid airship R.29 (Armstrong Whitworth)



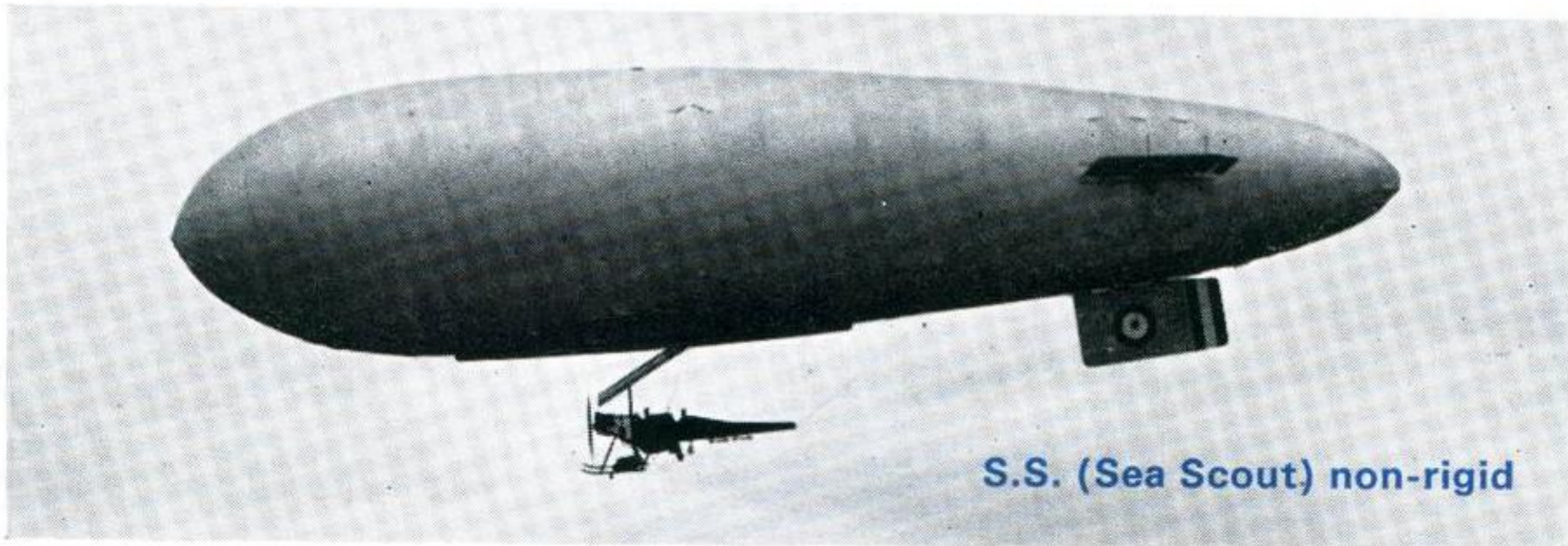
Rigid airship R.31 (Short Brothers)



Rigid airship R.33 (Armstrong Whitworth)

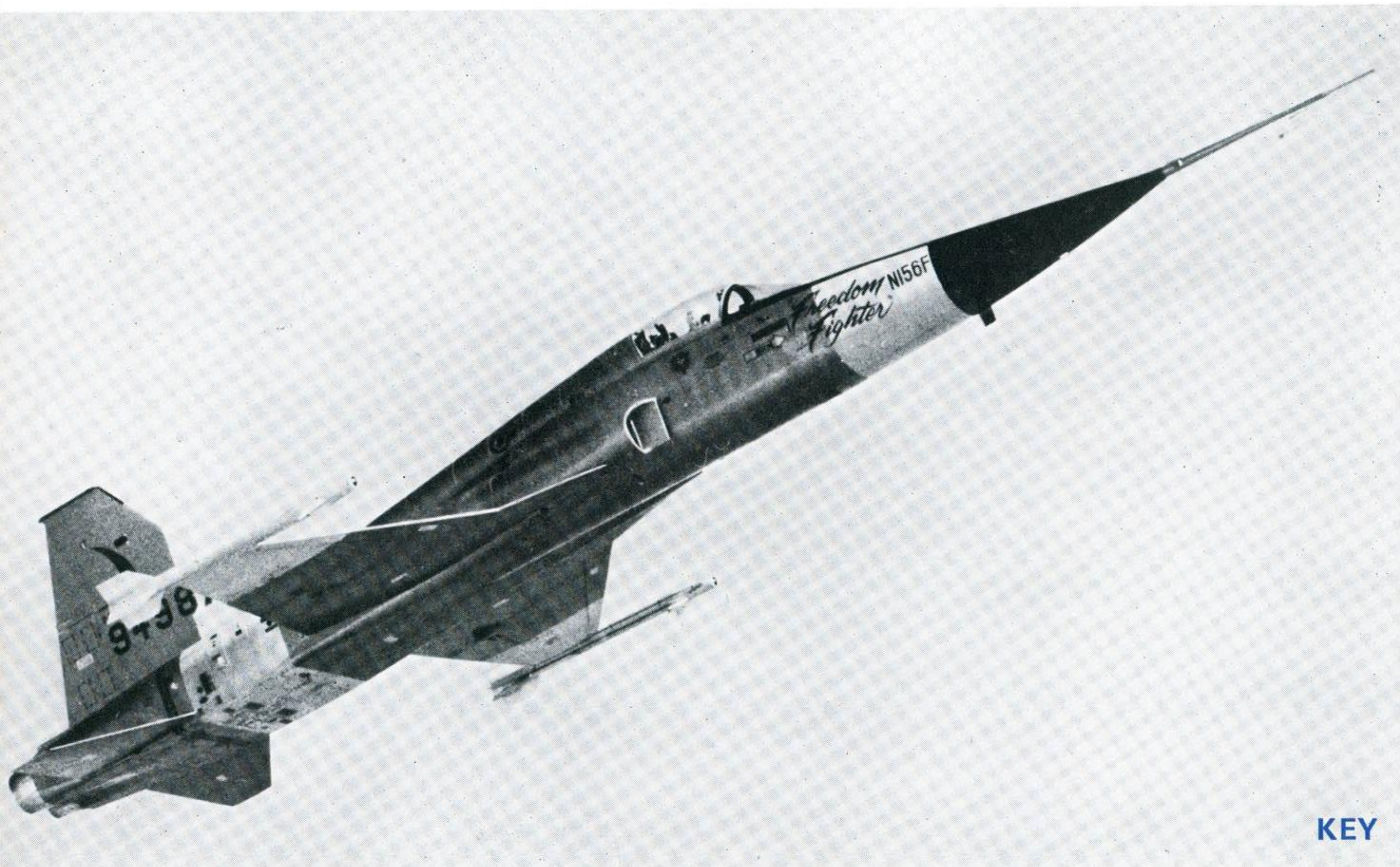


S.S. (Sea Scout) non-rigid



S.S.Z. (Sea Scout Zero) non-rigid





## NORTHROP F-5A

Operational with, or on order for, the air forces of some 15 Free World nations, the F-5A is a single-seat strike and reconnaissance fighter, the prototype of which first flew in 1959. With its two-seat F-5B version it is in large-scale production in the U.S.A. for supply under the U.S. Military Assistance Programme. In addition Spain has ordered 70 as a national purchase and 125 are being built under licence by Canadair as the CF-5A/R (two-seat version is CF-5D) for the Canadian Armed Force's Mobile Command, together with 75 single-seaters and 30 two-seaters for The Netherlands.

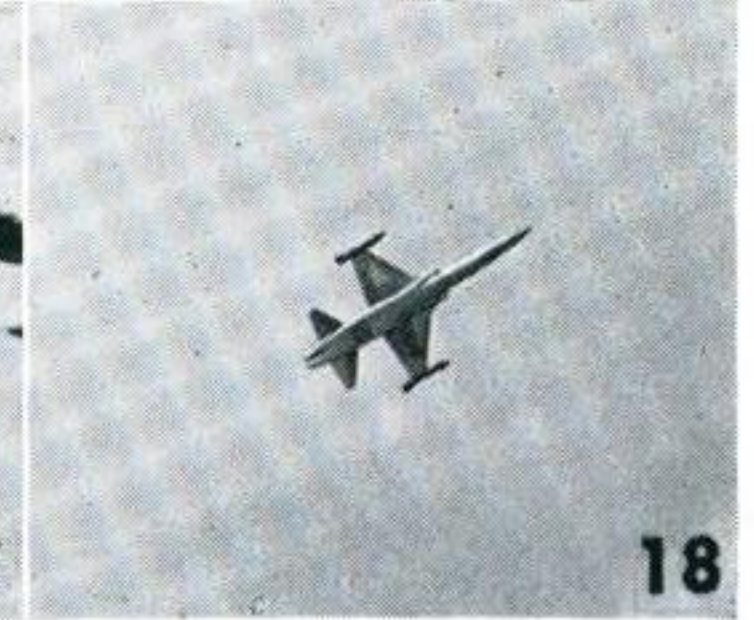
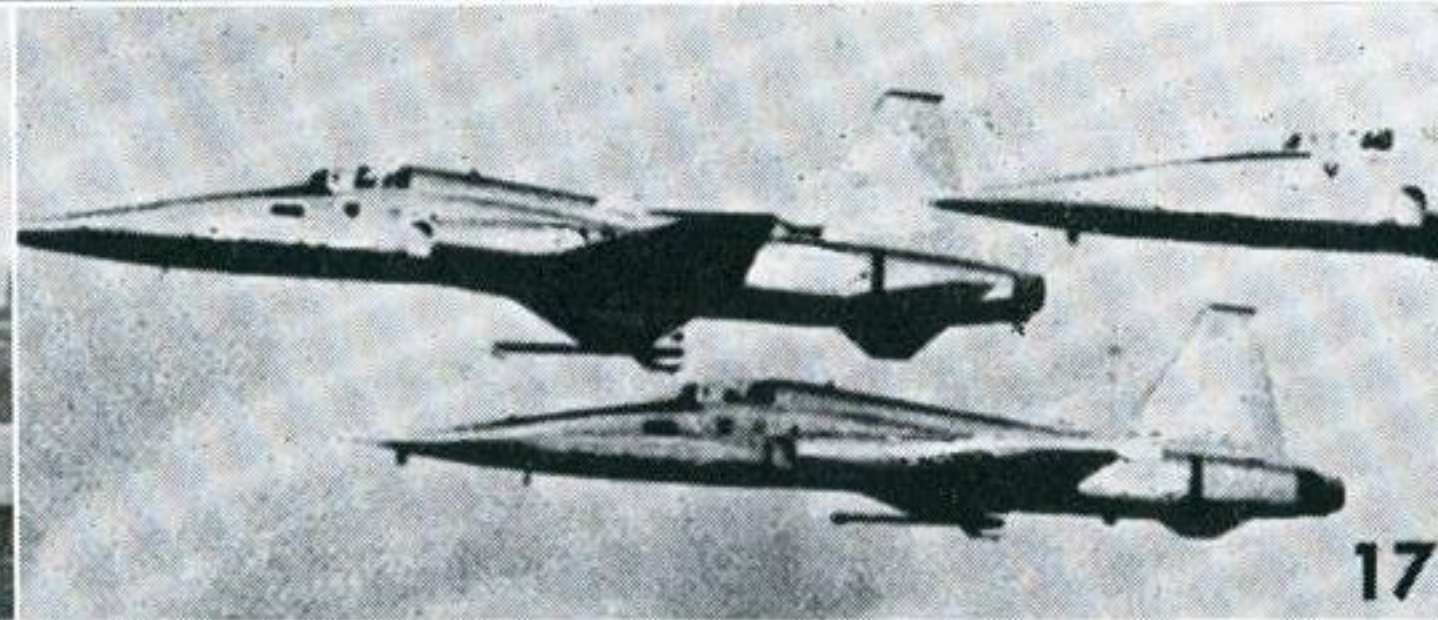
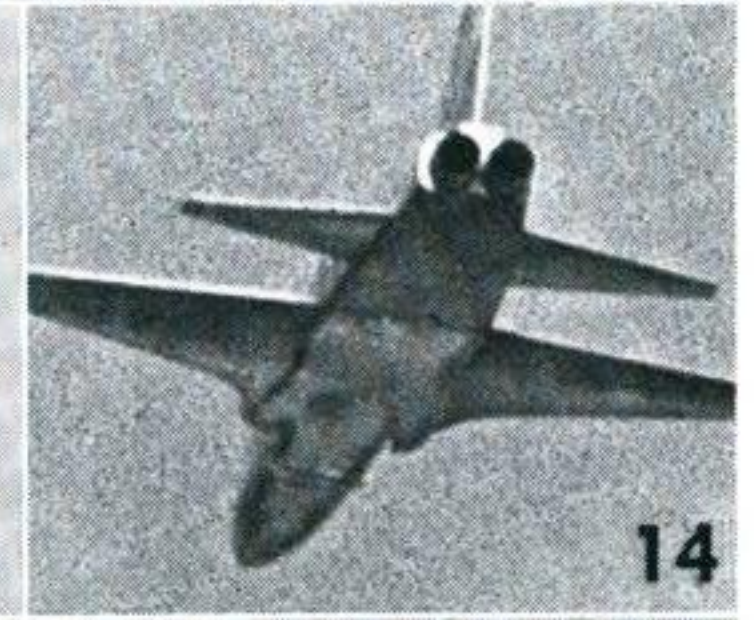
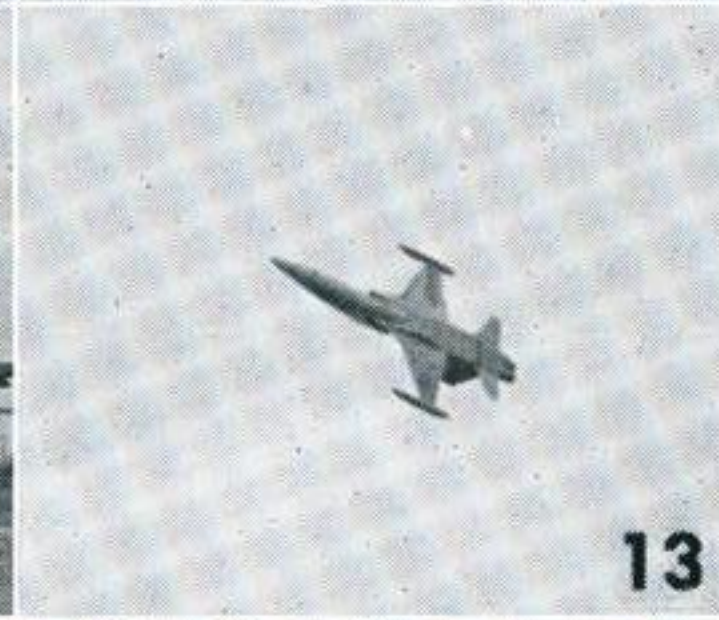
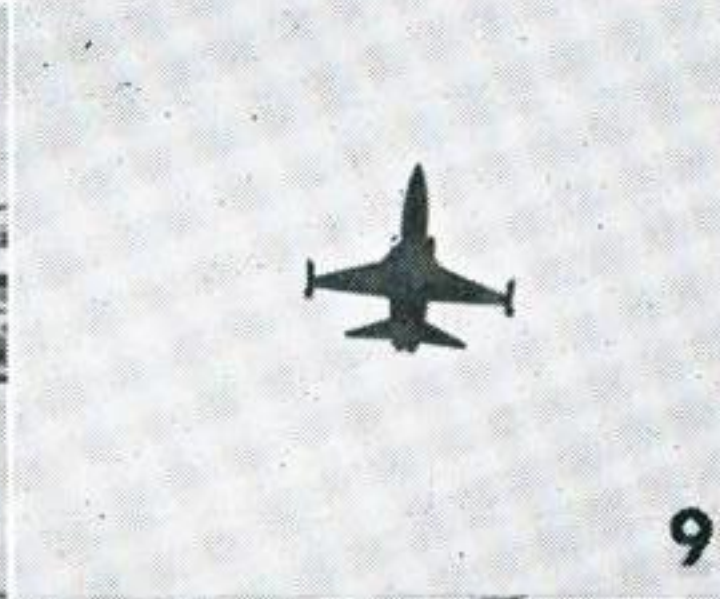
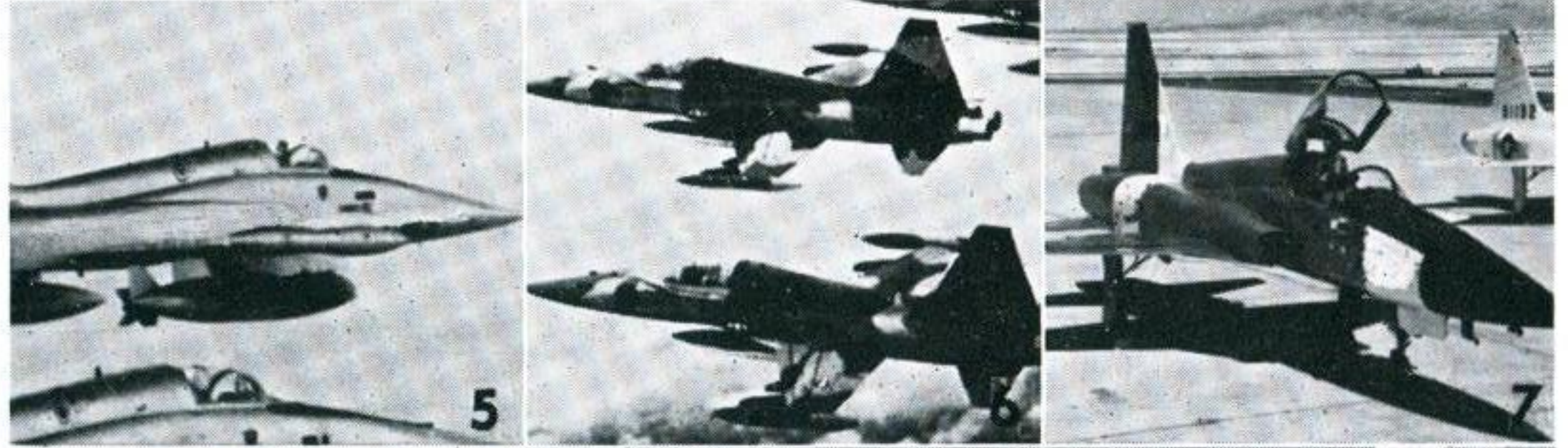
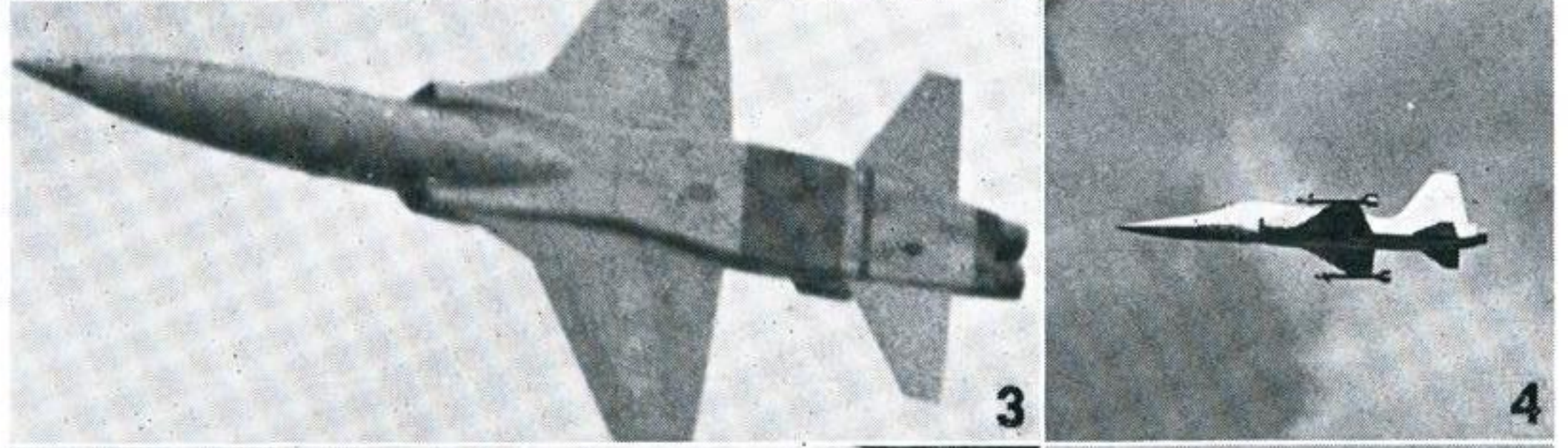
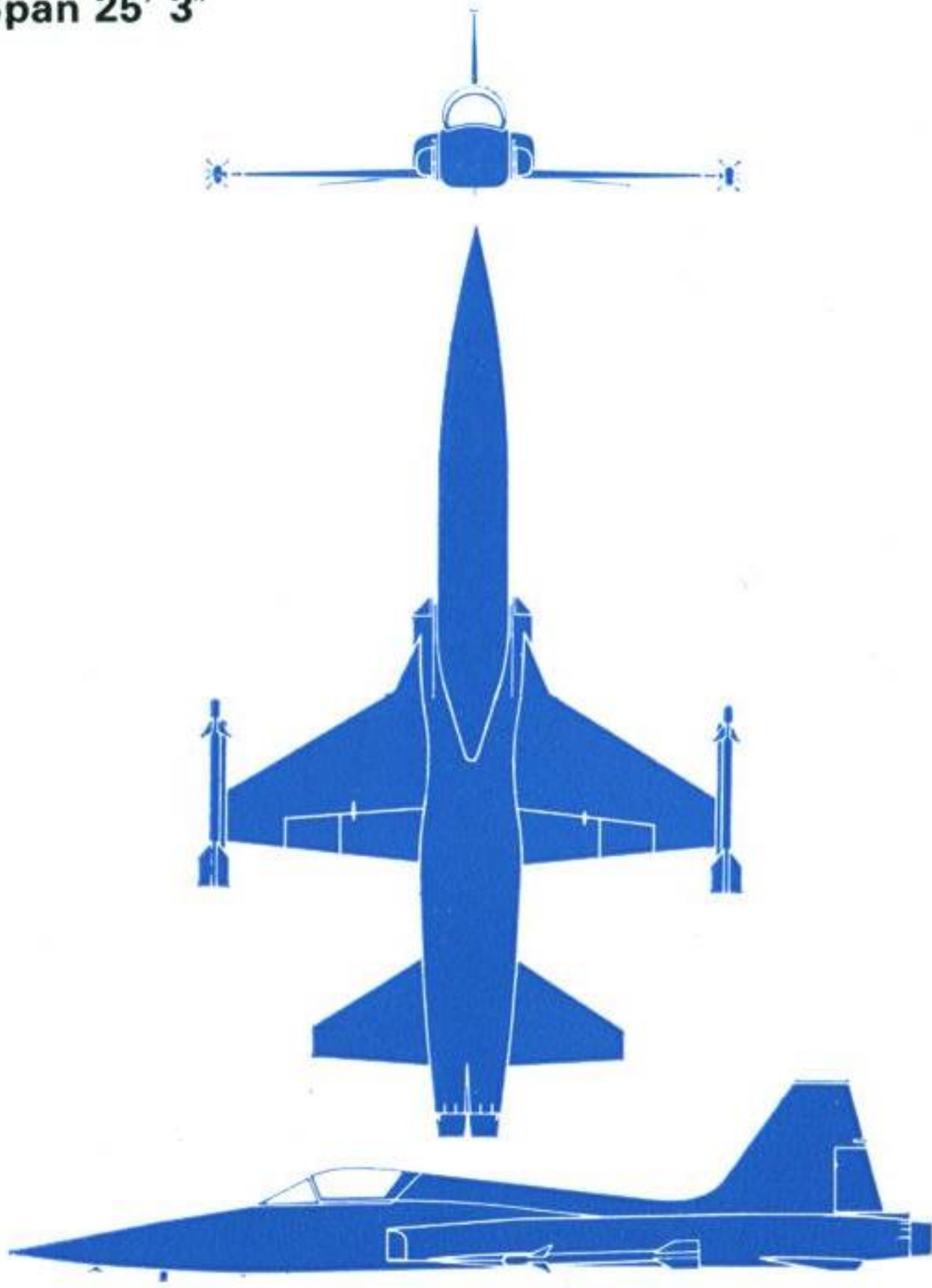
Powered by two General Electric J85-GE-13 turbojets, the F-5A, or Freedom Fighter as it is sometimes known, has a top speed (without external stores) of 924 m.p.h. at 36,860 feet (Mach 1.4) and its armament comprises two 20-mm. M-39 cannon and a maximum external ordnance load of 6,200 lb.

The F-5 is very similar in appearance—particularly in its two-seat version—to the Northrop T-38 Talon two-seat advanced trainer, the main differences being changes in wing plan (the F-5 has small leading-edge fillets inboard) and underwing stores stations.

*continued overleaf*



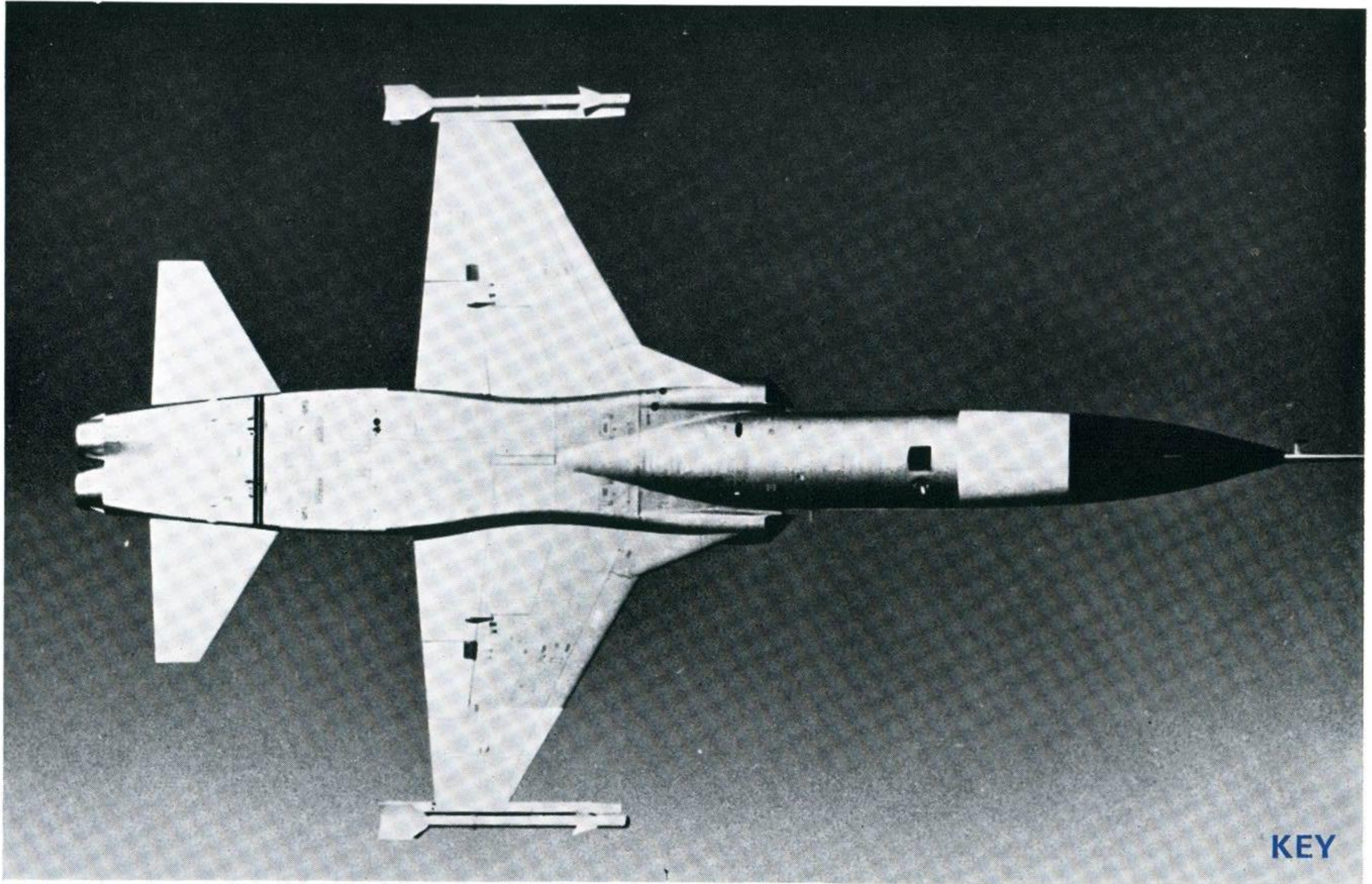
Span 25' 3"



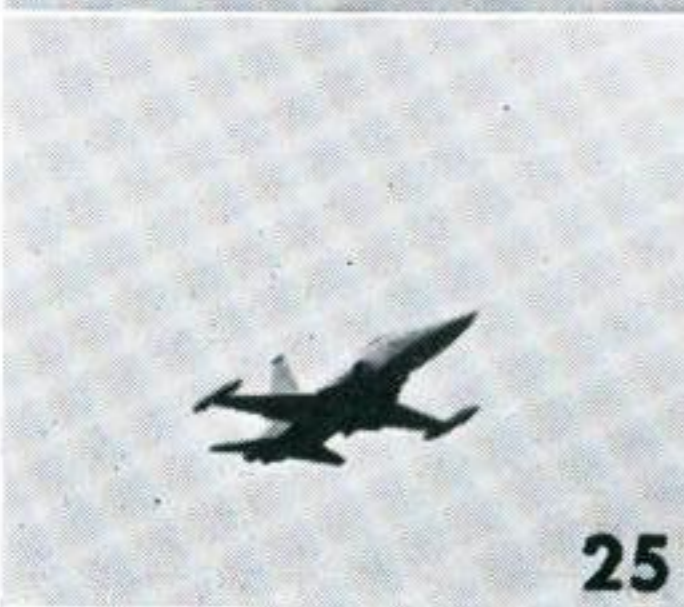
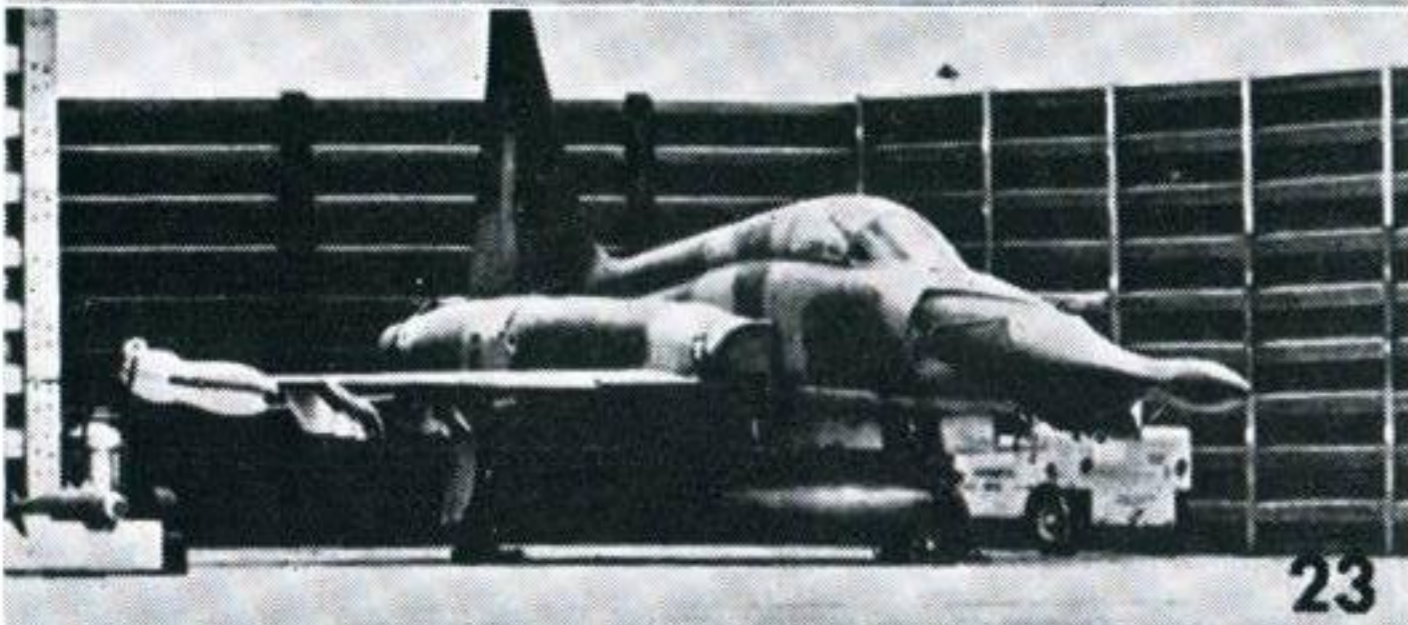
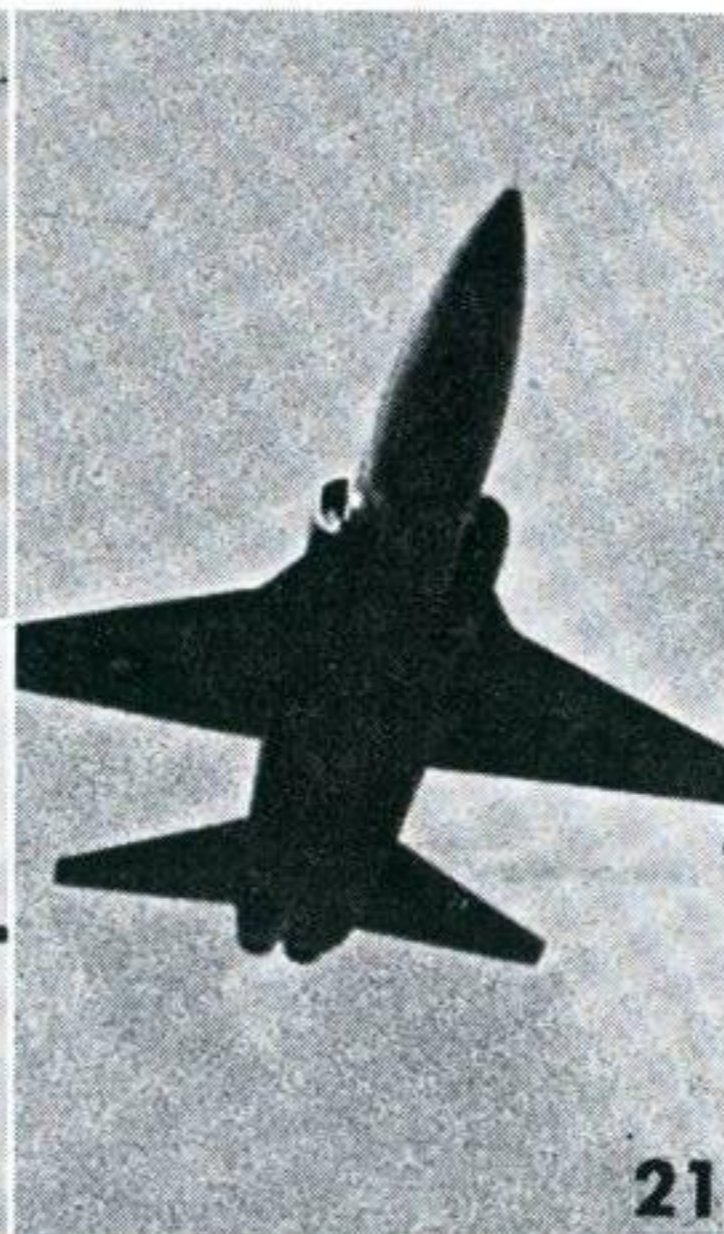
Lesson instructions on page 173 Solutions on the cover

KEY



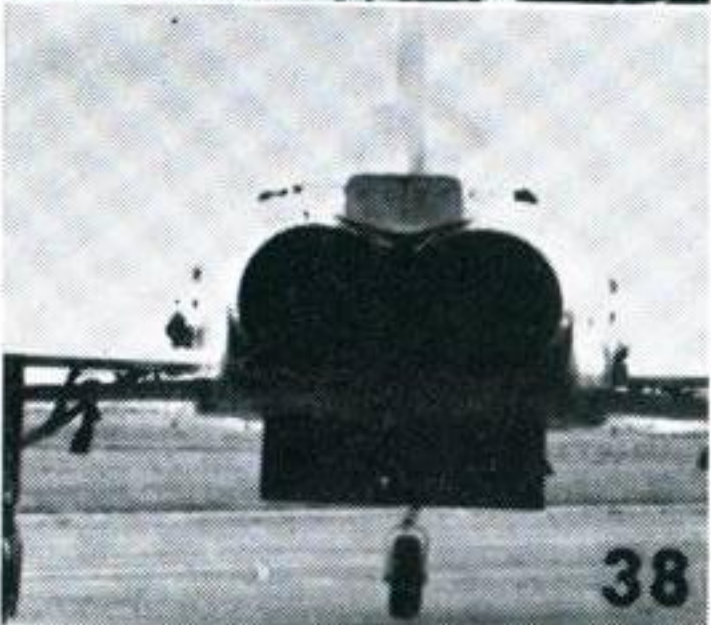
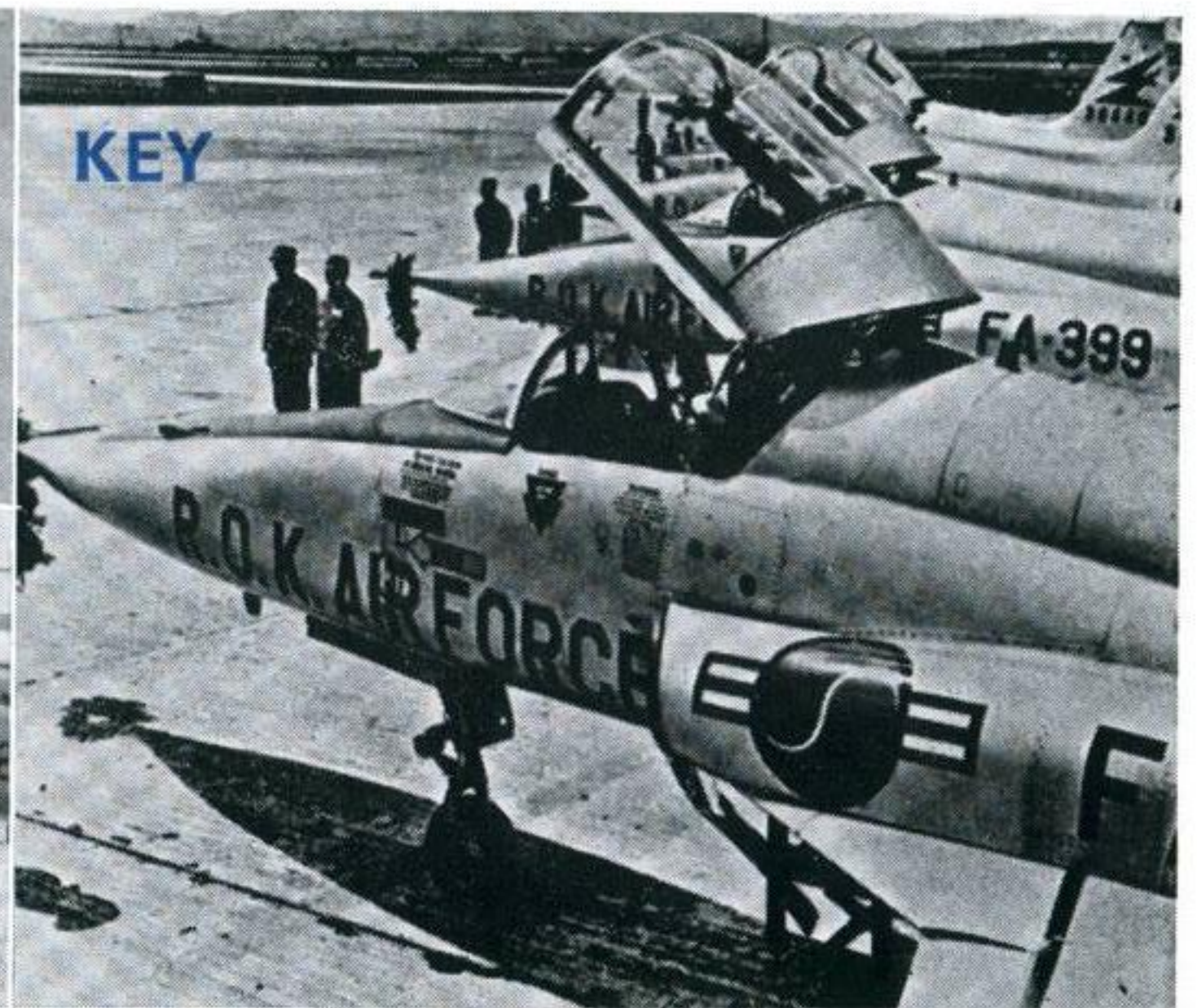
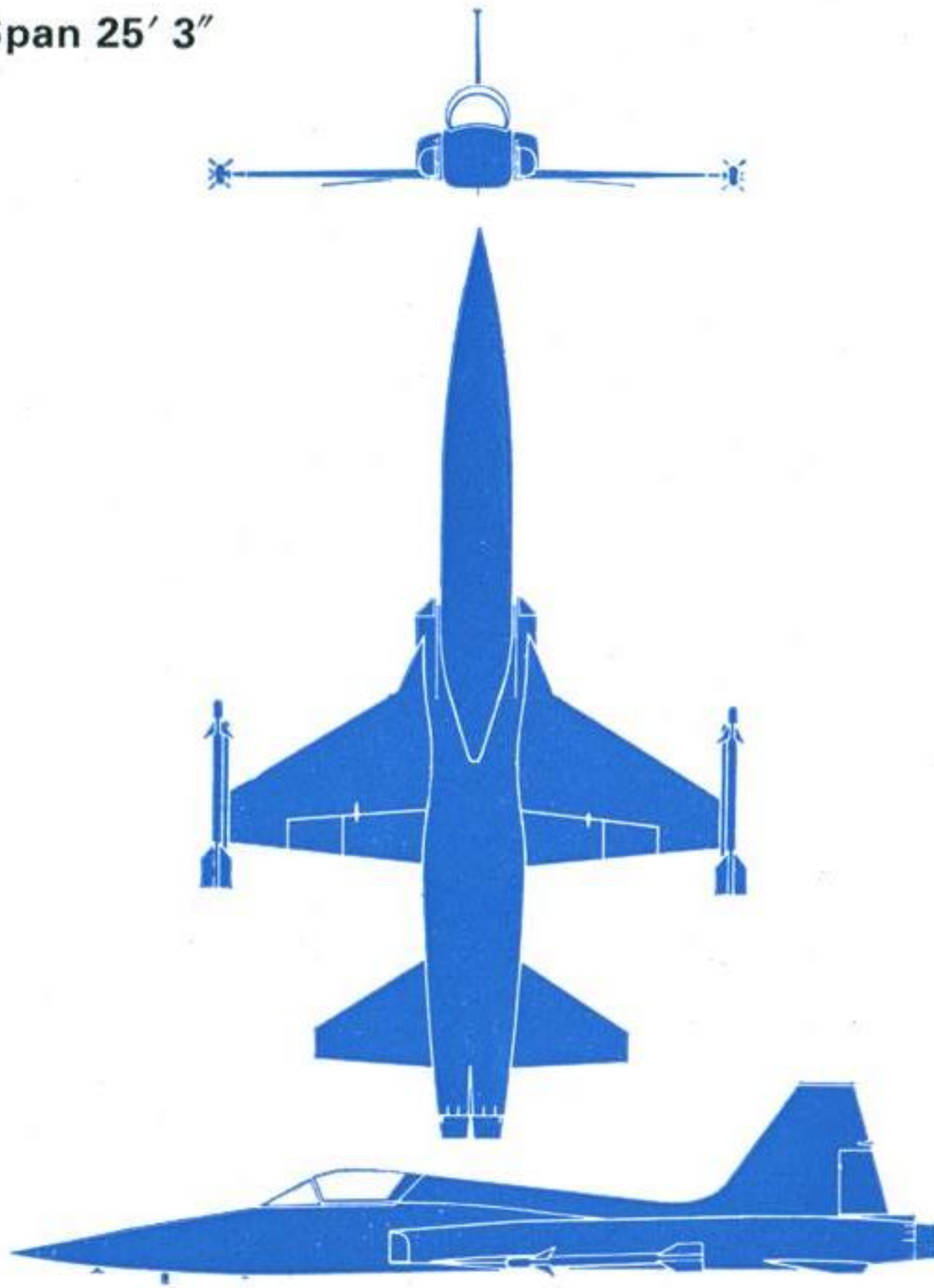


**NORTHROP F-5A** *continued*



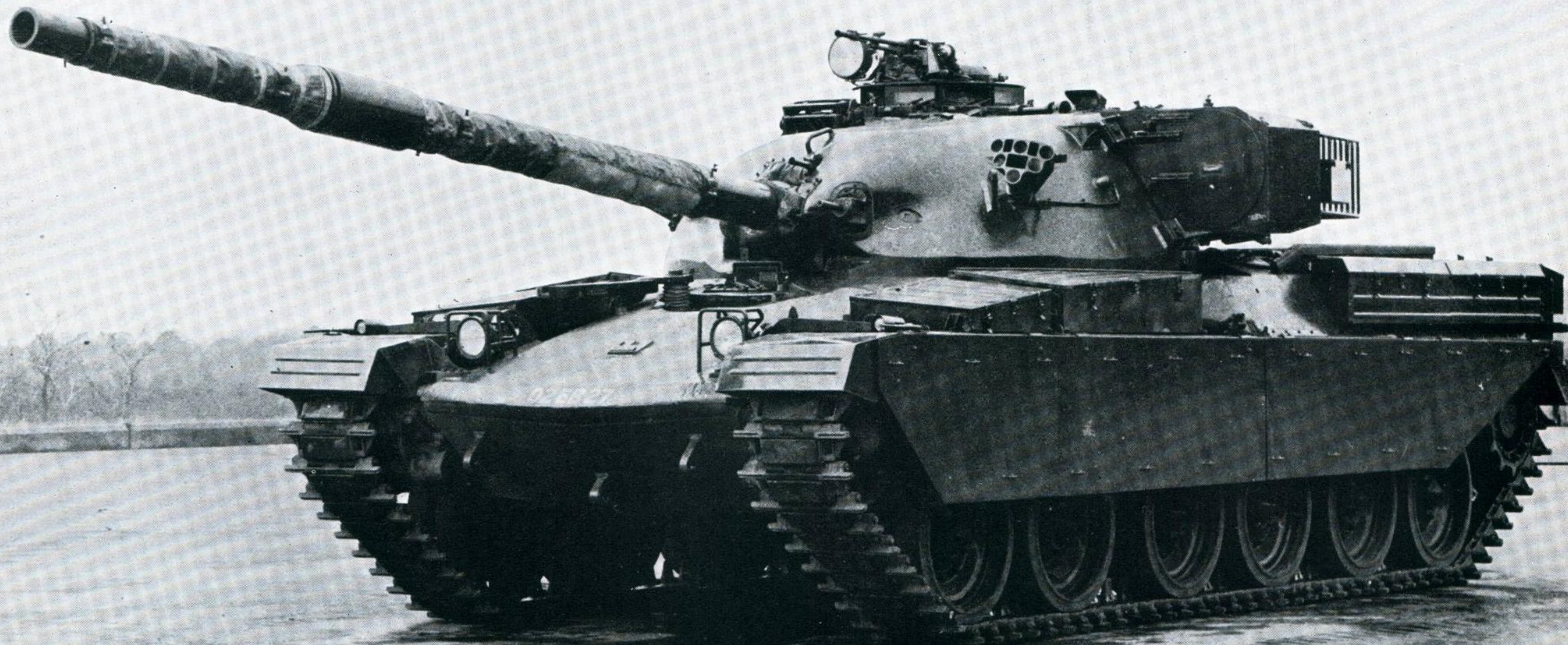
The present lesson concentrates on the F-5A single-seater, and to learn this properly, work to the instructions on page 173 reporting all targets as F-5A—or otherwise if jokers. Check your answers with the solutions on the back cover. Note that missiles or, alternatively, long-range fuel tanks can be mounted on the F-5's wing-tips. Also underwing-and-fuselage stores pylons are sometimes carried, although the actual stores themselves may not be present.

Span 25' 3"





# Chieftain Tank



KEY

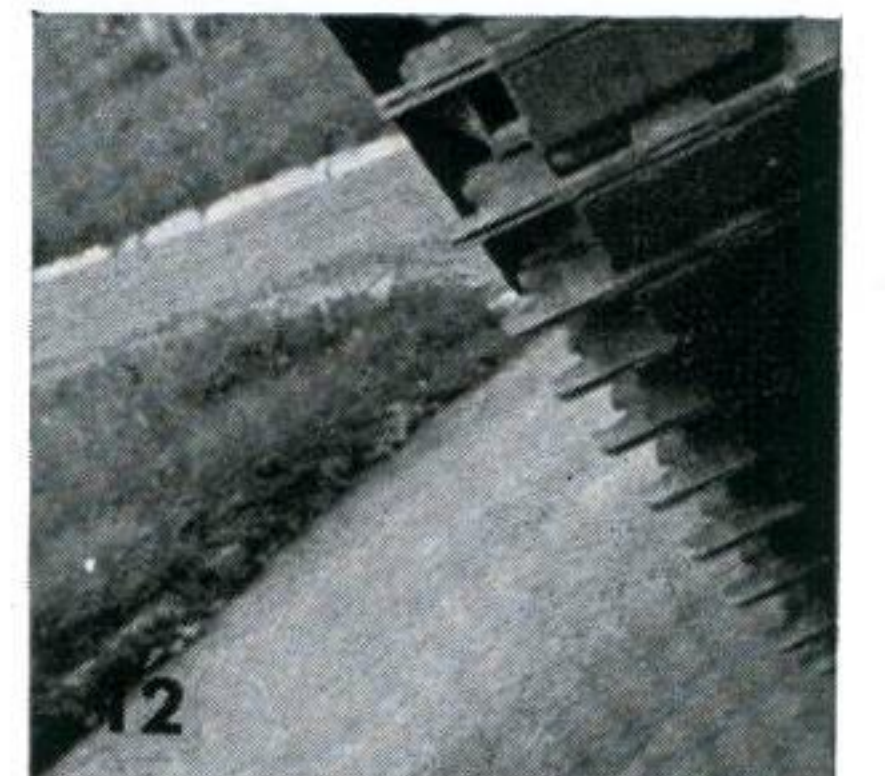
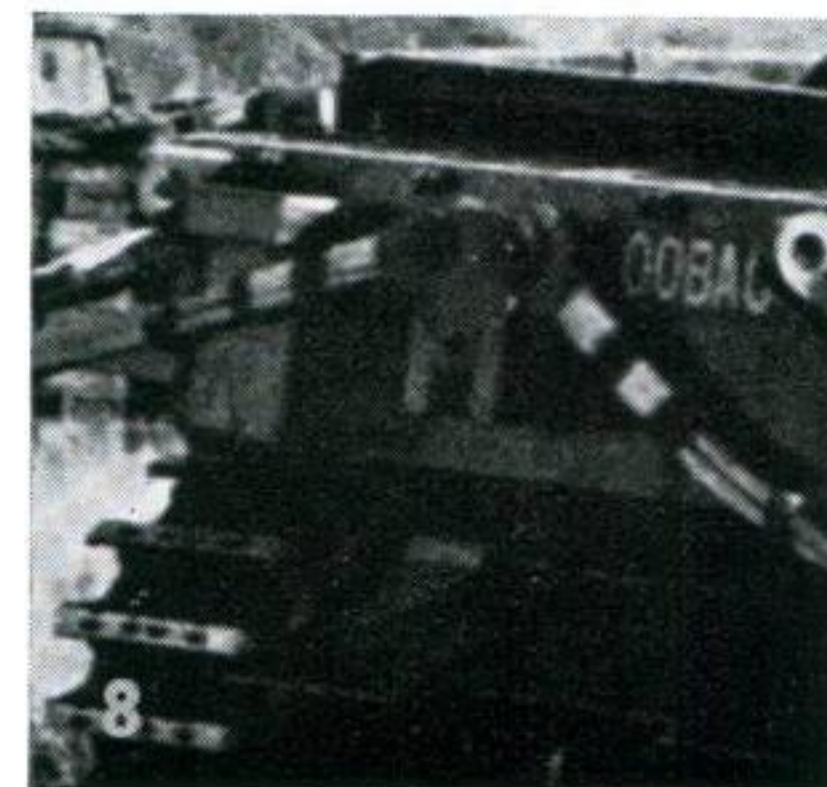
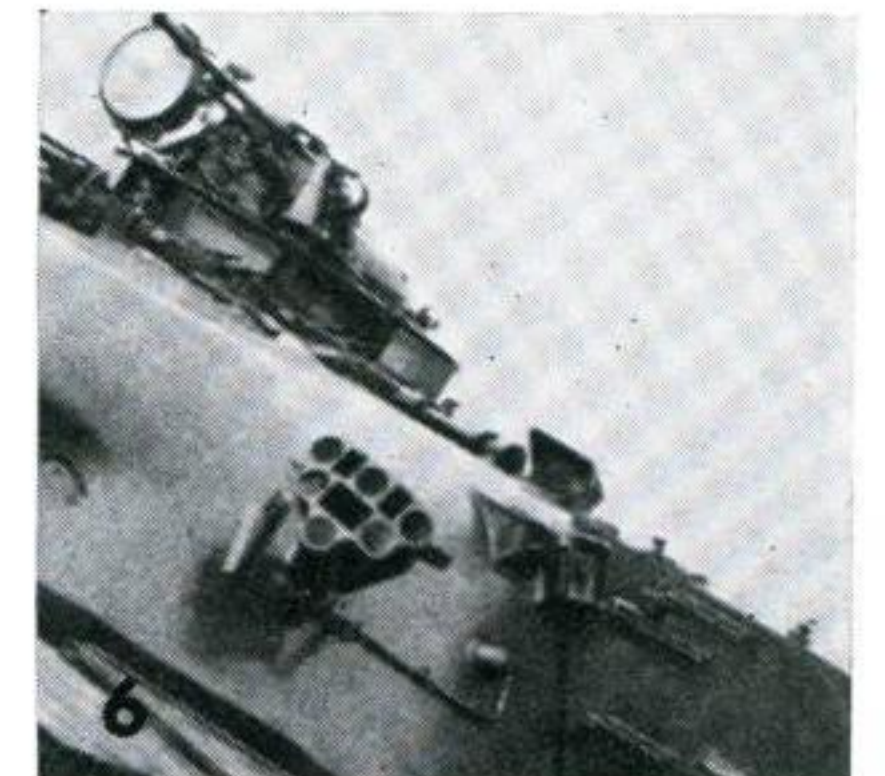
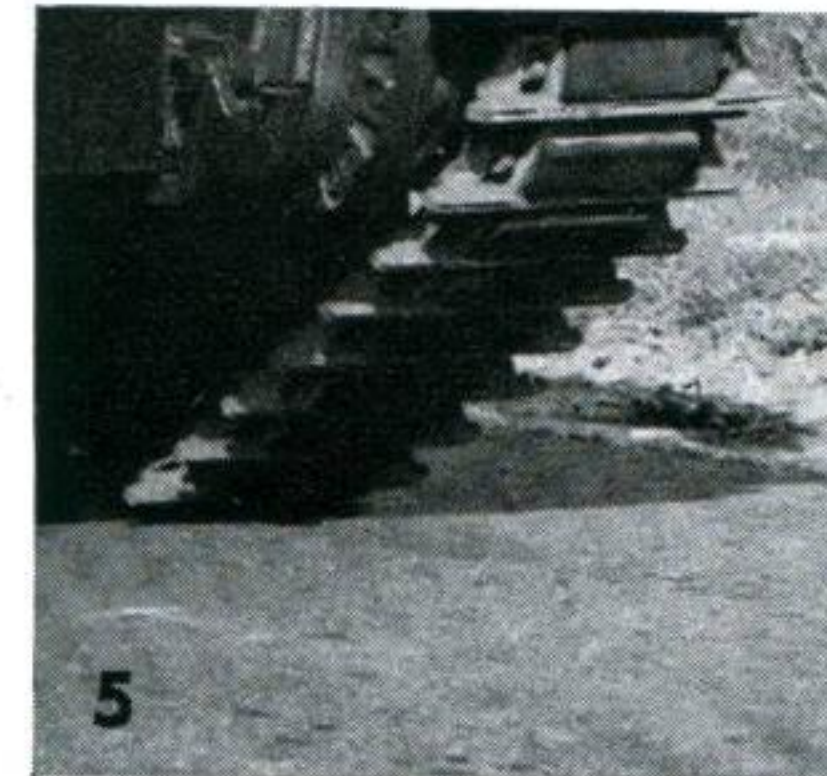
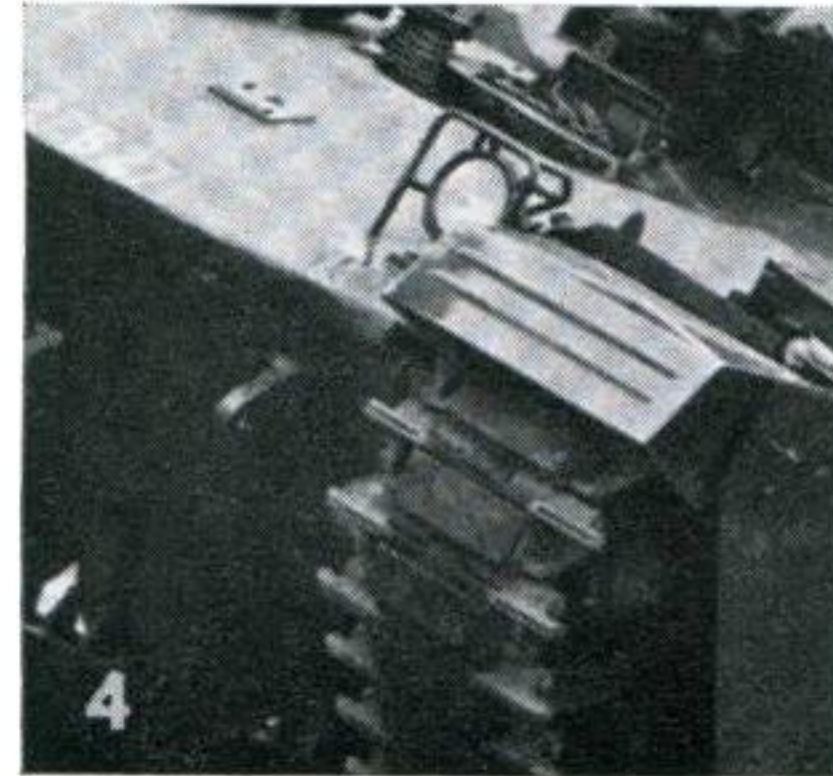
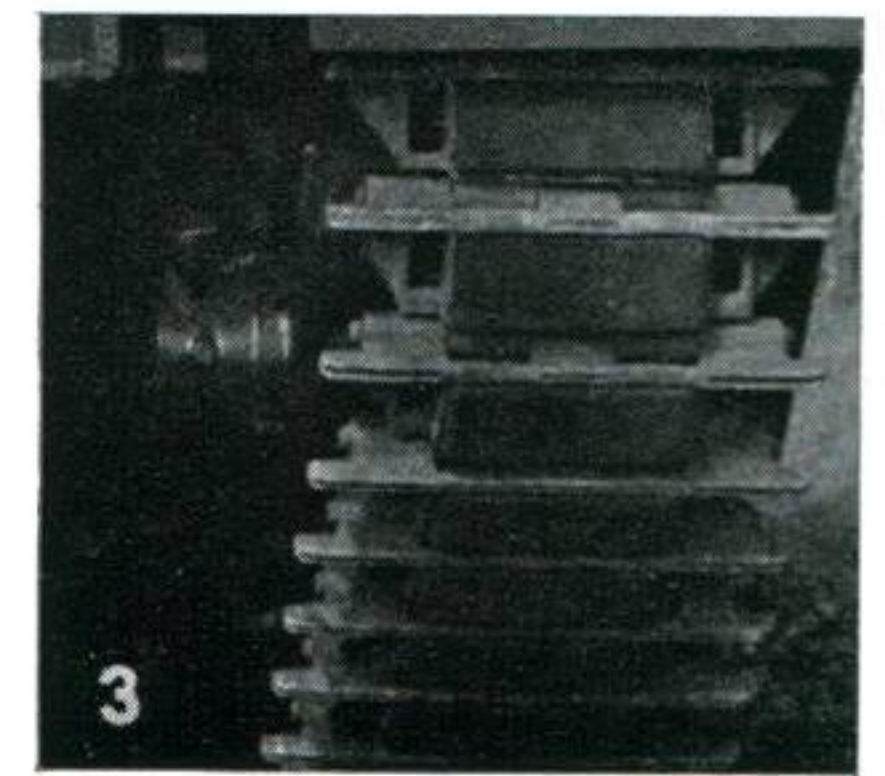
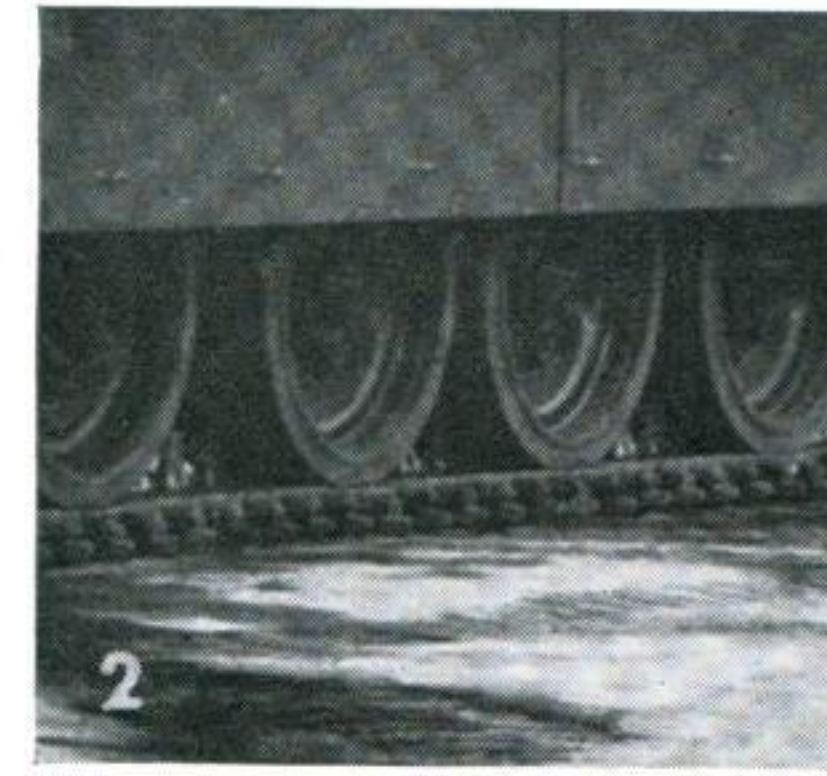
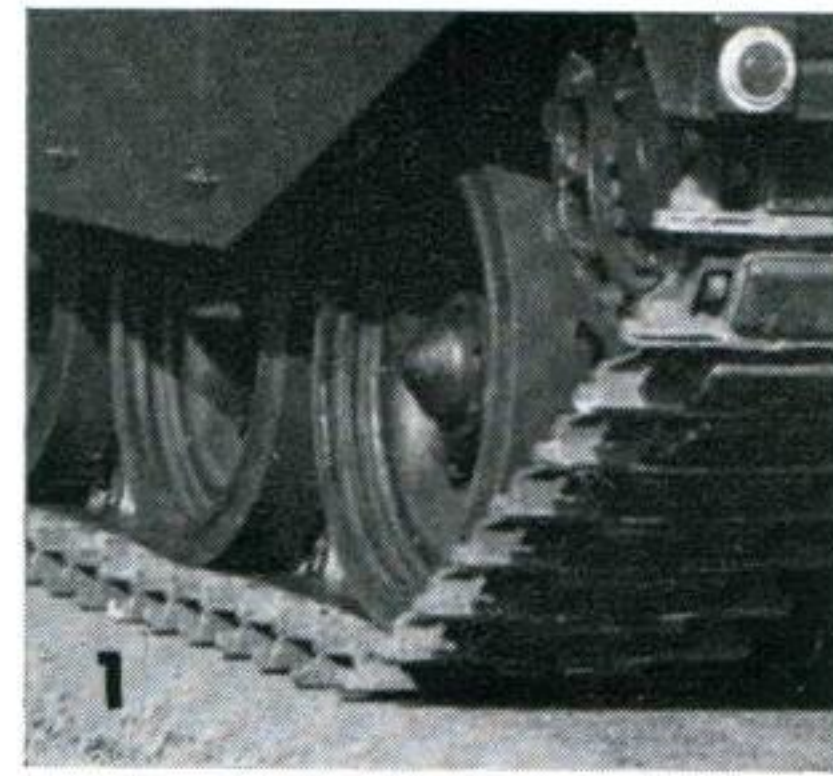
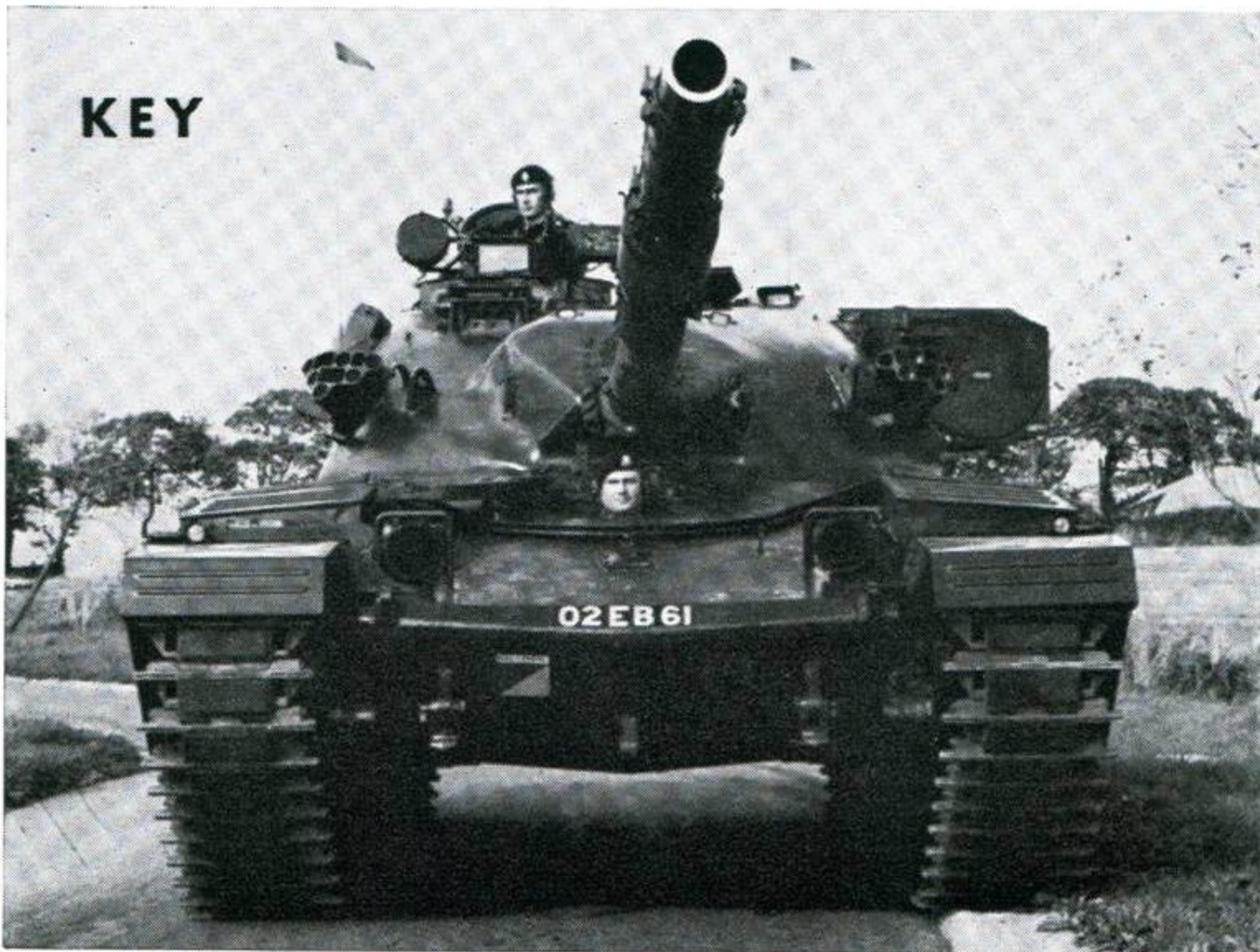
The Chieftain battle tank has already been the subject of a lesson in the August 1964 issue of the *Journal*. Its production version, which is now coming into service with the Royal Armoured Corps and which is illustrated here, differs, however, in several respects from the pre-production vehicles illustrated previously. In particu-

*Continued overleaf*

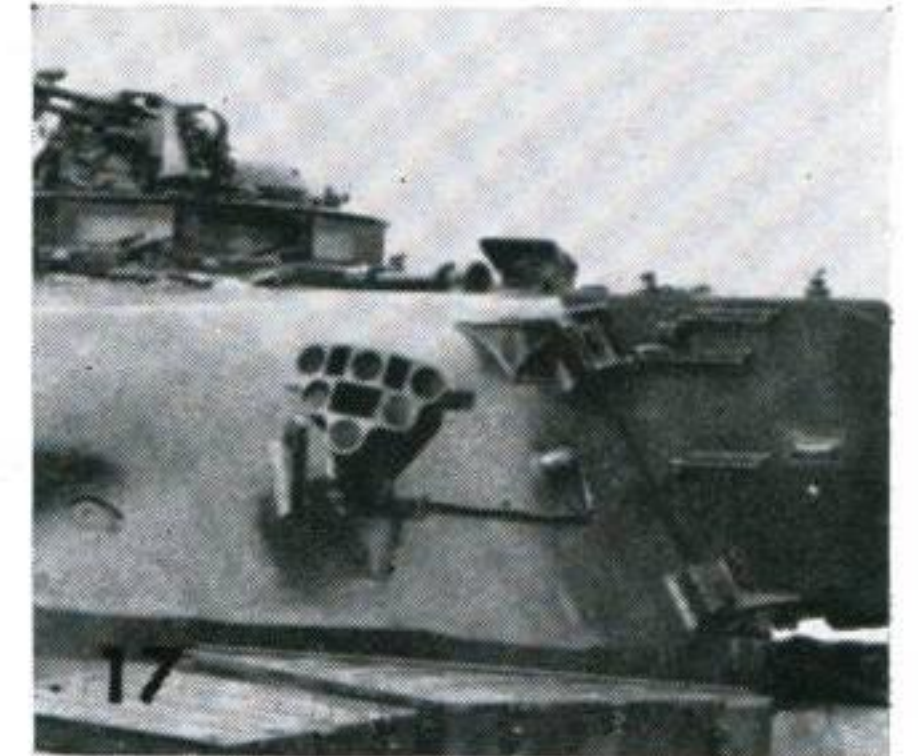
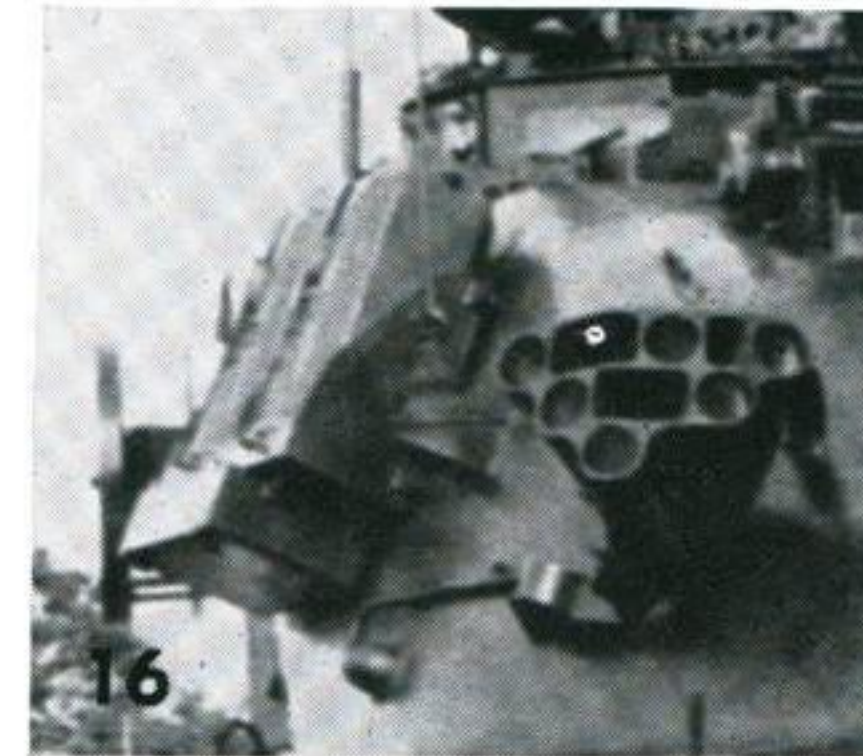
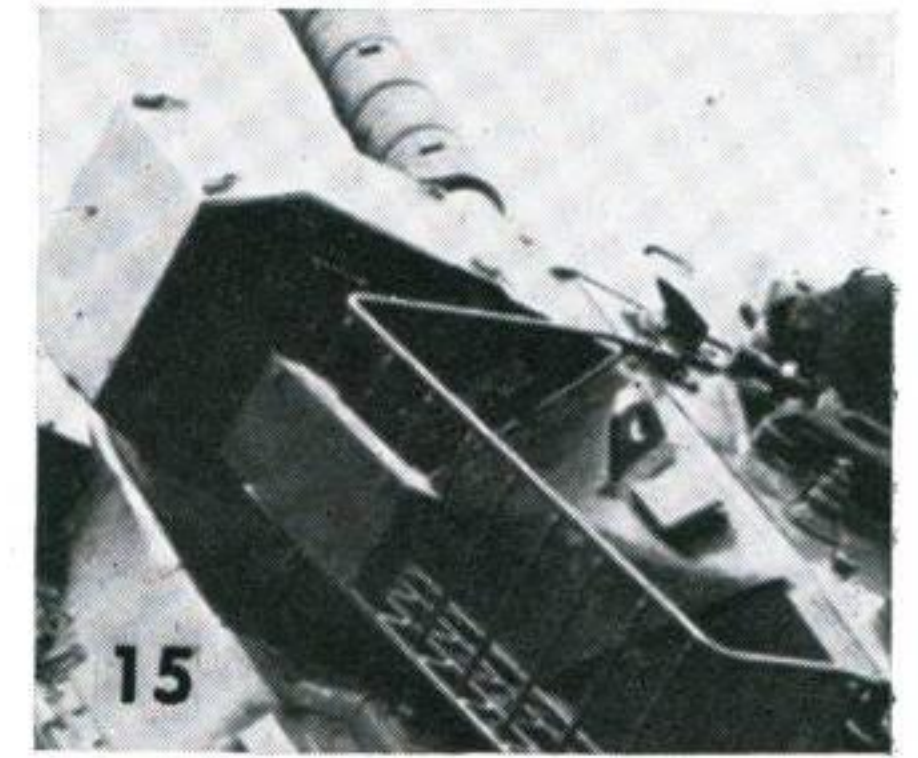
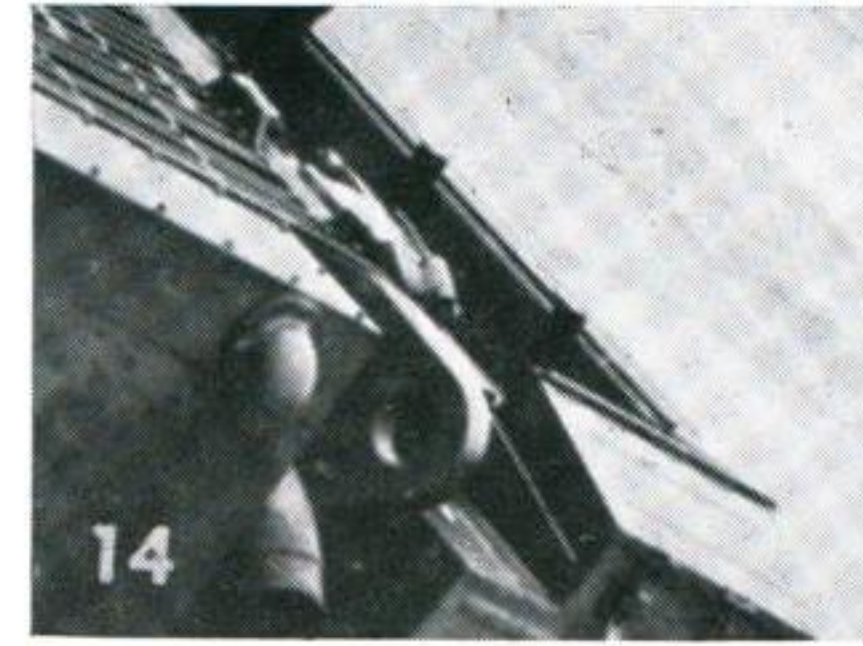
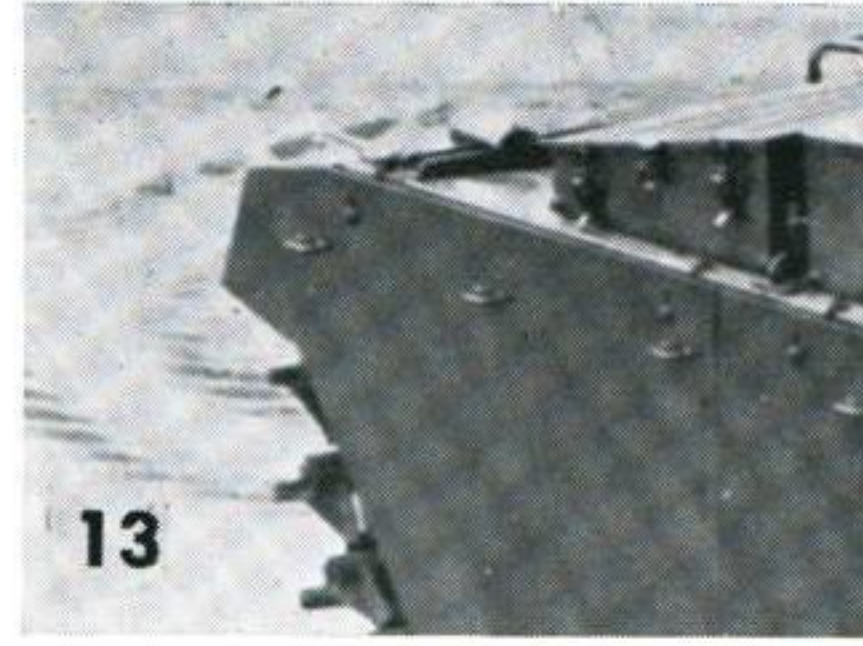


*Lesson instructions on page 173*

*Solutions on the cover*

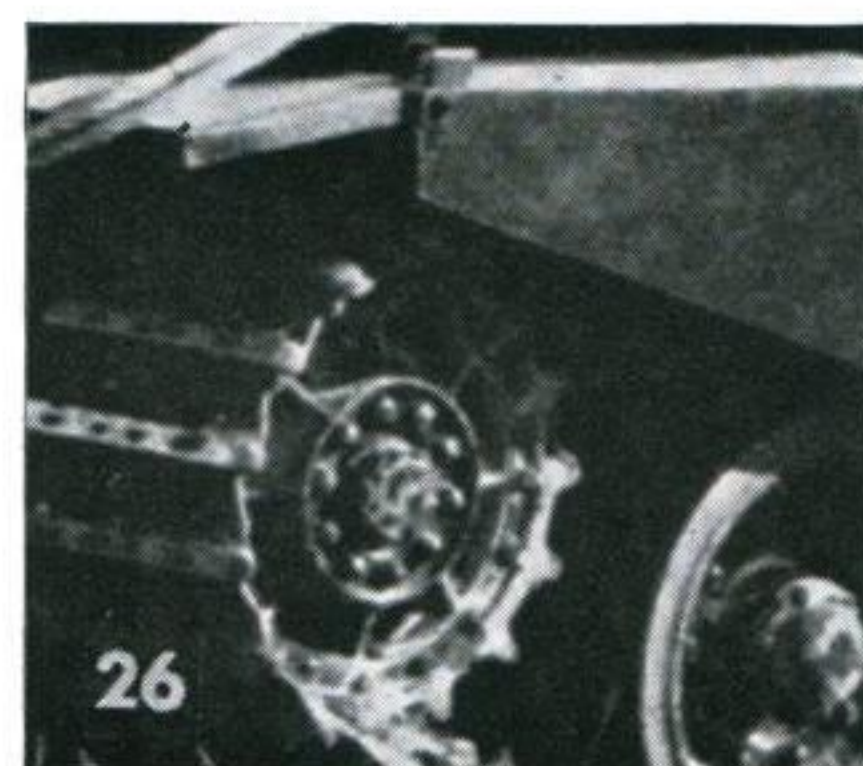
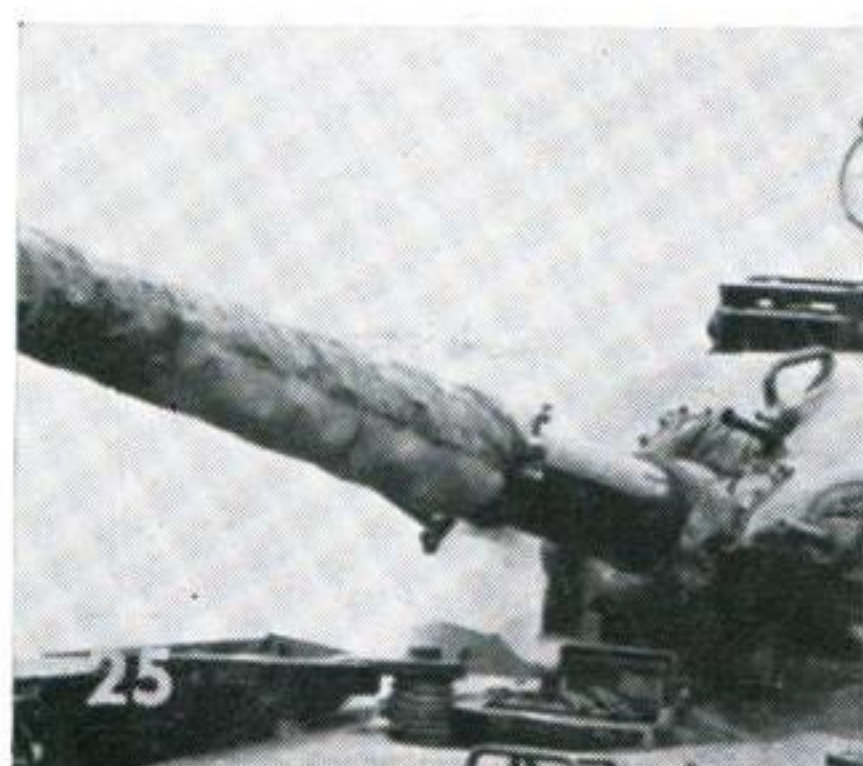
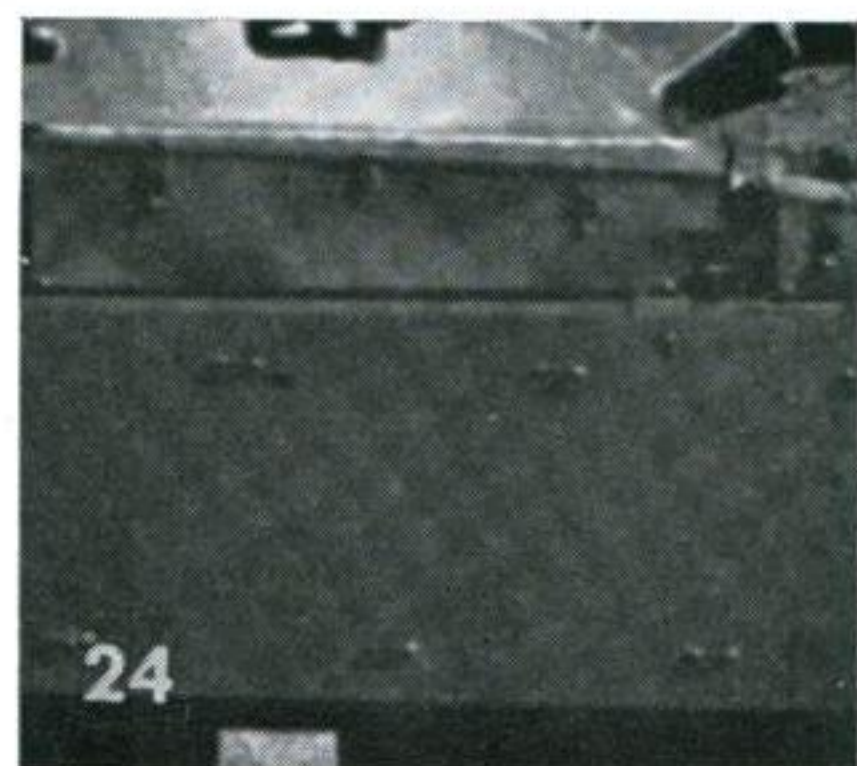
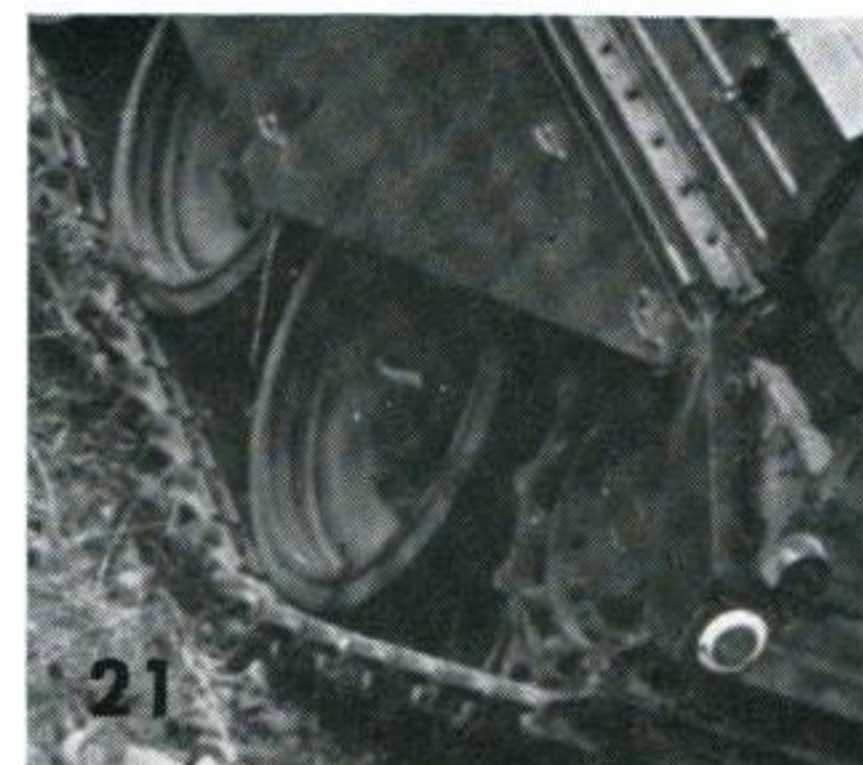
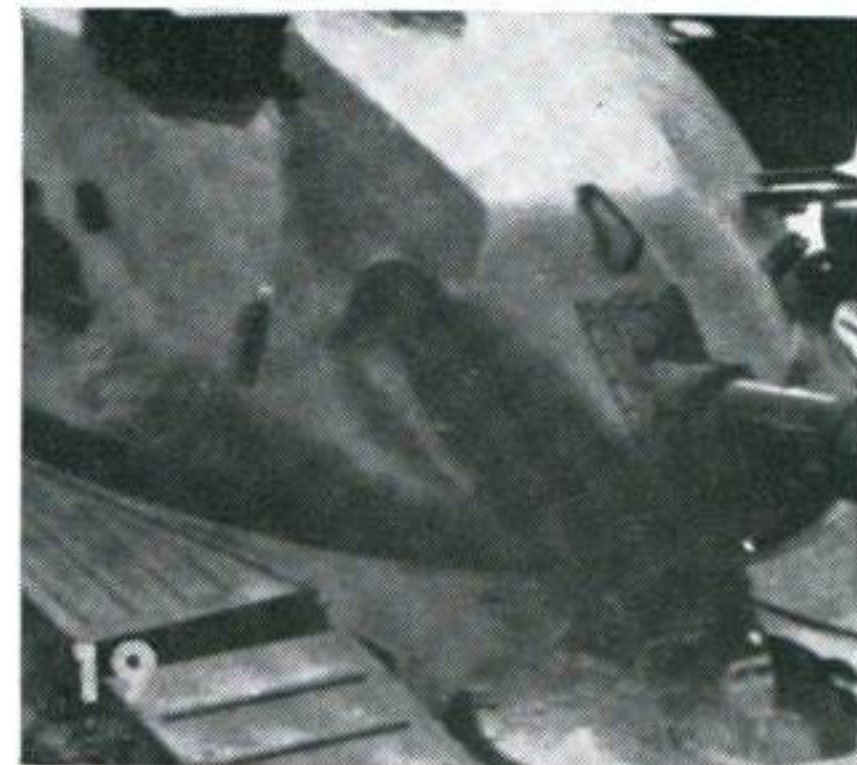
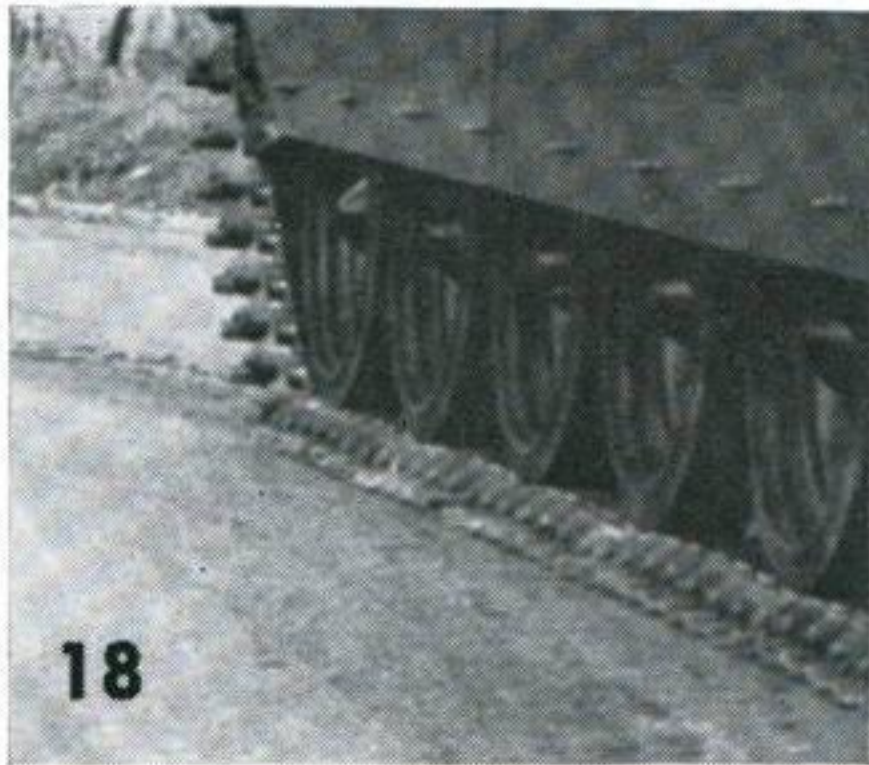


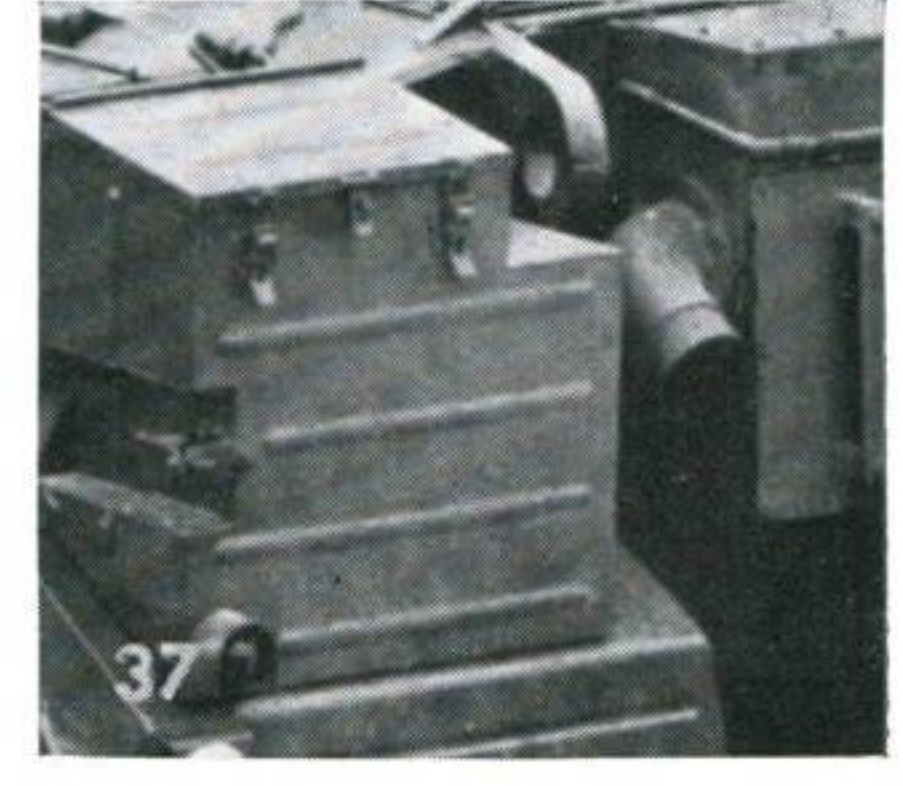
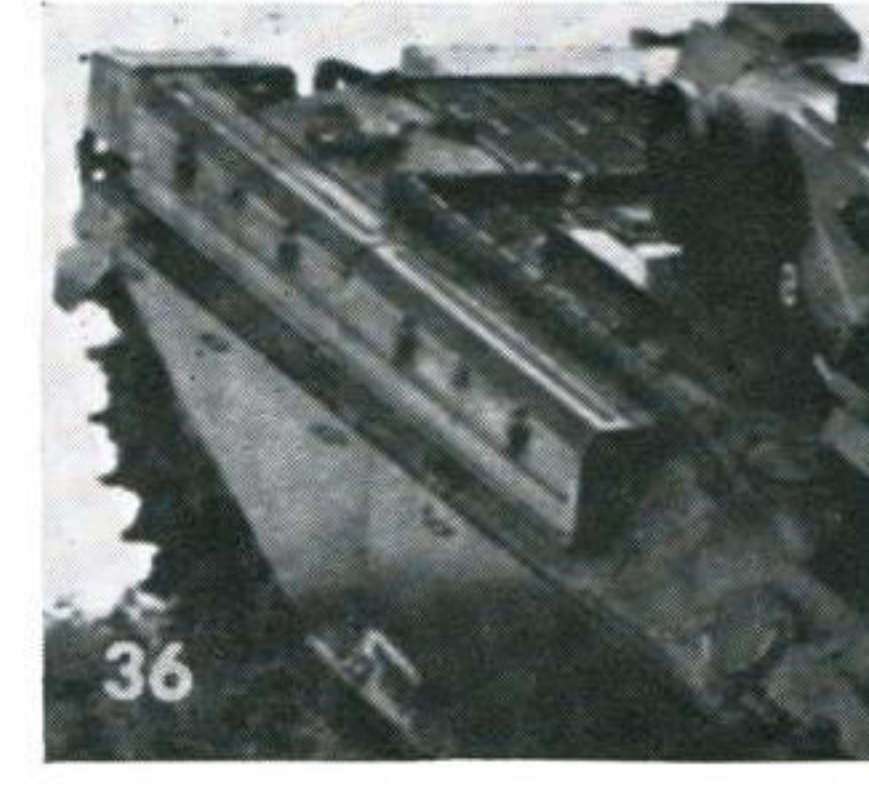
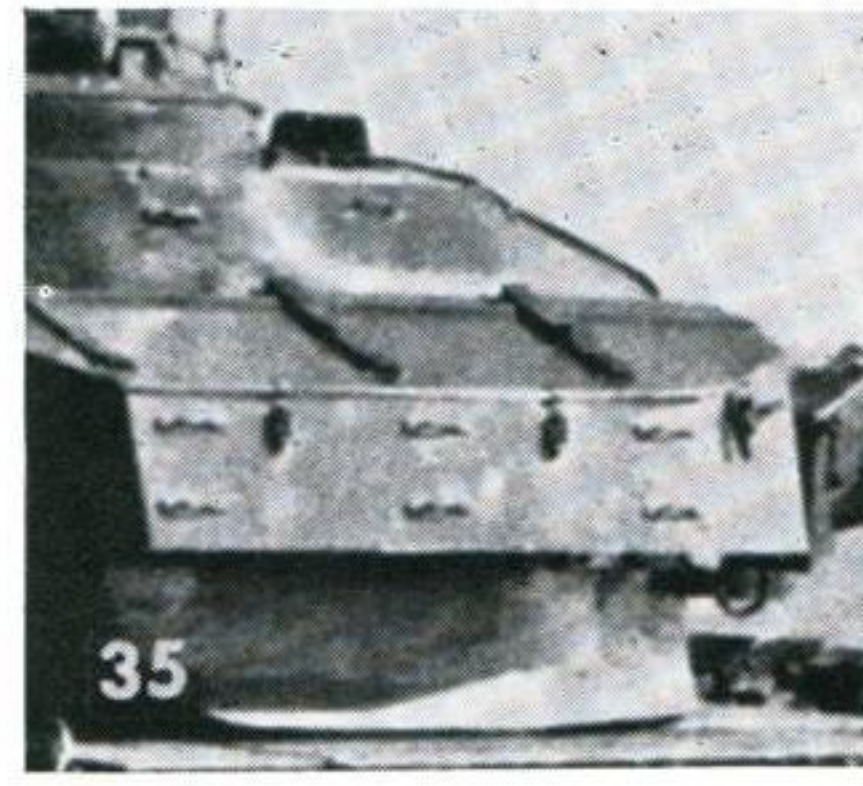
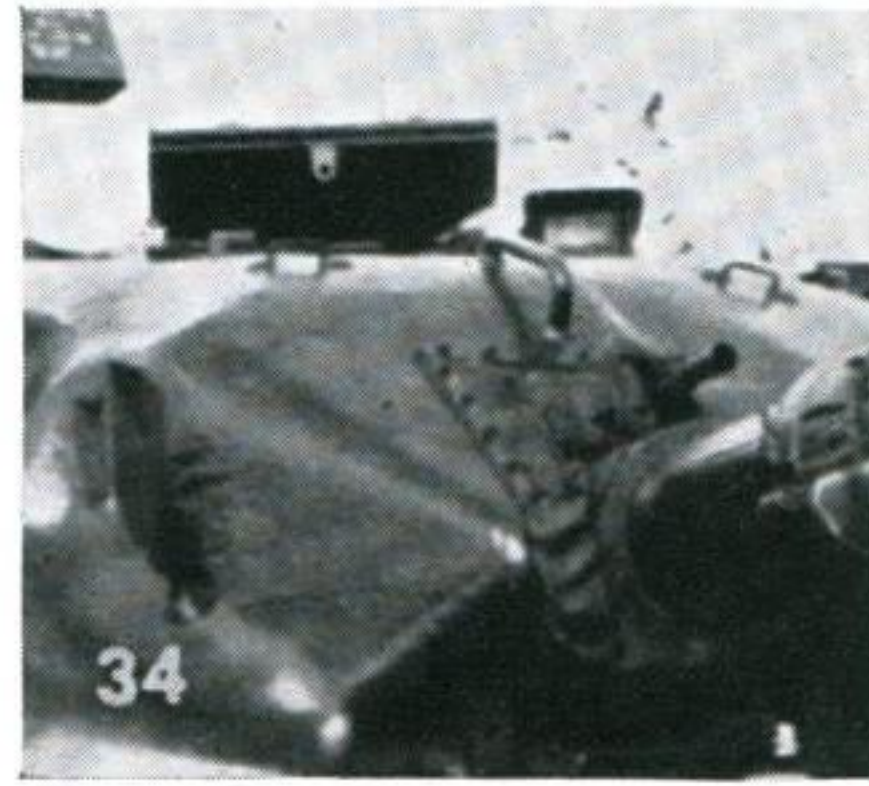
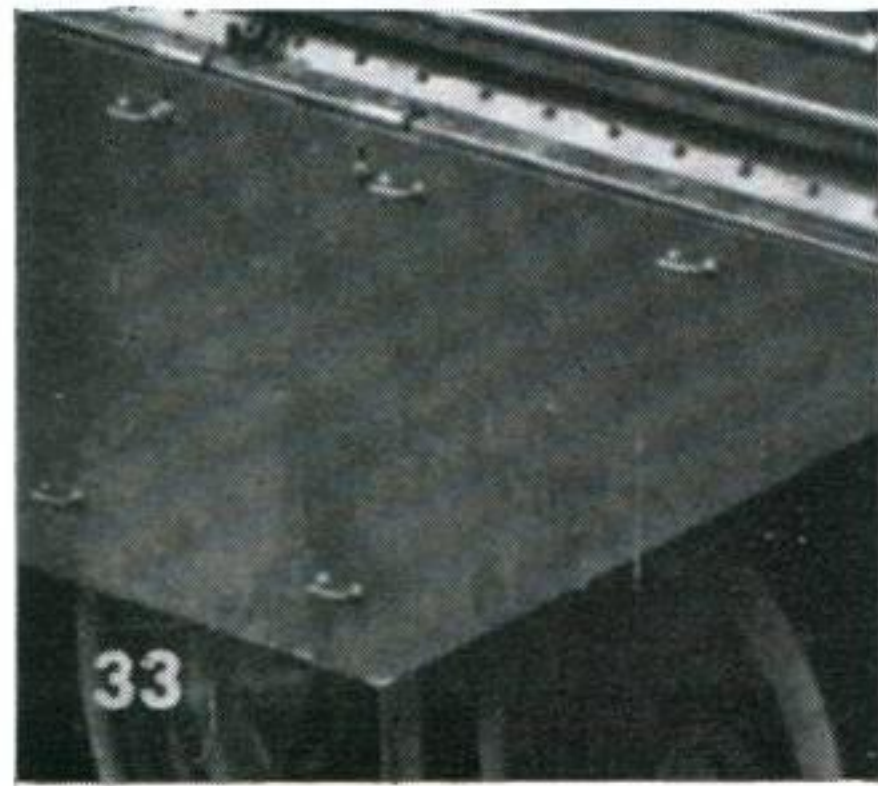
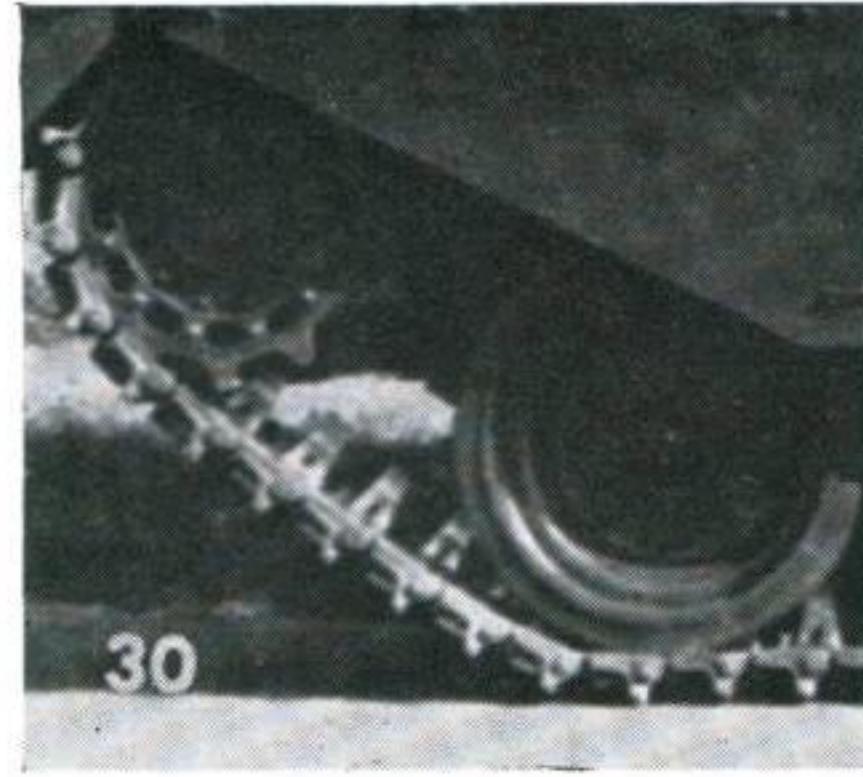
# Chieftain Tank



Lesson instructions on page 173

Solutions on the cover

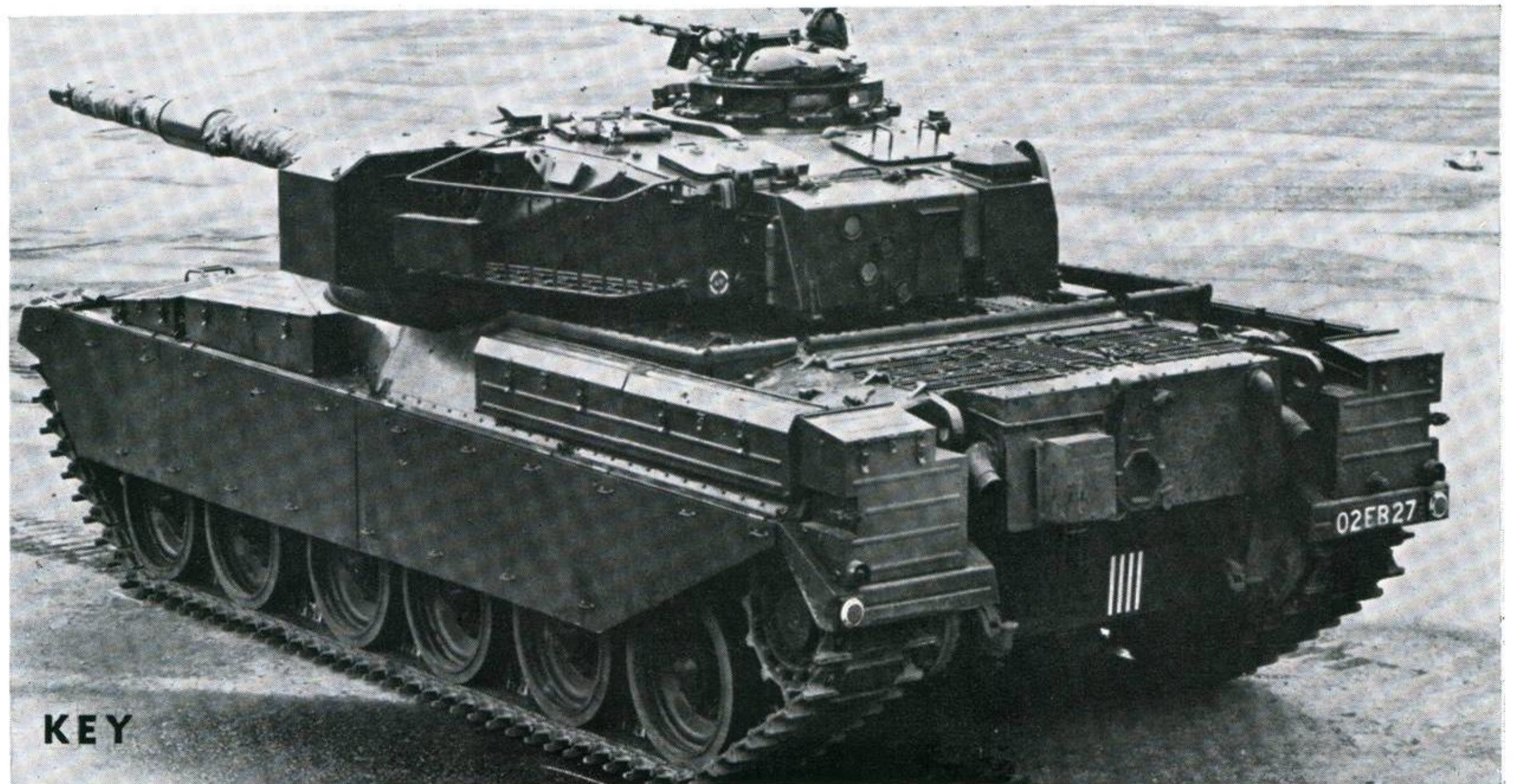




lar, a number of distinguishing fitments have been removed so that the well-profiled turret without an external gun mantlet can now be clearly seen. So can the front of the hull which was previously obscured by sheet metal boxes. Moreover, the latest production model has a rail running in front of the driver's hatch for the attachment of a deep fording rubber cover.

In some respects the Chieftain resembles the Centurion tank which it gradually replaces. Thus, it has a similar Horstmann suspension with six large road wheels per side and similar skirting plates. Its tracks are, however, different having rubber road pads. Its hull is also shallower and its front is cast instead of

*Continued overleaf*





KEY

# Chieftain Tank

being welded from rolled armour plates. What is more, the shape of its turret is greatly superior ballistically to that of the Centurion which has an almost vertical front and sides.

The most important difference between the two tanks is, however, in their armament. Instead of the 105-mm. gun of the Centurion the Chieftain has a 120-mm. which makes it the most powerfully armed tank in service today. Its weight of 51 tons, which is above that of all other battle tanks, also means that it is the most heavily armoured.

*Lesson instructions on page 173*

*Solutions on the cover*



38



39



40



41



42



43



44



47



45



46



48



49



**Cover Photo:** The Sikorsky CH-53A Sea Stallion built for the U.S. Marine Corps is the free world's fastest and most powerful heavy assault helicopter. It is designed for the U.S. Marines' vertical assault operations and is in service in Vietnam. Its top speed exceeds 200 miles an hour and it will carry up to nine tons of cargo. A normal military mission consists of delivery of four tons over a distance of 100 nautical miles at a cruising speed of 172 miles an hour. The Sea Stallion accommodates 38 fully equipped troops or 24 litters plus four medical attendants.

## SOLUTIONS TO TESTS AND EXERCISES

Page 173

### TEST PAPERS

**Dreadnought:** Joker is second line 3rd picture.  
**G Class Submarine:** Joker is second line 2nd picture and third line 3rd picture.

Page 174

### IROQUOIS

All targets are **Iroquois** except Nos. 7, 17 and 33, which are **Scouts**.

Page 178

### HOUND

All targets are of **Hound** except Nos. 12, 26, 27, 30 and 34 which are **Whirlwinds**.

Page 186

### NORTHROP F-5A

All targets are of the F-5A except No. 11 which is a **Thunderchief** and Nos. 22 and 35 which are **F-5Bs**.

Page 190

### CHIEFTAIN BATTLE TANK

All targets are of **Chieftain Battle Tank** except Nos. 8, 26, 27, 35 and 48.

### CORRECTION

*Joint Services Recognition Journal*, November 1967  
 Page 300 Ship Recognition

#### Hull Forms

Under the first line of silhouettes delete H2 and substitute H12.  
 Under the second line of silhouettes delete H12 and substitute H2

Page 196

### TESTING TIME

12 Bear	6 Fiddler	1 Blinder
13 Dakota	7 Lightning	2 Hercules
14 Buccaneer	8 Hunter	3 Whirlwind
15 Andover	9 Sioux	4 Jet Provost
16 Camel	10 Badger	5 Caravelle
	11 Vanguard	

## TESTING TIME

*Solutions above*

