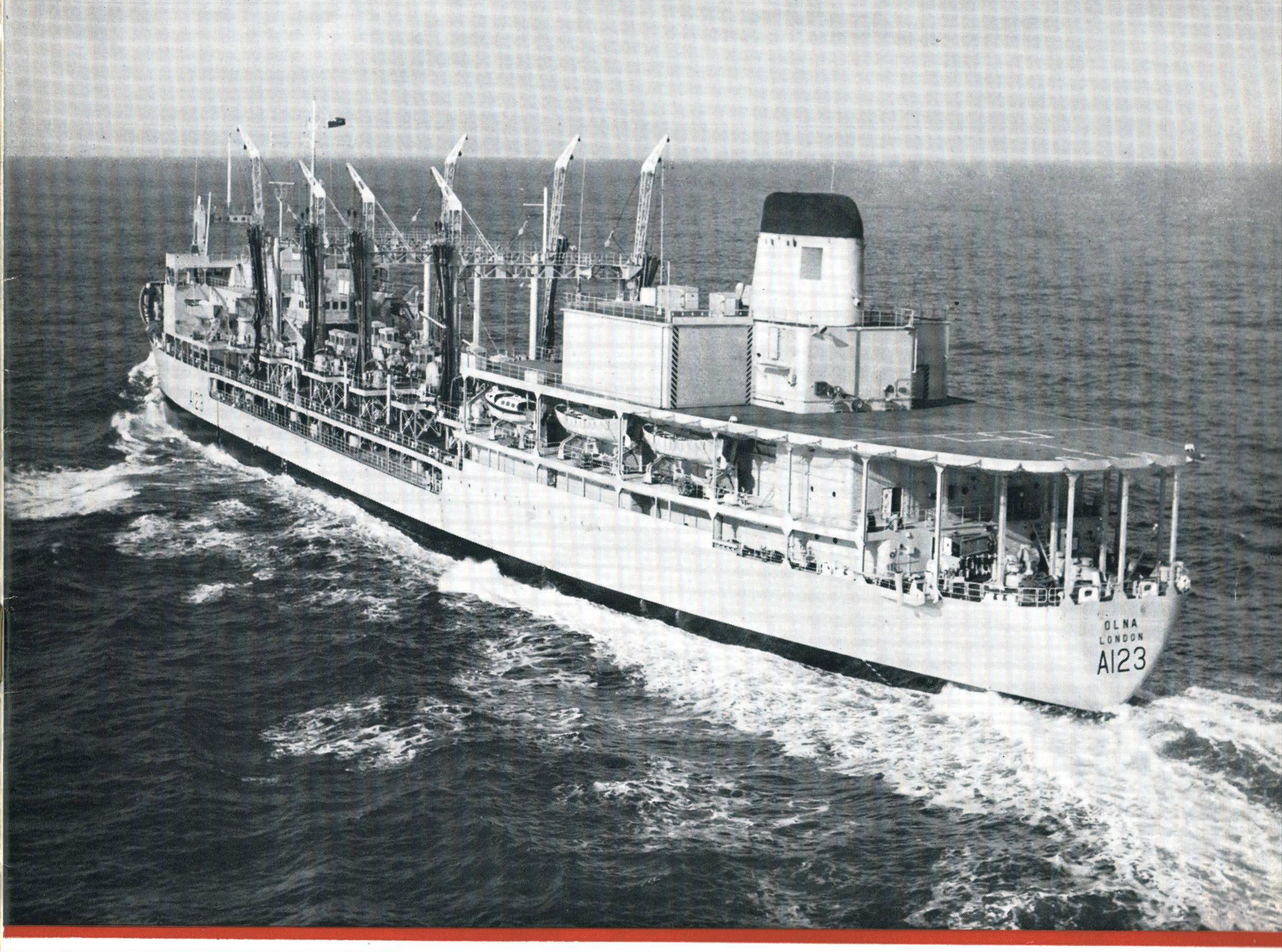
D7

JOINT SERVICES

RECOGNITION *Journal*



Vol. 22 JANUARY 1967 No. 1

The Journal is produced solely for official use and must not be sold or made available to members of the public.

A Shackleton M.R.2 of No. 224 Squadron dips in salute to an "A" Class submarine, symbolising a farewell salute to an old adversary as this squadron, with an outstanding record of anti-submarine work during the war, disbanded at Gibraltar late last year.

JANUARY 1967 Vol. 22 No. 1

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 Aviation (Air Technical Publications). 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.

CONTENTS

Feature	Page
R.F.A. *Olna*, Olynthus Class Fleet Replenishment Tanker *(cover)*	1
Shackleton M.R.2 dips in salute to submarine	2
The British Aerospace Industry *(editorial)*	3
* Gnat—Fighter and Trainer	4
* Skyvan	8
* Atlantic	10
In Passing	13
* Warships of the U S S R—G Class Submarine	14
* SRN5 Hovercraft	20
* T54 Soviet Medium Tank	22
Solutions to Tests and Exercises	28

* *Identification Lessons*

THE BRITISH AEROSPACE INDUSTRY

This *Journal* is often more concerned with foreign aircraft than with British and lessons to come on Hercules and Phantoms in British service may tend to eclipse the part our aircraft industry still plays. To give re-assurance, extracts are presented from a speech by Sir George Edwards (Managing Director, British Aircraft Corporation) to the Institute of Directors, late last year.

"The time has come when the whole nation must be made aware of the financial and balance of payments facts of life of the British Aerospace Industry. During this year (1966) it is exporting products to the record value of £200m. But that is only part of the story. In every aeroplane which is sold abroad over 90% of the money is paid for British brains and skills; less than 10% is the cost of the raw materials.

Britain never had an industry which was more perfectly suited to her needs than is the Aerospace Industry to the needs of our present crisis. We take some metal—mainly relatively cheap aluminium alloy and worth less than £100,000—and we fashion it into something we sell abroad for over £1m. The rest—the 90%—is made up of the British know-how, research genius, design and engineering skills which add up to our technological leadership. Make no mistake—we do still have this leadership. We are way ahead of all other Western countries except the U.S.A. and in a number of respects, especially in basic thinking, we are ahead of them too.

The practical solutions of the jet engine came from Britain. So did radar—and so for that matter did the swing-wing and the world's first jet and turboprop airliners. But those are only shop window examples. There are many others. The successful harnessing of a gas turbine engine to a propeller was achieved here. The Jump-Jet, and all that may one day imply, is British. The technological and aerodynamic and electronic miracles that were embodied in the TSR-2 were British—so are the Martin-Baker ejector seats used throughout the world and auto-landing and a score of other developments and improvements and refinements in the state of the aerodynamic, engineering and electronic arts.

For one reason or another, we did not reap the commercial benefits we should have done from many of these things. But today's British designers and scientists and technologists are no less brilliant, no less dedicated and no less determined than the men whose example first inspired them to join our industry. What we are suffering from is not lack of first-class brains—not lack of dedication—not lack of determination, but an overall lack of National Pride in our achievements and a failure properly to exploit them.

Today's British design teams are already achieving technological successes of the same order of magnitude as their most legendary predecessors achieved. Hovercraft—only in their infancy—new and vital defence weapons like ET316, and the British half of the world's first supersonic airliner—Concorde. These things are the tangible proof of Britain's ability and leadership.

We in aerospace have no need to cringe in corners and succumb to the symptoms of what the French call the 'English sickness'. I lay on the table today the credentials of British design teams and engineers to be regarded as the corps d'elite in the Export Battle of Britain—and I don't care a damn if some of them wear their hair long and their trousers tight. There's nothing wrong with their brains or their brilliance. I tell you this—and I know—they are as good as men of my generation—in many ways they are better."

GNAT—FIGHTER AND TRAINER

There are two distinct versions of the Gnat, a single-seat fighter and a two-seat trainer. Both versions have the same basic configuration, but variations occur in the overall dimensions, the trainer version being slightly larger, and in the cockpit canopy and nose shapes. Underwing stores including auxiliary tanks may be fitted to either version.

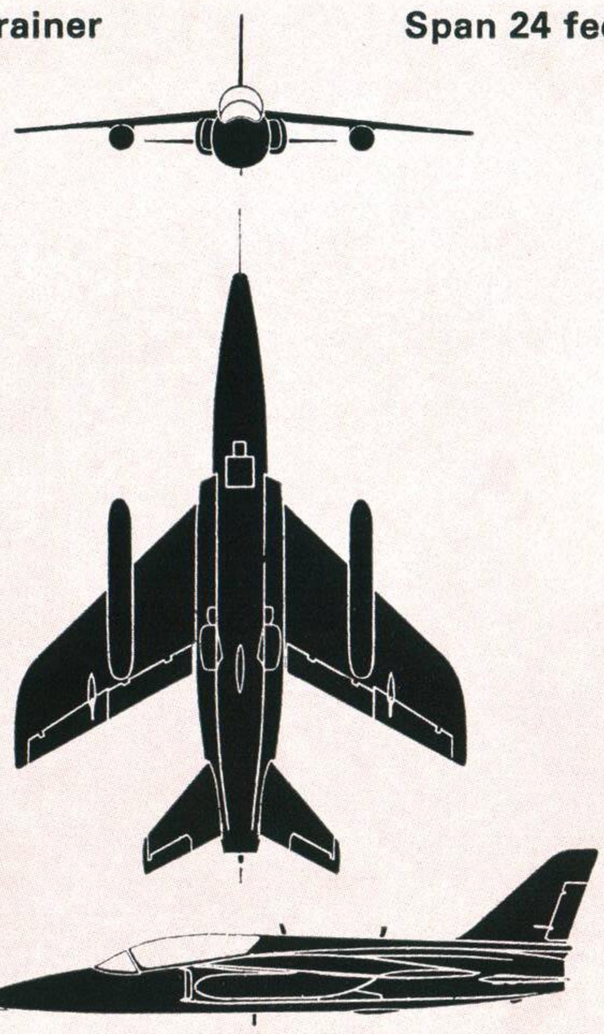
Gnat fighters are used by India and 25 were delivered complete plus components for others to initiate production of these fighters at Bangalore for the Indian Air Force. Twenty Gnat fighters were supplied to Finland and two to Yugoslavia.

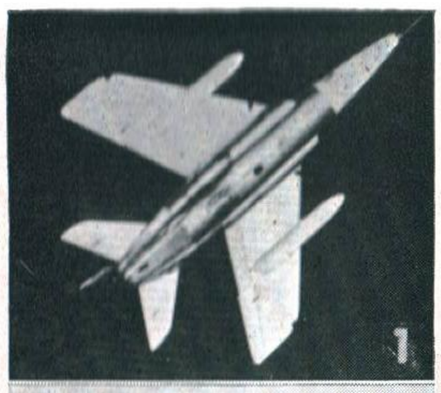
Gnat Trainers are exclusive to the R.A.F. where it is the standard advanced trainer in Flying Training Command as the Gnat T.1 and it also equips the world-famous Red Arrows aerobatic team.

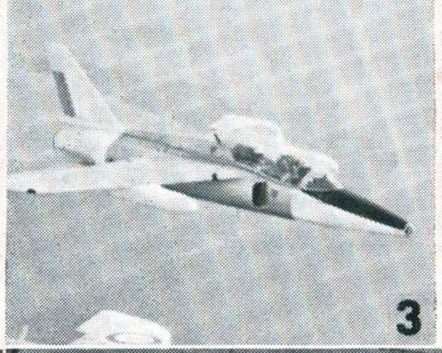
Using the instructions on page 13 report these targets as Gnats (whether fighters or trainers) or otherwise if jokers.

Solutions on the cover.

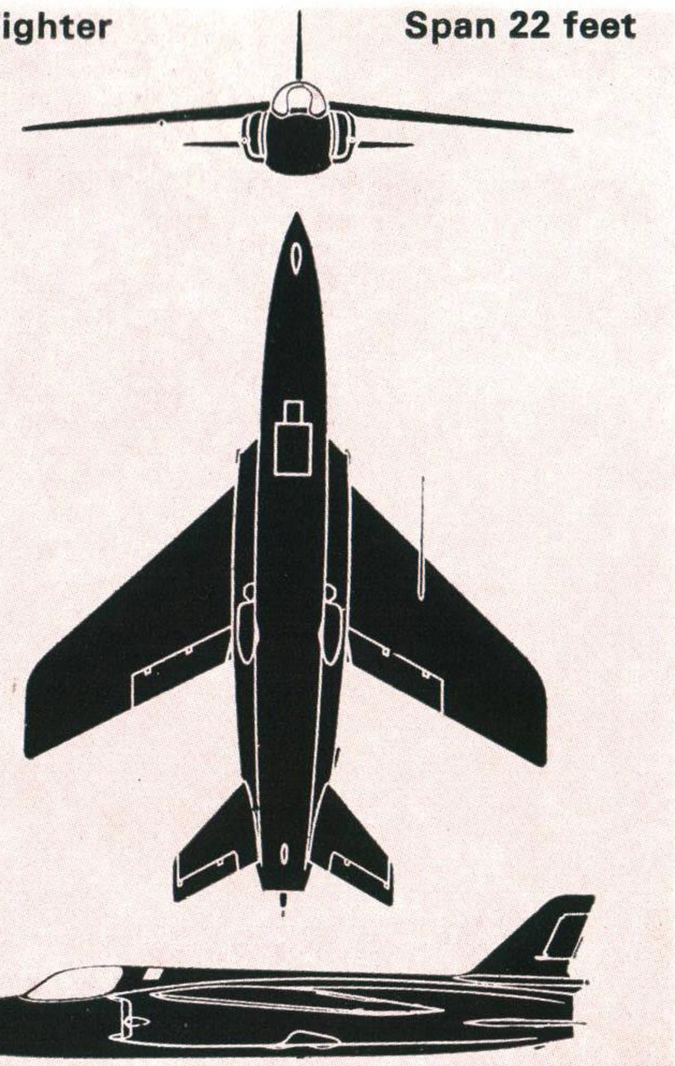
GNAT Trainer **Span 24 feet**

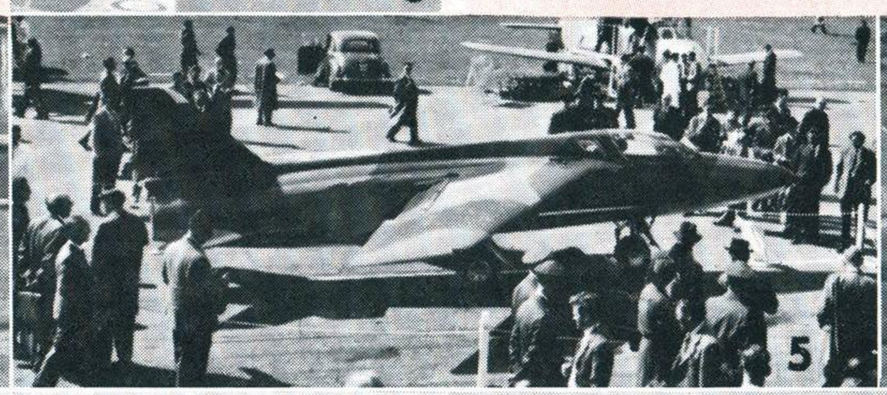


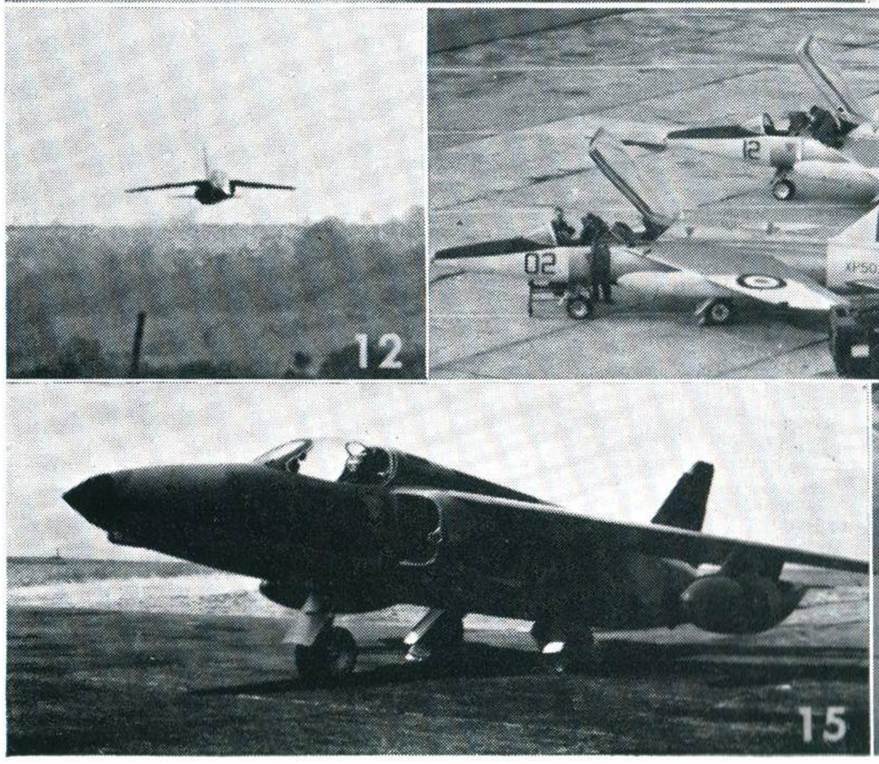


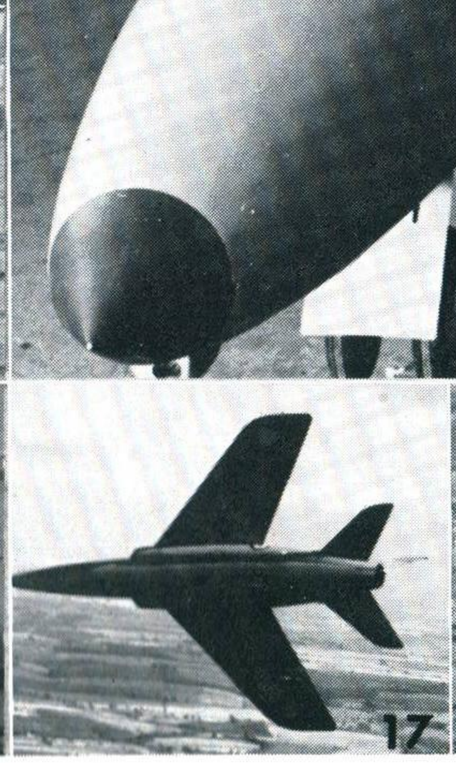


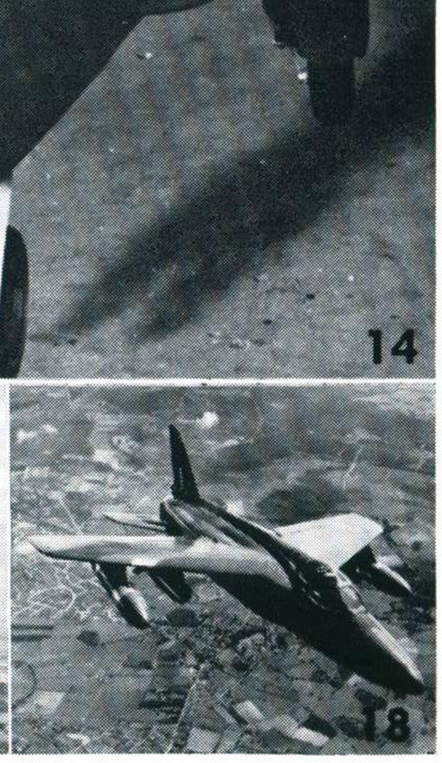
GNAT Fighter **Span 22 feet**











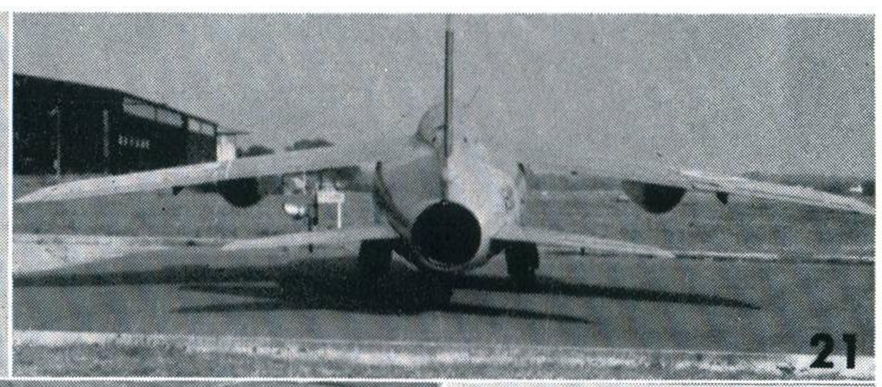
Continued overleaf

GNAT—Fighter and Trainer continued

Gnat Fighter (above)

19

20

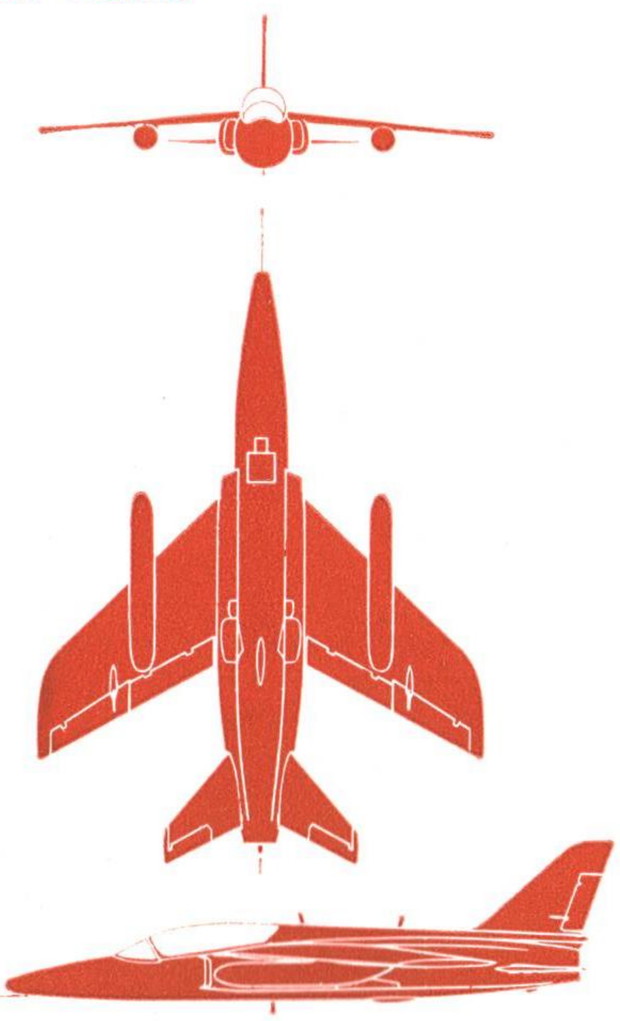

21

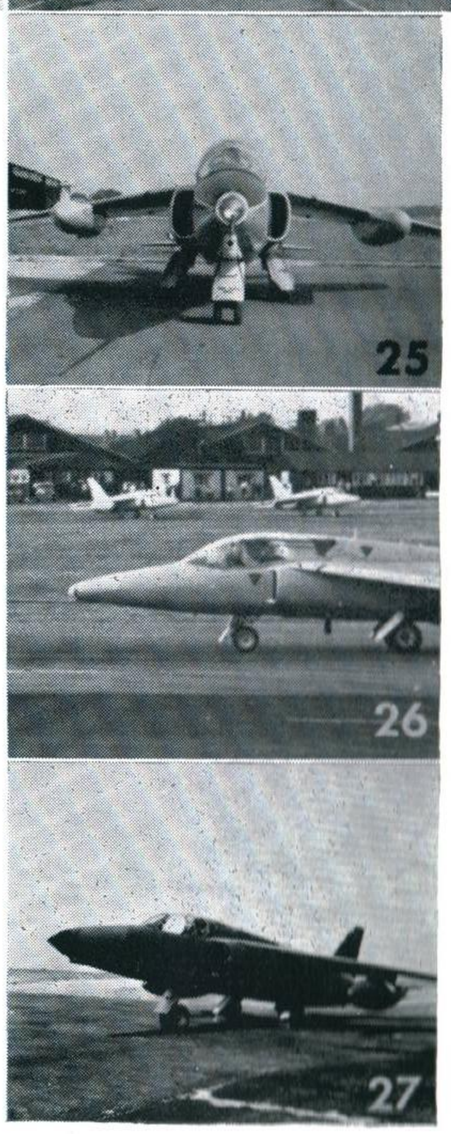
22

23

24

GNAT Trainer

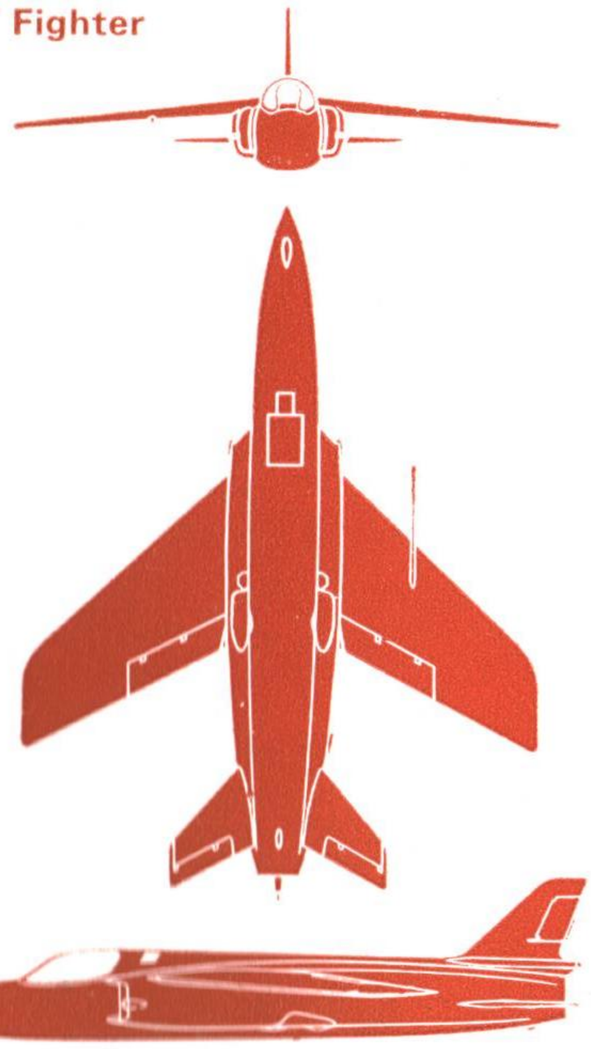



25

26

27

GNAT Fighter



28

29

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

Gnat Trainer (below)

SKYVAN

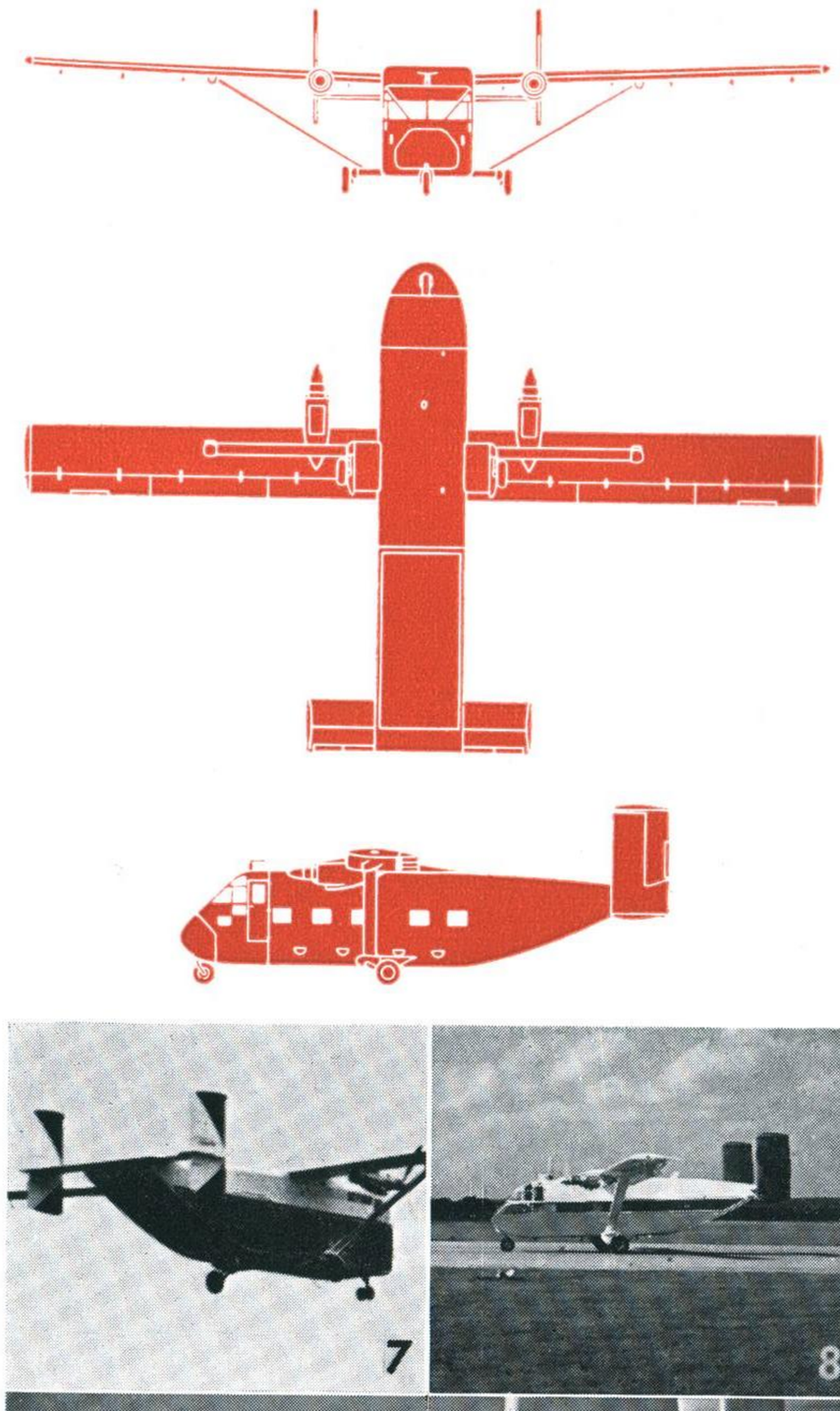
The Short Skyvan was designed as an all-purpose freighter able to carry loads up to 4,000 lbs over stage lengths of up to 600 miles. A total of 18 passengers, or 12 stretcher cases, can be accommodated in lieu of freight.

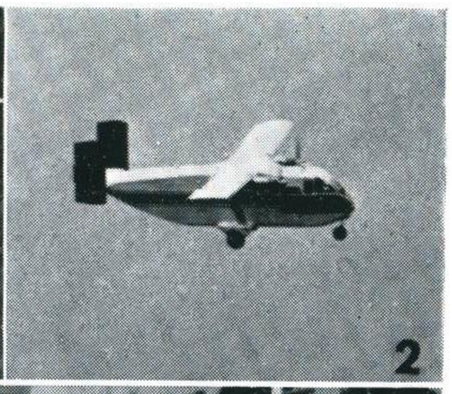
This current version is a turboprop development of the S.C.7 Skyvan introduced in the May 1963 edition of the *Journal*. Examples have been delivered to Italy and Ireland and production for overseas customers continues at Belfast.

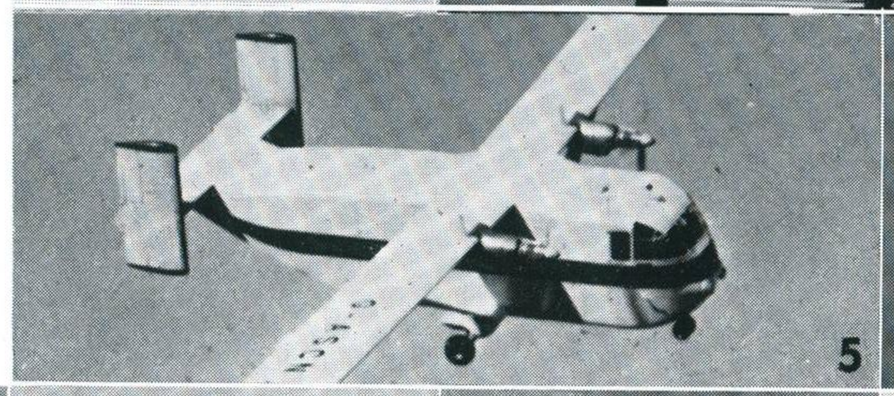
The undercarriage is non-retracting and there is provision for wheel substitution by floats or skis.

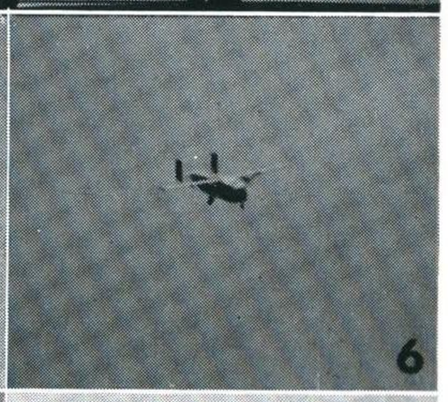
The normal lessons instructions as given on page 13 apply. The solutions are given on the cover.

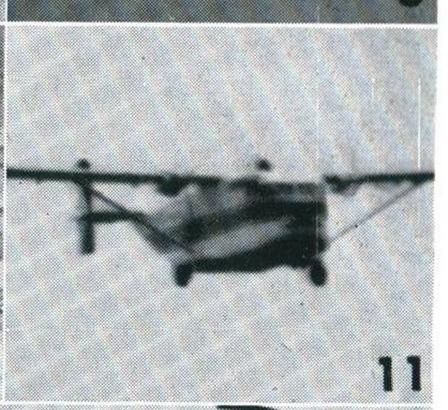
Span 64 feet

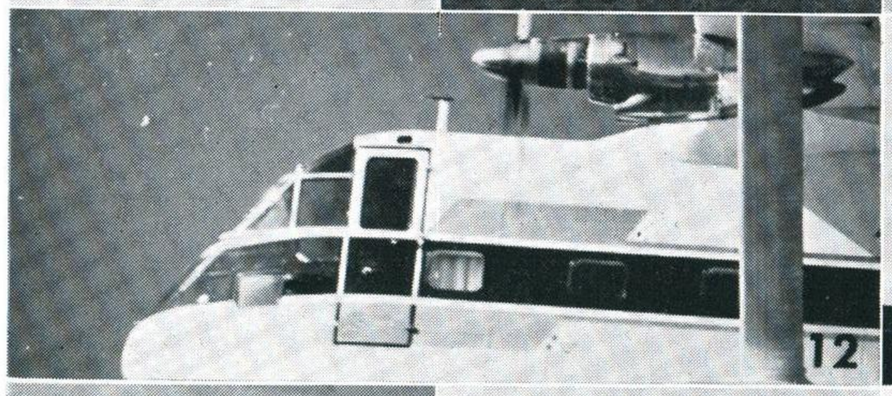


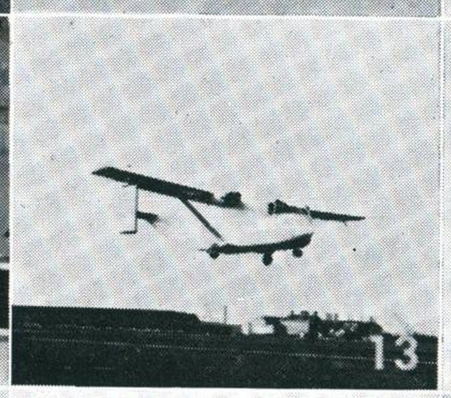


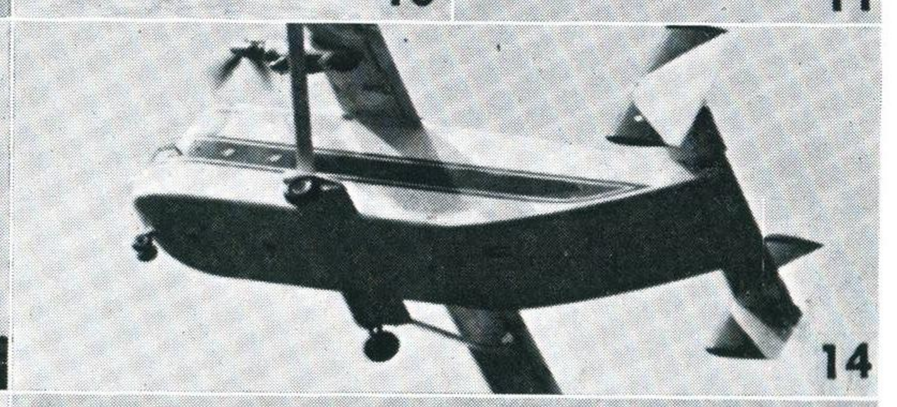


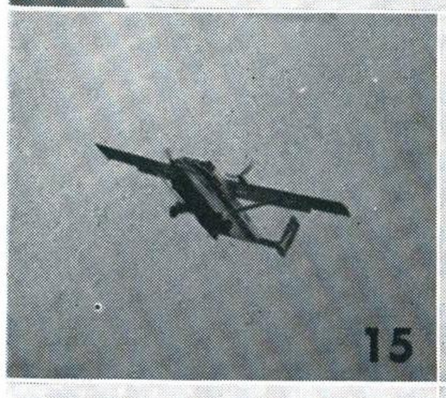


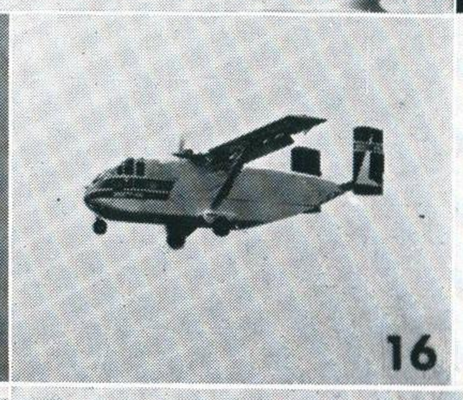


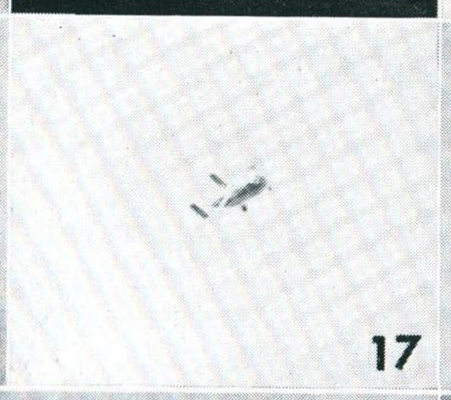


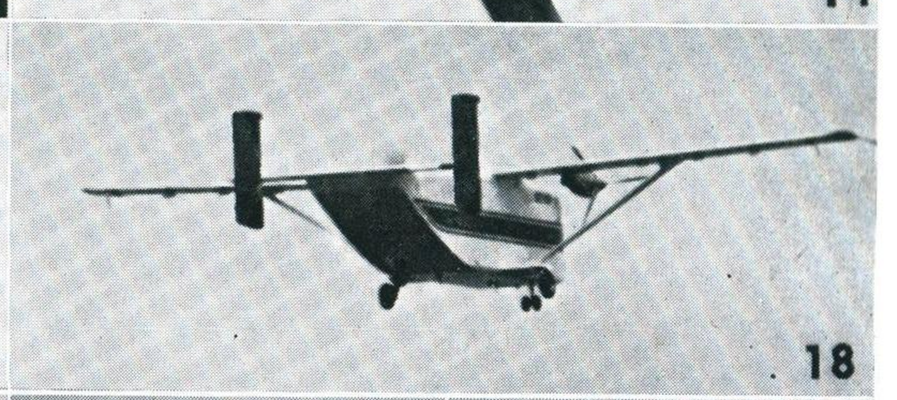


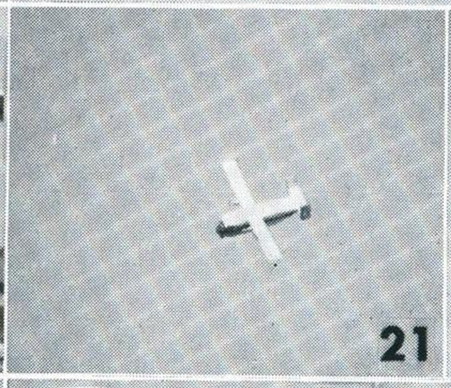


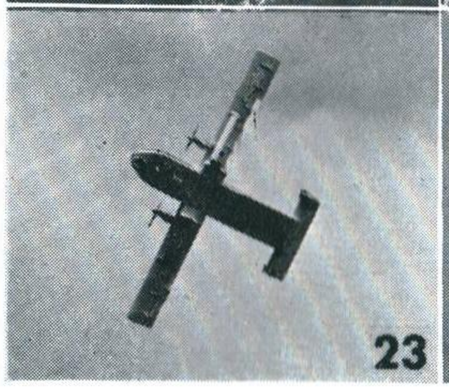


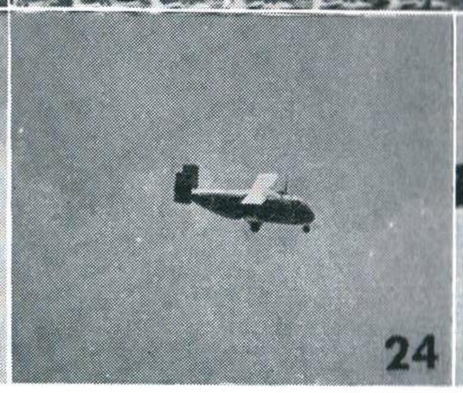










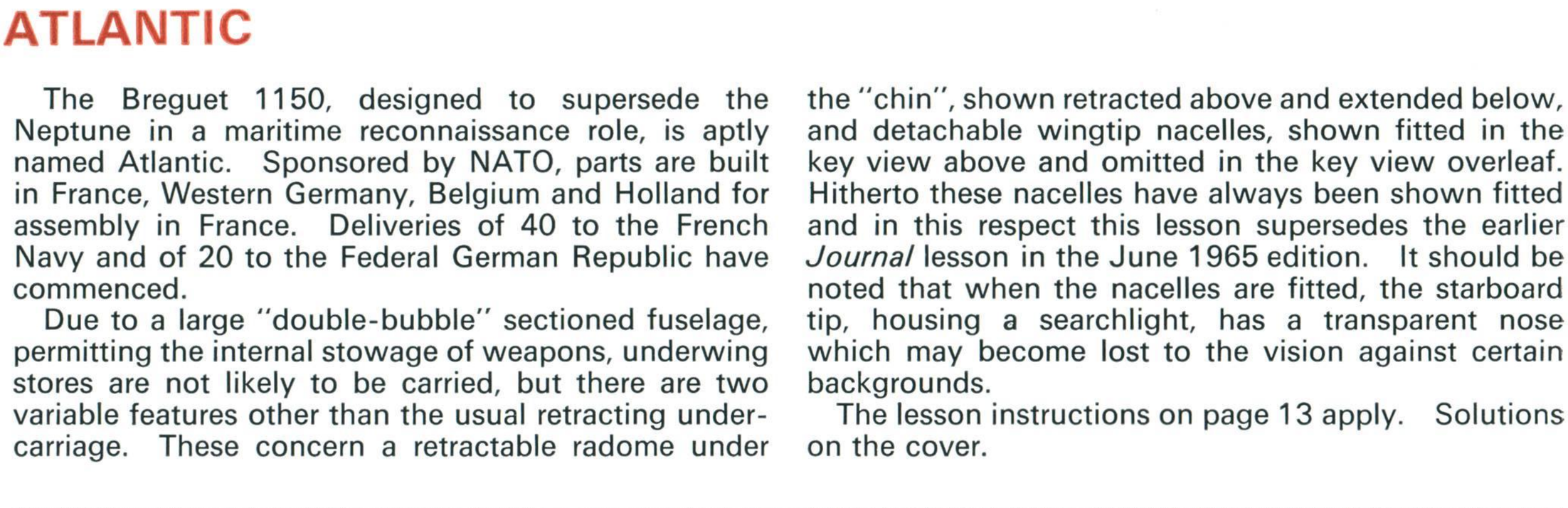


ATLANTIC

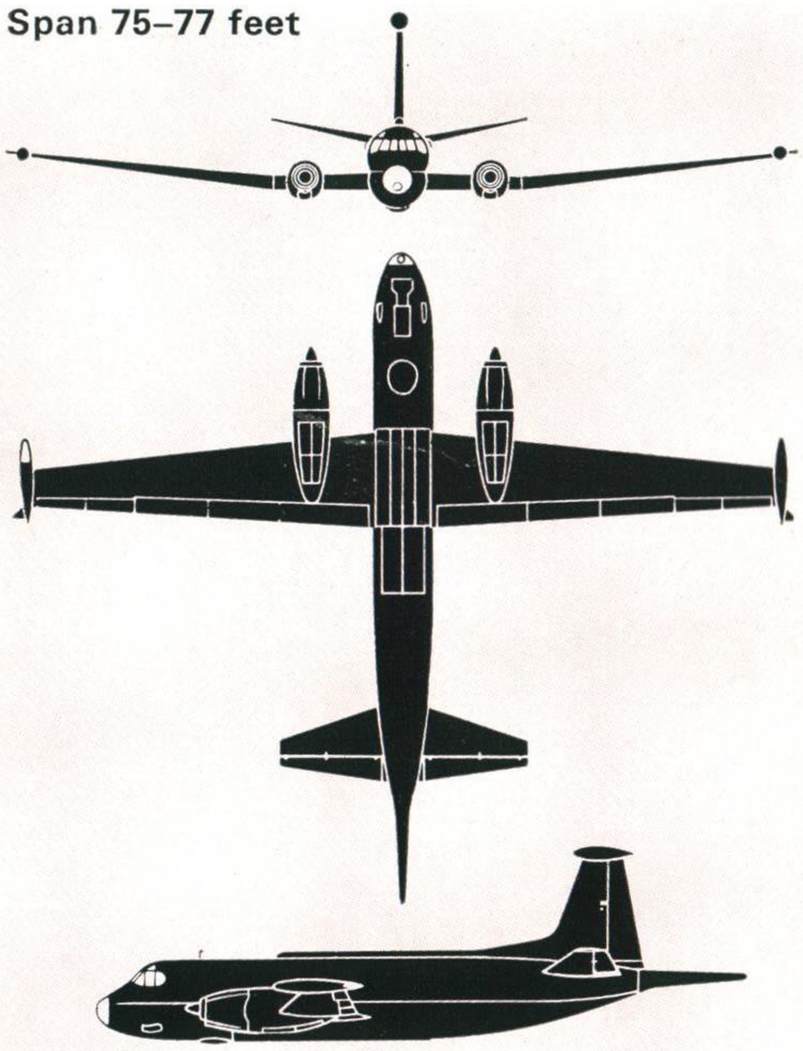
The Breguet 1150, designed to supersede the Neptune in a maritime reconnaissance role, is aptly named Atlantic. Sponsored by NATO, parts are built in France, Western Germany, Belgium and Holland for assembly in France. Deliveries of 40 to the French Navy and of 20 to the Federal German Republic have commenced.

Due to a large "double-bubble" sectioned fuselage, permitting the internal stowage of weapons, underwing stores are not likely to be carried, but there are two variable features other than the usual retracting undercarriage. These concern a retractable radome under the "chin", shown retracted above and extended below, and detachable wingtip nacelles, shown fitted in the key view above and omitted in the key view overleaf. Hitherto these nacelles have always been shown fitted and in this respect this lesson supersedes the earlier *Journal* lesson in the June 1965 edition. It should be noted that when the nacelles are fitted, the starboard tip, housing a searchlight, has a transparent nose which may become lost to the vision against certain backgrounds.

The lesson instructions on page 13 apply. Solutions on the cover.



Span 75–77 feet

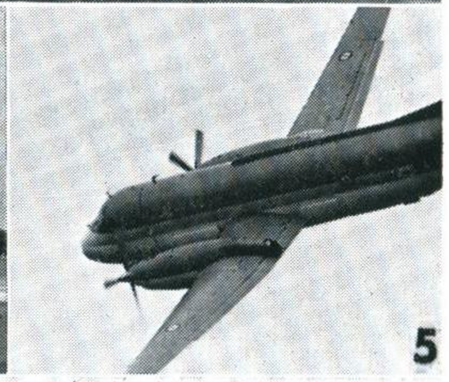


1

2

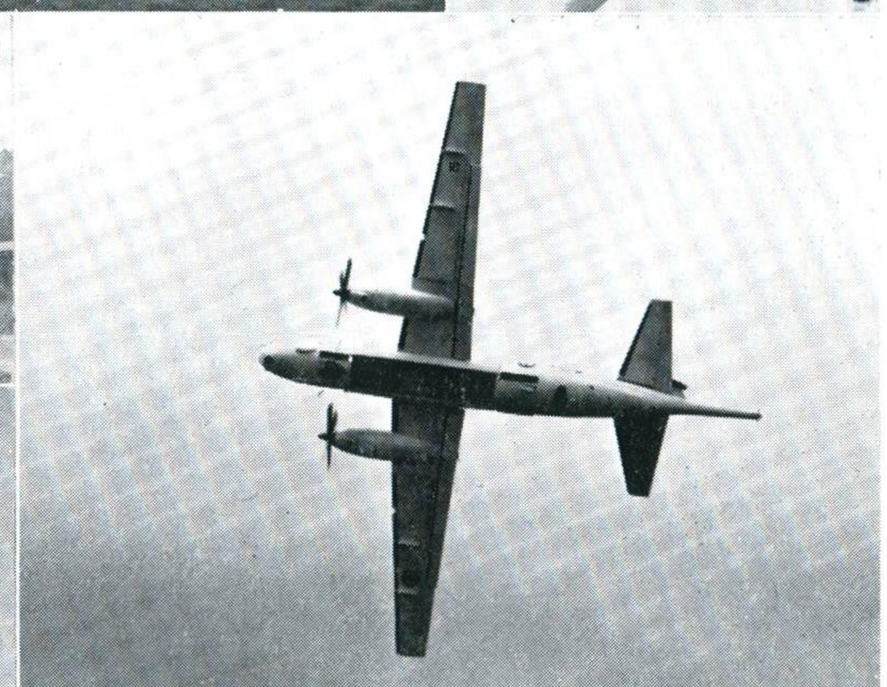
3

4


5

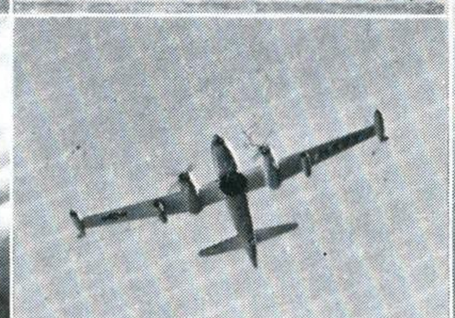
6

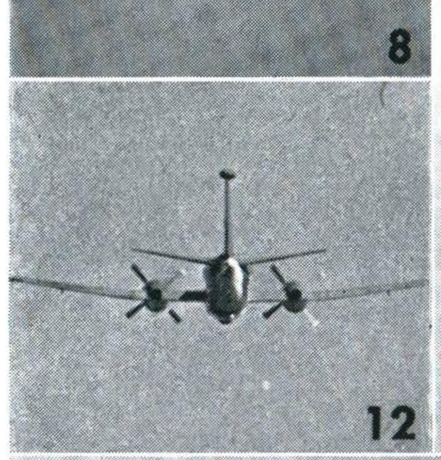
7

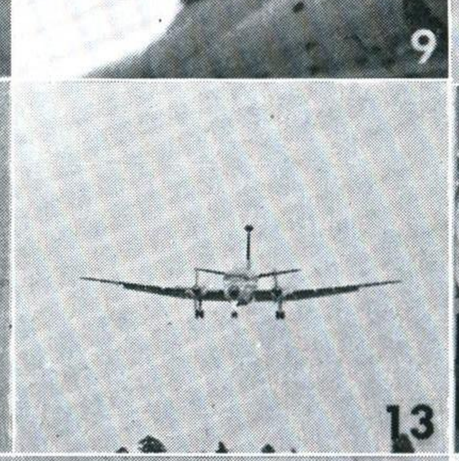

11

8

9

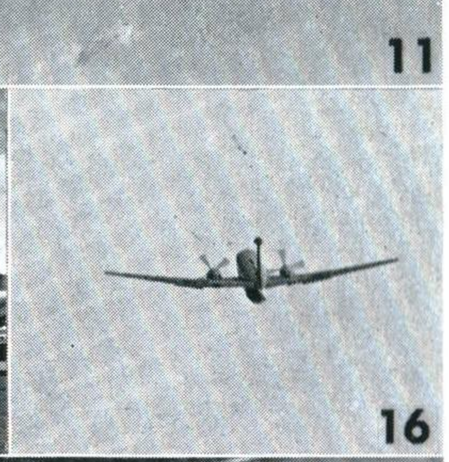

10


12


13

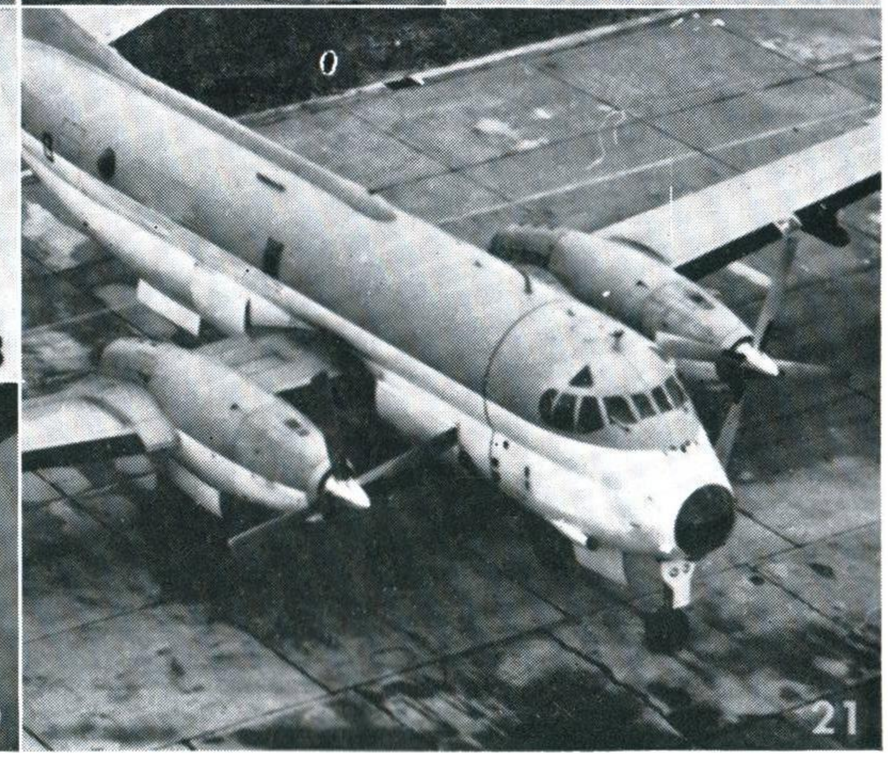
14

15


16

17

18


0

19

20

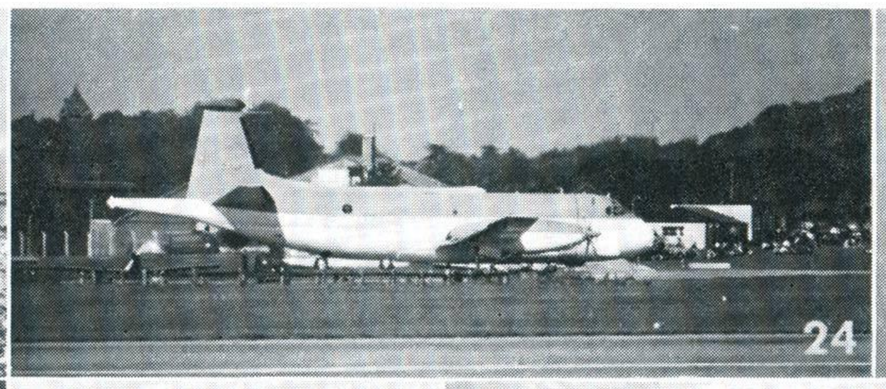
21

Continued overleaf

ATLANTIC continued

22

23

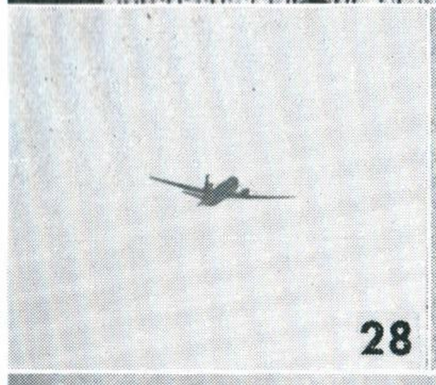

24

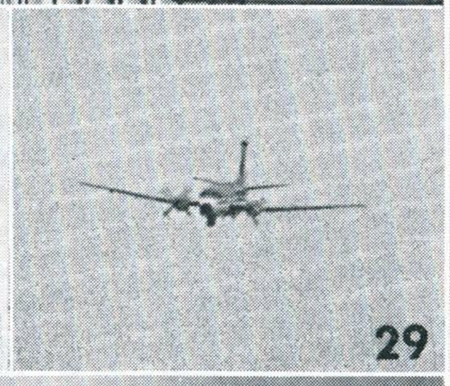
25

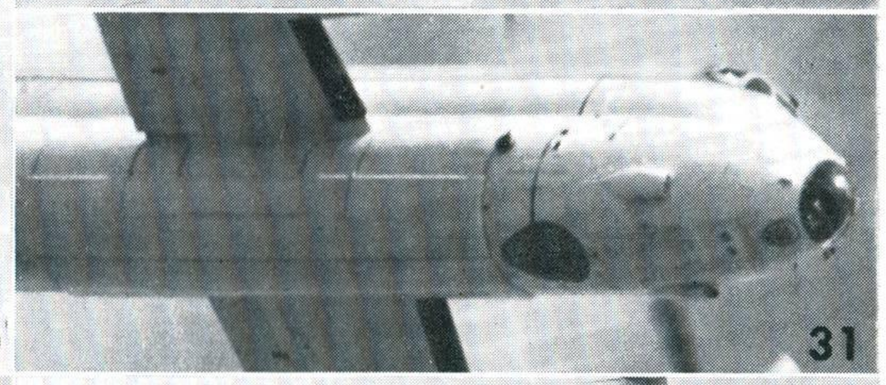
26

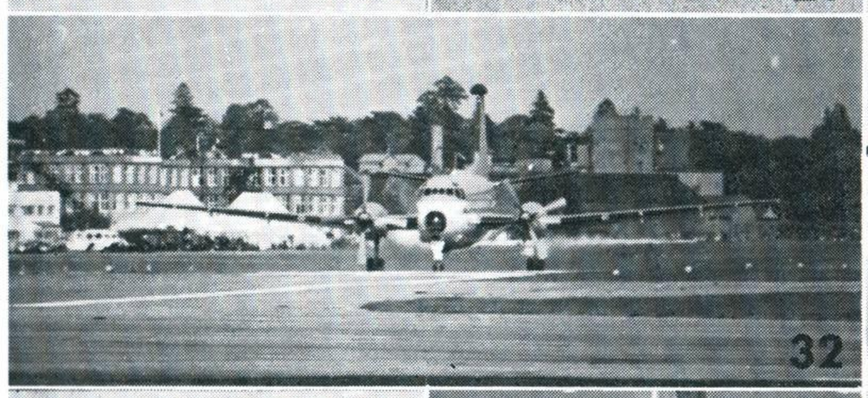
30

27


28


29

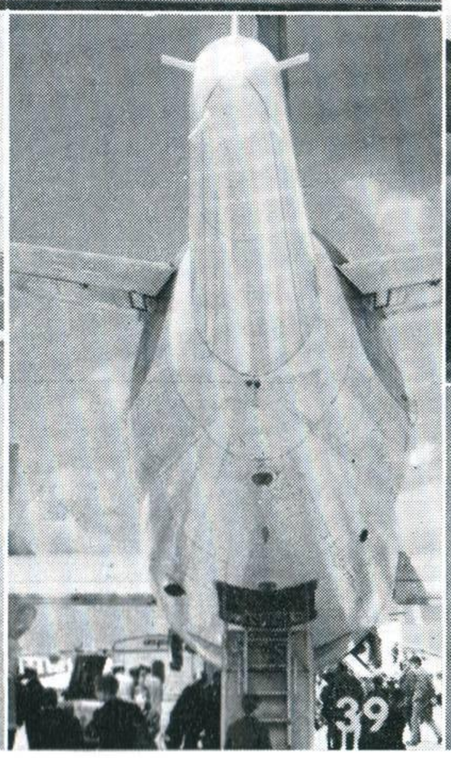

31


32

33

34

35


39

36

37

38

40

41

IN PASSING

CAN YOU HELP?

The editorial office is short of the following record copies of the *Joint Services Recognition Journal* and its antecedent *Aircraft Recognition—The Inter-Services Journal*:—

Old Series

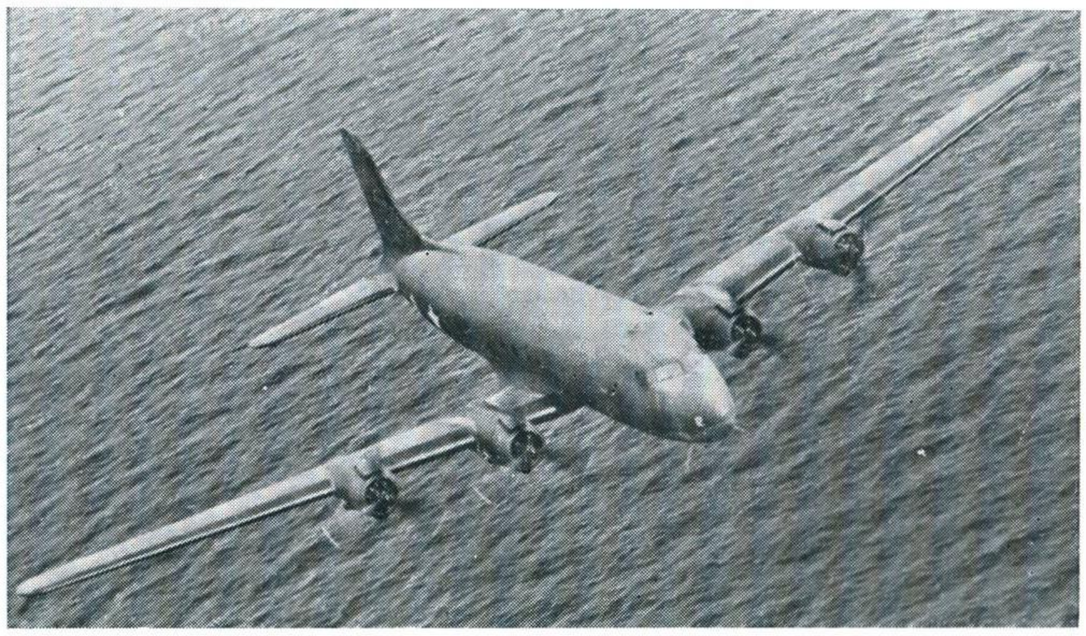
Vol. 1, No. 1, September 1942.
Vol. 3, No. 11, July 1945.
Vol. 3, No. 12, August 1945.
Vol. 3, No. 13, September 1945.

Current Series

Vol. 1, No. 1, July 1946.
Vol. 1, No. 2, August 1946.
Vol. 1, No. 3, September 1946.
Vol. 1, No. 5, November 1946.
Vol. 1, No. 6, December 1946.
Vol. 4, No. 4, August 1950.
Vol. 10, No. 11, November 1955.
Vol. 12, No. 3, March 1957.
Vol. 12, No. 4, April 1957.
Vol. 12, No. 9, September 1957
Vol. 19, No. 19, September 1964.

WHAT WAS IT?

A photograph taken during W.W.2 of a famous aircraft. What was it? Last month: Messerschmitt 109G in United States markings.



Claimed as the world's most popular aeroplanes are the Cessna 172 Skyhawk series of which nearly 12,000 have been built. The US Army recently ordered 225 and Peruvian Air Force examples are illustrated.

MIS-IDENTIFICATION ADDITION

An additional victim to those recorded in our editorial series on mis-identification during the last war was Lysander V9748 of No. 161, the "cloak and dagger work", squadron. It was missing from a night mission to Rennes and a Mosquito intruder pilot reported shooting down a Henschel Hs126 in this locality that same night.

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.**

Conduite des leçons

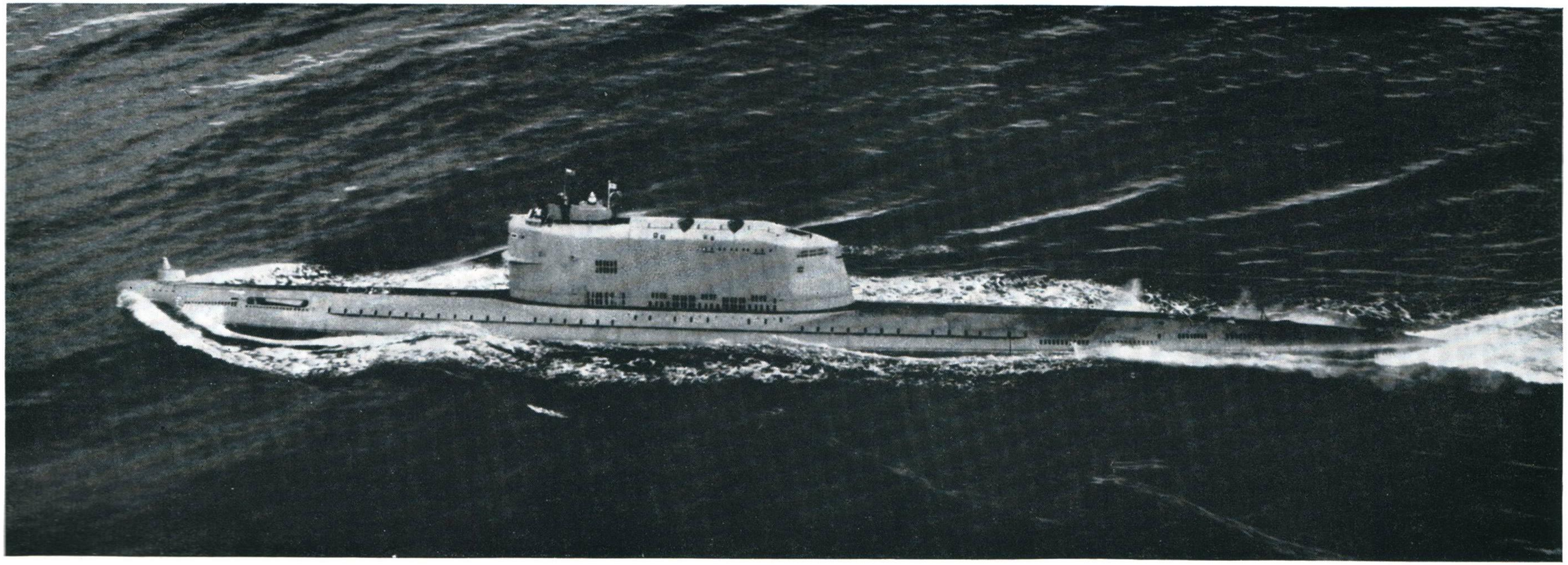
1. **Lire le texte correspondant à la leçon.**
2. **Préparer une liste de numéros de cible, de façon à pouvoir prendre les cibles dans n'importe quel ordre.**
3. **Identifier les photos de la cible en les comparant avec les vues-clé: commencer par les plus faciles de manière à gagner de l'expérience: se servir aussi de cibles déjà identifiées pour trouver les plus difficiles.**
4. **Quand vous serez certain de l'identité d'une cible, notez son nom immédiatement en face du numéro correspondant sur votre liste. CECI EST IMPORTANT.**
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.**
6. **Ne pas s'efforcer d'apprendre par cœur les détails, les formes ou les noms.**

WARSHIPS OF THE USSR

G CLASS SUBMARINE

WARSHIPS OF THE USSR

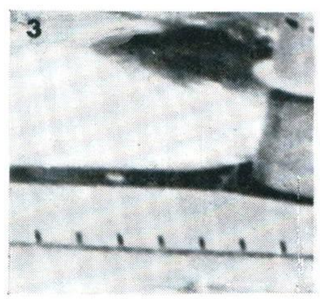
G CLASS SUBMARINE

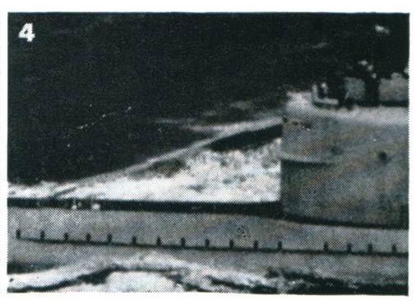


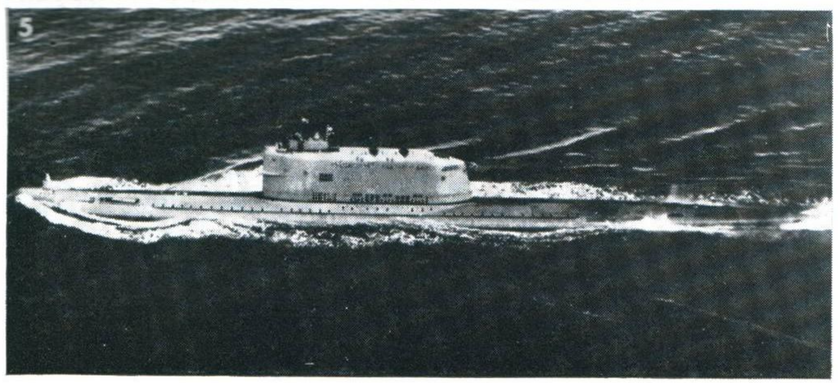
The Soviet G class Ballistic Missile Type Submarines are 320 feet long and have a displacement of 2,350 tons surfaced and 2,800 tons submerged; their complement is approximately 85.

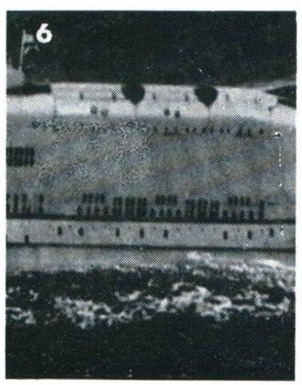
This class has an unusually long conning tower with three vertically-mounted tubes for launching guided missiles in addition to the conventional submarine armament of six torpedo tubes.

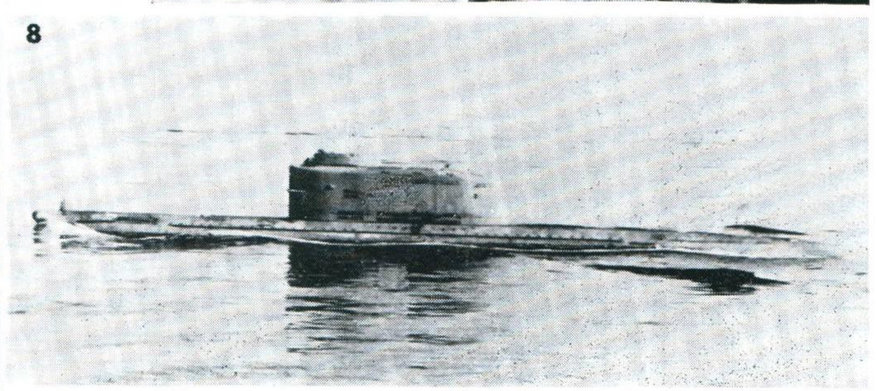
Use the instructions on page 13. Solutions on the cover.

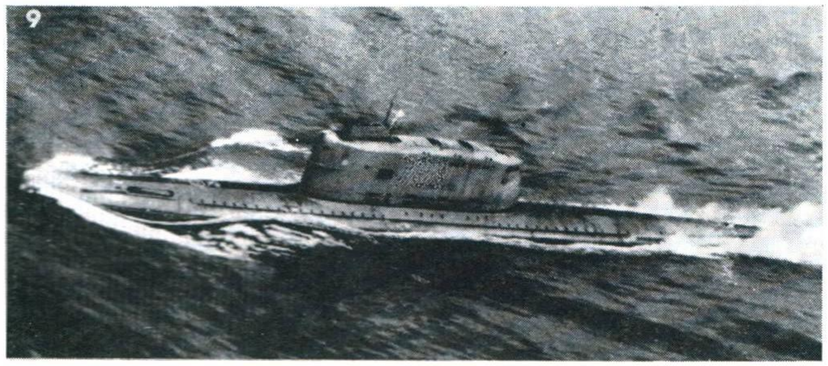


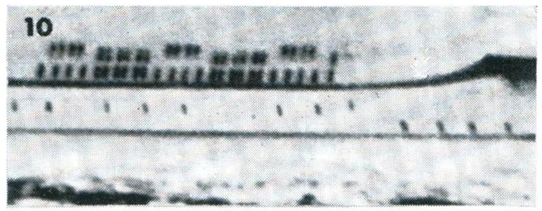


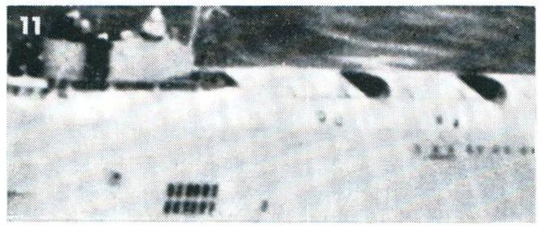


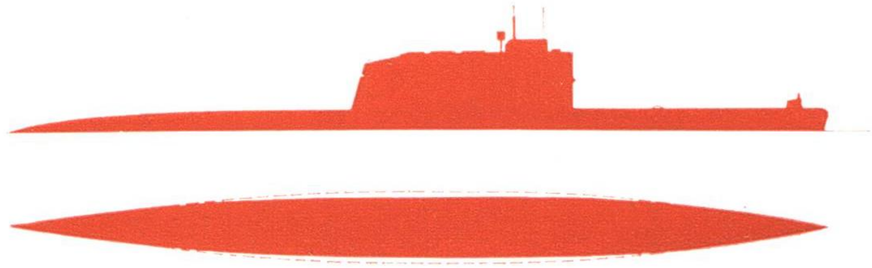


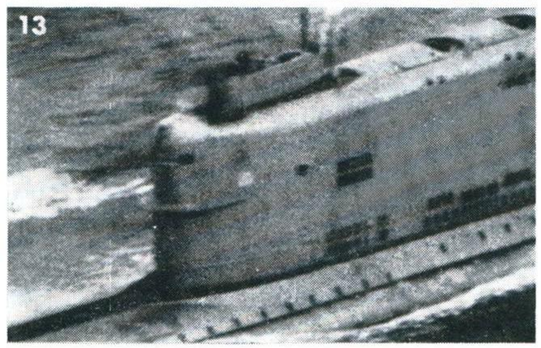


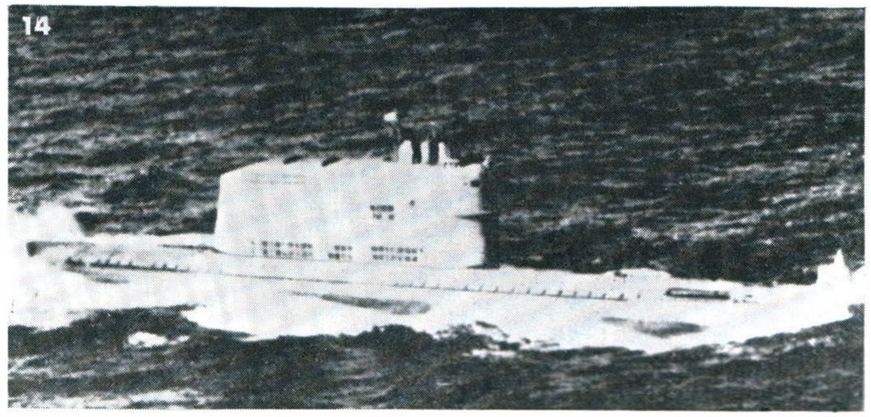


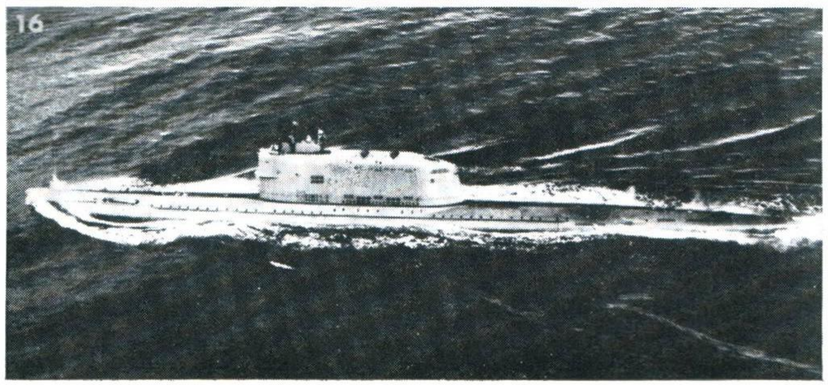


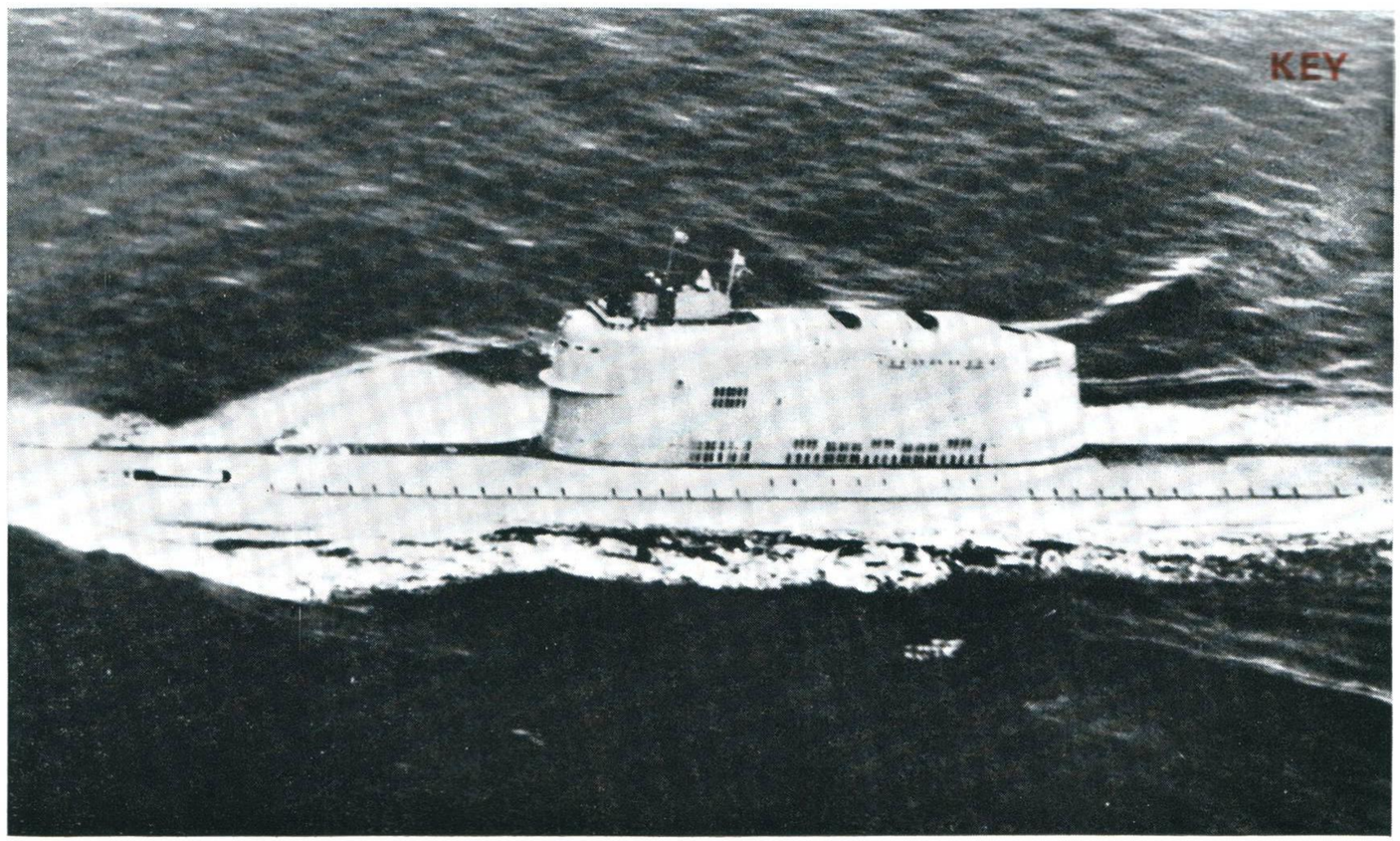




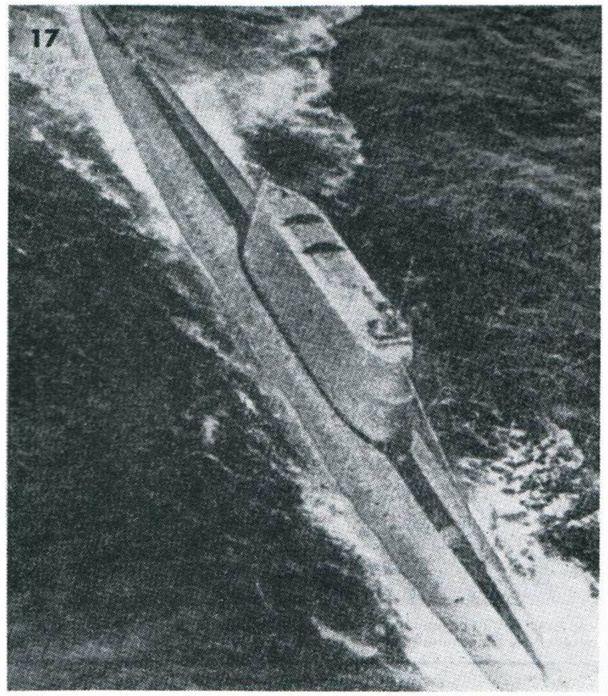


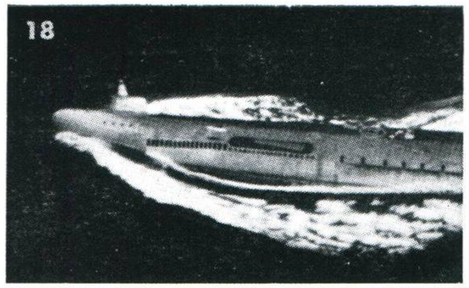


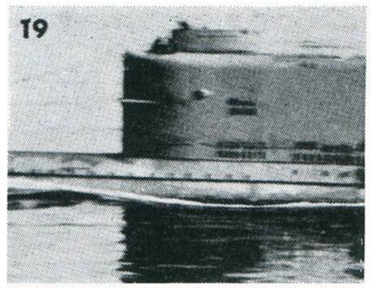


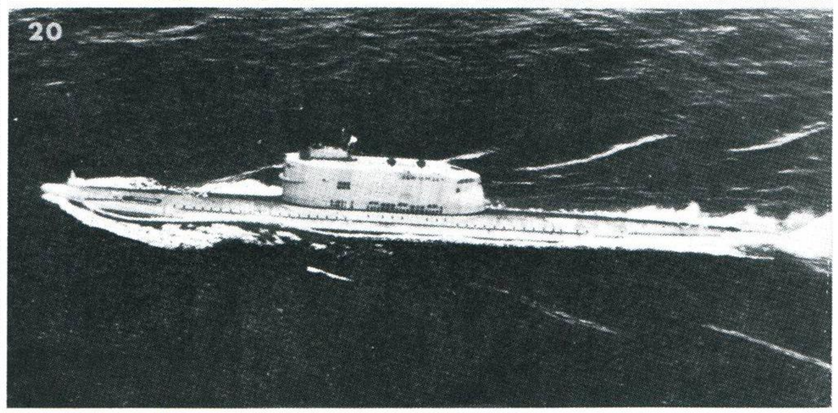


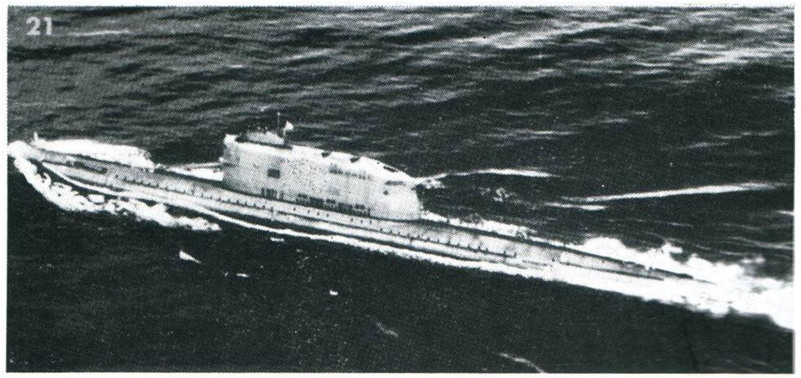
Continued overleaf

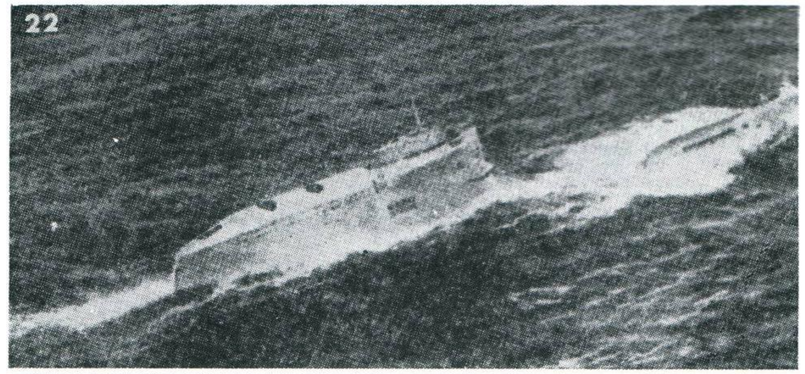




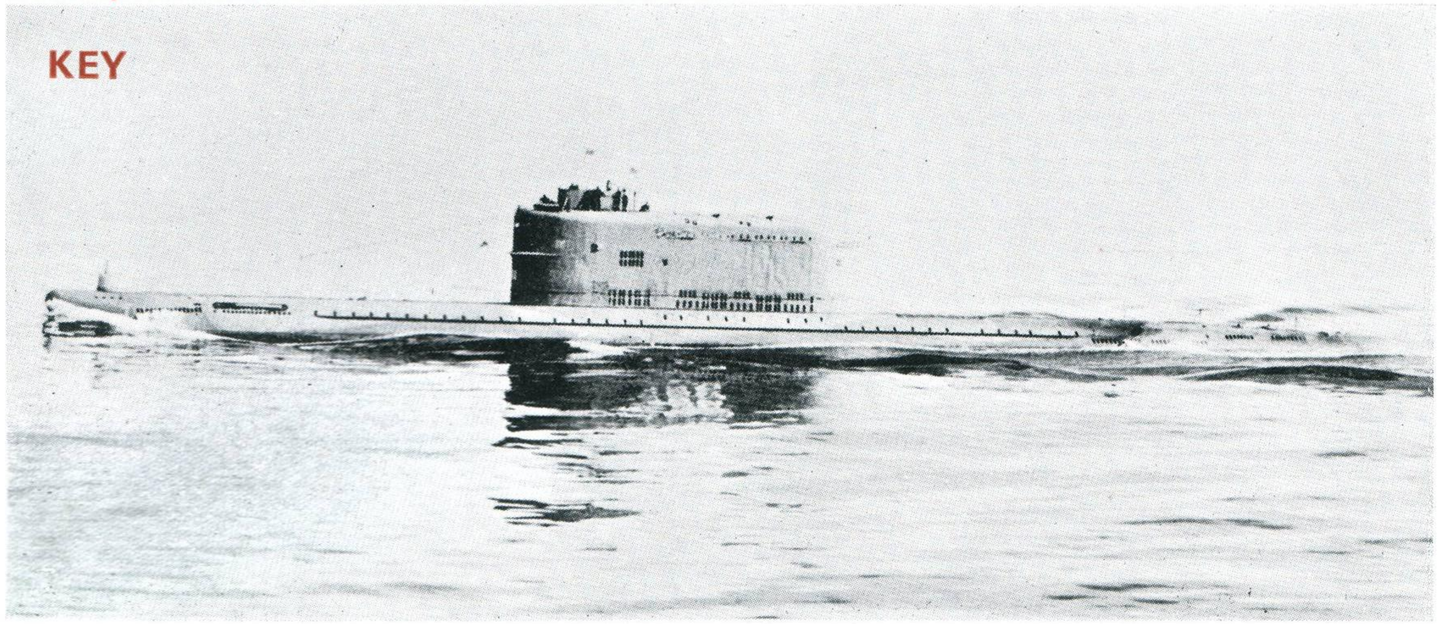


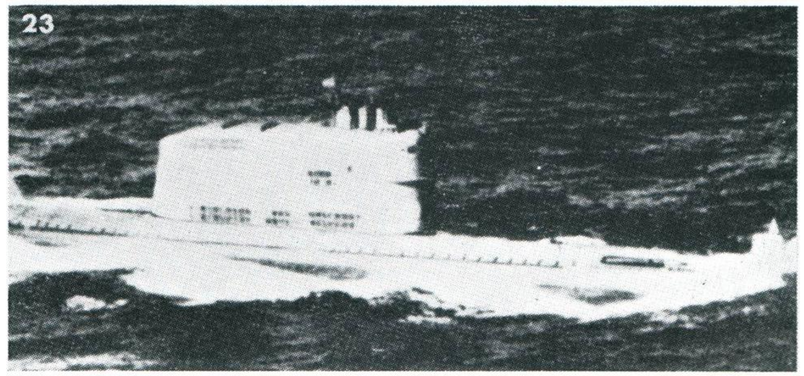


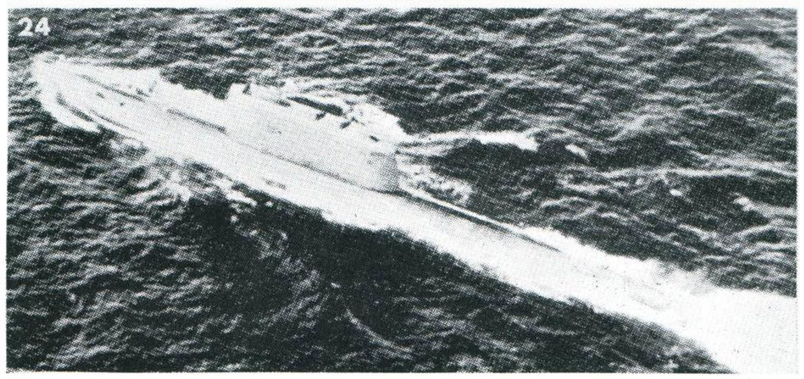


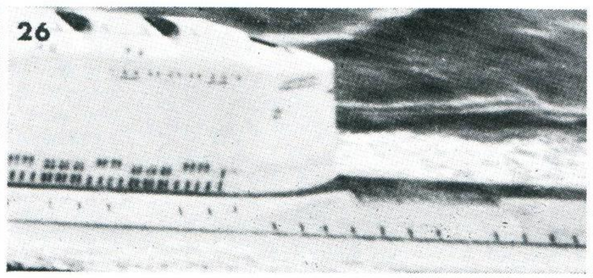


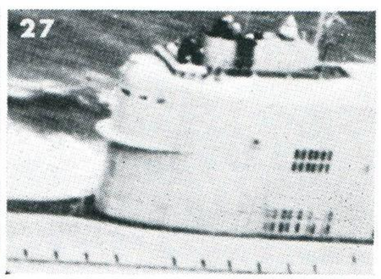
Warships of the USSR—G Class Submarine continued

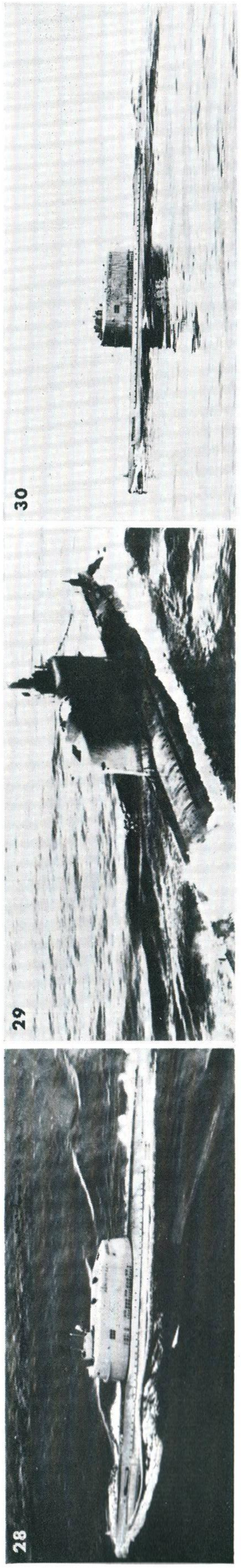






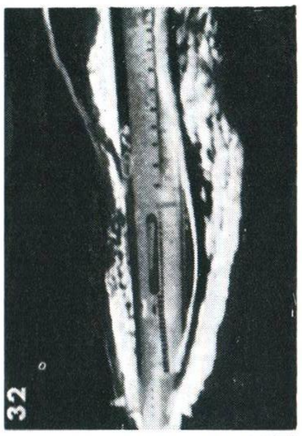




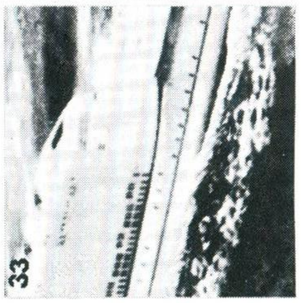

28

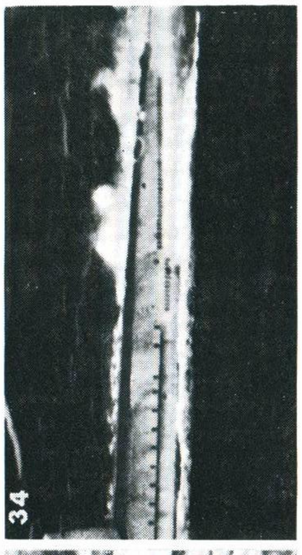
29

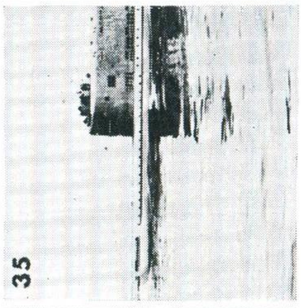
30

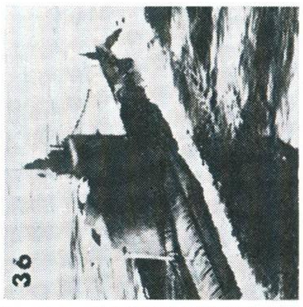

31

32

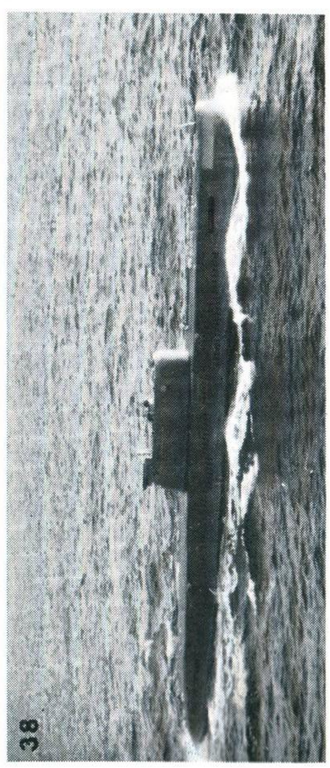

33


34

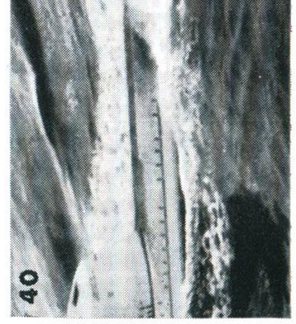

35


36

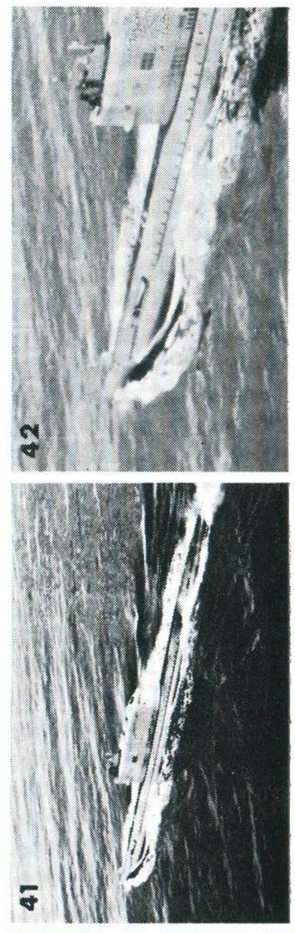
37

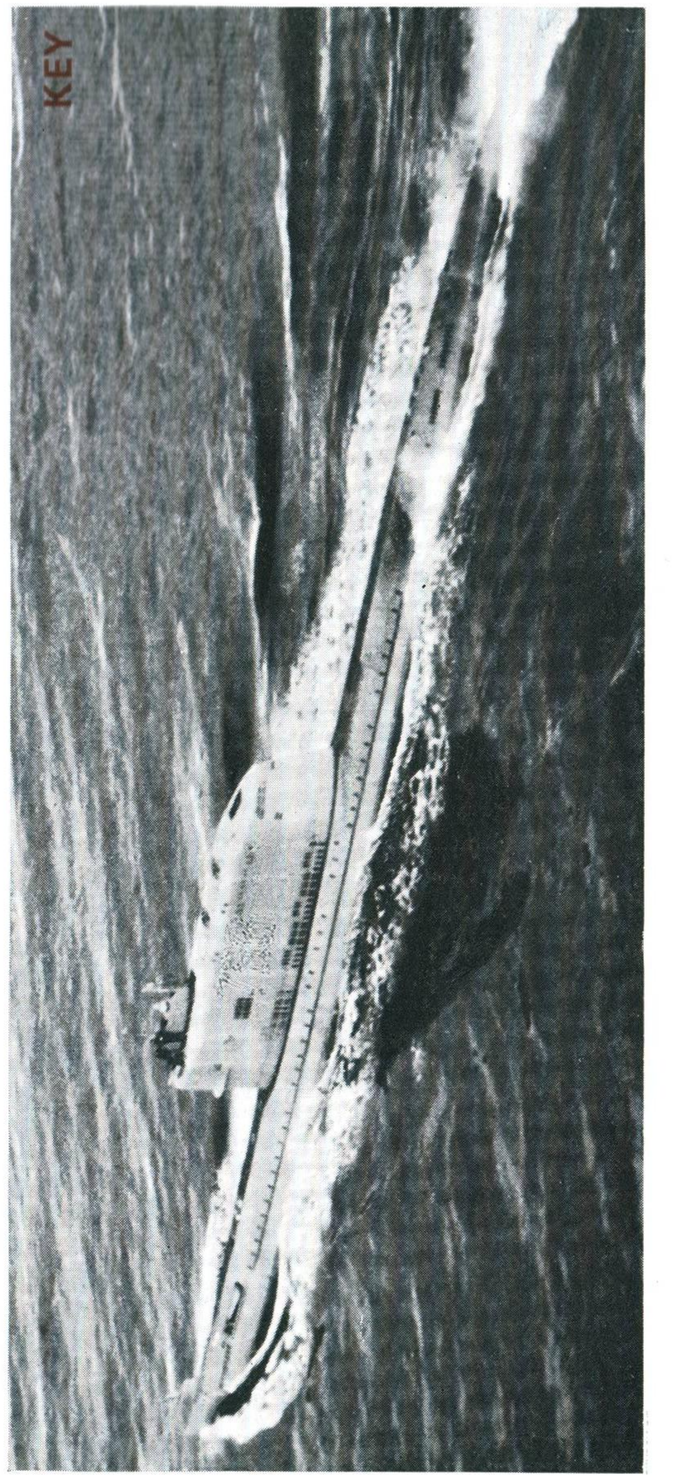

38

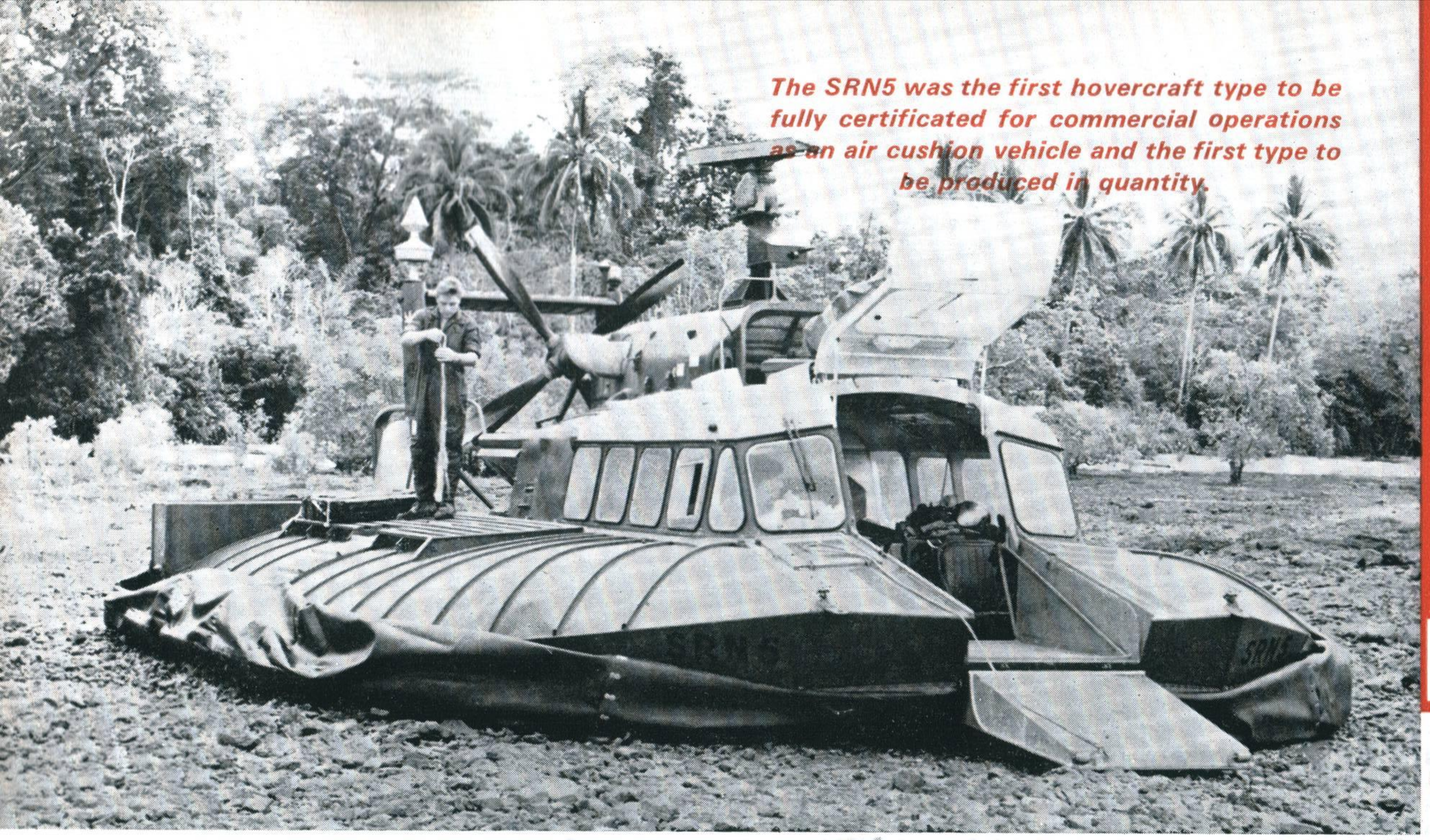
39


40

41


42


KEY



The SRN5 was the first hovercraft type to be fully certificated for commercial operations as an air cushion vehicle and the first type to be produced in quantity.

SRN5 hovercraft

Key views above the brown line, targets below.

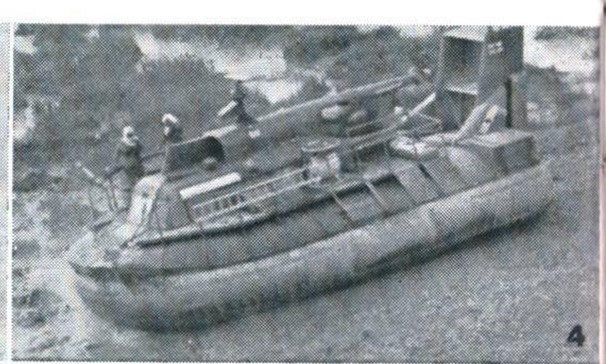
Solutions on the cover.

This type is in commercial use in Britain, Germany, Japan, Norway and the United States, and has had military trials by the British Services in the Middle and Far East and in Vietnam by the U.S. Forces. It can be used for a variety of tasks such as coastal patrol, amphibious assault, fire-fighting, search and rescue, weed and pest control, etc. Weighing 7 tons the SRN5 has seating for eighteen and travels at a speed of up to 60 knots. To identify the SRN5 from all other hovercraft types, do this lesson to the instructions on page 13.

1

2

3


4

5

6

7

8

9

10

11

12

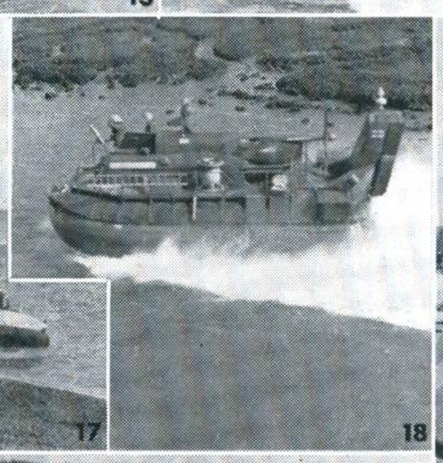
13

14

15

16

17


18

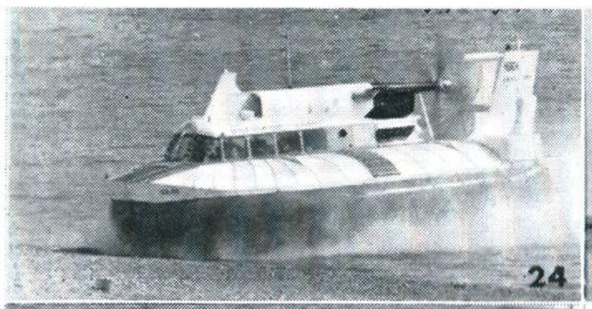
19

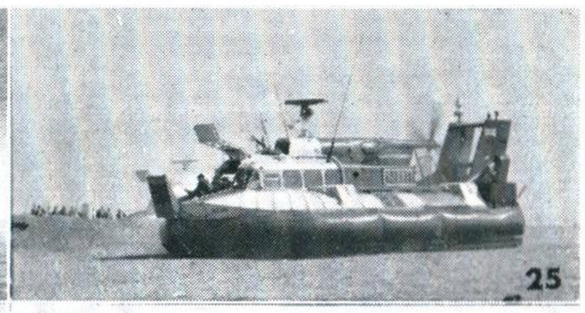
20

21

22

23


24


25

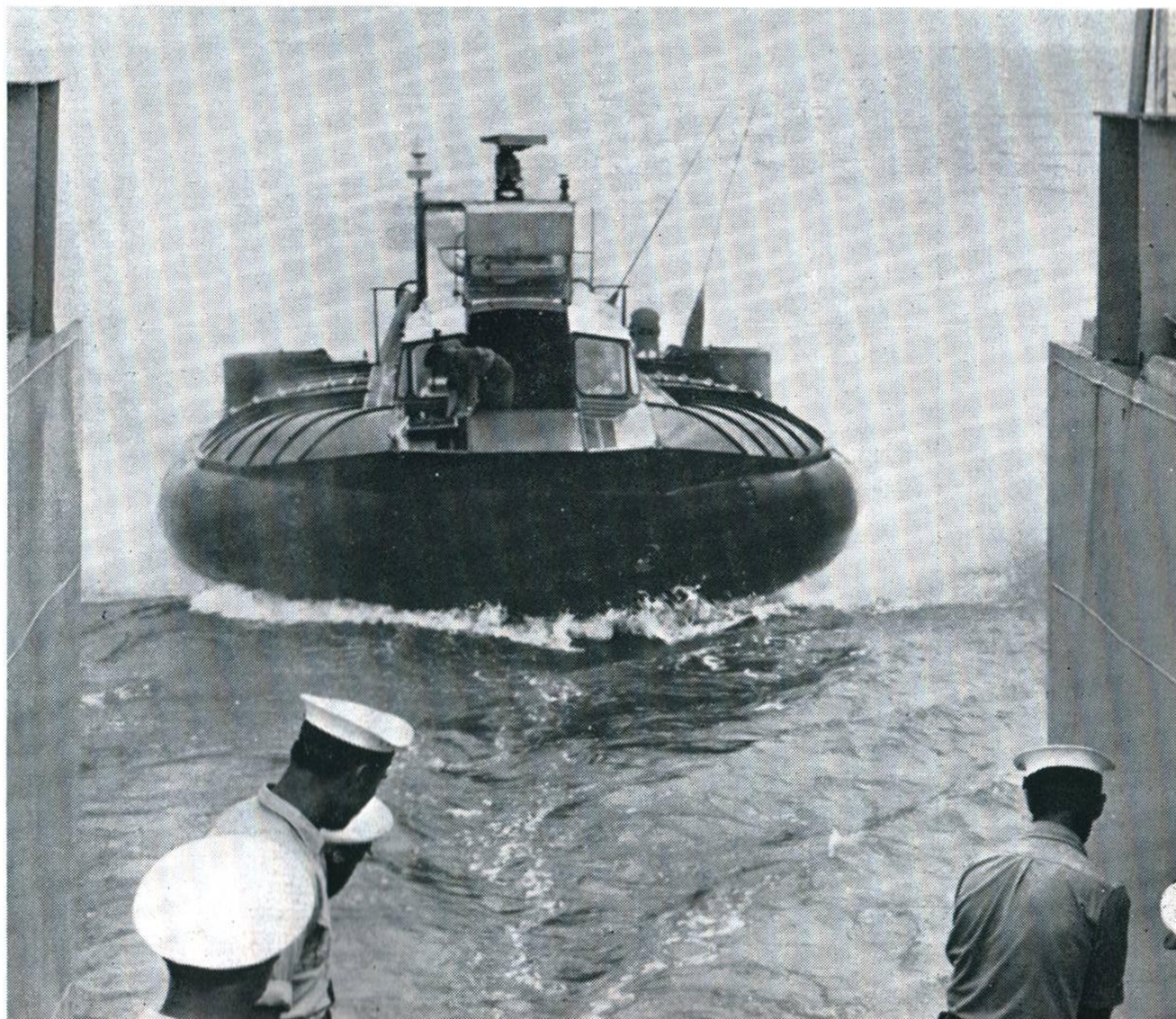
26

27

28

29

Service mails coming up by SRN5 hovercraft (right)

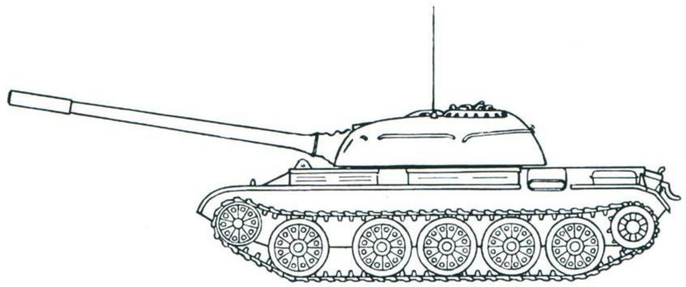


T54

SOVIET MEDIUM TANK

The T-54 is the most numerous and the most widely used tank today. It has attained this position as a result of becoming, since the mid-fifties, the principal tank of the Soviet Army and by being supplied, subsequently, to many other armies. In consequence, it has come to equip not only the numerous armoured formations of the Soviet Union and its East European Satellites but also those of several Arab countries, from Algeria through Egypt and Syria to Iraq. It is also in service in Finland and Afghanistan, as well as China which has recently delivered tanks of this type to Pakistan. The T-54 is even to be found in the Western Hemisphere, in Cuba.

The T-54 bears some resemblance to its predecessor, the T-34/85. In particular, it has five large road wheels on each side and no track return rollers but, in contrast to the T-34/85, there is a larger gap between the first and second wheels than the rest. What is far more important, however, is that the T-54 has a more powerful, 100-mm gun, instead of its predecessor's 85-mm gun.

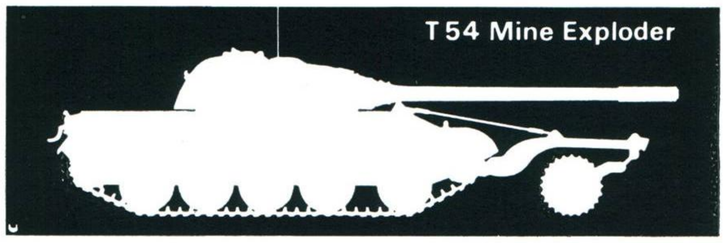


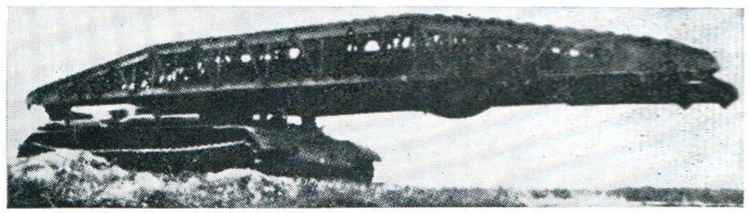
The gun is mounted in a dome-shaped turret without an external mantlet and no prominent commander's cupola. In contrast to Western tanks, the commander is on the left of the turret while the loader is on the right and it is the loader who operates the externally mounted 12·7-mm machine gun. Machine guns have not been mounted externally, however, on the more recent versions of the T-54 series, some of which have been called the T-55. Instead, there are infra-red as well as ordinary searchlights, for night fighting.

Its low turret and shallow hull give the T-54 a very low silhouette. To some extent, this has been achieved at the expense of the depression of the gun and of ammunition stowage but its low silhouette makes the T-54 a more difficult target.

Other features of the T-54 include its ability to ford rivers submerged after the attachment of an

T54 with air tubes for submerged fording



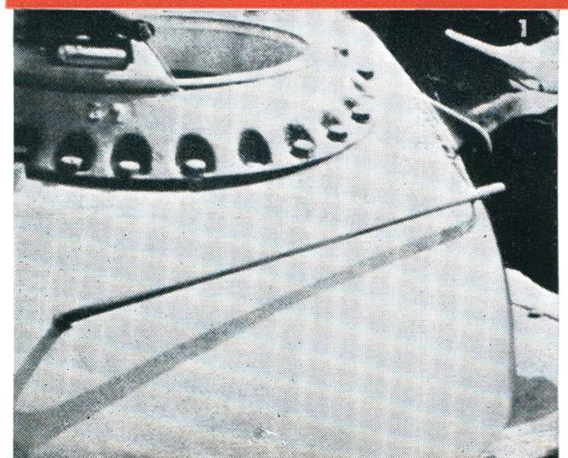


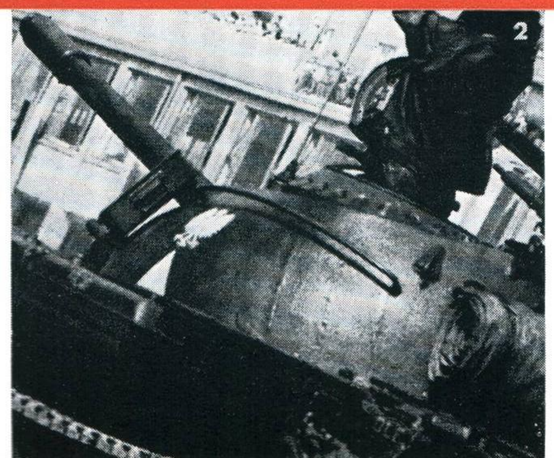
T54 Bridge Layer

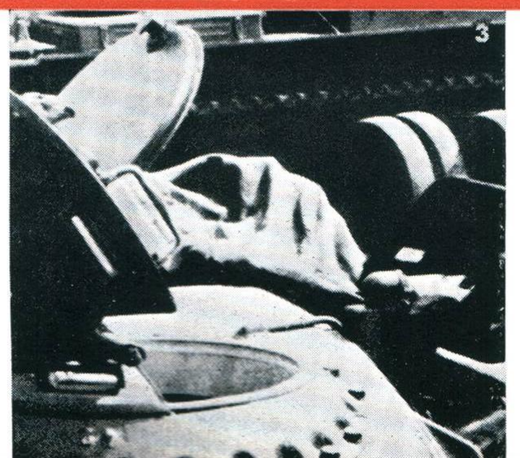
T54 Mine Exploder

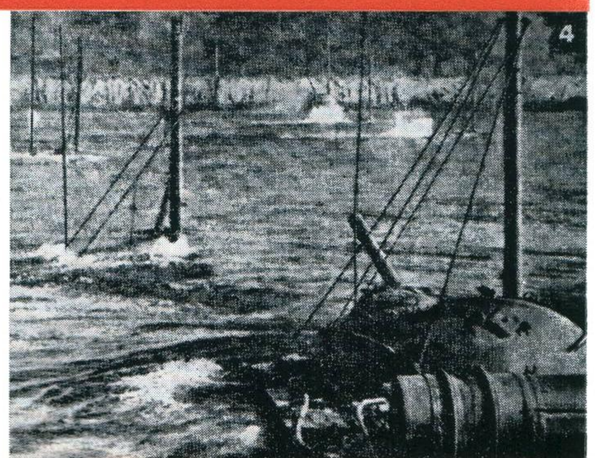
Targets begin here and continue overleaf

Read the instructions on page 13





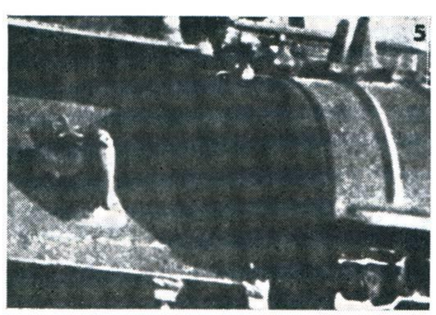


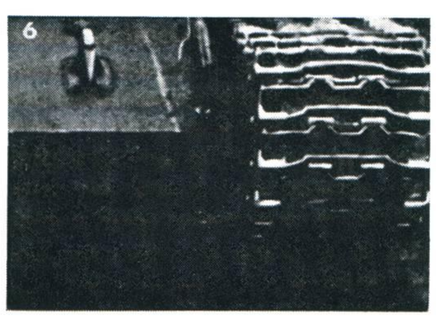


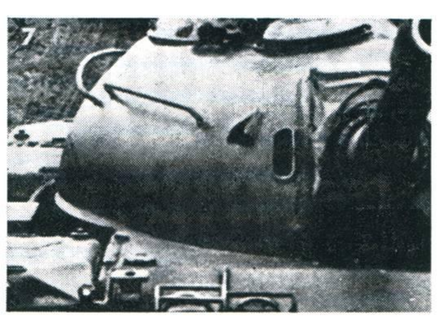
air intake tube to the top of the turret. It is also relatively light, as it weighs 36 tons, and its 580 b.h.p. diesel engine gives it a top speed of 34 m.p.h.

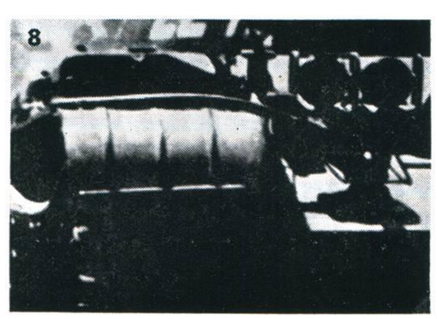
Like other tanks, the T-54 has been modified into a mine exploder by the attachment of a roller device and converted into a bridge-layer, after the removal of its turret. Its chassis has also been used as the basis of the ZSU-57 self-propelled anti-aircraft gun and of a turretless assault gun.

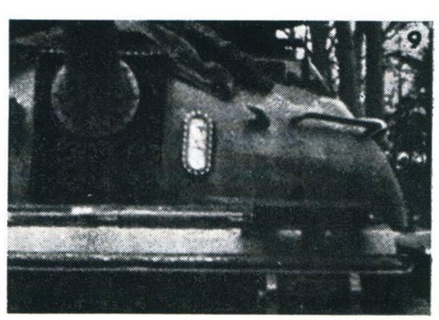
The T-54 has not yet completely displaced the T-34/85, which is still in use in different parts of the world, including the Yemen. But a successor to it has already appeared in the shape of the T-62 battle tank. Externally, the T-62 is similar to the T-54 but has a more powerful, 115-mm gun with a fume extractor near the middle of its long barrel and not at the muzzle. It also has five unevenly spaced road wheels but with a characteristic larger gap between the third, fourth and fifth wheels instead of the first two.



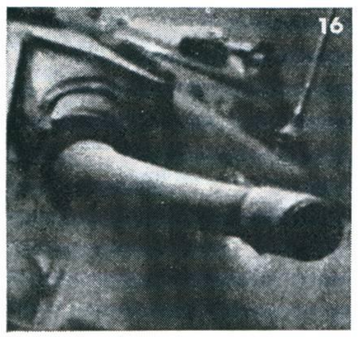


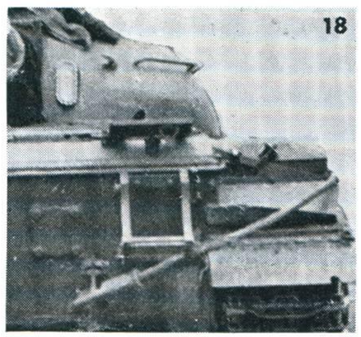


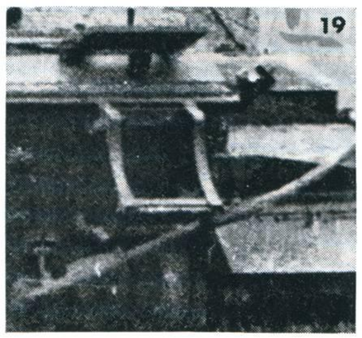




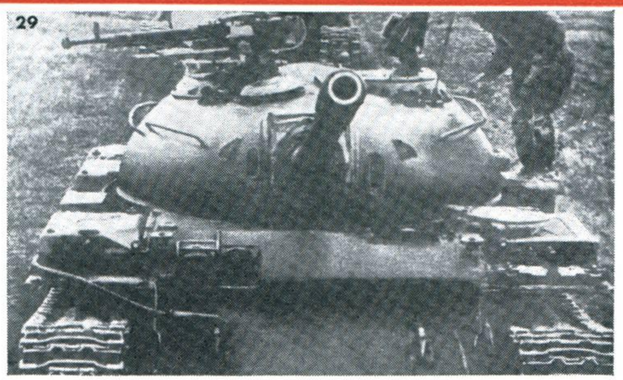
Continued overleaf

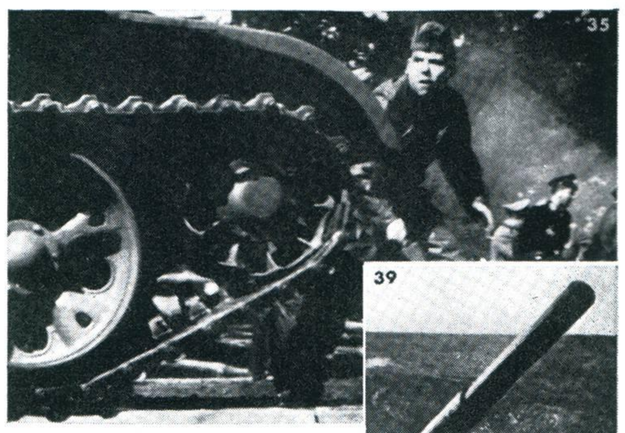


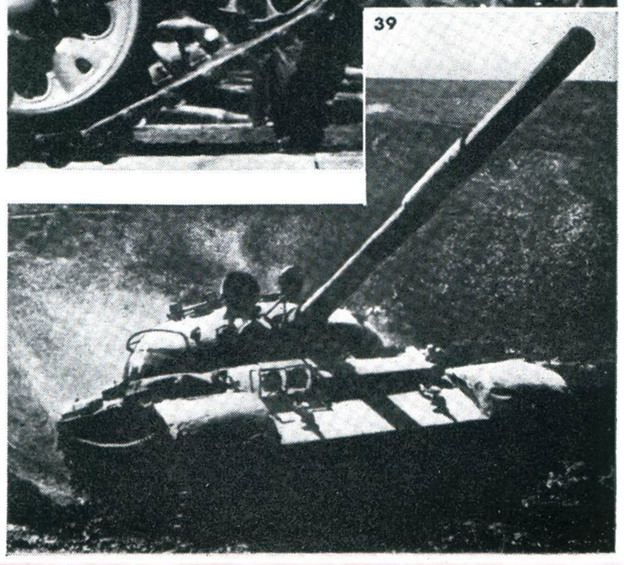


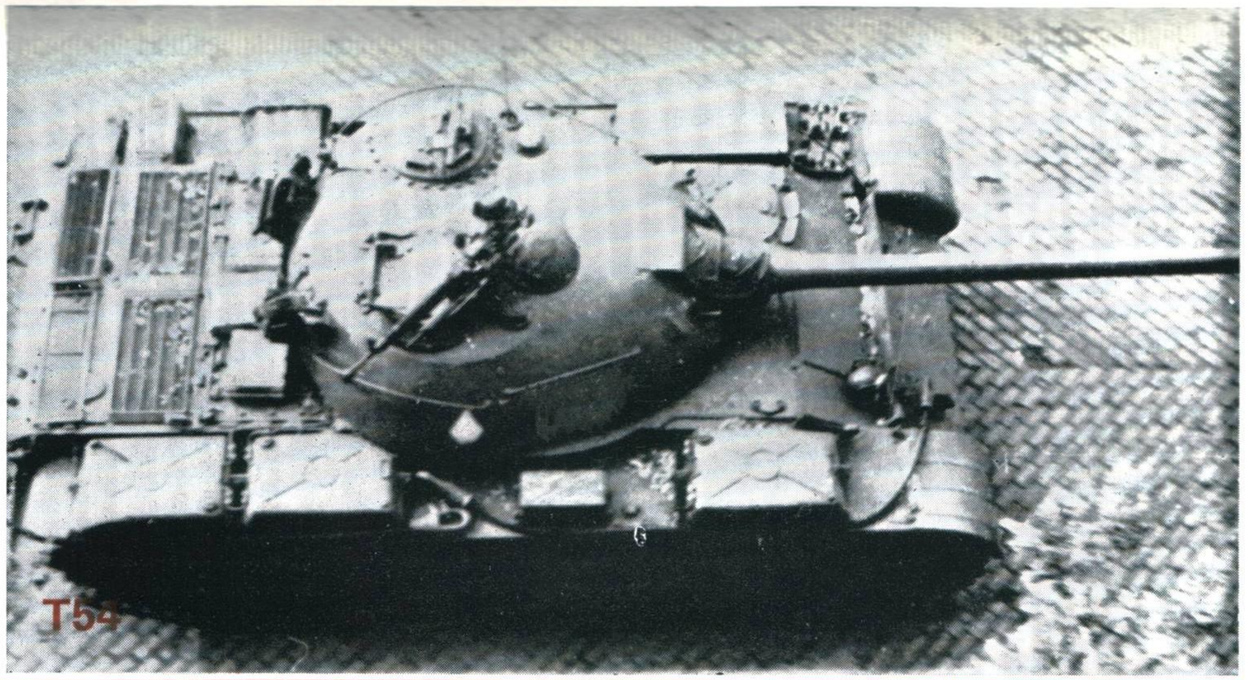


T54 continued

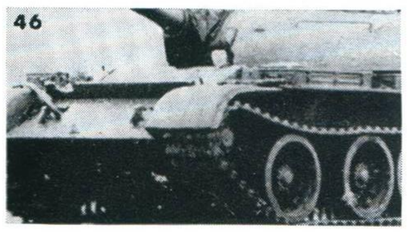


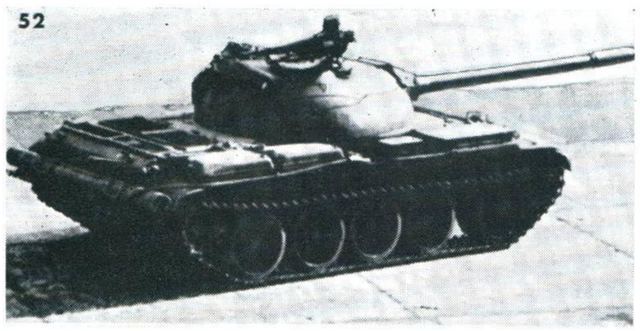


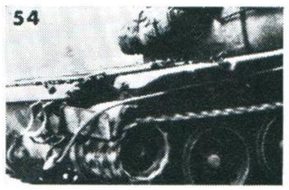


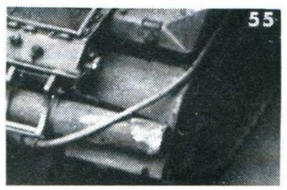


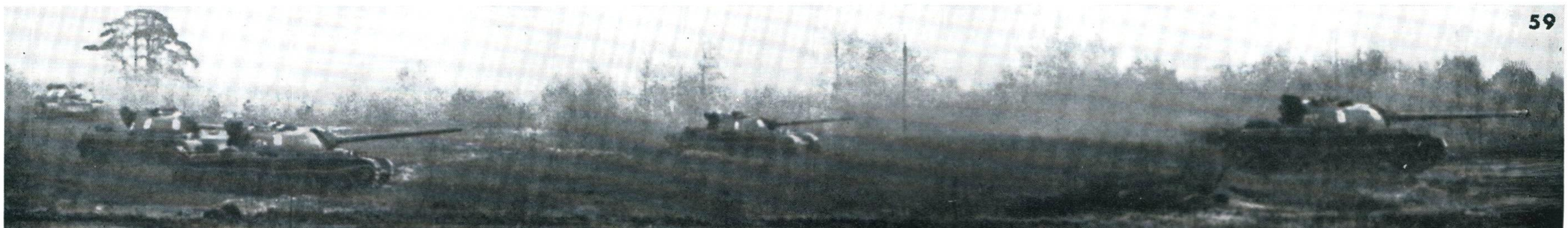
Solutions on the cover

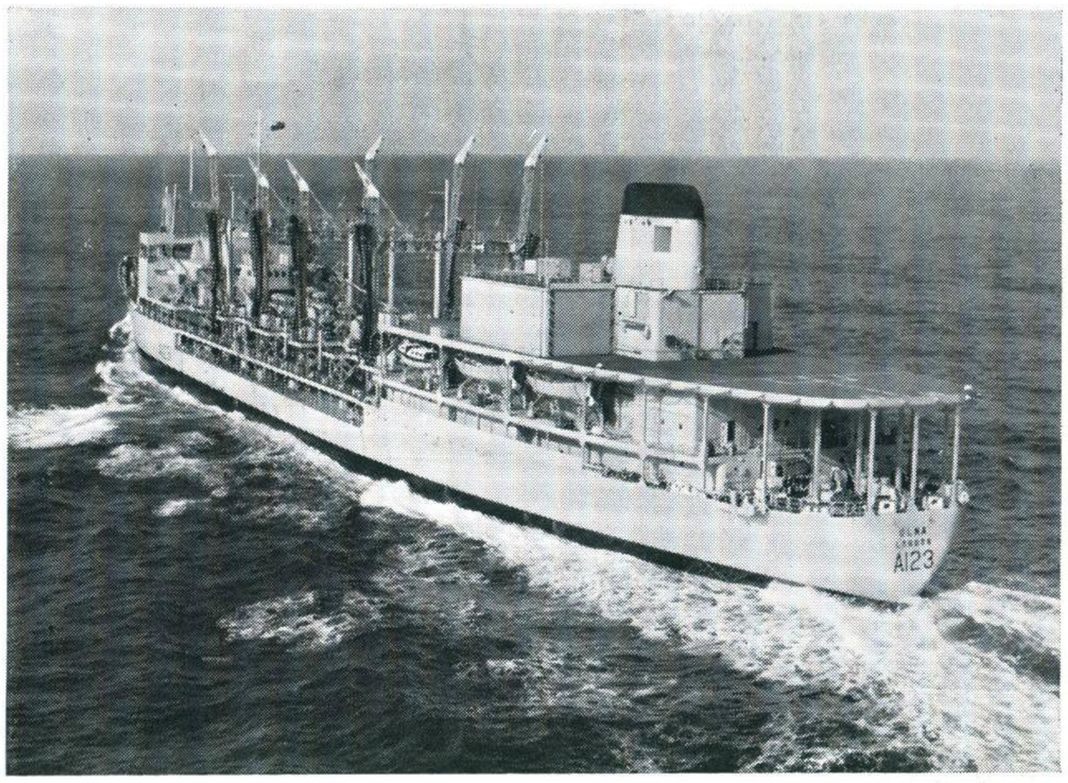












Cover Photo: Largest and fastest ships of the Royal Fleet Auxiliary Service are the Olynthus Class Fleet Replenishment Tankers which are fitted with helicopter landing platforms aft. The *Olna* depicted is the second of the three ships of the Olynthus Class to be commissioned.

SOLUTIONS TO TESTS AND EXERCISES

Page 4

GNAT—FIGHTER AND TRAINER

All targests are of **Gnats** (fighter or bomber versions) except for No. 8 **Galeb,** No. 20 **Fiat G91** and No. 33 **Hunter.**

Page 8

SKYVAN

All targets are of **Skyvans** except for No. 10 which is a **Clod.**

Page 10

ATLANTIC

All targets are of **Atlantics** except for No. 10 **Neptune** and No. 23 **Orion.**

Page 14

SOVIET "G" CLASS SUBMARINE

All targets are of **Soviet "G" Class Submarines** except for No. 15 which is a **"J" Class** and No. 38 which is an **"F" Class Submarine.**

Page 20

SRN-5 HOVERCRAFT

All targets are of the **SRN-5** except for No. 14 which is a French amphibious vehicle and Nos. 26 and 27 which are **SRN-6s.**

Page 22

SOVIET T54 BATTLE TANK

All targets are of **Soviet T54** battle tanks except as follows:

No. 22 **American M48** medium tank.
No. 38 **Soviet ZSU-57** self-propelled anti-aircraft gun.
No. 39 **Soviet T62** battle tank.
No. 58 **American M48** medium tank.

50-year span. A Tank Mk. V of the First World War armed with special 57-mm 6-pdr. guns and the Chieftain Battle Tank of today with its powerful 120-mm gun.

Printed for Her Majesty's Stationery Office by William Clowes & Sons, Limited, London and Beccles. 149158. 19,500. 1/67