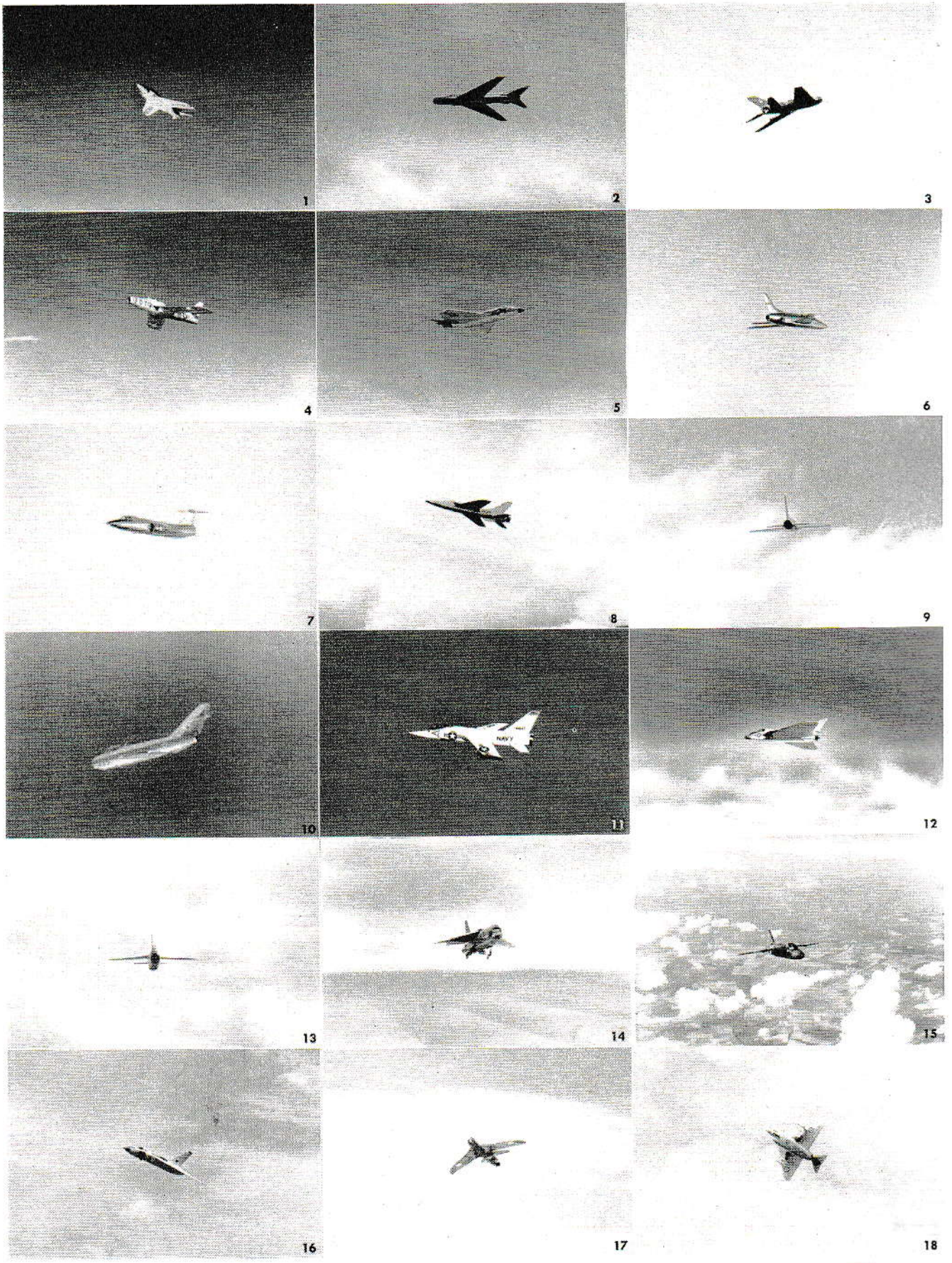
THE ROYAL OBSERVER CORPS

RECOGNITION Journal

and R.O.C. GAZETTE

Vol. I MAY 1959 No. 5



FIGHTER FORCE

Russian and Western Types

MAY 1959 Vol. 1 No. 5

THE ROYAL OBSERVER CORPS

RECOGNITION JOURNAL

AND R.O.C. GAZETTE

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CONTENTS

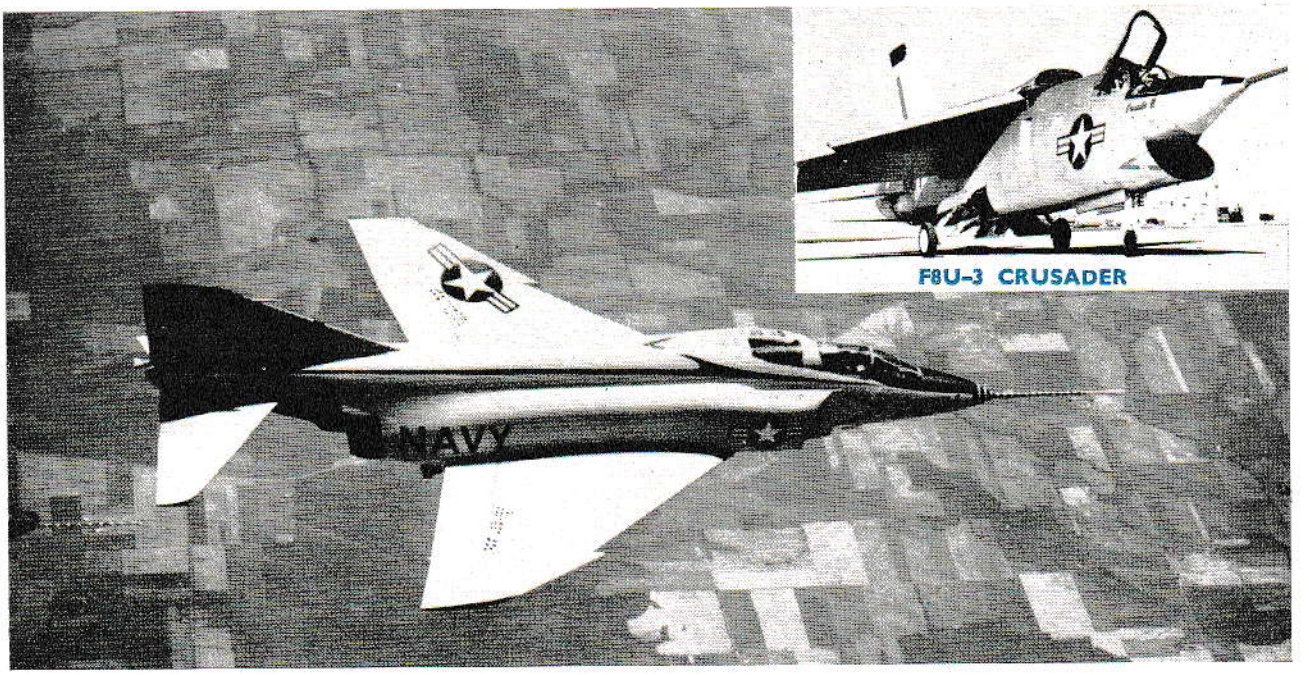
Feature	Page
Stratofortress (*cover*)	56
Fighter Force (*spotting test*)	66
Navy Cut (*editorial*)	67
Air Defence Up-To-Date (Part I)—by John W. R. Taylor	68
*Friend or Foe? (*Fagot and Mystère 4a*)	70
*Lansen	72
Oddities in the Air	76
Briefs	78
*Who's Who—2: Moscow and Vanguard	79
Airborne Headaches; Solutions to Tests and Lessons	80

* *Identification lessons*

NAVY CUT

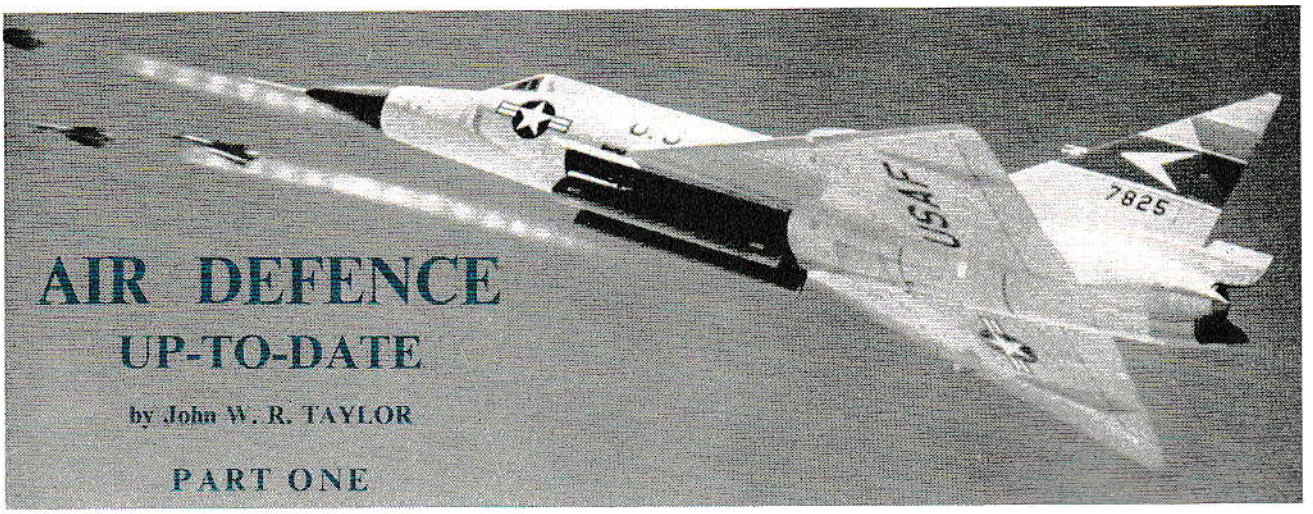
THE FIRST CHANCE VOUGHT CRUSADER, the F8U-1, holds an official U.S. speed record at 1,015 m.p.h. and is doubtless capable of improving upon that figure. Its successor, the F8U-2, may be considered to have a speed potential even higher, evidenced by the fitting of shallow ventral fins to maintain directional stability at the top end of its speed range. The F8U-3 Crusader III, when unveiled, was shown to have appreciably larger stabilisers than the F8U-2; and flight testing showed even these to afford only a marginal degree of stability, with the result that a large chordwise broadening of the vertical tail was added for further effect. From all this, coupled with official statements that the Crusader III was "capable of combat at more than twice the speed of sound," we may conclude that this all-weather carrier fighter has a speed performance at least comparable with the U.S. Air Force's latest acquisition, the F-104 Starfighter. The Crusader III was evaluated alongside another fighter built to the same requirements, the McDonnell F4H-1; Congress told the U.S. Navy that it could only have sufficient funds to purchase one of these aircraft, and in the event the decision went in favour of the McDonnell design.

Since it was in competition with the Crusader for the U.S. Navy's affections, it may be taken that the performance of the McDonnell F4H-1 is at least as good as that of the Chance Vought machine. The fact that it carries both pilot and radar operator, and that it has two engines, were deciding factors in its final selection. The F4H-1 is 56 feet long, has a wing span of 38 feet 5 inches and will be able to carry improved air-to-air missiles such as the Sparrow and the Sidewinder. The manufacturers claim that it will have the greatest range of any U.S. Navy jet fighter yet, and it will be able to refuel in flight by either the "probe and drogue" or the "buddy" system. So far the F4H-1 has not received a Service name, but knowing McDonnell's taste for the supernatural we may expect something pretty unorthodox and imaginative. The aircraft is at present expected to be in service in the early 1960s.



F8U-3 CRUSADER

McDONNELL F4H-1



AIR DEFENCE UP-TO-DATE

by John W. R. TAYLOR

PART ONE

THERE has been far too much gloom and despondency on R.O.C. posts since the day in 1957 when a Government *White Paper* announced that no more piloted interceptors or strategic bombers would be ordered for the Royal Air Force after the Lightning and V-bombers. They fail, quite understandably, to find a radiac survey meter so attractive as a supersonic fighter in a blue sky, and look forward with little enthusiasm to future exercises in which the emphasis will be on simulated fall-out rather than raid reporting.

Only when one begins to study closely the whole business of air power in this age of H-bombs and rocketry does the picture appear less depressing for the aircraft enthusiast.

Focal point of the NORAD organisation is the combat operations centre. Here the incoming reports are analysed, displayed on the "surveillance board" in the background and relayed to the Pentagon, Strategic Air Command, R.C.A.F. Headquarters and the Civil Defence agencies of both nations.

Three for luck. To be precise, three Falcon air-to-air missiles en route *from this F-102 Delta Dagger all-weather fighter to the annihilation of their target. Notice the diamond-pattern supersonic shock waves trailing behind the missiles.*

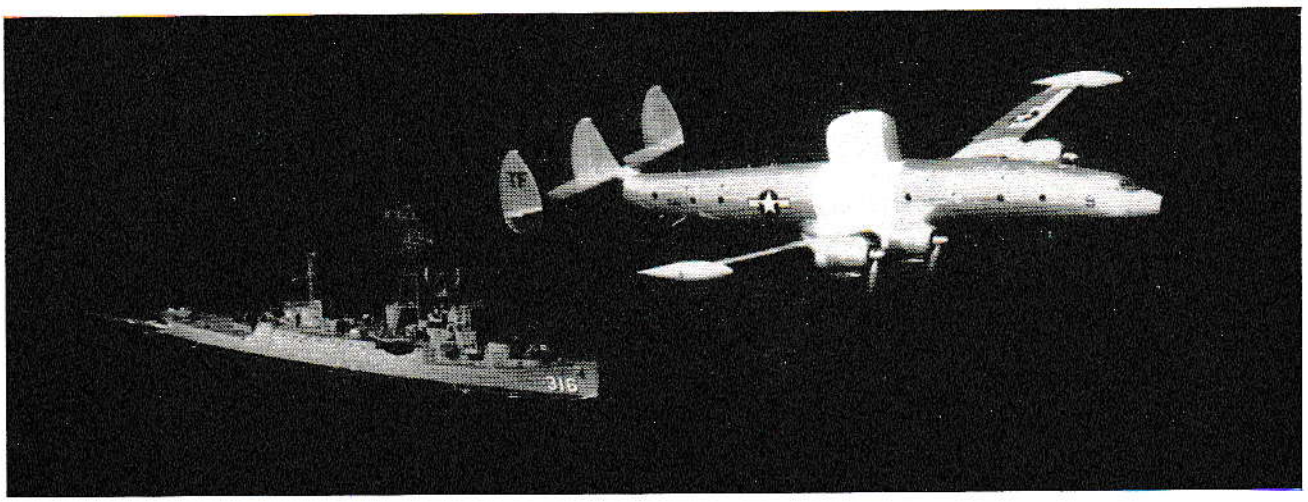
Lightnings, Vulcans and Victors will certainly remain in first-line service until the mid-60s, and recent orders for the Vickers/English Electric T.S.R. 2 "Canberra replacement" and Armstrong Whitworth Argosy and Short Britannic freighters provide proof of the continuing need for high-performance tactical aircraft and transports far into the future. In fact, it is becoming clear that the changing pattern of war will produce a different kind of piloted air force rather than a mere corps of guided weapon button-pushers.

As the *White Paper* implied, there may well be no more British piloted interceptors or strategic bombers of the kind with which we are familiar today, even though the Americans are continuing to develop these classes of aircraft in the shape of the F-108 fighter and B-70 Valkyrie bomber, both designed by North American for a Mach 3 performance. On the other hand, the R.A.F. can hardly fail to be interested in the possibility of launching long-range missiles from future highly advanced piloted aircraft, as this technique would offer far greater versatility and higher performance than firing strategic missiles from fixed bases, and would be less susceptible to enemy countermeasures.

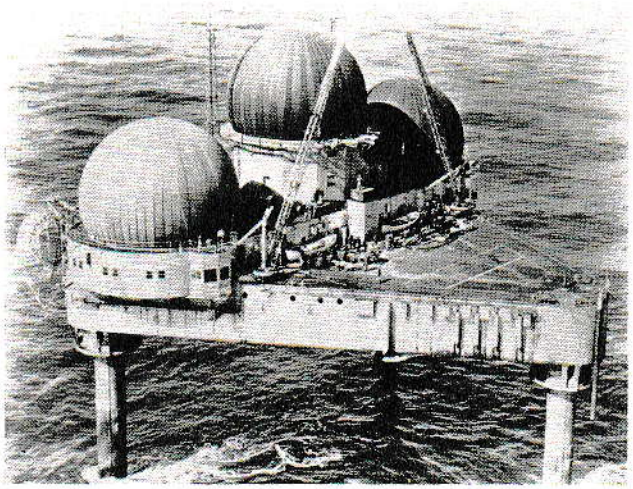
The same line of crystal-gazing produces some interesting ideas on defence as well as attack; but before looking at them we must gain a clear idea of how missiles will be integrated gradually into the air defence system in the next five years or so.

As the process has been under way for some time on the other side of the Atlantic, where the U.S. and Canadian defences are linked in the North American Air Defense Command (NORAD), this organisation gives a first-class illustration of how missiles and piloted aircraft can be operated side by side to maximum advantage. In the words of its own Office of Information Services: "The task of NORAD is to maintain a fence along North America's aerial frontiers that is 15,000 miles long, around an area of eight million square miles, and ten to twelve miles high. Moreover, this fence must be as nearly hole-proof, leak-proof and rat-proof as it is possible to build."

To date, something over $18,000 million has been spent on the "fence," of which the outer ramparts comprise the DEW-line of more than 50 *D*istant *E*arly *W*arning radar stations strung around the Arctic Circle from Alaska, across



Early Warning in two media: the ship is a radar picket destroyer, the aircraft a Lockheed WV-2 Warning Star. Both fulfil much the same purpose, that of searching electronically for enemy air, surface and undersea craft.



A hundred miles out from the Massachusetts coastline, this "Texas Tower" is one of several offshore radar stations of the U.S.A.F. Continental Air Defense Command.

northern Canada to Baffin Island. Further south is the Mid-Canada Line of automatic and semi-automatic radar stations spanning the Dominion from coast-to-coast; and yet another radar chain—the Pinetree Line—runs roughly along the border between America and Canada.

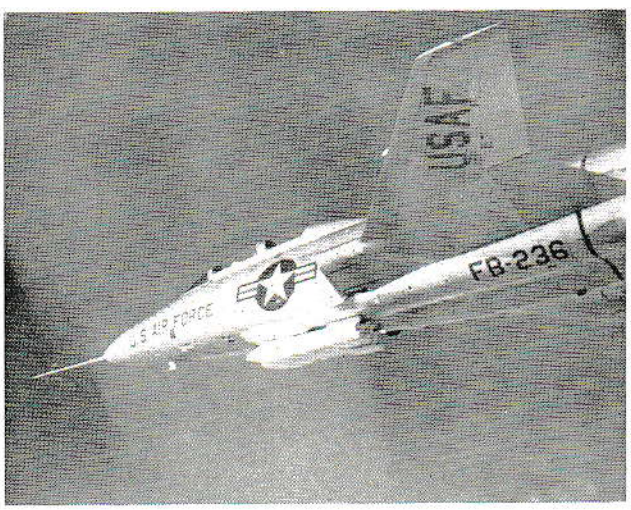
Supplementing these three chains are RC-121 and WV-2 Warning Star aircraft and ZPG-2W blimps of the U.S. Air Force and U.S. Navy, which provide early warning cover from considerable heights during prolonged patrols far out to sea off the Atlantic and Pacific coastlines; with radar picket ships and "Texas Tower" offshore radar stations on the surface below.

Information from all these sources is fed to the Combat Operations Center at NORAD H.Q. at Colorado Springs, where data are plotted on a vast perspex screen measuring 20 feet by 30 feet. As well as being the largest plotting table of its kind in the world, this screen holds the key to survival for many millions of people, because if it showed an apparent threat to North America, warning signals sent out from the Center could set in motion not only the defence system but the mighty thermonuclear counter-attack of the U.S. Air Force's Strategic Air Command.

Final responsibility for despatching the SAC bombers on their way to already-designated targets rests with President Eisenhower, in consultation with the Joint Chiefs of Staff in Washington, and the B-52s and B-47s could take off within five minutes of the first reports being received from the radar chains. The defence forces can swing into action even more quickly, almost at a second's notice, and are kept on their toes by frequent orders to investigate and prepare to deal with unidentified aircraft.

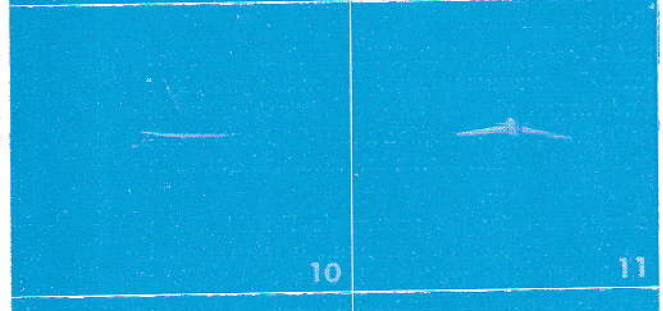
When NORAD came into being, the equipment of the U.S. Air Defense Command squadrons which are scrambled to intercept and inspect visually all such aircraft consisted mainly of F-86D Sabre, F-89 Scorpion and F-94C Starfire all-weather fighters; but there has been a tremendous increase in fighting efficiency since then.

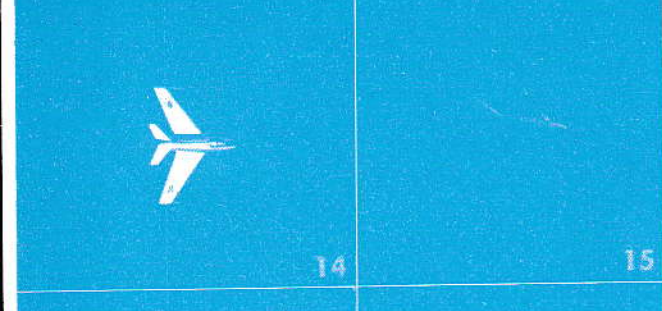
Many squadrons now fly the supersonic F-102A Delta Dagger, armed with Hughes Falcon homing missiles and batteries of unguided rockets, while the latest versions of the F-89 can carry MB-1 Genie missiles with a nuclear warhead. Even more formidable types entering service are the F-101B Voodoo, F-104 Starfighter and F-106 Delta Dart, all with missile armament and performance in the Mach 2 range, and there is the 2,000 m.p.h. F-108 to follow in a few years time.

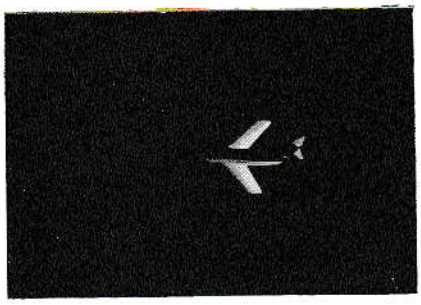


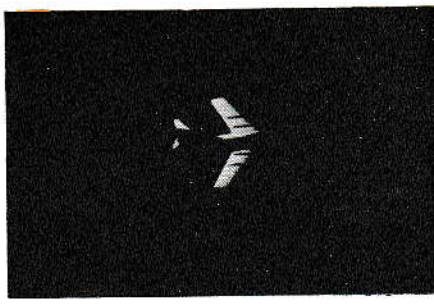
An intimate look at a McDonnell F-101B Voodoo interceptor and its lethal load of Genie air-to-air missiles. This weapon may be armed with a nuclear warhead.

● *The views expressed in this article (which is to be concluded) are the Author's, and do not necessarily reflect official opinions.*









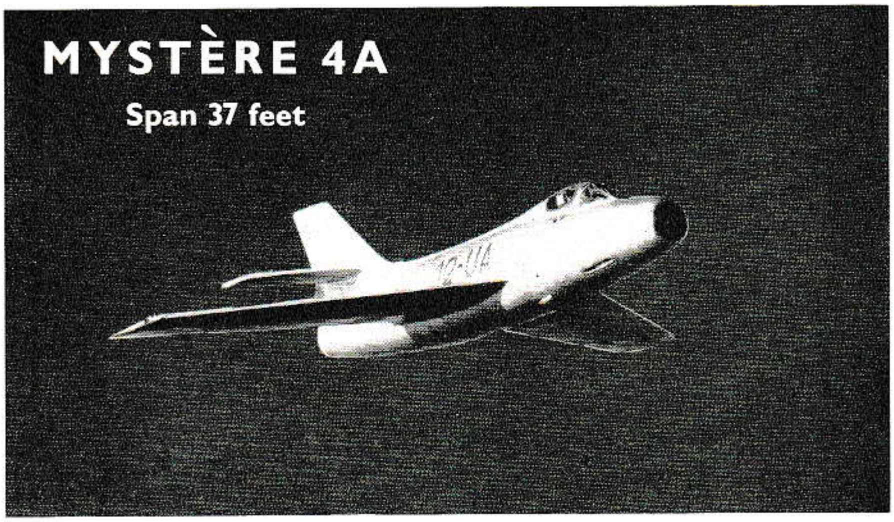
FRIEND or FOE?

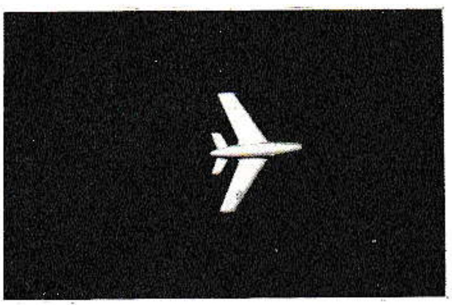
Caught in the rays of undiffused sunlight, the shapes of high-flying aircraft are thrown into strong patterns of light—the shade tending to merge with the background. You have to learn to identify these aircraft aspects as quickly and easily as you do others. This lesson will give you the necessary experience. If you have had some previous experience of these fighters, it will come all the easier; if not, and you have the March 1955 and February 1957 *Journals*, you can get

Answers on the

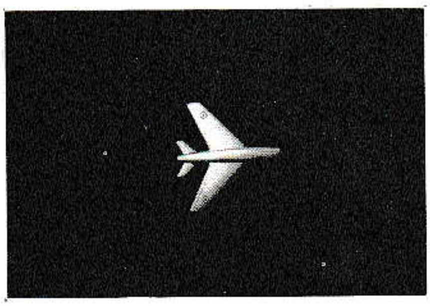
MYSTÈRE 4A

Span 37 feet





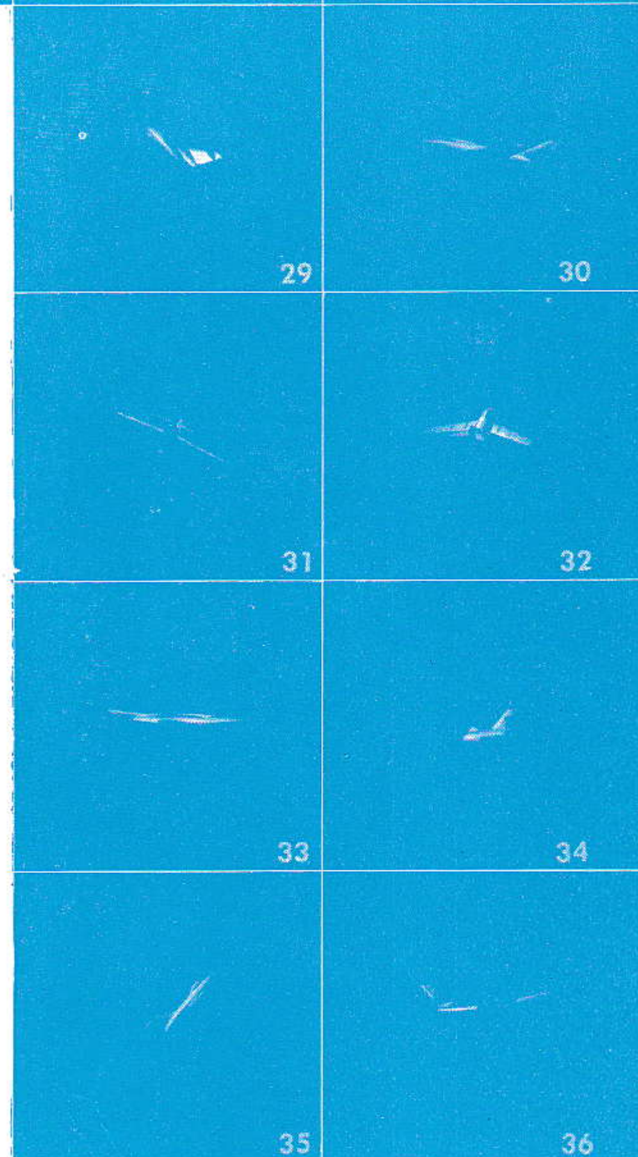
MYSTÈRE 4A

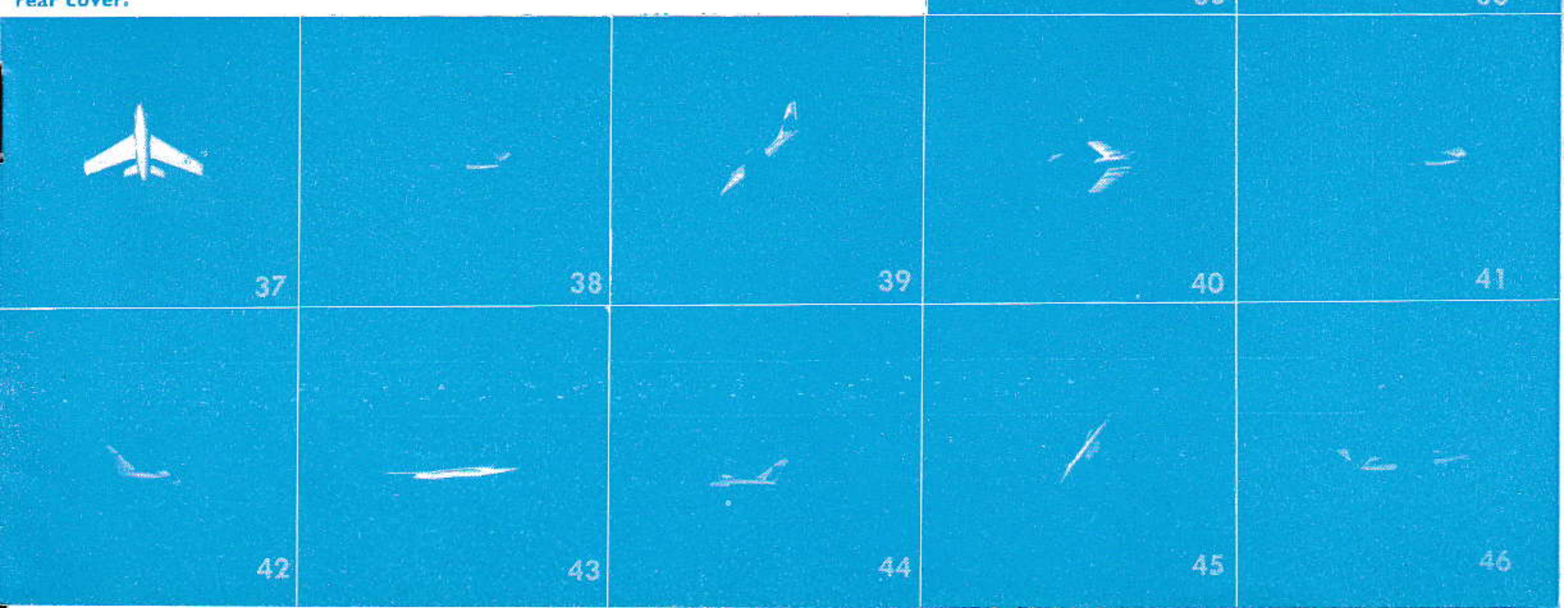


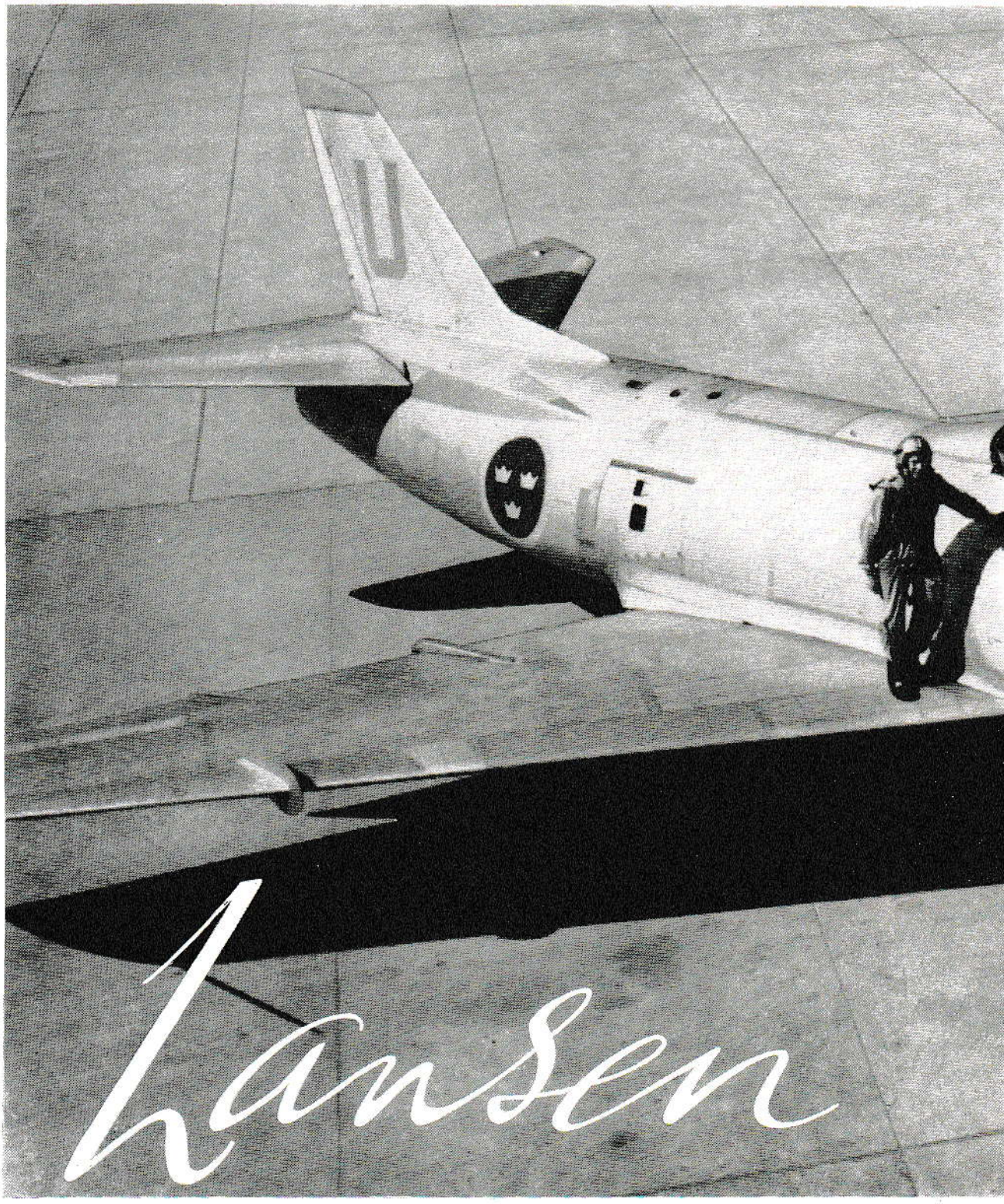
SUPER MYSTÈRE

such experience first if you wish; but even without it, you still ought to be able to get the majority of these targets by interpreting the easier ones first with the aid of the key views provided. Mixed with the Russian Fagots are two kinds of Mystère, the Mystère 4a shown in the large picture and its big brother the Super Mystère. The smaller named "highlights" will reveal some of their chief differences—the flat oval nose and tapered wings and tail of the Super Mystère—but you may spot others on your journey from target 1 to target 46.

rear cover.






Lansen

LANSEN

TARGETS START HERE

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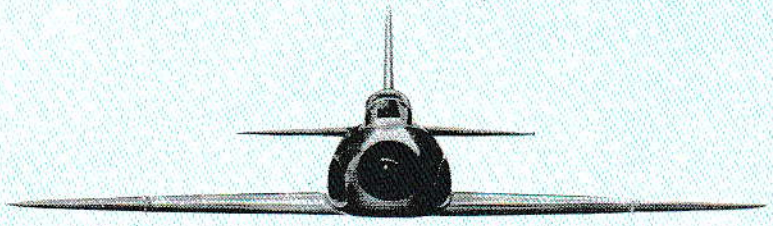
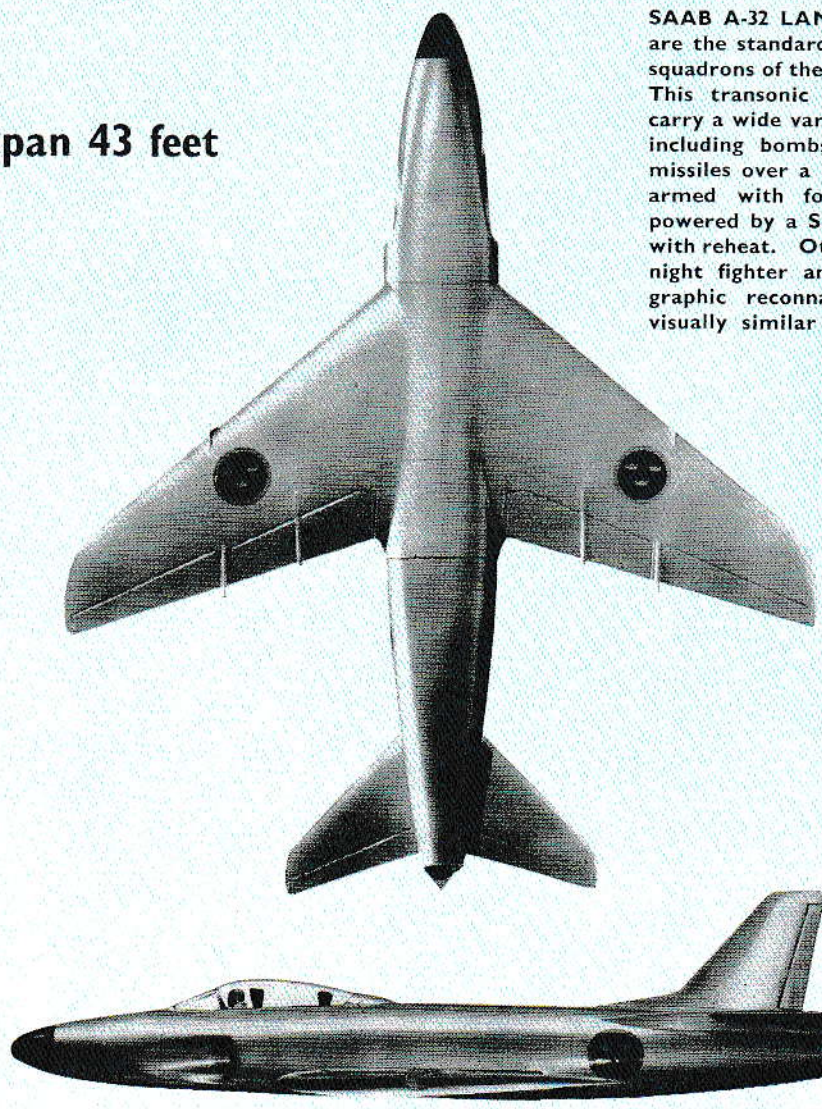


Span 43 feet



SAAB A-32 LANSENS in their hundreds are the standard equipment of all attack squadrons of the Royal Swedish Air Force. This transonic all-weather aircraft can carry a wide variety of external ordnance including bombs, rockets and air-to-air missiles over a considerable range. It is armed with four 20-mm. cannon and powered by a Swedish-built Avon engine with reheat. Other variants are the J-32B night fighter and the S-32C for photographic reconnaissance, but these are visually similar except in minor detail.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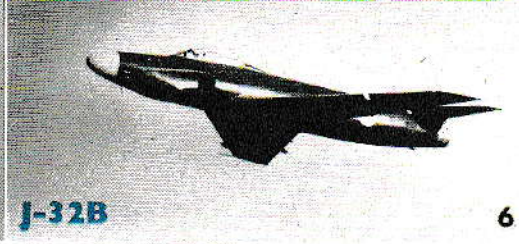
J-32B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S-32C


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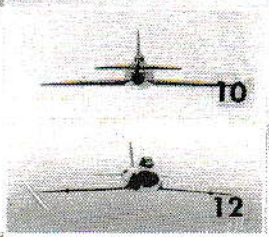
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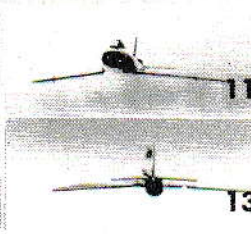
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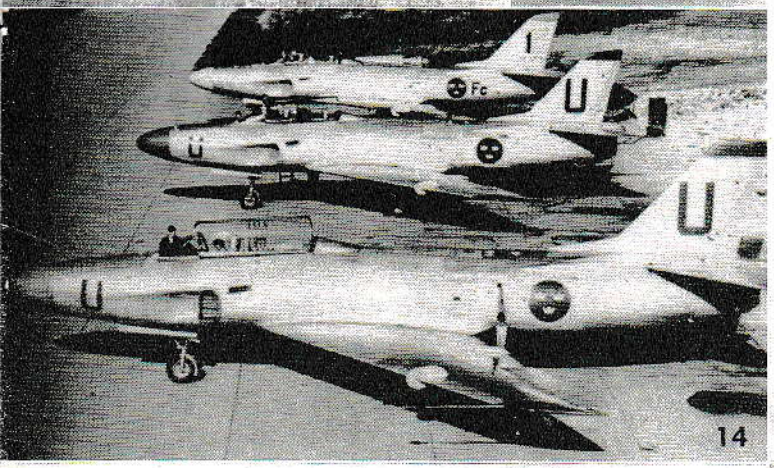
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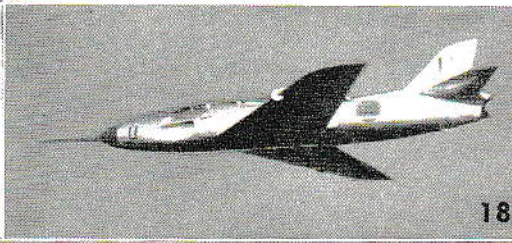
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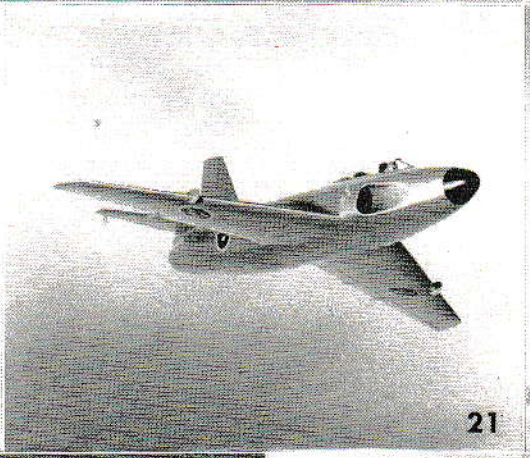
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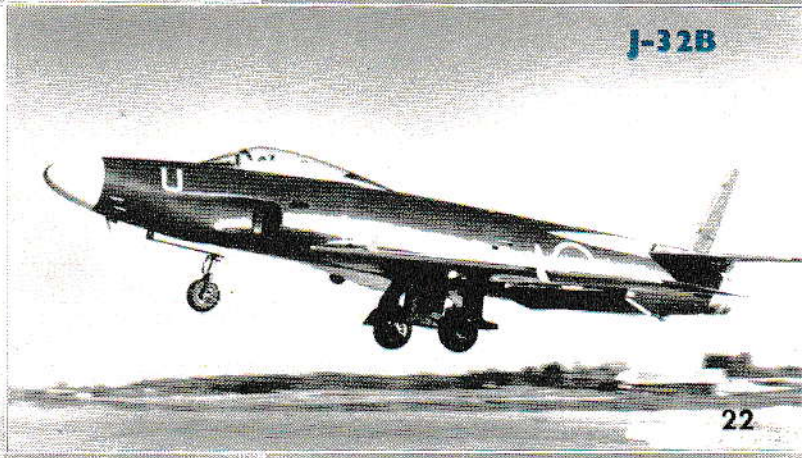
J-32B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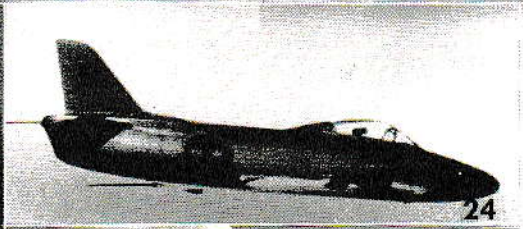
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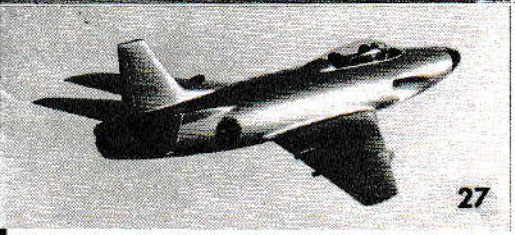
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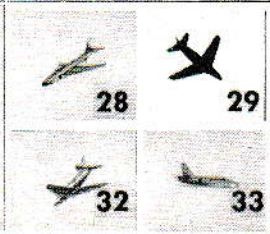
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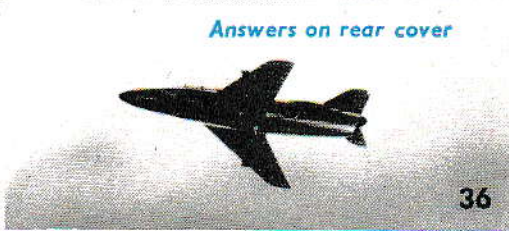
Answers on rear cover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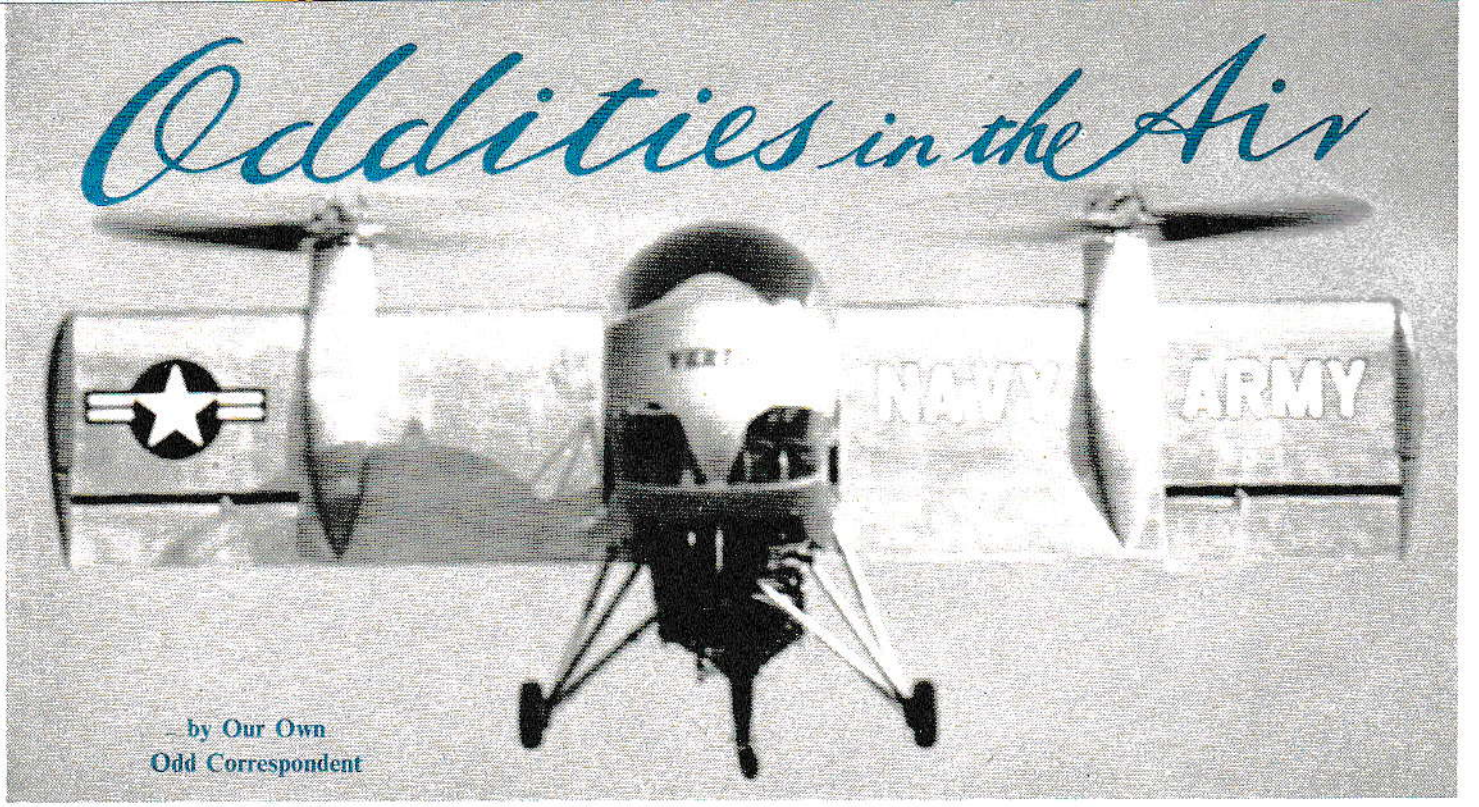
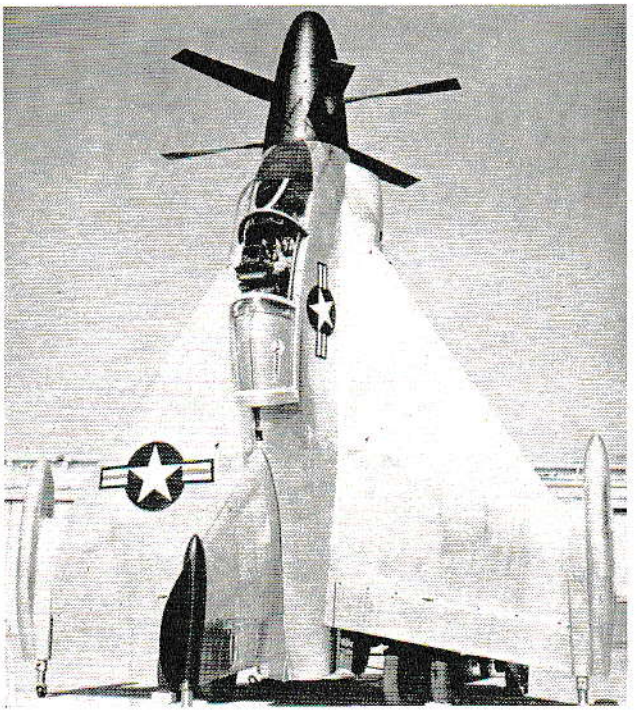
Oddities in the Air

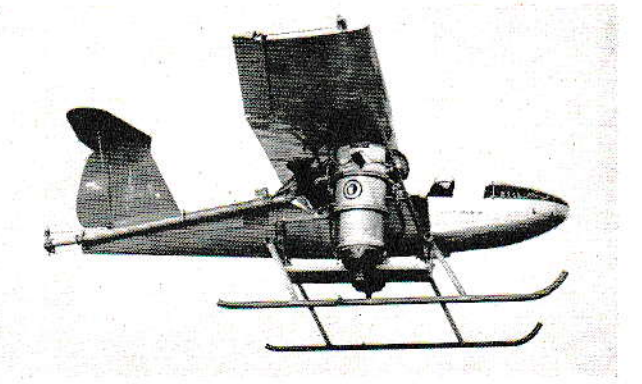


by Our Own
Odd Correspondent

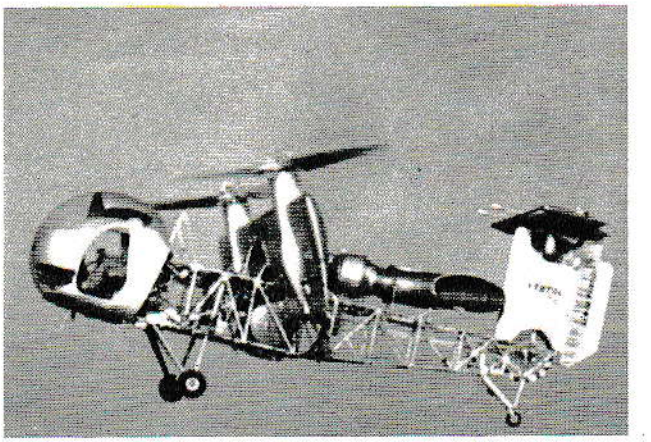
EVER since we discovered how to fly there have been airborne oddities—flying contraptions radically different in conception and configuration from the other aircraft of their day—but possibly there was never at one time such a variety as there is today. Having mastered flight itself, then the sound barrier, and having begun to overcome aerodynamic heating and space flight, we are now coming back to earth, as it were, and learning how to get off the ground again—but this time vertically, or near-vertically. Our grandfathers scoffed that "pigs might fly"; well, today they do—and so do a great many other things. Those here are just a sample, but there are plenty more where they came from.



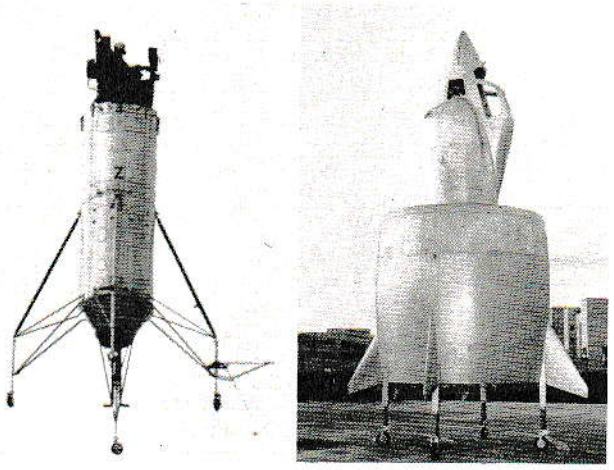
Convair's XFY-1 "Pogo" *(whose landing gear, I can reveal, is lubricated with castor oil) won a design competition against the Salmon a few years back, its cockpit being voted The Best Place To Put Your Feet Up. Just one question—how do you tell which is wing and which is tail?*



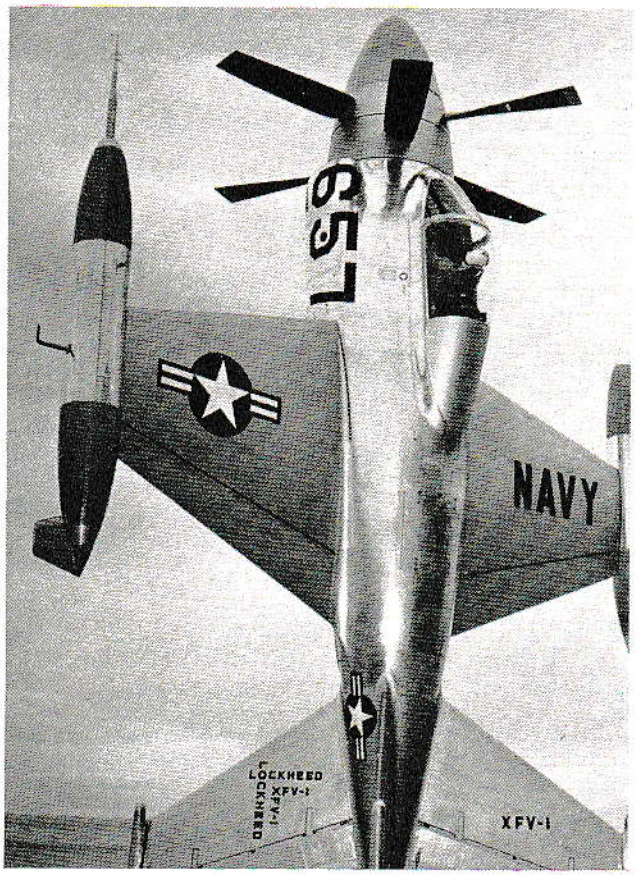
Take a couple of swivelling stovepipes, a pair of skis and an umbrella, stick them together and this is what you get—the ***Bell VTOL****. It will go in any direction in any sort of weather, and even D.D.T. is powerless against it. Anybody seen Professor Quatermass?*



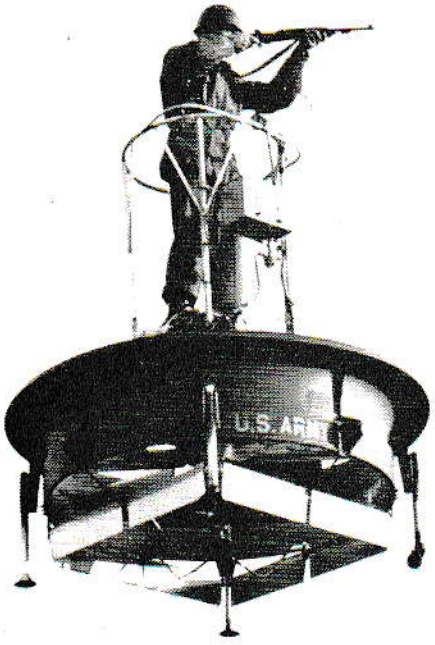
Not sure if this is Aunt Edie in a funny hat or (see the heading picture) the ghost of the late R.34 memorial, but it seems to fly all right even if its wings aren't on the right way up. Oh, it's the ***Vertol 76****. Why didn't you say so before?*



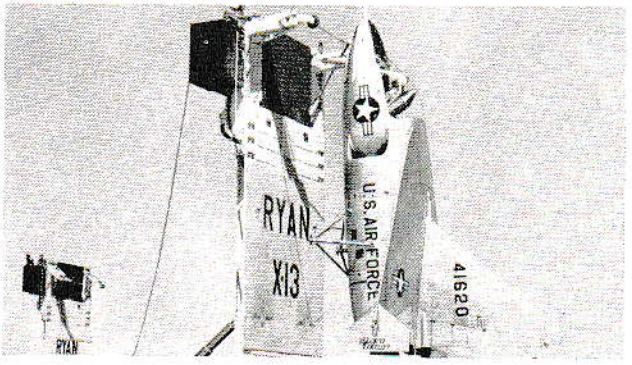
*The **Atar Volant** or Flying Atar—just a jet engine with an ashcan overcoat and a hot seat for the pilot. It is the grandaddy of the other creature, the **SNECMA Coléoptère**, which is apparently the result of crossing a canary with a serviette ring. (Personally, I don't believe it flies at all, but just stands there and looks round.)*



*They called **Lockheed's XFV-1** the **Salmon**: well, it's in a tin right enough and I suppose it might look a bit fishy to some people. Pilots say they can fly it standing on their heads; maybe they have to?*



***Hiller's Pawnee** is a "flat-riser" (very useful for top-floor tenants when the lift boy is at lunch). The company have sold some to the U.S. Army, who say it makes rings round the opposition; but despite its name it does* not *use three brass balls as landing gear.*



*The **Ryan X-13**, or **Vertijet**, is not so much a "tail-sitter" as a "nose-hanger." Clearly, it pays to keep in with the ground crew or you are liable to hang up there all day: this is what they call "hoist with your own petard."*

***Short's S.C.1** has one jet under its tail and four more in the middle which are mounted in pairs and swivel back and forth to alter direction. Big thing to watch when flying it is that you don't get your jets crossed and commit insecticide. Any questions?*

Briefs

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

Summer Lightning

It is anticipated that the English Electric P.11, trainer version of the Lightning all-weather fighter, will be flying by the summer—probably in July. Visually it will differ from the fighter only by the widened cockpit canopy accommodating the instructor and his pupil side by side. It has also been officially disclosed that the Lightning has flown at an "easily maintained" Mach 2 during test flights, which makes it the fastest twin-engined all-weather fighter in full production in the world. This speed was maintained with minimum use of reheat and would, in more favourable temperatures than those of an English winter, have been equivalent to a speed around that of the present World Air Speed Record of just over 1,400 m.p.h.

* * *

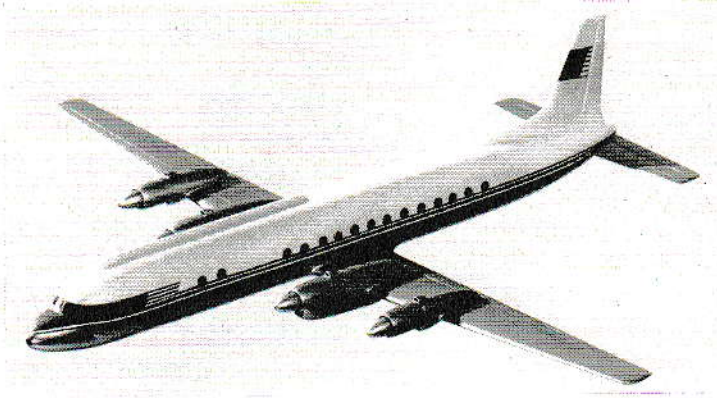
Augmenting Attack

A "follow-on" contract worth more than $80 million has been placed by the U.S. Navy for production of the North American A3J-1 Vigilante carrier-based attack bomber.

* * *

To Moscow By Moscow

If you live in Khabarovsk, that is. The Soviet airline *Aeroflot* has begun a freight service between these two cities with the Ilyushin IL-18 Moscow (NATO name: Coot). Journey is about 14 hours for this 5,200-mile route.



Not-So-Gentille Alouette

That versatile Sud-Aviation whirlybird, the Alouette II, has been showing its paces in the anti-submarine sphere of operations. It demonstrated its abilities in this field recently in front of senior U.S. Navy officials in the Pacific, where it operated with dummy torpedoes from the fantail of the U.S.S. *Everett F. Larson*. Well over 200 of these helicopters are in use throughout the world; the Royal Swedish Navy is among the latest recipients.

* * *

Hustling Hardware

Production orders for the B-58 Hustler bomber stand at 66 aircraft so far, with purchase of another 40 planned for the 1960 fiscal year.

* * *

Daggers for Europe

The U.S. Air Forces in Europe are beginning to replace some of their Sabre squadrons with Convair F-102A Delta Dagger all-weather interceptors.

* * *

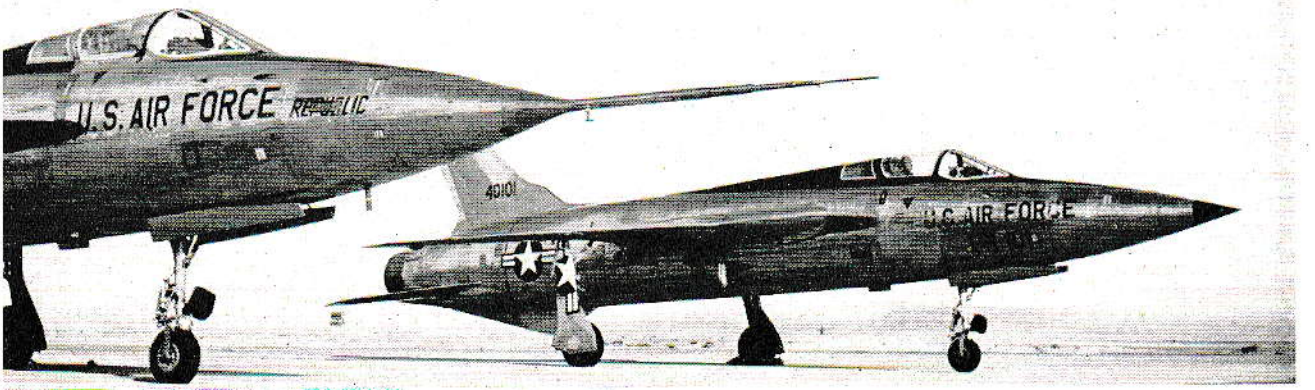
Stratojet Strategy

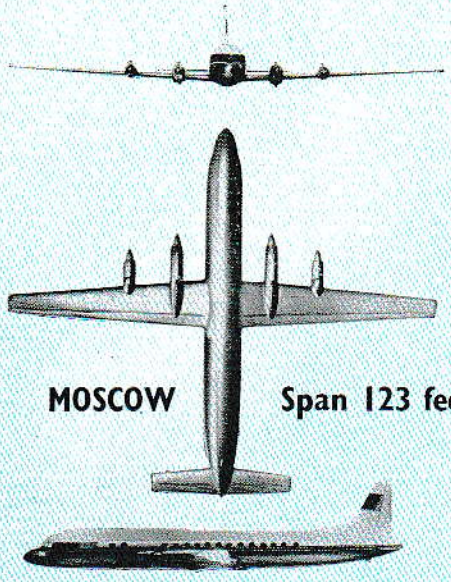
Two B-47 Stratojet medium bombers are to be converted into pilotless "drone" aircraft in order to help test the strength of defence systems in the North American continent. Lockheeds are doing the conversion, and the QB-47s, as the drone aircraft will be known, should reach the U.S.A.F. Air Research and Development Command this summer. They will be the first American drones having similar operational characteristics to Russia's current medium bomber fleet.

* * *

Heap Big Hurry

A Republic F-105B Thunderchief has flown across the American continent from Eielson A.F.B., Alaska, to Eglin A.F.B., Florida, at an average speed of 700 m.p.h. Refuelling twice on the way, it covered the 3,850-mile journey in just under 5½ hours.

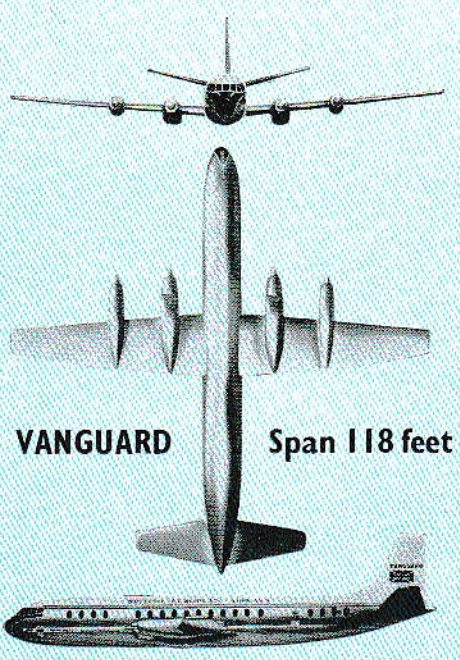




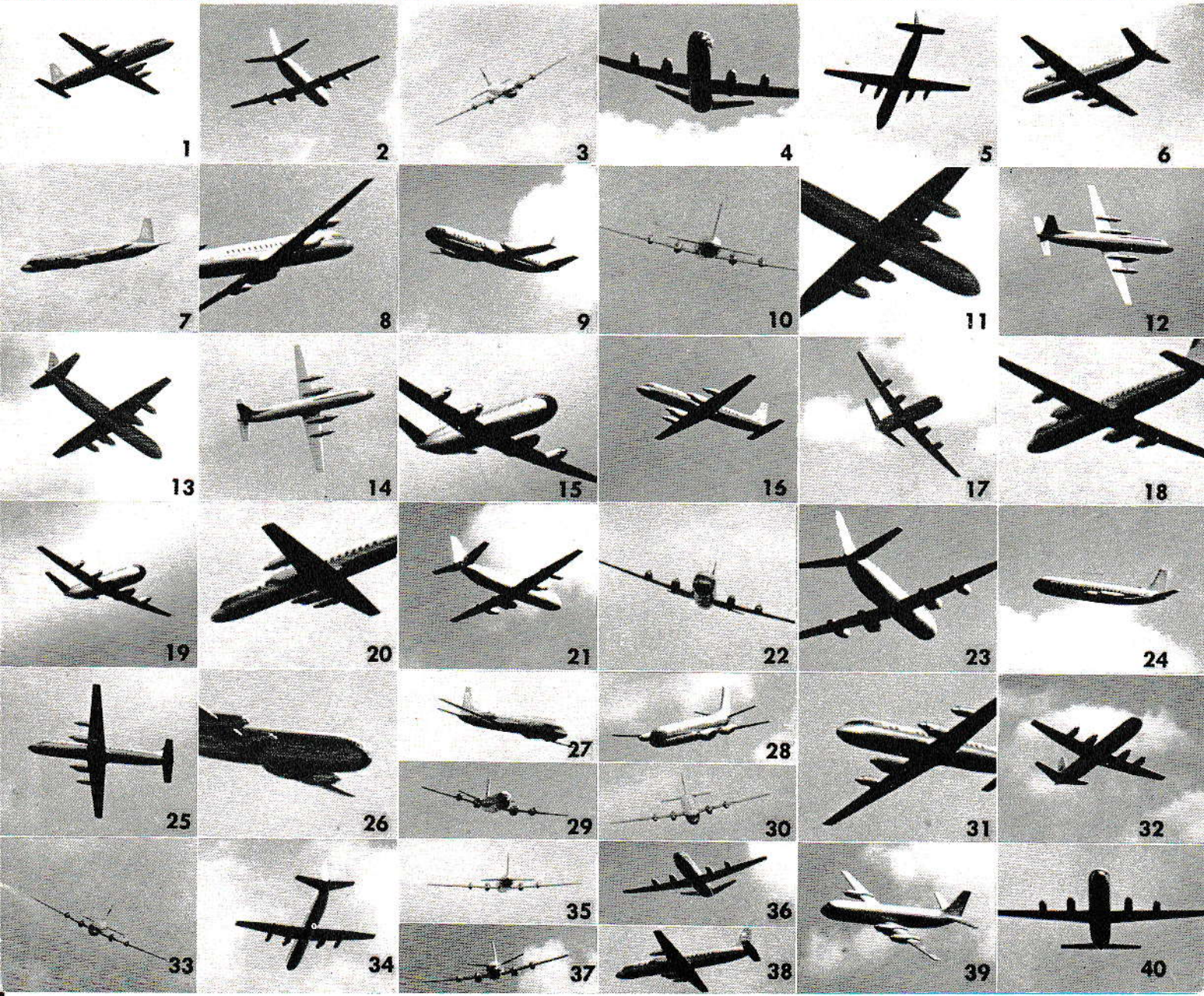
MOSCOW **Span 123 feet**

Who's Who—2

The sky below is full of flying shapes, and the job here is to decide the identities of those shapes. Each one is either a Vickers Vanguard or an Ilyushin Moscow, and the key three-views to the left and right will enable you to say with certainty which each one is. There is no need to hurry over the lesson : patience and accuracy are wanted, not speed and error. It is important, though, to put your answers down on paper, which will make you remember their names when you meet them again.



VANGUARD **Span 118 feet**



Cover Picture: The Boeing Stratofortresses in this dramatic U.S. Air Force official picture are some of those which made a round trip (without landing) from their U.S. bases to the Argentine capital of Rio de Janeiro during that nation's National Aviation Week in 1957.

AIRBORNE HEADACHES No. 62

The following are the solutions to the above test which was published in the *R.O.C. Recognition Journal and Gazette* of March, 1959:

482. **Hercules** (C-130)
483. **Sikorsky S-56**
484. **Vautour** 'B'
485. **Bear**
486. **Valiant** B Mk. 1
487. **Provider** (C-123)
488. **Shackleton** MR Mk. 3
489. **Skywarrior** (A3D-1)
490. **Bosun**
491. **Lansen**
492. **Sea Vixen** F(AW) Mk. 1
493. **Comet 2**
494. **Draken**
495. **Piaggio P-149D**
496. **Twin-Bonanza**
497. **Zlin Trener**

LANSEN

All the target views are **Lansens** except No. 15, which is a **Hawker Hunter.**

SOLUTIONS TO TESTS AND LESSONS IN THIS EDITION

FIGHTER FORCE

	Span in feet
1. **Scimitar** F Mk. 1	37
2. **Faceplate**	28
3. **Farmer** (MiG-19)	32
4. **Thunderstreak** (F-84F)	34
5. **Demon** (F3H-2N)	35
6. **Super Sabre** (F-100C)	38
7. **Starfighter** (F-104A)	22
8. **Thunderchief** (F-105B)	35
9. **Fishpot**	28
10. **Fresco** (MiG-17)	36
11. **Super Tiger** (F11F-1F)	32
12. **Skyray** (F4D-1)	34
13. **Lightning** F Mk. 1	35
14. **Crusader** (F8U-1)	36
15. **Gnat** F Mk. 1	22
16. **Arrow** Mk. 1	50
17. **Hunter** F Mk. 6	34
18. **Javelin** F(AW) Mk. 4	52

FRIEND OR FOE?

1. **Mystère 4a**
2. **Mystère 4a**
3. **Fagot**
4. **Super Mystère**
5. **Super Mystère**
6. **Fagot**
7. **Mystère 4a**
8. **Mystère 4a**
9. **Fagot**
10. **Mystère 4a**
11. **Mystère 4a**
12. **Fagot**
13. **Super Mystère**
14. **Super Mystère**
15. **Fagot**
16. **Super Mystère**
17. **Fagot**
18. **Super Mystère**
19. **Super Mystère**
20. **Super Mystère**
21. **Fagot**
22. **Fagot**
23. **Super Mystère**
24. **Mystère 4a**
25. **Fagot**
26. **Super Mystère**
27. **Fagot**
28. **Super Mystère**
29. **Fagot**
30. **Super Mystère**
31. **Super Mystère**
32. **Fagot**
33. **Mystère 4a**
34. **Fagot**
35. **Fagot**
36. **Super Mystère**
37. **Mystère 4a**
38. **Fagot**
39. **Mystère 4a**
40. **Fagot**
41. **Fagot**
42. **Fagot**
43. **Mystère 4a**
44. **Fagot**
45. **Fagot**
46. **Mystère 4a**

MOSCOW AND VANGUARD

1. **Moscow**
2. **Vanguard**
3. **Moscow**
4. **Vanguard**
5. **Moscow**
6. **Vanguard**
7. **Moscow**
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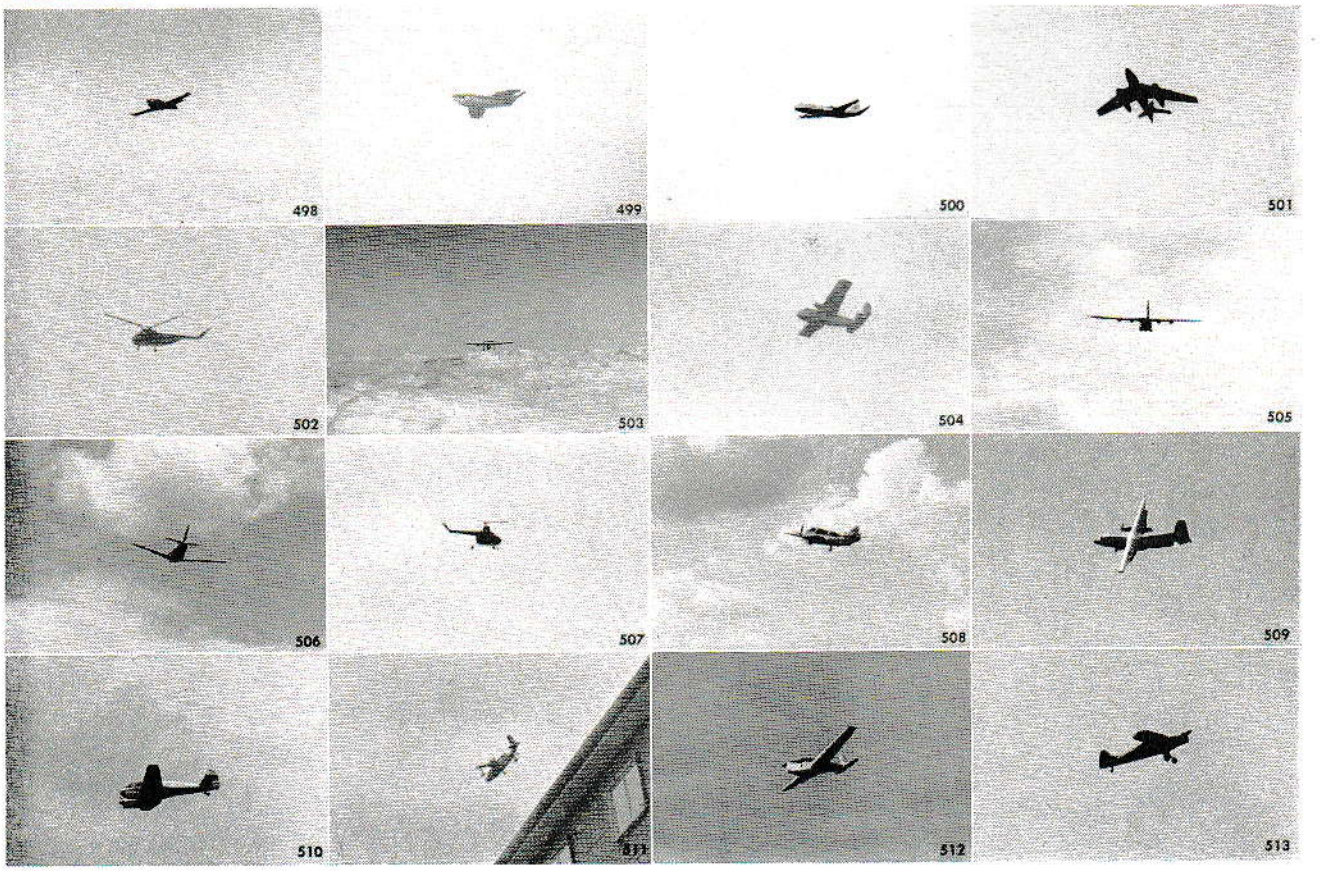
39. **Vanguard**
40. **Moscow**

AIRBORNE HEADACHES No. 63



Submission dates for answers to Airborne Headaches No. 63 will be notified by Group Headquarters.

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