THE ROYAL OBSERVER CORPS

RECOGNITION Journal

and R.O.C. GAZETTE

Vol. 2 FEBRUARY 1960 No. 2

Soaring Scimitars of 807 Royal Naval Squadron. Looking rather like penguins standing on their dignity, they are actually in process of looping. Lessons on the Scimitar will follow in future editions

(Photo by Courtesy of *Flight*)

FEBRUARY 1960 Vol. 2 No. 2

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RECOGNITION JOURNAL

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Just for the Record—3

Teaching and Testing

A test, or quiz, simply tests or quizzes: in other words it is a means for finding out the ability, knowledge and/or skill of a pupil after teaching has been done. Teaching on the other hand is a process of imparting knowledge or skill; it is a matter of giving—of adding something—as distinct from testing to find out what is already there. To many, this may sound like a rather pompous treatise on how to suck eggs, but in the Services almost everyone is called on sooner or later to teach someone something or other, and this applies particularly in recognition training.

In recognition training, teaching and testing methods are complementary but not interchangeable. A test will not teach but a great deal of time and energy is wasted—and much boredom is generated—by instructors who provide recognition tests *before* teaching is completed, and who, indeed often provide such tests *in place* of training in the belief that they do teach.

It should be remembered that the spotting test simply poses the question "What is this?" If the trainee knows what it is, it shows that he has learned his lesson. If he fails to identify it, he needs more training—more identification training that is. Giving him the answer to what he has failed to identify cannot properly do that. Still less will technical or descriptive talking, or improving his background knowledge of the aircraft. Such actions not only force too much conscious memorisation upon him which is a bad thing anyway, but are worse than useless when they do not meet his real need.

The greater part of the contents of every *Joint Services Recognition Journal*, and also, incidentally, of most *Royal Observer Corps Recognition Journals*, is devoted to identification teaching devices of one kind or another. These devices are not tests although they may look as though they are (and, as explained later, may be used as such). They are designed to teach, and each carries clear instructions as to what needs to be done in order to obtain the maximum training benefit.

In essence these instructions are that the trainee must carefully identify each target with the aid of known key information and, when certain, must commit himself to writing that identity on his prepared list. Nothing more is required than the careful working through of a procedure, to ensure that he gains experience of identifying the aircraft, ships or tanks contained in the lesson.

Put it in Writing!

It does not help to "mug-up" the key information before attempting to identify the targets, such conscious memorisation bores, and impedes learning. Range over keys and targets freely together as much as possible to determine identity.

The importance of writing down each answer as it is obtained cannot be overstressed. The scrutiny of keys and targets, which the trainee must undertake to establish identity, provides an experience of the object which familiarises him with it and enables him to recognise it again, but it is the act of *writing down* that "treads in" the name and completes his ability to identify it. The half-hearted or casual comparison of the target with key and *mental* identification will not have the same effect.

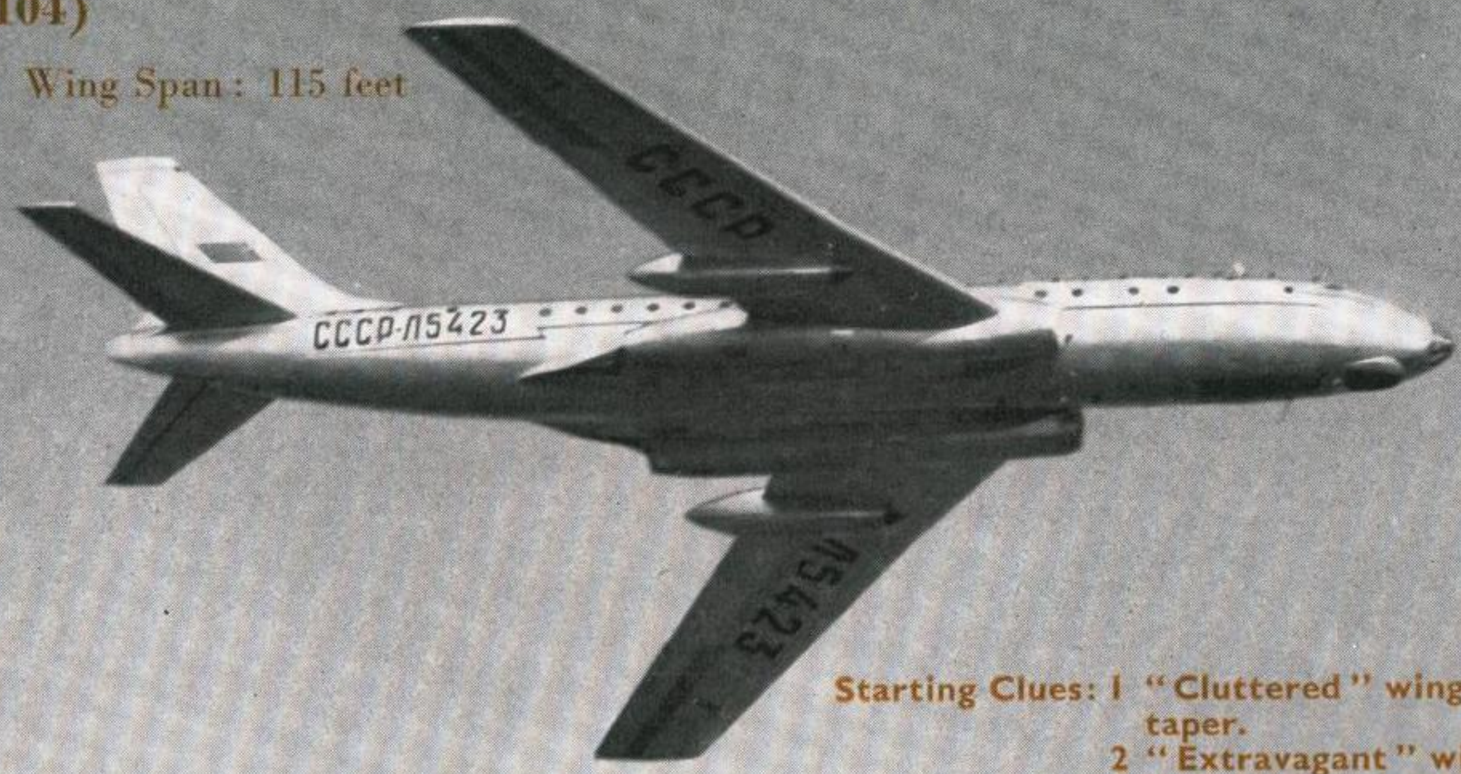
Naturally, the partially trained pupil will not need to use the key information so much nor take so much time over a lesson as someone new to aircraft, and in fact everyone finds the need for the key diminishing as the lesson progresses and experience is gained. However, it is inefficient to dispense with the key when there is the slightest doubt about the identity of a target: there is no room or time for guessing in this game. It is, as we have said, a process of undergoing experience and not a matter of trying to force the memory to hold information.

When the lesson is complete, there is, of course, no objection to the targets being used as a test; the key can be covered and the targets identified unaided.

So, to sum up these last three Editorial discourses, if recognition training is to be efficient, all who teach it must not only be absolutely clear in their minds about the differences between *recognition* and *identification*; about the value and the place of *information* in training of this kind; they must also be aware of the important differences between the methods of *teaching* and of *testing*, and, what is just as important, when each is needed.

CAMEL (TU-104)

Russian Airliner Wing Span : 115 feet



Starting Clues: 1 "Cluttered" wings with variable taper.
2 "Extravagant" wing root jets.
3 Tailplane on fuselage.

A PAIR TO COMPARE

Don't try to memorise the clues, they are only to help you start. What you have to do is to learn to distinguish between these two characters and to IDENTIFY them. You can do that by just listing the target numbers and writing down your answers each time you find out whether it's a Camel or a Caravelle you're looking at. It all looks pretty simple to do and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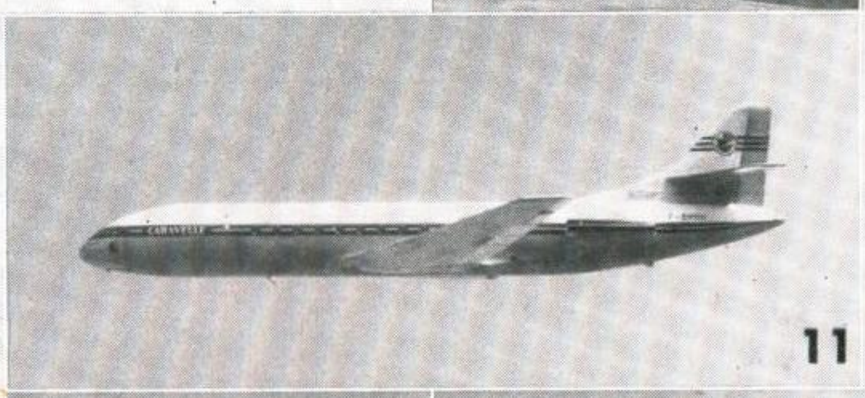
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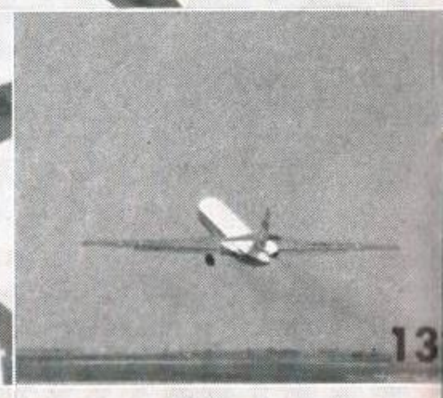
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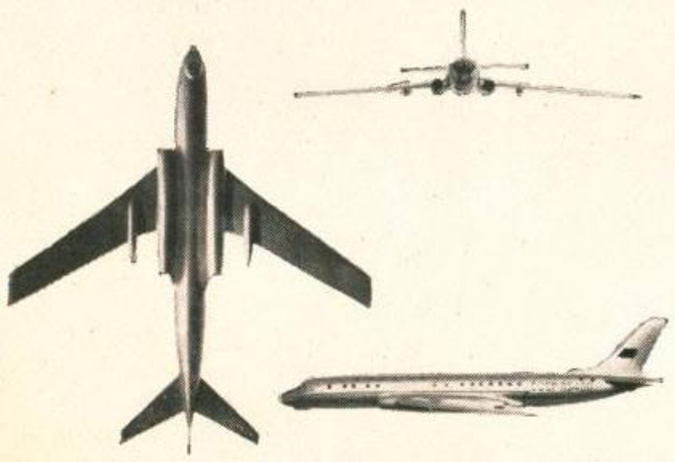


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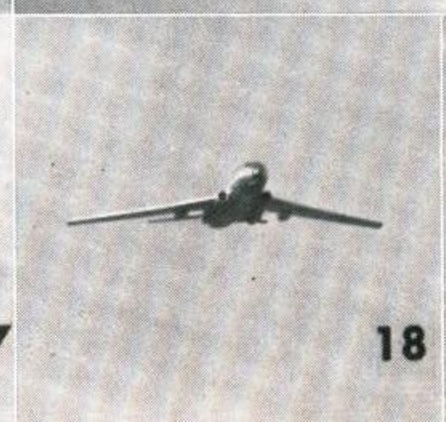
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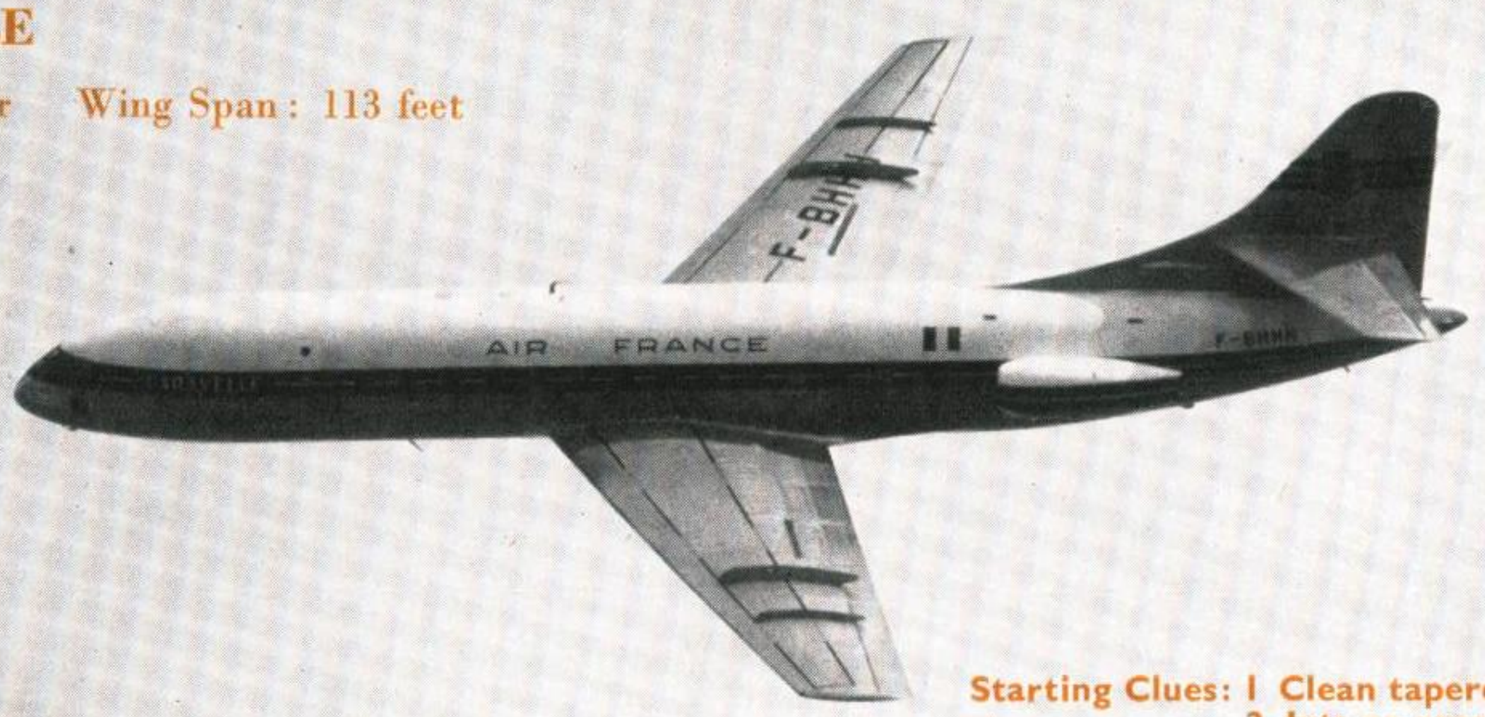
CARAVELLE

French Airliner Wing Span: 113 feet



Starting Clues: 1 Clean tapered swept wings.
2 Jets on rear of fuselage.
3 Tailplane on fin.

indeed it is, but unless you actually carry out the procedure thoroughly now, and learn to name each instantly it becomes identifiable you can easily stumble over naming these aircraft later in circumstances when it is important that you should not. When you've done all the targets compare your answers with the check list on the cover.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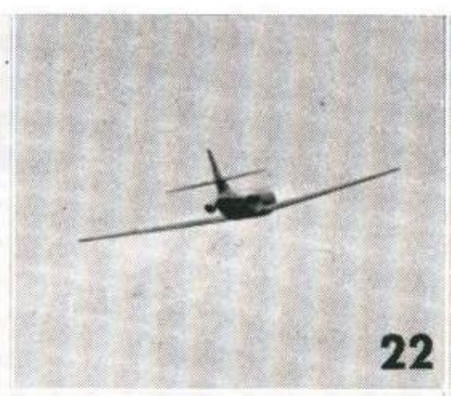
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ATOMS and NUCLEAR ENERGY

by

Observer Commander Q. Dunlop, M.B.E., B.Sc.

THE OBJECT of this article is to explain, in the simplest way possible, some of the terms connected with the "Fall-out" role of the Corps, in the hope that a basic understanding of the terms will give a little more interest to that role. Even the youngest member of the Corps must have noted in his short life the many thousands of different varieties of rocks, plants, insects, animals, and even human beings there are on this earth, as well as the many millions of different kinds of manufactured articles. He might, therefore, be surprised to know that all of these things, in fact everything in this earth and on it, including ourselves, is made up of a few simple materials called "elements."

There are 92 elements which occur naturally in the earth, and they can readily be divided into three categories, as follows:

1. The gases, such as Hydrogen, Oxygen and Nitrogen.
2. The solid non-metals, like Carbon, Sulphur and Phosphorus.
3. The metals themselves, Iron, Copper, Lead, Silver, Uranium, etc.

In addition to those elements which occur naturally, there are a few which have been made artificially, the most important of which is probably plutonium (which is made from Uranium).

The smallest part of any element which can exist and yet retain all the properties of that element is the "Atom." Unfortunately, the atom is so small that one can scarcely believe such a thing could exist. For instance, there are as many atoms in a grain of sand as there are grains of sand on a large beach; but, small as they are, all atoms of all the elements are constructed in exactly the same way, the essential difference between them being one of weight.

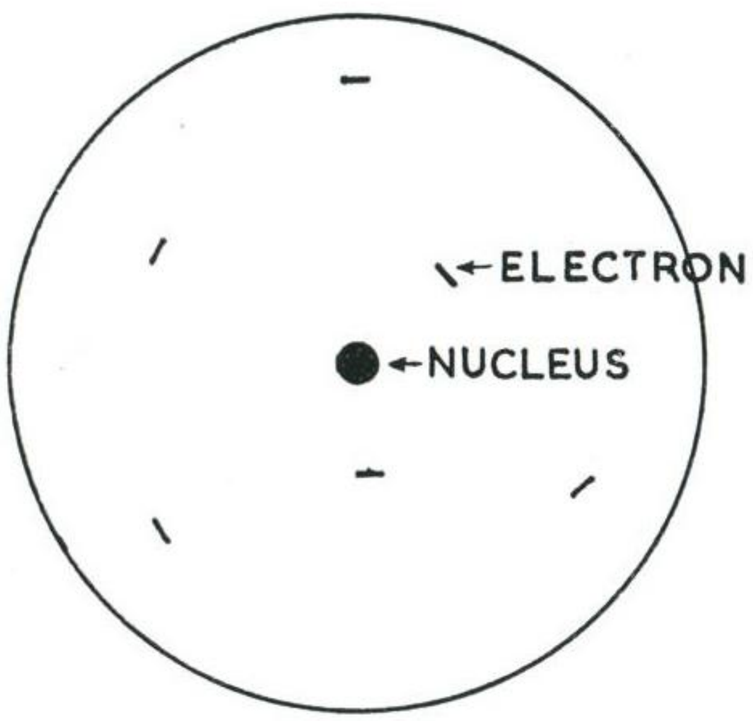


Fig. 1. The Atom

You will note from Figure (1) that the Atom consists of a central part called the nucleus, surrounded by particles called electrons. The nucleus, although taking up very little space in the atom, contains practically all the weight of the atom, and around it orbit these very light-weight electrons, just as the planets orbit round the sun, but at a very much greater speed, and as each of them carries a unit charge of negative electricity, they are shown here in the shape of a minus sign.

To get the atom into some sort of perspective, you will have to use your imagination, as it cannot be seen by even the most powerful microscope. If it were possible to enlarge an atom to the size of the dome of St. Paul's Cathedral, you would find the nucleus to be about the size of a pearl, and all the vast space surrounding it occupied by the few electrons whirling around at terrific speed. As was stated earlier, this small nucleus contains practically all the weight of the atom. For example, if all the atoms comprising the earth could be freed from their electrons and so allow the nuclei to come together, then the diameter of the earth would shrink to about a mile, but practically all the present weight of the earth would still be there. (This form of collapsed matter does exist, and bodies composed of it called White Dwarfs are to be found in outer-space.)

It is evident from the foregoing that the nucleus of an atom is a most peculiar and probably most important thing, and you will see from Figure (2) that it is made up of two kinds of particles, "Protons" and "Neutrons." These particles are of practically equal weight, but differ in one important respect, namely, the protons each carry a unit charge of positive electricity, whereas the neutrons, as their name implies are neutral. The protons are, therefore, shown here in the form of a plus sign. It follows then that the nucleus of any atom is always positively charged, but as this charge is exactly counterbalanced by the negative charge on the electrons, the atom itself is always neutral (in a normal atom of an element the number of protons and electrons are equal).

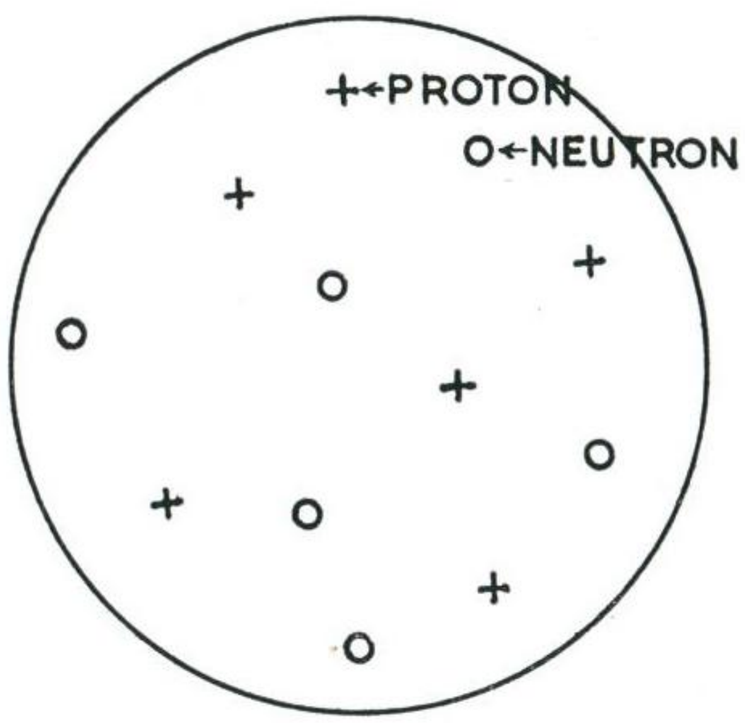


Fig. 2. Nucleus

Now the number of protons in the atoms of different elements varies considerably. Hydrogen has one; Carbon, six; Iron, twenty-six; Lead, eighty-two; Uranium, ninety-two and Plutonium, ninety-four; but all the atoms of a

given element always have the same number of protons in their nuclei. The atom of Carbon in Figure (1) always has six protons, no matter where it is found, be it Australia, Africa or America, and it is the number of protons in the atom of an element which gives to that element its atomic number and place in the periodic table.

In atoms of elements up to atomic number 20, the number of neutrons usually equals the number of protons, and it is the number of protons plus the number of neutrons in the atom of an element which gives the element its atomic weight. However, as you go up the periodic table, it seems to take proportionately more neutrons to keep the protons in order. For example, Oxygen has eight protons and eight neutrons, Iron twenty-six protons and thirty neutrons, Lead eighty-two protons and one hundred and twenty-four neutrons, and, in fact, once you go beyond atomic number eighty-two, no number of neutrons is capable of keeping the protons in order; therefore, all elements with atomic numbers above eighty-two are unstable. Whereas the number of protons in the atom of a given element remains constant, the number of neutrons may vary or can be made to vary, and when this happens it gives rise to a different species of that element to which the scientists have given the name Isotopes.

About 75 per cent. of the elements which occur naturally in the earth also have one or more isotopes which occur in nature, but many more isotopes have been made artificially, especially of the heavy elements, and most of these artificial isotopes are radio-active. This term radio-activity is one with which members of the Corps are familiar, so it is necessary to see what it means. As stated above, to make an artificial isotope it is necessary to vary the number of neutrons in an atom, and when this is done, it greatly disturbs the nucleus. As the atom then settles down to form a new element it gives off Alpha particles or Beta particles, and electro-magnetic radiations in the form of gamma-rays, i.e., it is radio-active.

Here is another term well known to members of the Corps, namely, "Gamma Radiation"; but before the Corps can have gamma radiation to measure, an Atomic bomb must have exploded at ground level. Now any explosion, whether it be conventional T.N.T. or Atomic, presupposes the release of an enormous amount of energy in a very short period of time. What interests us now is to see how energy can be released from atoms in such a way as will make an explosion.

This can be done in two ways:

(a) by the Fission Process, or
(b) by the Fusion Process.

For the Fission process we require to have an isotope of one of the heavy elements, say, the isotope of Uranium of atomic weight 235. Uranium 235 is a fairly radio-active substance and decays at a steady rate, but in addition, one of its atoms will now and again spontaneously disintegrate, throwing out neutrons in the process. If one of these neutrons succeeds in penetrating the nucleus of an adjacent atom it does in fact release energy, and in addition, two neutrons. If these neutrons in turn succeed in splitting the nuclei of adjacent atoms more energy will be released plus four neutrons, and so on. In fact what has happened is that a "Chain Reaction" has been set up. (This can only happen under carefully arranged circumstances and will not occur naturally.) Scientists have calculated that if all the atoms in 110 lb. weight of uranium 235 were split in this way, the energy released would be equivalent to the explosion of one million tons of T.N.T. and that this would be accomplished by 90 generations of neutrons which would take about one-millionth part of a second to complete. Here then, we have all the requirements for a very violent explosion, namely, an immense amount of energy released in an extremely short period of time.

We now have all the data and the material with which to make an Atomic bomb, so as a matter of interest let us see how one could be made. For this we require a very strong bomb casing and two sub-critical pieces of Uranium 235 (by sub-critical is meant that they are of such a mass that they will not individually sustain a chain reaction). Place one piece firmly in one end of the bomb casing, and put the other in a kind of gun barrel at the other end, then by means of a cordite charge, fire the second piece into the first. The result will be that you will then have one piece of Uranium 235 which will be super-critical, i.e., it will sustain a chain reaction and therefore will explode violently. As we have been splitting atoms to release energy this is called the Fission process and the bomb is sometimes referred to as a Fission Weapon.

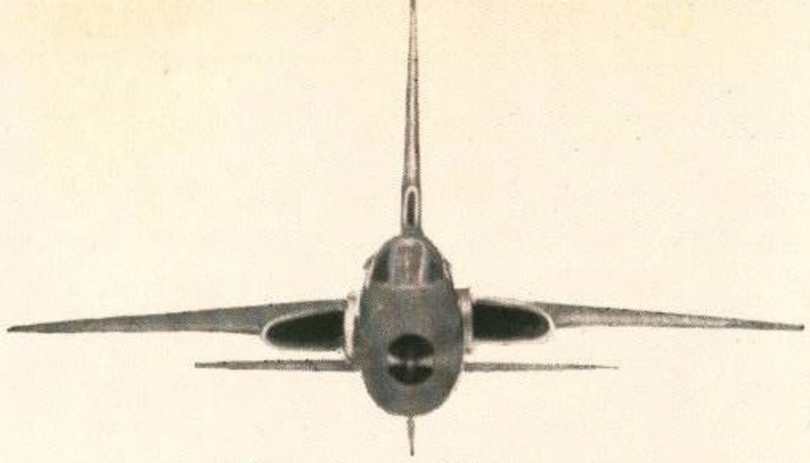
As was stated earlier, the other method of obtaining energy from atoms was by the Fusion process. For this we require an isotope of one of the lighter elements. The isotope of Hydrogen (the lightest element of all) called Deuterium, will do. To get energy from the atoms of Deuterium it is necessary to fuse the nuclei of the atoms together, and to do this, astronomical temperatures are required; something in the order of millions of degrees centigrade. Although this process has been going on in the sun for billions of years, temperatures of this magnitude could not be obtained on earth until the atom bomb was invented. When that bomb is exploded, temperatures in the required range are generated; therefore, to make a hydrogen bomb, all that has to be done is to put the Deuterium in an Atomic bomb and trigger it off.

The scientists have calculated that the energy released, when the nuclei of all the atoms in 110 lb. weight of Deuterium are fused together, is equivalent to the explosion of two and a half million tons of T.N.T. It was little wonder, then, that when this bomb was invented it was generally called the ultimate weapon.

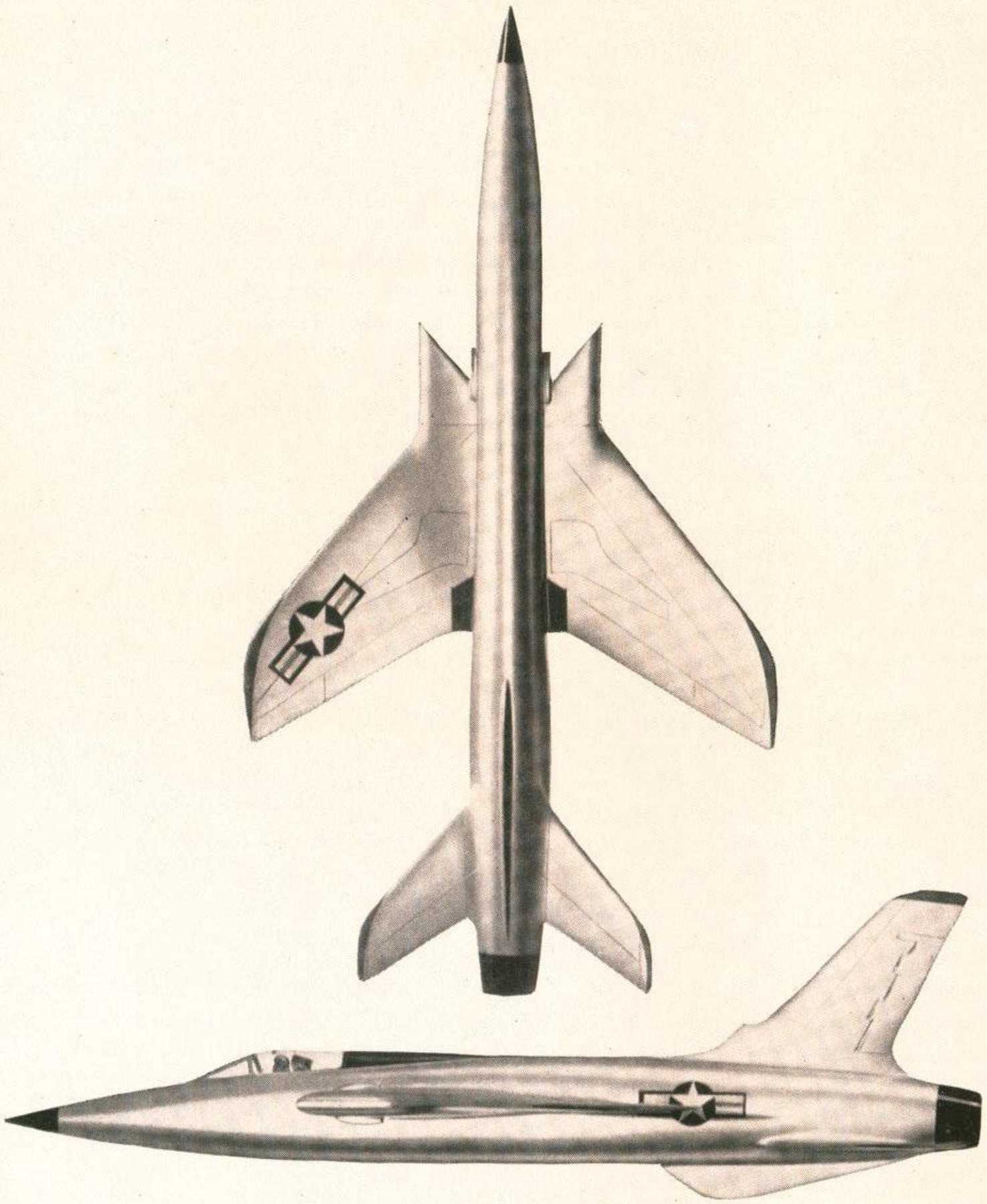
As very high temperatures are required in this process, and as the nuclei of atoms are fused together, this is called the Thermo Nuclear Process and the bomb is usually referred to as a thermo nuclear weapon.

When one of these bombs is exploded at ground level, millions of tons of earth and rock are vapourised by the immense temperatures generated, leaving a crater about a mile wide and 200 feet deep. This vapour is sucked up through the stem of the mushroom cloud where it mingles intimately with the radio-active products of the bomb. It is drawn right up to the stratosphere (about 100,000 feet) where it cools and condenses to form minute particles, by this time highly radio-active. The particles are carried along by the wind and eventually fall to earth where they continue to give off their deadly gamma radiation, and incidentally, give one very cogent reason for the continued existence of the Royal Observer Corps.

THUNDERCHIEF (F-105B)



Wing Span 35 feet



Alexander Kartveli, father of Republic's famous Thunderbrood, likes his aeroplanes to be graceful. If not actually graceful, his mighty Thunderchief—biggest, fastest and most aggressive of the Thunder tribe—is a commendably neat way of "wrapping up" a jet engine and its fuel, an atom bomb, several tons of electronics, a six-barrel Vulcan cannon, and, of course, a pilot. And, although, tipping the scales at 40,000 lb.—more than a fully-laden Dakota—the result flies at 1,400 m.p.h., no mean achievement for an aircraft which has "the lot." The expensive array of electronic refinements includes several radar systems; automatic fire-control for the Vulcan 20-mm. cannon; Sidewinder missiles; Doppler navigation and a toss-bombing computer.

Thunderchief was planned in 1952 as a successor to the F-84F. The first production version, the F-105B, a single-seat day fighter-bomber, is shown here. The F-105D followed, fitted with a more powerful turbo-jet, all-weather capabilities, improved fire control and radar navigation aids and a slightly lengthened nose, but is visually similar.

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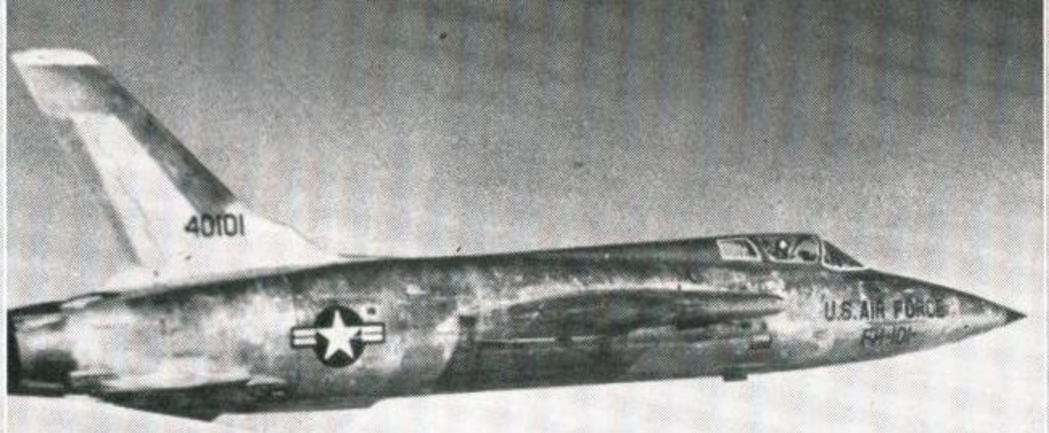

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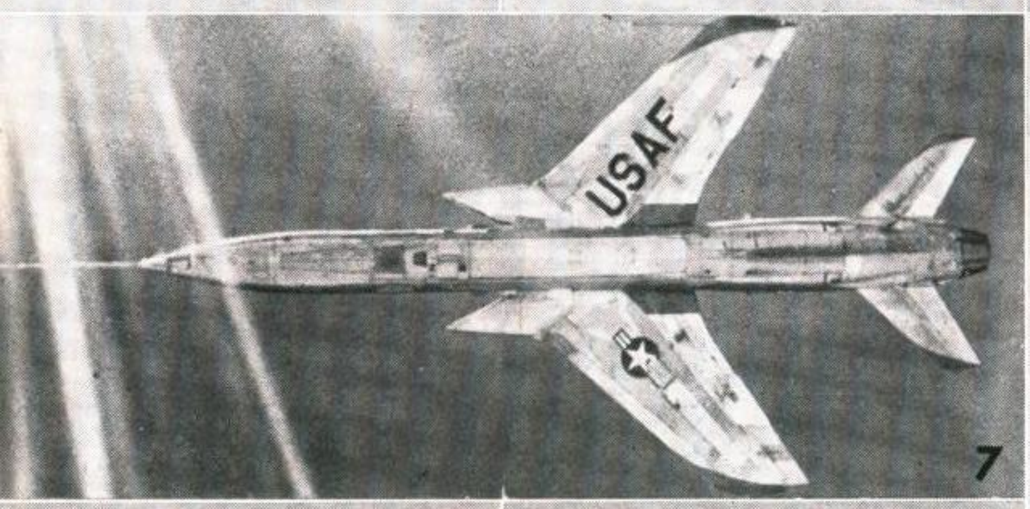

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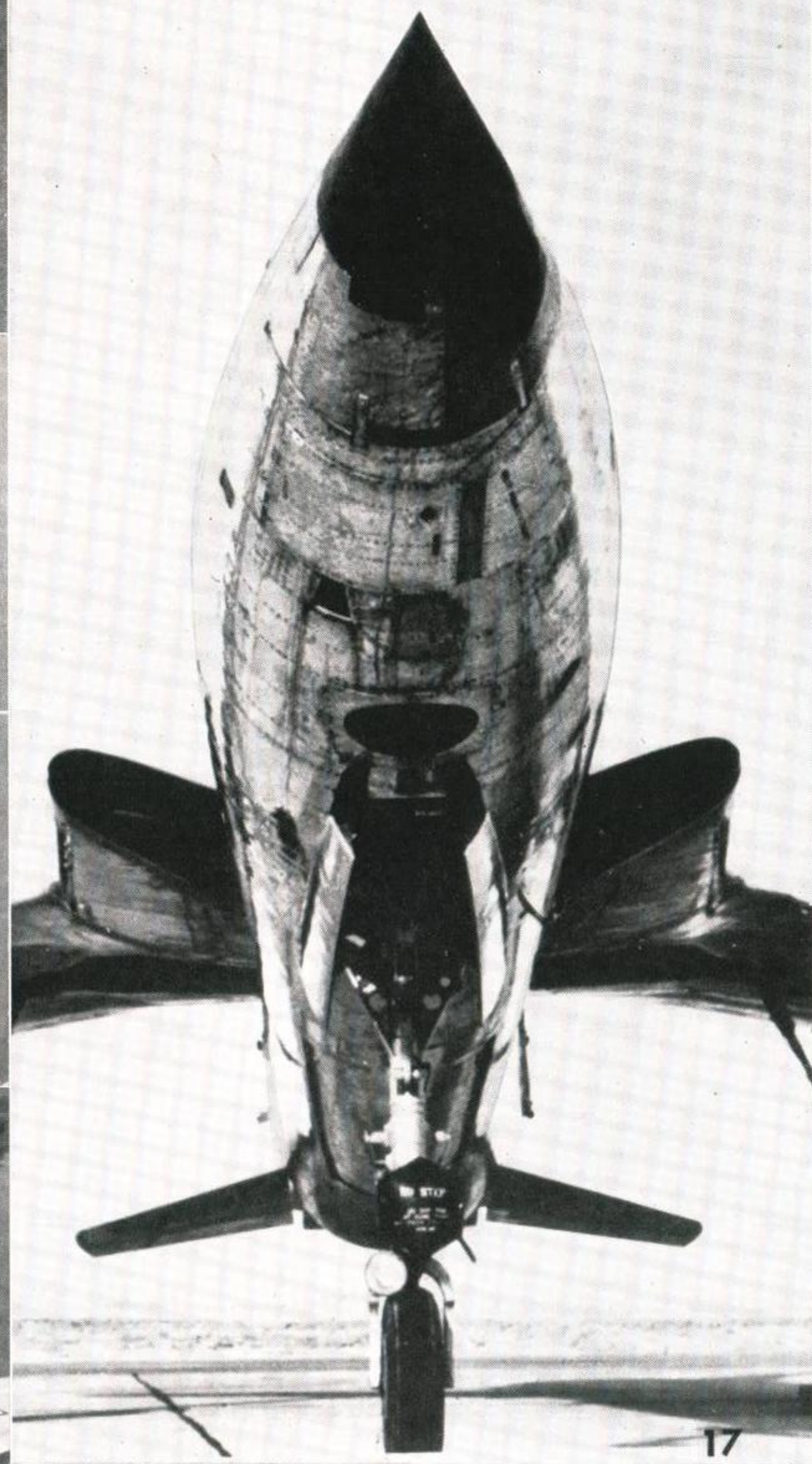

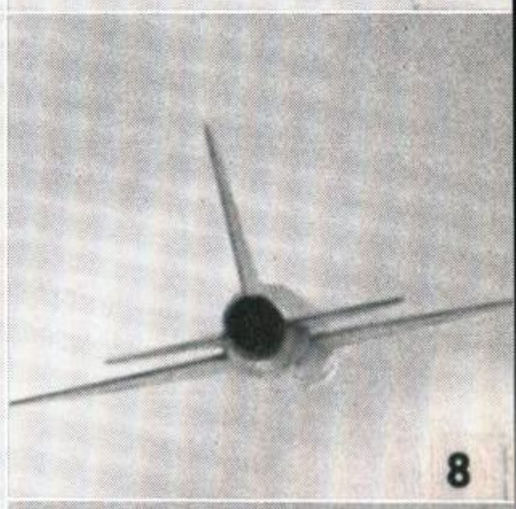
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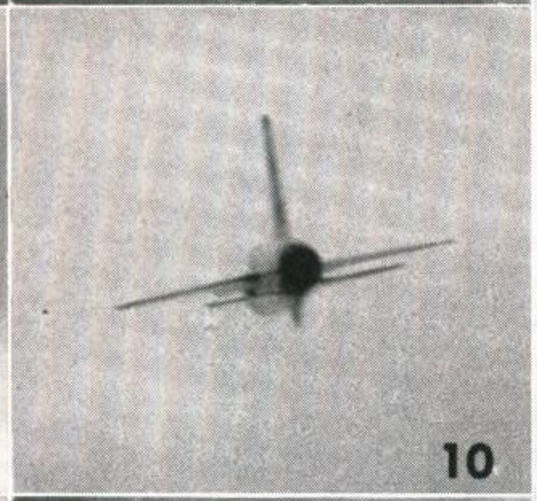
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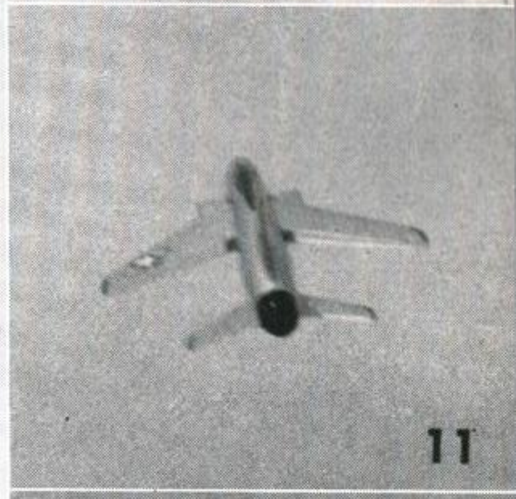
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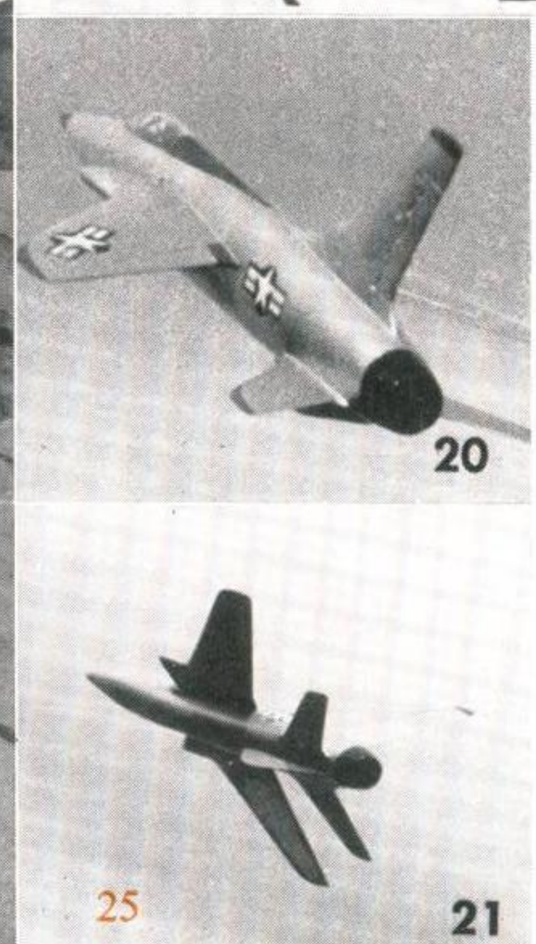
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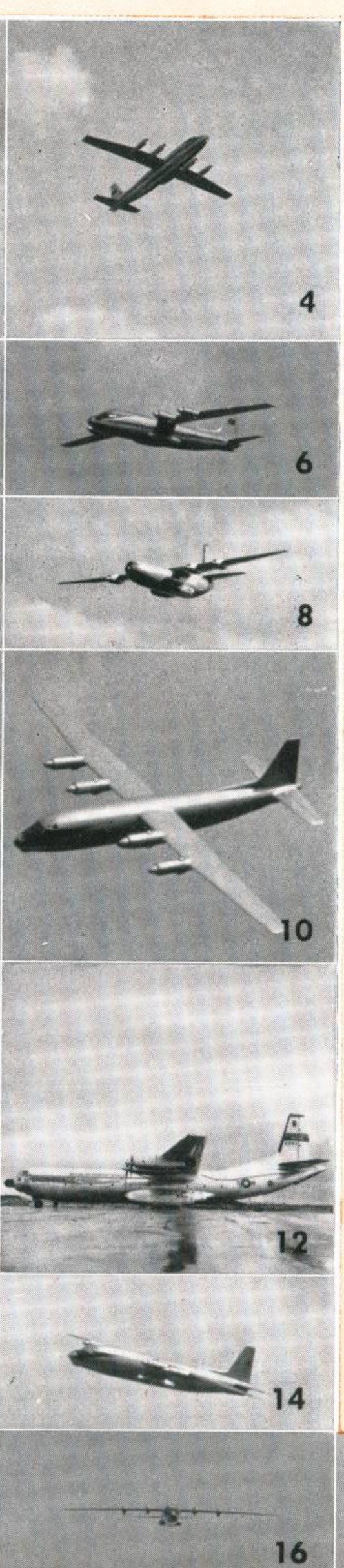
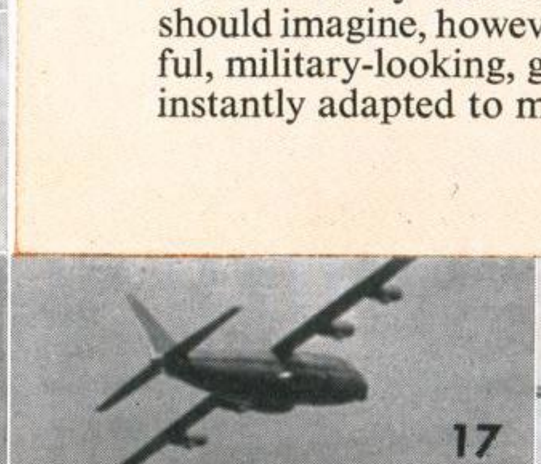
Do It Yourself

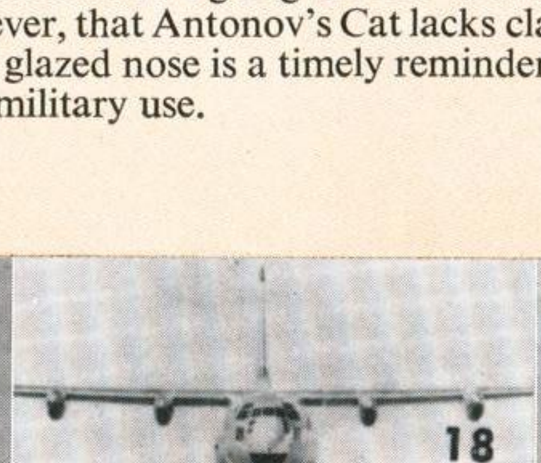
To identify the Thunderchief—there are lots of them about—first get a pencil and paper and list the target numbers (1 to 21). Then, using the three-view key information which is in colour opposite, identify each target and write down Thunderchief each time you are sure. But be *sure*—don't guess!—and watch for jokers. Do the easy targets first—no sense in making hard work of it. When you've got a full house—and not before—compare your answers with our list on the cover.

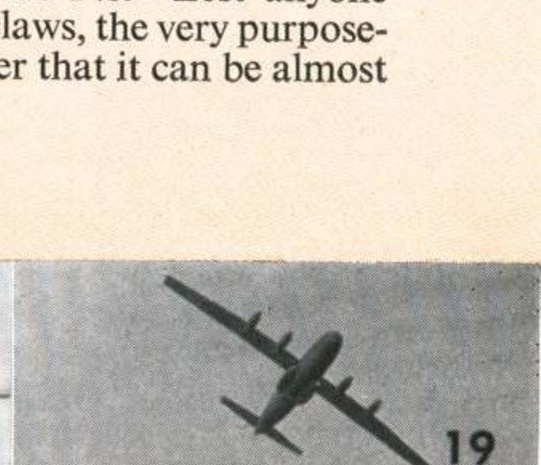
Cat and Cargomaster

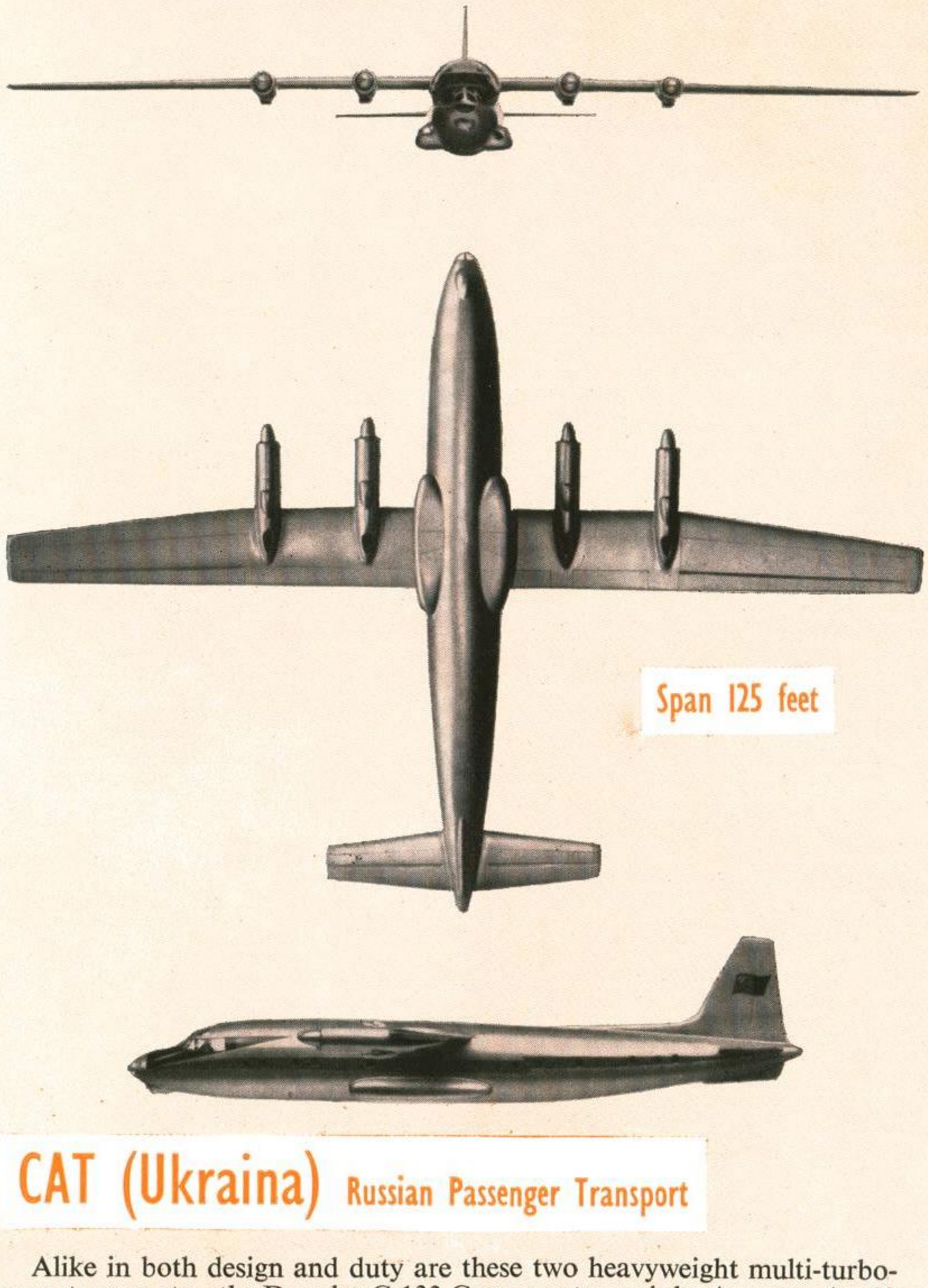
A glance at these targets might alarm you. How can such visually-similar aircraft be distinguished from each other from afar? Well, you can be reassured by doing this lesson. List the target numbers first, identify a few easy shots and then go on to the more difficult ones. DON'T FORGET TO WRITE OUT EACH ANSWER AS YOU IDENTIFY. When you've completed your list compare it with ours on the cover. You can get a 100% correct result, allowing for a joker perhaps?









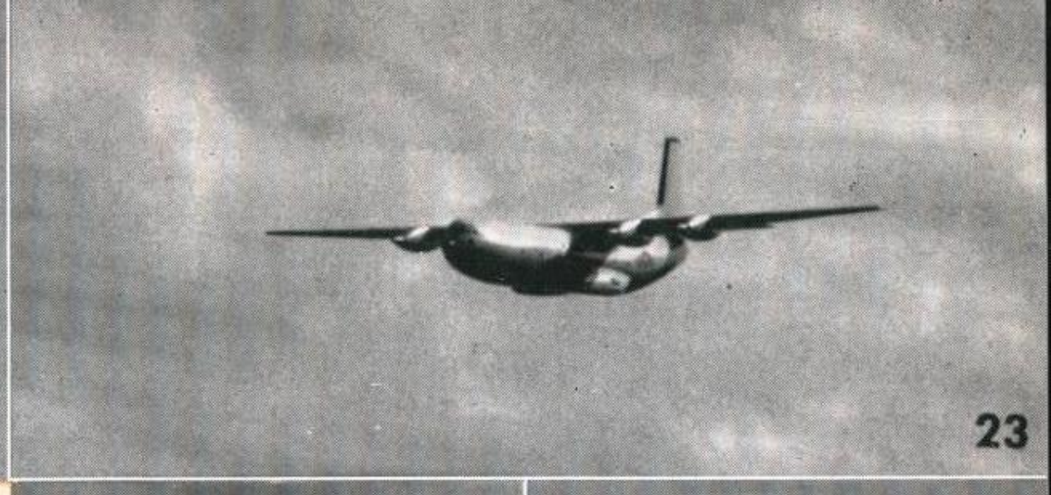


Span 125 feet

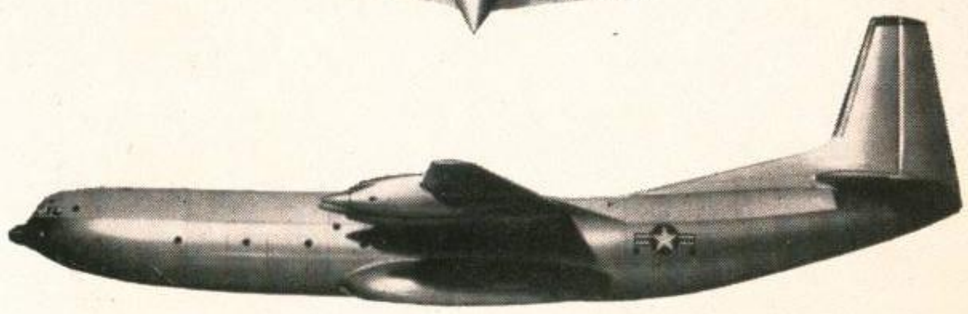
CAT (Ukraina) Russian Passenger Transport

Alike in both design and duty are these two heavyweight multi-turbo-prop transports—the Douglas C-133 Cargomaster and the Antonov An-10 Ukraina (Cat). The bigger of the two, the Falstaffian ocean-spanning, Cargomaster (all-up weight 115 tons) flies with U.S.A.F. and M.A.T.S. and, incidentally, can carry 96% of all U.S. ground force vehicles (including tanks and rocket launchers) fully assembled.

The less portly Cat (all-up weight 50 tons), is a stretched, four-engined version of the Antonov An-8 military transport. Twice the Cat it was, so to speak, it now serves Aeroflot as a high-capacity maid-of-all-work, and will eventually oust Aeroflot's ageing IL-12s and IL-14s. Lest anyone should imagine, however, that Antonov's Cat lacks claws, the very purposeful, military-looking, glazed nose is a timely reminder that it can be almost instantly adapted to military use.



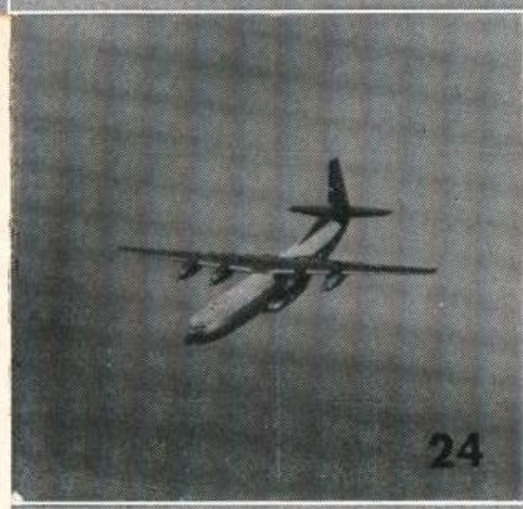
Span 180 feet

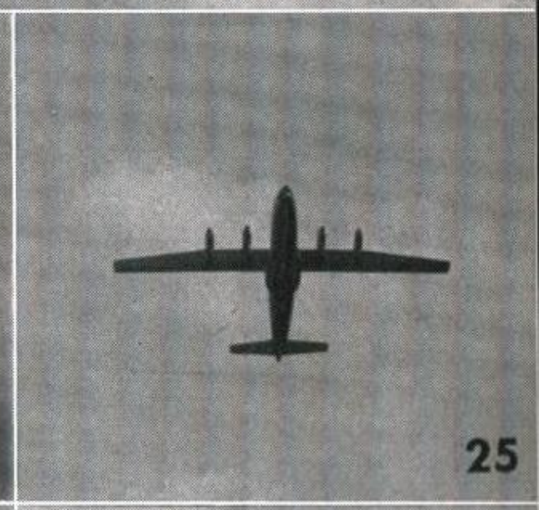


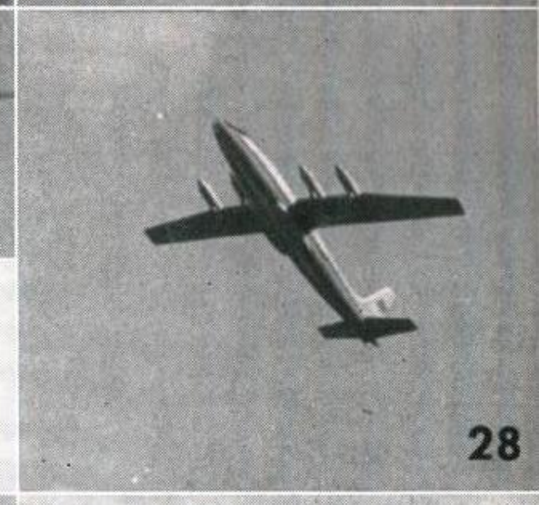
CARGOMASTER (C-133A) American Military Transport

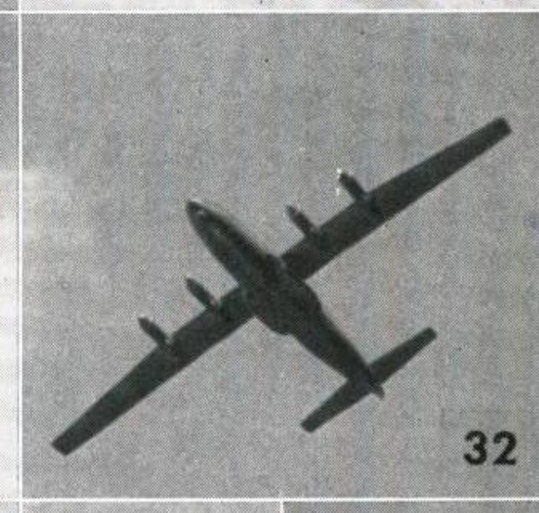
Though very much a pair to compare, a little bit of analysis will quickly reveal several major differences. Note how the Cargomaster's cabin follows the King-size cigar contours of the fuselage, while the Cat's lines are broken to embody a "stepped" cabin and pointed glazed nose. Cat has a ventral fin, while the Cargomaster's rear fuselage is clean and sharply upswept to permit end-loading.

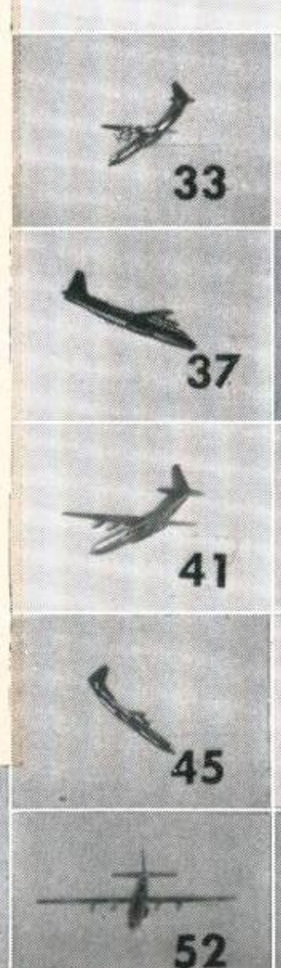
The wings of the Cargomaster are straight-tapered and set more than halfway back along the fuselage, in contrast to those of the Cat which have broken taper and are set further forward. And, incidentally, the latest version of the Cat makes distinction clearer—to cure stability problems, small end-plate fins have been fitted to the tailplane.

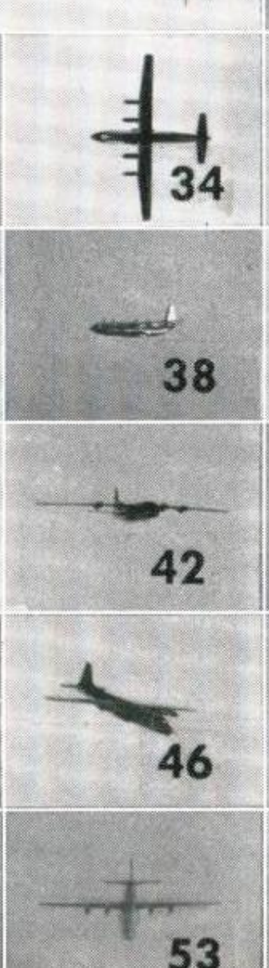


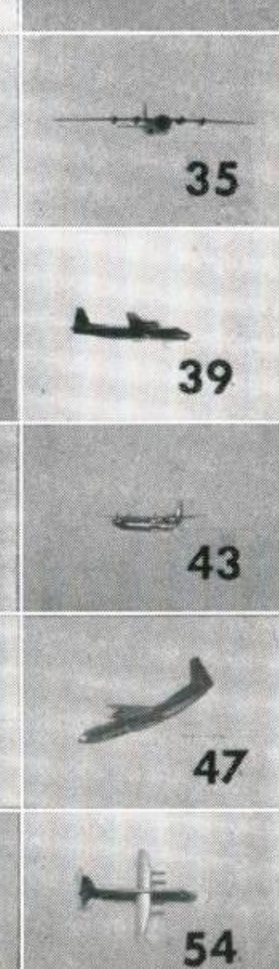


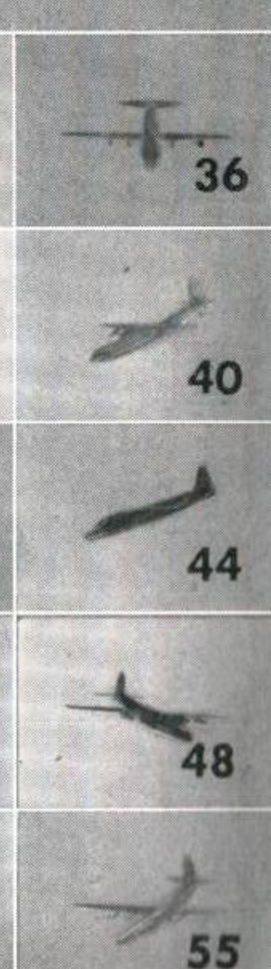


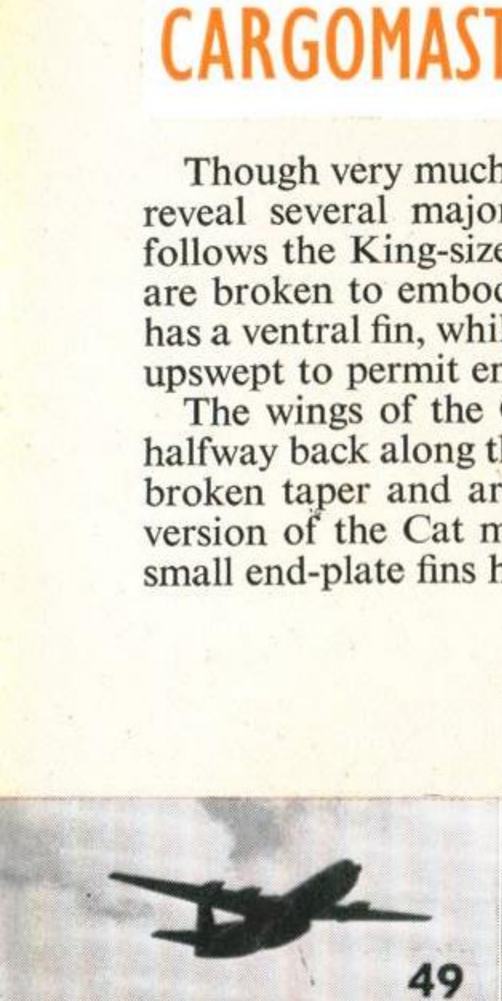


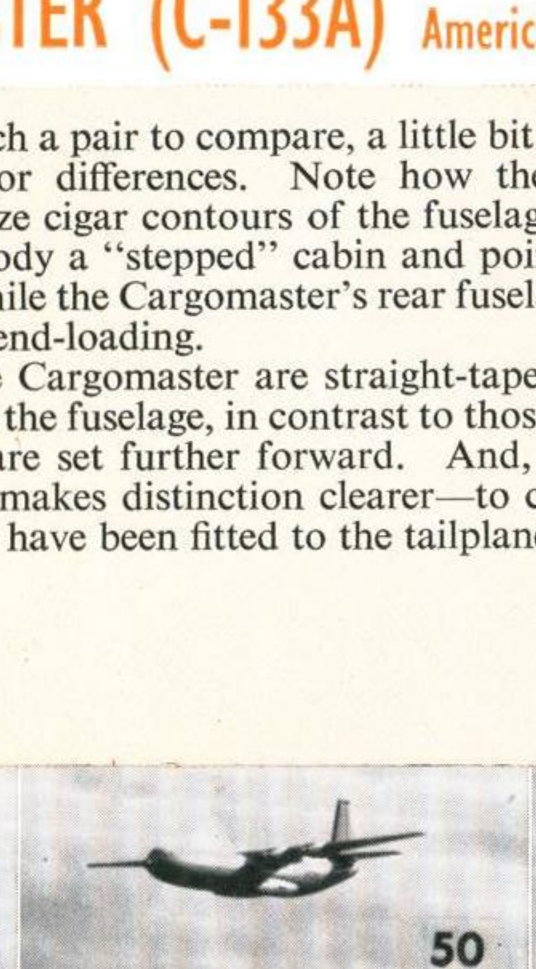


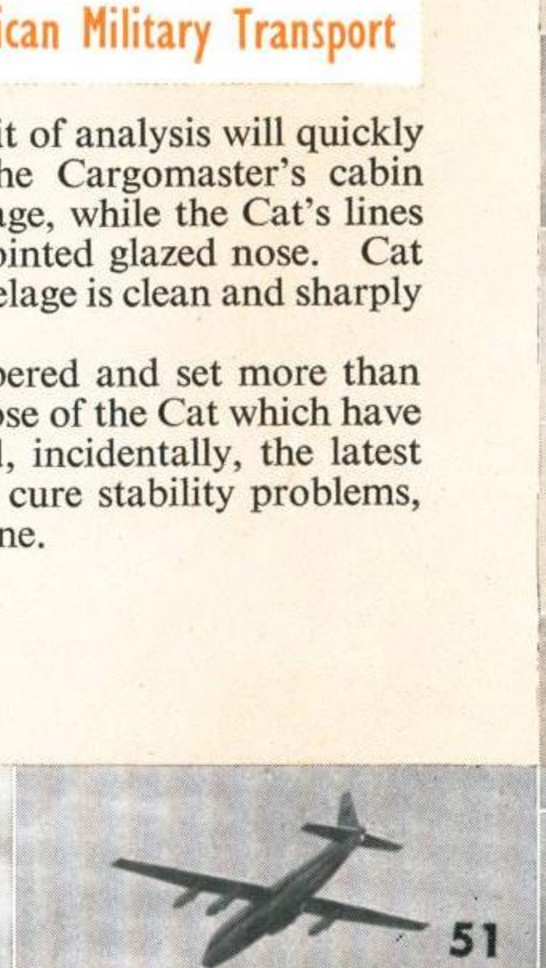












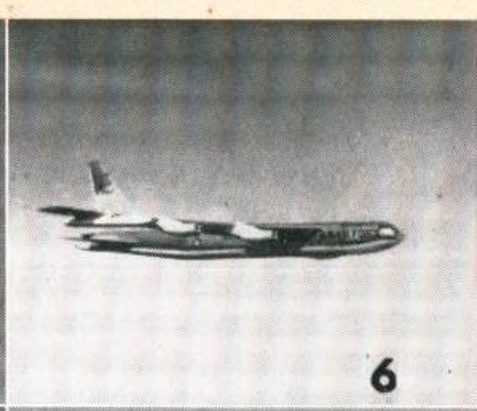
Stratofortress (B-52)

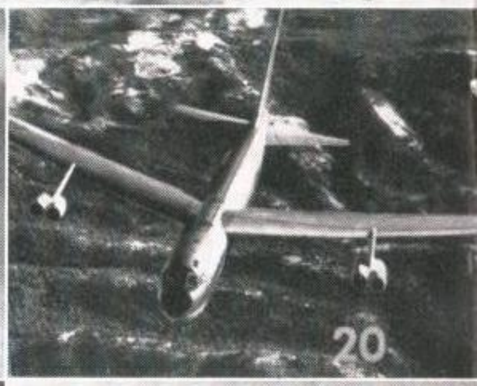
Who's Who?

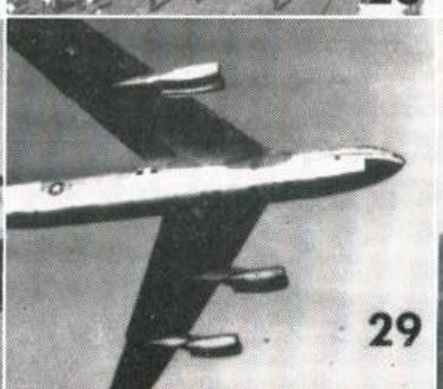
A Refresher Course

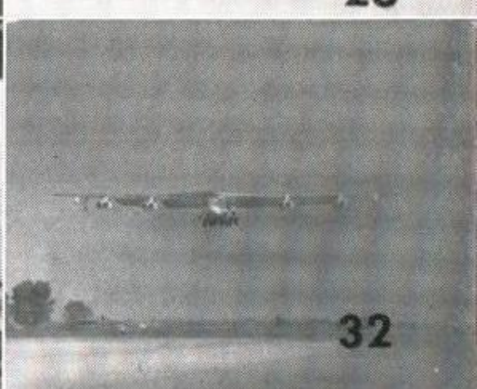
These two Boeing " strato " heavies are superficially similar in some views, although, as a study of the three-views on either side will reveal, they are, in fact, quite different, and by the time the lesson has been completed you will be in no doubt. List the target numbers and put down on paper each identity as soon as you are sure of it. Check your *complete* list against ours, which is on the cover.

Stratotanker (KC-135)









Bombing Brigade

(Can you hit the target each time?)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2


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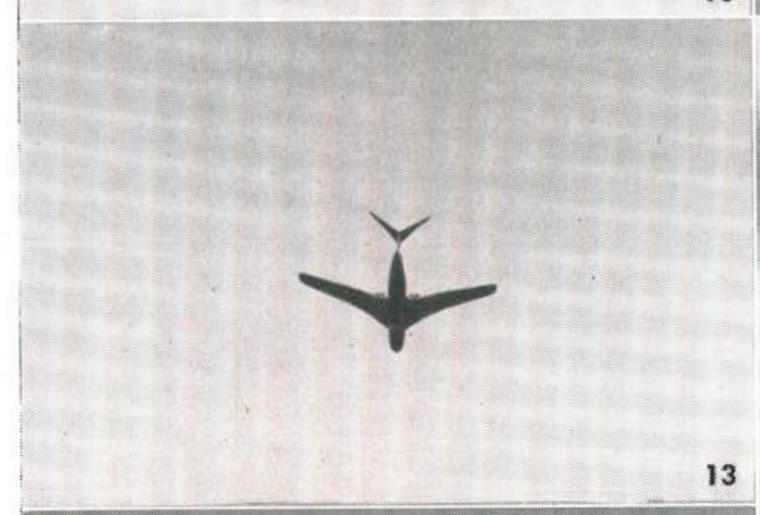
12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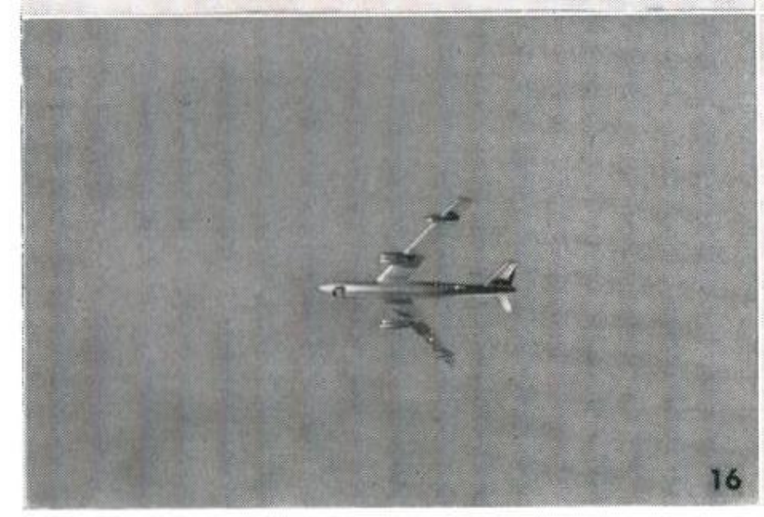

16


17


18

In Passing . . .

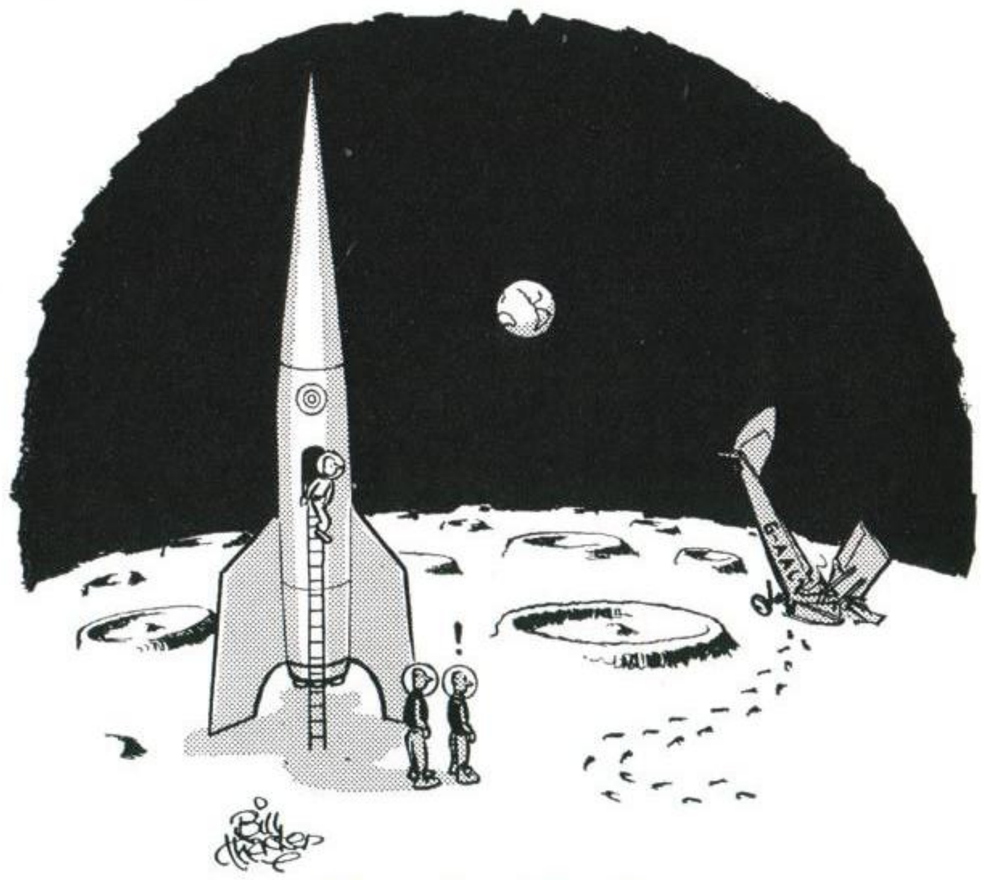
T.V. at Mach 3

The photo below depicts the airliner of 1970 as Convair see it. Cruising at Mach 3 at 80,000 feet the aircraft will have a third "pilot" in the cockpit with an infallible memory and instantaneous reflexes in the form of a complete computing mechanism that will not only fly the machine but also store information for the later use of servicing crews—a sort of electronic "snag" recorder. The climb to operating height of this hypersonic airliner will be steep and fast, and passenger seats will tilt so that passengers will always be sitting upright. Equally fast and steep descents will be necessary to save fuel and time. Individual T.V. screens, with finger tip control, will take the place of windows and will give either outside views or broadcast T.V. programmes.

How Educated can you get?

Apropos of nothing in particular, we reproduce the following descriptive piece from Convairiety, the Convair house magazine, and said to be the work of a 5th grade student.

"The head is kinda round and hard, it has your brain in it and hair on it, your face is on the front of it, that is the part you eat with and make faces with. Your head sits on your neck, it is what keeps your head from falling down in your collar and it is hard to keep clean, it is between your shoulders, they are shelves that stick out and hold your suspenders and your arms are on the end of them, they are what you use to pitch with and to reach the butter, and you have fingers that stick out of your hands so you can throw curves and add up arithmetic. Your back is always behind you, no matter how fast you turn around. Your backbone is what keeps you from folding up in the middle. Your legs is what if you've got only two of you can't run very fast and they have toes on the end of them that stick out and always get stumped. That is all there is of you except what is on the inside and I never did see that."



Book Notice

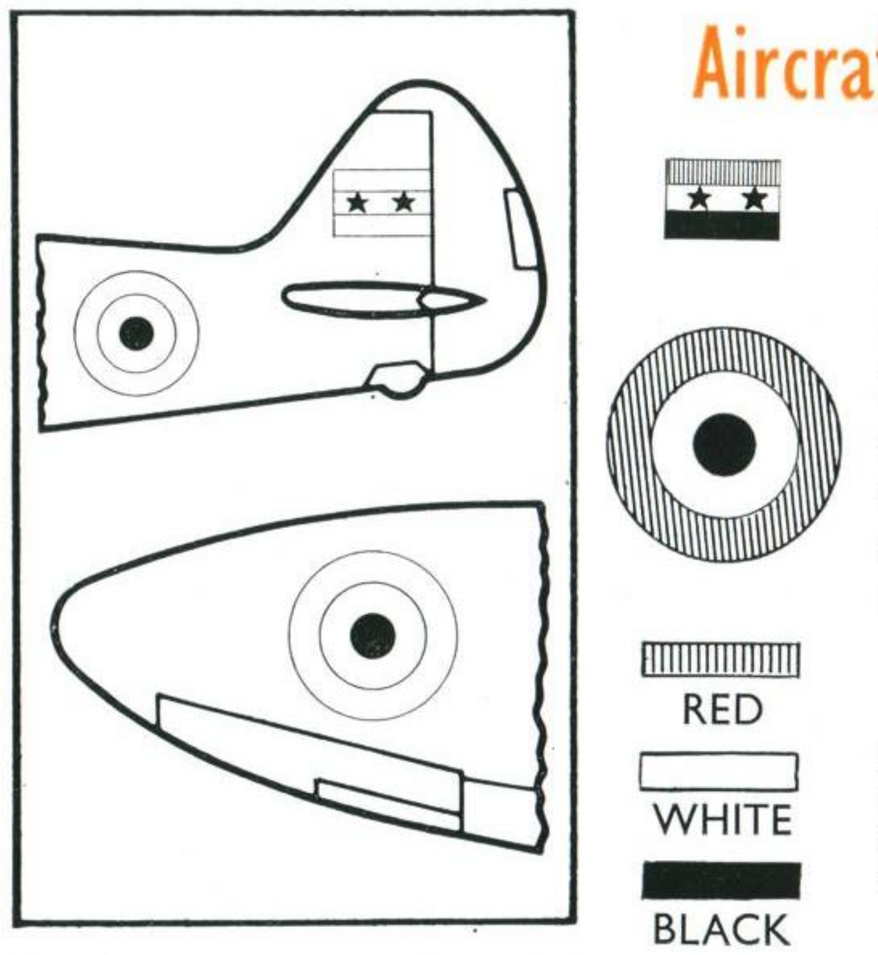
THE SEVEN SKIES, by John Pudney. Published by Putnam & Co. Ltd. at 30s. Illustrated. 320 pp.

The author explains that "The Seven Skies" was written at the invitation of the Chairman of BOAC, but that it is not an official history. The result does credit both to Mr. Pudney, who is above all a good writer, and to BOAC for allowing him a free hand to express his own interpretation of the 40-year span of British commercial flying, without glossing over the discord and failure which have occasionally punctuated its progress.

From the standpoint of completeness, it is perhaps regrettable that it is only BOAC and its "ancestor" airlines which are the subject of the book; a better balance would have been struck by including a full treatment of BEA which, after all, emerged from the same beginnings.

The number of illustrations is rather meagre in support of so graphic a text. G.D.H.L.

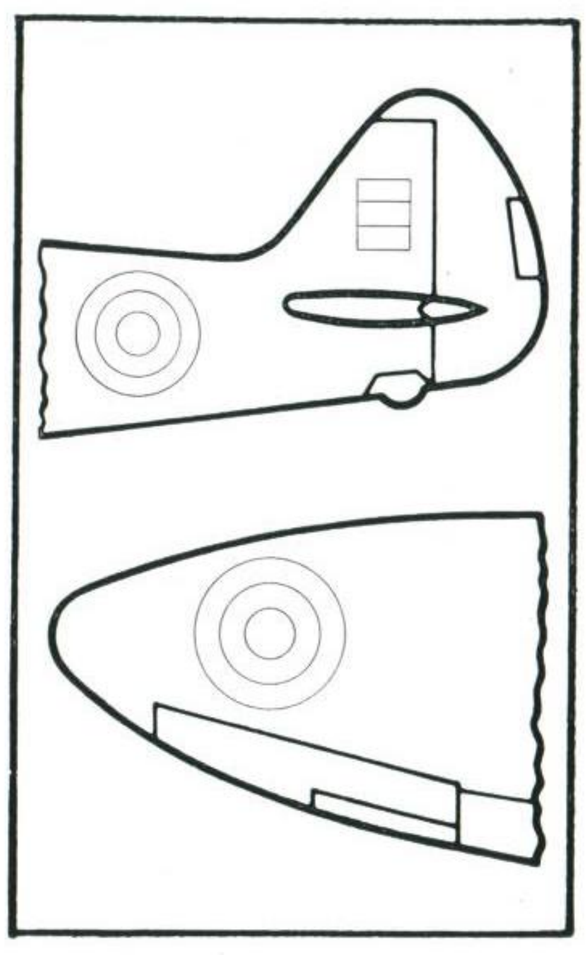
Aircraft National Markings



United Arab Republic Egypt & Syria

Here are two further examples of revised national insignia for incorporation into the Aircraft National Markings Chart (Air Diagram 4625). Each larger drawing should be treated as instructed below and stuck on to the chart to keep it amended.

Each large diagram should be coloured in accordance with the smaller "key" and then affixed in its appropriate position on A.D. 4625.



Sudan

BOOK REVIEWS

A.B.C. BRITISH AIRPORTS, by J. W. R. TAYLOR. 40 pp. (Illus.). Published by IAN ALLAN LTD. at 2s. 6d.

In the new edition to the popular and useful A.B.C. series are described all the 40 aerodromes currently listed in the Ministry of Transport and Civil Aviation's statistical tables as handling commercial traffic. John Stoud contributes an introductory article on "Airports of the British Isles."

(One correction on a point of accuracy: "Stansted" correctly in the text, "Stanstead" on the map.) G.D.H.L.

A.B.C. U.S. MILITARY AIRCRAFT, by J. W. R. TAYLOR. 32 pp. (Illus.). Published by IAN ALLAN LTD. at 2s. 6d.

The last edition of this "A.B.C." was published early in 1956. So rapid has been the progress of the U.S. aircraft industry that it must now be considered entirely obsolete!

Forty main types of U.S. Air Force, Navy and Marine Corps aircraft are described in detail—plus 54 others in current service. This is an essential recognition aid.

G.D.H.L.

AIRCRAFT ANNUAL 1960, edited by J. W. R. TAYLOR. 96 pp. (Illus.). Published by IAN ALLAN LTD. at 10s. 6d.

Apart from John Taylor's review of the year 1959, this latest edition of an excellent annual contains 14 articles on a wide range of aeronautical subjects. For the first time, there are colour plates (eight in number); the quality of reproduction of these is somewhat variable.

As usual, the editor has collected a most original array of black and white photographs, and for these there can be nothing but praise. G.D.H.L.

* * *

Talking Point

"If you think you are indispensable stick your finger in a bowl of water and notice the hole that's left when you take it out."

—from *The Roundel*, July/August 1959.

* * *

"Yep, I reckon Nature had area rule lined up long before the boffins."

A.B.C. FLEET AIR ARM, by J. W. R. TAYLOR. 40 pp. (Illus.). Published by IAN ALLAN LTD. at 2s. 6d.

One makes no apology in devoting space to a second edition—which this is—of a booklet already justly regarded as one of the best of the famous "A.B.C." series. It combines the purely tabular record of the Royal Navy's current aircraft and carriers (the only six remaining!) with excellent historic and descriptive articles; the photographs, virtually all changed since the 1957 edition, are supported by silhouettes of Dennis Punnett's usual high standard.

Earl Mountbatten of Burma contributes a Foreword—a new feature—and one cannot but endorse his praise.

G.D.H.L.

* * *

"Well, I wish you *wouldn't* wait to order it straight off the drawing board."

* * *

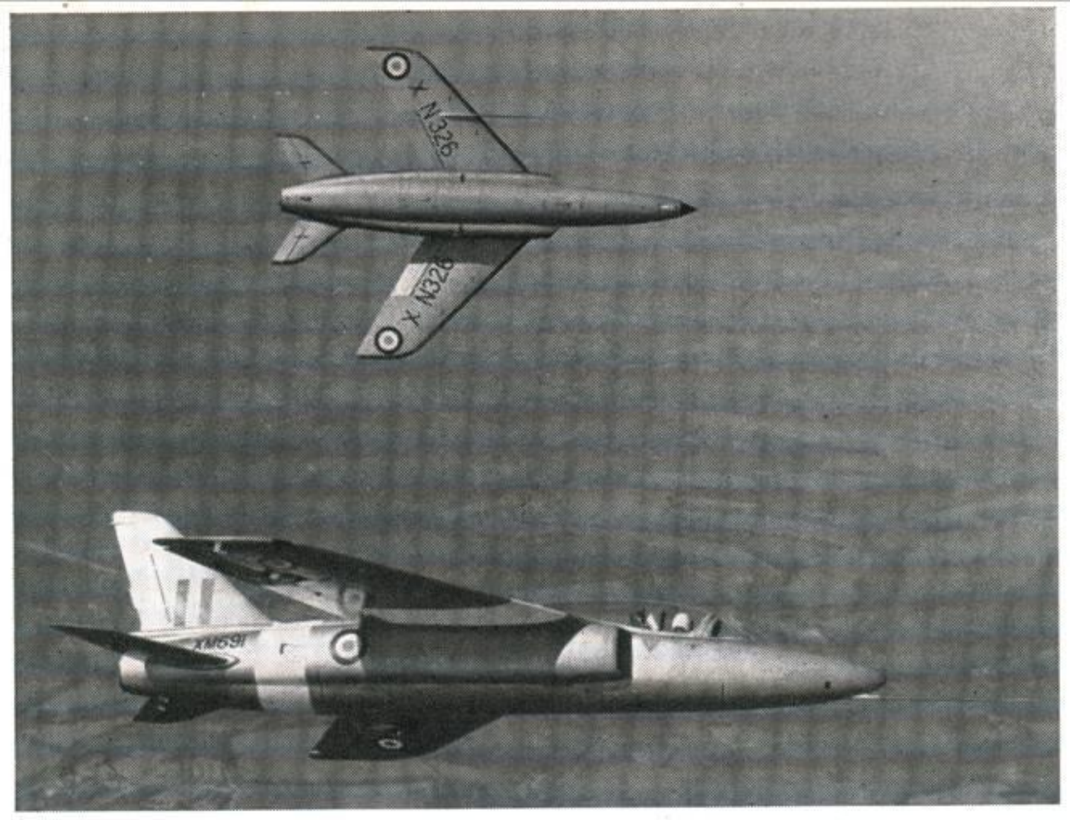
"KOOL, MAN, KOOL, DADDY-O"

The following item is reproduced from *Naval Aviation News*. If you don't "dig" the meaning you will find a "translation" on the rear cover.

"We were scratching along about 35 when three goofy loopers jumped us about 4 o'clock high. I called, "Blow Man Blow" and started to yo-yo. We were soon looking up their tailpipes closing fast. I called "Kool, Man, Kool" and we started riding just above their wash.

"We closed in and found out they were up on an IFR, so we plugged in for a practice drink from the Buddy. It wasn't easy as we were riding the backside of the curve. Soon as we finished we dropped the boards and headed for the ramp. I picked up a low meatball, rode over the top and boltered on on my first pass, but came right down the glide slope and trapped on the second."

If you overheard a conversation similar to this and haven't been exposed to jet types, angle deck carriers or mirror mechanisms which have made their debut in the Fleet during the past few years, don't panic. The beatniks and "cats" haven't taken over—you're just a little bit square. Catch up on a few of these terms and everything will be George man—real George.



Cover Picture: Peeling off is the Folland Gnat Mark I fighter; about to do so is the two-seater transonic trainer version, being one of a development batch of 14 ordered by the Ministry of Aviation. The makers say that although the two-seater Gnat owes much to the single-seater Mark 1, it is a new design and not an adaptation.

SOLUTIONS TO TESTS AND LESSONS IN THIS EDITION

THUNDERCHIEF F-105B

All the targets are **Thunderchief** except No. 8 which is a **Fishpot** and No. 9 which is a **Thunderflash.**

WHO'S WHO?

1. **B-52**
2. **KC-135**
3. **KC-135**
4. **B-52**
5. **KC-135**
6. **B-52**
7. **B-52**
8. **KC-135** (foreground) **707** (background)
9. **KC-135**
10. **B-52**
11. **KC-135**
12. **KC-135**
13. **B-52**
14. **KC-135**
15. **B-52**
16. **B-52**
17. **KC-135** (all three)
18. **B-52**
19. **KC-135**
20. **B-52**
21. **B-52**
22. **KC-135**
23. **KC-135**
24. **KC-135**
25. **KC-135**
26. **B-52**
27. **B-52**
28. **KC-135**
29. **B-52**
30. **KC-135**
31. **B-52**
32. **B-52**

CARAVELLE/CAMEL

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38. **Caravelle**
39. **Camel**
40. **Caravelle**

CAT AND CARGOMASTER

1. **Cat**
2. **Cargomaster**
3. **Cargomaster**
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6. **Cat**
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9. **Cargomaster**
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12. **Cargomaster**
13. **Cargomaster**
14. **Cat**
15. **Cat**
16. **Cat**
17. **Cat**
18. **Hercules**
19. **Cat**
20. **Cargomaster**
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49. **Cargomaster**
50. **Cargomaster**
51. **Cat**
52. **Cat**
53. **Cargomaster**
54. **Cat**
55. **Cargomaster**

BOMBING BRIGADE

	Span		Span
1. **Bosun**	**70 feet**	10. **B-52 Stratofortress**	**185 feet**
2. **Destroyer**	**72 feet**	11. **B-58 Hustler**	**57 feet**
3. **Backfin**	**78 feet**	12. **Skywarrior**	**73 feet**
4. **Vulcan 2**	**111 feet**	13. **Victor B Mk. I**	**110 feet**
5. **Bear**	**112 feet**	14. **Badger**	**112 feet**
6. **Blowlamp**	**66 feet**	15. **Valiant B Mk. I**	**114 feet**
7. **Beagle**	**68 feet**	16. **B-47 Stratojet**	**116 feet**
8. **Bison**	**171 feet**	17. **Martin B-57B**	**64 feet**
9. **Vautour 2B**	**50 feet**	18. **Backfin**	**78 feet**

"KOOL, MAN, KOOL, DADDY-O"

Scratching. Leaving contrails.

35. 35,000 feet, of course. Some of the old terms are still used.

Goofy Loopers. From the bomb delivery of the same name used by light attack pilots. Aircraft is pulled up into a 4G loop and bomb is released at a predetermined point.

Blow, Man, Blow. Also Go, Man, Go. Terms are used to inform wingmen of after-burner application.

Yo-yo. A form of clover leaf scissors executed while ascending or descending and used in jet tactics.

Kool, Man, Kool. Cut out afterburner.

IFR. Not Instrument Flight Rules in this case, but In-Flight Refueling.

Plugged in. Insertion of probe into drogue as hook-up is made with tanker aircraft.

Buddy. Light attack refueler aircraft are known as Buddy tankers.

Boards. Speed brakes.

Low Meatball. A low-placed glob of light reflected in the landing mirror, indicating that the pilot is below the glide slope on his landing approach.

Boltered. A "go-around" as they say in some flying circles.

Trapped. Arrested landing.

"Says he wants to snag the pressurisation."

20,300 2/60

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