



**SKYRAY**—This new anti-invasion plane takes its name from its resemblance to that sea creature, the manta ray. It has a delta type wing with jet engine. It is now being flight tested.

## AERONAUTICS

## Anti-Invasion Airplanes

**Our defense against bombers carrying atomic bombs is a plane which carries no guns, but which has electronic equipment to locate an enemy and automatically fire rockets.**

► THE NEW British Gloster GA-5 is Britain's supersonic answer to enemy bombers carrying atomic bombs, while the new American Starfire and Skyray are the answer in the U. S. or elsewhere if needed. Both are in the speed-of-sound class, and both are equipped with radar and other electronic apparatus to enable them in any kind of weather to locate and kill an approaching enemy bomber.

The Starfire, designed and built by the Lockheed Aircraft Corporation and known officially as the F-94C, is an evolution of the famous Shooting Star, America's first mass-produced jet airplane. In general appearance it resembles its predecessor and other well-known straight-wing jet fighters, while the new British plane is the delta-wing type with an appearance distinctive to aircraft of this type.

Delta-wing planes, being built in both America and England, have a wing surface in the shape of a gigantic triangle with a fuselage that stretches across the triangle and to the front. The new delta-wing Skyray, the Navy's speediest anti-invasion plane, is designed for use from carrier decks. It is a product of Douglas Aircraft and will be in production soon. It is able to climb rapidly to high altitudes and maneuvers well at such heights.

The new British Gloster is powered by two Sapphire jet engines with a combined thrust of 16,600 pounds. The Starfire is powered by a single Pratt and Whitney engine with a 6,250-pound thrust but is equipped with an afterburner to give additional power for rapid take-off and extra performance in combat. Both planes are long-range, day and night all-weather fighters.

Both planes are heavily equipped with radar and with electronic controls. The radar permits the pilots to "see" enemy craft in darkness or dense clouds. The British claim is that, while armament and radar equipment are secret, the new Gloster is better qualified than any other plane in the world to destroy atom bombers.

Electronic innovations in the Starfire include the new Westinghouse automatic pilot and the Sperry Zero Reader Flight director. It is one of the few fighter planes equipped with ILS (Instrument Landing System) for low-visibility landings in darkness or bad weather.

The Starfire carries no guns. Instead, it is armed with 24 air-to-air rockets, the 2.75-inch size, housed in a ring of firing tubes around the nose of the plane. It can carry additional rockets in new-type pods on the wings.

This American answer to invading enemy bombers is one of the fastest-climbing jet airplanes in ascending to bomber invasion lanes at 40,000 to 50,000 feet altitudes. It is maneuvered with the help of ground radar to the general target area, when its own radar takes over. The pilot then keeps the "pip" of the enemy plane centered on his radar screen. When the pip reaches a certain size on the screen, indicating its nearness, the pilot presses a trigger and the electronic equipment takes over to discharge automatically rockets at the proper time.

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## MEDICINE

### Epilepsy Drug May Cause Blood Disease

► A WARNING that apparently all the newer drugs for epilepsy can dangerously depress the blood-forming action of the bone marrow appears in the *Journal, American Medical Association* (Aug. 2).

The warning comes in a report, by Drs. Allen E. Hussar and Helen B. Rogers of the Veterans Administration Hospital, Tuscaloosa, Ala., of the first known direct evidence of such bone marrow damage from phethenylate, also known as "thiantoin." The patient developed the blood disease, agranulocytosis, but recovered when the drug was stopped.

Frequent blood cell counts should be made, the VA doctors advise, when any of the newer epilepsy drugs is used.

Only one which apparently does not interfere with blood cell formation in the bone marrow is the oldest of the group, diphenylhydantoin sodium, known also as Dilantin sodium.

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## MEDICINE

### Poisoning Case From Chlordane Fumes

► A CASE of poisoning from chlordane fumes, believed the first on record for this particular insecticide, is reported by Dr. G. Bruce Lemmon, Jr., of Springfield, Mo., and Comdr. Wilmot F. Pierce (MC), U.S.N., in the *Journal, American Medical Association* (Aug. 2).

The patient, a 33-year-old housewife, recovered. Her exposure to too much of the insecticide came when her apartment was sprayed during the day and she did not air it out afterwards and slept with the windows closed. She awakened about 3 a.m. coughing badly and vomiting and was taken to the U. S. Naval Hospital at San Diego.

Tests showed disturbance of liver function as well as lung involvement. The patient's fatness and "definite alcoholic tendencies" could have made her more susceptible to liver damage from the chlordane fumes, Drs. Lemmon and Pierce suggest.

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