

AERONAUTICS

New Delta-Wing Plane

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► THE new Delta-wing airplane, now under test at the U. S. Air Force base at Muroc, Calif., is another experimental craft to determine the real value of the so-called sweep-back wing which the National Advisory Committee for Aeronautics has been subjecting to wind-tunnel tests for the past few years.

As the term sweep-back is used in aviation it refers to wings whose forward edges extend backward at an angle with the body of the plane instead of at right angles as in conventional aircraft. Wind-tunnel tests indicate that the sweep-back wing presents less drag than the usual wing and is therefore perhaps desirable in planes designed for excessively high speeds.

This claim is already backed in two notable planes which recently made transcontinental passages in record breaking time. These are the Boeing Stratojet, U.S.A.F. B-47, which crossed the continent in less than four hours, and the Northrop Flying Wing, U.S.A.F. YB-49, which took a little over four hours for a transcontinental trip. Another speedy plane with sweep-back wings is the North American F-86, which holds the world's official speed record.

The new plane has a far different ap-

pearance from any of these, however, as shown on the cover of this week's SCIENCE NEWS LETTER. It resembles more the paper darts that schoolboys made and shot across the room to upset the quiet and peace of a study period. It might be said to resemble a giant bomb lying on and projecting forward from a giant equilateral triangular flat surface. In addition it has a vertical tailpiece projecting above the bomb just over the rear edge of the triangular wing surface to give stability in flight.

In addition to this radical appearance, the Delta wing has its forward edge at a sweep-back angle of 60 degrees. This is nearly twice the sweep-back angle of other planes now in use. Like other modern speedy planes, it is jet-propelled, being equipped with an Allison J-33 turbo-jet engine rated at 5,200 pounds thrust, with water injection.

The new Delta-wing plane, designed and built by Consolidated Vultee of San Diego, Calif., has been designated Model 7002 for identification. It is an experimental model, and no information has as yet been divulged relative to its possible speed or range. Tests already made indicate that this type of wing has low drag characteristics and satisfactory control in transonic and supersonic speed ranges.

Science News Letter, March 5, 1949

AERONAUTICS

Lamps for Landing System

► NEW sealed-beam lamps for use with the Civil Aeronautics Administration new slope-line approach light system for airports were revealed by General Electric. Rated at about 250 watts, approximately 600 of these lamps will be used at each installation.

The CAA slope-line approach lighting system has been adopted as standard by government authorities for installation at the commercial airports over which the Civil Aeronautics Administration has jurisdiction. This includes all the principal ports in the United States. An experimental installation at Indianapolis has demonstrated its efficiency. Eight or ten additional airports will be equipped with them in the near future, and others as soon as funds are available.

In the slope-line system, which provides a glide path as well as proper direction to the "touch" end of the runway, lighting units are placed at 100-foot intervals in "V" formation with the apex near the

landing strip. Each unit includes ten lamps, and it is in these that the new General Electric development will be used.

These units are at right angles to the approach path, and the long narrow boxes in which they are placed are at an angle of 45 degrees with the level earth and point inward on the approach path. When a pilot in the air is on the proper approach and glide path, the light units appear in two continuous lines, one on each side of the approach path. Otherwise, they appear as broken lines, somewhat like the teeth on a saw. (See SNL, Dec. 11, 1948).

In experimental work with this new approach lighting system, ordinary sealed-beam automobile headlights were used. They clearly indicated the advantages of the system over others but it was decided by CAA that lamps of greater candlepower were desirable. The new General Electric lamps, similar to the familiar automobile headlight, are of 250 watts, and have a beam spread of about 40 degrees horizon-

tally and eight degrees vertically. Like automobile headlights, they are of all-glass construction, and have the high efficiency characteristics of sealed-beam type of lamp.

Science News Letter, March 5, 1949

MEDICINE

Find Clue to Eye Disease In Premature Infants

► TOO MUCH vitamin and iron may be a possible explanation for the increase in recent years of a disease which strikes at the eyes of premature infants.

The disease is similar to congenital cataract but differs from it in that there are blood vessels in the membrane film located behind the crystalline lens of the eyes. The medical term for the blinding disease is retrolental fibroplasia.

Drs. V. Everett Kinsey and Leona Zacharias, of the departments of ophthalmology and obstetrics and the Howe Laboratory of Ophthalmology at Harvard Medical School, by the process of elimination, found that the disease was most prevalent in certain localities and that its increase in these places could be correlated with certain treatment given to the infant.

This treatment consists of giving premature infants multiple vitamin supplements mixed with water instead of oil, which seems to increase the absorption of vitamin A, and an increase in iron administration.

Although their findings seem to point to the treatment as contributing to the increase of the disease, they caution that it does so indirectly and not through a direct toxic effect.

Their survey covered the 10-year period, 1938 through 1947. Parents of infants born at the Boston Lying-in Hospital and the Providence Lying-in Hospital, where Drs. Kinsey and Zacharias are staff members, were contacted. Of the 372 babies weighing four pounds or less at birth who were born at the Boston hospital, 53 developed the disease.

In the Providence hospital there were 246 premature infants during the years 1941 through 1947, of which 16 developed the disease.

The scientists expect to test their theory in conjunction with the staffs of the Boston Lying-in Hospital and certain other hospitals, by omitting the iron and also the multiple vitamin preparation mixed with water in treatment of premature infants. Instead, the iron will be given when the infant is between two and three months of age and vitamin D will be substituted for the new vitamin treatment. In addition it is planned to supplement the diet with vitamin C daily. No vitamin A or vitamin B-complex will be given. The results will be published as soon as enough material exists for making a valid conclusion.

The investigators present their study in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Feb. 26).

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