

AERONAUTICAL ENGINEERING

Ram-Jet For More Speed

A new engine so light that one man can lift it is predicted to make planes beat the sun as they cross the horizon. Ram-jet is of simple construction.

See Front Cover

➤ A RAM-JET airplane that will beat the sun by traveling double the speed of sound, taking only 15 minutes to go from New York to Pittsburgh, was predicted by Dr. F. W. Schumacher, associate director of Esso Laboratories.

The pilot would be able to see the sun set in New York, rise over the horizon and then set again in Pittsburgh.

Flying in the stratosphere, the ram-jet motor will require only a tenth of the fuel needed just above sea-level. This aircraft propulsion unit was proved practical by the Navy's Bumblebee supersonic anti-aircraft weapon designed to counter Japanese suicide planes.

Much simpler in construction than conventional reciprocating engines, the ram-jet in its 1,400 miles per hour form develops one horsepower for each half ounce in weight compared with about a pound for ordinary engines. A ram-jet developing 2,000 horsepower will be so light that one man can lift it.

Flame shoots from ram-jet shown on the cover of this SCIENCE NEWS LETTER. About six inches in diameter, one jet releases heat equivalent to that of 300 domestic oil burners.

New fuels are being research-made for ram-jet use, and military develop-

ments underway promise superspeedy mail, express and passenger transport for the future.

Refrigerated as well as pressurized cabins will be needed. Without cooling, passengers would be heated to 300 degrees Fahrenheit at 1,400 miles per hour speeds, while the thermometer would rise to 650 degrees at 2,000 miles per hour.

Before ram-jet power plants are used, there will be commercial use of a combination of propeller and jet propulsion powered by gas turbine engines.

Three to ten years or longer will be needed to apply turbine power to commercial flying, depending upon the amount of research expended, in the opinion of Dr. Philetus H. Holt, Esso's assistant research director. Gas turbine and jet are combined now on the famous P-80 fighter planes.

Long flights of 3,000 miles will take six to seven hours instead of 12 to 14 hours as at present, Dr. Holt predicted.

Fuels of the future are being developed at the Standard Oil Company laboratories in Bayway, N. J., shown recently for the first time since the war. With airplane flying at great stratosphere heights, fuels must have a low freezing point to keep flowing at the intense cold there.

Science News Letter, April 26, 1947

MEDICINE

Preventing Smallpox

➤ ONE case of smallpox in New York is costing approximately \$1,000,000.

Chief items on this huge medical bill are the vaccinations for about half a million persons and the health detection work necessary in tracking down persons who might have caught the disease from the first case and be spreading the germs further.

Mayor William O'Dwyer of New York City estimates the cost of an emergency program of free vaccinations at \$100,000. But the mayor has urged that all the millions of residents of the city be vaccinated. Health authorities believe

thousands will be vaccinated by their own physicians and the total cost of the campaign will be nearer \$1,000,000.

This money is being spent to protect New York residents and millions of other people throughout the nation. But in one sense, it is a waste of money, because smallpox is a preventable disease.

The million-dollar case was brought into the city from outside the country. Many persons were exposed to the germs before it was known that the first patient had smallpox. Some of them caught the disease and others may have caught

it from them.

Three victims have died of smallpox, and New York's all-out war on the disease which can be prevented will be an expensive fight.

Smallpox can be prevented by correctly done vaccination. Yet there are many persons in the United States who have never been vaccinated, and many more unvaccinated in other countries, even though doctors and health authorities the world over know that vaccination protects against smallpox. The protection does not always last a lifetime, so authorities advise revaccination after five years, particularly for those likely to be exposed to the disease.

Science News Letter, April 26, 1947

SCIENCE NEWS LETTER

Vol. 51 APRIL 26, 1947 No. 17

The weekly summary of Current Science, published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N. W., Washington 6, D. C., North 2255. Edited by WATSON DAVIS.

Subscriptions—\$5.00 a year; two years, \$8.00; 15 cents a copy. Back numbers more than six months old, if still available, 25 cents.

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Entered as second class matter at the post office at Washington, D. C., under the Act of March 3, 1879. Established in mimeographed form March 18, 1922. Title registered as trademark, U. S. and Canadian Patent Offices. Indexed in Readers' Guide to Periodical Literature, Abridged Guide, and the Engineering Index.

The New York Museum of Science and Industry has elected SCIENCE NEWS LETTER as its official publication to be received by its members.

Member Audit Bureau of Circulation. Advertising Representatives: Howland and Howland, Inc., 393 7th Ave., N.Y.C., Pennsylvania 6-5566, and 360 N. Michigan Ave., Chicago, STate 4439.

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