

AERONAUTICS-ENGINEERING

# More Jet Engines

**Peacetime military fleet of 15,000 and 3,500 commercial planes assures large gas turbine aircraft industry. Two jet engines shown for first time.**

## See Front Cover

► PEACETIME production of gas turbine aircraft engines—jet and propeller drive—will rapidly become dominant in the high powered and high speed airplane fields, both military and commercial, George H. Woodard of the Westinghouse Electric Corporation stated.

Military air fleets totaling about 15,000 planes will be required for the maintenance of national security, while civil transport planes may number 3,500 within the next five years. Power will be derived for these planes not only from the usual reciprocating engines but from gas turbine engines as well, Mr. Woodard declared.

At a demonstration where two of the torpedo-shaped, axial-flow jet propulsion gas turbine engines were shown for the first time, it was learned that an American "buzzless" buzz bomb had

been designed to use a nine-and-a-half-inch diameter turbo-jet powerplant. The "Yankee," a small, high powered engine, was installed in the Navy's fastest plane, but later engines, still military secrets, are considered substantially better for weight and power. Through the jet orifice, shown on the front cover of this SCIENCE NEWS LETTER, a sizzling 50-ton-an-hour blast of combustion gases streams at more than 1,200 miles an hour to give the engine its propulsive thrust.

Although jet engines were the main concern during the war the gas turbine with propeller drive will be of even greater importance for peacetime needs. High powered and high speed planes will use the turbine type engines while the reciprocating engine will remain dominant in small and medium-sized planes.

Jet engines will be used exclusively

when speed is important above all other considerations. Propeller-drive gas turbines will be used in planes operating up to 550 miles an hour when high power combined with efficient operation is required.

Mr. Woodard predicted that gas turbine engines of 5,000 to 8,000 horsepower will be practicable within the next few years. Jet propulsion will be important but the useful power from a gas turbine's combustion gas will mainly be used to drive a propeller.

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ARCHAEOLOGY—GEOLOGY

## Mexican Expedition Seeks Early Evidence of Man

► STUDY of chronological records antedating historic pottery periods is the main objective of a geological and archaeological expedition headed by Dr. Hellmut de Terra, now at work in the region of the Valley of Mexico.

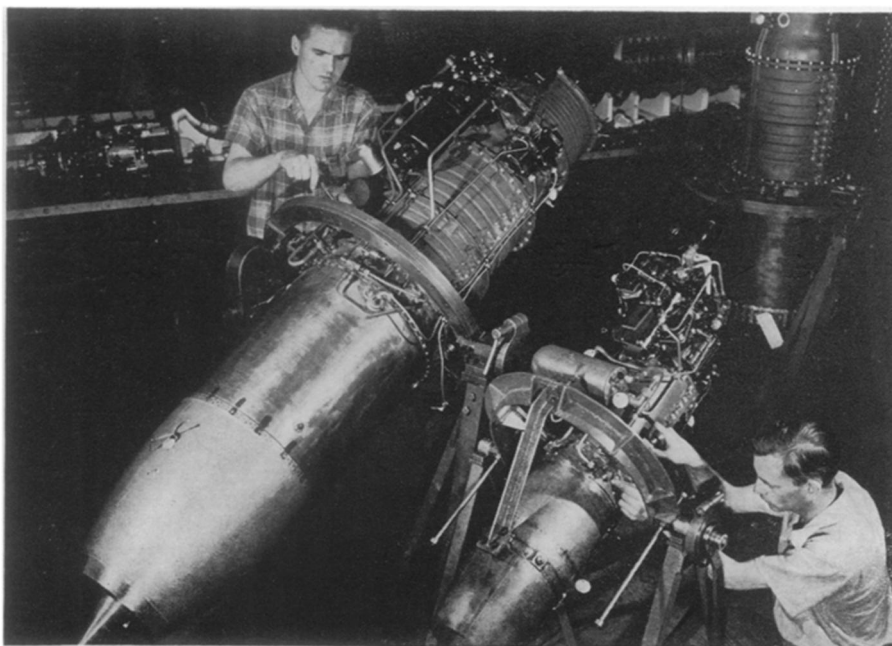
The investigation is being carried on under a grant from the Viking Fund, Inc., of New York and in collaboration with the Carnegie Institution of Washington. Dr. de Terra was recently appointed temporary research associate of the Institution so that the geological studies might be correlated with development of human industry in that region.

Previous investigations in the Valley of Mexico suggested glacial and post-glacial formations on the slopes of the famous Mexican mountain, Popocatepetl. The present investigations will attempt to gain a clearer idea as to the age of the basin underlying the Valley. In the course of the work early Pleistocene or recent remains of human industry may be found.

It is hoped that such discoveries will determine what relationship there is between the early evidences of man in that region. Footprints discovered in Nicaragua by an earlier expedition indicated a much earlier human occupancy of the area than was before supposed. Such evidence may be substantiated by the investigations now going on.

Information may be forthcoming as a result of this expedition which will also connect human developments in the Valley with our own Southwest. Archaeologists and anthropologists have long been interested in such a tie-up. They may soon have an answer to this baffling question.

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**BIG AND SMALL**—The jet engine on the left was designed to power Navy combat planes, the "baby" one on the right was originally designed to power an American version of "buzzless" buzz bomb. Some version of this engine may see service as a power source for aircraft cabin supercharging, wing de-icing and driving helicopters.