

AERONAUTICS

No Personal Jet Planes

Some jet engines may be used on commercial planes 10 years from now, but private planes will still have propeller-type engines.

► HIGH-SPEED jet planes may continue to break the speed records, but your own personal plane of 1957 will probably still use the familiar propeller-type reciprocating engine. This is the prediction of E. S. Thompson, aviation official of the General Electric Company.

Some jet engines will be used on commercial planes a decade from now, the aircraft engineer believes. But ten years from now he forecasts, military planes still will be the main users of the new high-speed propulsion units.

Large commercial planes and bombers will use jets, as will military pursuit planes. Rockets may be used on some pursuit planes, but the main use of rockets and the "flying stovepipe," ram jet, will still be on missiles and aircraft without human crews.

Here is the way aircraft will be powered in 1957, as foreseen by Mr. Thompson: Small personal planes and feeder line commercial craft will still use reciprocating engines. Some executive type or business planes will have the so-called "prop-jet," with a gas turbine engine driving propellers.

Medium-range commercial engines will have turbosupercharged engines and a few may have the prop-jet. Medium-sized, long-range commercial planes will use a compound engine and some turbo-jets, while the larger commercial aircraft will use prop-jets and some turbo-jets.

Military aircraft will use more jets. Medium-range bombers will have turbo-

jet engines while longer range bombing craft will probably have compound engines, with the largest using prop-jets. A few may have turbo-jet engines. Pursuit planes of a decade from now will have turbo-jets and some rockets.

The reason jets will not be used on your personal plane of a decade from now is a matter of economy, Mr. Thompson explains in the *Coast Artillery Journal* (July-Aug.). Increased costs of several jet types of engine will not be practical for small, irregularly-used personal planes. Turbo-jets are inefficient at speeds below 400 miles per hour, and rockets are out of the question, even for assisting take-offs, because of high speeds and extremely high fuel consumption.

Jets will become increasingly common in planes, but if you buy a personal plane in 1957, you will probably find it has today's conventional type of engine.

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PHYSIOLOGY

Vitamin C Needed For Adaptation to the Cold

► FOR THOSE who have pulled out of the heat wave enough to start thinking about winter weather problems, here's a tip: vitamin C, the orange, lemon and tomato juice vitamin, will help your body get used to and withstand severe cold.

The winter weather tip comes from studies by Drs. Louis-Paul Dugal and Mercedes Therien of Laval University

in Quebec. Both rats and guinea pigs were used in their studies. Guinea pigs, like man, depend on food for their vitamin C. Rats, unlike humans, can make it in their own bodies.

The amount of vitamin C in the body tissues of rats kept in the cold, between about 24 and 39 degrees Fahrenheit, increased as much as 80% over the amount in the tissues of rats kept at room temperature. So the rats evidently made more vitamin C to help their bodies adapt to the cold. Rats dying in the cold have a very low content of the vitamin in their tissues.

The guinea pigs, more than 600 of them, were divided into nine groups. Each group got a different sized daily dose of the vitamin. Half of each group was kept at room temperature, the other half in the cold. The ones at room temperature all behaved in the same way and all thrived. But the only ones able to adapt to the coldest temperature (about 17 degrees Fahrenheit), were the ones that got the largest daily dose of the vitamin. This dose was 150 times the daily dose needed to prevent scurvy in the animals.

The groups of guinea pigs were eliminated or lost weight one by one as the temperature was lowered, according to the amount of the vitamin they were given.

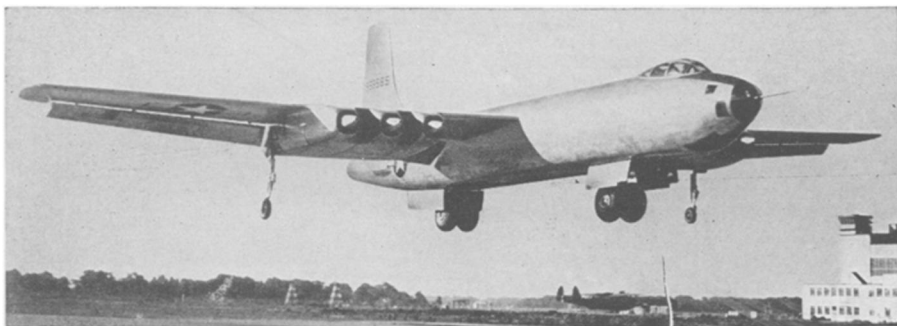
A relation between adaptation to cold and the amount of vitamin C in the animals' body tissues, particularly the adrenal glands, was observed. This, together with work by other scientists, suggests that vitamin C is beneficial to all animals unable to make the vitamin in cases where the response of the animal to some sort of stress involves activity of these glands. The stress may come from intense work, poisonous substances and other damaging agents that cause an "alarm reaction" in the adrenal glands.

Details of the vitamin C studies are reported in the *Canadian Journal of Research* (June).

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Spain, Italy, Greece and Portugal are the principal olive-producing countries in Europe in the order named; Europe is responsible for 85% of the world's supply of olive oil.

At the present rate the U. S. Civil Aeronautics Administration will have the country blanketed in two to three years with very high frequency (VHF) radio communication and radio ranges replacing the low-frequency type.



MARTIN XB-48—This is the largest multi-jet bomber of conventional design ever built for the Army Air Forces. It has six jet engines.