Press Release

October 6, 1947

RESEARCH INDICATES PROMISE OF ULTRA-HIGH SPEEDS WITH RAM JETS

The possibility of leaving New York at noon and arriving in San Francisco an hour before noon, Pacific time, is in the offing if research objectives on the ram-jet aircraft engine are attained, it was suggested here today by scientists of the National Advisory Committee for Aeronautics.

A demonstration of ram-jet flight research was made here today by NACA pilots before a gathering of leading industrial and military engineers who were invited over a three-day period to inspect the facilities of the NACA's Flight Propulsion Research Laboratory and to be brought up to date on the latest advances in aircraft propulsion research.

The ram-jet engine is one of the simplest means ever devised for propelling aircraft. Frequently dubbed the "Flying stovepipe" if consists in simple form of a chamber, open at both ends containing fuel injection nozzles and a burner similar to a gas burner on a kitchen range. Air is compressed upon entry into the chamber, (the higher the forward speed, the greater the compression) mixed with a spray of fuel and ignited at the burner. The exploded gases are ejected rearward as in jet propulsion causing the aircraft to be propelled forward.

Because compression increases with forward speed, the ram-jet appears most attractive for supersonic flight within the range of atmosphere. In fact, it is indicated from theoretical computations, verified by experimental research, that a simple, very light-weight ram-jet engine

would produce at twice the speed of sound a thrust equivalent to that produced by seven or eight of the largest reciprocating engines with propellers.

Despite the apparent simplicity of the device which holds so much promise for high-speed travel, a considerable amount of intensive, systematic research is required before a practicable ram jet can be developed. Among the problems are: the maintenance of combustion in a high velocity air stream; improvement of combustion efficiency; more effective conversion of velocity energy to pressure energy; and a satisfactory means of getting a ram-jet equipped airplane up to the speed required to efficiently compress air by ram (from 400 mph). Notable advances have recently been made on all these problems causing belief that the ram jet may eventually prove feasible of successful development.

So far, no aircraft has yet been propelled by a ram-jet engine. The NACA demonstrated flight research techique today by suspending a small ram-jet engine beneath the fuselage of a Northrop P-61 airplane. The main purpose of this test arrangement is to study means of starting combustion and controlling the flame in a relatively high velocity airstream.

The particular ram-jet used in the demonstration had a narrow rectangular cross section and was mounted inside a small wing section. The rectangular ram jet engine has several advantages, among them being easier construction of a variable area discharge nozzle, easier construction of the flame holder (a device for keeping the flame from being blown out by the air as it rushes through the engine), and adaptation to location entirely within the wing of an airplane.

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For Release A.M., October 10, 1947.

RESEARCH INDICATES PROMISE OF ULTRA HIGH SPEEDS WITH RAM JETS

Cleveland, Ohio, October 10. The possibility of leaving New York at noon and arriving in San Francisco an hour before noon, Pacific time, is in the offing if research objectives on the ram-jet aircraft engine are attained, it was suggested early yesterday by scientists of the NACA.

A demonstration of ram-jet flight research was made here today by NACA pilots before a gathering of leading industrial and military engineers who were invited over a three-day period to inspect the facilities of the NACA's Flight Propulsion Research Laboratory and to be brought up to date on the latest advances in aircraft propulsion research.

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Because compression increases with forward speed, the ram jet appears most attractive for supersonic flight within the range of the atmosphere. In fact it is indicated from theoretical computations, verified by experimental research, that a simple, very light-weight ram jet engine would produce, at twice the speed of sound, a thrust equivalent to that produced by 7 or 8 of

the largest reciprocating engines with propellers.

Despite the apparent simplicity of the device which holds so much promise for high-speed travel, a considerable amount of intensive, systematic research is required before a practicable ram jet can be developed. Among the problems are: the maintenance of combustion in a high velocity air stream; improvement of combustion efficiency; more effective conversion of velocity energy to pressure energy; and a satisfactory means of getting a ram-jet equipped airplane up to the speed required to efficiently compress air by ram (from 400 mph). Notable advances have recently been made on all these problems causing belief that the ram jet may eventually prove feasible of successful development.

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