



**TEST VEHICLE:** This is the Lockheed X-7, a supersonic test vehicle which for the past several years has been playing a major role in the development of new ramjet engines for use in missiles. The X-7 is customarily launched from a mother B-29 and after its fuel is exhausted, it is recovered by parachute. A rocket booster is used to get the X-7 up to efficient ramjet speed.

vices and stocked engine spares in connection with Capital Airlines' Dart-powered Viscounts.

Capital's recent order for 14 Comets (Avons), and the manufacture in the U.S. by Fairchild of the Fokker F-27 Friendship (Darts), will have a direct influence on the Canadian aircraft industry, according to R. M. Kendall, general manager for Rolls-Royce of Canada. The spares and service facilities that have been established at the Montreal plant to support the Dart engines now in service in the U.S. and Canada, will apply to the Avon as well.

## New Orenda Computer

An IBM Type 650 high speed electronic computer that does mathematical calculations five to 100 times faster than the previously used electronic card program calculator, has been installed by Orenda Engines Ltd. The fourth of its kind in Canada, the computer will be used to work out mathematical investigations of all phases of jet engine design, including aerodynamics, performance, stressing and vibration.

It adds, multiplies, subtracts, divides; it can work trigonometry, logarithms and more complicated mathematical operations. It can store 20,000 digits at a time, and consumes 15 kilowatts of electric power which is dissipated as heat.

The complete design of a compressor blade airfoil section originally took an engineer one week using a slide rule and desk calculator. This was cut to three hours when the card program calculator became available. Now, with the new machine, the entire process takes five minutes.

## Contracts Awarded

Contractors awarded business in excess of \$10,000 by the Department of Defence Production during the period June 16 to July, 15, 1956, include the following. The list does not include orders placed by the Department outside Canada, or with other agencies, and increases in orders placed earlier — nor do orders classified as secret appear here.

(Names appearing in bold face are current *Aircraft* advertisers.)

**Avro Aircraft Ltd.**, Toronto, \$660,000 for repair and overhaul of airframes and airframe spares during period April 1/56—May 31/57.

**Bristol Aero Engines Ltd.**, Montreal, \$1,482,000 for repair and overhaul of aero engine components during period April 1/56—March 31/57.

**Bristol Aero Engines (Western) Ltd.**, Vancouver, \$236,000 for repair and overhaul of aero engines and engine components during period April 1/56—March 31/57.

**Bristol Aero Engines (Western) Ltd.**, Vancouver, \$198,000 for repair and overhaul of aero engine components during period April 1/56—March 31/57.

**Bristol Aero Engines (Western) Ltd.**, Vancouver, \$75,000 for aero engine spares and tools during two fiscal years ending March 31/57.

**Canadian General Electric Co. Ltd.**, Toronto, \$28,528 for radar spares for armament systems.

**Canadian Pratt & Whitney Aircraft Co. Ltd.**, Longueuil, Que., \$655,000 for repair and overhaul of aero engines and engine

components during period April 1/56—March 31/57.

**Canadian Pratt & Whitney Aircraft Co. Ltd.**, Longueuil, Que., \$150,000 for repair and overhaul of helicopter airframes and airframe components during period April 1/56—March 31/57.

**Canadian Pratt & Whitney Aircraft Co. Ltd.**, Longueuil, Que., \$25,000 for aero engine spares, accessory spares and tools during period Feb. 1/56—March 31/57.

**Cossor (Canada) Ltd.**, Halifax, \$15,000, for electronic spares and test equipment during period April 1/56—March 31/57.

**Curtiss-Wright of Canada Ltd.**, Montreal, \$147,180 for aero engines and metal shipping containers.

**The de Havilland Aircraft of Canada Ltd.**, Toronto, \$25,000 for repair and overhaul of airframes and airframe components during period April 1/56—March 31/57.

**Fairey Aviation Co. of Canada Ltd.**, Dartmouth, N.S., \$220,000 for airframe spares.

**Imperial Oil Ltd.**, Ottawa, \$164,789 for aviation gasoline during period 1/56—March 31/57.

**Lucas-Rotax Ltd.**, Town of Mount Royal, Que., \$20,000 for aero engine accessories and accessories spares during period April 1/56—March 31/57.

**Orenda Engines Ltd.**, Toronto, \$9,400,000 for repair and overhaul of gas turbine aero engines and engine components during period April 1/56—March 31/57.

**Railway & Power Engineering Corp. Ltd.**, Montreal, \$38,150 for aircraft hardware.

**Spartan Air Services Ltd.**, Ottawa, \$16,800 for radar altimetry surveys.

**Standard Aero Engine Ltd.**, Winnipeg, \$659,000 for repair and overhaul of aero engines and engine components during period April 1/56—March 31/57.

**Abercorn Aero Ltd.**, Montreal, \$14,074 for aircraft cleaner.

**Aviation Electric Ltd.**, Montreal, \$18,869 for aircraft spares.

**Avro Aircraft Ltd.**, Toronto, \$448,000 for aircraft retrofit modification kits during period April 1/56—March 31/57.

**Bristol Aero Engines Ltd.**, Montreal, \$195,000 for reconditioning and preservation of engines during period ending March 31/57.

**Canada Ropes Ltd.**, Vancouver, \$14,950, for target towing apparatus.

**Canadian Car & Foundry Co. Ltd.**, Montreal, \$220,307, for airframe spares.

**The de Havilland Aircraft of Canada Ltd.**, Toronto, \$30,000 for repair and overhaul of airframes and airframe components during period April 1/56—March 31/57.

**The de Havilland Aircraft of Canada Ltd.**, Toronto, \$10,000 for repair and overhaul of aero engines and engine components during period April 1/56—March 31/57.

**Eastern Provincial Airways Ltd.**, Gander, Nfld., \$103,111 for charter of aircraft.

**B. F. Goodrich Canada, Ltd.**, Kitchener, Ont., \$18,351 for aircraft spares.

**J. W. Lawrence Radiators Ltd.**, Montreal, \$220,000, for repair and overhaul of aircraft cooling equipment during period April 1/56—March 31/57.

**Lucas-Rotax Ltd.**, Town of Mount Royal, Que., \$20,000 for repair and overhaul of installed aero engine fuel control units during period April 1/56—March 31/57.

**Prairie Equipment & Radiator Ltd.**, Winnipeg, \$30,000, for repair and overhaul of aircraft cooling equipment during period April 1/56 to March 31/57.

**Purolator Products (Canada) Ltd.**, Toronto, \$12,709 for aircraft spares.

**Railway & Power Engineering Corp. Ltd.**, Montreal, \$21,642 for aircraft spares.

**Vertol Aircraft Co. (Canada) Ltd.**, Arnprior, Ont., \$40,000 for helicopter airframe spares during period July 1/56—March 31/57.