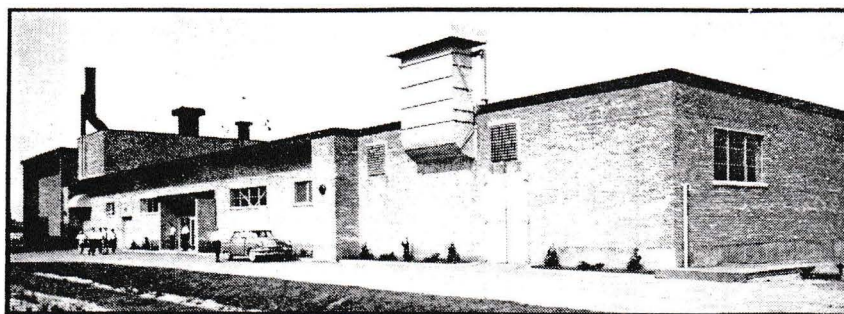


which in turn was followed by the Otter. At the present, the DHC-4 Caribou is being developed.

This firm does little that could be described as research work, though it was active in the now dormant Velvet Glove program. Wind tunnel testing of its designs is carried out at the NRC's Montreal Road Laboratories.

**Aviation Electric:** Although this company does not regard itself as a design and research company, its main activities of sales, overhaul and manufacture of a wide range of aircraft instruments and aircraft accessories necessarily involves it in a certain amount of design, development and research work. In this direction, recent efforts have been highlighted by the development of the Borden Tube (Canadian manufacture), research, design and manufacture of the AEL Ball Resolver (for use in an automatic navigational computer) and research, design, development and manufacture of (Torpedo) course controls.

The company's research and development activities are classed as part and parcel of its engineering facilities, which include an Engineering Department, Engineering Model Shop, Chemical Laboratory, Metallurgical Labora-



★ This is Orenda Engines' Sir Thomas Sopwith Turbine Research Laboratory.

tory and a wide range of environmental test equipment, all of which are available for use in a research and development capacity.

**Computing Devices of Canada:** Essentially a research and development organization, this company employs about 500, a large proportion of which are degree-level technical personnel. Main activities in the modern Ottawa plant of CDC include engineering and development in the fields of simulation, automation, computers, instrumentation, semiconductors, guided weapons, and electronics. Among the current projects, other than those of a classified nature, are the development of a navigation computer for the CF-105 Arrow; the Antac navigation

system for the CP-107 Argus; a radar spectrum analyzer; a velocity measurement system for projectiles; a radar test set.

CDC's Data Processing Centre has the latest analog and digital computer and data reduction facilities.

★ **Canadian Aviation Electronics:** This company's main research and development efforts are in the areas of computers, simulation, stability and control, and fire control. Specific projects include: CF-100 flight and weapons system simulation; precision servos; airborne instruments; airborne armament systems; airborne communications and remote control systems; transistorized power supplies; transistorized products for aircraft use. Personnel engaged in this work number about 30.

★ **Dowty Equipment of Canada:** Dowty has a long development record in the aircraft undercarriage and hydraulic field. For instance, it developed the main and nose undercarriage for the CF-100 and is performing a similar function in connection with the main undercarriage of the Avro CF-105 Arrow. This development activity also embraces a very wide variety of aircraft hydraulic components. The Ajax, Ont., plant is equipped with many types of hydraulic test equipment to assist in this development work. In connection with its undercarriage development projects, Dowty of Canada has installed and put into operation a large undercarriage drop test rig, complete with cathode ray oscillograph equipment, capable of testing undercarriages for aircraft up to 175,000 lb. gross weight.

**Lucas-Rotax Ltd.:** This company is well-established as a Canadian development facility for aircraft fuel system, electrical, hydraulic, and combustion equipment. Projects embrace fuel pumps and controls, reheat controls, starting equipment for aircraft gas tur-

(Continued on page 102)

## ★ THE CF-105 WEAPON SYSTEM ★

Appointment of three Canadian companies as subcontractors for engineering services relating to the Avro CF-105 electronic weapon system which is under development by the Radio Corp. of America and Minneapolis-Honeywell Regulator Co., has been announced by the two U.S. firms.

The appointments reflect a primary objective of the CF-105 electronic system development program to make maximum use of Canadian facilities and to develop Canadian industry potential in the field of systems engineering and production.

The Canadian subcontracts have been assigned to RCA Victor Co. Ltd., Montreal; Honeywell Controls Ltd., Toronto; and Computing Devices of Canada Ltd., Ottawa.

It will be recalled that a research and development contract for the CF-105 electronic weapon system was awarded to RCA last fall by the USAF, acting on behalf of the Canadian Department of Defence Production. At that time, it was announced that as much as possible of the subcontract work in connection with the project would be farmed out to Canadian companies.

The USAF contract assigns to RCA full responsibility for the development of a complete electronic system of fire control, navigation and communication, and an integrated

automatic flight control system. Minneapolis-Honeywell's Aeronautical Div. is working with RCA on an associate basis, with responsibility for the development of the automatic flight and other system controls.

Certain portions of the subcontracted engineering services will be performed in Canada. Other portions will require assignment of Canadian engineers to RCA and M-H facilities in Camden, N.J., and Minneapolis, Minn., respectively.

RCA Victor Co. Ltd. will perform various engineering studies and provide engineering services in connection with electronic portions of the CF-105 integrated weapon system.

CDC has been awarded a subcontract in connection with the development of an automatic dead reckoning navigation system, which will be integrated with the electronic weapon system. The navigation system will automatically advise pilots of their distance from target or base and of required courses to reach specific destinations.

The subcontract award to Honeywell Controls Ltd., made by the parent M-H company, involves engineering services in connection with the development of automatic flight controls.