

equipment previously imported, such as pylons, tires, wheels, drag chutes, brakes and instruments. Under an agreement between the Governments of Canada and the United States a number of *F-104G* aircraft, associated support equipment and initial spares are to be produced in Canada as a \$200,000,000 mutual aid program. The United States is to pay three-quarters of the cost and Canada is to pay one-quarter.

Deliveries of *CC-106* long-range transport aircraft were completed in 1961. Production of the *Caribou Mk.I* aircraft continued during the year. Seventy-three of these Canadian-designed aircraft had been sold to the end of 1961, and in the first quarter of 1962 an order for an additional 53 was received from the United States. Preliminary discussions and negotiations for the production of a new jet trainer, the *CT-114 (CL-41)*, began late in 1961.

Twenty-four *CH-112 (Hiller UH-12E)* light observation helicopters and four *Cessna L-19L* aircraft were delivered during 1961. Orders were placed for a small number of *CH-113 (Vertol 107-II)* heavy helicopters, with deliveries scheduled for 1963.

Moderate activity continued on aircraft engine production. Approximately 100 *J-79-7* turbo jet engines for the *CF-104* aircraft were delivered in 1961. Preparatory work was started on the production of *J-79-11A* engines for the *F-104G* mutual aid aircraft. Orders were placed for a small quantity of *T-58* turboshaft engines for use in search and rescue helicopters.

In the area of research and development, extensive development was done on the proposed Canadian manufacture of a photographic reconnaissance pod for external fitment to the *CF-104* aircraft. Some other NATO countries have indicated an interest in this pod. Contracts were issued for an earth orbital vehicle escape technique study for the United States Air Force, for development of the *CL-91* high mobility tracked vehicle for the United States Army, and for development of the *CL-89* surveillance and target acquisition system.

Research and development programs were also undertaken in co-operation with Canadian manufacturers. One was a study of the feasibility of the design of an all-weather anti-submarine hydrofoil craft and the other was the development and testing of a high lift wing system for a short take-off and landing (STOL) fighter aircraft. The *PT-6* turboshaft engine passed an official 50-hour preliminary flight rating test and was being flown in two aircraft. Development continued on a 600-hp. gas turbine engine for the United States as a possible replacement for diesel engines in some applications.

Electronics.—Production of aircraft electronic equipment continued to be a major sector of the electronics program. Canadian production was under way on such items as the NASARR system of fire control and terrain avoidance, bomb toss computers, air data computers and sight optical display and computer equipment for the *CF-104* aircraft. Planning was begun to ensure an adequate supply of electronic items for the *F-104G* aircraft to be produced under a Canada-United States mutual aid program. Requirements of other governments, particularly for doppler navigation equipment and position and homing indicators, contributed to the increased production of aircraft electronic equipment.

Production and installation were completed on the microwave air defence communication system (ADCOM) for the Royal Canadian Air Force. Installation of additional heavy radars and their data processing equipment for the general air defence network in Canada was continued. The CADIN/SAGE leased line communications program was about two-thirds completed by the end of 1961. All major items of equipment for the Canadian Army's main communications control centre were under contract. Contracting and production continued on equipment for the ten provincial communications centres and the National Survival Attack Warning System. A beginning was made on leasing communication facilities for this program.

Production of sonar and sonobuoys continued, while production of gyro compasses, logging equipment, and plotting tables for the Royal Canadian Navy was completed. Plotting tables were also in production for the United States Navy. Variable depth sonars