

THE INDUSTRY

Caribou Maiden Flight

The de Havilland Canada DHC-4 Caribou STOL transport made its first flight on the morning of Wednesday, July 30. The new aircraft was airborne for about one hour.

The Caribou had originally been taken out on the runway only for taxi trials, but during the course of these DHC Chief Engineering Test Pilot George Neal decided it felt ready to fly and lifted it into the air. Second pilot on the flight was Dave Fairbanks.

Orenda Contract Ends

In a brief ceremony at the Malton plant of Orenda Engines Ltd. in late June, the last Orenda engine on Canadian government contract was turned over to the Hon. Raymond O'Hurley, Minister of Defence Production, by Earle K. Brownridge, Orenda executive vice president & general manager. Mr. O'Hurley in turn, handed the engine over to Air Vice Marshal C. L. Annis, AOC of Air Materiel Command. The engine was number 3,794.

Of this number, 3,446 are still in service with the RCAF in both CF-100 and Sabre aircraft. The first production Orendas weighed 2,700 lbs. and produced 6,400 lbs. thrust. The last

mark to be built weighed 2,300 lbs. and had boosted its power to 7,500 lbs. thrust. The manufacturing firm will now devote its production lines to Iroquois jet engines.

Automation for Defence

Electronic equipment intended to automate the Canadian air defence system is being ordered by the government.

The equipment, designed to speed up the collection and channelling of information supplied by the warning lines in the far North, will amount to millions of dollars in the next few years. At the present time, the same job is done by direct line telephone messages. In the future, it will be accomplished by electronic computers and other equipment which the advent of missiles and faster interceptors has made necessary.

Although the new equipment is not specifically intended for the American SAGE System (Semi-Automatic Ground Environment), Defence Department officials say that it could be incorporated in such a system. A single SAGE installation in the United States costs about \$7 million. An RCAF official has stated that the integration of U.S. and RCAF Air Defence Commands under NORAD

necessitates the introduction of a system similar to SAGE in Canada.

TCA Go Home!

The giant new overhaul and repair facility which TCA plans to establish in Montreal is giving a number of Canadian aircraft industry members some sleepless nights over the effect it will have on the business of existing overhaul and repair contractors.

The smaller shops are particularly worried over reports that TCA intends to solicit RCAF repair and overhaul work in competition with private business.

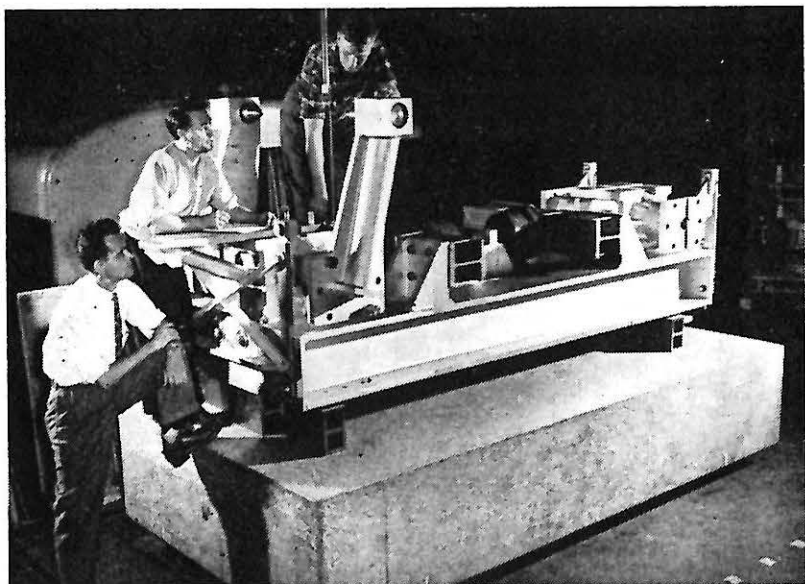
It is pointed out that the installation of an overhaul and repair facility on the scale envisaged by TCA appears to run counter to the policies of other major airlines where the trend is increasingly to subcontracting of such work to specialist companies. There are, it is further emphasized, Canadian companies capable of doing much of the work planned for the new TCA facility, in a competent and efficient manner.

Dart Life Extended

The approved overhaul life of the Dart turboprop engines which power TCA's Viscounts has been extended to 2000 hours by the DoT. This is the longest period between overhaul granted by any country's government for a gas turbine engine. When TCA started Viscount operations in April 1955, the approved overhaul life of the Dart was established at 1050 hours. By January of 1958, it had been extended to 1800 hours.

These advances have been made possible by the very low engine failure rate which, for TCA, is .09 per thousand engine hours flown. The failure rate for Capital Airlines in the United States is .04. This version of the Dart has completed more than 5 million hours in scheduled passenger flights; approximately 45% of this figure being accumulated by operators in North America.

Meanwhile, the Dart R.Da.10 turboprop has successfully completed a 25-hour flight approval test at a military rating which provides 3200 shp for take-off boosted with water methanol. The engine has a normal rating of 2,650 shp. The test was run under more stringent conditions than required in a normal type test. That is, 56.6% of the test was run at maximum continuous power as compared



ENGINE SUPPORT ASSEMBLY: Built by Orenda Engines Ltd., Malton, Ont., this unique engine support assembly will hang suspended in the high altitude test tunnel. The entire assembly weighs some 6000 pounds and was made in the tool room of Orenda's Plant 2. Tool Planner Mel Pattison (left) watches as toolmakers Tom Barnes and John Hemus (right) check the height of the support.

with 30% required by regulations.

This test demonstrated that the Dart R.Da.10 can be approved at this rating to permit flying in prototype aircraft. For this reason, Rolls-Royce are currently offering the engine to aircraft manufacturers for use in military aircraft.

Manufacturing Agreement

Douglas Randall Ltd., Scarborough, Ont., has been authorized to manufacture and market in Canada the Bourns lead-screw type potentiometers.

These potentiometers, trademarked "Trimpot", a military potentiometer used primarily in guided missiles and aircraft, and "Trimit", which is a commercial potentiometer for use in computers, instruments and similar ground equipment, are manufactured and marketed in the U.S. by Bourns Laboratories Inc., Riverside, Calif.

Iroquois Pace Up

Orenda Engines Ltd. last month began a 24-hour, three shifts-per-day operation in preparation for production of the Iroquois engine. Centre of the activity at the present time is the machine shops, where many members of Canada's staff are being transferred from final duties on the Orenda program.

According to an Orenda spokesman, although the tooling-up phase is presently being accelerated, full-scale production of the powerful jet engine is still some time in the future. The engine is scheduled to power the Avro Arrow, of which 37 have been ordered by the Department of Defence Production.

1000th DC-6/7

The 1000th airliner of the famed DC-6 and 7 series was delivered recently to United Air Lines by the Douglas Aircraft Company. The DC-7 was the 57th such transport delivered to the airline and the 151st DC-6 and 7 series airliner placed into service by United.

The 1,000 transports were sold to 53 different airlines, 23 domestic and 30 overseas, and to the USAF and the Navy. Of the total, 174 are DC-6's; 60 are DC-6A's; 268 are DC-6B's; 106 are DC-7's; 111 are DC-7B's; 114 are DC-7C's; and 167 are military counterparts.

First DC-6's sold for about \$640,000 in 1947. The larger and more luxurious DC-6B is currently valued at \$1.45

million, and a DC-7C at \$2.3 million. Total value of the 1000 airliners is approximately \$1.3 billion.

Douglas reports that its backlog of undelivered transports of the DC-6 and 7 series aircraft totals 41, with production scheduled to continue through November at the Santa Monica, Calif., plant.

Jetstar Visits Canada

The Lockheed Jetstar last month visited Canada, giving interested military and commercial observers an unexpected preview of North America's latest small jet transport. Flying at 45,000 feet, the silver and white Jetstar averaged 425 mph to complete the flight from Ottawa to Winnipeg in 2 hrs. 29 mins.

The 10-passenger jet transport was designed by Lockheed as a utility aircraft. The aircraft is powered by two Bristol Orpheus jet engines, each developing 4850 lb. thrust.

Flying Crane Airborne

Britain's "flying crane" helicopter, the twin-engined turbine Westland Westminster recently made its first flight. It was airborne for 1 hr. 4 mins. and carried out normal helicopter manoeuvres in hovering flight and at slow backward and forward speeds.

Built with a bridge-like open structure of welded tubes, this helicopter is a utility version of a development

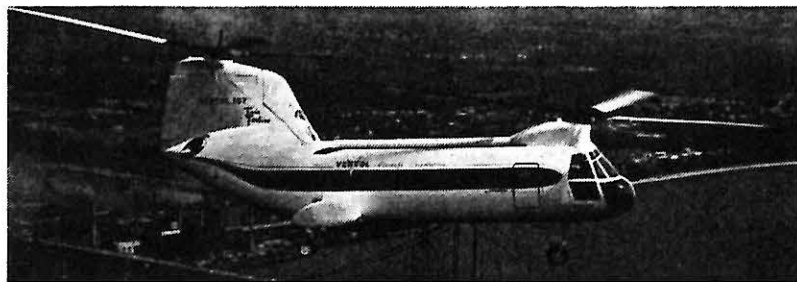
designed for inter-city services or troop carrying. In the transport version, it will seat 46 passengers. As a military helicopter, the utility model will be capable of either long range or of lifting heavy weapons. It is thus suitable for anti-submarine operations or freighting missiles or troops.

The Westminster is capable of lifting a load of 6 tons, and is powered by two 2,800 hp Eland engines mounted side by side above the cabin roof and geared to a common rotor shaft. All up weight of the Westminster is nearly 14 tons, making it the largest helicopter project ever undertaken as a private venture by a British company.

Rolls-Royce in Brazil

Rolls-Royce Ltd. has taken orders worth \$17.5 million from seven South American airlines since 1954 for turbo-prop and turbojet engines, and expect further business as other South American airlines re-equip with turbine-powered transports. By 1960, there will be nearly 150 Rolls-Royce aero engines of these types in airline service in South America arising from present firm orders.

To meet the growing volume of business, Rolls-Royce is investigating sites for the establishment of an overhaul and spares base and have set up a new subsidiary company in Brazil to manage the depot. The base, which will probably be in the Sao Paulo area,



VERTOL MODEL 107: Above, a new transport helicopter that its makers believe will become the DC-3 of helicopter airlines is presently being tested. The all-weather Vertol 107 is powered by two turbine engines, can carry 25 passengers. Lower left: Simple hatch covers and externally-mounted drive shaft make for ease of maintenance. Right: Rear ramp means quick loading of passengers or cargo.

