

Iroquois Testing

Clues to the capabilities of the Iroquois jet being developed by Orenda Engines Ltd., were revealed at the Malton, Ont., plant recently. A press conference was given prior to the arrival of an experimental B-47 bomber at Malton after fitting of the Iroquois test pod by Canadair Ltd., at Montreal.

Charles A. Grinyer, vice-president, engineering, and chief engineer of Orenda, responsible for the design and development of the new engine, addressed the conference. He said the engine measured 22 ft. 3½ in. long, but that it "grew" one inch with expansion when operating. It produced about 30% greater thrust than the J-75 engine, two of which would initially power the CF-105 Arrow.

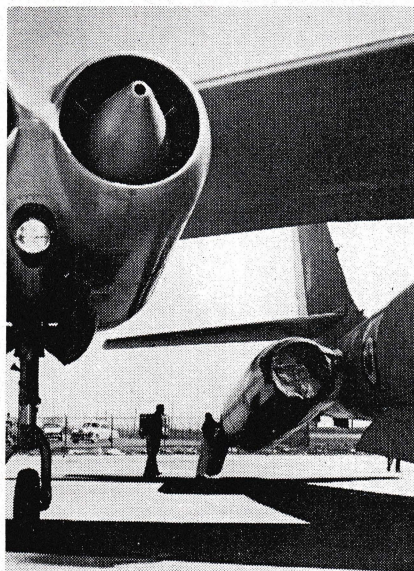
The Iroquois will be test flown in the B-47 pod for eighteen months or more before installation in some supersonic test-bed and finally the CF-105.

Following two years of test cell running, the flying tests of the Iroquois mark an important stage in development. The B-47 was one of twelve aircraft considered for the role of flying test bed. The need was for an aircraft which would fly at high subsonic speed and at great altitude. Other machines considered before the final choice of the six-jet B-47 included the British Avro Vulcan, the B-29 and the B-52.

Great co-operation has been afforded by Boeing. In fact, Mr. Grinyer said, the Americans were particularly interested in the Iroquois engine. Michael Cooper-Slipper, Orenda's chief test pilot, test pilot Leonard Hobbs, the flight engineer John McLachlan, and ground maintenance crews were all trained by Boeing and the USAF.

Several positions for the test pod were considered. The one chosen required the minimum of alteration to the airframe of the B-47. But because of danger of damage to the engine by foreign bodies in its position close to the ground during take-off and landing, aluminum shutters were devised to cover the intake.

The pod incorporates area rule to reduce aerodynamic effects arising from



its proximity to the stabilizer. The nacelle was extended about seven feet in front of the engine intake so that baffles could be fitted. These straighten out the airflow reaching the intake. They may also be moved to examine the effect of changes in the direction of airflow into the engine.

Cost of building the engine test attachment, designed by Canadair to Orenda's specifications, exceeded estimates. A figure of 50,000 man hours was worked out but the job ran into considerably higher figures. Instrumentation for obtaining the necessary data from the test engine absorbed 20,000 hours. This equipment is accommodated in easily installed packs in the bomb bay of the B-47. These can be removed or exchanged with other test equipment readily.

Vast size of the test pod is shown in the pictures above. Before inspection of the installation was allowed protective "wraps" were taped into position over the inlet and outlet. In the second picture the engine is viewed between the B-47's fuselage and two of its J-47 jet engines. Iroquois is said to be more powerful than four of these.

Douglas Shorthaul Bid

Douglas Aircraft's own bid for the DC-3 replacement market is taking shape. Details are revealed of the company's proposed new four turbo-prop engined transport. Design is suitable for short and medium stage operation. Designated Model 1940, it is a high-wing 42-60 passenger machine with cabin pressurization. Maximum take-off weight, at 65,500 lb. is almost double that of the F-27 Friendship, another popular contender for the "DC-3 Replacement" title. Payload of 15,000 lb. compares with F-27 figure of 9,535 lb.

Cruising speed of 243 knots is given for the Douglas model and take-off distance is 2,330 ft. No price is revealed but estimates put volume production figure at over \$1 million, about double the price of the Friendship. If interest merits development and production, deliveries of the 1940 could probably be made in 1960. Dimensions are: span, 102 ft. 6 in.; fuselage, 92 ft. 6 in.; height 36 ft. 8 in. A civil and military utility transport version of the aircraft, with a slightly shortened fuselage, is also proposed.

Argus Electronics

Radar, electronic and electrical equipment aboard the CP-107 Argus aircraft will receive its power from a new system supplied by the Canadian Westinghouse Co. Ltd., Hamilton, Ont. This is claimed to be the first aircraft electrical system in the world wired for automatic parallel operation of four engine driven generators supplying high voltage a-c power.

System has 40-kva alternators driven at 6,000 rpm by constant speed hydraulic transmissions from the plane's four engines. Any two engines will maintain the entire electrical system in the event of failure. Control panel incorporates automatic switching and protective functions to prevent any single failure from causing loss of the whole system.

Parallel generator, necessary owing to the large electrical power requirements of the CP-107, resulted in considerable weight saving in equipment and wiring.

Genaire Expansion

Genaire Ltd. of Malton has acquired a majority interest in Rotaire Ltd., the first independent helicopter repair, overhaul, maintenance and engineering facility established in Canada. Operations at Rotaire will be under the direction of Vice-President and Managing Director Art Limmert who brings 16 years of experience with helicopter operators and manufacturers to his new job. Rotaire activities will be supported by Genaire's facilities at Malton and St. Catharines Municipal Airport. Working parties will be available to travel to all parts of the country to provide technical service in the field. Other officers and directors of Rotaire are President G. R. Wooll, Vice-President Engineering H. B. Picken, Treasurer G. H. Forster and Secretary W. D. Lyon.