

Inferiority Complex?

The thinking that leads Canadian governing bodies, business and industrial concerns, and individuals to turn to the United States for the best in everything — and particularly in the matter of engineering skill — received a rude jolt in the minds of at least a few Canadians when the Avro Jetliner made its first official flight at Malton Airport near Toronto early in October.

While Avro Canada is a member of Britain's Hawker Siddeley Group, it was Canadian engineering and Canadian labour which built the Jetliner and proved that Canadians are fully capable of accomplishing great engineering works.

Actual figures were not given but it was stated that costs of developing the Jetliner were about half the figure considered usual for such a project in the United States.

A number of Americans among Avro Canada's guests were enthusiastic in their acknowledgment that this was a triumph of engineering skill and a Canadian accomplishment which the American aircraft industry will probably not match for several years. It is said that the U.S. has no pure jet trans-

port aircraft past the drawing board stage.

Inspiring as were the story and performance of the Jetliner, an even more inspiring picture was presented to a few of the technically trained visitors who saw Avro's gas turbine division. Here again a Canadian organization has achieved in the "Orenda", a design and performance equal to and perhaps better than that of any aircraft jet engine in the world today.

Avro is presently tooling-up to produce the Orenda in quantity. The few engines completed so far have set a new pattern for Canadian engineering enterprise. A few components have been made by Canadian sub-contractors, a few engine auxiliaries are previously developed units but the vast majority of the engine parts have been made in Avro's own shops. This has meant techniques and operations of which Canadians were considered incapable a few years ago.

Some excellent examples of the type of manufacturing processes new to Canada, and which have been developed by Avro and certain of its key contractors, include the fabrication of a number of large and intricate light alloy cast-

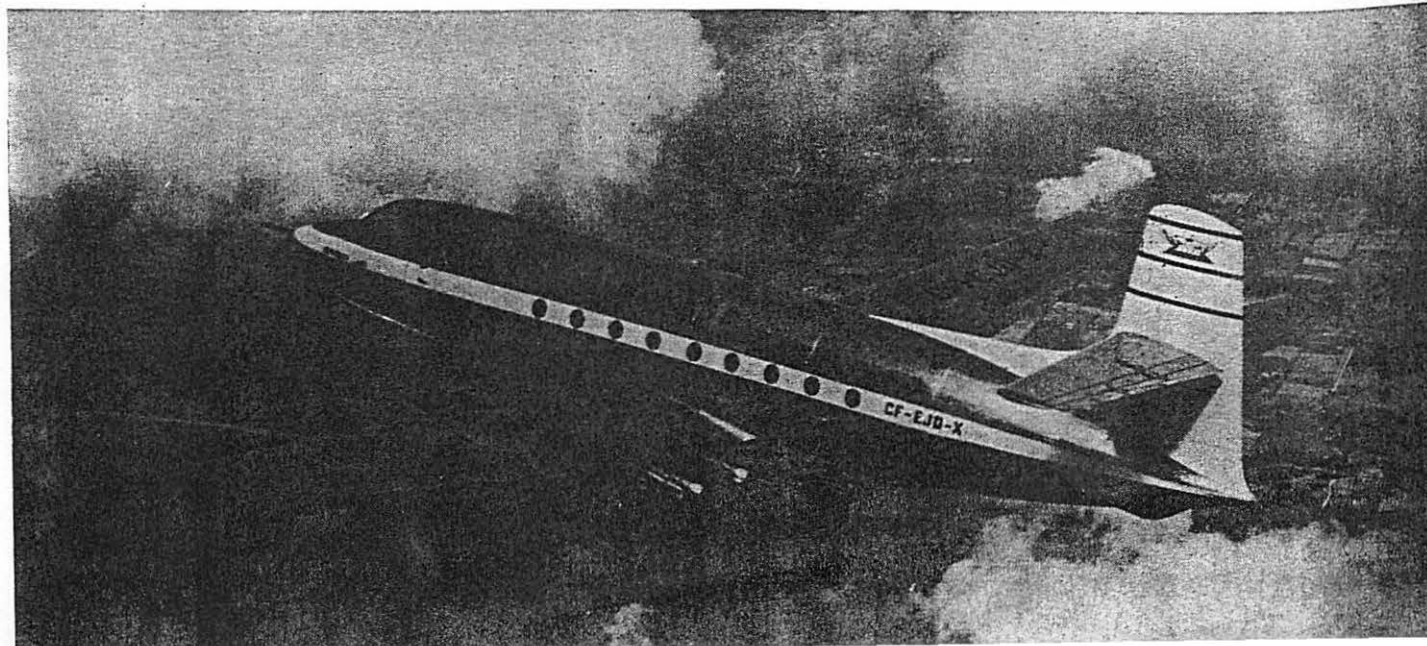
ings used in the main body of the engine. The crowning achievement is the fabrication by precision casting, machining and forging to very close tolerances of large numbers of compressor and turbine blades in light alloy and heat resisting alloys. The compressor and turbine turn at a very high rotational speed and to achieve any reasonable performance, their efficiencies must be of the order of 80 to 90 per cent. Only engineers familiar with axial compressor and turbine performance can appreciate the refinements of design and fabrication required to achieve such results.

Such refinements are being achieved at Malton and they are being achieved economically and efficiently. An eminent British authority has stated that Canada has received a better return for money invested in gas turbine development than any other country. An equally eminent Canadian engineer has said that he would not hesitate to turn over to Avro Canada's gas turbine engineering organization a multimillion dollar hydro-electric development or other engineering project with complete confidence that the results would equal the best that could be achieved anywhere.

The *Journal* feels that the story of Avro Canada, and particularly its gas turbine engineering division should be given wide publicity. Perhaps it might induce buyers of engineering services to look around Canada before contacting that "big name" organization in the United States.

The Avro Jetliner.

Avro Canada photograph



EDITOR'S NOTE

During the past year there has been a great deal of support for the Council for the Institute of American Engineers. It has been the Institute's first effort to bring about a better understanding of the history and activities of the Institute.

The engineering profession knows it too much of a back on a which began the founding of Engineers' Association of civilian from engineering scope and in the medical sciences for the exchange of knowledge to the units grew new inventions, and knowledge.

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