

Avro Builds New Research Laboratory

Sir Thomas Sopwith, legendary British aviation figure and chairman of the board of the Hawker Siddeley Group last month laid the corner stone for a new \$500,000 jet engine and research laboratory at A. V. Roe Canada.

The new laboratory is a private venture of Avro Canada. It will employ 100 engineers and technicians. Its 31,000 square feet will bring the total area of Avro Canada's facilities well above two and a half million square feet.

"The tremendous growth of aviation in Canada," Sir Thomas said, "has been paced by the advances in Canadian research and development of both aircraft and aero engines. Here, in this building of science to be erected on this site, Canada will have engineering facilities for aero engine development second to none for its type and size anywhere on this continent. You will be hearing more from Avro Canada Gas Turbine Division design and engineering teams before long."

The new building will have air conditioning, sound proofing, special lighting and maximum fire safety and other special arrangements for completely up-to-date laboratory operations.

With the completion of construction of the laboratory, the Gas Turbine Division of Avro Canada will have a complete and closely integrated facility for research, development and manufacturing. And each such phase of operation will have its own buildings and facilities, all within a half-mile radius of each other excepting the plant at Nobel, Ont. There, full scale facilities are conducting aerodynamic and thermodynamic tests on engine main compounds. Nobel is self-contained.

The new building will consist of five major sections—

Mechanical Laboratory: will contain specialized rigs for testing main bearings, gear-boxes, rotating seals and similar components. A structure rig will permit the testing of complete engines or major structural components under simulated flight load conditions to determine stresses. A photo-elastic unit will also be provided to assist in stress analyses. Vibration rigs to investigate blade vibration characteristics will be included together with an over-speed pit designed to take complete compressor or turbine rotor assemblies. A small machine-shop equipped with lathes, mills, drill presses, etc. will permit on the spot preparation of test pieces and rig maintenance.

Materials Laboratory: will contain full equipment for chemical analysis, fatigue and creep testing, spectrographic analysis, X-ray diffraction, tensile and hardness testing, corrosion and plating investigations, thermal shock testing and welding investigations.

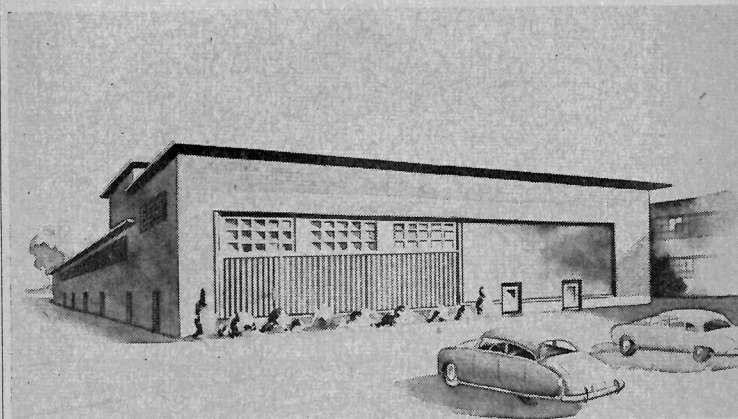
Instrument Laboratory: will contain a service section to maintain, repair and calibrate engine and equipment instrumentation used in the Gas Turbine Division, an electronics section for the development of specialized electronic devices, an instrument manufacturing shop for precision work, and a small welding shop.

Aerodynamics Laboratory: will contain a 6 in. wind-tunnel for aerodynamic investigations on small models and an electrolytic tank for two-dimensional pressure and flow determinations.

Fuel Systems Laboratory: will contain test rigs for all fuel and oil system components and complete systems including a temperature-control-



GUESTS of the company at the cornerstone-laying ceremony were Toronto businessmen who flew Sopwith aircraft during World War I. They were the special guests of Sir Thomas Sopwith and Air Marshal W. A. Curtis, former RCAF Chief of Staff and now Vice-Chairman of the Board of Avro Canada, who also flew a Sopwith fighter during his early flying days. Left to right: Quinn Sherriff, Mel Alexander, Air Marshal W. A. Curtis, Sir T. O. M. Sopwith, Gerry Nash and Sandy MacDonald.



ARTIST'S SKETCH of new half-million-dollar research and development laboratory being constructed at A. V. Roe Canada Ltd., Malton, Ont. The lab will be used by technicians of the company's Gas Turbine Division.

led, dust-free room for tear-down and assembly of the finely machined components. An ignition system laboratory will be provided to test ignition equipment under normal and simulated high altitude conditions.

With the exception of the aerodynamics laboratory the

above facilities not only serve the engineering groups in the development programs but provide assistance to the Production and Sales and Service Departments when required. They also carry out quality control checks, particularly on materials and fuel system components.