

reasons for this situation. The results of research and design in the US and UK have been available to us, and we have been able to use many of the facilities in the US for model testing and applied research generally.

We in the Defence Research Board have recognized that this is not a healthy, balanced condition for the future and we are doing something about it in several directions.

The keystone of any continuing research program is a supply of competent scientists and engineers for the research establishments and industry. To this end, the Defence Research Board grants approximately \$300,000 per annum to the various universities to provide facilities and support research projects for training in the Aerodynamics and Gas Dynamics fields. Similarly, in the Structures and Materials field, DRB grants to universities are of the order of \$130,000 per annum.

As many of you know, there is now a well-established Institute of Aerophysics for post-graduate training and research at the University of Toronto. This is physically located at Downsview and has been largely financed by DRB. Similarly, a smaller laboratory has been established at Laval University in Quebec, also financed by DRB, in order to encourage another centre for the training of aerodynamicists. In the propulsion field, DRB has supported a Gas Dynamics Laboratory at McGill University in Montreal for several years.

Early this year the Government gave its approval to construct a \$6,000,000 Wind Tunnel at Ottawa. This is being jointly financed by DRB and NRC, and, it is hoped will be ready for operation by 1960. This tunnel, with a 5 foot square test section will have a speed range from zero to Mach 4.5, resulting in Reynolds Numbers up to 15 million per foot, which represents a tenfold improvement over our present supersonic testing capabilities. This tunnel will have sufficient flexibility to test models of any type of airborne vehicle whether manned aircraft or unmanned missile, and even certain types of propulsion systems such as ramjets.

And at our Canadian Armament Research and Development Establishment in Quebec we have an 800' Aeroballistic range in which models can be tested and photographed in free flight up to hypersonic speeds. As an adjunct to the CARDE activities, we also maintain a fully instrumented Free Flight range at Picton, Ont., where much of the dynamic stability testing on the CF-105 aircraft was carried out.