

With a specially equipped experimental aircraft, the low-temperature laboratory has continued the flight investigation of aircraft icing, electro-thermal de-icing for wings and propellers and the study of meteorological conditions associated with ice.

In co-operation with the Meteorological Service of the Department of Transport, a snow-cover survey has been initiated to obtain data on the type and condition of snow encountered in different parts of Canada for use in the development of snow-clearing equipment and the study of other subjects, such as aircraft skis, associated with winter transportation.

The tailless glider has been modified to incorporate fighter-type cockpit canopies and further wind-tunnel tests have been carried out. Flight tests at Edmonton, Alta., during 1947, were interrupted early in the season by an accident to the glider.

Work continues on the improvement of fuels and lubricants for low-temperature use and includes observation of the performance of fuels and lubricants under cold-weather conditions at Churchill, Man., and the study of low-temperature lubrication problems for the Armed Services.

In co-operation with the Department of National Defence, road tests have been made to determine the limit of sulphur which can be tolerated in gasoline without harmful effects to motor-vehicles. This has become a problem because of the higher sulphur content of presently available crude oils. Research on fuels and combustion in jet engines has been initiated. A comprehensive theoretical and experimental investigation of turbine icing was begun in 1947.

Provision of static equipment for the testing of full-scale aircraft components was begun during the year and is nearing completion.

Work is being continued on the study of wing flutter, stressed shells, stresses in ski undercarriages, and prostheses.

Relations with Industry.—Problems suggested to the Council that are deemed of national interest may be undertaken entirely at the Council's expense. In other cases, when a company has an interest in a project, arrangements can be made on a mutually satisfactory basis whereby the expense of the research is shared by the company and the Council. In exceptional cases, especially when facilities for a given investigation are not available elsewhere in Canada, the Council may undertake a specific piece of research for an industry on a fee basis in which case the results become the property of the company requesting the information. From this it will be seen that each problem presented to the Council is considered on its merits and dealt with in what seems to be the most efficient and practical way.

An important service to industry is being rendered by the Council through the Technical Information Service. This organization, now carried on under the National Research Council, was established in the Department of Reconstruction and Supply as a means of bringing to the attention of Canadian industry the important scientific advances made in manufacturing processes and the uses of new materials. The smaller industries in particular have found the Service of great value.