are being investigated for their protection against icing. Canadian fighters and transports are being tested in co-operation with the Royal Canadian Air Force and aircraft firms, very comprehensive instrumentation having been designed and built for this work.

The model-testing basin for work on ship models has been very active with investigations proceeding both for the Royal Canadian Navy and for the shipbuilding industry. Studies in the latter field have included the design and operation of lake bulk-freighters, an ice-breaking ferry, fishing boats, and shallow-draft tugs.

Building Research.—Construction has been started on a laboratory and office building at Ottawa for the Division of Building Research. The Division's research station at Saskatoon, Sask., began regular operation during 1951, and first results of tests on wood-frame walls with air spaces will be published early in 1952. Studies on building in the North were continued and plans are being made for a permafrost research station. A draft of the first section of the revised National Building Code is now being circulated throughout Canada.

Experimental work on concrete slab foundations for houses without basements was begun in 1951, at Ottawa. Two slabs have been constructed, each heated electrically and carrying a building comparable to conventional house construction.

Development of test sites to study the effects of weather on various building materials in selected locations has been continued, and it is expected that all sites will be equipped and in use by the end of 1952. The appointment of a climatologist to the Division staff has further emphasized the importance of climate in relation to building research. Work on the correlation of the performance of standard test huts with climate has been expanded to include huts at Churchill, Man., and at Pennsylvania State College, U.S.A.

The Division co-operates with other government agencies on problems allied with building research. Special studies have been made for the Department of National Defence and many technical problems of the Central Mortgage and Housing Corporation have been investigated.

Radio and Electrical Engineering.—The Division of Radio and Electrical Engineering is very active in defence production work. In connection with radar and its application to artillery fire control, satisfactory progress has been made in redesigning experimental equipment, in engineered form, suitable for industrial production. Detection of aircraft by radar is also being highly developed. A recent redesign of a mobile medium-range radar used during World War II is now going into production on a large scale.

Work is proceeding on the design and positioning of "suppressed" antennæ to ensure their perfect performance on high-speed aircraft where the aerodynamic drag of external radio antennæ is so great that it is necessary to enclose them within the skin of the aircraft.

NRC's million-volt impulse generator is being used continuously for testing electric power-transmission equipment. The generator applies sudden high-voltage impulses, similar to lightning strokes, to power-line insulators, transformers and cables. The need for better insulating materials in the electrical industry in Canada requires, in turn, the development of accurate methods of testing materials already available. NRC is working on methods of testing transformer insulating oil and on the difficult problem of electrical breakdown characteristics of liquids.