

of Defence Production. The other members, appointed by the Governor in Council for three-year terms, are selected from universities and industry because of their scientific and technical backgrounds.

The organization consists of headquarters staff, an operational research group and ten field research stations, and liaison offices at London, Eng., and Washington, U.S.A. Advisory committees composed of leading Canadian scientists provide invaluable assistance to the Board by their consideration of a variety of problems.

The Government, realizing the vital need for continuity in research, planned the Defence Research Board as a fully integrated and permanent part of the defences of the country. To assist co-ordination at the highest level, the Chairman of the Board has the status of a Chief of Staff and is a member of the Chiefs of Staff Committee and of the Defence Council. Thus the Defence Research Board has been described as a fourth service. Its fundamental purpose is to correlate the special scientific requirements of the Armed Forces with the general research activities of the scientific community at large. The Board's policy is to select and concentrate its efforts upon defence problems of particular importance to Canada or for which Canada has unique resources or facilities. Existing research facilities such as the National Research Council are used wherever possible to meet the needs of the Armed Forces. The Board has built up new facilities only in those fields that have little or no civilian interest. From the policy of specialization it follows that close collaboration must be maintained with Canada's larger partners. Specialization is made possible only through the willingness of the United Kingdom and the United States to exchange the results of their broader programs for the less numerous but none the less valuable benefits of Canadian research.

The activities of the Defence Research Board are concerned primarily with naval, armament, telecommunications, Arctic, special weapons, operational, medical, aeronautical and materials research problems of specific interest to Canadian defence. To conduct this program of research, the Defence Research Board operates ten specialized research and development establishments and, in addition, organizes and supports research on problems of defence interest in universities and other agencies.

Research on naval problems is carried out at the Naval Research Establishment, Dartmouth, N.S., and at the Pacific Naval Laboratory, Esquimalt, B.C. Both stations are located adjacent to Royal Canadian Navy bases and consequently are able to work closely with the RCN, particularly on problems related to anti-submarine devices. Other major naval research investigations undertaken concern corrosion, marine paints, and underwater sound behaviour.

Research and development of weapons and armament is undertaken by the Defence Research Board in co-operation with the Armed Services at various establishments. The largest of these is the Canadian Armament Research and Development Establishment near Valcartier, Que. Its principal activities include research and development and testing of new and improved weapons.

Research on telecommunications is carried out in two laboratories at Ottawa—the Radio Physics Laboratory at Shirley Bay and the Electronics Laboratory on the Montreal Road. These two laboratories are known collectively as the Defence Research Telecommunications Establishment. This establishment is concerned with research in problems of communications and air navigation, with particular emphasis on basic research in the fields of radio propagation and electronic component development.

Research dealing with problems in Arctic operations is conducted at the Defence Research Northern Laboratory, Fort Churchill, Man. Recently the activities of DRNL have changed considerably, and during 1958 included support to the winding-up of the Canadian Geophysical Year (IGY) program and the associated United States IGY rocket program at Churchill.

Special weapons is the generic term used to cover research on the defensive aspects of chemical, biological and atomic weapons. This work is carried out at three Defence Research Board establishments—the Defence Research Chemical Laboratories at Ottawa,