

with an enrolment of more than 17,000 cadets, administered by the Air Cadet League of Canada, a voluntary civil organization. The value of cadet training continues to be confirmed by the number of Air Cadets enlisting in the R.C.A.F. regular and reserve forces. During 1951-52, 694 ex-Air Cadets joined the R.C.A.F. regular squadrons and 193 signed on with the reserve.

Subsection 4.—The Defence Research Board

The National Defence Act was amended on Apr. 1, 1947, to provide for the establishment of a Defence Research Board. The Board consists of six ex officio and six appointed members serving under a full-time chairman. The ex officio members are the Chairman of the Board, the Chiefs of Staff of the three Armed Services, the President of the National Research Council and the Deputy Minister of National Defence. The remaining six members, appointed by the Governor General in Council, are members with scientific and technical qualifications and are drawn from the universities and industry. The organization consists of a headquarters staff, advisory committees and field research stations.

In planning this organization, the Government considered the vital need for continuity in research and 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.

The Defence Research Board is an essential part of the defence of Canada and, as such, 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. This task is the main function of the Headquarters Staff and its work is strengthened by the expert counsel of comprehensive advisory committees.

It is the policy of the Board to select and concentrate its efforts upon those problems that are of particular importance to Canada or for which Canada has unique resources or facilities. Existing research facilities (for instance, 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 nonetheless valuable benefits of Canadian research.

An important and logical field of specialization for Canada is Arctic research. This interest in Arctic problems is reflected in nearly all the Board's activities. An outstanding example is a program of ionospheric research carried on jointly with the Department of Transport. The north magnetic pole is located on the northern edge of Canada's mainland and the auroral belt, in which ionospheric disturbances make radio communication difficult, is centred around the north magnetic pole and, therefore, extends well down into the inhabited areas of Canada. This means that Canada has unique radio communications problems that are not duplicated elsewhere in the world, except in northern Siberia, and which are of vital importance not only to defence but to civil aviation and communications. It is, therefore, appropriate that Canada should put special effort into this field of research