

Armed Services at several establishments, the largest of which is the Canadian Armament Research and Development Establishment near Valcartier, Que. Its principal activities include studies of defence against missiles, studies of the properties and application of infrared and other detection devices, exploration of the upper atmosphere with balloons and rockets, and the development of rocket propellants.

The Defence Research Telecommunications Establishment in Ottawa is concerned mainly with problems of communications which involves exploration of the ionosphere with ground-based equipment, with rockets and with satellites, and the applications of the science of electronics to military problems. The Defence Research Northern Laboratory, Fort Churchill, Man., conducts a variety of experiments requiring an Arctic environment including studies of the aurora borealis, communications experiments and rocket firings. Research on the defensive aspects of chemical, biological and atomic weapons is carried out at three Defence Research Board establishments—the Defence Research Chemical Laboratories at Ottawa, Ont., the Suffield Experimental Station at Ralston, Alta., and the Defence Research Kingston Laboratory at Barriefield, Ont.

The Defence Research Medical Laboratories near Toronto are concerned with biosciences research, chiefly with raising the operating efficiency of man working in the military environment, and includes such subjects as human physiology, experimental psychology and research on clothing.

Operational research is carried on by a headquarters group which conducts long-range scientific analyses of future defence problems. Trained operational research scientists are provided by the Board to the operational research teams in the three Armed Services.

Thus, the Board continues to support the fields of research that are of foremost interest to the Canadian Armed Services and the program is under continuing review to ensure that cognizance is taken of all changes in emphasis in defence requirements. Close liaison is maintained between the Defence Research Board and the Department of Defence Production to ensure that research and development activities are closely integrated with production.

## Section 2.—Services Colleges and Staff Training Colleges

**Canadian Services Colleges.**—The three Canadian Services Colleges are the Royal Military College of Canada founded at Kingston, Ont., in 1876, Royal Roads which was established in 1941 near Victoria, B.C., as a school for naval officers, and Collège Militaire Royal de Saint-Jean established at St. Jean, Que., primarily to meet the needs of French-speaking cadets. The Royal Military College and Royal Roads were constituted as Canadian Services Colleges in 1948, and Collège Militaire Royal de Saint-Jean was opened in 1952. In 1959 the Legislature of the Province of Ontario granted the Royal Military College a charter empowering it to grant degrees.

The purpose of the instruction and training at the Services Colleges is to impart the knowledge, to teach the skills and to develop the qualities of character and leadership essential to officers of all three Armed Services. The courses of instruction provide a sound and balanced liberal scientific and military education leading to degrees in arts, science and engineering which are granted by the Royal Military College. The organization and training give cadets the opportunity to command and to exercise judgment.

For cadets entering the Royal Military College and Royal Roads the course is of four years duration. As the third and fourth years of the course are given only at the Royal Military College, cadets entering Royal Roads must proceed to that College for the final two years of the arts, science or engineering courses. For cadets entering Collège Militaire Royal de Saint-Jean, which gives a preparatory year, the course is of five years duration. Cadets take the preparatory, first and second years at that institution and the final two years at the Royal Military College.