

Air Photographic Library indexes, preserves and distributes prints of all aerial photography done by or for the Federal Government. The Topographical Survey also administers the Canadian Board on Geographical Names.

The Legal Surveys and Aeronautical Charts Division makes and records legal surveys of federal Crown lands in the Yukon and Northwest Territories, the National Parks and Indian lands and reserves. This Division prepares aeronautical charts and electoral maps and prepares and distributes flight manuals.

The Canadian Hydrographic Service is responsible for the charting of the coastal and inland navigable waters of Canada, the analyses of tides and tidal current phenomena and the investigation of water-surface elevations of the St. Lawrence-Great Lakes waterway. The resultant data are published in the form of official navigation charts, volumes of Sailing Directions, Tide Tables and Water Level Bulletins.

The Map Compilation and Reproduction Division prepares, drafts and reproduces maps, charts and plans for lithographic printing in multicolour. The work includes the preparation and photo-reproduction of air chart bases, the reproduction and printing of air information for aeronautical charts, the preparation and printing of topographic maps and the reproduction and printing of hydrographic charts.

The Branch had 14 geodetic, 27 topographic, 15 legal survey and 20 hydrographic parties in the field in 1957.

*Geological Survey of Canada.*—The primary function of the Geological Survey is to obtain information on the geology of Canada that will be of assistance in the search for and development of mineral deposits. The results of its activities also provide a basis for the appraisal and conservation of Canada's mineral resources generally including water supplies, for soil surveys and for the solution of geological problems that frequently arise in construction projects. Reports issued by the Geological Survey include: memoirs with fairly complete descriptive accounts of the geology of particular areas, usually accompanied by geological maps; bulletins dealing with problems rather than areas; papers issued as soon as possible after the close of the field season, treating separately of each area and summarizing the information acquired; and the Economic Geology Series reports, dealing in a comprehensive way with mineral deposits of a particular type. Coloured geological maps are issued on various scales from one inch equalling a few hundred feet to one inch equalling eight or more miles, the common standard scales being one inch to one mile and one inch to four miles. Preliminary maps showing the geology are issued shortly after the field season ends for those areas where the search for metals or minerals is active.

In 1957 the Geological Survey had 72 parties in the field, one more than in 1956. The program featured two large helicopter projects, Operation Mackenzie and Operation Fort George. In Operation Mackenzie, nine officers of the Geological Survey and nine student assistants used helicopters to map 100,000 sq. miles of promising oil and gas territory in the Upper Mackenzie River basin in Northwest Territories lying between latitudes 60° and 64° and extending from longitude 126° to the western edge of the Canadian Shield. In Operation Fort George, three officers and three assistants mapped some 35,000 sq. miles of a 300-mile by 400-mile block of Quebec lying between latitudes 52° and 56° and extending from the Hudson and James Bay coast inland to longitude 68°. This is part of the largest unmapped area in the Canadian Shield. Operation Fort George will be continued in 1958.

The Precambrian Division is responsible for mapping and studying the rocks of the Canadian Shield and of the Arctic Islands. These studies help to establish the geological history and structure of the regions and the information is used as a guide in the search for mineral deposits.

The Post Precambrian Division is responsible for mapping and studying the rocks of the Appalachian and Cordilleran regions and the unconsolidated materials throughout Canada. The application of geology to engineering problems and the study of Canada's groundwater resources are also the responsibility of this Division.