

Section is responsible for field surveys; and the Air Survey Section plots and produces maps from aerial photographs, with control provided by field surveys. The Map Editing Section and Compilation Section are responsible, respectively, for map editing and finishing, and mathematical computations. The National Air Photographic Library is responsible for indexing, preserving and distributing prints for all air photography done by or for the Federal Government, and the Survey administrators and provides funds for the Canadian Board on Geographic Names.

In 1952, 57 parties including 14 Army Survey Establishment parties were placed in the field to carry out original ground surveys for control of mapping from aerial photographs over widely distributed areas. The field program included the projected helicopter operations in Newfoundland, to complete the topographic mapping of that Province and in northwest Yukon Territory. With the development of technique, instruments and mechanical aids to plotting maps from air photographs, topographical mapping practice has so changed that it is now held to be essential to have photographs of any area to be mapped. These are provided by the Royal Canadian Air Force and by commercial companies.

The Legal Surveys Division makes and records legal surveys of lands belonging to Her Majesty in the right of Canada or of which the Government of Canada has power to dispose, that are situated in the Yukon and Northwest Territories and the National Parks, and that are Indian lands or reserves; prepares and maintains aeronautical charts and flight manuals; prepares electoral maps; plots planimetric base maps from tri-camera aerial photographs; records and indexes survey returns and plans; and distributes plans, maps and aeronautical charts.

The Canadian Hydrographic Service is primarily 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.

*Dominion Observatories.*—The two main units of the Dominion Observatories are the Dominion Observatory at Ottawa, Ont., and the Dominion Astrophysical Observatory at Victoria, B.C. Permanent magnetic observatories are maintained at Agincourt, Ont., Meanook, Alta., and at Resolute Bay and Baker Lake, N.W.T. Seismic stations for recording earthquakes are operated at Ottawa and Victoria; at Seven Falls and Shawinigan Falls, Que.; Halifax, N.S.; Saskatoon, Sask.; and at Resolute Bay, N.W.T.

The Dominion Observatory at Ottawa is responsible for the time service of Canada, which involves nightly astronomical observations of accurate star positions and radio-broadcast services for distributing accurate time to all parts of Canada. Other astronomical activities centred at Ottawa include upper atmospheric studies by means of meteor observations, studies of the sun and its effect on earthly conditions, and mathematical studies of the atmospheres of the sun and stars. The geophysical work, also administered from Ottawa, includes the magnetic survey of Canada, with emphasis on aids to air and sea navigation, as well as field and observatory work of interest to the geophysical prospector. The methods of seismology are employed not only to study interesting and economically important aspects of the earth's crust in Canada, but also as part of world-wide investigations of the earth's interior. Gravity observations are carried on throughout Canada with a generally similar purpose, special attention being paid to methods of locating economic minerals.