11. Photogrammetrical Branch (Head Office)

The main work of this Branch has been the plotting and contouring of 1 : 25,000 maps. A number of special topographical mapping projects were also undertaken for other State Departments. Additional photogrammetrical plotting equipment was received during the year—namely, one Wild A.6 plotter from Switzerland and two Zeiss Multiplex machines (second-hand) from United States of America. The bringing of these machines into operation should increase output in the coming year.

Topographic Mapping

Planimetry and contours were plotted for a total area of 381 square miles during the year. A large part of the area mapped is in coalfield areas for which map cover was required for geological survey.

Special Projects

A number of special maps were made, mainly for other State Departments, for investigational and planning purposes. Work included a contour map of the George and Caswell Sounds area and contours and cross sections of the Waikato River for the State Hydro-electric Department, the preparation of timber-type maps for the State Forest Service; and a large-scale contour map of a development area near Suva for the Fiji Government.

12. Computing Branch (Head Office)

This Branch has been fully employed during the year in the adjustment of triangulation and other survey control, the computation of map projections and tables, tidal analysis, and special computations for other State Departments.

Triangulation

During the year the chief event was the completion of the first order network of geodetic triangulation after many years' work. This consists of 284 stations and covers the greater part of the country, including outlying islands, but does not include Westland, south-west Nelson, and the western parts of Otago and Southland.

The adjustments consisted of eight base nets, four main figures, with 208, 169, 81, and 47 condition equations respectively, and a number of smaller figures.

The computations for latitude and azimuth from observations at all the North Island and at most of the South Island stations were completed.

The "Geodetic Datum, 1949" based on this work was established, and geographical and grid co-ordinates of all the stations were computed in terms of this datum.

A commencement has been made with the adjustment of the second order geodetic triangulation in the Southland Land District.

Tidal Analysis

An inspection of the Auckland tide-gauge was carried out by the Chief Computer, but no analyses were completed owing to staff shortage and pressure of other work.

Mapping Control

Charts for the graphical transformation of co-ordinates from meridional circuit in links to national grid in yards were constructed for a number of districts, the total area covered being approximately 34,000 square miles. Latitudes, longitudes, circuit co-ordinates of sheet corners, convergences, and magnetic declinations, required for all maps in preparation for publication, were computed.