

TR 14-65-66
13. Seismic survey, proposed Post Office, Penguin

B. KNOX

At the request of the Commonwealth Department of Works, a seismic refraction, site investigation survey was carried out by M. J. Longman, Geophysicist. The results obtained were interpreted by the writer.

GEOPHYSICAL EQUIPMENT AND METHODS

A portable, 12-channel refractor seismograph, type G.T.2 manufactured by Geospace Corporation, Houston, Texas was used in conjunction with Hall Sears X2 model K geophones with a natural frequency of 14 c/s.

Five geophone spreads, consisting of 12 geophones evenly spaced at 5 ft intervals, were fired from both ends. Shot points were 3 ft deep and situated 5 ft from the first geophone. Spreads 1 to 4 were set out around the perimeter of the proposed building and Spread 5 was positioned diagonally across the site.

Owing to the proximity of the railway and road it was not possible to locate suitable extended shot-points. Three geophones of Spread 5 were not connected, due to the position of existing building foundations. Levels were taken at each individual geophone position and were related to an arbitrary datum of +25 ft.

RESULTS

The time-distance graphs indicate the following velocities:

1200 ft/sec	Probable sandy soil and fill.
5000 ft/sec	Probable clay or highly weathered rock.

CONCLUSIONS

The accompanying plan and cross sections (fig. 17) indicate the depth of unconsolidated cover to the 5000 ft/sec refractor layer. This unconsolidated material, probably sand soil and fill, varies in depth from 7-13 ft over the area, the greatest depth being on the northern boundary and in the eastern corner of the site.

FIGURE 17

