

The mean of high-water depths on the bar for the year was 21 ft. 6 in., which was not as good as the mean of 22 ft. for the previous year. This is illustrated more clearly in the following tabulation, which shows the number of days for the last three years on which the respective high-water depths obtained :—

Depth.	1940-41.	1939-40.	1938-39.
Over 14 ft.	365	366	365
„ 16 ft.	365	366	365
„ 18 ft.	363	366	363
„ 20 ft.	302	330	275
„ 22 ft.	118	184	126
„ 24 ft.	24	36	11

It will be noted that, as against the preceding twelve months, there were fewer days on which there was over 20 ft. of water on the bar at high water, but, on the other hand, this deficiency was greatly offset by the more favourable surface conditions quoted earlier in this report.

As with the two preceding years, there was no day on which there was not more than 16 ft. on the bar at high water.

Early in the year the port pilot and sounding launch “Kaiurunga” was subjected to a very extensive overhaul, with a considerable amount of the hull and framing timbers renewed, whilst a new heavy encircling hawser fender was fitted, and the vessel is now in first-class order. Due attention was given also where necessary to all other harbour structures and navigating aids and services.

The bucket dredger “Maui” continued in commission throughout the year, being utilized to deepen the fairway abreast the Staiths Wharf approaching to and alongside the Merchandise Wharf. As the vessel had to convey its dredgings to and dump at sea, adverse bar conditions at times hindered operations; nevertheless, good work was done. The dredger lifted some 121,550 cubic yards of shingle and sand from the areas mentioned, and soundings later in the period revealed an appreciable improvement in depths. Early in the closing month of the year the vessel proceeded to Wellington for bi-annual slip survey and overhaul.

In my last year's report I mentioned that the work of restoring and strengthening the stone facing of the Buller River bank protective work at the relief channel (Organ's Island) had been completed, and that the work of extending farther downstream the low stone training and control wall at the lower end of the island was continuing.

This latter work was completed during the year, and to assist the purpose of the wall in confining and directing the channel of the river, where otherwise it was meandering in a most undesirable manner and causing erosion of the bank at “Roselli's,” and resulting in building up of banks of shingle in the bed of the river, a control and directed channel from the downstream end of the wall was cut by the use of two large bulldozers for a few days, and a very satisfactory result was achieved.

The rock for the stone work was quarried from the harbour quarry at Cape Foulwind and transported by our own railway to the job. Third-class stone was placed in the river-protection work, and the first-class stone was conveyed to and placed on the seaward end of the west mole of the harbour entrance, to strengthen and make good the ravages of heavy seas over a period of previous years.

Over the period of two to three years that this work was in hand some 4,000 tons of rock was used in effecting the breakwater repair, and 26,000 tons were deposited in the river protection and control work.

Now that this work is complete, a commencement has been made on taking up the railway-track connecting the Buller Gorge railway line to Organ's Island, and the rails and sleepers are being disposed of to the Railways and Lands Departments respectively for other governmental works. At the Cape Foulwind quarry the 25-ton crane has been thoroughly painted and housed in, and the two smaller cranes conveyed into Westport for overhaul attention. Old sheds have been dismantled, and useable material removed to Westport for further use.

LIGHTHOUSES.

Manukan Heads.—Repairs were carried out to the hot-water system.

Moko Hinu.—A fuel-oil store has been erected, the diesel engines overhauled, and repairs and maintenance carried out to the electrical equipment.

Curier Island.—Routine maintenance has been carried out on the diesel engines and electrical equipment.

Godley Head.—The site for the new lighthouse has been constructed, involving some 300 cubic yards of excavation in rock. All electrical equipment is on order, and the lens and lantern ex Cape Foulwind are being reconditioned ready for installation. Arrangements are in hand for the construction of the power-line to the new site.

Akaroa.—A contract has been let for the erection of a Blondin cableway over the inlet at this station to replace obsolete landing-equipment.

Puysegur Point.—The power-house in connection with electrification has been completed and the access road approximately two miles long constructed. All material and equipment for electrification and installation of radio beacon is being assembled at Invercargill ready for transport and installation.

Moeraki.—A small hut has been erected to accommodate an extra man, and power-lines have been run to the station for electrification. The cottages and buildings are now supplied with electricity, and equipment is on order to electrify the light.