

MARINE.

LIGHTHOUSES.

North Cape Lighthouse.—This light, which consists of an automatic flashing outfit mounted on a concrete base, was erected during the period. The flasher is of the open-flame type, and is contained in a 800 mm. catadioptric lens, the whole being enclosed in a lantern-house and fitted with sun-valve. This light is visible for about seventeen miles in clear weather, and marks the turning-point in the courses of vessels proceeding round the northern portion of the North Island.

Manukau South Head.—This light was converted from a watched oil-burning light to an automatic acetylene outfit. The original lens and lantern-house has been retained, but the range has been reduced to about sixteen miles.

Kahu Rocks.—The erection of this light, which is of the Dalen automatic type, was completed during the year. Its main purpose is to mark the position of the group of offshore rocks in this locality. Owing to the great construction difficulty of building on the rocks themselves, the lighthouse has been erected on a prominent point on the foreshore and the exact position of the rocks defined by a red sector. The light itself consists of a 300 mm. catadioptric-lens drum fitted with a Dalen incandescent burner with automatic mantle-exchanger and sun-valve. The apparatus is lodged in a lantern-house with cast-iron murette for the storage of the gas-accumulators, and is built on a concrete base on the top of what is locally known as the Honeycomb Rock, at a height of approximately 80 ft.

Cape Egmont.—The existing watched light at this station is one of the older fixed type, being one of the earliest provided by the service. The growth of motor traffic on the adjacent roads and the increasing number of electric lights in the locality make it difficult for shipmasters to quickly and surely pick up the fixed light at this station. It was therefore decided to provide a completely new and up-to-date revolving light giving a triple flash. The apparatus has now been received, and it is anticipated that the installation will shortly be completed.

Baring Head Lighthouse.—At present the entrance to Wellington Harbour is marked by two lights—one a second-order oil-burning watched light at an elevation of 322 ft., maintained by the Department, and the other a low-level Wigham light, maintained by the Wellington Harbour Board. For some time past it has been felt that it would be much better if the existing Harbour Board light was strengthened and the Department's light shifted to Baring Head. As a situation for a coastal light Baring Head has a distinct advantage over Pencarrow, and arrangements are in hand to give effect to this policy, provision being made on this year's estimates accordingly.

Godley Head.—A new lightkeeper's cottage has been built at this station, and plans are in hand for the conversion of the light itself to automatic operation. The present light is a fixed one, and in these days of universal electric lighting for households and the use of powerful headlights on motor-cars it is necessary to provide a light which has a distinct flashing characteristic, so as to avoid any chance of confusing it with other lights in the vicinity. It is mainly for this reason that the conversion is being made.

Tory Channel Leading-lights.—An order has been placed for the necessary apparatus to convert these lights, which are at present oil-burning, to automatic acetylene operation.

Tory Channel Light on West Head.—Specifications have been prepared and an order placed for the supply of a 300 mm. lens with open-flame burner, sun-valves, &c. for erection on the West Head at the entrance of Tory Channel. At the present time difficulty is sometimes experienced in picking up the entrance in thick weather, owing to the leading-lights being visible over a small arc only. It is anticipated that the provision of this additional light will be of considerable assistance in picking up the leading-lights and in coastal navigation generally.

Jack's Point.—It is proposed to install a new lens at this station and install an automatic open-flame flashing burner with sun-valve, and orders have been placed for the necessary apparatus.

HARBOURS.

Westport Harbour.—The past year has been a somewhat critical time for this harbour. In the earlier portion of the year the entrance was far from satisfactory, and the two suction dredges, "Eileen Ward" and "Rubi Seddon," have been kept steadily at work, and for the latter portion of the period the position materially improved. In view of the necessity for thoroughly investigating the underlying causes for the shoaling of the bar, a Resident Harbour Engineer was appointed and has been very fully employed in such investigations. The information obtained indicates that the main cause of the shoaling on the bar is due to the gradual accretion which has been taking place adjacent to the breakwaters. To cope with this effectually it will be necessary to extend the breakwater another 250 ft., when it is anticipated better results will be obtained with less dredging. During the period 690,230 cub. yd. have been dredged from the bar by the "Eileen Ward" and the "Rubi Seddon." The bucket dredge "Maui" was employed for the whole year in the berthage area, and removed 184,597 cub. yd. of material. The depths at the Crane Wharf berthages were maintained to approximately 25 ft. at L.W.O.S.T., and a large quantity of material was dredged from the shoaling opposite the old Staiths Wharf and the Merchandise Wharf. A great deal of siltation takes place in these areas owing to the large amount of material brought down by freshes, but a reasonable depth has been maintained throughout the year. The Priestman grab has been employed removing snags in the upper river, and also in the Western Lagoon, where it is hoped to increase the tidal compactment. The protection work at Organ's Island was carried to completion during the year. The whole of the western side of the island, 55 ch. in length, has been faced with rock, and a retaining-wall 8½ ch. in length constructed on the down-stream end of the rock facing. A total of 27,665 tons of rock was used in this