

stress due to sudden application of the load is more than doubled. It is only by the yielding of the stays or derricks that more accidents have not occurred in cases where the lift has been checked suddenly or allowed to surge. Chain slings should not be used round hard material unless the corners have been packed with wood or other material that will prevent the nicking of the chain-links. When chain slings are to be attached to hooks by the slipping of the end link over the point of the hook, care should be taken that the link is large enough to rest freely on the hook. It should not be so small as to jam on the point of the hook and so remain out of plumb with the load.

Finance.—The financial aspects of this branch of the Department were placed on a fresh footing by last session's legislation, and it is now hoped that the services performed herein by the Department will be self-supporting.

Deceased Seamen's Estates.—The estates of twenty-five deceased seamen, amounting to £566 1s., have come into the hands of the Department during the year, and, including estates previously received, thirty-five have been finally administrated. A statement is appended showing the estates dealt with and those outstanding. The sum of £40 3s. 1d. has been paid into the Consolidated Fund, representing estates unclaimed for over six years.

Wrecks and Casualties.—Eighty-two inquiries, involving ninety-two vessels, have been held during the year, of which seventy-five were preliminary and seven magisterial. Those on or near the coast of the Dominion were seventy-five, of 94,441 tons register, as compared with sixty-seven, of 40,470 tons register, for the previous year. No lives were lost, as compared with one in the previous year.

A return of wrecks and casualties to shipping during the year is appended.

LIGHTHOUSES, HARBOURS, AND GOVERNMENT STEAMERS.

Lighthouses.—The duties connected with the maintenance of the various coastal lighthouses have been satisfactorily carried out during the year, the lighthouses being tendered by the s.s. "Tutanekai." The transfer of the lighthouse station from East Island to the mainland was completed, and the light in its new position is giving satisfaction. The transfer enabled the Department to reduce the staff from three to two, thus effecting a considerable reduction in cost of maintenance.

A similar saving has been effected at Castlepoint, without impairing the efficiency of the station.

The conversion of the present light on Tiritiri Island to an automatic acetone (unwatched) light has been decided on, and as soon as the apparatus is received in the Dominion the work will be undertaken. A similar conversion at Cape Foulwind is also proposed, and it is hoped to have this work undertaken in the near future also. These changes will enable the Department to effect a reduction of four in the staff, and a very considerable reduction in cost of maintenance.

Arrangements are being made also for the conversion of the Somes Island light to automatic acetone by the Department on behalf of the Wellington Harbour Board, which meets the cost of maintenance.

The erection of an automatic acetone light on Gable End Foreland, which has been recently completed, has given much satisfaction to mariners navigating that part of the coast. The light is of 3,200 candle-power, and has a range of seventeen miles in clear weather.

The erection of an automatic acetone light on Ohena Island, one of the Mercury Group, is practically completed, and will be of much benefit to shipping proceeding to and from Auckland through the Mercury Bay Passage.

It will be seen from the above that there is an increasing tendency towards the adoption of these automatic lights in the case of new lights, and to the conversion of the present watched lights to automatic where it can be done without loss of efficiency. From the Department's experience of these lights it is found that they function most efficiently, and the reduction in cost of maintenance is very considerable, but at the same time I desire to impress that, in consideration of the questions of installing these automatic lights, the factor of safety to shipping is the paramount one.

At Stephen Island oil-engines are being installed, in place of horse-driven whims, for hauling stores from the landing. As all the supplies for this light and for the lightkeepers' families have to be transported over two separate inclines, it is anticipated that this work will greatly improve conditions at the station, in addition to facilitating the despatch of the lighthouse tender.

The question of installing compressed-air fog-signals at Godley Head and Pencarrow Head, in substitution for the present explosive signals, which are out of date and expensive, is under consideration.

The question of a light on the Three Kings Islands was again gone into very carefully. The Marine Engineer, accompanied by a survey party, visited the islands, spent some days there, and surveyed a train route two miles in length from the only practicable landings on the main island to the site which was selected as most favourable for a lighthouse on the western corner, and this was also surveyed. The Western King, which was suggested for the proper site for the light, was also closely examined, and as a result of this survey and examination alternative estimates were prepared, either for a fully equipped watched light-station, with a radio beacon on the main island, or, alternatively, for a duplicate automatic unwatched light on the Western King. Later on the Department, with the assistance of the Post and Telegraph Department, carried out a number of experiments with a radio-beacon apparatus on the Great King to ascertain whether there would be any undue interference with the wireless-waves by reason of the shape or constitution of the ground. The results were quite satisfactory.

In view of the very high cost of either of the alternatives mentioned above it is proposed to go further into the question of providing a radio-beacon at the lighthouse on Cape Maria van Diemen before deciding what aid or aids to navigation are necessary at the Three Kings. The question of automatic lights is also being considered.