

opinion that the present regulations of Harbour Boards in New Zealand will necessarily require revision and consolidation.

*Machinery.*—After going thoroughly into the question of the inspection of running-gear the Commission decided that the inspection of all machinery used for loading and discharging ships, hulks, lighters, or store-ships, and for handling cargo on shore, should be carried out by an Inspector of Machinery appointed by the Marine Department, and recommended that legislation be placed upon the statute-book to give effect to the matter.

*Winches.*—Much evidence was taken in reference to winches, and after considering such evidence we came to the conclusion that it would be well to provide that all winches shall be opened up, dismantled, inspected, and put in thoroughly good working-order at the annual inspection of ships surveyed in New Zealand. This is a precaution warranted by the evidence submitted to us.

*Discharging Coal in Baskets.*—The evidence submitted relating to discharging coal in baskets by means of a bull-rope on to a stage for loading directly into carts or other vehicles proved to us that it was necessary that a minimum width should be fixed for the staging to be used for such purpose. We agreed that in such cases stages should be not less than 3 ft. 6 in. in width and should be firm. This will minimize the danger to those engaged on this class of work.

*T Irons.*—Accidents have happened through the T iron which is used for working a bull-rope coming adrift from the coaming. Some witnesses suggested a two-pronged T iron sealed and clamped, and others a single shaft securely fastened to the coaming. After going carefully into the evidence submitted we agreed that it was necessary for the purposes of safety that the T iron be securely bolted to the hatch-coaming, and consequently made the recommendation herein. We also fixed the diameter of the T of such iron at 3 in.

*Thwartship Hatch-beams.*—Accidents have occurred through men being required to “go out” on beams to ship or unship them. Various devices and methods of obviating this real danger were suggested, and we came to the conclusion that the time had arrived when “bridles” should be shackled to the ends of thwartship beams in order that they might be shipped and unshipped without danger to those engaged in the work. This we believe will minimize accidents. We were informed by witnesses that such a practice was already in vogue in one steamship line, and we propose to make it mandatory and general.

*Lanyards on Fore and After Hatch-beams.*—Accidents have happened through fore and after hatch-beams falling when men were shipping and unshipping them. The Commission unanimously decided that where fore and after hatch-beams were used lanyards and bridles of sufficient length should always be available for the purpose of enabling such beams to be shipped and unshipped from deck. It also decided that all timber fore and after hatch-beams should be shod with iron to minimize wear and ensure safety. We deem this of first importance.

*Lighters and Launches.*—In order to ascertain the conditions pertaining to lighters and launches engaged in roadstead harbours the Commission took evidence in Napier, and while there heard witnesses also from Wanganui and Gisborne. We decided that the time had arrived when the Government should make it imperative that all lighters and launches engaged in roadstead work should carry sufficient life-saving appliances in good order and condition to enable all men on board to be furnished with them in case of peril. We also decided that when hulks were being moved from Port Chalmers to Dunedin life-saving appliances should be carried. It was proved to the Commission that such a recommendation was needed, and should be carried out without any delay. The Commission further decided to require all lighters and launches working in roadstead harbours to carry blue lights for signalling when necessary.

*Hooks for Coal-baskets.*—Serious accidents have occurred through coal-baskets becoming unhooked. Several new kinds of hooks were produced to the Commission, but the actual style of hook was not agreed upon, though it was unanimously decided that a new form of hook was urgently necessary.

*Working-loads.*—The Commission received much evidence relating to the working-loads of chains, and the working-loads of wire, manila, and flax ropes, and of lanyards on cargo-nets. We decided that it was quite possible for the Marine Department to prepare and issue a table giving the recommended working-loads. It was deemed all-important that such table should be issued without delay, for it was clearly proved to us, and must be evident to all, that a recognized table for all to work by would reduce the risk of accident, and would therefore settle the controversy which frequently arose as to what was a “working-load.”

*Breaking-strain of Ropes.*—There is no regulation requiring all ropemakers in New Zealand to guarantee by certificate attached to ropes the breaking-strain of any rope manufactured for sale. This seemed to the Commission to be wrong. A rope, apparently new, of  $1\frac{1}{2}$  in. thickness, which had never been touched by acid, or used or strained, was produced to the Commission, and this rope could be broken by a hand strain without great effort. Serious consequences might have occurred had this condition of the rope in question not been discovered before use. We feel that the time has arrived when, in the interests of all, responsibility should be placed on those who should be able to test a breaking-strain of a rope at the time of its manufacture or sale.

*Lighting Ships and Hulks.*—The Commission went exhaustively into the question of lighting ships and hulks when loading or unloading cargo at night-time. We heard evidence as to the necessity of making it mandatory that electric light should be used. We found that no regulation could be made which would meet every port, so it was decided to recommend that electric light be used where such a current could be obtained; and it was also decided that Harbour Boards should provide connecting-plugs where necessary and where current circulated, so that movable clusters could be attached. Generally, we believe it is imperative that electric light should be used where it can possibly be provided.