

2 ft. by 12 in. by 3 in., was renewed. The decking on the top deck amidships was renewed and sheathed across with 350 ft. of sheathing, with felt and chunam between. Both boilers were raised 12 in. above their original position, and new stools and collision-chocks were fitted. The low-pressure piston and rings, high-pressure piston-rod and rings, high-pressure and low-pressure valve-spindles, and two crosshead brasses were renewed. The holding-down bolts of the engine-bed, which were originally of iron, were replaced with muntz-metal bolts. A new door was fitted to the condenser, and new plungers to the feed and bilge pumps. A length of the main steam-pipe was renewed, and the pipes were tested by hydraulic pressure. The steering-chains were annealed and renewed where required.

S.s. "Rita."—The keel of this wooden vessel for 18 ft. was renewed in ironbark. New brass straps were fitted at the apertures, and a new gudgeon in the rudder. Several new planks were put in the deck. A new mast was stepped aft, and the deck was strengthened underneath. Housing was erected over the engine-room. The bunkers were renewed. A new stay-tube and one new ordinary tube were fitted to the boiler. A compound surface-condensing engine was installed in the vessel. Liners were fitted in the cylinders, and new pistons and rings were also fitted. A new high-pressure piston-valve, new main bearing-brasses, and new thrust-block were fitted. The stern-tube was renewed in bronze.

O.e.v. "Te Toa."—The two sets of steam-engines and the boiler of this vessel have been taken out and replaced by two sets of four-cycle oil-engines. New pieces 15 ft. long have been scarfed into the keelsons. Three new floors have been fitted, and 10 ft. of new ceiling. New hatch-coamings have been fitted, and two new engine-beds have been made. The engine-room bulkhead has been lined with two thicknesses of T. and G. timber with a layer of felt between, and covered with zinc sheeting on the engine-room side.

SURVEY OF SHIPS FOR SEAWORTHINESS.

There has been a considerable increase in the number of surveys for seaworthiness made during the year, the total being ninety-nine. Quite a number of the vessels were damaged through taking the ground, striking wharves, or colliding with other vessels; others were damaged by fire. One accident was due to the overheating of a propeller-shaft liner; small pieces of the liner peeled off and a new liner had to be fitted. In another case a piece of a propeller-shaft liner became detached. The *s.s. "Stella,"* which grounded on the Fish Reef, Moeraki, required extensive repairs. Seven plates were taken out of the hull, rerolled and straightened. One plate was renewed, and two were straightened in place. Five floors and twelve intercostals were renewed. The bulb-iron on top of the keelson was reinforced with heavy angle-bars extending from the forward cross-bunker to the after end of the boiler. One watertight bulkhead was refastened at the bottom. A doubling-plate, 2 ft. square by $\frac{3}{8}$ in. thick, was fitted over a thin plate on the starboard side amidships.

SURVEY OF GOVERNMENT VESSELS.

Sixteen Government vessels were surveyed during the year. Their names are as follows: *S.s. "Ben Lomond," s.s. "Earnslaw," s.s. "Hauraki," s.s. "Hinemoa," o.e.v. "Huia," o.e.v. "Iriini," s.s. "Janie Seddon," o.e.v. "Kohurangi," o.e.v. "Manurere," o.e.v. "Maroro," p.s. "Mountaineer," o.e.v. "Patiti," o.e.v. "P.W.D.," o.e.v. "Sybil," s.s. "Tawera," and s.s. "Tutanekai."*

The "*Hinemoa*" had an extensive overhaul during the year. Both high- and low-pressure pistons of the main engines were drawn; the rods were shimmed up, and new neck-bushes were fitted at both ends. The high-pressure guide-shoes were remetalled, and the bottom end brasses were run up. The engines were thoroughly overhauled. Both main boilers and mountings were overhauled. The bunkers were repaired and strengthened. The bulwark sides and railings forward and aft were renewed. The windlass was overhauled, and three new spur wheels were fitted. Some keel-shoeing was renewed. 30 ft. of wooden sheathing was fitted to the after deck, and the decks were caulked fore and aft. The officers' quarters were cleaned and painted out. New lavatories and bathrooms supplied with hot and cold water were fitted up for the crew. The vessel has been employed continuously during the year on the usual lighthouse work and the cleaning and painting of buoys in the various harbours.

ADDITIONAL STEAMERS AND AUXILIARY-POWERED VESSELS SURVEYED FOR THE FIRST TIME.

Fifty-three vessels were surveyed for the first time during the year. Some of these vessels are of fairly large tonnage and engaged in the overseas trade.

SURVEY OF SAILING-VESSELS.

The number of sailing-vessels surveyed this year is fifty-five. The more important repairs carried out to some of them are set out in the following notes:—

Schooner "Cathkit."—The hull of this wooden vessel was strengthened with thirty-six angle braces, forty struts 6 in. by 6 in. fitted under bearers, and with one piece of timber 29 ft. by 6 in. by 5 in. on the starboard side, and one piece 39 ft. by 6 in. by 5 in. on the port side and fitted on top of the beam-struts; 34 ft. of 12 in. by 3 in. timber was fitted on each side forward, and twelve pieces, averaging 25 ft. long, were fitted in the partitions aft. Five $1\frac{1}{2}$ in. tie-bolts were fitted through the hull from side to side, and fifty-six $\frac{3}{4}$ in. bolts were fitted through the covering-boards from the fore rigging to the break of the poop. Six deck-planks were renewed. The donkey-boiler was opened up and cleaned, and new bolts were fitted to all sludge-hole doors. New gauge-glass mountings were also fitted. The winch and windlass were overhauled, and also the equipment. The standard compass was repaired and adjusted.