

put on the starboard side aft and round the stern. Several top timbers on each side and two angle-iron frames aft were renewed. One V-shaped angle frame, with gusset-plate, was fitted aft close to the sternpost. Other renewals were: Two horn timbers, 7 ft. by 6 in. by 6 in., of kauri; rudder-trunk; stringer on port side, 25 ft. by 9 in. by 2 in.; ledge-piece on port side aft, 20 ft. by 6 in. by 2 in.; and ceiling in hold. Three tie-bolts were fitted from side to side of the vessel. New accommodation was provided for the crew, and a new anchor and 60 fathoms of cable were shipped. The engines were converted from simple non-condensing into compound tandem condensing by adding two H.P. cylinders. New air, circulating, feed, and bilge pumps and a new condenser were placed on board.

S.s. "Warrimoo."—Extensive repairs have been made to the hull and boilers of this passenger-steamer. 287 ordinary and nineteen stay-tubes, and forty-seven screwed stays, were renewed in the forward port boiler; 278 ordinary and twenty-seven stay-tubes, and twenty-four screwed stays, were renewed in the forward starboard boiler; 198 ordinary tubes, one stay-tube, and fifty-nine screwed stays were renewed in the after starboard boiler; and 198 ordinary and six stay-tubes, and fifty screwed stays, were renewed in the after port boiler. Part of the back plating was renewed in the combustion-chambers of the centre furnaces of the forward port and after starboard and port boilers. In the donkey-boiler two new tubes were fitted and test holes drilled in the starboard combustion-chamber. A new furnace was fitted and the uptake was stiffened. On the boat-deck, two tie-plates were fitted between the furnace and engine-room casing, each 20 ft. by 12 in. by $\frac{3}{8}$ in., with two angles, each 21 ft. by $3\frac{1}{2}$ in. by $3\frac{1}{2}$ in. by $\frac{3}{8}$ in., and two straps, each 8 ft. by 3 in. by $1\frac{1}{2}$ in., half round beading. Two tie-plates were also fitted between the funnel-casing and forward stokehold-casing on boat and upper decks. Several bunker bulkheads, after peak bulkhead, and tank-top under boilers were sheathed. Some of the holding-down bolts in main engine bed-plate were renewed. A new propeller-boss was fitted to the tail-shaft, which was drawn for examination. The auxiliary steam-pipes, which, owing to being of brazed copper, were due for testing, were tested by hydraulic pressure.

SURVEYS OF SHIPS FOR SEAWORTHINESS.

As soon as the notice of a mishap affecting the seaworthiness of a vessel had been made known to the local Surveyor of Ships, steps were taken to investigate its nature. In many cases several days were thus occupied before the repairs were completed and the vessel declared seaworthy. The causes which necessitated these surveys include collisions between vessels and with wharves, snags, &c., strandings, defects in hull through bad weather, defective steam-pipes and fittings, leaky combustion-chambers in main boilers, accidents in engine-room, breaking of shafting of propelling machinery, loss of propeller-blades, and fires in holds.

The number of seaworthiness surveys made total seventy-four, and the fees amounted to £170.

Return No. 19 gives a full description of each survey made.

GOVERNMENT STEAMERS.

The Government steamers surveyed during the year numbered ten, as follows: *S.s. "Amokura,"* *s.s. "Antrim,"* *s.s. "Ben Lomond,"* *s.s. "Earnslaw,"* *s.s. "Hinemoa,"* *s.s. "Janie Seddon,"* *s.s. "Lady Roberts,"* *s.s. "Mountaineer,"* *s.s. "Tutanekai,"* and *o.e.v. Defence launch W.* A brief outline of the repairs that were found necessary is as follows:—

S.s. "Amokura."—The upper half of the sides and the top of the boiler and galley casings were renewed. The galley was lengthened 2 ft. on the after end. A new boat-deck, 34 ft. long, was attached to each side of the boiler-casing, and supported on beams and stanchions; chocks fitted for the boats to sit in; the boat-davits lengthened, and supporting-brackets fitted. New pins were fitted in the screw gear of the after boat-davits. The old gun-tables on each side of the vessel were removed, the gun sponson bulwarks and rails repaired, and ironbark belting fitted on the bottom edge of both sponsons. The main and other decks were caulked. A number of the stanchions about the decks were renewed and repaired, the fyfe rails repaired, and a new sanitary tank fitted to boys' latrine. Both boilers were retubed. A number of minor repairs to machinery were carried out.

S.s. "Hinemoa."—A small patch was made and fitted on bottom of starboard boiler, several new bolts were fitted in the old patch, the boilers were caulked where necessary, and new skirting-plates fitted to both boilers. New hydrokineter valves for both boilers were provided, and the feed and bilge pump plungers turned up and rebushed. The L.P. crank-pin brasses were relined, the steering-gear engine overhauled, and new steering-gear chains sheathing-plate fitted on the bottom of the engine-room bulkhead. 30 ft. of the ship's railing was renewed.

S.s. "Tutanekai."—Both propeller-shafts were drawn for examination. A sheathing-plate was fitted on the intercostal in the after-peak tank.

Defence launch W.—New cylinders were fitted to the engines.

"Ben Lomond."—A new boat was placed on board.

"Lady Roberts."—The principal repairs to this vessel were those made to the main boiler. 136 rivets were drilled out of the combustion-chambers round the bottoms and also on the back ends of furnaces. The rivet-holes have been countersunk a little deeper, and new rivets put in. Several rivet-holes which were found not to be fair were rymered, and special-sized lawmoor iron rivets were fitted into them. Two pieces of cracked plate were cut out of the flanging at the camber of the back end of the starboard furnace, and riveted and caulked patches fitted. Two cracks in the flanging on the combustion-chamber back-end plate, near the bottom, were studded and caulked over. After completion of the repairs, the boiler was tested by hydraulic pressure to about one and a half times the working steam-pressure. Both tail-shafts were drawn, and two new white-metal stern bushes fitted. Four slide-valve rods were turned up and four new turned-steel collars were fitted to the valve-rods for the bottom ends of slide-valves.