

S.s. "Warrimoo."—Some important repairs were made to the boilers of this vessel, as follows: In the after starboard boiler all plain tubes in centre combustion-chamber were renewed. In the centre furnace twenty-four rivets were taken out and cracks welded with oxyacetone blow-pipe and riveted. In the after port boiler eighty-five plain tubes and one stay-tube were renewed, also several combustion-chamber stays and rivets. In the starboard forward boiler several stays, nuts, and rivets were renewed. In the port forward boiler, besides some stays and rivets, a new furnace of the Fox type was fitted on the starboard side, and the boiler tested by hydraulic pressure. In the donkey-boiler all girders were taken off and refitted to tops of combustion-chambers. This boiler was tested by hydraulic pressure. In the bulkhead between No. 2 hold and bunker six plates, each 12 ft. by 5 ft. by $\frac{3}{8}$ in., were renewed, and one sheathing-plate, 6 ft. by 5 ft. by $\frac{3}{8}$ in., was fitted. In the forward bunker three plates, 8 ft. by 4 ft. by $\frac{5}{16}$ in., were renewed. On the ship's side in way of the forward bunkers eight reverse bars, each 6 ft. long by 5 in. by 3 in. by $\frac{3}{8}$ in., were fitted. In the after cross-bunker one beam was repaired by fitting two plates, one on each side, 6 ft. by 9 in. by $\frac{1}{2}$ in. In the saddle-back one patch, 4 ft. square by $\frac{1}{8}$ in., was fitted, and one plate, 6 ft. by 3 ft. by $\frac{5}{16}$ in., was renewed. Four stiffeners, each 8 ft. long by 5 in. by 3 in. by $\frac{3}{8}$ in., were fitted on after bulkhead of after cross-bunker. In the fore and after bunker one patch, 16 ft. by 2 ft. by $\frac{5}{16}$ in., and five small patches, each 5 ft. by 3 ft. by $\frac{5}{16}$ in., were fitted. Several patches were put into the starboard ballast-tank. A new watertight door was put in the bulkhead between No. 2 hold and the bunker. Thirty-five stanchions were fitted between the main and upper decks. To the main engines a new h.p. piston-rod was fitted. The l.p. valve was faced up, and two brass bars were fitted to the edges of the steam-ports. New l.p. crank-pin brasses were fitted. New bolts in No. 2 coupling, new liner in circulating-pump bucket, and new coils in feed-heater were also fitted.

SURVEYS OF SHIPS FOR SEAWORTHINESS.

Special surveys of steamships and other vessels totalling fifty-six were made during the year. The repairs that were found necessary to make some of the vessels safe were of a very extensive character, and necessitated the removal of a great many hull-plates and the reconstruction of the framing of the vessels in parts. Some of the causes for these surveys include collisions, strandings, defects in fastenings, defective rudders, shaft defects, loss of propeller-blades, defective rivets, steam-pipe fractures, defects in steering-gear, fires in holds, defective furnace-tubes in boilers, and defects in engines. The fees for these surveys amounted to £169.

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

GOVERNMENT STEAMERS.

The Government steamers surveyed this year include the *s.s. "Amokura," s.s. "Antrim," s.s. "Ben Lomond,"* o.e.v. defence launch "*W*," *s.s. "Hinemoa,"* o.e.v. "*Huia*," o.e.v. "*Irini*," *s.s. "Janie Seddon,"* o.e.v. "*Maroro*," *s.s. "Mountaineer,"* o.e.v. "*Patiti*," o.e.v. "*Rere-moana*," *s.s. "Tawera*," and *s.s. "Tutanekai*," a total of fourteen. A brief summary of the principal repairs effected to these steamers is given.

S.s. "Amokura."—The air-pump chamber of the main engines was bored out, a new gun-metal ring and tongue-piece was fitted to the bucket, four new gun-metal valve-seat plates were made and fitted in the recesses in the pump, and the old valves and springs were fitted to the plates. The drainpipe from the whistle and syren was altered and lengthened, and a new non-return valve fitted. Four new steel flanged furnace-fronts, with brackets, &c., were made and fitted to the boilers, and two new steel furnace-doors were made and fitted. Four new cast-iron bridge-chairs were made and fitted into the back of furnaces. The floor-plates under the boilers were sheathed, and additional reverse bars were fitted where necessary. One new ash-shoot was made for the port side. Three ventilator-slides in air-casing were taken off, the casing was patched, and the slides were refitted in position. Seven relief port-doors in bulwarks were renewed. Four boat-davits were fitted with new pins and bushes in the bottom joints. Six new bunker-gratings were fitted. Four new mooring-pipe covers were made and fitted. A new cover was made and fitted to the port-side hawse-pipe, and new hinges were fitted to the starboard hawse-pipe cover. The fore-castle-deck skylight was fitted with four new wrought-iron covers and fittings complete. The mess-deck skylight was fitted with new stanchions and chains for holding skylights open. Two new doors were fitted to the galley. One new ventilator was made and fitted to the steerage and mess decks, and six other ventilators were fitted with new cowls. The funnel was taken out and the lower portion of it and the air-casing were renewed. New angle-irons were fitted in the smoke-boxes. Two new gun-metal check-valve spindles were made and fitted. Seven sheathing-plates were fitted to bunker-plates. Four new stanchions were fitted to the gangways.

S.s. "Antrim."—Several of the planks of the hull under the paddle-boxes on both sides of hull were renewed. All butts and seams in the hull were caulked where necessary. The engines were also thoroughly overhauled.

S.s. "Ben Lomond."—A new stern-tube was fitted, and 10 ft. of the belting on the port side of the vessel was renewed.

Defence Oil-launch "W."—New cylinders were fitted to the engines, and also one new connecting-rod.

S.s. "Tutanekai."—A new funnel was fitted, 5 ft. 6 in. diameter and 44 ft. long, also a new foundation-plate for funnel, and new damper. A new donkey-boiler funnel was made and fitted inside the main funnel. The two waste steam-pipes were each lengthened 6 ft. and attached to funnel. The whole of the wooden decking on the bridge deck was renewed.

S.s. "Hinemoa."—A new Chadburn's repeating telegraph with all the necessary connections was fitted on the bridge and in the engine-room. Two new plates and angle-irons were fitted in the stern bulwarks. The angle-iron on the top of bulwarks all round the counter was renewed.