

rubber joints and bolts were fitted to some of them. Some air-tanks for lifeboats were repaired, and thirty-six new patent sheaves were fitted to boat's tackles. The mizzen-mast was taken out and the defective portion in way of tops was cut out, 12 ft. of new mast put in, and the mast converted into a pole mast.

S.s. "Aotea," of Kaipara.—The hull of this vessel has been thoroughly strengthened, and there is now no vibration of the hull when vessel is under way. The hull-planking under the covering-board on each side was removed, and a 10 in. by $\frac{1}{2}$ in. steel-plate longitudinal stringer was fitted for the full length on both sides of hull. New timber was fitted over the stringers and bolted with through bolts to the frames of the vessel. All fittings inside the vessel were removed, and twelve angle-iron bars, 3 in. by 3 in. by $\frac{7}{16}$ in., were fitted diagonally from under the deck, down the sides of the vessel, and bolted to the sister keelsons. Four plate brackets were fitted vertically on the outside of the vessel to underneath the skeleton keel, which supports a bare stern-post carrying the outer end of the tail-shaft. The tail-shaft was drawn, a new brass liner fitted, and the stern bush rewooded.

S.s. "Arapawa."—No. 1 hatch of this steamer was removed and the foremast put 8 ft. further forward. No. 2 hatch was lengthened to 20 ft. 6 in. Three large gusset-stays were fitted to each side of the vessel in lieu of stanchions. The coamings of the new length of the hatch were made thicker than those in the old part, and were stiffened with angle irons to compensate for the larger opening in the deck. A sketch of the alterations to be made were submitted to the Department and approved of before the contract for the work was let.

P.s. "Clutha."—The steel hull, engines, and boiler of this vessel were built last year in Dunedin under the supervision of the Department's Surveyors. The vessel is engaged carrying passengers and cargo on the Clutha River. Her tonnage is 173 gross and 95 register, and the length, breadth, and depth are 107 ft., 26 ft., and 5 ft. 3 in. respectively. The vessel is propelled by two stern paddle-wheels driven by two sets of compound surface-condensing engines, with cylinders 12 in. and 24 in. diameter and 33 in. stroke. Steam is supplied by a locomotive boiler fitted with a superheater, at a working-pressure of 160 lb. per square inch. The boiler-barrel is 5 ft. 3 in. diameter, and there are 146 tubes, $2\frac{1}{2}$ in. diameter by 8 ft. 9 in. long. The firebox is 6 ft. $3\frac{1}{2}$ in. long by 4 ft. 9 in. wide inside. The paddle-wheels are of the feathering type, and are 10 ft. diameter over all.

S.s. "Energy."—The hull, engines, and boiler of this vessel received a thorough overhaul. To the hull new bulwarks and coamings were fitted, and a new skylight to the engine-room. A new lamp-locker and deck-house were built. A complete new rudder was fitted. In the engine-room, pistons, pumps, &c., were overhauled, and new crossheads and guides and a new l.p. slide-valve supplied. All plain tubes and combustion-chamber crown stays, fifteen space-stays, the patch in furnace and combustion-chamber, all water-gauge mountings and test-cocks, and the funnel were renewed.

S.s. "Fire Float," of Auckland.—A new set of compound surface-condensing engines was fitted to this vessel. The cylinder-diameters are 9 in. and 18 in., with a stroke of 10 in. New main and auxiliary steam-pipes were fitted, and tested by hydraulic pressure to double the working steam-pressure.

S.s. "Flora."—Extensive alterations and repairs were made to this vessel, which has now been converted from a passenger to a cargo vessel. A new h.p. valve and a new tail-shaft and propeller-blades were fitted to the engines. Several patches and stay-nuts in the main boilers were renewed. The donkey boiler was put ashore. A deck-house was renewed. Three extra hatches and five new winches were fitted. The masts were shortened and moved aft 8 ft. Sixteen new stanchions were fitted in the 'tween decks, and one new mooring-pipe and sheathing-plates fitted in way of same. Thirty of the ports were closed up in the ship's side. The passenger accommodation was converted into hold space. The deck was repaired under the donkey boiler, and also the bulwarks in way of Nos. 3 and 4 hatches; 30 ft. of new bulwarks were fitted in way of Nos. 1 and 2 hatches, and some of the rivets were renewed in the hull.

S.s. "Hawiti."—This vessel, which is of wood, was built in Auckland for the passenger and cargo trade. The plans of the hull were submitted for approval and passed before the construction was begun. The principal dimensions of the vessel are—Tonnage, 147 gross and 82 register; length, 100 ft.; breadth, 20 ft.; depth, 7 ft. 6 in. The propelling machinery consists of one set of compound surface-condensing engines of 230 i.h.p., supplied with steam from a marine multi-tubular boiler. The passenger accommodation consists of a dining-saloon and ladies' cabin in the after-part of the vessel. The vessel may carry 28 passengers at sea, and 242 and 439 passengers in partially smooth and smooth water limits respectively.

S.s. "Hawera."—This vessel, which is also of wood, was built in Auckland for the Patea Shipping Company. Plans and specifications of the hull were submitted to the Department and approved before the construction of the vessel was commenced. The hull is built on the diagonal principle, and is insulated. The keel, keelsons, stem, stern-post, engine, and boiler-beds, &c., are of ironbark. All the planking and decks are of kauri. The tonnage is 174 gross and 92 register. The length is 108 ft., breadth 20 ft., depth 9 ft. 4 in. The main engines consist of one set, compound surface-condensing, with cylinders 12 in. and 28 in. diameters by 18 in. stroke. They were made in Auckland. The main boiler is 9 ft. 9 in. diameter by 9 ft. long, with a working-pressure of 130 lb. per square inch, and was built in Glasgow. The "Hawera" is principally employed carrying general cargo and produce.

S.s. "John."—This is a steel screw vessel built in 1898 at Dundee, and has been bought by a New Zealand owner for the coastal cargo trade. The vessel was surveyed for the first time in New Zealand this year. The principal dimensions are—Length, 125 ft.; breadth, 25 ft. 3 in.; depth, 9 ft. 9 in. Tonnage—Gross, 342; register, 111. The engines are compound surface-condensing; diameters of cylinders, 15 in. and 32 in.; length of stroke, 24 in.; boiler pressure, 130 lb. per square inch.