

side, and 32 ft. of the same keelsons on each side aft, were renewed. The main and rider keelsons were 14 in. by 12 in., the bilge keelsons 12 in. by 12 in. amidships and 10 in. by 10 in. aft, being all of ironbark timber.

*S.S. "Gannet."*—The old deck-planking of the vessel was removed and the deck raised aft. Eight defective deck-beams were replaced with new beams, and four natural-bend timbers were renewed on each side amidships. A new rudder-stock and several new hull-planks were also fitted. The boiler was taken out of the vessel, and fifty rivets were cut out and renewed at the end of the butt strap on the back end of the furnace. The shell was cleaned and painted, and the boiler tested to 150 lb. hydraulic pressure.

*T.S.S. "Hipi."*—The quadruple expansion engines of this vessel were replaced with two sets of compound engines, and a new Edwards air-pump was installed. A new main boiler was also fitted. The vessel also had new bunkers, new stern-brackets, new decks, and new covering-boards where they were found defective. The hull was strengthened with doubling beams and heavier stringers.

*S.S. "Invercargill."*—A considerable amount of repairs was found necessary in the neighbourhood of the after ballast-tank. Several floors, reverse bars, and intercostals were renewed. In the fore and after holds several reverse bars were renewed. The forepeak bulkhead was stiffened with two new angle-bars. A new high-pressure crosshead pin and brasses were fitted to the high-pressure engine, and a new bucket and rod to the circulating-pump. Division plates at each end of the condenser were renewed. A patch on the bottom of the port combustion-chamber of the main boiler was taken off and riveted. The lifeboats were overhauled and the buoyancy tanks were tested. A new standard compass was fitted.

*S.S. "Kahika."*—At the annual survey of this vessel the boilers and engines were the only parts requiring important repairs. Patches were fitted on each side of the three furnaces of the main boiler, and about forty combustion-chamber stays were renewed. Six stay-tubes, fifteen plain tubes, and several rivets were also renewed. The donkey boiler was retubed. Two gusset-stays were renewed. Three new sludgehole-doors and one manhole-door were fitted. The high-pressure cylinder was lifted out and a crack in the cylinder-jacket was patched and a ring shrunk on the cylinder. No. 2 cylinder was bored out and a new piston fitted. The crank-shaft was rebuilt with a new length of shafting and new crank-pins.

*S.S. "Kittawa."*—The hull, main and donkey boilers, and engines all received a thorough overhaul. In the after hold twelve reverse bars were renewed. Sections of the coamings of the engine and boiler casing were cut out and renewed. In the bunkers the casing and trunk-way hatch-coamings were repaired, and two 'tween-deck plates were renewed. Eighteen floors in No. 3 ballast-tank were renewed. Repairs had to be made to the rudder, and the tail-shaft was drawn for inspection. A cargo-derrick was replaced with a new spar, and the mainmast was lifted out and a new centre built in it. New foretopmast-stays, maintopmast-backstay, and four topmast-backstays were fitted. The main engine-shafting was lined up and a number of holding-down bolts were renewed. The plain tubes of the port combustion-chamber of the main boiler were renewed, and eighteen screwed stays in the port and centre combustion-chambers were renewed. The wasted portions at the bottom of the front of the boiler were made up with the oxy-acetylene process. All the plain tubes of the donkey boiler were renewed, and a patch round the bottom of the boiler was riveted and caulked. New main steam-pipes were installed and tested to a suitable hydraulic pressure.

*S.S. "Ohinemuri."*—The repairs effected to this vessel's main boiler consist of new ends, 2 ft. long, to both furnaces, and a new combustion-chamber bottom. The boiler was afterwards tested by hydraulic pressure. In the hull, four planks on the port side and two in the garboard strake, starboard side, and six in the fore deck were renewed. A new piece of timber was fitted in the aperture, and the bottom of the hull was sheathed with totara.

*S.S. "Opihi" (formerly the coal-hulk "Lilla").*—This vessel was built in 1886 of iron, and is 208.5 ft. in length, 34.6 ft. beam, and 21 ft. in depth. The hulk was originally a sailing-vessel. A great deal of the material and machinery, including the stern-frame, engines, and boilers, which were used in making the alterations to the "Opihi" were salvaged from the wreck of the s.s. "Opouri." The "Opouri" was an up-to-date steamer, but smaller than the "Opihi." Close investigation of the strength of the hulk had therefore to be made to ensure that the combination of old and modern methods of construction, and the re-enforcing of the weaker parts of the sailing-vessel and of the smaller scantlings of the parts salvaged from the "Opouri" would have the same efficiency as if the vessel had been designed originally to the requirements of a steamship. New plates were fitted at the stern, and the floors and frames in the machinery-space were strengthened. The hold is 110 ft. long, and has two hatchways, in way of which deep web frames are fitted. Bulkheads were erected dividing the vessel into four watertight compartments. The vessel has two masts, and is schooner-rigged. New fore and main rigging and stays, derricks, goose-necks, gin-blocks, and bands at mast-head were fitted.

*S.S. "Parera."*—It was found necessary to renew parts of this vessel's hull as follows: Twenty planks, seventy frames, eight floors, two stringers, decking aft, and the housing over the engine and boiler. The engine and boiler seatings were also renewed, and a new propeller was fitted.

*S.S. "Stella."*—The woodwork was stripped from the hull, the main and donkey boilers and the fresh-water tanks were removed, and the following repairs carried out: Seven floor-plates at the after end of the fore hold were renewed; five reverse frames in the boiler-space and seven on each side of the fore hold were strengthened; strake-plates E 4 on the port and starboard sides were renewed; new bottom plates and one on the top were fitted in the tunnel; a new deck-stringer was fitted on each side of the engine-casing, and the tie-plates at the boiler-casing, the boiler-casing coaming-plates on each side, and three plates on the port side of the boiler-casing and one on the starboard