

X. 24132

# Report of Survey for Repairs of Engines and Boilers.

No. 3554 on the SS. Rio "Lima" Date, first Survey 10<sup>th</sup> June Last Survey 1879  
Reg. Book. Falmouth Master A Villar  
Built at Newcastle When built August 1872  
Tons 285 Owners Companhia Thetis Port belonging to Oporto Classed 90 A. 1. 3. 78  
Lloyd's M.C. 3. 78

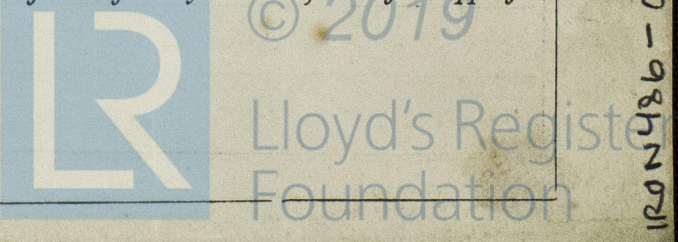
Diameter of Cylinders 20" & 36" Engines made at South Shields When made 1872  
Length of Stroke 24" Pressure of Steam 5-6 By whom made Marshall Osborne & Co.  
Registered Horse Power 5-6

*Particulars of Repairs and Examination* SS. On Engines and Boiler after damage said to have been occasioned through stress of weather while on a voyage from Antwerp to Vigo with railway iron. On examination it was found that the High pressure Cylinder bottom was knocked out, and the piston, with junk ring, Spring Metallic ring and springs were completely destroyed. The piston rods bent, the Forward slide rod broken, the piston rod guides loose, the eccentrics loose on the shaft. The Air and Circulating pump beams bent, the Connecting rods bent, the Low pressure piston very much worn from the action of the steam passing it, the Low pressure Cylinder grooved and not parallel. The Circulating pump discharge pipe broken at the flange on ships side, the Air, Circulating, Bidge, and feed pumps in a bad state of repair, the Condenser tubes beating badly, the Thrust shaft flawed in two places, and the Engines generally in a very bad state of repair. The Boiler is showing general signs of weakness in all parts, especially in the longitudinal stay and front plates. The Port furnace is down slightly for some considerable distance. The Stern tube and propeller shaft have not been seen, the vessel not having been docked.

A new High pressure Cylinder, with piston complete has been fitted, the Slide valve being retained. The Low pressure Cylinder has been filed out parallel, the piston turned up and a new metallic ring and new junk ring nuts fitted. The piston rods and Connecting rods have been straightened, the guides planed up and new guide blocks fitted. For slide rod repaired, a new slide Chest-cover and balance piston fitted to the slides, the Link motion has been thoroughly repaired, new steel pins, and new link blocks fitted, new brasses fitted to piston rod ends, the guides in Connecting rods tuned up, the Crank shaft put in the lathe and examined, and the crank pin tuned up, the eccentric straps let together, and the eccentrics fixed on the shaft. The pump beams have been straightened and the brasses adjusted. The bidge and feed pump plungers have been turned up and the glands re bushed. The Air and Circulating pumps have been repaired and new valves fitted; two new Starting Valves with boxes complete fitted to cylinders, and a stop valve fitted in the steam pipe. All Condenser tubes have been repaired and the Condenser tested. All shaft brasses have been adjusted. A new Thrust shaft 9 ft. long has been made and about 3 ft. lagged on to the original shaft which was 18 ft. long, this shaft

The Amount of Fee ... £ 2 : 2 : 0 received by me,  
Certificate (if required) ... £ 3 : 3 : 0 23<sup>rd</sup> July 1879  
Survey for Damage ... 6 " 5 " 0

Morton  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.





is now in two parts coupled in the centre and an additional Carriage in the tunnel to support it. A new discharge pipe to circulating pump fitted with expansion joint, an expansion joint has also been fitted to air pump discharge pipe. The cylinders have been new lagged, and the Donkey thoroughly repaired. Two longitudinal stays have been taken out of the steam space in the boiler, and new ones welded on them; the vertical stays in the steam dome have been reriveted, and one new  $\perp$  iron to support the bottom of a vertical stay has been put in. The safety valve box has been taken off and rejointed. The boiler tested by hydraulic pressure to 90 lbs. The pressure on the boiler has been reduced from 70 lbs to 60 lbs and the safety valves set to relieve at this pressure. The Machinery and Boiler of this vessel are now in a good state of repair, and in a safe working condition, and fit to remain as classed. The boiler, I think should be examined again in twelve months.

Morton.

The following note has been made in my report of this vessel to the Agents.

(Note) The Stern tube and shaft have not been examined owing to the vessel not having been docked. I beg respectfully to suggest that this be examined as soon as possible after the vessel arrives in Port. to enable her to retain her Character in the Register Book, in accordance with Sec 22 of the Rules of this Society.

Morton

The machinery of this vessel has been examined and put in good repair. The steam tube & steam connections have not been seen. It is suggested that the vessel should be docked in Feb but not a new certificate or order should be given until the boiler is examined. Of this the owner has no notice given them.

Morton  
28/7/79