

* 17372

Report of Survey for Repairs of Engines and Boilers.

No. 35

No. in Reg. Book. Survey held at Sunderland Date, first Survey July 27th Last Survey Nov 2^d 1876

371 on the Steam Ship "Libra" 617 Tons

Owners General Steam Navigation Co. Port belonging to London Classified Years assigned. Character in Register Book. AI

Diameter of Cylinder S. 43 x 78 Engines made at Dundee When made 1869
Length of Stroke 36
Pressure of Steam 70 lbs per sq. inch By whom made Gourlay, Bros & Co.
Nominal Horse Power 250

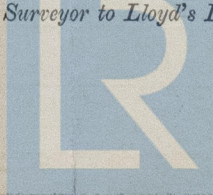
Particulars of Repairs and Examination The Engines were compounded by removing the two old cylinders, and fitting one high pressure, and one low pressure cylinder in their place; with the exhaust passages in them arranged so as to fit on to the old framings, which form the exhaust pipes to the surface condenser. These cylinders are fitted with new pistons, slide valves, and covers complete. The piston rods were trued up in the lathe. The forward crank pin was filed up smooth, and the connecting rod brasses fitted to it, and all the other bearings of the crank shaft adjusted. The balance weights were taken off the crank shaft. New eccentric pulleys fitted on the crank shaft, and all the eccentric rods, link motion, and valve gear repaired, and adjusted. Auxiliary starting valves fitted with the necessary rods and handles. A throttle valve, and stop valve fitted in the engine room, for the main steam pipe; the governor connected to the throttle valve. The cylinder of the starting engine was bored out, and the piston of it fitted with new junk and packing rings. The gudgeon pins of the connecting rods, were filed round, and smooth, and the brasses of them adjusted. A new guide block fitted to the piston rod crosshead, of the after engine. The tubes were all taken out of the surface condenser, and retubed with new ones. The air pumps were fitted with new valves, and the buckets with new wood. The feed pump plungers were trued up, the glands bushed, and new neck rings, and valves fitted. The circulating, and bilge pumps were overhauled. All the connecting rods of these pumps adjusted. The donkey engine was overhauled; and bilge suction connected to it, to draw from the forward, and after holds, with a cock & non return valve to suit. The propeller shaft was drawn and a new lignum vitae bush fitted in the rudder post; the lignum vitae in the outer end of the stem tube, was in a good condition and not worn. The shafts in the tunnel were all disconnected, and the bearings for them were put in a true line. The old tunnel was removed, on account.

The Amount of Fee ... £ 21 : 0 : received by me, }
Certificate (if required) ... £ - : - : - 187 }

(Travelling Expenses, if any, £ - : - : -)

Committee's Minute

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



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IRON 469-0189

17372 Iron.

of it not being watertight, having no bottom, only planking to walk upon. There was no entrance to the tunnel; excepting down a trunkway from the main deck. A new tunnel has been fitted complete, and caulked, with ~~the~~ entrance from the engine room, and a new sluice door, fitted on the bulkhead.

The two old main boilers, donkey boiler, and coal bunkers in the boiler room, were taken out. The forward bulkhead of the boiler space was removed aft (about 6 feet). New coal bunkers were built on each side of the boiler room; New plates were riveted on to the ship's floors, for the boiler seating.

Two new boilers put in and fixed with cast iron brackets on the bottoms, and with stay bolts to the ship's frames on the tops. The boilers are fitted with new mountings complete; New Chimney, Air casings, and deck work. New brine and blow-off cocks, are fitted on the round of the ship's bilge, above the flooring. New Main steam pipes, and feed pipes were fitted.

A new donkey boiler put in, new safety valve fitted on it, and the other mountings of it, renewed or repaired. The small donkey pump for feeding it, was repaired. A connection was made so that the main donkey can likewise feed the donkey boiler.

I was present on Nov^r 2^d when the steam was raised, and the engines worked. steam 50 lbs, Vacuum 27 inches. revols 50. all worked very satisfactory. The spring safety valves were adjusted and tested at a working pressure of 70 lbs per sq. inch.

In my opinion the Engines and Boilers of this vessel, are in good order and safe working condition.

William Allison.

On November 4th the undersigned was present at the trial trip when everything in connection with the engines and boilers worked satisfactorily. Steam 50 lbs. Revolutions per min 45. Vacuum 27 1/2 inches.

Amos P. Ben



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