

# LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

## ENGINEER SURVEYOR'S REPORT ON MACHINERY.

### ENGINES.

Description *Two Cylinders Inverted Compound S.C.* Are all the bilge suction pipes fitted with roses *Yes*  
 Made by *Messrs R. & W. Hawthorn* No. of feed pumps *(2)* and sizes *4 1/2" dia 13" stroke*  
 When *May 1874* At *Newcastle* What gauges are there attached to the engines and boilers ... *(1) Steam in each boiler 10" dia 13" stroke*  
 Diameter of cylinders *32" & 62"* Length of stroke *36"* *(1) Gauge for both engine rooms*  
 No. of revolutions per minute *60* Description and size of Donkey Pumps ... *(1) Vacuum Gauge, 1 Compound gauge*  
 Point of cut off *for 1/2 lbs of stroke* Where do they pump from ... *No 1 Ballast pump D.A. 8 1/2" dia 14" stroke*  
 Diameter of screw shaft *10" with Propeller* *No 2 Ballast pump D.A. 3 1/2" dia 8" stroke*  
 Diameter of crank shaft journals *10"* No. of bilge injections *(1)* and sizes *6"*  
 Diameter of screw, or paddle wheel *15' 0"* Are they connected to air, or circulating pumps *Circulating*  
 Pitch of screw *13' 0" to 16' 0"* Is there a hand pump in the engine room *No.*  
 No. of blades, *(14)* Total surface *58 sq. feet* Can it be worked by the main engines *No. 2 donkey used*  
 No. of bilge pumps *(2)* and sizes *5" x 13"* Is there a deck hose of sufficient length to reach to any part of the vessel *Yes.*  
 Do they pump from each compartment *one from Sea & engine room*

### MAIN BOILERS.

Number *Two* Description *Cylindrical Tubular* Can the super-heater be shut off and the boilers worked separately *Yes*  
 Made by *Messrs R. & W. Hawthorn* Description and area of safety valves on each boiler ... *Two Spring safety Valves by R. & W. Hawthorn 4" dia 25 sq. in area*  
 When *May 1874* At *Newcastle* No. of square feet of fire-grate surface in each boiler *45 sq. feet*  
 Working pressure *40 lbs* Are there separate blow off and brine cocks on each boiler, independent of those on the vessel's skin *Yes*  
 Tested by hydraulic pressure to *140 lbs*, Date *March 30/74* Are all pipes, cocks, roses, and pumps in connection with the machinery accessible at all times ... *All except roses in fore hold*  
 Description of super-heating apparatus *None* Can each boiler be worked separately *Yes*

### DONKEY BOILER.

Description *Vertical Cylindrical 3 Cross Motor boiler* Tested by hydraulic pressure to *100 lbs*, Date *23 March 74*  
 Where fixed *Side hold* Description and area of safety valves *one dead weight 2 1/2" dia = 5.4 sq. inch*  
 Working pressure *45 lbs per sq. inch* No. of square feet of fire grate *14. sq. feet*  
*Messrs John Smith & Sons Newcastle*

### PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *Yes* What pipes are carried through the bunkers *None*  
 Are they Kingston valves or common cocks *(14) Stop valves rest as common Cocks.* How are they protected *None*  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stow hold plates *Yes* When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *March 1874*  
 Are the discharge pipes above or below the deep water line *Below* Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *Yes.*  
 Are they each fitted with a discharge valve on the plating of the vessel *Yes* Is the screw shaft-tunnel water tight and fitted with a sluice door on bulkhead *Yes.*  
*Robert Hawthorn* Manufacturer. *present when engines Boilers & Safety Valves were tried under steam valves used 100 lbs, 60 lbs accumulation 5 lbs.*

I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron (or Wood) Screw (or Paddle) Steam Vessel *"Lombard"* owned by *J. H. Davison*  
 of the Port of *London* of *1122.20* Tons Register, and *160* Registered Horse Power,  
 and that they have been carefully inspected and examined by me at *Wilmington on 24th*  
 and found to be at this date, viz., *May 2nd* 1874 in good order and safe working condition.

Amount of Fee for Survey ... £ *0 : 0 : 0* received  
 (Travelling Expenses, if any, £ *0 : 0 : 0*) by me *George W. Munnell*  
*22/5/74*

George W. Munnell  
 Engineer Surveyor to Lloyd's Register of Shipping.  
*North Shields*