

18506 Iron.

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rev 24/5/77

Description *Two Cylinders Inverted Compound S.C.*
 Made by *Messrs R. & W. Hawthorn*
 When *May 1874* At *Newcastle*
 Diameter of cylinders *32" & 62"* Length of stroke *36"*
 No. of revolutions per minute *60*
 Point of cut off *in eighths of stroke*
 Diameter of screw shaft *10" with Propeller*
 Diameter of crank shaft journals *10"*
 Diameter of screw, or of paddle wheel *15' 0"*
 Pitch of screw *13' 0" to 16' 0"*
 No. of blades, *(14)* Total surface *58 sq. feet*
 No. of bilge pumps *(2)* and sizes *5" x 13"*
 Do they pump from each compartment *one from Sea & Engine Room*
 one " " *Engine Room*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *(2)* and sizes *4 1/2" dia 13" Stroke*
 What gauges are there attached to the engines and boilers ... *(1) Steam in each boiler & Slope pipe*
(1) Baro for both engine & boiler
(1) Vacuum Gauge, 1 Compound gauge
 Description and size of Donkey Pumps ... *No 1 Ballast pump D.A 8" dia 14" Stroke*
No 2 Baro pump D.A 3 1/2" dia 8" Stroke
 Where do they pump from ... *No 1 from Tanks Fore hold*
Engine room Bilge & Lift well
No 2 Engine Room Bilge & Sea
 No. of bilge injections *(1)* and sizes *6"*
 Are they connected to air, or circulating pumps *Circulating*
 Is there a hand pump in the engine room *No.*
 Can it be worked by the main engines *No 2 donkey used*
 Is there a deck hose of sufficient length to reach to any part of the vessel *Yes.*

MAIN BOILERS.

Number *Two* Description *Cylindrical Tubular*
 Made by *Messrs R. & W. Hawthorn*
 When *May 1874* At *Newcastle*
 Working pressure *40 lbs*
 Tested by hydraulic pressure to *140 lbs*, Date *March 30/77*
 Description of super-heating apparatus *None*
 Can each boiler be worked separately *Yes*

Can the super-heater be shut off and the boilers worked separately *Yes*
 Description and area of safety valves on each boiler ... *See Spring safety Valves by R. & W. Hawthorn 4" dia*
25 sq. in area
 No. of square feet of fire-grate surface in each boiler *45 sq. feet*
 Are there separate blow off and brine cocks on each boiler, independent of those on the vessel's skin *Yes*
 Are all pipes, cocks, roses, and pumps in connection with the machinery accessible at all times... *All except roses in Fore hold*

DONKEY BOILER.

Description *Vertical Cylindrical 3 Cross Metal tubes*
 Where fixed *Side hold*
 Working pressure *45 lbs per sq. inch*
 Tested by hydraulic pressure to *100 lbs*, Date *23rd March 77*
 Description and area of safety valves *one dead weight 2 1/2" dia = 5.4 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*
 Are they Kingston valves or common cocks *(14) Stop Valves rest as common Cocks.*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stee hold plates ... *Yes*
 Are the discharge pipes above or below the deep water line *Below*
 Are they each fitted with a discharge valve on the plating of the vessel *Yes*
 What pipes are carried through the bunkers *None*
 How are they protected *None*
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *March 1877*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *Yes.*
 Is the screw shaft-tunnel water tight and fitted with a sluice door on bulkhead *Yes.*
permanently when Engines Boilers & Safety Valves were tried under steam valves used 70 lbs, 69 lbs accumulation 5 lbs.
R. & W. Hawthorn Manufacturer.

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 Tyne*
 and found to be at this date, viz., *May 2nd 1877* in good order and safe working condition.

Amount of Fee for Survey *£ 0 : 0 : 0* received
Surprise 0 : 5 : 0 by me
 (Travelling Expenses, if any, £ *0*)
P. Young
22/5/77

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