

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rec 18/11/76

Description *Compound Double Surface Condensing*
 Made by *Messrs R. & W. Hawthorn*
 When *October 18/76* At *Newcastle*
 Diameter of cylinder *31" x 1-66"* Length of stroke *148"*
 No. of revolutions per minute *About 64*
 Point of cut off *9/16th of stroke*
 Diameter of screw shaft *11 1/2"* Tunnel shaft *10 1/2"*
 Diameter of crank shaft journals *11 1/2"*
 Diameter of screw, ~~or of paddle wheel~~ *16 ft*
 Pitch of screw *18 to 22 ft*
 No. of blades, *4* Total surface *64*
 No. of bilge pumps *2* and sizes *4 1/2 x 15 stroke Single Acting*
 Do they pump from each compartment *from sea, tank, engine room, fore hold, and after hold.*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *3* and sizes *3 1/2 x 24 stroke Single Acting*
 What gauges are there attached to the engines and boilers ... *3 Steam 1 Vacuum*
 Description and size of Donkey Pumps ... *Two Horizontal, Double acting pumps driven from one cylinder. No. 1 pump 8" dia x 12 stroke No. 2 pump 6" dia x 12 stroke*
 Where do they pump from ... *No. 1 draws from sea, after hold, fore hold engine room tanks, No. 2 draws from sea after hold*
 No. of bilge injections *1* and sizes *6"*
 Are they connected to air, or circulating pumps *Circulating pump*
 Is there a hand pump in the engine room *Donkey work by hand*
 Can it be worked by the main engines *No*
 Is there a deck hose of sufficient length to reach to any part of the vessel *Yes*

MAIN BOILERS.

Number *Two* Description *Round, Double Ended, Multitubular*
 Made by *Messrs R. & W. Hawthorn*
 When *October 18/76* At *Newcastle*
 Working pressure *80 lbs*
 Tested by hydraulic pressure to *150 lbs*, Date *March 18/76*
 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 *No Superheater*
 Description and area of safety valves on each boiler *Direct Spring Two on each boiler*
 No. of square feet of fire-grate surface in each boiler *58 sq ft*
 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. *Suction pipes not accessible in holds when vessel is loaded*

DONKEY BOILER

Description *Oblong Multitubular*
 Where fixed *On deck*
 Working pressure *40 lbs*

Made by *Messrs & Van Liering*
 Tested by hydraulic pressure to *85 lbs*, Date *Nov. 18/76*
 Description and area of safety valves *One direct weight 70 lbs*
 No. of square feet of fire grate *11 sq ft*

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 *Kingston valves and common cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *Blow off cocks in stoke hold above sea cocks in engine room below*
 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 bunker *Suction pipes to fore hold*
 How are they protected *Strong wood casing*
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *Now*
 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*

R. & W. Hawthorn Manufacturers of Engines & Main Boilers only

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 *"Tera"* owned by *J. Moore & Co* of the Port of *Liverpool* of *1182.44* Tons Register, and *250* Registered Horse Power, and that they have been carefully inspected and examined by me at *Hebburn on Tyne* and found to be at this date, viz., *1 November 1876* in good order and safe working condition.

Amount of Fee for Survey ... £ *5 : 5 : 0* *Received*
 (Travelling Expenses, if any, £ *0 : 5 : 0* *by me*)
55-10-0 *8/11/76*

Engineer Surveyor to Lloyd's Register of Shipping.