

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rec 16/10/76

Description *Compound Inverted Surface Condensing*
 Made by *Messrs Black, Hawthorn & Co*
 When *October 18/76* At *Gateshead*
 Diameter of cylinder *On 32" x 62"* Length of stroke *36"*
 No. of revolutions per minute *About 60"*
 Point of cut off *About 5/8th of stroke*
 Diameter of screw shaft *10 1/2"* Tunnel shaft *10"*
 Diameter of crank shaft journals *10 1/2"*
 Diameter of screw, or of paddle wheel *14" 9"*
 Pitch of screw *15" 6"*
 No. of blades, *4* Total surface *56 sq feet*
 No. of bilge pumps *2* and sizes *3 3/8" x 18" stroke Single acting*
 Do they pump from each compartment *from engine room fore hold, after hold, sea + hold*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *2* and sizes *3 3/8" x 18" stroke Single acting*
 What gauges are there attached to the engines and boilers ... *8 Steam 1 vacuum*
 Description and size of *No 1 Pump 8" dia x 12" stroke Double acting*
 Donkey Pumps ... *No 2 " 4" x 8"*
 Where do they pump from *No 1 - from fore and after tanks and engine room, No 2 - from sea, hold, after well*
 No. of bilge injections *1* and sizes *4 1/2" dia*
 Are they connected to air, or circulating pumps *Circulating pump*
 Is there a hand pump in the engine room *Donkey works 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 *2* Description *Round Multitubular*
 Made by *Messrs Black, Hawthorn & Co*
 When *October 18/76* At *Gateshead*
 Working pressure *65 lbs*
 Tested by hydraulic pressure to *130 lbs*, Date *4 Sep. 1876*
 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 *Two direct spring on each boiler Area of two valves 2.5 sq in*
 No. of square feet of fire-grate surface in each boiler *46 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 *Yes*

DONKEY BOILER.

Description *Vertical Cylindrical Water tubes in furnace*
 Where fixed *In stokehold*
 Working pressure *59 lbs*

Tested by hydraulic pressure to *120*, Date *15 July 1876*
 Description and area of safety valves *2 on boiler, 1 on water tank + 1 on pipes weight Total area 4.5 sq in*
 No. of square feet of fire grate *15.9 sq feet*

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 ... *Common cocks & stop valves fitted to Spencers valve box*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *Yes*
 Are the discharge pipes above or below the deep water line *Above*
 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 *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*

for Black Hawthorn & Co Manufacturers of Engines & Marine Boilers only
J. Wallend

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 *Ossian* owned by *James I. Es.*
 of the Port of *Gordon* of *1211.34* Tons Register, and *180* Registered Horse Power,
 and that they have been carefully inspected and examined by me at *Wallend & Shields*
 and found to be at this date, viz., *October 13th 1876* in good order and safe working condition.

Survey fee *£9-0-0*
 Certificate *5-0*
 Travelling expenses *£1-0-0*

Received at *Shields*
 by *P. Young*
13/10/76

Engineer Surveyor to Lloyd's Register of Shipping.

120N468-0383