

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rec 9/8/77

Description *2 Cyl. Compound Inverted S. C.*
 Made by *Palmer & Co. 1864 Compound*
 When *July 27 1877* At *Newcastle*
 Diameter of cylinder *25" x 48"* Length of stroke *30"*
 No. of revolutions per minute *(68)*
 Point of cut off *5/8"*
 Diameter of screw shaft *8"*
 Diameter of crank shaft journals *8"*
 Diameter of screw, or of paddle wheel *11 ft*
 Pitch of screw *15 ft*
 No. of blades, *(14)* Total surface *33 sq. ft.*
 No. of bilge pumps *(12)* and sizes *4 1/2" dia, 15" stroke,*
 Do they pump from each compartment *Engine Room only*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *(12)* and sizes *4 1/2" dia, 15" stroke*
 What gauges are there attached to the engines and boilers ... *1 Steam on each Boiler, 1 Safety Valve, 1 Compound gauge, 1 Ballast 8" dia, 10" stroke D.A.*
 Description and size of Donkey Pumps ... *"Boiler" 4" dia, 8" stroke,*
 Where do they pump from ... *"Ballast" from Tanks, Engine Room, Bilge, "Boiler" from Sea & Eng. Room Bilge*
 No. of bilge injections *(11)* and sizes *3 1/2"*
 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 *Small Donkey can be 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 *July 27 1877* At *Newcastle*
 Working pressure *45 lbs per sq. inch*
 Tested by hydraulic pressure to *150 lbs*, Date *June 12-77*
 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 *No Superheater*
 Description and area of safety valves on each boiler ... *Two Spring Valves by R. & W. Hawthorn 3" dia = 14 sq. in. area*
 No. of square feet of fire-grate surface in each boiler *28 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. *all except Tank filling Cocks which are worked from Deck*

NO - DONKEY BOILER.

Description _____
 Where fixed _____
 Working pressure _____
 Tested by hydraulic pressure to _____, Date _____
 Description and area of safety valves _____
 No. of square feet of fire grate _____

PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *all except Tank filling Cocks pipes of which are in good order*
 Are they Kingston valves or common cocks ... *1 Stop Valve rest are Common Cocks*
 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 _____
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *July 3rd 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 *No Tunnel*

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 *"Imperial"* owned by *J. Finwick & Sons* of the Port of *London* of *482* Tons Register, and *90* Registered Horse Power, and that they have been carefully inspected and examined by me at *Newcastle & Newcastle on Tyne* and found to be at this date, viz., *July 27th 1877* in good order and safe working condition.

Amount of Fee for Survey ... £ _____

(Travelling Expenses, if any, £ _____)

George W. Manuul
 Engineer Surveyor to Lloyd's Register of Shipping.

North Shields