

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Compound Inverted Vertical Rectangular*
 Made by *Messrs J. & F. S. Denny & Co.*
 When *1878* At *Dumbarton*
 Diameter of cylinder *850 x 86"* Length of stroke *54"*
 No. of revolutions per minute *65*
 Point of cut off *.6*
 Diameter of screw shaft *15 7/8"*
 Diameter of crank shaft journals *15 1/2"*
 Diameter of screw, ~~or of paddle wheel~~ *14 1/2"*
 Pitch of screw *23 1/2"*
 No. of blades *Four* Total surface *94 ft²*
 No. of bilge pumps *Two* and sizes *6" dia x 27" stroke*
 Do they pump from each compartment *Yes*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *Two* and sizes *4 3/4" dia x 27" stroke*
 What gauges are there attached to the engines and boilers *Seven Steam, One Vacuum, One Compound*
 Description and size of Donkey Pumps *Double acting 5" x 10" stroke*
 Where do they pump from *From the Sea, Bilge & Hotwell*
 No. of bilge injections *One* and sizes *6"*
 Are they connected to air, or circulating pumps *To Circulating*
 Is there a hand pump in the engine room *Yes*
 Can it be worked by the main engines *Yes*
 Is there a deck hose of sufficient length to reach to any part of the vessel *Yes*

MAIN BOILERS.

Number *Six* Description *Round Horizontal*
 Made by *Jenny & Co.*
 When *1878* At *Dumbarton*
 Working pressure *40 lbs*
 Tested by hydraulic pressure to *140 lbs*, Date *March 1878*
 Description of super-heating apparatus *Round Vertical with Gyp*
 Can each boiler be worked separately *Yes*

Can the super-heater be shut off and the boilers worked separately *No*
 Description and area of safety valves on each boiler *Two Direct Spring each 12.5 area*
 No. of square feet of fire-grate surface in each boiler *45 ft²*
 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 *Lat Sided*
 Where fixed *On Upper Deck*
 Working pressure *40 lbs*

Made by *Messrs Paul, Dumbarton*
 Tested by hydraulic pressure to *80 lbs*, Date *Oct. 20th 1878*
 Description and area of safety valves *Direct Spring 4" area*
 No. of square feet of fire grate *13 ft²*

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 *Screw down Valves & Cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *All fitted above the turn of the Bilge*
 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 *Bilge pipes & Gravel*
 How are they protected *By wood casing*
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *On Slip previous to being launched*
 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*

Jenny & Co. Manufacturer. *S*

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 "*Manora*" owned by *J. Macneil & P. Denny* of the Port of *London* of *2120* Tons Register, and *500* Registered Horse Power, and that they have been carefully inspected and examined by me at *Dumbarton* and found to be at this date, viz., *April 29th 1878* in good order and safe working condition.

Amount of Fee for Survey ... £25:--: Paid
 (Travelling Expenses, if any, £ 1-1-0)

James Morrison
 Engineer Surveyor to Lloyd's Register of Shipping.

The Machinery and Boiler of this vessel
are fitted in accordance with the
Committee's requirements. It is submitted
that she is eligible to have the
Notification Lloyd's M.C. in the
Register Book and a Machinery
Certificate June 29 April

1878

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7.5.78



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