

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Inverted Compound Surface Condensing*
 Made by *The North Eastern Marine Engineering Coy*
 When *1869* At *Sunderland*
 Diameter of cylinders *26 x 48* Length of stroke *30*
 No. of revolutions per minute *65*
 Point of cut off *1/2 stroke*
 Diameter of screw shaft *7 3/4*
 Diameter of crank shaft journals *8 1/4*
 Diameter of screw, or of paddle wheel *11 0*
 Pitch of screw *16 0*
 No. of blades, *4* Total surface *36 sq ft*
 No. of bilge pumps *2* and sizes *3 1/2 dia x 30 stroke*
 Do they pump from each compartment *Note hole. Engine room and the fore hold.*

Are all the bilge suction pipes fitted with roses *yes*
 No. of feed pumps *2* and sizes *3 1/2 dia x 30 stroke*
 What gauges are there attached to the engines and boilers ... *1 steam gauge on each boiler and 1 common to both + 1 vacuum.*
 Description and size of Donkey Pumps ... *2 inverted double acting 5 dia x 10 stroke & 4 dia x 7 stroke. the large one from the sea.*
 Where do they pump from ... *Fore hold. Small one from sea. Notwell*
 No. of bilge injections *1* and sizes *4 1/2 dia*
 Are they connected to air, or circulating pumps *to circulating pumps.*
 Is there a hand pump in the engine room *No. (small donkey can be used)*
 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 *Dickinson & Mares patent*
 Made by *Mr. John Dickinson*
 When *Oct 18 76* At *Sunderland*
 Working pressure *70 lbs per sq inch*
 Tested by hydraulic pressure to *140 lbs*, Date *Aug 5th 76*
 Description of super-heating apparatus *I was present r. A. none*
 Can each boiler be worked separately *yes*

Can the super-heater be shut off and the boilers worked separately
 Description and area of safety valves on each boiler *2 spring safety valves 2 3/4 dia = 11.8 area*
 No. of square feet of fire-grate surface in each boiler *23 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. *except the bilge pipes when the coals are in*

DONKEY BOILER.

Description *Vertical Cylindrical with 2 cross tubes*
 Where fixed *on the deck*
 Working pressure *46 lbs*

Tested by hydraulic pressure to *110 lbs*, Date *Sept 21st 76*
 Description and area of safety valves *1 loaded direct 2 1/2 = 4.9 area*
 No. of square feet of fire grate *8 3/4*

PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *Short Cast-iron pieces between side & the circulating pump valve & ship.*
 Are they Kingston valves or common cocks ... *stop valves and cocks.*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *the blow-off cock below.*
 Are the discharge pipes above or below the deep water line *Main discharge below others above.*
 Are they each fitted with a discharge valve on the plating of the vessel *yes, except the 2 bilge discharges which are above the deep lead line.*

What pipes are carried through the bunkers *2 bilge discharge pipes*
 How are they protected *in wood casing under the deck and above the deep lead line*
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *Oct. 1876.*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *yes. by non return valves.*
 Is the screw shaft-tunnel water tight and fitted with a sluice door on bulkhead *Sluice door fitted Tunnel not watertight.*

John Dickinson Manufacturer of the Cylinders and Main Boilers

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 *Frankland* owned by *H. J. Morton & Co* of the Port of *Sunderland* of *541* Tons Register, and *90* Registered Horse Power, and that they have been carefully inspected and examined by me at *Sunderland* and found to be at this date, viz., *Oct 13th 1876* in good order and safe working condition.

Amount of Fee for Survey ... £ - : -

(Travelling Expenses, if any, £ ...)

(1000/31/7/76.)

(Note) See my letter to the Secretary.
MEJ Oct 23rd 76
 r. A.

William Allison
 Engineer Surveyor to Lloyd's Register of Shipping.

IRON 468-0521