

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Rev 13/11/77

Description *2 cyl^l Compama Inverted S. C.*
 Made by *Messrs Palmers Coy Limited*
 When *Oct 24 1877* At *Lanark on Tyne*
 Diameter of cylinder *28 1/2 x 34 1/2* Length of stroke *36"*
 No. of revolutions per minute *65*
 Point of cut off *1/2 stroke*
 Diameter of screw shaft *9 3/4"*
 Diameter of crank shaft journals *9 3/4"*
 Diameter of screw, ~~or of~~ paddle wheel *13.6"*
 Pitch of screw *15.6"*
 No. of blades, *(41)* Total surface *47 sq feet*
 No. of bilge pumps *(2)* and sizes *4 dia 18 stroke*
 Do they pump from each compartment *Eng Room aft well mid fore hold*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *(2)* and sizes *4" dia, 18" stroke*
 What gauges are there attached to the engines and boilers ... *2 Mann. Stockholm Eng Room 1 Vacuum Gauge (Ballast) 8" dia 12 stroke D.A*
 Description and size of Donkey Pumps ... *(Boiler) 4" " 8" D.A*
 Where do they pump from ... *(Ballast) from Tanks & Eng. Bilge (Boiler) from Sea, Eng. Room Bilge fore well & aft well*
 No. of bilge injections *(1)* and sizes *4"*
 Are they connected to air, or circulating pumps *circulating*
 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 along with some piping*

MAIN BOILERS.

Number *Two* Description *Cylindrical Tubular*
 Made by *Messrs Palmers Coy*
 When *Oct 24 1877* At *Lanark on Tyne*
 Working pressure *15 lbs per sq inch*
 Tested by hydraulic pressure to *150 lbs*, Date *Sept 13/77*
 Description of super-heating apparatus *None Steam Receiver*
 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 ... *(2) Spring Valves by Palmers Coy 3 1/2" dia - 22 sq. inches*
 No. of square feet of fire-grate surface in each boiler *35 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. *all except rose in fore well,*

DONKEY BOILER.

Description *Tubular Cylindrical cross boiler*
 Where fixed *in Stockholm*
 Working pressure *45 1/4 lbs per sq inch*
Messrs Clarke Chapman & Sumner

Tested by hydraulic pressure to *100 lbs*, Date *Sept 25 1877*
 Description and area of safety valves *1 dead Weight 3 1/2" dia - 8.2"*
 No. of square feet of fire grate *14 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 ... *No Kingpins Stop Valves 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 *at deep lead line*
 Are they each fitted with a discharge valve on the plating of the vessel *Yes*
Palmers Shipbuilding & Iron Co. Ltd Manufacturer.

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 *Oct 23rd 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 *Yes*
Safety Valves rose 15 lbs accumulated to 19 1/2 lbs closed - - - 14 lbs

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 *Barbera* owned by *Mr John Boyd*
 of the Port of *Barra* of *835.75* Tons Register, and *120* Registered Horse Power,
 and that they have been carefully inspected and examined by me at *Lanark on Tyne*
 and found to be at this date, viz., *Oct 24th 1877* in good order and safe working condition.

Amount of Fee for Survey ... £ *6 : 0 : 0*
 Travelling Expenses, if any, £ *0 : 5 : 0*

By *George W Marnell*
 Engineer Surveyor to Lloyd's Register of Shipping.
North Shields
12/11/77