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LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Recd 28/5/77

Report (if any) on Hull of Vessel. No. 13358

Description *Two Cylindrical Compound Inverted S.C*
 Made by *Messrs Palmer & Coys Limited*
 When *Aug 1876* At *Lanuv on Tyne*
 Diameter of cylinder *25 & 50* Length of stroke *33"*
 No. of revolutions per minute *(60)*
 Point of cut off *Two thirds of stroke*
 Diameter of screw shaft *9"*
 Diameter of crank shaft journals *9"*
 Diameter of screw, or of paddle wheel *12'0"*
 Pitch of screw *12'0" to 17'0"*
 No. of blades, *(4)* Total surface *40 sq. feet*
 No. of bilge pumps *(2)* and sizes *6" dia, 7 1/2" stroke*
 Do they pump from each compartment *Engine room only*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *(2)* and sizes *5" dia, 13" stroke*
 What gauges are there attached to the engines and boilers ...
1. Steam in stokehold
1. ditto " Engine Room
1. Vacuum, 1 compound, 9 cups
 Description and size of Donkey Pumps ...
No. 1. Ballast pump 8" dia, 12" stroke D.A.
" 2. Water pump 4" dia, 8" stroke D.A.
 Where do they pump from ...
No. 1. from Tanks and Engine room Bilges
No. 2. from Sea Hatch and Engine room Bilges
 No. of bilge injections *(1)* and size *6" dia*
 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 *No No. 2 donkey can be used*
 Is there a deck hose of sufficient length to reach to any part of the vessel *Yes*

MAIN BOILERS.

Number *(1)* Description *Cylindrical tubular*
 Made by *Messrs Palmers Coy Limited*
 When *Oct 25 1876* At *Lanuv on Tyne*
 Working pressure *65 lbs per sq. inch*
 Tested by hydraulic pressure to *130 lbs*, Date *Oct 25 76*
 Description of super-heating apparatus *None*
 Can each boiler be worked separately *one boiler*

Can the super-heater be shut off and the boilers worked separately *No Superheater*
 Description and area of safety valves on each boiler ...
(2) spring safety valves
Adolus patent each 4 1/2" dia
= 31.8 sq. in area
 No. of square feet of fire-grate surface in each boiler *65 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 with (3) cross water tubes*
 Where fixed *Upper Deck*
 Working pressure *34 lbs per sq. inch*

Tested by hydraulic pressure to *not ascertained*, Date *—*
 Description and area of safety valves *(1) Lever, weight 3' dia*
144 sq. inches
 No. of square feet of fire grate *144 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 ... *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 ... *all except Tank filling cock*
 Are the discharge pipes above or below the deep water line *Main & Air pump discharge above rest below*
 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 *None tube 1876 Screw & all connections April 77*
 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 *"Penaphon Hall"* owned by *Messrs Dixon & Harris* of the Port of *London* of *562* Tons Register, and *99* Registered Horse Power, and that they have been carefully inspected and examined by me at *Lanuv on Tyne* and found to be at this date, viz., *May 11th* 1877 in good order and safe working condition.

Amount of Fee for Survey ... £ *—*
 (Travelling Expenses, if any, £ *—*)

George W. Mansel
 Engineer Surveyor to Lloyd's Register of Shipping.
North Shields