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LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

Recd 24/8/96

ENGINES.

Description *Compound Inverted Steam Engine*
 Made by *Cumiffe & Dunlop*
 When *1876* At *Port Glasgow*
 Diameter of cylinder *26" & 46"* Length of stroke *27"*
 No. of revolutions per minute *40*
 Point of cut off *Variable*
 Diameter of screw shaft *4 1/2"*
 Diameter of crank shaft journals *4 1/2"*
 Diameter of screw, *4" dia x 13 1/2" stroke*
 Pitch of screw *18ft.*
 No. of blades, *four* Total surface
 No. of bilge pumps *One* and sizes *4" dia x 13 1/2" 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 *3 1/2" x 13 1/2"*
 What gauges are there attached to the engines and boilers ... *One Steam, one Vacuum & one Compound in Engine Room & one to each boiler in stokehold.*
 Description and size of Donkey Pumps ... *Double acting 3 1/2" x 6 1/2"*
 Where do they pump from *from the sea, Bilge*
 No. of bilge injections *One* and sizes *3"*
 Are they connected to air, or circulating pumps *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 *Two* Description *Round Horizontal*
 Made by *Messrs Cumiffe & Dunlop*
 When *1876* At *Port Glasgow*
 Working pressure *65 lbs*
 Tested by hydraulic pressure to *130 lbs*, Date
 Description of super-heating apparatus *Round Vertical with Super*
 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 8 29" area.*
 No. of square feet of fire-grate surface in each boiler *30ft*
 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 *None*
 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.

All connections with the sea direct on the skin of the ship *All except main injection which is fitted on Hood*
 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 *Yes*
 Are discharge pipes above or below the deep water line *Below*
 Are they each fitted with a discharge valve on the plating of the vessel *Yes*

What pipes are carried through the bunkers *Bilge pipes to Stokehold*
 How are they protected *By strong 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*

Cumiffe & Dunlop Manufacturer.

I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron ~~Wood~~ Screw ~~Steam~~ *Iron* "Sobhran" owned by *J. V. Smith* of the Port of *London* of *180* Tons Register, and *100* Registered Horse Power, and that they have been carefully inspected and examined by me at *Port Glasgow* and found to be at this date, viz., *August 18th 1876* in good order and safe working condition.

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