

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Compound Inverted Direct Acting*
 Made by *James Muir & Houston*
 When *1877* At *Glasgow*
 Diameter of cylinder *13" x 23 1/2"* Length of stroke *18"*
 No. of revolutions per minute *120*
 Point of cut off *3/8"*
 Diameter of screw shaft *4 1/2"*
 Diameter of crank shaft journals *4 1/2"*
 Diameter of screw, *or of paddle shaft* *6" x 3"*
 Pitch of screw *from 9" 6" to 10 1/2"*
 No. of blades, *Three* Total surface *10 sq ft*
 No. of bilge pumps *One* and sizes *2" dia x 9" stroke*
 Do they pump from each compartment *Yes*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *One* and sizes *2" dia x 9" stroke*
 What gauges are there attached to the engines and boilers ... *One Steam & One Vacuum*
 Description and size of Donkey Pumps ... *Double Acting 5 Cyls 3" x 6" pump*
 Where do they pump from ... *From the Sea & Bilge*
 No. of bilge injections *None* and sizes *2"*
 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 *No*
 Is there a deck hose of sufficient length to reach to any part of the vessel *Yes*

MAIN BOILERS.

Number *One* Description *Round Horizontal*
 Made by *Muir & Houston*
 When *1877* At *Glasgow*
 Working pressure *65 lbs*
 Tested by hydraulic pressure to *130 lbs*, Date *Mar 20th 77*
 Description of super-heating apparatus *None*
 Can each boiler be worked separately *Yes*

Can the super-heater be shut off and the boilers worked separately *Yes*
 Description and area of safety valves on each boiler *Two Direct Spring each 1/4" area*
 No. of square feet of fire-grate surface in each boiler *about 20 sq ft*
 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 *None*
 Working pressure *None*
 Tested by hydraulic pressure to *None*, Date *None*
 Description and area of safety valves *None*
 No. of square feet of fire grate *None*

PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *Yes. The Circulating Injection Valve & Donkey Sep Cocks are fitted on a cast iron block*
 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 ... *Yes*
 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 *None*
 How are they protected *None*
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *On ship 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 *No Tunnel*

Muir & Houston 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 *"Loch Bell"* owned by *Pile & Coy* of the Port of *Glasgow* of *63* Tons Register, and *30* Registered Horse Power, and that they have been carefully inspected and examined by me at *Glasgow* and found to be at this date, viz., *April 26th 1877* in good order and safe working condition.

Amount of Fee for Survey ... £ *1 : 10 :*

(Travelling Expenses, if any, £ *None*)

(1000/31/7/76.)

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

IRON 471-0363