

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Compound, Inverted, Direct Acting*
 Made by *Handolph, Elder & Coy*
 When *1868* At *Glasgow*
 Diameter of cylinder *38" & 68"* Length of stroke *33"*
 No. of revolutions per minute *About 68*
 Point of cut off *2/3*
 Diameter of screw shaft *9 1/4"*
 Diameter of crank shaft journals *10"*
 Diameter of screw, *or of middle screw* *12 ft*
 Pitch of screw
 No. of blades, *4* Total surface *about 45 ft*
 No. of bilge pumps *Two* and sizes *4 3/4" dia x 6" 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 *4 7/8" & 16 1/2" stroke*
 What gauges are there attached to the engines and boilers ... *One Steam, One Vacuum, & One Comp in engine room and one Steam in Forward Stowhold*
 Description and size of Donkey Pumps ... *Double Acting 3 1/2" x 4" stroke*
 Where do they pump from ... *From the Sea & Bilge*
 No. of bilge injections *One* and sizes *3 1/2"*
 Are they connected to air, or circulating pumps *to Airpumps*
 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 fired from both ends*
 Made by *S. Gordon & Coy*
 When *1876* At *Glasgow*
 Working pressure *40 lbs*
 Tested by hydraulic pressure to *reported to be 140 lbs*, Date
 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
 Description and area of safety valves on each boiler ... *Two Direct Spring each 19.636" area*
 No. of square feet of fire-grate surface in each boiler *48 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 *Round Vertical*
 Where fixed *in Stowhold (after) at Ships side*
 Working pressure *50 lbs*

Tested by hydraulic pressure to *not ascertained*
 Description and area of safety valves *Direct weight 8.4" area*
 No. of square feet of fire grate *11 ft*

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 ... *Sluice 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 Cocks are under Stowhold plates*
 Are the 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 *None*
 How are they protected
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *26th April 1876*
 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*

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 *"St. Clair"* owned by *Leith & Clyde Shipping Coy.*
 of the Port of *Aberdeen* of *380* Tons Register, and *150* Registered Horse Power,
 and that they have been carefully inspected and examined by me at *Glasgow*
 and found to be at this date, viz., *8th May* 1876 in good order and safe working condition.

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