

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Oscillating*
 Made by *Messrs Mc Nab & Co in 1860*
Two Boilers 18 *73* At *Greenock*
 Diameter of cylinder *3 4 8"* Length of stroke *48"*
 No. of revolutions per minute
 Point of cut off *Not ascertained*
 Diameter of ~~screw~~ *Paddle* shaft *9 1/4"*
 Diameter of crank shaft journals *9 1/4" Pins 5 3/4"*
 Diameter ~~of screw~~ of paddle wheel *15 ft 6 in Center*
 Pitch of screw
 No. of ~~boilers~~ *Two* Total surface *6" 9" x 2" 8"*
 No. of bilge pumps *Two* and sizes *5 3/4" dia x 7" 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 *5 3/4" dia x 7" stroke*
one of the bilge pumps fitted with cut arrangement.
 What gauges are there attached to the engines and boilers ... *Two Steam One Vacuum*
 Description and size of Donkey Pumps ... *Double acting 3 1/2" x 7" stroke*
 Where do they pump from ... *From the Sea, Bilges & Hold*
 No. of bilge injections *One* and sizes *2 1/2" (Cock)*
 Are they connected to air, or circulating pumps *To Air pumps*
 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 *Rectangular with upright*
 Made by *P. Mac & Co*
 When 18 *73* At *Greenock*
 Working pressure *25 lbs*
 Tested by hydraulic pressure to *48 lbs*, Date *Jan 11th 1879*
Test of this boiler witnessed by Mr. Alphin
 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 loaded each 19 1/2" area*
 No. of square feet of fire-grate surface in each boiler *48 ft 2"*
 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 *Lat sided, vertical*
 Where fixed *On Main Deck*
 Working pressure *20 lbs*

Tested by hydraulic pressure to *60 lbs*, Date *Jan 11th 1879*
 Description and area of safety valves *One Lever 3" dia and one Direct weight 2 1/2" dia*
 No. of square feet of fire grate *18 ft*
James Morrison

PIPES, COCKS, AND CONNECTIONS.

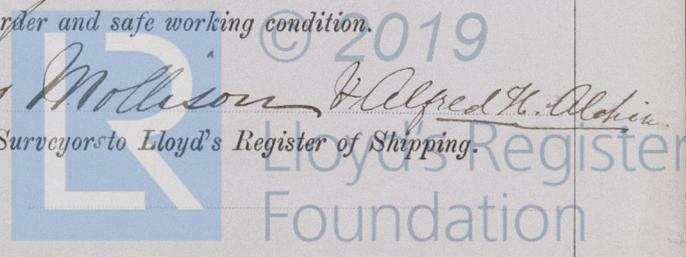
Are all connections with the sea direct on the skin of the ship *Yes*
 Are they Kingston valves or common cocks ... *Screw down valve & Cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *Blow off cock is under plates and fitted with Guard*
 Are the discharge pipes above or below the deep water line *Near to load line*
 Are they each fitted with a discharge valve on the plating of the vessel *Discharge valves have now been fitted*
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 *Sept 14th 1878*
 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*

I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron (or Wood) ~~Screw~~ Paddle Steam Vessel "St. Clair of the Isles" owned by *Harris & Goodwin* of the Port of *Glasgow* of *120* Tons Register, and *120* Registered Horse Power, and that they have been carefully inspected and examined by *us* at *Port Glasgow* and found to be at this date, viz., *February 1st* 18 *79* in good order and safe working condition.

Amount of Fee for Survey ... £ : :
 (Travelling Expenses, if any, £)
James Morrison & Alfred H. Alphin
 Engineer Surveyors to Lloyd's Register of Shipping.

Greenock No. 4591 Port Report (if any) on Hull of Vessel.



It is submitted that this vessel
is eligible to have a
machinery certificate
granted and Lloyd's
2.79 recorded

Multon
14/2/79



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Foundation