

*S.S. Clan Stuart*  
23263 *Jun*  
LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

*See 24/4/79*

*Glasgow No. 4842*  
Description *Compound Inverted Direct Acting* Are all the bilge suction pipes fitted with roses *Yes*  
Made by *David Rowan* No. of feed pumps *Two* and sizes *3 1/2" x 21" stroke*  
When *18 79* At *Glasgow* What gauges are there attached to the engines and boilers ... *Three Steam one Vacuum*  
Diameter of cylinder *36" 66"* Length of stroke *42"* the compound  
No. of revolutions per minute *about 65* Description and size of *one Double Acting 9" x 14" stroke*  
Point of cut off *off* Donkey Pumps ... *One " 4" x 12" "*  
Diameter of screw shaft *12"* Where do they pump *from Ballast Tanks. Sea Bilge*  
Diameter of crank shaft journals *12 1/2"* from *Atwell*  
Diameter of screw, or paddle wheel *14 ft* No. of bilge injections *one* and sizes  
Pitch of screw *18 ft* Are they connected to air, or circulating pumps *Circulating*  
No. of blades, *See* Total surface *85 ft<sup>2</sup>* Is there a hand pump in the engine room *yes*  
No. of bilge pumps *Two* and sizes *3 1/2" x 21" stroke* Can it be worked by the main engines *yes*  
Do they pump from each compartment *yes* Is there a deck hose of sufficient length to reach to any part of the vessel *yes*

MAIN BOILERS.

Number *Two* Description *Flat Sided Horizontal* Can the super-heater be shut off and the boilers worked separately *no*  
Made by *David Rowan* Description and area of safety valves on each boiler *Two Direct Acting each 17.72" area*  
When *18 79* At *Glasgow* No. of square feet of fire-grate surface in each boiler *61 ft<sup>2</sup>*  
Working pressure *80 lbs* Are there separate blow off and brine cocks on each boiler, independent of those on the vessel's skin *yes*  
Tested by hydraulic pressure to *160 lbs*, Date *7.4.79* Are all pipes, cocks, roses, and pumps in connection with the machinery accessible at all times *yes*  
Description of super-heating apparatus *none*  
Can each boiler be worked separately *yes*  
*The Furnaces Combustion Chambers are of Steel (Reinforced) and have been tested in accordance with Committee's requirements in Circular No. 367*

DONKEY BOILER.

Description *Round Vertical* Tested by hydraulic pressure to *120 lbs*, Date *11.4.79*  
Where fixed *on Main Deck* Description and area of safety valves *one Direct Spring 4" area*  
Working pressure *60 lbs* No. of square feet of fire grate *14 ft<sup>2</sup>*

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 valves & cocks*  
Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *off fitted on upper turn of the bilge*  
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*  
*David Rowan* Manufacturer.  
What pipes are carried through the bunkers *Pipe pipe to stoke hold*  
How are they protected *by wood casing*  
When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *on this 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*

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 *Clan Stuart* owned by *Cayzer Irvine & Co* of the Port of *Liverpool* of *210* Tons Register, and *210* 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 16<sup>th</sup> 79* in good order and safe working condition.

Amount of Fee for Survey ... £10:10:0 *paid*  
(Travelling Expenses, if any, £1:11:6)

*James Morrison*  
Engineer Surveyor to Lloyd's Register of Shipping.  
*Glasgow District*  
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The Engines and Boiler of this vessel are  
fitted in accordance with the rules  
submitted that she is eligible to  
have Lloyd's M.C. and a matching certificate.  
June 16<sup>th</sup> April 1879

MP 24.4.79



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Foundation