

18380 Iron  
LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Compound, inverted, Surface Cond.*  
Made by *J. Elder & Co*  
When *1872* At *Glasgow*  
Diameter of cylinder *50" x 86"* Length of stroke *42"*  
No. of revolutions per minute *About 50*  
Point of cut off *About 2/3 of stroke*  
Diameter of screw shaft *13 1/2 - Tunnel shaft 12 1/2*  
Diameter of crank shaft journals *13 1/2*  
Diameter of screw, or of paddle wheel *16" 6"*  
Pitch of screw *23" 0"*  
No. of blades, *4* Total surface *44 sq feet*  
No. of bilge pumps *2* and sizes *4 1/8" x 23" stroke Single Acting*  
Do they pump from each compartment *From fore, main, & after holds and from engine room*

Are all the bilge suction pipes fitted with roses *Yes*  
No. of feed pumps *2* and sizes *4 1/8" x 23" stroke Single Acting*  
What gauges are there attached to the engines and boilers ... *3 Steam. 1 Vacuum & 1 Compound*  
Description and size of Donkey Pumps ... *No 1 - 4 1/2 dia x 8 stroke No 2 - 4 1/2 dia x 8 stroke No 3 - 4 1/2 dia x 8 stroke No 1 - draws from Sea, engine room & holds No 2 - from holds & No 3 from sea & stoke hole*  
Where do they pump from ...  
No. of bilge injections *3* and sizes *2 - 1/2 dia & 1 - 3/2 dia*  
Are they connected to air, or circulating pumps *2 on air & 1 on 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 *Two* Description *Cylindrical, Double ended*  
Made by *J. Elder & Co*  
When *1872* At *Glasgow*  
Working pressure *5 1/2 lbs*  
Tested by hydraulic pressure to *Not ascertained* Date *in*  
Description of super-heating apparatus *Four Annular superheaters*  
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 on each boiler Area of two valves 89 sq in*  
No. of square feet of fire-grate surface in each boiler *About 120 sq feet*  
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. *Suction pipes in holds not accessible when vessel is loaded*

DONKEY BOILER.

Description *Flat sided Semicircular top & bottom Tubular*  
Where fixed *On Deck*  
Working pressure *50*

Tested by hydraulic pressure to *100 lbs* Date *April - 1874*  
Description and area of safety valves *Direct weight 96 lbs area*  
No. of square feet of fire grate *19.63 sq feet*

PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *Circulating sea cock on strong cast iron box others on skin of vessel*  
Are they Kingston valves or common cocks ... *Cocks & stop valves*  
Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *No*  
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 *Suction to holds*  
How are they protected *Iron casing*  
When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *March 1874*  
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 *Glenorchy* owned by *A. C. How & Co* of the Port of *London* of *1874* Tons Register, and *400* Registered Horse Power, and that they have been carefully inspected and examined by me at *London* and found to be at this date, viz., *2nd May* 18*74* in good order and safe working condition.

Amount of Fee for Survey ... .. £ : :

(Travelling Expenses, if any, £.....)

(1000/31/7/76.)

Engineer Surveyor to Lloyd's Register of Shipping.