

SHIP'S NAME

*Celsus*Report No. *428**24397**Iron Ship*

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Re 5/9/79

Description *Inverted, Compound, Surface Condensing*
 Made by *Mr. S. Clark*
 When *1871* At *Sunderland*
 Diameter of cylinder *2 1/2 ft* Length of stroke *30*
 No. of revolutions per minute *64*
 Point of cut off *about 7/8*
 Diameter of screw shaft *8*
 Diameter of crank shaft journals *8 1/2*
 Diameter of screw, or of paddle wheel *12.0*
 Pitch of screw *15.0*
 No. of blades, *4* Total surface *3 1/2 sq. feet*
 No. of bilge pumps *2* and sizes *4 1/4 x 15 stroke*
 Do they pump from each compartment *yes*

Are all the bilge suction pipes fitted with roses *yes*
 No. of feed pumps *2* and sizes *4 1/4 x 15 stroke*
 What gauges are there attached to the engines and boilers ... *2 steam gauges on boiler*
 Description and size of Donkey Pumps ... *one inverted double acting 6" dia x 8" stroke*
 Where do they pump from ... *Sea. Tanks Condenser, and bilges of engine room, aft well and fore hold.*
 No. of bilge injections *one* and sizes *4" diameter*
 Are they connected to air, or circulating pumps *to 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 (from line pipe)*

MAIN BOILERS.

Number *One* Description *Cylindrical & Multitubular*
 Made by *Mr. G. Clark*
 When *Aug 18 79* At *Sunderland*
 Working pressure *75 lbs*
 Tested by hydraulic pressure to *150 lbs*, Date *1.5.79*
 Description of super-heating apparatus *none*
 Can each boiler be worked separately *only 1 boiler*

Can the super-heater be shut off and the boilers worked separately *yes*
 Description and area of safety valves on each boiler ... *2 spring safety valves each 4 1/4 dia = 28.2 sq. in.*
 No. of square feet of fire-grate surface in each boiler *51*
 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 (except those in the holds when full)*

DONKEY

BOILER. *by Messrs Melford & Mingham*

Description *Upright, Cyl. with 3 cross tubes*
 Where fixed *In the stokehold*
 Working pressure *50 lbs*

Tested by hydraulic pressure to *100 lbs*, Date *2.7.79*
 Description and area of safety valves *1 shaped direct 3" 1 lever & weight 3" = 14 area*
 No. of square feet of fire grate *15*

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 ... *stop 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 *August 19th 1879*
 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 *Sluice door fitted tunnel apparently watertight*

Wm. Clark

Manufacturer.

Except of the Donkey Boiler

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 *"Celsus"* owned by *Calliford & Clark*
 of the Port of *Sunderland* of *655* Tons Register, and *98* Registered Horse Power,
 and that they have been carefully inspected and examined by me at *Sunderland*
 and found to be at this date, viz., *August 23rd 1879* in good order and safe working condition.

Amount of Fee for Survey ... £ *0:0:0*(Travelling Expenses, if any, £ *0:0:0*)

See annexed report for fees.

William Allison
 Engineer Surveyor to Lloyd's Register of Shipping.
Sunderland

IRON 487-0202