

# REPORT ON MACHINERY.

Port of Glasgow.

No. in Survey held at Glasgow.  
Reg. Book. L.S. Panfa  
on the

Received at London Office JAN 13 1903  
Date, first Survey 9<sup>th</sup> Sept 01 Last Survey 20<sup>th</sup> Dec 1902  
(Number of Visits 77)

Master Glasgow Built at Glasgow By whom built J. & W. Henderson when built 1902.  
Engines made at Glasgow By whom made Do. when made 1902.  
Boilers made at Do. By whom made Do. when made 1902.  
Registered Horse Power 820 Owners China Mutual S.N.C. Port belonging to Liverpool.  
Nom. Horse Power as per Section 28 820 Is Refrigerating Machinery fitted No. Is Electric Light fitted Yes.

**ENGINES, &c.**—Description of Engines Twin screw triple expansion No. of Cylinders 6 No. of Cranks 6  
Dia. of Cylinders 23 39 1/2 65 1/4 Length of Stroke 48 Revs. per minute 90 Dia. of Screw shaft as per rule 13.9 as fitted 15.9 Lgth. of stern bush 4-10  
Dia. of Tunnel shaft as per rule 12.52 as fitted 13 1/2 Dia. of Crank shaft journals as per rule 13.15 as fitted 14 Dia. of Crank pin 14 Size of Crank webs 19 1/2 x 8 1/2 Dia. of thrust shaft under collars 14 Dia. of screw 16-9 Pitch of screw 18-0 No. of blades 4 each State whether moveable Yes Total surface 80 sq each prop.  
No. of Feed pumps 2 Diameter of ditto 4 1/4 Stroke 24 Can one be overhauled while the other is at work Yes.  
No. of Bilge pumps 2 Diameter of ditto 4 1/4 Stroke 24 Can one be overhauled while the other is at work Yes.  
No. of Donkey Engines 4 Sizes of Pumps Ballast 12 1/2 x 9 1/2 x 26 No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room 3-3 1/2 General 10 x 7 x 12 DB 6 x 4 x 6 In Holds, &c. 8 fwd and 4 aft. 3 1/2 dia.  
3 tunnel well suction. 1-3 1/2 4 2-3 dia.  
No. of bilge injections 2 sizes 8 Connected to condenser, or to circulating pump Yes Is a separate donkey suction fitted in Engine room & size Yes. 3 1/2  
Are all the bilge suction pipes fitted with roses Yes. Are the roses in Engine room always accessible Yes. Are the staves on Engine room bulkheads always accessible None.  
Are all connections with the sea direct on the skin of the ship Yes. Are they Valves or Cocks both.  
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes. Are the discharge pipes above or below the deep water line above.  
Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes. Are the blow off cocks fitted with a spigot and brass covering plate Yes.  
What pipes are carried through the bunkers Forward bilge pipe How are they protected wood casing.  
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times Yes.  
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges Yes.  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock Yes. Is the screw shaft tunnel watertight Yes.  
Is it fitted with a watertight door Yes. worked from Upper deck.

**BOILERS, &c.**— (Letter for record S) Total Heating Surface of Boilers 11025 sq Is forced draft fitted Horizontal  
No. and Description of Boilers 3 D.E. cyl. multitubular Working Pressure 210 lb Tested by hydraulic pressure to 400 lb  
Date of test 21-10-02 Can each boiler be worked separately Yes Area of fire grate in each boiler 100 sq No. and Description of safety valves to each boiler 3 spring loaded Area of each valve 12.56 sq Pressure to which they are adjusted 205 lb. Are they fitted with easing gear Yes.  
Smallest distance between boilers or uptakes and bunkers or woodwork abt. 2 ft. Mean dia. of boilers 14-0 Length 19-0 Material of shell plates Stal  
Thickness 1 7/16 Range of tensile strength 28/32 Are they welded or flanged No Descrip. of riveting: cir. seams DR & TR Long. seams DB shape  
Diameter of rivet holes in long. seams 1 7/16 Pitch of rivets 9 1/2 Lap of plates or width of butt straps 20 3/8  
Percentages of strength of longitudinal joint rivets 88.4 Working pressure of shell by rules 231 lb. Size of manhole in shell 16" x 12"  
Size of compensating ring 2-9 x 2-4 x 1 1/2 No. and Description of Furnaces in each boiler 6 Brown Material Stal Outside diameter 44 1/4  
Length of plain part top 3 1/2 bottom 3 1/2 Thickness of plates crown 1 1/2 bottom 1 1/2 Description of longitudinal joint welded No. of strengthening rings ✓  
Working pressure of furnace by the rules 212 Combustion chamber plates: Material Stal Thickness: Sides 1 1/2 Back 1 1/2 Top 1 1/2 Bottom 1  
Pitch of stays to ditto: Sides 9 1/4 x 8 1/8 Back 9 1/4 x 8 1/8 Top 9 1/4 x 8 1/8 If stays are fitted with nuts or riveted heads Nuts inside Working pressure by rules 204 lb.  
Material of stays Stal Diameter at smallest part 1.98 Area supported by each stay 82 sq Working pressure by rules 200 End plates in steam space: Material Stal Thickness 1 1/4 Pitch of stays 18 1/2 x 15 How are stays secured Drut nut Working pressure by rules 260 lb. Material of stays Stal Diameter at smallest part 6.33 Area supported by each stay 272 Working pressure by rules 230 Material of Front plates at bottom Stal  
Thickness 2 1/2 Material of Lower back plate Stal Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓  
Diameter of tubes 2 1/2 Pitch of tubes 3 7/8 x 3 3/4 Material of tube plates Stal Thickness: Front 1 Back 3/2 Mean pitch of stays 9 1/2  
Pitch across wide water spaces 13 1/2 Working pressures by rules 500 lb. Girders to Chamber tops: Material Stal Depth and thickness of girder at centre (11 x 1 1/8) 2 Length as per rule 46 1/16 Distance apart 8 1/8 Number and pitch of Stays in each 4-9 1/4  
Working pressure by rules 218 lb. Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓ Stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓  
Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

