

# REPORT ON MACHINERY.

issued from  
Surveyor.  
10 MAY 1902

Port of Glasgow Received at London Office MAY 13 1902  
 Date, first Survey 13 June '01 Last Survey 5 May 1902  
 (Number of Visits 2)  
 No. in Survey held at Glasgow  
 Reg. Book. 81 on the S. S. "Clarence" Tons Gross 554.52 Net 223.46  
 Master Jones Built at Bowling By whom built Scott & Sons When built 1902  
 Engines made at Glasgow By whom made Arm & Duncan when made 1902  
 Boilers made at Glasgow By whom made Arm & Duncan when made 1902  
 Registered Horse Power \_\_\_\_\_ Owners J. Rank Ltd Port belonging to Hull  
 Nom. Horse Power as per Section 28 80.5 Is Refrigerating Machinery fitted no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple Expansion Surface Cond. No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 14" - 22 1/2" - 37" Length of Stroke 27" Revs. per minute 94 Dia. of Screw shaft 7.8" Lgth. of stern bush 2'-8"  
 Dia. of Tunnel shaft 6.8" Dia. of Crank shaft journals 7.15" Dia. of Crank pin 7 1/4" Size of Crank webs 4 7/8" x 10 1/2" Dia. of thrust shaft under collars 7 1/4" Dia. of screw 10'-0" Pitch of screw 12'-3" No. of blades 4 State whether moceable no Total surface 34 sq  
 No. of Feed pumps 2 Diameter of ditto 2 1/2" Stroke 13 1/2" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 2 1/4" Stroke 13 1/2" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Sizes of Pumps 4 1/2" x 2 3/4" x 4" 6" x 5 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps BALLAST.  
 In Engine Room 2 - 2" x 1 - 2 1/4" In Holds, &c. 2 - 2"  
 No. of bilge injections 1 sizes 3 1/4" Connected to condenser, or to circulating pump line Is a separate donkey suction fitted in Engine room & size Yes 2"  
 Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes  
 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 Hold suction 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 before launch Is the screw shaft tunnel watertight Yes.  
 Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.— (Letter for record (5) Total Heating Surface of Boilers 1350 sq Is forced draft fitted no  
 No. and Description of Boilers 1 Cylind. Mult. Single-ended Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs.  
 Date of test 31-12-01 Can each boiler be worked separately ✓ Area of fire grate in each boiler 49 sq No. and Description of safety valves to each boiler 2 Direct Spring Area of each valve 5.93" Pressure to which they are adjusted 165 lbs. Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 3'-6" Mean dia. of boilers 13'-0" Length 9'-6" Material of shell plates Steel  
 Thickness 1" Range of tensile strength 37-32 tons Are they welded or flanged no Descrip. of riveting: cir. seams double long. seams triple  
 Diameter of rivet holes in long. seams 1" Pitch of rivets 6 3/4" Lap of plates or width of butt straps 14 1/2"  
 Per centages of strength of longitudinal joint rivets 86.7 Working pressure of shell by rules 161 lbs. Size of manhole in shell 15" x 11 1/2"  
 Size of compensating ring 6 1/2" x 1" No. and Description of Furnaces in each boiler 3 plain Material Steel Outside diameter 40"  
 Length of plain part top 6'-3" bottom 8'-3" Thickness of plates crown 3/16" bottom 1/16" Description of longitudinal joint welded. No. of strengthening rings partial at bottom.  
 Working pressure of furnace by the rules 167 lbs. Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 5/8"  
 Pitch of stays to ditto: Sides 7 3/4" x 7 3/4" Back 7 3/4" x 7 3/4" Top 7 3/4" x 7 3/4" If stays are fitted with nuts or riveted heads nut Working pressure by rules 182 lbs.  
 Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 60" Working pressure by rules 165 lbs. End plates in steam space: Material Steel Thickness 15/16" Pitch of stays 15" x 16" How are stays secured All nuts + washers Working pressure by rules 170 lbs. Material of stays Steel  
 Diameter at smallest part 2 3/4" Area supported by each stay 240" Working pressure by rules 175 lbs. Material of Front plates at bottom Steel  
 Thickness 3/4" Material of Lower back plate Steel Thickness 3/16" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 284 lbs.  
 Diameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10 1/2"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 195 lbs. Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 6 1/2" x 2" Length as per rule 27 3/4" Distance apart 7 3/4" Number and pitch of Stays in each 2 - 7 3/4"  
 Working pressure by rules 177 lbs. Superheater or Steam chest; how connected to boiler none. 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 \_\_\_\_\_  
 If 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 ✓



