

REPORT ON MACHINERY.

Port of Glasgow

UES. 4 APR 1899

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No. in Survey held at Glasgow Date, first Survey 24. Decr. 1897 Last Survey 25. March 1899
 Reg. Book. on the S.S. Bethania (Number of Visits 43) Tons { Gross 4518.65 Net 4838.79
 Master V. Pietsch Built at Glasgow By whom built A. Stephen & Sons When built 1899
 Engines made at Glasgow By whom made A. Stephen & Sons when made 1899
 Boilers made at Glasgow By whom made A. Stephen & Sons when made 1899
 Registered Horse Power _____ Owners Hamburg American Linie Port belonging to Hamburg
 Nom. Horse Power as per Section 28 690 Is Refrigerating Machinery fitted _____ Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders three No. of Cranks three
 Dia. of Cylinders 30. 50. 80 Length of Stroke 60 Revs. per minute 65 Dia. of Screw shaft as per rule 16.25 Lgth. of stern bush 69"
 Dia. of Tunnel shaft as per rule 14.7 Dia. of Crank shaft journals as per rule 15.2 Dia. of Crank pin 16.2 Size of Crank webs 22x10.2 Dia. of thrust shaft under collars 15.2 Dia. of screw 20.3 Pitch of screw 21.6 No. of blades 4 State whether moveable yes Total surface 130 sq ft
 No. of Feed pumps 2 Diameter of ditto 9" Stroke 24" Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 14" Stroke 27" Can one be overhauled while the other is at work yes
 No. of Donkey Engines 2 Sizes of Pumps 2 duplex 9x6x10 No. and size of Suctions connected to both Bilge and Donkey pumps _____
 In Engine Room from 3.5" In Holds, &c. two 3" in each hold
 No. of bilge injections 1 sizes 9" Connected to condenser, or to circulating pump yes Is a separate donkey suction fitted in Engine room & size yes 3.5"
 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 no
 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 bilge suction How are they protected wood casings
 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 the screw shaft tunnel watertight apparently
 Is it fitted with a watertight door yes worked from upper platform

BOILERS, &c.— (Letter for record _____) Total Heating Surface of Boilers 12132 sq ft Is forced draft fitted no
 No. and Description of Boilers 4 cylindrical 2 double, 2 single Working Pressure 180 lbs Tested by hydraulic pressure to 300 lbs
 Date of test 31/3/99 Can each boiler be worked separately yes Area of fire grate in each boiler 642, 1129 No. and Description of safety valves to each boiler 2 direct spring 2 1/2 Area of each valve 14.18 sq in Pressure to which they are adjusted 185 Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork 3-3" Mean dia. of boilers 15-3" Length 11-5" Material of shell plates steel
 Thickness 1 1/16 Range of tensile strength 28532 Are they welded or flanged no Descrip. of riveting: cir. seams double lap long. seams triple butt
 Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 10" Lap of plates or width of butt straps 2 1/2
 Per centages of strength of longitudinal joint rivets 81.0 plate 85.3 Working pressure of shell by rules 207 lbs Size of manhole in shell 16x12
 Size of compensating ring in rivets No. and Description of Furnaces in each boiler 6 in double Material steel Outside diameter 3-11
 Length of plain part top V bottom V Thickness of plates crown 3 1/8 bottom 3 1/8 Description of longitudinal joint welded No. of strengthening rings ✓
 Working pressure of furnace by the rules 200 lbs Combustion chamber plates: Material steel Thickness: Sides 7/8 Back 7/8 Top 7/8 Bottom 7/8
 Pitch of stays to ditto: Sides 7 1/2-7 1/2 Back 7 1/2-7 1/2 Top 7 1/2-7 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 215 lbs
 Material of stays steel Diameter at smallest part 1.500 Area supported by each stay 62 Working pressure by rules 200 End plates in steam space: Material steel Thickness 1 3/16 Pitch of stays 8 1/2-10 1/2 How are stays secured 2 nuts Working pressure by rules 255 Material of stays steel
 Diameter at smallest part 5.34 Area supported by each stay 247 Working pressure by rules 265 Material of Front plates at bottom steel
 Thickness 7/8 Material of Lower back plate steel Thickness 7/8 Greatest pitch of stays 13 Working pressure of plate by rules 394
 Diameter of tubes 3 1/4 Pitch of tubes 4 5/8-1 1/2 Material of tube plates steel Thickness: Front 7/8 Back 7/8 Mean pitch of stays 9 1/2
 Pitch across wide water spaces 14 1/2 Working pressures by rules 257 Girders to Chamber tops: Material steel Depth and thickness of girder at centre 8 1/2-2 1/2 Length as per rule 3 1/2 Distance apart 7 1/8 Number and pitch of Stays in each 2 3/8
 Working pressure by rules 220 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 _____

