

REPORT ON MACHINERY.

Port of *Glasgow*

JUES. 4 APR 1899

Received at London Office 18

No. in Survey held at *Glasgow*
Reg. Book.Date, first Survey *24. Decr. 1897* Last Survey *25. March 18 99*(Number of Visits *43*)Tons { Gross *7518.65*
Net *4838.79*on the *S.S. Bethania*Master *V. Pietoch* 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 · 88* 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 16.25* Dia. of Crank pin *16 1/2* Size of Crank webs *22 x 10 1/2* Dia. of thrust shaft under collars *15 3/4* 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 *1 1/2* Stroke *27"* Can one be overhauled while the other is at work *yes*
 No. of Donkey Engines *2* Sizes of Pumps *2 cylinders 9 x 6 x 10* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *from 8 1/2"* In Holds, &c. *Two 2" in each hold*

No. of bilge injections *1* sizes *2"* 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 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 *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 landed* 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 · 129* No. and Description of safety valves to each boiler *3 direct spring SE* Area of each valve *14 · 18 · 11* 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 *7 · 6* Material of shell plates *steel*
 Thickness *1 1/2* 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 *81 · 0* Working pressure of shell by rules *207 lbs* Size of manhole in shell *16 x 12*
 Size of compensating ring *DN 11 1/2* No. and Description of Furnaces in each boiler *6 in double* Material *steel* Outside Diameter *3 · 11*
 Length of plain part *top V bottom* Thickness of plates *3 1/2* 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 *217 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 *26* Material of Front plates at bottom *steel*
 Thickness *7/8* Material of Lower back plate *steel* Thickness *7/8* Greatest pitch of stays *18"* Working pressure of plate by rules *394*
 Diameter of tubes *3 1/4* Pitch of tubes *4 1/2 x 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 x 2 1/2* Length as per rule *3 1/2* Distance apart *7 1/2* 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

DONKEY BOILER—

16879 gcs

No. Description *None*

Made at _____ By whom made _____ When made _____ Where fixed _____
 Working pressure _____ tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____
 No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____
 Dia. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range of tensile strength _____
 Descrip. of riveting long. seams _____ Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____
 Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to a _____
 Dia. of stays _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of joint _____
 Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____
 Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *As required by the rules in addition to propeller blades, one valve spindle complete one set of air pump valves, & one set each top & bottom end brass for rod*

The foregoing is a correct description,

Manufacturer.

Ally Stephen & Sons

Dates of Survey while building _____ During progress of work in shops— ¹⁸⁹⁷ Dec. 24. ¹⁸⁹⁸ Jan. 10. 17. Feb. 14. 16. 21. 28. Mar. 24. Apr. 8. May. 3. 16. 20. 30. Jul. 4. 12. 13. Aug. 5. Sep. 6. 22. Oct. 3. Nov. 17. 18. _____
 During erection on board vessel _____
 Total No. of visits _____ 43

Is the approved plan of main boiler forwarded herewith *yes*

donkey

General Remarks (State quality of workmanship, opinions as to class, &c.)

+LMC 3-99.

This machinery has been built under special survey, the materials & workmanship are of good description, it has been well fitted on board & tried under steam, & is in my opinion eligible to have the above notification

A flying Report is hereto appended

It is submitted that this vessel is eligible for THE RECORD.

+ L.M.C. 3. 99. Plac. Light

L.S.
4.4.99

The amount of Entry Fee. £ 3 : : : When applied for, 27.3.18.99
 Special £ 54 : 10 : : :
 Donkey Boiler Fee £ : : : : When received, 29.3.18.99
 Travelling Expenses (if any) £ : : : :
 Committee's Minute

Assigned

TUES. 4 APR 1899

MACHINERY CERTIFICATE WRITTEN

+ LMC 3,99

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Lloyd's Register Foundation

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Certificate (if required) to be sent to