

## REPORT ON MACHINERY.

No. 15349.

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Date of writing Report

19

When handed in at Local Office

10<sup>th</sup> April 1908. Port of GreenockNo. in Survey held at Port Glasgow  
Reg. Book.Date, First Survey 18<sup>th</sup> Sept. 1907 Last Survey 1<sup>st</sup> April 1908

(Number of Visits)

29 Sub. on the SCREW STEAMER "ACADIAN"Tons { Gross 2304.64  
Net 1457.10Master R.G. Groundwater Built at Port Glasgow By whom built Glyde S.B. & Eng. Co. Ltd. When built 1908Engines made at Port Glasgow By whom made Glyde S.B. & Eng. Co. Ltd. when made 1908Boilers made at Port Glasgow By whom made Glyde S.B. & Eng. Co. Ltd. when made 1908Registered Horse Power 162 Owners The Mutual Steamship Co. Ltd. Port belonging to GlasgowNom. Horse Power as per Section 28 162 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted YesENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks ThreeDia. of Cylinders 18" 30" 50" Length of Stroke 36" Revs. per minute 80 Dia. of Screw shaft 10 1/2" as per rule 10 1/2" as fitted 10 1/2" Material of screw shaft IronIs the screw shaft fitted with a continuous liner the whole length of the stern tube Yes Is the after end of the liner made water tightin the propeller boss Yes If the liner is in more than one length are the joints burned Yes If the liner does not fit tightly at the partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive Yes If twoliners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 40"Dia. of Tunnel shaft 9 1/2" as per rule 9 1/2" as fitted 9 1/2" Dia. of Crank shaft journals 9 1/2" as per rule 9 1/2" as fitted 9 1/2" Dia. of Crank pin 9 1/2" Size of Crank webs 18 1/2" x 6" Dia. of thrust shaft undercollars 9 1/2" Dia. of screw 13' 0" Pitch of Screw 14' 6" No. of Blades 4 State whether moveable Yes Total surface 56 ft<sup>2</sup>No. of Feed pumps 2 Diameter of ditto 4" Stroke 18" Can one be overhauled while the other is at work Yes PortsmouthNo. of Bilge pumps 2 Diameter of ditto 4" Stroke 18" Can one be overhauled while the other is at work Yes with automatic Control Tank, an ejector also fittedNo. of Donkey Engines Two Sizes of Pumps 8" x 8" 8" 7" x 4 1/2" x 8" No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room Three 3 1/2" dia. x 2 1/2" dia. In Holds, &c. No. 1 Hold one 3 1/2" dia. No. 2 Hold one 3 1/2" dia.No. of Bilge Injections 1 sizes 5" Connected to condenser, or to circulating pump C.P. 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 YesAre all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks BothAre 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 BelowAre 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 YesWhat pipes are carried through the bunkers None How are they protected YesAre all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times YesAre the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges YesDates of examination of completion of fitting of Sea Connections 19/2/08 of Stern Tube 19/2/08 Screw shaft and Propeller 19/2/08Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from YesBOILERS, &c.—(Letter for record \$) Manufacturers of Steel Steel Coy. of ScotlandTotal Heating Surface of Boilers 2492 ft<sup>2</sup> Is Forced Draft fitted No No. and Description of Boilers 2: Cylindrical Multi Single EndWorking Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 19/2/08 No. of Certificate 844Can each boiler be worked separately Yes Area of fire grate in each boiler 48 1/2 ft<sup>2</sup> No. and Description of Safety Valves 10each boiler 2: Direct Spring Area of each valve 5' 9" Pressure to which they are adjusted 185 lb Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork About 9" Mean dia. of boilers 13' 0" Length 10' 0" Material of shell plates SteelThickness 1 3/16" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Lap Doublelong. seams OT Butt Straps Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 1/2" 4 1/2" Lap of plates or width of butt straps 18 1/2"Per centages of strength of longitudinal joint 90 Working pressure of shell by rules 205 lb Size of manhole in shell 16" x 12"Size of compensating ring 33 1/2" x 4 1/2" x 1 1/2" No. and Description of Furnaces in each boiler 3: Brightons Material Steel Outside diameter 41 1/2"Length of plain part 6' 6" Thickness of plates 2" Description of longitudinal joint Weld No. of strengthening rings NoneWorking pressure of furnace by the rules 182 lb Combustion chamber plates: Material Steel Thickness: Sides 3 1/2" Back 3 1/2" Top 3 1/2" Bottom 16"Pitch of stays to ditto: Sides 8 1/4" x 9" Back 9 1/2" x 1 1/4" Top 9 1/2" x 8 1/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 188 lbMaterial of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 76" Working pressure by rules 185 lb End plates in steam space:Material Steel Thickness 1 1/4" Pitch of stays 19" x 19 1/2" How are stays secured By nuts Working pressure by rules 189 lb Material of stays SteelDiameter at smallest part 1 1/2" Area supported by each stay 370" Working pressure by rules 212 lb Material of Front plates at bottom SteelThickness 1 3/16" Material of Lower back plate Steel Thickness 3 1/2" Greatest pitch of stays 14" Working pressure of plate by rules 201 lbDiameter of tubes 3 1/2" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 1 1/4" Back 7 1/2" Mean pitch of stays 9 1/2"Pitch across wide water spaces 14 1/2" Working pressures by rules 267 lb 282 lb Girders to Chamber tops: Material Steel Depth andthickness of girder at centre 8 1/2" x 1 1/2" Length as per rule 28 1/4" Distance apart 9 1/2" Number and pitch of stays in each 2: 8 1/4"Working pressure by rules 212 lb Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler workedseparately Yes Diameter 14" Length 14" Thickness of shell plates 3 1/2" Material Steel Description of longitudinal joint Weld Diam. of rivetholes 1 1/4" Pitch of rivets 8 1/2" Working pressure of shell by rules 205 lb Diameter of flue 16" Material of flue plates Steel Thickness 3 1/2"If stiffened with rings Yes Distance between rings 14" Working pressure by rules 188 lb End plates: Thickness 16" How stayed By staysWorking pressure of end plates 188 lb Area of safety valves to superheater 188 lb Are they fitted with easing gear Yes

W1361-0042



# VERTICAL DONKEY BOILER— Manufacturers of Steel

No. *None.* Description \_\_\_\_\_  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_  
 Working pressure \_\_\_\_\_ tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety  
 Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_  
 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 \_\_\_\_\_ Rivets \_\_\_\_\_  
 Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Plates \_\_\_\_\_  
 Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_  
 Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_  
 Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_  
 Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— *Two crank pin Bolt & nuts, 2 cross head Bolt and nuts  
 2 main bearing Bolt & nuts, 1 set Coupling Bolt & nuts, 1 set Feed pump valves  
 1 set Bilge pump valves, 1 set Rambottom Pump for H.P. & P. Pistons, 2 Propeller blades  
 10 Condenser tubes, 6 Boiler tubes, 6 Junk Ring Bolts, 1 main & Donkey Check valve.  
 Bolt & nuts assorted and iron & various things.*

The foregoing is a correct description,

*John Brown*  
 Manufacturer.

Dates of Survey while building { During progress of work in shops— 1907 Sep. 18. 20. 24. 30. Oct. 3. 4. 8. 9. 12. 14. 17. 22. 25. 28. 30. Nov. 4. 8. 11. 14. 20. 22. 28. Dec. 5. 6.  
 During erection on board vessel— 10. 12. 17. 20. 26. 31. 1908 Jan. 8. 14. 16. 21. 28. 29. 31. Feb. 3. 10. 12. 19. 24. 26. Mar. 2. 3. 4. 7. 11. 17. 23. 31. April 1.  
 Total No. of visits 52. Is the approved plan of main boiler forwarded herewith *Yes.*

Dates of Examination of principal parts—Cylinders 1/4/08 Slides 8/1/08 Covers 1/4/08 Pistons 14/1/08 Rods 8/1/08.

Connecting rods 11/1/08 Crank shaft 8/1/08 Thrust shaft 28/2/08 Tunnel shafts \_\_\_\_\_ Screw shaft 3/3/08 Propeller 3/2/08.

Stern tube 3/2/08 Steam pipes tested 17/3/08 Engine and boiler seatings 24/2/08 Engines holding down bolts 7/3/08.

Completion of pumping arrangements 31/3/08 Boilers fixed 26/2/08 Engines tried under steam 1/4/08 ✓

Main boiler safety valves adjusted 23/3/08. Thickness of adjusting washers *Star Boiler P.V. 2" S.P. 76" Port Boiler P.V. 3" S.P. 76" full.*

Material of Crank shaft *Steel* Identification Mark on Do. *694* Material of Thrust shaft *Steel* Identification Mark on Do. *695*

Material of Tunnel shafts *✓* Identification Marks on Do. *✓* Material of Screw shafts *Iron* Identification Marks on Do. *696*

Material of Steam Pipes *Steel* Test pressure *450 lb.*

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

*The engines and Boilers of this vessel have been built under Special Survey and the materials and workmanship are good. When completed they were examined under full power steam trials in the dock and found to work satisfactorily.*

*The machinery throughout is now in good and efficient condition and eligible in my opinion to have the record of L.M.C. 4, 08 marked in the Society Register Book.*

It is submitted that  
 this vessel is eligible for  
 THE RECORD. L.M.C. 4.08.  
 ELEC. LIGHT.

*15.4.08.*

The amount of Entry Fee. £ 2 : : :  
 Special .. .. £ 24. 6 : : :  
 Donkey Boiler Fee .. .. £ : : :  
 Travelling Expenses (if any) £ : : :  
 When applied for, 8/4/1908  
 When received, 10/4/1908

Committee's Minute

*Glasgow*

13 APR 1908

Assigned

*+ LMC 4.08.*

MACHINERY

TIFICATE

WRITTEN 14.4.08

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



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 Foundation