

REPORT ON MACHINERY.

No. 15349.

Received at London Office **WED 15 APR 1908**

Date of writing Report 19 When handed in at Local Office 10th April 1908 Port of Greenock

No. in Survey held at Port Glasgow Date, First Survey 18th Sept. 1907 Last Survey 1st April 1908

Reg. Book. " (Number of Visits 1)

99 Subj. on the SCREW STEAMER "ACADIAN" Tons { Gross 2304.64 Net 1457.10

Master R.G. Groundwater Built at Port Glasgow By whom built Blyde SB Eng. 6th June When built 1908

Engines made at Port Glasgow By whom made Blyde SB Eng. 6th June when made 1908

Boilers made at Port Glasgow By whom made Blyde SB Eng. 6th June when made 1908

Registered Horse Power 162 Owners The Mutual Steamship Co. Ltd. Port belonging to Glasgow

Nom. Horse Power as per Section 28 162 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks Three

Dia. of Cylinders 18-30-50 Length of Stroke 36 Revs. per minute 80 Dia. of Screw shaft 10.5 Material of screw shaft Iron

Is 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 tight

in the propeller boss Yes If the liner is in more than one length are the joints burned No If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive No If two

liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 43

Dia. of Tunnel shaft 9.2 Dia. of Crank shaft journals 9.2 Dia. of Crank pin 9.2 Size of Crank webs 18 1/2 x 6 Dia. of thrust shaft under

collars 9.2 Dia. of screw 13.0 Pitch of Screw 14.6 No. of Blades 4 State whether moveable Yes Total surface 56.5

No. of Feed pumps 2 Diameter of ditto 4 Stroke 18 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 4 Stroke 18 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Two Sizes of Pumps 8 x 8 x 8 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three 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 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 Below

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 None How are they protected None

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

Dates of examination of completion of fitting of Sea Connections 19/2/08 of Stern Tube 19/2/08 Screw shaft and Propeller 19/2/08

Is the Screw Shaft Tunnel watertight None Is it fitted with a watertight door Yes worked from Engine Room

BOILERS, &c.—(Letter for record \$) Manufacturers of Steel Steel Coy of Scotland

Total Heating Surface of Boilers 2492 Is Forced Draft fitted No No. and Description of Boilers 2: Cylindrical Multi Single End

Working Pressure 180 lb Tested by hydraulic pressure to 360 lb Date of test 19/2/08 No. of Certificate 844

Can each boiler be worked separately Yes Area of fire grate in each boiler 48 1/2 No. and Description of Safety Valves to

each boiler 2: Direct Spring Area of each valve 5.9 Pressure to which they are adjusted 185 lb Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork About 9 Mean dia. of boilers 13.0 Length 10.0 Material of shell plates Steel

Thickness 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 Double

long. seams Butt Straps Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 1/8 Lap of plates or width of butt straps 15.8

Per centages of strength of longitudinal joint rivets 90 Working pressure of shell by rules 205 lb Size of manhole in shell 16 x 12

Size of compensating ring 33 x 24 x 1 1/2 No. and Description of Furnaces in each boiler 1: Brighton Material Steel Outside diameter 41 1/2

Length of plain part top 6.6 Thickness of plates crown 2 Description of longitudinal joint Weld No. of strengthening rings None

Working pressure of furnace by the rules 182 lb Combustion chamber plates: Material Steel Thickness: Sides 3/32 Back 3/32 Top 3/32 Bottom 1/8

Pitch of stays to ditto: Sides 8 1/2 x 9 Back 9 1/2 x 9 1/2 Top 9 1/2 x 8 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 188 lb

Material of stays Steel Diameter at smallest part 1 1/2 Area supported by each stay 46 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 Steel

Diameter at smallest part 1 1/2 Area supported by each stay 370 Working pressure by rules 212 lb Material of Front plates at bottom Steel

Thickness 1 3/16 Material of Lower back plate Steel Thickness 3/32 Greatest pitch of stays 14 Working pressure of plate by rules 201 lb

Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 x 4 3/4 Material of tube plates Steel Thickness: Front 1 1/4 Back 7/8 Mean pitch of stays 9.5

Pitch across wide water spaces 14 1/2 Working pressures by rules 264 lb Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 8 1/2 x 1 1/2 Length as per rule 28.4 Distance apart 9 1/2 Number and pitch of stays in each 2: 8 1/2

Working pressure by rules 212 lb Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked

separately Yes Diameter 14 Length 14 Thickness of shell plates 3/32 Material Steel Description of longitudinal joint Weld Diam. of rivet

holes 1 1/4 Pitch of rivets 8 Working pressure of shell by rules 205 lb Diameter of flue 14 Material of flue plates Steel Thickness 3/32

If stiffened with rings Yes Distance between rings 14 Working pressure by rules 205 lb End plates: Thickness 1 1/4 How stayed By nuts

Working pressure of end plates 205 lb Area of safety valves to superheater None 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 lead Bolt and nuts, 2 main Bearing Bolts & 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 as used and iron & various sizes.*

The foregoing is a correct description,
 John *Greenock* Manufacturer.
 Glasgow

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, 18, 19, 24, 26, Mar. 2, 3, 4, 7, 11, 17, 23, 31, April 1, 15
 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 9/1/08 Covers 1/4/08 Pistons 14/1/08 Rods 8/1/08.
 Connecting rods 11/1/07 Crank shaft 8/1/08 Thrust shaft 28/2/08 Tunnel shafts _____ Screw shaft 3/2/08 Propeller 3/2/08.
 Stern tube 3/2/08 Steam pipes tested 14/3/08 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. 3" 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's Register Book.*

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

J. H. C. 15.4.08.
 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

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

Committee's Minute *Glasgow* 13 APR 1908
 Assigned *+ LMC 4.08.* MACHINERY CERTIFICATE WRITTEN 16/4/08

Greenock.

Certificate (if required) to be sent to Committee's Minute.

