

# REPORT ON MACHINERY.

Port of Glasgow

Received at London Office 12 DEC 1905

No. in Survey held at Glasgow Date, first Survey 10 May Last Survey 23 Nov 1905  
 Reg. Book. Sup. 44 on the Steel Screw Steamer "Bessie Dollar" (Number of Visits 5/5)  
 Master Port Glasgow Built at Port Glasgow By whom built Messrs A. Rodger & Co (390) When built 1905  
 Engines made at Glasgow By whom made Messrs A. Rodger & Co (127 Eng) when made 1905  
 Boilers made at Paisley By whom made A. F. Craig & Co Ltd (369, 370, 371) when made 1905  
 Registered Horse Power 393 Owners Messrs Dollar & Co Port belonging to Victoria B.C.  
 Nom. Horse Power as per Section 28 393 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 25 1/2 : 42 : 70 Length of Stroke 48 Revs. per minute 70 Dia. of Screw shaft 14 3/4 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 ✓ 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 ✓  
 If two liners are fitted, is the shaft lapped for protected between the liners ✓ Length of stern bush 5" 0"  
 Dia. of Tunnel shaft 13 3/4 Dia. of Crank shaft journals 13 3/4 Dia. of Crank pin 13 3/4 Size of Crank webs 20 1/2 x 8 3/4 Dia. of thrust shaft under collars 13 3/4 Dia. of screw 17-6 Pitch of screw 18" 0" No. of blades 4 State whether moveable Yes Total surface 91 sq ft  
 No. of Feed pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Three Sizes of Pumps One 9" x 10" duplex barrel No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Four 3 1/2" In Holds, &c. Two 3 1/2" in each of three holds  
 No. of bilge injections 1 sizes 7" 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 None  
 Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Larger valves: smaller Cocks  
 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 Short bilge pipes in cross bunker How are they protected wooden 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 New metal Is the screw shaft tunnel watertight Yes  
 Is it fitted with a watertight door Yes worked from Upper Eng. Rm. gratings.

**BOILERS, &c.**—No. of Certificate 7794 (Letter for record 5) Total Heating Surface of Boilers 6399 Is forced draft fitted No  
 No. and Description of Boilers Three Single Ended Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs  
 Date of test 5-10-05 Can each boiler be worked separately Yes Area of fire grate in each boiler 56.75 No. and Description of safety valves to each boiler Two Direct Spring Area of each valve 5.94 Pressure to which they are adjusted 185 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 15" Mean dia. of boilers 14-6" Length 11-0" Material of shell plates steel  
 Thickness 1 3/16" Range of tensile strength 24 lbs Are they welded or flanged no Descrip. of riveting: cir. seams DRR long. seams D.B.S.  
 Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 8 3/4" Lap of plates or width of butt straps 18 3/8"  
 Per centages of strength of longitudinal joint rivets 87.84 Working pressure of shell by rules 182 lbs Size of manhole in shell 18" x 12"  
 plate 65.7  
 Size of compensating ring 7 x 1 3/16 No. and Description of Furnaces in each boiler 3 Dighton Material steel Outside diameter 3' 9 1/4"  
 Length of plain part top Thickness of plates crown Description of longitudinal joint weld No. of strengthening rings —  
bottom bottom  
 Working pressure of furnace by the rules 180 Combustion chamber plates: Material steel Thickness: Sides 7/8" Back 3/4" Top 7/8" Bottom 1 1/16"  
 Pitch of stays to ditto: Sides 7 1/16 x 9 1/2 Back 9 x 9 Top 7 1/16 x 9 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180 lbs  
 Material of stays steel Diameter at smallest part 2.07 Area supported by each stay 61 Working pressure by rules 200 End plates in steam space:  
 Material steel Thickness 1 1/8" Pitch of stays 18 1/2 x 17 7/8 How are stays secured DRR Working pressure by rules 182 Material of stays steel  
 Diameter at smallest part 5.79 Area supported by each stay 322 Working pressure by rules 180 Material of Front plates at bottom steel  
 Thickness 1 1/16" Material of Lower back plate steel Thickness 3/4" Greatest pitch of stays 15" Working pressure of plate by rules 190 lbs  
 Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" Material of tube plates steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 10 11/16"  
 Pitch across wide water spaces 13 3/4" Working pressures by rules 190 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 9 1/2 x 3 1/2 x 2 Length as per rule 31 1/2 Distance apart 9 1/4" Number and pitch of Stays in each 3 - 7 1/2"  
 Working pressure by rules 195 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**— No. *None* Description *None*  
 Made at \_\_\_\_\_ By whom made \_\_\_\_\_ Date of test \_\_\_\_\_ 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 do. \_\_\_\_\_  
 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:— *Two crank pin bolts. Two crosshead bolts. Two main bearing bolts. Set of coupling bolts. Feed & help pump valves. Boiler tubes. Condenser tubes. Iron bars. Iron tankard bolts.*

The foregoing is a correct description,  
*Al. Rodger & Co* Manufacturer.

Dates of Survey while building  
 During progress of work in shops— *1905. May 10. June 19. July 3 11 20 21 27 Aug 22 Sept 5 9 19 27*  
 During erection on board vessel — *Nov. 19. 16. 23*  
 Total No. of visits *17*  
 Is the approved plan of main boiler forwarded herewith *Yes*  
 " " " donkey " " *None*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*The machinery of this vessel has been constructed & fitted under special survey & in accordance with the approved plan of the boilers. The workmanship is good. The machinery is a duplicate of that fitted on board the sister vessel "Kazel Belle". Glas. Report. No. 22604.*

*It is submitted that the machinery is eligible for the record of + L.M.C. 11-05 in the Register.*

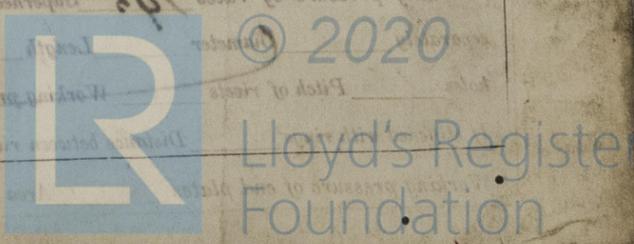
*It is submitted that this vessel is eligible for THE RECORD L.M.C. 11-05. ELEC. LIGHT*

*13.12.05*  
*13.12.05*

The amount of Entry Fee. £ *37* : - :  
 Special " " £ *39* : *13* :  
 Donkey Boiler Fee " " £ : :  
 Travelling Expenses (if any) £ : :  
 Glasgow 11 DEC 1905

*Arthur L. Jones*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute  
 Assigned *+ L.M.C. 11.05.*



Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.