

# REPORT ON MACHINERY.

Port of Glasgow.

Received at London Office 10 JUN 1902

No. in Survey held at Glasgow.

Date, first Survey 25 Nov '01 Last Survey 29 May 1902.

Reg. Book. S.S. Annie.

(Number of Visits 3) Tons { Gross 371.59  
Net 82.15

Master J. Ravencroft Built at Ayr By whom built Ailsa & Co. Ltd When built 1902.

Engines made at Glasgow. By whom made Ross & Duncaan. when made 1902

Boilers made at Glasgow. By whom made Ross & Duncaan. when made 1902

Registered Horse Power \_\_\_\_\_ Owners William Rowland Port belonging to Liverpool.

Nom. Horse Power as per Section 28 93.8 Is Refrigerating Machinery fitted no Is Electric Light fitted no

**ENGINES, &c.**—Description of Engines Compound Surface Cond. No. of Cylinders 2. No. of Cranks 2.

Dia. of Cylinders 20-42" Length of Stroke 27" Revs. per minute 100 Dia. of Screw shaft 8-9/16 as per rule 9.05 as fitted 9.3 Lgth. of stern bush 3-1/2"

Dia. of Tunnel shaft as per rule 8.05 as fitted none Dia. of Crank shaft journals as per rule 8.45 as fitted 8.2 Dia. of Crank pin 8-1/2" Size of Crank webs 12-3/4 x 5-9/16" Dia. of thrust shaft under collars 8-1/2" Dia. of screw 9-9" Pitch of screw 12-0" No. of blades 4 State whether moveable no Total surface 32 sq

No. of Feed pumps 2 Diameter of ditto 3-1/2" Stroke 13-1/2" Can one be overhauled while the other is at work yes.

No. of Bilge pumps 2. Diameter of ditto 3-1/2" Stroke 13-1/2" Can one be overhauled while the other is at work yes.

No. of Donkey Engines one Sizes of Pumps 6 x 4 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps \_\_\_\_\_

In Engine Room 2-2-1/2" 1-2" D.S.B. In Holds, &c. 2-2"

No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump Circpp. a separate donkey suction fitted in Engine room & size 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 ✓

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 none How are they protected ✓

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 on slipway Is the screw shaft tunnel watertight ✓

Is it fitted with a watertight door ✓ worked from ✓

**BOILERS, &c.**— (Letter for record S) Total Heating Surface of Boilers 1621.5 sq Is forced draft fitted no.

No. and Description of Boilers 1 cyl built single ended Working Pressure 130 lbs Tested by hydraulic pressure to 260

Date of test 15-4-02 Can each boiler be worked separately ✓ Area of fire grate in each boiler 52 sq No. and Description of safety valves to each boiler 2 Direct Spring Area of each valve 4 sq Pressure to which they are adjusted 135 lbs Are they fitted with easing gear yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 6-0" Mean dia. of boilers 13-6" Length 10-0" Material of shell plates steel

Thickness 7/8" Range of tensile strength 27-37 Are they welded or flanged no Descrip. of riveting: cir. seams lap D.R. long. seams D.R. Y.R.

Diameter of rivet holes in long. seams 1" Pitch of rivets 6-1/2" 3-3/8" Lap of plates or width of butt straps 15-1/2"

Per centages of strength of longitudinal joint rivets 86.5 Working pressure of shell by rules 131 lbs Size of manhole in shell 16 x 12

Size of compensating ring 6-1/2 x 7-1/2" No. and Description of Furnaces in each boiler 3 plain. Material steel Outside diameter 41"

Length of plain part top 6-6" bottom 8-9" Thickness of plates crown 2-1/2" bottom 3-1/2" Description of longitudinal joint weld. No. of strengthening rings partial at bottom.

Working pressure of furnace by the rules 146 lbs Combustion chamber plates: Material steel Thickness: Sides 17/32" Back 17/32" Top 17/32" Bottom 21/32"

Pitch of stays to ditto: Sides 7-1/2 x 7-1/2" Back 7-1/2 x 7-1/2" Top 7-1/2 x 7-1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 145 lbs

Material of stays steel Diameter at smallest part 1 1/2" Area supported by each stay 60 sq Working pressure by rules 132 lbs End plates in steam space: \_\_\_\_\_

Material steel Thickness 7/8" Pitch of stays 17-1/2 x 17-1/2" How are stays secured Donkey washers doubling at top stay Working pressure by rules 132 lbs Material of stays steel

Diameter at smallest part 2-5/8" Area supported by each stay 298 sq Working pressure by rules 142 Material of Front plates at bottom steel

Thickness 5" Material of Lower back plate steel Thickness 5" Greatest pitch of stays 15" Working pressure of plate by rules 187 lbs

Diameter of tubes 3-1/2" Pitch of tubes 4-3/8 x 4-1/2" Material of tube plates steel Thickness: Front 11/16 + 5/32" Back 11/16" Mean pitch of stays 10-9"

{ doubling plate fitted } Pitch across wide water spaces 15" Working pressures by rules 140. 141 Girders to Chamber tops: Material iron Depth and thickness of girder at centre 6-1/2 x 13-1/2" Length as per rule 28-3/4" Distance apart 7-3/8" Number and pitch of Stays in each 2. 7-3/8"

Working pressure by rules 143 lbs 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 \_\_\_\_\_

To a Report also sent on the Hull of the Ship

[500-13/01-Copyable Ink.]



W1367-0082

**DONKEY BOILER**— 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 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:— *2. Main bearing bolts, 1 set of coupling bolts, 2 bow Rod bolts & nuts, 2 Piston Rod bolts & nuts, 1 set of feed pump valves, 1 set of bilge pump valves, 20 assorted bolts & nuts, 35 Firebars, & an assortment of iron stools.*

The foregoing is a correct description,  
*L. M. C.* Manufacturer.

Dates of Survey while building

During progress of work in shops—	1901: Nov. 75. Dec. 4. 9.	1902: Jan. 10. 20. 23. 29. Feb. 3. 11. 14. 19. 21. 24.	
	During erection on board vessel—		Mar. 4. 10. 11. 14. 18. 21. 27. Apr. 7. 15. 18. 25. May. 5. 9. 13. 15. 21. 27. 29.
	Total No. of visits		31.

Is the approved plan of main boiler forwarded herewith *no.*  
 " " " donkey " " " *no.*

**General Remarks** (State quality of workmanship, opinions as to class, &c. *The machinery of this vessel has been tested & constructed under Special Survey & is, in my opinion eligible to have record of L.M.C. 5-02.*

Material of screw shaft *Scrap iron* Is the screw shaft fitted with a continuous liner the whole length of the stern tube *no.*

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 or protected between the liners *no.*

*Materials have been tested. the workmanship is of good quality. & machinery securely fastened on board. & tried under steam with satisfactory results.*

It is submitted that this vessel is eligible for THE RECORD — L.M.C. 5:02

*L.M.*

The amount of Entry Fee... £ 1 : : When applied for, *6/10/02*

Special... £ 14 2 : : *10/10/02*

Donkey Boiler Fee... £ : : When received, *11/01/02*

Travelling Expenses (if any) £ : 2 : : *11/01/02*

*A. J. Barnett*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow. 9-JUN 1902*

Assigned *L.M.C. 5:02.*  
*When fee paid*

MACHINERY CERTIFICATE  
 WRITTEN 14/6/02



Certificate (if required) to be sent to Glasgow