

329

No. 13269  
1129

# REPORT ON MACHINERY.

Port of Glasgow

Received at London Office  
TUES. 6 NOV 1894

No. in Survey held at  
leg. Book. Glasgow

Date, first Survey 30<sup>th</sup> July Last Survey 29<sup>th</sup> Oct<sup>r</sup> 1894

on the S.S. Bessie Barr

Number of Visits 7  
Tons { Gross 407  
Net 163

Master X Built at Port Glasgow By whom built Murdoch & Murray When built 1894-10

Engines made at Glasgow By whom made Muir & Houston when made 1894

Boilers made at do. By whom made do. when made 1894

Registered Horse Power X Owners R.B. Ballantyne & Co. Port belonging to Glasgow

Nom. Horse Power as per Section 28 75

**ENGINES, &c.** — Description of Engines Triple Expansion No. of Cylinders three

Diameter of Cylinders 13" x 21 1/2" - 34" Length of Stroke 27" Revolutions per minute 99 Diameter of Screw shaft as per rule 6 1/2"

Diameter of Tunnel shaft as fitted 6 3/4" Diameter of Crank shaft journals 7" Diameter of Crank pin 7" Size of Crank webs 1-1 1/2" x 10" x 5"

Diameter of screw 9'-0" Pitch of screw 13'-0" No. of blades 4 State whether moveable no Total surface 26 sq. ft.

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

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

No. of Donkey Engines Two Sizes of Pumps 5 1/2" x 3 1/2" x 5" - 2" x 4" x 4" No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Two 2 1/2" forward & one 2 1/2" aft In Holds, &c. Four 2 1/2" forward.

No. of bilge injections 1 sizes 3" Connected to condenser, or to circulating pump Co. Pumps a separate donkey suction fitted in Engine room & size 2 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

Are all pipes that 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

Were stern tube, propeller, screw shaft, and all connections examined in dry dock before launching Is the screw shaft tunnel watertight none

Is it fitted with a watertight door worked from

**BOILERS, &c.** — (Letter for record S) Total Heating Surface of Boilers 1013 sq. ft.

No. and Description of Boilers One Cylindrical Multitubular Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs

Date of test 11/10/94 Can each boiler be worked separately ✓ Area of fire grate in each boiler 49 sq. ft. No. and Description of safety valves to each boiler Two direct spring Area of each valve 4.9" Pressure to which they are adjusted 160 lbs. Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 22" Mean diameter of boilers 12'-3"

Length 9'-6" Material of shell plates Steel Thickness 1" Description of riveting: circum. seams Lap, Single long. seams D. butt, treble

Diameter of rivet holes in long. seams 1 1/4" Pitch of rivets 7 1/4" Lap of plates or width of butt straps 17"

Percentages of strength of longitudinal joint 107 Working pressure of shell by rules 161 lbs. Size of manhole in shell 16" x 12"

Size of compensating ring No. 1 No. and Description of Furnaces in each boiler 3 Plain Material Steel Outside diameter 37"

Length of plain part 6'-0" Thickness of plates 1 1/2" Description of longitudinal joint Double Butt No. of strengthening rings -

Working pressure of furnace by the rules 190 lbs. Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 3/4"

Pitch of stays to ditto: Sides 8 1/4" x 8 1/4" Back 8 1/4" x 8 1/4" Top 8 1/4" x 7 1/4" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 161 lbs.

Material of stays Steel Diameter at smallest part 1.447 Area supported by each stay 68" Working pressure by rules 17 1/2 lbs End plates in steam space:

Material Steel Thickness 7/8" Pitch of stays 14 1/2" x 14" How are stays secured d. nuts & washers Working pressure by rules 17 1/2 lbs Material of stays Steel

Diameter at smallest part 4.36 Area supported by each stay 202 1/4" Working pressure by rules 194 lbs. Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 14 1/2" Working pressure of plate by rules 255 lbs.

Diameter of tubes 3 1/2" Pitch of tubes 14 1/2" x 4 3/4" Material of tube plates Steel Thickness: Front 3/4" Back 3/4" Mean pitch of stays 9 1/2"

Pitch across wide water spaces 14 1/2" x 12" Working pressures by rules 285 lbs & 212 lbs Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 7 1/4" x 1 1/2" Length as per rule 28 1/2" Distance apart 7 1/4" Number and pitch of Stays in each Two 8 1/4"

Working pressure by rules 170 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

Boles 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

See letter from Glasgow 11-94

GR4329-0130

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DONKEY BOILER— Description *Vertical Cross tube*  
 Made at *Glasgow* By whom made *Muir & Houston* When made *1894* Where fixed *On deck*  
 Working pressure *70 lbs.* tested by hydraulic pressure to *140 lbs.* No. of Certificate *3690* Fire grate area *12 1/2* Description of safety valves *Direct Spring*  
 No. of safety valves *1* Area of each *5.93* Pressure to which they are adjusted *70 lbs.* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *4 7/8* Length *9-6* Material of shell plates *Steel* Thickness *3/8*  
 Description of riveting long. seams *Lap d. rivetted* Diameter of rivet holes *15/16* Whether punched or drilled *drilled* Pitch of rivets *3 1/4*  
 Lap of plating *5* Per centage of strength of joint *Rivets 93.5% Plates 71%* Thickness of shell crown plates *1/2* Radius of do. *4-6* No. of Stays to do. *4*  
 Dia. of stays. *1 1/2* Diameter of furnace Top *3.5 1/2* Bottom *4.3* Length of furnace *4.0* Thickness of furnace plates *7/16* Description of joint *Lap d. riv.* Thickness of furnace crown plates *1/2* Stayed by *four 1 1/2" stays* Working pressure of shell by rules *94 lbs.*  
 Working pressure of furnace by rules *73 lbs.* Diameter of uptake *10* Thickness of uptake plates *7/16* Thickness of water tubes *3/8*

SPARE GEAR. State the articles supplied:— *as required by the rules.*

The foregoing is a correct description,  
*Muir & Houston* Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c. *Engines & Boilers. Particulars of which are given on the other side & above have been constructed under special survey. Materials & workmanship are of good description. They have been well fitted on board & satisfactorily tried under steam & in our opinion are eligible to have notification + L.M.C. 10. 94.*

*1 Photo Boiler print & 3 Forging Report hereto attached.*

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 10-94 subject to the sluice valve on the fore bulkhead of the Machinery space being made easily accessible (the surveying has having answered the above question in the report)  
 W.A.  
 6-11-94

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 1 : 0 : 0	When applied for,
Special .. .. .	£ 11 : 5 : 0	2/11/94
Donkey Boiler Fee .. .	£ " : 0 : 0	When received,
Travelling Expenses (if any) £	" : 0 : 0	5/11/94

*Alex. Kidd, A.M. Reed*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES. 6 NOV 1894

MACHINERY CERTIFICATE WRITTEN.

Assigned

*+ L.M.C. 10, 94*



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The Surveyors are required not to write on or below this space for Committee's Minute.