

## REPORT ON MACHINERY.

No. 26242  
THU. OCT. 1. 1914

Received at London Office  
 Date of writing Report 19 When handed in at Local Office 30. SEP. 1914 Port of Sunderland.  
 No. in Survey held at Sunderland Date, First Survey 19 Jan Last Survey 22 Sep. 1914  
 Reg. Book. on the Steel S/S Beemah (Number of Visits 47) Tons Gross 4747 Net 2927  
 Master Breckon Built at Sland. By whom built W. Pickersgill & Sons When built 1914  
 Engines made at Sland By whom made Richardson Westgarth & Co. when made 1914.  
 Boilers made at Sland By whom made " " when made 1914.  
 Registered Horse Power Owners Rowland & Marwood Sland Port belonging to Whitby  
 Nom. Horse Power as per Section 28 401 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Tri C. P. 10. No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 25 1/2 x 42. 70" Length of Stroke 48" Revs. per minute 65 Dia. of Screw shaft as per rule 14 1/2 as fitted 15 Material of screw shaft S.  
 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 or protected between the liners Length of stern bush 5' 1"  
 Dia. of Tunnel shaft as per rule 12.87 as fitted 13 Dia. of Crank shaft journals as per rule 13.5 as fitted 13.75 Dia. of Crank pin 14" Size of Crank webs 20 1/2 x 8 1/2 Dia. of thrust shaft under collars 13 3/4 Dia. of screw 17.9" Pitch of Screw 17.9" No. of Blades 4 State whether moveable f Total surface 96 1/2  
 No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 27" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 27" Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 2 Rotary Ball Sizes of Pumps 12 1/2 x 5 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room four 3 1/2 In Holds, &c. two of 3 1/2 in each  
 Tunnel 2 1/2  
 No. of Bilge Injections 1 sizes 5 1/2 Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size Yes 4  
 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  
 Dates of examination of completion of fitting of Sea Connections 16.7.1914 of Stern Tube 14.8.14 Screw shaft and Propeller 17.8.14  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel J. Spencer & Sons  
 Total Heating Surface of Boilers 6620 Is Forced Draft fitted No No. and Description of Boilers 3. S.E.  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 Date of test 17.6.14 No. of Certificate 3223  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 57 1/2 No. and Description of Safety Valves to each boiler 2 Spring Area of each valve 4.06 Pressure to which they are adjusted 185 Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork about 2 ft Mean dia. of boilers 14.9" Length 11 ft Material of shell plates S  
 Thickness 1 5/32 Range of tensile strength 28 1/2 - 32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams R. long. seams R. Butt Diameter of rivet holes in long. seams 1 3/16 Pitch of rivets 8 1/4 Lap of plates or width of butt straps 16"  
 Per centages of strength of longitudinal joint rivets 86.5 plate 85.6 Working pressure of shell by rules 180 lbs Size of manhole in shell 16 x 12 (ends)  
 Size of compensating ring flanged No. and Description of Furnaces in each boiler 3 Monison Material S Outside diameter 3' 11 1/4  
 Length of plain part top 9 bottom 9 Thickness of plates crown 19 bottom 13 1/2 Description of longitudinal joint weld No. of strengthening rings  
 Working pressure of furnace by the rules 199 Combustion chamber plates: Material S Thickness: Sides 3/4 Back 1/6 Top 3/4 Bottom 1 1/16  
 Pitch of stays to ditto: Sides 11 1/2 x 9 Back 10 x 8 1/2 Top 11 1/2 x 9 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182  
 Material of stays S Diameter at smallest part 1.79 Area supported by each stay 88.75 Working pressure by rules 185 End plates in steam space:  
 Material S Thickness 1 3/32 Pitch of stays 20 3/8 x 20 How are stays secured d. nuts Working pressure by rules 180 1/2 Material of stays S  
 Diameter at smallest part 3.037 Area supported by each stay 404 Working pressure by rules 184 Material of Front plates at bottom S  
 Thickness 2 5/8 Material of Lower back plate S Thickness 2 1/2 Greatest pitch of stays 11 1/4 x 8 1/2 Working pressure of plate by rules 181  
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 x 4 1/2 Material of tube plates S Thickness: Front 2 5/32 Back 2 5/32 Mean pitch of stays 13 1/2 x 8 3/4  
 Pitch across wide water spaces 14 1/2 Working pressures by rules 204 Girders to Chamber tops: Material S Depth and thickness of girder at centre 9 3/4 x 1 1/2 Length as per rule 3 1/2 Distance apart 11 1/2 Number and pitch of stays in each 2.09  
 Working pressure by rules 187 Superheater or Steam chest; how connected to boiler 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



# VERTICAL DONKEY BOILER

Manufacturers of Steel

No.	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		
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint	Rivets 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	Radius of do.	Stayed by		
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

**SPARE GEAR.** State the articles supplied:— *Propeller & Shaft - Set top and bottom end bolts & nuts - two main bearing bolts & nuts - Set of Coupling bolts - Set of feed and bilge pump valves, air & circulating pump valves - two safety valve springs bolts nuts & assorted iron*

FOR RICHARDSONS, WESTGARTH & CO., LTD

The foregoing is a correct description,

Manufacturer

*Frederic St. Russell*

ASSISTANT MANAGER

Dates of Survey while building	During progress of work in shops --	<i>1914 Jan 19, 23, 27 Feb 4, 5, 7, 13 Mar 9, 12, 14, 25 Apr 2, 15, 17, 20, 32, 38, 29 May 18, 19, 21, 26, 28</i>
	During erection on board vessel --	<i>June 5, 15, 16, 17, 24, 26 Jul 2, 27, 28, 17 Aug 6, 11, 14, 18, 20, 21, 24, 25, 28 Sep 7, 15, 22</i>
	Total No. of visits	<i>(47)</i>

Is the approved plan of main boiler forwarded herewith *yes*

" " " donkey " " " *yes*

Dates of Examination of principal parts—Cylinders	<i>19.5.14</i>	Slides	<i>20.4.14</i>	Covers	<i>20.4.14</i>	Pistons	<i>19.5.14</i>	Rods	<i>19.5.14</i>
Connecting rods	<i>19.5.14</i>	Crank shaft	<i>18.5.14</i>	Thrust shaft	<i>18.5.14</i>	Tunnel shafts	<i>18.5.14</i>	Screw shaft	<i>18.5.14</i>
Stern tube	<i>28.5.14</i>	Steam pipes tested	<i>20.8.14</i>	Engine and boiler seatings	<i>6.8.14</i>	Engines holding down bolts	<i>21.8.14</i>		
Completion of pumping arrangements	<i>24.8.14</i>	Boilers fixed	<i>21.8.14</i>	Engines tried under steam	<i>24.8.1914</i>				
Main boiler safety valves adjusted	<i>24.8.14</i>	Thickness of adjusting washers	<i>FB p 32.532 CB p 45.54 IB 32.5716</i>						
Material of Crank shaft	<i>S 48 5229 AL 148-129</i>	Identification Mark on Do.	<i>R.J.T.</i>	Material of Thrust shaft	<i>MB 39142</i>	Identification Mark on Do.	<i>R.J.T.</i>		
Material of Tunnel shafts	<i>S</i>	Identification Marks on Do.	<i>MB 62</i>	Material of Screw shafts	<i>S</i>	Identification Marks on Do.	<i>R.M.B.J.F.</i>		
Material of Steam Pipes	<i>Copper</i>	Test pressure	<i>360</i>						

**General Remarks** (State quality of workmanship, opinions as to class, &c. *Machinery and boilers built under Special Survey materials and workmanship good. Engines and boilers examined under full steam & found satisfactory. In my opinion this vessel's machinery is worthy of the record of L.M.C. in the Register Book.*

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 9.14.

The amount of Entry Fee	£ 3	When applied for,	<i>29 SEP 1914</i>
Special	£ 40	When received,	<i>17/10/14</i>
Donkey Boiler Fee	£		
Travelling Expenses (if any)	£		

Committee's Minute *TUE. OCT. - 6. 1914*  
Assigned *L.M.C. 9.14*

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



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MACHINERY CERTIFICATE WRITTEN

SUNDERLAND.

Certificate (if required) to be sent to

(The Surveyors are requested not to write on or below the space for Committee's Minute.)