

## REPORT ON MACHINERY.

No. 8420.

Received at London Office

WED. MAY 13. 1914

Date of writing Report 5.5.14 When handed in at Local Office 6.5.14 Port of MIDDLESBRO'  
 No. in Survey held at Stockton-on-Tees Date, First Survey 29<sup>th</sup> January Last Survey 4<sup>th</sup> May 1914  
 Reg. Book. on the Steel Screw Steamer Buresk (S.S. No. 638) (Number of Visits 29)  
 Master \_\_\_\_\_ Built at Stockton By whom built Richardson Duck & Co Tons { Gross \_\_\_\_\_ Net \_\_\_\_\_  
 Engines made at Stockton By whom made Messrs Blair & Co Lim. (No. 1790) when made 1914  
 Boilers made at Stockton By whom made Messrs Blair & Co Lim. when made 1914  
 Registered Horse Power \_\_\_\_\_ Owners Messrs Burdick & Co. Managers Port belonging to London  
 Nom. Horse Power as per Section 28 375 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no  
 ENGINES, &c.—Description of Engines Tri-compound No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 26-42½-69½ Length of Stroke 45 Revs. per minute 60 Dia. of Screw shaft 14.13 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  
 the propeller boss yes If the liner is in more than one length are the joints burned in 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 tight fit If two  
 liners are fitted, is the shaft lapped or protected between the liners \_\_\_\_\_ Length of stern bush 5'-3"  
 Dia. of Tunnel shaft 12.72 as per rule 13.5 Dia. of Crank shaft journals 13.35 as per rule 14 Dia. of Crank pin 14½ Size of Crank webs 27½ x 9½ Dia. of thrust shaft under  
14½ Dia. of screw 16-10½ Pitch of Screw 16'-6" No. of Blades 4 State whether moveable no Total surface 97 f  
 Feed pumps 2 Diameter of ditto 3½ Stroke 33 Can one be overhauled while the other is at work yes  
 Bilge pumps 2 Diameter of ditto 4½ Stroke 33 Can one be overhauled while the other is at work yes  
 Donkey Engines 2 Sizes of Pumps Ballast 9"x10"; Fuel 4"x8" No. and size of Suctions connected to both Bilge and Donkey pumps  
 Engine Room 3 @ 3½ In Holds, &c. 2 @ 3½ in No. 1. 2 & 3 holds: one @ 3½  
 Aftermost hold: Tunnel with one @ 2½  
 Bilge Injections 1 sizes 7 Connected to condenser or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes-4"  
 Are 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 no  
 Are 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 pipes carried through the bunkers suctions to fore holds How are they protected wood  
 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  
 Date of examination of completion of fitting of Sea Connections 4.3.14 of Stern Tube 4.3.14 Screw shaft and Propeller 15.4.14  
 Is the Screw Shaft Tunnel watertight see hull Report Is it fitted with a watertight door yes worked from top platform  
 LERS, &c.—(Letter for record (S) 5 Manufacturers of Steel Messrs John Spencer & Co. Lim.  
 Total Heating Surface of Boilers 6094 Is Forced Draft fitted no No. and Description of Boilers Two single ended  
 Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 9.4.14 No. of Certificate 5270  
 Can each boiler be worked separately yes Area of fire grate in each boiler 66.2 f No. and Description of Safety Valves to  
 each boiler 2 direct spring Area of each valve 8.29 Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes  
 Smallest distance between boilers or uptakes and bunkers 2'-6" external dia. of boilers 16'-10½ Length 11'-6" Material of shell plates steel  
 Thickness 1½ Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 R. lap  
 Long. seams 2 B-3 Riv Diameter of rivet holes in long. seams 1½ Pitch of rivets 9½ Lap of plates or width of butt straps 20½ x 1½  
5 Rivs per pitch rivets 88.3 Working pressure of shell by rules 182 Size of manhole in shell 16" x 12"  
 Percentages of strength of longitudinal joint plate 85.28 No. and Description of Furnaces in each boiler 3. Fox's Material steel Outside diameter 50"  
 Size of compensating ring 7½ x 1½ Length of plain part top Thickness of plates crown 19 Description of longitudinal joint Weld No. of strengthening rings 29  
bottom 32 Working pressure of furnace by the rules 189 Combustion chamber plates: Material steel Thickness: Sides 21 Back 21 Top 21 Bottom 29  
32 Pitch of stays to ditto: Sides 9½ x 8 Back 9½ x 8½ Top 9½ x 8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180  
 Material of stays steel Diameter at smallest part 1.99 Area supported by each stay 81 Working pressure by rules 221 End plates in steam space:  
 Material steel Thickness 1½ Pitch of stays 20 x 18 How are stays secured nuts & washers Working pressure by rules 189 Material of stays steel  
 Area at smallest part 7.87 Area supported by each stay 430 Working pressure by rules 191 Material of Front plates at bottom steel  
 Thickness 1 Material of Lower back plate steel Thickness 1½ Greatest pitch of stays 17½ x 8½ Working pressure of plate by rules 203  
 Diameter of tubes 3½ Pitch of tubes 4½ x 4½ Material of tube plates steel Thickness: Front 1½ Back 1½ Mean pitch of stays 11"  
 Pitch across wide water spaces 14½ Working pressures by rules 192 Girders to Chamber tops: Material steel Depth and  
 Thickness of girder at centre 8½ x 2 Length as per rule 33 Distance apart 9½ Number and pitch of stays in each 3 @ 8"  
 Working pressure by rules 185 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  
 \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Diameter of flue \_\_\_\_\_ Material of flue plates \_\_\_\_\_ Thickness \_\_\_\_\_  
 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 See Middlesbrough Report No 8321

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 Say \_\_\_\_\_

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 \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:— Two each of cone rod top end & bottom end bolts & nuts  
2 main bearing bolts & nuts: one set of coupling bolts and nuts: one set of feed and bilge pump  
valves: one set each H.P. & M.P. piston & crosshead rings: assorted bolts & nuts: iron of various  
sizes: one propeller and one top half eccentric strap.

The foregoing is a correct description,  
For BLAIR & CO., LIMITED  
No. 11, North Street, Middlesbrough

1914.  
During progress of work in shops: SECRETARY Jan 29 Feb 2 3 5 10 17 18 19 22 24 25 27 Mar 2 3 4 6 9 10 11 12 13 16 19 23 24 26 27  
of Survey while building: During erection on board vessel: Apr 1 2 9 10 17 21 22 24 27 29 May 4  
Total No. of visits 39

Is the approved plan of main boiler forwarded herewith yes  
" " " donkey " " " yes

Dates of Examination of principal parts—Cylinders 25.2.14 Slides 4.3.14 Covers 4.3.14 Pistons 4.3.14 Rods 4.3.14  
Connecting rods 4.3.14 Crank shaft 9.3.14 Thrust shaft 2.2.14 Tunnel shafts 3.2.14 Screw shaft 26.3.14 Propeller 23.3.14  
Stern tube 3.3.14 Steam pipes tested 21.4.14 Engine and boiler seatings 4.3.14 Engines holding down bolts 15.4.14  
Completion of pumping arrangements 22.4.14 Boilers fixed 22.4.14 Engines tried under steam 24.4.14  
Main boiler safety valves adjusted 24.4.14 Thickness of adjusting washers P.B. 5-7/16 : S.B. 5-7/16  
Material of Crank shaft By Steel Identification Mark on Do. 6882 Material of Thrust shaft By Steel Identification Mark on Do. 216.N  
Material of Tunnel shafts By Steel Identification Marks on Do. 216.N Material of Screw shafts iron Identification Marks on Do. 6882  
Material of Steam Pipes Solid drawn copper (7x5/8 & 5x1/2) Test pressure 400 lbs.

## General Remarks (State quality of workmanship, opinions as to class, &amp;c.)

The machinery of this vessel has been built under special survey. The materials and workmanship are sound and good. The boilers and main steam pipes were tested by hydraulic pressure and the engines and boilers examined under steam with satisfactory results.

The machinery of this vessel is now in a good and safe working condition and eligible in our opinion to have the notation of L.M.C.-5.14 in the Register Book.

It is submitted that  
this vessel is eligible for  
THE RECORD, + L.M.C.5.14.

W.D. D.R.  
13/5/14

The amount of Entry Fee... £ 3-0-0 When applied for,  
Special... £ 38-15-0 12.5.1914  
Donkey Boiler Fee... £ 5  
Travelling Expenses (if any) £ :  
When received, 14/5/14

Committee's Minute FRI. MAY 15 1914

Assigned

+ L.M.C.5.14

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



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Foundation