

TUE. SEP. 30. 1913

Received at London Office

Date of writing Report 27.7.13 When handed in at Local Office 29.9.13 Port of Middlesbrough  
No. in Survey held at Stockton-on-Tees Date, First Survey 19<sup>th</sup> May 1913 Last Survey 20<sup>th</sup> Sept 1913  
Reg. Book. on the Steel Screw Steamer "Caldy" (Number of Visits (S.S.N. 634)) Tons { Gross 4221.21  
Net 2619.16  
Master Richard Care Built at Stockton By whom built Richardson Duck & Co When built 1913  
Engines made at Stockton By whom made Messrs Blair & Co Lim (No 1772) when made 1913  
Boilers made at Stockton By whom made Messrs Blair & Co Lim when made 1913  
Registered Horse Power \_\_\_\_\_ Owners Fargrove Steam Navigation Co Ltd Port belonging to London  
Nom. Horse Power as per Section 28 394 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 26-42-70 Length of Stroke 48 Revs. per minute 65 Dia. of Screw shaft as per rule 14.48 Material of 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 in one 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'-4"  
Dia. of Tunnel shaft as per rule 12.98 Dia. of Crank shaft journals as per rule 13.63 Dia. of Crank pin 14 3/4 Size of Crank webs 28 1/2 x 9 1/2 Dia. of thrust shaft under  
collars 14 3/4 Dia. of screw 17'-6" Pitch of Screw 17'-3" No. of Blades 4 State whether moveable no Total surface 96 sq ft  
No. of Feed pumps 2 Diameter of ditto 3 1/2 Stroke 34 Can one be overhauled while the other is at work yes  
No. of Bilge pumps 2 Diameter of ditto 5 Stroke 34 Can one be overhauled while the other is at work yes  
No. of Donkey Engines 2 Sizes of Pumps Ballant = 9 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room 4 @ 3 1/2 & Dry tank, one @ 3 1/2 In Holds, &c. 2 @ 3 1/2 in each hold  
Tunnel well one @ 2 1/2  
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 - 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 none  
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 suctions to forward holds How are they protected wood ceiling  
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 29.7.13 of Stern Tube 29.7.13 Screw shaft and Propeller 16.8.13  
Is the Screw Shaft Tunnel watertight see hull Rpt Is it fitted with a watertight door yes worked from top platform

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel Messrs John Spencer & Sons Lim.  
Total Heating Surface of Boilers 6435 Is Forced Draft fitted no No. and Description of Boilers 3 Single ended  
Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 14.8.13 No. of Certificate 5140  
Can each boiler be worked separately yes Area of fire grate in each boiler 59 1/2 sq ft No. and Description of Safety Valves to  
each boiler 2 direct spring Area of each valve 7.07 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~~ External 3'-0" Mean dia. of boilers 15'-3" Length 11'-0" Material of shell plates steel  
Thickness 1 1/2 Range of tensile strength 28-32 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 2 Riv lap  
long. seams 2 B-3 Riv Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets 8 1/2 Lap of plates or width of butt straps 18 1/2 x 1 1/2  
5 Rivts per pitch rivets 86.3 Working pressure of shell by rules 182 Size of manhole in shell 16" x 12"  
Per centages of strength of longitudinal joint plate 85.6  
Size of compensating ring 7 1/2 x 1 1/2 No. and Description of Furnaces in each boiler 3 Brighton Material steel Outside diameter 45 3/8  
Length of plain part top bottom Thickness of plates crown 9" Description of longitudinal joint weld No. of strengthening rings \_\_\_\_\_  
Working pressure of furnace by the rules 192 Combustion chamber plates: Material steel Thickness: Sides 1/2 Back 1/2 Top 1/2 Bottom 1/2  
Pitch of stays to ditto: Sides 8 3/8 x 10 Back 9 3/8 x 9 Top 10 x 8 3/8 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 185  
Material of stays steel Diameter at smallest part 1.99 Area supported by each stay 88.75 Working pressure by rules 202 End plates in steam space: \_\_\_\_\_  
Material steel Thickness 1 1/2 Pitch of stays 18 1/2 20 1/2 17 1/2 How are stays secured nuts & washers Working pressure by rules 193 Material of stays steel  
Diameter at smallest part 7.24 Area supported by each stay 390 Working pressure by rules 193 Material of Front plates at bottom steel  
Thickness 1 1/2 Material of Lower back plate steel Thickness 1 1/2 Greatest pitch of stays 14 1/2 x 9 Working pressure of plate by rules 252  
Diameter of tubes 3 1/2 Pitch of tubes 4 3/8 x 4 3/8 Material of tube plates steel Thickness: Front 1 1/2 Back 1 1/2 Mean pitch of stays 11 1/2  
Pitch across wide water spaces 14 1/2 Working pressures by rules 181 Girders to Chamber tops: Material steel Depth and  
thickness of girder at centre 7 3/4 x 1 3/4 Length as per rule 29 Distance apart 10 Number and pitch of stays in each 2 @ 8 3/8  
Working pressure by rules 191 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 \_\_\_\_\_



**VERTICAL DONKEY BOILER—** Manufacturers of Steel *See Middlesbrough Report No 8053*

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		
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			
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 con. rod top-end, bottom end, and main bearing bolts and nuts; one set of coupling bolts and nuts; one set of feed & bilge pump valves, one set each of HP & MP piston rings; assorted bolts and nuts; iron of various sizes; one tail end shaft and one propeller.*

The foregoing is a correct description,

*310 Middlesbrough* Manufacturer.

Dates of Survey while building	During progress of work in shops—	1912 May 19. 22. 28. 30 June 2. 4. 6. 9. 10. 12. 13. 16. 18. 20. 23. 25. 27. 30 July 3. 7. 9. 10. 14
	During erection on board vessel—	17. 19. 22. 24. 28. 29. 30 Aug. 1. 5. 8. 12. 14. 16. 23. 25. 30. Sep. 2. 8. 10. 12. 17. 20.
	Total No. of visits	46.

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

" " " donkey " " " *yes*

Dates of Examination of principal parts—Cylinders 23.6.13 Slides 23.6.13 Covers 7.7.13 Pistons 25.6.13 Rods 25.6.

Connecting rods 9.7.13 Crank shaft 7.7.13 Thrust shaft 16.6.13 Tunnel shafts 7.7.13 Screw shaft 1.8.13 Propeller 1.8.

Stern tube 28.7.13 Steam pipes tested 30.8.13 Engine and boiler seatings 29.7.13 Engines holding down bolts 2.9.13

Completion of pumping arrangements 10.9.13 Boilers fixed 2.9.13 Engines tried under steam 10.9.13

Main boiler safety valves adjusted 10.9.13 Thickness of adjusting washers *PB 5-3/8 : C.B 5-3/8 : S.B 5-3/8*

Material of Crank shaft *Ing Steel* Identification Mark on Do. 6838 Material of Thrust shaft *Ing Steel* Identification Mark on Do. 960

Material of Tunnel shafts *Ing Steel* Identification Marks on Do. 9605.N Material of Screw shafts *iron* Identification Marks on Do. 6838

Material of Steam Pipes *Solid drawn copper* Test pressure 400 lbs.

**General Remarks** (State quality of workmanship, opinions as to class, &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.*

*In our opinion this vessel is eligible to have the notation of*  
**⊕ LMC-9.13** *in the Register Book*

*It is submitted that this vessel is eligible for*  
**THE RECORD. ⊕ LMC 9.13.**

The amount of Entry Fee..	£ 3 : - 0 : 0	When applied for,
Special .. .. .	£ 39 - 14 - 4	29/9/13.
Donkey Boiler Fee .. .. .	£ 4 : - - -	When received,
Travelling Expenses (if any) £	1 : - - -	1.10.13

Committee's Minute **FR10CT3-1913**

Assigned *+ Lmb. 9.13*

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



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