

THUR. 24 OCT 1907

Rpt. 4.

# REPORT ON MACHINERY.

No. 5254

Port of **MIDDLESBROUGH-ON-TEES**

Received at London Office

THUR. 24 OCT 1907

No. in Survey held at Stockton Date, first Survey 11<sup>th</sup> June Last Survey 15<sup>th</sup> Oct. 1904  
 Reg. Book. 45 on the S.S. "Snowdonian" (Number of Visits 34)  
 Master Jones Built at Stockton By whom built Richardson Duck & Co Tons { Gross 3869.86  
 Engines made at Stockton By whom made Blain & Co Ltd. when made 1907 Net 2462.37  
 Boilers made at Stockton By whom made Blain & Co Ltd. when made 1907  
 Registered Horse Power \_\_\_\_\_ Owners Evon & Watter William & Co Port belonging to Cardiff  
 Nom. Horse Power as per Section 28 338 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Direct acting Trip expansion No. of Cylinders 3 No. of Cranks 3  
 Dia. of Cylinders 26"-41"-67" Length of Stroke 45" Revs. per minute 56 Dia. of Screw shaft as per rule 13.6 Material of Steel  
 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 Yes 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 11.9 Dia. of Crank shaft journals as per rule 12.5 Dia. of Crank pin 13 3/4 Size of Crank webs 2 1/2 x 9 Dia. of thrust shaft under  
 collars 13 3/4 Dia. of screw 17-0 Pitch of Screw 17 ft No. of Blades 4 State whether moveable No Total surface 85 #  
 No. of Feed pumps 2 Diameter of ditto 3 1/4 Stroke 33 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 3/4 Stroke 33 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines Two Sizes of Pumps Ballast 9 x 10 and 10 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Three 3 1/2 diam In Holds, &c. Two each hold 3 1/2 diam

No. of Bilge Injections / sizes 6 1/4 Connected to condenser, or to circulating pump L.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 19-9-07 of Stern Tube 19-9-07 Screw shaft and Propeller 23-9-07  
 Is the Screw Shaft Tunnel watertight See ship report Is it fitted with a watertight door Yes worked from Top platform

BOILERS, &c.—(Letter for record S) Manufacturers of Steel John Spencer & Son Ltd.  
 Total Heating Surface of Boilers 5620 # Is Forced Draft fitted No No. and Description of Boilers Two Cyl Tubular  
 Working Pressure 160 lbs Tested by hydraulic pressure to 320 lbs Date of test 3-9-07 No. of Certificate 4005  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 63 1/2 # No. and Description of Safety Valves to  
 each boiler Two Spring Area of each valve 8.29 # Pressure to which they are adjusted 165 lbs Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 18 Dia. of boilers 16-6 Length 11-0 Material of shell plates Steel  
 Thickness 3/16 Range of tensile strength 28/32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams L.D. Riv  
 long. seams 2 Butt Strap Diameter of rivet holes in long. seams 1 1/4 Pitch of rivets One row 8 7/8 Lap of plates or width of butt straps 1-6 1/2  
 Per centages of strength of longitudinal joint rivets 86.5 Working pressure of shell by rules 163 lbs Size of manhole in shell 17 x 13  
 Size of compensating ring 31 x 27 x 1 3/8 No. and Description of Furnaces in each boiler 3 Brown Impulse Material Steel Outside diameter 3-9 1/2  
 Length of plain part top 6-11 Thickness of plates crown 1 3/8 Description of longitudinal joint Welded No. of strengthening rings —  
 bottom 7-2 3/4 bottom 12 1/4 Working pressure of furnace by the rules 172 lbs Combustion chamber plates: Material Steel Thickness: Sides 5 1/8 3/32 Back 5 1/8 3/32 Top 5 1/8 3/32 Bottom 7/8  
 Pitch of stays to ditto: Sides 9 1/4 x 7 3/4 Back 9 3/4 x 9 1/4 Top 9 3/4 x 7 3/4 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 164 lbs  
 Material of stays Steel Diameter at smallest part 1 9/16 Area supported by each stay 90.1 # Working pressure by rules 163 lbs Material of stays Steel  
 Material Steel Thickness 1 1/4 Pitch of stays 21 3/4 x 20 3/4 How are stays secured 7 x 10 Working pressure by rules 163 lbs Material of Front plates at bottom Steel  
 Diameter at smallest part 3 Area supported by each stay 451.3 # Working pressure by rules 163 lbs Material of Front plates at bottom Steel  
 Thickness 1 Material of Lower back plate Steel Thickness 1 Greatest pitch of stays 16 x 9 1/4 Working pressure of plate by rules 202 lbs  
 Diameter of tubes 3 1/2 Pitch of tubes 4 3/4 x 4 7/8 Material of tube plates Steel Thickness: Front 1 Back 13/16 Mean pitch of stays 11 1/8  
 Pitch across wide water spaces 14 1/2 Working pressures by rules 182 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 7 3/4 x 1 3/4 Length as per rule 30 Distance apart 9 3/4 Number and pitch of stays in each Three 7 3/4  
 Working pressure by rules 172 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 \_\_\_\_\_

THE SURVEYORS ARE REQUESTED NOT TO WRITE ACROSS THIS MARGIN.

Lloyd's Register of Shipping

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

Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stays by \_\_\_\_\_

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

SPARE GEAR. State the articles supplied: — Top and bottom end connecting rods bolts & nuts  
 set of coupling bolts. Two main bearing bolts & nuts. Set of feed &  
 bilge pump valves N & M & piston springs & P piston springs  
 Propeller bolts & nuts assorted &c

The foregoing is a correct description,  
**FOR BLAIR & Co., LIMITED.**  
 Geo Nettleship Manufacturer. of main engines & boilers.

Assistant Secretary. 1907 June 11. 12. 25. July 5. 10. 18. 23. 24. 28. 31. Aug 2. 4. 7. 9. 10. 13. 14. 16. 26.  
 Dates of Survey while building: During progress of work in shops - - -  
 During erection on board vessel - - -  
 Total No. of visits 34

Is the approved plan of main boiler forwarded herewith No. 701  
 " " " donkey " " " Yes

Dates of Examination of principal parts—Cylinders 23.7.07 Slides 2.8.07 Covers 2.8.07 Pistons 11.9.07 Rods 7.8.07  
 Connecting rods 7.8.07 Crank shaft 18.9.07 Thrust shaft 27.7.07 Tunnel shafts 7.8.07 Screw shaft 17.9.07 Propeller 17.9.07  
 Stern tube 14.8.07 Steam pipes tested 24.9.07 Engine and boiler seatings 16.8.07 Engines holding down bolts 25.9.07  
 Completion of pumping arrangements 9.10.07 Boilers fixed 25.9.07 Engines tried under steam 9.10.07  
 Main boiler safety valves adjusted 9.10.07 Thickness of adjusting washers S.B. sv  $\frac{3}{16}$  or  $\frac{3}{16}$  P.V. sv  $\frac{3}{16}$  or  $\frac{3}{16}$   
 Material of Crank shaft Steel Identification Mark on Do. 6308 Material of Thrust shaft Steel Identification Mark on Do. 6285  
 Material of Tunnel shafts Steel Identification Marks on Do. 6280, 6289, 6290, 6291, 6292 Material of Screw shafts Steel Identification Marks on Do. 6307  
 Material of Steam Pipes Copper solid drawn Test pressure 320 lbs

General Remarks (State quality of workmanship, opinions as to class, &c.)  
 The engines and boilers of this vessel have been constructed under special survey, the materials and workmanship are good & efficient and when tested under steam were found satisfactory. In my opinion the machinery is now eligible for the notation L.M.C. 10.07. in the Register Book.

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 10.07.

Sd/- 25.10.07  
 Sd/- 25.10.07

The amount of Entry Fee..	£ 3 : 0 : 0	When applied for,	
Special .. .. .	£ 36 : 18 : 0	23.10.1907	
Donkey Boiler Fee .. .	£ : : :	When received,	
Travelling Expenses (if any) £	: : :	25.10.1907	

Geo. A. Milner  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

FRI. 25 OCT 1907

Committee's Minute

Assigned

MACHINED CERTIFICATE WRITING



FLAT PL (If Bar GARBOA State ac thickness way of L Botton

Write "Sheer Stroke" opposite its corresponding letter.

DOUBL Length and thickness

POOP BRIDGE FORECASTLE

manu Plate

Has FRIDGE REFRIGERATOR

LOBBY BELONGINGS TO BE SAVED

ENGINE ROOM

98 97

99

Form No. 1B.