

REPORT ON MACHINERY.

No. 24782

Port of Sunderland Received at London Office THUR. 6 APR 1911
 No. in Survey held at Sunderland Date, first Survey August 18 Last Survey March 24 1911
 Book. SS "Rudmore" (Number of Visits 28)
 on the SS "Rudmore" Tons { Gross 969 Net 574
 Master Newton Built at Sunderland By whom built Messrs S.P. Austin & Sons Ltd When built 1911
 Engines made at Sunderland By whom made G. Clark Ltd (No. 935) when made 1911
 Milers made at Sunderland By whom made G. Clark Ltd do when made 1911
 Registered Horse Power _____ Owners James Westall Port belonging to Sunderland
 Net Horse Power as per Section 28 162 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders 3 No. of Cranks 3
 Dia. of Cylinders 14 1/2 x 20 x 48 Length of Stroke 33 Revs. per minute 40 Dia. of Screw shaft 10 Material of screw shaft 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
 the propeller boss yes If the liner is in more than one length are the joints burned yes 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
 cylinders are fitted, is the shaft lapped or protected between the liners _____ Length of stern bush 3'-4"
 Dia. of Tunnel shaft 8 1/8 as per rule 8.85 Dia. of Crank shaft journals 9 5/16 as per rule 9.29 Dia. of Crank pin 9 3/8 Size of Crank webs 14 x 16 3/8 Dia. of thrust shaft under
 collars 10 Dia. of screw 11-6 Pitch of Screw 12-6 3/4 No. of Blades 4 State whether moveable no Total surface 44.5 #
 No. of Feed pumps 2 Diameter of ditto 2 3/4 Stroke 18 Can one be overhauled while the other is at work yes
 No. of Bilge pumps 2 Diameter of ditto 3 Stroke 18 Can one be overhauled while the other is at work yes
 No. of Donkey Engines Two Sizes of Pumps Sub 5 1/4 x 3 1/2 x 5 Ballast 9 x 10 x 10 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room after well port & starboard 2 1/2" dia In Holds, &c. Main well 2 1/2" dia, Fore Well 2 1/2" dia
 No. of Bilge Injections 1 sizes 4" Connected to condenser, or to circulating pump C.P. Is a separate Donkey Suction fitted in Engine room & size yes 5"
 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
 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 23-2-11 of Stern Tube 23-2-11 Screw shaft and Propeller 23-2-11
 Is the Screw Shaft Tunnel watertight to tunnel Is it fitted with a watertight door yes worked from _____

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Spencer & Sons
 Total Heating Surface of Boilers 2782 Is Forced Draft fitted no No. and Description of Boilers One single ended
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test _____ No. of Certificate _____
 Can each boiler be worked separately yes Area of fire grate in each boiler 8.2 No. and Description of Safety Valves to
 each boiler 2 Spring loaded Area of each valve 11.04 Pressure to which they are adjusted 180 lbs Are they fitted with easing gear yes
 Smallest distance between boilers or uptakes and bunkers or woodwork _____ dia. of boilers 16-6 Length 11-0 Material of shell plates Steel
 Thickness 1 9/32 Range of tensile strength 28 3/4 to 32 1/2 Are the shell plates welded or flanged no Descrip. of riveting: cir. seams D.R.
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 5/16 Pitch of rivets 8 1/8 Lap of plates or width of butt straps 20"
 Percentages of strength of longitudinal joint _____ rivets 88.4 Working pressure of shell by rules 180 lbs Size of manhole in shell 16 x 12
 Size of compensating ring none No. and Description of Furnaces in each boiler Four plain Material Steel Outside diameter 3'-6 5/8"
 Length of plain part 75" Thickness of plates 1 1/2 Description of longitudinal joint weld No. of strengthening rings none
 Working pressure of furnace by the rules 186 lbs Combustion chamber plates: Material Steel Thickness: Sides 23/32 Back 3/32 Top 3/32 Bottom 1/16
 Pitch of stays to ditto: Sides 9 1/2 x 10 1/4 Back 9 3/8 x 10 3/8 Top 8 3/4 x 11 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 180 lbs
 Material of stays Steel Diameter at smallest part 2-03 Area supported by each stay 99.5 Working pressure by rules 185 lbs End plates in steam space:
 Material Steel Thickness 1 1/16 Pitch of stays 20 3/8 x 2 1/4 How are stays secured D.R. Working pressure by rules 188 lbs Material of stays Steel
 Diameter at smallest part 8 29/32 Area supported by each stay 47.4 Working pressure by rules 181 lbs Material of Front plates at bottom Steel
 Thickness 1 1/16 Material of Lower back plate Steel Thickness 1 5/16 Greatest pitch of stays 17 1/4 x 9 3/16 Working pressure of plate by rules 199 lbs
 Diameter of tubes 3 Pitch of tubes 4 1/4 x 4 3/8 Material of tube plates Steel Thickness: Front 13/16 Back 1/4 Mean pitch of stays 10 1/16
 Pitch across wide water spaces 14 1/4 Working pressures by rules 184 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 20 9/8 x 7 3/8 Length as per rule 32 Distance apart 11 Number and pitch of stays in each 2 @ 8 3/4
 Working pressure by rules 184 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 _____

Water Capacity.
Tons
51
31
—
—
—
—

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 Foundation

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 _____ Stayed by _____

Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____ Dates of survey _____

SPARE GEAR. State the articles supplied:— One propeller, One propeller shaft, One set Air & Oil pump valves, 1 set feed helge pump valves & seats, 1 set Check valves, 2 1/2" bend bolts & nuts, 2 bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set coupling bolts, Assorted bolts, nuts & iron.

The foregoing is a correct description,

Manufacturer. of the Main Engines & Boilers **FORBES CLARK, LIMITED**

Dates of Survey while building	During progress of work in shops - -	1910 Aug 18 Sep 7 12 14 19 22 26 Oct 4 7 13 18 20 25 Nov 2 4 15 21 28
	During erection on board vessel - -	Dec 2 1911 Jan 31 Feb 6 22 Mar 7 9 13 14 22 24
	Total No. of visits	(28)

Is the approved plan of main boiler forwarded herewith **Yes**
 " " " donkey " " " **Yes**

Dates of Examination of principal parts—	Cylinders	4-10-10	Slides	13-10-10	Covers	13-10-10	Pistons	13-10-10	Rods	4-10-10	
Connecting rods	4-10-10	Crank shaft	8-10-10	Thrust shaft	4-2-11	Tunnel shafts	4-2-11	Screw shaft	4-2-11	Propeller	31-1-11
Stern tube	31-1-11	Steam pipes tested	9-3-11	Engine and boiler seatings	23-2-11	Engines holding down bolts	4-3-11				
Completion of pumping arrangements	4-3-11	Boilers fixed	4-3-11	Engines tried under steam	14-3-11						
Main boiler safety valves adjusted	14-3-11	Thickness of adjusting washers	Port 1 3/32 Stands 1/2"								
Material of Crank shaft	Steel	Identification Mark on Do.	5931 K.H.	Material of Thrust shaft	Steel	Identification Mark on Do.	5954 K.H.				
Material of Tunnel shafts	Iron	Identification Marks on Do.	✓	Material of Screw shafts	Steel	Identification Marks on Do.	5946 K.H.				
Material of Steam Pipes	New Copper Mild drawn 5 1/2" bore + 4 Wtg.	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 of good quality and the boilers were satisfactorily tested under hydraulic pressure. The whole of the machinery has been securely fitted on board & satisfactorily tried under steam.

The Machinery of this vessel is in good & safe working condition & eligible in my opinion to be classed & have record **LMC 3-11** in the Register Book.

It is submitted that this vessel is eligible for **THE RECORD, + LMC 3.11.**

The amount of Entry Fee..	£ 2 : 0 0	When applied for,
Special	£ 24 : 6 0	3 4 19
Donkey Boiler Fee .. .	£ :	When received,
Travelling Expenses (if any) £	7 : 10	7 10 19

William P. Butler
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute **FRI, 7 APR 1911**

Assigned **+ LMC 3.11**

MACHINERY CERTIFICATE WRITTEN.

