

## REPORT ON MACHINERY.

No. 63662

Date of writing Report 4<sup>th</sup> Feb 1913 When handed in at Local Office 10 Port of Newcastle  
 No. in Survey held at Newcastle Date, First Survey 25<sup>th</sup> May 1911 Last Survey 31<sup>st</sup> Jan 1913  
 Reg. Book. on the T.S.S. "City of Marseilles" (Number of Visits 17) Gross 8250  
 Master By whom built Newcastle By whom built Palmer Co When built 1913  
 Engines made at Newcastle By whom made Palmer Co No. 819 when made 1913  
 Boilers made at do By whom made do when made 1913  
 Registered Horse Power Owners Ellerman Line Ltd Port belonging to Liverpool  
 Nom. Horse Power as per Section 28 851 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Twin screw Quadruple Expansion of Cylinders 8 No. of Cranks 4  
 Dia. of Cylinders 20<sup>1</sup>/<sub>4</sub> - 29<sup>1</sup>/<sub>4</sub> - 42<sup>1</sup>/<sub>4</sub> - 61 Length of Stroke 45 Revs. per minute 90 Dia. of Screw shaft as per rule 13.9 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 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  
 liners are fitted, is the shaft lapped or protected between the liners yes Length of stern bush 4' - 8<sup>1</sup>/<sub>4</sub>"  
 Dia. of Tunnel shaft as per rule 11.59 Dia. of Crank shaft journals as per rule 12.17 Dia. of Crank pin 12<sup>3</sup>/<sub>4</sub>" Size of Crank webs 19" x 9" Dia. of thrust shaft under  
 collars 12<sup>3</sup>/<sub>4</sub>" Dia. of screw 16' - 0" Pitch of Screw 15' - 0" No. of Blades 3 State whether moveable yes Total surface 80 sq  
 No. of Feed pumps 2 Diameter of ditto 22<sup>1</sup>/<sub>2</sub> x 9<sup>1</sup>/<sub>2</sub>" Stroke 26" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 4<sup>1</sup>/<sub>2</sub>" Stroke 22<sup>1</sup>/<sub>2</sub>" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 3 Sizes of Pumps 10" x 10" x 10", 10" x 6" x 10", 6" x 4" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Four 3<sup>1</sup>/<sub>2</sub>" In Holds, &c. No. 1 hold 2-3<sup>1</sup>/<sub>2</sub>" No. 2 hold 2-3<sup>1</sup>/<sub>2</sub>"  
No. 3 hold 2-3<sup>1</sup>/<sub>2</sub>" No. 4 hold 2-3<sup>1</sup>/<sub>2</sub>" No. 5 hold well 1-3<sup>1</sup>/<sub>2</sub>" Tunnel Well 1-2<sup>1</sup>/<sub>2</sub>"  
 No. of Bilge Injections 2 sizes 8" Connected to condenser, or to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size yes 6"  
 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 none How are they protected yes  
 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 21-10-12 of Stern Tube 21-10-12 Screw shaft and Propeller 28-10-12  
 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. Spence & Sons & Palmer Co  
 Total Heating Surface of Boilers 12830 sq Is Forced Draft fitted yes No. and Description of Boilers Four, single-ended  
 Working Pressure 225 lbs Tested by hydraulic pressure to 450 lbs Date of test 10-7-12 No. of Certificate 8338  
 Can each boiler be worked separately yes Area of fire grate in each boiler 84<sup>1</sup>/<sub>2</sub> sq No. and Description of Safety Valves to  
 each boiler Two, Spring Area of each valve 8.29 sq Pressure to which they are adjusted 225 lbs Are they fitted with easing gear yes  
 Smallest distance between boilers uptakes and bunkers or woodwork 1' - 6" Mean dia. of boilers 15' - 10<sup>3</sup>/<sub>4</sub>" Length 12' - 0" Material of shell plates Steel  
 Thickness 1<sup>1</sup>/<sub>16</sub>" Range of tensile strength 33 - 36<sup>1</sup>/<sub>2</sub>" Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 8. Lap  
 long. seams 5BS & Riv Diameter of rivet holes in long. seams 1<sup>1</sup>/<sub>32</sub>" Pitch of rivets 9<sup>1</sup>/<sub>8</sub>" Lap of plates or width of butt straps 23"  
 Per centages of strength of longitudinal joint 95% Working pressure of shell by rules 262 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring Mc Neil No. and Description of Furnaces in each boiler 4 Medicine Material Steel Outside diameter 44<sup>1</sup>/<sub>2</sub>"  
 Length of plain part top Thickness of plates crown 1<sup>1</sup>/<sub>16</sub>" Description of longitudinal joint Welded No. of strengthening rings yes  
 Working pressure of furnace by the rules 255 lbs Combustion chamber plates: Material Steel Thickness: Sides 1<sup>1</sup>/<sub>16</sub>" Back 1<sup>1</sup>/<sub>16</sub>" Top 1<sup>1</sup>/<sub>16</sub>" Bottom 1<sup>1</sup>/<sub>8</sub>"  
 Pitch of stays to ditto: Sides 8<sup>1</sup>/<sub>4</sub> x 7<sup>5</sup>/<sub>8</sub>" Back 8<sup>3</sup>/<sub>4</sub> x 7<sup>3</sup>/<sub>8</sub>" Top 8<sup>1</sup>/<sub>2</sub> x 7<sup>5</sup>/<sub>8</sub>" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 240 lbs  
 Material of stays Steel Diameter at smallest part 2.03" Area supported by each stay 6.7 sq Working pressure by rules 270 lbs End plates in steam space:  
 Material Steel Thickness 1<sup>1</sup>/<sub>32</sub>" Pitch of stays 18" x 16<sup>1</sup>/<sub>2</sub>" How are stays secured S. R. & W. Working pressure by rules 225 lbs Material of stays Steel  
 Diameter at smallest part 7.24" Area supported by each stay 271 sq Working pressure by rules 276 lbs Material of Front plates at bottom Steel  
 Thickness 1<sup>1</sup>/<sub>32</sub>" Material of Lower back plate Steel Thickness 15<sup>1</sup>/<sub>16</sub>" Greatest pitch of stays 14<sup>1</sup>/<sub>4</sub>" Working pressure of plate by rules 235 lbs  
 Diameter of tubes 2<sup>1</sup>/<sub>2</sub>" Pitch of tubes 3<sup>3</sup>/<sub>4</sub> x 3<sup>5</sup>/<sub>8</sub>" Material of tube plates Steel Thickness: Front 1<sup>1</sup>/<sub>32</sub>" Back 29<sup>1</sup>/<sub>32</sub>" Mean pitch of stays 8<sup>1</sup>/<sub>4</sub>"  
 Pitch across wide water spaces 13<sup>3</sup>/<sub>8</sub>" Working pressures by rules 228 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 9<sup>3</sup>/<sub>4</sub> x 1<sup>3</sup>/<sub>4</sub>" Length as per rule 2' - 9<sup>1</sup>/<sub>2</sub>" Distance apart 8<sup>1</sup>/<sub>2</sub>" Number and pitch of stays in each 3 - 7<sup>5</sup>/<sub>8</sub>"  
 Working pressure by rules 246 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked  
 separately yes Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet  
 holes yes Pitch of rivets yes Working pressure of shell by rules yes Diameter of flue yes Material of flue plates yes Thickness yes  
 If stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes  
 Working pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes

W155-0048

# VERTICAL DONKEY BOILER—

Manufacturers of Steel

No.	Description	When made	Where fixed
Made at	By whom made		
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted
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
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates
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:— Two top-end, 2 bottom-end & 2 main bearing bolts & nuts, 1 set of coupling bolts, 1 set of feed & bilge pump valves, 2 sets of H.P. & 1 set of L.P. & L.P. piston rings, a quantity of assorted bolts nuts & iron, 1 pair of bottom-end bushes, 4 propeller blades, 1 air pump bucket, 1 eccentric strap, 2 safety valves, 1 slide valve spindle.

The foregoing is a correct description, value *£100*

Manufacturer.

Dates of Survey while building	During progress of work in shops	During erection on board vessel	Total No. of visits
1911	May 25-31, Jun 27, Aug 9-10-11-14-17-23-24-25-28-29-31, Sep 1-5-11-19-20-27-29, Oct 3-5-10-11-12-16-20-23-24	Nov 1-7-8-13-17-21-30, Dec 5-7-8-12-14-18-22-27, 1912 Jan 5-8-12-15-19-22, Feb 2-7-19-20-22-23-24, Mar 7-11, Apr 19-22-23-29, May 1-6-8-13-14-15-16-20-24-30, Jun 5-10-13-18, Jul 2-3-5-8-10-12-30, Aug 7-8-14-15, Sep 13-10, Oct 3-10-14-21-25-28, Nov 5-8-13-20-27, Dec 2-12-16-19-20, 1913 Jan 7-10-21-24-29-31	117

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

Dates of Examination of principal parts	Cylinders	Slides	Covers	Pistons	Rods
22-12-11	11-3-12	17-11-11	8-9-11	12-10-11	
Connecting rods	5-12-11	Crank shafts	22-12-11	Thrust shafts	5-11-11
Tunnel shafts	2-2-12	Screw shafts	14-8-12	Propellers	8-8-12
Stern tube	5-1-12	Steam pipes tested	20-12-12	Engine and boiler seatings	8-11-12
Engines holding down bolts	7-1-13	Completion of pumping arrangements	10-1-13	Boilers fixed	7-1-13
Engines tried under steam	10-1-13	Main boiler safety valves adjusted	10-1-13	Thickness of adjusting washers	S.F.B. Both $\frac{11}{32}$ " P.F.B. Both $\frac{3}{16}$ " S.A.B. $\frac{3}{16}$ " S.P.A. $\frac{3}{16}$ "
Material of Crank shafts	Steel	Identification Mark on Do.	Y.X. 12-11	Material of Thrust shafts	Steel
Identification Mark on Do.	Y.X. 11-11	Material of Tunnel shafts	Steel	Identification Marks on Do.	Y.X. 2-12
Material of Screw shafts	Steel	Identification Marks on Do.	Y.X. 8-12	Material of Steam Pipes	Steel
Test pressure	675 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 and the materials and workmanship are found and good. The engines have been tried under steam and the safety valves of main and auxiliary boilers adjusted. The machinery is now in good and safe working condition and eligible in my opinion to have the notation of +LMC 1-13. A report on the electric installation will be forwarded when received from the Electricians. To complete the survey the electric installation is to be tried under working conditions at Liverpool and the surveyors have been advised.

It is submitted that this vessel is eligible for THE RECORD + LMC. 1.13. 4SB & 1AUX SB (FD)

The amount of Entry Fee	£ 3 : 0 : 0	When applied for	FEB 4 1913
Special	£ 62 : 11 : 0	When received	11/2/13
Donkey Boiler Fee	£ - : - : -		
Travelling Expenses (if any)	£ - : - : -		

Committee's Minute

Assigned

Thomas Field  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

