

REPORT ON MACHINERY.

No. 63662

Date of writing Report 4th Feb 1913 When handed in at Local Office 10 Port of Newcastle Received at London Office FRI. FEB. 7. 1913

No. in Survey held at Newcastle Date, First Survey 25th May 1911 Last Survey 31st Jan 1913

Reg. Book. on the T.S.S. "City of Marseilles" (Number of Visits 17) Tons Gross 8250
Net 5289

Master Built at 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 20¹/₄ - 29¹/₄ - 42¹/₄ - 61 Length of Stroke 45 Revs. per minute 90 Dia. of Screw shaft as per rule 13.0 Material of Steel
as fitted 13.3/4 screw shaft)

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 4' - 8¹/₂"

Dia. of Tunnel shaft as per rule 11.59 Dia. of Crank shaft journals as per rule 12.47 Dia. of Crank pin 12³/₄" Size of Crank webs 19" x 9" Dia. of thrust shaft under
as fitted 11.7/8 as fitted 12.3/4 collars 12³/₄" 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 22¹/₂ x 9¹/₂" Stroke 26" Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 4¹/₂" Stroke 22¹/₂" 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 3¹/₂" In Holds, &c. No. 1 hold 2-3¹/₂" No. 2 hold 2-3¹/₂"
No. 3 hold 2-3¹/₂" No. 4 hold 2-3¹/₂" No. 5 hold well 1-3¹/₂" Tunnel Well 1-2¹/₂"

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 ✓

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 84¹/₂ 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 Staircases and bunkers or woodwork 1'-6" Mean dia. of boilers 15'-10³/₈" Length 12'-0" Material of shell plates Steel

Thickness 1¹/₁₆" Range of tensile strength 33-36¹/₂" Are the shell plates welded or flanged no Descrip. of riveting: cir. seams 8. Lap
long. seams 5BS & Rivet Diameter of rivet holes in long. seams 1¹⁹/₃₂" Pitch of rivets 9⁷/₈" Lap of plates or width of butt straps 23"

Per centages of strength of longitudinal joint rivets 95.5 Working pressure of shell by rules 262 lbs Size of manhole in shell 16" x 12"
plate 83.8

Size of compensating ring McNeil No. and Description of Furnaces in each boiler 4 Medicine Material Steel Outside diameter 44¹/₂"

Length of plain part top 11¹/₁₆" Thickness of plates bottom 11¹/₁₆" Description of longitudinal joint Welded No. of strengthening rings ✓

Working pressure of furnace by the rules 255 lbs Combustion chamber plates: Material Steel Thickness: Sides 11¹/₁₆" Back 11¹/₁₆" Top 11¹/₁₆" Bottom 1¹/₈"

Pitch of stays to ditto: Sides 8¹³/₁₆ x 7⁵/₈" Back 8³/₄ x 7³/₈" Top 8¹/₂ x 7¹/₈" 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 sq" Area supported by each stay 6.7 sq" Working pressure by rules 270 lbs End plates in steam space:

Material Steel Thickness 1⁵/₃₂" Pitch of stays 18" x 15¹/₂" How are stays secured S. R. & W. Working pressure by rules 225 lbs Material of stays Steel

Diameter at smallest part 7.24 sq" Area supported by each stay 271 sq" Working pressure by rules 276 lbs Material of Front plates at bottom Steel

Thickness 1¹/₃₂" Material of Lower back plate Steel Thickness 15¹/₁₆" Greatest pitch of stays 14¹/₄" Working pressure of plate by rules 235 lbs

Diameter of tubes 2¹/₂" Pitch of tubes 3³/₄ x 3⁵/₈" Material of tube plates Steel Thickness: Front 1¹/₃₂" Back 29¹/₃₂" Mean pitch of stays 8¹/₄"

Pitch across wide water spaces 13³/₈" Working pressures by rules 228 lbs Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 9³/₄ x 1³/₄" Length as per rule 2'-9¹/₂" Distance apart 8¹/₂" Number and pitch of stays in each 3-7⁵/₈"

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 ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint 2019 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 ✓

If not, state whether, and when, one will be sent

Im. 2115-T.

Lloyd's Register Foundation
W155-0048

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 _____ 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 S.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 _____
 Manufacturer. *J.M. Lloyd*

Dates of Survey while building	During progress of work in shops --	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
	During erection on board vessel --	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
	Total No. of visits	117

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

Dates of Examination of principal parts—Cylinders 22-12-11 Slides 11-3-12 Covers 17-11-11 Pistons 8-9-11 Rods 12-10-11
 Connecting rods 5-12-11 Crank shafts 22-12-11 Thrust shafts 1-11-11 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 $\frac{1}{16}$ " P.A.B. $\frac{3}{16}$ " S $\frac{1}{16}$ "
 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)
J.M. Lloyd 8/2/13
 Thomas Field
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee .. £ 3 : 0 : 0 When applied for, FEB 4 1913
 Special .. £ 62 : 11 : 0
 Donkey Boiler Fee .. £ ✓ : - : -
 Travelling Expenses (if any) £ ✓ : - : -
 When received, 11/2/13
 Committee's Minute
 Assigned *Thos Field*



NEWCASTLE-ON-TYNE.

Certificate (if required) to be sent for