

# REPORT ON MACHINERY

No. 17184.

WED. 17 OCT. 1917

Received at London Office

Date of writing Report 11-10-1917 When handed in at Local Office 12-10-1917 Port of Greenock  
 No. in Survey held at Port Glasgow Date, First Survey 1<sup>st</sup> Feb, 1916 Last Survey 8<sup>th</sup> October, 1917  
 Reg. Book. S.S. LANDONIA (Number of Visits 74)  
 on the S.S. LANDONIA Tons { Gross 2504 Net 1505  
 Master W.L. Chambers Built at Port Glasgow By whom built The Clyde R. & S. Co. Ltd. When built 1917  
 Engines made at Port Glasgow By whom made do when made 1917  
 Boilers made at do By whom made do when made 1917  
 Registered Horse Power \_\_\_\_\_ Owners Richard & Pupin Co. Ltd. Port belonging to London  
 Nom. Horse Power as per Section 28 250 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 22-35-59 Length of Stroke 39 Revs. per minute 70 Dia. of Screw shaft 12.2 Material of br.  
 as per rule 12.2 as fitted 12.5 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 - If two  
 liners are fitted, is the shaft lapped or protected between the liners - Length of stern bush 4-2  
 Dia. of Tunnel shaft 10.8 Dia. of Crank shaft journals 11.34 Dia. of Crank pin 1 1/2 Size of Crank webs 20 1/2 x 7 1/2 Dia. of thrust shaft under  
 collars 1 1/2 Dia. of screw 15-0 Pitch of Screw 16-0 No. of Blades 4 State whether moveable No Total surface 70 sq  
 No. of Feed pumps 2 Diameter of ditto 3 Stroke 21 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 Stroke 21 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines None Sizes of Pumps 7x8x8 & 4x4x4 No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 30 3/4 in engine with 12 1/2 in tunnel Holds, &c. 20 3/4 in hold 12 3/4 in hold well  
 No. of Bilge Injections 1 sizes 6 Connected to condenser, or to circulating pump in hold Is a separate Donkey Suction fitted in Engine room & size Yes 3-  
 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 For hold meters How are they protected lined over with wood  
 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 15/8/17 of Stern Tube 15/8/17 Screw shaft and Propeller 22/8/17  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from eng room

**BOILERS, &c.**—(Letter for record (S)) Manufacturers of Steel John & Co. Ltd.  
 Total Heating Surface of Boilers 4000 Is Forced Draft fitted No No. and Description of Boilers Two single ended multi  
 Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs Date of test 3/5/16 No. of Certificate 1249  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 63.24 No. and Description of Safety Valves to  
 each boiler 2 spring Area of each valve 7.06 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 9" Mean dia. of boilers 15-0 Length 10-6 Material of shell plates Steel  
 Thickness 1 1/2 Range of tensile strength 28/32 Are the shell plates welded or flanged - Descrip. of riveting: cir. seams -  
 long. seams T.R.D.B.S. Diameter of rivet holes in long. seams 1 1/8 Pitch of rivets 9 1/2 Lap of plates or width of butt straps 19 1/2  
 Per centages of strength of longitudinal joint rivets 89.3 Working pressure of shell by rules 184 lbs Size of manhole in shell 16" x 12"  
 plate 85.8 Size of compensating ring 33" x 27" x 1 1/2" No. and Description of Furnaces in each boiler 3 Brighten Material Steel Outside diameter 50 1/4"  
 Length of plain part 2 Thickness of plates 1 1/2 Description of longitudinal joint Welded No. of strengthening rings -  
 Working pressure of furnace by the rules 189 lbs Combustion chamber plates: Material Steel Thickness: Sides 1 1/2 Back 1 1/2 Top 1 1/2 Bottom 1 1/2  
 Pitch of stays to ditto: Sides 8 1/2 x 7 1/2 Back 8 x 8 Top 8 1/2 x 7 1/2 stays are fitted with nuts or riveted heads Nuts Working pressure by rules 208 lbs  
 Material of stays Steel Diameter at smallest part 1 1/2 Area supported by each stay 64 Working pressure by rules 182 lbs End plates in steam space:  
 Material Steel Thickness 1 1/8 Pitch of stays 18 x 15 How are stays secured J. Nuts Working pressure by rules 185 lbs Material of stays Steel  
 Diameter at smallest part 5.27 Area supported by each stay 270 Working pressure by rules 203 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 13 1/2 Working pressure of plate by rules 208 lbs  
 Diameter of tubes 3 1/2 Pitch of tubes 4 1/2 x 4 3/8 Material of tube plates Steel Thickness: Front 1 1/8 Back 3/2 Mean pitch of stays 8 1/2  
 Pitch across wide water spaces 14 1/2 Working pressures by rules 199 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 8 3/4 x 1 1/2 Length as per rule 3 1/2 Distance apart 8 1/2 Number and pitch of stays in each 32 7 1/2  
 Working pressure by rules 192 lbs Superheater or Steam chest; how connected to boiler - 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 *One.*

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 casing 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:— 2 connecting rods, 2 piston rods, 2 main bearing bolts & nuts, 1 set coupling bolts, 1 feed & bilge pump valve, 1 set piston springs for 2 cylinders, 50 assorted bolts & nuts, a quantity of iron plates & bars assorted, 1 condenser tube, 12 boiler tubes & furnace girth studs, 1 cap cover studs, valve for each check, 1 set air & oil pump valves, 1 pair propeller, 1 set valve for pump, 1 piston valve.

The foregoing is a correct description.

Manufacturer. *Wm. J. Jones* Director.

Dates of Survey while building: During progress of work in shops (1916) Feb. 1-18-28, Mar. 2-5-13-16-20-23-30, Apr. 3-6-12-18-24-28, May 2-5-9-23, June 5-23-26-30, July 5-12-25, Aug. 8, Sept. 20, Oct. 2-6-11-13-19-31, Nov. 6, Dec. 13-15 (1917), Jan. 9-12-23-29, Feb. 7-22-27, Mar. 1-6-9-15-21, Apr. 13-23, May 2-10-14, June 6-25, July 18-27-31, Aug. 15.

Total No. of visits 16-22, Sep. 7-11-19-21-24-26-28, Oct. 2-5-6-8: — 74

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

Dates of Examination of principal parts—Cylinders 5/7/16 Slides 25/7/16 Covers 11/10/16 Pistons 11/10/16 Rods 5/7/16  
 Connecting rods 25/7/16 Crank shaft 31/10/16 Thrust shaft 13/4/16 Tunnel shafts 31/10/16 Screw shaft 16/8/17 Propeller 15/8/17  
 Stern tube 19/6/17 Steam pipes tested 7/9/17 Engine and boiler seatings 11/9/17 Engines holding down bolts 19/9/17  
 Completion of pumping arrangements 20/9/17 Boilers fixed 19/9/17 Engines tried under steam—  
 Main boiler safety valves adjusted 20/9/17 Thickness of adjusting washers *5/8" 3/4" 5/8" 3/4"*  
 Material of Crank shaft *Steel* Identification Mark on Do. 186A Material of Thrust shaft *Steel* Identification Mark on Do. 186A  
 Material of Tunnel shafts *Steel* Identification Marks on Do. 186A Material of Screw shafts *Iron* Identification Marks on Do. 186A  
 Material of Steam Pipes *Copper* Test pressure 350 lbs

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The engines & boiler of this vessel have been built under special survey, and the materials & workmanship are good, on completion they were tried under full working conditions after which the vessel proceeded to Glasgow to load, on the way up the river a leak developed in the bottom of the HP cylinder due to hidden blow holes in the casting. A properly fitted cast yellow metal patch was fitted. The piston drawn & refitted & the HP cylinder tested by steam to full boiler pressure and the engines tried under steam and the cylinder found tight. The machinery throughout is now in good & efficient condition & eligible in my opinion to have the word **\*LMC 10.17** marked in the Register's Register book subject to a new HP cylinder being fitted at the first convenient opportunity.*

It is submitted that this vessel is eligible for **THE RECORD + LMC 10.17.**

Subject to a new HP cylinder being fitted at first opportunity.

*W. J. Jones* Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

The amount of Entry Fee	£ 2-0-0	When applied for	27.9.1917
Special	£ 32-10-0	When received	13.11.17
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

Committee's Minute **GLASGOW, 13 OCT. 1917**

Assigned **+ LMC 10.17**

Greenock 15/10/17

