

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 1st Feb'y, 1916, Last Survey 8th 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 & Lippin Dr. 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 as per rule 12.2" Material of *km.*
 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 as per rule 10.8" Dia. of Crank shaft journals as per rule 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' 4"
 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 4x8x4 No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room 30 3/4" in engine room 12 1/2" in tunnel Holds, &c. 20 3" in hold 12 3" in hold well
 8 20 2 1/2" after hold
 No. of Bilge Injections 1 sizes 6 Connected to condenser, or to circulating pump *Yes* 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 water* 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* *gutting*

BOILERS, &c.—(Letter for record (S)) Manufacturers of Steel *Thos. & Co. Ltd.*

Total Heating Surface of Boilers 4060' 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 plate 85.8 Working pressure of shell by rules 184 lbs Size of manhole in shell 16" x 12"
 Size of compensating ring 33" x 27" x 1 1/2" No. and Description of Furnaces in each boiler 3 *Brighton* Material *Steel* Outside diameter 50 1/2"
 Length of plain part top 2' Thickness of plates crown 1 1/2" Description of longitudinal joint *Welded* No. of strengthening rings —
 bottom 2' Working pressure of furnace by the rules 188 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 *2. 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 lbs 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 —

W825-0139

VERTICAL DONKEY BOILER—

Manufacturers of Steel *Inc.*

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 rod, 2 piston rod, 2 main bearing bolts & nuts, 1 set coupling bolts, 1 feed & 1 bilge pump valve, 1 set piston rings for 2 cylinders, 50 assorted bolts & nuts, a quantity of iron plates & bars assorted, 1 condenser tube, 12 boiler tubes & flange girders, 1 set of each of these valves for each check, 1 set of 8 in pump valves, 1 set of propeller, 1 set of valve fittings, 1 piston valve.

The foregoing is a correct description.

THE GLIDE SHIPBUILDING & ENGINEERING CO., LIMITED,

Manufacturer.

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. Sep. 20. Oct. 2-6-11-13-17-31.
		During erection on board vessel - - -	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. 7-11-17-21-24-25-28. Oct. 2-5-6-8: — 7/4 Is the approved plan of main boiler forwarded herewith <i>Yes</i> ✓

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
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	5/8/17				
Main boiler safety valves adjusted	20/9/17	Thickness of adjusting washers	5/8	PORT BOILER	5/8				
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 up & 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.

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. 1 OCT. 1917

Assigned + LMC 10.17

MACHINERY CERTIFICATE WRITTEN. 17.10.17

subject to

+ 20/12/17



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Lloyd's Register Foundation

Greenock

certificate (if required) to be sent to the Registrar of Shipping (The Registrar is requested not to write on or below the space for Committee's Minute.)

24-4 15/10/17