

# REPORT ON MACHINERY.

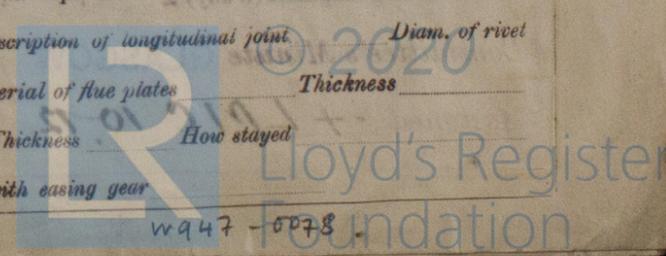
No. 31910.  
WED. OCT. -9. 1912

Received at London Office

Date of writing Report 19 12 When handed in at Local Office 4-10-12 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 12-2-12 Last Survey 2-10-1912  
 Reg. Book. on the S/S "Diplomat" (Number of Visits 49)  
 Master Glasgow Built at Glasgow By whom built B. Coumell & Co. L<sup>td</sup> Tons Gross 7615 Net 4873  
 Engines made at Glasgow By whom made Dunrobin Jackson L<sup>td</sup> (H11) when made 1912  
 Boilers made at ditto By whom made ditto when made 1912  
 Registered Horse Power 618 Owners J. J. Harrison Port belonging to Liverpool  
 Nom. Horse Power as per Section 28 618 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

**ENGINES, &c.**—Description of Engines Quadruple Expansion No. of Cylinders 4 No. of Cranks 4  
 Dia. of Cylinders 25 1/2, 36 1/2, 52, 74 Length of Stroke 54 Revs. per minute 72 Dia. of Screw shaft 15 1/4 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 in the propeller boss Yes If the liner is in more than one length are the joints burned No 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 No If two liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 6-0  
 Dia. of Tunnel shaft 14-06 Dia. of Crank shaft journals 14-76 Dia. of Crank pin 15 1/4 Size of Crank webs 29 1/2 x 10 Dia. of thrust shaft under collars 15 1/4 Dia. of screw 18-6 Pitch of Screw 18-9 No. of Blades 4 State whether moveable Yes Total surface 107 ft<sup>2</sup>  
 No. of Feed pumps 2 Diameter of ditto 4 1/2 Stroke 24 Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 Diameter of ditto 4 3/4 Stroke 24 Can one be overhauled while the other is at work Yes  
 No. of Donkey Engines 5 Sizes of Pumps 10 1/2 x 8, 10 x 10, 10 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps 2 1/2, 2, 2  
 In Engine Room 2-3 1/2 Stokelhold 2-3 1/2 In Holds, &c. 2-3 1/2 in each hold  
 Tunnel Well 1-3 1/2  
 No. of Bilge Injections 1 sizes 8 Connected to condenser to circulating pump Yes Is a separate Donkey Suction fitted in Engine room & size 3 1/2  
 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 Both  
 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 None  
 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 29.7.12 of Stern Tube 29.7.12 Screw shaft and Propeller 29.7.12  
 Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper Engine Room Platform

**BOILERS &c.**—(Letter for record S) Manufacturers of Steel Steel C<sup>o</sup> of Scotland Colville & Spence  
 Total Heating Surface of Boilers 11361 Is Forced Draft fitted No No. and Description of Boilers 2 Double Ended  
 Working Pressure 215 Tested by hydraulic pressure to 430 Date of test 30.7.12 No. of Certificate 11402  
 Can each boiler be worked separately Yes Area of fire grate in each boiler 126.5 No. and Description of Safety Valves to each boiler 2 Direct Spring Area of each valve 12.56 Pressure to which they are adjusted 220 Are they fitted with easing gear Yes  
 Smallest distance between boilers or uptakes and bunkers or woodwork 12 Mean dia. of boilers 15.9 Length 14.6 Material of shell plates Steel  
 Thickness 15/8 Range of tensile strength 30/32 Are the shell plates welded or flanged Yes Descrip. of riveting: cir. seams TR long. seams TR & DBS Diameter of rivet holes in long. seams 15/8 Pitch of rivets 10 3/8 ~~Length of plates~~ width of butt straps 2.0  
 Per centages of strength of longitudinal joint rivets 85% Working pressure of shell by rules 235 Size of manhole in shell 16 x 12 plate 84 3%  
 Size of compensating ring M. N. H. No. and Description of Furnaces in each boiler 6 Corrugated Material Steel Outside diameter 4-0  
 Length of plain part top 23/32 Thickness of plates crown 23/32 Description of longitudinal joint weld No. of strengthening rings None bottom 13/32  
 Working pressure of furnace by the rules 245 Combustion chamber plates: Material Steel Thickness: Sides 23/32 Back 13/32 Top 23/32 Bottom 13/32  
 Pitch of stays to ditto: Sides 9 3/8 x 8 1/2 Back 8 1/2 x 9 If stays are fitted with nuts or riveted heads Hub Working pressure by rules 219  
 Material of stays Steel Diameter at smallest part 1.98 Area supported by each stay 77.6 Working pressure by rules 250 End plates in steam space: Material Steel Thickness 1 1/4 Pitch of stays 16 x 19 1/4 How are stays secured DN Working pressure by rules 228 Material of stays Steel Diameter at smallest part 7.49 Area supported by each stay 307 Working pressure by rules 249 Material of Front plates at bottom Steel  
 Thickness 15/32 Material of Lower back plate Steel Thickness 15/32 Greatest pitch of stays 11 1/4 Working pressure of plate by rules 253  
 Diameter of tubes 3 Pitch of tubes 4 1/4 x 4 3/8 Material of tube plates Steel Thickness: Front 16/32 Back 15/16 Mean pitch of stays 11 1/4  
 Pitch across wide water spaces 14 Working pressure by rules 237 Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 12 x 1 (2) Length as per rule 3-6 Distance apart 9 Number and pitch of stays in each 4 at 8 1/2  
 Working pressure by rules 253 Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked separately Yes  
 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

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:—

2 Connecting Rod bolts & nuts for top end, ditto for bottom end. 2 Main Bearing bolts. 1 Set of Coupling bolts 1 Set of Feed & Pelge Pump Valves 1 Set of Piston Ring, a quantity of assorted bolts & nuts. Iron

The foregoing is correct description,

James Fletcher, Manufacturer.

Dates of Survey while building: During progress of work in shops --- 1912. Feby. 12-15-20-22-27. March 7-12-18-27-29. April 3-4-12-15-19-24-25  
 During erection on board vessel --- May 6-9-14-20-21-22-28. June 10-17-19-26. July 1-8-24-25-29-30. Aug. 1-6-21-22-28-29. Sep. 2-3-5-9-11-18  
 Total No. of visits 49. Is the approved plan of main boiler forwarded herewith  Yes

Dates of Examination of principal parts—Cylinders 25-7-12 Slides 25-7-12 Covers 10-6-12 Pistons 26-6-12 Rods 10-6-12  
 Connecting rods 10-6-12 Crank shaft 26-6-12 Thrust shaft 1-7-12 Tunnel shafts 26-6-12 Screw shaft 8-7-12 Propeller 25-7-12  
 Stern tube 8-7-12 Steam pipes tested 11-9-12 Engine and boiler seatings 29-7-12 Engines holding down bolts 19-9-12  
 Completion of pumping arrangements 23-9-12 Boilers fixed 29-8-12 Engines tried under steam 2-10-12  
 Main boiler safety valves adjusted 23-9-12 Thickness of adjusting washers SV 15/32 PV 13/32 SV 11/32 PV 1/2 FV 7/16 AV 15/32  
 Material of Crank shaft S Identification Mark on Do. LLOYDS WGM H11 Material of Thrust shaft S Identification Mark on Do. LLOYDS WGM H11  
 Material of Tunnel shafts S Identification Marks on Do. ditto Material of Screw shafts S Identification Marks on Do. ditto  
 Material of Steam Pipes Iron Test pressure 645.

General Remarks (State quality of workmanship, opinions as to class, &c. These Engines & Boilers have been built under Special Survey in accordance with the approved plans, & the workmanship & material are of good quality. The Machinery is eligible in my opinion for the record of. **L M C 10-12**)

It is submitted that this vessel is eligible for THE RECORD + LMC 10-12.

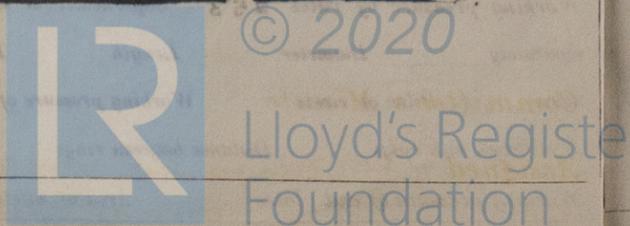
J.W.D. 10/10/12  
 J.P.S.

The amount of Entry Fee .. £ 3 : - : When applied for, 4/10/12  
 Special .. £ 50 : 18 : When received, 7-10-12  
 Donkey Boiler Fee .. £ : :  
 Travelling Expenses (if any) £ : : :

W. Gordon Muirhead  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute GLASGOW 9 - OCT. 1912

Assigned - + LMC 10-12.



GLASGOW

Certificate (if required) to be sent to Committee's Minute.

5/10/12