

# REPORT ON MACHINERY

No. 30658  
WED. OCT. 11. 1911

Received at London Office

Date of writing Report 10 When handed in at Local Office 7. 10. 11 Port of Glasgow  
 No. in Survey held at Glasgow Date, First Survey 20. Sept. 1910 Last Survey 6th. 5th. 1911  
 Reg. Book. on the TWIN S/S GUILDFORD CASTLE (Number of Visits 109)  
 Master Whiteinch Built at Whiteinch By whom built Barclay Curle & Co. Ltd. When built 1911  
 Engines made at Glasgow By whom made Barclay Curle & Co. Ltd. when made 1911  
 Boilers made at Glasgow By whom made Barclay Curle & Co. Ltd. when made 1911  
 Registered Horse Power 720 Owners Union Castle Mail Steamship Co. Ltd. Port belonging to London  
 Nom. Horse Power as per Section 28 720 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes

ENGINES, &c.—Description of Engines Quadruple Expansion (horizontal) No. of Cylinders 8 No. of Cranks 8  
 Dia. of Cylinders 19 3/4" 28" 41" 60" Length of Stroke 48" Revs. per minute 78 Dia. of Screw shaft 12 3/8" Material of steel  
 as fitted 12 3/8" 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 fib. white length If two  
 liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 4-8"  
 Dia. of Tunnel shaft 11 3/4" Dia. of Crank shaft journals 12 1/2" Dia. of Crank pin 13 1/4" Size of Crank webs 18x8 3/8" Dia. of thrust shaft under  
 collars 12 3/4" Dia. of screw 15-6" Pitch of Screw 20-3" No. of Blades 3 State whether moveable yes Total surface 62 1/2"  
 No. of Feed pumps 3 Diameter of ditto 7 7/8" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 Diameter of ditto 5" Stroke 24" Can one be overhauled while the other is at work yes  
 No. of Donkey Engines 3 Sizes of Pumps 1 Ballast 13"x12" 2 Sea. 8"x10" 7"x10" No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room 2 0 3 1/2" and 2 0 3 1/2" in Stokehold In Holds, &c. No 1:- 2 0 3 1/2", No 2:- 2 0 3 1/2", Reserve  
Bunker 2 0 3 1/2", No 3:- 2 0 3 1/2", No 4:- 2 0 3 1/2", Tunnel Well 1 0 3", Hat Box 2 0 3"  
 No. of Bilge Injections 2 sizes 9" Connected to condenser, or to circulating pump pumps Is a separate Donkey Suction fitted in Engine room & size 1 0 7"  
 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 below  
 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 10-8-11 of Stern Tube 10-8-11 Screw shaft and Propeller 10-8-11  
 Is the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from cylinder platform

BOILERS, &c.—(Letter for record ✓) Manufacturers of Steel D. Colville & Sons  
 Total Heating Surface of Boilers 12540 Is Forced Draft fitted no No. and Description of Boilers 2 double-ended  
 Working Pressure 220 lbs Tested by hydraulic pressure to 440 lbs Date of test 1-8-11 No. of Certificate 11130  
 Can each boiler be worked separately yes Area of fire grate in each boiler 129.4 No. and Description of Safety Valves to  
 each boiler double sprung loaded Area of each valve 10.68 Pressure to which they are adjusted 225 lbs Are they fitted with easing gear yes  
 Smallest distance between boilers 15" and bunkers 15" Mean dia. of boilers 15-8" Length 19-9" Material of shell plates steel  
 Thickness 1 3/32" Range of tensile strength 30/34 tons Are the shell plates welded or flanged no Descrip. of riveting: cir. seams T.R.  
 Long. seams T.R.D.G.S. Diameter of rivet holes in long. seams 1 3/32" Pitch of rivets 10 1/2" Lap of plates or width of butt straps 23 3/8"  
 Percentages of strength of longitudinal joint 84.2 Working pressure of shell by rules 258 Size of manhole in shell 16"x12"  
 Size of compensating ring 9"x1 3/32" No. and Description of Furnaces in each boiler 6 corrugated Material steel Outside diameter 3'-10 3/8"  
 Length of plain part top 7 1/8" bottom 7 1/8" Thickness of plates 7 1/8" Description of longitudinal joint weld No. of strengthening rings ✓  
 Working pressure of furnace by the rules 244 Combustion chamber plates: Material steel Thickness: Sides 21 1/32" Back ✓ Top 21 1/32" Bottom 7 1/8"  
 Pitch of stays to ditto: Sides 8x8" Back ✓ Top 8x8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 232  
 Material of stays steel Diameter at smallest part 1.76" Area supported by each stay 64" Working pressure by rules 220 End plates in steam space:  
 Material steel Thickness 1 5/32" Pitch of stays 16"x16" How are stays secured secured thro. plating outside Working pressure by rules 227 Material of stays steel  
 Area at smallest part 6.339 Area supported by each stay 256" Working pressure by rules 256 Material of Front plates at bottom steel  
 Thickness 13 1/16" Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays ✓ Working pressure of plate by rules ✓  
 Diameter of tubes 2 3/4" Pitch of tubes 4x4" Material of tube plates steel Thickness: Front 25 1/32" Back 25 1/32" Mean pitch of stays abt. 9-6"  
 Thickness across wide water spaces 13 3/4" + 3/4" double Working pressures by rules 271 Girders to Chamber tops: Material steel Depth and  
 Thickness of girder at centre 9 1/2" x 20 3/4" Length as per rule 4-9" Distance apart 8" Number and pitch of stays in each 608"  
 Working pressure by rules 274 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 ✓ Diam. of rivet  
 Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓  
 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 ✓

W82-0217

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 top-end bolts & nuts, 2 connecting rod bottom-end bolts and nuts, 2 main bearing bolts, 1 set of coupling bolts, 1 set of feed & bilge pump valves, 1 set of rings for H.P. & S.P. cylinders, 1 Air pump bucket complete, 2 bronze propeller blades, 4 propeller boss studs, a quantity of assorted bolts & nuts, and iron of various sizes.

The foregoing is a correct description, FOR BARCLAY CURLE & CO., LTD. Manufacturer James Gilchrist, Director.

Table with columns for Dates of Survey while building, During progress of work in shops, and During erection on board vessel. Includes dates from 1910 Sept. 20 to 1911 Aug. 17 and a total of 109 visits.

Table with columns for Dates of Examination of principal parts: Cylinders, Slides, Covers, Pistons, Rods, Connecting rods, Crank shaft, Thrust shaft, Tunnel shafts, Screw shafts, Propellers, Stern tube, Steam pipes tested, Engine and boiler seatings, Engines holding down bolts, Completion of pumping arrangements, Boilers fixed, Engines tried under steam, Main boiler safety valves adjusted, Thickness of adjusting washers, Material of Crank shaft, Identification Mark on Do., Material of Thrust shafts, Identification Mark on Do., Material of Tunnel shafts, Identification Marks on Do., Material of Screw shafts, Identification Marks on Do., Material of Steam Pipes, Test pressure.

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery of this vessel has been built under special survey in accordance with the rules and approved plans and has been seen working satisfactorily under steam. The materials & workmanship are good. This machinery is eligible, in our opinion, for classification and the Record L.M.C. 10. 11.

It is submitted that this vessel is eligible for THE RECORD + LMC 10. 11.

Handwritten signature and date: J.W.D. 10/10/11

Table with columns for Fees: The amount of Entry Fee (£ 3 : 0 : 0), Special (£ 56 : 0 : 0), Donkey Boiler Fee (£), Travelling Expenses (if any) (£). Includes dates for when applied for and when received.

A.C. Forster & Henderson-Smith, Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute GLASGOW 10 OCT. 1911

Assigned + LMC 10. 11



Glasgow

Certificate (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)

Vertical text on the right edge of the page, including 'Date of writing', 'No. in Survey Reg. Book', 'on the', 'Master', 'Engines made at', 'Boilers made at', 'Registered Horsepower', 'MULTITUBULAR', 'Letter for record', 'Boilers', 'No. of Certificate', 'Safety valves to', 'Are they fitted with', 'Smallest distance between', 'Material of shell plates', 'Descrip. of riveting', 'Pitch of plates on', 'Rules 258', 'Boiler 3 Corn', 'Description of long', 'Dates: Material of', 'Top 8x8" If', 'Smallest part of', 'Pitch of stays', 'Area supported by', 'Power back plate', 'Pitch of tubes', 'Water spaces', 'Order at centre', 'Working pressure', 'Separately', 'Pitch', 'Stiffened with ribs', 'Working pressure', 'Dates of Survey while building', 'GENERAL See M', 'Survey Fee', 'Travelling Exp', 'Committee's', 'Assigned Se', 'a'.