

Rpt. 4.

REPORT ON MACHINERY

No. 3065-8.

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 20th Sept. 1910 Last Survey Oct. 5th 1911

Reg. Book. on the TWIN S/S GUILDFORD CASTLE 22. (Number of Visits 109)

Master Built at Whiteinch. By whom built Barclay Curle & Co. Ltd. Tons Gross 7994 Net 7650

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 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 $\frac{3}{4}$ " 28" 41" 60" Length of Stroke 48" Revs. per minute 78 Dia. of Screw shaft as per rule 12 $\frac{1}{2}$ " 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 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 fibrous 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 as per rule 11 $\frac{1}{2}$ " Dia. of Crank shaft journals as per rule 12 $\frac{1}{2}$ " Dia. of Crank pin 13 $\frac{1}{4}$ " Size of Crank webs 18" x 8 $\frac{1}{2}$ " Dia. of thrust shaft under

collars 12 $\frac{3}{4}$ " Dia. of screw 15'-6" Pitch of Screw 20'-3" No. of Blades 3 State whether moveable yes Total surface 62 $\frac{1}{2}$ "

No. of Feed pumps 3 Diameter of ditto 7 $\frac{1}{2}$ " 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 2 Sea 50's 7" x 10" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 2 0 3 $\frac{1}{2}$ " and 2 0 3 $\frac{1}{2}$ " in Stokehold In Holds, &c. No 1:- 2 0 3 $\frac{1}{2}$ " No 2:- 2 0 3 $\frac{1}{2}$ " Reserve

Bunker 2 0 3 $\frac{1}{2}$ " No 3:- 2 0 3 $\frac{1}{2}$ " No 4:- 2 0 3 $\frac{1}{2}$ " Tunnel well 1 0 3" Hat Box 2 0 3"

No. of Bilge Injections 2 sizes 9" Connected to condenser, or to circulating pump Pump 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

WILERS, &c.—(Letter for record 12 DE 9916 11 E 2624 of) 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 sq ft No. and Description of Safety Valves to

each boiler double sprung loaded Area of each valve 10.68 sq in Pressure to which they are adjusted 225 lbs. Are they fitted with easing gear yes

Smallest distance between boilers and bunkers 15" Mean dia. of boilers 15'-8" Length 19'-9" Material of shell plates steel

Thickness 1 $\frac{1}{2}$ " 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 $\frac{1}{2}$ " Pitch of rivets 10 $\frac{1}{2}$ " Lap of plates or width of butt straps 23 $\frac{3}{8}$ "

Percentages of strength of longitudinal joint rivets 82 plate 84.2 Working pressure of shell by rules 258 Size of manhole in shell 16" x 12"

Size of compensating ring 9" x 1 $\frac{1}{2}$ " No. and Description of Furnaces in each boiler 6 corrugated Material steel Outside diameter 3'-10 $\frac{3}{8}$ "

Length of plain part top 7 $\frac{1}{2}$ " Thickness of plates crown 7 $\frac{1}{2}$ " 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 $\frac{1}{32}$ " Back 21 $\frac{1}{32}$ " Top 21 $\frac{1}{32}$ " Bottom 7"

Pitch of stays to ditto: Sides 8" x 8" Back 8" x 8" Top 8" x 8" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 232

Material of stays steel Area at smallest part 1.76 sq ft Area supported by each stay 64 sq ft Working pressure by rules 220 End plates in steam space:

Material steel Thickness 1 $\frac{5}{32}$ " Pitch of stays 16" x 16" How are stays secured secured to the plates outside Working pressure by rules 227 Material of stays steel

Area at smallest part 6.33 sq ft Area supported by each stay 256 sq ft Working pressure by rules 256 Material of Front plates at bottom steel

Thickness 1 $\frac{3}{16}$ " Material of Lower back plate Thickness Greatest pitch of stays Working pressure of plate by rules

Diameter of tubes 2 $\frac{3}{4}$ " Pitch of tubes 4" x 4" Material of tube plates steel Thickness: Front 25 $\frac{1}{32}$ " Back 25 $\frac{1}{32}$ " Mean pitch of stays abt. 9'-6"

Pitch across wide water spaces 13 $\frac{3}{4}$ " + 3 $\frac{1}{4}$ " Working pressures by rules 271 Girders to Chamber tops: Material steel Depth and

Thickness of girder at centre 9 $\frac{1}{2}$ " x 20 $\frac{3}{4}$ " 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.

Dates of Survey while building { During progress of work in shops - 1910. Sept. 20, 29, Oct. 4, 6, 10, 11, 21, 25, 28, 31, Nov. 2, 7, 8, 10, 15, 17, 25, 29, Dec. 2, 5, 7, 11, 12, 15, 19, 21, 22, 23, 26, 27, 29.
During erection on board vessel - 1911. Jan. 10, 16, 17, 21, 24, 25, 30, 31, Feb. 9, 13, 16, 17, 21, 27, March 1, 4, 6, 7, 9, 17, 21, 23, 25, 28, 30, April 3, 5, 7, 11, 12, 20, 25, 27, May 2, 6, 16, 17, 22, 23, 24, 30, June 1, 2, 5, 6, 12, 13, 15, 16, 19, 23, 27, July 4, 5, 10, 12, 26, 27, 31, Aug. 1, 10, 14, 15, 16, 17, 22, 28, 29, 31, Sept. 1, 5, 6, 8, 27, 28, Oct. 2.
Total No. of visits 109.

Is the approved plan of main boiler forwarded herewith Yes
" " " donkey " " "

Dates of Examination of principal parts—Cylinders 7.3.11 Slides 4.3.11 Covers 7.3.11 Pistons 4.3.11 Rods 11.4.11
Connecting rods 11.4.11 Crank shaft 11.4.11 Thrust shaft 22.5.11 Tunnel shafts 13.6.11 Screw shafts 13.6.11 Propellers 19.6.11
Stern tube 19.6.11 Steam pipes tested 31.8.11 Engine and boiler seatings 10.8.11 Engines holding down bolts 5.9.11
Completion of pumping arrangements 29.8.11 Boilers fixed 5.9.11 Engines tried under steam 2.10.11
Main boiler safety valves adjusted 6.9.11 Thickness of adjusting washers PORT D.E. BOILER STAR D.E. B.L.R. S.E.
Material of Crank shaft steel Identification Mark on Do. 488 Material of Thrust shafts steel Identification Mark on Do. 488
Material of Tunnel shafts steel Identification Marks on Do. 488 Material of Screw shafts steel Identification Marks on Do. 488
Material of Steam Pipes steel Test pressure 660 lbs per square inch.

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.

J.W.D. J.P.R.
19/10/11

The amount of Entry Fee .. £ 3 : 0 : 0 When applied for, 6/10/11
Special .. £ 56 : 0 : 0
Donkey Boiler Fee .. £ : :
Travelling Expenses (if any) £ : :
When received, 3.11.11

Committee's Minute GLASGOW 10 OCT. 1911

Assigned + LMC 10.11

H.C. Forster & H. Anderson-Smith.
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Certificate (if required) to be sent to Glasgow

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