

REPORT ON MACHINERY.

Port of Glasgow.

Received at London Office 1904

No. in Survey held at Glasgow Date, first Survey 25th May 03 Last Survey 25th March 1904

Reg. Book. on the London & Glasgow S.S. Co. Ltd No 56 (not yet named, laid up for sale) (Number of Visits 35)

Master Built at Londonderry By whom built Londonderry S.S. Co. Ltd Tons { Gross Net

Engines made at Irvine By whom made Renfrew Bros & Co when made 1904

Boilers made at Glasgow By whom made D. Howan & Co. (No 242) when made 1903.

Registered Horse Power Owners Port belonging to

Net Horse Power as per Section 28 96 Is Refrigerating Machinery fitted No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders Three No. of Cranks 3

Dia. of Cylinders 15, 25 & 40 3/32 Length of Stroke 27 Revs. per minute 90 Dia. of Screw shaft as per rule 8.78 as fitted 8 1/2 Material of screw shaft Cast iron

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No Is the after end of the liner made water tight

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 Yes If two

liners are fitted, is the shaft lapped or protected between the liners No Length of stern bush 3 1/2"

Dia. of Tinnel shaft as per rule 7 3/4 Dia. of Crank shaft journals as per rule 7 1/2 Dia. of Crank pin 7 3/4 Size of Crank webs 14 1/2 x 4 3/4 Dia. of thrust shaft under

rollers 7 3/4 Dia. of screw 10-0 Pitch of screw 13-0 No. of blades 4 State whether moveable No Total surface 36 sq. ft.

No. of Feed pumps 2 Diameter of ditto 2 1/2 Stroke 13 1/2 Can one be overhauled while the other is at work yes

No. of Bilge pumps 2 Diameter of ditto 3 Stroke 13 1/2 Can one be overhauled while the other is at work yes

No. of Donkey Engines 2 Sizes of Pumps 5 1/2 x 3 1/2 x 5 x 5 In Hold, &c. Two, 2" diameter

No. of bilge injections 1 sizes 4 Connected to condenser, to circulating pump pump Is a separate donkey suction fitted in Engine room & size yes 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 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 Bilge tank pipes How are they protected Wood & iron lining.

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.

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Before launch Is the screw shaft tunnel watertight No

Is it fitted with a watertight door No worked from Yes

BOILERS, &c.— (Letter for record (5) Total Heating Surface of Boilers 1607 sq. ft. Is forced draft fitted No

No. and Description of Boilers One single ended. Working Pressure 170 lbs Tested by hydraulic pressure to 340 lbs

Date of test 15/10/03 Can each boiler be worked separately Yes Area of fire grate in each boiler 53 1/2 sq. ft. No. and Description of safety valves to

each boiler Two direct spring Area of each valve 5.93 sq. in. Pressure to which they are adjusted 175 lbs per sq. in. Are they fitted with easing gear yes.

Smallest distance between boilers or uptakes and bunkers or woodwork 10" Mean dia. of boilers 13.6" Length 10.0" Material of shell plates steel.

Thickness 1 1/8" Range of tensile strength 28 to 32 Are they welded or flanged no Descrip. of riveting: cir. seams double long. seams treble

Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 8" Lap of plates or width of butt straps 16 1/2"

Per centages of strength of longitudinal joint rivets 86.5 Working pressure of shell by rules 173 lbs Size of manhole in shell 12" x 16"

Size of compensating ring 7 1/2" x 1 1/8" No. and Description of Furnaces in each boiler 2 Adamson Material steel Outside diameter 40 1/4"

Length of plain part top 3.0 bottom 3.6 Thickness of plates crown 5/8 bottom 5/8 Description of longitudinal joint welded No. of strengthening rings one

Working pressure of furnace by the rules 180 lbs Combustion chamber plates: Material steel Thickness: Sides 9/16" Back 19/32" Top 9/16" Bottom 7/8"

Pitch of stays to ditto: Sides 7 1/2" x 8 1/4" Back 8 1/2" x 8 1/4" Top 7 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 171 lbs

Material of stays steel Diameter at smallest part 1.48" Area supported by each stay 67 sq. in. Working pressure by rules 176 lbs End plates in steam space:

Material steel Thickness 1 3/16" Pitch of stays 18 1/2" x 20" How are stays secured nuts Working pressure by rules 170 lbs Material of stays steel

Diameter at smallest part 6.33" Area supported by each stay 370 sq. in. Working pressure by rules 171 lbs Material of Front plates at bottom steel

Thickness 3/32" Material of Lower back plate steel Thickness 3/32" Greatest pitch of stays 13 1/2" x 8 1/8" Working pressure of plate by rules 162 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Material of tube plates steel Thickness: Front 3/32" Back 7/8" Mean pitch of stays abt 10 1/2"

Pitch across wide water spaces 14" Working pressures by rules 171 lbs Girders to Chamber tops: Material steel Depth and

thickness of girder at centre 8" x 2" - 1" Length as per rule 31" Distance apart 8 1/2" Number and pitch of Stays in each 3 - 7 1/2"

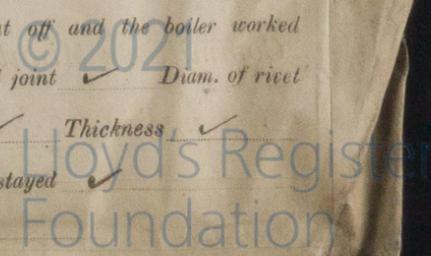
Working pressure by rules 178 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked

separately Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet

holes Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes

If stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes

Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes



DONKEY BOILER— *None* Description ✓

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure tested by hydraulic pressure to _____ No. of Certificate _____ Fire grate area _____ Description of safety valves _____

No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers enter the donkey boiler _____

Dia. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range of ten-
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 _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to do. _____
Plates _____

Dia. of stays _____ Diameter of furnace Top _____ Bottom _____ Length of furnace _____ Thickness of furnace plates _____ Description of
joint _____ Thickness of furnace crown plates _____ Stayed by _____ Working pressure of shell by rules _____

Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— *2 piston rod, 2 connecting rod, 2 main bearing and 6 coupling bolts & nuts, one set of feed & one set of bilge pump valves, one set of L.P. piston springs, 6 condenser tubes, 3 boiler tubes assorted bolts & nuts & a few bars of iron.*

The foregoing is a correct description,
Manufacturer. *Penfrew Brothers & Co*

Dates of Survey while building

During progress of work in shops—	1903: May 25, June 24, July 1, 9, 15, 21, Aug 17, Sept 14, 21, 23, 24, 30, Oct 15, 22
	During erection on board vessel—
	Nov 3, 6, 12, 18, Dec 3, 12, 16, 23, 26, 1904: Jan 11, 14, 15, 19, 22, 27, Feb 1, 8, 26, Mar 4, 11, 25

Total No. of visits *35*

Is the approved plan of main boiler forwarded herewith *yes.*
" " " donkey " " " *None.*

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been built under special survey, the materials and workmanship are of good quality, it has been securely fitted on board and satisfactorily tested under steam.

In our opinion the machinery of this vessel is now eligible for record of L.M.C. (in red) in register book.

Two forging reports of shafting and boiler plan now attached.

It is submitted that
this vessel is eligible for
THE RECORD. L.M.C. 3.04

Bab.
30.3.04

J.S.
30.3.04

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

The amount of Entry Fee..	£ 1 : 0	When applied for,	28 MAR 1904
Special	£ 14 : 8	When received,	7. 4. 04
Donkey Boiler Fee .. .	£ 3 : 9		
Travelling Expenses (if any) £			

Committee's Minute Glasgow 28 MAR 1904 THUR. 31 MAR 1904

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

Assigned *L.M.C. 3.04*
(Subject to classification of hull)



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