

REPORT ON MACHINERY.

No. 22240

Port of Glasgow

Received at London Office 11.8 NOV 1904

No. in Survey held at Glasgow

Date, first Survey 22nd March Last Survey 31st October 1904

Reg. Book. on the Steel Screw Steamer "Cheshire"

(Number of Visits 20)

Master J. Crofts Built at Paisley By whom built J. Fullerton & Co (No 178 7/8) When built 1904

Engines made at Glasgow By whom made Stephenson & Duncan (No 616) when made 1904

Boilers made at Glasgow By whom made Stephenson & Duncan (No 984) when made 1904

Registered Horse Power 118 Owners S. S. Cheshire Co Ltd Port belonging to Liverpool

Nom. Horse Power as per Section 28 118 Is Refrigerating Machinery fitted No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Compound No. of Cylinders Two No. of Cranks Two

Dia. of Cylinders 21" 4/6" Length of Stroke 30" Revs. per minute 85 Dia. of Screw shaft as per rule 8.97 Material of screw shaft Iron

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 Yes

If two liners are fitted, is the shaft lapped or protected between the liners ✓ Length of stern bush 3' 3"

Dia. of Tunnel shaft as per rule 8.68 Dia. of Crank shaft journals as per rule 9.12 Dia. of Crank pin 9 1/4" Size of Crank webs 6 1/2 x 13 1/2" Dia. of thrust shaft under collars 9 1/8" Dia. of screw 11" 0" Pitch of screw 14" 0" No. of blades 4 State whether moveable No Total surface 44"

No. of Feed pumps Two Diameter of ditto 3 1/4" Stroke 15" Can one be overhauled while the other is at work Yes

No. of Bilge pumps Two Diameter of ditto 3 1/4" Stroke 15" Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps 6 x 4 x 6 dup. 6 x 8 x 8 "In Hold, &c." No. and size of Suctions connected to both Bilge and Donkey pumps Two 2 1/2"

In Engine Room Two 2 1/4" One 2 1/2" Is it fitted with a watertight door ✓ worked from ✓

No. of bilge injections 1 sizes 4" Connected to condenser, or to circulating pump ✓ Is a separate donkey suction fitted in Engine room & size Yes 2 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 Now

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Larger Valves; smaller cocks

Are they sized 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 Inward bilge suction How are they protected Wooden casing

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 New metal Is the screw shaft tunnel watertight Engines aft

BOILERS, &c.— (Letter for record S) Total Heating Surface of Boilers 2025 Is forced draft fitted No

No. and Description of Boilers One Single ended Working Pressure 130 lbs Tested by hydraulic pressure to 260 lbs

Date of test 25/8/04 Can each boiler be worked separately ✓ Area of fire grate in each boiler 63.8 No. and Description of safety valves to each boiler Two Steel spring Area of each valve 8.29 Pressure to which they are adjusted 135 lbs Are they fitted with easing gear Yes

Smallest distance between boilers or uptakes and bunkers or woodwork See one feet Mean dia. of boilers 15" 6" Length 10" 6" Material of shell plates Steel

Thickness 1" Range of tensile strength 27-32 tons Are they welded or flanged No Descrip. of riveting: cir. seams 0. riv. long. seams 0. straps & Riv

Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 6 7/8" Lap of plates or width of butt straps 1" 5 1/2" x 7/8 inside 1 3/16 outside

Per centages of strength of longitudinal joint rivets 86.5 Working pressure of shell by rules 132 lbs Size of manhole in shell 16 x 12

Size of compensating ring 7" x 1" No. and Description of Furnaces in each boiler 3 plain Material Steel Outside diameter 50"

Length of plain part top 7 1/4" bottom 7 1/4" Thickness of plates top 1 1/16" bottom 1 1/16" Description of longitudinal joint Welded No. of strengthening rings One angle

Working pressure of furnace by the rules 132 Combustion chamber plates: Material Steel Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 1 1/16"

Pitch of stays to ditto: Sides 9 1/4" x 8 1/2" Back 9 1/4" x 8 1/2" Top 9" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 138 lbs

Material of stays Steel Diameter at smallest part 1 3/8" & 1 5/8" Area supported by each stay 78.6 Working pressure by rules 150 End plates in steam space: Material S Thickness 1" Pitch of stays 19 1/2" x 18" How are stays secured By nuts Working pressure by rules 134 Material of stays Steel

Diameter at smallest part 4.68 Area supported by each stay 19 1/2" x 14 1/2" Working pressure by rules 137 Material of Front plates at bottom Steel

Thickness 3/4" Material of Lower back plate 1 1/16" Steel Thickness 1 1/16" Greatest pitch of stays 14" (1/2" doub) Working pressure of plate by rules 130

Diameter of tubes 3 1/2" Pitch of tubes 4 3/4" x 4 5/8" Material of tube plates Steel Thickness: Front 1" + 3/4" Back 23/32" Mean pitch of stays 11 1/2"

Pitch across wide water spaces 14" (1/2" doub) Working pressures by rules 140 lbs Girders to Chamber tops: Material Iron Depth and thickness of girder at centre 7 1/2" x 2 1/4" Length as per rule 35" Distance apart 9" Number and pitch of Stays in each 3 at 8 1/2"

Working pressure by rules 151 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 ✓

Is a Report also sent on the Hull of the Ship? If not, state whether, and when, one will be sent?

Yes

DONKEY BOILER— No. *One* Description *Vertical. Four cross tubes.*
 Made at *Gateshead* By whom made *Messrs R. Chapman & Co* When made *2/8/04* Where fixed *In stockhead*
 Working pressure *75* tested by hydraulic pressure to *150* No. of Certificate *6845* Fire grate area *19'* Description of safety valves *Direct Spring*
 No. of safety valves *One* Area of each *6.49* Pressure to which they are adjusted *80 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *5' 0"* Length *10' 0"* Material of shell plates *Steel* Thickness *3/8"* Range of tensile strength *27/32* Descrip. of riveting long. seams *Doub. riv. lap* Dia. of rivet holes *3/4"* Whether punched or drilled *drilled* Pitch of rivets *2 3/4"*
 Lap of plating *3 5/8"* Per centage of strength of joint Rivets *12.5* Thickness of shell crown plates *1/2"* Radius of do. *5'-0"* No. of Stays to do. *4*
 Dia. of stays. *1 5/8"* Diameter of furnace Top *3' 8 1/2"* Bottom *4' 2"* Length of furnace *5' 2"* Thickness of furnace plates *1/2"* Description of joint *Single riv. lap* Thickness of furnace crown plates *1/2"* Stayed by *As shell crown* Working pressure of shell by rules *94*
 Working pressure of furnace by rules *100* Diameter of uptake *14"* Thickness of uptake plates *3/8"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *Two main bearing bolts. Two crosshead bolts. Two crank pin bolts. Set feed pump valves. Set bilge pump valves. Set coupling bolts. Assorted bolts & nuts. Iron etc.*

The foregoing is a correct description,

Ross & Duncan Manufacturer.

Dates of Survey while building	During progress of work in shops - - -	1904, Mar 22, 25. Apr. 22, 24. June 1, 6, 13, 22, 29. July 4, 9. Aug 4, 25.	
		During erection on board vessel - - -	Sept 8, 10, 22. Oct 10, 17, 21, 26, 31.
		Total No. of visits	<i>21</i>

Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " " *No*

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

The machinery has been constructed & fitted under special survey & in accordance with the requirements of the Rules, and it is submitted that the vessel is eligible for the notation + L.M.C 10.04 in the Register.

It is submitted that this vessel is eligible for THE RECORD. + L.M.C. 10.04

Balg.
W.L.
8.11.04
9.11.04

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

The amount of Entry Fee..	£ 2 : - :	When applied for, -7.NOV.1904
Special	£ 17 : 14 :	
Donkey Boiler Fee	£ : : :	When received, 11.11.04
Travelling Expenses (if any) £	: : :	

Arthur L. Jones

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

Committee's Minute *Glasgow - 7 NOV 1904*

Assigned

+ L.M.C. 10.04
When fee is paid

MACHINERY CERTIFICATE
 WRITTEN 11.11.04



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