

REPORT ON MACHINERY.

No. 22240

Port of *Glasgow*

Received at London Office

JUL 8 NOV 1904

No. in Survey held at *Glasgow*
Reg. Book.Date, first Survey *22nd March* Last Survey *31st October 1904*(Number of Visits *20*)on the *Steel Screw Steamer "Cheshire"*Tons { Gross *632.5*
Net *237.08*Master *J. Crofts* Built at *Paisley* By whom built *J. Fullerton & Co (No 1787)* 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" 46"* Length of Stroke *30"* Revs. per minute *85* Dia. of Screw shaft as per rule *8 3/4"* 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 tightin 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 partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *Yes* If twoliners 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 6/8"* Dia. of Crank shaft journals as per rule *9 1/2"* Dia. of Crank pin *9 1/4"* Size of Crank webs *6 1/2" x 13 1/2"* Dia. of thrust shaft undercollars *9 1/8"* Dia. of screw *1 1/2"* Pitch of screw *14' 0"* No. of blades *4* State whether moveable *No* Total surface *44' 0"*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 in. 6 x 8 x 8 in. 3 x 2 x 3 in.* No. and size of Suctions connected to both Bilge and Donkey pumpsIn Engine Room *Two 2 1/4" One 2 1/2"* *Two 2 1/2"*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 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 *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*Is it fitted with a watertight door *✓* worked from *✓*

BOILERS, &c.—

(Letter for record *S*) Total Heating Surface of Boilers *2025' 0"* Is forced draft fitted *No*No. and Description of Boiler *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 toeach boiler *Two. Oneel 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 *Seven 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 13/16 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 *7' 4"* Thickness of plates *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 *11/16"*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' 6.8"* Area supported by each stay *19 1/2" x 17 1/2"* Working pressure by rules *137* Material of Front plates at bottom *Steel*Thickness *3/4"* Material of Lower back plate *11/16"* Thickness *11/16"* Greatest pitch of stays *14" (1/2" down)* 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" x 3/4"* Back *23/32"* Mean pitch of stays *11 1/2"*Pitch across wide water spaces *14" (1/2" down)* Working pressures by rules *140 lbs* Girders to Chamber tops: Material *Iron* Depth andthickness 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 workedseparately *✓* Diameter *✓* Length *✓* Thickness of shell plates *✓* Material *✓* Description of longitudinal joint *✓* Diam. of rivetholes *✓* 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 *✓*

If not, state whether, and when, one will be sent?

Is a Report also sent on the Hull of the Ship?

[2000-5-03-Copyrightable Ink.]

W712-0014

DONKEY BOILER— No. *One* Description *Vertical. Four cross tubes.*
 Made at *Gateshead* By whom made *Wapell & Chapman & Co* When made *26/8/04* Where fixed *In store shed*
 Working pressure *75* tested by hydraulic pressure to *150* No. of Certificate *6845* Fire grate area *13'* 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 *Double riv. lap* Dia. of rivet holes *3/4"* Whether punched or drilled *drilled* Pitch of rivets *2 3/4"*
 Lap of plating *3 7/8"* Per centage of strength of joint *72.5* Rivets *72.5* 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,

James Duncan Manufacturer.

Dates of Survey while building	{	During progress of work in shops—	<i>1904: Mar 22, 25. Apr. 22, 24. June 1, 6, 13, 22, 29. July 4, 9. Aug 4, 25.</i>
		During erection on board vessel—	<i>Sept 8, 10, 22. Oct 10, 17, 21, 26, 31.</i>
		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.S.
8.11.04
9.11.04

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

Committee's Minute *Glasgow - 7 NOV 1904*

Assigned

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

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



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