

# REPORT ON MACHINERY.

No. 12432

Port of *Glasgow*

THURS 7 1903

No. in Survey held at  
Reg. Book.

Date, first Survey *26 May 1892* Last Survey *2 9 1893*

on the

Master *H. L. Allan* Built at *Glasgow* By whom built *London Glasgow S. S. Coy* When built *1893*

Engines made at *Glasgow* By whom made *Do Do* when made *1893*

Boilers made at *Do* By whom made *Do Do* when made *1893*

Registered Horse Power *550* *300* Owner's *China Mutual Steam Navigation Co. Ltd.* Port belonging to *London*

Nom. Horse Power as per Section 28 *298*

ENGINES, &c.— Description of Engines *Triple Expansion Direct Acting* No. of Cylinders *Three*  
Diameter of Cylinders *24 1/2 - 39 - 64* Length of Stroke *48* Revolutions per minute *75* Diameter of Screw shaft *12 1/2*  
Diameter of Tunnel shaft *12* Diameter of Crank shaft journals *12 1/2* Diameter of Crank pin *12 1/4* Size of Crank webs *23 1/2 x 9*  
Diameter of screw *17* Pitch of screw *16 - 6* No. of blades *Four* State whether moveable *Yes* Total surface *18 sq ft.*  
No. of Feed pumps *Two* Diameter of ditto *4* Stroke *24* Can one be overhauled while the other is at work *Yes*  
No. of Bilge pumps *Two* Diameter of ditto *4 1/2* Stroke *24* Can one be overhauled while the other is at work *Yes*  
No. of Donkey Engines *One* *Ballast Pump 9" x 10"* and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room *Three 3 1/2" diam.* In Holds, &c. *Two 3 1/2" from No 1 Hold. 2, 3 1/2" from No 2 Hold. one 3 1/2" from No 3 hold. one 3 1/2" from No 4 hold*  
No. of bilge injection *Two sizes 5 1/2 x 4* Connected to condenser, or circulating pump *Yes* Is a separate donkey suction fitted in Engine room & size *Yes - 4"*  
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 *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*  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock *Before Launching* Is the screw shaft tunnel watertight *Yes*  
Is it fitted with a watertight door *Upper Deck worked from*

BOILERS, &c.— (Letter for record *✓*) Total Heating Surface of Boilers *4657 sq ft.*  
No. and Description of Boilers *Two - Cylindrical Multitubular* Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs*  
Date of test *20-11-92* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *52 1/2 sq ft.* No. and Description of safety valves to each boiler *Two Spring Loaded* Area of each valve *11.14 sq in* Pressure to which they are adjusted *160 lbs* Are they fitted with easing gear *Yes*  
Smallest distance between boilers or uptakes and bunkers or woodwork *12"* Mean diameter of boilers *14 1/2 - 3"*  
Length *11 - 5* Material of shell plates *Steel* Thickness *1 1/8"* Description of riveting: circum. seams *Lap. Double Riveting* seams *Butt. Triple Riv.*  
Diameter of rivet holes in long. seams *1 1/8"* Pitch of rivets *8 1/2" + 3 3/4"* Lap of plates *23 1/4"* width of butt straps *23 1/4"*  
Per centages of strength of longitudinal joint *83%* Working pressure of shell by rules *184 lbs* Size of manhole in shell *16" x 12"*  
Size of compensating ring *No. 1 - No. 1* No. and Description of Furnaces in each boiler *Three Locomotive* Material *Steel* Outside diameter *48"*  
Length of plain part *8 - 0* Thickness of plates *3/4"* Description of longitudinal joint *Welded* No. of strengthening rings *Top 1 bottom 3*  
Working pressure of furnace by the rules *161 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *5/8"* Back *3/4"* Top *3/4"* Bottom *3/4"*  
Pitch of stays to ditto: Sides *7 - 4"* Back *7 - 6"* Top *7 - 4"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *161 lbs*  
Material of stays *Steel* Diameter at smallest part *1 1/2 x 1 1/4"* Area supported by each stay *54.47 sq in* Working pressure by rules *182 lbs* End plates in steam space: Material *Steel* Thickness *3/2"* Pitch of stays *4 1/2 x 14 1/2"* How are stays secured *Welded* Working pressure by rules *191 lbs* Material of stays *Steel*  
Diameter at smallest part *2 1/2"* Area supported by each stay *206.6 sq in* Working pressure by rules *178 lbs* Material of Front plates at bottom *Steel*  
Thickness *1 1/8"* Material of Lower back plate *Steel* Thickness *1 1/8"* Greatest pitch of stays *11 1/2 x 7 1/2"* Working pressure of plate by rules *164 lbs*  
Diameter of tubes *2 1/2"* Pitch of tubes *3 1/2 x 3 1/2"* Material of tube plates *Steel* Thickness: Front *5/8"* Back *3/4"* Mean pitch of stays *7 1/2 x 7 1/2"*  
Pitch across wide water spaces *13 + 11 1/2"* Working pressures by rules *174 + 164 lbs* Rinders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *7 1/2 x 1 1/8"* Length as per rule *30"* Distance apart *7 1/2"* Number and pitch of Stays in each *Three - 7"*  
Working pressure by rules *169 lbs* 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 *✓*

GLS168-0051



DONKEY BOILER— Description *Cylindrical Multitubular - Simple Ended*  
 Made at *Glasgow* By whom made *London & Glasgow S.S. Co.* When made *1893* Where fixed *on deck*  
 Working pressure *160 lbs* Tested by hydraulic pressure to *160 lbs* No. of Certificate *3117* Fire grate area *22 sq ft* Description of safety valves *Direct Spring*  
 No. of safety valves *Two* Area of each *5.1 sq ft* Pressure to which they are adjusted *80 lbs* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *8'-6"* Length *8'-8"* Material of shell plates *Steel* Thickness *3/4"*  
 Description of riveting long. seams *Lap Riv.* Diameter of rivet holes *15/16"* Whether punched or drilled *Drilled* Pitch of rivets *2 1/4"*  
 Lap of plating *4 1/2"* Per centage of strength of joint *69.4* Rivets *69.4* Thickness of shell *end* plates *1/4"* Radius of do. *✓* No. of Stays to do. *✓*  
 Dia. of stays *1 1/8"* Diameter of furnace *Top 3'4" Bottom 3'2"* Length of furnace *5'-6"* Thickness of furnace plates *3/4"* Description of joint *Double Riv. - Comb. Cham.* Stays by *1 1/2" Screwed Stay & Brides* Working pressure of shell by rules *160 lbs*  
 Working pressure of furnace by rules *117 lbs* Diameter of uptake *✓* Thickness of uptake plates *✓* Thickness of water tubes *✓*

SPARE GEAR. State the articles supplied:— *As required by the rules also 1 tail shaft, 4 propeller blades one crank, one valve spindle, one pump rod, one pair of bottom end brasses*

The foregoing is a correct description,  
 for THE LONDON & GLASGOW ENGRS & IRON SHIPB. COMPY. LD.

*W. Shepherd*  
 MANAGING DIRECTOR.

(12H32 Gls)

General Remarks (State quality of workmanship, opinions as to class, &c. *This vessels boilers and machinery have been built under the conditions of Special survey and have been securely fitted on board and satisfactorily tried under steam. The material and workmanship are good. Rowden's system of forced draught has been fitted to these boilers. It is submitted that this vessel is eligible for the record + L.M.C. 9.93 + L.M.C. 9.93*

It is submitted that  
 this vessel is eligible for  
 THE RECORD + L.M.C. 9.93—

*Robt*  
 4/9/93

MACHINERY CERTIFICATE

WRITTEN

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 2 : 0 : 0	When applied for,	4/9/93
Special .. .. .	£ 34 : 18 : 0	When received,	6/9/93
Donkey Boiler Fee .. .. .	£ " : " : "		
Travelling Expenses (if any) £	" : " : "		

*Robert C. Brown*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

FR 8 SEP 1893

+ L.M.C. 9.93



© 2019

Lloyd's Register  
 Foundation