

# REPORT ON MACHINERY.

No. 12884

Port of *Glasgow*

THURS. APR. 1894

No. in Survey held at *Glasgow*  
Reg. Book.

Date, first Survey *30<sup>th</sup> Oct. 1893* Last Survey *12<sup>th</sup> April 1894*  
(Number of Visits *24*)

on the *Steel S.S. St. Shanes Castle*

Master *G. Newton* Built at *Glasgow* By whom built *John Shanes & Sons* When built *1894*

Engines made at *Glasgow* By whom made *Ross & Duncan* when made *1894*

Boilers made at *Glasgow* By whom made *Ross & Duncan* when made *1894*

Registered Horse Power Owners *Charles Legg* Port belonging to *Belfast*

Nom. Horse Power as per Section 28 ☒

## ENGINES, &c.—

Description of Engines

*Compound inverted*

No. of Cylinders *Two*

Diameter of Cylinders *14" & 28"* Length of Stroke *20"* Revolutions per minute *as per rule 5.4*  
Diameter of Tunnel shaft *as fitted 5.4* Diameter of Crank shaft journals *5.4* Diameter of Crank pin *5.4* Size of Crank webs *3 1/2" x 10 1/2" x 7 1/2"*  
Diameter of screw *7.0"* Pitch of screw *9' - 7 1/2"* No. of blades *4* State whether moveable *No* Total surface *18 sq. ft.*  
No. of Feed pumps *one* Diameter of ditto *2 1/2"* Stroke *11"* Can one be overhauled while the other is at work ☒  
No. of Bilge pumps *one* Diameter of ditto *3"* Stroke *11"* Can one be overhauled while the other is at work ☒  
No. of Donkey Engines *one* Sizes of Pumps *4" Cyl. 4" Piston 2" Pump* No. and size of Suctions connected to both Bilge and Donkey pumps  
In Engine Room *Bilge pump 2" Suction, Donkey Pump 1 1/2" Suction* In Holds, &c. *All hold Suction 2"*

No. of bilge injections *one* sizes *2 1/2"* Connected to condenser, or to circulating pump *pump* Is a separate donkey suction fitted in Engine room & size *yes 1 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  
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 *none*  
Is it fitted with a watertight door ☒ worked from ☒

## BOILERS, &c.—

(Letter for record *S.*)

Total Heating Surface of Boilers *675 1/2 sq. ft.*

No. and Description of Boilers *one Multitubular Cylindrical* Working Pressure *110* Tested by hydraulic pressure to *220 lbs.*  
Date of test *20/3/94* Can each boiler be worked separately ☒ Area of fire grate in each boiler *29 sq. ft.* No. and Description of safety valves to each boiler *two 2 1/2" G. & Co. Patent* Area of each valve *4.9"* Pressure to which they are adjusted *110 lbs.* Are they fitted with easing gear *yes*  
Smallest distance between boilers or uptakes and bunkers *15"* *Outside* diameter of boilers *9'-6"*  
Length *9'-0"* Material of shell plates *Steel* Thickness *5/8"* Description of riveting: circum. seams *lap. D. riv.* long. seams *Butt. D. riv.*  
Diameter of rivet holes in long. seams *13/16"* Pitch of rivets *4 1/2"* *Top of plates or width of butt straps 8 3/4"*  
Per centages of strength of longitudinal joint *108.8* Working pressure of shell by rules *115 lbs.* Size of manhole in shell *16" x 11 1/2"*  
Size of compensating ring *6' x 5 1/2"* No. and Description of Furnaces in each boiler *two plain* Material *Steel* Outside diameter *36"*  
Length of plain part *top 6'-3" bottom 5'-11"* Thickness of plates *5/8"* Description of longitudinal joint *welded* No. of strengthening rings *one 2' x 1 1/2"*  
Working pressure of furnace by the rules *113 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *1/2"* Back *7/16"* Top *7/16"* Bottom *1/2"*  
Pitch of stays to ditto: Sides *7' x 7"* Back *7' x 7"* Top *7' x 7"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *157 x 110 lbs.*  
Material of stays *Steel* Diameter at smallest part *8"* Area supported by each stay *49"* Working pressure by rules *130 lbs.* End plates in steam space:  
Material *Steel* Thickness *3/8"* Pitch of stays *13 1/2" x 13 1/2"* How are stays secured *D. nuts* Working pressure by rules *111 lbs.* Material of stays *Steel*  
Diameter at smallest part *2.31* Area supported by each stay *182 1/4"* Working pressure by rules *114 lbs.* Material of Front plates at bottom *Steel*  
Thickness *5/8"* Material of Lower back plate *Steel* Thickness *5/8"* Greatest pitch of stays *13' x 10 1/2"* Working pressure of plate by rules *182 x 122*  
Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *Steel* Thickness: Front *5/8"* Back *5/8"* Mean pitch of stays *10 5/8"*  
Pitch across wide water spaces *13' x 10 1/2"* Working pressures by rules *162 x 122* Girders to Chamber tops: Material *iron* Depth and thickness of girder at centre *5" x 1 1/2"* Length as per rule *22 1/2"* Distance apart *4"* Number and pitch of Stays in each *21.7"*  
Working pressure by rules *188 lbs.* 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 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

GLS169-0363



12887 gls

DONKEY BOILER— Description *None*

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 can enter the donkey boiler	Diameter of donkey boiler	Length
Material of shell plates	Thickness	Description of riveting long. seams	Diameter of rivet holes
Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint
Rivets	Plates	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	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:— *One 4-bladed propeller, two connecting rod bolts; two piston rod bolts, two main bearing bolts, one set shaft coupling bolts one set of feed & bilge pump valves, six condenser tubes, six boiler tubes assorted bolts & nuts etc.*

The foregoing is a correct description,  
*Ross - Duncan* Manufacturer.

General Remarks (State quality of workmanship, opinions as to class, &c.) *The above mentioned engines & boiler have been constructed under special survey & are of good workmanship & material. They have been well fitted on board the vessel & on completion tried under steam with satisfactory results. The vessel is now in our opinion eligible to be noted in the Register Book.*

It is submitted that  
this vessel is eligible for  
THE RECORD *LMC 4.94*  
*ARR*  
*26-4-94*

*[Large blue ink scribble]*

Certificate (if required) to be sent to *Glasgow*

The amount of Entry Fee..	£ 1 : " : "	When applied for,
Special .. .. .	£ 8 : " : "	19/4/94
Donkey Boiler Fee .. .. .	£ " : " : "	When received,
Travelling Expenses (if any) £	" : " : "	21/4/94

*Alex. Kidd. A.M. Stead*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *FRI 27 APR 1894*  
Assigned *+ LMC 4.94*