

REPORT ON MACHINERY.

5948

Port of *Glasgow*

No. *8918*

No. in Survey held at *Glasgow*

Date, first Survey *11th Decem^r 1888* Last Survey *21st Dec^r 1889*

Reg. Book.

(Number of Visits *37*)

on the *S. S. Cardiff Castle*

Tons

Master _____ Built at *Glasgow* By whom built *Butt M. & Co. by him^s* When built *1889*

Engines made at *Glasgow* By whom made *William Kemp.* when made *1889.*

Boilers made at *Glasgow* By whom made *Anderson & Lyall* when made *1889.*

Registered Horse Power *160.* Owners *Morel Brothers* Port belonging to *Glasgow*

ENGINES, &c.—

Description of Engines *Triple Expansion.*
 Diameter of Cylinders *19", 32" & 52"* Length of Stroke *39"* No. of Rev. per minute *80* Point of Cut off, High Pressure *var* Low Pressure *var*
 Diameter of Screw shaft *10 1/4"* Diam. of Tunnel shaft *9 3/4"* Diam. of Crank shaft journals *10 1/4"* Diam. of Crank pin *10 1/4"* size of Crank webs *built*
 Diameter of screw *14'-9"* Pitch of screw *16'-0"* No. of blades *4* state whether moveable *Sol.* total surface *48 ft²*
 No. of Feed pumps *2.* diameter of ditto *3"* Stroke *19 1/2"* Can one be overhauled while the other is at work *yes*
 No. of Bilge pumps *2.* diameter of ditto *3.* Stroke *19 1/2"* Can one be overhauled while the other is at work *yes*
 Where do they pump from *all compartments*
 No. of Donkey Engines *Two* Size of Pumps *4 1/2" x 3" x 4"* Where do they pump from *Notwile, Sea, tanks and bilges*
Bolt. 8" x 8" x 10"
 Are all the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes* Are the sluices on Engine room bulkheads always accessible *yes*
 No. of bilge injections *One* and sizes *3 1/2"* Are they connected to condenser, or to circulating pump *yes*
 How are the pumps worked *by levers*
 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 *about*
 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 accessible at all times *yes*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes*
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock *9th Dec^r 1889. Govan Dry Dock*
 Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *upper platform*

BOILERS, &c.—

Number of Boilers *Two* Description *Cylindrical Mult.* Whether Steel or Iron *Steel*
 Working Pressure *160 lbs.* Tested by hydraulic pressure to *320 lbs.* Date of test *7-6-89.*
 Description of superheating apparatus or steam chest *none*
 Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *—*
 No. of square feet of fire grate surface in each boiler *40.* Description of safety valves *direct spring* No. to each boiler *two*
 Area of each valve *5.9* Are they fitted with easing gear *yes* No. of safety valves to superheater *—* area of each valve *—*
 Are they fitted with easing gear *—* Smallest distance between boilers and bunkers *9"* Diameter of boilers *11' 9"*
 Length of boilers *10' 6"* description of riveting of shell long. seams *Butt strap* circum. seams *Lap joint* Thickness of shell plates *1 1/2"*
 Diameter of rivet holes *1 1/8"* whether punched or drilled *drilled* pitch of rivets *6 3/4"* Lap of plating *19"*
 Per centage of strength of longitudinal joint *83. 3/4* working pressure of shell by rules *160 lbs* size of manholes in shell *12" x 16"*
 Size of compensating rings *4 rivetted forged ring.* No. of Furnaces in each boiler *two*
 Outside diameter *3' 5"* length, top *7' 0"* bottom *7' 3"* thickness of plates *17/32"* description of joint *welded* if rings are fitted *—*
 Greatest length between rings *—* working pressure of furnace by the rules *160 lbs.* combustion chamber plating, thickness, sides *1/2"* back *17/32"* top *9/16"*
 Pitch of stays to ditto, sides *7' x 7"* back *7 1/4' x 7 1/2'* top *7 1/4' x 7'* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating *—*
 rules *157 lbs.* Diameter of stays at smallest part *1 1/4"* working pressure of ditto by rules *187 lbs.* end plates in steam space, thickness *13/16"*
 Pitch of stays to ditto *14" x 16"* how stays are secured *Nuts + doublers* working pressure by rules *162 lbs.* diameter of stays at smallest part *2 1/2"* working pressure by rules *197 lbs.* Front plates at bottom, thickness *3/4"* Back plates, thickness *3/4"*
 Greatest pitch of stays *7 1/4"* working pressure by rules *—* Diameter of tubes *3 1/2"* pitch of tubes *4 3/4"* thickness of tube plates, front *13/16"* back *3/4"* how stayed *tubes* pitch of stays *9 1/2' x 9 1/2'* width of water spaces *6" to 9"*
 Diameter of Superheater or Steam chest *—* length *—* thickness of plates *—* description of longitudinal joint *—* diam. of rivet holes *—*
 Pitch of rivets *—* working pressure of shell by rules *—* diameter of flue *—* thickness of plates *—* If stiffened with rings *—*
 Distance between rings *—* working pressure by rules *—* end plates of superheater, or steam chest; thickness *—* how stayed *—*
 Superheater or steam chest; how connected to boiler *—*

State if Report is also sent on the Hull of the ship

Form 200-3 19-T Copyable Ink.

Pumps' Patent covering select Description of furnaces

DONKEY BOILER— Description *Vertical Multitubular (Meredith's patent)*
Made at *Stockton* by whom made *Riley Bros.* when made *1889* where fixed *Stockton*
Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *1956* fire grate area *17 1/2* description of safety
valves *d. spring* No. of safety valves *one* area of each *7"* if fitted with easing gear *yes* if steam from main boilers can
enter the donkey boiler *no* diameter of donkey boiler *6'-0"* length *12'-6"* description of riveting *d-riv lap*
Thickness of shell plates *13/32* diameter of rivet holes *13/16* whether punched or drilled *punch* pitch of rivets *2 1/2* lap of plating *4 1/4*
per centage of strength of joint *71%* thickness of crown plates *13/32* stayed by *hemispherical*
Diameter of furnace, top *4'-2"* bottom *5'-2"* length of furnace *2'-3"* thickness of plates *9/16* description of joint *single riv. lap*
Thickness of furnace crown plates *1/2* stayed by *hemispherical* working pressure of shell by rules *80 lbs*
Working pressure of furnace by rules *—* diameter of uptake *—* thickness of plates *—* thickness of water tubes *—*

SPARE GEAR. State the articles supplied:— *Top and bottom end bolts. Main beam
and coupling bolts. Feed and bilge pump valves
Bolts, nuts and iron assorted*

The foregoing is a correct description,

[Signature] Manufacturer.

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

*The above mentioned
engines and boilers have been built under
special survey and are now completed
in a satisfactory manner. The machinery is
now in our opinion eligible to the notation
of: L.M.C. 12.89.*

*It is submitted that this vessel is
eligible to have + L.M.C. 12.89 recorded
W.D.
1-1-90*

The amount of Entry Fee £ *2* : - : received by me,

Special £ *24* : - : -

Donkey Boiler Fee £ - : - : -

Certificate (if required) £ - : - : - *24/12/1889*

To be sent as per margin.

(Travelling Expenses, if any, £ - : - : -)

Committee's Minute

TUES 21 JAN 1890

+ L.M.C. 12/89

[Signature] *A. Stewart*
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Glasgow Lloyd's Register
Foundation