

REPORT ON MACHINERY.

No. 13398

Port of *Glasgow*

MON. 7 JAN 1895

No. in Survey held at *Glasgow*

Date, first Survey *6th February* Last Survey *27th Dec^r 1894*

Reg. Book.

on the

S. S. "Arundel Castle"

(Number of Visits *59*)

Tons { Gross *4588*
Net *2849*
When built *1894*.

Master *✓*

Built at *Glasgow*

By whom built *Fairfield S. B. Eng. Co. Ld.*

Engines made at *Glasgow*

By whom made *Fairfield S. B. Eng. Co. Ld.* when made *1894*.

Boilers made at *Glasgow*

By whom made *Fairfield S. B. Eng. Co. Ld.* when made *1894*.

Registered Horse Power *550*

Owners *Castle Mail Packet Co.*

Port belonging to *London*

Nom. Horse Power as per Section 28 *563*.

ENGINES, &c.—

Description of Engines

Triple Expansion

No. of Cylinders

Three

Diameter of Cylinders *30", 49 1/2" & 80"* Length of Stroke *54"* Revolutions per minute *80* Diameter of Screw shaft *as per rule 14.2"*

Diameter of Tunnel shaft *as fitted 14 3/4"* Diameter of Crank shaft journals *15 1/2"* Diameter of Crank pin *16"* Size of Crank webs *built*

Diameter of screw *18" 6"* Pitch of screw *21" 6"* No. of blades *4*. State whether moveable *Yes* Total surface *96 sq. ft.*

No. of Feed pumps *2*. Diameter of ditto *4 1/2"* Stroke *27"* Can one be overhauled while the other is at work *Yes*

No. of Bilge pumps *2*. Diameter of ditto *4 1/2"* Stroke *27"* Can one be overhauled while the other is at work *Yes*

No. of Donkey Engines *2 also* Sizes of Pumps *Ball: 12" x 11 1/2" x 12" Suction size of Suctions connected to both Bilge and Donkey pumps*

In Engine Room *Sanitary pump* *Stoke Hold* *3 1/2" dia* *Feed: 10" x 8 1/2" x 21" H.R.* *In Holds, &c. 13. 3 1/2" dia"*

No. of bilge injections *1*. sizes *6"* Connected to condenser, or to circulating pump *Yes* Is a separate donkey suction fitted in Engine room & size *Yes 8"*

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 *Bilge Suctions* How are they protected *Cased in*

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 *on stocks* Is the screw shaft tunnel watertight *Yes*

Is it fitted with a watertight door *Yes* worked from *upper platform*

BOILERS, &c.—

(Letter for record *(9)*)

Total Heating Surface of Boilers *9870*.

No. and Description of Boilers *Three Mult. Single Ended* Working Pressure *165 lbs* Tested by hydraulic pressure to *330 lbs*

Date of test *24.8.94* each boiler be worked separately *Yes* Area of fire grate in each boiler *94 sq. ft.* and Description of safety valves to

each boiler *2. Spring* Area of each valve *9.6"* Pressure to which they are adjusted *167 lbs.* Are they fitted

with easing gear *Yes* Smallest distance between boilers or uptakes and bunkers or *no side bunk* Mean diameter of boilers *19' 9"*

Length *10' 3"* Material of shell plates *steel* Thickness *1 1/2"* Description of riveting: circum. seams *tri. riv. lap* long. seams *d. butt str.*

Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *10"* Lap of plates or width of butt straps *20 1/2"*

Per centages of strenght of longitudinal joint *96* Working pressure of shell by rules *175 lbs.* Size of manhole in shell *16" x 12"*

Size of compensating ring *Hanged in* No. and Description of Furnaces in each boiler *4. Ribbed* Material *steel* Outside diameter *48 1/8"*

Length of plain part *top 36' 10 1/2" bottom 36' 10 1/2"* Thickness of plates *9 1/16"* Description of longitudinal joint *welded* No. of strengthening rings

Working pressure of furnace by the rules *169 lbs* Combustion chamber plates: Material *steel* Thickness: Sides *9 1/16"* Back *9 1/16"* Top *9 1/16"* Bottom *7 7/8"*

Pitch of stays to ditto: Sides *7 3/4" x 7 1/2"* Back *7 3/8" x 7 1/2"* Top *8" x 7"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *171 lbs.*

Material of stays *steel* Diameter at smallest part *1.31"* Area supported by each stay *56"* Working pressure by rules *165 lbs* End plates in steam space:

Material *steel* Thickness *1 3/16"* Pitch of stays *16 1/2"* How are stays secured *d. nuts* Working pressure by rules *175 lbs* Material of stays *Iron*

Diameter at smallest part *3 3/8"* Area supported by each stay *272 1/4"* Working pressure by rules *174 lbs* Material of Front plates at bottom *steel*

Thickness *13 1/16"* Material of Lower back plate *steel* Thickness *7 7/8"* Greatest pitch of stays *abt. 10 1/8"* Working pressure of plate by rules *165 lbs*

Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *steel* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *10 7/8"*

Pitch across wide water spaces *14 1/4"* Working pressures by rules *167 lbs.* Girders to Chamber tops: Material *Iron* Depth and

thickness of girder at centre *8 1/4" x 1 1/2"* Length as per rule *30"* Distance apart *8"* Number and pitch of Stays in each *3. 7"*

Working pressure by rules *166 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 —

Is 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 —

13398 Gls

DONKEY BOILER— Description

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 _____ 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:— Propeller shaft. Boss & blade. Top and bottom end bolts and brasses. Main bearing and coupling bolts. Feed, bilge & donkey pump valves & seats. Air & Greenl. bucket & rods etc—

THE FAIRFIELD SHIPBUILDING

AND ENGINEERING CO., LIMITED

The foregoing is a correct description,

Manufacturer.

SECRETARY.

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

The above mentioned engines & boilers have been built under special survey and are of good workmanship and material, they have been properly fitted on board and on completion tried under steam with satisfactory results. In my opinion the vessel's machinery is now eligible to the notation: *L.M.C. 12.94.*— in the British Register. —

Appended: Boiler print
3 Reports on Chafing

It is submitted that
this vessel is eligible for
THE RECORD + L.M.C. 12-94

N.A.
7/1/95

Certificate (if required) to be sent to

Glasgow

The amount of Entry Fee.. £ 3 : " : When applied for, 31/12/94
Special £ 48 : 3 :
Donkey Boiler Fee £ " : " :
Travelling Expenses (if any) £ " : " : 9.1.18.95

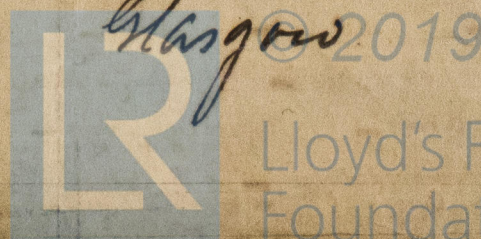
John Sanderford
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

TUES. 3 JAN 1895

Assigned

+ L.M.C. 12.94



Lloyd's Register Foundation