

File 11601 No. 14804

REPORT ON MACHINERY.

Port of *Glasgow*

RECEIVED DEC 1896

Received at London Office

No. in Survey held at *Glasgow*
Reg. Book. *S.S. Ceres*
46. on the

Date, first Survey *14th April* Last Survey *10th October 1896*
(Number of Visits *29*)

Master *J. Allan* Built at *Port Glasgow* By whom built *Russell & Co*
Engines made at *Greenock* By whom made *Kincaid & Co*
Boilers made at *Glasgow* By whom made *Anderson & Lyall*
Registered Horse Power *211* Owners *Ceres S.S. Coy. (Lim^d)*

Tons } Gross *3576*
Net *2316*
When built *1896*
when made *1896*
when made *1896*

Nom. Horse Power as per Section 28 *288*

Is Electric Light fitted *no*

ENGINES, &c.—Description of Engines *Made in Greenock* No. of Cylinders No. of Cranks

Diameter of Cylinders Length of Stroke Revolutions per minute Diameter of Screw shaft as per rule as fitted

Diameter of Tunnel shaft as per rule as fitted Diameter of Crank shaft journals Diameter of Crank pin Size of Crank webs

Diameter of screw Pitch of screw No. of blades State whether moveable Total surface

No. of Feed pumps Diameter of ditto Stroke Can one be overhauled while the other is at work

No. of Bilge pumps Diameter of ditto Stroke Can one be overhauled while the other is at work

No. of Donkey Engines Sizes of Pumps No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room In Holds, &c.

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

Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line

Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate

What pipes are carried through the bunkers How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight

Is it fitted with a watertight door worked from

BOILERS, &c.— (Letter for record *S.*) Total Heating Surface of Boilers *4392 sq ft* Is forced draft fitted *no*

No. and Description of Boilers *two cylindrical return tubular* Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs*

Date of test *16.10.96* Can each boiler be worked separately *no* Area of fire grate in each boiler *41.25* No. and Description of safety valves to each boiler *not ascertained* Area of each valve *no* Pressure to which they are adjusted *no* Are they fitted with easing gear *no* Smallest distance between boilers or uptakes and bunkers or woodwork *no* Mean diameter of boilers *18'6"*

Length *10'-6"* Material of shell plates *Steel* Thickness *1 1/4"* Description of riveting: circum. seams *double rounded lap* longitudinal seams *Double Knutt 5 Knuts*

Diameter of rivet holes in long. seams *17/16"* Pitch of rivets *9"* Lap of plates or width of butt straps *19 3/8"*

Per centages of strength of longitudinal joint rivets *89.2* plate *85.4* Working pressure of shell by rules *164 lbs.* Size of manhole in shell *12 1/2" x 16 1/2"*

Size of compensating ring *6 1/4" x 1 1/4"* No. and Description of Furnaces in each boiler *three ribbed* Material *Steel* Outside diameter *46 1/16"*

Length of plain part top *no* bottom *no* Thickness of plates crown *7/32"* bottom *no* Description of longitudinal joint *weld* No. of strengthening rings *ribs*

Working pressure of furnace by the rules *164 lbs* Combustion chamber plates: Material *Steel* Thickness: Sides *7/8"* Back *9/16"* Top *21/32"* Bottom *5/8"*

Pitch of stays to ditto: Sides *8 1/2"* Back *7 7/8" x 7 3/4"* Top *8 1/2" x 9 1/2"* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *165 lbs*

Material of stays *Steel* Diameter at smallest part *1 1/45 sq in* Area supported by each stay *68 sq in* Working pressure by rules *170 lbs* End plates in steam space: Material *Steel* Thickness *1 1/16"* Pitch of stays *15 1/2" x 12 1/2"* How are stays secured *Double nuts & washers* Working pressure by rules *199 lbs* Material of stays *Steel*

Diameter at smallest part *5.27 sq in* Area supported by each stay *271 sq in* Working pressure by rules *175 lbs* Material of Front plates at bottom *Steel*

Thickness *1 1/16"* Material of Lower back plate *Steel* Thickness *1 1/16"* Greatest pitch of stays *12"* Working pressure of plate by rules *275 lbs*

Diameter of tubes *3 1/2"* Pitch of tubes *4 3/4"* Material of tube plates *Steel* Thickness: Front *13/16"* Back *13/16"* Mean pitch of stays *11'9"*

Pitch across wide water spaces *15"* Working pressures by rules *185, approved* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *8" x 2 3/4"* Length as per rule *28 1/4"* Distance apart *9 1/2"* Number and pitch of Stays in each *2, 8 1/2"*

Working pressure by rules *180 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

DONKEY BOILER— Description *See Middlesbrough Surveyors Report attached.*
 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:—

The foregoing is a correct description, *Anderson & Ryall Govan Glasgow*
 Manufacturer. of main boilers.

Dates of Survey { During progress of work in shops - *Boilers - 1896. April 14, 15, 17, 21, 23, 28, 29, May 1, 4, 12, 18, 19, 22, 26, 27, 29, June 9, 14, 19, 21, 23, August 4, 12, 18, 21, 31, Sept 2, 7, 15, 17, 21, 23, 24, 30, Oct 2, 6, 8, 10, 20,*
 while board vessel - -
 building { Total No. of visits *39.*

General Remarks (State quality of workmanship, opinions as to class, &c. *These boilers have been built under the conditions of special survey of good material & workmanship, they have been satisfactorily tested by hydraulic pressure to 320 lbs per square inch. These boilers have been sent to Greenock where they will be fitted on board. In my opinion these boilers are in a safe working condition for the intended working pressure.*)

Boiler tracing retained here on account of completion of Russell's No 307

The amount of Entry Fee. . . £ : :
 Special £ : :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 18.
 When received, 18.

Committee's Minute
 Assigned

FRI 11 DEC 1896

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



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Certificate (if required) to be sent to
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