

REPORT ON MACHINERY. *Continued.*Port of *Glasgow*Received at London Office **THUR, 12 JAN 1899**No. in Survey held at *Glasgow*Date, first Survey *10 Sept 97*Last Survey *9 Jan 1899*

Reg. Book.

(Number of Visits *74*)on the *Turni screw steamer "Onra"*Tons { Gross *891.75*
Net *4637.74*

Master

Built at *Glasgow*By whom built *Fairfield Shipbuilding Co. Ltd.* When built *1898*Engines made at *Glasgow*By whom made *Fairfield Shipbuilding Co. Ltd.* when made *1898*Boilers made at *Glasgow*By whom made *Fairfield Shipbuilding Co. Ltd.* when made *1898*

Registered Horse Power

Owners

Port belonging to *Glasgow*

Nom. Horse Power as per Section 28

Is Electric Light fitted *Yes*

ENGINES, &c.—Description of Engines

No. of Cylinders

No. of Cranks

Diameter of Cylinders Length of Stroke Revolutions per minute Diameter of Screw shaft as per rule
 Diameter of Tunnel shaft as per rule 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 \$.) Total Heating Surface of Boilers

Is forced draft fitted *Yes*No. and Description of Boilers *Three 24 inch diameter horizontal boilers* Working Pressure *180 lbs.* Tested by hydraulic pressure to *360 lbs.*Date of test *2/16/98* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *702 sq. ft.* No. and Description of safety valves to each boiler *Two Direct Spring*Area of each valve *11.32* Pressure to which they are adjusted *185 lbs.* Are they fitted with easing gear *Yes*Smallest distance between boilers or uptakes and bunkers or woodwork *About 17"* Mean diameter of boilers *16' 10"*Length *44' 0"* Material of shell plates *Steel* Thickness *1 1/4"* Description of riveting: circum. seams *Double Butt Straps* long. seams *Double Butt Straps*Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *10"* Top of plates or width of butt straps *20 1/2"*Per centages of strength of longitudinal joint rivets *88%* Working pressure of shell by rules *206 lbs.* Size of manhole in shell *20" x 16"*Size of compensating ring *Double flange* No. and Description of Furnaces in each boiler *4 inch diameter* Material *Steel* Outside diameter *42"*Length of plain part top *37.9"* bottom *37.9"* Thickness of plates crown *3/4"* bottom *3/4"* Description of longitudinal joint *Welded* No. of strengthening rings *4*Working pressure of furnace by the rules *186 lbs.* Combustion chamber plates: Material *Steel* Thickness: Sides *3/4"* Back *3/4"* Top *3/4"* Bottom *3/4"*Pitch of stays to ditto: Sides *7/8 x 7/8"* Back *7/8 x 7/8"* Top *7/8 x 7/8"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *202 lbs.*Material of stays *Steel* Diameter at smallest part *1 1/4"* Area supported by each stay *54 sq. in.* Working pressure by rules *191 lbs.* End plates in steam space:Material *Steel* Thickness *1 1/4"* Pitch of stays *14 in.* How are stays secured *Double Nut* Working pressure by rules *241 lbs.* Material of stays *Steel*Diameter at smallest part *2 1/4"* Area supported by each stay *211 sq. in.* Working pressure by rules *198 lbs.* Material of Front plates at bottom *Steel*Thickness *3/4"* Material of Lower back plate *Steel* Thickness *5/8"* Greatest pitch of stays *12"* Working pressure of plate by rules *216 lbs.*Diameter of tubes *2 1/2"* Pitch of tubes *3 1/2 x 3 1/2"* Material of tube plates *Steel* Thickness: Front *7/8"* Back *7/8"* Mean pitch of stays *9.6"*Pitch across wide water spaces *10 1/2"* Working pressures by rules *210 lbs.* Girders to Chamber tops: Material *Iron* Depth andthickness of girder at centre *8 x 13"* Length as per rule *29 1/2"* Distance apart *7"* Number and pitch of Stays in each *2 x 7 1/2"*Working pressure by rules *189 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

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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:—*Four Connecting Rod top end Bolts, 2 Connecting Rod bottom end Bolts, 2 Main Bearing Bolts, 1 set Coupling Bolts, 2 Eccentric Shafts, Pulleys & Rods complete, 2 Propeller blades, 1 set Studs nuts & set pins for propeller blades, 2 sets Air pump valves, 8 feed pump valves seats, 8 Self pump valves seats, 2 set Safety valve Springs, 200 Condenser tubes, 50 plain & Roiled tubes, 10 Stay tubes, 1 set valves complete for the main pump, also a large assortment of Bolts, nuts & other spare gear.*
The foregoing is a correct description, _____
Manufacturer. _____

AND ENGINEERING CO., LIMITED

Dates of Survey while building { During progress of work in shops - _____
During erection on board vessel - _____
Total No. of visits _____
SECRETARY, _____

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

ENGINES—Length of stern bush _____ Diameter of crank shaft journals _____ as per rule _____ Diameter of thrust shaft under collars _____ as fitted _____
BOILERS—Range of tensile strength _____ Are they welded or flanged _____ **DONKEY BOILERS**—No. _____ Range of tensile strength _____
Is the approved plan of main boiler forwarded herewith _____ Is the approved plan of donkey boiler forwarded herewith _____

Electric Light Installation: A large number of the lights and fittings have not yet been completed. I am informed that this work will be finished in London. Messrs H. H. Allen & Co are fitting the installation.

Refrigerating Machinery:—The vessel is fitted with two Refrigerating machines on the Harlan System. The fittings of these are practically complete, but no spare gear has yet been supplied.

It is intended to insulate No 2 & 3 Holds. The insulation in No 3 Hold is nearly completed but the air passages have still to be put up. Except the fitting of the "Grounds" nothing has been done to the insulation in No 2 Hold. I am informed this work will be completed in London.

Certificate (if required) to be sent to _____
(The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee. . . £ 3 : . . : When applied for, _____
Special £ 108 : 18 : . . : 30/12/98
Donkey Boiler Fee £ : : : When received, _____
Travelling Expenses (if any) £ : : : 14/1/99

Wm. Austin
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute _____
Assigned _____
FRI 20 JAN 1899

