

REPORT ON MACHINERY.

No. 22609

Port of *Glasgow*

1125. 21 MAR 1905

Received at London Office

10

No. in Survey held at *Glasgow*
Reg. Book.Date, first Survey *11th July 04*Last Survey *11th March 1905*

(Number of Visits)

on the

*SS. Craighall*Tons { Gross
Net

Master

Built at *Glasgow*By whom built *D. W. Henderson*When built *1905*Engines made at *Glasgow*By whom made *D. W. Henderson & Co. Ltd.*when made *1905*Boilers made at *Glasgow*By whom made *D. W. Henderson & Co. Ltd.*when made *1905*

Registered Horse Power

Owners *Biggar & Fulton*Port belonging to *Glasgow*Nom. Horse Power as per Section 28 *368*

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted *yes*

ENGINES, &c.—Description of Engines

*Triple Compound*No. of Cylinders *3*No. of Cranks *Three*Dia. of Cylinders *25, 41, 67*Length of Stroke *48"*Revs. per minute *79*

Dia. of Screw shaft

as per rule *14.12*

Material of

screw shaft *Steel*Is the screw shaft fitted with a continuous liner the whole length of the stern tube *yes*

Is the after end of the liner made water tight

in the propeller boss *yes* If the liner is in more than one length are the joints burned *✓*

If the liner does not fit tightly at the part

between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *✓*

If two

liners are fitted, is the shaft lapped or protected between the liners *✓*Length of stern bush *58 1/2"*

Dia. of Tunnel shaft

as per rule *12.5*

Dia. of Crank shaft journals

as per rule *13.15*Dia. of Crank pin *13 1/2"*Size of Crank webs *8 1/2" x 17 1/2"*

Dia. of thrust shaft under

collars *13 1/2"*Dia. of screw *17' 6"*No. of blades *4*State whether moveable *no*Total surface *94 sq ft*No. of Feed pumps *2*Diameter of ditto *4 1/4"*Stroke *24"*Can one be overhauled while the other is at work *yes*No. of Bilge pumps *2*Diameter of ditto *4 1/4"*Stroke *24"*Can one be overhauled while the other is at work *yes*No. of Donkey Engines *Three*Sizes of Pumps *7 x 4 1/2 x 8, 10 1/2 x 3 1/2 x 6*No. and size of Suctions connected to both Bilge and Donkey pumps *✓*In Engine Room *Three 3 1/2"*In Holds, &c. *Forward four 3 1/2" aft four 3 1/2"*No. of bilge injections *1*size *5 1/2"*Connected to condenser, or to circulating pump *pump*Is a separate donkey suction fitted in Engine room & size *yes 3 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 *no*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*How are they protected *wood casings*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 launch*Is the screw shaft tunnel watertight *yes*Is it fitted with a watertight door *yes*worked from *top platform*

BOILERS, &c.—

(Letter for record)

Total Heating Surface of Boilers *6160 sq ft*Is forced draft fitted *no*No. and Description of Boilers *3 single ended cylindrical*Working Pressure *175 lbs*Tested by hydraulic pressure to *350 lbs*Date of test *17/12/04*Can each boiler be worked separately *yes*Area of fire grate in each boiler *57 3/4 sq ft*

No. and Description of safety valves to

each boiler *1 pair direct opening*Area of each valve *6.49 sq in*Pressure to which they are adjusted *180 lbs*Are they fitted with easing gear *yes*Smallest distance between boilers or uptakes and bunkers or woodwork *18"*Mean dia. of boilers *14' 6"*Length *11' 0"*Material of shell plates *steel*Thickness *1 3/32*Range of tensile strength *28/32*Are they welded or flanged *no*Descrip. of riveting: cir. seams *double lap long, seams triple butt*Diameter of rivet holes in long. seams *1 3/16"*Pitch of rivets *8 1/4"*Lap of plates or width of butt straps *17 3/4"*

Per centages of strength of longitudinal joint

rivets *86.3*plate *85.6*Working pressure of shell by rules *177 lbs*Size of manhole in shell *16 x 12"*Size of compensating ring *30" x 34"*No. and Description of Furnaces in each boiler *3 boxes*Material *steel*Outside diameter *46"*

Length of plain part

top *✓*

Thickness of plates

crown *17*Description of longitudinal joint *welded*No. of strengthening rings *✓*Working pressure of furnace by the rules *192 lbs*Combustion chamber plates: Material *steel*Thickness: Sides *5/8"*Back *39/64"*Top *19/32"*Bottom *7/8"*Pitch of stays to ditto: Sides *8 x 8"*Back *8 1/2 x 8 1/2"*Top *8 x 8 3/4"*If stays are fitted with nuts or riveted heads *nuts*Working pressure by rules *211 1/2 lbs*Material of stays *steel*Diameter at smallest part *1.44*Area supported by each stay *64 sq in*Working pressure by rules *177 lbs*

End plates in steam space:

Material *steel*Thickness *63/64"*Pitch of stays *16 x 16"*How are stays secured *22 x 22*Working pressure by rules *179*Material of stays *steel*Diameter at smallest part *4.72*Area supported by each stay *255 sq in*Working pressure by rules *187 lbs*Material of Front plates at bottom *steel*Thickness *63/64"*Material of Lower back plate *steel*Thickness *25/32"*Greatest pitch of stays *12 1/2"*Working pressure of plate by rules *181 lbs*Diameter of tubes *3 1/4"*Pitch of tubes *4 1/4 x 4 1/2"*Material of tube plates *steel*Thickness: Front *63/64"*Back *5/8"*Mean pitch of stays *8 3/4"*Pitch across wide water spaces *14 1/2"*Working pressures by rules *184, 176*Girders to Chamber tops: Material *steel*

Depth and

thickness of girder at centre *7 3/4 x 11 double*Length as per rule *32*Distance apart *8"*Number and pitch of Stays in each *three 8"*Working pressure by rules *194 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

010341-010404-0657

DONKEY BOILER— No. _____ Description iron

Made at _____ By whom made _____ When made _____ Where fixed _____

Working pressure _____ test/d 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 _____

Dia. of donkey boiler _____ Length _____ Material of shell plates _____ Thickness _____ Range of tensile strength _____

Descrip. of riveting long. seams _____ Dia. 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:— 1 set of top end bolts & nuts, 1 set bottom end bolts & nuts, 2 main bearing bolts & nuts, 1 set of coupling bolts & nuts, 1 set of 2nd pump valves, 1 set of edge pump valves, bolts & nuts of various sizes, also 1 propeller shaft, 1 thrust shaft, 1 (solid) propeller, 1 eccentric strap

The foregoing is a correct description,
DAVID & WILLIAM HENDERSON & CO., LIMITED.

A. J. Henderson Manufacturer.
A. J. Henderson Director.

Dates of Survey while building { During progress of work in shops - 1902 July 11. 26 Aug 1. 16 17 Sep 5. 16 Oct 3. 19 28 Nov 1. 29 11. 15. 18. 21
 { During erection on board vessel - 24. 30 Dec 6 8 15. 17 1905 Jan 9. 12 16 17 27 Feb 1. 10. 21 24 Mar 3 6 7 10 11
 Total No. of visits 27

Is the approved plan of main boiler forwarded herewith yes

" " " donkey " " " iron

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

These engines and boilers have been built under special survey. The materials and workmanship are of good description. They have been well fitted on board and tried under steam.

In my opinion this machinery is eligible to have notation of **LMC 3.05** in the Register Book.

It is submitted that
 this vessel is eligible for
THE RECORD

LMC 3.05 ELEC LIGHT

Ans.
 21. 3. 05

21. 3. 05

The Amount of Entry Fee. £ 3 : : When applied for, 20 MAR 1905
 Special £ 38 : 8 : :
 Donkey Boiler Fee . . . £ : : : When received, 25/10/05
 Travelling Expenses (if any) £ : : : 21. 3. 05

A. McLeod
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute Glasgow 20 MAR 1905

Assigned

LMC 3.05

When fee is paid

ENTRY CERTIFICATE
 DATED 21/3/05



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 Foundation

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