

# REPORT ON MACHINERY.

Port of Glasgow

Received at London Office JAN 13 1903

No. in Survey held at Glasgow

Date, first Survey 15<sup>th</sup> Sept Last Survey 26<sup>th</sup> Dec 1902

(Number of Visits 22)

Book. on the S. TRAWLER

"ELITE."

Tons }  
Gross  
Net

Registered Built at Glasgow By whom built Mackie & Thomson When built 1902

Engines made at Glasgow By whom made Muir & Houston Ltd when made 1902

Boilers made at Glasgow By whom made Muir & Houston Ltd when made 1902

Registered Horse Power ✓

Owners

Port belonging to

Net Horse Power as per Section 28 48 ✓

Is Refrigerating Machinery fitted No.

Is Electric Light fitted No.

ENGINES, &c.—Description of Engines Triple expansion-Screw No. of Cylinders 3 No. of Cranks 3

No. of Cylinders 11, 18, 30 Length of Stroke 22" Revs. per minute 115 Dia. of Screw shaft as per rule 6.91.7 Lgth. of stern bush 32"

No. of Tunnel shaft as per rule 5.86 Dia. of Crank shaft journals as per rule 6.16 Dia. of Crank pin 6 1/2" Size of Crank webs 3 7/8" Dia. of thrust shaft under

Boilers 6 3/4" Dia. of screw 8" 4" Pitch of screw 9" 0" No. of blades 4 State whether moveable no Total surface 27 sq. ft.

No. of Feed pumps 1 Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work ✓

No. of Bilge pumps 1 Diameter of ditto 2 1/2" Stroke 10" Can one be overhauled while the other is at work ✓

No. of Donkey Engines One Sizes of Pumps 6" x 3" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room Two 2" dia. In Holds, &c. One 2" dia.

No. of bilge injections 1 sizes 2 3/4" Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in Engine room & size yes 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 none

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks valves & cocks

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 none How are they protected ✓

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 none

Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.— (Letter for record (S)) Total Heating Surface of Boilers 750 sq. ft. Is forced draft fitted no

No. and Description of Boilers One single ended Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs

Date of test 6/12/02 Can each boiler be worked separately ✓ Area of fire grate in each boiler 24 sq. ft. No. and Description of safety valves to

each boiler 2 Patent Spring Area of each valve 2.4" Pressure to which they are adjusted 205 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 9" Mean dia. of boilers 10-3" Length 9.4" Material of shell plates steel

Thickness 3 1/2" Range of tensile strength 28 to 32 Are they welded or flanged no Descrip. of riveting: cir. seams double long. seams treble

Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 7 1/2" Lap of plates or width of butt straps 17"

Percentages of strength of longitudinal joint rivets 85 Working pressure of shell by rules 203 lbs Size of manhole in shell 16" x 12"

Size of compensating ring the heels No. and Description of Furnaces in each boiler 2 plain Material steel Outside diameter 3' 2"

Length of plain part top 5' 0" bottom 4' 6" Thickness of plates crown 2 1/2" bottom 2 3/32" Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 204 lbs Combustion chamber plates: Material steel Thickness: Sides 7/8" Back 7/8" Top 7/8" Bottom 13/16"

Pitch of stays to ditto: Sides 8" x 8" Back 8" x 8" Top 8" x 7 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 211 lbs

Material of stays steel Diameter at smallest part 2.03" Area supported by each stay 64" Working pressure by rules 254 lbs End plates in steam space:

Material steel Thickness 13/16" Pitch of stays 15" x 15" How are stays secured nuts Working pressure by rules 210 lbs Material of stays steel

Diameter at smallest part 5.56" Area supported by each stay 225" Working pressure by rules 244 lbs Material of Front plates at bottom steel

Thickness 7/8" Material of Lower back plate steel Thickness 13/16" Greatest pitch of stays 12 1/2" x 8" Working pressure of plate by rules 207 lbs

Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 7/8" Back 27/32" Mean pitch of stays 9"

Pitch across wide water spaces 14" Working pressures by rules 258 lbs Girders to Chamber tops: Material steel Depth and

Thickness of girder at centre 8" x 2-1/8" Length as per rule 2' 10" Distance apart 7 1/2" Number and pitch of Stays in each 3-8"

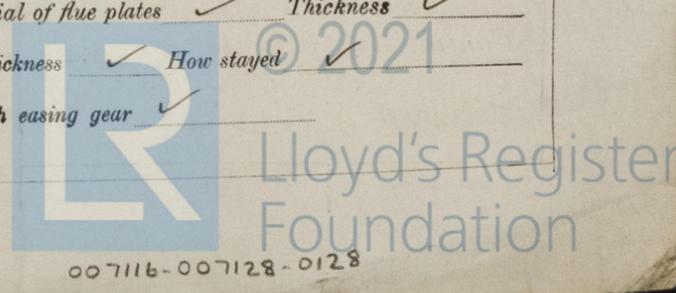
Working pressure by rules 215 lbs Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked

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— No. *None* 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

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:— *Two top end + two bottom end connecting rod bolts, two main bearing bolts, one set of coupling bolts, + one set of feed + bilge pump valves, etc.*

The foregoing is a correct description,

For **Muir & Houston, Limited** Manufacturer. *James Stewart*

Dates of Survey while building: During progress of work in shops— 1902:— Sep 15, 22 Oct 6, 10, 14, 22, 28, 30 Nov 3, 7, 11, 18, 20, 24 Dec 2, 6, 10, 11, 16, 17, 25, 26

Is the approved plan of main boiler forwarded herewith *yes*

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Is the approved plan of main boiler forwarded herewith *yes*

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

Material of screw shaft *iron* 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

The machinery of this vessel has been constructed under Special Survey, the materials + workmanship are of good quality, it has been securely fastened on board + tried under steam, + found satisfactory.  
In my opinion it is eligible to be classed in the Register Book with the record of **+ L.M.C. 12.02.**

It is submitted that this vessel is eligible for THE RECORD. **+ L.M.C. 12.02**

*AM*  
14.1.03

*RL*  
14.1.03

The amount of Entry Fee..	£ 1	:	:	When applied for,
Special .. .. .	£ 87	4	:	12/11 1903
Donkey Boiler Fee .. .. .	£	:	:	When received,
Travelling Expenses (if any) £	:	:	:	31.1.1903

*J.W. Dunmoch*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow*. 12 JAN. 1903  
**+ L.M.C. 12.02**  
*When repaired*

Assigned

MACHINERY CERTIFICATE WRITTEN 14.1.03



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Certificate (if required) to be sent to

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