

# REPORT ON MACHINERY.

9970

No. 9940

Port of Glasgow.

No. in Survey held at  
Reg. Book.

Glasgow.

Date, first Survey 18<sup>th</sup> Sept<sup>r</sup> 1889 Last Survey July 14<sup>th</sup> 1890.

Received at London Office

(Number of Visits 30)

Tons { Gross 1850  
Net 1204  
When built 1890.

Master Rutt

Built at Glasgow.

By whom built Mackie & Thomson.

Engines made at Glasgow.

By whom made Muir & Houston.

when made 1890

Boilers made at Do.

By whom made Do.

when made 1890.

Registered Horse Power 130

Owners Aitken & Walker

Port belonging to Glasgow

## ENGINES, &c.

Description of Engines *Improved Direct Acting Triple Expansion.* No. of Cylinders *Three.*  
Diam. of Cylinders *16, 31, 51* Length of Stroke *39* Rev. per minute *75* Point of Cut off, High Pressure *1/16* Low Pressure *9/16*  
Diameter of Screw shaft *10* Diam. of Tunnel shaft *9 1/2* Diam. of Crank shaft journals *10* Diam. of Crank pin *10* size of Crank webs *Built 11 1/2 x 7 1/2*  
Pitch of screw *13-0* Pitch of screw *15-0* No. of blades *Four* state whether moveable *Solid* total surface *54 sq ft*  
No. of Feed pumps *Two* diameter of ditto *2 3/4* Stroke *19 1/2* Can one be overhauled while the other is at work *yes*  
No. of Bilge pumps *Two* diameter of ditto *3 1/2* Stroke *19 1/2* Can one be overhauled while the other is at work *yes*  
Where do they pump from *Engine Room Holds & Yanks*  
No. of Donkey Engines *Two* Size of Pumps *Feed 7 1/2 hp 4 pump x 6 stroke* Where do they pump from *Both pump from all bilges and tanks, also from the sea - and the Feed donkey pumps from Hotwell & boiler -*  
Are all the bilge suction pipes fitted with roses *yes* Are the roses always accessible *yes* Are the sluices on Engine room bulkheads always accessible *yes*  
No. of bilge injections *One* and sizes *4 1/2 dia* Are they connected to condenser, or to circulating pump *Circulating.*  
How are the pumps worked *By levers from crosshead of Intermediate engine.*  
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 *At level*  
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*  
Are pipes carried through the bunkers *None* How are they protected *✓*  
Are pipes, cocks, valves, and pumps in connection with the machinery accessible at all times *yes*  
Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges *yes*  
When were stern tube, propeller, screw shaft, and all connections examined in dry dock *Before launching*  
Is the screw shaft tunnel watertight *yes* and fitted with a sluice door *yes* worked from *Engine room platform at deck*

## BOILERS, &c.

No. of Boilers *Two* Description *Cylindrical. Multi* Material *Steel.* Letter (for record) *S.*  
Working Pressure *160 lb.* Tested by hydraulic pressure to *320 lb.* Date of test *May 21<sup>st</sup> 1890.*  
Description of superheating apparatus or steam chest *None.*  
Can each boiler be worked separately *yes* Can the superheater be shut off and the boiler worked separately *✓*  
Area of square feet of fire grate surface in each boiler *45* Description of safety valves *Direct springs.* No. to each boiler *Two.*  
Area of each valve *4.9 sq in* Are they fitted with easing gear *yes* No. of safety valves to superheater *✓* area of each valve *✓*  
Are they fitted with easing gear *✓* Smallest distance between boilers and bunkers or woodwork *12"* Diameter of boilers *12-2"*  
Length of boilers *9-6"* description of riveting of shell long. seams *Butt. three rows* circum. seams *Lap. double.* Thickness of shell plates *1 1/16"*  
Diameter of rivet holes *1 1/8"* whether punched or drilled *Drilled* pitch of rivets *7 3/4 x 3 7/8* Lap of plating *17 x 13 butt.*  
Percentage of strength of longitudinal joint *85.5* working pressure of shell by rules *162 lb.* size of manholes in shell *15"*  
No. of compensating rings *Double riveted plate* No. of Furnaces in each boiler *Three* Description of Furnaces *Purvis' patent ribbed.*  
Diameter *37"* length *6-0"* thickness of plates *✓* description of joint *Weld.* if rings are fitted *yes*  
Least length between rings *9"* working pressure of furnace by the rules *186 lb.* combustion chamber plating, thickness, sides *1/2"* back *1/2"* top *1/2"*  
If stays to ditto, sides *7"* back *7"* top *7 x 6 1/2"* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by rules *157 lb.* Diameter of stays at smallest part *1 1/4 in* working pressure of ditto by rules *160 lb.* end plates in steam space, thickness *7/8"*  
Pitch of stays to ditto *13 x 13* how stays are secured *Nuts* working pressure by rules *162 lb.* diameter of stays at smallest part *2 1/4 in* working pressure by rules *162 lb.* Front plates at bottom, thickness *13/16"* Back plates, thickness *13/16"*  
Greatest pitch of stays *11 1/2 x 7* working pressure by rules *160 lb.* Diameter of tubes *3 1/4"* pitch of tubes *4 1/2 x 4 1/2"* thickness of tube plates, front *13/16"* back *13/16"* how stayed *Tubes* pitch of stays *13 x 9* width of water spaces *5 1/2 x 6"*  
Diameter of Superheater or Steam chest *None* length *✓* thickness of plates *✓* description of longitudinal joint *✓* diam. of rivet holes *✓*  
Pitch of rivets *✓* working pressure of shell by rules *✓* diameter of flue *✓* thickness of plates *✓* If stiffened with rings *✓*  
Distance between rings *✓* working pressure by rules *✓* end plates of superheater, or steam chest; thickness *✓* how stayed *✓*  
Superheater or steam chest; how connected to boiler *✓*



9970 g/s.

**DONKEY BOILER—** Description *No donkey boiler*  
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 \_\_\_\_\_ if fitted with easing gear \_\_\_\_\_ if steam from main boilers can  
enter the donkey boiler \_\_\_\_\_ diameter of donkey boiler \_\_\_\_\_ length \_\_\_\_\_ description of riveting \_\_\_\_\_  
Thickness of shell plates \_\_\_\_\_ diameter of rivet holes \_\_\_\_\_ whether punched or drilled \_\_\_\_\_ pitch of rivets \_\_\_\_\_ lap of plating \_\_\_\_\_  
per centage of strength of joint \_\_\_\_\_ thickness of crown plates \_\_\_\_\_ stayed by \_\_\_\_\_  
Diameter of furnace, top \_\_\_\_\_ bottom \_\_\_\_\_ length of furnace \_\_\_\_\_ thickness of 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 plates \_\_\_\_\_ thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *connecting top & bottom end bolts & nuts - two main bearing  
bolts - One set of coupling bolts - Feed & bilge pump valves - Assorted bolts, nuts, irons &*

The foregoing is a correct description,  
*Wm. Houston* Manufacturer.

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

*These engines & boilers have been constructed under  
special survey - they are of good material & workmanship - they have  
been well fitted on board - satisfactorily tested under steam and I am  
of opinion they are eligible to be classed + L. M. C. 7-90 in the  
Register Book.*

*Appended hereto are two Reports on Fittings -*

*It is submitted that  
this vessel is eligible to  
have + LMC 7.90 recorded*

*J. L. M.  
H. L. J.  
16. 7. 90*

*Machinery Certificate  
Written.*

The amount of Entry Fee . . . £ 2 : - : - received by me,

Special . . . £ 19 : 10 : -

Donkey Boiler Fee . . . £ - : - : -

Certificate (if required) . . . £ - : - : - 15/4 1890

To be sent as per margin.

(Travelling Expenses, if any, £ \_\_\_\_\_)

Committee's Minute

FRI 18 JULY 1890

*+ LMC 7/90*

*Walter & Robson.*  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



Lloyd's Register  
Foundation