

## REPORT ON MACHINERY.

No. 23109

Port of Glasgow

Received at London Office

1100 21 SEP 1905

No. in Survey held at  
Reg. Book.Glasgow

Date, first Survey

6<sup>th</sup> Dec<sup>r</sup> 04

Last Survey

7<sup>th</sup> Sep. 1905.

on the

S.S. "GUARDSMAN."

(Number of Visits)

Gross  
Tons

Net

Master

Built at

Ayr

By whom built

When built

1905

Engines made at

Glasgow

By whom made

J. Ritchie

when made

1905.

Boilers made at

Glasgow

By whom made

Barclay Curle & Co.

when made

1905.

Registered Horse Power

Owners

Port belonging to

Hull

Nom. Horse Power as per Section 28

59

Is Refrigerating Machinery fitted for cargo purposes

No.

Is Electric Light fitted

No.

## ENGINES, &amp;c. Description of Engines

Compound - Screw

No. of Cylinders

2

No. of Cranks

2

Dia. of Cylinders

15" & 32"

Length of Stroke

24"

Revs. per minute

130

Dia. of Screw shaft

7.25"

Material of

steel

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

no

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

no

Length of stern bush

2' 6"

Dia. of Tunnel shaft

6.43"

Dia. of Crank shaft journals

6.75"

Dia. of Crank pin

7"

Size of Crank webs

5th

Dia. of thrust shaft under

collars

collars

7"

Dia. of screw

7.9"

Pitch of screw

9.6

No. of blades

4

State whether moveable

no

Total surface

25 sq. ft.

No. of Feed pumps

1

Diameter of ditto

3"

Stroke

12"

Can one be overhauled while the other is at work

✓

No. of Bilge pumps

1

Diameter of ditto

3"

Stroke

12"

Can one be overhauled while the other is at work

✓

No. of Donkey Engines

One

Sizes of Pumps

6" x 4" x 6"

No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room

Two 2" dia.

In Holds, &amp;c.

One 2" dia. in forward &after compartments

No. of bilge injections

1

sizes

2 1/2"

Connected to condenser, or to circulating pump

pump

a separate donkey suction fitted in Engine room &amp; 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

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

main steam

How are they protected

iron tube

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

✓

Is it fitted with a watertight door

✓

worked from

✓

## BOILERS, &amp;c.—

(Letter for record

(S)

Total Heating Surface of Boilers

1136 sq. ft.

Is forced draft fitted

no

No. and Description of Boilers

One single ended.

Working Pressure

130 lbs

Tested by hydraulic pressure to

260 lbs.

Date of test

7.4.05

Can each boiler be worked separately

✓

Area of fire grate in each boiler

34.8 sq. ft.

No. and Description of safety valves to

each boiler

each boiler

2 Safety Spring

Area of each valve

9.6"

Pressure to which they are adjusted

135 lbs

Are they fitted with easing gear

yes

Smallest distance between boilers or uptakes and bunkers or woodwork

24"

Mean dia. of boilers

11.0"

Length

10.0"

Material of shell plates

steel

Thickness

3/4"

Range of tensile strength

28.5-32

Are they welded or flanged

no

Descrip. of riveting: cir. seams

double

long. seams

double

Diameter of rivet holes in long. seams

15/16"

Pitch of rivets

4 7/8"

Lap of plates

10 1/4"

width of butt straps

10 1/4"

Per centages of strength of longitudinal joint

84

Working pressure of shell by rules

135 lbs

Size of manhole in shell

16" x 12"

Size of compensating ring

28 1/2" x 24 1/2" x 7/8"

No. and Description of Furnaces in each boiler

2 plain

Material

steel

Outside diameter

39 1/2"

Length of plain part

7.5"

Thickness of plates

3/4"

Description of longitudinal joint

welded

No. of strengthening rings

none

Working pressure of furnace by the rules

134 lbs

Combustion chamber plates: Material

steel

Thickness: Sides

9/16"

Back

9/16"

Top

9/16"

Bottom

23/32"

Pitch of stays to ditto: Sides

9" x 8"

Back

7 3/4" x 8"

Top

9" x 8"

If stays are fitted with nuts or riveted heads

nuts

Working pressure by rules

150 lbs

Material of stays

steel

Diameter at smallest part

1.19"

Area supported by each stay

72 sq. in.

Working pressure by rules

132 lbs

End plates in steam space:

Material

steel

Thickness

7/8"

Pitch of stays

15 1/2"

How are stays secured

nuts

Working pressure by rules

143 lbs

Material of stays

steel

Area

3.76

Area supported by each stay

240 sq. in.

Working pressure by rules

148 lbs

Material of Front plates at bottom

steel

Thickness

1/16"

Material of Lower back plate

steel

Thickness

5/8"

Greatest pitch of stays

14"

Working pressure of plate by rules

170 lbs

Diameter of tubes

3 1/4"

Pitch of tubes

4 1/2"

Material of tube plates

steel

Thickness: Front

1/16"

Back

1/16"

Mean pitch of stays

11"

Pitch across wide water spaces

14 1/4"

Working pressures by rules

140 lbs

Girders to Chamber tops: Material

steel

Depth and

thickness of girder at centre

2-6 1/2" x 1/16"

Length as per rule

26 1/4"

Distance apart

8"

Number and pitch of Stays in each

2-9"

Working pressure by rules

150 lbs

Superheater or Steam chest; how connected to boiler

none

Can the superheater be shut off and the boiler worked

separately

✓

Diameter

✓

**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,  
*Jas Ritchie* Manufacturer.

Dates of Survey while building  
 During progress of work in shops— 1905: Dec. 6, 20, 29, 1905: Jan. 18, 20, Feb. 12, Mar. 9, 14, Apr. 5, 7, 20, 26, 29, May 28, 11, 12, 17.  
 During erection on board vessel— 18, 23, 25, 29, 31, June 2, 6, 9, 10, 18, 22, 26, 29, July 11, Aug. 9, 14, 22, 24, 29, Sep 7.  
 Total No. of visits— 28.

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

**General Remarks** (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been constructed under Special Survey, the materials & workmanship are of good quality, it has been securely fitted on board tried under steam & found to be satisfactory.*

*In our opinion it is eligible to be classed in the Register Book with the record of. L.M.C. 9.05.*

**It is submitted that this vessel is eligible for THE RECORD L.M.C. 9.05**

*J.S.*  
 21.9.05  
*Paul*  
 21.9.05

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. £ : :  
 Special . . . . £ 8 : :  
 Donkey Boiler Fee . . . . £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 20 SEP 1905  
 When received, 20 SEP 1905

*J.W. Dimmock & H. Laidman-Smith*  
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Glasgow* 20 SEP 1905  
 Assigned *+ L.M.C. 9.05*

MACHINERY CERTIFICATE  
 WRITTEN 21.9.05