

# REPORT ON MACHINERY.

Port of MIDDLESBROUGH-ON-TEES.

FRI. 28 MAY 1897

Received at London Office

Survey held at Stokton & Middlesbro' Date, first Survey 10<sup>th</sup> Dec<sup>r</sup> 1896 Last Survey 24<sup>th</sup> May 1897

(Number of Visits 18)

the

S. S. "Garnet."

Tons { Gross 356.  
Net 226.

Built at Belfast

By whom built Harland & Wolff

When built 1870.

Greenock

By whom made

Greenock Foundry Coy

when made 1870.

Stockton

By whom made

Riley Brothers

when made 1897.

Power 70.

Owners

Mathew & Luff

Port belonging to London.

as per Section 28

Is Electric Light fitted —

Description of Engines Compound No. of Cylinders 2. No. of Cranks 2.

Length of Stroke 24" Diameter of Screw shaft 6.43

Revolutions per minute 6 1/2 Diameter of Crank shaft journals 6 1/2 Diameter of Crank pin 6 1/2 Size of Crank webs

Pitch of screw No. of blades State whether moveable Total surface

Diameter of ditto Stroke Can one be overhauled while the other is at work

Diameter of ditto Stroke Can one be overhauled while the other is at work

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

In Holds, &c.

Connected to condenser, or to circulating pump Is a separate donkey suction fitted in Engine room & size

Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible

Are they Valves or Cocks

Are the discharge pipes above or below the deep water line

Are the blow off cocks fitted with a spigot and brass covering plate

How are they protected

Are the valves and pumps in connection with the machinery and all boiler mountings accessible at all times

Are the pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

Is the screw shaft tunnel watertight

worked from

(Letter for record 0 (5)) Total Heating Surface of Boilers 712.7 Is forced draft fitted No

Working Pressure 100 lbs Tested by hydraulic pressure to 200 lbs

Can each boiler be worked separately Yes Area of fire grate in each boiler 18 No. and Description of safety valves to

Area of each valve old valves Pressure to which they are adjusted 90 lbs Are they fitted

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-6" Mean diameter of boilers 9'-6"

Material of shell plates Steel Thickness 19/32 Description of riveting: circum. seams d.r. lap long. seams d. butt str.

Pitch of rivets 4" Lap of plates or width of butt straps 10"

Working pressure of shell by rules 107 lbs Size of manhole in shell 12" x 16"

No. and Description of Furnaces in each boiler 1. plain Material Steel Outside diameter 46"

Thickness of plates 3 9/16 Description of longitudinal joint welded No. of strengthening rings —

Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 1/2 Top 1/2 Bottom 5/8

If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 120 lbs

Diameter at smallest part 1 1/8 supported by each stay 62" Working pressure by rules 94 lbs End plates in steam space:

Pitch of stays 14 3/4 x 14 1/2 How are stays secured d. nuts Working pressure by rules 103 lbs Material of stays iron

Area supported by each stay 2138 Working pressure by rules 210 lbs Material of Front plates at bottom Steel

Greatest pitch of stays 9" Working pressure of plate by rules 200 lbs

Pitch of tubes 4 5/8 Material of tube plates Steel Thickness: Front 1/16 Back 3/4 Mean pitch of stays 13 1/4

Working pressures by rules 104 lbs Girders to Chamber tops: Material Steel Depth and

Distance apart 7 1/4 Number and pitch of Stays in each 2. 7 1/2

Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked

Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet

Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness

Working pressure by rules — End plates: Thickness — How stayed

Area of safety valves to superheater — Are they fitted with casing gear



**NO 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:—

The foregoing is a correct description,

*Griley Bros.* Manufacturer. *J. Main Boilers*

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

*See him list*

General Remarks (State quality of workmanship, opinions as to class, &c. *The old boilers have been taken*

*out of the vessel and new ones of the description given on other side have been fitted. These boilers were built under Special Survey and are of good workmanship & material. They have been properly fitted and secured on board the vessel and on completion tried under steam and safety valves adjusted to 90 lbs per square inch, this being the pressure the shafting is good for.*

*The Engines were all opened up and there were examined: Cylinders, pistons, rods, slides and valve gear. Crank and tunnel shafting. Condenser partly retubed and afterwards tested. Oil, feed, bilge and Circulating pumps overhauled and examined and a new donkey pump fitted with direct suction from engine bilge. -*

*On account of damage the vessel was placed in dry dock and the tail shaft recommended to be drawn. On examination found same in good order. Wood renewed in stern bush. Universal joint on shaft as well as the raise and lowering of the propeller, with which the vessel fitted, overhauled and adjusted. - All sea connections examined and found in good order. -*

*The machinery is now in good working order and in our opinion eligible to the following notations: L.M.C. 5.*

*H.N.B. 5.17.*

The amount of Entry Fee. . . £ : : When applied for. 24. 5. 97  
 Special Damage. £ 2 : 2 : 5. 4. 18. 4  
 Donkey Boiler Fee (2). . . £ 4 : 4 : 24. 5. 97  
 Travelling Expenses (if any) £ : : 22. 4. 18. 4

*J. M. Sanderson & Sidney Towell*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. 4 JUN 1897

Assigned

*L.M.C. 5.97*  
*+ H.N.B. 5.97*

*note on limit*

It is submitted that this vessel is eligible for THE RECORD. L.M.C. 5,977 & H.N.B. 5,97

and the vessel's name expunged from the limit list

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*1/6/97*

Certificate (if required) to be sent to

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