

## REPORT ON MACHINERY.

Gls. No. 15345.

Leith 8565

SAT. 27 NOV. 1897

Port of Glasgow.

Received at London Office 18

No. in Survey held at Glasgow & Grangemouth. Date, first Survey 5th July Last Survey 19th Nov 1897  
 Reg. Book. on the Screw Steamer "Humber" (Number of Visits 21)  
 Master W. Salgado Built at Grangemouth By whom built Grangemouth Dock Co. When built 1894  
 Engines made at Glasgow By whom made Walker, Henderson & Co. when made 1894  
 Boilers made at Glasgow By whom made A. Macdonald & Co. when made 1894  
 Registered Horse Power 35 Owners The Humber Coasting Co. (Limited) Port belonging to Hull  
 Nom. Horse Power as per Section 28 41 Is Electric Light fitted no

ENGINES, &c.—Description of Engines Compound.No. of Cylinders Two No. of Cranks Two

Diameter of Cylinders 14" - 29" Length of Stroke 21" Revolutions per minute 120 Diameter of Screw shaft as per rule 5 3/4"  
 Diameter of Tunnel shaft as fitted 5 1/2" Diameter of Crank shaft journals 5 3/4" Diameter of Crank pin 5 3/4" Size of Crank webs 3 3/8" x 8 1/4"  
 Diameter of screw 3 3/8" Pitch of screw 10 1/6" No. of blades 4 State whether moveable no Total surface 2 1/2 sq. ft.  
 No. of Feed pumps one Diameter of ditto 2 1/4" Stroke 10 1/2" Can one be overhauled while the other is at work ✓  
 No. of Bilge pumps one Diameter of ditto 2 1/4" Stroke 10 1/2" Can one be overhauled while the other is at work ✓  
 No. of Donkey Engines one Sizes of Pumps 4 1/2" x 2 1/4" x 4" Duplex No. and size of Suctions connected to both Bilge and Donkey pumps  
 In Engine Room Two come to main pump only all 2" dt. In Hold, &c. one 2" dt.

No. of bilge injections 1 sizes 2 1/2" Connected to condenser, or to circulating pump yes 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 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 suction to fore hold How are they protected Wood casing  
 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 new vessel Is the screw shaft tunnel watertight none  
 Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.— (Letter for record \$) Total Heating Surface of Boilers 758 sq. ft. Is forced draft fitted no.

No. and Description of Boilers One: bylo-hull: Single End Working Pressure 120 lbs. Tested by hydraulic pressure to 240 lbs.  
 Date of test 14/9/94 Can each boiler be worked separately ✓ Area of fire grate in each boiler 27 sq. ft. No. and Description of safety valves to  
 each boiler Two: Direct Spring Area of each valve 4.9" Pressure to which they are adjusted 120 lbs. Are they fitted  
 with easing gear yes Smallest distance between boilers or uptakes and bunkers or woodwork 6" Mean diameter of boilers 9' 6"  
 Length 9' 0" Material of shell plates Steel Thickness 7/16" Description of riveting: circum. seams Lap double long. seams D.B.S. Free  
 Diameter of rivet holes in long. seams 7/16" Pitch of rivets 4' 8" Lap of plates or width of butt straps 12"  
 Per centages of strength of longitudinal joint 81 Working pressure of shell by rules 126 lbs. Size of manhole in shell 16" x 12"  
 Size of compensating ring 6 1/2" x 1 1/16" No. and Description of Furnaces in each boiler 2: plain Material Steel Outside diameter 34 9/16"  
 Length of plain part top 5' 9" Thickness of plates bottom 7/16" Description of longitudinal joint Welded No. of strengthening rings partial at bottom  
 Working pressure of furnace by the rules 130 lbs. Combustion chamber plates: Material Steel Thickness: Sides 1/2" Back 1/2" Top 1/2" Bottom 1/2"  
 Pitch of stays to ditto: Sides 8' x 8' Back 8' x 8' Top 8' x 4' If stays are fitted with nuts or riveted heads nuts Working pressure by rules 120 lbs.  
 Material of stays Steel Diameter at smallest part 1 1/4" Area supported by each stay 64" Working pressure by rules 154 lbs. End plates in steam space:  
 Material Steel Thickness 7/16" Pitch of stays 13 1/2" x 13 1/2" How are stays secured all nuts Working pressure by rules 175 lbs. Material of stays Steel  
 Diameter at smallest part 1 1/4" Area supported by each stay 182" Working pressure by rules 120 lbs. Material of Front plates at bottom Steel  
 Thickness 5/8" Material of Lower back plate Steel Thickness 5/8" Greatest pitch of stays 13" Working pressure of plate by rules 180 lbs.  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 5/8" Back 5/8" Mean pitch of stays 10' 6"  
 Pitch across wide water spaces 14 1/2" Working pressures by rules 140 lbs. 125 lbs. Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 6" x 1 1/4" Length as per rule 24" Distance apart 7" Number and pitch of Stays in each 2: 8"  
 Working pressure by rules 124 lbs. Superheater or Steam chest; now 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 ✓

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Foundation

LTH566-0240



## DONKEY BOILER— Description

Made at Stockton By whom made Riley Bros. When made 1897 Where fixed Stockholm  
 Working pressure 80 lbs tested by hydraulic pressure to 160 lbs No. of Certificate 1572 Fire grate area 84 sq Description of safety valves Spring  
 No. of safety valves 1 Area of each 7.6 sq Pressure to which they are adjusted 80 lbs If fitted with easing gear yes If steam from m/n boilers can enter the donkey boiler no 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:— As per Rule

The foregoing is a correct description,

Manufacturer.

Walker, Henderson & Co.

Dates of Survey { During progress of work in shops— 1894 July 5, 6. August 5, 12, 16, 14, 20, 23, 23, Sept. 2, 6, 8, 14, 20, 29. Oct. 20.  
 { During erection on board vessel— 1897 Oct. 8, 29. Nov. 8, 16, 19.  
 building { Total No. of visits 21

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

The Engines and Boiler of this vessel have been built under special survey and the materials and workmanship are good. When completed they were steamed under full steam and worked satisfactorily.

The Machinery is now in good and efficient condition and reliable in our opinion to have the record of L. M. C. 11, 97. marked in the Society's Register Book.

It is submitted that  
 this vessel is eligible for  
 THE RECORD. + L. M. C. 11, 97

LL.  
29/11/97

The amount of Entry Fee. £ 1 : - : When applied for,  
 Special 5 : 6 : 8 24 hours 97  
 Deficit £ 2 : 13 : 4  
 Donkey Boiler Fee £ : : When received,  
 Travelling Expenses (if any) £ 1 : 4 : 6 24 hours 97

Committee's Minute

Assigned

TUES. 30 NOV 1897

+ L. M. C. 11, 97

Wm. R. Austin & Thomas Field  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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