

## REPORT ON MACHINERY.

Port of WEST HARTLEPOOL

WED. 27 OCT 1897

No. in Survey held at West Hartlepool Date, first Survey July 26<sup>th</sup> Last Survey 1<sup>st</sup> Oct. 1897  
 Reg. Book. 594 on the Iron S.S. "Ryhope" (Unclassed) (Number of Visits 24)  
 Master E. Fair - 96 Built at Sunderland By whom built J. Loring  
 Engines made at Newcastle By whom made Hallsend Slipway Co. when made 1881  
 Boilers made at West Hartlepool By whom made Central Marine Eng. Works when made 1894  
 Registered Horse Power \_\_\_\_\_ Owners H. Gory & Son (Lim) Port belonging to London  
 Nom. Horse Power as per Section 28 \_\_\_\_\_ Is Electric Light fitted No.

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

Diameter of Cylinders		Length of Stroke	Revolutions per minute	No. of Cylinders	No. of Cranks
Diameter of Tunnel shaft as per rule	Diameter of Crank shaft journals	Diameter of Crank pin	Diameter of Screw shaft as per rule		
Diameter of screw	Pitch of screw	No. of blades	State whether moveable	Total surface	
No. of Feed pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work		
No. of Bilge pumps	Diameter of ditto	Stroke	Can one be overhauled while the other is at work		
No. of Donkey Engines	Sizes of Pumps	No. and size of Suctions connected to both Bilge and Donkey pumps			
In Engine Room		In Holds, &c.			
No. of bilge injections	sizes	Connected to condenser, or to circulating pump	Is a separate donkey suction fitted in Engine room & size		
Are all the bilge suction pipes fitted with roses	Are the roses in Engine room always accessible	Are the sluices on Engine room bulkheads always accessible			
Are all connections with the sea direct on the skin of the ship	Are they Valves or Cocks				
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates	Are the discharge pipes above or below the deep water line				
Are they each fitted with a discharge valve always accessible on the plating of the vessel	Are the blow off cocks fitted with a spigot and brass covering plate				
What pipes are carried through the bunkers	How are they protected				
Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times					
Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges					
When were stern tube, propeller, screw shaft, and all connections examined in dry dock	Is the screw shaft tunnel watertight				
Is it fitted with a watertight door	worked from				

## BOILERS, &amp;c.—

(Letter for record B) Total Heating Surface of Boilers 1445 sq. ft. Is forced draft fitted No

No. and Description of Boilers One single ended, byl. Mult. Working Pressure 120 lbs. Tested by hydraulic pressure to 240 lbs.  
 Date of test 1. 10. 97 Can each boiler be worked separately \_\_\_\_\_ Area of fire grate in each boiler 42.5 sq. ft. No. and Description of safety valves to each boiler Two Spring direct. Area of each valve 8.29 sq. in. Pressure to which they are adjusted \_\_\_\_\_ Are they fitted with easing gear \_\_\_\_\_  
 Length 10' - 6" Material of shell plates steel Thickness 13/16" Description of riveting: circum. seams no cir. seams long. seams treble  
 Diameter of rivet holes in long. seams 7/8" Pitch of rivets 6 1/2" Lap of plates or width of butt straps 13 3/8"  
 Per centages of strength of longitudinal joint \_\_\_\_\_ Working pressure of shell by rules 121.9 lbs. Size of manhole in end 16" x 12"  
 Size of compensating ring flanges No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 39"  
 Length of plain part top 7' 2 3/4" Thickness of plates crown 5/8" Description of longitudinal joint double butt straps No. of strengthening rings \_\_\_\_\_  
 Working pressure of furnace by the rules 123.4 lbs. Combustion chamber plates: Material steel Thickness: Sides 17/32" Back 17/32" Top 17/32" Bottom 5/8"  
 Pitch of stays to ditto: Sides 8 1/2" Back 8 1/2" Top 9 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 120.4 lbs.  
 Material of stays steel Diameter at smallest part 1.25" Area supported by each stay 72 sq. in. Working pressure by rules 135.9 lbs. End plates in steam space: \_\_\_\_\_  
 Material steel Thickness 15/16" Pitch of stays 19" x 16" How are stays secured double nuts Working pressure by rules 124.6 lbs. Material of stays steel  
 Diameter at smallest part 2.25" Area supported by each stay 304 sq. in. Working pressure by rules 121.6 lbs. Material of Front plates at bottom steel  
 Thickness 13/16" Material of Lower back plate steel Thickness 15/16" Greatest pitch of stays 16" Working pressure of plate by rules 121.2 lbs.  
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" x 4 1/2" Material of tube plates steel Thickness: Front 13/16" Back 5/8" Mean pitch of stays 9"  
 Pitch across wide water spaces 14 1/4" Working pressures by rules E. 124. 13. 12 lbs. Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7" x 1 1/4" Length as per rule 24" Distance apart 8 1/2" Number and pitch of Stays in each one  
 Working pressure by rules 124. lbs. Superheater or Steam chest; how connected to boiler \_\_\_\_\_ 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— 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,

FOR THE CENTRAL MARINE ENGINE WORKS.  
(H. Gray & Co. Ltd.)

Manufacturers of Main Boiler. Thomas Mudd.

Dates of Survey while building } During progress of work in shops - - } 1897. July 26. 28. August 6. 20. 27. 30. Sept. 7. 8. 9. 10. 11. 13. 14. 15. 16. 17. 20. 21. 22. 23. 25. 30.  
} During erection on board vessel - - } Oct. 1.  
} Total No. of visits } 24.

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

The Main Boiler of this vessel has been constructed under Special Survey, material and workmanship good, the ultimate tensile strength of shell does not exceed 30 tons per sq. in., was afterwards tested under 240 lbs. hydraulic pressure and found tight, and is now, in my opinion, eligible to have the notation of H.B. 97 in black marked in the Register Book; when the work in connection with fitting this boiler on board the vessel has been completed.

The boiler has been sent to Messrs. S. P. Austin & Son (Lim). Sunderland.

This Boiler appears to have been constructed under special survey but as it does not appear to be intended for a classed vessel, it is submitted that no further action need be taken.

The Sunderland Surveyors should be requested to inform this office when the boiler has been fitted on board the vessel in order that the record H.B. 97 in black may be made in the Reg Book.

The amount of Entry Fee. . . £ : : When applied for,  
Special . . . . . £ 5 : 18 : 26. 10. 18. 97.  
Donkey Boiler Fee . . . . £ : : 11. 11. 97.  
Travelling Expenses (if any) £ : : 18. 97.

W. Smith  
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

(Assigned

Not for Class! Committee  
See so. 22. 2. 11. 97 (Unclassed)



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Foundation