

# REPORT ON MACHINERY.

8234

No. 8234 Port of West Hartlepool Received at London Office WED 19 NOV 1890  
 No. in Survey held at West Hartlepool Date, first Survey 20<sup>th</sup> March Last Survey 7<sup>th</sup> November 1890  
 Reg. Book. West Hartlepool (Number of Visits 48)  
 on the Screw Steamer Ipsden Tons { Gross 1747.78  
 Master F Mullar Built at W. Hartlepool By whom built Messrs W Gray & Son Net 1120.36  
 Engines made at West Hartlepool By whom made Central Marine Eng Works (Hartlepool) When built 1890  
 Boilers made at " By whom made " when made 1890  
 Registered Horse Power 150 Owners John Wood & Co Port belonging to W Hartlepool

## ENGINES, &c.—

Description of Engines Triple Expansion, Inverted, Direct Acting, 3 Cranks No. of Cylinders 3  
 No. of Cylinders 19 - 30 1/2 - 51 Length of Stroke 36" Rev. per minute 65 Point of Cut off, High Pressure 55 Low Pressure 55  
 Diameter of Screw shaft 9 1/2" Diam. of Tunnel shaft 9" Diam. of Crank shaft journals 9 1/2" Diam. of Crank pin 9 1/2" size of Crank webs 12 1/2 x 5 3/4"  
 Diameter of screw 13 - 9" Pitch of screw Differential No. of blades 4 state whether moveable No total surface 56 1/2 sq ft  
 No. of Feed pumps 2 diameter of ditto 2 1/2" Stroke 24" Can one be overhauled while the other is at work Yes  
 No. of Bilge pumps 2 diameter of ditto 3" Stroke 24" Can one be overhauled while the other is at work Yes  
 Where do they pump from Engine Room (P.S.C), Lunnell and After Peak  
 No. of Donkey Engines 2 Size of Pumps Feed - 5 dia x 3 1/2 Stroke duplex Ballast - 8 dia x 8 Stroke Where do they pump from Feed - Sea, Hotwell  
Ballast, All Tanks, Sea and Bilges  
 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 2 and sizes 5" dia Are they connected to condenser, or to circulating pump One to circulating Pump  
 How are the pumps worked Levers from After Crosshead  
 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 None How are they protected ✓  
 Are all 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 28<sup>th</sup> October 1890  
 Is the screw shaft tunnel watertight Yes and fitted with a sluice door Yes worked from Upper Platform

## BOILERS, &c.—

No. of Boilers Two Description 6 ft<sup>2</sup> Mult, Single Ended Material Steel (Tubes of Iron Letter for record)  
 Working Pressure 150 lbs Tested by hydraulic pressure to 300 lbs Date of test "  
 Description of superheating apparatus or steam chest None (Total Heating Surface in Two Boilers 2160 sq ft)  
 Can each boiler be worked separately Yes Can the superheater be shut off and the boiler worked separately ✓  
 No. of square feet of fire grate surface in each boiler 30 Description of safety valves Spring Loaded No. to each boiler 2  
 Area of each valve 7.07 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 15" Diameter of boilers 11 - 6"  
 Length of boilers 10 - 0" description of riveting of shell long. seams A.B.S. Triple Rivet circum. seams Shell end welded Lap Rivet Thickness of shell plates 5/16"  
 Diameter of rivet holes 7/16" whether punched or drilled Drilled pitch of rivets Lap 6 1/4" Circ 5 1/2" Lap of plating A.B.S. 5/16" Circ 9/16"  
 Percentage of strength of longitudinal joint 85.1% working pressure of shell by rules 150.4 lbs size of manholes in shell 16 x 12"  
 Size of compensating rings 2 - 4" x 2 - 8" x 7/8" No. of Furnaces in each boiler Two Description of Furnaces Brown's patent Ritted  
 Outside diameter 3 - 1 1/2" length 7 - 3 3/16" thickness of plates 1/2" description of joint Welded if rings are fitted No  
 Greatest length between rings " working pressure of furnace by the rules 160.4 lbs combustion chamber plating, thickness, sides 7/8" back 7/8" top 7/8"  
 Pitch of stays to ditto, sides 8 1/8" x 8 1/4" back 8 1/4" x 8 1/8" top 8 1/4" x 8 1/8" Are stays fitted with nuts or riveted heads Nuts working pressure of plating by rules 152.3 lbs  
 Diameter of stays at smallest part 1.58" working pressure of ditto by rules 152.3 lbs end plates in steam space, thickness 5/16"  
 No. of stays to ditto 14 1/4" x 14 1/4" how stays are secured Double Nuts working pressure by rules 155.42 lbs diameter of stays at smallest part 2.16"  
 working pressure by rules 168.6 lbs Front plates at bottom, thickness 3/4" Back plates, thickness 7/8"  
 Latest pitch of stays 12 1/2" working pressure by rules 150.5 Diameter of tubes 3 1/4" pitch of tubes 4 1/2" x 4 1/2" thickness of tube plates, front 5/16" back 3/32"  
 how stayed Stay tubes pitch of stays 9" x 9" width of water spaces 6"  
 Diameter of Superheater or Steam chest " 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 "



DONKEY BOILER— Description *Cyl<sup>d</sup>, Vertical with 4 Water Cross Tubes*  
Made at *West Hartlepool* by whom made *W. Gray & Co* when made *2.10.90* where fixed *Stokehole*  
Working pressure *80 lbs* tested by hydraulic pressure to *160 lbs* No. of Certificate *2148* fire grate area *—* description of safety  
valves *Spring Loaded* No. of safety valves *One* area of each *11.40* if fitted with easing gear *Yes* if steam from main boilers can  
enter the donkey boiler *No* diameter of donkey boiler *6-6"* length *13-6"* description of riveting *Double Rivet Lap*  
Thickness of shell plates *7/16"* diameter of rivet holes *3/16"* whether punched or drilled *punched* pitch of rivets *2 1/16"* lap of plating *4 1/2"*  
percentage of strength of joint *66.6%* thickness of crown plates *7/16"* stayed by *Six Stays 2"* Effective Diameter  
Diameter of furnace, top *4-8"* bottom *5-8"* length of furnace *6-0"* thickness of plates *7/8"* description of joint *Single Rivet*  
Thickness of furnace crown plates *7/8"* stayed by *Same as Shell Crown* working pressure of shell by rules *80*  
Working pressure of furnace by rules *80 lbs* diameter of uptake *15"* thickness of plates *3/8"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *The Propellor, One set Connecting Rod for*  
*(Top & Bottom Ends), One set Main Bearing Bolts, One set Coupling Bol*  
*One set H.P. Piston Springs, One set Feed & Bilge Pump Valves,*  
*6 Bars Iron (assorted), Bolts & Nuts (assorted)*

The foregoing is a correct description,

FOR THE CENTRAL MARINE ENGINE WORKS,  
(22, Gray's Alley, S.W.)

Manufacturers of Main Engines, Mote's.

Thomas Mudd

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

The Main Steam pipes have been tested by hydraulic pressure  
to 300 lbs per square inch and found tight and sound  
The Engines and Boilers of this Vessel have been  
Constructed under Special Survey, and of a good  
Quality of Workmanship, they have been tried under  
Steam, the safety Valves adjusted and found to  
work well, and, are now in safe and efficient  
working Condition, and eligible, in my opinion to  
have + L.M.C. 11.90 recorded in the Register of  
this Society.

Freeboard Certificate  
Written.

It is submitted that this Vessel is  
eligible to have + L.M.C. 11.90 recorded

Machinery Certificate  
Written.

Machinery Certificate  
Written.

20.11.90

The amount of Entry Fee ... £ 2 : 0 : 0 received by me,

Special ... £ 22 : 10 : 0

Donkey Boiler Fee ... £ 2 : 2 :

Certificate (if required) ... £ : : 18.11.90

To be sent as per margin.

(Travelling Expenses, if any, £ )

Committee's Minute

FRI 21 NOV 1890

+ L.M.C. 11/90

HPL 363/124

A. E. TAYLOR & SON, STEAM PRINTERS, 18 OLD STREET, SPINNEY ROAD, LONDON, E.C.1.



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