

REPORT ON MACHINERY.

8713. Port of *West Hartlepool* Received at London Office **THURS. 4 FEB 1892**
 No. in Survey held at *West Hartlepool* Date, first Survey *23 September 1891* Last Survey *22 January 1892*
 eg. Book. on the *Screw Steamer* *Mount Stewart* (Number of Visits *33*)
 Master *James Blyth* Built at *West Hartlepool* By whom built *W Gray & Co (Lim)* Tons { Gross *438.4*
 Engines made at *West Hartlepool* By whom made *The Central Marine & Works* when made *1892*
 Makers made at *West Hartlepool* By whom made *The Central Marine & Works* when made *1892*
 Registered Horse Power *120* Owners *Marquis of Londonderry* Port belonging to *Sunderland*
 " " *126* Managers *J. J. Pitchford*

GINES, &c.—
 Description of Engines *Triple Exp. Inverted, Direct Acting, Surface Condensing* No. of Cylinders *3 (3 Cranks)*
 diam. of Cylinders *18 - 28 1/2 - 47 1/2* Length of Stroke *33* Rev. per minute *65* Point of Cut off, High Pressure *5.5* Low Pressure *5.5*
 diameter of Screw shaft *9* Diam. of Tunnel shaft *8 1/2* Diam. of Crank shaft journals *9* Diam. of Crank pin *9* size of Crank webs *12 1/2 x 5 1/2*
 diameter of screw *11 - 0* Pitch of screw *Differential* No. of blades *4* state whether moveable *No* total surface *45 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 *Fore & Main Holds, Engine Room Tunnel, Fore & Aft Peaks & Sea.*
 No. of Donkey Engines *2* Size of Pumps *Red - 2 1/2 dia x 4 Stroke duplex* Where do they pump from *Red - Sea, Hotwell, Tanks & Bilges*
 Ballast *Sea, Tanks and Bilges. (Separate Bilge Suction)*
 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 *One* and sizes *4" dia* Are they connected to condenser, or to circulating pump *to bilge pump*
 How are the pumps worked *by 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 *14th January 1892*
 Is the screw shaft tunnel watertight *Yes* and fitted with a sluice door *Yes* worked from *Upper platform*

BOILERS, &c.—
 No. of Boilers *One* Description *Mult. cyl. Single Ended* Material *Steel (Lubes. Iron)* Letter (for record) *S*
 Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs* Date of test *14.11.91* No *2253*
 Description of superheating apparatus or steam chest *None. (Total Heating Surface 1850 sq ft)*
 Can each boiler be worked separately *✓* Can the superheater be shut off and the boiler worked separately *✓*
 No. of square feet of fire grate surface in each boiler *42* Description of safety valves *Spring direct* No. to each boiler *2*
 Area of each valve *8.29* 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 *on woodwork about 16"* Diameter of boilers *14 - 9"*
 Length of boilers *10 - 0"* description of riveting of shell long. seams *TBS Treble* circum. seams *centre lap treble* Thickness of shell plates *15/16"*
 Diameter of rivet holes *1 1/16" & 1 3/8"* whether punched or drilled *Drilled* pitch of rivets *Long 8 1/2" by 5 1/2"* Lap of plating *TBS 19/8" lap 9 1/2"*
 Percentage of strength of longitudinal joint *84.55%* working pressure of shell by rules *162.6 lbs* size of manholes in *END 16" x 12"*
 No. of compensating rings *24 x 24 x 7/8"* No. of Furnaces in each boiler *3* Description of Furnaces *Brown's patent Ribbed*
 Inside diameter *43 1/2"* length *6 - 4"* 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 *160.0* combustion chamber plating, thickness, sides *19/32* back *19/32* top *19/32*
 Pitch of stays to ditto, sides *8 5/8"* back *8 1/2" x 8 1/4"* top *8 1/2"* If stays are fitted with nuts or riveted heads *Nuts* working pressure of plating by
 rules *163.7* Diameter of stays at smallest part *1.3837* working pressure of ditto by rules *166.6* end plates in steam space, thickness *1"*
 Pitch of stays to ditto *16 1/16" x 16 1/16"* how stays are secured *Double Nuts* working pressure by rules *160.9 lbs* diameter of stays at
 smallest part *2.5367* working pressure by rules *163.3 lbs* Front plates at bottom, thickness *3/4"* Back plates, thickness *7/8"*
 Greatest pitch of stays *12 1/2"* working pressure by rules *169.0* Diameter of tubes *3 1/4" ex* pitch of tubes *4 1/2" x 4 1/2"* thickness of tube
 plates, front *15/16"* back *7/8"* how stayed *stay tubes* pitch of stays *9 x 9"* width of water spaces *5"*
 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 *Steel. Vertical cylindrical with 3 cross tubes*
Made at *West Hartlepool* by whom made *W Gray & Co (Linn)* when made *18.11.91* where fixed *Stokehole*
Working pressure *75 lbs* tested by hydraulic pressure to *150 lbs* No. of Certificate *2254* fire grate area *✓* description of safety
valves *Spring direct* No. of safety valves *One* area of each *7.66* if fitted with easing gear *Yes* if steam from main boilers can
enter the donkey boiler *No* diameter of donkey boiler *5'-6"* length *10'-0"* description of riveting *double riv lap*
Thickness of shell plates *3/8"* diameter of rivet holes *3/4"* whether punched or drilled *punched* pitch of rivets *2 3/4"* lap of plating *4 1/2"*
per centage of strength of joint *72.7%* thickness of crown plates *1/6"* stayed by *6 stays 1 1/2" dia*
Diameter of furnace, top *4-1* bottom *4-9* length of furnace *4-6* thickness of plates *1/2"* description of joint *single riv lap*
Thickness of furnace crown plates *1/2"* stayed by *same as shell crown* working pressure of shell by rules *82*
Working pressure of furnace by rules *75 lbs* diameter of uptake *14"* thickness of plates *3/8"* thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *One set Main Bearing Bolts & Nuts, One*
set Connecting Rod top end Bolts & Nuts, One set Connecting
Rod bott end Bolts & Nuts, One set Coupling Bolts & Nuts, One
set Piston Springs, One set Feed & Bilge pump Valves, Bolts & Nuts assorted
6 Bar. Iron assort
The foregoing is a correct description,
FOR THE CENTRAL MARINE ENGINE WORKS, Manufacturers of Main Engines & Boilers. *Thomas Mudd*
(W. Gray & Co. Ltd.)

General Remarks (State quality of workmanship, opinions as to class, &c. *The Main Steam Pipes*
have been tested by hydraulic pressure to 320 lbs
per sq inch & found tight
The Engines & Boilers of this Vessel have been
constructed under special survey, of a good
quality of workmanship, they have been tried
under steam, safety valves adjusted, and found
to work well and are now in my opinion
eligible to have L.M.C. 1.92 *Recorded in the*
Register of this Society.

It is submitted that
this vessel is eligible for
THE RECORD *+ L.M.C. 1.92*
Cert. 4.2.92

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

.. .. £ 18 : 18 : 0

Donkey Boiler Fee £ 2 : 2 :

Certificate (if required) .. £ : yes: 3.2.18 92

To be sent as per margin.

(Travelling Expenses, if any, £)

Committee's Minute

TUES. 9 FEB 1892

+ L.M.C. 1.92

Thomas R. Blackie
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping