

REPORT ON MACHINERY.

WED. 5 JUL 1893

Port of *West Hartlepool*

Received at London Office

No. in Survey held at *West Hartlepool* Date, first Survey *22nd Sept. 1892* Last Survey *23rd June 1893*
 Reg. Book. *113* on the *Screw Steamer* " **ADJUTANT** " (Number of Visits *52*)

Tons { Gross *2392.29*
 Net *1531.65*

Master Built at *West Hartlepool* By whom built *W Gray & Co (Linn)* When built *1893*
 Engines made at *West Hartlepool* By whom made *The Central Marine Eng Works when made 1893*
 Boilers made at *West Hartlepool* By whom made *The Central Marine Eng Works when made 1893*
 Registered Horse Power *240* Owners *General Steam Navigation Co* Port belonging to *London*
 Nom. Horse Power as per Section 28 *225*

ENGINES, &c.— Description of Engines *Triple Exp, Direct Act, Inverted, Surface Con-g* No. of Cylinders *3 (3 cranks)*
 Diameter of Cylinders *22"-35"-59"* Length of Stroke *39"* Revolutions per minute *65* Diameter of Screw shaft *as per rule 10.38*
 Diameter of Tunnel shaft *as per rule 9.86* Diameter of Crank shaft journals *10 3/4"* Diameter of Crank pin *10 3/4"* Size of Crank webs *15 1/8" x 6 3/4"*
 Diameter of screw *15'-0"* Pitch of screw *Differential* No. of blades *4* State whether moveable *No* Total surface *67 1/2*
 No. of Feed pumps *2* Diameter of ditto *3"* Stroke *26"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *2* Diameter of ditto *3 1/2"* Stroke *26"* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *2* Sizes of Pumps *FEED - 3 1/2" DIA 5" STROKE (duplex)* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *Five. 3 (3), (1) 2 3/4", (1) 5"* In Holds, &c. *Four (2) 2 3/4", Main (2) 2 3/4", Ht (2) 2 3/4"*
 Ht Peak *(1) 2 1/4", Tunnel (2) 2 1/4"*
 No. of bilge injections *One size 5" dia* Connected *to condenser* to circulating pump *Yes* Is a separate donkey suction fitted in Engine room & size *Yes. 5" dia*
 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 *Yes*
 Are all connections with the sea direct on the skin of the ship *Yes except main injection on short neck* 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 *Below*
 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 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 *Yes*
 Is it fitted with a watertight door *Yes* worked from *upper platform*

BOILERS, &c.— (Letter for record *(S)*) Total Heating Surface of Boilers *3500 sq ft*
 No. and Description of Boilers *2 Lye, Mult, Single Ended* Working Pressure *160 lbs* Tested by hydraulic pressure to *320 lbs*
 Date of test *30.1.93* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *38 sq ft* No. and Description of safety valves to
 each boiler *2 Spring direct* Area of each valve *7.07* Pressure to which they are adjusted *160 lbs* Are they fitted
 with easing gear *Yes* Smallest distance between boilers *15"* and bunkers *about 15"* Mean diameter of boilers *14'-0"*
 Length *10'-0"* Material of shell plates *Steel* Thickness *1 1/8"* Description of riveting: circum. seams *center lap, treble* long. seams *1 BS treble*
 Diameter of rivet holes in long. seams *1 1/8"* Pitch of rivets *7 3/8"* Lap of plates *8"* width of butt straps *9 1/2" and 16 3/8"*
 Per centages of strength of longitudinal joint *86.1* Working pressure of shell by rules *162.3 lbs* Size of manhole in *END 16" x 12"*
 Size of compensating ring *26" x 24" x 7/8"* No. and Description of Furnaces in each boiler *3 Ribbed* Material *Steel* Outside diameter *39"*
 Length of plain part *top 4" bottom 8"* Thickness of plates *crown 1 1/2" bottom 1 3/4"* Description of longitudinal joint *Welded* No. of strengthening *8*
 Working pressure of furnace by the rules *163.5* Combustion chamber plates: Material *Steel* Thickness: Sides *1 9/32"* Back *1 9/32"* Top *1 9/32"* Bottom *7/8"*
 Pitch of stays to ditto: Sides *8 3/8" x 8 1/2"* Back *8 3/8" x 8 1/2"* Top *8 1/2"* If stays are fitted with nuts or riveted heads *Nuts* Working pressure by rules *163.7*
 Material of stays *Steel* Diameter at smallest part *1.3854* Area supported by each stay *73.31* Working pressure by rules *161.3* End plates in steam space:
 Material *Steel* Thickness *1 1/8"* Pitch of stays *8 3/4" x 16 1/4"* How are stays secured *double nuts & riv washers* Working pressure by rules *161.2* Material of stays *Steel*
 Diameter at smallest part *2.78* Area supported by each stay *30.4* Working pressure by rules *164.3* Material of Front plates at bottom *Steel*
 Thickness *3/4"* Material of Lower back plate *Steel* Thickness *1"* Greatest pitch of stays *13 1/2"* Working pressure of plate by rules *189.6*
 Diameter of tubes *3 1/4"* Pitch of tubes *4 1/2" x 4 1/2"* Material of tube plates *Steel* Thickness: Front *1 5/16"* Back *7/8"* Mean pitch of stays *9" x 9"*
 Pitch across wide water spaces *1 1/4"* Working pressures by rules *166.2-172.8* Girders to Chamber tops: Material *Steel* Depth and
 thickness of girder at centre *8.2 plates 7/8"* Length as per rule *24"* Distance apart *8 1/2"* Number and pitch of Stays in each *One. 8 5/8"*
 Working pressure by rules *168.3* 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 *✓*

HPL 370-0084

DONKEY BOILER— Description *Steel, cyl, vertical with 6 cross tubes*
 Made at *West Hartlepool* By whom made *W Gray & Co (Lim)* When made *25.4.93* Where fixed *Stokehole*
 Working pressure *80 lb* tested by hydraulic pressure to *160 lb* No. of Certificate *2359* Fire grate area *20 sq ft* Description of safety valves *Spring direct*
 No. of safety valves *One* Area of each *11.79* Pressure to which they are adjusted *160 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Diameter of donkey boiler *6'-0"* Length *14'-0"* Material of shell plates *Steel* Thickness *13/32"*
 Description of riveting long. seams *double riv lap* Diameter of rivet holes *13/16"* Whether punched or drilled *annealed* Pitch of rivets *2 3/4"*
 Lap of plating *4 1/2"* Per centage of strength of joint *79.0* Rivets *70.4* Thickness of shell crown plates *1/2"* Radius of do. *8'-6"* No. of Stays to do. *7*
 Dia. of stays. *2 3/8"* Diameter of furnace Top *4'-6"* Bottom *5'-4"* Length of furnace *5'-0"* Thickness of furnace plates *19/32"* Description of joint *double riv lap* Thickness of furnace crown plates *17/32"* Stayed by *7 stays 2 3/8" dia* Working pressure of shell by rules *81 lb*
 Working pressure of furnace by rules *88 lb* Diameter of uptake *15"* Thickness of uptake plates *3/8"* Thickness of water tubes *3/8"*

SPARE GEAR. State the articles supplied:— *The propeller, The set Main Bearing Rods and Nuts, The set Connecting Rod Bolts Nuts (top & bottom), One set Coupling Bolts Nuts, One set Feed & Bilge pump valves, One set Piston Springs, Bolts & Nuts assorted, Iron assorted.*

The foregoing is a correct description,

FOR THE CENTRAL MARINE ENGINE WORKS,

(W. Gray & Co. Ltd.)

Manufacturers of Main Engines, Boilers and. *Thomas M*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Main Steam Pipes have been tested by hydraulic pressure to 320 lb per sq. inch & found tight.*

The Machinery of this vessel has 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 a safe working condition & eligible in my opinion to have L.M.C. 6.93. Recorded in the Register of this Society.

The photo. prints of the main & donkey boilers accompany this Report.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 6.93 -

Robt 5/7/93-

Certificate (if required) to be sent to

The amount of Entry Fee..	£ 2 : 0 :	When applied for,
Special	£ 31 : 5 :	4.7.93
Donkey Boiler Fee	£ 2 : 2 :	When received,
Travelling Expenses (if any) £	:	4.7.93

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

Committee's Minute

FR 7 JUL 1893

Assigned

+ L.M.C. 6.93



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