

REPORT ON MACHINERY.

Port of *West Hartlepool*Received at London Office **THURS. 31 MAR 1892**No. in Survey held at *West Hartlepool*Date, first Survey *14th Nov. 1891* Last Survey *25th March 1892*

Reg. Book.

(Number of Visits *17*)on the *Steamer "Eastry"*Tons { Gross *2997.72*
Net *1924.27*When built *1892*Master *L. W. Wattleley* Built at *Hartlepool* By whom built *Messrs. Furness, Withy & Co.*Engines made at *Hartlepool* By whom made *Messrs. S. Richardson & Sons* when made *1892*Boilers made at *Hartlepool* By whom made *Messrs. S. Richardson & Sons* when made *1892*Registered Horse Power *260* Owners *Liverwright, Bacon & Co.* Port belonging to *West Hartlepool*Nom. Horse Power as per Section 28 *257*

ENGINES, &c.— Description of Engines *Triple Expansion, Inverted, 3 Cylinders* No. of Cylinders *3*

Diameter of Cylinders *23, 37, 61* Length of Stroke *42* Revolutions per minute *55* Diameter of Screw shaft *as per rule 11.08*
as fitted 11.4

Diameter of Tunnel shaft *as per rule 10.5* Diameter of Crank shaft journals *11 3/4* Diameter of Crank pin *11 3/4* Size of Crank webs *17 x 7 3/4*
as fitted 11.4

Diameter of screw *17.0* Pitch of screw *17.0* No. of blades *4* State whether moveable *no* Total surface *79.8 sq. ft.*

No. of Feed pumps *2* Diameter of ditto *2 3/4* Stroke *26* Can one be overhauled while the other is at work *yes.*

No. of Bilge pumps *2* Diameter of ditto *3 3/4* Stroke *26* Can one be overhauled while the other is at work *yes.*

No. of Donkey Engines *2* Sizes of Pumps *(8 1/2 x 7) (6 x 6)* No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room *4* Two *4 1/2* dia. Two *2 1/2* dia. In Holds, &c. *9* Two *2 1/2* dia. For hold. Two *2 1/2* dia. Main hold. Two *2 1/2* dia. After hold. Two *2 1/2* dia. Aftermost hold. One *2 1/2* dia. after well.

No. of bilge injections *no* sizes *4 1/2* Connected to condenser, or to circulating pump *no* Is a separate donkey suction fitted in Engine room & size *yes 1 1/2* 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* 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 *before launch in dry dock 13th Feb. 1892* Is the screw shaft tunnel watertight *yes*

Is it fitted with a watertight door *yes* worked from *Top platform of engine room*

BOILERS, &c.— (Letter for record *(S)*) Total Heating Surface of Boilers *4113 sq. ft.*

and Description of Boilers *Two. Cylindrical built. Single Ended* Working Pressure *165 lb.* Tested by hydraulic pressure to *330 lb.*

No. of test *9.2.92* Can each boiler be worked separately *yes* Area of fire grate in each boiler *42.5 sq. ft.* No. and Description of safety valves to boiler *Two, Spring*

Area of each valve *7.07* Pressure to which they are adjusted *170 lb.* Are they fitted easing gear *yes* Smallest distance between boilers or uptakes and bunkers *or woodwork 22"* Mean diameter of boilers *14.9"*

Material of shell plates *Steel* Thickness *1 3/8"* Description of riveting: circum. seams *double lap* long. seams *double butt straps*

Diameter of rivet holes in long. seams *1 1/4"* Pitch of rivets *1 row 8 1/2", 2 rows 4 1/4"* Lap of plates *or width of butt straps 11"*

Percentages of strength of longitudinal joint *86%* Working pressure of shell by rules *167 lb.* Size of manhole in shell *none*

No. of compensating ring *3* No. and Description of Furnaces in each boiler *3, horizontal patent* Material *steel* Outside diameter *3.6 1/4"*

Thickness of plain part *top 3" bottom 2 1/2"* Thickness of plates *96* "Description of longitudinal joint *welded* No. of strengthening rings *none*

Working pressure of furnace by the rules *165 lb.* Combustion chamber plates: Material *steel* Thickness: Sides *3/2"* Back *3/2"* Top *3/2"* Bottom *3/8"*

No. of stays to ditto: Sides *8 1/2 x 8 1/4* Back *8 1/2 x 7 1/8* Top *8 1/2 x 8* If stays are fitted with nuts or riveted heads *nuts* Working pressure by rules *168 lb.*

Material of stays *steel* Diameter at smallest part *1 3/8"* Area supported by each stay *70.1 sq. in.* Working pressure by rules *169 lb.* End plates in steam space: Material *steel* Thickness *1 3/2"* Pitch of stays *18 x 17* How are stays secured *double nuts* Working pressure by rules *175 lb.* Material of stays *steel*

Diameter at smallest part *2 3/4"* Area supported by each stay *306 sq. in.* Working pressure by rules *174 lb.* Material of Front plates at bottom *steel*

Material of Lower back plate *steel* Thickness *3/2"* Greatest pitch of stays *12"* Working pressure of plate by rules *170 lb.*

Diameter of tubes *3 1/2"* Pitch of tubes *4 3/4 x 4 3/4* Material of tube plates *steel* Thickness: Front *3/2"* Back *1/6"* Mean pitch of stays *9 1/2 x 9 1/2"*

Working pressures by rules *171 lb.* Girders to Chamber tops: Material *steel* Depth and ss of girder at centre *7"* Length as per rule *26"* Distance apart *8 1/2"* Number and pitch of Stays in each *2, 8 pitch*

Working pressure by rules *208 lb.* Superheater or Steam chest; how connected to boiler *none* Can the superheater be shut off and the boiler worked *yes*

Diameter — Length — Thickness of shell plates — Material — Description of longitudinal joint — Diam. of rivet — Pitch of rivets — Working pressure of shell by rules — Diameter of flue — Material of flue plates — Thickness —

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 *Vertical, Cylindrical, 6 Water tubes (Steel)*
 Made at *Stockton* By whom made *Messrs. J. Hudson & Co.* When made *6.2.92* Where fixed *In stokehold*
 Working pressure *80lb.* tested by hydraulic pressure to *160lb.* No. of Certificate *398* Fire grate area *28sq. ft.* Description of safety valves *Spring*
 No. of safety valves *One* Area of each *12.5* Pressure to which they are adjusted *85lb.* If fitted with easing gear *yes* If steam from main boilers can enter the donkey boiler *no* Diameter of donkey boiler *7.0"* Length *15.0"* Material of shell plates *Steel* Thickness *1/4"*
 Description of riveting long. seams *Double lap* Diameter of rivet holes *1 3/16"* Whether punched or drilled *punched* Pitch of rivets *2 3/4"*
 Lap of plating *4 1/4"* Per centage of strength of joint *68.3* Rivets *68.3* Thickness of shell crown plates *7/16"* Radius of do. *5.9"* No. of stays to do. *7*
 Dia. of stays *1 3/4"* Diameter of furnace Top *5.4 1/2"* Bottom *6.2"* Length of furnace *6.3'* Thickness of furnace plates *3/32"* Description of joint *single lap* Thickness of furnace crown plates *5/8"* Stayed by *7 stays, 1 1/4" dia* Working pressure of shell by rules *81lb.*
 Working pressure of furnace by rules *83lb.* Diameter of uptake *14"* Thickness of uptake plates *7/16"* Thickness of water tubes *3/8"* as reported by H. H. Bell

SPARE GEAR. State the articles supplied:— *One propeller, a set of bolts & nuts for a connected, main bearing, & shaft coupling, 2 sets of piston springs, a set of valves for an air pump, a feed, bilge, & circulating pump. Bolts, nuts, and iron, assorted.*

The foregoing is a correct description,

P. PRO T. RICHARDSON & SONS

Manufacturers.

of Engines & main boilers.

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

Tested the main steam pipes by hydraulic pressure to 330lb per square inch and found them tight.

*The engines and boilers of this vessel have been considered under Special Survey, and of a good quality of workmen they have been tried under steam, the safety valves adjusted, and found to work well, and are now in an efficient working condition and, in my opinion, eligible to have **L.R.C. 3.92** recorded in the Register of this Society.*

The photo. print of the main boilers accompanies this Report

It is submitted that this vessel is eligible for THE RECORD L.R.C. 3.92

Certificate (if required) to be sent to

The amount of Entry Fee.. £ 2 : 0 : 0
 Special £ 32 : 17 : 6
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 29.3.92
 When received, 30.3.92

A. C. Stoddart
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

FRI 1 APR 1892

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