

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL

SAT. 4 APL 1903

No. in Survey held at *West Hartlepool*Date, first Survey *5th Aug. 1902*

Received at London Office

Last Survey *21st March 1903*

Reg. Book.

(Number of Visits *57*)on the *Iron Screw Steamer "Bidston"*Master *Do* Built at *Londonderry* By whom built *Londonderry Ship Co. Ltd.* Tons Gross *444.13* Net *63.15* When built *1903*Engines made at *West Hartlepool* By whom made *Central Marine Engine Works* When made *1902*Boilers made at *Do* By whom made *Do* when made *1902*

Registered Horse Power

Owners

Port belonging to

Nom. Horse Power, as per Section 28

183 (183)

Is Refrigerating Machinery fitted

No

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines *Triple expansion on four cranks* No. of Cylinders *4* No. of Cranks *4*
 Dia. of Cylinders *15.23.28.28* Length of Stroke *18* Revs. per minute *160* Dia. of Screw shaft *as per rule* as fitted *as approved* Lgth. of stern bush *3.0 1/4*
 Dia. of Tunnel shaft *as per rule* as fitted *6 3/4* Dia. of Crank shaft journals *as per rule* as fitted *4 1/4* Dia. of Crank pin *4 1/4* Size of Crank webs *4 1/2 x 8* Dia. of thrust shaft under collars *4 1/4* Dia. of screw *7.6* Pitch of screw *11.9* *Imperial* No. of blades *3* State whether moveable *No* Total surface *27.55*
 No. of Feed pumps *1 each type* Diameter of ditto *4"* Stroke *8"* Can one be overhauled while the other is at work *Yes*
 No. of Bilge pumps *1 each type* Diameter of ditto *3"* Stroke *6"* Can one be overhauled while the other is at work *Yes*
 No. of Donkey Engines *2* Sizes of Pumps *4 x 6 & 10 x 10* No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room *8-2"* In Holds, &c. *6-2"*

No. of bilge injections *1* sizes *4"* Connected to condenser, or to circulating pump *Pumps* Is a separate donkey suction fitted in Engine room & size *Yes-2"*
 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 *None*
 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 *Both*
 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 *Before launching* Is the screw shaft tunnel watertight *Plated & sealed*
 Is it fitted with a watertight door *Yes* worked from *Upper Deck*

BOILERS, &c.— (Letter for record *(S)*) Total Heating Surface of Boilers *34339* Is forced draft fitted *No*
 No. and Description of Boilers *Two Cylindrical Multitubular type* Working Pressure *170* Tested by hydraulic pressure to *340*
 Date of test *20.10.02* Can each boiler be worked separately *Yes* Area of fire grate in each boiler *529* No. and Description of safety valves *10*
 each boiler *See Spring* Area of each valve *7.04* Pressure to which they are adjusted *170 lbs* Are they fitted with easing gear *Yes*
 Smallest distance between boilers or uptakes and bunkers or woodwork *about 8 ft* Mean dia. of boilers *10.0* Length *16.10 1/2* Material of shell plates *Steel*
 Thickness *3/4* Range of tensile strength *29-32* Are they welded or flanged *No* Descrip. of riveting: cir. seams *Lap & butt* long. seams *Butt & lap*
 Diameter of rivet holes in long. seams *15/16* Pitch of rivets *6 1/2* Lap of plates or width of butt straps *14 3/4*
 Per centages of strength of longitudinal joint rivets *95* plate *85.5* Working pressure of shell by rules *180* Size of manhole in shell *16 x 12*
 Size of compensating ring *Flanged* No. and Description of Furnaces in each boiler *3 Banked* Material *Steel* Outside diameter *3.5 3/4*
 Length of plain part top *6.6* bottom *6.6* Thickness of plates crown *1/2* Description of longitudinal joint *Weld* No. of strengthening rings *4*
 Working pressure of furnace by the rules *180* Combustion chamber plates: Material *Steel* Thickness: Sides *3/16* Back *1/8* Top *5/8* Bottom *3/16*
 Pitch of stays to ditto: Sides *8"* Back *4"* Top *20"* If stays are fitted with nuts or riveted heads *None* Working pressure by rules *170.8*
 Material of stays *Steel* Diameter at smallest part *1.38* Area supported by each stay *64* Working pressure by rules *187* End plates in steam space:
 Material *Steel* Thickness *7/8 & 15/16* Pitch of stays *15 3/4* How are stays secured *By nuts* Working pressure by rules *173* Material of stays *Steel*
 Diameter at smallest part *2.63* Area supported by each stay *248* Working pressure by rules *203* Material of Front plates at bottom *Steel*
 Thickness *3/8* Material of Lower back plate *Steel* Thickness *15/16* Greatest pitch of stays *14"* Working pressure of plate by rules *172*
 Diameter of tubes *3 1/4* Pitch of tubes *4 1/2* Material of tube plates *Steel* Thickness: Front *15/16* Back *15/16* Mean pitch of stays *9"*
 Pitch across wide water spaces *14"* Working pressures by rules *172* Girders to Chamber tops: Material *Steel* Depth and thickness of girder at centre *10 x 1 1/2* Length as per rule *3.4 1/2* Distance apart *2.5* Number and pitch of Stays in each *Two 20"*
 Working pressure by rules *170* Superheater or Steam chest; how connected to boiler *None* 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—

No. Description
 Made at By whom made
 Working pressure tested by hydraulic pressure to No. of Certificate Fire grate area When made Where fixed
 No. of safety valves Area of each Pressure to which they are adjusted Description of safety valves
 enter the donkey boiler Dia. of donkey boiler Length Material of shell plates Thickness Range of tensile strength Descrip. of riveting long seams Dia. 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 Stayed by
 Working pressure of furnace by rules Diameter of uptake Thickness of uptake plates Thickness of water tubes

SPARE GEAR. State the articles supplied:— 2 Propeller Shafts, 2 Stem bushes, 12 Couplings bolts, 4 connecting rod bolts, 4 top end bolts, 2 main bearing bolts, 1 eccentric and strap, 2 pairs of connecting rod straps, 2 sets of valves for air pumps 12 condenser tubes, 20 boiler tubes, nuts, bolts given.
 The foregoing is a correct description,
 J. Williams Manufacturers

Dates During progress of work in shops— 1907. Aug. 5. 15. 26. Sept. 1. 3. 4. 5. 8. 9. 11. 12. 15. 16. 17. 18. 22. 24. 26. 27. Oct. 1. 2. 3. 7. 8. 10. 14. 15. 17. 20. 21. 22. 23. 24. 28. 29. 30. 31. Nov. 1. 5. 11. 14.
 During erection on board vessel— 19. 26. 27. Dec. 1. 2. 4. 9. 15. 17. 16. Jan. 17. 29. Feb. 17. March 14. 20. 21.
 building Total No. of visits 57

Is the approved plan of main boiler forwarded herewith *yes*

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery and boilers have been specially surveyed during construction the material & workmanship good and when efficiently fitted on board the vessel, the engine.

Material of screw shafts Iron Is the screw shaft fitted with a continuous liner the whole length of the stern tube 3 Separate
 Is the after end of the liner made water tight in the propeller boss *yes* If the liner is in more than one length are the joints burned *no*
 If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *no* If two liners are fitted, is the shaft lapped or protected between the liners *no*

tried and the Safety Valves adjusted under steam and set to the working pressure the vessel will be eligible in our opinion to have the Record + LMC 3-03 in the Register Book of the Society.
 The machinery has been shipped to Londonderry to be fitted.

The machinery of this vessel has been securely fitted on board, and on trial under steam, worked satisfactorily. I am of opinion it is eligible to be classed as recommended above.

It is submitted that this vessel is eligible for THE RECORD. + LMC 3-03. ELEC LIGHT.

R. J. Beveridge
 Belfast

yes
 6.4.03
 6.4.03

The amount of Entry Fee. £ 4 : 6 :
 Special £ 18 : 6 :
 Donkey Boiler Fee £ 9 : 3 :

When applied for. 31.12.02
 When received. 19.1.1903

Travelling Expenses (if any) £ 4 : 10 : 1903

Committee's Minute

FRI. 24 APR 1903

Assigned

MACHINERY CERTIFICATE
 WRITTEN.



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