

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL

SAV. 4 APL 1903

No. in Survey held at West Hartlepool Date, first Survey 5th Aug. 1902 Last Survey 21st March 1903
 Reg. Book. on the Iron Screw Steamer "Bidston" (Number of Visits 57)
 Master Built at Londonderry By whom built Londonderry Ship Repair Co 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 No

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 150 Dia. of Screw shaft as per rule as approved
 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 1/2 Size of Crank webs 4 7/8 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 8" - 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 Stitch & Co
 Is it fitted with a watertight door Yes worked from Upper Deck

BOILERS, &c.— (Letter for record (S)) Total Heating Surface of Boilers 3433 sq Is forced draft fitted No
 No. and Description of Boilers Two Cylindrical Multitube Navy 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 52 sq 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 8ft Mean dia. of boilers 10.0 Length 16.10 1/2 Material of shell plates Steel
 Thickness 5/16 Range of tensile strength 29.02 Are they welded or flanged No Descrip. of riveting: cir. seams Lap & butte long. seams Butt & double
 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 Stamped No. and Description of Furnaces in each boiler 3 Banded Material Steel Outside diameter 3.5 3/4
 Length of plain part top 6.6 bottom 6.6 Thickness of plates crown 1/2 bottom 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 5/8 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 Nuts 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 7/8 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 _____ If fitted with easing gear _____ If steam from main boilers can _____

strength _____ Descrip. of riveting long. seams _____ Thickness _____ Range of tensile _____

Lap of plating _____ Per centage of strength of joint _____ Rivets _____ Dia. of rivet holes _____ Whether punched or drilled _____ Pitch of rivets _____

Dia. of stays _____ Diameter of furnace Top _____ Bottom _____ Thickness of shell crown plates _____ Radius of do. _____ No. of Stays to do. _____

joint _____ Thickness of furnace crown plates _____ Stayed by _____ Thickness of furnace plates _____ Description of _____

Working pressure of furnace by rules _____ Diameter of uptake _____ Thickness of uptake plates _____ Working pressure of shell by rules _____ Thickness of water tubes _____

SPARE GEAR. State the articles supplied:— 2 Propeller Shafts, 2 Stem bushes, 12 Coupling 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,
P. Williams Manufacturers

Dates of Survey while building

During progress of work in shops—	1902. Aug. 5, 25, 26, 28, 31, 1. 3, 4, 5, 8, 9, 11, 12, 15, 16, 17, 18, 22, 24, 26, 29, Oct. 1, 2, 3, 7, 8, 10, 14, 15, 17, 20, 21, 22, 23, 24, 28, 29, 30, 31, Nov. 4, 5, 11, 14
During erection on board vessel—	19. 26, 27, Dec. 1, 2, 4, 9, 15, 17, 16, Jan. 19, 29, Feb. 17, March 14, 20, 21
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 due 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
R. J. Beveridge

R. J.
 6.4.03

Certificate (if required) to be sent to W. Warblepool

The amount of Entry Fee. £ 4 : 6 : 3

Special Donkey Boiler Fee £ 18 : 6 : 3

Travelling Expenses (if any) £ 9 : 6 : 3

When applied for. 31.12.02

When received. 19.1.1903

Richard Jones H. Stewart
 Engineer Surveyors to Lloyd's Register of British & Foreign Shipping.

Committee's Minute *Surveyed by Belfort* FRI. 24 APR 1903

Assigned *+ LMC 3-03*
elec light

MACHINERY CERTIFICATE WRITTEN.

