

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL.

Received at London Office

No. in Survey held at Hartlepool Date, first Survey 5th March Last Survey Nov 21 1900
 Reg. Book. 7 on the Steel S.S. "Woodburn" (Number of Visits 72)
 Master G. Fulcher Built at Blyth By whom built Blyth S. B. Co When built 1900
 Engines made at Hartlepool By whom made J. Richardson & Sons Ltd. when made 1900
 Boilers made at Hartlepool By whom made J. Richardson & Sons Ltd. when made 1900
 Registered Horse Power _____ Owners Syde Blyth S.S. Dunning & Co Port belonging to Newcastle
 Nom. Horse Power as per Section 28 254 Is Refrigerating Machinery fitted No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple expansion No. of Cylinders three No. of Cranks three
 Dia. of Cylinders 22½ - 34 - 61" Length of Stroke 39" Revs. per minute 62 Dia. of Screw shaft as per rule 11½" Lgth. of stern bush 4'-0"
 Dia. of Tunnel shaft as per rule 10.4" Dia. of Crank shaft journals as per rule 10.9" Dia. of Crank pin 12" Size of Crank webs 7½ x 18½" Dia. of thrust shaft under collars 12½" Dia. of screw 15'-6" Pitch of screw 16'-0" No. of blades 4 State whether moveable no Total surface 4000 sq. ft.
 No. of Feed pumps 2 Diameter of ditto 2¾" Stroke 25" Can one be overhauled while the other is at work Yes.
 No. of Bilge pumps 2 Diameter of ditto 3¾" Stroke 25" Can one be overhauled while the other is at work Yes.
 No. of Donkey Engines Two Sizes of Pumps Feed 4x6 duplex 10x9" No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three. - One 3" & Two 3½" dia. In Holds, &c. Two 3" Suctions each with Rule & approved plan.
 No. of bilge injections one sizes 5" Connected to condenser, or to circulating pump separate donkey suction fitted in Engine room & size Yes 3½"
 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 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 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 in Slip Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from Top platform

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 4015 sq. ft. Is forced draft fitted No
 No. and Description of Boilers 2 Single ended. byt. Mult. Working Pressure 180 lbs. Tested by hydraulic pressure to 360 lbs.
 Date of test 16.8.00 Can each boiler be worked separately Yes. Area of fire grate in each boiler 44 sq. ft. No. and Description of safety valves to each boiler Two Spring direct Area of each valve 40" Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes.
 Smallest distance between boilers or uptakes and bunkers or woodwork 21" Mean dia. of boilers 14'-6" Length 10'-6" Material of shell plates steel.
 Thickness 1 1/16" Range of tensile strength 28-32 Are they welded or flanged no Descrip. of riveting: cir. seams double long. seams treble
 Diameter of rivet holes in long. seams 1 1/16" Pitch of rivets 8 1/8" Lap of plates or width of butt straps 19 1/2"
 Per centages of strength of longitudinal joint 85.5 Working pressure of shell by rules 180.8 lbs. Size of manhole in shell 13" x 16 1/2"
 Size of compensating ring 28 x 30 x 1 1/16" No. and Description of Furnaces in each boiler 3 Morrison Material steel Outside diameter 45 1/2"
 Length of plain part top 9" Thickness of plates bottom 9" Description of longitudinal joint weld No. of strengthening rings —
 Working pressure of furnace by the rules 193 lbs. Combustion chamber plates: Material steel Thickness: Sides 19/32" Back 9/16" Top 19/32" Bottom 25/32"
 Pitch of stays to ditto: Sides 7/8 x 9/4" Back 7/2 x 8" Top 8 3/4 x 7/2" If stays are fitted with nuts or riveted heads nut Working pressure by rules 180 lbs.
 Material of stays steel Diameter at smallest part 1 3/8" Area supported by each stay 65.90" Working pressure by rules 180 lbs. End plates in steam space: Material steel Thickness 29/32" Pitch of stays 13 1/4 x 16" How are stays secured to H. & H. Working pressure by rules 180 lbs. Material of stays steel.
 Diameter at smallest part 2 1/4" Area supported by each stay 212" Working pressure by rules 180 lbs. Material of Front plates at bottom steel.
 Thickness 7/8" Material of Lower back plate steel Thickness 25/32" Greatest pitch of stays 12 5/8" Working pressure of plate by rules 193 lbs.
 Diameter of tubes 3 1/4" Pitch of tubes 4 1/2" Material of tube plates steel Thickness: Front 1" Back 3/4" Mean pitch of stays 9"
 Pitch across wide water spaces 14 1/4" Working pressures by rules 189 lbs. Girders to Chamber tops: Material steel Depth and thickness of girder at centre 4 1/2 x 1 1/2" Length as per rule 32" Distance apart 4 1/2" Number and pitch of Stays in each Two 8 3/4"
 Working pressure by rules 180 lbs. 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. *one* Description *Cylindrical Multitubular, 2 plain furnaces*
 Made at *Stockton* By whom made *Ludron & Co. L^o* When made *1900* Where fixed *Upper deck*
 Working pressure *180 lbs* tested by hydraulic pressure to *360* No. of Certificate *2311* Fire grate area *11.25* Description of safety valves *Spring loaded*
 No. of safety valves *2* Area of each *4.91* Pressure to which they are adjusted *180 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *9.0* Length *8.6* Material of shell plates *Steel* Thickness *2 1/32* Range of tensile strength *24-32* Descrip. of riveting long. seams *Double butt straps* Dia. of rivet holes *15/16* Whether punched or drilled *drilled* Pitch of rivets *5 1/2 x 2 1/2*
 Lap of plating *1 1/2* Percentage of strength of joint Rivets *EP. 4* Thickness of shell *end* plates *3/32* Radius of do. *9 1/2* No. of Stays to do. *13 x 12*
 Dia. of stays *2 1/4* Diameter of furnace Top *33* Bottom *✓* Length of furnace *5.4* Thickness of furnace plates *39/64* Description of joint *Weld* Thickness of furnace *iron* plates *19/32* Stayed by *1 1/2 Riveted steel stays* Working pressure of shell by rules *185*
 Working pressure of furnace by rules *180 lbs* Diameter of uptake *3* Thickness of uptake plates *2 1/16* Thickness of *stay* tubes *5/16*

SPARE GEAR. State the articles supplied:— *2 iron rod top + 2 bon. rod bottom end bolts + nuts, 2 Main bearing + one set of coupling bolts, one set of feed + bilge pump valves, quantity of assorted bolts nuts + iron, propeller, 6 boiler tubes, 12 condenser tubes, + 25 fire bars.*

The foregoing is a correct description,
 Manufacturer.

Dates of Survey while building
 During progress of work in shops - *1900 Mar 4. 5. 28. 31 Apr 6. 9. 10. 11. 12. 15. 20. 23. 24. 27. 30. May 1. 2. 4. 5. 7. 8. 9. 10. 11. 12. 14*
 During erection on board vessel - *17. 18. 19. 22. 23. 24. June 1. 8. 9. 12. 18. 22. 23. 25. 28. 29. 30. July 2. 3. 4. 5. 6. 11. 12. 16. 19. 20. Aug. 2. 14. 15. 16. 27*
 Total No. of visits *72*

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

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

The main steam pipes have been tested by hydraulic pressure to 360 lbs. per sq. in. and found tight. The engines and boilers of this vessel, have been constructed under special survey in accordance with the Rules requirements. The materials and workmanship are good and efficient. When completed and fitted on board they were tried under steam at moorings with satisfactory results, and are now in good working order, and, in our opinion, eligible to have notation in the Register Book.

L.M.C.

It is submitted that this vessel is eligible for THE RECORD + L.M.C. 11.00

EL
 29. 11. 00

CM
 29. 11. 00

The amount of Entry Fee... £ *32*
 Special... £ *17*
 Donkey Boiler Fee... £
 Travelling Expenses (if any) £

When applied for, *16. 11. 00*
 When received, *24. 11. 00*

Smith James C. Surpi
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute Assigned

FRI. 30 NOV 1900

MACHINE CERTIFICATE WRITTEN

+ L.M.C. 11.00

