

17/405

Mr. R. Stephenson S.S. No. 90

Rpt. 4.

REPORT ON MACHINERY.

No. 12679

MUN. 21 AUG 1905

Port of West Hartlepool

No. in Survey held at Hartlepool Date, first Survey 33rd Feb. 05 Last Survey 17th Aug. 1905
 Reg. Book. 177 (Number of Visits 72)
 on the Steel Steamer Teesbridge Tons Gross 5409 Net 2516
 Master W. H. ... Built at Newcastle By whom built R. Stephenson & Co. When built 1905
 Engines made at Hartlepool By whom made Richardson, Wigham & Co. when made 1905
 Boilers made at Hartlepool By whom made Richardson, Wigham & Co. when made 1905
 Registered Horse Power 211 Owners W. H. ... Port belonging to Hartlepool
 Nom. Horse Power as per Section 28 211 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted No

ENGINES, &c.—Description of Engines Triple Compound No. of Cylinders Three No. of Cranks Three
 Dia. of Cylinders 25" 40" 67" Length of Stroke 45" Revs. per minute 60 Dia. of Screw shaft 4 1/2" Material of Steel
 Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 Yes Length of stern bush 60"
 Dia. of Tunnel shaft 12 1/2" Dia. of Crank shaft journals 13 1/2" Dia. of Crank pin 13 1/2" Size of Crank webs 25 1/2" Dia. of thrust shaft under
 collars 13 1/2" Dia. of screw 16 1/2" Pitch of screw 16 1/2" No. of blades 4 State whether moveable No Total surface 846 sq ft
 No. of Feed pumps Two Diameter of ditto 3" Stroke 27" Can one be overhauled while the other is at work Yes
 No. of Bilge pumps Two Diameter of ditto 3 1/2" Stroke 27" Can one be overhauled while the other is at work Yes
 No. of Donkey Engines Two Sizes of Pumps 4 x 6" & 8 1/2" x 7" No. and size of Suctions connected to both Bilge and Donkey pumps
 In Engine Room Three 3 1/2" In Holds, &c. In all holds two 3 1/2"
Lunch with the 2 1/2"
 No. of bilge injections Five Connected to condenser, or to circulating pump Five Is a separate donkey suction fitted in Engine room & size 4 x 3 1/2"
 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 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 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 None
 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 from time to time Is the screw shaft tunnel watertight Yes
 Is it fitted with a watertight door Yes worked from Main Deck.

BOILERS, &c.— (Letter for record 5) Total Heating Surface of Boilers 4000 sq ft Is forced draft fitted No
 No. and Description of Boilers Two Equal Multitube Vertical Working Pressure 180 lbs Tested by hydraulic pressure to 260 lbs
 Date of test 11/24/05 Can each boiler be worked separately Yes Area of fire grate in each boiler 51 sq ft No. and Description of safety valves to
 each boiler Two Opening Area of each valve 5.94 sq in 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 24" Mean dia. of boilers 15.9" Length 10.6" Material of shell plates Steel
 Thickness 1 1/2" Range of tensile strength 385-52 Are they welded or flanged Yes Descrip. of riveting: cir. seams all on end long seams all on end long
 Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 8 1/2" Lap of plates or width of butt straps 18"
 Per centages of strength of longitudinal joint rivets 15.75 Working pressure of shell by rules 180 lbs Size of manhole in shell 13" x 16 1/2"
 Size of compensating ring 2 1/2" x 1 1/2" x 1 1/2" No. and Description of Furnaces in each boiler Three Horizontal Material Steel Outside diameter 49 1/2"
 Length of plain part top 9" Thickness of plates crown 19/32 Description of longitudinal joint Welded No. of strengthening rings None
 Working pressure of furnace by the rules 187 lbs Combustion chamber plates: Material Steel Thickness: Sides 19/32 Back 19/32 Top 19/32 Bottom 1 1/2"
 Pitch of stays to ditto: Sides 7 1/2" x 8 1/2" Back 7 1/2" x 8 1/2" Top 7 1/2" x 8 1/2" If stays are fitted with nuts or riveted heads None Working pressure by rules 184 lbs
 Material of stays Steel Diameter at smallest part 1 1/2" Area supported by each stay 66" Working pressure by rules 180 lbs End plates in steam space:
 Material Steel Thickness 1" Pitch of stays 16 1/2" x 16 1/2" How are stays secured all nut Working pressure by rules 181 lbs Material of stays Steel
 Diameter at smallest part 2 1/2" Area supported by each stay 16 1/2" x 16 1/2" Working pressure by rules 187 lbs Material of Front plates at bottom Steel
 Thickness 1 1/2" Material of Lower back plate Steel Thickness 1 1/2" Greatest pitch of stays 13" Working pressure of plate by rules 196 lbs
 Diameter of tubes 3 1/2" Pitch of tubes 14 1/2" Material of tube plates Steel Thickness: Front 15/16 Back 13/16 Mean pitch of stays 9"
 Pitch across wide water spaces 14 1/2" Working pressures by rules 185 lbs Girders to Chamber tops: Material Steel Depth and
 thickness of girder at centre 8" x 14 1/2" Length as per rule 31" Distance apart 8 1/2" Number and pitch of Stays in each Three 7 1/2"
 Working pressure by rules 181 lbs Superheater or Steam chest; how connected to boiler None Can the superheater be shut off and the boiler worked
 separately Yes Diameter None Length None Thickness of shell plates None Material None Description of longitudinal joint None Diam. of rivet
 holes None Pitch of rivets None Working pressure of shell by rules None Diameter of flue None Material of flue plates None Thickness None
 stiffened with rings Yes Distance between rings None Working pressure by rules None End plates: Thickness None How stayed None
 Working pressure of end plates None Area of safety valves to superheater None Are they fitted with easing gear None

W621-0044

DONKEY BOILER— No. 1 Description *Single ended Patent*
 Made at *Middlesbrough* By whom made *Richardson Westgarth & Co* When made *1905* Where fixed *Upper deck*
 Working pressure *80* tested by hydraulic pressure to *160* No. of Certificate *3652* Fire grate area *28.0* Description of safety valves *Spring*
 No. of safety valves *2* Area of each *3.98* Pressure to which they are adjusted *80* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No* Dia. of donkey boiler *7.6* Length *17.3* Material of shell plates *S* Thickness *19/32* Range of tensile strength *27/22* Descrip. of riveting long. seams *DR Lap* Dia. of rivet holes *15/16* Whether punched or drilled *Drilled* Pitch of rivets *3*
 Lap of plating *4 5/8* Percentage of strength of joint Rivets *8.5* Thickness of shell crown plates *19/32* Radius of do. *Hemisph* No. of Stays to do. *2*
 Dia. of stays *1 1/2* Diameter of furnace Top *3.9* Bottom *5.11 1/2* Length of furnace *4.8 1/2* Thickness of furnace plates *5/8* Description of joint *S.R.L.* Thickness of furnace crown plates *1/2* Stays by *CC* Working pressure of shell by rules *86*
 Working pressure of furnace by rules *86* Diameter of uptake *2 1/2* Thickness of uptake plates *1/2* Thickness of water tubes *3/64*

SPARE GEAR. State the articles supplied:— *Propeller, two top end, two bottom end, two main bearings & the set coupling bolts, feet & keys when assembled both & nuts, a few bars of iron & other small gear.*

The foregoing is a correct description,
 for **RICHARDSONS WESTGARTH & CO., LIMITED**

R. Morrison Managing Director.

Dates of Survey while building
 During progress of work in shops— 1905. Feb. 23. Mar. 1. 31. Apr. 3. 4. 6. 7. 10. 12. 13. 14. 17. 18. 19. 20. 26. 27. 28. May. 1. 4. 10. 16. 17. 18. 19. 22. 23. 26. 30. 31. June. 1. 3. 5. 6. 7.
 During erection on board vessel— 8. 14. 15. 16. 17. 20. 21. 22. 23. 24. 27. 28. July. 3. 4. 10. 11. 12. 13. 14. 15. 16. 17. 19. 20. 21. 22. 24. 25. 26. 27. 28. Aug. 1. Nov. 1. 2. 9. 11. 15. 16. 17.
 Total No. of visits *Apr 72. Nov. Five* Is the approved plan of main boiler forwarded herewith *Yes*

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

The main Steam Pipes (Iron) have been tested to 450 lbs and found tight and sound.

The Port Main Boiler shell has a crack in way of the top manhole which has been compensated for by means of a large 1 1/2" doubling plate efficiently fitted and riveted on, and so fitted that the manhole door joint is taken by the doubling plate. The Boiler has been examined inside after steaming and the crack which is bludded had not extended.

The Machinery and Engines of this vessel have been constructed under special survey and placed on board in accordance with the Society's Rules. They are now in our opinion in safe working condition and the case is respectfully submitted for the notification + L.M.C. P. 05. to the Register Book. It is respectfully submitted that the Port Boiler shell in way of manhole be again examined at the end of the Builder's guarantee 24 months time as per Secretary's letter 26 July 1905.

The donkey boiler has been fitted & with its safety valves tested under steam at Newcastle.

The amount of Entry Fee... £ 2 : :
 Special ... £ 34 : :
 Donkey Boiler Fee ... £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 19 AUG 1905
 When received, 23/8/05

It is submitted that this vessel is eligible for THE RECORD L.M.C. P. 05. For it is submitted that the Port Boiler shell in way of manhole has a crack which has been compensated for by a doubling plate. The case is respectfully submitted for the notification + L.M.C. P. 05. to the Register Book. It is respectfully submitted that the Port Boiler shell in way of manhole be again examined at the end of the Builder's guarantee 24 months time as per Secretary's letter 26 July 1905.

John H Heck. Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.
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