

REPORT ON MACHINERY.

Port of WEST HARTLEPOOL

Received at London Office **8 AUG 1902**

No. in Survey held at West Hartlepool Date, first Survey 23rd April, 1901 Last Survey 18th July 1902

Reg. Book. on the La Bourboudora Naval Española No. 24 (Number of Visits 46) Tons (Gross) (Net)

Master Built at By whom built When built

Engines made at West Hartlepool By whom made Central Marine Engine Works, L. when made 1902

Boilers made at Do By whom made Do when made 1902

Registered Horse Power Owners Port belonging to

Net Horse Power as per Section 28 184 Is Refrigerating Machinery fitted Is Electric Light fitted

ENGINES, &c.—Description of Engines Diesel acting triple expansion No. of Cylinders 3 No. of Cranks 3

Dia. of Cylinders 21-33-53 Length of Stroke 36 Revs. per minute 65 Dia. of Screw shaft 11.64 as per rule 11.78 Lgth. of stern bush 3.11

Dia. of Tunnel shaft 9.84 as per rule 10 Dia. of Crank shaft journals 10.33 as per rule 10.5 Dia. of Crank pin 10.5 Size of Crank webs 14.63 Dia. of thrust shaft under

flars 10.5 Dia. of screw 13.6 Pitch of screw 13.6 No. of blades 4 State whether moveable Yes Total surface 63.8

No. of Feed pumps 2 Diameter of ditto 2.5 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines 2 Sizes of Pumps 3.5, 5, 10, 9 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room In Holds, &c.

No. of bilge injections 1 sizes 6 Connected to condenser, or to circulating pump Pump Is a separate donkey suction fitted in Engine room & size

Are all the bilge suction pipes fitted with roses Are the roses in Engine room always accessible Are the sluices on Engine room bulkheads always accessible

Are all connections with the sea direct on the skin of the ship Are they Valves or Cocks

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Are the discharge pipes above or below the deep water line

Are they each fitted with a discharge valve always accessible on the plating of the vessel Are the blow off cocks fitted with a spigot and brass covering plate

How are they protected

Are all pipes, cocks, valves, and pumps in connection with the machinery and all boiler mountings accessible at all times

Are the bilge suction pipes, cocks, and valves arranged so as to prevent any communication between the sea and the bilges

When were stern tube, propeller, screw shaft, and all connections examined in dry dock Is the screw shaft tunnel watertight

Is it fitted with a watertight door worked from

BOILERS, &c.— (Letter for record (S)) Total Heating Surface of Boilers 2960.9 Is forced draft fitted

No. and Description of Boilers Two Simple ended Steel Working Pressure 165 lb Tested by hydraulic pressure to 330 lb

Date of test 17.8.01 Can each boiler be worked separately Yes Area of fire grate in each boiler 36.58 No. and Description of safety valves to

each boiler Two Spring Area of each valve 7.04 Pressure to which they are adjusted Are they fitted with easing gear

Smallest distance between boilers or uptakes and bunkers or woodwork Mean dia. of boilers 12.11 Length 10.0 Material of shell plates Steel

Thickness 1.5 Range of tensile strength 27-30 Are they welded or flanged Both Descrip. of riveting: cir. seams Lap double long. seams Butt straps tubes

Diameter of rivet holes in long. seams 1.76 Pitch of rivets 4.5/16 Lap of plates or width of butt straps 16"

Percentages of strength of longitudinal joint rivets 86.8 Working pressure of shell by rules 167.4 Size of manhole in shell 16" x 12"

Size of compensating ring 2.8-3.4 x 1.4 No. and Description of Furnaces in each boiler 3 Cambered Material Steel Outside diameter 2.118

Length of plain part top 6.4 bottom 7.0 Thickness of plates crown 7/16 bottom 7/16 Description of longitudinal joint Bevel No. of strengthening rings

Working pressure of furnace by the rules 176 Combustion chamber plates: Material Steel Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 13/16

Pitch of stays to ditto: Sides 9 Back 9 Top 9 If stays are fitted with nuts or riveted heads Tubs Working pressure by rules 166.6

Material of stays Steel Diameter at smallest part 1.5 Area supported by each stay 810 Working pressure by rules 176 End plates in steam space:

Material Steel Thickness 1.76 Pitch of stays 17.5-17.5 How are stays secured Double nut Working pressure by rules 166.1 Material of stays Steel

Diameter at smallest part 2.66 Area supported by each stay 3060 Working pressure by rules 181 Material of Front plates at bottom Steel

Thickness 1.5 Material of Lower back plate Steel Thickness 1.5 Greatest pitch of stays 16" Working pressure of plate by rules 198

Diameter of tubes 3.4 Pitch of tubes 4.5 Material of tube plates Steel Thickness: Front 1.5 Back 5/8 Mean pitch of stays 9"

Pitch across wide water spaces 14.4 Working pressures by rules 166.2 Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 7.3-1.4 Length as per rule 2.3 Distance apart 8" Number and pitch of Stays in each Two 9" pitch

Working pressure by rules 169 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

les Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

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. 1 Description Vertical crop tubes
 Made at Stockton By whom made J. Ludron & Co When made _____ Where fixed _____
 Working pressure 80 tested by hydraulic pressure to 100 No. of Certificate _____ Fire grate area _____ Description of safety valves _____
 No. of safety valves _____ Area of each _____ Pressure to which they are adjusted _____ If fitted with easing gear _____ If steam from main boilers can enter the donkey boiler _____
 Dia. of donkey boiler 6.6" Length 13.6" Material of shell plates Steel Thickness 7/16 Range of tensile strength 27-32 Descrip. of riveting long. seams Lap double riveted Dia. of rivet holes 13/16 Whether punched or drilled Punched Pitch of rivets 2 3/4
 Lap of plating 4 1/2 Per centage of strength of joint _____ Rivets 7270 Thickness of shell crown plates 9/16 Radius of do. 6.0" No. of Stays to do. 6
 Dia. of stays. 1 5/8 Diameter of furnace Top 5.2" Bottom 6.9" Length of furnace 6.9" Thickness of furnace plates 5/8 Description of joint Lap Single Thickness of furnace crown plates 9/16 Stayed by Same as shell crown Working pressure of shell by rules 88 1/4
 Working pressure of furnace by rules 86 1/4 Diameter of uptake 18" Thickness of uptake plates 7/16 Thickness of water tubes 3/8

SPARE GEAR. State the articles supplied:— Propeller, 2 Main bearing bolts & nuts, 2 top end bolts & nuts, 2 bottom end bolts & nuts, 1 set of shaft coupling bolts & nuts, 1 set of feed pump valves, 1 set of bilge pump valves, Springs for A.P. piston, nuts, bolts & girths.

The foregoing is a correct description,

Manufacturer.

Wm. B. Borrowman
 MANAGER.

Dates of Survey while building
 During progress of work in shops— 1901. Apr. 23. 26. 30. May 7. 9. 13. 16. 20. 22. 31. June 3. 4. 5. 7. 8. 11. 12. 14. 17. 18. 19. 20. 21. 24. 25. 28. July 2. 3. 5. 9. 10.
 During erection on board vessel— 11. 12. 13. 16. 17. 18. 20. 23. 25. 29. Aug. 15. 17. 20. 26. 1902. July 28.
 Total No. of visits 46 See visits at Cadiz See Ship 1st entry

Is the approved plan of main boiler forwarded herewith yes
 " " " donkey " " " no

General Remarks (State quality of workmanship, opinions as to class, &c.) The machinery has been specially surveyed during construction the material and workmanship good & renders the vessel eligible in my opinion to have the Record + L.R.C. When the machinery has been efficiently fitted & the main & donkey safety valves all fitted.
 Material of screw shaft Iron 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 _____ 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 _____

The machinery and boilers have been shipped to Cadiz to be fitted.

W. Warlepool

Certificate (if required) to be sent to _____
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee. . . £ 2 : :
 Special £ 18 8 : :
 Donkey Boiler Fee £ : :
 Travelling Expenses (if any) £ : :
 When applied for, 6. 8. 02
 When received, 5. 1. 03

Richard Hines
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. 26 JUN 1903

Assigned

MACHINERY CERTIFICATE WRITTEN



© 2021

Lloyd's Register Foundation