

REPORT ON MACHINERY.

Port of West Harlepool

THUR. 25 JUN 1903

Received at London Office Aug 1 1902

No. in Survey held at West Harlepool Date, first Survey 23rd April 1901 Last Survey 28th July 1902
Reg. Book. (Number of Visits 46)

on the La Constructora Naval Espanola No 24 Tons 24
now named "PEDRO LUIS LACAVE"

Master Jose Romero Built at Cadiz By whom built Constructor Naval Espanola When built

Engines made at West Harlepool By whom made Central Marine Eng Works when made 1902

Boilers made at do By whom made do when made 1902

Registered Horse Power Owners Compania Guaditona de Navegacion Port belonging to Cadiz

Nom. Horse Power as per Section 28 184 Is Refrigerating Machinery fitted no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Direct 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 11.55 Lgth. of stern bush 3' 11"

Dia. of Tunnel shaft 10 Dia. of Crank shaft journals 10.33 Dia. of Crank pin 10.5 Size of Crank webs 4 1/2 x 6 3/8 Dia. of thrust shaft under

collars 10.5 Dia. of screw 13' 6" Pitch of screw 13' 6" No. of blades 4 State whether moveable no Total surface 63 #

No. of Feed pumps 2 Diameter of ditto 2 1/2" 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 1/2 x 5 + 10 x 9 No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 1 Circulating suction 5", 1 Donkey Suction in Holds, &c. forward No. 2, of 2 3/4, two hand 2 3/4, tank No. 2 of 2 3/4 and

3" and three Bilge pump suction 2 3/4, top 3 1/4, 1st hold 3 of 2 3/4, two hand 2 3/4, tank 1 of 1 1/2, tunnel one 2 1/2

No. of bilge injections 1 sizes 5 Connected to condenser, or to circulating pump no Is a separate donkey suction fitted in Engine room & size yes 3"

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 yes

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 yes

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 launch Is the screw shaft tunnel watertight yes

Is it fitted with a watertight door yes worked from deck

BOILERS, &c.— (Letter for record (5)) Total Heating Surface of Boilers 2950 # Is forced draft fitted no

No. and Description of Boilers Two single ended steel Working Pressure 165 lbs Tested by hydraulic pressure to 330 lbs

Date of test 17-8-01 Can each boiler be worked separately yes Area of fire grate in each boiler 35.54 # No. and Description of safety valves to

each boiler Two Spring Area of each valve 7.07 Pressure to which they are adjusted 165 lbs Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 14 inches Mean dia. of boilers 12' 11" Length 10' 0" Material of shell plates Steel

Thickness 1 1/2 Range of tensile strength 27-30 Are they welded or flanged both Descrip. of riveting: cir. seams Lap Double long. seams Double

Diameter of rivet holes in long. seams 1 1/16 Pitch of rivets 7 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 167.7 Size of manhole in shell 16" x 12"

Size of compensating ring 2' 8" x 2' 4" x 1 1/2" No. and Description of Furnaces in each boiler 3 chambered Material Steel Outside diameter 2' 11 1/8"

Length of plain part top 6.44 bottom 7.0 Thickness of plates crown 7/16 bottom 7/16 Description of longitudinal joint weld No. of strengthening rings 1

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

Pitch of stays to ditto: Sides 9 Back 9 Top 9 If stays are fitted with nuts or riveted heads no Working pressure by rules 166.6

Material of stays Steel Diameter at smallest part 1-5 Area supported by each stay 81 # Working pressure by rules 176 End plates in steam space:

Material Steel Thickness 1 1/16 Pitch of stays 17 1/2" 17 1/2" How are stays secured nuts Working pressure by rules 165.1 Material of stays Steel

Diameter at smallest part 2.66 Area supported by each stay 306 # Working pressure by rules 181 Material of Front plates at bottom Steel

Thickness 1 5/16 Material of Lower back plate Steel Thickness 1 5/16 Greatest pitch of stays 15" Working pressure of plate by rules 198

Diameter of tubes 3 1/4 Pitch of tubes 1 1/2 Material of tube plates Steel Thickness: Front 1 5/16 Back 5/8 Mean pitch of stays 9"

Pitch across wide water spaces 14 1/2" Working pressures by rules 166.2 Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 7 3/4" x 1 1/4" Length as per rule 2' 3" Distance apart 8" Number and pitch of Stays in each Two 9" pitch

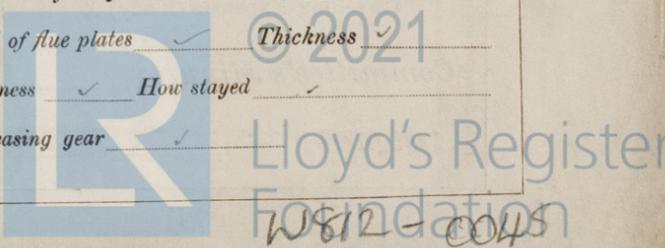
Working pressure by rules 169 Superheater or Steam chest; how connected to boiler none Can the superheater be shut off and the boiler worked

separately yes Diameter yes Length yes Thickness of shell plates yes Material yes Description of longitudinal joint yes Diam. of rivet

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

stiffened with rings yes Distance between rings yes Working pressure by rules yes End plates: Thickness yes How stayed yes

Working pressure of end plates yes Area of safety valves to superheater yes Are they fitted with easing gear yes



DONKEY BOILER— No. 1 Description Vertical Crop Tubes
 Made at Stockton By whom made J Ludron & Co When made _____ Where fixed in front of main boiler
 Working pressure 80 tested by hydraulic pressure to 160 No. of Certificate 2532 Fire grate area 26 1/2 Description of safety valves Spring
 No. of safety valves 1 Area of each 12.5664 Pressure to which they are adjusted 80 If fitted with easing gear yes If steam from main boilers enter the donkey boiler no Dia. of donkey boiler 6' 6" Length 13' 6" Material of shell plates Steel Thickness 7/8 Range of ten strength 27-32 Descrip. of riveting long. seams lap double rived Dia. of rivet holes 13/16 Whether punched or drilled punched Pitch of rivets 2
 Lap of plating 4 1/2 Per centage of strength of joint Rivets 72% Thickness of shell crown plates 9/16 Radius of do. 5' 0" No. of Stays to do. 6
 Dia. of stays. 1 5/8 Diameter of furnace Top 5' 2" Bottom 5' 9" Length of furnace 5' 9" Thickness of furnace plates 5/8 Description of joint lap angle Thickness of furnace crown plates 9/16 Stayed by same as shell crown Working pressure of shell by rules 85 lb
 Working pressure of furnace by rules 85 lb 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 bottom end bolts and nuts, 1 set of shaft coupling bolts & nuts, 1 set of feed pump valves, 1 set of bilge pump valves, Springs for HP piston, nuts bolts & iron.
 The foregoing is a correct description, for the Central Marine Eng. Co.
 Manufacturer. (signed) Wm C. 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. 13. 14. 17. 18. 19. 20. 21. 24
 During erection on board vessel— July 2. 3. 5. 9. 10. 11. 12. 13. 16. 17. 18. 20. 23. 25. 29. Aug 15. 17. 20. 26 (1902) July 28
 Total No. of visits 46 Is the approved plan of main boiler forwarded herewith Yes
In body trials on ship 19 July " " " donkey " " " No

General Remarks (State quality of workmanship, opinions as to class, &c. The machinery has been specially surveyed during construction, the material workmanship good and renders the vessel eligible in my opinion to have the record + LMC when the machinery has been efficiently fitted & the main & donkey valves adjusted.

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 No 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 non-corrosive No If two liners are fitted, is the shaft lapped or protected between the liners Painted

The Machinery and boilers have been shipped to Cadix to be fitted.
 The Machinery and boilers have now been fitted in this vessel all to my entire satisfaction, and I have seen the Engine working for four hours, to my satisfaction also, the safety valves of Main and donkey boilers have also been adjusted under steam to lift at 165 and 80, this vessel's Machinery being now, in my opinion, fit to have record + LMC.

It is submitted that this vessel is eligible for THE RECORD + LMC 6.03.
 Bal. 26.6.03
 H. 26.6.03

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

(Signed) Richard Hirst
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute FRI. 26 JUN 1903
 Assigned + LMC 6.03

