

REPORT ON MACHINERY.

Port of

Sunderland

WED. 9 AUG 1905

Received at London Office

19

No. in Survey held at

Sunderland

Date, first Survey 16th JanuaryLast Survey 29th July 1905

Reg. Book.

on the

Twin screw steamer "Madrid"

(Number of Visits 56)

Gross 1725.86

Net 1096.76

When built 1905

Master

Piddar

Built at

Sunderland

By whom built

J. Laing & Sons L^{td}

Engines made at

Sunderland

By whom made

North Eastern Marine Engineering L^{td}

when made

1905

Boilers made at

Sunderland

By whom made

North Eastern Marine Engineering L^{td}

when made

1905

Registered Horse Power

Owners

Navegacion a Vapor Nicolas Port belonging to Buenos Aires

Nom. Horse Power as per Section 28

234

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines Twin screw Inverted triple expansion No. of Cylinders 3 to each set No. of Cranks 3 to each set

Dia. of Cylinders 15¹/₂" 25" 41" Length of Stroke 27" Revs. per minute 113 Dia. of Screw shaft as per rule 4.9" 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 fitted If the liner is in more than one length are the joints burned Yes 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 Yes If two

liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 3' 0"

Dia. of Tunnel shaft as per rule 7.57" Dia. of Crank shaft journals as per rule 7.95" Dia. of Crank pin 8¹/₂" Size of Crank webs 13¹/₂" x 5¹/₂" Dia. of thrust shaft undercollars 8¹/₂" Dia. of screw 9' 0" Pitch of screw 13' 6" No. of blades 4 State whether moveable no Total surface 32^{sq} ftNo. of Feed pumps 2 Diameter of ditto 3¹/₂" Stroke 16¹/₂" Can one be overhauled while the other is at work YesNo. of Bilge pumps 2 Diameter of ditto 3¹/₂" Stroke 16¹/₂" Can one be overhauled while the other is at work Yes

No. of Donkey Engines 3 Sizes of Pumps Ballast 6" x 8" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3 of 2¹/₂" 7 of 2¹/₂" In Holds, &c. 1 of 2¹/₂" in 1 hold, 2 of 2¹/₂" inNo. of bilge injections 2 sizes 4" Connected to condenser, or to circulating pump pump Is a separate donkey suction fitted in Engine room & size Yes-2¹/₂"

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

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 new Is the screw shaft tunnel watertight Yes

Is it fitted with a watertight door Yes worked from top platform

BOILERS, &c.—

(Letter for record)

Total Heating Surface of Boilers

4224^{sq} ft

Is forced draft fitted no

No. and Description of Boilers 2 single ended cylindrical built Working Pressure 180 lbs Tested by hydraulic pressure to 360 lbs

Date of test 13.5.05 Can each boiler be worked separately Yes Area of fire grate in each boiler 58^{sq} ft No. and Description of safety valves toeach boiler 2 spring Area of each valve 5.94^{sq} ft Pressure to which they are adjusted 185 lbs Are they fitted with easing gear YesSmallest distance between boilers or uptakes and bunkers or woodwork 15" Mean dia. of boilers 14' 3¹/₂" Length 11' 6" Material of shell plates steelThickness 1¹/₂" Range of tensile strength 29/32 Are they welded or flanged no Descrip. of riveting: cir. seams d. & lap long. seams L. & R. doubleDiameter of rivet holes in long. seams 1¹/₂" Pitch of rivets 8¹/₂" Lap of plates or width of butt straps 18¹/₂"

Per centages of strength of longitudinal joint rivets 87.5% Working pressure of shell by rules 180.9 lbs Size of manhole in shell 16" x 12"

Size of compensating ring 7' x 1¹/₂" No. and Description of Furnaces in each boiler 3 Daytons Material steel Outside diameter 43¹/₂"

Length of plain part top Thickness of plates crown 17/32 Description of longitudinal joint weld No. of strengthening rings

Working pressure of furnace by the rules 188.1 lbs Combustion chamber plates: Material steel Thickness: Sides 25/32 Back 25/32 Top 25/32 Bottom 7/8"

Pitch of stays to ditto: Sides 12³/₄" x 9" Back 11" x 10¹/₂" Top 12³/₄" x 9" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 182.4 lbsMaterial of stays steel Diameter at smallest part 2.43" Area supported by each stay 115.6^{sq} ft Working pressure by rules 189.2 lbs End plates in steam space:Material steel Thickness 1¹⁵/₃₂" Pitch of stays 24" x 20" How are stays secured d. & w. Working pressure by rules 182 lbs Material of stays steelDiameter at smallest part 9.82" Area supported by each stay 540^{sq} ft Working pressure by rules 181.8 lbs Material of Front plates at bottom steelThickness 1³/₁₆" Material of Lower back plate steel Thickness 29/32 Greatest pitch of stays 14¹/₄" x 10¹/₂" Working pressure of plate by rules 181.1 lbsDiameter of tubes 3¹/₄" Pitch of tubes 4¹/₂" x 4¹/₁₆" Material of tube plates steel Thickness: Front 13/16" Back 13/16" Mean pitch of stays 8⁷/₈" x 9"Pitch across wide water spaces 14¹/₂" Working pressures by rules 184.9 lbs Girders to Chamber tops: Material steel Depth andthickness of girder at centre 8¹/₂" x 2¹/₈" Length as per rule 30¹/₂" Distance apart 12³/₈" Number and pitch of Stays in each 2-9"

Working pressure by rules 187.1 lbs Superheater or Steam chest; how connected to boiler 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

Port of

No. in
Reg. Book
65

Owners Name

Yard No.

DESCRIPTION

Two Four
couple

Capacity of L

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If vessel is w

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are perm

Are all switch

Total number

A 2

B 1

C 1

D 3

E 3

F 1

/ Mas

2.

3.

If arc lights,

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DESCRIPTION

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Branch cables o

Branch cables o

Leads to lamps

Cargo light cabl

DESCRIPTION

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DONKEY BOILER— No. *one* Description *Cylindrical Mult^l, 2 plain furnaces,*
 Made at *Stockton* By whom made *Riley Bros.* When made *1905* Where fixed *In stockhold*
 Working pressure *180 lb* tested by hydraulic pressure to *360 lb* No. of Certificate *3419* Fire grate area *22.2^{ft}* Description of safety valves *spring*
 No. of safety valves *2* Area of each *7.07^{ft}* Pressure to which they are adjusted *185 lb* If fitted with easing gear *Yes* If steam from main boilers can
 enter the donkey boiler *no* Dia. of donkey boiler *9' 3"* Length *9' 0"* Material of shell plates *steel* Thickness *13/16"* Range of tensile
 strength *27/32* Descrip. of riveting long. seams *double buttchep* Dia. of rivet holes *15/16"* Whether punched or drilled *drilled* Pitch of rivets *1 1/2" x 7"*
 Lap of plating *1 1/2"* Per centage of strength of joint *90.4* Rivets *90.4* Thickness of *end* plates *1 1/32"* Radius of do. *✓* No. of Stays to do. *4*
 Dia. of stays. *2 3/4"* rivetted washers Diameter of furnace *Top 32" Bottom 7' 9"* Length of furnace *top 5' 9 1/2"* Thickness of furnace plates *23/32* Description of
 joint *weld* Thickness of furnace crown plates *5 - 9/16"* Stayed by *screwed stays* Working pressure of shell by rules *180-240*
 Working pressure of furnace by rules *187 lb* Diameter of *tube* *3 1/4"* Thickness of *tube* plates *F- 1 1/32" B- 1/16"* Thickness of *stay* tubes *5/16"*

SPARE GEAR. State the articles supplied:— *2 Propeller shafts, 2 Propellers, 1/2" Crank shaft, 4*
bottom end, 4 top end, 4 Main bearing & 4 sets coupling bolts, 2 Feed pump Valves & 2
Pilge pump Valves, Bolts & nuts assorted & iron of size

NORTH EASTERN MARINE ENGINEERING CO. LTD.

The foregoing is a correct description,
 NORTH EASTERN MARINE ENGINEERING CO. LTD.
 Manufacturer.
Walter Beattie
W. B. M.

Dates of Survey { During progress of } 1905:— Jan: 31, Feb: 3, 6, 17, 21, 24, 27, 28, Mch: 1, 6, 7, 15, 17, 20, 22, 23,
 { work in shops - }
 { During erection on } 28, 30, 31, Apl: 7, 11, 13, 14, 17, 19, 27, May: 1, 2, 5, 8, 10, 11, 13, 15, 17, 18, 22, 23, 26, 30, June:
 { board vessel - }
 building { Total No. of visits } 56. 5, 9, 15, 16, 19, 21, 22, 24, 27, July, 11, Is the approved plan of main boiler forwarded herewith *Yes*
 " " " donkey " " " *Yes*

General Remarks (State quality of workmanship, opinions as to class, &c. *The Machinery for this vessel*
has been constructed under special survey, the workmanship
and materials used are both of good quality, the Engines
have been tried under steam, & the safety Valves adjusted
as above noted, the main steam pipes have been tested
to twice the working pressure & found satisfactory

I beg to recommend that this vessel
in my opinion, is eligible to have the record *L.M.C. 7.05*
in the Register Book

It is submitted that
 this vessel is eligible for
 THE RECORD *L.M.C. 7.05 ELEC LIGHT*

The amount of Entry Fee. £ 2 : : When applied for,
 Special .. £ 31 : 14 : { 8.8.1905
 Donkey Boiler Fee .. £ : : {
 Travelling Expenses (if any) £ : : { 10.8.05

K. W. Coomber.
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

FRI. 11 AUG 1905

Assigned

+ L.M.C. 7.05
 elec light

MACHINERY CERTIFICATE
 WRITTEN.



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 Foundation