

REPORT ON MACHINERY.

No. 6032
FRI. 7 JUL. 1922

Received at London Office

Date of writing Report 26th JUNE 1922 When handed in at Local Office 26th JUNE 1922 Port of **BILBAO**

No. in Survey held at **BILBAO** Date, First Survey 24th Oct. 1921 Last Survey 19th JUNE 1922
Reg. Book. (Number of Visits 36.)

13841 on the **S/S 'MARI' (EX. 'ULVERSMEAD')** Tons { Gross 3829
Net 2441

Master Built at **SUNDERLAND** By whom built **W. DOXFORD & SONS LTD.** When built 1907

Engines made at **SHIELDS** By whom made **W. DOXFORD & SONS LTD.** when made 1907

Boilers made at **SHIELDS** By whom made **W. DOXFORD & SONS.** when made 1907

Registered Horse Power **310** Owners **CIA. NAVIERE AMAYA** Port belonging to **CALADO**

Nom. Horse Power as per Section 28 **342** Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **YES.**

ENGINES, &c.—Description of Engines **TRIPLE EXPANSION** No. of Cylinders **3** No. of Cranks **3**

Dia. of Cylinders **24, 41, 68.** Length of Stroke **45** Revs. per minute Dia. of Screw shaft as per rule **13.921** Material of screw shaft **STEEL**
as fitted **14.125**

Is the screw shaft fitted with a continuous liner the whole length of the stern tube **YES** 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 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 If two

liners are fitted, is the shaft lapped or protected between the liners Length of stern bush **6'-0"**

Dia. of Tunnel shaft as per rule **12.201** Dia. of Crank shaft journals as per rule **12.810** Dia. of Crank pin **12.750** Size of Crank webs **18.7 x 8.66** Dia. of thrust shaft under

collars **12.750** Dia. of screw **17'-4"** Pitch of Screw No. of Blades **4** State whether moveable **No** Total surface

No. of Feed pumps **2** Diameter of ditto **4"** Stroke **29"** Can one be overhauled while the other is at work **YES.**

No. of Bilge pumps **2** Diameter of ditto **4"** Stroke **29"** Can one be overhauled while the other is at work **YES.**

No. of Donkey Engines **2** Sizes of Pumps **9" x 10"** **BALLAST FEED** 6.25 x 8.25. No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room **3 - 3" SUCTIONS** **1 - 2 1/2" TUNNEL SUCTION** In Holds, &c. **No. 1. HOLD 2 - 2 1/2". No. 2 HOLD 2 - 3".**

No. 3 HOLD 2 - 2 1/2" SUCTIONS **No. 4 HOLD 2 - 2 1/2" SUCTIONS.**

No. of Bilge Injections **1** sizes **6"** Connected to condenser, or to circulating pump **CIRC. P.** 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

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 **NIL** 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**

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.**) Manufacturers of Steel **PLAN OF BOILERS APPROVED 1/12/21**

Total Heating Surface of Boilers **5340.5** Is Forced Draft fitted **No** No. and Description of Boilers **TWO SINGLE ENDED MARINE**

Working Pressure **180 lbs** Tested by hydraulic pressure to Date of test No. of Certificate

Can each boiler be worked separately **YES** Area of fire grate in each boiler **72 sq** No. and Description of Safety Valves to

each boiler **2 SPRING LOADED** Area of each valve **11.04 sq"** Pressure to which they are adjusted **180 lbs** Are they fitted with easing gear **YES.**

Smallest distance between boilers or uptakes and bunkers or woodwork **3'-0"** Mean dia. of boilers **16'-6"** Length **11'-3"** Material of shell plates **STEEL**

Thickness **1 3/8** Range of tensile strength **28 - 32** Are the shell plates welded or flanged Descrip. of riveting: cir. seams **DOUBLE LAP**

long. seams **D. BUTT STRAPS** Diameter of rivet holes in long. seams **1 1/32** Pitch of rivets **9"** Lap of plates or width of butt straps **1-7/8 x 1 5/16**

Per centages of strength of longitudinal joint rivets **85.343%** Working pressure of shell by rules **189** Size of manhole in shell **END PLATE 1'-0" x 1'-4"**

Size of compensating ring **FLANGED** No. and Description of Furnaces in each boiler **3 BROWN'S IMPROVED** Material **STEEL** Outside diameter **4'-4 1/4"**

Length of plain part top Thickness of plates crown Description of longitudinal joint **WELD** No. of strengthening rings

Working pressure of furnace by the rules **188** Combustion chamber plates: Material **STEEL** Thickness: Sides **23/32** Back **45/64** Top **23/32** Bottom **23/32**

Pitch of stays to ditto: Sides **9 1/2" x 10"** Back **9 1/2" x 9"** Top **10" x 10"** If stays are fitted with nuts or riveted heads **NUTS** Working pressure by rules **199**

Material of stays **STEEL** Area at smallest part **2.03 sq"** Area supported by each stay **85.5 sq"** Working pressure by rules **213** End plates in steam space:

Material **STEEL** Thickness **1 9/64** Pitch of stays **1-7" x 1-6 1/2"** How are stays secured **DIA. NUTS & WASERS** Working pressure by rules **180** Material of stays **STEEL**

Area at smallest part **6.10** Area supported by each stay **351.625** Working pressure by rules **181** Material of Front plates at bottom **STEEL**

Thickness **27/32** Material of Lower back plate **STEEL** Thickness **5/16** Greatest pitch of stays **13" x 9"** Working pressure of plate by rules **180**

Diameter of tubes **3 1/2** Pitch of tubes **4 3/4 - 4 3/4** Material of tube plates **STEEL** Thickness: Front **7/8** Back **13/16** Mean pitch of stays **11" 9/2**

Pitch across wide water spaces **13 1/2"** Working pressures by rules **226** Girders to Chamber tops: Material **STEEL** Depth and

thickness of girder at centre **11" x 1 1/2** Length as per rule **3'-1 1/2** Distance apart **10"** Number and pitch of stays in each **3 - 10" PITCH.**

Working pressure by rules **187.** Steam dome: description of joint to shell % of strength of joint

Diameter Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes

Pitch of rivets Working pressure of shell by rules Crown plates Thickness How stayed

SUPERHEATER. Type _____ Date of Approval of Plan _____ Tested by Hydraulic Pressure to _____

Date of Test _____ Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler _____

Diameter of Safety Valve _____ Pressure to which each is adjusted _____ Is Easing Gear fitted _____

IS A DONKEY BOILER FITTED?

YES.

If so, is a report now forwarded?

YES.

SPARE GEAR. State the articles supplied:— 2 Piston rod top end bolts & nuts. 2 Crank rod bottom end bolts & nuts. 2 main bearing bolts. 1 Set of Coupling bolts. 1 Set of feed & bilge pump valves. Set of rings for each size piston. Set of springs for relief valves. 1 Spare propeller. Quantity of assorted bolts & nuts. 1 ton of various sizes.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops - - During erection on board vessel - - - Total No. of visits

Is the approved plan of main boiler forwarded herewith YES. " " " donkey " " " YES.

Dates of Examination of principal parts—Cylinders 29/12/21 Slides 29/12/21 Covers 29/12/21 Pistons 27/2/22 Rods 27/2/22

Connecting rods 27/2/22 Crank shaft 29/12/21 Thrust shaft 29/12/21 Tunnel shafts 29/12/21 Screw shaft 29/12/21 Propeller 29/12/21

Stern tube Steam pipes tested 22/2/22. Engine and boiler seatings 30/1/22 Engines holding down bolts 6/2/22

Completion of pumping arrangements 13/6/22 Boilers fixed 3/2/22 Engines tried under steam 16/6/22

Completion of fitting sea connections 25/4/22 Stern tube 25/4/22 Screw shaft and propeller

Main boiler safety valves adjusted 1/6/22 Thickness of adjusting washers S. 12 1/4 P. 10 1/2 S. 7 1/2 P. 10 1/2

Material of Crank shaft STEEL Identification Mark on Do. 542 Material of Thrust shaft STEEL Identification Mark on Do. 542

Material of Tunnel shafts STEEL Identification Marks on Do. 542 Material of Screw shafts STEEL Identification Marks on Do. 542

Material of Steam Pipes COPPER Test pressure 360 lbs

Is an installation fitted for burning oil fuel No Is the flash point of the oil to be used over 150°F.

Have the requirements of Section 49 of the Rules been complied with

Is this machinery duplicate of a previous case If so, state name of vessel

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

The machinery of this vessel has been examined whilst being re-erected at the port & on completion the machinery was examined under steam and found in order. The vessel has been placed in drydock, the sea-connections opened up & exam'd the screw shaft drawn inboard & examined. All cylinders, pistons and valves exam'd. Crank, thrust & tunnel shafting exam'd. Air circulating, feed & bilge pumps exam'd. Condenser exam'd & tested. Bridge & tank valve connections exam'd & the general pumping arrangement found to be in accordance with the rules. The main & donkey boilers together with their mounting, have been opened up and examined internally & externally. The safety valves have been examined & adjusted under steam to lift at 180 lbs & 110 lbs respectively.

The machinery, as far as now seen is in an efficient & safe working condition & is eligible in my opinion for classification and to have the records of L.M.C. 6-22 & T.S. 6-22 (C.L.)

Table with columns: Per cent., The amount of Entry Fee, Special, Donkey Boiler Fee, Travelling Expenses (if any). Values: £ 175.00, £ 1500.00, £ 200.00, £ 55.00.

W. G. Kinlay & C. H. Fowling Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. SEP. 19 1922 Assigned L.M.C. 6.22 C.L. 22/9/22 reported 22.

