

# REPORT ON MACHINERY.

No. 6016

Received at London Office

JUN. 7 1922

Date of writing Report 6/6/22 1922 When handed in at Local Office 8<sup>th</sup> June 1922 Port of **BILBAO.**

No. in Survey held at **BILBAO.** Date, First Survey Dec. 12<sup>th</sup> 1921 Last Survey JUNE 1<sup>st</sup> 1922  
Reg. Book. on the **S/S "CABO ROCHE"** (Number of Visits 23)

Master Built at **BILBAO** By whom built **Soc. ESPANOLA DE CONSTR. NAVAL.** When built **1922.**

Engines made at **STOCKTON** By whom made **MESSRS BLAIR & Co** when made **1920**

Boilers made at **STOCKTON** By whom made **MESSRS. BLAIR & Co** when made **1920**

Registered Horse Power Owners **YBARRA & Co.** Port belonging to **SEVILLA.**

Nom. Horse Power as per Section 28 **253.** Is Refrigerating Machinery fitted for cargo purposes **No.** Is Electric Light fitted **YES.**

**ENGINES, &c.—Description of Engines TRI - COMPOUND.** No. of Cylinders **3.** No. of Cranks **3.**

Dia. of Cylinders **22" - 36" - 59"** Length of Stroke **39"** Revs. per minute **as per rule 12.42** Material of screw shaft **STEEL**  
**as fitted 13.5"**

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 **4' - 8"**

Dia. of Tunnel shaft **as per rule 10.85"** Dia. of Crank shaft journals **as per rule 11.4"** Dia. of Crank pin **12.25"** Size of Crank webs **23 1/2 x 7 1/4"** Dia. of thrust shaft under collars **12 1/4"** Dia. of screw **15' - 6"** Pitch of Screw **15' - 9"** No. of Blades **4** State whether moveable **No** Total surface **68 sq ft**

No. of Feed pumps **2** Diameter of ditto **2 3/4"** Stroke **28"** Can one be overhauled while the other is at work **YES.**

No. of Bilge pumps **2** Diameter of ditto **4"** Stroke **28"** Can one be overhauled while the other is at work **YES.**

No. of Donkey Engines **2** Sizes of Pumps **10' x 10'** **5' x 8'** No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room **5 - 3" SUCT. 1. 2 1/4" TUNNEL. 4 - 2 1/4" TO COFFER DAMS** In Holds, &c. **No. 1. HOLD 2 - 3" No. 2. HOLD 2 - 3" No. 3 HOLD 2 - 2 1/2" & 1 - 3 1/2"**

No. of Bilge Injections **1.** sizes **6"** Connected to condenser, or to circulating pump **COND. R.** Is a separate Donkey Suction fitted in Engine room & size **YES. 4"**

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 **✓** 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)** Manufacturers of Steel **(SEE ATTACHED REPORTS. NOS 10910 & 40798.)**

Total Heating Surface of Boilers **Is Forced Draft fitted No.** No. and Description of Boilers **2. SINGLE ENDED.**

Working Pressure **180 lbs.** Tested by hydraulic pressure to **260** Date of test **7 - 12 - 20** No. of Certificate **6184**

Can each boiler be worked separately **YES.** Area of fire grate in each boiler **60.2 sq ft** No. and Description of Safety Valves to each boiler **2 DIRECT SPRING** Area of each valve **7.07 sq in** Pressure to which they are adjusted **180** Are they fitted with easing gear **YES.**

Smallest distance between boilers or uptakes and bunkers **1' - 6"** EXT. Mean dia. of boilers **15' - 2"** Length **10' - 6"** Material of shell plates **STEEL**

Thickness **1 1/32"** Range of tensile strength **28 - 32** Are the shell plates welded or flanged **✓** Descrip. of riveting: cir. seams **2R. LAP**

long. seams **2. B. 3. R.** Diameter of rivet holes in long. seams **1 1/4"** Pitch of rivets **8 1/16"** ~~End of plates or~~ width of butt straps **18 5/8" x 1 5/32"**

Per centages of strength of longitudinal joint rivets **86.4** Working pressure of shell by rules **182.** Size of manhole in shell **16" x 12"**

Size of compensating ring **7 1/2" x 1 1/32"** No. and Description of Furnaces in each boiler **3. MORISONS** Material **STEEL** Outside diameter **47 1/32"**

Length of plain part top **✓** Thickness of plates crown **37/64** Description of longitudinal joint **WELD** No. of strengthening rings **✓**

Working pressure of furnace by the rules **192** Combustion chamber plates: Material **STEEL** Thickness: Sides **1/16"** Back **1/16"** Top **1/16"** Bottom **3/4"**

Pitch of stays to ditto: Sides **9" x 9 1/2"** Back **9 1/4" x 9 1/4"** Top **10" x 8 1/4"** If stays are fitted with nuts or riveted heads **NUTS** Working pressure by rules **185**

Material of stays **STEEL** Area at smallest part **1.99** Area supported by each stay **87.8** Working pressure by rules **204** End plates in steam space:

Material **STEEL** Thickness **1 1/4"** Pitch of stays **18 1/2" x 20** How are stays secured **NUTS & WASHERS** Working pressure by rules **200** Material of stays **STEEL**

Area at smallest part **7.24** Area supported by each stay **37.5** Working pressure by rules **201** Material of Front plates at bottom **STEEL**

Thickness **1 1/16"** Material of Lower back plate **STEEL** Thickness **1"** Greatest pitch of stays **14 1/2" x 9 1/4"** Working pressure of plate by rules **212**

Diameter of tubes **3 1/2"** Pitch of tubes **4 3/4" x 4 7/8"** Material of tube plates **STEEL** Thickness: Front **1 1/16"** Back **13/16"** Mean pitch of stays **11 7/32"**

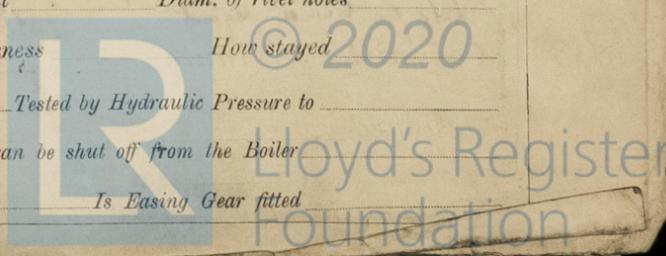
Pitch across wide water spaces **14 1/2"** Working pressures by rules **191** Girders to Chamber tops: Material **STEEL** Depth and thickness of girder at centre **7 3/4" x 1 5/8"** Length as per rule **28 1/4"** Distance apart **10** Number and pitch of stays in each **2. P. 8 3/4"**

Working pressure by rules **189** 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 Conn. rod top end & bottom end bolts & nuts. 2 main bearing bolts & nuts. 1 Set of Coupling bolts. 1 Set of feed & bilge pump valves. 1 Escape valve & spring of each size. 1 Safety valve & spring. Holding down bolts & nuts. 1 Propeller shaft. 1 Propeller. Several assorted sizes of bolts & nuts. 1 Full set of spare gear for oil fuel burning system.

The foregoing is a correct description,

ARMANDO ESPINOLA DE GUTIERREZ AYALA

D. A. Fullerton

for the installation of the machinery

Dates of Survey while building: During progress of work in shops - - See attached report 10910. During erection on board vessel - - 1921 Dec. 12, 16, 30. 1922 Jan. 13. MARCH 20, 22, 23, 24, 25, 29. APRIL 4, 11, 20, 27. MAY 5, 8, 9, 16, 18, 26, 30. JUNE 1, 6. Total No. of visits 23.

Is the approved plan of main boiler forwarded herewith? No.

Is the approved plan of donkey boiler forwarded herewith? Yes.

Dates of Examination of principal parts: Cylinders ✓ Slides ✓ Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓ Crank shaft ✓ Thrust shaft ✓ Tunnel shafts ✓ Screw shaft ✓ Propeller ✓ Stern tube ✓ Steam pipes tested 20/4/22. Engine and boiler seatings 4/4/22. Engines holding down bolts 11/4/22. Completion of pumping arrangements 16/5/22. Boilers fixed 11/4/22. Engines tried under steam 26/5/22. Completion of fitting sea connections 29/3/22. Stern tube 25/3/22. Screw shaft and propeller 25/3/22. Main boiler safety valves adjusted 9/5/22. Thickness of adjusting washers P. 11 7/8 S. 9 1/2. P. 10 7/8 S. 10 1/2. Material of Crank shaft by Steel Identification Mark on Do. 7285. Material of Thrust shaft by Steel Identification Mark on Do. 5484 N. Material of Tunnel shafts by Steel Identification Marks on Do. 5484 N. Material of Screw shafts by Steel Identification Marks on Do. 7285. Material of Steam Pipes LAP WELDED WROUGHT IRON. Test pressure 540 lbs.

Is an installation fitted for burning oil fuel? YES. Is the flash point of the oil to be used over 150°F? YES.

Have the requirements of Section 49 of the Rules been complied with? YES.

Is this machinery duplicate of a previous case? No. If so, state name of vessel.

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

The engines & boilers of this vessel have been exam'd by us whilst being installed on board at Bilbao. On completion the machinery was tried under steam and found satisfactory. The oil fuel system was tried under working conditions & found in order & fitted & tested in accordance with Section 49 of the Rules.

This vessel is now eligible in our opinion to have notation of L.M.C. 6-22. Electric lighting and fitted for the burning of oil fuel, flash point above 150°F. recorded in the register book.

It is submitted that this vessel is eligible for THE RECORD.

L.M.C. - 6.22. C.L.

Fitted for Oil Fuel, 6.22, F.P. above 150°F.

(Date of build 1922.)

PESETAS.

The amount of Entry Fee ... 175 Ptas. Special ... 1500 " ELECT. LIGHT Donkey Boiler Fee ... 250 " Travelling Expenses (if any) ... 39 " Late fee, Bureau request ... 128 " Committee's Minute

Assigned

MACHINERY DEPT. WRITTEN.

Fitted for oil fuel 6.22

F.P. above 150°F

C. H. Fowling & W. G. McKee Engineer Surveyors to Lloyd's Register of Shipping.



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BILBAO.

Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.