

## REPORT ON MACHINERY.

No. 5321

Date of writing Report 5<sup>th</sup> 1- 1919 When handed in at Local Office 5<sup>th</sup> 1- 1919 Port of Bilbao Received at London Office THU. 20 FEB. 1919

No. in Survey held at Gijon Date, First Survey 28<sup>th</sup> 8-18 Last Survey 10<sup>th</sup> 1- 1919

Reg. Book. on the S S "GLORIA" (N<sup>o</sup> 2 ship built by Astilleros de Riera) (Number of Visits)

Master FELIPE BASAURI Built at Gijon By whom built ASTILLEROS DE RIERA Tons { Gross 284  
Net 118

Engines made at into maine type By whom made Astilleros de Riera when made 1919

Boilers made at Bilbao By whom made TALLERES DE CONSTRUCCIONES METALICAS when made 1918  
ZORROZA BILBAO

Registered Horse Power 142.62 Owners MACLENNAN & YBARRAI Port belonging to Bilbao

Nom. Horse Power as per Section 28 142.62 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Description of Engines Compound Surface Condensing No. of Cylinders 2 No. of Cranks 2

Dia. of Cylinders 37 1/2" x 65 1/2" Length of Stroke 39 1/2" Revs. per minute 180 Dia. of Screw shaft as per rule 145 Material of screw shaft Steel

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 640

INTERMEDIATE Dia. of shaft as per rule 135 Dia. of Crank shaft journals as per rule 145 Dia. of Crank pin 163 1/2" Size of Crank webs 330 x 110 Dia. of thrust shaft under collars 160 7/8" Dia. of screw 1980 7/8" Pitch of Screw 2590 7/8" No. of Blades 4 State whether moveable no Total surface ✓

No. of Feed pumps one Diameter of ditto 70 7/8" Stroke 214 7/8" Can one be overhauled while the other is at work ✓

No. of Bilge pumps one Diameter of ditto 70 Stroke 214 7/8" Can one be overhauled while the other is at work ✓

No. of Donkey Engines 2 Sizes of Pumps 4 1/2" x 3" x 4" No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 4 of 52 7/8" In Holds, &c. 4 of 52 7/8" in Holds and one of 70 7/8" at the fore peak

No. of Bilge Injections 1 sizes 120 7/8" Connected to condenser to circulating pump yes Is a separate Donkey Suction fitted in Engine room & size 120 7/8"

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 none

Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks valves & cocks

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

Is the Screw Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓

BOILERS, &c.—(Letter for record S) Manufacturers of Steel ALTOS HORNOS DE VIZCAYA

Total Heating Surface of Boilers 750 sq ft Is Forced Draft fitted no No. and Description of Boilers one single ended multitubular

Working Pressure 130 lbs sq in Tested by hydraulic pressure to 260 lbs sq in Date of test 8-11-18 No. of Certificate ✓

Can each boiler be worked separately ✓ Area of fire grate in each boiler 27 sq ft No. and Description of Safety Valves to each boiler 2 direct springs Area of each valve 6 sq in Pressure to which they are adjusted 130 lbs sq in Are they fitted with easing gear yes

Smallest distance between boilers or uptakes and bunkers or woodwork 420 7/8" Mean dia. of boilers 9'-10" Length 9'-6" Material of shell plates Steel

Thickness 27/32" Range of tensile strength 28-32 Are the shell plates welded or flanged none Descrip. of riveting: cir. seams 2 Rows long. seams 0. Butt St. Su. Ri Diameter of rivet holes in long. seams 1" Pitch of rivets 5 1/8" Lap of plates or width of butt straps 10 1/2"

Per centages of strength of longitudinal joint rivets 144% plate 80.5% Working pressure of shell by rules 171 lbs sq in Size of manhole in shell 12" x 16"

Size of compensating ring 6 7/8" x 27/32" No. and Description of Furnaces in each boiler 2 Plain Material Steel Outside diameter 36"

Length of plain part top 74" Thickness of plates crown 11/16" Description of longitudinal joint welded No. of strengthening rings none

Working pressure of furnace by the rules 84 lbs sq in Combustion chamber plates: Material Steel Thickness: Sides 5/8" Back 1/16" Top 5/8" Bottom 27/32"

Pitch of stays to ditto: Sides 7 3/4" x 8" Back 8 3/8" x 8" Top 7 1/4" x 8 1/2" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 204 lbs sq in

Material of stays Steel Area at smallest part 1.76 sq in Area supported by each stay 68 sq in Working pressure by rules 233 lbs sq in End plates in steam space: Material Steel Thickness 27/32" Pitch of stays 15 1/2" x 12" How are stays secured nuts & washers Working pressure by rules 172 lbs sq in Material of stays Steel

Area at smallest part 4.11 sq in Area supported by each stay 186 sq in Working pressure by rules 229 lbs sq in Material of Front plates at bottom Steel

Thickness 27/32" Material of Lower back plate Steel Thickness 27/32" Greatest pitch of stays 13" Working pressure of plate by rules 189 lbs sq in

Diameter of tubes 3 1/4" Pitch of tubes 4 1/4" x 4 1/4" Material of tube plates Steel Thickness: Front 27/32" Back 3/4" Mean pitch of stays 8 1/2" x 8 1/2"

Pitch across wide water spaces 13" Working pressures by rules 151 lbs sq in Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 7 1/4" x 3/4" Length as per rule 32" Distance apart 9 1/2" Number and pitch of stays in each 2-8"

Working pressure by rules 203 lbs sq in 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 ✓

6500-655600-05600



IS A DONKEY BOILER FITTED?

no

If so, is a report now forwarded?

✓

SPARE GEAR. State the articles supplied:—

2 connecting Rod top end bolts & nuts  
2 " " Bottom end bolts & nuts  
2 main bearings bolts  
1 set of coupling bolts  
1 set of feed & bilge pump valves & one set of piston springs. & quantity of assorted bolts and nuts

The foregoing is a correct description,

ASTILLEROS RIERA (S.A.)

Presidente  
G. Riera

Manufacturer.

Dates of Survey while building { During progress of work in shops -- AUG-1918-28<sup>th</sup> Sep.-1918-2<sup>nd</sup> 4<sup>th</sup> - Dec 1918-3<sup>rd</sup> 4<sup>th</sup>  
During erection on board vessel -- 1918 Dec. 27<sup>th</sup> 28<sup>th</sup> JAN 1919-9<sup>th</sup> 10<sup>th</sup>  
Total No. of visits 9

Is the approved plan of main boiler forwarded herewith no

" " " donkey " " " ✓

Dates of Examination of principal parts—Cylinders 2<sup>nd</sup> & 4<sup>th</sup> 9-18 Slides 2<sup>nd</sup> & 4<sup>th</sup> 9-18 Covers 2<sup>nd</sup> & 4<sup>th</sup> 9-18 Pistons Rods  
Connecting rods 27-12-18 Crank shaft 25-6-18 Thrust shaft 28-12-18 INTER shaft 28-12-18 Screw shaft 28-12-18 Propeller 27-12-18  
Stern tube 3<sup>rd</sup> 4<sup>th</sup> 12-18 Steam pipes tested 27-12-18 Engine and boiler seatings 28-12-18 Engines holding down bolts 28-12-18  
Completion of pumping arrangements 27-12-18 Boilers fixed 27-12-18 Engines tried under steam 10-1-19  
Completion of fitting sea connections 8-1-18 Stern tube 3-5-18 Screw shaft and propeller 8-1-19  
Main boiler safety valves adjusted 10-1-19 Thickness of adjusting washers Star 18 7/8 Port 13 7/8  
Material of Crank shaft Steel Identification Mark on D. 26-6-18 W.D.E. Material of Thrust shaft Steel Identification Mark on D. 28-12-18 A.D.B.  
Material of INTER shafts Steel Identification Marks on D. 28-12-18 LLOYD'S NO 2 28-12-18 A.D.B. Material of Screw shafts Steel Identification Marks on D. 28-12-18 LLOYD'S NO 3 28-12-18 A.D.B.  
Material of Steam Pipes Copper Test pressure 260 lbs sq

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.)

All the parts of this engine have been opened out and examined. and all the bearings refitted. and the HP Cylinder Piston Rod has been renewed. The screw shaft is fitted with continuous liner and the dia. is 145<sup>mm</sup> in accordance with the approved plans as per letters dated E 9-5-17/E 6-6-17. The Boilers have been built under Special Survey, and the material and workmanship are sound and good and same have been tested by hydraulic pressure with satisfactory results. We enclose herewith the Boiler certificate for Signature. The engines and Boiler were fitted on board, secured mounted and tested under steam trials with satisfactory results. also the auxiliary machinery. I have to point you out that the condenser steel plate is only 9<sup>mm</sup> thick instead of 10 1/2<sup>mm</sup> as approved by the plans dated 23/12/18 the builders inform us that if this could be compensated by fitting outside angle stiffeners. The machinery of this vessel in my opinion is eligible to have notation of MS 1-19 and NB 1-19

The amount of Entry Fee ... £ 100 : When applied for,  
Special ... £ 60.0 : 16-1 1919  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ 258 : 16-1 1919

Committee's Minute

Assigned

See Report No 5354

L.M.C. 1-19

A. de Barona

Engineer Surveyor to Lloyd's Register of Shipping.



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