

REPORT ON OIL ENGINE MACHINERY.

-6 Arn 1520

BILBO REPORT No 6857

Date of writing Report **26 June 1923** When handed in at Local Office **19** Port of **Stockholm** Received at London Office **MON. 2 JUL. 1923**

No. in Survey held at **Stockholm** Date, First Survey **17 Jan.** Last Survey **19 June 1923.**
 Reg. Book. **M.V. "C15"** Number of Visits **8**

on the **Single** } Screw vessels **Tons** { Gross **19.16**
Twin } Net **18.18**
Triple }

Master **Gijon** Built at **Gijon** By whom built **Astilleros de Gijon Yard No. 15** When built **1926**
 Engines made at **Stockholm** By whom made **J. & C.G. Bolinder's Co. Ltd** Engine No. **15200/03** When made **1923**

Donkey Boilers made at **Stockholm** By whom made **Stockholm** Boiler No. **1923** When made **1923**

Brake Horse Power **160** Owners **Astilleros de Gijon** Part belonging to **Gijon**
Möller's order no. 197/

Nom. Horse Power as per Rule **46** Is Refrigerating Machinery fitted for cargo purposes **No.** Is Electric Light fitted **No.**

OIL ENGINES, &c.—Type of Engines **Bolinder Oil Engine** **2 stroke cycle** **Single or double acting**

Maximum pressure in cylinders **17Kg/sq.cm.** No. of cylinders **4** No. of cranks **4** Diameter of cylinders **300 m/m**

Length of stroke **310 m/m** Revolutions per minute **350** Means of ignition **hot bulb** Kind of fuel used **crude oil**

Is there a bearing between each crank **yes** Span of bearings (Page 92, Section 2, par. 7 of Rules) **600 m/m**

Distance between centres of main bearings **600 m/m** Is a flywheel fitted **yes** Diameter of crank shaft journals **121 m/m**
 as fitted **128 m/m**

Diameter of crank pins **128 m/m** Breadth of crank webs **161 m/m** Thickness of ditto **68 m/m**
 as fitted **170 m/m** as fitted **71.5 m/m**

The flywheel is fitted at fore end of the crank shaft

Diameter of flywheel shaft **100 m/m** Diameter of tunnel shaft **116 m/m** Diameter of thrust shaft **118 m/m**
 as fitted **100 m/m** as fitted **116 m/m** as fitted **118 m/m**

Diameter of screw shaft **100 m/m** 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 watertight in the propeller boss **Yes** 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 and non-corrosive **No**

If two liners are fitted, is the shaft lapped or protected between the liners **No** If without liners, is the shaft arranged to run in oil **No**

Type of outer gland fitted to stern tube **Guard ring** Length of stern bush **440 m/m** Diameter of propeller **1200 m/m**

Pitch of propeller **1200 m/m** No. of blades **3** state whether moveable **No.** Tonnage surface **square feet**

Method of reversing **timing** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **yes** Thickness of cylinder liners **none fitted**

Are the cylinders fitted with safety valves **no** Means of lubrication **pumps** Are the exhaust pipes and silencers water cooled or lagged with non-conducting material **yes** If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **fitted**

to funnel **yes** No. of cooling water pumps **2** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **yes**

No. of bilge pumps fitted to the main engines **1** Diameter of ditto **100 m/m** Stroke **50 m/m**

Can one be overhauled while the other is at work **yes** No. of auxiliary pumps connected to the main bilge lines **none** How driven **yes**

Sizes of pumps **1 1/2 dia.** No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room **1 1/2 dia.**

and in holds, etc. **1 1/2 dia.** No. of ballast pumps **yes** How driven **yes** Sizes of pumps **yes**

Is the ballast pump fitted with a direct suction from the engine room bilges **yes** State size **yes** Is a separate auxiliary pump suction fitted in Engine Room and size **to: yes**

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** Are they fixed sufficiently high on the ship's side to be seen without lifting the floor 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 all pipes, cocks, valves and pumps in connection with the machinery 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 **none**

worked from **yes** If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **yes**

No. of main air compressors **none fitted** No. of stages **yes** Diameters **yes** Stroke **yes** Driven by **yes**

No. of auxiliary air compressors **yes** No. of stages **yes** Diameters **yes** Stroke **yes** Driven by **yes**

No. of small auxiliary air compressors **yes** No. of stages **yes** Diameters **yes** Stroke **yes** Driven by **yes**

No. of scavenging air pumps **yes** Diameter **yes** Stroke **yes** Driven by **yes**

Diameter of auxiliary Diesel Engine crank shafts **yes** Are the air compressors and their coolers made so as to be easy of access **yes**

AIR RECEIVERS:—No. of high pressure air receivers **1** Internal diameter **434 m/m** Cubic capacity of each **280 litres**

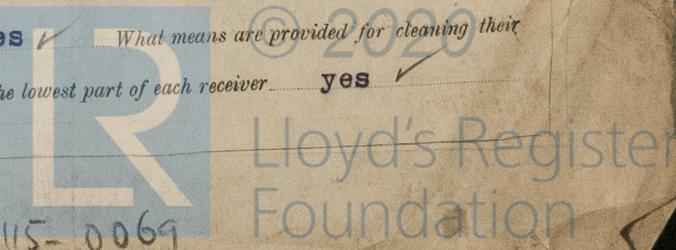
material **S.M. Steel** Seamless, lap welded or riveted longitudinal joint **lapwelded** Range of tensile strength **min. 23 tons sq. inch**

thickness **8 m/m** No. of starting air receivers **1** Internal diameter **434 m/m**

Total cubic capacity **280 litres** Material **S.M. Steel** Seamless, lap welded or riveted longitudinal joint **lapwelded**

Range of tensile strength **min. 23 tons sq. inch** Working pressure by rules **257 lbs.** Is each receiver, which can be isolated, fitted with a safety valve as per Rule **yes** What means are provided for cleaning their inner surfaces **manhole door**

Can the internal surfaces of the receivers be examined **yes** Is there a drain arrangement fitted at the lowest part of each receiver **yes**



007100-007115-0069

IS A DONKEY BOILER FITTED?

If so, is a report now forwarded?

HYDRAULIC TESTS:—

| DESCRIPTION. | DATE OF TEST. | WORKING PRESSURE. | TEST PRESSURE. | STAMPED. | REMARKS. |
|---------------------------------|----------------|-------------------|----------------|---|----------|
| ENGINE CYLINDERS | 19.6.23. | 17 Kg/sq.cm. | 37Kg/sq.cm. | Lloyd's Test 37 Kg. A.I.19.6.23. A | |
| COVERS | 19.6.23. | ditto | ditto | | |
| JACKETS | 19.6.23. | — | 3,5Kg/sq.cm. | | |
| PISTON WATER PASSAGES..... | /Open pistons/ | | | | |
| MAIN COMPRESSORS—1st STAGE..... | | | | | |
| 2nd | None fitted | | | | |
| 3rd | | | | | |
| AIR RECEIVERS—STARTING | 19,6.23. | 15Kg/sq.cm. | 30Kg/sq.cm. | No. 2239 Lloyd's Test 30 Kg. WP 15 Kg. A.I.19.6.23. A | |
| INJECTION | | | | | |
| AIR PIPES | | | | | |
| FUEL PIPES | | | | | |
| FUEL PUMPS | | | | | |
| SILENCER | 19.6.23. | — | 3,5Kg/sq.cm. | Hydr. Test 3,5 Kg. A.I.19.6.23. A | |
| WATER JACKET | 19.6.23. | — | ditto | | |
| SEPARATE FUEL TANKS | | | | | |

PLANS. Are approved plans forwarded herewith for shafting **no 25.6.25** Receivers **Starting E. 8.3.16.** Separate Tanks **None**

SPARE GEAR to be supplied and inspected on delivery.
 2 top end bolts and nuts, 2 in. bearing studs for pumps and bilge pumps etc.
 1 disc valve, 3 studs for injection valves, one stud for cylinder, one thrust-
 bearing bolt, one bolt for lubricating apparatus, one feed pump etc bolt
 bolt for oscillating lever, one bolt for governor weight, 2. Stud &
 discharge valves for air pump, and two coupling bolts and nuts.

The foregoing is a correct description.

ASTILLEROS de GIRON Manufacturer.

| | | | | | | | |
|---|----------------------------------|------------------------------------|------------------------------------|---|------------|-----------------------------|------------------------------------|
| Dates of Survey while building | During progress of work in shops | 7 & 31 | 16, 21 & 26 | 9 | 16 & 19 | 1923. | |
| | During erection on board vessel | 1 | 2 | 3 | 6 | | |
| Total No. of visits | | 8 in shop | 15 on ship | | | | |
| Dates of Examination of principal parts—Cylinders | | 16&19 | 23 | Covers | 16&19 | 23 | |
| Crank shaft | 7, 16, 23 | 17, 16&21, 19 | 23 | Tunnel shafts | ✓ | Screw shaft | 16&19 |
| Engines holding down bolts | Feb. 22 | Completion of pumping arrangements | March 9 | Engines tried under working conditions in shops | 16 23 | | |
| Material of crank shaft | S.M. Steel | Identification Mark on Do. | Lloyd's No. 3240 A.I. 16.2.23.A | Material of thrust shaft | S.M. Steel | Identification Mark on Do. | Lloyd's No. 3233 A.I. 16.2.23.A |
| Material of tunnel shaft | ✓ | Identification Marks on Do. | ✓ | Material of screw shafts | Steel | Identification Marks on Do. | No. 15, 5-11-25 T.M. |
| Is the flash point of the oil to be used over 150° F. | Yes ✓ | | | | C.14 ✓ | | |
| Is this machinery duplicate of a previous case | yes ✓ | If so, state name of vessel | See Skm. report no. 2247. | | | | |

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

I am of opinion, that this motor is of superior material and workmanship, and, as it has been designed and constructed under my special survey, I have respectfully to submit, that it will be eligible to be classed **LMC**, as soon as it has been

fitted in a classed vessel to the satisfaction of the Society's Surveyors.

This machinery has now been specially fitted on board in accordance with the Rules, approved plans and instructions. The materials and workmanship are good and on trial under working conditions were found satisfactory. In my opinion this vessel is eligible to be classed with the notation **L.M.C. 3-26**.

| | | | |
|------------------------------------|---------|-------------------|-------------------------|
| The amount of Entry Fee | £ 6.00 | When applied for, | |
| Special survey in shop | £ 12.00 | When received, | 22 June 1923 25/1/26 |
| Fitting on board Donkey Boiler Fee | £ 3.00 | | |
| Travelling Expenses (if any) | £ 3.69 | | 7. 5. 26 |

Thomas Miller, Engineer Surveyor to Lloyd's Register of Shipping.
 Assisted by Mr. K. J. Andersson

Committee's Minute

WED. 7 APR 1926

Assigned

Thme 3. 26 CERTIFICATE WRITER

Oil Inquiry



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