

## REPORT ON OIL ENGINE MACHINERY.

No. 2312.

Date of writing Report 26 June 1923 When handed in at Local Office

Port of Stockholm

Received at London Office

MON. 2 JUL. 1923

No. in Survey held at Stockholm  
Reg. Book.

Date, First Survey 17 Jan.

Last Survey 19 June 1923.

Number of Visits 8

✓ on the Single }  
Twin } Screw vessels  
Triple }

M.V. "C15"

Tons { Gross 19.16  
Net 18.18.

Master ✓ Built at GIRON

By whom built Astilleros de Giron Yard No. 15

When built 1926.

Engines made at Stockholm

By whom made J. &amp; C.G. Bolinder's Co. Ltd Engine No. 15200/03

When made 1923

Donkey Boilers made at ✓

By whom made ✓

Boiler No. ✓ When made ✓

Brake Horse Power 160

Owners Astilleros de Giron

Port belonging to Giron

Nom. Horse Power as per Rule 46 ✓

Is Refrigerating Machinery fitted for cargo purposes. No.

Is Electric Light fitted No.

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

Maximum pressure in cylinders 17 Kg/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) 87 3 1

600 m/m ✓

Distance between centres of main bearings 600 m/m

Is a flywheel fitted yes ✓

Diameter of crank shaft journals as per Rule 121 m/m ✓  
as fitted 128 m/m ✓

Diameter of crank pins 128 m/m ✓

Breadth of crank webs as per Rule 161 m/m ✓  
as fitted 170 m/m ✓Thickness of ditto as per Rule 68 m/m ✓  
as fitted 71.5 m/m ✓

The flywheel is fitted at fore end of the crank shaft ✓

Diameter of flywheel shaft as per Rule 128 m/m ✓  
as fitted 128 m/m ✓Diameter of tunnel shaft as per Rule 128 m/m ✓  
as fitted 128 m/m ✓Diameter of thrust shaft as per Rule 116 m/m ✓  
as fitted 118 m/m ✓Diameter of screw shaft as per Rule 100 m/m ✓  
as fitted 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.

Total 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

No. of cooling water pumps 2

Is the sea suction provided with an efficient strainer which can be cleared

within the vessel

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 ✓

No. of auxiliary pumps connected to the main bilge lines None

How driven ✓

Sizes of pumps

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.

No. of ballast pumps ✓

How driven ✓

Sizes of pumps ✓

Is the ballast pump fitted with a direct suction from the engine room bilges ✓

State size ✓

Is a separate auxiliary pump suction fitted in

Engine Room and size 20"

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 ✓

Is it fitted with a watertight door None

worked from ✓

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

No. of main air compressors none fitted

No. of stages

Diameters

Stroke

Driven by

No. of auxiliary air compressors

No. of stages

Diameters

Stroke

Driven by

No. of small auxiliary air compressors

No. of stages

Diameters

Stroke

Driven by

No. of scavenging air pumps

Diameter

Stroke

Driven by

Diameter of auxiliary Diesel Engine crank shafts as per Rule  
as fitted

Are the air compressors and their coolers made so as to be easy of access

AIR RECEIVERS:—No. of high pressure air receivers

Internal diameter

Cubic capacity of each

material

Seamless, lap welded or riveted longitudinal joint

Range of tensile strength

thickness

working pressure by Rules

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

thickness 8 m/m

Working pressure by rules 257 lbs.

Is each receiver, which can be isolated.

fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined yes

What means are provided for cleaning their

inner surfaces

manhole door ✓

Is there a drain arrangement fitted at the lowest part of each receiver yes

007100-007115-0069

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## 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 (If not, state date of approval) **Secretary's letter E.7.11.22.** **Starting E. 8.3.16.** Receivers **No. 25.6.25** Separate Tanks **None**

SPARE GEAR to be supplied and inspected on delivery.

2 top end bolts and nuts, 2 in. bearing studs & nuts on bridge pump suc. & discharge valves, 3 studs for injection valves, one stud for cylinder, one thrust bearing bolt, one bolt for lubricating apparatus, one feed pump ecc bolt, one bolt for oscillating lever, one bolt for governor weight, 2. 2. 2. discharge valves for air pump, and two coupling bolts and nuts.

The foregoing is a correct description.

ASTILLEROS de GUION

Manufacturer.

Dates of Survey while building: During progress of work in shops: 7 & 31, 16, 21 & 26, 9, 16 & 19, 1923. 1, 2, 3, 6. 24: July 29, Aug. 30, 1925, Jan 30, Feb. 6, 18, Aug. 11, Sept. 29, Oct. 21, Nov. 6, Dec. 17, 30, 1926, Feb. 20, Mar. 9, 16.

Total No. of visits: 8 in shop, 15 on ship.

Dates of Examination of principal parts—Cylinders: 16 & 19, 23. Covers: 16 & 19, 23. Pistons: 16 & 19, 23. Rods: 16 & 19, 23. Connecting rods: 31, 16 & 26, 19, 23.

Crank shaft: 31, 16, 2, 3, 6, 23. Thrust shaft: 17, 16 & 21, 19, 23. Tunnel shafts: 17, 16 & 21, 19, 23. Screw shaft: 16 & 19, 23. Propeller: 16 & 19, 23. Stern tube: 16 & 19, 23. Engine seating: 16 & 19, 23.

Engines holding down bolts: Feb. 22. Completion of pumping arrangements: Mar. 9. Engines tried under working conditions in shops: 16, 23.

Completion of fitting sea connections: March 9. Stern tube: March 9. Screw shaft and propeller: March 9.

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 TM.

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, &amp;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 and 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 ... £ 63/6 : When applied for,  
Special survey in ... £ 12 : 0 : 22 June 1923  
Fitting on board shop ... £ 3 : 00 : 25/1/26  
Donkey Boiler Fee ... £ 3 : 00 :  
Travelling Expenses (if any) £ 3 : 69 : 7. 5. 1926

Committee's Minute

WED. 7 APR 1926

Assigned

Thine 3. 26

CERTIFICATE WRITTEN

Oil Engraving



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