

# REPORT ON OIL ENGINE MACHINERY.

No. 2311.

Received at London Office

MON. 2 JUL. 1923

Reporting Report **26 June 1923** When handed in at Local Office **10** Port of **Stockholm**

Survey held at **Stockholm** Date, First Survey **17 Jan** Last Survey **19 June 1923.**  
 Number of Visits **10**

on the **Single** } Screw vessels  
**Twin** }  
**Triple** }

Built at **Stockholm** By whom built **J. & C.G. Bolinder's Co. Ltd.** Yard No. **15196/99** When built **1923**

Boilers made at **Stockholm** By whom made **J. & C.G. Bolinder's Co. Ltd.** Engine No. **15196/99** When made **1923**

Horse Power **160** Owners **Astilleros de Tarragona S.A.** Port belonging to **Tarragona**  
**/Möllers order no. 202/**

Horse Power as per Rule **46** Is Refrigerating Machinery fitted for cargo purposes **Is Electric Light fitted**

**ENGINES, &c.**—Type of Engines **Bolinder Oil Engine** **2** stroke cycle **Single** ~~Double~~ acting

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

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

Distance between 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 per Rule **128 m/m** as fitted

Diameter of crank pins **128 m/m** Breadth of crank webs **161 m/m** as per Rule **170 m/m** as fitted Thickness of ditto **68 m/m** as per Rule **71,5 m/m** as fitted

Diameter of flywheel shaft **116 m/m** as per Rule **118 m/m** as fitted Diameter of tunnel shaft **116 m/m** as per Rule **118 m/m** as fitted

Diameter of screw shaft **116 m/m** as per Rule **118 m/m** as fitted Is the screw shaft fitted with a continuous liner the whole length of the stern tube

Is the liner made watertight in the propeller boss **Is the liner in more than one length are the joints burned**

Does 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 without liners, is the shaft arranged to run in oil**

Are the liners are fitted, is the shaft lapped or protected between the liners **If without liners, is the shaft arranged to run in oil**

Is the outer gland fitted to stern tube **Length of stern bush** Diameter of propeller **square feet**

Number of blades **state whether moveable** Total surface **square feet**

Timing 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 **ducting material**

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **Is the sea suction provided with an efficient strainer which can be cleared**

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

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

Can the pumps be overhauled while the other is at work **No. of auxiliary pumps connected to the main bilge lines** How driven **Sizes of pumps**

No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room **No. of ballast pumps** How driven **Sizes of pumps**

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

Are all the bilge suction pipes fitted with roses **Are the roses in Engine Room always accessible**

Are the sluices on Engine Room bulkheads always accessible **Are all connections with the sea direct on the skin of the ship**

Are the key valves or cocks **Are they fixed sufficiently high on the ship's side to be seen without lifting the floor plates**

Are the discharge pipes above or below the deep water line **Are they each fitted with a discharge valve always accessible on the plating of the vessel**

Are all pipes, cocks, valves and pumps in connection with the machinery accessible at all times **Are the bilge suction pipes, cocks and valves arranged so as to prevent any communication between the sea and the bilges**

Is the screw shaft tunnel watertight **Is it fitted with a watertight door**

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **Are the air compressors and their coolers made so as to be easy of access**

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**

Are the meter of auxiliary Diesel Engine crank shafts **as per Rule** **as fitted**

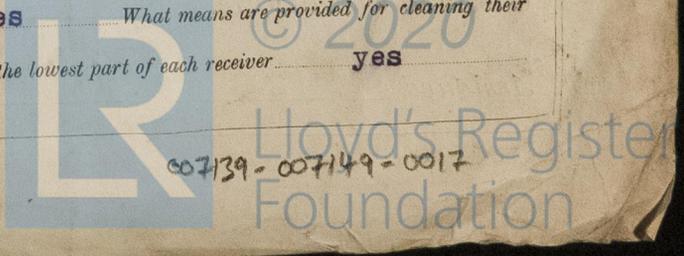
**RECEIVERS:—**No. of high pressure air receivers **Internal diameter** **Cubic capacity of each**

Material **Seamless, lap welded or riveted longitudinal joint** Range of tensile strength **1** Internal diameter **434 m/m**

Working pressure by Rules **No. of starting air receivers** **1**

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** thickness **8 m/m** Working pressure by rules **257 lbs.** Is each receiver, which can be isolated, **with a safety valve as per Rule** **Can the internal surfaces of the receivers be examined** **yes** What means are provided for cleaning their **surfaces** **manhole door** **Is there a drain arrangement fitted at the lowest part of each receiver** **yes**



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 .....	7.6.23.	17Kg./sq.cm.	37Kg./sq.cm.	Lloyd's Test 37 Kg. A.I. 7.6.23. A.	
COVERS .....	7.6.23.	ditto	ditto		
JACKETS .....	7.6.23	—	3,5Kg./sq.cm.		
PISTON WATER PASSAGES.....	/Open pistons/				
MAIN COMPRESSORS—1st STAGE.....					
2nd .....	None fitted				
3rd .....					
AIR RECEIVERS—STARTING .....	7.6.23.	15Kg./sq.cm.	30Kg./sq.cm.	No. 2238 Lloyd's Test 30 Kg. W.P. 15 Kg. A.I. 7.6.23. A.	
INJECTION .....					
AIR PIPES .....					
FUEL PIPES .....					
FUEL PUMPS .....					
SILENCER .....	7.6.23.	—	3,5Kg./sq.cm.	Hydr. Test 3,5 Kg. A.I. 7.6.23. A.	
WATER JACKET .....	7.6.23.	—	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. Receivers Starting E.8.3.16. Separate Tanks

SPARE GEAR to be supplied and inspected on delivery.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- 17, 20 & 31, 6, 16, 21 & 26, 4, 7 & 19 1923. / During erection on board vessel -- / Total No. of visits 10 in shop

Dates of Examination of principal parts—Cylinders 4&7/6 23 Covers 4&7/6 23 Pistons 4&7/6 23 Rods Connecting rods 31, 16&26 / 1 2 Crank shaft 20, 6, 7/23 Thrust shaft 17, 16&2/2, 7/23 Tunnel shafts Screw shaft Propeller Stern tube Engine seatings 7/6 23

Engines holding down bolts Completion of pumping arrangements Engines tried under working conditions in shop 4/6 23

Completion of fitting sea connections

Material of crank shaft S.M. Steel Identification Mark on Do. Lloyd's No. 3234 A.I. 6.2.23. 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 shafts Identification Marks on Do. Material of screw shafts Identification Marks on Do.

Is the flash point of the oil to be used over 150° F. 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.

The amount of Entry Fee ... £ : : When applied for, Special Survey in shop £ 12 : 0 : 22 June 1923. Donkey Boiler Fee ... £ : : When received, Travelling Expenses (if any) £ : : June 1923

Committee's Minute TUES. 9 FEB 1926

Assigned See Abo F.B. 2/1 6822

O. Jackson  
Engineer Surveyor to Lloyd's Register of Shipping.  
Assisted by Mr. K. J. Anderson.



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Verify (if required) to be sent to (The Surveyors are requested to write on or below the space for Committee's Minute.)