

REPORT ON OIL ENGINE MACHINERY.

No.

Received at London Office - 1 MAR 1926

Date of writing Report 25th Feb 1926 When handed in at Local Office 25th Feb 1926 Port of Barcelona
 Date, First Survey 7th May 1923 Last Survey 25th Feb 1926 Number of Visits 6
 in Survey held at Sarragona
 on the Single Twin Triple Screw vessels C. 21 Tons ^{Gross} 36 _{Net} 0
 Built at Sarragona By whom built Union Naval de Levante Yard No. C. 21 When built 1926
 Engines made at Stockholm By whom made J.C.F. Bolinder Co Ltd Engine No. 15196 When made 1926
 Monkey Boilers made at - By whom made - Boiler No. - When made -
 Brake Horse Power 160 Owners Cia. Arrendataria de Tabacos Port belonging to Barcelona
 m. Horse Power as per Rule 46 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted no

ENGINES, &c.—Type of Engines Bolinder oil engine 2 or 4 stroke cycle 2 Single or double acting Single
 Minimum pressure in cylinders 17 kg/sq. cm. No. of cylinders 4 No. of cranks 4 Diameter of cylinders 300 mm
 Length of stroke 310 mm Revolutions per minute 350 Means of ignition Hot Bullb. 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 mm
 Distance between centres of main bearings 600 mm Is a flywheel fitted Yes Diameter of crank shaft journals ^{as per Rule} 121 mm _{as fitted} 128 mm
 Diameter of crank pins 128 mm Breadth of crank webs ^{as per Rule} 161 mm _{as fitted} 170 mm Thickness of ditto ^{as per Rule} 68 mm _{as fitted} 71.5 mm
 Diameter of flywheel shaft ^{as per Rule} 100 mm _{as fitted} 100 mm Diameter of tunnel shaft ^{as per Rule} 116 mm _{as fitted} 118 mm
 Diameter of screw shaft ^{as per Rule} 100 mm _{as fitted} 100 mm Is the screw shaft fitted with a continuous liner the whole length of the stern tube no 3 Separate liners
 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 -
 Does the liner do 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 Yes
 Are two liners fitted, is the shaft lapped or protected between the liners Yes If without liners, is the shaft arranged to run in oil Yes
 Diameter of outer gland fitted to stern tube begin betwe. Length of stern bush 400 mm Diameter of propeller 1.215 m.
 Diameter of propeller 1.50 m. No. of blades 3 state whether moveable no Total surface 370 square feet
 Method of reversing Priming Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Thickness of cylinder liners -
 Are the cylinders fitted with safety valves Yes Means of lubrication Pumps Are the exhaust pipes and silencers water cooled or lagged with 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 Exhaust to funnel
 Is bilge suction provided in the vessel Yes No. of bilge pumps fitted to the main engines 1 Diameter of ditto 100 mm Stroke 50 mm
 Can one be overhauled while the other is at work Yes No. of auxiliary pumps connected to the main bilge pumps 5 How driven Hand
 No. of pumps 3 No. and sizes of suction connected to both main bilge pumps and auxiliary bilge pumps:—In engine room -
 Are pumps 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 3" Hand pump 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 the valves or cocks Both 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 -
 Is the bilge suction tunnel watertight Yes 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 -
 Capacity 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 -

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 mm
 Total cubic capacity 28 litres Material Sm. Steel Seamless, lap welded or riveted longitudinal joint Lap welded
 Range of tensile strength min 23 kg/sq. cm. thickness 8 mm Working pressure by rules 257 lb Is each receiver, which can be isolated, Yes
 Fitted with a safety valve as per Rule Yes Can the internal surfaces of the receivers be examined Yes What means are provided for cleaning their internal 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 | | | | | |
| " " COVERS | | | | | |
| " " JACKETS | | | | | |
| " " PISTON WATER PASSAGES | | | | | |
| MAIN COMPRESSORS—1st STAGE | | | | | |
| " 2nd " | | | | | |
| " 3rd " | | | | | |
| AIR RECEIVERS—STARTING | | | | | |
| " INJECTION | | | | | |
| AIR PIPES | | | | | |
| FUEL PIPES | | | | | |
| FUEL PUMPS | | | | | |
| SILENCER | | | | | |
| " WATER JACKET | | | | | |
| SEPARATE FUEL TANKS | | | | | |

See Stockholm Report No. 2311.

PLANS. Are approved plans forwarded herewith for shafting *Stockholm Rpt.* Receivers *Separate Tanks*
 (If not, state date of approval)

SPARE GEAR *valves, valve seats & springs, piston rings, bottom end and main bearing bolts & nuts, Coupling bolts, fuel pump & one set of valves for circulating & bilge pumps.*

The foregoing is a correct description of the machinery.

Amirant
 ASTILLEROS DE TARRAGONA

For the installing of the machinery.
 Manufacturer.

| Dates of Survey while building | During progress of work in shops -- | During erection on board vessel -- | Total No. of visits | Ingeniero-Director |
|--------------------------------|-------------------------------------|------------------------------------|---------------------|--------------------|
| | | 26/10/25, 16/11/25, 27/11/25 | 20/1/26, 25/2/26 | |

| Dates of Examination of principal parts | Cylinders | Covers | Pistons | Rods | Connecting rods |
|--|---|--|--|---|---|
| Crank shaft | Thrust shaft | Tunnel shafts | Screw shaft 5/5/25 | Propeller 24/11/25 | Stern tube 16/11/25, Engine seatings 16/11/25 |
| Engines holding down bolts 27/11/25 | Completion of pumping arrangements 24/11/25 | Engines tried under working conditions 22/1/26 | Completion of fitting sea connections 24/12/26 | Stern tube 24/11/25 | Screw shaft and propeller 24/11/25 |
| Material of crank shaft <i>S. S. Steel</i> | Identification Mark on Do. <i>A.I. 6-2-23</i> | Material of thrust shaft <i>S. S. Steel</i> | Identification Mark on Do. <i>A.I. 16-2-23</i> | Material of screw shafts <i>S. S. Steel</i> | Identification Marks on Do. <i>5-5-25</i> |

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 *C. 17, 18, 19 & 20.*

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

The workmanship being good and the machinery being well constructed and installed in accordance with the approved plans and under special survey, is, in my opinion, eligible for Classification with notation of L.M.C.

It is submitted that this vessel is eligible for THE RECORD. + LMC 2.26.

Oil Engines, 250 SA
 4 Cy 11 13/16" - 12 3/16" 46 HP.

| The amount of Entry Fee | Special | Donkey Boiler Fee | Travelling Expenses (if any) | When applied for | When received |
|-------------------------|----------|-------------------|------------------------------|------------------|---------------|
| £ | £ 103/00 | £ | £ | 6 Feb. 1926 | 19.4.26 |

C. H. Fowling
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUES. 2 MAR 1926*
 Assigned *+ L.M.C. 2.26 Oil Engines*



Certificate (if required) to be sent to (The Surveyors are requested not to write on or below the space for Committee's Minute.)

CERTIFICATE WRITTEN