

# REPORT ON OIL ENGINE MACHINERY.

No. 2775.

21 FEB 1927

Received at London Office

Date of writing Report **17.2.27** When handed in at Local Office in **Port of Stockholm**

No. in Survey held at **Stockholm** Date, First Survey **30.9.1926** Last Survey **8.2.1927**

Reg. Book. **Single** on the **Twin** } Screw vessels **Triple** } Number of Visits **6**

Built at **Bughespea** By whom built **Messrs Aldous & Co** Yard No. **18719/20** When built **1927**

Engines made at **Stockholm** By whom made **J. & C.G. Bolinder's Co. Ltd.** Engine No. **18719/20** When made **1927**

Donkey Boilers made at \_\_\_\_\_ By whom made \_\_\_\_\_ Boiler No. \_\_\_\_\_ When made \_\_\_\_\_

Brake Horse Power **120** Owners **Messrs. James Pollock, Sons & Pollock's Order no. 14633/G Co.** Port belonging to **London**

Nom. Horse Power as per Rule **34** Is Refrigerating Machinery fitted for cargo purposes \_\_\_\_\_ Is Electric Light fitted \_\_\_\_\_

**OIL ENGINES, &c.** Type of Engines **Bolinder Oil Engine** **2 stroke cycle** Single **XXXXX** acting **13 3/8**

Maximum pressure in cylinders **18,5 Kg/cm<sup>2</sup>** No. of cylinders **2** Diameter of cylinders **330 mm. 13"** No. of cranks **2** Length of stroke **340 mm.**

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **387 mm.** Is there a bearing between each crank **Yes**

Revolutions per minute **375** Flywheel dia. **710 mm.** Weight **385 Kg.** Means of ignition **Hot bulb** Kind of fuel used **Crude Oil**

Crank Shaft, dia. of journals **125 mm.** Crank pin dia. **125 mm.** Crank Webs Mid. length breadth **164 mm.** Thickness parallel to axis **✓**

**The flywheel is fitted at the fore end of the crank shaft** Mid. length thickness **69,5 mm.** Thickness around eyehole **✓**

Flywheel Shafts, diameter **100 mm.** Intermediate Shafts, diameter **115 mm.** Thrust Shaft, diameter at collars **100 mm.**

Tube Shafts, diameter **as per Rule** Screw Shaft, diameter **as per Rule** Is the tube shaft fitted with a continuous liner **✓**

Bronze Liners, thickness in way of bushes **as per Rule** Thickness between bushes **as per rule** Is the after end of the liner made watertight in the propeller boss **as fitted**

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner \_\_\_\_\_

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 \_\_\_\_\_ Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft \_\_\_\_\_

Length of Bearing in Stern Bush next to and supporting propeller \_\_\_\_\_

Propeller, dia. \_\_\_\_\_ Pitch \_\_\_\_\_ No. of blades \_\_\_\_\_ Material \_\_\_\_\_ whether Moveable \_\_\_\_\_ Total Developed Surface \_\_\_\_\_ sq. feet

Method of reversing Engines **Timing** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **Yes** Means of lubrication **umps**

Thickness of cylinder liners **none fitted.** Are the cylinders fitted with safety valves **no** Are the exhaust pipes and silencers water cooled or lagged with non-conducting material \_\_\_\_\_

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine \_\_\_\_\_

Cooling Water Pumps, No. **1** Is the sea suction provided with an efficient strainer which can be cleared within the vessel \_\_\_\_\_

Bilge Pumps fitted to the Main Engines, No. **none fitted** Diameter \_\_\_\_\_ Stroke \_\_\_\_\_ Can one be overhauled while the other is at work \_\_\_\_\_

Pumps connected to the Main Bilge Line { No. and Size \_\_\_\_\_ How driven \_\_\_\_\_

Ballast Pumps, No. and size \_\_\_\_\_ Lubricating Oil Pumps, including Spare Pump, No. and size \_\_\_\_\_

Are two independent means arranged for circulating water through the Oil Cooler \_\_\_\_\_ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Engine and Boiler Room \_\_\_\_\_

In Holds, &c. \_\_\_\_\_

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size \_\_\_\_\_

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes \_\_\_\_\_ Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges \_\_\_\_\_

Are all Sea Connections fitted direct on the skin of the ship \_\_\_\_\_ Are they fitted with Valves or Cocks \_\_\_\_\_

Are they fixed sufficiently high on the ship's side to be seen without lifting the **platform** plates \_\_\_\_\_ Are the Overboard Discharges above or below the deep water line \_\_\_\_\_

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel \_\_\_\_\_ Are the Blow Off Cocks fitted with a spigot and brass covering plate \_\_\_\_\_

What pipes pass through the bunkers \_\_\_\_\_ How are they protected \_\_\_\_\_

What pipes pass through the deep tanks \_\_\_\_\_ Have they been tested as per Rule \_\_\_\_\_

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times \_\_\_\_\_

Is the arrangement of valves and their connections such as to prevent the possibility of water passing from the sea or from water tanks into the cargo or machinery spaces, or from one compartment to another \_\_\_\_\_ Is the Shaft Tunnel watertight \_\_\_\_\_ Is it fitted with a watertight door \_\_\_\_\_ 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 \_\_\_\_\_

Main Air Compressors, No. **none fitted** No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_

Auxiliary Air Compressors, No. \_\_\_\_\_ No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_

Small Auxiliary Air Compressors, No. \_\_\_\_\_ No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_

Scavenging Air Pumps, No. **none fitted** Diameter \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_

Auxiliary Engines crank shafts, diameter **as per Rule** **as fitted**

**AIR RECEIVERS:**—Is each receiver, which can be isolated, 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 inner surfaces **Mudhole /280 x 200 mm/**

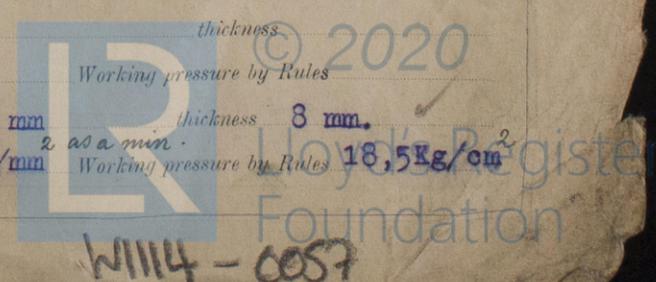
Is there a drain arrangement fitted at the lowest part of each receiver **Yes**

High Pressure Air Receivers, No. \_\_\_\_\_ Cubic capacity of each \_\_\_\_\_ Internal diameter \_\_\_\_\_ thickness \_\_\_\_\_

Seamless, lap welded or riveted longitudinal joint \_\_\_\_\_ Material \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_

Starting Air Receivers, No. **1** Total cubic capacity **286 litres** Internal diameter **434 mm** thickness **8 mm.**

Seamless, lap welded or riveted longitudinal joint **lapwelded** Material **S.M. Steel** Range of tensile strength **36Kg/mm<sup>2</sup>** Working pressure by Rules **18,5Kg/cm<sup>2</sup>**



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 .....	8. 2. 27.	18,5Kg/cm <sup>2</sup>	43 Kg/cm <sup>2</sup> ✓	Lloyd's Test 43 Kg. A.I. 8.2.27. A	
" " COVERS .....	8. 2. 27.	ditto	ditto		
" " JACKETS.....	8. 2. 27.		3,5Kg/cm <sup>2</sup> ✓		
" PISTON WATER PASSAGES.....	Open pistons				
MAIN COMPRESSORS—1st STAGE.....	None fitted				
" 2nd " .....					
" 3rd " .....					
AIR RECEIVERS—STARTING .....	8. 2. 27.	15 Kg/cm <sup>2</sup>	30 Kg/cm <sup>2</sup> ✓	No. 2253 Lloyd's Test A.I. 8.2.27. A W.P. 15 Kg. A.I. 8.2.27. A	
" INJECTION .....					
AIR PIPES .....					
FUEL PIPES .....					
FUEL PUMPS .....					
SILENCER .....	8. 2. 27.		3,5 Kg/cm <sup>2</sup> ✓	Hydr. Test 3,5 Kg. A. I. 8. 2. 27. A	
" WATER JACKET .....	8. 2. 27.		ditto ✓		
SEPARATE FUEL TANKS .....					

PLANS. See Secretary's letters E 16.5.17 & 7.6.21 Receivers E 8.3.16. Separate Tanks  
 (If not, state date of approval)  
 Donkey Boilers General Pumping Arrangements Oil Fuel Burning Arrangements

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 - 30/9, 28/10, 31/12 1926, 17/1, 2 & 8 1927.  
 During erection on board vessel - in shop 6  
 Total No. of visits

Dates of Examination of principal parts—Cylinders 2x8 27 Covers 2x8 27 Pistons 8 27 Rods ✓ Connecting rods 30, 28, 26, 17, 8 27  
 Crank shaft 26, 17, 8 27 Flywheel shaft ✓ Thrust shaft 30, 28, 26, 17, 8 27 Intermediate shafts Tube shaft  
 Screw shaft S.M. Steel Propeller Stern tube Engine seatings Engines holding down bolts in shop 2/2 1927.

Completion of fitting sea connections Completion of pumping arrangements Engines tried under working conditions

Crank shaft, Material S.M. Steel Identification Mark Lloyd's No. 3361 A.I. 17.1.27. A Flywheel shaft, Material Identification Mark  
 Thrust shaft, Material S.M. Steel Identification Mark Lloyd's No. 3332 A.I. 17.1.27. A Intermediate shafts, Material Identification Marks  
 Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

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. 2428.

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 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 ... Kr. 273:00 :  
 Special ... £ : :  
 Donkey Boiler Fee ... £ : :  
 Travelling Expenses (if any) £ : :  
 When applied for, 12. 2. 1927.  
 When received, Mar. 27 1927

H. J. Andersson  
 Acting Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRL 2 SEPI927

Assigned see minute on Lon R/S 91743



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(The Surveyors are requested not to write on or below this space for Committee's Minute)