

REPORT ON OIL ENGINE MACHINERY.

No. 2862

6 SEP. 1927

Received at London Office

Date of writing Report **2 Sept. 1927** when handed in at Local Office **Stockholm**

No. in Survey held at **Stockholm** Date, First Survey **4 Aug. 1917** Last Survey **30 Aug. 1927**
Reg. Book. Number of Visits **8**

on the ~~Single~~ ~~Twin~~ ~~Trip~~ **tug** **Quitador**

Tons ^{Gross} _{Net}

Built at **Chester** By whom built **J. Crichton & Co. Ltd.** Yard No. **13980 - 83** When built **1927**

Engines made at **Stockholm** By whom made **J&C.G. Bolinder's Co. Ltd.** Engine No. **13980 - 83** When made **1927**

Donkey Boilers made at _____ By whom made _____ Boiler No. _____ When made _____

Brake Horse Power **300** Owners **Argentine Navigation Co.** Port belonging to **Buenos Ayres**

Nom. Horse Power as per Rule **86** Is Refrigerating Machinery fitted for cargo purposes _____ Is Electric Light fitted _____

OIL ENGINES, &c.—Type of Engines **Bolinder Oil Engine** **2** ~~or 4~~ stroke cycle **Single** ~~or double~~ acting

Maximum pressure in cylinders **21 Kg./cm.²** No. of cylinders **4** Diameter of cylinders **380 mm.** No. of cranks **4** Length of stroke **410 mm.**

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **778 mm.** Is there a bearing between each crank **yes**

Revolutions per minute **300** Flywheel dia. **900 mm.** Weight **875 kg.** Means of ignition **Hot bulb** Kind of fuel used **Crude oil**

Crank Shaft, dia. of journals ^{as per Rule} **156 mm.** Crank pin dia. **160 mm.** Crank Webs ^{Mid. length breadth} **220 mm.** Thickness parallel to axis **-**

^{as fitted} **160 mm.** ^{Mid. length thickness} **94,5 "** ^{shrunk} Thickness around eye-hole **-**

The flywheel is fitted at fore end of the crank shaft Thrust Shaft, diameter at collars ^{as per Rule} **150 mm.**

Flywheel Shafts, diameter ^{as fitted} _____ Intermediate Shafts, diameter ^{as fitted} _____ Thrust Shaft, diameter at collars ^{as fitted} **155 "**

Tube Shafts, diameter ^{as per Rule} _____ ^{as fitted} _____ Screw Shaft, diameter ^{as per Rule} _____ ^{as fitted} _____

Bronze Liners, thickness in way of bushes ^{as per Rule} _____ ^{as fitted} _____ Thickness between bushes ^{as per rule} _____ ^{as fitted} _____

Is the after end of the liner made watertight in the propeller boss _____ 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 _____

pumps Thickness of cylinder liner **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. **2** 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 ordered** 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} _____

IR 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 **manhole /300 x 400 mm./**

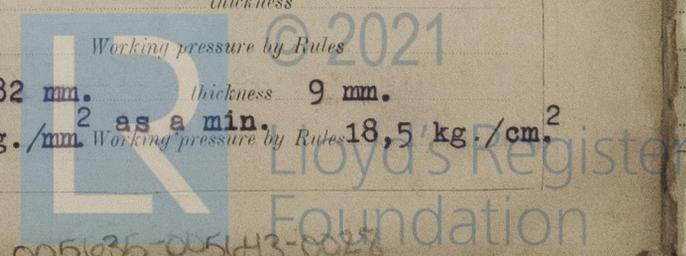
Is there a drain arrangement fitted at the lowest part of each receiver **yes**

High Pressure Air Receivers, No. **none fitted** 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. **2** Total cubic capacity **1300 litres** Internal diameter **582 mm.** thickness **9 mm.**

Seamless, lap welded or riveted longitudinal joint **lapwelded** Material **S.M. Steel** Range of tensile strength **38 kg./mm.²** Working pressure by Rules **18,5 kg./cm.²**



005635-005643-0028

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	30.8.27	21 kg./cm. ²	43 kg./cm. ²	Lloyd's Test 43 kg. A.I.30.8.27. A	
" " COVERS	"	ditto	ditto		
" " JACKETS	"	-	3,5 kg./cm. ²		
" PISTON WATER PASSAGES.....	/open pistons/				
MAIN COMPRESSORS—1st STAGE.....	} none fitted				
" 2nd "					
" 3rd "					
2 AIR RECEIVERS-STARTING	30.8.27	15 kg./cm. ²	30 kg./cm. ²	N:o 2257 LLOYD'S TEST 30 Kg. WP 15 Kg. A.I.30.8.27 A	Spare. N:o 2258 LLOYD'S TEST 30 Kg. WP 15 Kg. A.I.30.8.27 A
" INJECTION					
AIR PIPES					
FUEL PIPES					
FUEL PUMPS					
SILENCER	30.8.27	-	3,5 kg./cm. ²	HYDR. TEST 3,5 Kg. A.I. 30.8.27 A	
" WATER JACKET	30.8.27	-	ditto		
SEPARATE FUEL TANKS					

See Secretary's letters

PLANS. Are approved plans forwarded herewith for Shafting E 18/2, 1/10 1915 Receivers E. 8/3 1916 Separate Tanks

Donkey Boilers General Pumping Arrangements Oil Fuel Burning Arrangements

SPARE GEAR to be supplied and inspected when machinery is fitted in ship.

The foregoing is a correct description.

Manufacturer.

Dates of Survey while building
 During progress of work in shops - - 4 & 10 1917, 2 & 21, 10, 25, 18 & 30 1927.
 8 2 3 4 8
 During erection on board vessel - -
 Total No. of visits in shop 8.

Dates of Examination of principal parts—Cylinders 18 & 30 27 Covers 18 & 30 27 Pistons 30 27 Rods - Connecting rods 2 & 21, 30 27
 8 8 8 2 8
 Crank shaft 10, 25, 30 27 Flywheel shaft Thrust shaft 4 & 10 17, 30 27 Intermediate shafts Tube shaft
 3 4 8 8
 Screw shaft Propeller Stern tube Engine seatings Engines holding down bolts

Completion of fitting sea connections Completion of pumping arrangements Engines tried under working conditions in shop 18 2
 8
 Crank shaft, Material S.M. Steel Identification Mark LLOYD'S N:o 3393 A.I. 30.8.27 A Flywheel shaft, Material Identification Mark
 Thrust shaft, Material S.M. Steel Identification Mark LLOYD'S N:o 1776 A.I. 30.8.27 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. 2398.

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.

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

The amount of Entry Fee ... £ : : When applied for,
 Special ... Kr 391,30 : : 2.9. 19 27
 Donkey Boiler Fee ... £ : : When received,
 Travelling Expenses (if any) £ : : 30-9-27

Committee's Minute

FRI. 27 JAN 1928

Assigned

A. G. GARRSON
 Engineer Surveyor to Lloyd's Register of Shipping.
 Assisted by Mr. K. J. Andersson

