

# REPORT ON OIL ENGINE MACHINERY.

No. 56  
MAR 2 1938

Received at London Office

Date of writing Report 23-2-1938 When handed in at Local Office 19 Port of Groningen  
No. in Survey held at Hesterbrack Date, First Survey 9-12-1937 Last Survey 19-2-1938  
Reg. Book. Number of Visits 8

on the <sup>Single</sup> ~~Triple~~ ~~Quadruple~~ Screw vessel "MARALI"  
Tons } Gross 535.41  
          } Net 258.68

Built at Hesterbrack By whom built N. V. E. J. Smid & Zn Yard No. 653 When built 1938  
Engines made at Cologne By whom made Humboldt Deutz Motoren AG Engine No. 439456/58 When made 1937  
Donkey Boilers made at ✓ By whom made ✓ Boiler No. ✓ When made ✓  
Brake Horse Power 400 ✓ Owners London Owners Port belonging to London  
Nom. Horse Power as per Rule 94 ✓ Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
Trade for which vessel is intended Sea going Trade

IL ENGINES, &c. Type of Engines Heavy Oil Engine R.V. 2 or 4 stroke cycle 4 Single or double acting Single  
Maximum pressure in cylinders 50 kgs/cm<sup>2</sup> Diameter of cylinders 200 mm Length of stroke 450 No. of cylinders 8 No. of cranks 8  
Mean Indicated Pressure 6.6 kgs/cm<sup>2</sup>

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 307.5 mm Is there a bearing between each crank yes  
Revolutions per minute 300 ✓ Flywheel dia. 1250 mm Weight 2600 kgs Means of ignition Solid inj Kind of fuel used on hot bed gas oil  
Crank Shaft, dia. of journals as per Rule ✓ as fitted 190 mm Crank pin dia. 170 mm Crank Webs Mid. length breadth 370 mm shrunken Thickness parallel to axis ✓  
Mid. length thickness 70 mm Thickness around eyehole ✓

Flywheel Shaft, diameter as per Rule ✓ as fitted 190 mm Intermediate Shafts, diameter as per Rule ✓ as fitted 125 mm Thrust Shaft, diameter at collars as per Rule ✓ as fitted 160 mm  
Tube Shaft, diameter as per Rule ✓ as fitted ✓ Screw Shaft, diameter as per Rule ✓ as fitted 150 mm Is the shaft fitted with a continuous liner { no ✓  
141 at tip of cone as per rule

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 no If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 540 mm  
Propeller, dia. 1980 mm Pitch 1120 mm No. of blades 4 Material Cast iron whether Moveable no Total Developed Surface 1.526 m<sup>2</sup>

Method of reversing Engines direct reversing Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication forced Thickness of cylinder liners ? Are the cylinders fitted with safety valves yes 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. up funnel

Cooling Water Pumps, No. one Is the sea suction provided with an efficient strainer which can be cleared within the vessel yes  
Bilge Pumps worked from the Main Engines, No. one Diameter 100 mm Stroke 100 mm Can one be overhauled while the other is at work yes  
Pumps connected to the Main Bilge Line } No. and Size four, one 2.90 tons, one 2.15 tons, one 100 mm stroke, one 100 mm stroke  
How driven two by auxiliary diesel motor, one by main engine, one pump 2 1/4 by hand.

Is the cooling water led to the bilges no If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements ✓  
Ballast Pumps, No. and size one of 90 tons/h. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size capacity 80 lts/min at 1400 rev/min 2 tooth wheel pump, two stages  
Are two independent means arranged for circulating water through the Oil Cooler yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces three 2 1/2" In Pump Room ✓

Are Holds, &c. four 2 1/2" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one a 2 1/2"  
Are all the Bilge Suction pipes in Holds and Pannel Well fitted with strum-boxes yes Are the Bilge Suctions in the Machinery Spaces from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges yes

Are all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks valves & cocks  
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates yes Are the Overboard Discharges above or below the deep water line yes  
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel yes Are the Blow Off Cocks fitted with a spigot and brass covering plate ✓

Do all pipes pass through the bunkers none How are they protected ✓  
Do all 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 yes

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 yes Is the Shaft Tunnel watertight ✓ Is it fitted with a watertight door ✓ worked from ✓  
If the vessel is a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork ✓

Auxiliary Air Compressors, No. one No. of stages two Diameters 145/60 Stroke 100 Driven by main engine hand  
All Auxiliary Air Compressors, No. one No. of stages two Diameters Stroke Driven by Deutz 10.16 Disc. Start  
Suctioning Air Pumps, No. ✓ Diameter ✓ Stroke ✓ Driven by ✓

Auxiliary Engines crank shafts, diameter as per Rule please see Dusseldorf Report No. two 10 B.H.P. as fitted N° 198 Position Port and Starboard  
Hoyd's Register Foundation

**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 and cleaned *yes* Is a drain 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* \_\_\_\_\_ *Actual* \_\_\_\_\_  
**Starting Air Receivers, No.** *two* Total cubic capacity *2 x 500 lbs* Internal diameter *450 mm* thickness *12 mm*  
 Seamless, lap welded or riveted longitudinal joint *lap welded* Material *S.H. Steel* Range of tensile strength *30/44 kg/mm* Working pressure *by Rules* \_\_\_\_\_ *Actual* *30 kg/cm<sup>2</sup>*

**IS A DONKEY BOILER FITTED?** *no* If so, is a report now forwarded? *✓*  
 Is the donkey boiler intended to be used for domestic purposes only *✓*  
**PLANS.** Are approved plans forwarded herewith for Shafting *12-11-37* Receivers *21-7-32* Separate Fuel Tanks \_\_\_\_\_  
 (If not, state date of approval)  
 Donkey Boilers *✓* General Pumping Arrangements *9-10-37* Pumping Arrangements in Machinery Space *6-12-37*  
 Oil Fuel Burning Arrangements *6-12-37*

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied *yes, except spare propeller. Cast iron propeller now fitted with*  
 State the principal additional spare gear supplied *be substitute by a bronze propeller if results of cast iron propeller are satisfactory.*  
*none*

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building { During progress of work in shops -- }  
 { During erection on board vessel -- } *9, 27-12-1937; 7-1-1938; 3, 5, 10, 17, 19-2-1938.*  
 Total No. of visits *9.*

Dates of Examination of principal parts—Cylinders \_\_\_\_\_ Covers \_\_\_\_\_ Pistons \_\_\_\_\_ Rods \_\_\_\_\_ Connecting rods \_\_\_\_\_  
 Crank shaft \_\_\_\_\_ Flywheel shaft \_\_\_\_\_ Thrust shaft *3-2-38* Intermediate shafts *3-2-38* Tube shaft *✓*  
 Screw shaft *7-2-38* Propeller *7-2-38* Stern tube *7-2-38* Engine seatings *27-12-37* Engines holding down bolts *10-2-38*  
 Completion of fitting sea connections *7-2-38* Completion of pumping arrangements *18-2-38* Engines tried under working conditions *19-2-38*  
 Crank shaft, Material *✓* Identification Mark \_\_\_\_\_ Flywheel shaft, Material *✓* Identification Mark *LLOYD'S H.B. 2*  
 Thrust shaft, Material *S.H. Steel* Identification Mark *4 LLOYD'S N° 335* Intermediate shafts, Material *S.H. Steel* Identification Marks *P.F.W. 16-12-*  
 Tube shaft, Material *✓* Identification Mark \_\_\_\_\_ Screw shaft, Material *S.H. Steel* Identification Mark *LLOYD'S H.B. 84*  
*P.F.W. 16-12-*

Is the flash point of the oil to be used over 150° F. *yes*  
 Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *yes.*  
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *no* If so, have the requirements of the Rules been complied with *✓*  
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *✓*  
 Is this machinery duplicate of a previous case *no* If so, state name of vessel \_\_\_\_\_

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*The machinery has been fitted in accordance with the approved plans and Secretary's letters. In the two auxiliary heavy oil engines of 10 B.H.P. (Duty) the crankshafts have been substituted by the tested crankshafts as per certificates, (marks of identification LLOYD'S N° 2000 & 2001. H.B. 6-1-38.) On completion both engines tested under working condition and found good. The machinery examined during the trial and found working satisfactory. We are of opinion that this vessel is eligible for the notation of + LMC 2-38 oil engine.*

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

The amount of Entry Fee .. £	:	:	When applied for,
Special % ... .. £	:	:	19
Donkey Boiler Fee ... .. £	:	:	When received,
Travelling Expenses (if any) £	:	:	22/3 1938

*W. Williams*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
 Assigned *+ LMC 2-38 oil eng.*

FRI 18 MAR 1938 *ymk 2/3.*

