

REPORT ON OIL ENGINE MACHINERY.

APR -9 1937

Received at London Office

Date of writing Report **30.3.** 19**37** When handed in at Local Office **30.3.** 19**37** Port of **Düsseldorf.**

No. in Survey held at **Cologne** Date, First Survey **6.1.1937.** Last Survey **27.3.** 19**37.**
Reg. Book. Number of Visits

on the **Single** Screw vessel **Bohmer** Tons ^{Gross} _{Net}

Built at **Alblasserdam** By whom built **N.V. Scheepswerf voorheen Jan Smit, Czn.** Yard No. **521** When built **1937.**
397172/79

Engines made at **Cologne** By whom made **Humboldt-Deutzmotoren A.G.** Engine No. When made **1937.**

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

Brake Horse Power **400 BHP** Owners Port belonging to

Nom. Horse Power as per Rule **94 NHP** Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended

L ENGINES, &c.—Type of Engines **Heavy Oil Engine R.V.8 M 345** 2 or 4 stroke cycle **4** Single or double acting **single**

Maximum pressure in cylinders **50 kgs/cm²** Diameter of cylinders **280 mm** Length of stroke **450 mm** No. of cylinders **8** No. of cranks **8**

Mean Indicated Pressure **6,6 atm.** 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 **sol. inject.** Kind of fuel used **on test bed gas oil**

Crank Shaft, dia. of journals as per Rule **190 mm** Crank pin dia. **170 mm** Crank Webs Mid. length breadth **340 mm** Thickness parallel to axis
as fitted **190 mm** Mid. length thickness **70 mm** Thickness around eyehole

Flywheel Shaft, diameter as per Rule **short** Intermediate Shafts, diameter as per Rule **190 mm** Thrust Shaft, diameter at collars as per Rule **160**
as fitted **See Diagram** as fitted

Tube Shaft, diameter as per Rule **See Diagram** Is the { tube } shaft fitted with a continuous liner { screw }

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 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 If so, state type 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 **directly by hand** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **yes** Means of lubrication **at present, none**

Forced Thickness of cylinder liners **25 mm** Are the cylinders fitted with safety valves **none** Are the exhaust pipes ~~water~~ cooled or lagged with **water cooled**

Non-conducting material **cooled** 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. **one** Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Bilge Pumps worked from the Main Engines, No. **one** Diameter **100 mm** Stroke **85 mm** Can ~~be~~ be overhauled while ~~working~~ is at work **yes**

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

Is the cooling water led to the bilges If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements **capacity 100/80 lts/h at 1400 r.p.m.**

Ballast Pumps, No. and size **Main Engine driven** Lubricating Oil Pumps, including Spare Pump, No. and size **1 tooth wheel pump & 1 spare of same type**

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 In Pump 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 Spaces

and 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

For a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

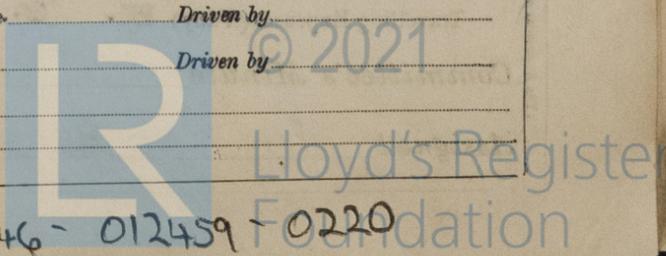
Main Air Compressors, No. No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. **one** No. of stages **two** Diameters **145/60mm** Stroke **85 mm** Driven by **main engine**

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

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule No. as fitted Position



AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule

Can the internal surfaces of the receivers be examined and cleaned Is a drain fitted at the lowest part of each receiver

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. **two** ✓ **Total cubic capacity** **2 x 500 lits** ✓ **Internal diameter** **450 mm** ✓ **thickness** **12 mm** ✓

Seamless, lap welded or riveted longitudinal joint **lap welded** ✓ **Material** **S.M. steel** ✓ **Range of tensile strength** **38-44 kg/mm²** ✓ **Working pressure** by Rules **30 kgs/cm²** ✓ Actual **30 kgs/cm²** ✓

IS A DONKEY BOILER FITTED? **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 **212 480. 1.9.36.** Receivers **60.244. 21.7.32** Separate Fuel Tanks

Donkey Boilers General Pumping Arrangements Pumping Arrangements in Machinery Space

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied **yes** ✓

State the principal additional spare gear supplied

The foregoing is a correct description

Humboldt-Deutz Motoren
AG Altenburger Maschinenfabrik

Manufacturer.

Dates of Survey while building { During progress of work in shops - - } **6.1.37 25.1.37 22.2.37 3.3.37 6.3.37 12.3.37 25.3.37 27.3.37**
{ During erection on board vessel - - }
Total No. of visits **Liners 3.3.37 27.3.37**

Dates of Examination of principal parts—Cylinders **22.2.37** Covers **3.3.37** Pistons **27.3.37** Rods Connecting rods **25.1.37-27.3.37**

Crank shaft **6.1.37-6.3.37** Flywheel shaft Thrust shaft Intermediate shafts **12.3.37 27.3.37** Tube shaft

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 **25.3.37 on**

Crank shaft, Material **S.M. steel** Identification Mark **Lloyds 2019 H.B. 6.1.37** Flywheel shaft, Material Identification Mark

Thrust shaft, Material Identification Mark Intermediate shafts, Material **S.M. steel** Identification Marks **106 V.S.12.**

Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

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

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo 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 **yes** If so, state name of vessel **Messrs. My. De Noord** Yard No. **559** Dusseldorf Report No. **12**

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

This heavy Oil engine has been constructed under special survey in accordance with the Society's Rules and Regulations as well as in accordance with the approved plans and instructions thereto. The material used in the construction is good and the workmanship is satisfactory. The engine has been tested on the makers test bed in the presence of the undersigned during 10 hours consecutively running under full load, 10% overload, and was found to be in safe working condition during these trials. After the trials all working parts of the engine have been opened out for inspection and were found in good condition. In our opinion the vessel for which this heavy oil engine is intended will be eligible for the notation of **L.H.C. (with date) when the whole machinery has been fitted satisfactorily on board and tried under full working conditions. It has been recommended that safety valves are to be fitted to the cylinder heads.**

A Copy of this report has been forwarded to the Rotterdam Surveyors.

The amount of Entry Fee .. **RM. :40.-** : When applied for, **2.8. Dec. 10 10034**
Special ... **RM. 470.-** : **9th April 1937**
Donkey Boiler Fee ... **£ :** :
Travelling Expenses (if any) **RM. :60.-** : **20.5.37**

Strobel Hb. Springemann
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute
Assigned **Su Rot 25-731**



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