

# REPORT ON OIL ENGINE MACHINERY.

No. 290.

Rpt. 4b.  
684641.

Date of writing Report 14.9. 1938 When handed in at Local Office 21.9. 1938 Port of Dusseldorf  
Date, First Survey 28.6.37 Last Survey 14.9. 1938  
Number of Visits 11.

No. in Survey held at Cologne Reg. Book.  
on the  Single  Twin  Triple  Quadruple } Screw vessel

Built at Westerbrock By whom built N.V. J Smit's Zoon Yard No. 660 When built 1938  
Engines made at Cologne By whom made Humboldt-Deutzmotoren A.G. Engine No. 491035/42 When made 1938  
Donkey Boilers made at By whom made Boiler No. When made  
Brake Horse Power 400 Owners Port belonging to  
Nom. Horse Power as per Rule 94 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted  
Trade for which vessel is intended

**IL 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 kg/cm<sup>2</sup> Diameter of cylinders 280 mm Length of stroke 450mm No. of cylinders 8 No. of cranks 8  
Mean Indicated Pressure 6,6 kg/cm<sup>2</sup> Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 307,5mm Is there a bearing between each crank yes

Revolutions per minute 300 Flywheel dia. 1250mm Weight 2600 kg Means of ignition sol. inject. Kind of fuel used on test bed gas oil  
Crank Shaft,  Solid forged  Semi built  All built dia. of journals as per Rule as fitted 190 mm Crank pin dia. 170 mm Crank Webs Mid. length breadth 340 mm Mid. length thickness 70 mm Thickness parallel to axis Thickness around eyehole

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 190 mm Thrust Shaft, diameter at collars as per Rule as fitted  
Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the tube shaft fitted with a continuous liner

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 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 forced  
Thickness of cylinder liners 25mm Are the cylinders fitted with safety valves yes 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. 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 100mm Stroke 100mm Can one be overhauled while the other 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 Main engine capacity 80 ltrs/min. at 1400 r.p.m. 1 tooth wheel pump two stages  
Ballast Pumps, No. and size Power Driven 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 Machinery Spaces In Pump Room

In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Are the Bilge Suctions in the Machinery Spaces  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Are they fitted with Valves or Cocks  
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 the Overboard Discharges above or below the deep water line  
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Are the Blow Off Cocks fitted with a spigot and brass covering plate  
Are they each fitted with a Discharge Valve always accessible on the plating of the vessel How are they protected

What pipes pass through the bunkers Have they been tested as per Rule  
What pipes pass through the deep tanks  
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. one No. of stages two Diameters 145/60mm Stroke 100mm Driven by main engine  
Auxiliary Air Compressors, No. one No. of stages two Diameters Stroke Driven by  
Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

What provision is made for first Charging the Air Receivers Driven by  
Scavenging Air Pumps, No. Diameter Stroke No. Position  
Auxiliary Engines crank shafts, diameter as per Rule as fitted Is a report sent herewith  
Have the Auxiliary Engines been constructed under special survey



008964-003972-0081

AIR RECEIVERS:—Have they been made under survey **yes** State No. of Report or Certificate attached to the copy **this report sent to Groningen Rpt. 4**

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 **yes**

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

Injection Air Receivers, No. Cubic capacity of each Internal diameter thickness **xxx**

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 **2x500 lts.** Internal diameter **450mm** thickness **12mm**

Seamless, lap welded or riveted longitudinal joint **lapwelded** Material **S.M. Steel** Range of tensile strength **38-44 kg/mm<sup>2</sup>** Working pressure by Rules Actual **30 kg/cm<sup>2</sup>**

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 **212480 1.9.36** Receivers **G.O.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

Identification marks for air receivers:

1515 & 1525  
LLOYD'S TEST  
60 Atm.  
W.P. 30 Atm.  
H.K. 11.6.38.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building: During progress of work in shops -- **28.6., 6.9.37, 11.6.- 13.6.- 14.6.- 9.8.- 12.8.- 17.8.- 19.8.- 12.9.- 14.9.-38.**  
During erection on board vessel --  
Total No. of visits

Dates of Examination of principal parts—Cylinders **12.8. 17.8. 14.9. 17.8.** Covers **19.8. 14.9.** Pistons **14.9.** Rods **14.6. 19. 14.9.** Connecting rods  
Crank shaft **13.6. 12.8. 14.9.** Flywheel shaft Thrust shaft Intermediate shafts **28.6. 6.9. 37 14.9. 38** 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 **12.9.38 on t bed**  
Crank shaft, Material **S.M. Steel** Identification Mark **LLOYD'S 13237 J.L. 13.6.38** Flywheel shaft, Material Identification Mark  
Thrust shaft, Material Identification Mark Intermediate shafts, Material **S.M. Steel** Identification Marks **732 H.K. 6.9**  
Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark  
Identification Marks on Air Receivers

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 Düsseldorf Report 122**

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 plan and instructions thereto. The material used in the construction is good and the workmanship is satisfactory. The engine has been tested on the Maker's test bed in the presence of the undersigned during 10 hours consecutive running under full load and 10% overload and was found to be in safe working condition during the trials. After the trials all working parts of the engine have been opened out for inspection and were found in good condition. In my opinion the vessel for which this engine is intended will be eligible for the notation + L.M.C. (with date) when the whole machinery has been fitted satisfactory on board and tried under full working condition.

The original report has been sent to London,

The amount of Entry Fee .. **RM : 40.-** When applied for, **Düsseldorf 21.9. 1938 40/- 11700**  
Special ... .. **RM : 470.-**  
Donkey Boiler Fee ... ..  
Travelling Expenses (if any) **RM : 60.-** See original report of the fee has been credited to Groningen 40

**Mr. Briggemann**  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRU 22 SEP 1939**

Assigned

See Gro. J.C. 78



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