

## REPORT ON OIL ENGINE MACHINERY.

No. 181385

Date of writing Report 10 Feb 1952 When handed in at Local Office 19 Port of Amsterdam Received at London Office 25 FEB 1952  
 No. in Survey held at Amsterdam Date, First Survey 15 Feb 1950 Last Survey 8 Feb 1952  
 Reg. Book. Single on the Triple Screw vessel M.V. ZAMRUD Number of Visits 18  
 Built at Waterhuizen By whom built Gebr. van Diepen Yard No. 910 When built 1952  
 Engines made at Amsterdam By whom made Werkspoor B.V. Engine No. 1017 When made 1950  
 Donkey Boilers made at Amsterdam By whom made Werkspoor B.V. Boiler No. 1017 When made 1950  
 Brake Horse Power 500 Owners Werkspoor B.V. Port belonging to Amsterdam  
 M.N. Power as per Rule 100 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes  
 Trade for which vessel is intended General cargo

OIL ENGINES, &c. — Type of Engines T.M.A.S. 170 2 or 4 stroke cycle 4 Single or double acting Single  
 Maximum pressure in cylinders 506.9 kg/cm<sup>2</sup> Diameter of cylinders 170 mm Length of stroke 500 mm No. of cylinders 8 No. of cranks 8  
 Mean Indicated Pressure 7.5 kg/cm<sup>2</sup> Ahead Firing Order in Cylinders 1-4-7-6-8-5-2-3 Span of bearings, adjacent to the crank, measured from inner edge to inner edge 320 mm Is there a bearing between each crank Yes Revolutions per minute 325  
 Flywheel dia 1130 mm Weight 1250 kg Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 4.5710<sup>6</sup> Means of ignition Comp. Kind of fuel used Dis. oil  
 Crank Shaft, Solid forged dia. of journals as per Rule Crank pin dia 100 mm Crank webs Mid. length breadth 340 mm Thickness parallel to axis shrunk  
 Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule  
 Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule Is the tube shaft fitted with a continuous liner Yes  
 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 Yes  
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner Yes  
 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 Yes If two liners are fitted, is the shaft lapped or protected between the liners Yes Is an approved Oil Gland or other appliance fitted at the after end of tube shaft Yes If so, state type Oil gland  
 Propeller, dia 1130 mm Pitch 1130 mm No. of blades 4 Material bronze whether moveable Yes Total developed surface 395 sq. feet  
 Moment of inertia of propeller (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 9.701410<sup>6</sup> Kind of damper, if fitted Yes  
 Method of reversing Engines By hand and Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication forced Thickness of cylinder liners 21 mm 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 Yes  
 Cooling Water Pumps, No. 1 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. 1 Diameter 130 mm Stroke 75 mm Can one be overhauled while the other is at work Yes  
 Pumps connected to the Main Bilge Line (No. and size 1 How driven By engine)  
 Is the cooling water led to the bilges Yes If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements Yes  
 Ballast Pumps, No. and size 1 Power Driven Lubricating Oil Pumps, including spare pump, No. and size 1045 c.p.h.  
 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 1 In pump room 1  
 In holds, &c. 1  
 Independent Power Pump Direct Suctions to the engine room bilges, No. and size 1  
 Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes Are the bilge suction in the machinery spaces led 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 Yes 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 Yes  
 What pipes pass through the bunkers Yes How are they protected Yes  
 What pipes pass through the deep tanks Yes Have they been tested as per Rule Yes  
 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 Yes Is it fitted with a watertight door Yes worked from Yes  
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Yes  
 Main Air Compressors, No. 1 No. of stages 3 diameters 100-120 mm stroke 90 mm driven by H. Engine  
 Auxiliary Air Compressors, No. 1 No. of stages 1 diameters 100 mm stroke 90 mm driven by H. Engine  
 Small Auxiliary Air Compressors, No. 1 No. of stages 1 diameters 100 mm stroke 90 mm driven by H. Engine  
 What provision is made for first charging the air receivers Yes  
 Scavenging Air Pumps, No. 1 diameter 100 mm stroke 90 mm driven by H. Engine  
 Auxiliary Engines crank shafts, diameter as per Rule No. 1 Position as fitted  
 Have the auxiliary engines been constructed under special survey Yes Is a report sent herewith Yes

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AIR RECEIVERS:—Have they been made under survey Yes State No. of report or certificate C 3700

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

Injection Air Receivers, No. ✓

Cubic capacity of each ✓

Internal diameter ✓

thickness ✓

Seamless, welded or riveted longitudinal joint ✓

Material ✓

Range of tensile strength ✓

Working pressure ✓

by Rules ✓

Starting Air Receivers, No. 2

Total cubic capacity 1340 litres

Internal diameter 500 mm

thickness 12 mm

Actual ✓

Seamless, welded or riveted longitudinal joint Welded

Material SM Steel

Range of tensile strength 41-47 kg

Working pressure ✓

by Rules ✓

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 20-1-53

(If not, state date of approval)

Receivers 20-1-53

Separate fuel tanks

Donkey boilers ✓

General pumping arrangements ✓

Pumping arrangements in machinery space

Oil fuel burning arrangements

Have Torsional Vibration characteristics been approved Yes

Date of approval 25-1-53

### SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

The following is a correct description,

Manufacturer.

Dates  
of Survey  
while  
building

During progress of  
work in shops - -

During erection on  
board vessel - -

Total No. of visits

Dates of examination of principal parts—Cylinders

Crank shaft

Screw shaft

Completion of fitting sea connections

Crank shaft, material

Thrust shaft, material

Tube shaft, material

Identification marks on air receivers

Welded receivers, state Makers' Name

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

Description of fire extinguishing apparatus fitted

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo

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

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

Engine in 1950 under Special Survey in accordance with approved plan and Society's Rules. Material tested as required and workmanship found good. Engine has been tested under full load condition on makers testbench with satisfactory results. The engine has been shipped to Waterhuizen (Groningen district). In my opinion the vessel for which this engine is intended will be eligible for the notation of L.M.C. (with date) when the whole machinery has been fitted satisfactorily on board and tried under full working condition. Copy certificate's of crankshaft, thrustshaft, int. shaft, screwshaft and airreceivers attached.

At the time of burning the m.h. was 103. The full amount of fee has been charged and paid

The amount of Entry Fee ... £577.00

Special ... £

Donkey Boiler Fee... £

Travelling Expenses (if any) £13.00

Committee's Minute

Assigned

See F.E. moly. rph. Exp. 677

TUES. 1 JUL 1952

When applied for

When received

number C. 4448

Engineer Surveyor

Lloyd's Register of Shipping

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Foundation