

# REPORT ON OIL ENGINE MACHINERY.

No. 1757

Received at London Office 16 APR 1956

Writing Report Sept. 14, 1955 When handed in at Local Office 19 Port of Cleveland, Ohio

Survey held at Milwaukee, Wisconsin Date, First Survey June 5th Last Survey Sept. 1st, 1955  
Number of Visits 3

by Rules Single on the Triple Screw vessel M/Y "ZAGORA" Tons (Gross - Net -)  
Actual Quadruple

at La Seyne, France By whom built Forges et Chantiers de la Meditt- Yard No. 1310 When built -  
1048-0648

Engines made at Milwaukee, Wis By whom made Nordberg Manufacturing Co Engine No. - When made 1955

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

Net Horse Power 2655 Owners - Port belonging to -

Power as per Rule 531 Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted -

Use for which vessel is intended -

ENGINES, &c. — Type of Engines Trunk piston solid injection  
Vee type 45° angle. 2 or 4 stroke cycle 4 Single or double acting S

Maximum pressure in cylinders 950 psi Diameter of cylinders 13" Length of stroke 16.5" No. of cylinders 12 No. of cranks 6

Indicated Pressure 195 psi Ahead Firing Order in Cylinders - Span of bearings, adjacent to the crank, measured  
from inner edge to inner edge 19.625" Is there a bearing between each crank Yes Revolutions per minute 500 (516)

Flywheel dia. 50" Weight 2630 lbs Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) 4633 Means of ignition Compress Kind of fuel used Diesel

Crank shaft, (Solid forged) dia. of journals 12" Crank pin dia. 10" Crank webs Mid. length breadth 15.5" Thickness parallel to axis -  
shrunken Mid. length thickness 4" Thickness around eyehole -

Flywheel Shaft, diameter - Intermediate Shafts, diameter - Thrust Shaft, diameter at collars -

Propeller Shaft, diameter - Screw Shaft, diameter - Is the (tube screw) shaft fitted with a continuous liner -

Bronze Liners, thickness in way of bushes - Thickness between bushes - 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 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

Moment of inertia of propeller (lbs. in<sup>2</sup> or Kg. cm<sup>2</sup>) - Kind of damper, if fitted -

Method of reversing Engines Rot. Cam. Is a governor or other arrangement fitted to prevent racing of the engine when debracketed Yes Means of  
lubrication Pressure 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 - 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. - Diameter - Stroke - Can one be overhauled while the other is at work -

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 -

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 all the bilge suction pipes in holds and tunnel well fitted with strum-boxes - 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 -

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. - 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 -

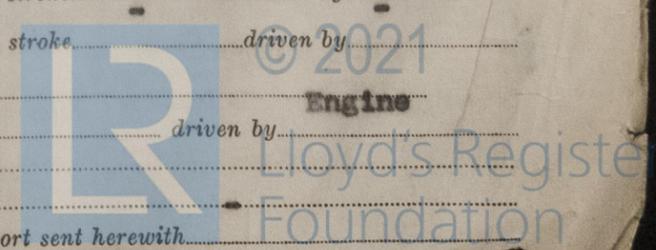
What provision is made for first charging the air receivers - Engine -

Scavenging Air Pumps, No. - diameter - stroke - driven by -

Auxiliary Engines crank shafts, diameter - Position -

Have the auxiliary engines been constructed under special survey - Is a report sent herewith -

013735-013739-0125



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

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.....

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

Seamless, welded or riveted longitudinal joint..... Material..... Range of tensile strength..... Working pressure.....

Starting Air Receivers, No..... Total cubic capacity..... Internal diameter..... thickness.....

Seamless, welded or riveted longitudinal joint..... Material..... Range of tensile strength..... Working pressure.....

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..... Receivers..... Separate fuel tanks.....

Donkey boilers..... General pumping arrangements..... Pumping arrangements in machinery space.....

Oil fuel burning arrangements.....

Have Torsional Vibration characteristics been approved..... No..... Date of approval.....

SPARE GEAR.

Has the spare gear required by the Rules been supplied.....

State the principal additional spare gear supplied.....

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building: During progress of work in shops - June 5th; July 4th; Sept, 1st, 1955; During erection on board vessel - - - - -; Total No. of visits - Three (3)

Dates of examination of principal parts: Crank shaft, Flywheel shaft, Thrust shaft, Intermediate shafts, Tube shaft, Screw shaft, Propeller, Stern tube, Engine seatings, Engine holding down bolts, Completion of fitting sea connections, Completion of pumping arrangements, Engines tried under working conditions, Crank shaft, material, Identification mark, Flywheel shaft, material, Identification mark, Thrust shaft, material, Identification mark, Intermediate shafts, material, Identification marks, Tube shaft, material, Identification mark, Screw shaft, material, Identification mark, 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 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, Speed restrictions, &c. This main propulsion engine has been built under survey and to approved plans. The materials have been tested by the Surveyors, and workmanship found to be of good quality throughout. The engine was brake tested at full and intermediate powers, governing and maneuvering controls tried out all with satisfactory results. The working parts were opened up and found in good order. It is therefore recommended that this vessel be assigned the record of 4LHC (with date) in the Register Book, subject to the engine being installed aboard the vessel and all remaining requirements of the Rules, including those relating to torsional vibration characteristics being carried out to the satisfaction of the Surveyors.

The amount of Entry Fee ... £ 518.00; Special ... £; Donkey Boiler Fee... £ 71.00; Travelling Expenses (if any) £; When applied for Sept. 14, 55; When received 19 FOR: J.P. Kline; Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute FRIDAY 18 MAY 1956; Assigned Jas. Rpt. 46.



Lloyd's Register Foundation

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