

# REPORT ON OIL ENGINE MACHINERY.

No. 13901.

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Date of writing Report 24 Dec 1936 When handed in at Local Office 19 Port of Amsterdam  
No. in Survey held at Hengelo - Amsterdam Date, First Survey 19 February Last Survey 10 Dec 1936  
Reg. Book. 49 Number of Visits 34

on the Single Twin Triple Quadruple Screw vessel "ENSIS" Tons Gross 6207  
Net

Built at Rotterdam By whom built Rotterd Drydock CV Yard No. 195 When built 1906  
Engines made at Hengelo By whom made Hengelo (Werkspun huizen) Engine No.  When made 1931  
Donkey Boilers made at Rotterdam By whom made Rotter Drydock Co Boiler No.  When made   
Brake Horse Power 2000 Owners Anglo Saxon Petroleum Co Ltd Port belonging to London  
Nom. Horse Power as per Rule 377 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
Trade for which vessel is intended 7576 558"

**IL ENGINES, &c.**—Type of Engines Diesel Airless injection Duplex 2 or 4 stroke cycle 4 Single or double acting single  
Maximum pressure in cylinders 700 lbs Diameter of cylinders 650 mm Length of stroke 1400 mm No. of cylinders 6 No. of cranks 6  
Mean Indicated Pressure 120 lbs

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 834 mm Is there a bearing between each crank Yes  
Revolutions per minute 125 Flywheel dia. 2260 mm Weight brooky Means of ignition Airless Kind of fuel used Cude oil  
Crank Shaft, dia. of journals as per Rule approved Crank pin dia. 460 mm Crank Webs Mid. length breadth 870 mm Thickness parallel to axis shrunk  
as fitted 460 mm Mid. length thickness 290 mm Thickness around eyehole

Flywheel Shaft, diameter as per Rule approved Intermediate Shafts, diameter as per Rule approved Thrust Shaft, diameter at collars as per Rule approved  
as fitted 340 mm as fitted 350 mm as fitted 340 mm  
Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule approved Is the tube screw shaft fitted with a continuous liner Yes  
as fitted as fitted 370 mm

Bronze Liners, thickness in way of bushes as per Rule approved Thickness between bushes as per rule approved Is the after end of the liner made watertight in the  
as fitted 19.5 mm as fitted 15 mm  
Propeller boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner C.I

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  
If so, state type Length of Bearing in Stern Bush next to and supporting propeller 1400 mm

Propeller, dia. 4270 mm Pitch 3500 mm No. of blades 4 Material bronze whether Moveable No Total Developed Surface 62 sq. feet  
Method of reversing Engines by air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication forced  
Thickness of cylinder liners 55 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged 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. 2 Salt & fresh water Is the sea suction provided with an efficient strainer which can be cleared within the vessel  
Bilge Pumps worked from the Main Engines, No. 2 Rotary type 35 ton each Can one be overhauled while the other is at work Yes  
Pumps connected to the Main Bilge Line No. and Size 2 rotary 35 ton each + 1 general service pump 8" x 8" x 10"  
How driven Main Motor 6 Steam

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 one 8" x 8" x 10" Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 rotary 40 ton/row duplex 8" x 8" x 10"  
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  
Are they fixed from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

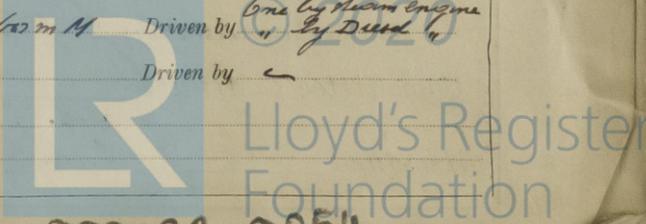
Are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks  
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Are the Overboard Discharges above or below the deep water line  
Are they each fitted with a Discharge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

How are they protected That pipes pass through the bunkers  
Have they been tested as per Rule That 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

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.  No. of stages  Diameters  Stroke  Driven by

Small Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 206-104 Stroke 160 mm Driven by One by Steam engine By Diesel  
Suctioning Air Pumps, No.  Diameter  Stroke  Driven by   
Auxiliary Engines crank shafts, diameter as per Rule approved No.  Position   
as fitted 110 mm



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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. *2* Total cubic capacity *500 Cub feet* Internal diameter *14 9/16* thickness *21 mm*

Seamless, lap welded or riveted longitudinal joint *welded* Material *SMS* Range of tensile strength *29.4 ton* Working pressure by Rules *approved* Actual *350 lbs.*

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 Shuffling *E 18.29 March 1935* Receivers *E 9.4.35* Separate Fuel Tanks *E 2.5.35*

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

State the principal additional spare gear supplied

The foregoing is a correct description,

Machinefabriek GEBR. STORK & Co. N.V.

Manufacturer.

Dates of Survey while building { During progress of work in shops -- *Jan 19. 24-26. March 16 April 3. 11. May 11-29 June 12, 24-26. July 14. 20. 20. Aug 6. 12. 20. Sept 3. 25-20-29. Oct 15, 20. 20. Nov. 6. 13. 19. 20. Dec 3. 8. 10* During erection on board vessel -- Total No. of visits

Dates of Examination of principal parts—Cylinders *25. 28-29 Oct* Covers *23 July 29 Oct* Pistons *3-9 Oct* Rods *3 Sept 9 Oct* Connecting rods *23 July 9 Oct* Crank shaft *16 March 25* Flywheel shaft *12 August* Thrust shaft *11 May* Intermediate shafts — Tube shaft —

Completion of fitting sea connections — Completion of pumping arrangements — Engines tried under working conditions. Crank shaft, Material *SMS* Identification Mark *H. P. B. 25.6-26* Flywheel shaft, Material *SMS* Identification Mark *2120 460403 SFR 3-8* Thrust shaft, Material *SMS* Identification Mark *H. P. B. 11-5-26* Intermediate shafts, Material — Identification Marks — Tube shaft, Material — Identification Mark — Screw shaft, Material — Identification Mark —

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 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 Is 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 *MV. Solarium Ans report 13723*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Machinery has been made in accordance with the approved plans Secretary's letters and the Society's rules Workmanship throughout good*

*The Machinery has been shipped to Rotterdam and will be fitted aboard Messrs Rotterdam drydock C<sup>e</sup> Jara N<sup>o</sup> 195*

The amount of Entry Fee .. *£ 60. -* : When applied for, Special ... *4/5 fee £ 703 -* : 19 Donkey Boiler Fee ... *£* : When received, Travelling Expenses (if any) *£ 192.50* : *20.1 19.37*

Committee's Minute *FRI 26 FEB 1937* Assigned *See Rot 25269*

*[Signature]*  
Engineer Surveyor to Lloyd's Register of Shipping.



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