

# REPORT ON OIL ENGINE MACHINERY.

No. 54511.

Date of writing Report 27<sup>th</sup> Oct. 1947 When handed in at Local Office 7 JAN 1948 Port of HULL  
 Received at London Office 8 - JAN 1948  
 Date, First Survey 15. 9. 47. Last Survey 30. 10. 1947.  
 Number of Visits 17.

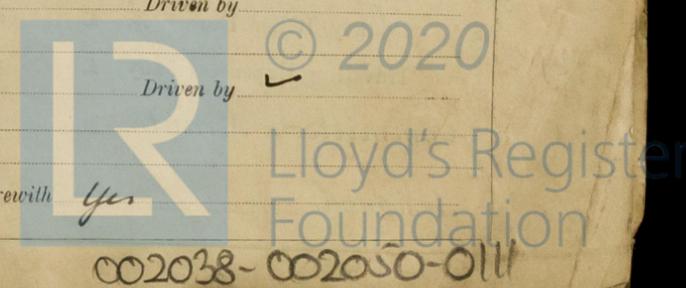
No. in Survey held at Hull  
 No. of Book 6910 on the Single Turn Triple Quadruple Screw vessel 'EMPIRE CONLEA' Tons 1939  
 Built at Rendsburg By whom built Weyt Nobiskrug Yard No. - When built 1939  
 Engines made at Kiel By whom made Deutsche Werke Kiel Engine No. - When made 1938  
 Monkey Boilers made at ✓ By whom made ✓ Boiler No. ✓ When made ✓  
 Brake Horse Power 165 Owners Jepperson Heaton & Co. Port belonging to London  
 Nom. Horse Power as per Rule 474 1/2 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
 Trade for which vessel is intended Coastal

**ENGINES, &c.**—Type of Engines Diesel Type MU 421 2 or 4 stroke cycle 4 Single or double acting Single  
 Maximum pressure in cylinders 45 Atmos. Diameter of cylinders 280 mm Length of stroke 4207 No. of cylinders 4 No. of cranks 4  
 Indicated Pressure 11" Flywheel dia. 3'-6 1/2" Weight 5 1/2" thick Means of ignition Compression Kind of fuel used Diesel oil  
 Distance of bearings, adjacent to the Crank, measured from inner edge to inner edge 13 3/4" Is there a bearing between each crank Yes  
 Revolutions per minute About 300 Crank pin dia. 1697 Crank Webs 10" Thickness parallel to axis ✓  
 Crank Shaft, Solid forged as per Rule 1697 as fitted 1697 Mid. length breadth 3 1/2" Thickness around eye-hole ✓  
 Propeller Shaft, diameter 5 1/4" as per Rule 5 1/4" as fitted 5 1/4" Thrust Shaft, diameter 4 3/4" as per Rule 4 3/4" as fitted 4 3/4"  
 Screw Shaft, diameter 5 1/4" as per Rule 5 1/4" as fitted 5 1/4" Is the screw shaft fitted with a continuous liner No  
 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 ✓

Is 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 No soft packing gland. If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 21"  
 Propeller, dia. 4'-11" Pitch 4 No. of blades 4 Material Brongze whether Moveable No Total Developed Surface - sq. feet  
 Method of reversing Engines Reversing gear Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Not accessible  
 Pressure Water cooled Thickness of cylinder liners Not accessible Are the cylinders fitted with safety valves No - see report. Are the exhaust pipes and silencers water cooled or lagged with  
 conducting material Water 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. 1 - 3 1/2" dia 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 3 1/2" Stroke 4" Can one be overhauled while the other is at work is rotating cocks fitted.  
 Pumps connected to the Main Bilge Line { No. and Size 1 Centrif 3" bore suction & delivery. How driven Clutch connection to aux. diesel engine.

Is the cooling water led to the bilges Aux. compressor only If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping  
 arrangements No special arrangement. (1/2" bore pipe with shut off valve to compressor)  
 Oil Pumps, No. and size On above Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size No independent pumps.  
 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 2 - 2 1/2" In Pump Room 1 - 2 1/2" (solid) through main chest. 1 - 2 1/2" (alt) through bilge general chest.  
 Holds, &c. 2 - 2" F. Peak 2" A. Peak 2"  
 Independent Power Pump ✓ Suctions to the Engine Room Bilges, No. and size 1 - 2 1/2" (solid) through main chest. 1 - 2 1/2" (alt) through bilge general chest.  
 Are all the Bilge Suction pipes in Holds and Tanks Weld fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces  
 from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges No (See remarks)  
 All Sea Connections fitted direct on the skin of the ship Short stand pipes Are they fitted with Valves or Cocks Valves  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates P. Yes, S. No. Are the Overboard Discharges above or below the deep water line Above  
 Are they each fitted with a Discharge Valve always accessible on the plating of the vessel Yes - except for main engine discharge which is fitted direct to short stand pipe welded to ship plating. Are the Blow Off Cocks fitted with a spigot and brass covering plate  
 How are they protected How are they protected  
 Are 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 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 ✓ Is it fitted with a watertight door ✓ worked from ✓  
 Are good vessels, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork ✓  
 Air Compressors, No. 1 No. of stages 2 Diameters 1 5/8, 4 3/8" Stroke 2 3/8" Driven by Main engine  
 Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 1" 2 3/4" Stroke 2 1/2" Driven by Aux. diesel engine  
 Is provision is made for first Charging the Air Receivers Aux. diesel is hand starting.  
 Lifting Air Pumps, No. ✓ Diameter ✓ Stroke ✓ Driven by ✓  
 Auxiliary Engines crank shafts, diameter See separate report. No. ✓ Position ✓  
 Are the Auxiliary Engines been constructed under special survey No Is a report sent herewith Yes



**AIR RECEIVERS:**—Have they been made under survey No State No. of Report or Certificate ✓  
 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, lap welded or riveted longitudinal joint ✓ Material ✓ Range of tensile strength ✓ Working pressure by Rules ✓ Actual ✓  
**Starting Air Receivers, No.** 1 (main) Total cubic capacity 200 LTR <sup>EX</sup> Internal diameter 15 1/4" thickness 0.36"  
 Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength ✓ Working pressure by Rules 585 Actual 560 lb

**IS A DONKEY BOILER FITTED?** No If so, is a report now forwarded? ✓  
 Is the donkey boiler intended to be used for domestic purposes only ✓  
**PLANS.** Are ~~plans~~ plans forwarded herewith for Shafting Yes Receivers Yes Separate Fuel Tanks Yes  
 Donkey Boilers ✓ General Pumping Arrangements Yes Pumping Arrangements in Machinery Space Yes  
 Oil Fuel ~~Burning~~ Arrangements Yes

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied Yes - for vessels engaged on short-voyages.  
 State the principal additional spare gear supplied None

The foregoing 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 Covers Pistons Rods Connecting rods  
 Crank shaft Flywheel shaft Thrust shaft Intermediate shafts Tube shaft  
 Screw shaft 23-9-47 Propeller Stern tube Engine seatings Engines 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 (main)  
 200 LTR  
 BETNESBN 40 ATM  
 PROB EDR 80 ATM  
 5-3-38  
 NR. 111764 D

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 No - see remarks.  
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo No 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, &c.)  
 The after bilge suction in the engine room is a just a pipe bent down into the bilge and terminating in a strainer box. The fore suction has a non-return valve with straight tail piece to strainer box. The after suction should be amended to comply with the Rules but it is submitted that the fore suction could be accepted as this could be cleared by removing cover of N.R. Valve.  
 For other remarks & recommendations see our Rpt 9 of 15

The amount of Entry Fee	.. £	:	:	When applied for,
Special	... .. £	:	:	19
Donkey Boiler Fee	... .. £	:	:	When received,
Travelling Expenses (if any)	£	:	:	19

*M. Chambers*  
 Engineer Surveyor to Lloyd's Register of Shipping.



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Committee's Minute  
 Assigned See minute on file rpt

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