

# REPORT ON OIL ENGINE MACHINERY.

No. 132303

2 NOV 1955

Received at London Office.

Date of writing Report 25-10-1955 When handed in at Local Office 25-10-1955 Port of LONDON.

Survey held at STAMFORD Date, First Survey 15-8-55 Last Survey 12-10-1955 Number of Visits 2

Single on the Twin Triple Quadruple Screw vessel "ESSO LEEDS". Tons Gross Net.

Yard No. 914 When built.

Engines made at STAMFORD By whom made BLACKSTONE & CO. Engine No. M65860 When made 10.55.

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

Indicated Horse Power 162 (16 max) Owners Port belonging to.

N. Power as per Rule. Is Refrigerating Machinery fitted for cargo purposes. Is Electric Light fitted.

Grade for which vessel is intended.

L ENGINES, &c. —Type of Engines EYMG4. 2 or 4 stroke cycle 4 Single or double acting SINGLE

Maximum pressure in cylinders 800 lb./sq. in. Diameter of cylinders 8 3/4" Length of stroke 11 1/2" No. of cylinders 4 No. of cranks 4

Mean Indicated Pressure 97 lb./sq. in. Ahead Firing Order in Cylinders 1.2.4.3. Span of bearings, adjacent to the crank, measured

from inner edge to inner edge 10 1/16" Is there a bearing between each crank YES Revolutions per minute 600 - 308 propeller

Flywheel dia. 38" Weight 2180 lbs Moment of inertia of flywheel (lbs. in<sup>2</sup> or Kg. cm.<sup>2</sup>) 6.98 Means of ignition COMP. Kind of fuel used DIESEL

Crank shaft, Solid forged dia. of journals 5" as per Rule 16 3/4" as fitted Crank pin dia. 6 1/8" Crank webs Mid. length breadth 7 3/4" Mid. length thickness 2 25/32" shrunk Thickness parallel to axis Thickness around eyehole

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as fitted

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the tube screw shaft fitted with a continuous liner

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. 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 appliances 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 VISCIOUS DAMPER IN ENG. COUPLING.

Method of reversing Engines GEARBOX Is a governor or other arrangement fitted to prevent racing of the engine when declutched YES Means of

lubrication FORCED Thickness of cylinder liners 19/32" Are the cylinders fitted with safety valves YES Are the exhaust pipes and silencers water cooled

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. 2 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 1 - PRESSURE - 810 GPH. 1 - SCAVENGE - 1160 G.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 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. ONE No. of stages ONE diameters 1 5/8" stroke 2" driven by BELT.

Small Auxiliary Air Compressors, No. No. of stages diameters stroke driven by

What provision is made for first charging the air receivers.

Scavenging Air Pumps, No. diameter stroke driven by

Auxiliary Engines crank shafts, diameter as per Rule No. Position

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



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.....by Rules.....Actual.....

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

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

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 STANDARD ENGINE.....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 see letter Eng 17/12/55 to London outside + another to Hull.....Date of approval.....

#### SPARE GEAR.

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

State the principal additional spare gear supplied SEE ATTACHED LIST. R/19240A/3-8.

The foregoing is a correct description,  
R. Ganges for Blackstone & Co Ltd.....Manufacturer.

Dates of Survey while building.....During progress of work in shops - - 15.8.55, 12.10.55.....  
During erection on board vessel - - .....  
Total No. of visits.....

Dates of examination of principal parts—Cylinders 15.8.55 Covers 15.8.55 Pistons 15.8.55 Rods ✓ Connecting rods 15.8.55

Crank shaft 15.8.55 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 FORGED STEEL Identification mark 4244 13.2.55 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.....If so, state name of vessel.....

General Remarks (State quality of workmanship, opinions as to class, &c. The above machinery has been efficiently installed in the above named vessel & is under full power working conditions satisfactorily. For Recommendations please see Hull - 16 Report No 62347. Also samples taken for test)

This engine has been built under Special Survey in accordance with Approved Plans and requirements of the rules. Steel used in its construction has been made at works approved by the Committee. The workmanship is good. The engine when tested in the shops under full load and 10% overload conditions showed satisfactory results. Crankcase explosion Relief Valves fitted to Rule Requirements. In my opinion the engine is eligible to be fitted on board a vessel classed with this Society subject to torsional vibration characteristics of the dynamic system formed by the engine, shafting and propeller being approved. Attached hereto is Sheffield Report No. F3441 Relating to Crankshaft.

The amount of Entry Fee ... £ 14 : 10 : .....

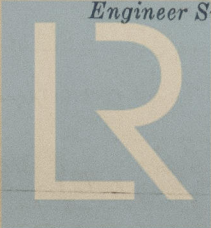
Special ... £ : : When applied for 19

Donkey Boiler Fee... £ : : When received 19

Travelling Expenses (if any) £ 4 : 10 : .....

(Committee's Minute FRIDAY - 7 SEP 1956

Assigned See Rpt. 46.



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