

# REPORT ON OIL ENGINE MACHINERY.

Received at London Office 12 MAY 1948

7th April, 1948

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Port of MANCHESTER.

Date of writing Report 7th April, 1948 When handed in at Local Office 7th May, 1948 Port of MANCHESTER. Date, First Survey 14.4.48. Last Survey 22nd March, 1948. Number of Visits 11.

on the ~~Triple~~ <sup>Single</sup> Screw vessel. Glassed Vessel. Tons Gross Net. built at Dartmouth. By whom built Philip & Sons Ltd. Yard No. 1165. When built 1948. Engines made at Openshaw. By whom made Crossley Bros. Engine No. 137305. When made 1948. Donkey Boilers made at. By whom made. Boiler No. When made. Brake Horse Power 375. Owners. Port belonging to. Nom. Horse Power as per Rule 105. Is Refrigerating Machinery fitted for cargo purposes. Is Electric Light fitted.

TYPE OF ENGINES, &c. Type of Engines Vertical Solid Injection Heavy Oil. 2 or 4 stroke cycle 2. Single or double acting single. Maximum pressure in cylinders 950 lbs per sq. inch. Diameter of cylinders 10.1/2". Length of stroke 13.1/2". No. of cylinders 5. No. of cranks 5. Mean Indicated Pressure 92 lbs per sq. inch.

Distance between bearings, adjacent to the Crank, measured from inner edge to inner edge 14.11/16". Is there a bearing between each crank Yes. Revolutions per minute 340. Flywheel dia. 37 1/8". Weight 2166 lbs. Means of ignition Compression. Kind of fuel used Diesel Oil. Crank Shaft, Solid forged dia. of journals as per Rule approved. 7 1/2". Crank pin dia. 7.1/4". Crank Webs Mid. length breadth 9.1/4". Thickness parallel to axis. Mid. length thickness 3.23/32". Thickness around eye-hole. Flywheel Shaft, diameter as per Rule mounted on end of crankshaft. Intermediate Shafts, diameter as per Rule fitted. Thrust Shaft, diameter at collars as per Rule Approved. 4.3/4".

Tube Shaft, diameter as per Rule. Screw Shaft, diameter as per Rule. 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.

When 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. When 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. Length of Bearing in Stern Bush next to and supporting propeller. If so, state type. Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet.

Method of reversing Engines Compressed Air. Is a governor or other arrangement fitted to prevent racing of the engine when declutched. Yes. Means of lubrication. Are the exhaust pipes and silencers water cooled or lagged with insulating material. Thickness of cylinder liners 7/8". Are the cylinders fitted with safety valves. Yes. Are the exhaust pipes and silencers water cooled or lagged with insulating 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.

Boiling Water Pumps, No. One 4 1/2" Dia. x 3" stroke. Is the sea suction provided with an efficient strainer which can be cleared within the vessel. Bilge Pumps worked from the Main Engines, No. One. Diameter 4.1/4". Stroke 3". Can one be overhauled while the other is at work. Yes. 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 3/4" & 2.3/16" x 2" Stroke. 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.

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 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.

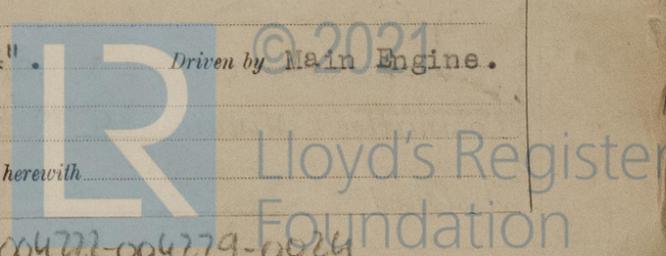
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates. Are the Overboard Discharges above or below the deep water line. Are they each fitted with a Discharge Valve always accessible on the plating of the vessel. Are the Blow Off Cocks fitted with a spigot and brass covering plate. How are they protected. 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. Are 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. One. No. of stages Two. Diameters 5 3/4" & 2 1/2". Stroke 4". Driven by Main Engine. 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. Revolving Air Pumps, No. One Double Acting. Diameter 20.1/2". Stroke 6.1/4". Driven by Main Engine. Auxiliary Engines crank shafts, diameter as per Rule. No. as fitted. Position. Have the Auxiliary Engines been constructed under special survey. Is a report sent herewith.

21.5.48



004222-004229-0024

AIR RECEIVERS: - Have they been made under survey... yes. State No. of Report on Certificate C.6731. C.6734.

Is each receiver, which can be isolated, fitted with a safety valve as per Rule Safety Valve on Air Compressor, Fusible plugs on air r

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. E.6148. Riveted & Welded. Total cubic capacity 15 cub. ft. Internal diameter 21 - 0.1/8". thickness 3/8".

Seamless, lap welded or riveted longitudinal joint Material O.H. Steel Range of tensile strength 26/30 Tons. Working pressure by Rules 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 Shafting 7th May, 1947. Receivers Separate Fuel Tanks 27th Feb.,

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 AS PER RULE REQUIREMENTS.

State the principal additional spare gear supplied

Lead for

The foregoing is a correct description, and the particulars of the installation as fitted are approved for torsional vibration characteristics.

CROSSLEY BROTHERS LIMITED, Manufacturer.

Dates of Survey while building During progress of work in shops - - - 1947. April 14. Nov. 7. Dec. 5, 9, 12, 23, 30. 1948. Mar. 1, 19, 22.

Dates of Examination of principal parts - Cylinders 15.12.47 Covers 9.12.47 Pistons 19.3.48 Rods - Connecting rods 5.12.47

Crank shaft 7.11.47 Flywheel shaft - Thrust shaft 14.4.47 Intermediate shafts Tube shaft

Screw shaft 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 O.H. Steel. Identification Mark S. 7.11.47 Flywheel shaft, Material - Identification Mark -

Thrust shaft, Material Identification Mark R. 14.4.47 Intermediate shafts, Material Identification Marks

Tube shaft, Material Identification Mark Screw shaft, Material Identification Mark

Identification Marks on Air Receivers E.6145, E.6148.

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

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, &c. This engine has been constructed under special

survey of tested materials and in accordance with the Secretary's letters, approved plans and

Rule Requirements.

Materials and workmanship are of good quality, and the engine when tested in the shop under

full load conditions, showed satisfactory results.

In our opinion, this engine is suitable for installation in a vessel to be classed with this

Society, for the purpose intended.

Torsional vibration characteristics approved in the Secretary's letter dated 7th May, 1947,

for a service speed of 340 r.p.m., provided a notice board be fitted at the control station stating

that the engine of this vessel is not to be run continuously between 208 and 244 r.p.m. and

torsiograph records taken from the installation confirm that the magnitude of the stress in thru

shaft is not in excess of 7,000 lbs per sq. inch.

The amount of Entry Fee 2/3 £ 28 : 0 : 0 When applied for, 7-5-48

Special ... £ : : When received, J. White 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.)

Committee's Minute FRI. 17 SEP 1948

Assigned Sir F.E. Mchey. rpt.

