

Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No 13269.

Received at London Office

12 MAY 1948

7th April, 48.

7th May, 48.

Port of

MANCHESTER.

Date of writing Report

When handed in at Local Office

MANCHESTER.

Date, First Survey 14.4.47.

Last Survey 22nd March, 48.

Number of Visits 11.

To. in Survey held at  
eg. Book.

on the ~~Triple~~ <sup>Single</sup> Screw vessel  
~~Quadruple~~ <sup>Triple</sup>  
Dartmouth.

Glassed Vessel.

Tons <sup>Gross</sup>  
<sub>Net</sub>

built at  
Engines made at Openshaw.

By whom built Philip & Sons Ltd.  
By whom made Crossley Bros.

Yard No. 1165. When built 1948.  
137305.  
Engine No. When made 1948.  
Boiler No. When made

Donkey Boilers made at  
Brake Horse Power 375.

By whom made  
Owners

Port belonging to

nom. Horse Power as per Rule 105.

Is Refrigerating Machinery fitted for cargo purposes

Is Electric Light fitted

Trade for which vessel is intended

**L 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.

Mean Indicated Pressure 92 lbs per sq. inch.

Diameter of cylinders 10.1/2". Length of stroke 13.1/2". No. of cylinders 5. No. of cranks 5.

Span of 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 as per Rule approved. dia. of journals 7 1/8". Crank pin dia. 7.1/4". Crank Webs Mid. length breadth 9.1/4". Thickness parallel to axis -

Flywheel Shaft, diameter as per Rule mounted on end of crankshaft. Intermediate Shafts, diameter as per Rule Thrust Shaft, diameter at collars as per Rule Approved.

as fitted - as fitted - as fitted 4.3/4"

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

as fitted - as fitted - as fitted

Bronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per Rule as fitted Is the after end of the liner made watertight in the

as fitted - as fitted - as fitted

Propeller boss If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner

as fitted - as fitted - as fitted

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

as fitted - as fitted - as fitted

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

as fitted - as fitted - as fitted

Length of Bearing in Stern Bush next to and supporting propeller

as fitted - as fitted - as fitted

Propeller, dia. Pitch No. of blades Material whether Moveable Total Developed Surface sq. feet

as fitted - as fitted - as fitted

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

as fitted - as fitted - as fitted

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

as fitted - as fitted - as fitted

conducting 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

as fitted - as fitted - as fitted

Bolting 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

as fitted - as fitted - as fitted

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.

as fitted - as fitted - as fitted

Pumps connected to the Main Bilge Line No. and Size How driven

as fitted - as fitted - as fitted

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

as fitted - as fitted - as fitted

arrangements

as fitted - as fitted - as fitted

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.

as fitted - as fitted - as fitted

are two independent means arranged for circulating water through the Oil Cooler Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

as fitted - as fitted - as fitted

Pumps, No. and size:—In Machinery Spaces In Pump Room

as fitted - as fitted - as fitted

Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size

as fitted - as fitted - as fitted

are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Are the Bilge Suctions in the Machinery Spaces

as fitted - as fitted - as fitted

from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges

as fitted - as fitted - as fitted

are all Sea Connections fitted direct on the skin of the ship Are they fitted with Valves or Cocks

as fitted - as fitted - as fitted

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

as fitted - as fitted - as fitted

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

as fitted - as fitted - as fitted

what pipes pass through the bunkers How are they protected

as fitted - as fitted - as fitted

what pipes pass through the deep tanks Have they been tested as per Rule

as fitted - as fitted - as fitted

are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times

as fitted - as fitted - as fitted

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

as fitted - as fitted - as fitted

apartment to another Is the Shaft Tunnel watertight Is it fitted with a watertight door worked from

as fitted - as fitted - as fitted

on a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork

as fitted - as fitted - as fitted

Main Air Compressors, No. One. No. of stages Two. Diameters 5 3/4" & 2 1/2" Stroke 4". Driven by Main Engine.

as fitted - as fitted - as fitted

Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

as fitted - as fitted - as fitted

Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

as fitted - as fitted - as fitted

Ship what provision is made for first Charging the Air Receivers

as fitted - as fitted - as fitted

Reversing Air Pumps, No. One Double Acting. Diameter 20.1/2". Stroke 6.1/4". Driven by Main Engine.

as fitted - as fitted - as fitted

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

as fitted - as fitted - as fitted

have the Auxiliary Engines been constructed under special survey Is a report sent herewith

as fitted - as fitted - as fitted



**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  
E.6145. 15 cub. ft. 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.,  
(If not, state date of approval)

Donkey Boilers General Pumping Arrangements Pumping Arrangements in Machinery Space  
Oil Fuel Burning Arrangements

**SPARE GEAR.**

**AS PER RULE REQUIREMENTS.**

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

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

**CROSSLEY BROTHERS LIMITED,**

Manufacturer.

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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.  
During erection on board vessel - - }  
Total No. of visits

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 Lloyd's 3148 Flywheel shaft, Material - Identification Mark -  
Thrust shaft, Material Identification Mark Lloyd's 3135 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 torsionograph records taken from the installation confirm that the magnitude of the stress in thrust shaft is not in excess of  $\pm 7,000$  lbs per sq. inch.

The amount of Entry Fee 2/3 £ 28 :0 :0 When applied for, 7-5-48  
Special ... £ : :  
Donkey Boiler Fee ... £ : :  
Travelling Expenses (if any) £ 1 :0 :0 When received, 19...

Committee's Minute FRI. 17 SEP 1948

Assigned

Su F.E. mch. not.



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