

REPORT ON OIL ENGINE MACHINERY.

951

No. 13827.



Received at London Office 17 OCT 1949

1st September, 49 27th September, 49 Port of MANCHESTER.

Survey held at HAZEL GROVE, STOCKPORT. Date, First Survey 31st January, 1949 Last Survey 21st June, 1949. Number of Visits 10.

Single on the Twin Triple Quadruple Screw vessel. Classed Vessel (Yard No. 629).

By whom built Richard Dunstan Ltd. Yard No. 629. When built.

Engines made at Hazelgrove. By whom made Mirrlees, Bickerton & Day Ltd. Engine No. 33402. When made 1949.

Boiler No. When made. Port belonging to Fleetwood.

Brake Horse Power 225 (12 hr. rating). Owners St. Andrews Steam Trawling Co.

Is Refrigerating Machinery fitted for cargo purposes. Is Electric Light fitted.

Trade for which vessel is intended Trawling.

Engines, &c. — Type of Engines Mirrlees Type TLA 15 Heavy Oil. 2 or 4 stroke cycle. 4. Single or double acting. Single.

Maximum pressure in cylinders 800 lbs/sq. inch. Diameter of cylinders 8 1/2". Length of stroke 13 3/4". No. of cylinders 5. No. of cranks 5.

Mean Indicated Pressure 116 lbs/sq. inch. Ahead Firing Order in Cylinders 1, 3, 5, 4, 2. Span of bearings, adjacent to the crank, measured from inner edge to inner edge 8.5/8".

Is there a bearing between each crank Yes. Revolutions per minute 500. Compression Diesel.

Weight 1310 lbs. Moment of inertia of flywheel (lbs. in² or Kg. cm.²) 1320 lbs. in sec². Kind of fuel used Diesel.

Crank pin dia. 5.9/16". Crank webs Mid. length breadth 9 1/2". Thickness parallel to axis. Thickness around eye-hole.

Intermediate Shafts, diameter as fitted. Thrust Shaft, diameter at collars as fitted.

Screw Shaft, diameter as fitted. Is the (tube/screw) shaft fitted with a continuous liner.

Bronze Liners, thickness in way of bushes as fitted. Thickness between bushes as fitted. 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 appliance fitted at the after end of tube shaft.

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. in² or Kg. cm.²). Kind of damper, if fitted.

Method of reversing Engines. Is a governor or other arrangement fitted to prevent racing of the engine when declutched. Yes. Means of lubrication.

Thickness of cylinder liners. Are the cylinders fitted with safety valves. Are the exhaust pipes and silencers water cooled or 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. 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. Type. Capacity 666 galls/hr.

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.

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. 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. Scavenging Air Pumps, No. diameter. stroke. driven by.

Auxiliary Engines crank shafts, diameter as fitted. Position. Have the auxiliary engines been constructed under special survey. Is a report sent herewith.



ML10-964200-14200

AIR RECEIVERS:—Have they been made under survey Yes, as reported for Engine No. 33401. State No. of report or certificate

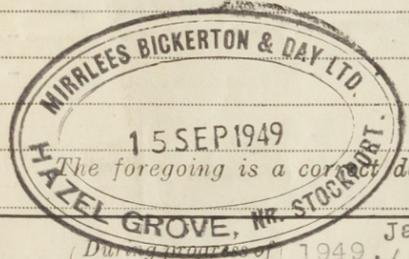
Is each receiver, which can be isolated, fitted with a safety valve as per Rule.
Can the internal surfaces of the receivers be examined and cleaned. Is a drain fitted at the lowest part of each receiver.
Injection Air Receivers, No. Cubic capacity of each. Internal diameter. thickness.
Seamless, welded or riveted longitudinal joint. Material. Range of tensile strength. Working pressure
Starting Air Receivers, No. Total cubic capacity. Internal diameter. thickness.
Seamless, welded or riveted longitudinal joint. Material. Range of tensile strength. Working pressure

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. 3rd May, 1949. Receivers. Separate fuel tanks. Owners.
Donkey boilers. General pumping arrangements. Pumping arrangements in machinery space.
Oil fuel burning arrangements.
Have Torsional Vibration characteristics been approved. Yes: for 500 R.P.M. Date of approval. 13th June, 1949.

SPARE GEAR.

Has the spare gear required by the Rules been supplied. Yes.
State the principal additional spare gear supplied.



Signature: J. M. ...

The foregoing is a correct description, and the particulars of the installation as fitted are as approved by the Rules.
CHIEF DRAUGHTSMAN. Manufacturer for Torsional Vibration Characteristics.

Dates of Survey while building. 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. 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. 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.

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. This Engine has been built under Special survey)
of tested materials and in accordance with the Secretary's letters, approved plans and Rule requirements. The materials and workmanship are good. The engine, direct coupled to a Heenan & Froude Dynamic Dynamometer, was tested at the Builders Works under the following conditions of loading and found satisfactory: 5 Hours 100% Load, 1 Hour 110% Load.
Torsional vibration characteristics of the shafting installation for this auxiliary machinery have been approved for a service speed of 500 Revs. per min. It is intended that this engine will be direct coupled to a Hyland Pump, through a flexible pin type coupling and, in our opinion, is suitable for installation in a vessel classed with this Society for the purpose intended.

Forging Report No. F.5828 attached herewith.

The amount of Entry Fee ... £ 11 5 0
Special ... £ : :
Donkey Boiler Fee... £ : :
Travelling Expenses (if any) £ 3 0 0
When applied for 27.9.19
When received 19

Committee's Minute ERI 2 JUN 1950
Assigned S. F. E. ...



Lloyd's Register Foundation

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