

REPORT ON OIL ENGINE MACHINERY.

No. 16897

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Received at London Office 14 NOV 1955

Date of writing Report 9th Nov. 19 55 When handed in at Local Office 19 Port of MANCHESTER

Survey held at Date, First Survey 7th July, 1955 Last Survey 26th Oct. 19 55

g. Book. Number of Visits 12

on the ^{Single} ~~Double~~ Screw vessel. Trawler (Classed Vessel) M.V. MUKSON: Tons Gross Net

uilt at Lowestoft By whom built Brooke Marine Ltd. Yard No. 243 When built 1955

Engines made at Hazel Grove By whom made Mirrlees, Bickerton and Day. Engine No. 46054 When made 1955

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

Indicated Horse Power 1100 Cont. Owners U.S.S.R. Port belonging to Murmansk

N. Power as per Rule 220 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted

Trade for which vessel is intended Fishing

Oil ENGINES, &c. - Type of Engines KSDM 8 Heavy Oil. 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 1000 psi Diameter of cylinders 15" Length of stroke 18" No. of cylinders 8 No. of cranks 8

Mean Indicated Pressure 155 psi. Ahead Firing Order in Cylinders 1.3.2.5.8.6.7.4. Span of bearings, adjacent to the crank, measured from inner edge to inner edge 17.5" Is there a bearing between each crank Yes Revolutions per minute 260

Flywheel dia. 4'6" Weight 4250 lbs. Moment of inertia of flywheel (lb.in²) 1969000 Means of ignition Comp. Kind of fuel used Pool

Crank Shaft, Solid forged ~~Semi-bulk~~ dia. of journals as per Rule as fitted 11 1/2" Crank pin dia. 10 1/2" Crank webs Mid. length breadth 18" Thickness parallel to axis 5.7/32" shrunk Mid. length thickness 5.7/32" Thickness around eye-hole 9 1/4"

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 9 1/2" Thrust Shaft, diameter at collars as fitted 9 1/4"

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted 11 1/4" Is the (tube screw) shaft fitted with a continuous liner

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 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

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 (lb.in²) 3872 Kind of damper, if fitted

Method of reversing Engines Pneumatic Operated Shaft Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Forced Thickness of cylinder liners 1.25/64" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled

Are the exhaust pipes and silencers water cooled Lagged with non-conducting material Lagged 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. Two D.A. Ram Type 8000 GPH each, 5" dia. x 4" 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. 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 Two Gear Type 6900 GPH x 100 ft. hd. each

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 per Rule as fitted Position

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

012165-012171-0025



AIR RECEIVERS:—Have they been made under survey Yes State No. of report or certificate See below

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, welded or riveted longitudinal joint Material Range of tensile strength Working pressure

Starting Air Receivers, No. 1 x 11 cu.ft. Total cubic capacity 126 Internal diameter 23" thickness 1"

Seamless, welded or riveted longitudinal joint Welded Material BSS 14 Boiler Quality Range of tensile strength 26/30 Working pressure 300 p

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 12.8.54 Receivers Separate fuel tanks

Donkey boilers General pumping arrangements Pumping arrangements in machinery space

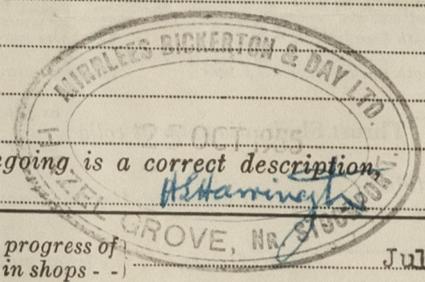
Oil fuel burning arrangements

Have Torsional Vibration characteristics been approved Yes Date of approval 25.11.54

SPARE GEAR.

Has the spare gear required by the Rules been supplied As per Rule requirements.

State the principal additional spare gear supplied



The foregoing is a correct description and the particulars of the engine, as supplied, are as approved for torsional vibration character

Dates of Survey while building: During progress of work in shops July 7, 29. Aug. 2, 23, 24, 26, 31. Sept. 13, 22. Oct. 4, 5, 26.

During erection on board vessel

Total No. of visits

Dates of examination of principal parts—Cylinders 7.7.55 Covers 23.8.55 Pistons Rods Connecting rods 26.8.55

Crank shaft 20.10.55 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 O.H. Steel Identification mark 694 Flywheel shaft, material Identification mark

Thrust shaft, material O.H. Steel Identification mark 2813 Intermediate shafts, material Identification marks

Tube shaft, material Identification mark Screw shaft, material Identification mark

Identification marks on air receivers 23/3341/3323/3884/3885/3919/, 11/4004

Welded receivers, state Makers' Name J. & H. McLaren

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, Speed restrictions, &c. This heavy oil propulsion engine has been built under special survey of tested materials and in accordance with the Secretary's letter approved plans and Rule Requirements. The material is sound and free from defects. The workmanship is good. The engine, direct coupled to a dynamic dynamometer was successfully tested at the Engine Builders works under the following conditions of loading - 6 hours 100% engine rating, Governor and manoeuvring trials.

The torsional vibration characteristics of the shafting installation have been examined in conjunction with the Engine Builders calculations and will be approved for a service speed of 260 RPM. In my opinion, this engine, is suitable for installation in a vessel to be classed by this Society, when the particulars of the complete propulsion installation, as fitted, are verified to be as approved for torsional vibration characteristics. Crankcase explosion devices are fitted. Attached hereto:- Shaft Certs. Df.F 55/1468, F1166 Certs.AR. C23689, 23687, 24704, 24784, 24783, 24908

The amount of Entry Fee ... £ 69 : 12 : - When applied for 11.11.55 Donkey Boiler Fee... £ : : When received 19 Travelling Expenses (if any) £ 2

FRIDAY 28 SEP 1956

Committee's Minute Assigned See Rpt. 4c.

Engineer Surveyor to Lloyd's Register of Shipping. This engine has been satisfactorily installed on board Bost Marine's first N243. Basalt sea trials were run on completion of the installation and the engine operated satisfactorily.

The Surveyors are requested not to write on or below the space for Committee's Minute.

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