

REPORT ON OIL ENGINE MACHINERY.

No. 16984

Received at London Office 17 JAN 1956

Writing Report 14th Dec 1955 When handed in at Local Office 16-1-56 19 Port of MANCHESTER

Survey held at Ashton-under-Lyne Date, First Survey 23rd Sept. 1955 Last Survey 16th Jan. 19 56

Number of Visits 8

on the ^{Single} ~~Triple~~ ~~Quadruple~~ Screw vessel. Irrawaddy Flotilla Quarter Wheeler - Classed Vessel. Tons Gross 2105 Net 105

at Scotstoun, Glasgow. By whom built Messrs. Varrow & Co. Job No. 635 Order No. E.4535 When built 6,56

as made at Ashton-under-Lyne By whom made The National Gas & Oil Co. Ltd. Engine No. 80632 When made 6,56

Boilers made at By whom made 47489/70. Boiler No. When made

Horse Power 440 Owners The Burma Inland Water Transport Organisation. Port belonging to Rangoon.

Power as per Rule 88 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Yes.

for which vessel is intended

ENGINES, &c. Type of Engines National R4AMB 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 850 psi Diameter of cylinders 9" Length of stroke 12" No. of cylinders 8 No. of cranks 8

Indicated Pressure 115 psi Ahead Firing Order in Cylinders 1.5.2.6.8.4.7.3 Span of bearings, adjacent to the crank, measured

inner edge to inner edge 10 1/4" Is there a bearing between each crank Yes lb.in.sec 2 Revolutions per minute 600/35.94 made

Wheel dia. 55 3/8" Weight 2840 Lbs. Moment of inertia of flywheel (lbs.in² or Kg.cm²) 1433 Means of ignition Comp. Kind of fuel used Diesel

Solid forged with oil approved dia. of journals as per Rule 6.622" Crank pin dia. 6.372" Crank webs Mid. length breadth 8 1/2" Thickness parallel to axis -

as fitted 6.622" Crank webs Mid. length thickness 2 3/4" shrunk Thickness around eye-hole -

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

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

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

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

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-

ive 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

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.in² or Kg.cm²) Kind of damper, if fitted "Holset" viscous type.

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

operation Forced Thickness of cylinder liners 19/32" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled

Exhaust Manifold Water Cooled. If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned

the engine 1 FW. Pump 5280 GPH. capacity. 1 SW. Pump 8,000 GPH. capacity. Cooling Water Pumps, No. Is the sea suction provided with an efficient strainer which can be cleared within the vessel

Pumps worked from the Main Engines, No. Diameter Stroke Can one be overhauled while the other is at work

Connections connected to the Main Bilge Line No. and size How driven

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

Pumps, No. and size Power Driven Lubricating Oil Pumps, including spare pump, No. and size Two, 1000 GPH each.

Independent means arranged for circulating water through the Oil Cooler Suctions, connected to both main bilge pumps and auxiliary

pumps, No. and size:—In machinery spaces In pump room

Other pumps, &c.

Independent Power Pump Direct Suctions to the engine room bilges, No. and size

Are the bilge suction pipes in holds and tunnel well fitted with strum-boxes Are the bilge suction in the machinery spaces led from easily

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

Sea Connections fitted direct on the skin of the Ship Are they fitted with valves or cocks Are they fixed

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 the pipes, cocks, valves and pumps in connection with the machinery and all boiler mountings accessible at all times

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

the main engine room

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

Air Compressors, No. One CS2 Reavell No. of stages Two diameters LP. 3 1/4" dia. HP. 1 1/4" dia. stroke 3" driven by Vee belt from Bobbin coupling.

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

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

Is any special provision made for first charging the air receivers

Other Air Pumps, No. diameter stroke driven by

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



Handwritten notes and signatures on the right margin, including '27/1/56' and '01636-01645-0093'.

Leeds State No. of report or certificate. C.24746/7

AIR RECEIVERS:—Have they been made under survey... Yes... 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. Two... Total cubic capacity 10 cu.ft. Internal diameter 17 1/2" thickness 3/8" Longitudinal & circumferential... In accordance with Class II Rule... Requirements for Unfired Pressure Vessels.

IS A DONKEY BOILER FITTED... If so, is a report now forwarded... Is the donkey boiler intended to be used for domestic purposes only... approved 23/6/55 Receivers... Separate fuel tank

PLANS. Are approved plans forwarded herewith for shafting... (If not, state date of approval) Donkey boilers... General pumping arrangements... Pumping arrangements in machinery space... Oil fuel burning arrangements... Have Torsional Vibration characteristics been approved... Yes... Date of approval... 26th July 1955

SPARE GEAR.

Has the spare gear required by the Rules been supplied... No... State the principal additional spare gear supplied... None yet ordered

The foregoing is a correct description, and the particulars of the engine, as supplied, are as approved... Torsional Vibration Characteristics... Manufacturer... J. & H. McLaren Ltd. Leeds.

Dates of Survey while building... During progress of work in shops... 1955 Sept. 23, 26, 27, 28, 29. Dec. 5, 6, 1956. Jan. 16. During erection on board vessel... Total No. of visits... Dates of examination of principal parts... Column 29.9.55 Covers 28.9.55 Pistons 5.12.55 Rods 23.9.55 Connecting rods 26.9.55 Crank shaft 26.9.55 Crank-Gear box 9.11.55 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 LL.5055. HKS. Ham. Flywheel shaft, material... Identification mark... Thrust shaft, material... Identification mark... Intermediate shafts, material O.H. Steel Identification marks... Tube shaft, material... Identification mark... Screw shaft, material... Identification mark... Identification marks on air receivers... 5/3897 Lloyd's Test 700 lb. W.P. 350 lb. 26.8.55. ATR. Lds. 5/3898 Lloyd's Test 700 lb. W.P. 350 lb. 26.8.55. ATR. Lds.

Welded receivers, state Makers' Name... J. & H. McLaren Ltd. Leeds. 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... No... If so, state name of vessel...

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c. This machinery has been constructed under Special Survey of tested materials in accordance with the Secretary's letters, approved devices and Requirements of the Rules. Crankcase explosion devices are fitted. The Torsional Vibration Characteristics of the shafting installation of this main machinery have been examined in conjunction with the Engine Builder's calculations and will be approved for an engine service speed of 600 RPM. The corresponding paddle speed of 43.6 RPM. The materials and workmanship are good and the engine when tested in the builder's works under full load conditions for 4 hours, 10% overload for 1 hour, 75% load & 50% load for 1/2 hour each Ahead, and 1 hour on 2/3 load and 3/4 speed Astern, showed satisfactory results. In the opinion of the undersigned, this machinery is suitable for installation in a vessel to be classed with this Society for the purpose intended. Attached are:-

B/mn. Rpt. No. F6284 covering Crank. 5055. Leeds Certs. No. C24746 & 7 covering A.R.'s 5/38 M/cr. Cert. No. C9259 covering Engine 80632. London " No. MWD.1368 covering Gearbox No. 1

The amount of Entry Fee ... £ 31 ; - } When applied for 16.1.56 Special ... £ : : } When received 19 Donkey Boiler Fee... £ : : Travelling Expenses (if any) £ 1 : 15

Assigned... Glasgow 7 AUG 1956 SEE ACCOMPANYING MACHINERY REPORT This engine has been efficiently installed and tested under full working conditions and found satisfactory. Abampbell Gls. Lloyd's Register Foundation

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

Handwritten notes: 14/1/56, 14/1/56

Vertical text on the right edge: Rpt. 13., No. in Reg. Book, Built at, Owners, Installat, Is vessel, Plans, Heating, Prime M, with a t, Are the, Have m, under 1, Is the u, damage, are they, steam a, materia, per Bul, for each, and the, Are con, ammete, protect, Switch, make o, overloa, devices, of the, Are ab, enlaga, type of, and la, smd, under, Are ab, nulkhe, fectio, have, and the