Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 23163.

1953

Received at London Office 11 FEB 1953

Date of writing Report 30 - 1 1953 When handed in at Local Office 19 Port of Leith

No. in Reg. Book. Survey held at Leith Date, First Survey 29 - 8 - 57 Last Survey 20 - 1 - 1953

Number of Visits 16 (SIXTEEN)

✓ on the ~~Single~~ Twin ~~Triple~~ ~~Quadruple~~ Screw vessel Motor Tug "M.S.C. RANGER"

Tons Gross 154.18 Net

Built at Leith By whom built Messrs Henry Robb Ltd Yard No 415. When built 1953

Engines made at Openshaws. By whom made Messrs Crossley Bros Ltd Engine Nos 142825 142826 When made 1952

Donkey Boilers made at ✓ By whom made ✓ Boiler No. ✓ When made ✓

Brake Horse Power { Maximum 600 each engine Service 1200 Total } Owners Manchester Ship Canal Co. Ltd Port belonging to Manchester

M.N. as per Rule 240 Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes

Trade for which vessel is intended River & Harbour Towing Services.

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OIL ENGINES, &c. —Type of Engines ✓ 2 or 4 stroke cycle ✓ Single or double acting ✓

Maximum pressure in cylinders ✓ Diameter of cylinders ✓ Length of stroke ✓ No. of cylinders ✓ No. of cranks ✓

Mean Indicated Pressure ✓ Span of bearings (i.e., distance between inner edges of bearings in way of a crank) ✓ Is there a bearing between each crank ✓ Revolutions per minute { Maximum ✓ Service ✓

Flywheel dia. ✓ Weight ✓ Moment of inertia of flywheel (lbs. in² or Kg.cm.²) ✓ Means of ignition ✓ Kind of fuel used ✓

" " balance wts. (" " " " ") ✓

Crank Shaft, { Solid forged / Semi built / All built } dia. of journals as per Rule ✓ as fitted ✓ Crank pin dia. ✓ Crank webs Mid. length breadth ✓ Mid. length thickness ✓ shrunk Thickness parallel to axis ✓ Thickness around eyehole ✓

Flywheel Shaft, diameter as per Rule ✓ as fitted ✓ **Intermediate Shafts,** diameter as per Rule Approved as fitted 9" ✓ **Thrust Shaft,** diameter at collars as per Rule ✓ as fitted ✓

Tube Shaft, diameter as per Rule ✓ as fitted ✓ **Screw Shaft,** diameter as per Rule Approved as fitted 9" ✓ Is the ~~tube~~ screw shaft fitted with a continuous liner No. ✓

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** fitted at the after end of stern tube YES ✓ If so, state type VICKERS. Length of bearing in **Stern Bush** next to and supporting propeller 3'-1" ✓

Propeller, dia. 7'-0" ✓ Pitch ~~4'-55~~ 3'-7" No. of blades 4 Material Cast Iron whether moveable Solid Total developed surface 19.25 sq. feet

Moment of inertia of propeller including entrained water (lbs. in² or Kg.cm²) ✓ Kind of damper, if fitted ✓

Method of reversing Engines ✓ Is a governor or other arrangement fitted to prevent racing of the engine ✓ 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 down near the waterline, what means are arranged to prevent water from being syphoned back to the engine ✓

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Cooling Water Pumps, No. and how driven ✓ Working F.W. ✓ S.W. ✓ Spare F.W. ✓ S.W. ✓ Is the sea suction provided with an efficient strainer which can be cleared within the vessel ✓

Bilge Pumps worked from the **Main Engines,** No. and capacity ✓ Can one be overhauled while the other is at work ✓

Pumps connected to the **Main Bilge Line** { No. and capacity of each 2@50 Tons/hr. 1@20 Tons/hr. (Auxiliary Bilge pump) / How driven main engines. Electric driven. }

Is the cooling water led to the bilges No. 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 capacity ✓ **Power Driven Lubricating Oil Pumps,** including spare pump, No. and size 2-driven by main Engines.

Are two independent means arranged for circulating water through the **Oil Cooler** Yes **Branch Bilge Suctions** No. and size:—In machinery spaces 1@2½" Eng room forward. 1@2½" Eng Room aft. ✓ In pump room ✓

In holds, &c. 1@2" forward cofferdam

Direct Bilge Suctions to the engine room bilges, No. and size 1@2½" S.W. Pump suction aft fore end of E.R. 1@2½" Aux bilge pump aft end of E.R.

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes Are the bilge suctions 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 Yes.

Are all **Sea Connections** fitted direct on the skin of the Ship On Saddles Are they fitted with valves or cocks Valves Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes Are the overboard discharges above or below the deep water line Above

Are they each fitted with a discharge valve always accessible on the plating of the vessel Yes Are the blow off cocks fitted with a spigot and brass covering plate ✓

What pipes pass through the bunkers None How are they protected ✓

What pipes pass through the deep tanks None 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 Yes.

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 Yes 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. MANCHESTER REPORT No. of stages 15273. diameters stroke driven by

Auxiliary Air Compressors, No. Two No. of stages Two diameters 4½" × 1 5/8" stroke 3½" driven by Electric Motor

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

What provision is made for first charging the air receivers Electric generator can be driven by either of two diesel engines capable of being started by hand.

Scavenging Air Pumps or Blowers, No. MANCHESTER REPORT How No. driven 15273.

Auxiliary Engines Have they been made under survey Yes. Engine Nos. 14553/14

Makers name Messrs Crossley Bros Ltd Position of each in engine room Forward end of engine room.

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23-2-53

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

State full details of safety devices ....

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 ....

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IS A DONKEY BOILER FITTED no 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 yes (If not, state date of approval) Receivers ✓ Separate fuel tanks yes

Donkey boilers ✓ General pumping arrangements ✓ Pumping arrangements in machinery space yes

Oil fuel burning arrangements ✓

Have Torsional Vibration characteristics been approved yes Date and particulars of approval 20-4-50.

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes State if for "short voyages" only ✓

State the principal additional spare gear supplied ....

HENRY ROBB LIMITED
[signature]
DIRECTOR

The foregoing is a correct description, ... Manufacturer.

Dates of Survey while building:
- During progress of work in shops 1951.
- During erection on board vessel 29th Aug 4th & 18th Sept. 23 May 1952. 2nd June 52, 20th June 4th July 30th Sept 4th Nov. 11th Nov. 17th Nov. 2nd Dec 9th, 12th & 26th Dec. 20 Jan 19..
- Total No. of visits 16.

Dates of examination of principal parts—Cylinders ✓ Covers ✓ Pistons ✓ Rods ✓ Connecting rods ✓

Crank shaft ✓ Flywheel shaft ✓ Thrust shaft ✓ Intermediate shafts .... Tube shaft ✓

Screw shaft 4-6-52 Propeller 30-9-52. Stern tubes P 4-7-52 S 20-6-52 Engine seatings 9-12-52 Engine holding down bolts 12-12-52

Completion of fitting sea connections 4-11-52 Completion of pumping arrangements 26-12-52 Engines tried under working conditions 20-1-53

Crank shaft, material ✓ Identification mark ✓ Flywheel shaft, material ✓ Identification mark ....

Thrust shaft, material ✓ Identification mark ✓ Intermediate shafts, material Ingot steel Identification marks 5265-6 G.H. 4-6-52 5264-8

Tube shaft, material ✓ Identification mark ✓ Screw shaft, material Ingot steel Identification mark G.H. 4.6.52

Identification marks on air receivers MANCHESTER REPORT No 15273.

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 yes.

Full description of fire extinguishing apparatus fitted in machinery spaces As per approved plan.

Is the vessel (not being an oil tanker) fitted for carrying oil as cargo no. If so, have the requirements of the Rules been complied with ✓

What is the special notation desired ✓

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 yes. If so, state name of vessel M.S.C. "QUARRY" & "QUEST"

General Remarks (State quality of workmanship, opinions as to class, Speed restrictions, &c. This machinery has been satisfactorily fitted on board in accordance with the requirements of the Rules and the approved plans.

The materials and workmanship have been found good upon completion, satisfactory sea trials under full working conditions have been carried out.

In accordance with Glasgow Secretary's letter dated 28.7.50 the governor has been adjusted to prevent the speed of engine rising above 280 R.P.M.

It is recommended that the record of +LMC 1/53, OIL ENGINES, T.S.O.G. be made in the Register Book.

The amount of Entry Fee ... £ ✓

Special (Installation) £ 55-4-0 When applied for 31/1/1953.

Donkey Boiler Fee ... £ ✓ When received 19

Travelling Expenses (if any) £ ✓

Thomas Donaldson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 10 FEB 1953

Assigned + LMC. 1,53. Oil Engines with torsional endorsement

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

2/12/53 13.2.53