

# REPORT ON OIL ENGINE MACHINERY.

See Lith. Rpt. No. 21313

No. 68648

Received at London Office

13 JUL 1944

Report 19. When handed in at Local Office 7.7.44 Port of **GLASGOW**  
 Survey held at **GLASGOW** Date, First Survey 16.9.43. Last Survey 21.6.1944  
 Number of Visits 24  
 Single or Double Acting **Single**  
 In the **Triple** Screw vessel **H.M.R.T. MEDIATOR**  
 Tons Gross 11824 Net 11637  
 LEITH By whom built **H. ROBB LTD.** Yard No. 337 When built 1944  
 By whom made **BRITISH AUXILIARIES LTD.** Engine No. 46970 When made 1944  
 GLASGOW By whom made - Boiler No. - When made -  
 8/4 Boilers made at - Owners **THE ADMIRALTY** Port belonging to -  
 Horse Power **3020 at propeller** Is Refrigerating Machinery fitted for cargo purposes - Is Electric Light fitted -  
 Power as per Rule **500** which vessel is intended - 13 3/8" 22 7/16"

**GINES, &c.** Type of Engines **M.4.8.M. Heavy Oil** 2 or 4 stroke cycle **2** Single or double acting **Single**  
 Pressure in cylinders **783 lbs/sq.in.** Diameter of cylinders **340m/m** Length of stroke **570m/m** No. of cylinders **16** No. of cranks **16**  
 Rated Pressure **99.6 lbs/sq.in.**  
 Rings, adjacent to the Crank, measured from inner edge to inner edge **484 m/m** Is there a bearing between each crank **Yes**  
 Engine 320 Propeller 145 Flywheel dia. **1200 m/m** Weight **1446 lbs** Means of ignition **Compression** Kind of fuel used **Diesel**  
 Solid forged dia. of journals as per Rule **217 m/m** as fitted **235 m/m** Crank pin dia. **235 m/m** Crank Webs Mid. length breadth **366.3m/m** Thickness parallel to axis **shrunk**  
 as fitted **235 m/m** Mid. length thickness **122** Thickness around eye-hole **shrunk**  
 Shaft, diameter as per Rule **217 m/m** as fitted **235 m/m** Intermediate Shafts, diameter as per Rule - as fitted - Thrust Shaft, diameter at collars as per Rule - as fitted -  
 as per Rule - as fitted - Screw Shaft, diameter as per Rule - as fitted - Is the tube screw shaft fitted with a continuous liner -  
 4-29 Bore, 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 -  
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of 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 -  
 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 -  
 If so, state type - Length of Bearing in Stern Bush next to and supporting propeller -  
 dia. - Pitch - No. of blades - Material - whether Moveable - Total Developed Surface - sq. feet  
 reversing Engines **Direct** Is a governor or other arrangement fitted to prevent racing of the engine when started **Yes** Means of lubrication -  
 Thickness of cylinder liners **25.5m/m** Are the cylinders fitted with safety valves **Yes** Are the exhaust pipes and silencers water cooled or lagged with -  
 ng 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 -  
 Water Pumps, No. **1 each 170 x 140m/m** Is the sea suction provided with an efficient strainer which can be cleared within the vessel -  
 aps worked from the Main Engines, No. **One** Diameter **120 m/m** Stroke **140 m/m** Can one be overhauled while the other is at work -  
 mected to the Main Bilge Line No. and Size - How driven -  
 ng 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 -  
 umps, No. and size - Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **1 Each engine 7500 Galls/Hour.**  
 ependent means arranged for circulating water through the Oil Cooler - Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge -  
 and size:—In Machinery Spaces - In Pump Room -  
 ent Power Pump Direct Suctions to the Engine Room Bilges, No. and size -  
 Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes - Are the Bilge Suctions in the Machinery Spaces -  
 easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges -  
 Connections fitted direct on the skin of the ship - Are they fitted with Valves or Cocks -  
 ed 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 -  
 ch 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 -  
 pass through the bunkers - How are they protected -  
 pass through the deep tanks - Have they been tested as per Rule -  
 usties, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times -  
 ngement 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 -  
 t to another - Is the Shaft Tunnel watertight - Is it fitted with a watertight door - worked from -  
 essel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork -  
 Compressors, No. **One Each engine** No. of stages **2** Diameters **H.P. 80m/m L.P. 215 m/m** Stroke **240m/m** Driven by **Main Engine**  
 Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -  
 ililiary Air Compressors, No. - No. of stages - Diameters - Stroke - Driven by -  
 sion is made for first Charging the Air Receivers -  
 g Air Pumps, No. **One Each engine** Diameter **940 m/m** Stroke **480 m/m** Driven by **Main Engine**  
 Engines crank shafts, diameter as per Rule - as fitted - Position -  
 Auxiliary Engines been constructed under special survey - Is a report sent herewith -



AIR RECEIVERS: - Have they been made under survey **Yes** State No. of Report or Certificate **C. 50612**

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**

Injection Air Receivers, No. **2** Cubic capacity of each **140 cu. feet.** Internal diameter **36"** thickness **3/4"**  
Seamless, lap welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **Ends 26/30 tons/sq. in. Shell 28/32** Working pressure **350** by Rules **350** Actual

Starting Air Receivers, No. **2** Total cubic capacity **140 cu. feet.** Internal diameter **36"** thickness **3/4"**  
Seamless, lap welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **Ends 26/30 tons/sq. in. Shell 28/32** Working pressure **350** by Rules **350** Actual

IS A DONKEY BOILER FITTED? **Yes** If so, is a report now forwarded?

Is the donkey boiler intended to be used for domestic purposes only **Yes**

PLANS. Are approved plans forwarded herewith for Shafting **15 - 6 - 40** Receivers **25 - 8 - 40** Separate Fuel Tanks **Yes**  
(If not, state date of approval) **Crank shaft appd 21.10.42**  
Donkey Boilers **General Pumping Arrangements** **Pumping Arrangements in Machinery Space**  
Oil Fuel Burning Arrangements **being order altered**

**SPARE GEAR.**

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

The foregoing is a correct description,

**J. S. Raeburn**

Manufacturer.

Dates of Survey while building  
During progress of work in shops - **1943 Sep 16 Oct 15 Nov 4 Dec 2. 1944 Jan 7 17 Feb 1. 10. 11. 12. 14. 28 Mar 30. 24. 31 Apr 4. 20. 27 May 23. 25 Jun 5. 12. 21.**  
During erection on board vessel - **24**  
Total No. of visits **24**

Dates of Examination of principal parts - Cylinders **11/2/44** Covers **4/4/44** Pistons **7/1/44** Rods **7/1/44** Connecting rods **14/2/44**  
**8/11/43** Flywheel shaft **4/11/43** Thrust shaft **27/4/44** Intermediate shafts **14/2/44** Tube shaft **14/2/44**  
Crank shaft **10/2/44**

Screw shaft **10/2/44** Propeller **4/11/43** Stern tube **4/11/43** Engine sealings **4/11/43** Engines holding down bolts **4/11/43**  
Completion of fitting sea connections **2163 F.H. 25/10/43** Completion of pumping arrangements **2951 F.H. 30/9/43** Engines tried under working conditions **2951 F.H. 30/9/43**

Crank shaft, Material **Steel** Identification Mark **2163 F.H. 25/10/43** Flywheel shaft, Material **2951 F.H. 30/9/43** Identification Mark **2951 F.H. 30/9/43**  
Thrust shaft, Material **Steel** Identification Mark **2163 F.H. 25/10/43** Intermediate shafts, Material **2951 F.H. 30/9/43** Identification Marks **2951 F.H. 30/9/43**  
Tube shaft, Material **Steel** Identification Mark **2163 F.H. 25/10/43** Screw shaft, Material **2951 F.H. 30/9/43** Identification Mark **2951 F.H. 30/9/43**

Identification Marks on Air Receivers **2 off Lloyd's No. 50612 T.P. 260 lbs/sq. in. W.P. 350 J. McL. 8/11/43.** See Lth Rept.

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 **Yes**

Description of fire extinguishing apparatus fitted **Yes**  
Is the vessel (not being an oil tanker) fitted for carrying oil as cargo **Yes** If so, have the requirements of the Rules been complied with **Yes**

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with **Yes**  
Is this machinery duplicate of a previous case **Yes** If so, state name of vessel **M.V. BUSTLER GIS.RPT.NO. 65**

General Remarks (State quality of workmanship, opinions as to class, &c. **These engines have been built under Special Survey in accordance with the Rules and approved plans.**

**The materials and workmanship are good. On completion the engines were tested on the bench at full load with satisfactory results.**

**These engines are to the order of Messrs. Henry Robb, Ltd., Ship No. 337.**

Inclusive Fee.  
The amount of Entry Fee **£ 10** When applied for, **19**  
Special **£ 10** When received, **19**  
Donkey Boiler Fee **£ 10**  
Travelling Expenses (if any) **£ 10**

Committee's Minute **GLASGOW 11 JUL 1944** **5 JAN 1945**

Assigned **Deferred for Completion** **See FE machy rpt**

**McLain**  
Engineer Surveyor to Lloyd's Register of Shipping

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