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Rpt. 4b.  
29 JUN 1944

# REPORT ON OIL ENGINE MACHINERY.

London Report No. 112116

No. 68618

IN D.O.

Date of writing Report

When handed in at Local Office

86.6 Port of

GLASGOW.

29 August 1944

No. in Survey held at Reg. Book.

Date, First Survey

9.3.44

Last Survey

8.6.1944

Number of Visits

7+12

Single  
Twin  
Triple  
Quadruple  
Screw vessel

"EMPIRE BARKIS"

Built at Rowhedge

By whom built Rowhedge Ironworks Ltd.

Yard No. 760 When built 1944

Engines made at Glasgow.

By whom made British Auxiliaries Ltd.

Engine No. 506 When made 1944

Donkey Boilers made at -

By whom made -

Boiler No. - When made -

Brake Horse Power 395

Owners. MINISTRY OF WAR TRANSPORT

Port belonging to LONDON

Nom. Horse Power as per Rule 67

Is Refrigerating Machinery fitted for cargo purposes -

Is Electric Light fitted -

Trade for which vessel is intended -

OIL ENGINES, &c.—Type of Engines 2 S.C.S.A. Heavy oil 2 stroke cycle Single or double acting Single

Maximum pressure in cylinders 853 lbs/sq.in. 250 m/m Length of stroke 420m/m No. of cylinders 4 No. of cranks 4

Mean Indicated Pressure - Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 360 m/m Is there a bearing between each crank Yes

Revolutions per minute 400 Flywheel dia. 1050m/m Weight 1110 lbs Means of ignition compression Kind of fuel used Diesel.

Crank Shaft, Solid forged dia. of journals as per Rule 157 m/m as fitted 169.86 Crank pin dia. 169.86m/m Crank Webs Mid. length breadth 209 Mid. length thickness 88 Thickness parallel to axis - Thickness around eye-hole -

Flywheel Shaft, diameter as per Rule - as fitted - Intermediate Shafts, diameter as per Rule - as fitted - Thrust Shaft, diameter at collars as per Rule 116.5m/m as fitted 204.5m/m

Tube Shaft, diameter as per Rule - as fitted - Screw Shaft, diameter as per Rule - as fitted - Is the tube 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 at 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 the tube shaft -

Propeller, dia. - Pitch - No. of blades - Material - whether Moveable - Total Developed Surface - sq. feet

Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine Yes Means of lubrication forced

Thickness of cylinder liners 19.5m/m Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting 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 -

Cooling Water Pumps, No. 1 off. 85 x 60m/m Is the sea suction provided with an efficient strainer which can be cleared within the vessel -

Bilge Pumps worked from the Main Engines, No. 1 Diameter 85 m/m Stroke 60 m/m 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 2. off

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 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 -

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. One No. of stages 2 Diameters 55" HP Stroke 240 m/m Driven by N/E

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. One Diameter 580 m/m Stroke 240 m/m Driven by M.E.

Auxiliary Engines crank shafts, diameter as per Rule - as fitted - No. - Position -

Have the Auxiliary Engines been constructed under special survey - Is a report sent herewith -



008973-008981-0235

**AIR RECEIVERS:** — Have they been made under survey **Yes** ✓ State No. of Report or Certificate **C. 52235** ✓  
 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, lap welded or riveted longitudinal joint - Material - Range of tensile strength - Working pressure by Rules - Actual -  
**Starting Air Receivers, No. Two** ✓ Total cubic capacity **30 cu. ft.** Internal diameter **21"** ✓ thickness **13/32"** ✓  
 Seamless, lap welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **28/32 tons/sq. in.** Working pressure by Rules **355 lbs.** Actual **355 lbs.** ✓

**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 <sup>13-3-44</sup> <sub>8-7-43</sub> Receivers **4. 4. 44.** Separate Fuel Tanks **70% for**  
 (If not, state date of approval)  
 Donkey Boiler **None** General Pumping Arrangements **None** Pumping Arrangements in Machinery Space  
 Oil Fuel Burning Arrangements

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied **Yes** ✓  
 State the principal additional spare gear supplied **As per attached list.** ✓

The foregoing is a correct description,

*M. Watson* Manufacturer.

Dates of Survey while building  
 During progress of work in shops - 1944 Mar 9. Apr 27 May 1. 8. 25 Jun 5. 8  
 During erection on board vessel - 1944 Feb 23 June 6. 17. 23. 25 July 6. 20 Aug 10. 16. 24. 25. 29  
 Total No. of visits **7 + 12**

Dates of Examination of principal parts—Cylinders **1. 5. 44** Covers **25. 5. 44** Pistons **25. 5. 44** Rods **25. 5. 44** Connecting rods **25. 5. 44**  
 Crank shaft **27. 4. 44** Flywheel shaft **27. 4. 44** Thrust shaft - Intermediate shafts - Tube shaft -  
 Screw shaft - Propeller - Stern tube - Engine seatings - Engines holding down bolts -  
 Completion of fitting sea connections - Completion of pumping arrangements - Engines tried under working conditions **5. 6. 44**  
 Crank shaft, Material **Steel** Identification Mark **136F.W 28.843** Flywheel shaft, Material **Steel** Identification Mark -  
 Thrust shaft, Material **Steel** Identification Mark **F.W. 16.10.43** Intermediate shafts, Material - Identification Marks -  
 Tube shaft, Material - Identification Mark - Screw shaft, Material - Identification Mark -  
 Identification Marks on Air Receivers **No. 52235**

Lloyd's test **550 lbs/sq. in.**  
 W.P. **225 lbs/sq. in.** *355 as per let. L.L. 22/7/44.*  
 P.W. **30. 3. 44.**

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, &c. **This engine has been built under special survey in accordance with the rules and approved plans.**  
**The materials and workmanship are good. On completion the Engine was tested on the bench connected to the brake at full power, with satisfactory results. It is to the order of Messrs. Rowledge Iron Works Ltd., intended for their Ship No. A/MS 760.**

Certificate (if required) to be sent to Committee's Minute.

The amount of Entry Fee £ **2** : - : - When applied for,  
 2/3 Gls a/c **11.3.0.** £ **16** : **15** : - 2 JUN 1944  
 Special  
 1/3 Lon a/c **5.12.0.**  
 Donkey Boiler Fee ... £ : : : When received,  
 Travelling Expenses (if any) £ : : : 19.

*J. McFarlane*  
 Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 6 OCT 1944 © 2021 Lloyd's Register Foundation  
 Glasgow 27 JUN 1944  
 Assigned Transmit to Wokingham  
 see minute  
 28. 8. 44