

REPORT ON OIL ENGINE MACHINERY.

No 102954

Received at London Office

4 JUL 1945

Date of writing Report

19

When handed in at Local Office

28-6-45

Port of

NEWCASTLE-ON-TYNE

No. in Survey held at
Reg. Book.

NEWCASTLE-ON-TYNE.

Date, First Survey

(1943) Jan'y. 11th

Last Survey

June 25th 1945

Number of Visits

126

Single
on the Tank
Triple
D. Quadruple

Screw vessel TANKER

M/V BRITISH VIRTUE.

Tons

Gross 8553

Net 4953

Built at NEWCASTLE.

By whom built SWAN, HUNTER & WIGHAM RICHARDSON LTD Yard No. 1762. When built 1945

Engines made at NEWCASTLE.

By whom made

S.H.W.R.

Engine No. 1762. When made 1945

Donkey Boilers made at NEWCASTLE.

By whom made

S.H.W.R.

Boiler No. When made 1945

Brake Horse Power 3100. ✓

Owners BRITISH TANKER CO LTD.

Port belonging to LONDON.

Nom. Horse Power as per Rule 687. ✓

Is Refrigerating Machinery fitted for cargo purposes

NO. ✓

Is Electric Light fitted YES. ✓

Trade for which vessel is intended

OPEN SEA. ✓

CARRYING PETROLEUM IN BULK. ✓

OIL ENGINES, &c.—Type of Engines OPPOSED PISTON. AIRLESS INJECT. 2 or 4 stroke cycle 2. Single or double acting SINGLE. ✓

Maximum pressure in cylinders 568 lbs/sq. in. ✓ Diameter of cylinders 600 mm. ✓ Length of stroke 2320 mm. ✓ No. of cylinders 4 ✓ No. of cranks 4-3 throw. ✓

Mean Indicated Pressure 85 lbs/sq. in. ✓ BETWEEN CENTRES OF SIDE RODS 1200 mm. ✓

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1800 mm. ✓ Is there a bearing between each crank YES. ✓

Revolutions per minute 105. ✓ Flywheel dia. 2450 mm. ✓ Weight 3.25 tons. ✓ Kind of fuel used HEAVY OIL. ✓

Crank Shaft, { Semi built dia. of journals as APPROX 425 mm. ✓ Crank pin dia. 450 mm. ✓ Mid. length breadth 650 mm. ✓ Thickness parallel to axis 255 mm. ✓
All built as fitted 450 mm. ✓ Mid. length thickness 255 mm. ✓ Thickness around eye hole 200 mm. ✓Flywheel Shaft, diameter as APPROX 425 mm. ✓ Intermediate Shafts, diameter as APPROX 13 1/8" ✓ Thrust Shaft, diameter at collars as APPROX 425 mm. ✓
as fitted 450 mm. ✓ as fitted 10 7/8" ✓ as fitted 450 mm. ✓Tube Shaft, diameter as per Rule 14.68" ✓ Screw Shaft, diameter as APPROX 10 7/8" ✓ Is the shaft fitted with a continuous liner YES. ✓
as fitted 10 7/8" ✓ as fitted 10 7/8" ✓

Bronze Liners, thickness in way of bushes as per Rule 3/4" ✓ Thickness between bushes as per Rule 25/32" ✓ Is the after end of the liner made watertight in the propeller boss YES. ✓

If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner ONE LENGTH. ✓

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 TIGHT FIT. ✓

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 NO. ✓ If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 5'-8 1/2". ✓

Propeller, dia. 16'-3". ✓ Pitch 12'-3". No. of blades 4. Material BRONZE. whether Moveable NO. Total Developed Surface 90. sq. feet

Method of reversing Engines COMPRESSED AIR. Is a governor or other arrangement fitted to prevent racing of the engine YES. ✓ Means of lubrication

FORCED. Thickness of cylinder liners 25 mm. ✓ Are the cylinders fitted with safety valves YES. ✓ Are the exhaust pipes and silencers water cooled or 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. — FW FOR JACKETS. ✓ Is the sea suction provided with an efficient strainer which can be cleared within the vessel S.W. SYSTEM YES. ✓

Bilge Pumps worked from the Main Engines, No. NONE. Diameter ✓ Stroke ✓ Can one be overhauled while the other is at work ✓

Pumps connected to the Main Bilge Line { No. and Size THREE :- 1 BALLAST 10" x 11" x 10". 1 BILGE 7" x 7 1/2" x 8". 1 SANITARY 7" x 7 1/2" x 8". EACH 80 mm. ✓
How driven STEAM. ✓ 190 T/M.

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 size ONE 10" x 11" x 10". 190 T/M. ✓ Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size TWO. ONE 6" x 7" x 6" SIMPLEX 30 mm. ✓

Are two independent means arranged for circulating water through the Oil Cooler YES. ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size: — In Machinery Spaces 3 — 3 1/2" DIAM. 2 — 2 1/2" DIAM. ✓ In Pump Room 2 — 4" DIAM. ✓

In Holds, &c. FOREHOLD 2 — 2 1/2" DIAM. STORE ROOM 2 — 2" DIAM. FORWARD HOLD PUMPROOM. 1 — 2" DIAM. ✓

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size BALLAST PUMP 1 — 6" DIAM. BILGE PUMP 1 — 5" DIAM. ✓

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strain-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 YES. ✓ Are they fitted with Valves or Cocks BOTH. ✓

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 BELOW. ✓

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 YES. ✓

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 MCHY ART. 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. NONE. ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓

Auxiliary Air Compressors, No. TWO. ✓ No. of stages 3. Diameters 11 1/2". 9 1/4". 2 3/4". Stroke 7". Driven by STEAM. ✓

Small Auxiliary Air Compressors, No. NONE. No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓

What provision is made for first Charging the Air Receivers STEAM DRIVEN COMPRESSOR. ✓

Scavenging Air Pumps, No. ONE DOUBLE ACTING. ✓ Diameter 1960 mm. ✓ Stroke 608 mm. ✓ Driven by MAIN ENGINES. ✓

Auxiliary Engines crank shafts, diameter as per Rule ✓ No. 2 STEAM DRIVEN 30 KW. EACH. ✓ ON STAR SIDE. ✓
as fitted ✓ Position. AIR COMPRESSORS.

Have the Auxiliary Engines been constructed under special survey NO. (STEAM ONLY). ✓ Is a report sent herewith ✓

Lloyd's Register
Foundation
002515-002521-0173

AIR RECEIVERS: - Have they been made under survey **YES.** ✓ State No. of Report or Certificate
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. **NONE.** 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 **280 cu. ft.** ✓ Internal diameter **4'-1 1/2"** ✓ thickness **1 3/32"** ✓
Seamless, lap welded or riveted longitudinal joint **TR. DBS.** Material **STEEL.** Range of tensile strength **29/33 tons.** Working pressure by Rules **602 LBS/10**
Actual **600 LBS/10**

IS A DONKEY BOILER FITTED?

Is the donkey boiler intended to be used for domestic purposes only **NO.** (STEAM AUXILIARY EN.)

PLANS. Are approved plans forwarded herewith for Shafting **26/28/5/42.** ✓ Receivers **28/5/42.** Separate Fuel Tanks **✓**
(If not, state date of approval)

Donkey Boilers **28/5/42.** General Pumping Arrangements **25/2/43.** Pumping Arrangements in Machinery Space **21.4.45.**
Oil Fuel Burning Arrangements **22/10/42.**

SPARE GEAR.

Has the spare gear required by the Rules been supplied **YES.** ✓

State the principal additional spare gear supplied

- 1 - MAIN SPHERICAL BEARING. 1 - LOWER PISTON SKIRT. 2 - COMPLETE SETS OF SPRINGS.
- 1 - NON-RETURN AIR STARTING VALVE. 5 - MAIN PISTON RINGS. 2 - COMPLETE SETS OF JOINTS.
- 1 - CYLINDER RELIEF VALVE. 4 - PISTON SKIRT SCRAPER RINGS.
- 1 - FUEL PUMP BODY COMPLETE WITH SUCTION DEL VALVES. 6 - RUBBER HOSES FOR UPPER P.W.S.
- 1 - UPPER PISTON SKIRT. 1 - 6 FEED LUBRICATORS FOR WORKING CYLS.

The foregoing is a correct description.

G. J. Dwyer Manufacturer.

Dates of Examination of principal parts - Cylinders **28.2.44.** Covers **✓** Pistons **28.3.44.** Rods **28.3.44.** Connecting rods **28.3.44.**
Crank shaft **16.2.44.** Flywheel shaft **✓** Thrust shaft **✓** Intermediate shafts **13.3.44.** Tube shaft **✓**
Screw shaft **13.3.44.** Propeller **2.2.45.** Stern tube **22.1.45.** Engine seatings **1.2.45.** Engines holding down bolts **9.4.45.**
Completion of fitting sea connections **9.3.45.** Completion of pumping arrangements **6.6.45.** Engines tried under working conditions **29.5.45.** **19.6.45.**
Crank shaft, Material **STEEL.** Identification Mark **LRN 11582.** Flywheel shaft, Material **✓** Identification Mark **12649-992**
Thrust shaft, Material **STEEL.** Identification Mark **LRN 11582** Intermediate shafts, Material **STEEL.** Identification Mark **12649-993**
Tube shaft, Material **✓** Identification Mark **✓** Screw shaft, Material **STEEL.** Identification Mark **14499-792. SPARE.**
Identification Marks on Air Receivers **TWO STARTING AIR RECEIVERS MARKED.** **12649-991. WORKING.**

Dates of Examination of principal parts - Cylinders **28.2.44.** Covers **✓** Pistons **28.3.44.** Rods **28.3.44.** Connecting rods **28.3.44.**
Crank shaft **16.2.44.** Flywheel shaft **✓** Thrust shaft **✓** Intermediate shafts **13.3.44.** Tube shaft **✓**
Screw shaft **13.3.44.** Propeller **2.2.45.** Stern tube **22.1.45.** Engine seatings **1.2.45.** Engines holding down bolts **9.4.45.**
Completion of fitting sea connections **9.3.45.** Completion of pumping arrangements **6.6.45.** Engines tried under working conditions **29.5.45.** **19.6.45.**
Crank shaft, Material **STEEL.** Identification Mark **LRN 11582.** Flywheel shaft, Material **✓** Identification Mark **12649-992**
Thrust shaft, Material **STEEL.** Identification Mark **LRN 11582** Intermediate shafts, Material **STEEL.** Identification Mark **12649-993**
Tube shaft, Material **✓** Identification Mark **✓** Screw shaft, Material **STEEL.** Identification Mark **14499-792. SPARE.**
Identification Marks on Air Receivers **TWO STARTING AIR RECEIVERS MARKED.** **12649-991. WORKING.**

Identification Marks on Air Receivers **TWO STARTING AIR RECEIVERS MARKED.** **12649-991. WORKING.**

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 **✓**
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 **NOT DESIRED.**
Is this machinery duplicate of a previous case **YES.** ✓ If so, state name of vessel **EMPIRE MACCABE. SHWR 1724.**

General Remarks (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been constructed under Special Survey in accordance with the approved plans, and the Society's Rules, and the materials and workmanship are good.

The main engines were tested in the works under full load, and afterwards the electric welded construction of bedplate, columns & entablature were examined and found in good condition.

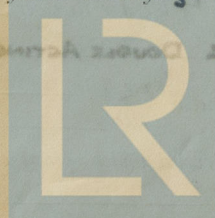
The machinery has been efficiently installed on board the vessel and tested under working conditions with satisfactory results, and is eligible in our opinion to have the record of **LMC 6.45** and the notations **2.DB 150 LBS WP. C.L. OIL ENG MCH. AFT.**

The amount of Entry Fee .. £ **6 : 0 :** When applied for, **- 3 JUL 1945.**
Special .. £ **109 : 7 :**
R.W. CONSTRUCTION MAIN ENGINES. **12 12.**
Donkey Boiler Fee .. £ **23 : 10 :**
2. STARTING AIR RECEIVERS. **4 4.**
Travelling Expenses (if any) £ **19.**

Committee's Minute **FRI. 20 JUL 1945**

Assigned **+ LMC 6.45**

A. Watt *W. E. Munro*
Engineer Surveyor to Lloyd's Register of Shipping.



Lloyd's Register Foundation