

REPORT ON OIL ENGINE MACHINERY.

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Date of writing Report 10 08 42 Port of Belfast LIVERPOOL Date, First Survey 30 Dec 1941 Last Survey 28 Mar 1942 Number of Visits 4-5

No. in Survey held at Reg. Book. Single on the Twin Screw vessel "BRITISH TRADITION" Built at Birkenhead By whom built Bammell Laird & Co. Ltd. Yard No. 1067 When built Engines made at Belfast By whom made Harland & Wolff Ltd. Engine No. 2099 When made 1942 Donkey Boilers made at By whom made Boiler No. When made Brake Horse Power 3300 Owners Port belonging to Nom. Horse Power as per Rule 489 Is Refrigerating Machinery fitted for cargo purposes Is Electric Light fitted Trade for which vessel is intended

OIL ENGINES, &c. Type of Engines Harland & Wolff B.W. Airless Injection 2 or 4 stroke cycle 4 Single or double acting Single Maximum pressure in cylinders 700 lbo Diameter of cylinders 740 mm Length of stroke 1500 mm No. of cylinders 6 No. of cranks 6 Mean Indicated Pressure 128 lbo Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 972 mm Is there a bearing between each crank Yes Revolutions per minute 110 Flywheel dia. 2489 mm Weight 2590 kgs Means of ignition Compression Kind of fuel used Diesel oil Crank Shaft Solid forged dia. of journals as per Rule approved Crank pin dia. 505 mm Crank Webs Mid. length breadth 980 mm Thickness parallel to axis 310 mm All built as fitted 505 mm Crank pin dia. 115 mm Mid. length thickness 310 mm Thickness around eye-hole 292.5 mm Flywheel Shaft, diameter as per Rule as thrust shaft Intermediate Shafts, diameter as per Rule 13.77 13.48 Thrust Shaft, diameter at collars as per Rule approved as fitted 454 mm Tube Shaft, diameter as per Rule as fitted 15.1 14.81 Is the shaft fitted with a continuous liner YES Screw Shaft, diameter as per Rule 16 14.81 Thickness between bushes as per Rule 9/16 as fitted 1/16 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 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 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'-2"

Propeller, dia. 16'-0" Pitch 11'-6" No. of blades 4 Material Mn: BRONZE Whether Moveable NO Total Developed Surface 81 sq. feet Method of reversing Engines Air & oil brake cylinders Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Faced Thickness of cylinder liners 53 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 One sea water and alternative means

Cooling Water Pumps, No. 2 One sea water, one fresh water Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes Bilge Pumps worked from the Main Engines, No. One Diameter Stroke Can one be overhauled while the other is at work Pumps connected to the Main Bilge Line No. and Size 1 BILGE & SAN @ 8'x8'x10' DUPLEX, 1 BALLAST @ 10'x11'x10' DUPLEX How driven STEAM, ALSO ONE M.E. DRIVEN

Is the cooling water led to the bilges PLUMBER BLOCKS ONLY If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements NOTHING ADDITIONAL TO APPROVED BILGE SUCTIONS Ballast Pumps, No. and size 1 @ 10'x11'x10' Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size one engine driven 100 tons/hr and a spare pump 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" In Pump Room 2 @ 4" In Holds, &c. HOLD - 1 @ 2 1/2" P+S. STORE 1 @ 2" P+S. FOREHOLD 1 @ 2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 6" FROM AFTWELL, 1 @ 8" EMERGENCY 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 BUILT BOXES 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 BELOW & L.W.L. 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 Are pipes pass through the deep tanks NONE Have they been tested as per Rule 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. Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 1 1/2 @ 8 1/8" Stroke 5 1/4" Driven by STEAM Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by

Is provision made for first charging the Air Receivers Reversing Air Pumps, No. Diameter Stroke Driven by 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

AIR RECEIVERS: - Have they been made under survey... **YES.** State No. of Report or Certificate **2543.**
 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 -
Starting Air Receivers, No. 2 Total cubic capacity **450 EACH.** Internal diameter **4'-10 7/8"** thickness **27/32"**
 Seamless, lap welded or riveted longitudinal joint **RIVETED.** Material **STEEL.** Range of tensile strength **28/32 TONS** Working pressure by Rules **370. LBS**
 Actual **350. LBS.**

IS A DONKEY BOILER FITTED? **YES - TWO.** If so, is a report now forwarded? **YES.**
 Is the donkey boiler intended to be used for domestic purposes only **NO**
PLANS. Are approved plans forwarded herewith for Shafting **30. Aug. 1940** Receivers **30-10-41.** Separate Fuel Tanks
 (If not, state date of approval) **9-4-41.**
 Donkey Boilers **23-7-40.** General Pumping Arrangements **12-7-41** Pumping Arrangements in Machinery Space **22 10 -41**
 Oil Fuel Burning Arrangements **2-10-41.**

SPARE GEAR.

Has the spare gear required by the Rules been supplied **In accordance with the Emergency Arrangements**
 State the principal additional spare gear supplied **See Attached list.**

FOR HARBAND AND WOLFF, LIMITED.

The foregoing is a correct description,
Manhall
 Manufacturer.

Dates of Survey
 During progress of work in shops - **1941 Dec. 30 Jan 1, 2, 4, 5 Feb. 2, 9, 20 Mar 4, 10, 14, 16, 18, 25 Apr 2, 3, 7, 13, 15, 16, 17, 20, 21**
 During erection on board vessel - **22, 23, 24, 27, 28, 29, 30 May 1, 2, 4, 5, 6, 7, 9, 11, 12, 13, 21, 22, 26, 27, 28 ||| 14/1/41 to 9/9/42.**
 Total No. of visits **45 + 86.**
Dates of Examination of principal parts - Cylinders **4.5.42 11.5.42** Covers **20.4.42 26.5.42** Pistons **5.5.42 11.5.42** Rods **22.4.42** Connecting rods **17.4.42**
 Crank shaft **18.3.42** Flywheel shaft Thrust shaft **18.3.42** Intermediate shaft **3-2-42** Tube shaft
 Screw shaft **3-2-42** Propeller **3-2-42** Stern tube **3-2-42** Engine seatings **25-3-42** Engines holding down bolts **14-7-42**
 Completion of filling sea connections **3-3-42** Completion of pumping arrangements **19-8-42** Engines tried under working conditions **30-8-42**
 Crank shaft, Material **S. M. Steel** Identification Mark **LLOYD'S No. 1044** Flywheel shaft, Material Identification Mark
 Thrust shaft, Material **S. M. Steel** Identification Mark **LLOYD'S No. 1044** Intermediate shafts, Material **Steel** Identification Marks **LR 6615 C.P.**
 Tube shaft, Material Identification Mark Screw shaft, Material **Steel.** Identification Mark **6611 C.P.**

No 2543.
LLOYD'S TEST.
550 lb.
W.P. 350 lb.
No. 9-10-41

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 **Chemical**
 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 If so, state name of vessel **HOLD - 10 22 1942**

General Remarks (State quality of workmanship, opinions as to class, &c.)
 This machinery has been constructed under special survey. The materials & workmanship are sound & for test bed runs at full power were satisfactory. In my opinion, the machinery is eligible for a classed vessel. It has been shipped to Birkenhead for installation.
 It has been fitted in the MV "BRITISH TRADITION", tried under working conditions and found satisfactory.

The amount of Entry Fee **£ 5 - 0/07** When applied for, **18/8/42**
 2/3rd of Special for Reepart. **£ 65 : 11/4** 18. 9. 42
 Air Receivers **£ 4 : 4/0** 15. 9. 42
 Donkey Boiler Fee ... **£ :** When received,
 Travelling Expenses (if any) **£ :** 19.

R. Lee Amey
 Engineer Surveyor, to Lloyd's Register of Shipping.

Committee's Minute **LIVERPOOL 22 SEP 1942**
 Assigned **L.M.C. 8:42.**
T.S. CL.

