

Rpt. 4b

REPORT ON OIL ENGINE MACHINERY.

No. 101,434

5 - AUG 1943

Received at London Office
NEWCASTLE-ON-TYNE - 3 AUG 1943

Date of writing Report 19. When handed in at Local Office 19. Port of **NEWCASTLE-ON-TYNE**
Date, First Survey **24 March 43** Last Survey **29 June 1943**
Number of Visits **3**

No. in Survey held at **NEWCASTLE-ON-TYNE**
Reg. Book. **Single** on the **Triple** **Quadruple** Screw vessel **M.V. "EMPIRE ALLIANCE"** Tons **Gross** **Net**

Built at **Sunderland** By whom built **Sir J. Laing & Sons Ltd.** Yard No. **747** When built **1943**
Engines made at **Glasgow** By whom made **Harland & Wolff Ltd** Engine No. **8459/3** When made **1943**
Donkey Boilers made at **Wallsend** By whom made **N.E. Marine Eng Co (1938) Ltd** Boiler No. **3034** When made **1943**
Fitting out **C 3078**
Brake Horse Power **3300** Owners **Ministry of War Transport** Port belonging to **Sunderland**
Nom. Horse Power as per Rule **490** Is Refrigerating Machinery fitted for cargo purposes **no** Is Electric Light fitted **yes**
Trade for which vessel is intended **Carrying Petroleum in bulk.**

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

Maximum pressure in cylinders **See Glasgow Report** No. of cylinders **10** No. of cranks **10**

Mean Indicated Pressure **See Glasgow Report** Is there a bearing between each crank **no**

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge **10 6/8**

Revolutions per minute **13.82** Flywheel dia. **13.68** Weight **13.68** Means of ignition **spark** Kind of fuel used **oil**

Crank Shaft, dia. of journals **as per Rule** Crank pin dia. **as per Rule** Crank Webs **as per Rule** Mid. length breadth **13.82** Mid. length thickness **13.68** Thickness parallel to axis **shrunk** Thickness around eye-hole **shrunk**

Flywheel Shaft, diameter **as per Rule** Intermediate Shafts, diameter **as per Rule** Thrust Shaft, diameter at collars **as per Rule**

Tube Shaft, diameter **as per Rule** Screw Shaft, diameter **as per Rule** Is the shaft fitted with a continuous liner **yes**

Bronze Liners, thickness in way of bushes **as per Rule** Thickness between bushes **as per Rule** 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 **yes**

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 **yes**

If two liners are fitted, is the shaft lapped or protected between the liners **yes** Is an approved Oil Gland or other appliance fitted at the after end of the tube **yes**

shaft **no** If so, state type **12 ft reduced** Length of Bearing in Stern Bush next to and supporting propeller **5'-4 1/4"**

Propeller, dia. **16-0** Pitch **10'-6"** No. of blades **4** Material **Bronze** whether Moveable **no** Total Developed Surface **94** sq. feet

Method of reversing Engines **Servo-motor** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **no** Means of lubrication **oil**

Thickness of cylinder liners **as per Rule** Are the cylinders fitted with safety valves **yes** Are the exhaust pipes and silencers water cooled or lagged with non-conducting material **no**

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **no**

Cooling Water Pumps, No. **2** 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. **2** Diameter **80 tons** Stroke **1** Can one be overhauled while the other is at work **yes**

Pumps connected to the Main Bilge Line **2 Bilge pumps 80 tons, 1 Ballast pump 160 tons** How driven **Steam**

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 **no**

Ballast Pumps, No. and size **1 @ 12 1/2" x 10 1/2" x 24"** Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size **1 @ 13" x 10 1/2" x 24"**

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 **2 @ 3 1/2" for 1 @ 3 1/2" aft well.** In Pump Room **4" P.T.S.**

In Holds, &c. **2 1/2" P.T.S.** **2 1/2" Ford Pump room.** Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **1 @ 5 1/2" Emergency Bilge**

Are all the Bilge Suction pipes in Holds and Tunnel Wall 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 **yes** Are they fitted with Valves or Cocks **values**

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 **no**

What pipes pass through the deep tanks **none** Have they been tested as per Rule **yes**

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 **none** Is it fitted with a watertight door **no** worked from **no**

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **yes**

Main Air Compressors, No. **none** No. of stages **none** Diameters **none** Stroke **none** Driven by **none**

Auxiliary Air Compressors, No. **two** No. of stages **3** Diameters **11 1/2-2 3/4 11 1/2-9 1/4 x 7"** Stroke **none** Driven by **Steam**

Small Auxiliary Air Compressors, No. **1** No. of stages **1** Diameters **none** Stroke **none** Driven by **no**

Scavenging Air Pumps, No. **1** Diameter **none** Stroke **none** Driven by **no**

Auxiliary Engines crank shafts, diameter **as per Rule** **30KG Crossley Diesel Generator** Position **for lighting purposes, not constructed under survey**

Report on donkey boiler removed

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *no. Safety Valves on Compressors* ^{fusible plugs fitted} *7*

Can the internal surfaces of the receivers be examined and cleaned *yes* ✓ Is a drain fitted at the lowest part of each receiver *yes* ✓

High Pressure 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* **Stamped No** *2387 239* **Lloyds Test** *556 lbs* **WP** *356 lbs* **R.S.** *20.10.42*
 Total cubic capacity _____ Internal diameter _____ thickness _____

Seamless, lap welded or riveted longitudinal joint _____ Material _____ Range of tensile strength _____ Working pressure by Rules _____ Actual *356 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 _____ Receivers _____ Separate Fuel Tanks *24.8.42 & 15.9.42*

Donkey Boilers *31.3.42* General Pumping Arrangements *yes* ✓ Pumping Arrangements in Machinery Space *yes* ✓

Oil Fuel Burning Arrangements *yes* ✓

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes* ✓

State the principal additional spare gear supplied *See attached sheets.*

THE NORTH EASTERN MARINE ENGINEERING CO. (1938) LTD.
 The foregoing is a correct description,

Hampshire

DIRECTOR

Manufacturer.

Dates of Survey while building { During progress of work in shops - *1943*
 { During erection on board vessel - *Mar 2.9.10.18.19.23.31. Apr 5.13.14.16.20.21.23.27.29.30 May 3.10.11.13.14.17.21.24.27.28*
 { Total No. of visits *31*

Dates of Examination of principal parts—Cylinders _____ Covers _____ Pistons _____ Rods _____ Connecting rods _____
 Crank shaft _____ Flywheel shaft _____ Thrust shaft _____ Intermediate shafts *13.4.43* Tube shaft _____
 Screw shaft *13.4.43* Propeller *16.4.43* Stern tube *18.2.43* Engine seatings *16.4.43* Engines holding down bolts *17.5.43*

Completion of fitting sea connections *10.3.43* Completion of pumping arrangements *29.6.43* Engines tried under working conditions *15.17.29/6/43*
 Crank shaft, Material _____ Identification Mark _____ Flywheel shaft, Material _____ Identification Mark _____
 Thrust shaft, Material _____ Identification Mark _____ Intermediate shafts, Material *Steel* Identification Marks *80208 8036 CP*
 Tube shaft, Material _____ Identification Mark _____ Screw shaft, Material *Steel* Identification Mark *8016 CP 16/44*
 Is the flash point of the oil to be used over 150° F. *yes* Identification Mark *Ref 13.4.43*

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with *yes* ✓
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo *tanker* 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. *The machinery (Glasgow Rpt No 66880) of boilers & auxiliaries described herein have been installed on board under Special Survey in accordance with the Requirements of the Rules, the approved Plans & the Specifications. The materials & workmanship are good & the machinery proved satisfactory under working conditions at quay.*

The machinery is eligible in my opinion to have the Record + LMC 6.43 2 DB. CL. Oil Engines 4 SC SA.

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

The amount of Entry Fee .. £ : :
 1/3 Special + 25% ... £ 41 : 0 : 0 : **30 JUL 1943**
 Donkey Boiler Fee + 25% £ 32 : 15 : 0 :
 Travelling Expenses (if any) £ : : :
 When received, 19 _____

Re Cluffitt
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute _____
 Assigned *+ LMC 6.43 CL. 2 DB-180 lbs.*