

# REPORT ON OIL ENGINE MACHINERY.

No. 105153

27 MAR 1948

Received at London Office.

Date of writing Report 18-2-1948. When handed in at Local Office 22 MAR 1948

Port of NEWCASTLE-ON-TYNE

No. in Survey held at WALLSEND ON TYNE. Date, First Survey 29<sup>th</sup> OCTOBER, 1946 Last Survey 27<sup>th</sup> FEBRUARY 1948

Reg. Book. Single on the LEMبولUS. Tons Gross 6502.57. Net 3598.62.

Built at Wallsend By whom built Span, Hunter & Wigham Richardson Ltd Yard No. 1755 When built 1948

Engines made at Wallsend By whom made Wallsend Shipyard & Eng'g Co. Ltd Engine No. 1001 When made 1948

Donkey Boiler made at Wallsend By whom made ditto Boiler No. 1001 When made 1948

Brake Horse Power 2800 Owners Anglo Saxon Port belonging to LONDON

I.N. Power as per Rule 555 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Ocean going, Carrying Petroleum in bulk.

TYPE OF ENGINES, &c. — Type of Engines 3 Cyls Opposed-piston type 2 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 640 Diameter of cylinders 600 Length of stroke 2320 No. of cylinders 3 No. of cranks 3

Mean Indicated Pressure 91.5 Ahead Firing Order in Cylinders 1, 3, 2 Span of bearings, adjacent to the crank, measured between each between each

Revolutions per minute 117 Is there a bearing between each crank between each

Weight of flywheel 2.263 Moment of inertia of flywheel 11.65 x 10<sup>6</sup> Means of ignition HEAT OF COMPRESS Kind of fuel used Heavy oil

Cranks: Solid forged ALL BUILT dia. of journals 450 Crank pin dia. 450 Mid. length breadth 820 Thickness parallel to axis 255

Intermediate Shafts, diameter 17 3/4 Thrust Shaft, diameter at collars 450

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 In one piece

Propeller, dia 15.17 Pitch 11.36 No. of blades 4 Material Brass whether moveable No Total developed surface 84 sq. feet

Method of reversing Engines Compressed air by hand lever Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes

Lubrication Forced Thickness of cylinder liners 25 Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled Yes

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. ONE Diameter 85 Stroke 608 Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line: No. and size ONE 4" BILGE P. 40 TONS/HR How driven STEAM

Ballast Pumps, No. and size NIL Power Driven Lubricating Oil Pumps, including spare pump, No. and size ONE STAND-BY 60 TONS/HR

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: ONE 4" & ONE 4 1/2"

Independent Power Pump Direct Suctions to the engine room bilges, No. and size ONE G.S.P. 4 1/2"; ONE BILGE P. 4 1/2"; ONE CIRC W.P. 5"

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes Yes Are the bilge suction pipes 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 VALVES Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates YES

Are they each fitted with a discharge valve always accessible on the plating of the vessel YES Are the overboard discharges above or below the deep water line ABOVE

What pipes pass through the bunkers How are they protected Are the blow off cocks fitted with a spigot and brass covering plate YES

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 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 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 NONE

Main Air Compressors, No. Two No. of stages 3 STAGE diameters 8 1/8, 4 3/8, 2 3/8 stroke 6 1/2 driven by STEAM

Auxiliary Air Compressors, No. NIL No. of stages None diameters None stroke None driven by None

What provision is made for first charging the air receivers Steam driven Air Compressors

Scavenging Air Pumps, No. ONE DBLE-ACTING diameter 1700 stroke 608 driven by MAIN ENG

Auxiliary Engines crank shafts, diameter 29 Position Starboard side on Eng. Rm.

Have the auxiliary engines been constructed under special survey YES Is a report sent herewith YES

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. **NIL.** Cubic capacity of each. ✓ Internal diameter. ✓ thickness. ✓  
 Seamless, welded or riveted longitudinal joint. ✓ Material. ✓ Range of tensile strength. ✓ Working pressure by Rules. ✓  
 Starting Air Receivers, No. **Two** Total cubic capacity. **220 CUB. FT.** Internal diameter. **4'-3 9/8"** thickness. **1 5/32"** Actual. ✓  
 Seamless, welded or riveted longitudinal joint. **RIVETED** ✓ Material. **M. STL.** Range of tensile strength. **29 to 33 TONS.** Working pressure by Rules. ✓  
 Actual. **600** ✓

IS A DONKEY BOILER FITTED **YES.** 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. **CRANK SHAFT 27<sup>th</sup> AUG. 46**  
**LINE SHAFTING 4<sup>th</sup> NOV. 46** Receivers. **2-12-46** Separate fuel tanks. ✓  
 (If not, state date of approval)  
 Donkey boilers. **18-4-46 & 19-12-46** General pumping arrangements. ✓ Pumping arrangements in machinery space. **2<sup>nd</sup> MAY 1947**  
 Oil fuel burning arrangements. **13-2-47.**  
 Have Torsional Vibration characteristics been approved. **YES.** Date of approval. **4<sup>th</sup> NOVEMBER 1946.**

SPARE GEAR.

Has the spare gear required by the Rules been supplied. **YES**  
 State the principal additional spare gear supplied. **1. Main Bearing, 25 Piston Rings, 2 Fuel Valves (Complete),  
 2 sets of Fuel pp. pressure parts, valves, Crossheads & Levers etc; 12 each Rubber Pipes for P.W.S. & Transverse  
 1 each Roller Chains for Chain Drives; 2 Pyrometers for Exh.; 6 HD Bolts for Bedplate, 1 T.S.O., etc etc.**

The foregoing is a correct description and the particulars of the installation as fitted, are as approved  
 FOR THE WALLSEND SLIPWAY & ENGINEERING CO. LIMITED for torsional vibration characteristics.  
 J. B. Hunt, DIRECTOR, Manufacturer.

Dates of Survey while building  
 During progress of work in shops - (1946) OCT. 29, NOV. 25, DEC. 2, 4, 10, 17, 27, 30, (1947) JAN. 9, 24, 30, 31, FEB. 5, 13, 19, MAR. 5, 10, 11, 24, APR. 9, MAY. 7, 29, JUNE, 3, 4, 9, 10, 24, JULY, 9, 10, 14, 16, 17, 25, AUG. 5, 20, 21, 25, 26, 27, 28, SEPT. 3, 5, 10, 12, 24, OCT. 1, 2, 3, 13, 21, 22, 28, 31, NOV. 6, 18, 24, 25, 26, 27, 28  
 During erection on board vessel - DEC. 2, 8, 9, 10, 11, 16, 17, 19, 22, 23, 29, 30, 31, (1948) JAN. 5, 12, 19, 22, 23, 26, 27, 29, FEB. 2, 3, 6, 20, 21, 27.  
 Total No. of visits. **88**

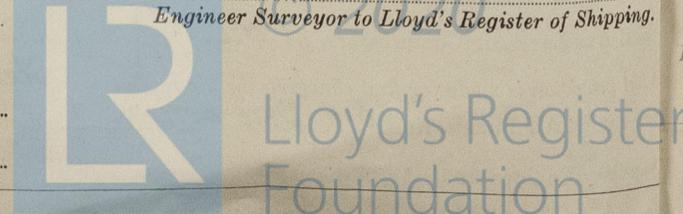
Dates of examination of principal parts—Cylinders. **3-10-47** Covers. ✓ Pistons. **5-8-47** Rods. **21-10-47** Connecting rods. **5-8-47 & 25-8-47**  
 Crank shaft. **16-7-47** Flywheel shaft. **as Cr. sh.** Thrust shaft. **as Cr. sh.** Intermediate shaft. **27-8-47** Tube shaft. ✓  
 Screw shaft. **27-8-47** Propeller. **21-8-47** Stern tube. **27-8-47** Engine seatings. **27-8-47** Engine holding down bolts. **31-12-47**  
 Completion of fitting sea connections. **24-9-47** Completion of pumping arrangements. **3-2-48** Engines tried under working conditions. **at Sea 20<sup>th</sup> & 21<sup>st</sup> Feb. 1948**  
 Crank shaft, material. **Forged M. STL** Identification mark. **LLOYDS N° 261** Flywheel shaft, material. **Forged M. STL** Identification mark. **as Cr. sh.**  
 Thrust shaft, material. **" M. STL** Identification mark. **as Cr. shaft.** Intermediate shaft, material. **" M. STL** Identification marks. **16080 H**  
 Tube shaft, material. ✓ Identification mark. ✓ Screw shaft, material. **" M. STL** Identification mark. **16080 HAJ.**  
 Identification marks on air receivers. **2 off. LLOYDS TEST 800 LBS W.P. 600 LBS AW. 6-9-47 AW.**

Welded receivers, state Makers' Name. ✓  
 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. **IN ENG. RM. & IN BLR RM. One 2 1/2" HOSE on G.S.P.P. Steam 2" bore perforated pipes, one 2 1/2" " IN BLR RM. & ROXY. C.W. LINE FOAMITE FIRE EXTINGUISHERS, 3 of 10 GALL. & 5 of 2 GALL. IN ENR. RM. AND 2 of 2 GALL. IN BLR RM.**  
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo. **NO** 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. **No.** If so, state name of vessel. ✓

General Remarks (State quality of workmanship, opinions as to class, &c.) **The Machinery of this Vessel has been Constructed and fitted on board under special Survey, in accordance with the approved plans and the Society's Rules, and the materials and workmanship are good. The Machinery was tried under working conditions with satisfactory results, and is eligible, in my opinion, for record LMC 2.48, and the notations S.R. 180<sup>th</sup> T.S.O. The torsional vibrations characteristics data was approved 4-11-47 and a Notice Plate re Revs 80 to 90 r.p.m. has been fitted at the Main Engine CONTROL STATION, P.S. The WSTE Coy. have re-submitted the Torsional Vibration Calcs. on account of the Weight of Propeller as fitted. See Two Letters of 18-3-48.**

The amount of Entry Fee ... £ :  
 Special (April 1945 Scale) £ 130 : 10/-  
 FAB CONSTRUCTION BED. COILS. ENTRIES £ 14 : 0/-  
 Donkey Boiler Fee... £ 28 : 13/-  
 2 STARTING AIR RECS £ 6 : 0/-  
 Travelling Expenses (if any) £ :  
 23 MAR 1948  
 When applied for... 19  
 When received... 19

A Watt  
 Engineer Surveyor to Lloyd's Register of Shipping.



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

Committee's Minute... **FRI. 30 APR 1948**  
 Assigned... **+ LMC 2.48 Oil Engrs. C.L. DB 180<sup>th</sup>**