

pt. 4b.
RECEIVED
16 MAR 1944
Date of writing Report

REPORT ON OIL ENGINE MACHINERY.

No. 68202.

Received at London Office

16 MAR 1944

14 APR 1944

19 When handed in at Local Office

13.3.44 Port of Glasgow

Survey held at Glasgow

Date, First Survey 6.10.41 Last Survey 2.3.1944

Number of Visits 67

on the Single Screw vessel

"NORRISIA"

Tons Gross 8245.97
Net 4767.83

built at Belfast

By whom built Harland & Wolff, Ltd.

Yard No. 1194 When built 1944

Engines made at Glasgow

By whom made Harland & Wolff, Ltd.

Engine No. 2460/4 When made 1944

Donkey Boilers made at Belfast

By whom made Harland & Wolff, Ltd.

Boiler No. 1194 When made 1944

Brake Horse Power 3300

Owners Anglo Saxon Petroleum Co. Ltd.

Port belonging to London

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

Tanker

TYPE OF ENGINES, &c.—Type of Engines Heavy oil, Airless injection 2 or 4 stroke cycle 4 Single or double acting S.A

Maximum pressure in cylinders 700 Diameter of cylinders 740 mm Length of stroke 1500 mm No. of cylinders 6 No. of cranks 6

Mean Indicated Pressure 120

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, dia. of journals as per Rule Appd. 505 mm Crank pin dia. 505 mm Crank Webs Mid. length breadth 980 mm Thickness parallel to axis 310 mm

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted Thrust Shaft, diameter at collars as per Rule Appd. 454 mm

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

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 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'-0"

Propeller, dia. 15'-6" Pitch 12'-0" No. of blades 4 Material Bronze whether Moveable no Total Developed Surface 75 sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when detached yes Means of lubrication forced

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

Cooling Water Pumps, No. 2 Fresh water, 2 Salt 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. none Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and Size 2 Bilge & Sanitary Pumps each 80 tons per hour. How driven Steam. General Service Pumps 27 tons per hour. 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

Ballast Pumps, No. and size Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 Engine driven, 100 ton/hour. 1 Steam driven, 100 ton/hour.

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 P. 3 1/2; S. 3 1/2; Bilge well aft 3 1/2; 1 Cofferdam 2 1/2 dia In Pump Room

In Holds, &c. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 3 at 6" dia; O.F. transfer pump suction from gutterways 2 at 2 1/2"

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 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 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 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. No. of stages Diameters Stroke Driven by

Auxiliary Air Compressors, No. 2 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 Steam driven compressor.

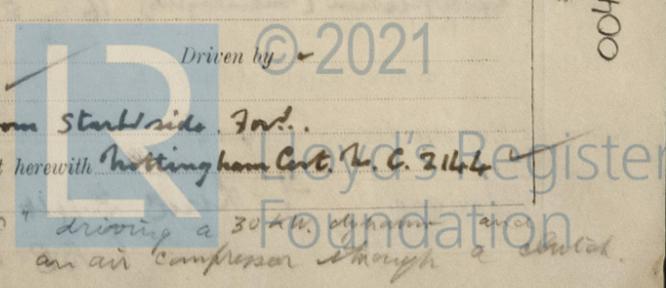
Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule as fitted Journals 4 3/16, Pins 3 1/4 Position Engine room Starboard side, Fore.

Have the Auxiliary Engines been constructed under special survey? yes Is a report sent herewith Nottingham Lloyd's Reg. Co. 2144

4 S.C.S.A. 4 G. 5 1/2 - 8 driving a 30 H.P. flywheel and an air compressor through a shaft.

004573-004578-0217



AIR RECEIVERS: — Have they been made under survey *yes* ✓ State No. of Report or Certificate *2-1050 (Belfast)*
 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. *2* Total cubic capacity *900 cu. ft.* Internal diameter *6-0 5/16"* thickness *1"* ✓
 Seamless, lap welded or riveted longitudinal joint *Riveted* ✓ Material *Steel* ✓ Range of tensile strength *28/32 tons* Working pressure by Rules *✓* Actual *356 lbs.* ✓
IS A DONKEY BOILER FITTED? *yes (2)* ✓ If so, is a report now forwarded? *Yes, Belfast Rpt No. 1335*

PLANS. Are approved plans forwarded herewith for Shafting *Crank & Thrust shafts, 23-4-41*
Intin. & Screw shafts 25-1-43 Receivers *26-5-41 Belfast* Separate Fuel Tanks *✓*
 Donkey Boilers *26-5-41 Belfast* General Pumping Arrangements *22-7-43 Belfast* Pumping Arrangements in Machinery Space *1-11-43 Belfast*
 Oil Fuel Burning Arrangements *15-9-43 Belfast*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *Yes* ✓
 State the principal additional spare gear supplied *As per enclosed list. (Under separate cover)* ✓

The foregoing is a correct description.

Wm. J. Wright.

Manufacturer.

Dates of Survey while building
 During progress of work in shops -- (1941) Oct 6 Dec 30 (1942) Jan 10 Apr 22 May 4 Jul 16 Aug 14 Sep 17 (1943) Feb 25 Mar 12 29 May 11 Jun 18
 During erection on board vessel -- Jul 23 29 Aug 17 18 23 24 27 30 Sep 8 10 13 15 Oct 20 21 22 Nov 18 19 24 Dec 8 11 21 30 1944 Jan 7 10 11 12 13 14 17 18
 Total No. of visits *67*

Dates of Examination of principal parts — Cylinders *30-8-43* Covers *30-8-43* Pistons *10-9-43* Rods *10-9-43* Connecting rods *15-9-43*
 Crank shaft *29-3-43* Flywheel shaft *✓* Thrust shaft *11-5-43* Intermediate shafts *19-11-43* Tube shaft *✓*
 Screw shaft *9-10-43* * Propeller *11-10-43* * Stern tube *4-10-43* * Engine seatings *21-12-43* Engines holding down bolts *14-1-44*
 Completion of fitting sea connections *11-10-43* * Completion of pumping arrangements *2-3-44* Engines tried under working conditions *2-3-44*
 Crank shaft, Material *Steel* Identification Mark *Lloyd's 8460/4 P9* Flywheel shaft, Material *✓* Identification Mark *✓*
 Thrust shaft, Material *Steel* Identification Mark *Lloyd's S-4990 P9* Intermediate shafts, Material *Steel* Identification Marks *Lloyd's S-6931*
 Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Steel* Identification Mark *Lloyd's S-7634 RLA. 9-10-43*
 Identification Marks on Air Receivers *M 251 RS. ; M. 252 RS. * See Belfast Report No. 13626.*

Steam pipes 2" dia, *S.D.* Steel. All other sizes *S.D.* Bessemer steel tubes taken from *H + W* stock. Flanges marked accordingly.

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 *Perforated steam pipes under boilers. Portable extinguishers as per B.O.T. & Merchant Shipping Regulations.*
 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 *Generally similar to M.V. "Empire Benefit"*

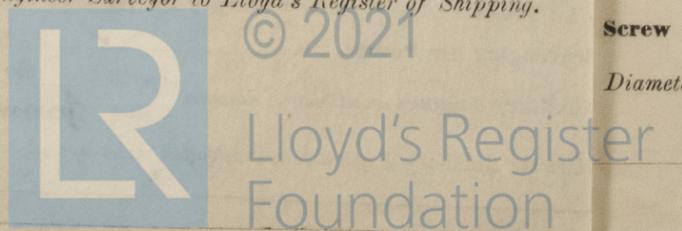
General Remarks (State quality of workmanship, opinions as to class, &c.)
The machinery of this vessel has been constructed under Special Survey and in accordance with the approved plans, the Rules of this Society, and the Ministry of War Transport Specification for the main engines. The materials and workmanship are good.
The machinery has been efficiently secured in position on board the vessel, and afterwards tried under full working conditions with satisfactory results.
The machinery is eligible in my opinion to be classed in the Register Book with notation of 1/2 LMC 3.44 C.L. + 2 D.B. WP 150 lbs.
See also Belfast Report No. 13626.

The amount of Entry Fee .. £ 5 : 0 :
 Special Specification (Main Engines) .. £ 98 : 10 :
 Donkey Boiler Fee .. £ 16 : 8 :
 Travelling Expenses (if any) £ : :
 When applied for, *14 MAR 1944*
 When received, .. 19 ..

P. Fitzgould & G. L. Murdoch.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *GLASGOW 14 MAR 1944*

Assigned *1/2 LMC 3.44 Oil Eng & 2 DB 150 lbs.*



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