Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No 13626

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No. in Reg. Book. Survey held at ... Date, First Survey 16 Aug 1943 Last Survey 6 Nov 1943

Number of Visits

... on the Single / ~~Twin~~ / ~~Triple~~ / ~~Quadruple~~ Screw vessel M.V. "NORRISIA" Tons Gross ... Net ...

Built at Belfast By whom built Harland & Wolff Ld Yard No. 1194 When built A|MS|M87

Engines mad at ... By whom made Harland & Wolff Ld. Engine No. 8460|4 When made

Donkey Boilers made at Belfast By whom made Harland & Wolff Ld. Boiler No. ~~G0.~~ 8469 When made 1942.

Brake Horse Power Owners Anglo Saxon Petroleum Co Ld. Port belonging to London

Nom. Horse Power as per Rule ... Is Refrigerating Machinery fitted for cargo purposes ... Is Electric Light fitted

Grade for which vessel is intended ...

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

Maximum pressure in cylinders ... Diameter of cylinders ... Length of stroke ... No. of cylinders ... No. of cranks

Mean Indicated Pressure ...

Mean of bearings, adjacent to the Crank, measured from inner edge to inner edge ... Is there a bearing between each crank

Revolutions per minute ... Flywheel dia. ... Weight ... Means of ignition ... Kind of fuel used ...

Crank Shaft, Solid forged / Semi built / All built dia. of journals as per Rule ... as fitted ... Crank pin dia. ... Crank Webs Mid. length breadth ... Mid. length thickness ... shrunk Thickness parallel to axis ... Thickness around eyehole ...

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

Tube Shaft, diameter as per Rule ... as fitted ... **Screw Shaft,** diameter as per Rule as approved ✓ as fitted 16" ✓ Is the ~~tube~~ / screw shaft fitted with a continuous liner yes.

Bronze Liners, thickness in way of bushes as per Rule as approved ✓ as fitted 13/16" ✓ Thickness between bushes as per Rule as approved ✓ as fitted 21/32 ✓ 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 ✓

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 Braze whether Moveable NO Total Developed Surface 75 sq. feet

Method of reversing Engines ... Is a governor or other arrangement fitted to prevent racing of the engine when declutched ... Means of lubrication

... Thickness of cylinder liners ... Are the cylinders fitted with safety valves ... Are the exhaust pipes and silencers water cooled or lagged with non-conducting material ... 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. ... Is the sea suction provided with an efficient strainer which can be cleared within the vessel ...

Bilge Pumps worked from the **Main Engines,** No. ... Diameter ... Stroke ... Can one be overhauled while the other is at work ...

Pumps connected to the **Main Bilge Line** No. and Size ... How driven ...

Is the cooling water led to the bilges ... 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 ...

Are two independent means arranged for circulating water through the **Oil Cooler** ... **Suctions,** connected to both Main Bilge Pumps and Auxiliary Bilge Pumps, No. and size:—In Machinery Spaces ... In Pump Room ...

... Holds, &c. ...

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size ...

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes ... Are the Bilge Suctions in the Machinery Spaces fed from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges ...

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 ... Are the Overboard Discharges above or below the deep water line ...

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel ... Are the Blow Off Cocks fitted with a spigot and brass covering plate ...

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 ...

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 ... 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. ... 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 ...

Scavenging 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 ...

004573-004578-0216

AIR RECEIVERS: — *Have they been made under survey* yes. *State No. of Report or Certificate* Z1050

Is each receiver, which can be isolated, fitted with a safety valve as per Rule

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 lb/o"

IS A DONKEY BOILER FITTED? (2) yes. *If so, is a report now forwarded?*

Is the donkey boiler intended to be used for domestic purposes only

PLANS. *Are approved plans forwarded herewith for Shafting* *Receivers* 26/5/41 *Separate Fuel Tanks*
(If not, state date of approval)

Donkey Boilers 26/5/41. *General Pumping Arrangements* *Pumping Arrangements in Machinery Space*

Oil Fuel Burning Arrangements

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building — *During progress of work in shops* — 1943 Aug 6.31 Sept 1 Oct 4.9.11.12.15.19.20.26.27 Nov. 2.4.5.6

During erection on board vessel —

Total No. of visits 16

Dates of Examination of principal parts—*Cylinders* *Covers* *Pistons* *Rods* *Connecting rods*

Crank shaft *Flywheel shaft* *Thrust shaft* *Intermediate shafts* *Tube shaft*

Screw shaft 9.10.43. *Propeller* 11.10.43. *Stern tube* 4.10.43. *Engine seatings* *Engines holding down bolts*

Completion of fitting sea connections 11.10.43. *Completion of pumping arrangements* *Engines tried under working conditions*

Crank shaft, Material *Identification Mark* *Flywheel shaft, Material* *Identification Mark*

Thrust shaft, Material *Identification Mark* *Intermediate shafts, Material* *Identification Marks*

Tube shaft, Material *Identification Mark* *Screw shaft, Material* Steel *Identification Mark* LLOYD'S S7434 R.L.A. 9.10.43.

Identification Marks on Air Receivers No 251 LLOYDS TEST 556 lb/o" WP 356 lb/o" 3.5.43 RS. No 252 LLOYDS TEST 556 lb/o" WP 356 lb/o" 5.5.43. R.S.

Is the flash point of the oil to be used over 150° F.

Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with

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

Is this machinery duplicate of a previous case *If so, state name of vessel*

General Remarks (State quality of workmanship, opinions as to class, &c. The air receivers, donkey boilers, propeller & screwshaft have been fitted in place & the vessel has proceeded to the Clyde for installation of machinery.

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 ..	£	:	:	When applied for,
Special	£	:	:	..... 19.....
Donkey Boiler Fee ...	£	:	:	When received,
Travelling Expenses (if any)	£	:	:	..... 19.....

Committee's Minute GLASGOW 14 MAR 1944

Assigned

T. D. Shilston

Engineer Surveyor to Lloyd's Register of Shipping.