

REPORT ON OIL ENGINE MACHINERY.

No. 69150

Received at London Office

11 JAN 1945

Date of writing Report 1945 When handed in at Local Office 8.1.45 Port of **GLASGOW.**

Survey held at **GLASGOW.** Date, First Survey **7/10/41.** Last Survey **20th Dec. 1944.**

Boat No. **1112** on the **Single** Screw vessel **M.V. "NISO"** Tons Gross **8273** Net **4777**

Engines made at **GLASGOW** By whom built **HARLAND & WOLFF LTD.** Yard No. **1198** When built **1944**

Boilers made at **BELFAST** By whom made **Do** Engine No. **8463/1** When made **1944**

Horse Power **3300** Owners **ANGLO SAXON PETROLEUM CO. LTD.** Port belonging to **LONDON.**

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 **Do**

L 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 lbs.** Diameter of cylinders **29 1/8" / 740 m/m** Length of stroke **59 1/16" / 1500 m/m** No. of cylinders **6** No. of cranks **6**

Mean Indicated Pressure **120 lbs.** Span of bearings, adjacent to the crank, measured from inner edge to inner edge **972 m/m** Is there a bearing between each crank **Yes**

Revolutions per minute **110** Flywheel dia. **2489 m/m** Weight **2590 kgs.** Means of ignition **Compression** Kind of fuel used **Diesel**

Crankshaft dia. of journals **505 m/m** Crank pin dia. **505 m/m** Crank webs Mid. length breadth **980 m/m** Thickness parallel to axis **310 m/m**

as fitted **Bored 115 m/m** Bored **230 m/m** Mid. length thickness **310 m/m** Thickness around eye-hole **2925 m/m**

Flywheel Shaft, diameter as per Rule **As approved** Intermediate Shafts, diameter as fitted **17"** Thrust Shaft, diameter at collars as fitted **As approved**

Subsidiary Shaft, diameter as per Rule **As approved** Screw Shaft, diameter as fitted **16"** Is the screw shaft fitted with a continuous liner **Yes**

Bronze Liners, thickness in way of bushes as per Rule **As approved** Thickness between bushes 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 **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-prosive **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 tube shaft **NO**

If so, state type **5'-0"** Length of bearing in Stern Bush next to and supporting propeller **5'-0"**

Propeller, dia. **5'-0"** Pitch **18"** No. of blades **3** Material **Cast Iron** whether moveable **Yes** Total developed surface **18.12** sq. feet

Method of reversing Engines **Direct** Is a governor or other arrangement fitted to prevent racing of the engine **Yes** Means of lubrication **Forced**

Thickness of cylinder liners **53 to 41 m/m** Are the cylinders fitted with safety valves **Yes** Are the exhaust pipes and silencers water cooled lagged with non-conducting material **Yes**

If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **Yes** 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 **8"** Stroke **6"** Can one be overhauled while the other is at work **Yes**

Pumps connected to the Main Bilge Line No. and size **2 Bilge Each 80 tons/Hr.** 1 General Service **27 tons/hr.** How driven **Steam** **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 **None**

Ballast Pumps, No. and size **None** Power Driven Lubricating Oil Pumps, including spare pump, No. and size **1 M.E. 100 tons/hr.** 1 Steam

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 off 3 1/2" Cofferdam 1 off 2 1/2"** In pump room **None**

In holds, &c. **None**

Independent Power Pump Direct Suctions to the engine room bilges, No. and size **3 off 6" Oil Fuel Transfer 2 gutterways each 2 1/2"**

Are all the bilge suction pipes in **held and tested** well fitted with strum-boxes **Yes** Are the bilge suction 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 **None** How are they protected **None**

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 **Yes** Is it fitted with a watertight door **Yes** worked from **None**

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. **None** No. of stages **None** diameters **None** stroke **None** driven by **None**

Auxiliary Air Compressors, No. **1** No. of stages **2** diameters **280 m/m / 245 m/m** stroke **130 m/m** driven by **Steam Engine**

Small Auxiliary Air Compressors, No. **1** No. of stages **2** diameters **3 1/2" x 8"** stroke **6"** driven by **Diesel Eng.**

What provision is made for first charging the air receivers **Steam driven compressors.**

Scavenging Air Pumps, No. **None** diameter **None** stroke **None** driven by **None**

Auxiliary Engines crank shafts, diameter as per Rule **As approved** No. **1 Diesel & 1 Steam** Position **E.R. Starboard forward**

Have the auxiliary engines been constructed under special survey **Yes** Is a report sent herewith **See Nottingham Rpt.** Cert. No. **2759.**

400-182300-512200

Lloyd's Register

Foundation

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AIR RECEIVERS:—Have they been made under survey... **Yes** ✓ State No. of report or certificate... **BEL. Z. 1211**
 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. **None** Cubic capacity of each... Internal diameter... thickness...
 Seamless, lap welded or riveted longitudinal joint... Material... Range of tensile strength... Working pressure...
 Starting Air Receivers, No. **-** Total cubic capacity... Internal diameter... thickness...
 Seamless, lap welded or riveted longitudinal joint... Material... Range of tensile strength... Working pressure...

IS A DONKEY BOILER FITTED **Yes (2)** If so, is a report now forwarded **See Belfast Rpt. No. 13803**
 Is the donkey boiler intended to be used for domestic purposes only... **No** ✓

PLANS. Are approved plans forwarded herewith for shafting... **15: 1: 44.** Receivers... Separate fuel tanks...
 Donkey boilers... **As above.** General pumping arrangements... **6/3/44.** Pumping arrangements in machinery space... **6/3/44.**
 Oil fuel burning arrangements... **15: 9: 44.**

SPARE GEAR.

Has the spare gear required by the Rules been supplied... **Yes** ✓
 State the principal additional spare gear supplied... **As per specification.** ✓

The foregoing is a correct description,
 For **HAMILTON AND WOLFE LIMITED** Manufacturer.
 Wm. Wright. Glasgow Secretary

Dates of Survey while building
 During progress of work in shops - 1941 Oct 7 Dec 31 1942 Mar 12 Apr 23 May 5 Sep 22 1943 Aug 23 Dec 21 Nov 3 1944 Dec 2 14 15 1945 Jan 6 11 14 17 18 21 28 31
 Feb 1 2 7 10 14 18 24 28 29 Mar 7 9 25 Apr 6 May 1 4 10 21 Jun 11 22 Jul 6 14 24 Aug 12 30 Sep 6 13 14 19 21 22 29 Oct 6
 During erection on board vessel - 4 5 9 11 12 16 17 25 26 30 Nov 6 8 9 10 13 15 16 20 21 22 23 27 29 30 Dec 4 7 8 14 18 20
 Total No. of visits... **84**

Dates of examination of principal parts—Cylinders **17:1:44 to 17:1:44 to 14:1:44 to 14:1:44 to 14:1:44**
 Crank shaft **23: 8: 43.** Flywheel shaft... Thrust shaft **23:8:43** Intermediate shafts... Tube shaft...
 Screw shaft... Propeller... Stern tube... Engine sealings **19:9:44** Engine holding down bolts **17:11:44**
 Completion of fitting sea connections... Completion of pumping arrangements **20/12/44** Engines tried under working conditions **20:12:44**
 Crank shaft, material **Steel** Identification mark **Lloyds 8463/1 P.F.** Flywheel shaft, material... Identification mark...
 Thrust shaft, material... Identification mark **Lloyds 4573 P.F.** Intermediate shafts, material... Identification marks...
 Tube shaft, material... Identification mark... Screw shaft, material... Identification mark...
 Identification marks on air receivers... **See Belfast Rpt. No. 13803.**

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... **Steam and foamite, as per B.O.T. & M.S.R. regulations.** ✓
 Is the vessel (not being an oil tanker) fitted for carrying oil as cargo... **Yes** ✓ If so, have the requirements of the Rules been complied with... **Yes** ✓
 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... **Yes** ✓ If so, state name of vessel... **M/V Norrisia Gls. Rpt. 68202.**

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 our opinion to be classed in the Register Book with notation of $\frac{1}{2}$ L.M.C. 12-44, C.L. and 2 D.B. W.P. 150 lbs. See also Belfast Report No. 13803. (Specification main engines only)**

The amount of Entry Fee ... £ **5 : 0 0**
 Special ... £ **98 : 10 0** When applied for **9 JAN 1945**
 Specification Donkey Boiler Fee... £ **16 : 8 0** When received **19**
 Travelling Expenses (if any) £ :

GLASGOW

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

(The Committee's Minute Assigned **-1- Lmc 12.44 oil eng**
GLASGOW 9 JAN 1945
2 NB 150 lb

for **P. Fitzgerald & Self.**
G. E. Murdoch
 Engineer Surveyor to Lloyd's Register of Shipping
 Lloyd's Register Foundation