

REPORT ON OIL ENGINE MACHINERY.

No. 51840
21 OCT 1931

Received at London Office

Writing Report 16th Oct. 1931 When handed in at Local Office 17th Oct. 1931 Port of **GLASGOW.**

Survey held at **Glasgow** Date, First Survey 11th Aug 1930 Last Survey 14th Oct. 1931
Number of Visits 89

on the **"CLIONA"** Screw vessel Tons { Gross 8375
Net 4948

at **Glasgow** By whom built **Harland & Wolff Ltd.** Yard No. **908G.** When built **1931-10.**

Engines made at **do.** By whom made **do.** Engine No. **908** When made **1931.**

Boilers made at **Belfast** By whom made **do.** Boiler No. **908** When made **1931.**

Horse Power **4200.** Owners **Anglo-Saxon Petroleum Co. Ltd.** Port, belonging to **London.**

Horse Power as per Rule **877.** Is Refrigerating Machinery fitted for cargo purposes **No.** Is Electric Light fitted **Yes.**

for which vessel is intended **Foreign.**

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

Working pressure in cylinders **500 lb./sq. in.** Diameter of cylinders **700 mm.** Length of stroke **1400 mm.** No. of cylinders **12** No. of cranks **12**

Bearings, adjacent to the Crank, measured from inner edge to inner edge **970 mm.** Is there a bearing between each crank **Yes.**

Revolutions per minute **120** Flywheel dia. **2218.5 mm.** Weight **1075 kg.** Means of ignition **Compression** Kind of fuel used **Heavy oil.**

Shaft, dia. of journals as per Rule **442 mm.** Crank pin dia. **456 mm.** Crank Webs Mid. length breadth **732 mm.** Thickness parallel to axis **285 mm.**

Intermediate Shafts, diameter as per Rule **259.50** Thrust Shaft, diameter at collars as per Rule **259.50**

Screw Shaft, diameter as per Rule **259.50** Is the tube shaft fitted with a continuous liner **Yes.**

Liners, thickness in way of bushes as per Rule **25/32** Thickness between bushes as per Rule **17/32** Is the after end of the liner made watertight in the 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.**

Does the liner 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.**

Are the liners 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.**

Length of Bearing in Stern Bush next to and supporting propeller **5'-0"**

Propeller, dia. **14'-6"** Pitch **11'-10"** No. of blades **3 each** Material **Bronze** whether Moveable **No** Total Developed Surface **53** sq. feet

of reversing Engines **Compressed Air** Is a governor or other arrangement fitted to prevent racing of the engine when declutched **Yes.** Means of lubrication **Oil**

Thickness of cylinder liners **50 to 30 mm.** Are the cylinders fitted with safety valves **Yes.** Are the exhaust pipes and silencers water cooled or lagged with insulating 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 **Yes.**

Water Pumps, No. **2** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **Yes.**

connected to the Main Bilge Line { No. and Size **2" 8" x 8" x 10" Duplex.** How driven **Steam.**

Pumps, No. and size **2" 8" x 8" x 10" Duplex** Lubricating Oil Pumps, including Spare Pump, No. and size **6" 6" each 40 tons/hr.**

independent means arranged for circulating water through the Oil Cooler **Yes.** Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge Pumps **Yes.**

No. and size:—In Machinery Spaces **2@ 3 1/2"; 2@ 2 1/2"; 2@ 2 1/2" from cofferdams** In Pump Room **4@ 3" (Main) - 1@ 3" (Spare)**

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **1@ 5"; 2@ 6"**

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

Sea Connections fitted direct on the skin of the ship **Yes.** Are they fitted with Valves or Cocks **Both.**

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

Are the Blow Off Cocks fitted with a spigot and brass covering plate **Yes.**

How are they protected **Yes.**

Have they been tested as per Rule **Yes.**

Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **Yes.**

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 **Yes.**

On vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork **Yes.**

Air Compressors, No. **Two** No. of stages **Three** Diameters **250, 675, 150 mm.** Stroke **410 mm.** Driven by **Main Engines.**

Auxiliary Air Compressors, No. **One** No. of stages **Three** Diameters **18 1/2", 11 1/2", 5"** Stroke **12"** Driven by **Steam Engine.**

Auxiliary Air Compressors, No. **Yes.** No. of stages **Yes.** Diameters **Yes.** Stroke **Yes.** Driven by **Yes.**

Refrigerating Air Pumps, No. **Yes.** Diameter **Yes.** Stroke **Yes.** Driven by **Yes.**

Auxiliary Engines crank shafts, diameter as per Rule **Amsterdam Report - N° 12,234 (herewith).** Replaced by Steam Eng. **Yes.**

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule **Yes.**

Are the internal surfaces of the receivers be examined and cleaned **Yes.** Is a drain fitted at the lowest part of each receiver **Yes.**

Pressure Air Receivers, No. **Two** Cubic capacity of each **400 litres each** Internal diameter **492 mm.** thickness **19.5 mm.**

Are the receivers, lap welded or riveted longitudinal joint **Seamless** Material **Steel** Range of tensile strength **28-32 tons/in.²** Working pressure **1100 lb./in.²** Actual **900 lb./in.²**

Refrigerating Air Receivers, No. **Two** Total cubic capacity **1400 ft.³** Internal diameter **5'-10 5/16"** thickness **1"**

Are the receivers, lap welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **28-32 tons/in.²** Working pressure **371 lb./in.²** Actual **356 lb./in.²**

IS A DONKEY BOILER FITTED? *Yes. Two S.E.* If so, is a report now forwarded? *Yes. Rel. 1057*

Is the donkey boiler intended to be used for domestic purposes only? *No.*
 PLANS. Are approved plans forwarded herewith for Shafting *2-8-30-Lm. th & Rel. 25-9-30.* Receivers *Yes* Separate Tanks *None fitted*
 Donkey Boilers *No* General Pumping Arrangements *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: *3- Cylinders covers + 4- Liners. 11 Exhaust Valves. 3- Pistons + 42- Piston Rings. 1- Inlet Valve. 1- Piston Rod + 1- Connecting Rod. 1- Propeller Shaft + 2- Best Iron Propellers.*

The foregoing is a correct description,
For HARLAND AND WOLFF, LIMITED

Archibald Paterson Manufacturer.
Acting Finnieston Secretary

Dates of Survey while building	During progress of work in shops--	1930 Aug: 11 Oct: 13, 23, 24, 28, 29, 30, 31 Nov: 4, 5, 6, 11, 12, 13, 17, 20, 24, 26, 28 Dec: 3, 4, 9, 10, 17, 18, 25, 29, 30 (1931) Jan: 12, 13, 14, 16, 19, 21, 23, 30 Feb: 3, 4, 5, 9, 10, 11, 18, 20, 24, 26 Mar: 2, 4, 10, 11, 12
	During erection on board vessel--	20, 24, 26 Apr: 1, 2, 3, 7, 8, 13, 16, 17, 21, 23 May: 1, 5, 6, 8, 10, 22 June: 4, 19, 22 July: 7, 31
	Total No. of visits	89 - 27, 28 Sep: 7, 15, 17 Oct: 6, 14

Dates of Examination of principal parts—Cylinders	21-4-31	Covers	21-4-31	Pistons	20-3-31	Rods	20-3-31	Connecting rods	3-4
Crank shaft	5. 18-2-31	Flywheel shaft	None	Thrust shafts	5. 9-2-31	Intermediate shafts	10-2-31	Tube shaft	—
Screw shaft	5. 24-12-30	Propellers	10-3-31	Stern tube	5. 24-12-30	Engine seatings	10-3-31	Engines holding down bolts	5. 22-
Completion of fitting sea connections	26-3-31	Completion of pumping arrangements	14-10-31	Engines tried under working conditions	14-10-				
Crank shaft, Material	Steel	Identification Mark	As per attached list	Flywheel shaft, Material	None	Identification Mark	—		
Thrust shafts, Material	Steel	Identification Mark	AS 47368 2217	Intermediate shafts, Material	Steel	Identification Marks	S. 427		
Tube shaft, Material	None	Identification Mark	—	Screw shaft, Material	Steel	Identification Mark	2068, 42		

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.*
 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? *Yes.*
 If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with? *Yes.*
 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.) *These Engines have been built in accordance with the Society's Rules & approved plans. Along with the Donkey Boilers (Rel. Rpt. 1057) they have been properly fitted in the vessel and tried under full power at sea with satisfactory result. The materials & workmanship are good.*

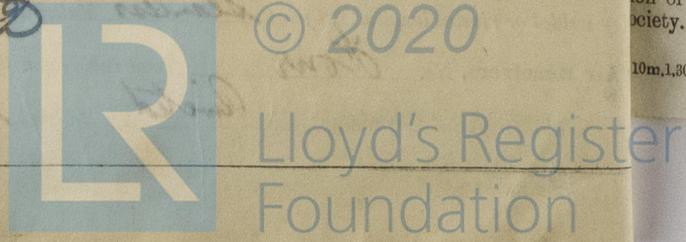
This vessel's Machinery is eligible, in my opinion, to be classed in the Register Book with records: + L.M.C. 10, 31 — Oil Engines; 2 D.B. — 150 lb.; C.L.

The amount of Entry Fee	.. £ 6 : -	When applied for,	10. 10. 1931
Special	... £ 118 : 16/-		
Donkey Boiler Fee	... £ : :	When received,	4. 11. 31
Travelling Expenses (if any)	£ : -		

J. D. Boyle
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **GLASGOW 20 OCT 1931**
 Assigned *+ L.M.C. 10, 31. 2 D.B. — 150 lb.*

CERTIFICATE WRITTEN.



AS
 19/10/31

The Surveyors are requested not to write on or below the space for Committee's Minute.

