

Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No. 58570

Received at London Office JUL 14 1937

Date of writing Report 19 When handed in at Local Office 10.7.37 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 16.9.36 Last Survey 7/7/1937  
Reg. Book. Number of Visits 50

on the <sup>Single</sup> ~~Triple~~ ~~Quadruple~~ Screw vessel "BOARDALE" Tons Gross 8334.22 Net 4973.31

Built at Glasgow By whom built Harland + Wolff Ltd. Yard No. 9716. When built 1937  
Engines made at Glasgow By whom made Harland + Wolff Ltd. Engine No. 9716. When made 1937  
Donkey Boilers made at Belfast By whom made Harland + Wolff Ltd. Boiler No. 971. When made 1937  
Brake Horse Power 2850 @ 105 R.P.M. Owners The Admiralty. 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 Oil tanker

OIL ENGINES, &c. Type of Engines Solid injection 2 or 4 stroke cycle 4 Single or double acting S.A.  
Maximum pressure in cylinders 700 lb. Diameter of cylinders 740 mm. Length of stroke 1500 mm. No. of cylinders 6 No. of cranks 6  
Mean Indicated Pressure 128

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 105 Flywheel dia. 2689 mm. Weight 2540 Kp. Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule 483 mm. Crank pin dia. 505 mm. Crank Webs Mid. length breadth 840 mm Thickness parallel to axis 310 mm  
as fitted 505 mm 115 mm dia hole: 230 mm dia hole. Mid. length thickness 310 " shrunk Thickness around eyehole 222.5 "

Flywheel Shaft, diameter as per Rule 483 mm Intermediate Shafts, diameter as per Rule 13.6" Thrust Shaft, diameter at collars as per Rule 14.3"  
as fitted as fitted 17" as fitted 454 mm (17.87")

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 15" Is the <sup>tube</sup> screw shaft fitted with a continuous liner yes  
as fitted 17"

Bronze Liners, thickness in way of bushes as per Rule .758" Thickness between bushes as per rule .57" Is the after end of the liner made watertight in the  
as fitted 7/8" as fitted 11/16" 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. 17'-0" Pitch 11'-6" No. of blades 4 Material <sup>My Bronze</sup> whether Moveable no Total Developed Surface 89 sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when disengaged yes Means of lubrication  
forced Thickness of cylinder liners 53 to 32 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. Three, 1 @ 150 + 2 @ 100 tons/hour. 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. Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and Size 1 Ballast pump 150 tons/hour 2 Bilges + Sanitary pumps each 100 tons/hour  
How driven Steam engine (9x10x10) Steam engine (7x8x8)

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 One 150 tons per hour 9x10x10 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 70 tons per 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 Port drain hut 3 1/2"; Starboard drain hut 3 1/2", aft. hull 3 1/2" In Pump Room aft. " 2 @ 4"

In Holds, &c. Fore hold, one 3' port, one 3' starboard  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 6", 1 @ 4 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 above  
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

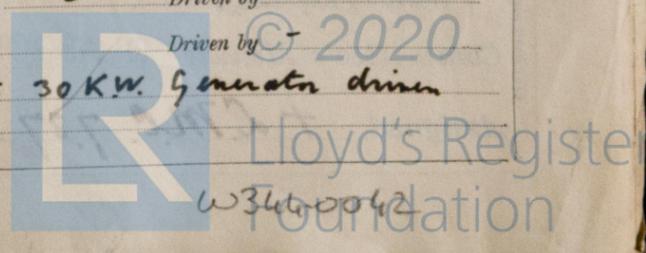
What pipes pass through the bunkers How are they protected  
What pipes pass through the deep tanks Have they been tested as per Rule

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 2. Diameters 120 cm train Stroke 350 mm at 450 R.P.M. Driven by Steam engine.

Small Auxiliary Air Compressors, No. No. of stages Diameters Stroke Driven by  
Scavenging Air Pumps, No. Under side of piston Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule All auxy. machinery steam driven except 30 K.W. Generator driven  
as fitted by a Diesel Engine. For lighting only.



**AIR RECEIVERS:**—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*

**High Pressure 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.** *Two* Total cubic capacity. *900 cu. ft.* Internal diameter. *6-0 5/16* thickness. *Shell 1", Ends 1 5/32"*

Seamless, lap welded or riveted longitudinal joint. *Riveted* Material. *Steel* Range of tensile strength. *26/30 ends 28/32 shell* Working pressure by Rules Actual. *356 lb. 356 "*

**IS A DONKEY BOILER FITTED?** *yes* If so, is a report now forwarded? *yes. Belfast Rpt. No. 1191*

Is the donkey boiler intended to be used for domestic purposes only. *no*

**PLANS.** Are approved plans forwarded herewith for Shafting. *yes* Receivers. *yes* Separate Fuel Tanks. *yes*

Donkey Boilers. *yes* General Pumping Arrangements. *yes* Pumping Arrangements in Machinery Space. *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. *As per attached list.*

The foregoing is a correct description,  
For **HARLAND AND WOLFF, LIMITED.**  
*Wm. J. Wright.* Manufacturer.

Dates of Survey while building	During progress of work in shops--	<i>Finnlestone Secretary 1936 Sep: 16 Oct: 12.26 Nov: 9.12.24 Dec: 2.18 (1937) Jan: 15</i>
	During erection on board vessel--	<i>19.26.27 Feb: 2.9.12.18 Mar: 2.9.10.17.18.22.23.26.30 Apr: 2.5.7.8.9.21.22.23.27</i>
	Total No. of visits	<i>50 May: 3.7.10.17.24.31 June: 7.10.11.18.23.29 July: 1.5.7</i>

Dates of Examination of principal parts—Cylinders	2-4-37	Covers	2-4-37	Pistons	2-4-37	Rods	2-4-37	Connecting rods	5-4-37
Crank shaft	18-3-37	Flywheel shaft	✓	Thrust shaft	23-3-37	Intermediate shafts	23-3-37	Tube shaft	✓
Screw shaft	23-3-37	Propeller	23-3-37	Stern tube	23-3-37	Engine seatings	15-3-37	Engines holding down bolts	7-6-37
Completion of fitting sea connections	21-4-37	Completion of pumping arrangements	1-7-37	Engines tried under working conditions	7-7-37				
Crank shaft, Material	<i>Steel</i>	Identification Mark	<i>971 P.F. + test marks.</i>	Flywheel shaft, Material	✓	Identification Mark	✓		
Thrust shaft, Material	<i>Steel</i>	Identification Mark	<i>5941 P.F.</i>	Intermediate shafts, Material	<i>Steel</i>	Identification Marks	<i>6076 P.F.</i>		
Tube shaft, Material	✓	Identification Mark	✓	Screw shaft, Material	<i>Steel</i>	Identification Mark	<i>5996 P.F.</i>		

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. *✓* 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. *yes* If so, state name of vessel. *"BRITISH POWER" Glasgow Rpt 57800*

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

The machinery of this vessel has been built under Special Survey and in accordance with the approved plans and the Rules of this Society.

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 LMC 7.37 C.L. 2 DB. 150th.*

*10/7/37*

The amount of Entry Fee	£ 5 : -	When applied for,	<b>13 JUL 1937</b>
Special	£ 98 : 10	When received,	<i>12.8 19.37 14.8</i>
Donkey Boiler Fee	£ :		
Travelling Expenses (if any)	£ :		

*P. Fitzgerald.*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 13 JUL 1937**

Assigned *+ L.M.C. 7.37 2 DB - 150th.*



GLASGOW

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