

# REPORT ON OIL ENGINE MACHINERY.

No. 11976  
JUL 15 1937

Received at London Office

Date of writing Report 10 When handed in at Local Office 14. 7. 1937. Port of Belfast  
No. in Survey held at Reg. Book. Date, First Survey 18. Nov. 1936 Last Survey 6-7-37 19  
Number of Visits 136

on the Single Twin Triple Quadruple Screw vessel SINGLE SCREW "DELIUS" GIL ENGINES Tons { Gross 6065 Net 3749  
Built at Belfast By whom built Harland & Wolff L<sup>r</sup> Yard No. 980 When built 1937  
Engines made at Belfast By whom made Harland & Wolff L<sup>r</sup> Engine No. 980 When made 1937  
Donkey Boilers made at Belfast By whom made Harland & Wolff L<sup>r</sup> Boiler No. 980 When made 1937  
Brake Horse Power 4400 Owners Lampson & Holt L<sup>r</sup> Port belonging to Liverpool  
Nom. Horse Power as per Rule 898 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes  
Trade for which vessel is intended Ocean going

OIL ENGINES, &c.—Type of Engines Harland B.W. airless injection 2 stroke cycle 2 Single double acting Yes  
Maximum pressure in cylinders 49 Kgo/cm<sup>2</sup> Diameter of cylinders 530 Length of stroke 1250 No. of cylinders 6 No. of cranks 6  
Mean Indicated Pressure \_\_\_\_\_  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1004 Is there a bearing between each crank Yes  
Revolutions per minute 110 Flywheel dia. 2281 Weight 2150 Kgs Means of ignition Compression Kind of fuel used Diesel Oil  
Crank Shaft, dia. of journals as per Rule as app<sup>d</sup> as fitted 420 Crank pin dia. 420 Crank Webs Mid. length breadth 800 Thickness parallel to axis 225 Mid. length thickness 225 Thickness around eyehole 155  
Flywheel Shaft, diameter as per Rule as app<sup>d</sup> as fitted \_\_\_\_\_ Intermediate Shafts, diameter as per Rule as app<sup>d</sup> as fitted 1-2 3/4 Thrust Shaft, diameter at collars as per Rule as app<sup>d</sup> as fitted 420  
Tube Shaft, diameter as per Rule \_\_\_\_\_ as fitted \_\_\_\_\_ Screw Shaft, diameter as per Rule as app<sup>d</sup> as fitted 1-4 1/2 Is the tube screw shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule \_\_\_\_\_ as fitted 7/8 Thickness between bushes as per Rule \_\_\_\_\_ as fitted 1 1/2 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-corrosive 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 the tube shaft No If so, state type \_\_\_\_\_ Length of Bearing in Stern Bush next to and supporting propeller 5-8  
Propeller, dia. 17-3 Pitch 13-6 No. of blades 4 Material M.B. whether Moveable Solid Total Developed Surface 104 sq. feet  
Method of reversing Engines Air Brake cyls. Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Forced Thickness of cylinder liners 36 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 Yes

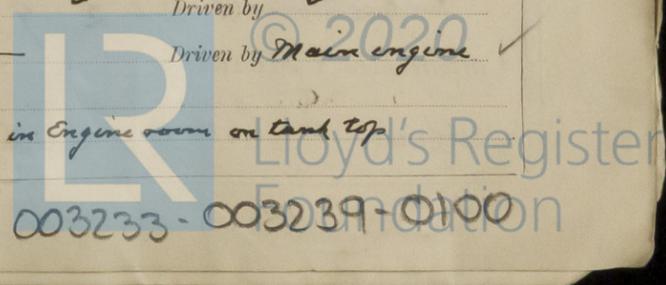
Cooling Water Pumps, No. Two Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes  
Bilge Pumps worked from the Main Engines, No. 1 Rotary Diameter \_\_\_\_\_ Stroke \_\_\_\_\_ Can one be overhauled while the other is at work Yes  
Pumps connected to the Main Bilge Line { No. and Size Three - Two 100 tons One 180 tons How driven One 100 tons main eng. Two steam driven 1-100 tons 1-180 tons  
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 180 tons Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size One main engine 180 tons One steam driven 180 tons  
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 Two 5" Two 3 1/2" Two 2 1/2" One 2 1/2" eng pump. One 2 1/2" Coff. In Pump Room Two 2" Sludge Tanks  
In Holds, &c. Two 3" and Two 3 1/2" in Fore holds. Five 3" and two 3 1/2" in tunnel & aft holds

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Two 5"  
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 Valves  
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 None How are they protected \_\_\_\_\_  
What pipes pass through the deep tanks None 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 Yes Is it fitted with a watertight door Yes worked from Main deck  
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. Two No. of stages Two Diameters 8 1/2, 3 1/2 Stroke 7 Driven by Steam  
Auxiliary Air Compressors, No. \_\_\_\_\_ No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_  
Small Auxiliary Air Compressors, No. \_\_\_\_\_ No. of stages \_\_\_\_\_ Diameters \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by \_\_\_\_\_  
2 Scavenging Air Pumps, No. 208 M<sup>3</sup> min capacity 280 rpm Diameter \_\_\_\_\_ Stroke \_\_\_\_\_ Driven by Main engine

Auxiliary Engines crank shafts, diameter as per Rule \_\_\_\_\_ as fitted Steam driven 2 1/2 dia Diesel 3 1/8 No. \_\_\_\_\_ Position On seats in Engine room on tank top



**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 ✓  
**Starting Air Receivers, No.** 1 Total cubic capacity 538 cuft. Internal diameter 6'-0 3/4" thickness 1 1/2"  
 Seamless, lap welded or riveted longitudinal joint riveted ✓ Material S ✓ Range of tensile strength 25/32 tons ✓ Working pressure by Rules 373 lbs.  
 Actual 356 lbs.

**IS A DONKEY BOILER FITTED?** Yes ✓ If so, is a report now forwarded? Yes ✓  
 Is the donkey boiler intended to be used for domestic purposes only Auxiliary machinery ✓

**PLANS.** Are approved plans forwarded herewith for Shafting Yes Receivers Yes Separate Fuel Tanks Yes  
 (If not, state date of approval) ✓  
 Donkey Boilers Yes General Pumping Arrangements 1-4-37 Pumping Arrangements in Machinery Space 1-4-37  
 Oil Fuel Burning Arrangements 13-4-37

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied \_\_\_\_\_  
 State the principal additional spare gear supplied \_\_\_\_\_

*See attached list*

The foregoing is a correct description,  
 FOR HARLAND AND WOLFF, LIMITED.

Chastagne DIRECTOR. Manufacturer.

Dates of Survey while building	1936		1937	
	During progress of work in shops--	During erection on board vessel--		
	Nov. 18, 24, 26, 28	Dec. 17, 11, 12, 19, 21, 23, 24	Jan. 4, 5, 6, 7, 11, 12, 13, 15, 16, 14, 22, 25, 26, 27, 28, 29	Feb. 1, 2, 3, 4, 5, 6, 8, 9, 11, 12, 13, 15, 16, 17, 18, 19, 20, 22, 23, 24, 25, 26
	Mar. 1, 2, 3, 4, 5, 8, 9, 10, 11, 15, 16, 18, 19, 20, 22, 23, 24, 25, 26, 31	Apr. 1, 2, 5, 6, 7, 8, 9, 12, 13, 14, 15, 16, 19, 20, 21, 22	May 3, 4, 5, 6, 7, 8, 11, 13, 14, 15, 17, 18, 19, 20, 21, 22, 24, 25, 26, 27, 28, 31	June 1, 2
Total No. of visits	6, 4, 8, 9, 11, 14, 16, 19, 18, 21, 22, 24, 25, 30	July 2, 5, 6	= 136	

Dates of Examination of principal parts—Cylinders 5-4-37 Covers 24/7/37-24/5/37 Pistons 28/3/37-30/4/37 Rods 1-3-37/22-4-37 Connecting rods 19-4-37  
 Crank shaft 10-3-37 Flywheel shaft ✓ Thrust shaft 9-6-37 Intermediate shafts 22-2-37/22-3-37 Tube shaft ✓  
 Screw shaft 22-2-37/25-3-37 Propeller 24-2-37 Stern tube 21-12-36 Engine seatings 7-4-36 Engines holding down bolts 16-6-36  
 Completion of filling sea connections 7-4-36 Completion of pumping arrangements \_\_\_\_\_ Engines tried under working conditions \_\_\_\_\_  
 Crank shaft, Material S Identification Mark 110405 255 Flywheel shaft, Material ✓ Identification Mark ✓  
 Thrust shaft, Material S Identification Mark 110405 305 Intermediate shafts, Material S Identification Marks 110405 305  
 Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material S Identification Mark 110405 305

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 No 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 No  
 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.)  
 The machinery of this vessel has been constructed under special survey. The materials & workmanship are good. The main & auxiliary machinery have been efficiently installed & tried out under working conditions with satisfactory results. In our opinion this vessel is eligible for notation in the Society's Register Book + LMC 7-37 C.L. 2 DBs 120 lbs GIL ENGINE

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	£ 6 :	When applied for,
Special	£ 119 : 18 :	7. 1937.
Donkey Boiler Fee	£ 15 : 4 :	When received,
Air Receivers	£ 4 : 4 :	5. 8 1937/8
Travelling Expenses (if any)	£ 2 : 9 :	

Charles H. Humber & Lee James  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute  
 Assigned + LMC 7-37 see log  
 2 DB 120 lb CL

