

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 Ltd. Yard No. 980 When built 1937
 Engines made at Belfast By whom made Harland & Wolff Ltd. Engine No. 980 When made 1937
 Donkey Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 980 When made 1937
 Brake Horse Power 4400 Owners Lampert & Holt Ltd. 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 or double acting Yes
 Maximum pressure in cylinders 49 Kg/cm² Diameter of cylinders 530 mm Length of stroke 1250 mm 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 mm Is there a bearing between each crank Yes
 Revolutions per minute 110 Flywheel dia. 2281 mm Weight 2150 kg Means of ignition Compression Kind of fuel used Diesel Oil
 Crank Shaft, dia. of journals as per Rule 420 mm Crank pin dia. 420 mm Crank Webs as per Rule 800 mm Thickness parallel to axis 225 mm
 Flywheel Shaft, diameter as per Rule 420 mm Intermediate Shafts, diameter as per Rule 1-2 3/4" Thrust Shaft, diameter at collars as per Rule 420 mm
 Tube Shaft, diameter as per Rule 1-4 1/2" Is the tube screw shaft fitted with a continuous liner Yes
 Screw Shaft, diameter as per Rule 1-4 1/2" Is the after end of the liner made watertight in the propeller boss Yes
 Bronze Liners, thickness in way of bushes as per Rule 7/8" Thickness between bushes as per Rule 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
 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 cyl. 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 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 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 Yes
 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" off tank 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 Yes
 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 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 Yes
 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 M³/min capacity 280 rpm Diameter Stroke Driven by Main engine
 Auxiliary Engines crank shafts, diameter as per Rule Steam driven 2 1/2" dia Diesel 3 1/8" 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 by Rules

Actual

Starting Air Receivers, No. *1*

Total cubic capacity *538 cu ft.*

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

Actual

373 lb.

356 lb.

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* ✓
(If not, state date of approval)

Receivers *Yes* ✓

Separate Fuel Tanks *Yes* ✓

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.

Chas. Pape DIRECTOR

Manufacturer.

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

Dates of Examination of principal parts—Cylinders *5-4-37*— Covers *24/3/37-24/5/37* Pistons *28/3/37-30/4/37* Rods *1-3-37/24-4-37* 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 fitting 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 lb GIL ENGINE

The amount of Entry Fee

£ 6 :

When applied for,

Special

£ 119 : 18 :

When received,

Donkey Boiler Fee

£ 15 : 4 :

Travelling Expenses (if any)

£ 4 : 4 :

When received,

£ 5 : 8 : 19 37 6 9 8

Committee's Minute

Assigned + LMC 7.37

FRI 30 JUL 1937

2 DB 120 lb CL

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



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Foundation