

REPORT ON OIL ENGINE MACHINERY

No. 11524

Received at London Office 17 MAY 1935

Date of writing Report 19 When handed in at Local Office 16th May 1935 Port of BELFAST

No. in Survey held at BELFAST Date, First Survey 24th May 1934 Last Survey 11th May 1935

Reg. Book. 91071 on the ^{Single} ~~Triple~~ ~~Quadruple~~ Screw vessel ROTHEsay CASTLE Tons { Gross Net

Built at Belfast By whom built Harland & Wolff Ltd. Yard No. 944 When built 1935
Engines made at Belfast By whom made Harland & Wolff Ltd. Engine No. 944 When made 1935
Donkey Boilers made at Belfast By whom made Harland & Wolff Ltd. Boiler No. 944 When made 1935
Brake Horse Power 7000 Owners Union Castle Mail Steamship Co. Ltd. Port belonging to London
Nom. Horse Power as per Rule 1643 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
Trade for which vessel is intended Ocean-Going 24.6 55.5

OIL ENGINES, &c.—Type of Engines Harland & Wolff - 8 cyl. Diesel 2 or 4 stroke cycle 2 Single or double acting double
Maximum pressure in cylinders 700 lbs. Diameter of cylinders 620 mm Length of stroke 1400 mm No. of cylinders 8 No. of cranks 8
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 946 mm Is there a bearing between each crank Yes
Revolutions per minute 93 Flywheel dia. 2482.8 mm. Weight 2500 Kg Means of ignition Compression Kind of fuel used Diesel oil
Crank Shaft, dia. of journals as per Rule 484.5 mm. as fitted 500 mm. Crank pin dia. 80 mm. Crank Webs Mid. length breadth 980 mm Thickness parallel to axis 312 mm.
Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule 17.89" as fitted 18" Thrust Shaft, diameter at collars as per Rule 18.78" as fitted 480 mm
Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted 19.75" Is the shaft fitted with a continuous liner Yes
Bronze Liners, thickness in way of bushes as per Rule as fitted 29/32" Thickness between bushes as per rule as fitted 27/32" Is the after end of the liner made watertight in the propeller boss 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
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
Propeller, dia. 19.6" Pitch 18.4" 15.0" No. of blades 4 Material Mang. Br. whether Moveable No. Total Developed Surface 125 sq. feet
Method of reversing Engines air motor Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication forced
Thickness of cylinder liners 4.2 mm. Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-conducting material lagged

Cooling Water Pumps, No. Two of 300 Gals/hr. 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 Two (Ridge) 105 Gals/hr (Ballast) 150 Gals/hr. How driven Electric Motor
Ballast Pumps, No. and size One 150 Gals/hr. Lubricating Oil Pumps, including Spare Pump, No. and size Two of 200 Gals/hr.
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 of 3 1/2" Three of 2 1/2" Two of 2" Tunnel hole 4" Drain Tank 2 1/2"

In Holds, &c. Nos. 1, 2, 3 + 4 Holds Two of 3 1/2" each.
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Two of 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 Yes
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
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
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 upper 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. No. of stages Diameters Stroke Driven by
Auxiliary Air Compressors, No. Two No. of stages Two Diameters 280 mm & 280-265 mm Stroke 130 mm. Driven by Electric motor
Small Auxiliary Air Compressors, No. One No. of stages Two Diameters 106.34 mm & 24 mm Stroke 80 mm. Driven by Steam engine
Scavenging Air Pumps, No. Two of 404 M³ Capacity Diameter at 389 R.P.M. + 1.2 atmos abs. Driven by gear & main engine
Auxiliary Engines crank shafts, diameter as per Rule 199.7 mm as fitted 280 mm. Position — mid of motor room.

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. One Cubic capacity of each 180 litres Internal diameter 14" thickness 1/2"
Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 28-32 Working pressure by Rules 966 lbs. Actual 2520
Starting Air Receivers, No. One Total cubic capacity 1076 cub. ft. Internal diameter 5'-6 3/4" thickness 1 5/16"
Seamless, lap welded or riveted longitudinal joint Yes Material Steel Range of tensile strength 28-32 Working pressure by Rules 356 lbs. Actual

W450-0095

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? *No*

PLANS. Are approved plans forwarded herewith for Shafting *Yes*
(If not, state date of approval)

Receivers *Yes*

Separate Tanks *Yes*

Donkey Boilers *Yes*

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 *See attached list.*

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

Manufacturer.

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Dates of Survey while building	During progress of work in shops--	1934 May 24 Aug 24 28 29 Oct 19 23 Nov 12 14 16 19 22 26 27 Dec 5 7 10 12	1935 Jan 4 7 9 10 16 17 18 21 23 24
	During erection on board vessel--	25 29 31 Feb 4 8 12 13 14 15 18 19 20 21 22 25 26 27 28 Mar 1 2 4 5 6 7 8 11 12 13 14 15	Mar 1 2 4 7 8 9 10 11
	Total No. of visits	89	

Dates of Examination of principal parts—Cylinders and Covers *15-2-35* Pistons *15-2-35* Rods *13-2-35* Connecting rods *25-1-35*

Crank shaft *27-2-35* Flywheel shaft *✓* Thrust shaft *4-2-35* Intermediate shafts *4-2-35* Tube shaft *✓*

Screw shaft *4-2-35* Propeller *18-1-35* Stern tube *28-1-35* Engine seatings *20-2-35* Engines holding down bolts *2-4-35*

Completion of fitting sea connections *13-4-35* Completion of pumping arrangements *8-5-35* Engines tried under working conditions *9-5-35*

Crank shaft, Material *S.M. Steel* Identification Mark *LLOYD'S 216 R.L.A* Flywheel shaft, Material *✓* Identification Mark *✓*

Thrust shaft, Material *S.M. Steel* Identification Mark *LLOYD'S 1589 R.L.A* Intermediate shafts, Material *S.M. Steel* Identification Marks *LLOYD'S 1582-1564 1564-1580*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *S.M. Steel* Identification Mark *LLOYD'S 118-1564*

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 *"Roslin Castle"*

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 sound and good. The main engines and auxiliaries have been efficiently installed and tried out under working conditions with satisfactory results. The main generator was constructed under survey + the electrical installations tested and tried out satisfactorily. In our opinion the vessel is now eligible for notation in the Society's Register Book "L.M.C. 5.35 C.L. D.B. 100 lbs" OIL ENGINES.

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	£ 141: 1/6	16 th May 1935
Donkey Boiler Fee	£ 4: 16	When received,
AIR RESERVOIRS	£ 7: 7	30.5.35
Travelling Expenses (if any)		31/5

R Lee Ames & Charles J Hunter
Engineer Surveyor to Lloyd's Register of Shipping.



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Committee's Minute

FRI. 24 MAY 1935

Assigned

+ LMC 5.35 Oil Engines
DB-100 lbs