

REPORT ON OIL ENGINE MACHINERY.

No. 12103

MAR -8 1938

Received at London Office

Date of writing Report 19 When handed in at Local Office 1. 3. 1938 Port of Belfast

No. in Survey held at Belfast Date, First Survey 3rd Dec. 1936 Last Survey 3/3/38 19

Reg. Book. 30386 on the Single Twin Triple Quadruple Screw vessel TWIN **MUNSTER** Tons Gross 4302 Net 2319

Built at Belfast By whom built Harland & Wolff Ltd Yard No. 996 When built 1938

Engines made at Belfast By whom made Harland & Wolff Ltd Engine No. 996 When made 1938

Donkey Boilers made at Belfast By whom made Harland & Wolff Ltd Boiler No. 996 When made 1938

Brake Horse Power Owners British & Irish Steam Pk Co 1936 Ltd Port belonging to Liverpool

Nom. Horse Power as per Rule 1347 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended Irish Channel Service

ENGINES, &c.—Type of Engines Harland - B.W. airless injection 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 700 lbs Diameter of cylinders 500 7/8 Length of stroke 900 7/8 No. of cylinders 10 No. of cranks 10

Position of bearings, adjacent to the Crank, measured from inner edge to inner edge 704 7/8 Is there a bearing between each crank Yes

Revolutions per minute 120 Flywheel dia. 1654 7/8 Weight 1000 kgs Means of ignition Compression Kind of fuel used Diesel Oil

Crank Shaft, dia. of journals as per Rule 354 as fitted 354 Crank pin dia. 354 Crank Webs Mid. length breadth 572 7/8 Thickness parallel to axis 220 7/8 Mid. length thickness 220 7/8 Thickness around eye hole 242.5 7/8

Flywheel Shaft, diameter as per Rule as approved as fitted 11 5/8 Thrust Shaft, diameter at collars as per Rule as approved as fitted 330 7/8

Stern Tube Shaft, diameter as per Rule as approved as fitted 13 1/4 Is the tube screw shaft fitted with a continuous liner No

Bronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per Rule as fitted 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 Yes

If so, state type Cedarsalls Patent Length of Bearing in Stern Bush next to and supporting propeller 4-9"

Propeller, dia. 12-3" Pitch 18-3" No. of blades 3 Material Brass metal whether Moveable Solid Total Developed Surface 44.5 sq. feet

Method of reversing Engines Hand gear 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 7/8 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. None Diameter as per Rule Stroke as per Rule Can one be overhauled while the other is at work Yes

Pumps connected to the Main Bilge Line No. and Size Two @ 60 tons/hr One @ 100 tons/hr How driven Electrically

Ballast Pumps, No. and size One @ 100 tons/hr Lubricating Oil Pumps, including Spare Pump, No. and size Two @ 170 tons/hr 1 spare

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 Motor room 4 @ 2 1/2" Aux eng room 4 @ 2 1/2" In Pump Room 1 @ 2 1/2"

Holds, &c. N° 1 & 2 holds 1-2 1/2 P.S. For tunnel 1-2 1/2 P.S. Buoyancy Space 1-2 1/2 P.S. Mid & aft tunnels 1-2 1/2 P.S. Tunnel Well

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Motor room 1-5 P. & 1-4 S. Aux E.R. 1-4 P.S.

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces 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 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

That pipes pass through the bunkers None How are they protected as per Rule

That pipes pass through the deep tanks as per Rule 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 C. Deck

If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork as per Rule

Main Air Compressors, No. 2 No. of stages 2 Diameters 240 7/8 & 210 7/8 Stroke 160 7/8 Driven by El Motor

Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 3 1/4 & 1 1/4 Stroke 3" Driven by El Motor

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 3 1/4 & 1 1/4 Stroke 3" Driven by El Motor

Scavenging Air Pumps, No. 1 Capacity 168 cu ft/min. at 1.2 atmos abs. Stroke at 661 rpm Driven by Main eng.

Auxiliary Engines crank shafts, diameter as per Rule as approved 17-10-36 No. 3 Position Aux E.R.

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Refusable plugs & safety valves on A.C. discharge line

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

Starting High Pressure Air Receivers, No. 2 Cubic capacity of each 538 cu ft Internal diameter 6-0 3/8" thickness 1 1/2"

Seamless, lap welded or riveted longitudinal joint Yes Material Steel Range of tensile strength 28/32 Working pressure Actual 356 lbs

Emergency Starting Air Receivers, No. 1 Total cubic capacity 150 litres Internal diameter 1'6" thickness 3/8"

Seamless, lap welded or riveted longitudinal joint Yes Material Steel Range of tensile strength 28/32 Working pressure Actual 356 lbs

W456-0090

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? *Yes*

PLANS. Are approved plans forwarded herewith for Shafting *17-10-36* ²¹⁻¹²⁻³⁶ ₄₋₁₋₃₇ Receivers *5-11-36* Separate Tanks *4/8/37* *26/5/37*
(If not, state date of approval)
Donkey Boilers *25-2-37* General Pumping Arrangements *26-5-37* Oil Fuel Burning Arrangements *20-7-37*

SPARE GEAR.

Has the spare gear required by the Rules been supplied

State the principal additional spare gear supplied

The foregoing is a correct description,

For HARLAND AND WOLFE, LIMITED.

A. G. Marshall Manufacturer.

1936-1937
Dates of Survey while building
During progress of work in shops--
During erection on board vessel--
Total No. of visits *169*

Dates of Examination of principal parts—Cylinders *9/8/37-6/10/37* Covers *7/8/37-1/12/37* Pistons *7/8/37-20/10/37* Rods *✓* Connecting rods *26/8/37-24/9/37*

Crank shaft *P 17-8-37* Flywheel shaft *✓* Thrust shaft *P 17/5/37* Intermediate shafts *18/8/37-30/9/37* Tube shaft *✓*

Screw shaft *30-9-37* Propeller *P 11/1/38* Stern tube *P 2/9/37* Engine seatings *9/9/37* Engines holding down bolts *17/12/37-24/12/37*

Completion of fitting sea connections *25/10/37* Completion of pumping arrangements *15/2/37* Engines tried under working conditions *15/2/37*

Crank shaft, Material *Steel* Identification Mark *261* Flywheel shaft, Material *✓* Identification Mark *✓*

Thrust shaft, Material *Steel* Identification Mark *261* Intermediate shafts, Material *Steel* Identification Marks *313*

Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *Steel* Identification Mark *313*

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 *Yes* If so, state name of vessel *"LEINSTER"* *Ref op' N° 12030 3/11/37*

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

The machinery of this vessel has been constructed to the Society's Rules under Special survey. The materials & workmanship are good. The main engines & auxiliary machinery have been efficiently installed & tried under full working with satisfactory results. The main generators were constructed under special survey and the electrical installation tested in accordance with the Rules.

In our opinion this vessel is eligible for Notation in the Society's Register Book + LMC 3-38 OG DB 80 lbs Oil Engines

The Main engine bedplates are fabricated by the electric welding process to approved design under Special survey.

The amount of Entry Fee .. £ 6 : 0 : 0 When applied for, *7 Mar 1938*
Special Welded bedplate ... £ 133 : 13 : 6 : 0
Donkey Boiler Fee ... £ 6 : 6 : 0 : 0
Air Receivers ... £ 7 : 16 : 0 : 0
Travelling Expenses (if any) £ 10 : 10 : 0 : 0
When received, *24/3 1938*

Committee's Minute *FRI 11 MAR 1938*

Assigned + Line 3.38 1 DB 80 lbs

Oil Eng OG

Charles G. Hunter, R. Lee Ameson
Engineer Surveyor to Lloyd's Register of Shipping.
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