

REPORT ON OIL ENGINE MACHINERY.

No. 11806

Received at London Office 3 SEP 1936

Date of writing Report

When handed in at Local Office

2nd Sept 36 Port of

BELFAST

No. in Survey held at

Belfast

Date, First Survey

6th June 1935

Last Survey

31 Aug

1936

Number of Visits

145

80 on the ^{Single} Twin ^{Triple} Screw vessel

DUNVEGAN CASTLE

Tons ^{Gross}
^{Net}

It at Belfast

By whom built Harland & Wolff Ltd.

Yard No. 960 When built 1936

Lines made at Belfast

By whom made Harland & Wolff Ltd.

Engine No. 960 When made 1936

Boilers made at Belfast

By whom made Harland & Wolff Ltd.

Boiler No. 960 When made 1936

Horse Power 11900

Owners Union Castle Mail S.S. Co. Ltd.

Port belonging to London

Horse Power as per Rule 1931

✓

Is Refrigerating Machinery fitted for cargo purposes

Yes

Is Electric Light fitted

Yes

Made for which vessel is intended

Ocean-going 17 1/2"

47 1/2"

ENGINES, &c.—Type of Engines Harland & Wolff - D.V.M. Airless Injection 2 or 4 stroke cycle 2 Single or double acting double

Maximum pressure in cylinders 700 lbs. sq. in. Diameter of cylinders 450 mm. Length of stroke 1200 mm. No. of cylinders 18 No. of cranks 18

No. of bearings, adjacent to the Crank, measured from inner edge to inner edge 734 mm. Is there a bearing between each crank Yes

Revolutions per minute 128 Flywheel dia. 1949 mm. Weight 2040 Kgs. Means of ignition Compression Kind of fuel used diesel oil

Crank Shaft, dia. of journals as per Rule Approved as fitted 390 mm. Crank pin dia. 390 mm. Crank Webs Mid. length breadth 670 mm. Thickness parallel to axis 238 mm.

as fitted 390 mm. 115 mm. Mid. length thickness 238 mm. shrunk Thickness around eyehole 175 mm.

Flywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted 14 1/2" Thrust Shaft, diameter at collars as per Rule as fitted 390 mm.

Screw Shaft, diameter as per Rule as fitted 16" Is the tube screw shaft fitted with a continuous liner Yes

Copper Liners, thickness in way of bushes as per Rule as fitted 7/8" Thickness between bushes as per rule as fitted 23/32" 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

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

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 Length of Bearing in Stern Bush next to and supporting propeller 7 1/2"

Propeller, dia. 16'3" Pitch 16'3" 18' 2 1/2" No. of blades 3 Material mm. Br. whether Moveable No. Total Developed Surface ca. 70 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 34 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 to funnel

Cooling Water Pumps, No. 2 pair of 228 Tons/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 2 pair of 135 Tons/hr. (Bilge, Emergency Bilge, Fire, Ballast) How driven Electric motor

Ballast Pumps, No. and size One of 135 Tons/hr. Lubricating Oil Pumps, including Spare Pump, No. and size 2 pair of 190 Tons/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 Main Room 2 of 3 1/2", 2 of 2 1/2" Aux. Room 2 of 3 1/2" Repig. Room 2 of 3 1/2" + 1 of 2 1/2" Tunnel 2 of 3 1/2" 1 of 2 1/2" Repig.

In Holds, &c. 10 of 3 1/2" 4 of 2 1/2" 4 of 3" 1 of 3 1/2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Five 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 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 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 2 Diameters 4 Cyls. 130 x 45 mm Stroke 120 mm. Driven by Electric motor

Small Auxiliary Air Compressors, No. One No. of stages 2 Diameters 106 x 55 mm. Stroke 80 mm. Driven by Steam Engine

Scavenging Air Pumps, No. Two 233 M³/min. Capacity at Diameter 341 x p.m. delivering Stroke at 1.2 Min. absol. Driven by main motor

Auxiliary Engines crank shafts, diameter as per Rule as fitted 220 mm. No. 4 Pairing - Aux. 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 Open ends What means are provided for cleaning their inner surfaces

Is there a drain arrangement 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 Yes Material Steel Range of tensile strength 24/28 Tons Working pressure by Rules 828 lbs.

Starting Air Receivers, No. Two Total cubic capacity 1076 Cub. ft. Internal diameter 5' 6 3/4" thickness 1 3/32"

Seamless, lap welded or riveted longitudinal joint Yes Material Steel Range of tensile strength 28/32 Tons Working pressure by Rules 360 lbs.

W383-0034

IS A DONKEY BOILER FITTED? Yes (not for domestic purposes only) If so, is a report now forwarded? Yes

PLANS. Are approved plans forwarded herewith for Shafting 22nd Oct. 17th 18th Ap. 1935 Receivers 28th May 1935 Separate Tanks 25th 31st Jan. 21st Oct. 9th 16th Mar. 1935

Donkey Boilers 13.6.35 6.7.35 General Pumping Arrangements 24.12.35 20.2.36 Oil Fuel Burning Arrangements 7.2.36

SPARE GEAR In excess of rules see appended list.

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

Marshall

Manufacturer.

Assistant Secretary
Dates of Survey while building
During progress of work in shops -- 1935 June 6 July 10 Aug. 2.6.9.16.22 Sept 17 Dec 19.20 1936 Jan 3.6.13.24.28.29 Feb 1.4.5.6.12.14.20.21.22.23.24.25.26.27.28.29.30 Apr 3.6.7.8.9.10.11.15.17.18.20.21.22.23.24.25.26.27.28.29.30 May 1.2.4.5.6.7.8.9.11.12.13.14.15.16.18.19.20.21.22.23.25.26.27.28.29.30 June 1.2.3.4.5.6.8.9.10.11.12.13.15.16.17.18.19.20.21.22.23.25.26.27.28.29.30 July 1.2.3.4.6.7.8.10.11.15.16.17.18.20.21.22.23.25.26.27.28.29.30 Aug 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.25.26.27.28.29.30
During erection on board vessel -- 12.13.15.16.17.18.22.24.25.26.27.30 July 1.2.3.4.6.7.8.10.11.15.16.17.18.20.21.22.23.25.26.27.28.29.30 Aug 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.22.23.25.26.27.28.29.30
Total No. of visits 5.6.10.12.14.15.17.18.19.21.27.31 = 145

Dates of Examination of principal parts—Cylinders 5.3.6.23.7.36 Covers AND Pistons 8.4.36 24.7.36 Rods 28.4.36 5.5.36 Connecting rods 20.4.36 7.5.36

Crank shaft 2.4.36 30.4.36 8.5.36 Flywheel shaft Thrust shaft 6.2.36 30.4.36 Intermediate shafts 30.2.36 22.4.36 Tube shaft

Screw shaft 18.3.36 Propeller 18.3.36 12.6.36 Stern tube 7.5.36 Engine seatings 10th Apr. 36 Engines holding down bolts 30.6.36 5.12.36

Completion of fitting sea connections 10th Aug 1936 Completion of pumping arrangements 12th Aug 1936 Engines tried under working conditions 18th-19th Aug 1936

Crank shaft, Material S.M. STEEL Identification Mark 235 and 237 Flywheel shaft, Material Identification Mark 154.158.176.124.591.161

Thrust shaft, Material Do Identification Mark 172 and 190 Intermediate shafts, Material S.M. STEEL Identification Marks 161.158.124.149.271

Tube shaft, Material Identification Mark Screw shaft, Material Do Identification Mark 190.189 and 603

Is the flash point of the oil to be used over 150° F. Yes

Is this machinery duplicate of a previous case Yes If so, state name of vessel "JUNNOTAR CASTLE"

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

The machinery of this vessel has been constructed under special survey and in accordance with the Rules. The workmanship & materials are good. The main engines and auxiliaries have been efficiently installed and tried out under working conditions with satisfactory results. In our opinion the vessel is eligible for notation in the Society's Register Book

+LMC 9-36 CL. 2 DBs 100LBS GIL ENGINES

The amount of Entry Fee ... £ 6 : 0 0 When applied for,

Special ... £ 148 : 15 0 1st Sept. 1936

Donkey Boiler Fee ... £ 12 : 6 0 When received,

Travelling Expenses (if any) £ 7 : 7 0 12.9.36

Committee's Minute

Assigned

+Lm 8.06
2 DB-100 lbs
Oil Eng CL

Charles Y. Hunter R Lee Amess
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation