

REPORT ON OIL ENGINE MACHINERY.

No. 12.312

EB 24 1935

Received at London Office

Date of writing Report

19

When handed in at Local Office

22.2.39 Port of Belfast

No. in Survey held at
Reg. Book.Date, First Survey 20th Jan, 1938 Last Survey 13 Feb. 1939

Number of Visits 118

89817 on the ^{Single}
^{Triple}
^{Quadruple}

Screw vessel

"RICHMOND CASTLE"

Tons {
Gross
Net

Built at Belfast By whom built Harland & Wolff Ltd Yard No. 1012 When built 1939
 Engines made at Belfast By whom made Harland & Wolff Ltd Engine No. 1012 When made 1939
 Donkey Boilers made at Annan By whom made Cochrane & Annan Ltd Boiler No. 14194 When made 1938
 Brake Horse Power 9375 Owners Union Castle Mail Steamship Co 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 2476 558

OIL ENGINES, &c.—Type of Engines Harland B&W. with injection 2 or 4 stroke cycle 2 Single or double acting doubleMaximum pressure in cylinders 49 kg/cm² Diameter of cylinders 620 mm Length of stroke 1900 mm No. of cylinders 8 No. of cranks 8Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1164 mm Is there a bearing between each crank YesRevolutions per minute 105.5 Flywheel dia. 2483 mm Weight 2500 kg. Means of ignition Compression Kind of fuel used Diesel oilCrank Shaft, dia. of journals as per Rule 500 mm Crank pin dia. 500 mm Crank Webs Mid. length breadth 960 mm Thickness parallel to axis 260 mm
as fitted 500 mm M. d. length thickness 260 mm shrunk Thickness around eye hole 225 mmFlywheel Shaft, diameter as per Rule as fitted Intermediate Shafts, diameter as per Rule as fitted Thrust Shaft, diameter at collars as per Rule 479.5 mm
as fitted as fitted as fitted 17 1/4" as fitted 490 mmTube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule as fitted Is the tube shaft fitted with a continuous liner Yes
as fitted as fitted as fitted 19 3/4" as fitted as fittedBronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as fitted 27/32" Is the after end of the liner made watertight in thepropeller boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner YesIf 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 YesIf 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 tubeshaft No If so, state type Yes Length of Bearing in Stern Bush next to and supporting propeller 6-9"Propeller, dia. 19-6" Pitch 17-10" No. of blades 4 Material Mangrove Whether Moveable Solid Total Developed Surface 130 sq. feetMethod of reversing Engines Air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubricationForced Thickness of cylinder liners 42 mm Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged withnon-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 YesCooling Water Pumps, No. Two Is the sea suction provided with an efficient strainer which can be cleared within the vessel YesBilge Pumps worked from the Main Engines, No. None Diameter 1-110 tons/hr Stroke 1-150 tons/hr Can one be overhauled while the other is at workPumps connected to the Main Bilge Line { No. and Size Two How driven Electric motors Lubricating Oil Pumps, including Spare Pump, No. and size Two 300 tons/hrBallast Pumps, No. and size One 150 tons/hr Are two independent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary BilgePumps, No. and size:—In Machinery Spaces Two 3 1/2" & 5-2 1/2" Refrig room 2-3 1/2" Tunnel 1-4"In Holds, &c. One 4" & 3 1/2" Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Two - 5 1/2"Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spacesled from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes Are they fitted with Valves or Cocks BothAre all Sea Connections fitted direct on the skin of the ship 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 BelowAre 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 YesWhat pipes pass through the bunkers None How are they protected Yes Have they been tested as per Rule YesWhat pipes pass through the deep tanks 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 Upper DeckIf a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork YesMain Air Compressors, No. 2 No. of stages 2 Diameters 250 & 245 mm Stroke 130 mm Driven by El MotorAuxiliary Air Compressors, No. 1 No. of stages 1 Diameters 100 & 85 mm Stroke 80 mm Driven by Steam engineSmall Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 100 & 85 mm Stroke 80 mm Driven by Main engineScavenging Air Pumps, No. 2 Capacity each 695 m³/min at 344 rpm. Stroke 1.24 kg/cm² abs. Driven by Main engineAuxiliary Engines crank shafts, diameter as per Rule 199.7 as fitted 250 mm journal 250 mmAIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes What means are provided for cleaning their inner surfaces ManualCan the internal surfaces of the receivers be examined Yes Is there a drain arrangement fitted at the lowest part of each receiver YesMANOEUVRING Air Receivers, No. 2 Cubic capacity of each 538 cu ft Internal diameter 6'-0 3/8" thickness 1 1/32"Seamless, lap welded or riveted longitudinal joint Seamless Material SP steel Range of tensile strength 28/32 tons Working pressure by Rules 374Starting Air Receivers, No. One Total cubic capacity 290 litres Internal diameter 4-16 mm thickness 17.5 mmSeamless, lap welded or riveted longitudinal joint Seamless Material SP steel Range of tensile strength 28/32 tons Working pressure by Rules 1185 lb

W1175-0033

Lloyd's Register
Foundation

IS A DONKEY BOILER FITTED?

Yes

If so, is a report now forwarded?

Yes

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

7-1-38 21-2-38

Receivers

3-12-37

Separate Tanks 13-9-38

Donkey Boilers 1-2-38

General Pumping Arrangements 23-5-38

Oil Fuel Burning Arrangements 29-4-38

SPARE GEAR

The foregoing is a correct description,

For HARLAND AND WOLFF, LIMITED.

A. J. Marshall

Manufacturer.

1938
Dates of Survey while building
During progress of work in shops-- Jan. 20, 25 Feb. 3 Mar. 29 May 2, 4, 6, 17, 24, 25, 27 June 1, 2, 6, 7, 14, 17, 20, 21 July 6, 17, 28 Aug. 3, 4, 5, 8
During erection on board vessel-- 9, 10, 16, 22, 23, 25, 26, 29, 30, 31 Sept. 1, 2, 5, 9, 12, 13, 15, 16, 19, 20, 26 Oct. 1, 5, 10, 11, 12, 13, 14, 17, 18, 19, 20
Total No. of visits 118

Dates of Examination of principal parts—Cylinders 17-11-38 18-12-38 Covers 2-11-38 16-11-38 Pistons 23-10-38 26-11-38 Rods 11-11-38 Connecting rods 11-11-38

Crank shaft 26-10-38 Flywheel shaft Thrust shaft 26-10-38 Intermediate shafts 19-9-38 23-8-38 Tube shaft

Screw shaft 22-10-38 Propeller 29-10-38 Stern tube 3-8-38 Engine seatings 3-8-38 Engines holding down bolts 4-1-39

Completion of fitting sea connections 23-1-39 Completion of pumping arrangements 6-1-39 Engines tried under working conditions 1-2-39

Crank shaft, Material Steel Identification Mark N° 275 P.L.A. Flywheel shaft, Material Identification Mark

Thrust shaft, Material Steel Identification Mark N° 275 P.L.A. Intermediate shafts, Material Steel Identification Marks N° 325 C.M.H.

Tube shaft, Material Identification Mark Screw shaft, Material Steel Identification Mark N° 275 C.M.H.

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

Is this machinery duplicate of a previous case Yes If so, state name of vessel ROXBURGH CASTLE Bel p^t 11967

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 & good. The main engines & auxiliary machinery have been efficiently installed and tried out under full working conditions with satisfactory results. In our opinion the vessel is eligible for notation in the Society's Register Book.

+ LMC 2-39, CL. DB 100 lbs. OIL ENGINE

The amount of Entry Fee ... £ 6 : 0 :
Special ... £ 141 : 1 : 6 :
Donkey Boiler Fee ... £ 8 : 8 :
Travelling Expenses (if any) £ : :
When applied for, 23 Feb. 1939
When received, 11. 3. 1939

Committee's Minute

Assigned

2. 29. 39
oil & fuel
CL DB-100 lbs

Charles J. Hunter & Alec Anderson
Engineer Surveyor to Lloyd's Register of Shipping.



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