

REPORT ON OIL ENGINE MACHINERY.

EB 24 1935

Received at London Office

Date of writing Report 19 22.2.39 When handed in at Local Office Port of Belfast
 No. in Survey held at Belfast Date, First Survey 20th Jan, 1938 Last Survey 13 Feb. 1939
 Reg. Book. 89817 on the Single Screw vessel "RICHMOND CASTLE" Number of Visits 118

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 & Co 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 Bow. valves injection 2 or 4 stroke cycle 2 Single or double acting double
 Maximum pressure in cylinders 49 kg/cm² Diameter of cylinders 620 Length of stroke 1900 No. of cylinders 8 No. of cranks 8
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1164 Is there a bearing between each crank Yes
 Revolutions per minute 105.5 Flywheel dia. 2483 Weight 2500 kg. Means of ignition Compression Kind of fuel used Diesel oil
 Crank Shaft, dia. of journals as per Rule 500 Crank pin dia. 500 Crank Webs Mid. length breadth 960 Thickness parallel to axis 260
 as fitted 500 Crank pin dia. 500 Crank Webs M. d. length thickness 260 Thickness around eye-hole 225
 Flywheel Shaft, diameter as per Rule 479.5 Intermediate Shafts, diameter as fitted 17 3/4 Thrust Shaft, diameter at collars as fitted 490
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 Tube Shaft, diameter as per Rule 19 3/4 Is the screw shaft fitted with a continuous liner Yes
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 Bronze Liners, thickness in way of bushes as per Rule 1 Thickness between bushes as fitted 27/32 Is the after end of the liner made watertight in the
 as fitted 1 Thickness between bushes as fitted 27/32 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 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
 shaft 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 Mang. Bronze Whether Moveable Solid Total Developed Surface 130 sq. feet
 Method of reversing Engines Air Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication Yes
Forced Thickness of cylinder liners 4.2 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 — Stroke — Can one be overhauled while the other is at work Yes
 Pumps connected to the Main Bilge Line { No. and Size Two, 1-110 tons/hr & 1-150 tons/hr.
 How driven Electric motors

Ballast Pumps, No. and size One 150 tons/hr Lubricating Oil Pumps, including Spare Pump, No. and size Two 300 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 Two 3 1/2" & 5-2 1/2" Repair 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 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 Both
 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 — 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 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 Yes
 Main Air Compressors, No. 2 No. of stages 2 Diameters 250 & 245 Stroke 130 Driven by El Motor
 Auxiliary Air Compressors, No. — No. of stages — Diameters — Stroke — Driven by —
 Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 100 & 85 Stroke 80 Driven by Steam engine
 Scavenging Air Pumps, No. 2 Capacity each 695 m³/min at 344 rpm. Stroke 1.24 kg/cm² abs. Driven by Main engine
 Auxiliary Engines crank shafts, diameter as per Rule 199.7 as fitted 250 pin 280 journal

AIR 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 Manually
 Can the internal surfaces of the receivers be examined Yes
 Is there a drain arrangement fitted at the lowest part of each receiver Yes
 MANOEUVRING 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 riveted Material S Range of tensile strength 25/32 tons Working pressure by Rules 374
 Starting Air Receivers, No. One Total cubic capacity 290 litres Internal diameter 4-16 7/8" thickness 17.5
 Seamless, lap welded or riveted longitudinal joint Seamless Material SD steel Range of tensile strength 28/32 tons Working pressure by Rules 1185 lb

Im. 828. T

IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? Yes
 PLANS. Are approved plans forwarded herewith for Shafting 7-1-38 21-2-38 Receivers 3-12-37 Separate Tanks 13-9-38
 (If not, state date of approval)
 Donkey Boilers 1-2-38 General Pumping Arrangements 23-5-38 Oil Fuel Burning Arrangements 29-4-38

SPARE GEAR

See attached list

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

A. J. Marshall Manufacturer.

HB

Secretary
 Dates of Survey while building
 During progress of work in shops-- 1938 Jan. 20, 25 Feb. 3 Mar. 29 May 2, 4, 6, 14, 24, 25, 27 June 1, 2, 6, 9, 14, 17, 20, 21 July 6, 19, 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
 21, 22, 24, 25, 26, 27, 28, 29, 31 Nov. 1, 2, 4, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 21, 22, 23, 24, 25, 26, 28, 29, 30 Dec. 1, 2
 5, 7, 8, 9, 12, 13, 14, 20, 21, 22 1939 Jan. 4, 9, 10, 11, 17, 19, 20, 23, 24, 26, 27, 28, 30 Feb. 1, 6, 13
 Total No. of visits 118

Dates of Examination of principal parts—Cylinders 17-11-38 16-12-38 Covers 2-11-38 16-11-38 Pistons 25-10-38 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 PLA Flywheel shaft, Material ✓ Identification Mark ✓
 Thrust shaft, Material Steel Identification Mark N° 275 PLA 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 of 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

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 : 0 : When applied for, 23 Feb. 1939
 Special ... £ 141 : 1 : 6
 Donkey Boiler Fee ... £ 8 : 8 : When received, 11. 3. 1939
 Travelling Expenses (if any) £ : :
 Committee's Minute TUE 28 FEB 1939
 Assigned Adm. 2.39 Oil & DB-100 lbs

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

