

REPORT ON OIL ENGINE MACHINERY.

No. 10,409

1 JUL 1930

Received at London Office

Date of writing Report

19

When handed in at Local Office

30-6-30 Port of

Belfast

No. in Survey held at
Reg. Book.

Belfast

Date, First Survey

27 August 1928

Last Survey

20 June 1930

Number of Visits 250

1689 on the ^{Single} Twin ^{Triple} Screw vessel

BRITANNIC

Tons { Gross
Net

Built at Belfast

By whom built Harland & Wolff Ltd.

Yard No. 807 When built 1920

Engines made at Belfast

By whom made Harland & Wolff Ltd.

Engine No. 807 When made 1930

Donkey Boilers made at Belfast

By whom made Harland & Wolff Ltd.

Boiler No. 707 When made 1930

Brake Horse Power

Owners Oceanic Steam Navigation Co. (White Star Line)

Port belonging to Liverpool

Nom. Horse Power as per Rule 4214

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

Trade for which vessel is intended

Ocean. transp.

3316-63"

L ENGINES, &c.—Type of Engines Harland & Wolff - B.M. Diesel 2 or 4 stroke cycle + Single or double acting double

Maximum pressure in cylinders 500 lb. Diameter of cylinders 840 mm. Length of stroke 1600 mm. No. of cylinders 20 No. of cranks 20

Position of bearings, adjacent to the Crank, measured from inner edge to inner edge 1194 mm. Is there a bearing between each crank Yes

Revolutions per minute 102 Flywheel dia. 300 mm. Weight 5.5 tons Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, dia. of journals as per Rule assumed Crank pin dia. 635 (bore) 230 mm. Mid. length breadth 1650 mm Thickness parallel to axis 385 mm

as fitted 635 (bore) 230 mm. Crank Webs Mid. length thickness 385 mm shrunk Thickness around eye hole 287.5 mm. dia.

Flywheel Shaft, diameter as per Rule on Thrust Shaft Intermediate Shafts, diameter as per Rule approved Thrust Shaft, diameter at collars as per Rule assumed

as fitted 685 mm. as fitted 19" as fitted 20"

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

as fitted 21" as fitted 22" as fitted 32"

Bronze Liners, thickness in way of bushes as per Rule 15/16" Thickness between bushes as per rule 15/16" 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 Yes Is an approved Oil Gland or other appliance fitted at the after end of the tube

No If so, state type Length of Bearing in Stern Bush next to and supporting propeller 94 3/8"

Propeller, dia. 20'6" Pitch 20'6" No. of blades 3 Material Trans. Br. whether Moveable Yes Total Developed Surface each 110 sq. feet

Method of reversing Engines Direct Acting Engines a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication

forced Thickness of cylinder liners 50 mm. Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

conducting material Yes If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine 18 funnel

Sling Water Pumps, No. 4 Horiz. Centrif. 10" bore Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Large Pumps worked from the Main Engines, No. None Diameter Stroke Can one be overhauled while the other is at work

Pumps connected to the Main Bilge Line No. and Size Two 6" 180 Tons, One 7" 180 Tons, Two 8" 300 Tons, Centrifugal. How driven Electric Motors.

Fast Pumps, No. and size Two 8" Vert. Centrif. 300 Tons Lubricating Oil Pumps, including Spare Pump, No. and size Two 12" Vert. Centrif. 320 Tons

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 Motor Room Two 4" Eight 2 1/2" Aux. Motor Room Two 4" Two 2 1/2" Boiler Room One 2 1/2" Forward Tunnel One 2 1/2" Aft. Tunnel One 2 1/2" Aft. Tunnel One 2 1/2"

Holds, &c. No. 1. Two 4" No. 2. Two 4" No. 3. Two 4" No. 4. Eight 4" No. 5. Two 4" One 2 1/2" No. 6. Two 4" One 2 1/2" No. 7. One 4" Two 2 1/2" No. 8. Two 4"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Copepumps Two 4" Nine 2 1/2" Five 7"

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

from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes

all Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Yes

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

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

pipes pass through the bunkers None How are they protected

pipes pass through the deep tanks None Have they been tested as per Rule

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

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

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

Air Compressors, No. Four (Twin Cyl.) No. of stages Three Diameters 860. 775. 172 mm. stroke 400 mm. Driven by Separate diesel units

Auxiliary Air Compressors, No. One No. of stages Two Diameters 180. 54 mm. stroke 115 mm. Driven by Steam.

Suctioning Air Pumps, No. None Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule approved as fitted 300 mm.

RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes and/or fusible plug.

the internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces Open-ended

a drain arrangement fitted at the lowest part of each receiver Yes

Pressure Air Receivers, No. 16 Cubic capacity of each 12-550 litres 4-150 litres Internal diameter 520 mm. thickness 19 mm

Joints, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 28-32 tons Working pressure by Rules 1126 lbs.

Suctioning Air Receivers, No. Four Total cubic capacity 4000 cft Internal diameter 6'-11 7/16" thickness 1 5/32"

Joints, lap welded or riveted longitudinal joint Yes Material Steel Range of tensile strength 28-32 tons Working pressure by Rules 358.4 lbs.

IS A DONKEY BOILER FITTED? *Five Waste Heat Boilers (Blackson)* *Two Scotch type* If so, is a report now forwarded? *Yes*
PLANS. Are approved plans forwarded herewith for Shafting *Yes* Receivers *Yes* Separate Tanks *Yes*
(If not, state date of approval) *Yes* General Pumping Arrangements *Yes* Oil Fuel Burning Arrangements *Yes*
Donkey Boilers *Yes*
SPARE GEAR *In excess of rule requirements See attached list.*

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

Delebeck

Manufacturer.

1929
Dates of Survey while building
During progress of work in shops - *Aug 27, Sept 5, 26, Oct 5, 12, 22, 25, Nov 6, 4, 13, 16, 19, 22, 25, 28, 29, 30, Dec 3, 4, 5, 6, 7, 11, 12, 13, 17, 19, 20, 21, 1929*
During erection on board vessel - *Jan 1, 7, 11, 14, 16, 18, 21, 22, 23, 24, 25, 26, 30, 31, Feb 1, 4, 5, 6, 8, 9, 11, 12, 13, 14, 15, 19, 21, 25, 27, 28, Mar 4, 6, 8, 9, 10, 13, 14, 15, 16, 17, 21, 22, 23, 24, 25, 26, 27, 29, 30, May 1, 2, 6, 8, 9, 10, 13, 14, 15, 16, 17, 21, 22, 23, 24, 27, 28, 30, 31, June 3, 5, 7, 10, 12, 15, 16, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28, 29, 30, Aug 1, 5, 6, 7, 8, 9, 12, 14, 16, 19, 20, 21, 27, 28, 29, 30, Sept 2, 4, 10, 11, 12, 13, 16, 18, 23, 25, 30, Oct 14, 14, 18, 28, 30, Nov 4, 8, 15, 19, 21, 22, Dec 3, 6, 9, 11, 12, 16, 17, 18, 20, 31, 1929*
Total No. of visits *250*
Dates of Examination of principal parts - Cylinders *23, 11, 28, 15, 10, 7, 29* Pistons *7, 8, 29* Rods *29, 7, 29* Connecting rods *20, 6, 29*
Crank shafts *27, 2, 29* Flywheel shaft *✓* Thrust shafts *16, 6, 29* Intermediate shafts *21, 6, 29* Tube shaft *✓*
Screw shafts *10, 5, 29* Propellers *4, 5, 29* Stern tube *9, 5, 29* Engine seatings *14, 8, 29* Engines holding down bolts *16, 12, 29*
Completion of fitting sea connections *6, 8, 29* Completion of pumping arrangements *26, 5, 30* Engines tried under working conditions *26, 5, 30*
Crank shaft, Material *S. M. STEEL* Identification Mark *NB 33 1/2 68 R.L.A.* Flywheel shaft, Material *✓* Identification Mark *323, 375, 1024, 1425, 1479, 1523, 1662, 1705, 276, 287, 1454, 1496, 1539, 1582, 1625, 1668, 1711, 1754, 1797, 1840, 1883, 1926, 1969, 2012, 2055, 2098, 2141, 2184, 2227, 2270, 2313, 2356, 2399, 2442, 2485, 2528, 2571, 2614, 2657, 2700, 2743, 2786, 2829, 2872, 2915, 2958, 3001, 3044, 3087, 3130, 3173, 3216, 3259, 3302, 3345, 3388, 3431, 3474, 3517, 3560, 3603, 3646, 3689, 3732, 3775, 3818, 3861, 3904, 3947, 3990, 4033, 4076, 4119, 4162, 4205, 4248, 4291, 4334, 4377, 4420, 4463, 4506, 4549, 4592, 4635, 4678, 4721, 4764, 4807, 4850, 4893, 4936, 4979, 5022, 5065, 5108, 5151, 5194, 5237, 5280, 5323, 5366, 5409, 5452, 5495, 5538, 5581, 5624, 5667, 5710, 5753, 5796, 5839, 5882, 5925, 5968, 6011, 6054, 6097, 6140, 6183, 6226, 6269, 6312, 6355, 6398, 6441, 6484, 6527, 6570, 6613, 6656, 6699, 6742, 6785, 6828, 6871, 6914, 6957, 7000, 7043, 7086, 7129, 7172, 7215, 7258, 7301, 7344, 7387, 7430, 7473, 7516, 7559, 7602, 7645, 7688, 7731, 7774, 7817, 7860, 7903, 7946, 7989, 8032, 8075, 8118, 8161, 8204, 8247, 8290, 8333, 8376, 8419, 8462, 8505, 8548, 8591, 8634, 8677, 8720, 8763, 8806, 8849, 8892, 8935, 8978, 9021, 9064, 9107, 9150, 9193, 9236, 9279, 9322, 9365, 9408, 9451, 9494, 9537, 9580, 9623, 9666, 9709, 9752, 9795, 9838, 9881, 9924, 9967, 10000*
Thrust shaft, Material *S. M. STEEL* Identification Mark *NB 705 714 R.L.A.* Intermediate shafts, Material *S. M. STEEL* Identification Marks *789 R.L.A.*
Tube shaft, Material *S. M. STEEL* Identification Mark *✓* Screw shaft, Material *S. M. STEEL* Identification Mark *NB 1024 R.L.A.*
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 *Yes* If so, have the requirements of the Rules been complied with *Yes*
Is this machinery duplicate of a previous case *No* If so, state name of vessel *✓*

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 the auxiliaries have been tried out under working conditions with satisfactory results. In my opinion the vessel is now eligible for notation in the Society's Register Book. L.M.C. 6.30 C.L. Two Donkey Boilers pressure 150 lbs. Five Waste Heat Boilers pressure 100 lbs. Fitted for oil fuel 6.30 F.P. not to exceed 150°F Electric light.

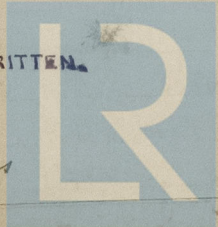
It is submitted that
this vessel is eligible for
THE RECORD. + L.M.C. 6.30 C.L.
Oil Engines 45C.DA 20 Cy. 33 1/16 - 63"
N.H.P. 4214. 2DB 150 1/2 5DB (upper) 100 1/2

8/7/30

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, *26-6-1930*
Special ... £ 205 : 7 :
Donkey Boiler Fee ... £ 11 : 18 :
AIR RESERVOIRS ... £ 16 : 16 :
Travelling Expenses (if any) ... £ 2 : 2 :
STEAM RESERVOIR ...
Committee's Minute *FRI. 11 JUL 1930*
Assigned *+ L.M.C. 6.30 Oil Engines*

R. Lee Amess
Engineer-Surveyor to Lloyd's Register of Shipping



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Foundation