

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 10.850

Received at London Office

Date of writing Report

19

When handed in at Local Office

20th May 1932 Port of

Belfast

23 MAY 1932

No. in Survey held at

Belfast

Date, First Survey 5th March 1931Last Survey 16th May 1932

Reg. Book.

Number of Visits 193

40630 on the ^{Single} ~~Twin~~ ^{Triple} ~~Quadruple~~ Screw vessel

HIGHLAND PATRIOT

Tons { Gross 14130
Net 8730

Built at Belfast

By whom built Harland & Wolff Ltd.

Yard No. 916 When built 1932

Engines made at Belfast

By whom made Harland & Wolff Ltd.

Engine No. 916 When made 1932

Donkey Boilers made at Sheffield

By whom made Dany Bros. Ltd.

Boiler No. 4646 When made 1931

Brake Horse Power

Owners Nelson Lin. Nav. Co. Ltd. (Mr. Nelson Ltd. Mgr.)

Port belonging to Belfast

Nom. Horse Power as per Rule 2190

Is Refrigerating Machinery fitted for cargo purposes Yes

Is Electric Light fitted Yes

Trade for which vessel is intended

Ocean-going

26 3/4

63

IL ENGINES, &c.—Type of Engines Harland & Wolff - B & W Diesel 2 or 4 stroke cycle 4 Single or double acting double
 Maximum pressure in cylinders 500 lbs. Diameter of cylinders 680 mm. Length of stroke 1600 mm. No. of cylinders 16 No. of cranks 16
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 950 mm. Is there a bearing between each crank Yes
 Revolutions per minute 105 Flywheel dia. 2.8 metres Weight 2.16 tons Means of ignition Compression Kind of fuel used Diesel
 Crank Shaft, dia. of journals as per Rule approved as fitted 515 bored 134 mm. Crank pin dia. 515 bored 134 mm. Crank Webs Mid. length breadth 844 mm. Thickness parallel to axis 300 mm.
 as fitted 515 bored 134 mm. Mid. length thickness 300 mm. shrunk Thickness around eye-hole 234.5 mm.
 Flywheel Shaft, diameter as per Rule approved as fitted Intermediate Shafts, diameter as per Rule approved as fitted 16 3/4" Thrust Shaft, diameter at collars as per Rule approved as fitted 18 1/2"
 Tube Shaft, diameter as per Rule approved as fitted Screw Shaft, diameter as per Rule approved as fitted 18 1/2" Is the screw shaft fitted with a continuous liner Yes
 Bronze Liners, thickness in way of bushes as per Rule 55.5" as fitted 15 1/2" Thickness between bushes as per Rule 25 1/2" as fitted 25 1/2" 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 Length of Bearing in Stern Bush next to and supporting propeller 83"

Propeller, dia. 17' 6" Pitch 17' 6" No. of blades three Material Mang. Br. whether Moveable Yes Total Developed Surface ca. 84 sq. feet

Method of reversing Engines direct acting engine Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication forced

Thickness of cylinder liners 48 mm. Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with non-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 15 funnel

Cooling Water Pumps, No. four vert. cent. 8" bore 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 three vert. cent. 6" bore 120 tons/hr. How driven electric motor

Ballast Pumps, No. and size one vert. cent. 7" bore 250 tons/hr. **Lubricating Oil Pumps**, including Spare Pump, No. and size four 160 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" four 2 1/2" three 2 1/2" in for 2" tunnel - three 3 1/2" & two 2 1/2" in after tunnel two 2" tunnel recess in Pump Room

In Holds, &c. No. 1 Hold two 3 1/2" No. 2 Hold two 3 1/2" No. 3 Hold two 3 1/2" No. 4 Hold two 3 1/2" & one 2 1/2" No. 5 Hold two 3 1/2" & one 2 1/2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size three 6" one 7"

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 both

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 fuel oil suction for Nos. 2 & 4 pass through Nos. 1 & 3 How are they protected steel pipes

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

Main Air Compressors, No. two - twin No. of stages three Diameters 750-675-172 mm. Stroke 550 mm. Driven by main engines

Auxiliary Air Compressors, No. four No. of stages three Diameters 455-408-92 mm. Stroke 280 mm. Driven by aux. diesel.

Small Auxiliary Air Compressors, No. one No. of stages two Diameters 106-34 mm. Stroke 80 mm. Driven by steam

Scavenging Air Pumps, No. Diameter Stroke Driven by

Auxiliary Engines crank shafts, diameter as per Rule 198 mm. as fitted 200 mm. 4 off. See Sep. Report

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes and for portable plugs.

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

High Pressure Air Receivers, No. eleven Cubic capacity of each 6-290 litres 4-88 " Internal diameter 6-416 mm. thickness 6-175 mm.

Seamless, lap welded or riveted longitudinal joint seamless Material Steel Range of tensile strength 28/32 Tons Working pressure by Rules 1103 lbs. Actual 1000 lbs. max.

Starting Air Receivers, No. four Total cubic capacity 3200 cub. ft. Internal diameter 6'-4 1/2" thickness 1 1/2" by Rules 357 lbs. Actual 355 lbs.

Seamless, lap welded or riveted longitudinal joint yes Material Steel Range of tensile strength 28/32 Tons Working pressure by Rules 357 lbs. Actual 355 lbs.

W406-0131

Registered Foundation

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

No. Small Steam Compressor for Auxiliary air.

PLANS. Are approved plans forwarded herewith for Shafting

(If not, state date of approval)

17-6-31

Receivers

25-2-31

Separate Tanks

14-4-31

Donkey Boilers

17-8-31

General Pumping Arrangements

5-8-31

Oil Fuel Burning Arrangements

13-8-31

SPARE GEAR.

Has the spare gear required by the Rules been supplied

Yes see attached list.

State the principal additional spare gear supplied

The foregoing is a correct description,

FOR HARLAND AND WOLF, LIMITED

Manufacturer.

Dates of Survey while building
During progress of work in shops - 5.12.31, 10.15.31, 10.21.31, 22.23.31, 24.28.29 May 8.12.13.18.19.21.22.25.27.28.29 June 1.3.5.9.10.12.23.24.25.26.27.28.31
During erection on board vessel - 24.25.28.29.30 Oct. 1.2.5.6.7.8.9.12.13.14.15.16.18.20.21.24.25.26.27.28.31 Sept 1.2.3.4.7.8.9.10.11.12.14.15.16.17.18.21.22.23.24.30 1933 Jan 4.6.7.8.11.12.13.14.18.19.20
Total No. of visits 26.29 7.2.10.12.15.19.20 24.25.26.29 Mar 1.2.3.4.9.10.11.18.22.30.31 Apr 4.5.8.12.15.18.21.22.26.28.29.30 May 12.13.16 1933

Dates of Examination of principal parts - Cylinders 28.10.1931 Covers 28.10.1931 Pistons 9.9.31 24.11.31 Rods 9.9.31 24.11.31 Connecting rods 1.8.31 2.11.31

Crank shaft 4.8.31 30.9.31 Flywheel shaft 21.12.31 Thrust shaft 4.12.31 21.12.31 Intermediate shafts 23.9.31 22.10.31 Tube shaft 27.10.31

Screw shaft 27.10.31 Propeller 17.11.31 Stern tube 15.10.31 23.10.31 Engine seatings 17.11.31 Engines holding down bolts 10.2.32

Completion of fitting sea connections 10.12.31 Completion of pumping arrangements 28-11-32 Engines tried under working conditions 21.11.32

Crank shaft, Material S.M. INGOT STEEL Identification Mark No 168-171 R.L.A. Flywheel shaft, Material Identification Mark No 4665-1175

Thrust shaft, Material S.M. INGOT STEEL Identification Mark No 4665-1207 R.L.A. Intermediate shafts, Material S.M. INGOT STEEL Identification Mark No 4665-1206

Tube shaft, Material Identification Mark No 4665-1174 R.L.A. Screw shaft, Material S.M. INGOT STEEL Identification Mark No 4665-1174 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 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

Is this machinery duplicate of a previous case Yes If so, state name of vessel Highland monarch etc.

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

The machinery of this vessel has been constructed under special survey. The workmanship and materials are sound and good. The main motors and auxiliary machinery have been tried 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. 5.32 C.L. Waste Heat Boiler Pressure 100 lbs

The amount of Entry Fee .. £ 6 : -
Special ... £ 154 : 15 :
Donkey Boiler Fee ... £ 16 : 16 :
AIR RESERVOIRS
Travelling Expenses (if any) £ : :
When applied for, 21.11.32
When received, 26/5/1932

Committee's Minute

Assigned

+ L.M.C. 5.32

C.L.

Oil Eng.

215.100 lb.

CERTIFICATE WRITTEN.

R. Lee Anners.

Engineer Surveyor to Lloyd's Register of Shipping.



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