

REPORT ON OIL ENGINE MACHINERY.

No. 10,529
18 DEC 1930

Received at London Office

Date of writing Report 12th Dec 1930 Port of BELFAST

No. in Survey held at BELFAST Date, First Survey 24th Sept. 1929 Last Survey 11th Dec. 1930
Reg. Book. Number of Visits 133

76346 on the ^{Single} Twin Triple Quadruple Screw vessel LAGANBANK Tons { Gross Net

Built at BELFAST By whom built HARLAND & WOLFF LD. Yard No. 879 When built 1930

Engines made at BELFAST By whom made HARLAND & WOLFF LD. Engine No. 879 When made 1930

Donkey Boilers made at BELFAST By whom made HARLAND & WOLFF LD. Boiler No. 879 When made 1930

Brake Horse Power Owners BANK LINE LD (AWEIR & CO. LD. MGRS) Port belonging to BELFAST

Nom. Horse Power as per Rule 830 Is Refrigerating Machinery fitted for cargo purposes YES. Is Electric Light fitted YES

Trade for which vessel is intended OCEAN GOING. 474

OIL ENGINES, &c. Type of Engines HARLAND & WOLFF - B.W. 234 2 or 4 stroke cycle 4 Single or double acting SINGLE

Maximum pressure in cylinders 500 LBS/SQ IN Diameter of cylinders 530 MM. Length of stroke 1200 MM. No. of cylinders 16 No. of cranks 16
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 820 MM. Is there a bearing between each crank YES

Revolutions per minute 138 Flywheel dia. 1654 MM. Weight 975 KGS. Means of ignition COMPRESSION Kind of fuel used DIESEL OIL
Crank Shaft, dia. of journals as per Rule APPROVED Crank pin dia. 330 MM. Crank Webs Mid. length breadth 640 MM shrunk Thickness parallel to axis 250 MM.
as fitted 330 BORED 115 MM. Mid. length thickness 250 MM. Thickness around eye-hole 160 MM.

Flywheel Shaft, diameter as per Rule Intermediate Shafts, diameter as per Rule APPROVED Thrust Shaft, diameter at collars as per Rule APPROVED
as fitted 11" as fitted 12"

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule APPROVED Is the shaft fitted with a continuous liner YES.
as fitted 12 1/4" as fitted 15 3/2"

Bronze Liners, thickness in way of bushes as per Rule 20" Thickness between bushes as per Rule 15 3/2"
as fitted 3 3/4" as fitted 19 3/2" 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 shaft No. If so, state type Length of Bearing in Stern Bush next to and supporting propeller 4'-6"

Propeller, dia. 13'-3" Pitch 11'-8" No. of blades 3 Material MANG. BR. whether Moveable YES Total Developed Surface EACH 48 sq. feet
Method of reversing Engines DIRECT - ENGINE Is a governor or other arrangement fitted to prevent racing of the engine when disengaged YES Means of lubrication FORCED Thickness of cylinder liners 43 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 TO FUNNEL
Cooling Water Pumps, No. 2 VERT. CENT. 7" 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. - Diameter - Stroke - Can one be overhauled while the other is at work -

Pumps connected to the Main Bilge Line { No. and Size Two ONE BILGE 80 TONS/HOUR ONE BALLAST 150 TONS/HOUR
How driven ELECTRIC MOTORS.
Ballast Pumps, No. and size ONE VERT. CENT. 6" BORE Lubricating Oil Pumps, including Spare Pump, No. and size Two 70 TONS/HOUR

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" Six-2 1/2" TUNNEL ONE-3 1/2" TWO-2 1/2" In Pump Room

In Holds, &c. No. 1 HOLD Two-3" No. 2 HOLD Two-3 1/2" No. 3 HOLD (DEEP TANK) Two-2 1/2" No. 4 HOLD Two-3 1/2" No. 5 HOLD Two-3 1/2"
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size Two-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 AT D.W.L.

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 No. 1 & 2 HOLDS BILGE SUCTION 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. - No. of stages - Diameters - Stroke - Driven by -

Auxiliary Air Compressors, No. THREE No. of stages THREE Diameters 320-280-82 MM Stroke 220 MM. Driven by DIESEL ENGINES.
Small Auxiliary Air Compressors, No. ONE No. of stages TWO Diameters 106-34 MM. Stroke 80 MM. Driven by STEAM.

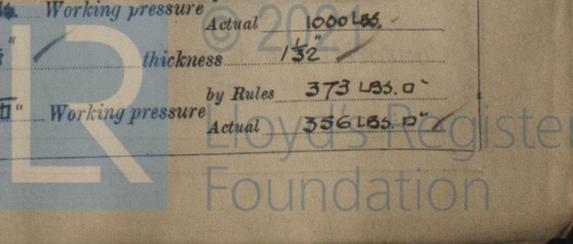
Scavenging Air Pumps, No. - Diameter - Stroke - Driven by -
Auxiliary Engines crank shafts, diameter as per Rule 176.5 MM. No. 3
as fitted 180 MM. Position - MOTOR ROOM WINGS

IR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule YES AND/OR FUSIBLE PLUGS.
Can the internal surfaces of the receivers be examined and cleaned YES Is a drain fitted at the lowest part of each receiver YES

High Pressure Air Receivers, No. FOUR Cubic capacity of each ONE OF 150 LITRES Internal diameter 295 MM. thickness 15 MM.
Seamless, lap welded or riveted longitudinal joint SEAMLESS Material STEEL Range of tensile strength 28-32 TONS Working pressure by Rules 1405 LBS.
Actual 1000 LBS.

Starting Air Receivers, No. TWO Total cubic capacity 1400 LITRES Internal diameter 72 3/8" thickness 1 1/2"
Seamless, lap welded or riveted longitudinal joint B.S. Material STEEL Range of tensile strength 28-32 TONS Working pressure by Rules 373 LBS. 0"
Actual 356 LBS. 0"

W524-0217



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

PLANS. Are approved plans forwarded herewith for Shafting Yes Receivers Yes Separate Tanks Yes
(If not, state date of approval)
Donkey Boilers Yes General Pumping Arrangements Yes Oil Fuel Burning Arrangements Yes

SPARE GEAR.

Has the spare gear required by the Rules been supplied Yes.

State the principal additional spare gear supplied PLEASE SEE ATTACHED LIST.

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

A. J. Marshall Manufacturer.
Assistant Secretary.

Dates of Survey while building
During progress of work in shops - 1929 Sept 24 Oct 3, 16, 22 Nov 1, 11, 27 Dec 4, 10, 12, 13 1930 Jan 8, 22 Feb. 10, 14, 19, 27 Mar 19, 19. Apr 2, 3, 11, 14, 16, 23, 24, 30
During erection on board vessel - May 2, 5, 9, 20, 30 June 5, 6, 9, 11, 12, 16, 19, 19, 20, 23, 24, 25 July 1, 2, 4, 5, 8, 22, 23, 25, 29 Aug 11, 12, 14, 15, 18, 19, 21, 22, 24, 27, 29 Sept 1, 3, 4, 5, 8, 9, 10, 11, 12, 13, 15, 19, 19, 20, 22, 23, 24, 25, 26, 27 Oct 2, 3, 6, 9, 8, 9, 10, 13, 14, 15, 16, 19, 20, 21, 22, 23, 24, 27 Nov 3, 6, 7, 10, 11, 13, 14, 17, 19, 20, 21, 24, 25, 26, 27, 28 Dec 1, 2, 3, 4, 5, 6, 8, 9
Total No. of visits = 133

Dates of Examination of principal parts - Cylinders 17.9.30 to 27.10.30 Covers 15.8.30 to 27.10.30 Pistons 30.9.30 Rods 30.9.30 17.10.30 Connecting rods 30.9.30 16.10.30

Crank shaft 27.9.30 30.9.30 Flywheel shaft ✓ Thrust shaft 22.9.30 Intermediate shafts 4.9.30 Tube shaft ✓

Screw shaft 4.7.30 7.7.30 Propeller 25.7.30 Stern tube 24.6.30 Engine seatings 17.10.30 Engines holding down bolts 1.12.30

Completion of fitting sea connections 1.12.30 Completion of pumping arrangements 9.12.30 Engines tried under working conditions 11.12.30

Crank shaft, Material S.M. STEEL Identification Mark 143 : 145 R.L.A. Flywheel shaft, Material ✓ Identification Mark 3811 : 3811 : 3821 : 3848 : 3861

Thrust shaft, Material S.M. STEEL Identification Mark 3704 R.L.A. Intermediate shafts, Material S.M. STEEL Identification Marks 3811 : 3821 : 3848 : 3861

Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material S.M. STEEL Identification Mark 3840 : 3862 : 3898 R.L.A. 3655 T.D.S. 3800 T.D.S. 3787 J.K.W.

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.

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with No.

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

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

The machinery of this vessel has been constructed under special survey. The materials and workmanship are sound and good. The main and auxiliary machinery have been tried under working conditions with satisfactory results.

In my opinion the vessel is eligible for notation in the Society's Register Book + L.M.C. 12.30. C.L. OIL ENGINES.

"D.B. 120400" FITTED FOR OIL FUEL 12.30 F.P. ABOVE 150° F. ELECTRIC LIGHT.

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,
Special £ 116 : 10 : 12th Dec 1930
Donkey Boiler Fee £ 5 :- : When received,
AIR RESERVOIRS.
Travelling Expenses (if any) £ 8 : 8 : 21.1.31

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

Committee's Minute

TUE. 30 DEC 1930

Assigned

+ L.M.C. 12.30 oil Eng
G. D.B. - 120400

CERTIFICATE WRITTEN.



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Foundation