

REPORT ON OIL ENGINE MACHINERY.

No. 60050

Received at London Office

AUG 10 1938

Date of writing Report 19 38 When handed in at Local Office 6.8.38 Port of Glasgow
 No. in Survey held at Glasgow Date, First Survey 30th Mar 1937 Last Survey 30th July 1938
 Reg. Book. Number of Visits 85

on the Single Twin Triple Quadruple Screw vessel "LOCHAVON" Tons Gross 9204.58 Net 5703.25
 Built at Glasgow By whom built Harland & Wolff Ltd. Yard No. 999 When built 1938
 Engines made at Glasgow By whom made Harland & Wolff Ltd. Engine No. 999 When made 1938
 Donkey Boilers made at Stockton By whom made Stockton C.F. & Riley Boilers Ltd. Boiler No. 6276 When made 1937
 Brake Horse Power 11100 Owners Royal Mail Lines Ltd Port belonging to London
 Nom. Horse Power as per Rule 2052 Is Refrigerating Machinery fitted for cargo purposes yes Is Electric Light fitted yes
 Trade for which vessel is intended Pacific Coast.

II ENGINES, &c.—Type of Engines Heavy oil. Solid injection 2 or 4 stroke cycle 2 Single or double acting D.A.
 Maximum pressure in cylinders 700 lb Diameter of cylinders 24 3/8 620 mm. Length of stroke 55 1/8 1400 mm. No. of cylinders 5 No. of cranks 5
 Mean Indicated Pressure 100

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1164 mm. Is there a bearing between each crank yes
 Revolutions per minute 106.5 Flywheel dia. 2439 mm. Weight 5000 kg. Means of ignition Compression Kind of fuel used Distil oil.
 Crank Shaft, Solid forged as per Rule Appd. 485 mm. Crank pin dia. 485 mm. Crank Webs Mid. length breadth 930 mm Thickness parallel to axis 250 mm.
Semi built dia. of journals as fitted 485 mm. Mid. length thickness 250 shrunk Thickness around eye-hole 217.5
All built

Flywheel Shaft, diameter as per Rule Appd. 485 mm. Intermediate Shafts, diameter as per Rule Appd. 15 1/4 Thrust Shaft, diameter at collars as per Rule Appd. 460 mm.
 as fitted 15 1/4 as fitted 460 mm.
 Tube Shaft, diameter as per Rule Appd. 16 3/4 Is the tube shaft fitted with a continuous liner yes.
 as fitted 16 3/4 screw

Bronze Liners, thickness in way of bushes as per Rule 3/8 Thickness between bushes as per Rule 23/32 Is the after end of the liner made watertight in the propeller boss yes.
 as fitted 3/8 as fitted 23/32
 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 no Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft no
 If so, state type oil gland Length of Bearing in Stern Bush next to and supporting propeller 6-0
 Propeller, dia. 17-9 Pitch 19-3 No. of blades 3 Material Brnze whether Moveable yes Total Developed Surface 76 sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when de-clutched yes Means of lubrication oil
 Thickness of cylinder liners 42 1/4 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. 3 Salt, 2 Fresh, 1 Ballast 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. 1 Diameter 110 Stroke 110 Can one be overhauled while the other is at work yes
 Pumps connected to the Main Bilge Line { No. and Size Bilge pump 110 tons per hr. General Sec. pump 110 tons per hr. Ballast 210 tons per hr.
 How driven Electric Motor Electric Motor Electric Motor

Is the cooling water led to the bilges no If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements no
 Ballast Pumps, No. and size 1 off. 210 tons per hr. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 3 off each 230 tons per 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 6 @ 3 1/2; 11 @ 2 1/2; 1 @ 2 1/2 Four tunnel In Pump Room yes

In Holds, &c. No. 1-2-3 Hold, Port, 1 @ 3 1/2 each hold, No. 2-3 Hold, starb, 1 @ 3 1/2 each hold. Four Cofferdam 1 @ 3 1/2
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 3 @ 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 yes
 Are they fitted with Valves or Cocks both

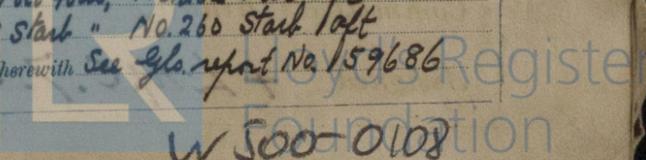
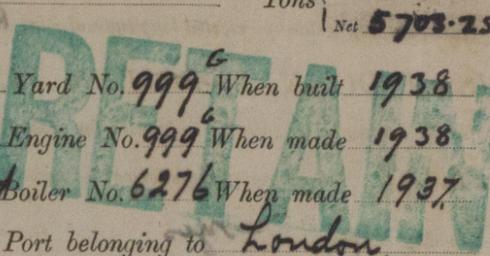
Are all Sea Connections fitted direct on the skin of the ship yes Are they fitted with Valves or Cocks both
 Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates yes Are the Overboard Discharges above or below the deep water line above
 Are they each fitted 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 yes How are they protected yes
 What pipes pass through the deep tanks yes 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 Main 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. 1 No. of stages 2 Diameters 400 x 350 mm. Stroke 260 mm. Driven by Elec. Motor.
 Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 180 x 54 mm. Stroke 115 Driven by Steam engine.
 Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 180 x 54 mm. Stroke 115 Driven by Steam engine.

What provision is made for first Charging the Air Receivers Above steam driven air compressor.
 Scavenging Air Pumps, No. 2 each engine Diameter Rotary Stroke 152 7/8 Driven by Main engine
 Auxiliary Engines crank shafts, diameter as per Rule 152 7/8 as fitted 160 7/8 No. 4 off. No. 261 Port Four, No. 262 Port aft, No. 259 Starb, No. 260 Starb. 1 aft Position See Gls. report No. 159686
 Have the Auxiliary Engines been constructed under special survey yes Is a report sent herewith yes



W 500-0108

AIR RECEIVERS:—Have they been made under survey *yes* State No. of Report or Certificate **Z-219**
 Is each receiver, which can be isolated, fitted with a safety valve as per Rule *yes*
 Can the internal surfaces of the receivers be examined and cleaned *yes* Is a drain fitted at the lowest part of each receiver *yes*
MANEUVERING
Injection Air Receivers, No. 2 Cubic capacity of each **1450 cu. ft.** Internal diameter **6'9"** thickness **Shell 1 1/2", Ends 1 3/8" + 1**
 Seamless, lap welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **Ends 28/30** Working pressure **by Rules 356 lb. sq. in.**
Starting Air Receivers, No. 1 Total cubic capacity **50 cu. ft.** Internal diameter **3'0"** thickness **Shell 1 1/2", Ends 1 3/8"**
 Seamless, lap welded or riveted longitudinal joint **Riveted** Material **Steel** Range of tensile strength **Ends 28/30** Working pressure **by Rules 356 lb. sq. in.**
 Actual **356 "**

IS A DONKEY BOILER FITTED? *yes* If so, is a report now forwarded? *See Muddabrough Rpt No 16*
 Is the donkey boiler intended to be used for domestic purposes only *No. Driving Steam Compressor & heating purposes*

PLANS. Are approved plans forwarded herewith for Shafting *yes* Receivers *yes* Separate Fuel Tanks *yes*
 Donkey Boilers *yes* General Pumping Arrangements *yes* Pumping Arrangements in Machinery Space *yes*
 Oil Fuel Burning Arrangements **Waste heat boiler**

SPARE GEAR.
 Has the spare gear required by the Rules been supplied *yes*
 State the principal additional spare gear supplied *as per attached list.*

The foregoing is a correct description,
FOR HARLAND AND WOLFE, LIMITED.
Wm. J. Wright Manufacturer.

Dates of Survey while building
 During progress of work in shops-- **1937 Mar: 30 July: 5 Aug: 24 5 18 24 Sep: 8 21 28 30 Oct: 6 12 15 18 20 Nov: 2 12 16**
 During erection on board vessel-- **Dec: 2 7 9 10 13 16 20 21 (1938) Jan: 7 11 18 19 20 21 24 25 28 31 Feb: 1 2 4 8 11 14 15 16 17 18**
 Total No. of visits **8 5 12 21 22 25 28 30 2 38 6 16 2 38 6 20 1 38 6 20 1 38 6 2 2 38**

Dates of Examination of principal parts—Cylinders **22-3-38** Covers **22-3-38** Pistons **6-5-38** Rods **6-5-38** Connecting rods **4-4-38**
 Crank shaft **7-1-38; 15-2-38** Flywheel shaft **7-1-38; 15-2-38** Thrust shaft **7-1-38; 15-2-38** Intermediate shafts **18-1-38** Tube shaft **7-1-38**
 Screw shaft **18-1-38** Propeller **2-7-38, 18-1-38** Stern tube **14-2-38** Engine seatings **14-2-38** Engines holding down bolts **24-6-38**
 Completion of fitting sea connections **14-2-38** Completion of pumping arrangements **22-7-38** Engines tried under working conditions **22-7-38**
 Crank shaft, Material **steel** Identification Mark **P.999 P.F. } test hrs.** Flywheel shaft, Material **steel** Identification Mark **-**
 Thrust shaft, Material **steel** Identification Mark **P.6291 P.F. } 56291 P.F.** Intermediate shafts, Material **steel** Identification Marks **See attached list**
 Tube shaft, Material **steel** Identification Mark **-** Screw shaft, Material **steel** Identification Mark **-**

Identification Marks on Air Receivers
 No. 175 **LLOYD'S TEST 585 lbs. W.P. 356 lbs. R.L.A. 12-1-38.**
 No. 175 **LLOYD'S TEST 585 lbs. W.P. 356 lbs. R.L.A. 14-1-38.**
 No. 176 **LLOYD'S TEST 585 lbs. W.P. 356 lbs. R.L.A. 12-1-38.**

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 *yes*
 Is this machinery duplicate of a previous case *No* If so, state name of vessel *yes*

General Remarks (State quality of workmanship, opinions as to class, &c.) *The machinery of this vessel has been built under Special Survey in accordance with the Rules and approved plans. The materials and workmanship are good. The main and auxiliary engines, and donkey boiler has been efficiently fitted on board, tried under full working conditions with satisfactory results. The machinery is eligible in our opinion to be classed in the Register Book with notation of +L.M.C. 7.38 C.L. S.B. working pressure 100 lb per sq. in.*

The amount of Entry Fee .. £ **6.0.0.** When applied for, **9 - AUG 1938**
 Special £ **151.6.0**
 Donkey Boiler Fee £ **✓**
 Travelling Expenses (if any) £ **✓** When received, **24/8 1938**

P. Fitzgerald & **S. E. Murdoch**
 Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 21 - AUG 1938**
 Assigned **+ L.M.C. 7.38. S.B. 100 lbs.**



GLASGOW certificate (if required) to be sent to

6.8.38