

Rpt. 4b.

# REPORT ON OIL ENGINE MACHINERY.

No. 32832

Received at London Office

APR -4 1940

Date of writing Report

When handed in at Local Office

1<sup>st</sup> Oct 1940 Port of

Sunderland.

No. in Survey held at Reg. Book.

Date, First Survey 18 Aug '39 Last Survey 28 March 1940

Number of Visits 92

on the Single Twin Triple Quadruple Screw vessel

"LA CORDILLERA"

Tons Gross 5185 Net 3050

Built at Sunderland

By whom built Wm. Beard & Sons L<sup>td</sup>

Yard No. 655 When built 1940

Engines made at Sunderland

By whom made Wm. Beard & Sons L<sup>td</sup>

Engine No. 655 When made 1940

Donkey Boilers made at Stockton

By whom made Stockton Locomotive Eng<sup>g</sup> & Ship Bld<sup>g</sup> L<sup>td</sup>

Boiler No. 6388/9 When made 1940

Brake Horse Power 3300

Owners Burns Marine L<sup>td</sup>

Port belonging to London.

Nom. Horse Power as per Rule 684

Is Refrigerating Machinery fitted for cargo purposes no.

Is Electric Light fitted Yes.

Trade for which vessel is intended

**IL ENGINES, &c.** Type of Engines Opposed piston airless injection 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 5 1/2 lbs/sq in Diameter of cylinders 600 mm Length of stroke Upper 980 mm Lower 1340 mm No. of cylinders 4 No. of cranks 4 (3 throws)

Mean Indicated Pressure 86 lbs/sq in Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 940 mm Is there a bearing between each crank Between each 3 throws

Revolutions per minute 110 Flywheel dia. F. 2300 mm Weight F. 64 cwt Means of ignition Compression Kind of fuel used Tempurated

Crank Shaft, dia. of journals as per Rule 432 mm Crank pin dia. 450 mm Crank Webs Mid. length breadth 650 mm Thickness parallel to axis 255 mm

Flywheel Shaft, diameter as per Rule 432 mm Intermediate Shafts, diameter as per Rule 326 mm Thrust Shaft, diameter at collars as per Rule 432 mm

Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 360 mm Is the tube shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 18.4 mm Thickness between bushes as per Rule 13.8 mm 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 One length

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 no Length of Bearing in Stern Bush next to and supporting propeller 4'-11"

Propeller, dia. 16'-0" Pitch 12'-4" No. of blades 4 Material Brongze whether Moveable no Total Developed Surface 93 sq. feet

Method of reversing Engines Hand lever Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes Means of lubrication

Hand speed thickness of cylinder liners 25 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 no

Cooling Water Pumps, No. one engine driven Is the sea suction provided with an efficient strainer which can be cleared within the vessel F.W. Cooling

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

Pumps connected to the Main Bilge Line No. and Size 2 5 1/2 x 6 x 15 How driven Steam

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 - 12 x 12 x 12 Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size Engine driven 120 mm bore x 400 mm

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 4 @ 3" in E.R. 1 @ 3" in Tunnel well. In Pump Room no

In Holds, &c. N°1 Hold 3" p.r.s. N°2 Hold 3 1/2" p.r.s. N°3 Hold 3" p.r.s. N°4 Hold 1 @ 3 1/2" Deep Tank 3" p.r.s.

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 8" (Ballast pump) 1 @ 5" (Gen. Ser.)

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

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 Side for bilge Suctions How are they protected no

What pipes pass through the deep tanks none 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 E.R.

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 No. of stages 3 Diameters 11 1/2 - 9 1/4 - 2 3/4 Stroke 6 1/2 Driven by Steam Engine 11 1/2 x 6 1/2

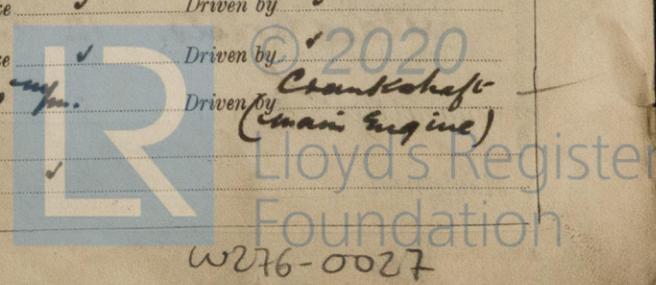
Auxiliary Air Compressors, No. no No. of stages no Diameters no Stroke no Driven by no

Small Auxiliary Air Compressors, No. no No. of stages no Diameters no Stroke no Driven by no

Scavenging Air Pumps, No. One Diameter 1500 mm Stroke 1200 mm Driven by Crankshaft (Main engine)

Auxiliary Engines crank shafts, diameter as per Rule No. no Position no

1m.3.30. T.



W276-0027

**AIR RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule *Yes* (on discharge from Compressors, pt)

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.** *Two* Cubic capacity of each *220 cu ft.* Internal diameter *3'-6"* thickness *1"*

Seamless, lap welded or riveted longitudinal joint *Riveted* Material *M. Steel* Range of tensile strength *28/32* Working pressure *600 lbs/sq. in.*

**Starting Air Receivers, No.** *Two* Total cubic capacity *220 cu ft.* Internal diameter *3'-6"* thickness *1"*

Seamless, lap welded or riveted longitudinal joint *Riveted* Material *M. Steel* Range of tensile strength *28/32* Working pressure *600 lbs/sq. in.*

**IS A DONKEY BOILER FITTED?** *Yes*. If so, is a report now forwarded? *No.*

**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 *Yes*. **SPARE GEAR.**

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

State the principal additional spare gear supplied *1 cast iron propeller, 1 propeller shaft, 1 cylinder liner & gasket complete, 1 main piston head & 12 piston rings, 2 3/4 in & 2 Back fuel valves complete, 8 spray pipes, 4 scavenge pump suet & del. valve discs, 2 fuel pump bodies complete, 1 non return starting air valve complete, 1 cyl. relief valve, 1 set of coupling bolts for crankshaft & 1 set for intermediate shafting, 2 central & side conn. rod top end bearings, 1 central & side conn. rod bottom end bearings, 1 set thrust pads, 1 set of valves for fuel pipe main pump, 1 roller chain for crankshaft drive.*

The foregoing is a correct description, *WILLIAM DOYFORD & SONS, Limited.*

*W. Keller* Director. Manufacturer.

Dates of Survey while building: During progress of work in shops - *39/ Aug. 18, 24, 25, 29, 30. Sep. 1, 4, 5, 6, 8, 11, 13, 14, 18, 19, 21, 25, 26, 27, 28. Oct. 5, 10, 11, 12, 7, 20, 23, 25, 27, 30. Nov. 1, 2, 3, 9, 10. Dec. 1, 14, 15, 16, 20, 22, 23, 24, 27, 28, 29, 30. 40/ Jan. 3, 5, 8, 9, 11, 12, 15, 16, 17, 19, 22, 23, 24, 25, 26, 27, 28, 29.*

Dates of Examination of principal parts: Crank shaft (G.I.S.) *30/10/39, 19/12/39*. Flywheel shaft *no crank*. Thrust shaft *no crank*. Pistons *5/1/40*. Rods *5/1/40*. Connecting rods *9/1/40*. Intermediate shafts *26/2/40, 29/2/40*. Tube shaft *✓*. Engines holding down bolts *13/3/40*. Engines tried under working conditions *19/3/40*.

Completion of fitting sea connections *22/11/39*. Completion of pumping arrangements *19/3/40*. Crank shaft, Material *Engst. Steel*. Identification Mark *S.O. 163 G.A.*. Flywheel shaft, Material *no crank*. Identification Mark *no crank*. Intermediate shafts, Material *Engst. Steel*. Identification Marks *nos 626, 744, 694, 828*. Tube shaft, Material *✓*. Identification Mark *✓*. Screw shaft, Material *Engst. Steel*. Identification Mark *586, 834*.

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 *not desired*. Is this machinery duplicate of a previous case *Yes*. If so, state name of vessel *M/V LA ESTANCIA*.

**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 of the Society the approved plans & the Secretary's letters. The materials & workmanship are good. It has been securely fitted on board the vessel & tried under working conditions alongside quay with satisfactory results. The two donkey boilers have also been securely fixed on board, fitted to burn oil fuel (FP above 150°). Section 20 of the Rules has been complied with, Safety valves of boilers adjusted to working pressure in accordance with rule requirements.*

*The machinery is eligible in my opinion to have notation 2 1/2 H 3.40 (oil Eng.) T.S. (CL) 2 DB 120 lbs/sq. in.*

The amount of Entry Fee .. £ 6 : : When applied for, Special ... £ 109 : 4 : : 2 APR 1940 Donkey Boiler Fee £ 12 : 12 : : When received, Travelling Expenses (if any) £ : : : 5-4-1940

*H. Haser*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE 9 APR 1940*  
Assigned *2 DB - 120 lbs oil Eng. CL*

