

Rpt. 4b.

REPORT ON OIL ENGINE MACHINERY.

No. 32832

Received at London Office

APR -4 1940

Date of writing Report 19- When handed in at Local Office 1st Oct 1940 Port of Sunderland.
 No. in Survey held at Sunderland. Date, First Survey 18 Aug '39 Last Survey 28 March 1940
 Reg. Book. 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. Beaford & Sons Ld. Yard No. 655 When built 1940
 Engines made at Sunderland By whom made Wm. Beaford & Sons Ld. Engine No. 655 When made 1940
 Donkey Boilers made at Stokeston By whom made Stokeston & Co. Eng. & Ship. Bldg. Co. Ld. Boiler No. 6388 When made 1940
 Brake Horse Power 3300 Owners Burns Marine Ld. 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 2378 9175

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 540 lbs/sq. in. Diameter of cylinders 600 mm. Length of stroke upper 980 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. 2300 mm. Weight 64 cwt. Means of ignition Compression Kind of fuel used temp.
 Crank Shaft, dia. of journals as per Rule 432 mm. Crank pin dia. 450 mm. Crank Webs as per Rule 326 mm. Thickness parallel to axis 255 mm.
 Flywheel Shaft, diameter as per Rule 432 mm. Intermediate Shafts, diameter as per Rule 350 mm. Thrust Shaft, diameter at collars as per Rule 432 mm.
 Tube Shaft, diameter as per Rule 360 mm. Screw Shaft, diameter as per Rule 389 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 Hand lever.
 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 Brass 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 decoupled Yes. Means of lubrication Hand & foot.
 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 one engine driven.
 Cooling Water Pumps, No. one steam 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 5 1/2" x 6" x 15" Can one be overhauled while the other is at work Yes.
 Pumps connected to the Main Bilge Line No. and Size 2 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 Yes.

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. In Pump Room 1 @ 3" in Tunnel well.
 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 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 Yes.
 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 Yes.
 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.
 If a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Steam Engine.
 Main Air Compressors, No. Two No. of stages 3 Diameters 11 1/2" - 9 1/4" - 23 1/4" Stroke 6 1/2" Driven by 11 1/2" x 6 1/2"
 Auxiliary Air Compressors, No. Yes No. of stages Yes Diameters Yes Stroke Yes Driven by Yes
 Small Auxiliary Air Compressors, No. Yes No. of stages Yes Diameters Yes Stroke Yes Driven by Yes
 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. Yes Position Yes

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

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 cift.* 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.*

Starting Air Receivers, No. *Two* Total cubic capacity *220 cift.* 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.*

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

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 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" & 2 Back fuel valves complete, 8 spray plugs, 4 Scavenge

pump valves & 4 valves, 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 Cental & side

Conn. rod top & end bearings, 1 Cental & side Conn. rod bottom & end bearings, 1 set thrust pads, 1 set of valves

for fuel & air main & pump, 1 roller chain for crankshaft drive.

The foregoing is a correct description, *WILLIAM DOVEY & 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.*
During erection on board vessel - *13, 14, 15, 16, 20, 22, 23, 24, 27, 28, 29, 30. Dec. 4, 6, 11, 13, 15, 18, 19, 20, 22, 28, 29. 40/ Jan. 3, 5, 8, 9, 11, 12, 15, 16, 17, 19, 22, 23, 24, 25, 26, 27.*
Total No. of visits *92*

Dates of Examination of principal parts—Cylinders *13/12/39, 4/12/39* Covers *5/1/40* Pistons *5/1/40* Rods *5/1/40* Connecting rods *9/1/40*

Crank shaft (G.I.S.) *29/1/40* Flywheel shaft *30/1/40* Thrust shaft *29/1/40* Intermediate shafts *26/2/40, 29/2/40* Tube shaft *13/3/40*

Screw shaft *29/1/40* Propeller *30/1/40* Stern tube *29/1/39* Engine seatings (tank top) *13/3/40* Engines holding down bolts *13/3/40*

Completion of fitting sea connections *22/11/39* Completion of pumping arrangements *19/3/40* Engines tried under working conditions *19/3/40*

Crank shaft, Material *Engst. Steel* Identification Mark *5.0.163 G.A.* Flywheel shaft, Material *Engst. Steel* Identification Mark *no crank.*

Thrust shaft, Material *no crank* Identification Mark *no crank.* Intermediate shafts, Material *Engst. Steel* Identification Marks *Nos 626, 744, 694, 828*

Tube shaft, Material *Engst. Steel* Identification Mark *586, 824* Screw shaft, Material *Engst. Steel* Identification Mark *844 WNF 13/40, 4082 WNF 29/1/40*

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 *not decided*

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with *not decided*

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 about 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

Oil Eng. 3.40 (oil Eng.) T.S. (CL) 2 DB 120 lbs/sq.

The amount of Entry Fee .. £ *6* : : When applied for, *2 APR 1940*

Special ... £ *109* : *4* : : When received, *5-4-1940*

Donkey Boiler Fee £ *12* : *12* : : Travelling Expenses (if any) £ *5-4-1940*

Committee's Minute *TUE 9 APR 1940*

Assigned *2 DB - 120 lbs*

W. Keller

Engineer Surveyor to Lloyd's Register of Shipping.

Lloyd's Register Foundation