

# REPORT ON OIL ENGINE MACHINERY.

No. 5316<sup>A</sup>

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Date of writing Report Dec 6 1939 When handed in at Local Office Dec 6 1939 Port of Vancouver B.C.

No. in Survey held at Vancouver & Marpole. Date, First Survey Feb 9. Last Survey Oct 9 1939  
Reg. Book. Number of Visits 24

on the <sup>Single</sup> ~~Triple~~ ~~Quadruple~~ Screw vessel **LEOLA VIVIAN**

Tons { Gross 49.49  
Net 21.57

Built at Marpole B.C. By whom built W. Virlain. Yard No. 1 When built 1939. 9.

Engines made at Vancouver By whom made Virlain Engine Works Engine No. 2013 When made 1939.

Donkey Boilers made at none By whom made ✓ Boiler No. ✓ When made ✓

Brake Horse Power 160 ✓ Owners W. Virlain Port belonging to Vancouver B.C.

Nom. Horse Power as per Rule 35 ✓ Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes

Trade for which vessel is intended British Columbia, Coastwise. (Cruiser.)

IL ENGINES, &c.—Type of Engines Full Diesel. 2 or 4 stroke cycle 4 Single or double acting Single.

Maximum pressure in cylinders 700 Diameter of cylinders 6 1/4 Length of stroke 10 No. of cylinders 8 No. of cranks 8  
Mean Indicated Pressure 100

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 7 1/2 Is there a bearing between each crank Yes

Revolutions per minute 600 Flywheel dia. 26 1/2 Weight 390 Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, { Solid forged as per Rule 4.03 dia. of journals as fitted 4.375 Crank pin dia. 4.375 Crank Webs Mid. length breadth 5 3/4 Kind of fuel used Diesel oil  
{ Semi built as fitted 4.375 Mid. length thickness 2 1/4 Thickness parallel to axis Solid  
{ All built Thickness around eyehole

Flywheel Shaft, diameter as per Rule 4.375 Intermediate Shafts, diameter as per Rule 2.58 as fitted 3 7/16 Thrust Shaft, diameter at collars as per Rule 2.71 as fitted 3

Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 2.6 as fitted 3 1/2 Is the { tube } shaft fitted with a continuous liner { screw } No. bronze shaft

Bronze Liners, thickness in way of bushes as per Rule as fitted Thickness between bushes as per Rule as fitted Is the after end of the liner made watertight in the

propeller boss ✓ If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner ✓

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 ✓

If two liners are fitted, is the shaft lapped or protected between the liners ✓ Is an approved Oil Gland or other appliance fitted at the after end of the tube ✓

Shaft ✓ If so, state type ✓ Length of Bearing in Stern Bush next to and supporting propeller 14" ✓

Propeller, dia. 42" Pitch 25" No. of blades 3 Material Bronze whether Moveable No Total Developed Surface 620 sq. feet ✓

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

forced ✓ Thickness of cylinder liners 1/2" Are the cylinders fitted with safety valves No Are the exhaust pipes and silencers water cooled or lagged with

non-conducting material Water coils If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine ✓

Cooling Water Pumps, No. One attached Is the sea suction provided with an efficient strainer which can be cleared within the vessel No

Bilge Pumps worked from the Main Engines, No. one Diameter 2" Stroke 1" Can one be overhauled while the other is at work ✓

Pumps connected to the Main Bilge Line { No. and Size one Centrifugal 1 1/2" dia Suction. ✓  
{ How driven by belt from auxiliary engine. ✓

If 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 Cooling water discharge overboard with tabs on ship's side ✓

Ballast Pumps, No. and size ✓ Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size from Main engine. Rotary pump, 5 gal. ✓

Are two independent means arranged for circulating water through the Oil Cooler ✓ Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

Pumps, No. and size:—In Machinery Spaces Two 1 1/2" dia. ✓ In Pump Room ✓

Holds, &c. one forward and one aft. 1 1/2" dia all from pipe ✓

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size one 1 1/2" dia from pipe. ✓

Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes. Yes ✓ Are the Bilge Suctions in the Machinery Spaces

from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges. No Strainers only, but accessible. ✓

Are all Sea Connections fitted direct on the skin of the ship. Yes ✓ Are they fitted with Valves or Cocks. Valves. ✓

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. ✓

Do all pipes pass through the bunkers. ✓ How are they protected. ✓

Do all pipes pass through the deep tanks. ✓ Have they been tested as per Rule. ✓

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

apartment to another. Yes ✓ Is the Shaft Tunnel watertight. Yes ✓ Is it fitted with a watertight door. Yes ✓ worked from after accommodation. ✓

On a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork. Suitable Trays ✓

Main Air Compressors, No. one No. of stages one Diameters 4 Stroke 2 Driven by Main engine ✓

Auxiliary Air Compressors, No. one No. of stages one Diameters 4 Stroke 4 Driven by Aux. engine. ✓

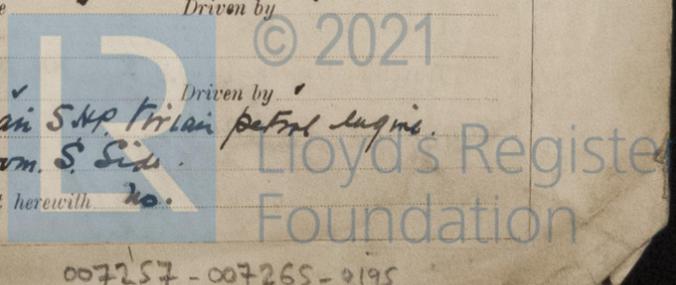
All Auxiliary Air Compressors, No. ✓ No. of stages ✓ Diameters ✓ Stroke ✓ Driven by ✓

Is any provision made for first Charging the Air Receivers. Auxiliary Compressor. ✓

Revolving Air Pumps, No. ✓ Diameter ✓ Stroke ✓ Driven by ✓

Auxiliary Engines crank shafts, diameter as per Rule 2" as fitted No. one. Virlain 5 HP Virlain patent engine. ✓

Have the Auxiliary Engines been constructed under special survey. No. Virlain Standard Is a report sent herewith. No. ✓



AIR RECEIVERS:—Have they been made under survey *yes* ✓ State No. of Report or Certificate *468. 1P250. 28.6.39Rk*

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* ✓

Injection Air Receivers, No. \_\_\_\_\_ Cubic capacity of each \_\_\_\_\_ Internal diameter \_\_\_\_\_ thickness \_\_\_\_\_  
Seamless, lap welded or riveted longitudinal joint \_\_\_\_\_ Material \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_ Actual \_\_\_\_\_

Starting Air Receivers, No. *One.* Total cubic capacity *5 cu feet* Internal diameter *12"* thickness *1/4"*  
Seamless, lap welded or riveted longitudinal joint *riveted* Material *ONS.* Range of tensile strength *26627* Working pressure by Rules *292* Actual *250* ✓

IS A DONKEY BOILER FITTED? *No* ✓ If so, is a report now forwarded? *✓*  
Is the donkey boiler intended to be used for domestic purposes only *✓*

PLANS. Are approved plans forwarded herewith for Shafting *Crank Shaft - Bronz Receivers* *yes* ✓ Separate Fuel Tanks *yes* ✓  
Donkey Boilers *✓* General Pumping Arrangements *yes* ✓ Pumping Arrangements in Machinery Space *yes* ✓  
Oil Fuel Burning Arrangements *✓*

SPARE GEAR.

Has the spare gear required by the Rules been supplied *yes* ✓  
State the principal additional spare gear supplied \_\_\_\_\_

The foregoing is a correct description,  
VIVIAN ENGINE WORKS LTD.  
For *Wm Vivian* Pres Manufacturer.

Dates of Survey while building { During progress of work in shops - - *July 9. 10. 11. 13. 14. 22 28 incl 1. 2*  
During erection on board vessel - - *incl 1. 29 Oct 19. May 17 June 9. 29. July 13. 29. Aug 10. 15. 25. Sep 12. 18. Oct 9. 1929*  
Total No. of visits *23.*

Dates of Examination of principal parts—Cylinders *14. 2. 39* Covers *14. 2. 39* Pistons *9. 2. 39* Rods *9. 2. 39* Connecting rods *9. 2. 39*  
Crank shaft *9. 2. 39* Flywheel shaft *9. 2. 39* Thrust shaft *9. 2. 39* Intermediate shafts *9. 6. 39* Tube shaft *✓*  
Screw shaft *9. 6. 39* Propeller *29. 8. 39* Stern tube *12. 7. 39* Engine seatings *17. 5. 39* Engines holding down bolts *3. 8. 39*  
Completion of fitting sea connections *9. 6. 39* Completion of pumping arrangements *25. 8. 39* Engines tried under working conditions *9. 10. 39*  
Crank shaft, Material *ONS.* Identification Mark *437. 21. 12. 38Rk* Flywheel shaft, Material *ONS.* Identification Mark *437. 21. 12. 38Rk*  
Thrust shaft, Material *ONS.* Identification Mark *437. 21. 12. 38Rk* Intermediate shafts, Material *ONS.* Identification Marks *LR. 30. 1. 2*  
Tube shaft, Material *✓* Identification Mark *✓* Screw shaft, Material *BRONZE.* Identification Mark *LR. 30. 1. 2*  
Identification Marks on Air Receiver *468. 1P. 250. 28. 6. 39. R. K.*

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 *Taucoran report 4651-4652 dated Oct 22. 1929*

General Remarks (State quality of workmanship, opinions as to class, etc.)  
*The machinery of this vessel has been built to approval/plaus- of good materials and workmanship and under special Survey.  
The machinery was installed under Survey, and has been satisfactorily tested under working conditions, and manoeuvring. Pumping arrangements tested  
It is recommended that the machinery be classed + LMC 10. 39. CL*

The amount of Entry Fee .. \$ 10: 00 : When applied for,  
Special ... \$ 125: 00 : *Dec 6 19 39*  
Donkey Boiler Fee ... £ : : When received,  
Travelling Expenses (if any) \$ 10: 00 : *7-3-19 40*

*Ascor* *RK Knows* (act)  
Engineer Surveyor to Lloyd's Register of Shipping.



(2) Taucoran 186.

(The Surveyors are requested not to write on or below the space for Committee's Minute.)

Committee's Minute  
Assigned *to Lumb. 10. 39*  
*oil Lys. (Bronze)*