

## REPORT ON OIL ENGINE MACHINERY.

No. 6262

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Date of writing Report 30th June, 1944 When handed in at Local Office 30th June, 1944 Port of Vancouver, B. C.

No. in Survey held at Vancouver, B. C. Date, First Survey 21st Mar., 1943 Last Survey 21st June, 1944  
Reg. Book.

Number of Visits 47

Single  
on the Twin Screw vessel Wooden M.V. H.M.C.S. "LAVALLEE" Tons { Gross 168.19  
Triple  
Quadruple Net 62.70

Built at Vancouver, B.C. By whom built A.C. Benson Shipyard, Ltd. Yard No. 748 When built 1944

Engines made at Vancouver, B. C. By whom made Vivian Diesels & Munitions Engine No. 2449 When made 1944  
Ltd.

Donkey Boilers made at 400 Normal By whom made -- Boiler No. -- When made --

Brake Horse Power 500 Supercharged Owners Department of National Defence Port belonging to Not registered  
600 Maximum (Naval Service)

Nom. Horse Power as per Rule 78.9 79 Is Refrigerating Machinery fitted for cargo purposes -- Is Electric Light fitted Yes

Trade for which Vessel is intended Government Service - Minesweeping.

OIL ENGINES, &amp;c.—Type of Engines Heavy Oil 2 or 4 stroke cycle 4 Single or double acting Single

Maximum pressure in cylinders 800 lbs. per Sq. Inch. Diameter of cylinders 9" Length of stroke 12" No. of cylinders 10 No. of cranks 10

Mean Indicated Pressure 150 lbs. per sq. inch

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 12" Is there a bearing between each crank Yes

Revolutions per minute 500 Flywheel dia. 30" Weight 900 lbs. Means of ignition Compression Kind of fuel used Diesel Oil F.P. above 150 F.

Crank Shaft, Solid forged as per Rule 5".827 Mid length breadth 8".5 Thickness parallel to axis shrunk

Combined with thrust as fitted 6".125 Crank pin dia. 6.125 Crank Webs Mid length thickness 3".5 Thickness around eyehole --

Flywheel Shaft, diameter as per Rule 5".827 Intermediate Shafts, diameter as fitted 5".0 Thrust Shaft, diameter as fitted 5".5

Screw Shaft, diameter as per Rule 4".77 Is the screw shaft fitted with a continuous liner Yes

Tube Shaft, diameter as fitted -- as fitted 5" Thickness between bushes as per Rule .329 Is the after end of the liner made watertight in the

Bronze Liners, thickness in way of bushes as per Rule .439 as fitted .5 Thickness between bushes as fitted .375

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. As approved

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 Tight fit

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

If so, state type -- Length of Bearing in Stern Bush next to and supporting propeller 25" Hyertex bearing.

Propeller, dia. 58" Pitch 32" - 35" No. of blades 3 Material Bronze whether Moveable Fixed Total Developed Surface 9.2 sq. feet

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

Forced Water Thickness of cylinder liners 7/8" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

Non-conducting material Cooled 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. 3 @ 4" Dia. x 2 1/2" Stroke the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Large 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 1- off "Paramount" Rotary 160" Gall/min. 1- off "Buffalo" Rotary 90" Gall/min. &amp; 5" Downton. How driven By Main Eng. &amp; 25 K.W. Generator &amp; Downton Hand Pump respectively.

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

Ballast Pumps, No. and size -- Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2-Twin, 10 Gall/min.

Are there 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 2 at 2 1/2" Dia. In Pump Room --

Holds, &amp;c. One each in Crew Spaces for'd. &amp; aft; tank compartment, Battery Room 2 1/2" Dia., One 2 1/2" Dia. Hose Suction to Fore Peak.

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

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 Yes. As approved.

Are all Sea Connections fitted direct on the skin of the ship Yes As 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 approved the Overboard Discharges above or below the deep water line On L.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 --

Do all pipes pass through the bunks -- 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 compartment to another Yes Is the Shaft Tunnel watertight None Is it fitted with a watertight door -- worked from --

In a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork Drip trays fitted

Main Air Compressors, No. One No. of Stages One, 2 cyl. Diameters 4" x 4" Stroke 3 1/2" Driven by Main Engine

Auxiliary Air Compressors, No. One No. of stages 2 Diameters 5" - 2 1/2" Stroke 4" Driven by 25 K.W. Generator

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

Is there any provision made for first Charging the Air Receivers Self starting 25 K.W. Gen. Engine Aux. Compressor.

Savenging Air Pumps, No. One Diameter 7x11 Opening Stroke Belt driven Driven by Main Engine

Auxiliary Engines crank shafts, diameter as per Rule Approved R.C.N. No. 1- 25K.W. &amp; 2- 54K.W. Gen. Engines

Have the Auxiliary Engines been constructed under special survey No Is a report sent herewith Cert. forwarded with Electrical Report.



**AIR RECEIVERS:**—Have they been made under survey Yes State No. of Report or Certificate Nos. 10394 & 10396.  
Is each receiver, which can be isolated, fitted with a safety valve as per Rule Fusible plugs in Receivers & safety valve in pipe line to receivers.  
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                       
Starting Air Receivers, No. Two Total cubic capacity 17.27 Cu.Ft. Internal diameter 24" thickness 3/8"  
Seamless, lap welded or riveted longitudinal joint Butt Welded Material O.H. Steel Range of tensile strength 26-30 tons Working pressure                       
by Rules 274 lbs.  
Actual 250 lbs.

**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 approved N.Yk. Oct. 1/42 Separate Fuel Tanks Approved Vcr. 2-11-42  
(If not, state date of approval) N.Yk. Nov. 18/42 16-10-42 Approved N.Yk. 16-2-43.  
Donkey Boilers                      General Pumping Arrangements                      Pumping Arrangements in Machinery Space Approved N.Yk. 16-2-43.  
Oil Fuel Burning Arrangements                     

### SPARE GEAR.

Has the spare gear required by the Rules been supplied As per list forwarded with Vancouver Report No. 6181.  
State the principal additional spare gear supplied                     

The foregoing is a correct description

*Will Vian*

Manufacturer.

Dates of Survey while building { During progress of work in shops - 1943. July 3, 5, 6, 7, 9, 14, 15, 20, 22, 23, 24, 26, 27, 28.  
During erection on board vessel - 1943. March 21. May 28. June 28. July 26. Aug 4, 14, 16. Oct. 7, 15. Nov. 3, 9, 26, Dec 29.  
Total No. of visits 49 1944. Jan. 3, 14, 22, 24. Feb. 15, 21, 26. Mar. 10, 15, 28, 29. Apr. 3, 28. May 8, 10, 11. June 1, 8, 9, 14, 21.

Dates of Examination of principal parts—Cylinders 7-7-43 Covers 20-7-43 Pistons 7-7-43 Rods -- Connecting rods 15-7-43  
Crank shaft and Flywheel shaft and Thrust shaft 15-7-43 Intermediate shafts 29-11-43 Tube shaft --  
Screw shaft 29-11-43 Propeller 29-11-43 Stern tube 26-11-43 Engine seatings 9-8-43 Engines holding down bolts 3-4-44  
Completion of fitting sea connections 28-5-43 Completion of pumping arrangements 8-6-44 Engines tried under working conditions 14-6-44  
Crank shaft, Material O.H. Steel Identification Mark 5655 Flywheel shaft, Material do Identification Mark do  
Thrust shaft, Material -- Identification Mark -- Intermediate shafts, Material O.H. Steel Identification Mark Lloyd's No. 3225  
Tube shaft, Material -- Identification Mark -- Screw shaft, Material O.H. Steel Identification Mark Lloyd's No. 3231  
Description of fire extinguishing apparatus fitted. E.E.R. 9-2-43

**CO Sprinkler system fitted, also 6 Fomene & 7 Pyrene** Identification Marks on Air Receivers  
2 10394 10396  
portable extinguishers fitted in E.R. Galley accommodation Lloyd's Test Lloyd's Test  
spaces & Battery Room. T.P. 425 lbs. T.P. 425 lbs.  
Is the flash point of the oil to be used over 150° F. Yes W.P. 250 lbs. W.P. 250 lbs.  
3-11-43 J.A.S. 3-11-43 J.A.S.

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 H.M.C.S. "DAERWOOD" (Vcr. Report No. 6181)

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

The machinery of this vessel has been constructed under special survey in accordance with the Rules and approved plans & New York letters. The materials have been tested, found efficient, and the workmanship throughout is good. It has been efficiently installed on board and tried under full working conditions with satisfactory results. Sixteen stops and starts were made with engines, using one air receiver only without replenishing. Mean speed was 11.5 knots @ 500 R.P.M. and engine slow speed was between 100 & 120 R.P.M. The time taken from full ahead to full astern was approximately 10 seconds. This machinery is eligible in our opinion to have the notations of Oil Eng. KL.M.C. 6,44 and Screw Shaft (C.L.) 6,44 in the Register Book. All the requirements of Sections 20 and 34 of the Rules, so far as they are applicable have been complied with. Additional cooling water connections to main engine from 25 K.W. Generator and fire main pipe line fitted.

The amount of Entry Fee ... \$ 10.00 : When applied for, 3rd July 1944  
Special (Shipbuilders) \$ 20.00 :  
Shipbuilders Expenses \$ 5.00 :  
Donkey Boiler Fee ... £ :  
Engine builders fee \$ 120.00 :  
Travelling Expenses (if any) £ 5.00 :  
(Eng. builders) \$ :  
When received, 19

Committee's Minute

Assigned + LMC 6,44 Oil Eng. C.L.

Engine Surveyors to Lloyd's Register of Shipping.

Lloyd's Register Foundation