

REPORT ON OIL ENGINE MACHINERY.

No. 8521

Received at London Office

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Date of writing Report 29th Jan. 1940 When handed in at Local Office 29th Jan. 1940 Port of Hongkong
Date, First Survey Oct 23rd 1939 Last Survey 27th Jan. 1940
Number of Visits 22

No. in Survey held at Hongkong
Reg. Book.

on the ^{Single} ~~Twin~~ ~~Triple~~ ~~Quadruple~~ Screw vessel **TROVADOR** Tons ^{Gross} 79.00 ^{Net} 11.02
Built at Hongkong By whom built The Hongkong & Whampoa Dockyard No. 828 When built 1940
Engines made at Oakland, Calif. By whom made Union Diesel Engine Co. Engine No. 30517 When made 1930
Donkey Boilers made at None By whom made Boiler No. When made
Brake Horse Power 225 Owners Visayan Stevedore Transportation Co. Inc. Port belonging to Hoilo, P.I.
Nom. Horse Power as per Rule 65 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes
Trade for which vessel is intended Towing Services in Philippine Islands.

OIL ENGINES, &c.—Type of Engines Solid injection 2 or 4 stroke cycle 4 Single or double acting Single
Maximum pressure in cylinders 600 lbs. Diameter of cylinders 10 1/2" Length of stroke 15" No. of cylinders 6 No. of cranks 6
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 12 1/2" Is there a bearing between each crank Yes
Revolutions per minute 280 Flywheel dia. 3'-7 1/4" Weight 2250 lbs. Means of ignition Compression Kind of fuel used Diesel oil
Crank Shaft, dia. of journals as per Rule 6.07" Crank pin dia. 6 3/8" Crank Webs Mid. length breadth 9 1/2" Thickness parallel to axis
as fitted 6 3/8" Mid. length thickness 3 13/64" shrunk Thickness around eyehole
Flywheel Shaft, diameter as per Rule 6.07" Intermediate Shafts, diameter as per Rule 3.9" Thrust Shaft, diameter at collars as per Rule 4.57"
as fitted 6 1/2" (crank shaft) as fitted 4" as fitted 5 7/16" dia.
Tube Shaft, diameter as per Rule Screw Shaft, diameter as per Rule 4.3" Is the tube screw shaft fitted with a continuous liner Yes
as fitted Thickness between bushes as per rule 3/8" as fitted 7/16" 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 fits tightly
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
Propeller, dia. 4'-9" Pitch 4'-2 3/4" No. of blades 4 Four Material Bronze whether Moveable No Total Developed Surface 10.5 sq. feet
Cutter Rubber bearing.

Method of reversing Engines direct Is a governor or other arrangement fitted to prevent racing of the engine when disengaged Yes Means of lubrication
Forced + Hand Thickness of cylinder liners 1" Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with
non-conducting material Water Cooled + Lagged If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine Funnel
Cooling Water Pumps, No. one M.E. + one Auxiliary Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

What special arrangements are made for dealing with cooling water if discharged into bilges discharged overboard.
Bilge Pumps worked from the Main Engines, No. one Diameter 2 1/6" Stroke 2" Can one be overhauled while the other is at work Yes
Pumps connected to the Main Bilge Line No. and Size one @ 2 1/6" dia. x 2" Stroke How driven Main Engine one Vertical 3" dia x 6" Stroke (D.A. pump) by 5 H.P. electric motor.

Ballast Pumps, No. and size 1-3" dia x 6" Stroke Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 1 @ 2 1/2" x 1 3/4" + one Hand
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 1-2" dia. In Pump Room

In Holds, &c. 1-2" in aft hold, 1-2" in fore hold + 1-2" in cofferdam. (1-2" in Fore hold + 1-2" in aft hold connected to Hand pump)
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-2" dia. Are the Bilge Suctions in the Machinery Spaces
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are they fitted with Valves or Cocks Valves

Are all Sea Connections fitted direct on the skin of the ship Yes Are the Overboard Discharges above or below the deep water line above
Are they fixed sufficiently high on the ship's side to be seen without lifting the platform plates Yes Are the Blow Off Cocks fitted with a spigot and brass covering plate Yes
What pipes pass through the bunkers None How are they protected
What pipes pass through the deep tanks None 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 No Tunnel Is it fitted with a watertight door W.T. door on aft bulkhead worked from upper deck to Crew Space.

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. one No. of stages one Diameters 5 7/8" Stroke 5" Driven by Main engine
Auxiliary Air Compressors, No. one No. of stages Two Diameters 4 1/2" + 1 7/8" Stroke 4 Driven by Lister 15 HP oil engine
Small Auxiliary Air Compressors, No. No. of stages Driven by hand starting

Scavenging Air Pumps, No. Diameter Stroke Driven by
Auxiliary Engines crank shafts, diameter as per Rule 2 3/4" Position Port side of Engine room
as fitted Yes

AIR RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes Is a drain fitted at the lowest part of each receiver Yes
Can the internal surfaces of the receivers be examined and cleaned Yes
High Pressure Air Receivers, No. None Cubic capacity of each Internal diameter thickness by Rules
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure Actual

Starting Air Receivers, No. Two Total cubic capacity 50 cub. ft. Internal diameter 24" thickness 3/8"
Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 28 Tons Working pressure by Rules 287.6 lbs. Actual 250 lbs.
007312-007323-0151

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 Inter + Tail Shafts Kobe 16-9-39 Receivers Separate Tanks
(If not, state date of approval)

Donkey Boilers General Pumping Arrangements Kobe 28/6/39, 30/10/39 Oil Fuel Burning Arrangements Kobe 30/10/39

SPARE GEAR.

Has the spare gear required by the Rules been supplied? No. No spare gear was forwarded along with the machinery, but the owner's Representative stated that a complete set of spare gear to Rule requirements is in Manila + will be placed on board on vessel's arrival there. The Manila Surveyor has been notified.

Auxiliaries:- One "Lister" heavy oil engine (hand starting) 15 H.P., driving auxiliary air compressor + 5 K.W. electric generator by belts.
one G.S. Pump driven by 5-H.P. electric motor. (geared)
1- 1 K.W. electric generator driven by belt from main engine.

The foregoing is a correct description.

Lloyd's Manufacturer.
CHIEF MANAGER

Dates of Survey while building
During progress of work in shops-- 1939 Oct. 23, 26, 31, Nov. 13, 14, 16, 24, 25, Dec. 14, 22,
During erection on board vessel-- Dec. 7, 9, 23, 27, 30, 1940 Jan. 2, 5, 6, 10, 11, 16, 27.
Total No. of visits 22

Dates of Examination of principal parts—Cylinders 13-11-39 Covers 13-11-39 Pistons 13-11-39 Rods 13-11-39 Connecting rods 13-11-39
Crank shaft 13-11-39 Flywheel shaft 13-11-39 Thrust shaft 22-12-39 Intermediate shafts 22-12-39 Tube shaft
Screw shaft 22-12-39 Propeller 14-12-39 Stern tube 27-12-39 Engine seatings 4-12-39 Engines holding down bolts 5-1-40.
Completion of fitting sea connections 4-12-39 Completion of pumping arrangements 11-1-40 Engines tried under working conditions 11-1-40 and 27-1-40
Crank shaft, Material Identification Mark Flywheel shaft, Material Identification Mark
Thrust shaft, Material O.H. Steel Identification Mark LLOYD'S N°828 Intermediate shafts, Material (O.H. Steel) LLOYD'S N°828 Identification Marks
Tube shaft, Material Identification Mark Screw shaft, Material O.H. Steel Identification Mark LLOYD'S N°828

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 "LUSTEVECO"

General Remarks (State quality of workmanship, opinions as to class, &c.) This machinery was previously fitted in a wood launch in Manila + was not built under special survey. (See H.T. Letter dated 21st June 1939 + London letter dated 4th July 1939).

All working parts of main + auxiliary machinery, including air receivers, were opened up + examined throughout, water passages tested 50 lbs. hyd. press.; air pipes tested 500 lbs. + air receivers tested 425 lbs. + all found or placed in good condition.

Thrust shaft, intermediate shafts + tail shaft were made here (Forging report enclosed).
This machinery has been satisfactory installed in the vessel in accordance with the Rules + tried under working conditions + it is recommended that the vessel be classed with Lloyd's Machinery Certificate + the record of LMC 1-40, Made 1930, Refitted 1-1940, be made in the Register Book.

Plan of general arrangement of engine room enclosed. Forging report enclosed.

The amount of Entry Fee .. £4 = \$ 65 : When applied for.
Special ... £14 = \$ 227 : 27th Jan 1940
Installation £10-16-8 = \$ 175 :
Donkey Boiler Fee ... \$ 10 :
Cablegram ... \$ 50 :
Travelling Expenses (if any) \$ 50 :
Total \$ 527.00 :
When received, 2/3/1940 (Personal Recd 2/3/40)

W.S. Morrison
Engineer Surveyor to Lloyd's Register of Shipping.



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

Committee's Minute
Assigned LMC, 1-40
NE. 30 refitted 1-40
oil fuel. Cf.