

# REPORT ON OIL ENGINE MACHINERY.

No. 1547

17821326

Received at London Office

NAGASAKI.

14th Aug. 26 When handed in at Local Office 14th Aug. 26

Port of NAGASAKI.

Survey held at NAGASAKI.

Date, First Survey July 3rd, 1925 Last Survey 12th Aug. 1926

Number of Visits 136

on the <sup>Single</sup> Twin <sup>Triple</sup> <sup>Quadruple</sup> Screw vessel "MONTEVIDEO MARU".

Tons { Gross 7267  
Net 4387

built at Nagasaki. By whom built Mitsubishi Zosen Kaisha, Ltd. Yard No. 412 When built 1926.  
Engines made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Engine No. 1 & 2 When made 1926.  
Main Boilers made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Boiler No. 412 When made 1926.  
Indicated Horse Power 2300 each E. = 4600 Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.  
Horse Power as per Rule 1164. 2 E. Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes  
Service for which vessel is intended Round the World.

**ENGINES, &c.**—Type of Engines Mitsubishi - Sulzer. 2 or 4 stroke cycle 2 Single or double acting Single  
Working pressure in cylinders 38 Ats Diameter of cylinders 12 total Length of stroke 600 m/m No. of cylinders 12 total No. of cranks 12  
Bearings, adjacent to the Crank, measured from inner edge to inner edge 810 m/m Is there a bearing between each crank Yes  
Revolutions per minute 112 Flywheel dia. 2100 m/m Weight 10300 Kgs Means of ignition Temp. occasioned by compression Kind of fuel used Heavy fuel oil  
Shaft, dia. of journals as per Rule 386 m/m as fitted 405 " Crank pin dia. 405 m/m Crank Webs Mid. length breadth 550 m/m Mid. length thickness 225 " Thickness parallel to axis / Thickness around eye-hole /  
Shaft, diameter as per Rule 386 " as fitted 405 " Intermediate Shafts, diameter as per Rule 292 m/m as fitted 337 " Thrust Shaft, diameter at collars as per Rule 306.6 m/m as fitted 390.0 "  
Propeller shaft, diameter as per Rule / as fitted / Screw Shaft, diameter as per Rule 326 m/m as fitted 381 " Is the screw shaft fitted with a continuous liner Yes  
Liners, thickness in way of bushes as per Rule 17.5 m/m as fitted 19.0 " Thickness between bushes as per rule 13.5 m/m as fitted 15.0 " Is the after end of the liner made watertight in the stern Yes  
If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner On one length.  
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 the 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 propeller tube shaft No Length of Bearing in Stern Bush next to and supporting propeller 1695 m/m  
Pitch dia. 12'-10" Pitch 15'-9" No. of blades 4 Material Bronze whether Moveable Yes Total Developed Surface 52.1 sq. feet  
Type of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication at top  
Thickness of cylinder liners 45 m/m Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with insulating 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 funnel.  
Water Pumps, No. Five. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes  
Pumps worked from the Main Engines, No. None Diameter / Stroke / Can one be overhauled while the other is at work /  
Pumps connected to the Main Bilge Line { No. and Size Four 2- 50 ton bilge. 1-100 ton bilge & Gen. service. How driven Electric motor. 1- 200 ton ballast & bilge.  
Pumps, No. and size One, 200 ton Lubricating Oil Pumps, including Spare Pump, No. and size Three. (2- 25 M<sup>3</sup> 1- 10 " )  
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 3- 3 1/2" dia to Eng. Room well or No. 2 Cofferdam, 2- 3 1/2" dia to Eng. Room thrust recess bilge hat.  
No. and size:—1- 3" to No. 1 Coff. 2- 3" to No. 1 Hold. 2- 3 1/2" to No. 2 & 3 Holds. 1- 2" to No. 3 Cofferdam. Room  
1- 3" to No. 4 & 5 Holds. 1- 2 1/2" to Tunnel well.  
Suction Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1- 8" dia. 3- 5" dia. 3- 3 1/2" dia. to Engine well.  
Are the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes. Yes Are the Bilge Suctions in the Machinery Spaces easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes  
Sea Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Some valves & some cocks.  
Are they fitted 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  
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  
Do they pass through the bunkers. None How are they protected /  
Do they pass through the deep tanks. None Have they been tested as per Rule /  
Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes  
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 Uppermost Cont. deck.  
For vessels, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork /  
Air Compressors, No. 2 per engine No. of stages 3 Diameters 640/580/140 Stroke 560 m/m Driven by Crank shaft  
Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 325/290/65 Stroke 180 m/m Driven by Elec. motors  
Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 110/35 Stroke 120 m/m Driven by Hot Bulb Eng.  
Scavenging Air Pumps, No. Two turbo scavenging blowers each having an intake volume of 560 cu. metres of air per min. Driven by Elec. motors.  
Crank shafts, diameter as per Rule 152.5 m/m as fitted 175 "

**RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule Yes  
Internal surfaces of the receivers be examined Yes What means are provided for cleaning their inner surfaces HP Inj. air rec. hole 150 m/m at one end. HP starting air rec. hole 270 m/m at each end.  
Is there a drain arrangement fitted at the lowest part of each receiver Yes  
Pressure Air Receivers, No. 2 Injection, 2 Cubic capacity of each 150 litres Internal diameter 300 m/m thickness 15 m/m  
Starting 10 Seamless Material M.S. Range of tensile strength 50-60 kg. m/m Working pressure by Rules 102.8 Ats. 2 @ 47 kg. m/m<sup>2</sup>  
Lap welded or riveted longitudinal joint Riveted Material M.S. Range of tensile strength 28-32 tons sq. in. Working pressure by Rules 427 lbs. sq. in.  
Scavenging Air Receivers, No. 2 Total cubic capacity 5 Cu. metres Internal diameter 1200 m/m thickness 7/8"  
Lap welded or riveted longitudinal joint Riveted Material M.S. Range of tensile strength 28-32 tons sq. in. Working pressure by Rules 427 lbs. sq. in.

IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? Yes  
 PLANS. Are approved plans forwarded herewith for Shafting Yes Receivers Yes Separate Tanks Yes  
(If not, state date of approval)  
 Donkey Boilers Yes General Pumping Arrangements Yes Oil Fuel Burning Arrangements /

SPARE GEAR As per Rules and in addition:- (See Separate List).

The foregoing is a correct description.

NAGASAKI WORKS, MITSUBISHI ZOSSEN KAISHA LTD.

*M. Abe*  
 GENERAL MANAGER. Manufacturer.

Dates of Survey while building  
 During progress of work in shops - 1925. July 3, Sep. 26, 26. Oct. 3, 6, 13, 21, 30. Nov. 5, 7, 9, 10, 11, 16, 18, 23, 24, Dec. 2  
 19, 24, 28, 29. 1926. Jan. 8, 9, 12, 14, 15, 16, 20, 22, 25, 28, 30. Feb. 1, 2, 3, 5, 9, 10, 11  
 During erection on board vessel - 20, 22, 23, 24, 25, 26, Mar. 2, 3, 5, 6, 9, 12, 13, 15, 16, 17, 19, 20, 22, 23, 26, 27, 29, Apr. 2  
 12, 15, 16, 17, 21, 22, 23, 26, 27, 28, May 3, 5, 7, 10, 13, 18, 19, 21, 22, 24, 26, 28, 29, June  
 Total No. of visits 6, 7, 9, 11, 12, 14, 16, 19, 21, 23, 24, 25, 26, 29, July 1, 3, 5, 7, 8, 9, 10, 12, 19, 22, 23, 24, 26  
 31, Aug. 2, 3, 7, 10, 12. Total No. 136.

Dates of Examination of principal parts - Cylinders 5-6-26 Covers 5-6-26 Pistons 18-5-26 Rods 18-5-26 Connecting rods 18-5-26

Crank shaft 20-2-26 Flywheel shaft 18-5-26 Thrust shaft 20-2-26 Intermediate shafts 18-3-26 Tube shaft /

Screw shaft 19-7-26 Propeller 19-7-26 Stern tube 12-4-26 Engine seatings 7-6-26 Engines holding down bolts 7-6-26

Completion of fitting sea connections 19-7-26 Completion of pumping arrangements 23-7-26 Engines tried under working conditions May 3, July 24

Crank shaft, Material M.S. Identification Mark P. Lloyd's No. 223. W.K. 1-2-26. Flywheel shaft, Material M.S. Identification Mark P. Lloyd's No. 223. W.K. 20-2-26.

Thrust shaft, Material M.S. Identification Mark See flywheel Intermediate shafts, Material M.S. Identification Marks Lloyd's No. 223. W.K. 20-2-26.

Tube shaft, Material / Identification Mark / 3 Screw shaft, Material (1 spare) M.S. Identification Mark Lloyd's No. 223. W.K. 20-2-26.

Is the flash point of the oil to be used over 150° F. Yes

Is this machinery duplicate of a previous case Yes If so, state name of vessel M/V "Santos Maru" & "La Plata"

General Remarks (State quality of workmanship, opinions as to class, &c. The Main & Auxiliary Machinery including M.

No. 101/6 & 201/6 & auxiliary engines No. 14201/4, 14205/8, 14209/12, Type 4 RH 31, No. 14227/8,

2 RH 24, & two auxiliary compressors No. 3 & 4 (Type MC 6) have all been constructed under special

survey & properly installed aboard in accordance with the requirements of the Rules & approved

The workmanship & materials are good & the plant has been tested & examined under working conditions

with satisfactory results. Mean speed on trials 16.191 knots (Half load).

The machinery of this vessel is in my opinion eligible for the record of L.M.C., 8-26, in

Register Book.

Sister vessels "Santos Maru" Nagasaki report No. 1514, and "La Plata Maru" Nagasaki report No. 1515.

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

The amount of Entry Fee ...	£ 61:30	When applied for,	
Special ...	£ 2028:80	14. 8. 1926	
Air Receivers ...	£ 64:40		
Donkey Boiler Fee ...	£ 64:40	When received,	
Aux. Air Comprs. ...	£ 229:80	AUG 21 1926	
Travelling Expenses (if any) ...	£		

*L. Kimber*  
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute

TUES. 21 SEP 1926

Assigned

*H. H. 8. 26*

*CL Oil Engines  
 DB 10015*

CERTIFICATE WRITTEN



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