

# REPORT ON OIL ENGINE MACHINERY

No. 1533

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Writing Report 4th May 1926 when handed in at Local Office 4th May 1926 Port of NAGASAKI. Date, First Survey 13th May 1925. Last Survey 21st Apr. 1926. Number of Visits 85.

To in Survey held at NAGASAKI. Date, First Survey 13th May 1925. Last Survey 21st Apr. 1926. Number of Visits 85. on the ~~Book~~ ~~Book~~ Screw Motor Vessel "LA PLATA MARU". Tons Gross 7267. Net 4387. Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha Ltd. Yard No. 411 When built 1926. Engines made at Winterthur. By whom made Sulzer Bros. Engine No. 5477 5483 When made 1925. Donkey Boilers made at Nagasaki. By whom made Mitsubishi Zosen Kaisha Ltd. Boiler No. 411. When made 1926. Brake Horse Power 2300 each engine = Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka. 4600 Total. Nom. Horse Power as per Rule 1164. 2 Eng Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

**IL ENGINES, &c.**—Type of Engines Sulzer Diesel Engines. 2 or 4 stroke cycle 2 Single or double acting Single. Maximum pressure in cylinders 38 Ats. No. of cylinders 12 Total diameter of cylinders 600 m/m. No. of cranks 12 Total Length of stroke 1060 m/m. No. of 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 Kg. Means of ignition Temp. due to Comp. Kind of fuel used Heavy Fuel Oil. Crank Shaft, dia. of journals as per Rule 386 m/m. Crank pin dia. 405 m/m. Crank Webs Mid. length breadth 550 m/m. Thickness parallel to axis as fitted 405 " Mid. length thickness 225 " Thickness around eye-hole as per Rule 386 m/m. Intermediate Shafts, diameter as per Rule 292 m/m. Thrust Shaft, diameter at collar as fitted 306.6 m/m. as fitted 405 " as fitted 337 " as fitted 390 m/m. Main Shafts, diameter as per Rule / Screw Shaft, diameter as per Rule 326 m/m. Is the screw shaft fitted with a continuous liner Yes. as fitted / as fitted 381 "

Bronze Liners, thickness in way of bushes as per Rule 17.5 m/m. Thickness between bushes as per rule 13.5 m/m. 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 In 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 Is an approved Oil Gland or other appliance fitted at the after end of the tube shaft No. Length of Bearing in Stern Bush next to and supporting propeller 1695 m/m.

Propeller, dia. 12'-10" Pitch 15'-9" No. of blades 4 Material Nickel. whether Moveable Yes Total Developed Surface 52.1 sq. feet Method of reversing Engines Direct. Is a governor or other arrangement fitted to prevent racing of the engine w/xxxxxxx Yes Means of lubrication at top Greased 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 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 Exh. led to funnel.

Cooling Water Pumps, No. Five. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes. Bilge Pumps fitted to 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. Serv. How driven Electric motor. 1 - 200 ton Bilge and Ballast. Ballast Pumps, No. and size 1 - 200 ton. Lubricating Oil Pumps, including Spare Pump, No. and size 3 - { 2 - 25 M<sup>3</sup>: 1 - 10 M<sup>3</sup>: }

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 Engine Room. 3- 3 1/2" dia. to Eng. well or No.2 Cofferdam. 2- 3 1/2" dia. to Engine Room. In Holds, &c. 1- 3" to No.1 Cofferdam. 2- 3" to No.1 Hold. 2- 3 1/2" to Nos.2 & 3 Holds. 1- 2" to No.3 Coff. 1- 3" to No.4 & 5 Holds. 1- 2 1/2" to Tunnel well. 1- 8" dia. 3- 5" dia. 3- 3 1/2" dia. to Eng. well or No.2 Cofferdam. Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size / Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes. Are the Bilge Suctions in the Machinery Space led from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes.

Are all Sea Connections fitted direct on the skin of the ship Yes. Are they fitted with Valves or Cocks Valves & cocks. 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 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 Yes. Is it fitted with a watertight door Yes. worked from Uppermost Cont. deck.

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. Two each 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 Diameter 325/290/65 Stroke 180 m/m Driven by Elec. motors. Small 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 660 cub. metres of free air per min. Driven by Elec. motors.

Auxiliary Engines crank shafts, diameter as per Rule 152.5 m/m. as fitted 175 " **AIR RECEIVERS:**—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 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. holes 270 m/m at each end. Is there a drain arrangement fitted at the lowest part of each receiver Yes. High Pressure Air Receivers, No. 2 Cubic capacity of each 150 litres Internal diameter 300 m/m thickness 15 m/m. Starting Air Receivers, No. 10 800 " Internal diameter 540 " thickness 25 " Seamless, lap welded or riveted longitudinal joint Seamless Material M. Steel. Range of tensile strength 50-60 Kg. m/m<sup>2</sup> Working pressure by Rules 102.8 Ats. @ 47 Kg. m/m<sup>2</sup>. Starting Air Receivers, No. 2 Total cubic capacity 5 Cu. metres. Internal diameter 1200 m/m thickness 7/8" Seamless, lap welded or riveted longitudinal joint Riveted Material M. Stl. 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.**

HYDRAULIC TESTS:-

DESCRIPTION.	DATE OF TEST.	WORKING PRESSURE.	TEST PRESSURE.	STAMPED.	REMARKS.
ENGINE CYLINDERS .....	11-5-25 to 19-5-25.	38 Ats.	75 Ats.	LR.	Tested in winterth
" " COVERS .....	" "	"	"	"	" "
" " JACKETS .....	" "	1	6	"	" "
" PISTON WATER PASSAGES .....	4-6-25 to 12-6-25.	2 "	6 "	"	" "
MAIN COMPRESSORS—1st STAGE .....	8-5-25 to 12-5-25.	3	50 "	"	" "
" 2nd " .....	" "	17.5 "	" "	"	" "
" 3rd " .....	13-5-25 to 14-5-25.	70 "	150 "	"	" "
AIR RECEIVERS—STARTING .....	25-8-25 to 7-7-25.	" "	" "	MB.HK.JQ.LR.	Tested in Dusseldo
" INJECTION .....	15-7-20 to 27-3-25.	" "	" "	HK & LR.	Tested in winterth
AIR PIPES .....	7-7-25 to 24-7-25.	" "	" "	LR	" "
FUEL PIPES .....	" "	" "	" "	LR	" "
FUEL PUMPS & Valves.	16-1-25 to 14-4-25.	" "	140 or 150	"	" "
SILENCER .....	22-7-25 to 4-8-25.	.05 "	2.5 Ats.	"	" "
" WATER JACKET .....					2- 8 ton D.B.Sett
SEPARATE FUEL TANKS .....	11-12-25 to 6-1-26.	Atmospheric	14.5 lbs & coils 300 lbs.	WK or LR	2- 10 ton M.E. "

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,

(Sign) **Sulzer Bros.** Manufacturer.

Dates of Survey while building  
 During progress of work in shops - 1925 May 13, 14, 15, July 6, 27, Aug. 20, 27, Sep. 7, 10, 24, 25, 28, 29, 30, Oct. 1, 5, 19, 29, 30, Nov. 2, 3, 4, 6, 7, 9, 11, 12, 13, 16, 17, 19, 23, 24, 25, 26, Dec. 2, 12, 21, 28, 29, 30.  
 During erection on board vessel - 1926 Jan. 4, 6, 8, 9, 11, 12, 15, 16, 17, 20, 22, 25, 28, 29, Feb. 2, 3, 4, 5, 9, 12, 15, 15, 17, 18, 24, 26, 27, Mar. 2, 4, 9, 11, 12, 19, 30, 31, Apr. 2, 6, 8, 14, 21.  
 Total No. of visits 85.

Dates of Examination of principal parts—Cylinders 30-7-25, Covers 30-7-25, Pistons 30-7-25, Rods 30-7-25, Connecting rods 30-7-25  
 Crank shaft 4-8-25, Flywheel shaft 4-8-25, Thrust shaft 4-8-25, Intermediate shafts 1-10-25, Tube shaft /  
 Screw shaft 7-9-25, Propellers 19-3-26, Stern tube s 19-3-26, Engine seatings 9-12-25, Engines holding down bolts 3-2-26.  
 Completion of fitting sea connections 19-3-26, Completion of pumping arrangements 4-3-26, Engines tried under working conditions 30-3-26.  
 Crank shaft, Material M.S. (E No. 5477 Lyd MB 5924 KH 12152, 16-4-25 or 4-2-25 LR 4-6-25, Flywheel shaft, Material M.S. (E No. 5477 Lyf TQ 1000 2-12-25, 2-12-24 LR 4-8-25, E No. 5483 Lyd KH 12151, 5-1-25 LR 4-8-25, Identification Mark See Flywheel shaft, Intermediate shafts, Material M.S., Identification Marks R.C. 222.  
 Tube shaft, Material / Identification Mark / Screw shaft, Material M.S., Identification Mark R.C. 222.

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"**.

General Remarks (State quality of workmanship, opinions as to class, &c. **The Main & Auxiliary Machinery including M.E. Nos. 5477 & 5483 & Auxiliary Engines Nos. 14189, 14193 & 14197 (Type 4 RH 31) No. 14215 (Type 2 RH 2) and two auxiliary compressors Nos. 1 & 2 (Type MC 6) have all been properly secured on board in accordance with the Rules & finally examined under full working conditions.**  
**Mean speed on trials 16.036 knots (Half load).**  
**The Machinery of this vessel is in my opinion eligible for the record of **LMC, 4-'26** in the Register Book.**  
**Sister vessel "Santos Maru", Nagasaki Report No. 1514.**

The amount of Entry Fee ... £ : When applied for,  
 Special ... £ 403:10 : 21. 4. 19. 26  
 Air Receivers ... £ 65:60  
 Donkey Boiler Fee ... £ 65:60 : When received,  
 Aux. Air Compressors 234:20 : 26. 4. 19. 26  
 Travelling Expenses (if any) £ :

Committee's Minute **TUES. 8 JUN 1926**  
 Assigned **+ L.M.C. 4-26 Oil Engines C.P.**

**L. Kimber**  
 Engineer Surveyor to Lloyd's Register of Shipping.  
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Certificate (if required) to be sent to  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)