

## REPORT ON OIL ENGINE MACHINERY.

No. 737

18 AUG 1930

Received at London Office

Date of writing Report 21st July 30 When handed in at Local Office 21st July 30 Port of NAGASAKI.

No. in Survey held at NAGASAKI.  
Reg. Book.

Date, First Survey 22nd July 1929 Last Survey 23rd June 1930.

Number of Visits 148.

41025 on the Twin Screw vessel "KINAI MARU".  
in Sup. ~~Donkey~~Tons { Gross 8365.28  
Net 5046.44

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha, Ltd. Yard No. 471. When built 1930.  
Engines made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Engine No. 471. When made 1930.  
Donkey Boilers made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Boiler No. 471. When made 1930.  
Brake Horse Power 7,200. Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.  
Nom. Horse Power as per Rule 1,495. Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes  
Trade for which vessel is intended Japan - New York.

## OIL ENGINES, &amp;c.—Type of Engines Mitsubishi-Sulzer Diesel Engine 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 40 Kg/cm<sup>2</sup> Diameter of cylinders 680 m/m Length of stroke 1200 m/m No. of cylinders 12 No. of cranks 12  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 930 m/m Is there a bearing between each crank Yes  
Revolutions per minute 120 Flywheel dia. 2200 m/m Weight 7800 Kg. Means of ignition Compression Kind of fuel used Heavy fuel oil.  
Crank Shaft, dia. of journals as per Rule 457.3 m/m as fitted 470 m/m Crank pin dia. 470 m/m Crank Webs Mid. length breadth 620 m/m Mid. length thickness 260 " Thickness parallel to axis / Thickness around eye hole /  
Flywheel Shaft, diameter as per Rule 457.3 m/m as fitted 470 m/m Intermediate Shafts, diameter as per Rule 338.4 m/m as fitted 350 m/m Thrust Shaft, diameter at collars as per Rule 457.3 m/m as fitted 470 m/m  
Tube Shaft, diameter as per Rule / as fitted / Screw Shaft, diameter as per Rule 368.5 m/m as fitted 380 m/m Is the { screw } shaft fitted with a continuous liner { Yes  
Bronze Liners, thickness in way of bushes as per Rule 18.8 m/m as fitted 22 m/m Thickness between bushes as per rule 14.1 m/m as fitted 16 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 /

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 /  
Length of Bearing in Stern Bush next to and supporting propeller 1520 m/m

Propeller, dia. 14'-0" Pitch 15'-2" No. of blades 4 Material Bronze whether Moveable Yes Total Developed Surface 54.9 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 at top Thickness of cylinder liners 53 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 /

Cooling Water Pumps, No. 2 @ 300 M<sup>3</sup>/hr for Cylinders. 2 @ 65 " for Pistons. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes  
Bilge 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 2 @ 110 M<sup>3</sup>/hr. 1 @ 30 M<sup>3</sup>/hr. How driven Electric motor.  
Ballast Pumps, No. and size 1 @ 110 M<sup>3</sup>/hr. Lubricating Oil Pumps, including Spare Pump, No. and size 1 @ 52 M<sup>3</sup>/hr for Bearing. 1 @ 7 " for Crosshead. One of each- Spare.

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 4 @ 3½". 2 @ 2". Cofferdams 1 each @ 2".  
In Holds, &c. No. 1- 2 @ 3". No. 2- 2 @ 3". No. 3- 2 @ 3". No. 4- 1 @ 3". No. 5- 1 @ 3". No. 6- 1 @ 3".  
Pipe passage 1 @ 2". No. 1 Cofferdam 1 @ 2". Tunnel well 1 @ 2½".  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 5½". 1 @ 2½". 1 @ 8" (Emergency).

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

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 Both  
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 / How are they protected /  
What 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 Yes Is it fitted with a watertight door Yes worked from Upper 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. 2 No. of stages 3 Diameter 570/480/150 m/m Stroke 600 m/m Driven by Main Engine.  
Auxiliary Air Compressors, No. 2 No. of stages 3 Diameter 340/295/75 m/m Stroke 180 m/m Driven by Elec. motor.  
Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 110/35 m/m Stroke 120 m/m Driven by Oil engine.  
Turbo Blower Scavenging Air Pumps, No. 2 Capacity, 1000 M<sup>3</sup>/min. (each). Stroke / Driven by Elec. motor.

Auxiliary Engines crank shafts, diameter as per Rule / as fitted /

LR 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 Hand hole- HP Air Recr. Man hole- LP Air Recr.

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 litre Internal diameter 300 m/m thickness 16 m/m  
Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 28-35 tons sq. in. Working pressure by Rules 103.7 Kg/cm<sup>2</sup> 91.7 Kg/cm<sup>2</sup>

Starting Air Receivers, No. 2 Total cubic capacity 12 Cub. M. Internal diameter 1200 m/m thickness 22.5 m/m  
Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 28-35 tons sq. in. Working pressure by Rules 484.9 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

Donkey Boilers Yes

General Pumping Arrangements Yes

Oil Fuel Burning Arrangements

SPARE GEAR As per the Rules and in addition. (See separate list).

The foregoing is a correct description,  
NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

Manufacturer.

GENERAL MANAGER.

Dates of Survey while building  
During progress of work in shops--  
During erection on board vessel--  
Total No. of visits 148.

Dates of Examination of principal parts--Cylinders 22-1-30 to 25-11-29 to 6-2-30 to 26-9-29 to 3-10-29 to  
Covers 13-2-30 28-1-30 Pistons 23-5-30 Rods 16-5-30 Connecting rods 28-1-30

Crank shaft 20-6-29 to Flywheel shaft and Thrust shaft 23-5-29 to Intermediate shafts 11-3-30 to Tube shaft /  
Screw shaft 9-12-29 to Propeller 23-5-30. Stern tube 1-3-30. Engine seatings 24-3-30 Engines holding down bolts 8-5-30

Completion of fitting sea connections 24-3-30 Completion of pumping arrangements 7-5-30 Engines tried under working conditions 2-6-30

Crank shaft, Material Ingot steel Identification Mark S. LLOYD'S Nos. 8124.8125 PK 2-8-29. Ingot steel Identification Mark LLOYD'S No. 645  
Thrust shaft, Material Ingot steel Identification Mark P. LLOYD'S Nos. 8126.8143 PK 2-8-29. Ingot steel Identification Mark 2.S. 10-9-29

Tube shaft, Material / Identification Mark / Screw shaft, Material Ingot steel Identification Mark P.S. LLOYD'S No. 241 K  
Spare:-No. 241 KK 28-1-30

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

Is this machinery duplicate of a previous case No If so, state name of vessel /

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

Identification Mark:- INTERMEDIATE SHAFTS.

Port:-	LLOYD'S No. 218 K.K.	14-1-30.	2 off.	Star:-	LLOYD'S No. 218 K.K.	6-1-30.	1
	"	24-1-30.	1 off.		"	14-1-30.	1
	"	28-1-30.	1 off.		"	24-1-30.	2
	"	31-1-30.	1 off.		"	28-1-30.	1
	"	15-2-30.	1 off.		"	31-1-30.	1
	"	11-3-30.	1 off.		"	11-3-30.	1

The Machinery has been constructed under Special Survey and installed in the vessel in accordance with the Rules and Approved plans.

The materials and workmanship are good and the machinery has been examined under working condition and found satisfactory.

The Machinery of this vessel is eligible in my opinion to have the record of LMO, 6-30

Mean speed on trial 18.438 knots, at 14'-1 1/4" draught.

Certificates of Castings and Forgings herewith.

The amount of Entry Fee ... £ 60:00 : When applied for,

Special ... £ 2060:78 : 16. 6. 1930

Donkey Boiler Fee ... £ 63:00 : When received,

Air Receivers, ... £ 94:50 : 1. 7. 1930

Travelling Expenses (if any) £

Committee's Minute

Assigned

Oil Eng. D.B. 10000.

CERTIFICATE WRITTEN.

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