

Rpt. 4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 9952

-8 MAR '37

Received at London Office

Date of writing Report 4/2/1937 When handed in at Local Office 16/2/1937 Port of KOBE  
No. in Survey held at TAMA Date, First Survey 4-2-36 Last Survey 15-1-1937  
Reg. Book. on the <sup>Single</sup> ~~Triple~~ ~~Quadruple~~ Screw vessel MOTORSHIP "OMROSAN MARU" Tons Gross 9205 Net 5288  
Built at TAMA By whom built MITSUI BUSSAN KAISHA Yard No. 212 When built 1937  
Engines made at TAMA By whom made MITSUI BUSSAN KAISHA Engine No. 96 When made 1937  
Donkey Boilers made at TAMA By whom made MITSUI BUSSAN KAISHA Boiler No. 134/136 When made 1937  
Brake Horse Power 7,600 Owners MITSUI BUSSAN KAISHA Port belonging to KOBE  
Nom. Horse Power as per Rule 1,231 Is Refrigerating Machinery fitted for cargo purposes NO Is Electric Light fitted YES  
Trade for which vessel is intended CARRYING PETROLEUM IN BULK.

L ENGINES, &c.—Type of Engines BURMEISTER & WAIN 24/16 2 or 4 stroke cycle 2 Single or double acting DOUBLE  
Maximum pressure in cylinders 47 kg/cm<sup>2</sup> Diameter of cylinders 620 mm Length of stroke 1,400 mm No. of cylinders 6 No. of cranks 6  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 940 mm Is there a bearing between each crank YES  
Revolutions per minute 112 Flywheel dia. 1,911 mm Weight 2,200 Kgs Means of ignition COMPRESSION Kind of fuel used HEAVY OIL  
Crank Shaft, dia. of journals as per Rule 483 mm as fitted 485 mm Crank pin dia. 485 mm Crank Webs Mid. length breadth 860 mm Thickness parallel to axis 305 mm  
as fitted 485 mm (115 mm HOLLOW) (115 mm HOLLOW) Mid. length thickness 285 mm Thickness around eye hole 232.5 mm  
Secondary Crank Shaft, diameter as per Rule 260 mm Intermediate Shafts, diameter as per Rule 419 mm as fitted 433 mm Thrust Shaft, diameter at collars as per Rule 440 mm as fitted 463 mm  
Tube Shaft, diameter as per Rule as fitted Screw Shaft, diameter as per Rule 457 mm as fitted 468.3 mm Is the shaft fitted with a continuous liner YES  
Bronze Liners, thickness in way of bushes as per Rule 21.59 mm as fitted 23 mm Thickness between bushes as per rule 16.26 mm as fitted 22.2 mm 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 YES  
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 YES Is an approved Oil Gland or other appliance fitted at the after end of the tube YES  
If so, state type Length of Bearing in Stern Bush next to and supporting propeller 1956 mm  
Propeller, dia. 5,400 mm Pitch 5037 mm No. of blades 4 Material BRONZE whether Moveable YES Total Developed Surface 9.48 sq. feet  
Method of reversing Engines DIRECT (ELEC. MOTOR) Is a governor or other arrangement fitted to prevent racing of the engine when declutched YES Means of lubrication FORCED  
Thickness of cylinder liners 42 mm 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 YES  
Cooling Water Pumps, No. 2 CAPACITY=300 T/H EACH 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. 2 Diameter 160 mm Stroke 238 mm Can one be overhauled while the other is at work YES  
Pumps connected to the Main Bilge Line { No. and Size 2-MAIN ENG. BILGE PUMP-25 T/H EACH 1-INDEPENDENT B+S. PUMP-2X30 T/H 1-BALLAST OR AUX. COND. COOLING PUMP-150 T/H  
(MAIN ENGINE) (ELEC. MOTOR) (STEAM ENG.)  
How driven AND 1-GENERAL SERVICE PUMP-120 T/H (ELEC. MOTOR)

Ballast Pumps, No. and size 1-150 T/H Lubricating Oil Pumps, including Spare Pump, No. and size 2-250 T/H 1-5 T/H  
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 3-4" 2-3"  
Holds, &c. FORE HOLD:- 2-3" PUMP ROOM:- FORWARD:- 2-3" MIDSHIP:- 2-3" (FROM PUMPS OUTSIDE ENGINE ROOM)  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-8" & 2-5 1/2"  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes YES Are the Bilge Suctions in the Machinery Spaces fitted 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 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  
That pipes pass through the bunkers How are they protected  
That 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 YES  
Is a wood vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork YES

Main Air Compressors, No. 2 No. of stages 2 Diameters 280 mm Stroke 200 mm Driven by 1-AUX. DIESEL ENGINE  
Auxiliary Air Compressors, No. 2 No. of stages 2 Diameters 320 mm Stroke 200 mm Driven by 1-ELECT. MOTOR  
Small Auxiliary Air Compressors, No. 1 No. of stages 2 CAPACITY: 25 M<sup>3</sup>/H at 900 RPM & 30 kg/cm<sup>2</sup> Diameters DIA 464/108 mm Stroke 95 mm Driven by STEAM ENGINE FOR AUX. GENERATOR  
Scavenging Air Pumps, No. 1 (IMPELLER TYPE) Diameter 169 mm Stroke 180 mm Driven by ELECTRIC MOTORS (2)  
Auxiliary Engines crank shafts, diameter as per Rule 169 mm as fitted 180 mm Driven by (1 SPARE FOR EACH OTHER)

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 ACCESS BY MANHOLE  
Is there a drain arrangement fitted at the lowest part of each receiver YES  
High Pressure Air Receivers, No. 2 Cubic capacity of each 2x18 M<sup>3</sup> Internal diameter 1944~2000 mm thickness 28 mm  
Seamless, lap welded or riveted longitudinal joint RIVETED Material STEEL Range of tensile strength 28-32 T/0 + 26-30 T/0 Working pressure by Rules SHELL 28 mm END 35 mm  
Starting Air Receivers, No. 2 Total cubic capacity 2x18 M<sup>3</sup> Internal diameter 1944~2000 mm thickness 26.4 kg/cm<sup>2</sup>  
Seamless, lap welded or riveted longitudinal joint RIVETED Material STEEL Range of tensile strength 28-32 T/0 + 26-30 T/0 Working pressure by Rules 26.4 kg/cm<sup>2</sup>

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IS A DONKEY BOILER FITTED? YES (THREE)

is a report now forwarded? YES

PLANS. Are approved plans forwarded herewith for Shafting 15-2-35 + 9/10/36  
(If not, state date of approval)

Receivers 16-3-35 + 26-3-35 Separate Tanks 5-12-35

Donkey Boilers 26-3-35 + 28-3-35

General Pumping Arrangements 14-2-35 + 13-6-35

Oil Fuel Burning Arrangements 31-5-35

SPARE GEAR IN ACCORDANCE WITH THE RULES' REQUIREMENTS, IN ADDITION, THE FOLLOWING

IMPORTANT SPARE GEAR HAS BEEN PLACED ON BOARD:-

1- SCAVENGE AIR BOX WITH STUDS + NUTS.

1- TOP EXHAUST PISTON COMPLETE.

1- BOTTOM " " " "

1- FUEL OIL PUMP COMPLETE + 6- PLUNJERS WITH BUSHES.

1/4- SET OF DOUBLE ROLLER DRIVING CHAIN BETWEEN MAIN + SECONDARY CRANK SHAFTS.

1- PROPELLER SHAFT (CL) R. NO. 1072 Y.S. 20-7-36.

1- BRONZE PROPELLER BLADE.

1- SOLID C.I. PROPELLER, 4 BLADED, (R. NO. 5031 14-3-36)

The foregoing is a correct description,

PER PRO MITSUBISHI BUSSAN KAISHA, LTD.,  
Saito.

Manufacturer.

Dates of Survey while building	During progress of work in shops--	1936. FEB. 14. MAR. 7. 10, 21, 22. MAY. 23, 29. JUNE 25. JULY. 23, 24, 29, 30. AUG. 1, 19, 22, 23. SEP. 9, 15, 28. OCT. 1, 9, 19, 20, 21, 22, 23, 26, 27, 28. NOV. 17, 24, 26, 28. DEC. 2.
	During erection on board vessel--	1936. NOV. 13, 26. DEC. 7, 16, 26. 1937. JAN. 7, 15.
	Total No. of visits	41.

Dates of Examination of principal parts--Cylinders 31/8, 15/9 + 19/10/36. Covers 19 + 22/8/36 Pistons 19/8 + 15/9/36 Rods 15/9/36 Connecting rods 25/6/35

Crank shaft 17-6-36 SECONDARY CRANK Flywheel shaft 22-6-36 Thrust shaft 14/9/36 Intermediate shafts 29/8/36 Tube shaft ✓

Screw shaft 9/10/36 Propeller 9/10/36 Stern tube 9/10/36 Engine seatings 30/7 + 26/11/36 Engines holding down bolts 26/11 + 16/12

Completion of fitting sea connections 16/6/36 Completion of pumping arrangements 16/12/36 Engines tried under working conditions 17/11 + 26/12

Crank shaft, Material STEEL Identification Mark R. NO. 5291 SECONDARY CRANK Flywheel shaft, Material STEEL Identification Mark R. NO. 5314

Thrust shaft, Material STEEL Identification Mark R. NO. 5487 Intermediate shafts, Material STEEL Identification Marks R. NO. 5475

Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material STEEL Identification Mark R. NO. 5510

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 OIL TANKER If so, have the requirements of the Rules been complied with YES

Is this machinery duplicate of a previous case YES If so, state name of vessel "OTOWASAN MARU"

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

This machinery has been constructed under Special Survey in accordance with the Rules and Approved plans.

The materials and workmanship are good.

On completion the machinery was installed in the vessel in accordance with the Rules and tested under full working condition, and is eligible in my opinion for classification with the record of \* LMC 1,37, Oil Engine, T.S. (CL) 1,37 and 3 D.B. 200 lbs per square inch.

The amount of Entry Fee ... £ 6. : 0 0 When applied for, Jan. 18<sup>th</sup> 1937  
Special ... £ 163. : 9. 4  
Donkey Boiler Fee ... £ : : When received, Feb. 15<sup>th</sup> 1937  
Travelling Expenses (if any) £ : :

Committee's Minute FRI 12 MAR 1937

Assigned

+ LMC 1.37  
3 D.B. - 200 lbs  
oil Eng.

CH

M. Kamakura. C. Macpherson  
Engineer Surveyor to Lloyd's Register of Shipping.



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Foundation