

REPORT ON OIL ENGINE MACHINERY.

No. 9508.

-5 JUN 1936

Received at London Office

Date of writing Report 9-4-1936 When handed in at Local Office

23-4-1936 Port of KOBE

No. in Survey held at TAMA
Reg. Book.

Date, First Survey 23-5-1935 Last Survey 4-4-1936

Number of Visits 36

on the Single Screw vessel MOTORSHIP "OTOWASAN MARU"

Tons { Gross 9234
Net 5338

Built at TAMA

By whom built MITSUI BUSSAN KAISHA

Yard No. 211 When built 1936

Engines made at TAMA

By whom made MITSUI BUSSAN KAISHA

Engine No. 95 When made 1936

Donkey Boilers made at TAMA

By whom made MITSUI BUSSAN KAISHA

Boiler No. 131/132/133 When made 1936

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.

OIL ENGINES, &c.—Type of Engines BURMEISTER AND WAIN. 2 or 4 stroke cycle 2 Single or double acting DOUBLE

Maximum pressure in cylinders 47 kg/cm² Diameter of cylinders 620 mm Length of stroke 1400 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. 1811 mm Weight 2200 Kgs. Means of ignition COMPRESSION Kind of fuel used HEAVY OIL

Crank Shaft, dia. of journals as per Rule 483 mm Crank pin dia. 485 mm (115 mm HOLLOW) Crank Webs Mid. length breadth 860 mm Thickness parallel to axis 305 mm

SECONDARY CRANK as fitted 485 mm (115 mm HOLLOW) as per Rule 419 mm M.d. length thickness 285 mm Thickness around eyehole 232.5 mm

Flywheel Shaft, diameter as fitted 260 mm Intermediate Shafts, diameter as fitted 433 mm Thrust Shaft, diameter at collars as fitted 463 mm

Tube Shaft, diameter as fitted 260 mm Screw Shaft, diameter as fitted 470 mm Is the {tube} shaft fitted with a continuous liner {YES}

Bronze Liners, thickness in way of bushes as per Rule 21.59 mm Thickness between bushes as fitted 21.43 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

shaft No If so, state type YES Length of Bearing in Stern Bush next to and supporting propeller 1956 mm

Propeller, dia. 5,400 mm Pitch 5,037 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 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-INDEPEND. B.S. PUMP-2X30 T/H (ELECTRIC MOTOR) 1-BALLAST OR AUX. COND. COOLING PUMP-150 T/H AND (STEAM ENGINE)}

How driven 1-GENERAL SERVICE PUMP-120 T/H (ELECTRIC MOTOR) Lubricating Oil Pumps, including Spare Pump, No. and size 2-250 T/H 1-5 T/H

Ballast Pumps, No. and size 1-150 T/H Are two independent means arranged for circulating water through the Oil Cooler YES

Pumps, No. and size:—In Machinery Spaces 3-4" 2-3" Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

In 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

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 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 YES How are they protected YES

What pipes pass through the deep tanks YES Have they been tested as per Rule YES

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

If 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 H.P. 280 mm L.P. 320 mm Stroke 200 mm EACH Driven by 1-AUX. DIESEL ENGINE 1-ELECTRIC MOTOR

Auxiliary Air Compressors, No. 2 No. of stages 2 CAPACITY: 25 M³/H at 900 RPM. & 30 kg/cm² Driven by STEAM ENGINE FOR AUX. GENERATOR

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Driven by ELECTRIC MOTORS. (2)

Scavenging Air Pumps, No. 1 (IMPELLER TYPE) Diameter 650 mm Stroke 200 mm

Auxiliary Engines crank shafts, diameter as per Rule 169 mm as fitted 180 mm

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 2 x 18 M³ Internal diameter 1944 mm thickness 28 mmSeamless, lap welded or riveted longitudinal joint Material STEEL Range of tensile strength 26-30 T/H Working pressure by Rules 26.4 kg/cm²Starting Air Receivers, No. 2 Total cubic capacity 2 x 18 M³ Internal diameter 1944 mm thickness 28 mm Working pressure by Rules 26.4 kg/cm²Seamless, lap welded or riveted longitudinal joint Riveted Material STEEL Range of tensile strength 26-30 T/H Working pressure by Rules 26.4 kg/cm²

IS A DONKEY BOILER FITTED? YES (THREE) If so, is a report now forwarded? YES
PLANS. Are approved plans forwarded herewith for Shafting 15-2-35 Receivers 16-3-35 + 26-3-35 Separate Tanks 5-12-35
(If not, state date of approval)
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:-

ONE SCAVANGE AIR BOX WITH STUDS & NUTS.
ONE TOP EXHAUST PISTON COMPLETE
ONE BOTTOM EXHAUST PISTON COMPLETE
TWO FUEL OIL PUMP COMPLETE AND SIX PLUNTERS WITH BUSHES.
1/4 SET OF DOUBLE ROLLER DRIVING CHAIN BETWEEN MAIN & SECONDARY CRANK SHAFTS
ONE PROPELLER SHAFT (CL) (R No. 1035 3-2-36.)
ONE BRONZE BLADE
ONE SOLID CAST IRON PROPELLER, 4 BLADED (R No. 5031 14-3-36)

The foregoing is a correct description

PER PRO MITSUBUSHI KAISHA, LTD.,

S. Saito

Manufacturer.

SUB-MANAGER SHIPBUILDING DEPT.

Dates of Survey while building	{ During progress of work in shops-- During erection on board vessel-- Total No. of visits	1935. MAY 23 24 25 27 JULY 11 13 15 AUG. 28 SEPT. 23 28 OCT. 8. 9. 12 15 21 25 28 30
		NOV. 5. 6. 8. 21. 1936. JAN. 15 20 21 27 FEB. 12
		1936. JAN. 23 27 FEB. 4 MAR. 3. 5. 23 28 31 APR. 4.

Dates of Examination of principal parts—Cylinders 28-10-35 Covers 28-8-35 Pistons 28-9-35 Rods 28-10-35 Connecting rods 13-9-35
Crank shaft 8-11-35 SECONDARY CRANK Flywheel shaft 8-11-35 Thrust shaft 21-11-35 Intermediate shafts 21-11-35 Tube shaft ✓
Screw shaft 20-11-35 Propeller 20-11-35 Stern tube 22-11-35 Engine seatings 15-1-36 Engines holding down bolts 21-1-36

Completion of fitting sea connections 13-12-35 Completion of pumping arrangements 23-3-36 Engines tried under working conditions
Crank shaft, Material STEEL Identification Mark 4677 3-10-35 SECONDARY CRANK Flywheel shaft, Material STEEL Identification Mark 4716 26-10-35
Thrust shaft, Material STEEL Identification Mark 4654 11-9-35 Intermediate shafts, Material STEEL Identification Marks 4753 13-11-35 4762 19-11-35
Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material STEEL Identification Mark 4708 25-10-35

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 No. If so, state name of vessel ✓

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 conditions, and is eligible in my opinion for classification with the record of * LMC 4,36, Oil Engine, T.S. (CL) 4,36 4 3 D.B. 200 lbs per sq inch.

The amount of Entry Fee ... £ 6-0-0: When applied for,
Special ... £ 163-8-1: 16 Apr. 1936
AIR RECEIVER Donkey Boiler Fee ... £ 2-12-6: When received,
Travelling Expenses (if any) £ : 26-6-1936 26/6

Committee's Minute

Assigned

FRI. 12 JUN 1936

+ LMC 4,36 Oil Engines
3 DB 200 lbs CL

Engine Surveyor to Lloyd's Register of Shipping.

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Foundation