

REPORT ON OIL ENGINE MACHINERY

No. 8656

Received at London Office

23 JUL 1934

Date of writing Report 19 When handed in at Local Office 19 Port of **KOBE** Date, First Survey **13-7-33** Last Survey **22-6-1934** Number of Visits **51**

No. in Survey held at **KOBE** on the **Single** Screw vessel **"TOR MARU"** Tons Gross **10052** Net **9038**

built at **KOBE** By whom built **KAWASAKI DOCKYARD Co.** Yard No. **572** When built **1934**
Engines made at **KOBE** By whom made **KAWASAKI DOCKYARD Co.** Engine No. **205** When made **1934**
Main Boilers made at **KOBE** By whom made **KAWASAKI DOCKYARD Co.** Boiler No. **1** When made **1934**
Indicated Horse Power **8000** Owners **IINO SHOJI KABUSHIKI KAISHA** Port belonging to **NAKAMAIZURU**
Nominal Horse Power as per Rule **2115** Is Refrigerating Machinery fitted for cargo purposes **NO** Is Electric Light fitted **YES**
Trade for which vessel is intended **OIL IN BULK**

ENGINES, &c.—Type of Engines **M.R.N 80ZU 70/120** 2 or 4 stroke cycle **2** Single or double acting **DOUBLE**
Maximum pressure in cylinders **45 kg/cm²** Diameter of cylinders **700 mm** Length of stroke **1200 mm** No. of cylinders **8** No. of cranks **8**
Distance of bearings, adjacent to the Crank, measured from inner edge to inner edge **1100 mm** Is there a bearing between each crank **YES**
Revolutions per minute **110** Flywheel dia. **5566 mm** Weight **5193 kg** Means of ignition **COMPRESSION** Kind of fuel used **HEAVY OIL**
Crank Shaft, dia. of journals as per Rule **478 mm** as fitted **525 mm** Crank pin dia. **525 mm** Crank Webs Mid. length breadth **850 mm** Thickness parallel to axis **330 mm**
Wheel Shaft, diameter as per Rule **478 mm** as fitted **525 mm** Intermediate Shafts, diameter as per Rule **427 mm** as fitted **455 mm** Thrust Shaft, diameter at collars as per Rule **490 mm** as fitted **490 mm**
Propeller Shaft, diameter as per Rule **465 mm** as fitted **486 mm** Is the **hub** screw shaft fitted with a continuous liner **YES**

Cylinder Liners, thickness in way of bushes as per Rule **22 mm** as fitted **24 mm** Thickness between bushes as per Rule **16.5 mm** as fitted **21 mm** Is the after end of the liner made watertight in the boiler 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 the 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 **NO**
If so, state type **GOO** Length of Bearing in Stern Bush next to and supporting propeller **300**

Propeller, dia. **5500 mm** Pitch **4808 mm** No. of blades **4** Material **BRONZE** Whether Moveable **YES** Total Developed Surface **318** sq. feet
Method of reversing Engines **DIRECT** Is a governor or other arrangement fitted to prevent racing of the engine when detached **YES** Means of lubrication **FORCED**
Thickness of cylinder liners **40 mm** Are the cylinders fitted with safety valves **YES** Are the exhaust pipes and silencers water cooled or lagged with conducting material **LAGGED**
If the exhaust is led overboard near the waterline, what means are arranged to prevent water from being syphoned back to the engine **YES**

Discharging Water Pumps, No. **3** Is the sea suction provided with an efficient strainer which can be cleared within the vessel **YES**
Discharging Pumps worked from the Main Engines, No. **1** Diameter **150 mm** Stroke **120 mm** Can one be overhauled while the other is at work **YES**
Pumps connected to the Main Bilge Line No. and Size **1-150T/H** **1-120T/H** **1-50T/H**
How driven **STEAM** **ELECTRIC** **ELECTRIC**
Discharging Pumps, No. and size **1-150T/H** Lubricating Oil Pumps, including Spare Pump, No. and size **2-75T/H**

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 **1-8"** **1-5"** **5-3 3/4"** (**COFFERDAM 4-2"**)
Holds, &c. **FORE HOLD 2-3 1/2"** **AUX PUMP ROOM 2-2 1/2"** (**COFFERDAM 2-2 1/2"**) **PUMP ROOM 2-2 1/2"** (**COFFERDAM 2-2 1/2"**) **AFT COFFERDAM 3-2 1/2"**
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size **1-8"** **1-5"**
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes **YES** Are the Bilge Suctions in the Machinery Spaces 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**
Do all pipes pass through the bunkers **YES** How are they protected **YES**
Do all 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 the vessel 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 **3** Diameters **350 295 100 mm** Stroke **240 mm** Driven by **RUX¹ DIESEL ENGINE**
Auxiliary Air Compressors, No. **1** No. of stages **2** Diameters **120 106 mm** Stroke **180 mm** Driven by **EMERGENCY GENERATOR**
Discharging Air Pumps, No. **1** **TURBO BLOWER** Capacity **1050 cm³/min** Stroke **1** Driven by **MOTOR**

Auxiliary Engines crank shafts, diameter as per Rule **1633 mm** as fitted **170 mm**
RECEIVERS:—Is each receiver, which can be isolated, fitted with a safety valve as per Rule **YES**
Are the internal surfaces of the receivers examined **YES** What means are provided for cleaning their inner surfaces **STEAM**
Is there a drain arrangement fitted at the lowest part of each receiver **YES**
High Pressure Air Receivers, No. **2** Cubic capacity of each **30** Internal diameter **2000 mm** thickness **33.33 mm**
Material **STEEL** Range of tensile strength **28/32 T/O** Working pressure by Rules **30 kg/cm²**
Is the vessel lap welded or riveted longitudinal joint **RIVETED**



W1341-0021

IS A DONKEY BOILER FITTED? **YES** 3. If so, is a report now forwarded? **YES**

PLANS. Are approved plans forwarded herewith for Shafting **GERMANY**. Receivers **2-5-33**. Separate Tanks **11-10-33**.
(If not, state date of approval)

Donkey Boilers **26-7-33** 4-9-33. General Pumping Arrangements **16-5-33**. Oil Fuel Burning Arrangements **22-7-33**

SPARE GEAR PLACED ON BOARD.

✓ CYLINDER COVER COMPLETE WITH VALVES SPRINGS & FITTINGS TOP 2 SETS BOTTOM 2 SETS. CYLINDER LINERS. 2 SETS.
 FUEL NEEDLE VALVES. TOP 8 SETS. BOTTOM 16 SETS. CYLINDER SAFETY VALVES. 2 TOP 2 BOTTOM.
 ✓ PISTON AND ROD COMPLETE. 2 SETS. SCREW SHAFT. 1.
 ✓ TELESCOPIC COOLING PIPES. SET FOR 1 PISTON. THRUST COLLAR PADS 1 SET.
 ✓ CAM SHAFT DRIVING SKEN WHEELS. 1 SET. PROPELLER BLADE. 1.
 ✓ CYLINDER COVER STUDS & NUTS. SET FOR 1 CYLINDER. TURBO-BLOWER IMPELLER. 1. IMPELLER SHAFT. 1.
 ✓ CROSSHEAD BEARING BOLTS & NUTS. SET FOR 1 CROSSHEAD. FUEL PUMPS. 2.
 ✓ CRANKPIN BEARING BOLTS & NUTS. SET FOR 1 CRANK. BILGE PUMP IMPELLER SHAFT AND BEARING. 1.
 ✓ CRANKSHAFT COUPLING BOLTS & NUTS. 1 SET. DAILY FUEL SUPPLY PUMP. 1 COMPLETE.
 ✓ INTERMEDIATE SHAFT COUPLING BOLTS & NUTS. 1 SET. SOLID DRANN STEEL APES. 13 LENGTHS.
 ✓ MAIN BEARING BOLTS & NUTS. 1 SET.

The foregoing is a correct description,

J. Munro Chief Designer. Manufacturer.
K. D. & Co.

Dates of Survey while building

During progress of work in shops--	JUL/33. 13-14-18-25. SEP/33. 8-29. OCT/33. 10-13-20-24-30. NOV/33. 11. DEC/33. 4-8-15-19-22-26. JAN/34. 3-15-22-29. FEB/34. 5-3-14-19-21.
	MAR/34. 2-6-10-12-20-27-31. APR/34. 7-17-18-19-20-25.
During erection on board vessel--	MAY/34. 3-16-25-29. JUN/34. 1-2-4-12-18-21-22.
Total No. of visits	51.

Dates of Examination of principal parts—Cylinders 19-3-34. Covers 19-3-34. Pistons 12-3-34. Rods 12-16-19-29/3-34. Connecting rods 26-2-34. Crank shaft 20-11-33. Flywheel shaft 9-4-34. Thrust shaft 17-3-34. Intermediate shafts 17-3-34. Tube shaft 19-2-34. Propeller 19-3-34. Stern tube 17-3-34. Engine seatings 28-3-34. Engines holding down bolts 4-6-34. Completion of fitting sea connections 28-3-34. Completion of pumping arrangements 25-4-34. Engines tried under working conditions 12-13-6-34. Crank shaft, Material STEEL. Identification Mark LR. NO. 14990. Flywheel shaft, Material STEEL. Identification Mark LR. NO. 3618A. Thrust shaft, Material STEEL. Identification Mark LR. NO. 3618B. Intermediate shafts, Material STEEL. Identification Marks LR. NO. 376. Tube shaft, Material ✓. Identification Mark ✓. Screw shaft, Material STEEL. Identification Mark LR. NO. 3752.

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 ✓.

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 efficiently installed in the vessel and tested under full working conditions and is eligible in my opinion for classification with the record of LMC 6.34. TS(CL) 6.34. and 3.78, 178 lbs/s.

Certificate (if required) to be sent to

The amount of Entry Fee ... £ 6. : 0.0. When applied for,
 Special ... £ 191 : 1.10. 22nd June 1934
 Donkey Boiler Fee ... £ 91 : 19.0. When received,
 AIR RECEIPTS. Travelling Expenses (if any) £ 15 : 15.0. 23rd June 1934

Committee's Minute TUE. 31 JUL 1934

Assigned *+ LMC 6.34 CL*
3 D.B. - 178 TUE. 23 OCT 1934

CERTIFICATE WRITTEN

A. E. Munro
 Engineer Surveyor to Lloyd's Register of Shipping
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