

## REPORT ON OIL ENGINE MACHINERY.

No. 9536.

Received at London Office 13 JUN 1936

Date of writing Report 12 May 1936 When handed in at Local Office 20 May 1936 Port of Kobe  
 No. in Survey held at KOBE & OH, HARIMA Date, First Survey 14 June 1935 Last Survey Apr. 18 1936  
 Reg. Book.

Single  
 on the ~~Twin~~  
 Triple  
 Quadruple  
 Screw vessel

**"KASHII MARU"**

Tons { Gross 6823  
 Net 3663

Built at OH, HARIMA By whom built HARIMA SHIPBUILDING & ENG. CO. LTD. Yard No. 215 When built 1936  
 Engines made at KOBE By whom made KOBE STEEL WORKS, LTD. Engine No. 232 When made 1935.  
 Donkey Boilers made at HARIMA By whom made HARIMA S. & E. CO. LTD. Boiler No. When made 19  
 Brake Horse Power 7000 Owners KOKUSAI KISEN KAISHA. Port belonging to TOKIO  
 Nom. Horse Power as per Rule 1875 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes  
 Trade for which vessel is intended Foreign.

**OIL ENGINES, &c.** Type of Engines **SULZER 6 D.S.D. 76 HEAVY OIL.** 2 or 4 stroke cycle 2 ~~single~~ double acting  
 Maximum pressure in cylinders 700 <sup>kg/cm<sup>2</sup></sup> Diameter of cylinders 760 mm Length of stroke 1200 mm No. of cylinders 6 No. of cranks 6  
 Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1020 mm Is there a bearing between each crank yes  
 Revolutions per minute 122. Flywheel dia. 68575 kg-m BALANCE Weights 700 kg-m Means of ignition Compression Kind of fuel used Heavy oil  
 Crank Shaft, dia. of journals as per Rule 493.5 mm Crank pin dia. 510 mm Crank Webs Mid. length breadth 830 mm Thickness parallel to axis 320 mm  
 as fitted 510 mm M.d. length thickness 320 mm Thickness around eye hole 242.5 mm  
 Flywheel Shaft, diameter as per Rule 494 mm Intermediate Shafts, diameter as per Rule 395 mm Thrust Shaft, diameter at collars as per Rule 395 mm  
 as fitted 510 mm as fitted 405 mm as fitted 510 mm  
 Tube Shaft, diameter as per Rule 430 mm Is the screw shaft fitted with a continuous liner yes  
 as fitted 444 mm  
 Bronze Liners, thickness in way of bushes as per Rule 20.8 mm Thickness between bushes as per rule 15.6 mm Is the after end of the liner made watertight in the  
 as fitted 23.5 mm as fitted 19 mm  
 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 one piece.  
 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 no If so, state type Length of Bearing in Stern Bush next to and supporting propeller 2415 mm  
 Propeller, dia. 5200 mm Pitch 3.978 M. No. of blades 4 Material Bronze whether Moveable yes Total Developed Surface 99.9 sq. feet  
 Method of reversing Engines Compressed air Is a governor or other arrangement fitted to prevent racing of the engine when declutched 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  
 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 Sea Water + 2 Fresh Water 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. none Diameter Stroke Can one be overhauled while the other is at work  
 Pumps connected to the Main Bilge Line { No. and Size 1 @ 30 tons/hour, 1 @ 250 tons/hr. 1 @ 200 tons/hour.  
 How driven all by electric motors.  
 Ballast Pumps, No. and size 1 @ 250 tons/hr. Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 70 M<sup>3</sup>/hr.  
 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 2 @ 90 mm.  
 In Holds, &c. 2 @ 90 mm in each hold, 1 @ 120 mm in each deep tank.  
 Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 90 mm, 2 @ 140 mm + 2 @ 200 mm.  
 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 yes.  
 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 top platform  
 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. none. No. of stages 2 Diameters 400 + 360 mm Stroke 200 mm Driven by 1 by Aux. Engine  
 Auxiliary Air Compressors, No. 2. No. of stages 2 Diameters 38 + 38 mm Stroke 60 mm Driven by 1 by Elec. Motor  
 Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 38 + 38 mm Stroke 60 mm Driven by Paraffin Engine  
 Scavenging Air Pumps, No. 1, 2 cyl. tandem. Diameter 1920 mm Stroke 860 mm Driven by main Engine  
 Auxiliary Engines crank shafts, diameter as per Rule 164.5 mm  
 as fitted 184 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 steam.

Is there a drain arrangement fitted at the lowest part of each receiver yes.

**High Pressure Air Receivers, No. none.** Cubic capacity of each Internal diameter thicknessSeamless, lap welded or riveted longitudinal joint Material 28 M<sup>2</sup> (main) Range of tensile strength 1960 mm Working pressure by Rules 30 mm**Starting Air Receivers, No. 1 aux.** Total cubic capacity 500 litres (Aux) Internal diameter 700 mm thickness 14 mmSeamless, lap welded or riveted longitudinal joint Riveted. Material Steel. Range of tensile strength 44-50 mm Working pressure by Rules 30 kg/cm<sup>2</sup>

010526-010536-0207



IS A DONKEY BOILER FITTED?

yes.

If so, is a report now forwarded?

yes.

PLANS. Are approved plans forwarded herewith for Shafting

16/5/35 14/2/36

Receivers

2/5/35 10/5/35

Separate Tanks

Donkey Boilers

29/7/35

General Pumping Arrangements

18/7/35

Oil Fuel Burning Arrangements

29/10/35

SPARE GEAR

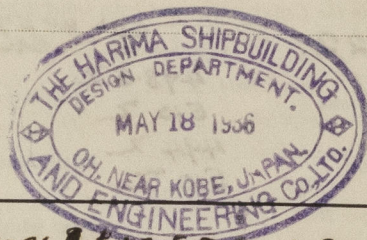
The spare gear is in accordance with the requirements of the Rules with the following important additional items:-

1 screw shaft with continuous liner (Cert N° 4953), 2 propeller blades, 1 top & 1 bottom cylinder cover, 1 complete set top & bot. fuel valves with springs, 3 set starting valves complete, 3 top & 3 bottom safety valves, 1 top & 1 bottom cyl. liner, 1 piston complete with rod, 4 sets piston rings for 1 piston, 1 set telescopic cooling pipes for 1 piston, 1 set crankshaft coupling bolts, 10 thrust pads, 1 half set conn. rod top & bottom end brasses with bolts & nuts for scavenging pump. & 1 piston ring for scav. pump.

The foregoing is a correct description,

*Marata*

Manufacturer.



1935.  
Dates of Survey while building  
During progress of work in shops - June 14, 15, 24, 28 July 1, 9, 11, 20 Aug 5. Sept 7, 9, 10, 16, 21 & 26 Oct. 1, 3, 5, 7, 21, 22, Nov. 2, 9, 14, 22 Dec. 11, 14, 26, 28 Jan 1936, 9, 10.  
During erection on board vessel - 1935 Oct. 31 Nov. 30 Dec. 14, 21, 23, 26 Jan 1936 8, 13, 17, 21, 27 Feb. 5, 17, 21 Mar. 12, 14, 17, 19, 23, 24, 25, 28, Apr. 1, 4, 9, 13, 16, 18.  
Total No. of visits 61.

Dates of Examination of principal parts - Cylinders 22/10/35 Covers 5/10/35 Pistons 3/10/35 Rods 21/9/35 Connecting rods 1/10/35.

Crank shaft 7/9/35 Flywheel shaft 17/2/36 Thrust shaft 9/9/35 Intermediate shafts 7-10-17/1/36 Tube shaft ✓

Screw shaft 17/1/36 Propeller 24-28/2/11/36 Stern tube 17/1/36 Engine seatings 27/1/36 Engines holding down bolts 2/3/36.

Completion of fitting sea connections 20/1/36 Completion of pumping arrangements 1/4/36 Engines tried under working conditions 9/4/36

Crank shaft, Material Forged Steel Identification Mark 4468, 4473 & 4517 Flywheel shaft, Material Forged Steel Identification Mark 4481.

Thrust shaft, Material Forged Steel Identification Mark 4481 Intermediate shafts, Material Forged Steel Identification Marks 4880.

Tube shaft, Material Forged Steel Identification Mark ✓ Screw shaft, Material Forged Steel Identification Mark 4886.

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 yes 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 & approved plans. The materials & workmanship are good.

On completion, the machinery was installed in the vessel in accordance with the Rules afterwards tested under full working conditions & is eligible, in our opinion, for classification with the record of +L.M.C. 4.36, Oil Engine, D.B. 1007b. & T.S. (C.L.) 4.36.

Certificate (if required) to be sent to

The amount of Entry Fee ... £ 6-0-0  
Installation ... £ 146-17-6  
Special ...  
Cost of Copies ... Yen 228.88.  
Travelling Expenses (if any) £

When applied for,

Mar. 4 1936

Apr. 18 1936

When received,

Mar. 26 1936

Apr. 25 1936

Committee's Minute

Assigned + L.M.C. 4.36  
D.B. -1007b  
Oil Eng.

C. Macpherson & Yamada  
Engineer Surveyors to Lloyd's Register of Shipping.



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Foundation