

# REPORT ON OIL ENGINE MACHINERY.

No. 9468  
-1 MAY 1936

Received at London Office

Date of writing Report 3<sup>rd</sup> April 1936 When handed in at Local Office 13<sup>th</sup> Apr. 1936 Port of KOBE  
No. in Survey held at KOBE Date, First Survey March 8<sup>th</sup> 1935 Last Survey 2<sup>nd</sup> March 1936  
Reg. Book. Number of Visits

on the Single Screw vessel "KINUGASA MARU" Tons { Gross 6808  
Net 3717  
Built at KOBE By whom built KAWASAKI DOCKYARD Co. LTD Yard No. 591 When built 1936  
Engines made at KOBE By whom made KAWASAKI DOCKYARD Co. LTD Engine No. 221 When made 1936  
Donkey Boilers made at KOBE By whom made KAWASAKI DOCKYARD Co. LTD Boiler No. When made 1936  
Brake Horse Power 7000 Owners KOKUSAI KISEN KAB. KAISHA Port belonging to TOKYO  
Nom. Horse Power as per Rule 2187 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted YES  
Trade for which vessel is intended FOREIGN.

**IL ENGINES, &c.**—Type of Engines KAW-MAN.DTZU 70/120 HEAVY OIL 2 or 4 stroke cycle 2. Single or double acting Double  
Maximum pressure in cylinders 45 kg/cm<sup>2</sup> Diameter of cylinders 700 mm Length of stroke 1200 mm No. of cylinders 7 No. of cranks 7  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1090 mm Is there a bearing between each crank yes  
Revolutions per minute 120 Flywheel dia. 2100 mm Weight 3100 KGS. Means of ignition Compression Kind of fuel used Heavy oil  
Crank Shaft, dia. of journals as per Rule 473 mm Crank pin dia. 500 mm Crank Webs Mid. length breadth 790 mm Thickness parallel to axis 320 mm  
as fitted 500 mm M.d. length thickness 320 mm shrunk Thickness around eye-hole 222.5 mm  
Flywheel Shaft, diameter as per Rule 473 mm Intermediate Shafts, diameter as per Rule 398 mm Thrust Shaft, diameter at collars as per Rule 435 mm  
as fitted 500 mm as fitted 405 mm as fitted 460 mm  
Tube Shaft, diameter as per Rule 440 mm Is the tube shaft fitted with a continuous liner yes  
as fitted 446 mm Screw Shaft, diameter as per Rule 21.2 mm as fitted 16 mm  
as fitted 24 mm Thickness between bushes as per rule 19 mm as fitted 19 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 Continuous

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 tight fit  
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 2445 mm  
Propeller, dia. 18'-0" Pitch 13'-0" No. of blades 4 Material BRONZE whether Moveable yes Total Developed Surface 100 sq. feet  
Method of reversing Engines Compression Is a governor or other arrangement fitted to prevent racing of the engine 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 yes

Cooling Water Pumps, No. 2 Independent sea water + I, F.W. + I.S.W. port service pump. 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 yes Stroke yes Can one be overhauled while the other is at work yes  
Pumps connected to the Main Bilge Line { No. and Size 1 @ 250 TONS/HR, 1 @ 100 TONS/HR, 1 @ 30 TONS/HR.  
How driven All by Electric motors.  
Ballast Pumps, No. and size 1 @ 250 TONS/HR, 1 @ 100 TONS/HR. Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 70 TONS/HR EACH.  
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 @ 90 mm, 2 @ 140 mm

In Holds, &c. N<sup>os</sup> 1, 2, 3, 5 & 6 holds, 2 @ 90 mm in each; 4 deep tanks in N<sup>o</sup> 4 hold, 1 @ 90 mm in each tank.  
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 90 mm, 1 @ 150 mm, 1 @ 200 mm, 2 emergency @ 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  
and from easily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Suction roses + strainers fitted  
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 yes  
What pipes pass through the deep tanks none 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 E.R. casing.  
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. NONE No. of stages yes Diameters yes Stroke yes Driven by Elec. motor  
Auxiliary Air Compressors, No. 2 No. of stages 3 Diameters 100/350/295 Stroke 200 mm Driven by 1 aux. engine  
Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 38/89 mm Stroke 60 mm Driven by 24 P. pas. engine  
Vacuuming Air Pumps, No. 1 tandem type Diameter 1800 mm Stroke 1000 mm Driven by Main Engine

Auxiliary Engines crank shafts, diameter as per Rule 161 mm  
as fitted 170 mm  
**IR RECEIVERS:**—Is each receiver, which can be isolated, fitted with a safety valve as per Rule yes Access by manhole +  
Steam connection yes  
Can the internal surfaces of the receivers be examined yes What means are provided for cleaning their inner surfaces yes  
Is there a drain arrangement fitted at the lowest part of each receiver yes  
High Pressure Air Receivers, No. NONE Cubic capacity of each yes Internal diameter yes thickness yes  
Seamless, lap welded or riveted longitudinal joint yes Material yes Range of tensile strength yes Working pressure by Rules yes  
Starting Air Receivers, No. 2 Total cubic capacity 28 cub. metres Internal diameter 2000 mm thickness 1 5/16  
Seamless, lap welded or riveted longitudinal joint T.R.D.B.S. Material Steel. Range of tensile strength 44-50 KGS/cm<sup>2</sup> Working pressure by Rules 30 KGS/cm<sup>2</sup>

IS A DONKEY BOILER FITTED?

yes.

If so, is a report now forwarded?

yes.

PLANS. Are approved plans forwarded herewith for Shafting 25/6/35 + 6/2/35 Receivers 9/7/35. Separate Tanks 20/8, 20/9 + 1/10/35. Donkey Boilers 20/8/35. General Pumping Arrangements 22/8/35. Oil Fuel Burning Arrangements 11/9/35.

SPARE GEAR In accordance with the requirements of the Rules + the following are the more important additional items supplied:-

1 Screw shaft, 2 propeller blades, 1 complete thrust ring, 10 pads for thrust block, 2 piston rods, 1 pair camshaft driving gear wheels, Top + bottom end + main bearing bushes, 1 set of each, 1 upper + 1 lower cylinder liner, + Scavenging Pump bottom end + main bearing bushes.



The foregoing is a correct description,

Manufacturer.

T. Ohno



Dates of Survey while building: During progress of work in shops - 1935 March 8, 14, 15, 16, 18, 19, 20, 22, 25, 27, 29. Apr. 1, 5, 8, 10, 12, 13, 15, 17, 19, 23, 27. May 1, 3, 4, 7, 8, 9, 10, 11, 13, 14, 15, 17, 20, 22, 24, 27, 29, 31. June 3, 6, 7, 11, 12, 14, 15, 17, 18, 19, 20, 21, 24, 25, 26, 27, 28. July 1, 3, 5, 8, 10, 12, 13, 15, 18, 19, 22, 26. Aug 2, 5, 7, 9, 12, 14, 16, 19, 21, 23, 26, 29, 30. Sept. 2, 5, 9, 10, 11, 16, 18, 27, 28, 30. Oct. 1, 4, 5, 7, 8, 15, 16, 18, 21, 23, 24, 25. Nov. 2. During Erection on board. 4, 6, 8, 9, 11, 12, 13, 16, 18, 19, 20, 22, 27, 30. Dec. 5, 9, 12, 18, 19, 20, 21. 1936. Jan. 9, 15, 22, Feb. 2, 5, 6, 8, 15, 20, 21, 22, 24, 25, 26, 28, Mar 2nd. Total No. of visits 145 visits.

Dates of Examination of principal parts - Cylinders 2/11/35 Covers 4/11/35 Pistons 30/9/35 Rods 15/10/35 Connecting rods 1/10/35

Crank shaft 11/10/35 Flywheel shaft 23/10/35 Thrust shaft 5/12/35 Intermediate shafts 5/12/35 Tube shaft ✓

Screw shaft 12/12/35 Propeller 12/12/35 Stern tube 5/12/35 Engine seatings 4/11/35 Engines holding down bolts 9/12/35

Completion of fitting sea connections 20/12/35 Completion of pumping arrangements 2/2/36 Engines tried under working conditions 13/2/36

Crank shaft, Material F.S.M.S. Identification Mark 1199 Flywheel shaft, Material F.S.M.S. Identification Mark 4768

Thrust shaft, Material F.S.M.S. Identification Mark 4580 Intermediate shafts, Material F.S.M.S. Identification Marks 4676

Tube shaft, Material ✓ Identification Mark ✓ Screw shaft, Material F.S.M.S. Identification Mark 4680

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 + LMC 2.36, Oil Engine, D.B. 100 lb. per sq. inch + T.S. (C.L.) 2.36.

The amount of Entry Fee ... £ 6.- When applied for, Special ... £ 193-16 10/- Mar-2nd 1936 Donkey Boiler Fee ... £ 6-0-0 When received, amended to £ 182-16-3 by agreement Travelling Expenses (if any) £ 10-0-0 Mar-17th 1936

Committee's Minute FRI. 15 MAY 1936 Assigned + LMC 2.36 Oil Eng. D.B. - 100 lb.

C. Macpherson + Yamada Engineer Surveyor to Lloyd's Register of Shipping.

