

REPORT ON OIL ENGINE MACHINERY.

No. 6235

Date of writing Report 19th Oct 1937 When handed in at Local Office 19/10/1937 Port of YOKOHAMA
No. in Survey held at YOKOHAMA Date, First Survey 17th February 1937 Last Survey 14th Oct 1937
Reg. Book. Number of Visits 87

Single on the Twin Screw vessel M.V. "KAISO MARU"
Built at Yokohama By whom built Yokohama Dock Yard No. 279 When built 1937
Engines made at Yokohama By whom made Mitsubishi J. K. K. Yokohama Engine No. 279 When made 1937
Donkey Boilers made at Yokohama By whom made Mitsubishi J. K. K. Yokohama Boiler No. 279 When made 1937
Brake Horse Power 4500 Owners Nippon Tanker K. K. Port belonging to Tokio.
Nom. Horse Power as per Rule 1166.8 Is Refrigerating Machinery fitted for cargo purposes no Is Electric Light fitted yes
Trade for which vessel is intended Carrying petroleum in bulk.

MAIN ENGINES, &c.—Type of Engines Mitsubishi MAN 2 or 4 stroke cycle 2 Single or double acting yes
Maximum pressure in cylinders 45 kg/cm² Diameter of cylinders 600 mm Length of stroke 1100 No. of cylinders 6 No. of cranks 6
Position of bearings, adjacent to the Crank, measured from inner edge to inner edge 885 mm Is there a bearing between each crank yes
Revolutions per minute 130 Flywheel dia. 2100 mm Weight 3400 kg Means of ignition Solid Kind of fuel used Crude Oil
Crank Shaft, dia. of journals as per Rule 414 mm as fitted 420 mm Crank pin dia. 420 mm Crank Webs Mid. length breadth 348 mm Mid. length thickness 355 mm Thickness parallel to axis 365 mm Thickness around eye hole 372 mm
Flywheel Shaft, diameter as per Rule 420 mm Intermediate Shafts, diameter as per Rule 348 mm as fitted 355 mm Thrust Shaft, diameter at collars as per Rule 365 mm as fitted 372 mm
Stern Shaft, diameter as per Rule 380 mm as fitted 406 mm Is the screw shaft fitted with a continuous liner yes
Bronze Liners, thickness in way of bushes as per Rule 25 mm as fitted 25.5 mm Thickness between bushes as per rule 18 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
If so, state type Length of Bearing in Stern Bush next to and supporting propeller 1870 mm
Propeller, dia. 4,777 mm Pitch 3439 mm No. of blades 4 Material M. Bronze whether Moveable yes Total Developed Surface 6.612 sq. ft.
Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched yes Means of lubrication
used 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 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
Cooling Water Pumps, No. Two 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. Two Diameter 100 mm Stroke 210 mm Can one be overhauled while the other is at work yes
Pumps connected to the Main Bilge Line No. and Size 2-20 T/hr 1-160 T/hr 1-75 T/hr How driven main engine steam steam
Ballast Pumps, No. and size 1-160 T/hr Lubricating Oil Pumps, including Spare Pump, No. and size 1-200 mm. 91-240 x 220 x 500 mm
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 1-90 mm aft, 1-200 mm aft, 2-90 mm fore, 1-140 mm S.S. fore, 1-150 mm P.S. fore In Pump Room 1-75 mm
Holds, &c. aft cofferdam 2-50 mm, fore hold 2-75 mm, fore peak 2-75 mm, fore cofferdam 1-75 mm
Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1-140 mm, 1-200 mm, 1-150 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
d 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 No.
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 After cofferdam bilge suction How are they protected Oil bunker.
That pipes pass through the deep tanks 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. No. of stages Diameters Stroke Driven by
Auxiliary Air Compressors, No. One No. of stages Two Diameters 150 x 375 mm Stroke 180 mm Driven by Steam
Small Auxiliary Air Compressors, No. One No. of stages Two Diameters 60 x 145 mm Stroke 100 mm Driven by Steam
Scavenging Air Pumps, No. One Diameter 1380 mm Stroke 850 mm Driven by main engine

Auxiliary Engines crank shafts, diameter as per Rule as fitted

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 and cleaned yes Is a drain fitted at the lowest part of each receiver yes

High Pressure Air Receivers, No. Cubic capacity of each Internal diameter thickness
Seamless, lap welded or riveted longitudinal joint Material Range of tensile strength Working pressure by Rules
Starting Air Receivers, No. Two Total cubic capacity 20,000 litres Internal diameter 1800 mm thickness 30 mm
Seamless, lap welded or riveted longitudinal joint riveted Material steel Range of tensile strength 44-55 kg/cm² Working pressure by Rules 34.8 kg/cm² Actual 30 kg/cm²

IS A DONKEY BOILER FITTED? Yes

If so, is a report now forwarded? Yes

pt. 5a.

Is the donkey boiler intended to be used for domestic purposes only no

PLANS. Are approved plans forwarded herewith for Shafting 30-9-37
(If not, state date of approval)

Receivers 2/4/37

Separate Tanks 28, 29/5/37 17/

Donkey Boilers 4-2-37

General Pumping Arrangements 22/4/37, 13/4/37, 22/9/37 Oil Fuel Burning Arrangements 2/4/37

SPARE GEAR.

Has the spare gear required by the Rules been supplied yes

State the principal additional spare gear supplied List attached

The foregoing is a correct description,

Z. Adachi

Manufacturer.

Dates of Survey while building
During progress of work in shops - 17/2, 23/2, 27/2, 1/3, 9/3, 13/3, 11/3, 15/3, 16/3, 23/3, 25/3, 27/3, 30/3, 2, 4, 7, 9, 10, 13, 14, 16, 19, 20, 22, 24, 24/4, 3, 5, 7, 10, 15, 17, 19, 22, 25, 31/5, 3, 9, 10, 14, 21, 23, 24, 25, 30/6, 1, 2, 3, 5, 6, 8, 12, 17, 19/7, 3, 5, 9, 11, 12, 13, 14, 17, 26, 31/8, 22/7, 23/7, 10/9, 17/9, 30/9, 1/10, 2/10, 4/10, 8/10, 14/10/36.
During erection on board vessel - 4/8, 24/8, 19/9, 13/9, 17/9, 2/10, 4/10, 6/10, 7/10, 12/10/37.
Total No. of visits 77.

Dates of Examination of principal parts - Cylinder 3/5-9/10/37 Covers 27/3-31/8/37 Pistons 9/3-23/7/37 Rods 5/4-23/7/37 Connecting rods 13/4-30/6/37
Crank shaft 31-5-37 Flywheel shaft 13-9-37 Thrust shaft 13-9-37 Intermediate shafts 13/9 & 12/10/37 Tube shaft ✓
Screw shaft 30/7 & 14/8/37 Propeller 14, 17, 19/5, 4, 5/8/37 Stern tube 10/6 & 4/8/37 Engine seatings 4/8/37 Engines holding down bolts 24/8, 10, 13, 27/8/37

Completion of fitting sea connections 4-8-37 Completion of pumping arrangements 5-10-37 Engines tried under working conditions 7-10-37

Material	Identification Mark	Material	Identification Mark
Crank shaft, Material <u>Steel</u>	<u>1644 11644A LR</u>	Flywheel shaft, Material <u>Steel</u>	<u>6387</u>
Thrust shaft, Material <u>Steel</u>	<u>H.D.B. 1-3-37</u>	Intermediate shafts, Material <u>Steel</u>	<u>SS. 8-5-37 LR</u>
Screw shaft, Material <u>Steel</u>	<u>6426 S.S. LR</u>	Screw shaft, Material <u>Steel</u>	<u>6418</u>
	<u>FL. 25-5-37</u>		<u>SS. 22-5-37</u>
	<u>6428 LR</u>		<u>6427 LR</u>
	<u>SS. 25-5-37 FL</u>		<u>SS. 25-5-37</u>

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 ✓

If so, have the requirements of the Rules been complied with ✓

If the notation for Ice Strengthening is desired, state whether the requirements in this respect have been complied with ✓

Is this machinery duplicate of a previous case Yes

If so, state name of vessel HOYO MARU. YKA.RPT.No 593.

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

The machinery of this vessel has been built under Special Survey in accordance with the Rules & Approved Plans. Materials & Workmanship On completion of fitting out onboard machinery tried under full working conditions ahead & stern and all found in order manoeuvring test carried out.

The machinery of this vessel is eligible in our opinion to be classed with the boilers & electrical equipment & L.M.C. 10-37.

The amount of Entry Fee .. £ 6 : 0 :
Special ... £ 161 : 10 :
Donkey Boiler Fee ... £ 29 : 5 :
AIR RECEIVERS 10 10
Travelling Expenses (if any) 58.00.

When applied for, 19-10-1937

When received, 14/2 1938

Committee's Minute

Assigned

+ Lmb 10.37
208-163/4
at M. C. L.

J. Micholas & R. Kihigane
Engineer Surveyor to Lloyd's Register of Shipping



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