

## REPORT ON OIL ENGINE MACHINERY.

No. 794

Received at London Office

14 AUG 1931

Date of writing Report 13th July 31 When handed in at Local Office 13th July 31 Port of NAGASAKI.

Survey held at NAGASAKI. Date, First Survey 8th Aug. 1930. Last Survey 30th June 1931. Number of Visits 134.

Type of vessel "KAHOKU MARU". Tons Gross 3277.99 Net 1875.33

By whom built Mitsubishi Zosen Kaisha, Ltd. Yard No. 491 When built 1931

By whom made Mitsubishi Zosen Kaisha, Ltd. Engine No. 491 When made 1931

Boilers made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Boiler No. 491 When made 1931

Horse Power 1,500. Owners Dairen Kisen Kabushiki Kaisha. Port belonging to Dairen.

Horse Power as per Rule 388-389 Is Refrigerating Machinery fitted for cargo purposes / Is Electric Light fitted Yes

For which vessel is intended Dairen - coast of China.

Type of Engines Mitsubishi-Sulzer. 2 or 4 stroke cycle 2 Single or double acting Single

Mean pressure in cylinders 40 Kg/cm<sup>2</sup> Diameter of cylinders 600 m/m Length of stroke 2060 m/m No. of cylinders 4 No. of cranks 4 for Wks. Cylinder.

of bearings, adjacent to the Crank, measured from inner edge to inner edge 830 m/m Is there a bearing between each crank Yes

Revolutions per minute 115 Flywheel dia. 2100 m/m Weight 8100 Kgs Means of ignition Compression Kind of fuel used Heavy fuel oil.

Crank Shaft, dia. of journals as per Rule 368.4 m/m Crank pin dia. 405 m/m Crank Webs Mid. length breadth 650 m/m Thickness parallel to axis 225 m/m

Main Shaft, diameter as per Rule 368.4 m/m Intermediate Shafts, diameter as fitted 290 m/m Thrust Shaft, diameter at collars as per Rule 270.4 m/m

Screw Shaft, diameter as fitted 320 m/m Is the shaft fitted with a continuous liner Yes

Liners, thickness in way of bushes as per Rule 16.2 m/m Thickness between bushes as fitted 15 m/m Is the after end of the liner made watertight in the

After boss Yes If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner /

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 /

The 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

No If so, state type / Length of Bearing in Stern Bush next to and supporting propeller 1270 m/m

Propeller, dia. 13'-0" Pitch 9.80 ft No. of blades 4 Material Bronze whether Moveable Yes Total Developed Surface 48.5 sq. feet

Method of reversing Engines Direct Is a governor or other arrangement fitted to prevent racing of the engine when declutched Yes Means of lubrication

Thickness of cylinder liners 45 m/m Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water cooled or lagged with

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 piston and jacket cooling. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes

Pumps worked from the Main Engines, No. / Diameter / Stroke / Can one be overhauled while the other is at work /

Pumps connected to the Main Bilge Line No. and Size 1.-bilge pump 70 ton/hr. 1.-ballast pump 150 ton/hr.

How driven By electric motor. Lubricating Oil Pumps, including Spare Pump, No. and size 2 for Main bearing 12.5 m<sup>3</sup> 2 for Crossheads 1.5 m<sup>3</sup>

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 @ 3 1/2". 4 @ 3". 1 @ 2" in cofferdam. In Pump Room

Holds, etc. No.1 hold, 2 @ 3". No.2 hold, 2 @ 3". No.3 hold, 2 @ 3". No.4 hold bilge well 2 @ 3".

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 2 @ 6".

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

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 Below

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

How are they protected / Have they been tested as per Rule /

All pipes pass through the deep tanks Yes

All Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes

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 Upper deck

On 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. 1 No. of stages 3 Diameters 750/480/150 m/m Strokes 400 m/m Driven by Main engine

Auxiliary Air Compressors, No. 1 No. of stages 3 Diameters 360/310/80 m/m Strokes 180 m/m Driven by Elec. motor.

Small Auxiliary Air Compressors, No. 1 No. of stages 2 Diameters 4" / 1 1/2" Stroke 3" Driven by Oil engine

Exhausting Air Pumps, No. 1 turbo blower Capacity 205 m<sup>3</sup>/min. Driven by Elec. motor

Auxiliary Engines crank shafts, diameter as per Rule / Position /

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. 1 5 Cubic capacity of each 800 litre Internal diameter 300 m/m thickness 15 m/m

Seamless, lap welded or riveted longitudinal joint Seamless Material S.M. Steel Range of tensile strength 28-35 tons sq. in. Working pressure by Rules 97.18 Kg/cm<sup>2</sup> Actual 98.09 Kg/cm<sup>2</sup>

Starting Air Receivers, No. 1 Total cubic capacity 4 Cub. M. Internal diameter 1200 m/m thickness 22 m/m

Seamless, lap welded or riveted longitudinal joint Riveted Material S.M. Steel Range of tensile strength 28-35 tons sq. in. Working pressure by Rules 32.99 Kg/cm<sup>2</sup> Actual 30 " "



Yes

No

Yes

### General Pumping Arrangements

Yes

## Oil Fuel Burning Arrangements

*SPARE GEAR.*

Has the spare gear required by the Rules been supplied..... Yes.

State the principal additional spare gear supplied See separate list.

The foregoing is a correct description

YAMAGUCHI WORKS, MITSUBISHI ZISSEN KAISHA, LTD.

GENERAL MANAGER

Manufacturer.

GENERAL MANAGER	
Dates of Survey while building	During progress of work in shops - -
	During erection on board vessel - -
	Total No. of visits

*Dates of Examination of principal parts—*

<i>Cylinders</i>	28-1-31 to 2-3-31	<i>Covers</i>	5-2-31 to 27-2-31	<i>Pistons</i>	24-3-31	<i>Rods</i>	19-8-30 to 7-1-31	<i>Connecting rods</i>	28-10-30 to 5-2-31
<i>Crank shaft</i>	22-9-30 to 13-2-31	<i>Flywheel shaft</i>	and	<i>Thrust shaft</i>	15-10-30 to 13-2-31	<i>Intermediate shafts</i>	24-1-31 to 6-4-31	<i>Tube shaft</i>	/
<i>Screw shaft</i>	24-1-31 to 29-5-31	<i>Propeller</i>	9-4-31	<i>Stern tube</i>	19-3-31 to 2-4-31	<i>Engine seatings</i>	30-1-31 to 9-2-31	<i>Engines holding down bolts</i>	7-5-31
<i>Completion of fitting sea connections</i>	20-4-31	<i>Completion of pumping arrangements</i>	2-6-31	<i>Engines trial</i>					

Crank shaft, Material	S.M.Steel	Identification Mark	LLOYDS No. 363 T.K. 13-2-31	Flywheel shaft, Material	S.M.Steel	Identification Mark	LLOYD'S No. T.K. 13-2-31
Thrust shaft, Material	"	Identification Mark	See Flywheel shaft.	Intermediate shafts, Material	S.M.Steel	Identification Marks	LLOYD'S No. (See below)
Tube shaft, Material	/	Identification Mark	/	Screw shaft, Material	S.M.Steel.	Identification Mark	LLOYD'S No. G.A. 25-3-31
Is the flash point of the oil to be used over 150° F. Yes.				(Spare)	"	"	"
Have the requirements of the Rules for oil fuel pipes and tank fittings been complied with?				"	"	"	LLOYD'S No. 4 G.A. 29-5-31

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 No

*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 / If so, state name of vessel

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

Identification Mark:- Intermediate Shafts.

LLOYD's No. 399. G.A. 25-3-31.  
" " G.A. 31-3-31.

LLOYD'S No.399. G.A. 31-3-31.  
" " T.K. 27-3-31.

LLOYD'S No.399. G.A. 31-3-31  
" " T.K. 6-4-31

The Machinery has been constructed under Special Survey and installed in the vessel in accordance with the Rules and Approved Plans.

The Materials and workmanship are good and the machinery has been examined under working condition and found satisfactory.

The Machinery of this vessel is eligible in my opinion to have the record ✠ LMC, 6.-3/4  
Mean speed on trial 13.313 knots, at 9'-6 $\frac{1}{2}$ " draught.

Cartificates of Castings and Forgings herewith.

The amount of Entry Fee .. £~~5~~ 50:00

When applied for,

Special ... £¥ 1248:00:  
Air vessel ...

2. 7. 31

Donkey Boiler Fee	...	£ <sup>n</sup>	31:50
			63:00:

When received.

Travelling Expenses (if any) £ : :

Committee's Minute

*Assigned*

+ L. M. 631

Rice

CL

1810

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Foundation