

# REPORT ON OIL ENGINE MACHINERY.

No. *Kobe 2157*  
1458-A

Received at London Office **3-AUG 1954**

Date of writing Report *30th June 1954* When handed in at Local Office *Kobe JUN 12 1954* 19 Port of *Kobe and YOKOHAMA*  
 No. in Survey held at *Tamashima & Yokosuka* Date, First Survey *YOKOHAMA 19-10-53* Last Survey *YOKOHAMA 28-6-1954*  
 Reg. Book. *Tamashima & Yokosuka* Number of Visits *Kobe 21 visits YOKOHAMA 81 visits*  
 on the *Single* Screw vessel **M. V. "TAMON MARU"** Tons *Gross 7713.61*  
*Triple*  
*Quadruple*  
 Built at *Yokosuka Japan* By whom built *THE URAGA DOCK CO., LTD.* Yard No. *655* When built *6-54*  
 Engines made at *TAMASHIMA JAPAN* By whom made *URAGA TAMASHIMA DIESEL KOGYO K.K.* Engine No. *245* When made *3-54*  
 Donkey Boilers made at *YOKOSUKA JAPAN* By whom made *THE URAGA DOCK CO., LTD.* Boiler No. *10718 (YAR 46)* When made *4-54*  
 Brake Horse Power *7300* Owners *HACHIUMA KISEN K. K.* Port belonging to *NISHINOMIYA*  
 M.N. Power as per Rule *1460* Is Refrigerating Machinery fitted for cargo purposes *NO* Is Electric Light fitted *Yes*  
 Trade for which vessel is intended *Ocean going*

## OIL ENGINES, &c. — Type of Engines *2 SCSA* 2 or 4 stroke cycle *2* Single or double acting *single*

Maximum pressure in cylinders *52.7 kg/cm<sup>2</sup>* Diameter of cylinders *720 mm* Length of stroke *1250 mm* No. of cylinders *10* No. of cranks *10*  
 Mean Indicated Pressure *6.1 kg/cm<sup>2</sup>* Ahead Firing Order in Cylinders *1-8-7-4-3-10-5-2-9-6* Span of bearings, adjacent to the crank, measured from inner edge to inner edge *930 mm* Is there a bearing between each crank *yes* Revolutions per minute *128*  
 Flywheel dia *2423.9 mm* Weight *1340 kg* Moment of inertia of flywheel (*lbs. in<sup>2</sup>* or Kg. cm.<sup>2</sup>) *5.1 x 10<sup>7</sup>* Means of ignition *Compression* Kind of fuel used *diesel oil*  
 Crank Shaft, *Solid forged* dia. of journals as per Rule *473 mm* Crank pin dia *190 mm* Crank webs Mid. length breadth *810 mm* Thickness parallel to axis *305 mm*  
*Semi built* dia. of journals as fitted *490 mm* Mid. length thickness *295 mm* shrunk Thickness around eyehole *243 mm*  
*All built*  
 Flywheel Shaft, diameter as per Rule *390.08 mm* Intermediate Shaft, diameter as fitted *400 mm* Thrust Shaft, diameter at collars as fitted *490 mm*  
 as fitted *430.54 mm* *380 mm approved* as per Rule *409.2 mm*  
 Tube Shaft, diameter as per Rule *440 mm* Is the *tube* shaft fitted with a continuous liner *yes*  
 as fitted *440 mm* *screw*  
 Bronze Liners, thickness in way of bushes as per Rule *20.35 mm* Thickness between bushes as fitted *21 mm* Is the after end of the liner made watertight in the propeller boss *yes*  
 as fitted *24 x 25 mm*  
 If the liner is in more than one length are the junctions made by fusion through the whole thickness of the liner *—*  
 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 tube shaft *—* If so, state type *—* Length of bearing in Stern Bush next to and supporting propeller *1830 mm*  
 Propeller, dia. *5250 mm* Pitch *4050 (0.7R)* No. of blades *4* Material *Mn. Br.* whether moveable *NO* Total developed surface *103.12* sq. feet  
 Moment of inertia of propeller (*lbs. in<sup>2</sup>* or Kg. cm.<sup>2</sup>) *2.16 x 10<sup>8</sup>* Kind of damper, if fitted *—*

Method of reversing Engines *direct* Is a governor or other arrangement fitted to prevent racing of the engine when declutched *yes* Means of lubrication *forced* Thickness of cylinder liners *45 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* 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. *—* Diameter *—* Stroke *—* Can one be overhauled while the other is at work *—*  
 Pumps connected to the Main Bilge Line { No. and size *Bilge P. 30 1/2 x 35 1/2 x 1 set* *Bilge + ballast P. 200 1/2 x 20 1/2 x 1 set* *G.S.P. 200 1/2 x 30 1/2 x 1 set*  
 How driven *motor driven* *steam driven (Washington type)* *motor driven*  
 Is the cooling water led to the bilges *—* If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping arrangements *—*

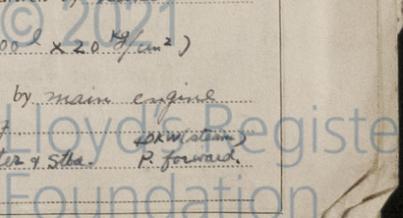
Ballast Pumps, No. and size *1 x 200 1/2 x 20 1/2* Power Driven Lubricating Oil Pumps, including spare pump, No. and size *2, 280 1/2 x 45 mm*  
 Are two independent means arranged for circulating water through the Oil Cooler *yes* Suctions, connected to both main bilge pumps and auxiliary bilge pumps, No. and size:— In machinery spaces *10 (2" x 3" 3" x 6" 5" x 1")* In pump room *—*  
 In holds, &c. Nos. *1, 2, 3, 4, 5* Hold: *3" x 2 each* *NO. 6 Hold: 3" x 4"*  
 Independent Power Pump Direct Suctions to the engine room bilges, No. and size *2 (3" x 1" 5" x 1") + (1 @ 240 mm) emergency*

Are all the bilge suction pipes in holds and tunnel well fitted with strum-boxes *yes* Are the bilge suction 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 *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*  
 What pipes pass through the bunkers *NO* How are they protected *—*  
 What pipes pass through the deep tanks *NO* 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 *upper deck*  
 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. *—* No. of stages *—* diameters *—* stroke *—* driven by *—*  
 Auxiliary Air Compressors, No. *2* No. of stages *2* diameters *310/340 mm* stroke *180 mm* driven by *main dynamo engine*  
 Small Auxiliary Air Compressors, No. *1* No. of stages *2* diameters *40/92 mm* stroke *70 mm* driven by *hand*  
 What provision is made for first charging the air receivers *manual air compressor & small starting air receiver (100 l x 20 kg/cm<sup>2</sup>)*

Scavenging Air Pumps, No. *10* diameter *950 mm* stroke *520 mm* driven by *main engine*  
 Auxiliary Engines crank shafts, diameter as per Rule *163.3 mm* No. *Engine No. 256 257*  
 as fitted *200 mm* Position *Manoeuvring platform: Rafter 9 Sta. R. forward*  
 Have the auxiliary engines been constructed under special survey *yes* Is a report sent herewith *yes*

MADE AND PRINTED IN GREAT BRITAIN



**AIR RECEIVERS:**—Have they been made under survey yes  
 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  
**Injection Air Receivers, No.** — Cubic capacity of each — Internal diameter — thickness — by Rules —  
 Seamless, welded or riveted longitudinal joint — Material — Range of tensile strength — Working pressure Actual —  
**Starting Air Receivers, No.** 2 (for M.E.) Total cubic capacity 10.5 m<sup>3</sup> x 2 Internal diameter 1740 mm thickness shell 38 mm, end 40 mm  
 Seamless, welded or riveted longitudinal joint welded Material O.H. steel Range of tensile strength — Working pressure Actual 33.9 kg/cm<sup>2</sup>  
 End: 42.1, 43.6 " Working pressure Actual 60 "

**IS A DONKEY BOILER FITTED** yes If so, is a report now forwarded yes  
 Is the donkey boiler intended to be used for domestic purposes only NO  
**PLANS.** Are approved plans forwarded herewith for shafting 22/1/54 Kobe Receivers 24-11-53 Note Separate fuel tanks 24-2-54  
 Gas heat + oil burning. 26-11-53 (If not, state date of approval) Donkey boilers oil burning 27-11-53 General pumping arrangements 12-1-54 Pumping arrangements in machinery space 10-12-53  
 Oil fuel burning arrangements 8-2-54  
 Have Torsional Vibration characteristics been approved NO Date of approval —

**SPARE GEAR.**

Has the spare gear required by the Rules been supplied yes  
 State the principal additional spare gear supplied 1 piston crown 1/2 set of guide shoe for one cylinder 1 scavenging guide  
 1 piston complete 1 scavenging pump piston and piston rod 1 scavenging pump driving lever complete  
 1 pilot valve complete 1 governor spring 1 mechanical cylinder lubrication complete  
 6 indicator valves

The foregoing is a correct description,  
 Manufacturer: Uraga Tamashima Diesel Kogyo K.K.  
S. Kaneko

Dates of Survey while building	During progress of work in shops --	1953: NOV. 12, 20, 27, DEC 4, 11, 16, 22, 29 1954: JAN 13, 20, 27, FEB 3, 6, 11, 24, MAR 3, 9, 20, 26, 29, APR 8, 1954: JAN 6, 8, 11, 13, 18, 20, 22, 25, 27, 29, 30, FEB 5, 8, 10, 12, 16, 17, 19, 22, 24, 26 1953: MAR. 1, 5, 8, 10, 12, 15, 19, 22, 26, 29, 31, APR. 2, 5, 7, 9, 12, 14, 16, 17, 19, 21, 23, 27, 28, 30, MAY 5, 10, 12, 17, 20, 24, 28, JUN 3, 7
	During erection on board vessel --	1954: MAY 5, 12, 17, 20, 24, 28, JUN 3, 7, 11, 14, 19, 22, 24, 25, 28
Total No. of visits	22 (KOBE) 81 (YOKOHAMA)	
Dates of examination of principal parts—	Cylinders 29-12-53 Covers 27-8-53 pistons 22-12-53 23-2-54 Rods 28-12-52, 9-10-53 Connecting rods 9-1-54	
Crank shaft 2-12-53	Flywheel shaft — Thrust shaft 22-12-53 Intermediate shafts 7-4-54	Tube shaft —
Screw shaft 23-12-53	Propeller 12-4-54 Stern tube 7-4-54 Engine seatings 28-5-54 Engine holding down bolts 28-5-54	
Completion of fitting sea connections 17-4-54	Completion of pumping arrangements 7-6-54 Engines tried under working conditions sea trial 22-6-54	
Crank shaft, material O.H. steel	Identification mark LR NO. Y 2661 IS B Flywheel shaft, material — Identification mark LLOYD'S YKA NO. FSF 808, 809, 810 811, 812, 813 2-4-54	
Thrust shaft, material O.H. steel	Identification mark LR NO. K-F1495 KR B Intermediate shafts, material O.H. steel Identification marks H.T. 7-4-54 12-4-54	
Tube shaft, material —	Screw shaft, material O.H. steel Identification mark NOFSF814 H.T. 7-4-54	
Identification marks on air receivers	for M.E. (10.5 m <sup>3</sup> x 2) NO. YAR 25 + 26 LLOYD'S TEST YKA WP 48.5 KG HT 30-4-54 for A.M.E. NO. YAR 27 LLOYD'S TEST YKA WP 48.5 KG HT 10-5-54 NO. YAR 28 LLOYD'S TEST YKA WP 33.5 KG HT 17-4-54	

Welded receivers, state Makers' Name Uraga Shipbuilding yard, The Uraga Dock Co., Ltd.  
 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  
 Description of fire extinguishing apparatus fitted Steam smothering system, 45L x 2, 7.9L x 12 foam fire extinguishers, 3 hydrants  
 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 yes If so, state name of vessel M.V. "EISHIN MARU" 813E

**General Remarks** (State quality of workmanship, opinions as to class, &c. This main engine has been constructed under Special Survey in accordance with the Rules approved plans and Secretary's letters. The workmanship and materials are sound and good.  
The main engine has been examined under full working condition in the Shop and found satisfactory. This engine is intended for the installation in the ship No. 655 being built by Uraga Dock Co., Ltd. Yokosuka.  
It is recommended that this engine is eligible in our opinions to have a record of + LMC with date when satisfactorily installed in the vessel.  
The machinery of this vessel was satisfactorily installed in the vessel and tested under working condition.  
It is submitted that the machinery of this vessel is eligible to be classed with this Society with the notation of + LMC 6,54, and TS (CL) 6,54.

The amount of Entry Fee KOB ¥ 512,000 YKA, JUL 15, 1954  
YOKOHAMA ¥ 286,000 Kobe, JUN 12, 1954  
 Pumps, air receivers, oil heating Special ... ¥ 134,300  
 propellers etc.  
 Donkey Boiler Fee... See 5-a  
 Travelling Expenses (if any) KOB ¥ 17,600  
YKA ¥ 5,000

Committee's Minute FRIDAY 10 SEP 1954  
 Assigned + LMC 6.54  
2 WTD 142 cl.  
CL.

M. Kamekura  
 Engineer Surveyor to Lloyd's Register of Shipping.  
