

REPORT ON OIL ENGINE MACHINERY.

No. 1999

Received at London Office 26 NOV 1934

Date of writing Report 5th Nov. 1934 When handed in at Local Office 5th Nov. 1934 Port of NAGASAKI

No. in Survey held at NAGASAKI. Date, First Survey 14th Nov. 1933 Last Survey 14th Oct. 1934
Reg. Book. Number of Visits 168.

2167 on the ^{Single} ~~Deck~~ ^{Trade} ~~Quadruple~~ Screw vessel "NOTO MARU" Tons ^{Gross} 7184.51 _{Net} 4317.76

Built at Nagasaki By whom built Mitsubishi Jukogyo Kaisha. Yard No. 580 When built 1934

Engines made at Nagasaki By whom made Mitsubishi Jukogyo Kaisha. Engine No. 580 When made 1934

Donkey Boilers made at Nagasaki By whom made Mitsubishi Jukogyo Kaisha. Boiler No. 580 When made 1934

Brake Horse Power 6,700 Owners Nippon Yusen Kabushiki Kaisha. Port belonging to Tokio.

Nom. Horse Power as per Rule 1,851. Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

for which vessel is intended All Seas.

GINES, &c. Type of Engines Mitsubishi-Sulzer Airless Injection 2 or 4 stroke cycle 2 Single or double acting Double

Pressure in cylinders 50 Kg/cm² Diameter of cylinders 700 m/m Length of stroke 1200m/m No. of cylinders 7 No. of cranks 7

Rated Pressure 5.3 Kg/cm² Rings, adjacent to the Crank, measured from inner edge to inner edge 1020 m/m Is there a bearing between each crank Yes

per minute 106 Flywheel dia. 2740 m/m Weight 2365 Kgs Means of ignition Compression Kind of fuel used Diesel oil F.P. above 150° F.

Shaft, dia. of journals as per Rule App. Lon. Crank pin dia. 510 m/m Crank Webs Mid. length breadth 895 m/m Thickness parallel to axis 320 m/m

as fitted 510 m/m Crank pin dia. 510 m/m Crank Webs Mid. length thickness 320 m/m shrunk Thickness around eyehole 242.5m/m

Shaft, diameter as per Rule App. Lon. Intermediate Shafts, diameter as per Rule 408.7 m/m Thrust Shaft, diameter at collars as per Rule App. Lon.

as fitted 510 m/m to 424 m/m as fitted 420 m/m as fitted 510 m/m

Shaft, diameter as per Rule / Screw Shaft, diameter as per Rule 446.3 m/m Is the ~~iron~~ screw shaft fitted with a continuous liner Yes

as fitted / as fitted 470 m/m as per rule 15 m/m as fitted 25 m/m Is the after end of the liner made watertight in the

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

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

If so, state type / Length of Bearing in Stern Bush next to and supporting propeller 1875 m/m

, dia. 5400m/m Pitch 4950m/m No. of blades 4 Material Bronze whether Moveable Moveable Total Developed Surface 112.05 sq. feet

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 to 40m/m Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers ~~connected~~ lagged with

ing 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 /

Water Pumps, No. Two, Jacket & Piston Rotary Pumps. 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 /

connected to the Main Bilge Line { No. and Size 2 reciprocating 30 M³/hr. & 100 M³/hr. 1 rotary 110 M³/hr. How driven Electric motor.

ing water led to the bilges. No If so, state what special arrangements are made to deal with this water in addition to the ordinary bilge pumping

ls. /

pumps, No. and size 1 Rotary 110 M³/hr. 1 Reciprocating 100 M³/hr. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 Rotary @ 65 M³/hr

dependent means arranged for circulating water through the Oil Cooler Yes Suctions, connected to both Main Bilge Pumps and Auxiliary Bilge

and size:—In Machinery Spaces Bilge well 3 @ 90m/m: Coff. 4 @ 50m/m: Bilge hat 1 @ 90m/m. In Pump Room

No. 1 Hold 2 @ 80 & 1 @ 50 in Cofferdam: No. 2 Hold 2 @ 90m/m: No. 3 Hold 2 @ 80m/m: No. 4 Hold

Ec. (Deep tanks) 4 @ 180m/m: No. 5 Hold 3 @ 80m/m: No. 6 Hold 1 @ 80m/m: Tunnel well 1 @ 80m/m:

alent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 140 m/m: 1 @ 200 m/m:

are Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces

asily accessible mud-boxes, placed above the level of the working floor, with straight tail pipes to the bilges Yes

a Connections fitted direct on the skin of the ship Yes Are they fitted with Valves or Cocks Yes

ed 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

ch 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

pass through the bunkers / How are they protected /

pass through the deep tanks / Have they been tested as per Rule /

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

ngement 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

nt to another Yes Is the Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Same level as Bridge deck.

vessel, what means are provided to prevent leakage of either fuel oil or of lubricating oil from saturating the woodwork /

Compressors, No. 2. Kob. Cert No. 4103 & 4104 No. of stages 3 Diameters 360x310x80 m/m Stroke 180 m/m Driven by Aux. Engine.

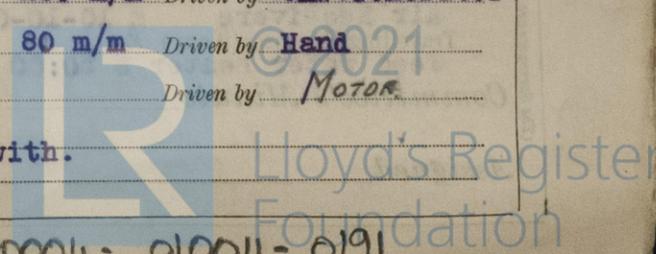
Air Compressors, No. One No. of stages One Diameters 150m/m Stroke 230 m/m Driven by 20KW. Generator.

Auxiliary Air Compressors, No. One No. of stages 2 Diameters 80x32m/m Stroke 80 m/m Driven by Hand

Turbo Blower capacity 975 M³/hr Stroke / Driven by MOTOR

Engines crank shafts, diameter as per Rule See Kobe report No. 8711, attached herewith.

as fitted



010004-010011-0191

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 / Actual /

Starting Air Receivers, No. 2. (Nag. Cert No. 1022) Total cubic capacity **each 15 M³** Internal diameter **1800 m/m** thickness **31 m/m**

~~Seamless~~ riveted longitudinal joint **T.R.D.B.S** Material **Steel** Range of tensile strength **Shell 44to50Kgs Ends 41to47Kgs** Working pressure by Rules **31.9Kg/** Actual **30 "**

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 **6-6-33. 5-9-33** Receivers **13-6-33** Separate Tanks **12-10-33**

(If not, state date of approval)

Donkey Boilers **20-11-33** General Pumping Arrangements **8-5-34** 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, forwarded under separate cover.**

The foregoing is a correct description.

T. J. J. J. Manufacturer.
GENERAL MANAGER

Dates of Survey while building	During progress of work in shops -	1933: Nov 14.18.21.25.28 Dec 15.20.30. 1934:- Jan 8.10.12.13.15.16.18.20.22.23.27.30.31 Feb 1.2.3.5.6.8.10.13.14.16.19.21.22.23.24.26.28 Mar 1.3.5.6.8.9.10.12.15.20.22.26.27.30 Apr 2.4.6.7.10.12.13.14.16.18.19.20.21.23.25.26.28 May 2.4.5.8.9.11.12.13.15.18.19.20.21.23.25.26.28 June 1.4.6.8.9.11.12.13.15.18.19.20.21.23.25.26.28 July 2.3.5.6.7.10.12.13.18.19.20.27.28.30.31 Aug 1.2.3.4.6.8.11.12.13.14.16.18.20.21.22.24.27.28.30.31 Sep 3.4.5.6.7.10.13.14.19.20.27.28.29 Oct 1.3.6.10.11.13.14.
	During erection on board vessel - -	6.10.11.13.14.
	Total No. of visits	167.

Dates of Examination of principal parts—Cylinders **24-5-34to 19-6-34** Covers **20-1-34to 30-6-34** Pistons **20-1-34to 22-6-34** Rods **15-1-34to 22-5-34** Connecting rods **16-1-34to 4-6-34**

Crank shaft **4-4-34to 18-6-34** Flywheel shaft **27-1-34to 12-6-34** Thrust shaft **See flywheel shaft** Intermediate shafts **12-1-34to 23-4-34** Tube shaft /

Screw shaft **8-2-34to 19-4-34** Propeller **19-4-34** Stern tube **19-4-34** Engine seatings **31-3-34** Engines holding down bolts **8-8-34**

Completion of fitting sea connections **25-4-34** Completion of pumping arrangements **6-8-34** Engines tried under working conditions **29-9-34**

Crank shaft, Material **Ingot steel** Identification Mark **LLOYD'S No.1017 HDB.** Flywheel shaft, Material **Ingot steel** Identification Mark **LLOYD'S No.1017A TK**

Thrust shaft, Material **Ingot steel** Identification Mark **See flywheel shaft** Intermediate shafts, Material **Ingot steel** Identification Mark **LLOYD'S No.1017A TK**

Tube shaft, Material / Identification Mark / Screw shaft, Material **Ingot steel** Identification Mark **LLOYD'S No.1055 TK.**

Spare Screw shaft. **LLOYD'S No.1055 TK.**

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**

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 **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 terms of the Rules and approved plans. The materials have been tested found efficient and the workmanship throughout is good. Full power, overload and governor tests were carried out on the test bed with satisfactory results afterwards opened up cleaned, examined and found in good order.

This machinery has now been efficiently installed on board, tested under full power, manoeuvring (12 stops & starts) and slow running (32-35 r.p.m) conditions with satisfactory results, and a net sea speed of 18.5 knots/hr was obtained on light draught. Upon completion of trials all main engine cylinders, pistons, valves, crank, thrust and tunnel shafting was examined, also the auxiliary engine cylinders, pistons and crank shafts, oil & water service pumps, were examined, and all found in good order.

This case is eligible in our opinion to have the record of **LMC, 10-34 in the register**

Note:- The hand air compressor and the aux. air compressor, using one cylinder of the 20 K.W. generator as an air compressor, were tested and found satisfactory.

The amount of Entry Fee .. £ **6-0-0** : When applied for, **24. 10. 1934**

Special £ **182-16-10** : When received, **27-12-34**

Donkey Boiler Fee ... £ **5-5-0** : **27-12-34**

Air Receivers ... £ **10-10-0** : **27-12-34**

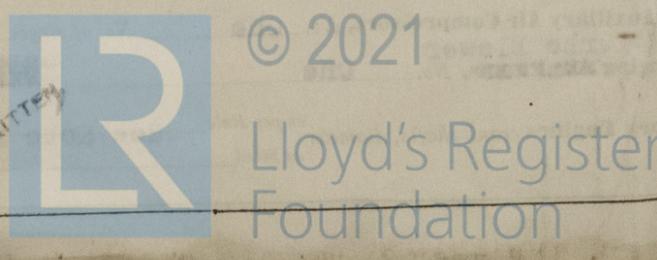
Travelling Expenses (if any) £ : **27-12-34**

Feed water heater £ **50-00** : **27-12-34**

Committee's Minute **FUL. 18 DEC 1934**

H.D. Buchanan & T. Kurishu
Engineer Surveyors to Lloyd's Register of Shipping.

Assigned **+ dmb. 10.34 S-B. 100th**



Certificate (if required) to be sent to the Surveyors are requested not to write on or below the space for Committee's Minute.