

Rpt. 4b.

## REPORT ON OIL ENGINE MACHINERY.

No. 2018

Received at London Office

25 MAR 1935

Date of writing Report 20th Feb. 1935 When handed in at Local Office 20th Feb. 1935 Port of NAGASAKI.  
No. in Survey held at NAGASAKI. Date, First Survey 29th Jan. 1934 Last Survey 13th Feb. 1935  
Reg. Book. Number of Visits 212.  
90519 on the <sup>Single</sup> ~~Triple~~ ~~Quadruple~~ Screw vessel "NOJIMA MARU" Tons { Gross 7183.63  
Net 4317.93  
Built at Nagasaki By whom built Mitsubishi Jukogyo Kaisha, Ltd. Yard No. 582 When built 1935  
Engines made at Nagasaki By whom made Mitsubishi Jukogyo Kaisha, Ltd. Engine No. 582 When made 1935  
Donkey Boilers made at Nagasaki By whom made Mitsubishi Jukogyo Kaisha, Ltd. Boiler No. 582 When made 1935  
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  
Trade for which vessel is intended All Seas.

IL ENGINES, &c. Type of Engines Mitsubishi-Sulzer Airless Injection For 4 stroke cycle 2 Single or double acting Double  
Maximum pressure in cylinders 50 Kg/cm<sup>2</sup> Diameter of cylinders 700 m/m Length of stroke 1200 m/m No. of cylinders 7 No. of cranks 7  
Mean Indicated Pressure 5.5 Kg/cm<sup>2</sup> Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 1020 m/m Is there a bearing between each crank Yes  
Revolutions per minute 106 Flywheel dia. 2740 m/m Weight 2365 Kgs. Means of ignition Compression Kind of fuel used Diesel oil F.P.  
Crank 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 Mid. length thickness 320 m/m Thickness around eyehole 242.5 m/m  
Flywheel Shaft, diameter as per Rule App. Lon. Intermediate Shafts, diameter as per Rule 408 m/m Thrust Shaft, diameter at collars as per Rule App. Lon.  
as fitted 510 to 424 m/m as fitted 420 m/m as fitted 510 m/m  
Tube Shaft, diameter as per Rule / Screw Shaft, diameter as per Rule 446.3 m/m Is the { screw } shaft fitted with a continuous liner { Yes  
as fitted / as fitted 470 m/m  
Bronze Liners, thickness in way of bushes as per Rule 21.1 m/m Thickness between bushes as per rule 15.8 m/m Is the after end of the liner made watertight in the  
as fitted 25 m/m as fitted 25 m/m  
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 /  
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 the tube  
shaft No If so, state type / Length of Bearing in Stern Bush next to and supporting propeller 1875 m/m  
Propeller, dia. 5400 m/m Pitch 4950 m/m No. of blades 4 Material Bronze whether Moveable Moveable Total Developed Surface 112.05 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  
Forced Thickness of cylinder liners 45 to 40 m/m Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers 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. Two-Jacket & Piston Rotary Pumps. 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 2 Reciprocating 30 M<sup>3</sup>/H. and 100 M<sup>3</sup>/H. 1 Rotary 110 M<sup>3</sup>/H.  
How driven Electric Motor.  
Is the cooling 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  
arrangements /  
Ballast Pumps, No. and size 1-Rotary 110 M<sup>3</sup>/H. 1-Recip. 100 M<sup>3</sup>/H. Power Driven Lubricating Oil Pumps, including Spare Pump, No. and size 2 Rotary @ 65 M<sup>3</sup>/H.  
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 Bilge well 3 @ 90 m/m: Coff. 4 @ 50 m/m: Bilge hat 1 @ 90 m/m  
In Holds, (Deep Tks) No. 1 Hold 2 @ 80 m/m & 1 @ 50 m/m in Coff: No. 2 Hold 2 @ 90 m/m: No. 3 Hold 2 @ 80 m/m: No. 4 Hold  
(Deep Tks) 4 @ 180 m/m: No. 5 Hold 3 @ 80 m/m: No. 6 Hold 1 @ 80 m/m: Tunnel well 1 @ 80 m/m: Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 140 m/m: 1 @ 200 m/m:  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions 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 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 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 / How are they protected /  
What pipes pass through the deep tanks / 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 Same level as Bridge 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. Two (Kobe Cert No. 4294-5) No. of stages 3 Diameters 360x310x80 m/m Stroke 180 m/m Driven by Aux. Engine.  
Auxiliary Air Compressors, No. One No. of stages 1 Diameters 150 m/m Stroke 230 m/m Driven by 20KW. Generator.  
Small Auxiliary Air Compressors, No. One No. of stages 2 Diameters 80x32 m/m Stroke 80 m/m Driven by Hand  
Scavenging Turbo Blower, One (Kobe cert No. 4124) Capacity, 875 M<sup>3</sup>/H Stroke / Driven by Motor  
Auxiliary Engines crank shafts, diameter as per Rule See Kobe report. attached herewith.  
as fitted

Lloyd's Register

007059-007071-0210



**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.** **Two, No. 1091** (Nag. Cert) Total cubic capacity each, **15 M<sup>3</sup>**. Internal diameter **1800 m/m** thickness **31 m/m**

Seamless, lap welded or riveted longitudinal joint **T.R.D.B.S.** Material **Steel** Range of tensile strength **Shell:-44 to 50 Kgs** by Rules **31.9 Kg** Actual **30** Working pressure **Ends:-41 to 47 Kgs** 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**

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,

**NAGASAKI WORKS, MITSUBISHI JUKYO KABUSHIKI KAISHA.**

Manufacturer.

**1934:-** Jan 29 31 Feb 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 Mar 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 Apr 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 May 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 Jun 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 Jul 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 Aug 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 Sep 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 Oct 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 Nov 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 Dec 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29

Dates of Survey while building

During progress of work in shops -

During erection on board vessel -

Total No. of visits **212.**

Dates of Examination of principal parts—Cylinders **30-8-34 to 6-10-34** Covers **28-4-34 to 10-10-34** Pistons **28-6-34 to 9-11-34** Rods **7-9-34 to 20-9-34** Connecting rods **20-9-34**

Crank shaft **31-10-34** Flywheel shaft **31-10-34** Thrust shaft **see flywheel shaft** Intermediate shafts **10-10-34** Tube shaft /

Screw shaft **12-10-34** Propeller **12-10-34** Stern tube **16-10-34** Engine seatings / Engines holding down bolts **10-1-35**

Completion of fitting sea connections **20-10-1934** Completion of pumping arrangements **8-1-1935** Engines tried under working conditions **29-1-1935.**

Crank shaft, Material **Ingot steel** Identification Mark **LLOYD'S No. 1089 & 1089A. HDB.** Flywheel shaft, Material **Ingot steel** Identification Mark **LLOYD'S No. 1089 & 1089A. HDB.**

Thrust shaft, Material **Ingot steel** Identification Mark **See flywheel shaft** Intermediate shafts, Material **Ingot steel** Identification Marks **LLOYD'S No. 1089 & 1089A. ADM.**

Tube shaft, Material / Identification Mark / Screw shaft, Material **Ingot steel** Identification Mark **LLOYD'S No. 1089 & 1089A. TK.**

Is the flash point of the oil to be used over 150° F. **Yes** Spare Screw shaft:- **LLOYD'S No. 1095 TK.**

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 **No**

Is this machinery duplicate of a previous case **Yes** If so, state name of vessel **Noto Maru" Nag. Rpt No. 1999.** **Noshiro Maru" Nag. Rpt No. 2005.**

**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 (11 stops and starts) and slow running (32-35 r.p.m) conditions with satisfactory results, and a mean speed of 18.143 knots/hr. was obtained on light draft.

Upon completion of trials all main engine, cylinders, pistons and crank shafts, oil and water service pumps, were examined and all found in good order.

This case is eligible in our opinion to have the record of **LMC, 2-35** in the Register Book

Note:-The hand air compressor and the Auxiliary 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, **13. 2. 19 35**

Special ... .. £ **182-16-10** : When received, **28. 2. 19 35**

Donkey Boiler Fee ... £ **5-5-0** :

Air Receivers £ **10-10-0** :

Travelling Expenses (if any) £ : **50:00**

Fee water heater. ¥ **50:00**

Committee's Minute **FRI 20 MAR 1935**

Assigned **+ Lmb. 2.35 Oil Eng**  
**CL D.B. - 100 lbs**

**H. Buchanan & T. Kimishu**  
Engineer Surveyor to Lloyd's Register of Shipping.



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