

REPORT ON OIL ENGINE MACHINERY.

Received at London Office - 7 APR 1933

Date of writing Report 13th Mar 33 When handed in at Local Office 13th Mar 33 Port of NAGASAKI.

No. in Survey held at NAGASAKI. Date, First Survey 13th July 1931 Last Survey 4th March 1933
Reg. Book. Number of Visits 246.

64026 on the Single Twin Triple Quadruple Screw vessel "HOKKAI MARU". Tons { Gross 8416.19
Net 5114.29

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha, Ltd. Yard No. 502 When built 1933

Engines made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Engine No. 502 When made 1933

Donkey Boilers made at Lincoln. By whom made Babcock & Wilcox, Ltd. Boiler No. 73/4623 When made 1931

Brake Horse Power 7,200 (Total) Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka.

Nom. Horse Power as per Rule 1678. Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

Trade for which vessel is intended Japan - New York.

OIL ENGINES, &c. Type of Engines Mitsubishi Airless Injection. 2 or 4 stroke cycle 2 Single or double acting Single

Maximum pressure in cylinders 45 Kg/cm² Diameter of cylinders 720 m/m Length of stroke 1250 m/m No. of cylinders 2 x 6 No. of cranks 2 x 6

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 950 m/m Is there a bearing between each crank Yes

Revolutions per minute 120 Flywheel dia. 2200 m/m Weight 10000 Kgs Means of ignition Compression Kind of fuel used Diesel oil

Crank Shaft, dia. of journals 500 m/m Crank pin dia. 500 m/m Crank Webs 803.5 m/m Thickness parallel to axis 315 m/m

Flywheel Shaft, diameter 500 m/m Intermediate Shafts, diameter 320.4 m/m Thrust Shaft, diameter at collars 336.4 m/m

Tube Shaft, diameter 353 m/m Screw Shaft, diameter 410 m/m Is the screw shaft fitted with a continuous liner Yes.

Bronze Liners, thickness in way of bushes 18.3 m/m Thickness between bushes 13.8 m/m 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 /

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 / If so, state type / Length of Bearing in Stern Bush next to and supporting propeller 1650 m/m

Propeller, dia. 14'-0" Pitch 15.13 ft No. of blades 4 Material Bronze whether Moveable Moveable Total Developed Surface 55 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 56 m/m at top. Are the cylinders fitted with safety valves Yes Are the exhaust pipes and silencers water wash box 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 Jacket & piston pumps 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 3- 2 off 110 tons/hr. Rotary, and 1 off 30 tons/hr. Reciprocating.

How driven Electric Motor.

Ballast Pumps, No. and size 1 off, 110 tons per hr. Lubricating Oil Pumps, including Spare Pump, No. and size 3 Rotary 60 Cu.M. per hr.

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 4 @ 3 1/2", 2 @ 2", 4 @ 2" in bilge wells & cofferdams. In Pump Room /

In Holds, &c. No.1 hold 2 @ 3" No.2 hold 2 @ 3" No.3 hold 2 @ 3" No.4 hold 1 @ 3" No.5 hold 1 @ 3" No.6 hold 1 @ 3" Tunnel well 1 @ 2 1/2" A.P. well 1 @ 2 1/2"

Independent Power Pump Direct Suctions to the Engine Room Bilges, No. and size 1 @ 8", 2 @ 5 1/2" and 1 @ 3"

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 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 8'-0" 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 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. 2 (Kob. Cert 3279) No. of stages 3 Diameters 360/310/80 m/m Stroke 180 m/m Driven by Aux. Generator.

Auxiliary Air Compressors, No. / No. of stages / Diameters / Stroke / Driven by /

Small Auxiliary Air Compressors, No. 1 (Kob. Cert 3140-A) No. of stages 2 Diameters 120/40 m/m Stroke 130 m/m Driven by Hot Bulb Eng.

Scavenging Air Pumps, No. 6 each engine. Diameter 620 m/m Stroke 1250 m/m Driven by Main Engine.

Auxiliary Engines crank shafts, diameter See Kobe Report No. 7906. No. 235 Position On Engine Room Floor.

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 /

Starting Air Receivers, No. 4. Total cubic capacity 8 Cu.M. each. Internal diameter 1600 m/m thickness 40 m/m

Seamless, lap welded or riveted longitudinal joint T.R.D.B.S. Material Steel. Range of tensile strength Shell- 28-35 tons. Ends- 26-30 tons. Working pressure by Rules 46.97 Kg/cm² Actual 45 Kg/cm²

IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? No. See Grimsby Report No. 17718.

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

PLANS. Are approved plans forwarded herewith for Shafting 25-26-5-31, Receivers App:- 16-5-31, Separate Tanks App:- 25-9-31. (If not, state date of approval) 11-7-32 & 27-8-31. App:- 6-10-31. Donkey Boilers / General Pumping Arrangements App:- 30-7-31, Oil Fuel Burning Arrangements / 29-9-31.

SPARE GEAR.

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

State the principal additional spare gear supplied As per Rules and Additional. (See separate List).

The foregoing is a correct description.

NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD.

S. Motora GENERAL MANAGER.

1931:- July 13.17.25 Aug 5.8.12.13.19.20.22.24.25.26.28 Sep 2.8.9.10.14.17.25.29. Oct 3.5.19.28.31 Nov 7.12.17.19.21.24.26 Dec 3.4.7.9.10.12.16.18.19.21.22.24.26.28.29. 1932:- Jan 6.9.13.15.20.22.27.28.29 Feb 1.2.3.4.12.15.16.19.22.24.29 Mar 1.3.4.7.9.11.14.15.17.19.22.28.29.31 Apr 2.5.6.8.9.11.12.15.19.20.21.23.25.26.30.31 May 3.4.5.6.7.10.11.12.14.16.18.19.20.21.23.24.25.26.27.28.30.31 Jun 1.2.3.6.7.8.10.11.14.15.16.17.18.20.21.23.24.25.26.27.28.30.31 Jul 1.2.4.5.6.8.9.11.12.14.15.16.17.18.19.20.21.23.24.25.26.27.28.30.31 Aug 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.23.24.25.26.27.28.30.31 Sep 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.23.24.25.26.27.28.30.31 Oct 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.23.24.25.26.27.28.30.31 Nov 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.23.24.25.26.27.28.30.31 Dec 1.2.3.4.5.6.7.8.9.10.11.12.13.14.15.16.17.18.19.20.21.23.24.25.26.27.28.30.31

Dates of Examination of principal parts - Cylinders to 25-7-32 Covers to 25-6-32 Pistons to 27-6-32 Connecting rods to 1-7-32 Crank shaft 6-6-31 to 24-5-32 Flywheel shaft and Thrust shaft 13-8-31 to 4-5-32 Intermediate shafts 11-3-32 to 11-8-32 Tube shaft / Screw shaft 22-3-32 to 30-7-32 Propeller 2-8-32 to 26-11-32 Stern tube 10-6-32 to 10-8-32 Engine seatings 16-6-32 Engines holding down bolts 24-1-33 Completion of fitting sea connections 1-9-32 Completion of pumping arrangements 24-1-33 Engines tried under working conditions 14-2-33

Crank shaft, Material Ingot steel Identification Mark LLOYD'S No. 564 & A. TK. Flywheel shaft, Material Ingot steel Identification Mark LLOYD'S No. 565 & A. TK. Thrust shaft, Material Ingot steel Identification Mark See Flywheel shaft. Intermediate shafts, Material Ingot steel Identification Mark LLOYD'S No. 589 to H(9) 598.604.603. A & TK. Tube shaft, Material / Identification Mark / Screw shaft, Material Ingot steel. Identification Mark L.No. 595 & A. T Spare- L.No. 595-B. 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 fillings 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 Yes If so, state name of vessel M.V. "Nankai MARU", Nag.Rpt.No.1869.

General Remarks (State quality of workmanship, opinions as to class, &c.) The Machinery of this vessel 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. This Machinery has now been efficiently installed on board and tested under full load and overload conditions with satisfactory results afterwards opened up, examined and found in good condition. This case is eligible in our opinion to have the record L.M.C., 3-'33, in the Register Book. Mean speed on trial 18.608 knots, at 14.19 ft draught.

A Vertical Donkey Boiler with all auxiliaries (in E.Rm) complete has been installed on the Upper Dk level of engine casing and the safety valves were adjusted on the 14th February 1933 to 103 lbs, pressure and all in accordance with Sec.18-22 of the Rules. Certificates of castings and forgings herewith.

The amount of Entry Fee .. £ 100:00 : When applied for, Special ... £ 3539:00 : 6. 3. 1933 Installation, Donkey Boiler Fee ... £ 50:00 : When received, Main & Aux. Receivers ... £ 367:00 : 27.4. 1933 Travelling Expenses (if any) £ :

For T. Kuwishi vself A.D. Buchanan, Engineer Surveyor to Lloyd's Register of Shipping.



Committee's Minute WED. 19 APR 1933

Assigned + L.M.C. 3.33 C.L. D.B. 100th. CERTIFICATE WRITTEN

Vertical text on the left margin: The Surveyors are requested not to write on or below the space for Committee's Minute.