

# REPORT ON OIL ENGINE MACHINERY.

No. 1789

13 JUL 1931

Received at London Office

Date of writing Report 15th June 31 When handed in at Local Office 15th June 1931 Port of NAGASAKI.

No. in Survey held at Ludwigshafen/Rhein & Nagasaki Date, First Survey 28th Oct. 1930. Last Survey 30th May 1931. Reg. Book. (Nag) Number of Volls 88 (Nag)

91193 on the ~~Deck~~ ~~Deck~~ ~~Deck~~ Single Screw vessel "KANAN MARU". Tons {Gross 3280.09 Net 1876.74

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha, Ltd. Yard No. 490 When built 1931  
Engines made at Ludwigshafen/Rhein. By whom made Gebruder Sulzer A.G. Cyl. No. 61257 When made 1931  
Donkey Boilers made at Nagasaki By whom made Mitsubishi Zosen Kaisha, Ltd. Boiler No. 490 When made 1931  
Brake Horse Power 1500. Owners Dairen Kisen Kabushiki Kaisha. Port belonging to Dairen.  
Nom. Horse Power as per Rule 388.389 Is Refrigerating Machinery fitted for cargo purposes / Is Electric Light fitted Yes  
Trade for which vessel is intended Dairen - coast of China. 2378 4134

FL ENGINES, &c. Type of Engines 4 S 60. 331800 - 331802. 2 or 4 stroke cycle 2 Single or double acting Single  
Maximum pressure in cylinders 38.5 Kg/cm<sup>2</sup> Diameter of cylinders 600 m/m Length of stroke 1060 m/m No. of cylinders 4 No. of cranks 4 for Wkg. cylinder.  
Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 870 m/m Is there a bearing between each crank Yes  
Revolutions per minute 125 Flywheel dia. 2100 m/m Weight 7955 Kg. Means of ignition Air Injection Kind of fuel used Heavy fuel oil.  
Crank Shaft, dia. of journals as per Rule 355 m/m Crank pin dia. 405 m/m Crank Webs Mid. length breadth 550 m/m Thickness parallel to axis /  
as fitted 405 m/m Mid. length thickness 225 m/m Thickness around eye-hole /  
Flywheel/Shaft, diameter as per Rule 355 m/m Intermediate Shafts, diameter as per Rule 246.4 m/m Thrust Shaft, diameter at collars as per Rule 258.7 m/m  
as fitted 405 m/m as fitted 290 m/m as fitted 405 m/m  
Propeller Shaft, diameter as per Rule / Screw Shaft, diameter as per Rule 272.3 m/m Is the ~~axle~~ shaft fitted with a continuous liner /  
as fitted / as fitted 320 m/m as fitted Yes

Bronze Liners, thickness in way of bushes as per Rule 15.8 m/m Thickness between bushes as per rule 11.8 m/m Is the after end of the liner made watertight in the  
as fitted 20 m/m as fitted 15 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  
aft No If so, state type / Length of Bearing in Stern Bush next to and supporting propeller 1270 m/m  
Propeller, dia. 12'-3" Pitch 9.65 ft No. of blades 4 Material Bronze whether Moveable Moveable Total Developed Surface 46.7 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 38 m/m 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. 1 piston cooling pump fitted to the engine. Is the sea suction provided with an efficient strainer which can be cleared within the vessel Yes  
Large Pumps worked from the Main Engines, No. 1 Diameter 130 m/m Stroke 330 m/m 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.

Ballast Pumps, No. and size One- 150 ton/hr. Lubricating Oil Pumps, including Spare Pump, No. and size 1 pump for bearing lubric pump 17.5 M<sup>3</sup>.  
1 independent oil pump 12.6 M<sup>3</sup>.  
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 1 @ 3 1/2", 4 @ 3", 2 @ 2", 1 @ 2" in cofferdam. In Pump Room /  
Holds, &c. 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".  
Are all the Bilge Suction pipes in Holds and Tunnel Well fitted with strum-boxes Yes Are the Bilge Suctions in the Machinery Spaces  
fitted 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 / 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. 1. No. of stages 3 Diameter 570/480/150 Stroke 400 m/m Driven by Main engine.  
Auxiliary Air Compressors, No. 2. No. of stages 2 Diameters 240/80 m/m Stroke 140 m/m Driven by Oil engine.  
Small Auxiliary Air Compressors, No. 1. No. of stages 2 Diameters 110/35 m/m Stroke 120 m/m Driven by Oil engine.  
Savenging Air Pumps, No. 1. Diameter 1270 m/m Stroke 700 m/m Driven by Main engine.  
Auxiliary Engines crank shafts, diameter as per Rule / (140 m approx) No. — /  
as fitted / 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 Cubic capacity of each 150 litre Internal diameter 300 m/m thickness 16 m/m  
6 800 litre Internal diameter 540 m/m thickness 25 m/m  
Seamless, lap welded or riveted longitudinal joint Seamless. Material S.M. Steel Range of tensile strength 44-50 Kg/cm<sup>2</sup> Working pressure by Rules 75 atm.  
Actual 70 kg/cm<sup>2</sup>  
Starting Air Receivers, No. One Total cubic capacity 5 cu.m. Internal diameter 1200 m/m thickness 21 m/m ends 23 mm.  
Seamless, lap welded or riveted longitudinal joint Riveted Material Steel Range of tensile strength 44-50 Kg/cm<sup>2</sup> Working pressure by Rules 30 Kg/cm<sup>2</sup>  
Actual 24.6% W/278-0144

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 Yes Reversers No. Separate Tanks Yes.
Donkey Boilers 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.
NAGASAKI WORKS, MITSUBISHI ZUSEN KAISHA, LTD.

J. Motora
GENERAL MANAGER.

Dates of Survey while building: During progress of work in shops - 1930. Oct 28. Nov. 1. 15. Dec 1. 2. 5. 6. 10. 15. 19. 22. 23. 24. 27.
During erection on board vessel - 1931. Jan 6. 9. 12. 13. 16. 17. 20. 22. 24. 27. 28. 29 Feb 2. 5. 7. 10. 12. 13. 14. 17. 21. 24. 25. 28.
Mar 2. 3. 4. 5. 6. 7. 10. 11. 12. 13. 14. 16. 18. 19. 23. 24. 30 Apr 1. 2. 4. 6. 7. 8. 9. 10. 11. 13. 15.
May 1. 2. 4. 5. 8. 14. 18. 20. 21. 25. 26. 28. 30.
Total No. of visits 88.

Dates of Examination of principal parts: Cylinders to 18-9-29, 18-19-9-29, 28-10-29, 27-1-30, Rods 28-12-29, Connecting rods 28-12-29
Crank shaft 28-12-29, Thrust & Flywheel shaft 28-12-29, Thrust shaft /, Intermediate shafts 6-12-30 to 26-2-31 (Nag), Tube shaft /
Screw shaft 12-1-31 to 1-5-31 (Nag), Propeller 6-3-31 (Nag), Stern tube 10-2-31 & 12-2-31 (Nag), Engine seatings 10-2-31, 24-2-31 (Nag), Engines holding down bolts 31-3-31 (Nag)
Completion of fitting sea connections 19-3-31 (Nag), Completion of pumping arrangements 6-4-31 (Nag), Engines tried under working conditions 14-5-31 (Nag)
Crank shaft, Material S.M. Steel, Identification Mark LLOYD'S V.S. 832, Thrust & Flywheel shaft, Material M.S. Steel, Identification Mark LLOYD'S V.S. 832.
Thrust shaft, Material /, Identification Mark /, Intermediate shafts, Material S.M. Steel, Identification Mark LLOYD'S No. (See below)
Tube shaft, Material /, Identification Mark /, Screw shaft, Material S.M. Steel, Identification Mark LLOYD'S No. T.K. 26-2-31
Is the flash point of the oil to be used over 150° F. Yes " " " " (Spare:- LLOYD'S No. T.K. 1-5-31)
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 No If so, state name of vessel /

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

Identification Mark:- Intermediate shafts.

LLOYD'S No. 375. T.K. 28-1-31. LLOYD'S No. 375 T.K. 29-1-31. LLOYD'S No. 375 T.K. 27-1-31.
" " " 2-2-31. " " " 17-2-31. " " " 26-2-31.

This machinery constructed by Messrs. Gebrüder Sulzer A.G. of Ludwigshafen/Rhein. has been satisfactorily installed in the vessel, tried under full working condition and found satisfactory and is eligible in my opinion to have the record X LMC, 5.-'31/

Mean Speed on trial 12.686 knots, at 9'-6 1/2" draught.

Certificates of Castings and Forgings herewith.

See also Bremen Rpt No. 1240.

The amount of Entry Fee Part £ 10:00 When applied for,
Special ... £ 249:60 12. 6. 1931
Donkey Boiler Fee ... £ 63:00 When received,
Travelling Expenses (if any) £ : : 21. 7. 1931

George Anderson & T. Kurishu
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 17 JUL 1931

Assigned

+ LMC. 5. 31 C.L.

Oil Eng. N.H. 100 lb.



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Lloyd's Register Foundation



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Approved
(The Surveyors are requested not to write on or below the subject for Committee's Minute.)