

REPORT ON OIL ENGINE MACHINERY.

No. 1745

8 OCT 1930

Received at London Office

Date of writing Report 16th Sep. 30 When handed in at Local Office 16th Sep 30 Port of NAGASAKI.

No. in Survey held at NAGASAKI. Date, First Survey 17th May 1929. Last Survey 30th Aug. 1930. Reg. Book. Number of Visits 206.

89020. on the ~~Screw~~ ^{Twin} ~~Propeller~~ ^{Engine} vessel "YASUKUNI MARU". Tons Gross 11,929.52 Net 7,157.70

Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha, Ltd. Yard No. 468 When built 1930.
 Engines made at " By whom made " " " Engine No. 468 When made 1930.
 Donkey Boilers made at Nagasaki. By whom made " " " Boiler No. 468 When made 1930.
 Brake Horse Power 10,000 (Total) Owners Nippon Yusen Kabushiki Kaisha. Port belonging to Tokio.
 Nom. Horse Power as per Rule 2,492. Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes
 Trade for which vessel is intended Japan - Europe. 26 3/4 47 1/4

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

Maximum pressure in cylinders 40 Kg/cm² Diameter of cylinders 680 m/m Length of stroke 1200 m/m No. of cylinders 20 No. of cranks 20

Span of bearings, adjacent to the Crank, measured from inner edge to inner edge 910 m/m Is there a bearing between each crank Yes

Revolutions per minute 100 Flywheel dia. 2400 m/m Weight 14,080 Kg. Means of ignition Temp. due to Compression Kind of fuel used Heavy fuel oil.

Crank Shaft, dia. of journals as per Rule 451.9 m/m as fitted 470 m/m Crank pin dia. 470 m/m Crank Webs Mid. length breadth / shrunk Thickness parallel to axis 295 m/m

Flywheel Shaft, diameter as per Rule 451.9 m/m as fitted 470 m/m Intermediate Shafts, diameter as per Rule 401.4 m/m as fitted 410 m/m Thrust Shaft, diameter at collars as per Rule 451.9 m/m as fitted 470 m/m

Tube Shaft, diameter as per Rule / as fitted / Screw Shaft, diameter as per Rule 435.8 m/m as fitted 450 m/m Is the shaft fitted with a continuous liner Yes

Bronze Liners, thickness in way of bushes as per Rule 21 m/m as fitted 26 m/m Thickness between bushes as per Rule 15.7 m/m as fitted 18 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 /

Length of Bearing in Stern Bush next to and supporting propeller 1800 m/m

Propeller, dia. 16'-3" Pitch 17'-11" No. of blades 4 Material Bronze whether Movable Yes Total Developed Surface 68.89 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 top of Thickness of cylinder liners 53 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. 6 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 1 @ 200 tons/hr. 2 @ 150 tons/hr. 1 @ 140 tons/hr. How driven Electric motor.

Ballast Pumps, No. and size 1 @ 200 tons/hr. Lubricating Oil Pumps, including Spare Pump, No. and size 2 @ 75 M³/hr for Bearing. 2 @ 10 " for Crosshead.

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 3 @ 5 1/2". 6 @ 3 1/2". 4 @ 2" (Cofferdams).

In Holds, &c. No. 1- 2 @ 3". No. 2- 2 @ 3". No. 3- 2 @ 3". No. 4- 3 @ 3". No. 5- 1 @ 3". No. 6- 1 @ 3", 2 @ 2". Chain locker 1 @ 3". Pipe passage 1 @ 2 1/2". Tunnel well 1 @ 3".

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

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 As per approved plan.

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 Both.

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 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. 4 (2 each engine) No. of stages 3 Diameters 570/480/150 Stroke 600 m/m Driven by Main Engine

Auxiliary Air Compressors, No. One 4 cy. each with 3 stages Diameters 360/310/80 Stroke 180 m/m Driven by Elec. Motor.

Small Auxiliary Air Compressors, No. One No. of stages 2 Diameters 110/35 Stroke 120 m/m Driven by Oil Engine

Scavenging Air Pump, No. 2 Turbo Blower Capacity 1350 Cu. M/min. (each). Driven by Elec. Motor.

Auxiliary Engines crank shafts, diameter as per Rule / as fitted /

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 Yes What means are provided for cleaning their inner surfaces Hand holes for H.P. Man holes for L.P.

Is there a drain arrangement fitted at the lowest part of each receiver Yes

High Pressure Air Receivers, No. 2 10 Cubic capacity of each 150 litre 2000 litre Internal diameter 300 m/m 775 m/m thickness 16 m/m 32.5 m/m

Seamless, lap welded or riveted longitudinal joint Seamless Material Steel Range of tensile strength 28-35 tons sq. in. Working pressure by Rules 103.7 kg/cm² 91.7 " 2018 "

Starting Air Receivers, No. 2 Total cubic capacity 18 cu. m. Internal diameter 1600 m/m thickness 28.5 m/m

Seamless, lap welded or riveted longitudinal joint F.R.D.B.S. Material Steel Range of tensile strength 28-35 tons sq. in. Working pressure by Rules 470.2 lbs sq. in.

IS A DONKEY BOILER FITTED? Yes If so, is a report now forwarded? Yes
PLANS. Are approved plans forwarded herewith for Shafting Yes Receivers Yes Separate Tanks Yes
Donkey Boilers Yes General Pumping Arrangements Yes Oil Fuel Burning Arrangements Yes
SPARE GEAR As per the Rules and in addition. (See separate list).

NAGASAKI WORKS, MITSUBISHI ZOSSEN KAISHA, LTD.

The foregoing is a correct description,

Manufacturer.

1929. May 17 June 14. 24. 25. 26. 28. 29 Jul 1. 2. 6. 8. 11. 17. 19. 20. 24. 27. 30 Aug 2. 5. 16. 8.
12. 13. 16. 22. 26. 27. 28. 29. 31 Sep 2. 3. 4. 6. 9. 11. 12. 13. 14. 16. 17. 18. 19. 20. 21. 23. 26. 27
Oct 1. 3. 5. 10. 11. 12. 14. 16. 18. 19. 21. 22. 23. 24. 25. 26. 28. 29. 30. 31 Nov 1. 2. 4. 5. 8. 7. 8.
12. 13. 14. 15. 16. 18. 19. 20. 21. 22. 25. 27. 28. 29. 30. Dec 2. 3. 4. 5. 6. 7. 9. 10. 12. 13. 14. 1
18. 19. 20. 21. 23. 24. 26. 28. 1930. Jan 6. 7. 8. 10. 11. 14. 15. 16. 17. 18. 20. 21. 23. 25. 27. 28
Feb 7. 8. 10. 14. 18. 19. 21. 22. 25. Mar 6. 15. 20. 26. 27. 28. 31 Apr 7. 8. 10. 11. 15. 23. May 7. 9. 10
14. 16. 17. 18. 21. 22. 24. 26. 31 June 2. 3. 6. 6. 9. 12. 14. 17. 18. 23. 24. 27. 30 Jul 1. 2. 3. 4. 5
28. 29. 30 Aug 4. 13. 14. 15. 16. 19. 21. 22. 23. 26. 29. 30.
Dates of Examination of principal parts—Cylinders 2-11-29 to 21-10-29 Covers 14-12-29 to 11-11-29 Pistons 3-10-29 to 25-6-29 Connecting rods 28-5-29
20-6-29 to 12-9-29 (Prague) Flywheel shaft and Thrust shaft 29-5-29 to 29-7-29 (Prague) Intermediate shafts 27-5-29 to 28-9-29 (Kobe) Tube shaft /
Screw shaft 7-1-30 to 28-1-30 Propeller 6-6-30 Stern tube 7/10-1-30 Engine seatings 28-1-30 Engines holding down bolts 11-4-30
Completion of fitting sea connections 14-2-30 Completion of pumping arrangements 30-6-30 Engines tried under working conditions 4-8-30
Crank shaft, Material Ingot steel Identification Mark See below Flywheel shaft, Material Ingot steel Identification Mark P-No. 8073 PK 29-
Thrust shaft, Material Ingot steel Identification Mark See Flywheel Intermediate shafts, Material Ingot steel Identification Marks See below S-No. 8075 PK 29-
Tube shaft, Material / Identification Mark / Screw shaft, Material Ingot steel Identification Mark P-No. 2017 KK 7-
Is the flash point of the oil to be used over 150° F. Yes S-No. 2012 KK 14 (Spare No. 2002 KK 28)

Is this machinery duplicate of a previous case Yes If so, state name of vessel "Terukuni Maru" Nag. Rpt. No. 1734.
General Remarks (State quality of workmanship, opinions as to class, &c.)
Identification Mark:- CRANK SHAFTS.
Port:- LLOYD'S No. 8087 PK 19-7-29, No. 8088 PK 2-9-29. Spare:- LLOYD'S No. 8089, P.K. 12-9-29.
Star:- " No. 8085 HJ 20-6-29, No. 8086 PK 7-8-29.

Identification Mark:- INTERMEDIATE SHAFTS.
Port:- LLOYD'S No. 2183, A.W. 24-9-29. 1 off. Star:- LLOYD'S No. 2183, A.W. 24-9-29. 1 off.
" No. 2139, " 31-7-29. 2 " " No. 2173, " 12-9-29. 5 off.
" No. 2173, " 12-9-29. 2 " " No. 2189, " 28-9-29. 1 off.
" No. 2234, " 2-11-29. 1 " " No. 2069, " 27-5-29. 1 off.
" No. 2189, " 28-9-29. 1 " " No. 2069, " 27-5-29. 1 "
" No. 2069, " 27-5-29. 1 "

The Machinery has been constructed under Special survey and installed in the vessel in accordance with the Rules and Approved plans.
The materials and workmanship are good and the machinery has been examined under working condition and found satisfactory.
The Machinery of this vessel is eligible in my opinion to have the record of LMC, 8-30, Mean speed on trial 18.022 knts, at 22'-0" draught. It is submitted that this vessel is eligible for THE RECORD + LMC 8.30 - C-L Oil Engines 25.5 SA 20cy. 26 3/4 - 4 NHP 2492 2DB. - 100 lb.
Certificates of Castings and Forgings herewith.

The amount of Entry Fee ... £ 60:00 : When applied for,
Special ... £ 2434:61 : 2. 9. 19 30
Donkey Boiler Fee ... £ 162:74 : When received,
Air Receivers ... £ 126:00 : 16. 9. 19 30
Travelling Expenses (if any) £ :
Committee's Minute TUE. 14 OCT 1930
Assigned + L.M.C. 8.30 C.L.
Oil Eng. 2 NHP 100 lb.

George Anderson
Engineer Surveyor to Lloyd's Register of Shipping.
Kishigami
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