

Rpt. 4.

REPORT ON MACHINERY.

No. 1228.

Date of writing Report 8th April 1919 When handed in at Local Office 8th April 1919 Port of NAGASAKI.
No. in Survey held at NAGASAKI. Date, First Survey 24th Nov. 1917 Last Survey 2nd April 1919
Reg. Book. on the S.S. "Madras Maru" (Number of Visits 93)
Master S. Imabizumi Built at Nagasaki By whom built Mitsubishi Zosen Kaisha When built 1919
Engines made at Nagasaki By whom made Mitsubishi Zosen Kaisha when made 1919
Boilers made at Nagasaki By whom made Mitsubishi Zosen Kaisha when made 1919
Registered Horse Power 380 Owners Osaka Shosen Kaisha Port belonging to Osaka
Nom. Horse Power as per Section 28 380 Is Refrigerating Machinery fitted for cargo purposes Yes Is Electric Light fitted Yes

ENGINES, &c.—Description of Engines Triple Expansion No. of Cylinders 3 No. of Cranks 3
Dia. of Cylinders 23" 38" & 61" Length of Stroke 48" Revs. per minute 87 Dia. of Screw shaft 14.5" Material of steel
Is the screw shaft fitted with a continuous liner the whole length of the stern tube No Is the after end of the liner made water tight
in the propeller boss Yes If the liner is in more than one length are the joints burned Yes 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 Yes If two
liners are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5' 1 1/2"
Dia. of Tunnel shaft 12.49" Dia. of Crank shaft journals 13.116" Dia. of Crank pin 11.4" Size of Crank webs 8 1/2" x 19 5/8" Dia. of thrust shaft under
collars 13 1/2" Dia. of screw 16.6" Pitch of Screw 17.3" No. of Blades 4 State whether movable Yes Total surface 76 sq. ft.
No. of Feed pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes
No. of Bilge pumps 2 Diameter of ditto 4 1/2" Stroke 24" Can one be overhauled while the other is at work Yes
No. of Donkey Engines 3 Sizes of Pumps 7 1/2" x 5 1/2" x 6" No. and size of Suctions connected to both Bilge and Donkey pumps
In Engine Room 3 @ 3 1/2" 7 1/2" x 12" x 10" In Holds, &c. No. 1 Hold 2 @ 3 1/2" No. 2 Hold 2 @ 3 1/2"
No. 3 Hold 2 @ 3 1/2" No. 4 Hold 2 @ 3 1/2" Tunnel 1 @ 2 1/2"
No. of Bilge Injections 1 sizes 7" Connected to condenser, or to circulating pump. Yes Is a separate Donkey Suction fitted in Engine room & size Yes, 4 1/2"
Are all the bilge suction pipes fitted with roses Yes Are the roses in Engine room always accessible Yes Are the sluices on Engine room bulkheads always accessible Yes
Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both
Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates Yes Are the Discharge Pipes above or below the deep water line Above
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 are carried through the bunkers Bilge pipes How are they protected With steel plates
Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times Yes
Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges Yes
Is the Screw Shaft Tunnel watertight Yes Is it fitted with a watertight door Yes worked from Upper deck

BOILERS, &c.—(Letter for record S.) Manufacturers of Steel South Durham Steel & Iron Co., 7 North Bros. Steel works
Total Heating Surface of Boilers 5250 sq. ft. Is Forced Draft fitted Yes No. and Description of Boilers 3 Single ended, cylindrical
Working Pressure 200 lbs. Tested by hydraulic pressure to 400 lbs. Date of test 25th Feb. 1919 No. of Certificate 90
Can each boiler be worked separately Yes Area of fire grate in each boiler 61.8 sq. ft. No. and Description of Safety Valves to
each boiler 2 Spring loaded Area of each valve 9.62 sq. in. Pressure to which they are adjusted 205 lbs. Are they fitted with easing gear Yes
Smallest distance between boilers or uptakes and bunkers or woodwork 16 1/2" Mean dia. of boilers 15' 0" Length 12' 0" Material of shell plates Steel
Thickness 1 1/2" Range of tensile strength 28 to 32 tons Are the shell plates welded or flanged No Descrip. of riveting: cir. seams Double lap
long. seams 2 straps Diameter of rivet holes in long. seams 1 1/2" Pitch of rivets 9 1/2" Lap of plates or width of butt straps 21 1/2" & 2 1/4"
Per centages of strength of longitudinal joint 92.2 Working pressure of shell by rules 203 lbs. Size of manhole in shell 16" x 12"
Size of compensating ring 37" x 33" x 1 1/2" No. and Description of Furnaces in each boiler 3 Doughton's Material Steel Outside diameter 3' 11 1/2"
Length of plain part top 5' 1/2" Thickness of plates bottom 5' Description of longitudinal joint Welded No. of strengthening rings 1
Working pressure of furnace by the rules 216 lbs. Combustion chamber plates: Material Steel Thickness: Sides 1 1/2" Back 3/4" Top 1 1/2" Bottom 1"
Pitch of stays to ditto: Sides 8' x 9 1/2" Back 9' x 8 1/2" Top 8 1/2' x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 218 lbs.
Material of stays Steel Area at smallest part 2.02 sq. in. Area supported by each stay 81 sq. in. Working pressure by rules 224 lbs. End plates in steam space:
Material Steel Thickness 1 3/4" Pitch of stays 21 1/2" x 15" How are stays secured Double nuts Working pressure by rules 216 lbs. Material of stays Steel
Area at smallest part 8.29 sq. in. Area supported by each stay 382.5 sq. in. Working pressure by rules 224 lbs. Material of Front plates at bottom Steel
Thickness 3/4" Material of Lower back plate Steel Thickness 3/4" Greatest pitch of stays 13 1/2" Working pressure of plate by rules 240 lbs.
Diameter of tubes 3 1/2" Pitch of tubes 14 1/2" x 4 1/2" Material of tube plates Steel Thickness: Front 3/4" Back 5/8" Mean pitch of stays 8 1/2"
Pitch across wide water spaces 13 1/2" Working pressures by rules 248 lbs. Girders to Chamber tops: Material Steel Depth and
thickness of girder at centre 10 1/2" x 3 1/2" Length as per rule 2' 11 1/2" Distance apart 8 1/2" x 8" Number and pitch of stays in each 3 @ 8 1/2"
Working pressure by rules 212 lbs. Steam dome: description of joint to shell Yes % of strength of joint Yes
Diameter Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint Yes Diam. of rivet holes Yes
Pitch of rivets Yes Working pressure of shell by rules Yes Crown plates Yes Thickness Yes How stayed Yes

SUPERHEATER. Type Yes Date of Approval of Plan Yes Tested by Hydraulic Pressure to Yes
Date of Test Yes Is a Safety Valve fitted to each Section of the Superheater which can be shut off from the Boiler Yes
Diameter of Safety Valve Yes Pressure to which each is adjusted Yes Is Easing Gear fitted Yes

W1314-0212

IS A DONKEY BOILER FITTED? No. If so, is a report now forwarded?
 SPARE GEAR. State the articles supplied:— As per Rule, and in addition one H.P. valve spindle, one L.P. valve spindle, one air pump rod, one impeller spindle for circulating pump, one set each of H.P., I.P., & L.P. packing rings, 13 junk ring bolts, two safety valve springs, one set of air pump valves, one set of valves, seats & spindles for main & aux. check valves for one boiler, one set of eccentric rods & bolts, 13 condenser tubes, & 37 ferrules.

The foregoing is a correct description,

NAGASAKI WORKS, LTD. (INCORPORATED IN JAPAN) ZOSSEN KAISHA, LTD. GENERAL MANAGER.

Manufacturer.

Dates of Survey while building { During progress of work in shops - - 1917 Nov. 24. Dec. 7. 13. 26. 1918 Jan. 8. 15. 30. Feb. 2. 6. 7. 8. Mar. 1. 19. 28. May 1. 3. 10. 11. Aug. 21. Sept. 25. Oct. 2. 3. 4. 11. 12. 15. 16. 18. 19. 21. 23. 24. Nov. 5. 14. 15. 20. 26. Dec. 4. 7. 9. 10. 11. 13. 14. 16. 24. 1919 Jan. 7. 11. 13. 15. 16. 17. 20. 22. 24. 25. 30. 31. Feb. 1. 6. 10. 13. 14. 17. 18. 19. 20. 21. 24. 25. 27. Mar. 14. 5. 7. During erection on board vessel - - - 12. 13. 14. 17. 18. 19. 20. 22. 24. 27. 28. 29. 31. April 1. 2. Total No. of visits 93 Is the approved plan of main boiler forwarded herewith Yes.

Dates of Examination of principal parts—Cylinders 11. 13. 1. 19 Slides 20. 2. 19 Covers 11. 13. 1. 19 Pistons 20. 2. 19 Rods 20. 2. 19 Connecting rods 20. 2. 19 Crank shaft 26. 12. 18 Thrust shaft 13. 12. 18 Tunnel shafts 13. 12. 18 Screw shaft 13. 12. 18 Propeller 20. 2. 19 Stern tube 14. 2. 19 Steam pipes tested 27. 2. 19 11. 3. 19 Engine and boiler seatings 13. 2. 19 Engines holding down bolts 12. 3. 19 Completion of pumping arrangements 17. 3. 19 Boilers fixed 7. 3. 19 Engines tried under steam 19. 3. 19 Completion of fitting sea connections 4. 3. 19 Stern tube 18. 2. 19 Screw shaft and propeller 24. 2. 19 Main boiler safety valves adjusted 17. 3. 19 Thickness of adjusting washers No washers, brass joint nuts 14. 8. Material of Crank shaft Steel Identification Mark on Do. A.S.W. Material of Thrust shaft Steel Identification Mark on Do. 14. 8. A.S.W. Material of Tunnel shafts Steel Identification Marks on Do. 14. 8. A.S.W. Material of Screw shafts Steel Identification Marks on Do. 14. 8. A.S.W. Material of Steam Pipes Solid drawn steel and copper Test pressure 600lb. & 400lb. per sq. in. Is an installation fitted for burning oil fuel Yes Is the flash point of the oil to be used over 150°F. Yes

Have the requirements of Section 49 of the Rules been complied with Yes Is this machinery duplicate of a previous case Yes If so, state name of vessel "Tomura Maru" Boilers of "Miyaura Maru"

General Remarks (State quality of workmanship, opinions as to class, &c. These Engines and Boilers have been constructed under Special Survey, in accordance with the Rules and of good materials and workmanship. They have been securely fitted on board, and have been satisfactorily tried under steam. The machinery of this vessel is eligible, in my opinion, for the record of LMC 4. 19 in the Register Book.

Mean speed on Trial in ballast trim = 14. 13 knots.

It is submitted that this vessel is eligible for THE RECORD. + LMC 4. 19. F.D.

The amount of Entry Fee 30.00 Special 682.50 Donkey Boiler Fee Travelling Expenses (if any) £ When applied for, 7th April 1919 When received, 19

a. s. Williamson Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute WED. JUN. 11. 1919 Assigned + LMC 4. 19