

# REPORT ON MACHINERY.

Port of Nagasaki

Received at London Office 18

No. in Survey held at Nagasaki Date, first Survey 12 Nov 1902 Last Survey 2<sup>nd</sup> July 1903  
 eg. Book. (Number of Visits) \_\_\_\_\_  
 on the Steel Screw Steamer "Niigata Maru" Tons { Gross 2183  
 Net 1353  
 Master Y. Kishi Built at Nagasaki By whom built Mitsui Bishi D. & E. Wks. When built 1903  
 Engines made at Nagasaki By whom made Mitsui Bishi D. & E. Wks. when made 1903  
 Boilers made at " By whom made " " " " when made 1903  
 Registered Horse Power \_\_\_\_\_ Owners Nippon Yusen Kaisha Port belonging to Tokyo  
 Nom. Horse Power as per Section 28 245 Is Electric Light fitted No.

**GINES, &c.—Description of Engines** Triple Expansion No. of Cylinders Three No. of Cranks Three  
 Diameter of Cylinders 21" 35" 58" Length of Stroke 36" Revolutions per minute 80 Diameter of Screw shaft as per rule 11.58"  
 Diameter of Tunnel shaft as fitted 10.4" Diameter of Crank shaft journals 11 1/4" Diameter of Crank pin 11 3/4" Size of Crank webs 17" x 7 3/4"  
 Diameter of screw 14" 0" Pitch of screw 16" 0" No. of blades 4 State whether moveable No Total surface 61.65"  
 No. of Feed pumps 2 Diameter of ditto 3 3/4" Stroke 21 Can one be overhauled while the other is at work Yes.  
 No. of Bilge pumps 2 Diameter of ditto 3 3/4" Stroke 21 Can one be overhauled while the other is at work Yes.  
 No. of Donkey Engines Four Sizes of Pumps 6 1/2" 4 1/2" 6" Dup. Feed OK. & Meir's 8" 6" 21" Dup.  
 Engine Room 3' Centre suction & 2 3/4" brif. suction In Holds, &c. Two 2 3/4" to each of Nos 1, 2 & 3 holds.  
& 3" suction from tunnel well.  
 No. of bilge injections 1 sizes 8" Connected to condenser, or to circulating pump Cir. p. Is a separate donkey suction fitted in Engine room & size Yes 5" x 3"  
 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 None  
 Are all connections with the sea direct on the skin of the ship Yes. Are they Valves or Cocks Valves & Cocks.  
 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 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 are carried through the bunkers Forward bilge suction How are they protected Wooden casing  
 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.  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock new vessel Is the screw shaft tunnel watertight Yes  
 Is it fitted with a watertight door Yes worked from upper E. platform.

**BOILERS, &c.—** (Letter for record S) Total Heating Surface of Boilers 3270 Is forced draft fitted Yes.  
 No. and Description of Boilers Two Single Ended Working Pressure 180 lbs Tested by hydraulic pressure to 370 lbs  
 Date of test 11.4.03 Can each boiler be worked separately Yes. Area of fire grate in each boiler 34.5 No. and Description of safety valves to  
 each boiler Two Direct Spring. Area of each valve 2 1/8" diam. Pressure to which they are adjusted 190 lbs Are they fitted  
 with easing gear Yes. Smallest distance between boilers or uptakes and bunkers or woodwork Several feet Mean diameter of boilers 12" 0"  
 Length 11" 3" Material of shell plates Steel Thickness 1/4" Description of riveting: circum. seams Double long. seams D. Shaps. 3/8 riv.  
 Diameter of rivet holes in long. seams 1 5/16" Pitch of rivets 9 1/8" & rows Lap of plates or width of butt straps 18 3/4" x 1 1/8"  
 Percentages of strength of longitudinal joint rivets 88.0 Working pressure of shell by rules 224 lbs Size of manhole in shell 16" x 12"  
 Size of compensating ring 34 1/2" x 30 1/2" x 1 1/8" No. and Description of Furnaces in each boiler Two Morrison Material Steel Outside diameter 45 3/4"  
 Length of plain part top 19/32 Thickness of plates crown 19/32 Description of longitudinal joint Welded No. of strengthening rings ✓  
 Working pressure of furnace by the rules 206 Combustion chamber plates: Material Stl. Thickness: Sides 7/8 Back 19/32 Top 1/16 Bottom 3/4  
 Pitch of stays to ditto: Sides 7 1/2" x 8 1/2" Back 7 1/2" x 7 3/4" Top 8 3/4" x 8 1/2" If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 210 lbs  
 Material of stays Steel Diameter at smallest part 1 1/2" 1 5/8" Area supported by each stay 44.3 Working pressure by rules 190 End plates in steam space:  
 Material Steel Thickness 1/32 Pitch of stays 17 1/2" x 16" How are stays secured Out nuts & Riv. washers. Working pressure by rules 213 Material of stays Steel  
 Diameter at smallest part 3" Area supported by each stay 262 Working pressure by rules 270 Material of Front plates at bottom Steel  
 Thickness 13/16 Material of Lower back plate Steel Thickness 5/8 Greatest pitch of stays 14" wide Working pressure of plate by rules 185  
 Diameter of tubes 2 1/2" Pitch of tubes 3 5/8" x 3 1/16" Material of tube plates Steel Thickness: Front 13/16 Back 11/16 Mean pitch of stays 4 1/16  
 Pitch across wide water spaces 13 3/4" Working pressures by rules 185 lbs Girders to Chamber tops: Material Steel Depth and  
 thickness of girder at centre 7" x 1" plate Length as per rule 25 1/2" Distance apart 8 3/4" Number and pitch of Stays in each Two at 8 1/2"  
 Working pressure by rules 255 Superheater or Steam chest; how connected to boiler ✓ Can the superheater be shut off and the boiler worked  
 separately ✓ Diameter \_\_\_\_\_ Length \_\_\_\_\_ Thickness of shell plates \_\_\_\_\_ Material \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_ Diam. of rivet  
 holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Working pressure of shell by rules \_\_\_\_\_ Diameter of flue \_\_\_\_\_ Material of flue plates \_\_\_\_\_ Thickness \_\_\_\_\_  
 If stiffened with rings \_\_\_\_\_ Distance between rings \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ End plates: Thickness \_\_\_\_\_ How stayed \_\_\_\_\_  
 Working pressure of end plates \_\_\_\_\_ Area of safety valves to superheater \_\_\_\_\_ Are they fitted with easing gear \_\_\_\_\_



**DONKEY BOILER**— Description *Hor. Sing. Inded Multitubular. Particulars on separate form.*  
 Made at *Nagasaki* By whom made *Mitsu Bishi Dry Dock & Eng Works* When made *1903* Where fixed *In Stocked.*  
 Working pressure *120* tested by hydraulic pressure to *240* No. of Certificate *11/4/03* Fire grate area *20.4* Description of safety valves *Direct Spring*  
 No. of safety valves *2* <sup>Or</sup> ~~Area~~ of each *2"* Pressure to which they are adjusted *125 lb* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No.* Diameter of donkey boiler *9'-0"* Length *9'-2"* Material of shell plates *Steel* Thickness *2 3/32*  
 Description of riveting long. seams *Double Strap Double Riv.* Diameter of rivet holes *15/16* Whether punched or drilled *Drilled* Pitch of rivets *5' x 2 1/2*  
 Lap of plating *10 1/2 x 11/16* Per centage of strength of joint *85.4* Rivets *8 1/2* Thickness of shell <sup>End</sup> ~~plates~~ *27.11* Radius of do. *14 1/2 x 13 1/2*  
 Dia. of stays *2" u. thrd.* Diameter of furnace <sup>Top</sup> *30 7/8* <sup>Bottom</sup> *30 7/8* Length of furnace *41 1/2* Thickness of furnace plates *7/16* Description of joint *Welded* Thickness of furnace crown plates *1/2* Stayed by *1 1/2" dia stays.* Support *59* Working pressure of shell by rules *147*  
 Working pressure of furnace by rules *145 lb* Diameter of uptake *10"* Thickness of uptake plates *1/2* Thickness of water tubes *1/2*

**SPARE GEAR.** State the articles supplied:— *Two con. rod top end bolts & nuts, & bottom end ditto.*  
*Two main bearing bolts & nuts. Set coupling bolts & nuts. Six feed valves & seats.*  
*Two bilge pump valves & seats. Set packing rings & springs for all pistons. Assorted bolts*  
*nuts & iron. 1/3 Crank shaft. 1 Piston rod. H. Junk ring. Propeller shaft. &*  
*propeller. Pt. crank pin brasses, & main bearing do.*  
*Safety valve springs etc.*  
 The foregoing is a correct description,  
*A. Midzutan* Manufacturer.

Dates During progress of work in shops— *12<sup>th</sup> Nov. 1902 To 9<sup>th</sup> May 1903*  
 of Survey while building During erection on board vessel— *9<sup>th</sup> May 1903 to 2<sup>nd</sup> July 1903*  
 Total No. of visits *Continuous attendance.*

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

**ENGINES**—Length of stern bush *4' 9 3/4"* Diameter of crank shaft journals *10.9* as per rule *11 1/4* as fitted Diameter of thrust shaft under collars *11 1/4"*  
**BOILERS**—Range of tensile strength *27-32* <sup>in shells</sup> Are they welded or flanged *No* **DONKEY BOILERS**—No. *1* Range of tensile strength *27-32*  
 Is the approved plan of main boiler forwarded herewith *Yes.* Is the approved plan of donkey boiler forwarded herewith *Retained for reference.*

*These engines & boilers have been built under special survey in accordance with the Rules, & the workmanship has been found good throughout.*

*Howden's system of forced draft is fitted.*

*The vessel is eligible in my opinion for the record of + & LMC 7.03 in red in the Register.*

*It is submitted that this vessel is eligible for THE RECORD. + LMC 7.03 F.D.*

*Bel.*

*10.8.03*

*10.8.03*

The amount of Entry Fee... *2* : - : When applied for.  
 Special ... *48* : *7/6* : *30.6.03*  
 Donkey Boiler Fee ... *3* : - : When received.  
 Travelling Expenses (if any) £ : : *30.6.03*

*A. L. Jones*

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute

Assigned

*TUES. 11 AUG 1903*

*+ LMC 7.03*

MACHINERY CERTIFICATE  
WRITTEN



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Foundation