

# REPORT ON MACHINERY.

No. 730

MUN. 8 MAY 1911

Port of Nagasaki

Received at London Office

No. in Survey held at Nagasaki Date, first Survey Dec. 9. 1909 Last Survey April 15. 1911.

Reg. Book. 21<sup>st</sup> 5. on the Twin Screw Steamer Canada Maru (Number of Visits 146.)

Master K. Hori Built at Nagasaki By whom built Mitsui Bishi S. & E. Works. When built 1911. Tons { Gross 6063. Net 3759.

Engines made at Nagasaki By whom made Mitsui Bishi S. & E. Works. when made 1911.

Boilers made at Nagasaki By whom made Mitsui Bishi S. & E. Works. when made 1911.

Registered Horse Power 578 Owners Osaka Shosen Kaisha Port belonging to Nagasaki.

Nom. Horse Power as per Section 28 578. Is Refrigerating Machinery fitted for cargo purposes No. Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines Twin Screw Triple Expansion No. of Cylinders Six No. of Cranks Six

Dia. of Cylinders 19 1/4. 32. 54 Length of Stroke 48 Revs. per minute 85 Dia. of Screw shaft 12 as per rule 12 Material of screw shaft Steel as fitted 13 1/2

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 lapped at ends Length of stern bush 5-3 1/2

Dia. of Tunnel shaft 11.2 as per rule 11.25 Dia. of Crank shaft journals 11.79 as per rule 12 Dia. of Crank pin 12 1/2 Size of Crank webs 16 x 8 Dia. of thrust shaft under collars 12 Dia. of screw 14-9 Pitch of Screw 17-9 No. of Blades 4 State whether moveable Yes Total surface 68.4 sq. ft.

No. of Feed pumps 4 Diameter of ditto 3 3/4 Stroke 24 Can one be overhauled while the other is at work Yes.

No. of Bilge pumps 4 Diameter of ditto 3 3/4 Stroke 24 Can one be overhauled while the other is at work Yes.

No. of Donkey Engines Three Sizes of Pumps See next page. No. and size of Suctions connected to both Bilge and Donkey pumps In Engine Room Three @ 3 1/2, Boiler Room Two @ 3 1/2 In Holds, &c. Two @ 3 1/2 in each hold. One 3 in each Tunnel and one 3 in Tunnel well.

No. of Bilge Injections 2 sizes 7 Connected to condenser, or to circulating pump C. P. Is a separate Donkey Suction fitted in Engine room & size Yes, 7.

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 valves and 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 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 Exhaust, Wmch. E. Heaters + w. c. How are they protected Strong wood casings.

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.

Dates of examination of completion of fitting of Sea Connections 27. 11. 10. of Stern Tube 26. 11. 10 Screw shaft and Propeller 6. 1. 11.

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 Beardmore's Steel Co. Scotland, Lanarkshire Leeds Forge Co., Glasgow + Glasgow and C. W. Neil.

Total Heating Surface of Boilers 8344 sq. ft. Is Forced Draft fitted Yes No. and Description of Boilers Three Scotch.

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 28. 12. 10 No. of Certificate 48.

Can each boiler be worked separately Yes Area of fire grate in each boiler 66 sq. ft. No. and Description of Safety Valves to each boiler 2 @ 3 1/2" direct spring Area of each valve 9.62 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 1-6 Mean dia. of boilers 15-6 Length 11-9 Material of shell plates Steel

Thickness 1 15/32 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 2 R. Lap. long. seams 3 R. 2 Staps Diameter of rivet holes in long. seams 1 1/2 Pitch of rivets 10+5 Lap of plates or width of butt straps 1-10

Per centages of strength of longitudinal joint rivets 90% Working pressure of shell by rules 217 lbs Size of manhole in shell 16 x 12 plate 85%

Size of compensating ring 36 1/2 x 32 1/2 x 1 1/2 No. and Description of Furnaces in each boiler 3. L.F. Bull Material Steel Outside diameter 46 5/16

Length of plain part top 2.1 Thickness of plates crown 32 Description of longitudinal joint Welded No. of strengthening rings 4 bottom 32

Working pressure of furnace by the rules 234. Combustion chamber plates: Material Steel Thickness: Sides 11/16 Back 11/16 Top 11/16 Bottom 7/8

Pitch of stays to ditto: Sides 9 x 8 3/4 Back 9 x 8 1/2 Top 9 x 8 1/2 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 212.

Material of stays Steel Diameter at smallest part 1 5/8 Area supported by each stay 78.75 Working pressure by rules 232. End plates in steam space: Material Steel Thickness 1 9/32 Pitch of stays 20 x 18 1/2 How are stays secured 2 N + WASHERS Working pressure by rules 202 Material of stays Steel

Diameter at smallest part 3 3/4 Area supported by each stay 370 Working pressure by rules 229 Material of Front plates at bottom Steel

Thickness 3/4 Material of Lower back plate Steel Thickness 27/32 Greatest pitch of stays 14 1/2 x 9 Working pressure of plate by rules 270

Diameter of tubes 3 Ex Pitch of tubes 4 3/8 x 4 1/8 Material of tube plates Steel Thickness: Front 3/4 Back 3/4 Mean pitch of stays 8 1/2

Pitch across wide water spaces 13 1/4 Working pressures by rules 269 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 12 x 1 3/4 Length as per rule 34 1/16 Distance apart 9 Number and pitch of stays in each 3 @ 8 1/2

Working pressure by rules 300 1/2 Superheater or Steam chest; how connected to boiler Yes Can the superheater be shut off and the boiler worked separately Yes Diameter Yes Length 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 Diameter of flue Yes Material of flue plates Yes Thickness Yes

If stiffened with rings Yes Distance between rings Yes Working pressure by rules Yes End plates: Thickness Yes How stayed Yes

Working pressure of end plates Yes Area of safety valves to superheater Yes Are they fitted with easing gear Yes

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VERTICAL DONKEY BOILER— Manufacturers of Steel

Form with fields for No., Description, Made at, By whom made, When made, Where fixed, Working pressure, Date of test, No. of Certificate, Fire grate area, Description of Safety, etc.

SPARE GEAR. State the articles supplied :-

As per rule, and in addition One length crank shaft, one Propeller shaft, one Piston Rod. Two Eccentric Rods, One Valve Spindle. Two Eccentric Straps, gauge for crank shaft &c &c!

The foregoing is a correct description, MITSUBISHI DOCKYARD & ENGINE WORKS, Manufacturer.

Table with columns for Dates of Survey while building, During progress of work in shops, and Total No. of visits.

Table with columns for Dates of Examination of principal parts, Connecting rods, Crank shaft, Thrust shaft, Tunnel shafts, Screw shafts, Propellers, Stern tube, Steam pipes tested, Engine and boiler seatings, Engines holding down bolts, Completion of pumping arrangements, Boilers fixed, Engines tried under steam, Main boiler safety valves adjusted, Thickness of adjusting washers, Material of Crank shaft, Identification Mark on Do., Material of Thrust shaft, Identification Mark on Do., Material of Tunnel shafts, Identification Marks on Do., Material of Screw shafts, Identification Marks on Do., Material of Steam Pipes, Iron lap welded, Test pressure 600 lbs per sq in.

General Remarks (State quality of workmanship, opinions as to class, &c. These Engines and Boilers have been constructed under special survey, and are in accordance with the Rules. The Workmanship, and the materials used are good. They have been securely and satisfactorily fitted on board, and have been seen working well under a full head of steam, and are now eligible in my opinion to be recorded L.M.C.

4.11. in Register Book. Engines fitted amidships. Mean Speed on Trials with half deadweight 14.85 knots. Weirs Feed Pumps. Duplex. 10 1/2 x 8 x 21. Ballast Pump. Duplex 9 x 12 x 10. General Donkey Pump Duplex 12 x 8 x 10.

It is submitted that this vessel is eligible for THE RECORD, + L.M.C. 4.11.

Table with columns for The amount of Entry Fee, Special, Donkey Boiler Fee, Travelling Expenses (if any), When applied for, When received.

F.D. JWD 12/5/11 A.C. Heron. Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute TUE. 16 MAY 1911 Assigned Thome 4.11



Vertical text on the right edge of the page, including 'Port of', 'No. in Reg. Book', 'Owners', 'Yard No.', 'DESCRIPTION', 'Two', 'Sam', 'Capacity of', 'Where is L', 'Position of', 'Positions of', 'you s', 'you p', 'If cut out', 'circuit', 'If vessel is', 'Are the cut', 'Are all cut', 'are p', 'Are all sci', 'Total num', 'A Fore', 'B Up', 'C Bri', 'D Eng', 'E', 'Two', 'Two', 'If are lig', 'Where a', 'DESCRIP', 'Main cab', 'Branch co', 'Branch co', 'Leads to', 'Cargo lig', 'DESCRIP', 'Wires', 'of te', 'coater', 'Joints in', 'distr', 'insu', 'Are all', 'ma', 'Are ther', 'How ar', 'cables'

Vertical text on the left edge: Nagasaki, Certificate (if required) to be sent to the space for Committee's Minute.