

REPORT ON MACHINERY.

Port of Nagasaki

JUN 12 1902

Received at London Office

No. in Survey held at Nagasaki Date, first Survey 1st Mar. 1901 Last Survey 3rd May 1902

Reg. Book. New on the Steel Screw-Steamer "Wakamatsu Maru" Tons { Gross 2774 Net 1720

Master N. Sakamoto Built at Nagasaki By whom built Mitsu Bishi Dkyd. Y. Wk. When built 1902

Engines made at Nagasaki By whom made Mitsu Bishi Dkyd. Y. Wk. when made 1902

Boilers made at " By whom made " when made 1902

Registered Horse Power 278 Owners The Mitsu Bishi Co Port belonging to Nagasaki

Nom. Horse Power as per Section 28 278 Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines Quadruple Expansion No. of Cylinders 4 No. of Cranks 4

Diameter of Cylinders 20 1/2 : 29 : 42 : 60; Length of Stroke 45 Revolutions per minute 70 Diameter of Screw shaft 12 1/2

Diameter of Tunnel shaft 11 1/4 Diameter of Crank shaft journals 11 3/4 Diameter of Crank pin 12 Size of Crank webs 8 1/2 x 16 1/2

Diameter of screw 15'-6" Pitch of screw 16'-0" No. of blades 4 State whether moveable Yes Total surface 76'

No. of Feed pumps Two Diameter of ditto 3 3/4 Stroke 22 1/2 Can one be overhauled while the other is at work Yes.

No. of Bilge pumps Two Diameter of ditto 3 3/4 Stroke 22 1/2 Can one be overhauled while the other is at work Yes.

No. of Donkey Engines Three Sizes of Pumps Ballast 8 x 10 x 8 and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room Three (Centre 3 1/2" Wump 3") Two 3" in each of Nos 1, 2 & 3 holds.

No. of bilge injections 1 sizes 7" Connected to condenser, or to circulating pump Cir. p. Is a separate donkey suction fitted in Engine room & size Yes 3 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 None

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Large valves, small 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 Forward bilge suction How are they protected Wood 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 Eng. Rm. platform.

BOILERS, &c.— (Letter for record S.) Total Heating Surface of Boilers 4296.7 Is forced draft fitted No

No. and Description of Boilers One. Double Ended Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs

Date of test 25.2.02 Can each boiler be worked separately ✓ Area of fire grate in each boiler 123 3/4 No. and Description of safety valves to each boiler Two. Direct Spring Area of each valve 4" dia 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' 4" Mean diameter of boilers 15'-6"

Length 18'-0" Material of shell plates Steel Thickness 1 9/16 Description of riveting: circum. seams Mid. tr. l. long. seams Shaps. Int. riv

Diameter of rivet holes in long. seams 1 9/16 Pitch of rivets 10 3/8 x 5 3/16 Lap of plates or width of butt straps 23 1/2

Per centages of strength of longitudinal joint 88.2 Working pressure of shell by rules 220 Size of manhole in shell 16 x 12

Size of compensating ring 2' 10 1/2 x 2' 6 1/4 No. and Description of Furnaces in each boiler Six. Morrison Material Steel Outside diameter 49 1/4"

Length of plain part top 21/32 Thickness of plates bottom 32 Description of longitudinal joint Welded No. of strengthening rings -

Working pressure of furnace by the rules 217 Combustion chamber plates: Material Steel Thickness: Sides 23/32 Back ✓ Top 23/32 Bottom 13/16

Pitch of stays to ditto: Sides 9 Back ✓ Top 9 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 220

Material of stays S. Diameter at smallest part 1 5/8" Area supported by each stay 81" Working pressure by rules 230 End plates in steam space:

Material S. Thickness 1/8 Pitch of stays 14 1/2 x 15 How are stays secured Double nuts & washers Working pressure by rules 218 Material of stays Steel

Diameter at smallest part 2.8 Area supported by each stay 263" Working pressure by rules 230 Material of Front plates at bottom Steel

Thickness 7/8 Material of Lower back plate ✓ Thickness ✓ Greatest pitch of stays Approved Working pressure of plate by rules 200

Diameter of tubes 3/4 Pitch of tubes 4 3/8 x 4 3/4 Material of tube plates S. Thickness: Front 1 1/16 Back 13/16 Mean pitch of stays 9 1/8"

Pitch across wide water spaces 14 1/4" Working pressures by rules 206 Girders to Chamber tops: Material Steel Depth and thickness of girder at centre 8 x 2" Length as per rule 3.9 Distance apart 9" Number and pitch of Stays in each Four at 9"

Working pressure by rules 200 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 -

Plan of engine 14/19/02



DONKEY BOILER— Description *Horizontal multitubular. Two flues. (H.S. 521. G.S. 20.6)*
 Made at *Nagasaki* By whom made *Mitsui Bishi Dockyard* When made *1902* Where fixed *On aft. amidships*
 Working pressure *100 lbs* tested by hydraulic pressure to *200 lbs* No. of Certificate *25/102* Fire grate area *20.6* Description of safety valves *Direct Spring*
 No. of safety valves *2* Area of each *2 1/2 sq ft* Pressure to which they are adjusted *100 lbs* If fitted with easing gear *Yes* If steam from main boilers can enter the donkey boiler *No.* Diameter of donkey boiler *8" 0"* Length *7' 6"* Material of shell plates *Steel* Thickness *5/8"*
 Description of riveting long seams *Treb. riv. lap.* Diameter of rivet holes *7/8"* Whether punched or drilled *Drilled* Pitch of rivets *3 1/4"*
 Lap of plating *6 3/8"* Per centage of strength of joint *Rivets 75.3* Thickness of shell plates *upper end 11/16 lower 11/16* Radius of do. *1/2 11/16* Pitch of stays to do. *18 x 14 in*
 Dia. of stays *2" effective* Diameter of furnace *Top 28 7/8 Bottom Adams 28 1/2* Length of furnace *5' 5"* Thickness of furnace plates *1/16* Description of joint *Welded.* Thickness of *comb. cham. Side & top 7/16 Bottom 1/2* Stayed by *1 3/8* *sets* Spaced *8 1/2 in* Working pressure of shell by rules *118 lbs*
 Working pressure of furnace by rules *100 lbs* Diameter of tubes *3"* Thickness of tube plates *11/16* Thickness of water tubes *4 1/2 x 3/4 (x2)* Span *17* Spacing *9"*

SPARE GEAR. State the articles supplied:— *Packing for all pistons & piston valves. 2 Valve spindles. Two bolts & nuts for Crankheads, & two for Crank pin braces. Two pt. Crank braces, & one for Crank pin brace. Two bolts & nuts for main bearings. Coupling bolts & nuts for one coupling. 1/20 Couplers or tubes. Air pump rod, & 1/2 set valves & seats. Centrifugal fan & spindle. 4 Red valves & seats. 2 Bilge valves & seats. 2 Cheek valves & seats. Safety valve spring for main boilers & for donkey boiler. Five bars. 1/20 boiler tubes. Set valves for wear pump, ballast pump & donkey pump. Assorted iron plates & bars. 100 Assorted bolts & nuts, & 100 washers.*

The foregoing is a correct description,

Y. Suptani Manufacturer.

Dates of Survey: During progress of work in shops— *1st March 1901 to Feb 1902*
 During erection on board vessel— *Feb 1902 to May 1902*
 while building—
 Total No. of visits *Continuous attendance.*

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

ENGINES—Length of stern bush *6' 5"* Diameter of crank shaft journals *as per rule 11 3/4* Diameter of thrust shaft under collars *11 3/4*

BOILERS—Range of tensile strength *27-32* 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 _____ Is the approved plan of donkey boiler forwarded herewith _____

The boiler plans are retained for reference in the case of the sister vessel "Iaiya Maru" yard No 134, now fitting out afloat.

The Engines & Boilers have been constructed under special survey & in accordance with the requirements of the Rules. The workmanship is good throughout. The main & other steam pipes & all parts subject to steam pressure have been tested as required & found satisfactory.

The Report on the Electric Lighting will be sent shortly.

The Machinery in my opinion is eligible for the notation + LMC 5:02 in the Register.

The speed attained on trial was 12 1/4 knots.

It is submitted that this vessel is eligible for THE RECORD - LMC 5:02 Elec: Light.

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

Certificate (if required) to be sent to _____
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)

The amount of Entry Fee..	£ 2: - :	When applied for,
Special	£ 50: 17 :	8.5.02
Donkey Boiler Fee .. .	£ :	When received,
Travelling Expenses (if any) £	:	9.5.02

Committee's Minute **FRI. 13 JUN 1902**

Assigned *+ LMC 5:02*

