

REPORT ON MACHINERY.

Port of *Nagasaki*

JUN 12 1902

Received at London Office 18

No. in Survey held at *Nagasaki* Date, first Survey *1st Mar. 1901* Last Survey *3rd May 1902*
 Reg. Book. (Number of Visits)
 New on the *Steel Screw Steamer "Wakamatsu Maru"* Tons { Gross *2774*
 Net *1720*
 Master *N. Sakamoto* Built at *Nagasaki* By whom built *Mitsui Bishi Okya. Ltd. Yokohama* When built *1902*
 Engines made at *Nagasaki* By whom made *Mitsui Bishi Okya. Ltd. Yokohama* when made *1902*
 Boilers made at *"* By whom made *"* when made *1902*
 Registered Horse Power *278* Owners *The Mitsui 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 *as per rule 12 1/2*
 Diameter of Tunnel shaft *as fitted 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")* *Feed 6 1/2 x 4 1/2 x 6 dwp.* *Snugg 4 1/2 x 2 1/2 x 4 1/2 dwp.* *Two 3" in each of Nos 1, 2 & 3 holds.*
 No 4 (apchold) One 3" Tunnel well. One 3" *And special 7" suction to ballast pump.*
 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 Rnd* 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. trch.* 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 3/32* 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 1/8* Pitch of stays *17 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 *-*

DONKEY BOILER— Description *Horizontal multitubular. Two flues. (H.S. 521.5' G.S. 20.6')*
 Made at *Nagasaki* By whom made *Mitsui Bishi Dryd Reg. Wks.* When made *1902* Where fixed *On a/c. anidships*
 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 *4' 6"* Material of shell plates *Steel* Thickness *7/8"*
 Description of riveting long. seams *Treb. rw. 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 upper end 11/16 lower 11/16* Thickness of shell plates *11/16* Radius of do. *1/2 11/16* Pitch of stays to do. *18" 14"* 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 1/2" Stayed by 1 3/8" struts. Spaced 8 1/2"* 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, & 1/4 set valves & seats. Centrifugal fan & spindle. 4 Red valves & seats. 2 Bilge valves & seats. 2 Cheek valves & seats. Safety valve spring for main boiler & for donkey boiler. Fire 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. Sugitani Manufacturer.

Dates During progress of work in shops -
 of Survey During erection on board vessel -
 while building -
 Total No. of visits

1st March 1901 to Feb 1902

Feb 1902 to May 1902

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"*
as fitted 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 "Idaiya 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.

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

A. L. Jones

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

Committee's Minute

FRI. 13 JUN 1902

Assigned

+ LMC 5:02



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