

REPORT ON MACHINERY.

No. 743.

MON. 24-1911

Port of *Nagasaki*

Received at London Office

19

No. in Survey held at
Reg. Book.

Nagasaki

Date, first Survey *21st May 1908* Last Survey *19th Aug 1911.*

(Number of Visits *369.*)

Gross *13377.*

Tons Net *7223.*

on the *Triple Turbine S. Shinyo Maru*

Master *H. S. Smith*

Built at

Nagasaki

By whom built

Mitsui Bishi & Co. Works When built *1911.*

Engines made at

Nagasaki

By whom made

Mitsui Bishi & Co. Works

when made

1911.

Boilers made at

Nagasaki

By whom made

Mitsui Bishi & Co. Works

when made

1911.

Registered Horse Power

16800

Owners

Toyo Kisen Kaisha Port belonging to *Tokyo.*

Nom. Horse Power as per Section 28

2970

Is Refrigerating Machinery fitted for cargo purposes

No

Is Electric Light fitted

Yes

ENGINES, &c.—Description of Engines *Parsons Turbines 3, Screws No. of Cylinders Three No. of Cranks*

Dia. of Cylinders *See next page* Length of Stroke *✓* Revs. per minute *300* Dia. of Screw shaft *as per rule 12.65" as fitted 13.75" screw shaft* Material of *Lockfast Iron.*

Is the screw shaft fitted with a continuous liner the whole length of the stern tube *Yes* 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 *✓* If two

liners are fitted, is the shaft lapped or protected between the liners *✓* Length of stern bush *7' 8 3/4"*

Dia. of Tunnel shaft *as per rule 11.81" as fitted 12.06"* Dia. of Crank shaft journals *as per rule H.P. 15" as fitted H.P. 16"* Dia. of Crank pin *✓* Size of Crank webs *✓* Dia. of thrust shaft under

collars *13 1/2"* Dia. of screws *8-9"* Pitch of Screws *9-7"* No. of Blades *3* State whether moveable *No* Total surface *39.3 sq each*

No. of Feed pumps *Four* Diameter of ditto *17x12 1/2"* Stroke *26"* Can one be overhauled while the other is at work *Yes, Weirs.*

No. of Bilge pumps *Two* Diameter of ditto *8x10"* Stroke *8"* Can one be overhauled while the other is at work *Yes.*

No. of Donkey Engines *To Bilges (4)* Sizes of Pumps *9x12x10" 1 duplex 8x10x8" 2 duplex 8x10x8" 2 duplex* No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room *3 @ 3 1/2"* in Boiler Rooms *6 @ 3 1/2"* In Holds, &c. *2 @ 3 1/2" in each hold, one at 3 1/2" in Tunnel well.*

No. of Bilge Injections *2* sizes *12"* Connected to condenser, or to circulating pump *C.P.* Is a separate Donkey Suction fitted in Engine room & size *Yes 9"*

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 *Nil.*

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 *Cabin Heats & Bath exhaust and soil pipes.* 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 *16. 2. 11* of Stern Tube *17. 2. 11* Screw shafts and Propellers *10. 7. 11.*

Is the Screw Shaft Tunnels watertight *Yes* Is it fitted with a watertight doors *Yes* worked from *Upper deck.*

BOILERS, &c.—(Letter for record *S.*) Manufacturers of Steel *Clydebridge, Palmus, Lanarkshire.*

Total Heating Surface of Boilers *37661 sq* Is Forced Draft fitted *Yes* No. and Description of Boilers *(13) Thirteen Scotch*

Working Pressure *180 lb.* Tested by hydraulic pressure to *360 lb.* Date of test *See over* No. of Certificate *42. 43. 45. 46.*

Can each boiler be worked separately *Yes* Area of fire grate in each boiler *75.5 sq.* No. and Description of Safety Valves to

each boiler *Two spring 3 3/4"* Area of each valve *11.04"* Pressure to which they are adjusted *185 lb.* Are they fitted with easing gear *Yes*

Smallest distance between boilers or uptakes and bunkers or woodwork *18 1/2"* Mean dia. of boilers *15-9"* Length *11-6"* Material of shell plates *Steel*

Thickness *1 29/64"* 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 R. lap* Diameter of rivet holes in long. seams *1 1/2"* Pitch of rivets *10+5"* Lap of plates or width of butt straps *22"*

Per centages of strength of longitudinal joint: rivets *90% plate 85%* Working pressure of shell by rules *210 lb.* Size of manhole in shell *16" x 12" 3"*

Size of compensating ring *37x32 x 1/32* No. and Description of Furnaces in each boiler *4 Morisons* Material *Steel* Outside diameter *44 3/4"*

Length of plain part *top 19" bottom 32"* Thickness of plates *bottom 32"* Description of longitudinal joint *Welded* No. of strengthening rings *Nil.*

Working pressure of furnace by the rules *211* Combustion chamber plates: Material *Steel* Thickness: Sides *45" 64"* Back *41" 64"* Top *45" 64"* Bottom *15" 16"*

Pitch of stays to ditto: Sides *8 3/4 x 8 1/2"* Back *9 x 8 3/8"* Top *8 3/4 x 8"* If stays are fitted with nuts or riveted heads *Studs* Working pressure by rules *190.*

Material of stays *Steel* Diameter at smallest part *1 1/2"* Area supported by each stay *74.375* Working pressure by rules *186* End plates in steam space:

Material *Steel* Thickness *1 3/32"* Pitch of stays *20 1/2 x 17"* How are stays secured *2 N + W.H.s.* Working pressure by rules *190* Material of stays *Steel*

Diameter at smallest part *3 1/16"* Area supported by each stay *348.5"* Working pressure by rules *223* Material of Front plates at bottom *Steel*

Thickness *3/4"* Material of Lower back plate *Steel* Thickness *7/8"* Greatest pitch of stays *11" doubled* Working pressure of plate by rules *285"*

Diameter of tubes *2 1/2"* Pitch of tubes *3 5/8 x 3 3/4"* Material of tube plates *Steel* Thickness: Front *3/4"* Back *3/4"* Mean pitch of stays *7 3/8"*

Pitch across wide water spaces *12 3/4"* Working pressures by rules *248 lb.* Girders to Chamber tops: Material *Steel* Depth and

thickness of girder at centre *11 1/4 x 1 3/4"* Length as per rule *34 1/2"* Distance apart *8 3/4"* Number and pitch of stays in each *3 @ 8"*

Working pressure by rules *275.* 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 *✓*

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4229-175M

VERTICAL DONKEY BOILER—Manufacturers of Steel

No.	Description	Made at	By whom made	When made	Where fixed
Working pressure	tested by hydraulic pressure to	Date of test	No. of Certificate	Fire grate area	Description of Safety
Valves	No. of Safety Valves	Area of each	Pressure to which they are adjusted	Date of adjustment	
If fitted with easing gear	If steam from main boilers can enter the donkey boiler	Dia. of donkey boiler	Length		
Material of shell plates	Thickness	Range of tensile strength	Descrip. of riveting long seams		
Dia. of rivet holes	Whether punched or drilled	Pitch of rivets	Lap of plating	Per centage of strength of joint	Rivets Plates
Working pressure of shell by rules	Thickness of shell crown plates	Radius of do.	No. of stays to do.	Dia. of stays	
Diameter of furnace Top	Bottom	Length of furnace	Thickness of furnace plates	Description of joint	
Working pressure of furnace by rules	Thickness of furnace crown plates	Stayed by			
Diameter of uptake	Thickness of uptake plates	Thickness of water tubes	Dates of survey		

SPARE GEAR. State the articles supplied:— *As per rule, and in addition, one Centre + one wing propeller shafts, Two complete Rotor Main Bearing Brasses. and spare parts for all auxiliary Engines.*

MITSUBISHI DOCKYARD & ENGINE WORKS.

The foregoing is a correct description,

Manufacturer.

Dates of Survey while building	During progress of work in shops—	June 18. July 20. Aug. 15. Sep. 19. Oct. 12. Nov. 14. Dec. 12. Jan. 1910. 14. Feb. 10. March 5. April 10. May 12.
	During erection on board vessel—	June 14. July 13. Aug. 7. Sep. 4. Oct. 13. Nov. 6. Dec. 7. Jan. 1911. 0. Feb 8. March—
	Total No. of visits	369.

Is the approved plan of main boiler forwarded herewith *yes*

Dates of Examination of principal parts	Rotors	Cylinders	1. 2. 11	Slides	✓	Covers	7. 2. 11.	Pistons	✓	Rods	✓
Connecting rods	✓	Crank shaft	✓	Thrust shaft	✓	Tunnel shafts	1. 12. 08	Screw shafts	12. 12. 10	Propellers	22. 2. 11.
Stern tube s.	11. 1. 11	Steam pipes tested	19. 5. 11 20. 5. 11 25. 5. 11 30. 5. 11	Engine and boiler seatings	27. 6. 11	Engines holding down bolts	29. 6. 11.				
Completion of pumping arrangements	17. 7. 11.	Boilers fixed	12. 7. 11	Engines tried under steam	20. 22. + 25; 7. 11						
Main boiler safety valves adjusted	18. 7. 11	Thickness of adjusting washers	No washers, brass jamb nuts.								
Material of Rotor shafts	Steel	Identification Mark on Do.	LLOYD'S N: 37. A.C.H. 2-8-11.	Material of Thrust shaft	Steel	Identification Mark on Do.	✓				
Material of Tunnel shafts	Steel	Identification Marks on Do.	LLOYD'S N: 37. A.C.H. 1. 12. 08.	Material of Screw shafts	Lockfast Iron	Identification Marks on Do.	below.				
Material of Steam Pipes	Lap welded iron.	Test pressure	540 lbs per square inch.								

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, of good materials and good workmanship. They are securely and satisfactorily fitted on board, and have been seen running well under full steam. All Rotor casings have been subjected to prescribed hydraulic tests, found sound and good, and now eligible in my opinion for the record of L.M.C. 8. 11 in Register Book. No oil fuel fitted.*

Average Mean Speed of Six Runs on Trials 20.238 Knots.

Main Boilers N: 1. 2 + 3	tested	21. 4. 10	Marks on Propeller Shafts.
" " N: 4. 5 + 6	"	27. 5. 10	Port. Centre. Starboard.
" " N: 7. 8. 9	"	5. 9. 10	LLOYD'S LLOYD'S LLOYD'S
" " N: 10. 11. 12 + 13	"	14. 10. 10	N: A.F. 2. 203 N: A.F. 3. 203 N: A.F. 3. 203
			15. 6. 08 19. 6. 08 19. 6. 08
			G.M. J.M.N. C.M.

H.P. Drum 6. 4" Casing 6. 7 1/4" to 7. 1"
L.P. Drums 8. 10" Casings 9. 1 1/4" to 10. 4 1/2"
Asiatic Drums 7. 3" Casings 7. 4 1/4" to 7. 8"

The Asiatic Turbines are incorporated in L.P. Turbines. *It is submitted that this vessel is eligible for THE RECORD. L.M.C. 8. 11*

The amount of Entry Fee.	£ 3 : 0 :	When applied for,
Special	£ 168 : 10 :	18. 8. 1911
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any) £	:	19. 8. 1911

A.C. Heron. F.D
Engineer Surveyor to Lloyd's Register of British & Foreign Shipping

Committee's Minute

TUE. SEP. 5—1911

Assigned

June 8. 11



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