

REPORT ON MACHINERY.

No. 772

Port of *Nagasaki*

Received at London Office SAT. JUN. 8 - 1912

No. in Survey held at *Nagasaki*Date, first Survey *April 8, 1911* Last Survey *20 April 1912*

Reg. Book.

on the *Twin Screw S. "Yokohama Maru"*(Number of Visits *165*)Master *H. Noda* Built at *Nagasaki* By whom built *Mitsui Bishi & Co. Works* Tons { Gross *6525.39*
Net *4045.75*When built *1912*Engines made at *Nagasaki* By whom made *Mitsui Bishi & Co. Works* when made *1912*Boilers made at *Nagasaki* By whom made *Mitsui Bishi & Co. Works* when made *1912*Registered Horse Power *632* Owners *Nippon Yusen Kaisha* Port belonging to *Tokyo*Nom. Horse Power as per Section 28 *632* 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 *20 33 1/2 56* Length of Stroke *48* Revs. per minute *85* Dia. of Screw shaft as per rule *13.5* Material of screw shafts *1. IRON*
as fitted *15* *1. STEEL*Is the screw shaft fitted with a continuous liner the whole length of the stern tube *No liners* Is the after end of the liner made water tightthe 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 partbetween the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive *Yes* If twoliners are fitted, is the shaft lapped or protected between the liners *Yes* Length of stern bush *5 3/2*Dia. of Tunnel shaft as per rule *11.4* Dia. of Crank shaft journals as per rule *12.06* Dia. of Crank pin *12.5* Size of Crank webs *16 1/2 x 8 1/4* Dia. of thrust shaft underbars *12 1/4* Dia. of screw *15 6* Pitch of Screws *18-0* No. of Blades *4* State whether moveable *Yes* Total surface *62.8 sq ft each*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 *Four* Sizes of Pumps *See next page* No. and size of Suctions connected to both Bilge and Donkey pumpsEngine Room *3 @ 3 1/2 in* In Hold, &c. *Two in each hold 3 1/2 in*One *3 1/2 in* in Tunnel well and one *3 1/2 in* in each TunnelNo. 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 *4" x 5"*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 *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*How are they protected *Strong wood casings and steel iron*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 *29.1.12* of Stern Tube *28.1.12* Screw shaft and Propeller *12.4.12*Is the Screw Shaft Tunnel watertight *Yes* Is it fitted with a watertight door *Yes* worked from *upper deck*MILERS, &c.—(Letter for record *S*) Manufacturers of Steel *Beardmores, Lanarkshire, Consell, C. M. Mill.*Total Heating Surface of Boilers *9222* Is Forced Draft fitted *Yes* No. and Description of Boilers *Four Scotch. S.E.*Working Pressure *200 lbs* Tested by hydraulic pressure to *400 lbs* Date of test *23.11.11* No. of Certificate *53*Can each boiler be worked separately *Yes* Area of fire grate in each boiler *55.0 sq ft* No. and Description of Safety Valves toeach boiler *2, 3 1/2 inch direct spring* Area of each valve *9.62 sq in* Pressure to which they are adjusted *205 lbs* Are they fitted with easing gear *Yes*Smallest distance between boilers or uptakes and bunkers *16 in* Mean dia. of boilers *14.0* Length *11.6* Material of shell plates *Steel*Thickness *1 1/16* Range of tensile strength *28-32* Are the shell plates welded or flanged *No* Descrip. of riveting: cir. seams *2 R. Lap*g. seams *2 Sp. 3 R.* Diameter of rivet holes in long. seams *1 1/16* Pitch of rivets *10 x 5* Lap of plates or width of butt straps *1-10*Percentages of strength of longitudinal joint rivets *91.9* Working pressure of shell by rules *212 lbs* Size of manhole in shell *16" x 12"*Size of compensating ring *30 x 26 x 1 1/16* No. and Description of Furnaces in each boiler *3. L.F. Bull* Material *Steel* Outside diameter *41 1/8*Length of plain part top *9* Thickness of plates crown *9* Description of longitudinal joint *Welded* No. of strengthening rings *15*Working pressure of furnace by the rules *214* Combustion chamber plates: Material *Steel* Thickness: Sides *1 1/16* Back *1 1/16* Top *1 1/16* Bottom *1 1/16*Pitch of stays to ditto: Sides *9 1/2 x 7 3/4* Back *8 3/4 x 8 1/2* Top *9 x 8 1/4* 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 *74.25* Working pressure by rules *246* End plates in steam space:Material *Steel* Thickness *1 3/16* Pitch of stays *18 1/8 x 16 1/2* How are stays secured *2 N. + W. 2* Working pressure by rules *223* Material of stays *Steel*Diameter at smallest part *3* Area supported by each stay *299* Working pressure by rules *245* Material of Front plates at bottom *Steel*Thickness *3/4* Material of Lower back plate *Steel* Thickness *3/4* Greatest pitch of stays *17 x 10* Working pressure of plate by rules *259*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 1/4*Pitch across wide water spaces *1 1/2* Working pressures by rules *285* Girders to Chamber tops: Material *Steel* Depth andThickness of girder at centre *10 x 1 3/4* Length as per rule *292* Distance apart *8 1/4* Number and pitch of stays in each *2 @ 9*Working pressure by rules *340* Superheater or Steam chest; how connected to boiler *Yes* Can the superheater be shut off and the boiler workedseparately *Yes* Diameter *Yes* Length *Yes* Thickness of shell plates *Yes* Material *Yes* Description of longitudinal joint *Yes* Diam. of rivetPitch of rivets *Yes* Working pressure of shell by rules *Yes* Diameter of flue *Yes* Material of flue plates *Yes* Thickness *Yes*Stays 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*

W1359-0012

VERTICAL DONKEY BOILER—

Manufacturers of Steel

"Yokohama Maru"

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 including crank shaft gauge for each Engine, and in addition, 2 Propeller shafts, four Propeller Blades. One Stem Bush lined with white metal. One crank shaft interchangeable, one set crank pin brasses. one piston rod with nut. one slide valve spindle &c. &c.

The foregoing is a correct description,

Manufacturer.

General Manager

Dates of Survey while building
During progress of work in shops— April 1911, 3. May 7. June 3. July 13. Aug 13. Sep 18. Oct 20. Nov 20. Dec 23.
During erection on board vessel— Jan. 1912. 18. Feb. 16. March 17. April 12.
Total No. of visits 165.

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

Dates of Examination of principal parts—Cylinders 28.11.11 Slides 19.1.12 Covers 25.1.12 Pistons 20.1.12 Rods 27.12.11.
Connecting rods 28.12.11 Crank shaft 23.12.11 Thrust shaft 27.10.11 Tunnel shafts 26.12.11 Screw shaft 28.1.12 Propellers 19.1.12.
Stern tube 16.1.12 Steam pipes tested 5.9.11 Engine and boiler seatings 2.3.12 Engines holding down bolts 22.2.12.
Completion of pumping arrangements 15.4.12 Boilers fixed 2.3.12 Engines tried under steam 17.4.12.
Main boiler safety valves adjusted 8.4.12 Thickness of adjusting washers No washers brass jamb nuts.
Material of Crank shafts Steel Identification Mark on Do. 23.12.11. Material of Thrust shafts Steel Identification Mark on Do. 27.10.11.
Material of Tunnel shafts Steel Identification Marks on Do. 26.12.11. Material of Screw shafts I.L. IRON Identification Marks on Do. 18.1.12.
Material of Steam Pipes Lap welded Iron Test pressure 600 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 working well under a full head of steam, and are now eligible in my opinion for Record.

LMC 5.12 in Register Book.

Mean Speed on Trials 15.0 Knots.

Feed Donkey Pump.	7" x 5" x 7"	Propeller shafts, Starboard mild steel,
Ballast Donkey.	9" x 12" x 10"	Port Lockfast iron, for comparison test.
Small Donkey.	5 1/4" x 3 1/2" x 5"	Plain shafts on white metal, with oil
Weirs Pumps.	10 1/2" x 8" x 24"	circulation from two small pumps, fitted in aft end of tunnel worked of shafts.

It is submitted that this vessel is eligible for THE RECORD + LMC 4.12.

F.D.

J.W.D. 11/6/12 J.M.

A.C. Heron.

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

The amount of Entry Fee.	£ 3 : 0 :	When applied for,
Special	£ 77 : 8 :	21/5 1912.
Donkey Boiler Fee	£ :	When received,
Travelling Expenses (if any) £	:	21/5 1912.

Committee's Minute

TUE. JUN 11. 1912

Assigned

+ L.M.C. 4.12

F.D.



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Certificate (if returned) to be sent to Nagasaki.

(The Surveyors are requested not to write on or below the space for Committee's Minute.)