

REPORT ON MACHINERY.

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 When built 1912
Tons { Gross 6525.39
Net 4045.75

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.

Net 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

No. of Cylinders 20 Length of Stroke 48 Revs. per minute 85 Dia. of Screw shaft 13.5 Material of screw shafts 1. IRON

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 tight

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

boilers are fitted, is the shaft lapped or protected between the liners Yes Length of stern bush 5-3/2

Dia. of Tunnel shaft 11.4 Dia. of Crank shaft journals 12.06 Dia. of Crank pin 12.5 Size of Crank webs 16 1/2 x 8 1/4 Dia. of thrust shaft under

rollers 12 1/4 Dia. of screws 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 pumps

Engine 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 Tunnel

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 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 Bilge W.C. + Scupper 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

MANUFACTURERS, &c.—(Letter for record S) Manufacturers of Steel Beardmores, Lanarkshire, Gussell, C. M. Neil

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 to

each boiler 2, 3 1/2" 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 Mean dia. of boilers 14.0 Length 11.6 Material of shell plates Steel

Thickness 1 5/16 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 7/16 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 5/16 No. and Description of Furnaces in each boiler 3. L.F. Bull Material Steel Outside diameter 41 3/8

Length of plain part top 9 Thickness of plates crown 9 Description of longitudinal joint Welded No. of strengthening rings 1

Working pressure of furnace by the rules 214 Combustion chamber plates: Material Steel Thickness: Sides 1/16 Back 1/16 Top 1/16 Bottom 15

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. + Wash 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 1/2 Working pressures by rules 285 Girders to Chamber tops: Material Steel Depth and

Thickness of girder at centre 10 x 1 3/4 Length as per rule 29 1/2 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 worked

separately Yes Diameter Yes Length Yes Thickness of shell plates Yes Material Yes Description of longitudinal joint 2020 Diam. of rivet

plates Yes Pitch of rivets Yes Working pressure of shell by rules Yes Diameter of flue Yes Material of flue plates Yes Thickness Yes

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

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
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
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 for 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. *[Signature]*
 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*
 " " " " donkey " " " "

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. N: 53	Material of Thrust shafts	Steel	Identification Mark on Do. N: 53
Material of Tunnel shafts	Steel	Identification Marks on Do. N: 53	Material of Screw shafts	I.L. IRON	Identification Marks on Do. N: 53
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 L.M.C. 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"	Pari 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. *[Signature]*
 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
 Assigned
 TUE. JUN 11. 1912
 + L.M.C. 4.12
 F.D.

Certificate (if returned) to be sent to Nagasaki

DESCRIPTION
 Main cable carrying
 Branch cables carrying
 Branch cables carrying
 Leads to lamps carrying
 Cargo light cables carrying
 DESCRIPTION OF
 Main wires and
 pure india rubber
 together, then
 joints in cables, how
 distributing board
 with pure india
 Are all the joints of
 made in bunkers,
 Are there any joints in
 How are the cables led