

Received at London Office

WFR. 18 MAY 1910

Date of writing Report 28. 4. 1910 When handed in at Local Office 29. 4. 1910. Port of Nagasaki.

No. in Survey held at Nagasaki Date, First Survey 5. 3. 09. Last Survey 26. 4. 1910.

Reg. Book. 50. s. on the T. S. S. "Panama Maru" (Number of Visits 182.)

Master T. Ogata. Built at Nagasaki By whom built Mitsun Bishi & Co. Wks When built 1910.

Engines made at Nagasaki By whom made " " " when made 1910

Boilers made at " By whom made " " " when made 1910

Registered Horse Power 604 Owners Osaka Shosen Kaisha Port belonging to Osaka.

Nom. Horse Power as per Section 28 604 Is Refrigerating Machinery fitted for cargo purposes No Is Electric Light fitted Yes.

ENGINES, &c.—Description of Engines Two Sets Triple Expansion No. of Cylinders Six No. of Cranks Six

Dia. of Cylinders 19 1/4. 32. 54 Length of Stroke 48 Revs. per minute 80 Dia. of Screw shaft as per rule 12. 9/16 Material of Steel as fitted 13/2 screw shaft

Is the screw shaft fitted with a continuous liner the whole length of the stern tube No 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 Yes If two

liners are fitted, is the shaft lapped or protected between the liners ends lapped. Length of stern bushes 5-3/2

Dia. of Tunnel shaft as per rule 11-22 Dia. of Crank shaft journals as per rule 11-79 Dia. of Crank pin 12 1/2 Size of Crank webs 16x8 Dia. of thrust shaft under

collars 12-0 Dia. of screw 14-9 Pitch of Screw 17-9 No. of Blades 4 State whether moveable Yes Total surface 68-4 sq ft

No. of Feed pumps 2 Diameter of ditto 3 3/4 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Bilge pumps 2 Diameter of ditto 3 3/4 Stroke 24 Can one be overhauled while the other is at work Yes

No. of Donkey Engines Three Sizes of Pumps See next page No. and size of Suctions connected to both Bilge and Donkey pumps

In Engine Room 3 at 3 1/2, Boiler Room 2 at 3 1/2 In Holds, &c. Two at 3 1/2 in each hold

One 3 in each tunnel, and one 3 in Tunnel well.

No. of Bilge Injections 2 sizes 7 Connected to condenser, or to circulating pump & Pumps a separate Donkey Suction fitted in Engine room & size Yes 7

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 Yes

Are all connections with the sea direct on the skin of the ship Yes Are they Valves or Cocks Both valves & 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 Bilge & Winch Exhaust 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 14. 1. 10 of Stern Tube 11. 1. 10 Screw shaft and Propeller 11. 1. 10.

Is the Screw Shaft Tunnels watertight Yes Is it fitted with a watertight door Yes worked from Bridge deck.

BOILERS, &c.—(Letter for record S) Manufacturers of Steel Lanarkshire S.C. & Co. Ltd. Colville & Sons.

Total Heating Surface of Boilers 1548-8 Is Forced Draft fitted Yes No. and Description of Boilers 3 Large Single ended. 1 Small Scotch.

Working Pressure 200 lbs Tested by hydraulic pressure to 400 lbs Date of test 21. 1. 10 No. of Certificate 40.

Can each boiler be worked separately Yes Area of fire grate in each boiler 58-2 sq ft No. and Description of Safety Valves to

each boiler 2 Spring 3 1/2 dia 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 or woodwork 15 Mean dia. of boilers 14-3 Length 11-6 Material of shell plates Steel

Thickness 1 1/32 Range of tensile strength 28-32 Are the shell plates welded or flanged No Descrip. of riveting: cir. seams 2 R Lap.

long. seams 2 S. 3 R. 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 93 % plate 85 % Working pressure of shell by rules 224 Size of manhole in shell 16 x 12

Size of compensating ring 36 1/2. 32 1/2. 1 3/2 No. and Description of Furnaces in each boiler 3 L.F. Bull Material Steel Outside diameter 34 1/4

Length of plain part top 5 bottom 3 Thickness of plates crown 5 bottom 3 Description of longitudinal joint Welded. No. of strengthening rings 15

Working pressure of furnace by the rules 241. Combustion chamber plates: Material Steel Thickness: Sides 64 Back 16 Top 64 Bottom 16

Pitch of stays to ditto: Sides 10 x 7 1/2 Back 8 5/8 x 8 1/2 Top 9 x 8 If stays are fitted with nuts or riveted heads Nuts Working pressure by rules 216.

Material of stays Steel Diameter at smallest part 1 5/8 Area supported by each stay 72 sq in Working pressure by rules 253 End plates in steam space:

Material Steel Thickness 1 3/16 Pitch of stays 18 1/4 - 16 1/2 How are stays secured 2N + W Working pressure by rules 215 Material of stays Steel

Diameter at smallest part 3 3/8 Area supported by each stay 309 sq in Working pressure by rules 257 Material of Front plates at bottom Steel

Thickness 3/4 Material of Lower back plate Steel Thickness 3/4 Greatest pitch of stays 14 x 9 Working pressure of plate by rules 260

Diameter of tubes 3 Ex Pitch of tubes 4 1/4 x 4 1/8 Material of tube plates Steel Thickness: Front 3/4 Back 3/4 Mean pitch of stays 8 3/8

Pitch across wide water spaces 13 1/2 Working pressures by rules 250 Girders to Chamber tops: Material Steel Depth and

thickness of girder at centre 10 x 1 3/4 Length as per rule 29 5/16 Distance apart 8 Number and pitch of stays in each 2 at 9

Working pressure by rules 300 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

VERTICAL DONKEY BOILER— Manufacturers of Steel

No.	Description		When made		Where fixed	
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 length crank shaft, one Propeller shaft, four propeller blades, one eccentric Rod and strap complete, Three Valve spindles, Condenser tubes &c.*

The foregoing is a correct description,

MITSU BISHI DOCKYARD & ENGINE WORKS.

Manufacturer.

Dates of Survey while building	During progress of work in shops - -	1909. Dec 15. Total 142.
	During erection on board vessel - -	March. 5. April 5. May 17. June 17. July 18. August 15. Sep 15. Oct 11. Nov. 21.
	Total No. of visits	182.

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

Dates of Examination of principal parts—Cylinders	9. 11. 09	Slides	11. 11. 09	Covers	5. 10. 09	Pistons	21. 10. 09	Rods	13. 10. 09.		
Connecting rods	14. 6. 09	Crank shaft	10. 7. 09	Thrust shaft	7. 8. 09	Tunnel shafts	15. 5. 09 8. 2. 10	Screw shaft	1. 10. 09	Propeller	1. 10. 09
Stern tube	23. 12. 09	Steam pipes tested	7. 2. 10	Engine and boiler seatings	1. 3. 10	Engines holding down bolts	18. 2. 10				
Completion of pumping arrangements	7. 4. 10		Boilers fixed	19. 2. 10		Engines tried under steam	16. 4. 10				
Main boiler safety valves adjusted	2. 4. 10		Thickness of adjusting washers	No washers, jamb nuts.							
Material of Crank shaft	Steel	Identification Mark on Do.	N. 38 A.C.H. 10. 7. 09.	Material of Thrust shaft	Steel	Identification Mark on Do.	N. 38 A.C.H. 7. 2. 09.				
Material of Tunnel shafts	Steel	Identification Marks on Do.	N. 38 D.F.R. 3. 5. 09	Material of Screw shafts	Steel	Identification Marks on Do.	N. 38 A.C.H. 11. 1. 10				
Material of Steam Pipes	Lap welded iron		8. 2. 10 A.C.H.	Test pressure	600 lbs.						

General Remarks (State quality of workmanship, opinions as to class, &c.) *The Engines and Boilers of this vessel, have been constructed in accordance with the Rules under special survey. The materials used and workmanship are of good quality. They have been 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 to be noted; L.M.C 4.10. in Register Book.*

Forced Draught and Electric Light.

Average speed on Trials 14.95 Knots.

Machinery fitted amidships.

The small Main Boiler reported on Special Form R.P.C. 5a, was an after consideration.

Weirs Feed Pumps Duplex 10 1/2 x 8 x 21". Ballast Duplex 9 x 12 x 10".

The amount of Entry Fee	£ 3 : 0 :	When applied for,
Special	£ 75. 6 :	28. 4. 1910
Donkey Boiler Fee	£ — : — :	When received,
Travelling Expenses (if any)	£ — : — :	29. 4. 1910

It is submitted that this vessel is eligible for THE RECORD. + L.M.C 4.10

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

Committee's Minute **MES. 24 MAY 1910**

Assigned

+ hml 4. 10



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FLA (If GAR) Sta this way I Write "Sheer Stroke" opposite its corresponding letter. M u. Dot Lei a thic Poc BRI FOE ma Pla 2 Ha FR RE Lo Bo To Bi Sa Et Nu Cel 62 62 62 62 62 62 H. H. Form No. 1B.

Rpt. 5 Date of No. in Reg. Boo 50m. Master Engines Boilers Register MULT (Letter Boilers No. of safety Are they Smalles Material Descrip Lap of rules boiler Descrip plates Top 9. smalles Pitch Area s Lower Pitch water girder Worki separa holes If stip Work Da of Su wh builda GE