

## REPORT ON BOILERS.

No. 690.

Received at London Office

WED 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 2. 6. 10 Last Survey 16. 4. 1910  
Reg. Book. *"Panama Maru"* (Number of Visits 112.) Gross 6057.  
50 m. S. on the *Twin Screw Steamer* Tons Net 3755Master *J. Ogata*. Built at *Nagasaki* By whom built *Mitsui Bishi DTE Works* When built 1910.Engines made at *Nagasaki* By whom made *Mitsui Bishi DTE Works* when made 1910Boilers made at *Nagasaki* By whom made " " when made 1910Registered Horse Power 604 Owners *Osaka Shosen Kaisha* Port belonging to *Osaka*MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY—Manufacturers of Steel *D. Colville & Son, Leith & Co. of Scotland.*(Letter for record *S*) Total Heating Surface of Boilers 1548.8  $\text{sq. ft.}$  Is forced draft fitted *yes* No. and Description ofBoilers *One C. Multitubular* Working Pressure 200 Tested by hydraulic pressure to 400 Date of test 21.1.10.No. of Certificate 41 Can each boiler be worked separately *yes* Area of fire grate in each boiler 38.5  $\text{sq. ft.}$  No. and Description ofsafety valves to each boiler *Two at 3" Spring* Area of each valve 7.07  $\text{sq. in.}$  Pressure to which they are adjusted 205 lbs.Are they fitted with easing gear *yes* In case of *donkey* boilers, state whether steam from main boilers can enter the donkey boiler *No*Smallest distance between *boilers* or uptakes and bunkers or *woodwork* 21" Mean dia. of boilers 12'-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 long. seams 2 B S. 3 R. Diameter of rivet holes in long. seams 1 3/8" Pitch of rivets 9 1/4" x 4 5/8"

Lap of plates or width of butt straps 1'-8 1/2" Per centages of strength of longitudinal joint rivets 90.5% Working pressure of shell by plate 85.1%

rules 247 Size of manhole in shell 16 x 12" Size of compensating ring 36 1/2 x 32 1/2 x 1 1/4" No. and Description of Furnaces in each

boiler *Two L.F. Bull* Material *Steel* LEAST Outside diameter 3'-7 5/8" Length of plain part top bottom Thickness of plates crown 21" bottom 32Description of longitudinal joint *Welded*. No. of strengthening rings *45* Working pressure of furnace by the rules *219* Combustion chamberplates: Material *Steel* Thickness: Sides 64 Back 16 Top 64 Bottom 16 Pitch of stays to ditto: Sides 10 x 7 1/2 Back 8 7/8 x 8 7/8Top 9 1/4 x 9 If stays are fitted with nuts or riveted heads *Yes* Working pressure by rules 206 Material of stays *Steel* Diameter atsmallest part 1 19/32" Area supported by each stay 83 1/4" Working pressure by rules 242 End plates in steam space: Material *Steel* Thickness 1 3/16"Pitch of stays 18 x 17" How are stays secured *2N+WS* Working pressure by rules 218 Material of stays *Steel* Diameter at smallest part 3 1/4"Area supported by each stay 306 Working pressure by rules 270 Material of Front plates at bottom *Steel* Thickness 3/4" Material ofLower back plate *Steel* Thickness 3/4" Greatest pitch of stays *doubled* 14 x 9 Working pressure of plate by rules 240 Diameter of tubes 3" ExPitch 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 widewater spaces 14" Working pressures by rules *doubled* 212 lbs Girders to Chamber tops: Material *Steel* Depth and thickness of

girder at centre 10 x 1 3/4" Length as per rule 30 13/16" Distance apart 9 1/4" Number and pitch of Stays in each 2 @ 9"

Working pressure by rules 270 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 rivetholes *yes* Pitch of rivets *yes* Working pressure of shell by rules *yes* Diameter of flue *yes* Material of flue plates *yes* Thickness *yes*If 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*The foregoing is a correct description, *MITSUI BISHI DOCKYARD & ENGINE WORKS.*Manufacturer. *Shiota*Is the approved plan of boiler forwarded herewith *yes*

Dates of Survey: During progress of work in shops - June, 2. 5. 7. 8. 10. 11. 12. 16. 18. 26. 30. Sep. (11) Total No. of visits 112.

while building: During erection on board vessel - Jan. 1910. 5. 10. 12. 14. 16. 18. 28. Feb. (14) March. (5) April. 4. 7. 16.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &amp;c. This Main Boiler

has been constructed under Special Survey, of tested

materials, the workmanship is of good quality.

and is one of four fitted in "Panama Maru"; of

smaller dimensions than other three Boilers.

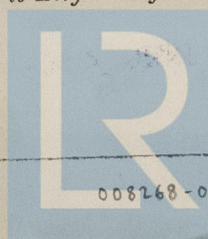
Included in Main Report. 4.

Survey Fee ... £ : : When applied for, ... 19.

Travelling Expenses (if any) £ : : When received, ... 19.

A. C. Heron.

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

Committee's Minute *MAY 24 MAY 1910*Assigned *See minute on attached**mpt nag. 690*

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