

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. **50** in S. on the **Twin Screw Steamer "Panama Maru"** (Number of Visits **112**.) } Gross **6057**.
Tons } Net **3755**

Master **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 **1910**
Boilers made at **Nagasaki** By whom made " " when made **1910**
Registered 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** Is forced draft fitted **yes** No. and Description of Boilers **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** No. and Description of safety valves to each boiler **Two at 3" Spring** Area of each valve **7.07** 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 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 **15"** Thickness of plates crown **21"** bottom **32"**

Description of longitudinal joint **Welded**. No. of strengthening rings **45** Working pressure of furnace by the rules **219** 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 7/8 x 8 7/8"**

Top **9 1/4 x 9"** If stays are fitted with nuts or riveted heads **Nuts** Working pressure by rules **206** Material of stays **Steel** Diameter at smallest 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 of Lower back plate **Steel** Thickness **3/4"** Greatest pitch of stays **14 x 9"** Working pressure of plate by rules **240** 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 **14"** Working pressures by rules **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 2 9"**

Working pressure by rules **270** 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 **yes**
MITSU BISHI DOCKYARD & ENGINE WORKS.
The foregoing is a correct description,
T. Shiro Manufacturer.
General Manager.

Dates of Survey: During progress of work in shops - June, 2, 5, 7, 8, 10, 11, 12, 16, 18, 26, 30, Sep. (11) Is the approved plan of boiler forwarded herewith **yes**.
During erection on board vessel - Jan. 1910, 5, 10, 12, 14, 16, 18, 28, Feb. (14) Total No. of visits **112**.
March, (5) April, 4, 7, 16.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &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.**

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 1910**
Assigned **See minute on attached rpt Nag. 690**

