

## REPORT ON BOILERS.

No. 1138

Received at London Office 30 DEC 1952

Date of writing Report 19... When handed in at Local Office 18 DEC 1952 Port of Kobe

No. in Survey held at Nagasaki Date, First Survey 7th July, 1951 Last Survey 15th May, 1952

on the Twin screw motor vessel "TOMISHIMA-MARU" (Number of Visits 28) Gross 76.13.89 Tons Net 43.34.44

Builder Built at Nagasaki By whom built Mitsubishi Zosen K.K. Yard No. 1426 When built 1952.5 mo.

Engines made at Nagasaki By whom made Nagasaki Works Mitsubishi Zosen K.K. Engine No. 242/242 When made 1952.5 mo.

Boilers made at Nagasaki By whom made Nagasaki Works Mitsubishi Zosen K.K. Boiler No. 136.3 When made 1952.5 mo.

Nominal Horse Power Owners Iino Kaiun K.K. Port belonging to Tokyo

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Yawata Iron and Steel Works (Letter for Record)

Total Heating Surface of Boilers 268.5 m<sup>2</sup> Is forced draught fitted Yes Coal or Oil fired Oil & Gas

No. and Description of Boilers one, Multitubular cylindrical Dry Combustion Working Pressure 7 kgs/cm<sup>2</sup>

Tested by hydraulic pressure to 14 kgs/cm<sup>2</sup> Date of test 18th Feb. 1952 No. of Certificate B-241 Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler one set, 2 valves full lift type

Area of each set of valves per boiler per Rule 51.2 cm<sup>2</sup> as fitted 56.5 cm<sup>2</sup> Pressure to which they are adjusted 7 kgs/cm<sup>2</sup> Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork 600 mm Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 600 mm Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 3800 mm Length 2650 mm Shell plates: Material Boiler quality Tensile strength 46-54 kgs/mm<sup>2</sup>

Thickness 19 mm Are the shell plates welded or flanged No Description of riveting: circ. seams end Double riveted lap joint inter. 8.8 mm

Long. seams Double riveted double butt strap Diameter of rivet holes in circ. seams 26.5 mm long. seams 26.5 mm Pitch of rivets 10.2 mm

Percentage of strength of circ. end seams plate 69.9 rivets 53.8 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 74.0 rivets 87.7 Working pressure of shell by Rules 7 kgs/cm<sup>2</sup>

Thickness of butt straps outer 13 mm inner 16 mm No. and Description of Furnaces in each Boiler one, Morrison corrugated furnace

Material Boiler quality Tensile strength 42-49 kgs/mm<sup>2</sup> Smallest outside diameter 874 mm

Length of plain part top Thickness of plates crown 14 mm bottom 14 mm Description of longitudinal joint Butt fusion welded from both sides

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 7 kgs/cm<sup>2</sup>

End plates in steam space: Material Boiler quality Tensile strength 42-49 kgs/mm<sup>2</sup> Thickness 22 mm Pitch of stays 400 mm

How are stays secured with nuts inside and outside of end plates Working pressure by Rules 7 kgs/cm<sup>2</sup>

Tube plates: Material front Boiler quality back Boiler quality Tensile strength 42-49 kgs/mm<sup>2</sup> Thickness 22 mm

Mean pitch of stay tubes in nests 318 mm Pitch across wide water spaces 230 mm Working pressure front back

Girders to combustion chamber tops: Material Tensile strength Depth and thickness of girder at centre Length as per Rule Distance apart No. and pitch of stays in each Working pressure by Rules Combustion chamber plates: Material Tensile strength Thickness: Sides Back Top Bottom Pitch of stays to ditto: Sides Back Top Are stays fitted with nuts or riveted over Working pressure by Rules Front plate at bottom: Material Boiler quality Tensile strength 42-49 kgs/mm<sup>2</sup> Thickness 22 mm Lower back plate: Material Tensile strength Thickness Pitch of stays at wide water space Are stays fitted with nuts or riveted over Working pressure Main stays: Material Boiler stay bar Tensile strength 45-55 kgs/mm<sup>2</sup> Diameter At body of stay 6.5 mm or Over threads No. of threads per inch 6 Area supported by each stay Working pressure by Rules Screw stays: Material Tensile strength Diameter At turned off part or Over threads No. of threads per inch Area supported by each stay



Working pressure by Rules..... Are the stays drilled at the outer ends..... Margin stays: Diameter <sup>At turned off part,</sup> <sub>or</sub> <sup>Over threads</sup>.....

No. of threads per inch..... Area supported by each stay..... Working pressure by Rules.....

Tubes: Material *Boiler tube* ✓ External diameter <sup>Plain</sup> *76.2 mm* ✓ Thickness <sup>Stay</sup> *76.2 mm* ✓ No. of threads per inch *9* ✓

Pitch of tubes *Vertical 105 mm Horizontal 107 mm* ✓ Working pressure by Rules *7 kgs/cm<sup>2</sup>* ✓ Manhole compensation: Size of opening.....

shell plate *405 mm X 305 mm* ✓ Section of compensating ring *19" X 160" X 160"* No. of rivets and diameter of rivet holes *36 26.5 mm* ✓

Outer row rivet pitch at ends *122.7 mm* ✓ Depth of flange if manhole flanged *85 mm* ✓ Steam Dome: Material.....

Tensile strength..... Thickness of shell..... Description of longitudinal joint.....

Diameter of rivet holes..... Pitch of rivets..... Percentage of strength of joint <sup>Plate</sup> <sub>Rivets</sub>.....

Internal diameter..... Working pressure by Rules..... Thickness of crown..... No. and diameter of stays.....

How connected to shell..... Inner radius of crown..... Working pressure by Rules.....

Size of doubling plate under dome..... Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell.....

Type of Superheater *None* Manufacturers of <sup>Tubes</sup>..... <sup>Steel forgings</sup>..... <sup>Steel castings</sup>.....

Number of elements..... Material of tubes..... Internal diameter and thickness of tubes.....

Material of headers..... Tensile strength..... Thickness..... Can the superheater be shut off from the boiler.....

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler.....

Area of each safety valve..... Are the safety valves fitted with easing gear..... Working pressure as Rules.....

Pressure to which the safety valves are adjusted..... Hydraulic test pressure.....

tubes..... forgings and castings..... and after assembly in place..... Are drain cock valves fitted to free the superheater from water where necessary.....

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with.....

The foregoing is a correct description,

*S. Matsushita*  
NAGASAKI WORKS

Dates of Survey while building <sup>1951</sup> During progress of work in shops - - - *June 6, July 7, Aug 23, Dec 12, 20, 27, Jan 7, 1952* <sup>1952</sup> *Feb 6, 8, 11, 15, 17* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

<sup>1952</sup> During erection on board vessel - - - *Feb 28, March 2, 6, 11, 25, April 7, 9, May 15* Total No. of visits *28*

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *IMT "ASO-MARI" "ARIMA-MARI"*

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

*The Donkey Boiler of this vessel has been constructed under Special Survey in accordance with the Rules, Approved plans and Secretary's letter.*

*Materials and workmanship are good.*

*The Donkey Boiler has been examined under steam, the Safety Valves were adjusted to 7 kgs per square cm and found satisfactory.*

Survey Fee ... .. £ *9,072.0*

Travelling Expenses (if any) £ .....

When applied for, *22 DEC 1952*

When received, .....

*S. G. Yamada*

Engineer Surveyor to Lloyd's Register of Shipping

FRI 16 JAN 1953

Committee's Minute.....

Assigned *See F.E. mch. rpt.*



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