

## REPORT ON BOILERS.

No. 1823

Received at London Office

-9 MAY 1932

Date of writing report 5th Apr. 1932 When handed in at Local Office 5th April 1932 Port of NAGASAKI.

No. in Reg. Book. Survey held at NAGASAKI.

Date, First Survey 12th June 1931. Last Survey 24th March 1932.

42659 on the Steel Twin Screw Steamer "USSURI MARU".

(Number of Visits) Report. Gross 6385.57 Tons Net 3789.10

Master / Built at Nagasaki. By whom built Mitsubishi Zosen Kaisha. Hard No. 500 When built 1932-3mo.  
Engines made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Engine No. 500 When made 1932-3mo.  
Boilers made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Boiler No. 500 When made 1932-3mo.  
Nominal Horse Power 1157.5 Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka Japan.

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY

Manufacturers of Steel Gutehoffnungshutte A.G. Oberhausen., Imperial Steel Works Yawata.  
Bolling & Kummerhoff G.m.b.H. of Neuss a/Rh. Tokyo Kozai Kaisha. Letter for Record S.

Total Heating Surface of Boilers 12565 sq. ft. Is forced draught fitted Yes Coal or Oil fired Coal.

No. and Description of Boilers Five, Single ended Multitubular. Working Pressure 225 lbs/sq. in.

Tested by hydraulic pressure to 387.5 lbs/sq. in. Date of test 16-10-31 No. of Certificate 145. Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 63.97 sq. ft. and Description of safety valves to each boiler 2 - Direct spring loaded.

Area of each set of valves per boiler {per Rule 13.09 sq. in. Pressure to which they are adjusted 229 lbs Are they fitted with easing gear Yes  
as fitted 16.59 sq. in. 3/4" Dia.

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 10 1/2" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 21 3/4" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 15'-0" Length 12'-0" Shell plates: Material Steel Tensile strength 28-35 tons/sq. in.

Thickness 1 19/32" Are the shell plates welded or flanged No Description of riveting: circ. seams {end D.R. Lap.  
long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 1/2" Pitch of rivets {4.134"  
long. seams 1 5/8" 11 3/16"

Percentage of strength of circ. end seams {plate 63.71 Percentage of strength of circ. intermediate seam {plate /  
rivets 44.08 rivets /

Percentage of strength of longitudinal joint {plate 85.48 Working pressure of shell by Rules 237 lbs/sq. in.  
rivets 89.56  
combined 88.87

Thickness of butt straps {outer 1 1/2" No. and Description of Furnaces in each Boiler 3 - Leads Forge bulb furnaces. 34  
inner 1 3/8"

Material Steel Tensile strength 26 to 30 tons/sq. in. Smallest outside diameter 45 7/8"

Length of plain part {top / Thickness of plates {crown 11/16" Description of longitudinal joint Welded  
bottom / bottom /

Dimensions of stiffening rings on furnace or c.c. bottom / Working pressure of furnace by Rules 233.4 lbs/sq. in.

End plates in steam space: Material Steel Tensile strength 26 to 30 tons/sq. in. Thickness 1 9/32" Pitch of stays 17 1/2" x 18 1/2"

How are stays secured Double nuts and washers. Working pressure by Rules 236.9 lbs/sq. in.

Tube plates: Material {front Steel Tensile strength 26 to 30 tons/sq. in. Thickness 13/16" + 9/16" D.P. in W.W.S.  
back " " "

Mean pitch of stay tubes in nests 9.42 Pitch across wide water spaces 13 3/4" Working pressure {front 242.4 lbs/sq. in.  
back 267.7 lbs/sq. in. (W.W.S.)

Girders to combustion chamber tops: Material Steel Tensile strength 28 to 35 tons/sq. in. Depth and thickness of girder

at centre Two- 10 1/2" x 3/4" Length as per Rule 35 7/32" Distance apart 8 1/2" No. and pitch of stays

in each 3 @ 8 1/2" Working pressure by Rules 238.7 lbs/sq. in. Combustion chamber plates: Material Steel

Tensile strength 26 to 30 tons/sq. in. Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 1"

Pitch of stays to ditto: Sides 8" x 8 1/2" Back 8 1/2" x 7 7/8" & 9" Top 8 1/2" x 8 1/2" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules Sides, 258.2 lbs/sq. in. Back, 236.8 " Front plate at bottom: Material Tensile strength

Top, 243.9 " Thickness 15/16" Centre back plate: Material Steel Tensile strength 26 to 30 tons Thickness 23/32" + 11/16"

Pitch of stays at wide water space 13 3/4" x 8 1/2" Are stays fitted with nuts or riveted over Nuts

Working Pressure 246.8 lbs/sq. in. Main stays: Material Steel Tensile strength 28 to 35 tons/sq. in.

Diameter {At body of stay, 3 1/8" No. of threads per inch 6 Area supported by each stay 343.4 sq. in.  
Over threads 3 3/8"

Working pressure by Rules 249.2 lbs/sq. in. Screw stays: Material Steel Tensile strength 26 to 30 tons/sq. in.

Diameter {At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay Back, 76.5 sq. in.  
Over threads 1 3/4"



Working pressure by Rules <sup>Back</sup> 237.1 lbs/sq.in. are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, / or Over threads 2" }  
 No. of threads per inch 9 Area supported by each stay 96.7 sq.in. Working pressure by Rules 256.2 lbs/sq.in.  
 Tubes: Material Steel External diameter { Plain 3 1/2" / Stay 3 1/4" } Thickness { 5/16" & 3/8" } No. of threads per inch 9  
 Pitch of tubes 4 3/8" x 4 1/2" Working pressure by Rules 230 lbs/sq.in. Manhole compensation: Size of opening in  
 shell plate 17 1/2" x 21 1/2" Section of compensating ring 2" x 9" x 1 19/32" No. of rivets and diameter of rivet holes 36 - 1 5/8"  
 Outer row rivet pitch at ends 11 3/16" Depth of flange if manhole flanged 3 1/2" Steam Dome: Material /  
 Tensile strength / Thickness of shell / Description of longitudinal joint /  
 Diameter of rivet holes / Pitch of rivets / Percentage of strength of joint { Plate / Rivets / }  
 Internal diameter / Working pressure by Rules / Thickness of crown / No. and diameter of  
 stays / Inner radius of crown / Working pressure by Rules /  
 How connected to shell / 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 Esaky's Superheater Manufacturers of { Tubes Weldless Steel Tube Co. / Steel Headers Press & Walzwerke Co. Dusseldorf. }  
 Number of elements 385 Material of tubes S.D. Steel Internal diameter and thickness of tubes 5/8" dia. 1/8" thick.  
 Material of headers S.D. Steel Tube. Tensile strength 26-30 tons/sq.in. Thickness 26 m/m Can the superheater be shut off and  
 the boiler be worked separately Yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes  
 Area of each safety valve 3.14 sq.in. Are the safety valves fitted with easing gear Yes Working pressure as per  
 Rules Tubes, 480 lbs Headers, 1813 lbs/sq.in. Pressure to which the safety valves are adjusted 232 lbs/sq.in. Hydraulic test pressure:  
 tubes 1422 lbs/sq.in. Headers, 675 lbs/sq.in. and after assembly in place 450 lbs/sq.in. Are drain cocks or valves fitted  
 to free the superheater from water where necessary Yes

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

The foregoing is a correct description,  
 NAGASAKI WORKS, MITSUBISHI ZOSEN KAISHA, LTD. Manufacturer.

Dates { During progress of work in shops - - / while building { During erection on board vessel - - - }

See Machinery Report.

Are the approved plans of boiler and superheater forwarded herewith Yes  
 (If not state date of approval.)

Total No. of visits /

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "Utal Maru" Nag.Rpt No.1676.

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

The materials and workmanship are good.

The boilers have been constructed under special survey in accordance with the Rules & Approved plan,  
 satisfactorily fitted in the vessel and safety valves adjusted under steam to 229 lbs/sq.in.

Survey Fee ... : When applied for, 19  
 Travelling Expenses (if any) £ : See Machinery Report. When received, 19

George Anderson & T. Kunishi  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 13 MAY 1932

Assigned

See F.B. Rpt.



© 2021

Lloyd's Register  
 Foundation