

Rpt. 5a.

REPORT ON BOILERS.

No. 1676

Received at London Office

Date of writing Report 23rd Apr. 1929. When handed in at Local Office 23rd Apr. 1929. Port of NAGASAKI.

No. in Reg. Book. Survey held at NAGASAKI. Date, First Survey 15th Sept. 1928 Last Survey 29th March 1929.

92456 on the Steel Twin Screw Steamer "URAI MARU". (Number of Visits) Gross 6376.92 Tons Net 3758.45

Master / Built at Nagasaki. By whom built Mitsubishi Zosen K. Yard No. 452. When built 1929-3mo.

Engines made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Engine No. 452. When made 1929-3mo.

Boilers made at Nagasaki. By whom made Mitsubishi Zosen Kaisha, Ltd. Boiler No. 452. When made 1929-3mo.

Nominal Horse Power 1158. Owners Osaka Shosen Kabushiki Kaisha. Port belonging to Osaka. Japan.

MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY OR DONKEY~~

Manufacturers of Steel Mannesmannrohrenwerke A.S.K. Gutehoffnungshutte A.G. (Letter for Record S.)

Total Heating Surface of Boilers 12565 sq. ft. 5 boilers Is forced draught fitted Yes Coal or Oil fired Coal.

No. and Description of Boilers 5 Single ended Multitubular Boilers. Working Pressure 225 lbs.

Tested by hydraulic pressure to 387.5 Date of test 3.11.13 Dec. 1928. No. of Certificate 129-130-131 in 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 15.7 sq. in. 13 as fitted 16.592 sq. in. Pressure to which they are adjusted 230 Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Donkey boiler not fitted.

Smallest distance between boilers or uptakes and bunkers or woodwork 10" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 19" 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.

Thickness 1 19/32" Are the shell plates welded or flanged No Description of riveting: circ. seams {end D.R. inter. 4.13

Long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 1/2" long. seams 1 5/8" Pitch of rivets {11 3/16 outer) 5 19/32 (inner)

Percentage of strength of circ. end seams {plate 63.7 rivets 44.1 Percentage of strength of circ. intermediate seam {plate / rivets /

Percentage of strength of longitudinal joint {plate 85.47 rivets 89.56 combined 88.9 Working pressure of shell by Rules 237 lbs sq. in.

Thickness of butt straps {outer 1 1/4 inner 1 3/8 No. and Description of Furnaces in each Boiler 3- Leeds Forge Bulb. 3. C.F.

Material Steel Tensile strength 26 - 30 tons. Smallest outside diameter 4 5 7/8"

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

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 - 30 tons 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 236.8 lbs sq. in.

Tube plates: Material {front Steel. Tensile strength {26 - 30 tons. Thickness {13/16"

Mean pitch of stay tubes in nests 9.45" Pitch across wide water spaces 13 3/4" Working pressure {front 243 (Wide W. space) back 265.3

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

at centre 2- 10 1/2" x 3/4" Length as per Rule 34 7/32" Distance apart 8 3/4" No. and pitch of stays

in each 3 @ 8 1/2" Working pressure by Rules 235 lbs. Combustion chamber plates: Material Steel.

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

Pitch of stays to ditto: Sides 8" x 8 3/4" Back 9" x 8 1/2" Top 8 1/2" x 8 3/4" Are stays fitted with nuts or riveted over Nuts.

Working pressure by Rules 236.8 lbs Front plate at bottom: Material Steel Tensile strength 26 - 30 tons.

Thickness 15/16" Centre back plate: Material Steel Tensile strength 26 - 30 tons Thickness 23/32" + 11/16" D.P. in W.W.S.

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 341 lbs sq. in. Main stays: Material Steel. Tensile strength 28 - 35 tons.

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

Working pressure by Rules 249 lbs Screw stays: Material Steel Tensile strength 26 - 30 tons

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

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Working pressure by Rules 237.1 lbs are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, /
Over threads 2"
No. of threads per inch 9 Area supported by each stay 96.7 sq.in. Working pressure by Rules 322.5 lbs
Tubes: Material S.D. Steel External diameter { Plain 3 1/4" Thickness { 8 L.S.G.
Stay 3 1/4" 1/2" & 3/8" No. of threads per inch 9
Pitch of tubes 4 1/2" x 3 3/8" Working pressure by Rules 230 lbs. Manhole compensation: Size of opening in
shell plate 21 1/8" x 17 1/8" Section of compensating ring 2 x 9" x 1 19/32" No. of rivets and diameter of rivet holes 36 - 1 5/8" dia.
Outer row rivet pitch at ends 11 3/16" Depth of flange if manhole flanged 3 1/2" 34 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. Wednesfield.
Steel castings 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 41 to 48 kg/mm² 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 2" dia. Are the safety valves fitted with easing gear Yes Working pressure as per
Rules Tubes, 471 lbs. Pressure to which the safety valves are adjusted 232 lbs sq.in. Hydraulic test pressure:
Headers, 1845 lbs.
tubes 100 kg/cm² Headers, 47.5 kg/cm² and after assembly in place 47.5 kg/cm² Are drain cocks or valves fitted
to free the superheater from water where necessary Yes.

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes.

NAGASAKI WORKS, LTD. The foregoing is a correct description.
S. Kawai Manufacturer.

Dates { During progress of work in shops - - } See Machinery report. Are the approved plans of boiler and superheater forwarded herewith Yes.
while building { During erection on board vessel - - - }
Total No. of visits /

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The materials & workmanship are good.
The boilers have been constructed under special survey in accordance with the Rules and Approved plan, satisfactorily fitted in the vessel and safety valves adjusted under steam to 230 lbs sq.in.

Survey Fee ... See Machy.rept. When applied for, 192
Travelling Expenses (if any) £ When received, 192

George Anderson & K. Kihigami
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 7 JUN 1929 FRI. 12 JUL 1929

Assigned See P.L. 4th attached



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