

REPORT ON BOILERS.

No. 3845

Received at London Office 11 MAR 1927

Date of writing Report Jan 20 1927 When handed in at Local Office — 192— Port of Yokohama

No. in Survey held at Uraga Date, First Survey Sept 14 Last Survey Dec 14 1926

Reg. Book. — on the Steel Screw Steamer Tsukushi Maru No 2 (Number of Visits 18) Gross 2423.32 Tons Net —

Master — Built at Uraga By whom built Uraga Dock Co Yard No. 316 When built 1926

Engines made at Uraga By whom made Uraga Dock Co Engine No. 316 When made 1926

Boilers made at Uraga By whom made do Boiler No. — When made 1926

Nominal Horse Power 2 Owners Kaigima Shogyo Kabushiki Kaisha Port belonging to Shimonoseki

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Imperial Steel Works, Yawata (Letter for Record (5))

Total Heating Surface of Boilers 14000 Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers Two multitubular Working Pressure 200 lbs

Tested by hydraulic pressure to 350 lbs Date of test Nov 10 No. of Certificate 182 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 50 No. and Description of safety valves to each boiler 2 spring loaded

Area of each set of valves per boiler {per Rule 14 as fitted 14.14 Pressure to which they are adjusted 200 lbs 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 — Is oil fuel carried in the double bottom under boilers —

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

Largest internal dia. of boilers 13'-6" Length 11'-6" Shell plates: Material Steel Tensile strength 28-35 tons

Thickness 1 1/4" Are the shell plates welded or flanged No Description of riveting: circ. seams {end D.R.L. inter. —

Long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 5/16" long. seams 1 5/16" Pitch of rivets { 4" 9"

Percentage of strength of circ. end seams {plate 67.25 rivets 47.4 Percentage of strength of circ. intermediate seam {plate — rivets —

Percentage of strength of longitudinal joint {plate 85.62 rivets 91.35 combined 89.50 Working pressure of shell by Rules 217 lbs

Thickness of butt straps {outer 1" inner 1 1/8" No. and Description of Furnaces in each Boiler 3 Morrison

Material Steel Tensile strength 26-30 tons Smallest outside diameter 3'-1 1/8"

Length of plain part {top 7'-9 3/4" bottom 7'-9 3/4" Thickness of plates {crown 9/16" bottom 9/16" Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom — Working pressure of furnace by Rules 219 lbs

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1/4" Pitch of stays 19 1/2 x 18

How are stays secured DN & W Working pressure by Rules 207 lbs

End plates: Material {front Steel back Steel Tensile strength { 26-30 tons Thickness { 7/8" 3/4"

Can pitch of stay tubes in nests 8.5" Pitch across wide water spaces 13.5" Working pressure {front 241 lbs back 222

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

centre 9 1/2" x 13 1/4" Length as per Rule 32.0625 Distance apart 11" No. and pitch of stays

each 3 @ 8" Working pressure by Rules 220 lbs Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 3/4" Back 1 1/16" Top 3/4" Bottom 7/8"

Pitch of stays to ditto: Sides 8 1/2" x 11" Back 9 x 8 7/8" Top 8 x 11" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 205 lbs Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 7/8"

Pitch of stays at wide water space 14" x 14" Are stays fitted with nuts or riveted over Nuts

Working Pressure 290 lbs Main stays: Material Steel Tensile strength 28-35 tons

At body of stay, 3" No. of threads per inch 6 Area supported by each stay 28-35

Over threads — Working pressure by Rules 223 lbs Screw stays: Material Steel Tensile strength 26-30

At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 78.4

Over threads —

Working pressure by Rules 233 lbs Are the stays drilled at the outer ends ho Margin stays: Diameter ^{At turned off part} 1 7/8
No. of threads per inch 9 Area supported by each stay 93.5 sq in Working pressure by Rules 228 lbs
Tubes: Material Steel External diameter ^{Plain} 3 Thickness ^{Stay} 3/16 No. of threads per inch 9
Pitch of tubes 4 1/4 x 4 1/8 Working pressure by Rules 300 lbs Manhole compensation: Size of opening in
shell plate / Section of compensating ring 3'-1" x 2'-9" x 1 1/4 No. of rivets and diameter of rivet holes 36 x 1 1/16 dia
Outer row rivet pitch at ends 11" 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} ✓
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 None Manufacturers of ^{Tubes} ✓
Number of elements ✓ Material of tubes ✓ Internal diameter and thickness of tubes ✓
Material of headers ✓ Tensile strength ✓ Thickness ✓ Can the superheater be shut off and
the boiler be worked separately ✓ 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 per
Rules ✓ Pressure to which the safety valves are adjusted ✓ Hydraulic test pressure ✓
tubes ✓ castings ✓ and after assembly in place ✓ Are drain cocks or valves fitted
to free the superheater from water where necessary ✓

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

The foregoing is a correct description,

Dates of Survey ^{During progress of work in shops - -} Sept 14. 17. 23. Oct 4. 6. 12. 18. 25.
^{while building} Nov 8. 10. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
^{board vessel - - -} Nov 17. 26. 30. Dec 2. 3. 4. 7. '14 Total No. of visits 18.

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

The boilers have been built in accordance with the requirements of the Rules and the material & workmanship found Good.
These boilers are eligible in my opinion to the record of B.S. 12. 26.

Survey Fee ... £ See Machinery Report When applied for, 4. 12. 1926
Travelling Expenses (if any) £ Report When received, 24. 12. 1926

W.D. Atche
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUES. 15 MAR 1927

Assigned

See Report attached



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