

# REPORT ON BOILERS.

No. 4112

27 APR 1928

Received at London Office

Date of writing Report 2<sup>nd</sup> April 1928 When handed in at Local Office 1928 Port of YOKOHAMA

No. in Reg. Book. Survey held at YOKOHAMA Date, First Survey 27<sup>th</sup> Sept. Last Survey 24<sup>th</sup> March 1928

on the STEEL SINGLE SCREW STEAMER "SHOYO MARU" (Number of Visits 19) Tons { Gross 7499 Net 4509

Master \_\_\_\_\_ Built at YOKOHAMA By whom built YOKOHAMA DOCK CO Yard No. 159 When built 1928

Engines made at YOKOHAMA By whom made YOKOHAMA DOCK CO Engine No. 159 When made 1928

Boilers made at YOKOHAMA By whom made YOKOHAMA DOCK CO Boiler No. \_\_\_\_\_ When made 1928

Nominal Horse Power 582.4 Owners NIPPON TANKER KABUSHIKI KAISHA Port belonging to YOKOHAMA

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

Manufacturers of Steel Illinois Steel Co U.S.A. (Letter for Record \_\_\_\_\_)

Total Heating Surface of Boilers 8295 sq ft Is forced draught fitted YES Coal or Oil fired YES

No. and Description of Boilers 3, Single Ended Working Pressure 200 lb

Tested by hydraulic pressure to 350 lb Date of test 10-1-28 No. of Certificate No 11 Can each boiler be worked separately YES

Area of Firegrate in each Boiler 61.8 sq ft No. and Description of safety valves to each boiler 2, Spring loaded.

Area of each set of valves per boiler { per Rule 25 sq in as fitted 25.13 sq in Pressure to which they are adjusted 200 lb 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 8' 7" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 4' 4" Is the bottom of the boiler insulated YES

Largest internal dia. of boilers 15' 6" Length 12' 0" Shell plates: Material Mild Steel Tensile strength 28-35 tons

Thickness 1 7/16" Are the shell plates welded or flanged ✓ Description of riveting: circ. seams { end Double riveted lap. inter. ✓

long. seams Double riveted double butt straps Diameter of rivet holes in { circ. seams 1 1/2" Pitch of rivets { 4 1/2" long. seams 1 1/2" 10 1/8"

Percentage of strength of circ. end seams { plate 66.4 rivets 47.5 Percentage of strength of circ. intermediate seam { plate ✓ rivets ✓

Percentage of strength of longitudinal joint { plate 85.18% rivets 93.5% combined 89.1% Working pressure of shell by Rules 205 lb

Thickness of butt straps { outer 1 1/8" inner 1 1/4" No. and Description of Furnaces in each Boiler 3, Deighton type

Material Mild Steel Tensile strength 26-30 tons Smallest outside diameter 4' 0"

Length of plain part { top ✓ bottom ✓ Thickness of plates { crown 3/4" bottom ✓ Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 230 lb

End plates in steam space: Material Mild Steel Tensile strength 26-30 ton Thickness 1 9/32 Pitch of stays 20"

How are stays secured Through plates and nuts on each side. Working pressure by Rules 223 lb

Tube plates: Material { front Mild Steel back Mild Steel Tensile strength { 26-30 ton Thickness { 3/4" 3/4"

Mean pitch of stay tubes in nests 9.78" Pitch across wide water spaces 13 1/4" Working pressure { front 228 lb back 210 lb

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

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

in each 3 8 1/2" Working pressure by Rules 209 lb Combustion chamber plates: Material Mild Steel

Tensile strength 26-30 ton Thickness: Sides 1/16" Back 1/16" Top 1/16" Bottom 1/8"

Pitch of stays to ditto: Sides 9" Back 9.25" Top 8.5" Are stays fitted with nuts or riveted over YES

Working pressure by Rules 209 lb Front plate at bottom: Material Mild Steel Tensile strength 26-30 ton

Thickness 3/4" Lower back plate: Material Mild Steel Tensile strength 26-30 ton Thickness 3/4"

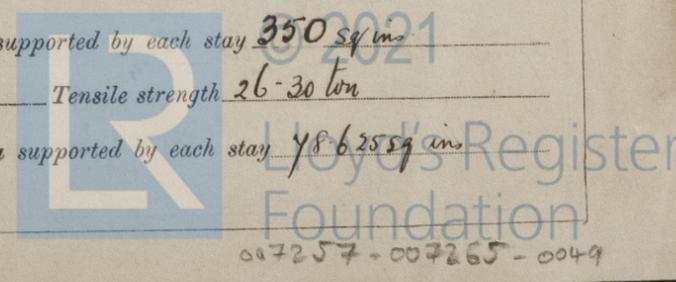
Pitch of stays at wide water space 21" Are stays fitted with nuts or riveted over YES

Working Pressure 206 lb Main stays: Material Mild Steel Tensile strength 28-35 ton

Diameter { At body of stay, 3" No. of threads per inch 6 Area supported by each stay 350 sq in

Working pressure by Rules 224 lb Screw stays: Material Mild Steel Tensile strength 26-30 ton

Diameter { At turned off part, 1 3/4" No. of threads per inch 9 Area supported by each stay 78.625 sq in



Working pressure by Rules 230 lb. Are the stays drilled at the outer ends No. Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \frac{17}{8}$ "

No. of threads per inch 9 Area supported by each stay 106 sq ins Working pressure by Rules 211 lb.

Tubes: Material Mild Steel External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \left. \begin{array}{l} 3 \\ 3 \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 7.88 \\ 3/8 \text{ } 5/16 \end{array} \right.$  No. of threads per inch 9

Pitch of tubes 4 5/16" Working pressure by Rules 300 lb. Manhole compensation: Size of opening in shell plate 12" x 16" Section of compensating ring 33.74 sq ins No. of rivets and diameter of rivet holes 40 1 1/2"

Outer row rivet pitch at ends 10 1/8" 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  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. \left. \begin{array}{l} \text{✓} \\ \text{✓} \end{array} \right.$

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  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right. \left. \begin{array}{l} \text{✓} \\ \text{✓} \end{array} \right.$

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,  
F. Fenchiya Manufacturer.

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right. \left. \begin{array}{l} \text{Sept 27}^{\text{th}} \text{ Oct 20}^{\text{th}} \text{ 24}^{\text{th}} \text{ Nov 1}^{\text{st}} \text{ 11}^{\text{th}} \text{ 24}^{\text{th}} \text{ Dec 8}^{\text{th}} \text{ 16}^{\text{th}} \text{ 20}^{\text{th}} \\ \text{Jan 10}^{\text{th}} \text{ 16}^{\text{th}} \text{ 18}^{\text{th}} \\ \text{Feb 14}^{\text{th}} \text{ 25}^{\text{th}} \text{ 29}^{\text{th}} \text{ March 6}^{\text{th}} \text{ 12}^{\text{th}} \text{ 19}^{\text{th}} \text{ 24}^{\text{th}} \end{array} \right.$  Are the approved plans of boiler and superheater forwarded herewith No. 6-6-27 (If not state date of approval.)

Total No. of visits 19.

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) The boilers of this vessel have been constructed in accordance with the Rules for a working pressure of 200 lb. The materials and workmanship have been found good. The boilers are eligible, in my opinion, to be classed in the Register Book with the record of + L.M.C. 3.28.

Survey Fee ... See Machinery Report. When applied for,  192

Travelling Expenses (if any) £ See Machinery Report. When received,  192

R.O. Batchelor per L.D. Smith  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 4 MAY 1928

Assigned See Report attached

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