

# REPORT ON BOILERS.

No. 8857.

21 JAN 1935

Received at London Office

192 When handed in at Local Office 192 Port of **KOBE.**  
 No. in Survey held at **KOBE.** Date, First Survey **26-1-34.** Last Survey **3-12-1934.**  
 on the **MOTOR VESSEL "KYOKUTO MARU."** (Number of Visits **12.**) Gross **10052.**  
 Tons Net **5821.**  
 Built at **KOBE.** By whom built **KANASAKI DOCKYARD Co.** Yard No. **584.** When built **1934.**  
 Engines made at **KOBE.** By whom made **KANASAKI DOCKYARD Co.** Engine No. **209.** When made **1934.**  
 Boilers made at **KOBE.** By whom made **KANASAKI DOCKYARD Co.** Boiler No. When made **1934.**  
 Nominal Horse Power **2115.** Owners **IINO SHOJI KABUSHIKI KAISHA.** Port belonging to **NAKAMAIZURU.**

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

Manufacturers of Steel **KANASAKI DOCKYARD CO. LTD. FUKUI PLATE & SHEET MILLS.** (Letter for Record **S.**)  
 Total Heating Surface of Boilers **OIL BURNING 572M<sup>2</sup> WASTE GAS 2868M<sup>2</sup>** Is forced draught fitted **NO.** Coal or Oil fired **OIL & WASTE GAS.**  
 No. and Description of Boilers **ONE:- WASTE GAS AND OIL FIRED SINGLE ENDED MULTITUBULAR.** Working Pressure **12.5 KG/CM<sup>2</sup>.**  
 Tested by hydraulic pressure to **22.5 KG/CM<sup>2</sup>** Date of test **16-10-34.** No. of Certificate **4238 C.** Can each boiler be worked separately **YES.**  
 Area of Firegrate in each Boiler **OIL FUEL.** No. and Description of safety valves to each boiler **2 - SPRING LOADED.**  
 Area of each set of valves per boiler {per Rule **83.7 CM<sup>2</sup>** as fitted **108.4 CM<sup>2</sup>** Pressure to which they are adjusted **12.5 KG/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 **NO BUNKERS OR WOODWORK IN VICINITY OF BOILERS.** Is oil fuel carried in the double bottom under boilers **YES.**  
 Smallest distance between boilers or uptakes and bunkers or woodwork **NO BUNKERS OR WOODWORK IN VICINITY OF BOILERS.** Is the bottom of the boiler insulated **YES.**  
 Largest internal dia. of boilers **4050 MM.** Length **3600 MM.** Shell plates: Material **STEEL.** Tensile strength **28-32.**  
 Thickness **28 MM.** Are the shell plates welded or flanged **NO.** Description of riveting: circ. seams {end **DOUBLE RIVETED LAP.** inter. **DOUBLE RIVETED LAP.**  
 long. seams **TREBLE RIVETED DOUBLE BUTT STRAP.** Diameter of rivet holes in {circ. seams **30 MM.** long. seams **30 MM.** Pitch of rivets {**80 MM.** **200 MM.**  
 Percentage of strength of circ. end seams {plate **62.5.** rivets **51.5.** Percentage of strength of circ. intermediate seam {plate **61.** rivets **61.**  
 Percentage of strength of longitudinal joint {plate **85.0.** rivets **97.0.** combined **89.4.** Working pressure of shell by Rules **12.7 KG/CM<sup>2</sup>.**  
 Thickness of butt straps {outer **22 MM.** inner **26 MM.** No. and Description of Furnaces in each Boiler **ONE - MORISON TYPE CORRUGATED.**  
 Material **STEEL.** Tensile strength **26-30.** Smallest outside diameter **942.38 MM.**  
 Length of plain part {top **220 MM.** bottom **220 MM.** Thickness of plates {crown **14 MM.** bottom **14 MM.** Description of longitudinal joint **WELDED.**  
 Dimensions of stiffening rings on furnace or c.e. bottom **NO.** Working pressure of furnace by Rules **15.1 KG/CM<sup>2</sup>.**  
 End plates in steam space: Material **STEEL.** Tensile strength **28-32.** Thickness **28 MM.** Pitch of stays **400 MM.**  
 How are stays secured **DOUBLE NUTS & WASHERS.** Working pressure by Rules **14.27 KG/CM<sup>2</sup>.**  
 Tube plates: Material {front **STEEL.** back **STEEL.** Tensile strength {**28-32.** Thickness {**22 MM.** **20 MM.**  
 Mean pitch of stay tubes in nests **250 MM.** Pitch across wide water spaces **340 MM.** Working pressure {front **17.2 KG/CM<sup>2</sup>.** back **16.15 KG/CM<sup>2</sup>.**  
 Girders to combustion chamber tops: Material **STEEL.** Tensile strength **28-32.** Depth and thickness of girder  
 at centre **200x22x2** Length as per Rule **680 MM.** Distance apart **230 MM.** No. and pitch of stays  
 in each **2x240 MM.** Working pressure by Rules **21.3 KG/CM<sup>2</sup>.** Combustion chamber plates: Material **STEEL.**  
 Tensile strength **28-32.** Thickness: Sides **20 MM.** Back **20 MM.** Top **20 MM.** Bottom **20 MM.**  
 Pitch of stays to ditto: Sides **280x240 MM.** Back **190x230 MM.** Top **240x230 MM.** Are stays fitted with nuts or riveted over **NUTS.**  
 Working pressure by Rules **14.7 KG/CM<sup>2</sup>.** Front plate at bottom: Material **STEEL.** Tensile strength **28-32.**  
 Thickness **25 MM.** Lower back plate: Material **STEEL.** Tensile strength **28-32.** Thickness **25 MM.**  
 Pitch of stays at wide water space **230x370 MM.** Are stays fitted with nuts or riveted over **NUTS.**  
 Working Pressure **14.7 KG/CM<sup>2</sup>.** Main stays: Material **STEEL.** Tensile strength **28-32.**  
 Diameter {At body of stay, **14.7 KG/CM<sup>2</sup>.** over threads **80 MM.** No. of threads per inch **6.** Area supported by each stay **2600 M<sup>2</sup>.**  
 Working pressure by Rules **13 KG/CM<sup>2</sup>.** Screw stays: Material **STEEL.** Tensile strength **28-32.**  
 Diameter {At turned off part, **40 3/46 MM.** over threads **40 3/46 MM.** No. of threads per inch **11.** Area supported by each stay **487x672 M<sup>2</sup>.**



Working pressure by Rules  $14.6 \text{ kg/cm}^2$ . Are the stays drilled at the outer ends **YES**. Margin stays: Diameter  $\begin{cases} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{cases} 46 \text{ mm.}$

No. of threads per inch **11**. Area supported by each stay  $672 \text{ m}^2$ . Working pressure by Rules  $13.2 \text{ kg/cm}^2$ .

Tubes: Material **STEEL**. External diameter  $\begin{cases} \text{Plain} & 69.85 \text{ mm.} \\ \text{Stay} & 69.85 \text{ mm.} \end{cases}$  Thickness  $\begin{cases} \text{No. 9 L.S.G.} \\ 794 & 16.35 \text{ mm.} \end{cases}$  No. of threads per inch **9**.

Pitch of tubes  $100 \times 100 \text{ mm.}$  Working pressure by Rules  $12.5 \text{ kg/cm}^2$ . Manhole compensation: Size of opening

shell plate  $500 \times 600 \text{ mm.}$  Section of compensating ring  $540 \times 28 \text{ mm.}$  No. of rivets and diameter of rivet holes **42 - 30 mm.**

Outer row rivet pitch at ends  $200 \text{ mm.}$  Depth of flange if manhole flanged  $95 \text{ mm.}$  Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint  $\begin{cases} \text{Plate} \\ \text{Rivets} \end{cases}$

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

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 Manufacturers of  $\begin{cases} \text{Tubes} \\ \text{Steel castings} \end{cases}$

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

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

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,  
*Toshiko Chuo Kawasaki Dockyard* Manufacture

Dates of Survey  $\begin{cases} \text{During progress of} \\ \text{work in shops} \end{cases} \text{JAN/34. 26. JUL/34. 20. AUG/34. 3. 23.}$  Are the approved plans of boiler and superheater forwarded herewith **14. 2. 34**

while building  $\begin{cases} \text{During erection on} \\ \text{board vessel} \end{cases} \text{SEP/34. 25. 26. 29. OCT/34. 9.}$  (If not state date of approval.)

Oct/34. 16. 22. 25. DEC/34. 3. Total No. of visits **12.**

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

This boiler has been constructed under Special Survey in accordance with the Rules and approved plans.

The materials and workmanship are good.

The boiler was tested by hydraulic pressure to  $22.5 \text{ kg/cm}^2$ , and found sound and tight, afterwards efficiently installed in the vessel, and the safety valves adjusted under steam to  $12.5 \text{ kg/cm}^2$  ( $178 \text{ lbs/sq. in.}$ ).

This boiler in my opinion is eligible to have the record of  $178 \text{ lbs/sq. in.}$ .

Survey Fee ...  $\pounds 37 : 1 : 0$  When applied for, **Dec. 17th 1934**

Travelling Expenses (if any)  $\pounds$  When received, **Dec. 19th 1934**

*A. E. Munro*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 25 JAN 1935**

Assigned *See No. J.E. 8857*



© 2021

Lloyd's Register  
 Foundation