

REPORT ON BOILERS.

No. 8981

Received at London Office 11 APR 1935

Date of writing Report 1935 When handed in at Local Office 1935 Port of KOBE.

No. in Survey held at Reg. Book. Date, First Survey 5-7-34. Last Survey 9-2-1935.

on the MOTOR VESSEL "KONGO MARU" (Number of Visits 8.) Tons {Gross 7061. Net 3761.

Master Built at HARIMA By whom built HARIMA S.B. & ENG CO LTD Yard No. 205. When built 1935.

Engines made at KOBE. By whom made KAWASAKI DOCKYARD CO LTD Engine No. 1600. When made 1935.

Boilers made at HARIMA. By whom made HARIMA S.B. & ENG CO LTD Boiler No. When made 1935.

Nominal Horse Power 2115. Owners KOKUSAI KISEN KABUSHIKI KAISHA. Port belonging to TOKIO.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel THE STEEL COMPANY OF SCOTLAND LD. & KAWASAKI DOCKYARD CO LD. (Letter for Record (S))

Total Heating Surface of Boilers EXHAUST GAS 218 M² OIL FUEL 103 M² Is forced draught fitted Coal or Oil fired OIL FUEL & EXHAUST GAS.

No. and Description of Boilers ONE SINGLE ENDED MULTITUBULAR. Working Pressure 7 KG/CM² = 100 lb.

Tested by hydraulic pressure to 14 KG/CM². Date of test 2-11-34 No. of Certificate 4290. Can each boiler be worked separately.

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler TWO SPRING LOADED.

Area of each set of valves per boiler {per Rule 27.96.0" as fitted 31.80". Pressure to which they are adjusted 7 KG/CM² 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 FITTED IN TWEEN DECK. 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 3800 MM. Length 3550. Shell plates: Material STEEL. Tensile strength 44-50.

Thickness 22 MM. Are the shell plates welded or flanged NO. Description of riveting: circ. seams {end D.R.L. inter. YES.

Long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 24 MM long. seams 24 MM. Pitch of rivets {75 MM 166 MM.

Percentage of strength of circ. end seams {plate 68. rivets 44.9. Percentage of strength of circ. intermediate seam {plate rivets.

Percentage of strength of longitudinal joint {plate 85.5. rivets 94.6. Working pressure of shell by Rules 10.5 KG/CM².

Thickness of butt straps {outer 19 MM inner 22 MM. No. and Description of Furnaces in each Boiler TWO MORISON TYPE CORRUGATED.

Material STEEL. Tensile strength 41-47. Smallest outside diameter 1099 MM.

Length of plain part {top 198 MM bottom 198 MM. Thickness of plates {crown 16 MM bottom 16 MM. Description of longitudinal joint WELDED.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 14.9 KG/CM².

End plates in steam space: Material STEEL. Tensile strength 41-47. Thickness 25 MM. Pitch of stays 360 MM.

How are stays secured DOUBLE NUTS & WASHERS. Working pressure by Rules 11.3 KG/CM².

Tube plates: Material {front STEEL back STEEL. Tensile strength {41-47. Thickness {22 MM 19 MM.

Lean pitch of stay tubes in nests 277 MM. Pitch across wide water spaces 350 MM. Working pressure {front 10.85 KG/CM² back 11.8 KG/CM².

Girders to combustion chamber tops: Material STEEL. Tensile strength 41-47. Depth and thickness of girder.

at centre 200 x 19 MM. Length as per Rule 217 MM. Distance apart 300 MM. No. and pitch of stays.

in each 2 x 200 MM. Working pressure by Rules 11.4 KG/CM². Combustion chamber plates: Material STEEL.

Tensile strength 41-47. Thickness: Sides 16 MM. Back 14 MM. Top 16 MM. Bottom 19 MM.

Pitch of stays to ditto: Sides 300 x 200 MM. Back 200 x 240 MM. Top 300 x 200 MM. Are stays fitted with nuts or riveted over NUTS.

Working pressure by Rules 9.6 KG/CM². Front plate at bottom: Material STEEL. Tensile strength 41-47.

Thickness 22 MM. Lower back plate: Material STEEL. Tensile strength 41-47. Thickness 22 MM.

Pitch of stays at wide water space 350 x 200 MM. Are stays fitted with nuts or riveted over NUTS.

Working Pressure 11.4 KG/CM². Main stays: Material STEEL. Tensile strength 44-50.

Diameter {At body of stay 2 1/2" or Over threads. No. of threads per inch 6. Area supported by each stay 795 x 360 MM.

Working pressure by Rules 12.5 KG/CM². Screw stays: Material STEEL. Tensile strength 44-50.

Diameter {At turned off part 1 3/4", 1 1/2", 1 5/8" or Over threads. No. of threads per inch 9. Area supported by each stay 200 x 240 MM.



Working pressure by Rules 20 kg/cm^2 . Are the stays drilled at the outer ends NO. Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. 1\frac{1}{2}''$

No. of threads per inch 9. Area supported by each stay $345 \times 200 \text{ mm}$. Working pressure by Rules 20.1 kg/cm^2 .

Tubes: Material STEEL. External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 2\frac{1}{2}''$. Thickness $\left\{ \begin{array}{l} \text{10 L.S.G.} \\ \text{5/16}'' \end{array} \right.$. No. of threads per inch 9.

Pitch of tubes $317.5 \times 180 \text{ mm}$ 80. Working pressure by Rules 12.1 kg/cm^2 . Manhole compensation: Size of opening in shell plate $430 \times 530 \text{ mm}$. Section of compensating ring $370 \times 22 \text{ mm}$. No. of rivets and diameter of rivet holes 48 - 24 mm.

Outer row rivet pitch at ends 166 mm. Depth of flange if manhole flanged 85 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 $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

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

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 HARIMA SHIP-BUILDING AND ENGINEERING CO. LTD.
 The foregoing is a correct description,
 M. Hirata Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right. \left\{ \begin{array}{l} \text{1934 July-5, Sept-8, 18, Oct-1-8.} \\ \text{Nov-2.} \\ \text{1935 Jan-26, 29, Feb-9.} \end{array} \right.$

Are the approved plans of boiler and superheater forwarded herewith 27-6-34. (If not state date of approval.)

Total No. of visits 8

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 14 kg/cm^2 , and found sound and tight, afterwards efficiently installed in the vessel, and the safety valves adjusted under steam to 7 kg/cm^2 (100 lbs/sq in)

This boiler in our opinion is eligible to have the record of D. B. 100 lbs/sq in.

Survey Fee ... £ 35 : 0 : 0. When applied for, 23rd Mar. 1935

Travelling Expenses (if any) £ : : When received, 28.6 1935

See also Mch. Rpt.

R. Redigame
 Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute **FRI. 26 APR 1935**

Assigned See Kob. 26. 8981

FRI. 17 MAY 1935
FRI. 20 SEP 1935

