

REPORT ON BOILERS.

No. 4469

Received at London Office

Date of writing Report 31-7-1924 When handed in at Local Office 19 Port of Kobe

No. in Survey held at Tama Uno Date, First Survey 13.4.24 Last Survey 27-7-1924

Reg. Book. on the MOTOR VESSEL "AKAGISAN MARU" (Number of Visits 12)

Tons $\left\{ \begin{array}{l} \text{Gross } 4630.54 \\ \text{Net } 2810.52 \end{array} \right.$

Built at TAMA, UNO By whom built Mitsui Bussan Kaisha Yard No. 63 When built 1924

Engines made at Copenhagen By whom made Burmeister & Wain Engine No. 996 When made 1923

Boilers made at - By whom made - Boiler No. - When made -

Owners Mitsui Bussan Kaisha Port belonging to Kobe

VERTICAL DONKEY BOILER.

Made at Tama, Uno By whom made Mitsui Bussan Kaisha Boiler No. 63 When made 1924 Where fixed in Engine Room

Manufacturers of Steel Carnegie Steel Co., and Illinois Steel Co., U.S.A.

Total Heating Surface of Boiler 68 sq.ft. Is forced draught fitted no Coal or Oil fired Oil

No. and Description of Boilers One vertical cross Tube Boiler Working pressure 80 lbs

Tested by hydraulic pressure to 160 lbs. Date of test 8.5.24 No. of Certificate LLOYD'S TEST NO. 479

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler One Spring Loaded Type. WT 160 lbs.

Area of each set of valves per boiler $\left\{ \begin{array}{l} \text{per rule } 3.142 \text{ sq.in.} \\ \text{as fitted } 4 \text{ sq.in.} \end{array} \right.$ Pressure to which they are adjusted 85 lbs. Are they fitted with easing gear yes

State whether steam from main boilers can enter the donkey boiler no Smallest distance between boiler or uptake and bunkers or woodwork 2'0"

Is oil fuel carried in the double bottom under boiler no Smallest distance between base of boiler and tank top plating -

Is the base of the boiler insulated no Largest internal dia. of boiler 4'6" Height 10'6"

Shell plates: Material steel Tensile strength 29.39-30.0 tons Thickness 9/16"

Are the shell plates welded or flanged - Description of riveting: circ. seams $\left\{ \begin{array}{l} \text{end. } \text{Single riveted} \\ \text{inter. } \text{-} \end{array} \right.$ long. seams Dble riv. lap.

Dia. of rivet holes in $\left\{ \begin{array}{l} \text{circ. seams } 15/16" \text{ dia.} \\ \text{long. seams } 15/16" \end{array} \right.$ Pitch of rivets $\left\{ \begin{array}{l} 2\frac{1}{8} \\ 2\frac{3}{8} \end{array} \right.$ Percentage of strength of circ. seams $\left\{ \begin{array}{l} \text{plate } 55.7 \\ \text{rivets } 45.6 \end{array} \right.$ of Longitudinal joint $\left\{ \begin{array}{l} \text{plate } 67.3 \\ \text{rivets } 67.4 \\ \text{combined } \text{-} \end{array} \right.$

Working pressure of shell by rules 202 lbs. Thickness of butt straps $\left\{ \begin{array}{l} \text{outer } \text{-} \\ \text{inner } \text{-} \end{array} \right.$

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat Dished partial Spherical Material Steel

Tensile strength 28.65 tons Thickness 9/16 Radius 4'-0 Working pressure by rules 140

Description of Furnace: Plain, spherical, or dished crown Plain Material Steel Tensile strength 29.63 tons

Thickness 11/16 External diameter $\left\{ \begin{array}{l} \text{top } 3'-6" \\ \text{bottom } 4'-4\frac{3}{8} \end{array} \right.$ Length as per rule 39 9/16" Working pressure by rules 193 lbs.

Pitch of support stays circumferentially - and vertically - Are stays fitted with nuts or riveted over -

Diameter of stays over thread - Radius of spherical or dished furnace crown - Working pressure by rule -

Thickness of Ogee Ring 11/16 Diameter as per rule $\left\{ \begin{array}{l} \text{D } 52\frac{7}{8} \\ \text{d } 46 \end{array} \right.$ Working pressure by rule 169

Combustion Chamber: Material Steel Tensile strength 28.65 Thickness of top plate 9/16

Radius if dished 3'-3" Working pressure by rule 140 Thickness of back plate - Diameter if circular -

Length as per rule - Pitch of stays - Are stays fitted with nuts or riveted over -

Diameter of stays over thread - Working pressure of back plate by rules -

Tube Plates: Material $\left\{ \begin{array}{l} \text{front } \text{-} \\ \text{back } \text{-} \end{array} \right.$ Tensile strength $\left\{ \begin{array}{l} \text{-} \\ \text{-} \end{array} \right.$ Thickness $\left\{ \begin{array}{l} \text{-} \\ \text{-} \end{array} \right.$ Mean pitch of stay tubes in nests -

If comprising shell, Dia. as per rule $\left\{ \begin{array}{l} \text{front } \text{-} \\ \text{back } \text{-} \end{array} \right.$ Pitch in outer vertical rows $\left\{ \begin{array}{l} \text{-} \\ \text{-} \end{array} \right.$ Dia. of tube holes FRONT $\left\{ \begin{array}{l} \text{stay } \text{-} \\ \text{plain } \text{-} \end{array} \right.$ BACK $\left\{ \begin{array}{l} \text{stay } \text{-} \\ \text{plain } \text{-} \end{array} \right.$

Is each alternate tube in outer vertical rows a stay tube - Working pressure by rules $\left\{ \begin{array}{l} \text{front } \text{-} \\ \text{back } \text{-} \end{array} \right.$

Girders to combustion chamber tops: Material - Tensile strength -

Depth and thickness of girder at centre - Length as per rule -

Distance apart - No. and pitch of stays in each - Working pressure by rule -



Crown stays: Material _____ Tensile strength _____ Diameter { at body of stay,
 or
 over threads.....

No. of threads per inch _____ Area supported by each stay _____ Working pressure by rules _____

Screw stays: Material _____ Tensile strength _____ Diameter { at turned off part,
 or
 over threads..... No. of threads per inch _____

Area supported by each stay _____ Working pressure by rules _____ Are the stays drilled at the outer ends _____

Tubes: Material _____ External diameter { plain
 stay Thickness {
 No. of threads per inch _____ Pitch of tubes _____ Working pressure by rules _____

Manhole Compensation: Size of opening in shell plate $16" \times 9/16" = 9 \text{ sq. in.}$ Section of compensating ring $18" \times 9/16" = 10.1 \text{ sq. in.}$ No. of rivets and diameter _____

of rivet holes $46 @ 15/16"$ Outer row rivet pitch at ends $7"$ Depth of flange if manhole flanged _____

Uptake: External diameter $15 \frac{7}{8}"$ Thickness of uptake plate $7/16"$

Cross Tubes: No. two External diameters { $9 \frac{7}{8}"$ Thickness of plates $7/16"$

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

The foregoing is a correct description,
 PER PRO. MITSUI BUSSAN KAISHA, LTD,
S. Uka Manufacturer.

SUB-MANAGER.

Dates of Survey { During progress of work in shops - - } 1924 April 23, 28; May 3 & 8;
 while building { During erection on board vessel - - } June 13, 19, 23, 24
 Is the approved plan of boiler forwarded herewith (If not state date of approval.) No Feb. 29th 1924
 Total No. of visits 12

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

This Donkey Boiler has been constructed and fitted under special survey in accordance with the rules and approved plan.

The materials and workmanship are good

The vessel is eligible in my opinion for the Record of "Donkey Boiler 80 lbs. per sq. inch."

This boiler is fitted with a De Lormeuille ^{oil burner} Jenstoberier, with gravitation oil supply from Diesel engine oil settling tanks, heated by means of U tube in furnace & atomized by reduced air taken from air reservoir. The air & oil pipes are attached to burner, the air blowing the oil in a fine spray into the furnace oil pipes tested to 100 lbs water pressure, heating coils in tanks to 160 lbs water pressure oil fuel installation fitted in accordance with Rules.

Survey Fee $\pounds 63.00$ When applied for, 1-8-1924
 Travelling Expenses (if any) \pounds SEE HULL RPT. When received, 14th Aug 1924

A. Watt, H.D. Buchanan
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 26 SEP 1924**
 Assigned

