

REPORT ON BOILERS.

No. 5350

3, 19/10/33, 2:

Received at London Office

4 OCT 1934

Date of writing Report ^{1st} September 1934 When handed in at Local Office 1/9/ 1934 Port of Yokohama

No. in Reg. Book 1654 on the S.S M/V "NAGARA MARU" Survey held at Yokohama Date, First Survey 13th December 1933 Last Survey 27th August 1934 (Number of Visits 16) Tons Gross 7142 Net 4246

Yokohama By whom built Yokohama Dock Co Ltd Yard No. 220 When built 1934-8 Engines made at do By whom made do Engine No. 4702 When made 1934 Boilers made at do By whom made do Boiler No. - When made - Owners Nippon Yusen K. K. Port belonging to Tokio

VERTICAL DONKEY BOILER.

Made at Uraga By whom made Uraga Dock Co Ltd Boiler No. - When made 1934 Where fixed above throat recess

Manufacturers of Steel Imperial Steel Works Japan.

Total Heating Surface of Boiler 632.4 sq ft. Is forced draught fitted No. Coal or Oil fired oil & exhaust gas.

No. and Description of Boilers One, Thimble Tube Working pressure 7 Kg/cm²

Tested by hydraulic pressure to 14 Kg/cm² Date of test 2/4/34. No. of Certificate 39.

Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler 2-70 mm dia Spring loaded

Area of each set of valves per boiler { per rule 8.270" as fitted 10.950" Pressure to which they are adjusted 7 Kg/cm² Are they fitted with easing gear Yes.

State whether steam from main boilers can enter the donkey boiler - Smallest distance between boiler or uptake and bunkers

Is oil fuel carried in the double bottom under boiler - Smallest distance between base of boiler and tank top plating

Is the base of the boiler insulated Largest internal dia. of boiler 2600 mm. Height 4460 mm.

Shell plates: Material Steel Tensile strength 44/55 Kg/cm² Thickness 14 mm.

Are the shell plates welded or flanged No. Description of riveting: circ. seams { end S.R. & D.R. Lap, inter. S.R. Lap } long. seams D.R. D.B.S.

Dia. of rivet holes in { circ. seams 26.5 mm, long. seams 23 mm } Pitch of rivets { 55 & 70.3 mm, 100 mm } Percentage of strength of circ. seams { plate 51.8 & 62.4, rivets 58.5 & 91.5 } of Longitudinal joint { plate 77, rivets 136, combined 99.5 }

Working pressure of shell by rules 8.1 Kg/cm² Thickness of butt straps { outer 14 mm, inner 16 mm }

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

Tensile strength 41/47 Kg/cm² Thickness 25 mm Radius - Working pressure by rules 13.7 Kg/cm²

Description of Furnace: Plain, spherical, or dished crown plain Material steel Tensile strength 41/47 Kg/cm²

Thickness 30 mm External diameter { top 1620 mm, bottom - } Length as per rule 2550 mm Working pressure by rules 14.7 Kg/cm²

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 Agae Ring 25 mm Diameter as per rule { D, d } Working pressure by rule -

Combustion Chamber: Material - Tensile strength - Thickness of top plate -

Radius if dished - Working pressure by rule - 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 { front, back } Tensile strength { } Thickness { } Mean pitch of stay tubes in nests -

If comprising shell, Dia. as per rule { front, back } Pitch in outer vertical rows { } Dia. of tube holes FRONT { stay, plain } BACK { stay, plain }

Is each alternate tube in outer vertical rows a stay tube - Working pressure by rules { front, back }

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 -



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Crown stays: Material Tensile strength _____ Diameter $\left\{ \begin{array}{l} \text{at body of stay} \\ \text{or} \\ \text{over threads} \end{array} \right.$ _____
 No. of threads per inch _____ Area supported by each stay _____ Working pressure by rules _____
Screw stays: Material Tensile strength _____ Diameter $\left\{ \begin{array}{l} \text{at turned off part} \\ \text{or} \\ \text{over threads} \end{array} \right.$ _____ No. of threads per inch _____
 Area supported by each stay _____ Working pressure by rules _____ Are the stays drilled at the outer ends _____
Tubes: Material Steel Thimble Tubes External diameter Thimble 82.55 mm Thickness 6 L.S.G.
 No. of threads per inch Pitch of tubes 203.6 x 139 mm Working pressure by rules 19.3 Kg.
Manhole Compensation: Size of opening in shell plate 445 x 546 mm Section of compensating ring 225 x 14 mm No. of rivets and diam. of rivet holes 36 @ 28.5 mm Outer row rivet pitch at ends 140 mm Depth of flange if manhole flanged
Uptake: External diameter 1032 mm Thickness of uptake plate 16 mm
Cross Tubes: No. External diameters _____ Thickness of plates _____

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

The foregoing is a correct description.

[Signature] for Uraga Manufacturing Dock Co. Ltd.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right.$ $\left\{ \begin{array}{l} \text{During erection on board vessel} \end{array} \right.$
13/12/1933 10, 23, 26/1, 1, 12/2 1, 7, 20/3 2/4/1934 Is the approved plan of boiler forwarded herewith 24/5/33
 (If not state date of approval.)
19, 26/6 2, 9/7 8, 27/8/1934 Total No. of visits 16

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This Boiler has been built under Special Survey in accordance with the Rules and approved plan. Material and Workmanship good. On completion of fitting on board, the Boiler was examined under full working conditions, and also accumulation trials were carried out with satisfactory results.

The Donkey Boiler of this Vessel is eligible in my opinion to be classed with the machinery + L.M.C. 8.34.

Survey Fee £ 5-5-0 When applied for, 8th Sept 1934
 Travelling Expenses (if any) £ : : When received, 3.12 1934

G. H. Macdonald
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRL-12 OCT 1934
 Assigned See other Ura J.B. Rpt.

