

5a.

COMPOSITE TYPE

## REPORT ON BOILERS.

No. 1693 B

Received at London Office

6 JUL 1955

Date of writing Report 24-6-1955 When handed in at Local Office Yokohama Port of Yokohama  
 Survey held at Yokohama Date, First Survey 13-1-1955 Last Survey 9-6-1955  
 on the M.V. "VIRGINIA MARU" (Number of Visits 25) Tons { Gross 7633.48  
 at Yokohama By whom built Yokohama Shipyard & Engine Works Net 4371.82  
 By whom made Mitsubishi Nippon Heavy Industries Ltd No. 802 When built 6-1955  
 Engine No. D3701 When made 4-1955  
 Boiler No. 41308 When made 6-1955  
 Owners Mitsubishi Kaisha K.K. Port belonging to Tokyo

## TITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Nippon Kōkan K.K. Kawasaki Iron Works & Furukawa Iron Works  
 Heating Surface of Boilers Oil 835.4 m<sup>2</sup> (77.6 m<sup>2</sup>) Gas 1533.2 m<sup>2</sup> (142.4 m<sup>2</sup>) Of Superheaters —  
 for Register Book Is forced draught fitted Yes Coal or Oil fired Oil  
 and Description of Boilers 1 - Howden Johnson Type (Composite Type) Working Pressure 10 kg/cm<sup>2</sup>  
 by hydraulic pressure to 8.5 kg/cm<sup>2</sup> Date of test 31-3-1955 No. of Certificate YBC 63 Can each boiler be worked separately Yes  
 of Firegrate in each Boiler — No. and Description of safety valves to each boiler Two, High Lift Type  
 of each set of valves per boiler { per Rule 71.9 cm<sup>2</sup> Pressure to which they are adjusted 10.2 kg/mm<sup>2</sup> Are they fitted with easing gear Yes  
 as fitted 76.75 cm<sup>2</sup>  
 of donkey boilers, state whether steam from main boilers can enter the donkey boiler —  
 least distance between boilers and settling tank for boiler F.O. 1.6 m Is oil fuel carried in the double bottom under boilers —  
 least distance between shell of boiler and Engine room middle platform 601 mm Is the bottom of the boiler insulated Yes  
 least internal dia. of boilers 3850 mm Length 3256 mm Shell plates: Material Steel plate Tensile strength 49.5 ~ 51.2 kg/mm<sup>2</sup>  
 ion welded, state name of welding Firm — Have all the requirements of the Rules for Class I vessels  
 complied with — Thickness 24 mm Are the shell plates welded or flanged — Description of riveting: circ. seams { end Double row lap joint  
 seams Triple row butt joint Diameter of rivet holes in { circ. seams 33.5 mm Pitch of rivets { inter 89.5 mm  
 long. seams 29.5 mm { 180 mm  
 ntage of strength of circ. end seams { plate 62.6 % Percentage of strength of circ. intermediate seam { plate —  
 rivets 55.8 % rivets —  
 ntage of strength of longitudinal joint { plate 83.6 % rivets 112.8 % combined 89.9 %  
 ness of butt straps { outer 19 mm No. and Description of Furnaces in each Boiler 1 - Morison Type  
 inner 22 mm Tensile strength 46.3 kg/mm<sup>2</sup> Smallest outside diameter 874 mm  
 of plain part { front 100 mm Design 12 mm Thickness of plates Actual 13 mm Description of longitudinal joint fusion weld  
 back 40 mm bottom 40 mm  
 nsions of stiffening rings on furnace or c.c. bottom —  
 plates in steam space: Material Open hearth Steel plate Tensile strength 44.6 ~ 46.8 kg/mm<sup>2</sup> Thickness 24 mm Pitch of stays 420 mm  
 are stays secured Nuts from both sides  
 plates: Material { front Open hearth steel plate Tensile strength { Upper 46.2 ~ 47.0 kg/mm<sup>2</sup> Thickness { Upper 24 mm  
 back Open hearth steel plate Lower 44.5 ~ 46.3 kg/mm<sup>2</sup> Lower 23 mm  
 pitch of stay tubes in nests 200 mm Pitch across wide water spaces —  
 ers to combustion chamber tops: Material — Tensile strength — Depth and thickness of girder  
 tre. Length as per Rule — Distance apart — No. and pitch of stays  
 ch Combustion chamber plates; Material  
 le strength — Thickness: Sides — Back — Top — Bottom —  
 of stays to ditto: Sides — Back — Top — Are stays fitted with nuts or riveted over —  
 plate at bottom: Material Open hearth steel plate Tensile strength 43.5 ~ 45.8 kg/mm<sup>2</sup>  
 ness 23 mm Lower back plate: Material Open hearth steel plate Tensile strength 45.3 ~ 46.3 kg/mm<sup>2</sup> Thickness 23 mm  
 of stays at wide water space One stay only bottom Are stays fitted with nuts or riveted over Nuts from both sides  
 hips: Material Open hearth steel bar Tensile strength 45.9 ~ 51.6 kg/mm<sup>2</sup>  
 ter { At body of stay 6.5 mm No. of threads per inch 6 threads per inch  
 Over threads 7.3 mm  
 stays: Material — Tensile strength —  
 ter { At turned off part — No. of threads per inch —  
 Over threads —

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Are the stays drilled at the outer ends..... Margin stays: Diameter { At turned off part,..... 4c.  
or  
Over threads.....  
No. of threads per inch.....  
Tubes: Material Open hearth steel tube External diameter { Plain..... 70 mm  
Stay..... 70 mm Thickness { 40 mm  
9.5 mm No. of threads per inch 9 thread  
Pitch of tubes..... 100 98 mm Manhole compensation: Size of op in  
shell plate..... 405 mm x 305 mm Section of compensating ring..... flat No. of rivets and diameter of rivet holes..... 40 - 35.5  
Outer row rivet pitch at ends..... 100 mm Depth of flange if manhole flanged..... Shell plate 100 mm  
End plate 90 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 { Plate.....  
Rivets.....  
Internal diameter..... Thickness of crown..... No. and diam  
stays..... Inner radius of crown.....  
How connected to shell..... Size of doubling plate under dome..... Diameter of rivet holes an of Set  
of rivets in outer row in dome connection to shell.....  
Type of Superheater..... Manufacturers of { Tubes.....  
Steel forgings.....  
Steel castings.....  
Number of elements..... Material of tubes..... Internal diameter and thickness of tubes.....  
Material of headers..... Tensile strength..... Thickness..... Can the superheater be shut  
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.....  
Pressure to which the safety valves are adjusted..... Hydraulic test pr  
tubes..... forgings and castings..... and after assembly in place..... Are drain  
valves fitted to free the superheater from water where necessary.....  
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with..... Yes

The foregoing is a correct description,

Dates of Survey while building { During progress of work in shops - - 1955: - Jan. 13, 18, Feb. 13, 20, 25, 26, Mar. 3, 5, 8, 12, 17, 19, 22, 31. Are the approved plans of boiler and superheater forwarded herewith 17-1  
During erection on board vessel - - Apr. 26, 30, May 12, 23, June 9 Total No. of visits 25  
(If not state date of approval.)

Is this Boiler a duplicate of a previous case..... No If so, state Vessel's name and Report No. ....

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

This boiler has been constructed under the supervision of the Surveyors in accordance with the Approved plans and Rules.

The quality of workmanship and materials have been found satisfactory. The boiler has been satisfactorily installed in the vessel and examined under steam and safety valve adjusted as stated. Accumulation tested as per rule.

It is submitted that this boiler is eligible to be classed with this Society with notation of DBS. 6. 55.

Survey Fee ... .. £ 60.000 -

Travelling Expenses (if any) £ : :

When applied for..... JUL. 1. 1955..... 19.....

When received..... 19.....

FRIDAY 16 SEP 1955

Committee's Minute.....

Assigned See Rpt. 46



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