

REPORT ON BOILERS.

No. 10731.

Received at London Office SEP 19 1938

Date of writing Report 30/8/1938 When handed in at Local Office 1/9/1938 Port of Kobe

*No. in Reg. Book. Osaka Date, First Survey 27th Sept 1937 Last Survey 22nd June 1938

on the Steel Screw Lug "TAYGA" (Number of Visits) 355 Tons 355 Net

Master Osaka Built at Osaka By whom built Namuna Shipyard Co. Ltd. Yard No. 197 When built 1938

Engines made at Osaka By whom made Namuna Shipyard Co. Ltd. Engine No. 11 When made 1938

Boilers made at Osaka By whom made Namuna Shipyard Co. Ltd. Boiler No. ✓ When made 1938

Nominal Horse Power 134 Owners M. S. S. R. Port belonging to Vladivostok

MULTITUBULAR BOILERS MAIN, ~~AUXILIARY, OR DONKEY.~~

Manufacturers of Steel Nippon Seitetsu Kab. Kaisha, Yawata Seitetsu Sh. (Letter for Record 5)

Total Heating Surface of Boilers 172 sq. M. 1857 Is forced draught fitted yes Coal or Oil fired Coal

No. and Description of Boilers One single ended Multitubular Working Pressure 14 Kgs/cm²

Tested by hydraulic pressure to 350 kg/cm² Date of test 26.3.38 No. of Certificate 6931 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 5 sq. M. No. and Description of safety valves to each boiler One double, spring loaded.

Area of each set of valves per boiler per Rule 10.35 m² Pressure to which they are adjusted 205 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 21" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating open floors Is the bottom of the boiler insulated yes.

Largest internal dia. of boilers 4200 mm Length 2150 mm Shell plates: Material Steel Tensile strength 44/50 Kgs/cm²

Thickness 32 mm Are the shell plates welded or flanged No Description of riveting: circ. seams end 24 mm inter. 232 mm

long. seams T.R.D.B.S. zig zag Diameter of rivet holes in circ. seams 15 1/16" long. seams 15 1/16" Pitch of rivets 24 mm

Percentage of strength of circ. end seams plate 65.5 riquets 45.5 Percentage of strength of circ. intermediate seam plate 85.4 riquets 90.5 combined 89.6

Percentage of strength of longitudinal joint plate 85.4 riquets 90.5 combined 89.6 Working pressure of shell by Rules 14.25 Kgs/cm²

Thickness of butt straps outer 25 mm inner 28 mm No. and Description of Furnaces in each Boiler 3 - Morrison type, corrugated

Material Steel Tensile strength 41/47 Kgs/cm² Smallest outside diameter 1022 mm

Length of plain part top 16 mm bottom 16 mm Thickness of plates 16 mm Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 16.1 Kgs/cm²

End plates in steam space: Material Steel Tensile strength 41/47 Kgs/cm² Thickness 25 mm Pitch of stays 460 x 430 mm

How are stays secured Double nuts and washers Working pressure by Rules 17.2 Kgs/cm²

Tube plates: Material front Steel back Steel Tensile strength 41/47 Kgs/cm² Thickness 22 mm 22 mm

Mean pitch of stay tubes in nests 254 mm Pitch across wide water spaces 350 x 110 mm Working pressure front 16.4 Kgs/cm² back 19.2 Kgs/cm²

Girders to combustion chamber tops: Material Steel Tensile strength 40/50 Kgs/cm² Depth and thickness of girder 220 mm x 2 @ 22 mm

at centre 220 mm x 2 @ 22 mm Length as per Rule 809 mm Distance apart 210 mm No. and pitch of stays 3, 190 x 210 mm

Working pressure by Rules 17 Kgs/cm² Combustion chamber plates: Material Steel

Tensile strength 41/47 Kgs/cm² Thickness: Sides 16 mm Back 19 mm Top 16 mm Bottom 19 mm

Pitch of stays to ditto: Sides 210 x 190 mm Back 225 x 220 mm Top 210 x 190 mm Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 15.3 Kgs/cm² Front plate at bottom: Material Steel Tensile strength 41/47 Kgs/cm²

Thickness 22 mm Lower back plate: Material Steel Tensile strength 41/47 Kgs/cm² Thickness 22 mm

Pitch of stays at wide water space 350 x 220 mm Are stays fitted with nuts or riveted over nuts

Working Pressure 16.2 Kgs/cm² Main stays: Material Steel Tensile strength 44/50 Kgs/cm²

Diameter At body of stay, 3" No. of threads per inch 6 Area supported by each stay 460 x 430 mm

Working pressure by Rules 14.8 Kgs/cm² Screw stays: Material Steel Tensile strength 41/47 Kgs/cm²

Diameter At turned off part, 44.5 mm No. of threads per inch 11 Area supported by each stay 230 x 225 mm

Working pressure by Rules 15.25 kg Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, or Over threads 47.5 mm ✓

No. of threads per inch 11 Area supported by each stay 288 x 220 mm Working pressure by Rules 15.2 kg/cm²

Tubes: Material Steel External diameter { Plain 3 1/4" Stay 3 1/4" Thickness 8.5 mm No. of threads per inch 10 ✓

Pitch of tubes 287.5 x 220 mm Working pressure by Rules 25.4 kg/cm² Manhole compensation: Size of opening in shell plate 540 x 440 mm Section of compensating ring 480 x 28 mm No. of rivets and diameter of rivet holes 38 - 15/16" ✓

Outer row rivet pitch at ends 250 mm Depth of flange if manhole flanged ✓ Steam Dome: Material None

Tensile strength 591 Thickness of shell 8.5 mm Description of longitudinal joint ✓

Diameter of rivet holes 15/16" Pitch of rivets 250 mm Percentage of strength of joint { Plate 88% Rivets 88%

Internal diameter 1150 mm Working pressure by Rules 15.2 kg/cm² Thickness of crown 8.5 mm No. and diameter of stays 10 - 15/16"

How connected to shell ✓ Inner radius of crown 1150 mm Working pressure by Rules 15.2 kg/cm²

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 Smoke Tube Type Manufacturers of { Tubes Sumitomo Metal Industries Ltd. Steel castings Nippon Steel Foundry Ltd.

Number of elements 40 Material of tubes Steel Internal diameter and thickness of tubes 5 1/8" x 1 1/8" ✓

Material of headers 6. Steel Tensile strength 44 / 53 kg/cm² Thickness 20 mm Can the superheater be shut off and the boiler be worked separately yes Is a safety valve fitted to every part of the superheater which can be shut off from the boiler yes

Area of each safety valve 3.14 sq. in Are the safety valves fitted with easing gear yes Working pressure as per Rules 590 lb/in² Pressure to which the safety valves are adjusted 204 lb/in² ✓ Hydraulic test pressure: tubes 1500 lb/in² castings 600 lb/in² and after assembly in place 400 lb/in² ✓ Are drain cocks or valves fitted to free the superheater from water where necessary yes

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

The foregoing is a correct description, Y. Namura Manufacturer.

1937: Nov. 16, 25, 29 - Dec 7, 14, 20, 29 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

During progress of work in shops - - 1938 JAN 13, 20, 26, FEB 3, 14, 25 - MAR 8, 14, 26

During erection on board vessel - - - APR 16, 23, 28 MAY 10, 17, 30 Total No. of visits 25

JUNE 13 - 75 - 22

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 to 24.5 kg/cm² and found sound and tight, afterwards efficiently installed in the vessel and the safety valves adjusted under steam.

Survey Fee ... £ : : When applied for, 192

Travelling Expenses (if any) £ : : When received, 192

A. R. Hiddlee
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI 23 SEP 1938

Assigned See F. E. Rep.