

## REPORT ON BOILERS.

No. 1384.

13 AUG 1931

Received at London Office

Date of writing Report 31st July 1931 When handed in at Local Office 1931 Port of Bremen

No. in Survey held at 10000 Rodmunder - Bremen Date, First Survey 17th April 1931 Last Survey 31st July 1931

on the STEEL TWIN SC "GARDENGA" (Number of Visits 12) Gross 287 Tons Net 110

Master ✓ Built at Danzig By whom built J. W. Klawitter Yard No. ✓ When built 1904  
 Engines made at Danzig By whom made J. W. Klawitter Engine No. ✓ When made 1904  
 Boilers made at Danzig By whom made J. W. Klawitter Boiler No. 389/90 When made 1904  
 Nominal Horse Power 70 Owners P. St. John Coasters Prop. Ltd. Port belonging to Port Natal

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel ✓ (Letter for Record (S))  
 Total Heating Surface of Boilers  $2 \times 72.5 \text{ m}^2$  ✓ Is forced draught fitted NO Coal or Oil fired coal  
 No. and Description of Boilers Two multitubular Working Pressure 12 kg/cm<sup>2</sup>  
 Tested by hydraulic pressure to ✓ Date of test ✓ No. of Certificate ✓ Can each boiler be worked separately YES  
 Area of Firegrate in each Boiler  $2.72 \text{ m}^2$  No. and Description of safety valves to each boiler 2 spring loaded ✓  
 Area of each set of valves per boiler {per Rule 3400 mm<sup>2</sup> as fitted 23849 " Pressure to which they are adjusted 12 kg/cm<sup>2</sup> 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 170 mm Is oil fuel carried in the double bottom under boilers NO  
 Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated NO  
 Largest internal dia. of boilers 2550 mm Length 2600 mm Shell plates: Material S.M. Steel Tensile strength available double  
 Thickness 19 mm. Are the shell plates welded or flanged NO Description of riveting: circ. seams {end 83 mm inter. 220 mm  
 long. seams Double 301 ✓ Diameter of rivet holes in {circ. seams 26 mm long. seams 25 " Pitch of rivets {220 " ✓  
 Percentage of strength of circ. end seams {plate ✓ rivets ✓ Percentage of strength of circ. intermediate seam {plate ✓ rivets ✓  
 Percentage of strength of longitudinal joint {plate ✓ rivets ✓ Working pressure of shell by Rules ✓  
 Thickness of butt straps {outer 15 mm inner 15 " No. and Description of Furnaces in each Boiler 2 plain with Adamson joint 2p  
 Material S.M. Steel Tensile strength ✓ Smallest outside diameter 832 mm.  
 Length of plain part {top 1145 mm bottom 1000 mm Thickness of plates {crown 16 mm bottom 16 mm Description of longitudinal joint welded ✓  
 Dimensions of stiffening rings on furnace {crown 1000 x 15 mm bottom 1000 x 15 mm Working pressure of furnace by Rules ✓  
 End plates in steam space: Material S.M. Steel Tensile strength 36/4 ✓ Thickness 20 mm Pitch of stays 380 x 290 mm  
 How are stays secured by nuts ✓ Working pressure by Rules ✓  
 Tube plates: Material {front S.M. Steel back S.M. Steel Tensile strength ✓ Thickness {20 mm 20 mm  
 Mean pitch of stay tubes in nests 210 x 315 mm Pitch across wide water spaces ✓ Working pressure {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 Rules ✓ Combustion chamber plates: Material S.M. Steel  
 Tensile strength ✓ Thickness: Sides 15 mm Back 14 mm Top 23 mm Bottom 15 mm  
 Pitch of stays to ditto: Sides 170 mm Back 170 x 170 mm Top ✓ Are stays fitted with nuts or riveted over riveted over  
 Working pressure by Rules ✓ Front plate at bottom: Material S.M. Steel Tensile strength ✓  
 Thickness 20 mm Lower back plate: Material S.M. Steel Tensile strength ✓ Thickness 20 mm  
 Pitch of stays at wide water space ✓ Are stays fitted with nuts or riveted over riveted over  
 Working Pressure ✓ Main stays: Material NOT STATED Steel Tensile strength ✓  
 Diameter {At body of stay, 55 mm or Over threads No. of threads per inch ✓ Area supported by each stay 380 x 290 mm.  
 Working pressure by Rules ✓ Screw stays: Material NOT STATED Steel Tensile strength ✓  
 Diameter {At turned off part, 35 mm or Over threads No. of threads per inch ✓ Area supported by each stay 170 x 170 mm.

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Working pressure by Rules ☒ Are the stays drilled at the outer ends ☒ Margin stays: Diameter <sup>At turned off part.</sup> <sub>or</sub> <sup>Over threads</sup> 35 mm.

No. of threads per inch ☒ Area supported by each stay ☒ Working pressure by Rules ☒

Tubes: Material *not stated* External diameter <sup>Plain</sup> 83 mm <sup>Stay</sup> 83 " Thickness <sup>3 mm</sup> 6 - 4 - No. of threads per inch ☒

Pitch of tubes 105 mm Working pressure by Rules ☒ Manhole compensation: Size of opening in shell plate 300 x 400 mm Section of compensating ring 150 x 19 mm No. of rivets and diameter of rivet holes 29, 23 mm dia.

Outer row rivet pitch at ends 125 mm Depth of flange if manhole flanged ☒ Steam Dome: Material *S.M. Steel*

Tensile strength ☒ Thickness of shell 10 mm Description of longitudinal joint *overlap, double riveted*

Diameter of rivet holes 18 mm Pitch of rivets 53 mm Percentage of strength of joint <sup>Plate</sup> ☒ <sup>Rivets</sup> ☒

Internal diameter 500 mm Working pressure by Rules ☒ Thickness of crown 10 mm No. and diameter of stays ☒

How connected to shell *riveted* Inner radius of crown 445 mm Working pressure by Rules ☒ Size of doubling plate under dome 19 mm Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 23 mm dia. 75 mm pitch.

Type of Superheater ☒ Manufacturers of <sup>Tubes</sup> ☒ <sup>Steel castings</sup> ☒

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 ☒

Area of each safety valve ☒ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler ☒

Rules ☒ Are the safety valves fitted with easing gear ☒ Working pressure as per Rules ☒

tubes ☒ Pressure to which the safety valves are adjusted ☒ Hydraulic test pressure: ☒

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 ☒

The foregoing is a correct description, ☒

Manufacturer. ☒

Dates of Survey ☒ During progress of work in shops - - - ☒ Are the approved plans of boiler and superheater forwarded herewith ☒ (If not state date of approval.)

while building ☒ During erection on board vessel - - - ☒ Total No. of visits ☒

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

These Boilers have been constructed under the supervision of the Tainig Harbour Authority. It is stated that the plate material is *Simms-Martin Steel* and that it has been tested by the *Germanischer Lloyd*. Certificate of test of the material are not available.

The Boilers have been examined throughout and found to be in good and safe working condition. The top and back combustion plating has been specially examined and found to show no sign of strain. The scantlings of the boilers were found in accordance with the plan.

Please see Rpt. 9 attached.

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

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

*G. H. C. Mamm*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 1 SEP 1931

Assigned



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