

## REPORT ON BOILERS.

No. 18047

Received at London Office 17 MAY 1928

Date of writing Report 14 May 1928 When handed in at Local Office 1928 Port of Hamburg

No. in Reg. Book. Survey held at Hamburg - Kiel Date, First Survey 26<sup>th</sup> August 27 Last Survey 30<sup>th</sup> April 1928

on the STEEL TWIN SC PACIFIC GROVE (Number of Visits 6.) Gross 7114 Tons Net 4316.

Master Built at Kiel By whom built Deutsche Werke A.G. Yard No. 413 When built 1928

Engines made at Kiel By whom made Deutsche Werke A.G. Engine No. 213 When made 1928

EXHAUST GAS Fired Boiler made at Hamburg By whom made Deutsche Werke A.G. Boiler No. 305 When made 1928

Nominal Horse Power 1014. Owners TRANS OCEANIC S.S. Co. Port belonging to LONDON.

Waste heat.

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Messrs. Gutehoffnungshütte, Oberhausen (Letter for Record S.)

Total Heating Surface of Boilers 45 m<sup>2</sup> Is forced draught fitted ☒ Coal or Oil fired Exhaust gas fired

No. and Description of Boilers One vertical multitubular donkey boiler Working Pressure 100 lbs (7 kg/cm<sup>2</sup>)

Tested by hydraulic pressure to 200 lbs Date of test 23. 11. 27 No. of Certificate 454 Can each boiler be worked separately ☒

Area of Firegrate in each Boiler ☒ No. and Description of safety valves to each boiler two spring loaded

Area of each set of valves per boiler (per Rule 3440 m<sup>2</sup> as fitted 3926 m<sup>2</sup>) Pressure to which they are adjusted 100 lbs Are they fitted with easing gear ☒

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler ☒

Smallest distance between boilers or uptakes and bunkers or woodwork ☒ Is oil fuel carried in the double bottom under boilers ☒

Smallest distance between shell of boiler and tank top plating ☒ Is the bottom of the boiler insulated ☒

Largest internal dia. of boilers 1450 mm Length 1780 mm Shell plates: Material 1. m. steel Tensile strength 41-47 kg/cm<sup>2</sup>

Thickness 11 mm Are the shell plates welded or flanged flanged Description of riveting: circ. seams (end lp single) (inter. lp single)

long. seams lp single Diameter of rivet holes in (circ. seams 20 mm (long. seams 20 mm Pitch of rivets (49.8 mm (60.0 mm

Percentage of strength of circ. end seams (plate 60 % (rivets 50 % Percentage of strength of circ. intermediate seam (plate 70 % (rivets 75 % Working pressure of shell by Rules 9.1 kg/cm<sup>2</sup>

Percentage of strength of longitudinal joint (combined ☒

Thickness of butt straps (outer ☒ (inner ☒

No. and Description of Furnaces in each Boiler ☒

Material Tensile strength Smallest outside diameter

Length of plain part (top ☒ (bottom ☒ Thickness of plates (crown ☒ (bottom ☒ Description of longitudinal joint

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules

End plates in steam space: Material Tensile strength Thickness Pitch of stays

How are stays secured Working pressure by Rules

Tube plates: Material (top 1. m. steel (bottom 1. m. steel Tensile strength (41-47 kg/cm<sup>2</sup> Thickness (20 mm (20 mm

Mean pitch of stay tubes in nests 260 x 235 mm Pitch across wide water spaces Working pressure (front 16 kg/cm<sup>2</sup> (back 16 kg/cm<sup>2</sup>

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

Tensile strength Thickness: Sides Back Top Bottom

Pitch of stays to ditto: Sides Back Top Are stays fitted with nuts or riveted over

Working pressure by Rules Front plate at bottom: Material Tensile strength

Thickness Lower back plate: Material Tensile strength Thickness

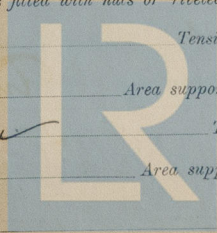
Pitch of stays at wide water space Are stays fitted with nuts or riveted over

Working Pressure Main 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



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Working pressure by Rules ☒ Are the stays drilled at the outer ends ☒ Margin stays: Diameter ☒ At turned off part, or Over threads

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

Tubes: Material *steel* External diameter ☒ Plain *54 7/8 in* Thickness ☒ *3 7/8 in* No. of threads per inch *10*

Pitch of tubes *76 in* Working pressure by Rules *10 hp/cm<sup>2</sup>* Manhole compensation: Size of opening in shell plate ☒ Section of compensating ring ☒ No. of rivets and diameter of rivet holes ☒

Outer row rivet pitch at ends ☒ Depth of flange if manhole flanged ☒ 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 ☒ Working pressure by Rules ☒ Thickness of crown ☒ No. and diameter of stays ☒

How connected to shell ☒ Inner radius of crown ☒ Working pressure by Rules ☒

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 ☒ Manufacturers of ☒ Tubes 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 off and 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 ☒ Working pressure as per Rules ☒

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

tubes ☒ 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,

*Friedrich J. A. Cantus* Manufacturer

Dates of Survey ☒ During progress of work in shops - - *18<sup>th</sup> H. 27. 23<sup>rd</sup> H. 27*

while building ☒ During erection on board vessel - - *28/3-11/4-26/4-30/4/28*

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) ☒

Total No. of visits *6*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This exhaust gas fired Donkey Boiler has been built under Special Survey in accordance with the approved plan, the Secretary's letter of 27<sup>th</sup> July 1927 and otherwise in conformity with the requirements of the Rules and the material & the workmanship are of good quality. The materials used in the construction are made at works recognised by the Committee and tested in accordance with the Rules by the Soc. Surveyors. When tested by hydraulic pressure to 300 lbs per sq. inch this Donkey Boiler was found to be tight and sound in every respect and showed no signs of weakness. Under steam it was found tight and its safety valves have been adjusted to 100 lbs per sq. inch. It is eligible in our opinion for notation of \* N.D.B. 3. 28.*

Marks on Boiler:

*No 454  
Lloyds Test  
200 lbs  
WP 100 lbs  
A.C. 23. 11. 27*

Thickness of waters:

*FORN: 17 1/2 in - AFT: 18 1/2 in.*

Survey Fee ... £ *4 : 4 : 0* When applied for, *23. 11. 1927*

Travelling Expenses (if any) £ *0 : 5 : 0* When received, *21. 12. 1927*

Committee's Minute *TUES. 22 MAY 1928*

Assigned *See Encl. attached*



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