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REPORT ON BOILERS.

No. 14971

Received at London Office

of writing Report 22nd March 1928 When handed in at Local Office

192 8 Port of Hamburg

Survey held at Hamburg & Kiel Date, First Survey 16th August 27 Last Survey 12th March 1928

on the STEEL TWIN Sc. PACIFIC PRESIDENT (Number of Visits) Tons {Gross 7114
Net 4316

Built at Kiel By whom built Deutsche Werke A.G. Yard No. 212 When built 1928

Machinery made at Kiel By whom made Deutsche Werke A.G. Engine No. 212 When made 1928

Boilers made at Hamburg By whom made Deutsche Werke A.G. Boiler No. 306 When made 1928

Original Horse Power Owners TRANS-OCEANIC S.S. Co Port belonging to LONDON.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers 45 m² Is forced draught fitted no Coal or Oil fired Exhaust gas fired

and Description of Boilers One vertical multitubular Donkey Boiler Working Pressure 100 lbs (7 kg/cm²)

Tested by hydraulic pressure to 200 lbs Date of test 23.11.27 No. of Certificate 455 Can each boiler be worked separately

No. and Description of safety valves to each boiler two spring loaded

No. of each set of valves per boiler {per Rule 3440 m²
as fitted 3926 m² Pressure to which they are adjusted 100 lbs 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 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 1.9m steel Tensile strength 41-47 kg/cm²

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

Seams sp single Diameter of rivet holes in {circ. seams 20 mm
long. seams 20 mm Pitch of rivets {49.2 mm
66.1 mm

Percentage of strength of circ. end seams {plate 60%
rivets 50% Percentage of strength of circ. intermediate seam {plate
rivets

Percentage of strength of longitudinal joint {plate 70%
rivets 75% Working pressure of shell by Rules 9.1 kg/cm²

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

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

How are stays secured Working pressure by Rules

Shell plates: Material {front 1.9m steel
back 1.9m steel Tensile strength {41-47 kg/cm²
41-47 kg/cm² Thickness {20 mm
20 mm

Pitch of stay tubes in nests 200 x 235 mm Pitch across wide water spaces Working pressure {front
back 16 kg/cm²

Stays to combustion chamber tops: Material Tensile strength Depth and thickness of girder

Centre Length as per Rule Distance apart No. and pitch of stays

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

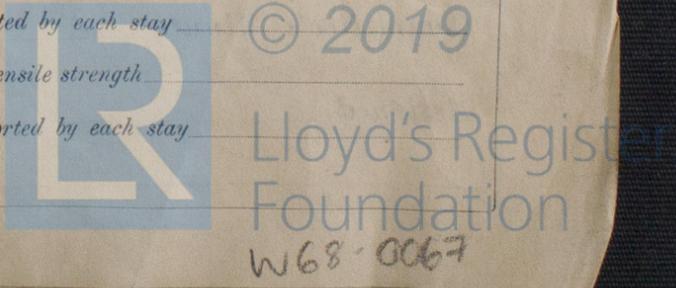
Pitch of stays at wide water space Are stays fitted with nuts or riveted over

Working Pressure Main stays: Material Tensile strength

At body of stay, No. of threads per inch Area supported by each stay

Over threads Working pressure by Rules Screw stays: Material Tensile strength

At turned off part, 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 $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right.$

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

Tubes: Material *Steel* External diameter $\left\{ \begin{array}{l} \text{Plain } 54 \text{ mm} \\ \text{Stay } 54 \text{ mm} \end{array} \right.$ Thickness $\left\{ \begin{array}{l} 3 \text{ mm} \\ 3 \text{ mm} \end{array} \right.$ No. of threads per inch 10

Pitch of tubes *76 mm* Working pressure by Rules *10 kg/cm²* Manhole compensation: Size of opening

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 $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

Internal diameter Working pressure by Rules Thickness of crown No. and diameter

stays Inner radius of crown Working pressure by Rules

How connected to shell Size of doubling plate under dome Diameter of rivet holes and

of rivets in outer row in dome connection to shell

Type of Superheater Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

Number of elements Material of tubes Internal diameter and thickness of tubes

Material of headers Tensile strength Thickness Can the superheater be shut off

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

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

tubes, castings and after assembly in place Are drain cocks or valves

to free the superheater from water where necessary

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with *yes*

The foregoing is a correct description,
 KTIENGESELLSCHAFT, *Manufaktur*

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops - - } 18^{\text{th}} \text{ H. 27, } 23^{\text{rd}} \text{ H. 27.} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - - } 2/8 - 5/2 - 8/2 - 10/2 / 12/3/28 \end{array} \right. \end{array} \right.$ Are the approved plans of boiler and superheater forwarded herewith *yes*
 (If not state date of approval.)

Total No. of visits *11.*

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 E 27th July 1927 and otherwise in conformity with the requirements of the Rules, and the materials & the workmanship are of good quality. The materials used in the construction are made at works recognized by the Committee and tested in accordance with the Rules by the Ins. Surveyors. When tested by hydraulic pressure to 200 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 our opinion for notation of N.D.B. 3.28.*

Marks on Boiler

N ^o 455
Lloyd's Test
200 lbs
WP 100 lbs
R.C. 23. 11. 27

Thickness of washers:
 PORT - 20 mm. Hb. 21 mm.

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

Travelling Expenses (if any) £ 0 : 5 : 0 When received, 26. 12. 1927

Friedrich A. Carstensen
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUES. 3 APR 1928

Assigned *See p. 3 of attached*

WED. 8 AUG 1928

FRI. 21 SEP 1928

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