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# REPORT ON BOILERS.

No. 17012

Received at London Office

15 SEP 1926

Date of writing Report 10<sup>th</sup> Sept. 1926 When handed in at Local Office 10 Port of HAMBURG

No. in Survey held at KIEL Date, First Survey 1<sup>st</sup> June Last Survey 28<sup>th</sup> August 1926

on the Steel Truss S. M. V. 'CALLIOPE' (Number of Visits 11) Tons { Gross 1744 Net 5036

Built at KIEL By whom built HOWALDTWERKE Yard No. 675 When built 1926

Engines made at KIEL By whom made HOWALDTWERKE Engine No. 445 When made 1926

Boilers made at KIEL By whom made HOWALDTWERKE Boiler No. { 1416/17 1420 1421/22 } When made 1926

Owners 39LT. AMERIK. PETROL. IMP. G. M. B. H. Port belonging to DANZIG

## VERTICAL DONKEY BOILER.

Made at Kiel By whom made Howaldtwerke Boiler No. 1421/22. When made 1926. Where fixed Pidem.

Manufacturers of Steel Vincennes Hohlstein - Rindberg

Total Heating Surface of Boiler 2 x 52.7 sq. m. Is forced draught fitted ✓ Coal or Oil fired exhaust gas fired.

No. and Description of Boilers 2 exhaust gas fired Donkey Boilers for Heating Purposes. Working pressure 5.8 kg/cm<sup>2</sup> (74 lb.)

Tested by hydraulic pressure to 10 kg/cm<sup>2</sup> (142 lbs) Date of test 28.7.26 No. of Certificate 437-438

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2 spring loaded

Area of each set of valves per boiler { per rule 5360 cm<sup>2</sup> as fitted 5634 cm<sup>2</sup> } Pressure to which they are adjusted 5 kg (71 lb) Are they fitted with easing gear ✓

State whether steam from main boilers can enter the donkey boiler No. ✓. Non return valves ✓. Smallest distance between boiler or uptake and bunkers on woodwork about 8000 mm

Is oil fuel carried in the double bottom under boiler ✓ Smallest distance between base of boiler and tank top plating

Is the base of the boiler insulated ✓ Largest internal dia. of boiler 1470 mm Height 2250 mm

Shell plates: Material Steel ✓ Tensile strength 34-41 kg/cm<sup>2</sup> Thickness 9 mm ✓

Are the shell plates welded or flanged flange ✓ Description of riveting: circ. seams { top sp. single end sp. single inner sp. single } long. seams sp. double

Dia. of rivet holes in { circ. seams 20 mm long. seams 20 mm } Pitch of rivets { 52 mm 65.5 mm } Percentage of strength of circ. seams { plate 61.6% rivets 71% } of Longitudinal joint { plate 69.5% rivets 112.8% combined ✓

Working pressure of shell by rules 5.68 kg/cm<sup>2</sup> Thickness of butt straps { outer inner }

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat Material

Tensile strength Thickness Radius Working pressure by rules

Description of Furnace: Plain, spherical, or dished crown Material Tensile strength

Thickness External diameter { top bottom } Length as per rule Working pressure by rules

Pitch of support stays circumferentially and vertically Are stays fitted with nuts or riveted over

Diameter of stays over thread Radius of spherical or dished furnace crown Working pressure by rule

Thickness of Ogee Ring Diameter as per rule { D d } Working pressure by rule

Combustion Chamber: Material Tensile strength Thickness of top plate

Radius if dished Working pressure by rule Thickness of back plate Diameter if circular

Length as per rule Pitch of stays Are stays fitted with nuts or riveted over

Diameter of stays over thread Working pressure of back plate by rules

Tube Plates: Material { top front back } Steel Tensile strength { 34-41 kg/cm<sup>2</sup> } Thickness { 24 mm } Mean pitch of stay tubes in nests 252 mm

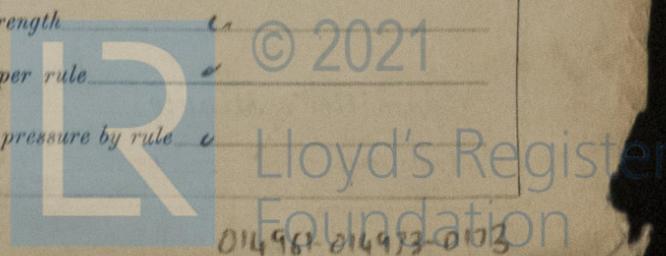
If comprising shell, Dia. as per rule { front back } Pitch in outer vertical rows { } Dia. of tube holes FRONT { stay 44- hollow 49 plain 48 } BACK { stay 49 plain 49 }

Is each alternate tube in outer vertical rows a stay tube Working pressure by rules { 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 rule



**Crown stays:** Material \_\_\_\_\_ Tensile strength \_\_\_\_\_ Diameter <sup>at body of stay,</sup> \_\_\_\_\_ <sub>or</sub> \_\_\_\_\_ <sub>over threads</sub>  
 No. of threads per inch \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_  
**Screw stays:** Material \_\_\_\_\_ Tensile strength \_\_\_\_\_ Diameter <sup>at turned off part,</sup> \_\_\_\_\_ <sub>or</sub> \_\_\_\_\_ <sub>over threads</sub> No. of threads per inch \_\_\_\_\_  
 Area supported by each stay \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ Are the stays drilled at the outer ends \_\_\_\_\_  
**Tubes:** Material *Seamless mild steel* External diameter <sup>plain</sup> *4 1/8* \_\_\_\_\_ <sub>stay</sub> *4 1/8* \_\_\_\_\_ Thickness <sup>3</sup> *3/16* \_\_\_\_\_ <sub>4</sub> *4/16* \_\_\_\_\_  
 No. of threads per inch *9* Pitch of tubes *7 1/4* \_\_\_\_\_ Working pressure by rules *11 1/2* \_\_\_\_\_  
**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 \_\_\_\_\_  
**Uptake:** External diameter \_\_\_\_\_ Thickness of uptake plate \_\_\_\_\_  
**Cross Tubes:** No. \_\_\_\_\_ External diameters \_\_\_\_\_ Thickness of plates \_\_\_\_\_  
 Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with *ye*

The foregoing is a correct description,  
**HOWALDTSWERK**  
*F. J. Bahr* Manufacturer.

Dates of Survey <sup>During progress of</sup> work in shops - - *1/6-8/6-11/6-18/6-21/6-28/6-28/7/26* Is the approved plan of boiler forwarded herewith *ye*  
 while building <sup>During erection on</sup> board vessel - - *3/8-10/8-27/8-28/8/26* Total No. of visits *11*

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) *Material and workmanship of these 2nd Donkey boilers are of good quality. The material used in the construction is made at works recognized by the Committee and tested by the Society's Surveyor in accordance with the Rules. These Exhaust fired Donkey boilers are built under Special Survey in accordance with the approved plan, the Secretary's letter and otherwise in conformity with the requirements of the Rules and is eligible in my opinion for record. "N.D.B-26"*

Survey Fee ... .. £ *8. : 8. :* } When applied for, *25. 8. 1926*  
 Travelling Expenses (if any) £ : : } When received, *6. 9. 26*

*Friedrich Hill*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 17 SEP 1926*  
 Assigned *See A.E. pt. attached*

