

## REPORT ON BOILERS.

No. 17012

Received at London Office

15 SEP 1926

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

19 Port of HAMBURG

Survey held at

Tiel

Date, First Survey

9<sup>th</sup> FebruaryLast Survey 28<sup>th</sup> August

1926

Book.

on the Steel Twin S.C. M.V. "CALLIOPE"

(Number of Visits 14)

Gross 8744  
Tons Net 5026

at Tiel

By whom built HOWALDTSWERKE

Yard No. 675 When built 1926

Machines made at Tiel

By whom made HOWALDTSWERKE

Engine No. 445 When made 1926

Boilers made at Tiel

By whom made HOWALDTSWERKE

Boiler No. 1420 When made 1926

Boilers. FALTSCH AMERIKANISCHE PETROLEUM IMPG. m. b. H. Port belonging to

DANZIG.

## VERTICAL DONKEY BOILER.

at Kiel

By whom made Howaldtswerke

Boiler No. 1420

When made 1926

Where fixed (see compartment)

Manufacturers of Steel Gutehoffnungshütte - Oberhausen.

Heating Surface of Boiler

22 sq. m.

Is forced draught fitted

Yes

Coal or Oil fired Oil fired

and Description of Boilers

1 Vertical Donkey Boiler for Heating Purposes

Working pressure 5 kg/cm<sup>2</sup> (71 lb)

Tested by hydraulic pressure to

10 kg/cm<sup>2</sup> (142 lb)

Date of test

4.5.26

No. of Certificate 428

No. of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2 Spring loaded

No. of each set of valves per boiler

per rule 2690  
as fitted 3927

Pressure to which they are adjusted

5 kg/cm<sup>2</sup> (71 lb)

Are they fitted with easing gear

Yes

Whether steam from main boilers can enter the donkey boiler

No - non return valve fitted

Smallest distance between boiler or uptake and bunkers

Woodwork

2600 mm

Is oil fuel carried in the double bottom under boiler

No

Smallest distance between base of boiler and tank top plating

1100 mm

Is the base of the boiler insulated

No

Largest internal dia. of boiler

1350 mm

Height 3323 mm

Shell plates: Material

Steel

Tensile strength

44-50 kg/cm<sup>2</sup>

Thickness

11 mm

The shell plates welded or flanged

Flanged

Description of riveting: circ. seams

end top: 1/2 p. single  
inter. bottom: 1/2 p. double

long. seams 1/2 p. double

No. of rivet holes in

circ. seams 23  
long. seams 20

Pitch of rivets

top: 56 mm  
bottom: 76 mm

Percentage of strength of circ. seams

plate: 55.8%  
rivets: 55.8%

Longitudinal joint

plate: 66.6%  
rivets: 89.5%  
combined 78.2%

Working pressure of shell by rules

10.5 kg/cm<sup>2</sup>

Thickness of butt straps

outer

inner

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

Material Steel

Tensile strength

41-47 kg/cm<sup>2</sup>

Thickness

14 mm

Radius

1350 mm

Working pressure by rules

8.56 kg/cm<sup>2</sup>

Description of Furnace: Plain, spherical, or dished crown

partial spherical

Material

Steel

Tensile strength

41 kg/cm<sup>2</sup>

Thickness

13 mm

External diameter

top: 1120 mm  
bottom: 1164 mm

Length as per rule

1075 mm

Working pressure by rules

7.92 kg/cm<sup>2</sup>

No. 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

1100 mm

Working pressure by rule

7.44 kg/cm<sup>2</sup>

Thickness of Ogee Ring

13 mm

Diameter as per rule

D 1164 mm  
a 1324 mm

Working pressure by rule

6.96 kg/cm<sup>2</sup>

Combustion Chamber: Material

Steel

Tensile strength

41 kg/cm<sup>2</sup>

Thickness of top plate

14 mm

Radius if dished

1100 mm

Working pressure by rule

7.44 kg/cm<sup>2</sup>

Thickness of back plate

13 mm

Diameter if circular

1120 mm

Pitch as per rule

2135 mm

Pitch of stays

circumferentially: 182 mm  
vertically: 320 mm

Are stays fitted with nuts or riveted over

riveted over

Diameter of stays over thread

38 mm

Working pressure of back plate by rules

7.68 kg/cm<sup>2</sup>

Plates: Material

front: Steel  
back: Steel

Tensile strength

41-47 kg/cm<sup>2</sup>

Thickness

18 mm

Mean pitch of stay tubes in nests

270 mm

Comprising shell, Dia. as per rule

front: 1200 mm  
back: 1200 mm

Pitch in outer vertical rows

270 mm

Dia. of tube holes FRONT

stay: 64 mm  
plain: 65 mm

BACK

stay: 60 mm  
plain: 60 mm

Each alternate tube in outer vertical rows a stay tube

No

Working pressure by rules

front: 10.1 kg/cm<sup>2</sup>  
back: 11.5 kg/cm<sup>2</sup>

Boilers to combustion chamber tops: Material

Tensile strength

Pitch and thickness of girder at centre

Length as per rule

Pitch apart

No. and pitch of stays in each

Working pressure by rule



**Crown 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 \_\_\_\_\_ Working pressure by rules \_\_\_\_\_ Are the stays drilled at the outer ends \_\_\_\_\_

**Tubes:** Material *Laurel mild steel* External diameter { plain *65 in* stay *60 in* Thickness { *3 in* *6 in*

No. of threads per inch *9* Pitch of tubes *90 in* Working pressure by rules *9 kg/cm<sup>2</sup>*

**Manhole Compensation:** Size of opening in shell plate *300 x 400 in* Section of compensating ring \_\_\_\_\_ No. of rivets and diameter \_\_\_\_\_

of rivet holes \_\_\_\_\_ Outer row rivet pitch at ends \_\_\_\_\_ Depth of flange if manhole flanged *85 in*

**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 *yes*

The foregoing is a correct description,

HOWALDTSWERKE

*[Signature]* Manufacturer



Dates of Survey { During progress of work in shops - *9/2-2/3-9/3-16/3-23/3-7/4-27/4-4/5/26* Is the approved plan of boiler forwarded herewith *Yes* *Reg. No. 16532*  
(If not state date of approval.)  
while building { During erection on board vessel - *2/6-28/7-3/8-10/8-23/8-28/8/26* Total No. of visits *14*

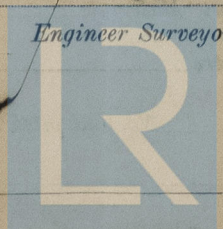
**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) *Material and Workmanship of this boiler are of good quality. The material used in the construction is made at works recognized by the Committee and tested in accordance with the requirements of the Rules. This boiler having been built under Special Survey in accordance with the approved plan the Secretary's letter and otherwise in conformity with the requirements of the Rules is eligible in my opinion for record 'N.D.B.-26'.*

Survey Fee ... £ *4. 4. :* When applied for, *25. 8. 1926*  
Travelling Expenses (if any) £ : : When received, *6. 9. 1926*

*Friedrich Hill*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 17 SEP 1926*  
Assigned *See 1st attached*



Lloyd's Register Foundation

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