

REPORT ON BOILERS.

No. 16427

Date of writing Report 19<sup>th</sup> July 1925 When handed in at Local Office 1925 Port of HAMBURG  
No. in Reg. Book. HAMBURG Date, First Survey 14<sup>th</sup> Nov. 1924 Last Survey 7<sup>th</sup> July 1925  
on the Steel S.S. Motor V. "DUISBURG" (Number of Visits 12) Gross 6530 Tons Net 3800  
Master Built at HAMBURG By whom built VULCANWERKE Yard No. 638 When built 1925  
Engines made at HAMBURG By whom made VULCANWERKE Engine No. 638 When made 1925  
Boilers made at HAMBURG By whom made VULCANWERKE Boiler No. 3299 When made 1925  
Nominal Horse Power 578 Owners DEUTSCH-AFRIKA-LIMPFSCHE GES. Port belonging to HAMBURG.

Waste heat boiler

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Mannermann, H. Lohy, Gnaul - Huettingen (Letter for Record 3.)  
Total Heating Surface of Boilers 2095 sq. m. 195 sq. m. Is forced draught fitted Coal or Oil fired steam gas  
No. and Description of Boilers 1. exhaust gas fired multitubular donkey boiler Working Pressure 7 kg (100 lb)  
Tested by hydraulic pressure to 200 lb. Date of test 23.1.25. No. of Certificate 369 Can each boiler be worked separately  
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 as fitted 10052 sq. m. Pressure to which they are adjusted 7 kg/100 lb. Are they fitted with easing gear yes  
In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no. - non return valve fitted  
Smallest distance between boilers or uptakes and bunkers or woodwork 2500 mm. Is oil fuel carried in the double bottom under boilers none  
Smallest distance between shell of boiler and tank top plating 700 mm in eng. room skylight. Is the bottom of the boiler insulated yes  
Largest internal dia. of boilers 2700 mm. Length 1930 mm. Shell plates: Material Steel Tensile strength 47-54 kg.  
Thickness 13 mm. Are the shell plates welded or flanged flanges Description of riveting: circ. seams {end double lap rivets inter. 66 mm.  
Long. seams double butt. double riv. Diameter of rivet holes in {circ. seams 20 mm. Pitch of rivets {80 mm.  
Percentage of strength of circ. end seams {plate 69.8 % rivets 56.2 % Percentage of strength of circ. intermediate seam {plate rivets  
Percentage of strength of longitudinal joint {plate 75 % rivets 130 % Working pressure of shell by Rules 7.75 kg.  
Thickness of butt straps {outer 11.5 mm. inner 11.5 mm. No. and Description of Furnaces in each Boiler none  
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 Steel Tensile strength 41-47 kg. Thickness 20.5 mm. Pitch of stays 350-400 mm.  
How are stays secured double nut + wash. Working pressure by Rules 9.48 kg.  
Tube plates: Material {front back Steel Tensile strength {41-47 kg. Thickness {20.5 mm. 20.5 mm.  
Lean pitch of stay tubes in nests 255 mm. Pitch across wide water spaces 200 mm. Working pressure {front 13.8 kg. back 13.8 kg.  
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  
at 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 Steel Tensile strength 41-47 kg.  
Thickness 20.5 mm. Lower back plate: Material Steel Tensile strength 41-47 kg. Thickness 20.5 mm.  
Pitch of stays at wide water space 255 mm. Are stays fitted with nuts or riveted over  
Working Pressure 11.15 kg. Main stays: Material Steel Tensile strength 40-47 kg.  
Diameter {At body of stay, 51 mm. No. of threads per inch 6 Area supported by each stay 350 x 400 mm.  
Working pressure by Rules 7.65 kg. Screw stays: Material Tensile strength  
Diameter {At turned off part, No. of threads per inch Area supported by each stay

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 *Mild steel* ☒ External diameter ☒ Plain *63.5 mm* ☒ Stay *63.5 mm* ☒ Thickness ☒ *3 mm* ☒ No. of threads per inch *9* ☒

Pitch of tubes *85 mm* ☒ Working pressure by Rules *9 kg* ☒ Manhole compensation: Size of opening ☒

shell plate *300 x 400 mm* ☒ Section of compensating ring *640 x 740 x 20 mm* ☒ No. of rivets and diameter of rivet holes *40 - 20 mm* ☒

Outer row rivet pitch at ends *100 mm* ☒ Depth of flange if manhole flanged *78 mm* ☒ 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 ☒

stays ☒ Inner radius of crown ☒ Working pressure by Rules ☒

How connected to shell ☒ 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 *Schmidt's Patent* ☒ Manufacturers of ☒ Tubes *Lauitz hammer* ☒ Steel castings *Kulrau Werke* ☒

Number of elements *40* ☒ Material of tubes *Steel* ☒ Internal diameter and thickness of tubes *15 - 2.5 mm* ☒

Material of headers *Steel castings* ☒ Tensile strength *41-48 kg* ☒ Thickness *10 mm* ☒ Can the superheater be shut off ☒

the boiler be worked separately *yes* ☒ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *yes - 2* ☒

Area of each safety valve *38 mm* ☒ Are the safety valves fitted with easing gear *yes* ☒ Working pressure as per ☒

Rules *9 kg* ☒ Pressure to which the safety valves are adjusted *7 kg* ☒ Hydraulic test pressure ☒

tubes *50 kg/cm<sup>2</sup>* ☒ castings *21 kg/cm<sup>2</sup>* ☒ and after assembly in place *21 kg/cm<sup>2</sup>* ☒ Are drain cocks or valves fitted ☒

to free the superheater from water where necessary *yes* ☒

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

The foregoing is a correct description,

Hamburg und Stettin Acting Manufacturer *H. Walde* ☒

Dates of Survey ☒ During progress of work in shops - - *14/4 - 4/12 - 11/12 - 19/12 - 29/12 - 10/1 - 17/1* ☒ Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) ☒

while building ☒ During erection on board vessel - - *11/4 - 11/5 - 26/6 - 7/7/25* ☒ Total No. of visits *12* ☒

## 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 and other wire in accordance with the requirements of the Rules and the workmanship are of good quality. The materials used have been made at works approved by the Committee and tested in accordance with the requirements of the Rules by the Society's Surveyor. The Donkey boiler was found to be sound & tight and no weaker when tested by water pressure to 200 lbs per inch. Under steam it was found to be sound and it is eligible in my opinion for notification. N.D.B. 1.25.*

## MARK ON BOILER

*N<sup>o</sup> 369  
LLOYD'S TEST.  
200 lbs.  
W.P. 100 lbs.  
F.M. 13.1.25*

Survey Fee *See attached: repair*  
Travelling Expenses (if any) *on Machinery*

When applied for, *192*  
When received, *192*

*Friedrich Hilt*

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute *FRI. 31 JUL 1925*

Assigned



© 2021

Lloyd's Register Foundation