

# REPORT ON BOILERS.

No. 16196<sup>c</sup>

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Writing Report. 22 Nov 1946 When handed in at Local Office. 19..... Port of. Amsterdam

Survey held at. Amsterdam Date, First Survey. 10<sup>th</sup> September Last Survey. 1<sup>st</sup> November 1946

on the S/S "AARDENBURG" (ex "STAHLER") (Number of Visits. 5.....) Tons { Gross. 1663  
Net. 907

Built at. Bremen By whom built. A.G. "Weser" Yard No. .... When built. 1923

made at. Bremen By whom made. A.G. "Weser" Engine No. .... When made. 1923

made at. BREMEN By whom made. ACTIEN GESELLSCHAFT "WESER" Boiler No. 1378 When made. 1923

Horse Power. 207 Owners. Kon. Ned. Stoomboot Mij. Port belonging to. Amsterdam

## TUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

FRIEDR. KRUPP, A.G. — ESSEN

Manufacturers of Steel. CALDERBANK STEEL WORKS — CALDERBANK (Letter for Record. (S))

Heating Surface of Boilers. 2 x 155 m<sup>2</sup> Is forced draught fitted. no Coal or Oil fired. coal

Description of Boilers. two - cylindrical Working Pressure. 14 kg/cm<sup>2</sup>

by hydraulic pressure to. 21 kg/cm<sup>2</sup> Date of test. 26-10-46 No. of Certificate. .... Can each boiler be worked separately. yes

Firegrate in each Boiler. 4.3 m<sup>2</sup> No. and Description of safety valves to each boiler. two - spring loaded

each set of valves per boiler { per Rule. 6280 mm<sup>2</sup>  
as fitted. 10,000 mm<sup>2</sup> Pressure to which they are adjusted. 14 kg/cm<sup>2</sup> Are they fitted with easing gear. yes

of donkey boilers, state whether steam from main boilers can enter the donkey boiler. no donkey boilers

distance between boilers or uptakes and bunkers or woodwork. 63 cm Is oil fuel carried in the double bottom under boilers. no

distance between shell of boiler and tank top plating. 54 cm Is the bottom of the boiler insulated. yes

internal dia. of boilers. 3950 mm Length. 3250 mm Shell plates: Material. S.M. steel Tensile strength. 489/52.8 kg/mm<sup>2</sup>

ess. 28 mm Are the shell plates welded or flanged. flanged Description of riveting: circ. seams { end. lap joint - 2 rows  
inter. ....

ams. double butt straps - 4 rows Diameter of rivet holes in { circ. seams. 32 mm  
long. seams. 35 mm Pitch of rivets { 95 mm  
480 mm

age of strength of circ. end seams { plate. 66.3 %  
rivets. 69.5 % Percentage of strength of circ. intermediate seam { plate. ....  
rivets. ....

age of strength of longitudinal joint { plate. 92.8 %  
rivets. 109 % Working pressure of shell by Rules. 15.8 kg/cm<sup>2</sup>

combined. 95.4 %

ss of butt straps { outer. 21 mm  
inner. 21 mm No. and Description of Furnaces in each Boiler. two - corrugated Morrison

il. S.M. steel Tensile strength. 36.4/40.9 kg/mm<sup>2</sup> Smallest outside diameter. 1130 mm

of plain part { top. ....  
bottom. .... Thickness of plates { 15 mm Description of longitudinal joint. welded

ions of stiffening rings on furnace or c.c. bottom. .... Working pressure of furnace by Rules. 13.6 kg/cm<sup>2</sup> ?

ates in steam space: Material. S.M. steel Tensile strength. 36.4/39.1 kg/mm<sup>2</sup> Thickness. 28 mm Pitch of stays. 360 x 430 mm

e stays secured. nuts inside and outside Working pressure by Rules. 16.2 kg/cm<sup>2</sup>

plates: Material { front. S.M. steel Tensile strength. 36.1/36.8 kg/mm<sup>2</sup> Thickness. 28 mm  
back. S.M. steel Tensile strength. 36.1/39.8 kg/mm<sup>2</sup> Thickness. 23 mm

itch of stay tubes in nests. 220 mm Pitch across wide water spaces. 365 mm Working pressure { front. 15.3 kg/cm<sup>2</sup>  
back. 17.8 kg/cm<sup>2</sup>

s to combustion chamber tops: Material. S.M. steel Tensile strength. 37.3/39.1 kg/mm<sup>2</sup> Depth and thickness of girder

re. 190 mm - 16.5 mm Length as per Rule. 750 mm Distance apart. 180 mm No. and pitch of stays

two - 220 mm Working pressure by Rules. 11.8 kg/cm<sup>2</sup> ? Combustion chamber plates: Material. S.M. steel

strength. 36.1/40.1 kg/mm<sup>2</sup> Thickness: Sides. 18.5 mm Back. 18 mm Top. 18.5 mm Bottom. 23 mm

f stays to ditto: Sides. 200 x 220 mm Back. 190 x 205 mm Top. 180 x 220 mm Are stays fitted with nuts or riveted over. nuts

g pressure by Rules. 21 kg/cm<sup>2</sup> Front plate at bottom: Material. S.M. steel Tensile strength. 36.1/36.8 kg/mm<sup>2</sup>

ess. 28 mm Lower back plate: Material. S.M. steel Tensile strength. 35.3/39 kg/mm<sup>2</sup> Thickness. 24.5 mm

f stays at wide water space. 365 mm Are stays fitted with nuts or riveted over. nuts

ping pressure. 20.4 kg/cm<sup>2</sup> Main stays: Material. S.M. steel Tensile strength. ....

er { At body of stay. 70 mm  
or Over threads. .... No. of threads per inch. 6 Area supported by each stay. 360 x 430 mm

g pressure by Rules. 16.3 kg/cm<sup>2</sup> Screw stays: Material. S.M. steel Tensile strength. ....

er { At turned off part. 38 mm  
or Over threads. .... No. of threads per inch. 10 Area supported by each stay. 190 x 205 mm



Working pressure by Rules 14.5 kg/cm<sup>2</sup> Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 53 mm  
or  
Over threads ✓  
No. of threads per inch 10 Area supported by each stay 190 x 285 mm Working pressure by Rules 22.9 kg/cm<sup>2</sup>  
Tubes: Material SM steel External diameter { Plain 83 mm Thickness 4 mm No. of threads per inch ✓  
Stay 83 mm 8 and 10 mm  
Pitch of tubes 110 mm Working pressure by Rules 16 kg/cm<sup>2</sup> Manhole compensation: Size of  
shell plate 400 x 500 mm Section of compensating ring 260 x 28 mm No. of rivets and diameter of rivet holes 48 rivets - 35  
Outer row rivet pitch at ends 180 mm Depth of flange if manhole flanged 90 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 d  
stays ✓ Inner radius of crown ✓ Working pressure by Rules ✓  
How connected to shell ✓ Size of doubling plate under dome ✓ Diameter of rivet holes  
of rivets in outer row in dome connection to shell ✓

Type of Superheater W. Schmidt Manufacturers of { Tubes A.G. Weser  
Steel forgings ✓  
Steel castings ✓  
Number of elements 48 Material of tubes SM steel Internal diameter and thickness of tubes 16 mm - 2.5 mm  
Material of headers cast steel Tensile strength ✓ Thickness 35 mm Can the superheater be sh  
the boiler be worked separately no Is a safety valve fitted to ~~every part of~~ the superheater ~~which can be shut off from the boiler~~ ✓  
Area of each safety valve 1260 mm<sup>2</sup> Are the safety valves fitted with easing gear no Working press  
Rules ✓ Pressure to which the safety valves are adjusted 15 kg/cm<sup>2</sup> Hydraulic test  
tubes ✓ forgings and castings ✓ and after assembly in place ✓ Are drai  
valves fitted to free the superheater from water where necessary yes

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

The foregoing is a correct description, ✓

Dates of Survey { During progress of work in shops - - } ✓ A plan of the boiler is forwarded here  
while building { During erection on board vessel - - } ✓ Are the approved plans of boiler and superheater forwarded herewith  
(If not state date of approval.)  
Total No. of visits ✓

Is this Boiler a duplicate of a previous case no If so, state Vessel's name and Report No. ✓

#### GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The boilers have been built under Special Survey of the Germ. Lloyd.  
The tensile strengths are according to the G.L. certificates:

N° 13866 (1-2), Dortmund 13-10-22

N° 13867 (1-2), Dortmund 13-10-22

N° 2, Glasgow 8-9-22

Both boilers have been examined internally and externally, hydraulically tested and fo  
in a satisfactory condition. They have been marked: Starb boiler

LLOYDS TEST  
N° 167  
21 KG. WP. 14 KG  
G.V. 26-10-46

Port boiler  
LLOYDS TEST  
N° 168  
21 KG. WP. 14 KG  
G.V. 26-10-46

All mountings and safety valves have been examined and found or made in order.  
The boilers have been tried under steam afterwards and their safety valves adjusted.  
I am of opinion that this vessel is eligible to get the record LMC 11,46 in the Register book

Survey Fee on Machinery Report  
Travelling Expenses (if any) £ ✓

When applied for, 19  
When received, 19

Engineer Surveyor to Lloyd's Register of S

Committee's Minute FRI 28 FEB 1947

Assigned See F.E. mch. rph



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Foundation