

## REPORT ON BOILERS.

No. 19486

Received at London Office 20 AUG 1930

Date of writing Report 9th August, 1930 When handed in at Local Office 1930

Port of HAMBURG

No. in Reg. Book. Survey held at Lübeck.

Date, First Survey 3rd December 1929 Last Survey 31st July 1930

on the steel ss. "LASBEK"

(Number of Visits 14) Gross 2159 Tons Net 1263

Master Brauer Built at Lübeck By whom built Lüb. Maschbau Gesell. Yard No. 302 When built 1930

Engines made at Berlin-Tegel By whom made A. Borsig G.m.B.H. Engine No. 7970 When made 1930

Boilers made at Lübeck By whom made Lübecker Maschinenbau Gesellschaft Boiler No. 1290/41 When made 1930

Nominal Horse Power 216 Owners Knöhr &amp; Burchard Nachf. Port belonging to Hamburg.

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Mannesmann-Röhrenwerke AG. Schulz-Knaudt, Hückingen/Rh. (Letter for Record 5, 28/11/29)

Total Heating Surface of Boilers 290.2 m<sup>2</sup> 3120 m<sup>2</sup> forced draught fitted yes Coal or Oil fired coal

No. and Description of Boilers 2 multitubular, single ended Working Pressure 199 lb

Tested by hydraulic pressure to 350 lb Date of test 20/5/30 No. of Certificate 508/09 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 3.36 m<sup>2</sup> No. and Description of safety valves to each boiler 2 springs loadedArea of each set of valves per boiler (per Rule 5900 mm<sup>2</sup> as fitted 8370 mm<sup>2</sup>) Pressure to which they are adjusted 199 lb 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 50 mm Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating 400 mm Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 3650 mm Length 3176 mm Shell plates: Material S.M. Steel Tensile strength 42-53 kg/mm<sup>2</sup>

Thickness 27 mm Are the shell plates welded or flanged flanged Description of riveting: circ. seams (end double not inter) x

long. seams double butt str. riv. Diameter of rivet holes in (circ. seams 32 mm long. seams 32 mm) Pitch of rivets 98.6 mm 200 mm

Percentage of strength of circ. end seams (plate 67.5% rivets 53.2%) Percentage of strength of circ. intermediate seam (plate x rivets x)

Percentage of strength of longitudinal joint (plate 84% rivets 102% combined 89%) Working pressure of shell by Rules 14.3 kg/cm<sup>2</sup>

Thickness of butt straps (outer 27 mm inner 27 mm) No. and Description of Furnaces in each Boiler 2 Morison

Material Siemens Martin Steel Tensile strength 41-47 kg/mm<sup>2</sup> Smallest outside diameter 1030 mm

Length of plain part (top 340 mm bottom 340 mm) Thickness of plates (crown 15 mm bottom 15 mm) Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom + Working pressure of furnace by Rules 19.65 kg/cm<sup>2</sup>End plates in steam space: Material S.M. Steel Tensile strength 41-47 kg/mm<sup>2</sup> Thickness 27 mm Pitch of stays 360 x 335 mmHow are stays secured nuts & washers on both sides Working pressure by Rules 17.2 kg/cm<sup>2</sup>Tube plates: Material (front Siemens Martin steel back steel) Tensile strength (41-47 kg/mm<sup>2</sup> 41-47 kg/mm<sup>2</sup>) Thickness (27 mm 22 mm)Mean pitch of stay tubes in nests 220 mm Pitch across wide water spaces 360 mm Working pressure (front 14.4 kg/cm<sup>2</sup> back 25.4 kg/cm<sup>2</sup>)Girders to combustion chamber tops: Material Siem. Mart. Steel Tensile strength 41-47 kg/mm<sup>2</sup> Depth and thickness of girder

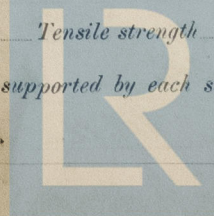
at centre 235, 2 x 1/3 Length as per Rule 667.5 mm Distance apart 180-200 - 210 mm No. and pitch of stays

in each 3 x 175 mm Working pressure by Rules 14.45 kg/cm<sup>2</sup> Combustion chamber plates: Material S.M. SteelTensile strength 41-47 kg/mm<sup>2</sup> Thickness: Sides 16.5 mm Back 16.5 mm Top 16.5 mm Bottom 19.5 mm

Pitch of stays to ditto: Sides 200 x 175 mm Back 195 x 190 mm Top 175 x 210 mm Are stays fitted with nuts or riveted over with nuts

Working pressure by Rules 18.9-17.9-17.8 kg/cm<sup>2</sup> Front plate at bottom: Material Siem. Mart. Steel Tensile strength 41-47 kg/cm<sup>2</sup>Thickness 27 mm Lower back plate: Material S.M. Steel Tensile strength 41-47 kg/mm<sup>2</sup> Thickness 27 mm

Pitch of stays at wide water space 360 Are stays fitted with nuts or riveted over nuts on both sides

Working Pressure 18.5 kg/cm<sup>2</sup> Main stays: Material Siem. Mart. Steel Tensile strength 44-50 kg/mm<sup>2</sup>Diameter (At body of stay, 68 mm 65 mm No. of threads per inch 6 Area supported by each stay 142,000 mm<sup>2</sup>)Working pressure by Rules 18.5 kg/cm<sup>2</sup> Screw stays: Material Siem. Mart. Steel Tensile strength 41-47 kg/cm<sup>2</sup>Diameter (At turned off part, 37 mm 41.3 mm No. of threads per inch 9 Area supported by each stay 37,000 mm<sup>2</sup>)

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Working pressure by Rules  $18.6 \text{ kg/cm}^2$  Are the stays drilled at the outer ends ☒ NO Margin stays: Diameter { At turned off part,  $43.5 \text{ mm}$   
or Over threads  $47.6 \text{ mm}$   
No. of threads per inch 9 Area supported by each stay  $71,000 \text{ mm}^2$  Working pressure by Rules  $13.6 \text{ kg/cm}^2$   
Tubes: Material S.M. Steel External diameter { Plain  $83 \text{ mm}$   
Stay  $83 \text{ mm}$  Thickness {  $4 \text{ mm}$   
 $8.5 + 10 \text{ mm}$  No. of threads per inch 9  
Pitch of tubes  $110 \text{ mm}$  Working pressure by Rules  $16 \text{ kg/cm}^2$  Manhole compensation: Size of opening in  
shell plate  $300 \times 400 \text{ mm}$  Section of compensating ring  $250 \times 27 \text{ mm}$  No. of rivets and diameter of rivet holes  $40 \times 32 \text{ mm}$   
Outer row rivet pitch at ends  $93 \text{ mm}$  Depth of flange if manhole flanged ☒ X Steam Dome: Material ☒ X  
Tensile strength ☒ X Thickness of shell ☒ X Description of longitudinal joint ☒ X  
Diameter of rivet holes ☒ X Pitch of rivets ☒ X Percentage of strength of joint { Plate ☒ X  
Rivets ☒ X  
Internal diameter ☒ X Working pressure by Rules ☒ X Thickness of crown ☒ X No. and diameter of  
stays ☒ X Inner radius of crown ☒ X Working pressure by Rules ☒ X  
How connected to shell ☒ X Size of doubling plate under dome ☒ X Diameter of rivet holes and pitch  
of rivets in outer row in dome connection to shell ☒ X

Type of Superheater *Schmidt'sche Heissdampf-Ges.* Manufacturers of { Tubes *Metallwerke Obligs G.m.B.H., Obligs.*  
Steel castings *Norddeutsche Stahlwerke, Neumünster.*  
Number of elements  $190$ , each  $600 \text{ mm}$  Material of tubes *Siem. Mart. Steel* Internal diameter and thickness of tubes  $16 \text{ mm} - 2.5 \text{ mm}$   
Material of headers *cast steel* Tensile strength  $41-53 \text{ kg/cm}^2$  Thickness  $25 + 35 \text{ mm}$  Can the superheater be shut off and  
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  
Area of each safety valve  $3848 \text{ mm}^2$  Are the safety valves fitted with easing gear ☒ yes Working pressure as per  
Rules *as approved* Pressure to which the safety valves are adjusted  $199 \text{ lbs}$  Hydraulic test pressure:  
tubes  $10\%$  to  $100 \text{ kg/cm}^2$ , castings  $50 \text{ kg/cm}^2$  and after assembly in place  $50 \text{ kg/cm}^2$  Are drain cocks or 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

*Lübecker  
Maschinenbau-Gesellschaft  
Fischer & H. Panning*

The foregoing is a correct description,

Manufacturer.

Dates of Survey { During progress of work in shops - - -  $3/2/29, 18/3/29, 1/4, 15/4, 29/4, 6/5, 29/5, 27/5, 14/6$   
while building { During erection on board vessel - - -  $23/6, 1/7, 15/7, 29/7, 31/7/30$  Are the approved plans of boiler and superheater forwarded herewith ☒ 28/11/29 Boil.  
28/11/29 Sup.  
(If not state date of approval.)  
Total No. of visits  $14$

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

Material and workmanship of Boilers and Superheaters are of good quality. The material used in the construction is made at works recognized by the Committee and tested by the Society's Surveyors in conformity with the requirements of the Rules. Boilers and Superheaters were found to be tight and sound when tested to hydraulic pressure of  $350 \text{ lbs}$  and  $210 \text{ lbs}$  ( $50 \text{ kg/cm}^2$ ) resp.

Thickness of adjusting washers:-	port	starb.
Port Boiler	$17.-$	$16.5 \text{ mm}$
Starb. Boiler	$18.-$	$18.-$

These Boilers are eligible in my opinion to be classed in the Society's Reg. Book with notation of " $199 \text{ lbs}$ ."

The approved plans will be transmitted after completion of the sister vessel "*SCHIFFBEK*" + manhole ring.

*Conclusion*

Survey Fee *See Machinery Report* When applied for, 192  
Travelling Expenses (if any) £ When received, 192

*J. A. B. Smith*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. 3 SEP 1929*

Assigned *See F.E. Rpt.  
on Machinery*