

# REPORT ON BOILERS.

No. 21702

Received at London Office 18 NOV 1935

Writing Report 10<sup>th</sup> November 35 When handed in at Local Office 19 Port of Hamburg  
 Survey held at Hamburg Date, First Survey 20<sup>th</sup> April 35 Last Survey 30<sup>th</sup> Oct. 1935  
 on the Steel Single Screw Oil Tanker "Marina" (Number of Visits 12) Gross 9898 Tons Net 5903  
 Built at Hamburg By whom built Deutsche Werft. A.G. Yard No. 161 When built 1935  
 No. and dia. of rivet holes made at Berlin By whom made A.E.G. Turbinenfabrik Engine No. 226 When made 1935  
 made at Hamburg By whom made Deutsche Werft. A.G. Boiler No. 506 When made 1935  
 al Horse Power 1167 Owners Thorvald Berg Port belonging to Tönsberg.

## LTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY. Boilers.

Manufacturers of Steel Gute Hoffnungshütte, Oberhausen (Letter for Record S)  
 Heating Surface of Boilers 145 m<sup>2</sup> each Is forced draught fitted ✓ Coal or Oil fired oil fired.  
 and Description of Boilers 2, two furnace single ended mult. tubular Donkey Boiler Working Pressure 12 Kg/cm<sup>2</sup>  
 by hydraulic pressure to 21.5 Kg/cm<sup>2</sup> Date of test 24-6-1935 No. of Certificate 586/87 Can each boiler be worked separately yes  
 of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler each two spring loaded safety valves  
 of each set of valves per boiler { per Rule 6790 mm<sup>2</sup> as fitted 6800 Pressure to which they are adjusted 12 Kg/cm<sup>2</sup> Are they fitted with easing gear yes  
 description, use of donkey boilers, state whether steam from main boilers can enter the donkey boiler ✓  
 Manuf. test distance between boilers or uptakes and bunkers or woodwork 756 mm Is oil fuel carried in the double bottom under boilers two decks  
 test distance between shell of boiler and tank top plating 450 mm Is the bottom of the boiler insulated yes.  
 herewith 2/4 test internal dia. of boilers 3400 mm Length 3294 mm Shell plates: Material S.M. Steel Tensile strength 47/53 Kg/mm<sup>2</sup>  
 thickness 22 mm Are the shell plates welded or flanged double butt strapped Description of riveting: circ. seams { end 2 row; 214-229 inter. ✓  
 seams double butt strapped Diameter of rivet holes in { circ. seams 29 mm long. seams 26 mm Pitch of rivets { 96 mm 171 mm.  
 percentage of strength of circ. end seams { plate 69.8 % rivets 55.0 % Percentage of strength of circ. intermediate seam { plate 84.8 % rivets 101.3 %  
 percentage of strength of longitudinal joint { plate 89.8 % rivets 89.8 % Working pressure of shell by Rules 12.9 Kg/cm<sup>2</sup>  
 thickness of butt straps { outer 22 mm inner 22 mm No. and Description of Furnaces in each Boiler each boiler 2 Morrison furnaces  
 Material S.M. Steel Tensile strength 41/47 Kg/mm<sup>2</sup> Smallest outside diameter 1026 mm  
 length of plain part { top 316 mm bottom 316 mm Thickness of plates { crown 12 mm bottom 12 mm Description of longitudinal joint water gas welded  
 dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 11.8 Kg/cm<sup>2</sup>  
 d plates in steam space: Material S.M. Steel Tensile strength 41/47 Kg/mm<sup>2</sup> Thickness 22 mm Pitch of stays 390 x 380 mm  
 how are stays secured stiffening washers inside, reversed, washers and nuts in and outside Working pressure by Rules 15 Kg/cm<sup>2</sup>  
 be plates: Material { front S.M. Steel back S.M. Steel Tensile strength { 41/47 Kg/mm<sup>2</sup> Thickness { 22 mm.  
 an pitch of stay tubes in nests 208 x 312 mm Pitch across wide water spaces 360 mm Working pressure { front 12.9 Kg/cm<sup>2</sup> back 19.2 " "  
 orders to combustion chamber tops: Material S.M. Steel Tensile strength 47/53 Kg/mm<sup>2</sup> Depth and thickness of girder  
 centre 180 + 2 x 74 mm Length as per Rule 609 mm Distance apart 220 mm No. and pitch of stays  
 each 2, 180 x 220 Working pressure by Rules 14 Kg/cm<sup>2</sup> Combustion chamber plates: Material S.M. Steel  
 tensile strength 41/47 Kg/mm<sup>2</sup> Thickness: Sides 16 mm Back 19 mm Top 16 mm Bottom 22 mm  
 pitch of stays to ditto: Sides 190 x 200 mm Back 190 x 210 mm Top 220 x 180 mm Are stays fitted with nuts or riveted over margin stays, reversed with nuts + washers  
 Working pressure by Rules 16.4, 14.8, 15.4 Kg/cm<sup>2</sup> Front plate at bottom: Material S.M. Steel Tensile strength 41/47 Kg/mm<sup>2</sup> Thickness 22 mm  
 thickness 22 mm Lower back plate: Material S.M. Steel Tensile strength 41/47 Kg/mm<sup>2</sup> Thickness 22 mm  
 pitch of stays at wide water space φ 500 mm Are stays fitted with nuts or riveted over double plate, reversed nuts + washers in + outside  
 Register of Shipping Working Pressure 13.2 Kg/cm<sup>2</sup> Main stays: Material S.M. Steel Tensile strength 41/47 Kg/mm<sup>2</sup>  
 diameter { At body of stay, 62.6 mm No. of threads per inch 6 Area supported by each stay 390 x 380 = 148200 mm<sup>2</sup>  
 Over threads 68.0 " Working pressure by Rules 14.8 Kg/cm<sup>2</sup> Screw stays: Material S.M. Steel Tensile strength 41/47 Kg/mm<sup>2</sup>  
 diameter { At turned off part, 35.4, 41.4, 47.4 mm No. of threads per inch 9 Area supported by each stay 190 x 210 = 39900 mm<sup>2</sup>  
 Over threads 39.0, 45.0, 51.0 "



Working pressure by Rules  $15 \frac{1}{2} \text{ kg/cm}^2$  Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part,  $41.4 : 41.6$  or Over threads  $45.0 : 51.0$  }  
No. of threads per inch 9 Area supported by each stay  $40000 \text{ mm}^2$  Working pressure by Rules  $21.2 + 28.5$   
Tubes: Material S.M. Steel External diameter { Plain  $76 \text{ mm}$  Stay  $76 \text{ mm}$  } Thickness {  $3.75 \text{ mm}$   $8.0 \text{ mm}$  } No. of threads per inch 9  
Pitch of tubes  $104 \times 104 \text{ mm}$  Working pressure by Rules  $13.5 + \text{over } 21 \frac{1}{2} \text{ kg/cm}^2$  Manhole compensation: Size of op shell plate  $300 \times 400 \text{ mm}$  Section of compensating ring  $25 \times 450 \text{ mm}$  No. of rivets and diameter of rivet holes  $32 : 29 \text{ mm}$   
Outer row rivet pitch at ends  $125 \text{ mm}$  Depth of flange if manhole flanged ✓ Steam Dome: Material S.M. Steel  
Tensile strength  $41/47 \text{ kg/mm}^2$  Thickness of shell  $14 \text{ mm}$  Description of longitudinal joint welded + inner butt st  
Diameter of rivet holes  $23 \text{ mm}$  Pitch of rivets  $74 \text{ mm}$  Percentage of strength of joint { Plate Rivets }  $50\%$   
Internal diameter  $800 \text{ mm}$  Working pressure by Rules  $18 \text{ kg/cm}^2$  Thickness of crown  $17 \text{ mm}$  No. and dia stays ✓ Inner radius of crown  $800 \text{ mm}$  Working pressure by Rules  $17.7 \text{ kg/cm}^2$   
How connected to shell pressed flange and riveted Size of doubling plate under dome see compensating ring Diameter of rivet holes an of rivets in outer row in dome connection to shell  $29 \text{ mm } \phi, 199 \text{ mm}$

Type of Superheater ✓ Manufacturers of { Tubes ✓ Steel castings ✓ }  
Number of elements ✓ Material of tubes ✓ Internal diameter and thickness of tubes ✓  
Material of headers ✓ Tensile strength ✓ Thickness ✓ Can the superheater be shut the boiler be worked separately ✓ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler ✓  
Area of each safety valve ✓ Are the safety valves fitted with easing gear ✓ Working pressure Rules ✓ Pressure to which the safety valves are adjusted ✓ Hydraulic test pressure tubes ✓, castings ✓ and after assembly in place ✓ Are drain cocks or valves to free the superheater from water where necessary ✓  
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with yes

The foregoing is a correct description,

16.11.35

DEUTSCHE WERFT  
AKTIENGESELLSCHAFT

Manuf

Dates of Survey { During progress of work in shops - - }  $20/11/35, 27/11/35, 15/12/35, 3/1/36, 5/1/36, 17/1/36, 24/1/36$   
while building { During erection on board vessel - - }  $3/1/36, 23/1/36, 8/2/36, 24/2/36, 30/2/36$  Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
Total No. of visits 12

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These donkey boilers have been cons  
ted under special survey in accordance with the approved plans, the Society's letters  
in conformity with the requirements of the Rules. The material used in the constr  
are made at works recognized by the Committee and tested by the Society's Surveyor  
Material and workmanship are of good quality. These Donkey Boilers are  
eligible in my opinion to be noted in the Society's Register Book with the m  
\* D.B. pressure. 170 lbs.

Port. Starb.

Thickness of washers { Port. D. Boiler:  $22.5 \text{ mm}$   $27.3 \text{ mm}$   
of the safety valves. { Starb. D. Boiler:  $28.0 \text{ mm}$   $32.0 \text{ mm}$

Survey Fee ... Rm. 410: - When applied for, 11.11.35

Travelling Expenses (if any) ... : - : - When received, 30.4.1936

W. Schneider

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute

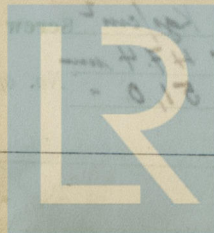
TUE. 26 NOV 1935

TUE. 18 FEB 1936

FRI. 13 MAR 1936

Assigned

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