

# REPORT ON WATER TUBE BOILERS.

No. 975.

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Port of Bremen

No. in Survey held at Bremen Date, First Survey 7th Sept. 1926 Last Survey 12th July 1927  
 g. Bk. on the STEELSC "ADRIA" (Number of Visits 60) Tons { Gross 6358  
 ster Built at Bremen By whom built Quarterm. Schiff- u. Maschinenbau A.G. Net 3637  
 gines made at Bremen By whom made " When made 1927  
 ilers made at " By whom made " When made 1926/27  
 gistered Horse Power " Owners Bremen Öl. Transport G.m.b.H. Port belonging to Bremen

**WATER TUBE BOILERS MAIN, AUXILIARY, OR DONKEY.**—Manufacturers of Steel Mannmann, Rönigk - Witten  
 d dia Matter for Record 5 Date of Approval of plan 21st May 1926 Number and Description or Type  
 Boilers 2 - Fatcoor-Willeke Working Pressure 14 kg/cm<sup>2</sup> Tested by Hydraulic Pressure to 24.5 kg/cm<sup>2</sup> Date of Test 7/4/27  
 of Certificate ✓ Can each boiler be worked separately Yes Total Heating Surface of Boilers 100 sq. meters  
 forced draught fitted ✓ Area of fire grate (coal) in each Boiler ✓ Total grate area of boilers in vessel including  
 in and Auxiliary ✓ No. and type of burners (oil) in each boiler 2 Vulkan Type No. and description of safety valves on  
 h boiler 2 spring loaded Area of each valve 2 x 5026 mm<sup>2</sup> Pressure to which they are adjusted 14 kg/cm<sup>2</sup>  
 e they fitted with easing gear Yes In case of donkey boilers state whether steam from main boilers can enter the donkey boiler No  
 allest distance between boilers or uptakes and bunkers or woodwork 560 mm. Height of Boiler 4280 mm. Width and Length 2565 x 4741 mm.  
 am Drums:—Number in each boiler 1 Inside diameter 1300 mm. Material of plates J. M. Steel Thickness 21 mm.  
 ange of Tensile Strength 44-51 kg/cm<sup>2</sup> Are drum shell plates welded or flanged No Description of riveting:—  
 seams double long. seams double Diameter of rivet holes in long. seams 23 mm. Pitch of Rivets 81 mm.  
 p of plate or width of butt straps 230 mm. Thickness of straps 18 mm. Percentage strength of long. joint:—Plate 71.6% Rivet 75.1%  
 ameter of tube holes in drum 95 mm. Pitch of tube holes 160 x 195 mm. Percentage strength of shell in way of tubes 51.4%  
 26. Drum has a flat side state method of staying ✓ Depth and thickness of girders at centre  
 fitted) ✓ Distance apart ✓ Number and pitch of stays in each ✓ Working pressure  
 rules 17.1 kg/cm<sup>2</sup> Steam Drum Heads or Ends:—Material J. M. Steel Thickness 20 x 23 mm. Radius or how stayed 1170 mm.  
 ze of Manhole or Handhole 300 x 400 mm. Water Drums:—Number in each boiler 2 Inside 170 mm.  
 aterial of plates J. M. Steel Thickness 19 x 22 mm. Range of tensile strength 41-48 kg/cm<sup>2</sup> Are drum shell plates welded  
 flanged Yes Description of riveting:—Cir. seams single long. seams ✓ Diameter of Rivet Holes in  
 g. seams 26 mm. Pitch of rivets 70 mm. Lap of plates or width of butt straps ✓ Thickness of straps ✓  
 rcentage strength of long. joint:—Plate ✓ Rivet ✓ Diameter of tube holes in 98 x 95 mm. Pitch of tube holes 160 x 140 mm.  
 rcentage strength of drum shell in way of tubes 51.4% Water Drum Heads or Ends:—Material ✓ Thickness ✓  
 dius or how stayed ✓ Size of manhole or handhole ✓ Headers or Sections:—Number ✓  
 aterial ✓ Thickness ✓ Tested by Hydraulic Pressure to ✓ Material of Stays ✓  
 ea at smallest part ✓ Area supported by each stay ✓ Working Pressure by Rules ✓ Tubes:—Diameter ✓  
 ickness ✓ Number ✓ Steam Dome or Collector:—Description of Joint to Shell ✓  
 rcentage strength of Joint ✓ Diameter ✓ Thickness of shell plates ✓ Material ✓  
 scription of longitudinal joint ✓ Diameter of Rivet Holes ✓ Pitch of Rivets ✓ Working Pressure of shell  
 Rules ✓ Crown or End Plates:—Material ✓ Thickness ✓ How stayed ✓

**SUPERHEATER.** Type ✓ Date of Approval of Plan ✓ Tested by Hydraulic Pressure to ✓  
 te of Test ✓ Is a safety valve fitted to each section of the superheater which can be shut off from the Boiler ✓  
 ameter of Safety Valve ✓ Pressure to which each is adjusted ✓ Is easing gear fitted ✓  
 a-drain cock or valve fitted at lowest point of superheater ✓ Number, diameter, and thickness of tubes ✓  
 are Gear. Tubes ✓ Gaskets or joints:—Manhole ✓ Handhole ✓ Handhole plates ✓

The foregoing is a correct description,  
Deutsche Schiff- und Maschinenbau A.G. Manufacturer.  
 approved 21/5/26.  
 Dates { During progress of 1926: - 7/9, 11/10, 22/11; 1927: - 5/2, 2+28/37/4 Is the approved plan of boiler forwarded herewith ✓  
 Survey work in shops - - -  
 while During erection on 1927: - 28/6, 4 x 12/7. Total No. of visits 10  
 ilding board vessel - - -

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed  
under Special Survey in accordance with the approved plan and instructions and in conformity  
with the Rules. The material used in the construction and the workmanship are good. They  
are eligible in my opinion to be classed in the Register Book with record of 199 lbs.  
Thickness of adjusting washers of safety valves: Starboard 26 mm. Port boiler 25.4 mm. Starboard 26 mm.  
Starboard " " 25.4 " " 23 "

Survey Fee ... £ 8 : 8 : } When applied for, 19.7. 1927  
 Travelling Expenses (if any) £ : : } When received, 1.9. 1927  
G. H. C. Ham  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 29 JUL 1927  
 signed See 28 apt attached  
 007412 - 007421 - 0103