

# REPORT ON BOILERS.

No. 22443

Received at London Office

HAMBURG

Date of writing Report 22.7.37 19 When handed in at Local Office 19 Port of

No. in Survey held at Date, First Survey 16.10.36 Last Survey 9.7.37 19

045 on the Steel "Coimbra" (Number of Visits 25) Tons Gross 4768 Net 3976

Built at Kiel By whom built Howaldtswerke A.G. Yard No. 786 When built 1937

Engines made at Berlin-Tege By whom made Rheinmetall-Borsig A.G. Engine No. 8177 When made 1937

Boilers made at Kiel By whom made Howaldtswerke A.G. Boiler No. 15267 When made 1937

Minimal Horse Power 650 Owners Standard Transportation Co, Hongkong Port belonging to London

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY

Manufacturers of Steel Mannesmannröhren-Werke A.G. Alt. Heymich-Bierums-Hütte (Letter for Record S ✓)

Total Heating Surface of Boilers  $3 \times 260 = 780 m^2$  83934 Is forced draught fitted yes ✓ Coal or Oil fired oil ✓

and Description of Boilers 3 Scotch Marine Boilers 3 SB Working Pressure 228.15 ✓

Tested by hydraulic pressure to 392.15 ✓ Date of test 22.7.37 No. of Certificates 650-1-2 Can each boiler be worked separately yes ✓

Area of Firegrate in each Boiler oil fired ✓ No. and Description of safety valves to each boiler 1, 2 springs loaded ✓

Area of each set of valves per boiler { per Rule 9280  $mm^2$  as fitted 15396  $mm^2$  } Pressure to which they are adjusted 228.15 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 ✓ Is oil fuel carried in the double bottom under boilers no ✓

Smallest distance between shell of boiler and tank top plating 600  $mm$  ✓ Is the bottom of the boiler insulated yes ✓

Largest internal dia. of boilers 4700  $mm$  Length 3620  $mm$  ✓ Shell plates: Material O.H. Steel Tensile strength  $47 \div 52 kg/mm^2$  ✓

Thickness 38  $mm$  ✓ Are the shell plates welded or flanged flanged ✓ Description of riveting: circ. seams { end D.R. inter. ✓

g. seams double butt straps ✓ Diameter of rivet holes in { circ. seams 37.5  $mm$  long. seams 37.5  $mm$  } Pitch of rivets { 99.9  $mm$  241  $mm$  } ✓

Percentage of strength of circ. end seams { plate 63.4 rivets 42.2 } Percentage of strength of circ. intermediate seam { plate rivets } ✓

Percentage of strength of longitudinal joint { plate 84.4 rivets 86.6 combined 150.2 } Working pressure of shell by Rules 15.92  $kg/mm^2$  ✓

Thickness of butt straps { outer 34  $mm$  inner 32  $mm$  } No. and Description of Furnaces in each Boiler 3 Morrison 394 ✓

Material O.H. Steel Tensile strength  $41 \div 47 kg/mm^2$  ✓ Smallest outside diameter 1188.8  $mm$  ✓

Length of plain part { top 285  $mm$  bottom ✓ } Thickness of plates { crown 19.4  $mm$  bottom 19.4  $mm$  } Description of longitudinal joint Lap welded, water gas. ✓

Dimensions of stiffening rings on furnace or c.c. bottom none ✓ Working pressure of furnace by Rules 16.9  $kg/mm^2$  ✓

1 plates in steam space: Material O.H. Steel Tensile strength  $41 \div 47 kg/mm^2$  Thickness 30  $mm$  ✓ Pitch of stays 450  $\times$  405  $mm$  ✓

Are stays secured screwed through plates, nuts in and outside Working pressure by Rules 16.08  $kg/mm^2$  ✓

Front plates: Material { front O.H. Steel back O.H. Steel } Tensile strength { 41-47  $kg/mm^2$  41-47  $kg/mm^2$  } Thickness { 29  $mm$  24  $mm$  } ✓

on pitch of stay tubes in nests 330  $\times$  220  $mm$  Pitch across wide water spaces 365  $mm$  ✓ Working pressure { front 16.38  $kg/mm^2$  back 19.48 " } ✓

Boilers to combustion chamber tops: Material O.H. Steel Tensile strength  $41 \div 47 kg/mm^2$  ✓ Depth and thickness of girder

centre 220, 2  $\times$  25  $mm$  ✓ Length as per Rule 770  $mm$  ✓ Distance apart max. 210  $mm$  ✓ No. and pitch of stays

each 3, 200  $mm$  ✓ Working pressure by Rules 20.5  $kg/mm^2$  ✓ Combustion chamber plates: Material O.H. Steel

Tensile strength  $41 \div 47 kg/mm^2$  Thickness: Sides 18  $mm$  ✓ Back 18  $mm$  ✓ Top 18  $mm$  ✓ Bottom 25  $mm$  ✓

h of stays to ditto: Sides 200  $mm \times$  200  $mm$  Back 192.5  $\times$  220  $mm$  Top 200  $\times$  210  $mm$  Are stays fitted with nuts or riveted over with nuts

Working pressure by Rules 19.85, 18.85, 19.14  $kg/mm^2$  ✓ Front plate at bottom: Material O.H. Steel Tensile strength  $41 \div 47 kg/mm^2$  ✓

Thickness 29  $mm$  ✓ Lower back plate: Material O.H. Steel Tensile strength  $41 \div 47 kg/mm^2$  ✓ Thickness 23.5  $mm$  ✓

h of stays at wide water space  $A = 440 mm$  ✓ Are stays fitted with nuts or riveted over with nuts & double plate, 22  $mm$

Working Pressure 29.2  $kg/mm^2$  ✓ Main stays: Material O.H. Steel Tensile strength  $41 \div 47 kg/mm^2$  ✓

meter { At body of stay, 80  $mm$  No. of threads per inch 6 Area supported by each stay 450  $\times$  405 = 182250  $mm^2$  ✓

Over threads 74.6  $mm$  ✓ Working pressure by Rules 17.45  $kg/mm^2$  ✓ Screw stays: Material O.H. Steel Tensile strength  $41 \div 47 kg/mm^2$  ✓

meter { At turned off part, 28.4  $mm$  17.45  $kg/mm^2$  No. of threads per inch 9 Area supported by each stay 192.5  $\times$  220 = 42350  $mm^2$  ✓

Over threads 42  $mm$  ✓



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Working pressure by Rules 16.26 lb Are the stays drilled at the outer ends yes Margin stays: Diameter { At turned off part, 50.38 44.38 mm  
Over threads 54.- 48.- mm  
No. of threads per inch 9 Area supported by each stay 73312 60800 mm<sup>2</sup> Working pressure by Rules 18.1 16.2 lb/cm<sup>2</sup>  
Tubes: Material O.H. Steel External diameter { Plain 83 mm  
Stay 83 mm Thickness { 4.- mm  
10.- 8.5 mm No. of threads per inch 9  
Pitch of tubes 110 \* 110 mm Working pressure by Rules 16 lb/cm<sup>2</sup> Manhole compensation: Size of opening in  
shell plate 600 \* 450 mm Section of compensating ring 220 \* 1020 \* 40 mm No. of rivets and diameter of rivet holes 48 \* 35 mm  
Outer row rivet pitch at ends 226 mm Depth of flange if manhole flanged 105 mm Steam Dome: Material none  
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 of  
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'sche Heißdampf-Gr. Manufacturers of \_\_\_\_\_

Number of elements 60 Material of tubes O.H. Steel Tubes DESCHIMAG, Werk Seebeck, Hesevünde  
Material of headers Cast Steel Tensile strength 44-50 lb/mm<sup>2</sup> Steel forgings ---  
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 Steel castings Nordische Stahlwerke, Bach & Co, Nümmenster  
Area of each safety valve 12.57 mm<sup>2</sup> Are the safety valves fitted with easing gear yes Working pressure as per  
Rules 5-120 HP = 99 lb/cm<sup>2</sup> Pressure to which the safety valves are adjusted 228 lb Hydraulic test pressure:  
tubes 10% with 200 lb/cm<sup>2</sup> forgings and castings 50 lb/cm<sup>2</sup> and after assembly in place 50 lb/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 22 inclusive for boilers been complied with yes

The foregoing is a correct description,

Howaldtswerke A.-G.

Dates of Survey { 1936  
During progress of work in shops - - { Oct. 14, 23, 30 Nov. 2, Dec. 11, 22, 29 1937 Jan. 8, 15, 22, 29 Feb. 4, 5, 10, 12  
while building { During erection on board vessel - - { Jan. 2, 16, 28 Feb. 5, 6, 9  
Are the approved plans of boiler and superheater forwarded herewith 12.6.36.  
(If not state date of approval.)  
Total No. of visits 25 Superheaters: 18.8.36

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.)

These Boilers are built under Special Survey in accordance with the approved plans, the Secretary's letters and the Society's Rules. The materials used in the construction and the workmanship are of good quality. These boilers have been satisfactorily fitted on board, examined under steam and their safety valves have been adjusted to a pressure of 228 lb. In my opinion these boilers are eligible for notation in the Reg. Book of

3 SB 9 of 228 lb.

Survey Fee ... See machinery When applied for, 19  
Travelling Expenses (if any) £ Report. When received, 19

P. A. Wright  
Engineer/Surveyor to Lloyd's Register of Shipping.

Committee's Minute \_\_\_\_\_

TUE. 17 AUG 1937

Assigned \_\_\_\_\_

See Ham. J.C. 22443



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