

## REPORT ON BOILERS.

No. 22444

Received at London Office

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Date of writing Report 5.8.37 19 When handed in at Local Office 19 Port of HAMBURG

No. in Reg. Book. Survey held at Kiel Date, First Survey 18.12.36 Last Survey 8.7.37 19

24576 on the Steel Steamer "Esso Bolívar" (Number of Visits 9) Gross 10389 Tons Net 6081

Master Built at Kiel By whom built Fr. Krupp Germaniawerft A.G. Yard No. 568 When built 1927

Engines made at Kiel By whom made Fried. Krupp Germaniawerft A.G. Engine No. 5523 When made 1937

Boilers made at Kiel By whom made Nitto Boiler No. 3962 When made 1937

Nominal Horse Power 912 Owners Panama Transport Co. Port belonging to Panama R.P.

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Ruhrstahl A.G. Henrichshütte of Hattingen (Letter for Record 5 ✓)

Total Heating Surface of Boilers 130 m<sup>2</sup> Is forced draught fitted no Coal or Oil fired waste heat ✓

No. and Description of Boilers 1 multitubular horizontal Waste Heat Donkey Boiler Working Pressure 200 lb. ✓

Tested by hydraulic pressure to 350 lb. Date of test 17.3.37 No. of Certificate 661 Can each boiler be worked separately no

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

Area of each set of valves per boiler {per Rule 5280 mm<sup>2</sup> as fitted 5655 mm<sup>2</sup> Pressure to which they are adjusted 200 lb. Are they fitted with easing gear yes ✓

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

Smallest distance between boilers or uptakes and bunkers or woodwork ✓ Is oil fuel carried in the double bottom under boilers 2nd deck

Smallest distance between shell of boiler and tank top plating 450 mm Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 2300 mm Length 2681 mm Shell plates: Material O.H. Steel ✓ Tensile strength 44-50 kg/cm<sup>2</sup>

Thickness 20 mm Are the shell plates welded or flanged flanged Description of riveting: circ. seams {end D.R. inter. ✓

Long. seams double 57. straps Diameter of rivet holes in {circ. seams 29. mm long. seams 29. mm Pitch of rivets {90 mm 150 mm ✓

Percentage of strength of circ. end seams {plate 67.8 rivets 43. Percentage of strength of circ. intermediate seam {plate ✓ rivets ✓

Percentage of strength of longitudinal joint {plate 81.7 rivets 148. Working pressure of shell by Rules 15-kg/cm<sup>2</sup>

Thickness of butt straps {outer 20 mm inner 20 mm No. and Description of Furnaces in each Boiler removable system of Tubes. ✓

Material O.H. Steel Tensile strength 41-47 kg/cm<sup>2</sup> ✓ Smallest outside diameter ✓

Length of plain part {top ✓ bottom ✓ Thickness of plates {crown ✓ bottom ✓ Description of longitudinal joint ✓

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules ✓

End plates in steam space: Material O.H. Steel Tensile strength 41-47 kg/cm<sup>2</sup> Thickness 28 mm Pitch of stays d = 800 mm

How are stays secured Stay tubes expanded, no nuts Working pressure by Rules as approved

Tube plates: Material {front O.H. Steel Tensile strength 41-47 kg/cm<sup>2</sup> Thickness {25 mm 25 mm ✓

Mean pitch of stay tubes in nests 130 x 150 mm Pitch across wide water spaces ✓ Working pressure {front back

Girders to combustion chamber tops: Material ✓ Tensile strength ✓ Depth and thickness of girder

at centre ✓ Length as per Rule ✓ Distance apart ✓ No. and pitch of stays

in each ✓ Working pressure by Rules ✓ Combustion chamber plates: Material ✓

Tensile strength ✓ Thickness: Sides Back Top Bottom ✓

Pitch of stays to ditto: Sides Back ✓ Top ✓ Are stays fitted with nuts or riveted over ✓

Working pressure by Rules ✓ Front plate at bottom: Material O.H. Steel Tensile strength 41-47 kg/cm<sup>2</sup> ✓Thickness 28 mm Lower back plate: Material O.H. Steel Tensile strength 41-47 kg/cm<sup>2</sup> Thickness 28 mm

Pitch of stays at wide water space ✓ Are stays fitted with nuts or riveted over

Working Pressure as approved Main stays: Material ✓ Tensile strength ✓

Diameter {At body of stay, ✓ No. of threads per inch ✓ Area supported by each stay ✓

Working pressure by Rules ✓ Screw stays: Material ✓ Tensile strength ✓

Diameter {At turned off part, ✓ No. of threads per inch ✓ Area supported by each stay ✓

Over threads ✓

Over threads ✓



Working pressure by Rules ☒ Are the stays drilled at the outer ends ☒ Margin stays: Diameter { At turned off part, ☒ or Over threads ☒ No. of threads per inch ☒ Area supported by each stay ☒ Working pressure by Rules ☒ Tubes: Material *O.H. Steel* External diameter { Plain *47.5* ☒ Stay *47.5* ☒ Thickness { *3.25* ☒ *7.* ☒ No. of threads per inch *79* Pitch of tubes *75* ☒ Working pressure by Rules *above 15 lbs* Manhole compensation: Size of opening shell plate *300 x 400* ☒ Section of compensating ring *25 x 680 x 780* ☒ No. of rivets and diameter of rivet holes *36, 29* ☒ Outer row rivet pitch at ends *126 mm* ☒ Depth of flange if manhole flanged ☒ 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 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 *Steam Drier System of coils.* ☒

Manufacturers of

Tubes *Press- und Hüttenwerk, Düsseldorf-Reisholz.*  
Steel forgings ☒  
Steel castings ☒

Number of elements *1* Material of tubes *O.H. Steel* Internal diameter and thickness of tubes *61.5 4.25* ☒ Material of headers *none* Tensile strength ☒ Thickness ☒ Can the superheater be shut off from the boiler ☒ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler ☒ Area of each safety valve *3.4* ☒ Are the safety valves fitted with easing gear ☒ Working pressure as per Rules *17.1 kg/cm<sup>2</sup>* Pressure to which the safety valves are adjusted *200 lb.* Hydraulic test pressure tubes *80 kg/cm<sup>2</sup>* forgings and castings ☒ and after assembly in place *48 kg/cm<sup>2</sup>* Are drain cocks valves fitted to free the superheater from water where necessary ☒

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

The foregoing is a correct description,

GERMANIA WERFT

Manufactured

Dates of Survey { *1936*  
During progress of work in shops - *Dec: 18 31 Jan: 5, 12, 22 Feb: 9, 15 Mar: 17*  
while building { *1936*  
During erection on board vessel - *May: 7 Jul: 8*  
Are the approved plans of boiler and superheater forwarded herewith *8.8.36*  
(If not state date of approval.)  
Total No. of visits *9*

Is this Boiler a duplicate of a previous case ☒ If so, state Vessel's name and Report No. *"Henry Dundas" Ham. Rpt. No 229*

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

*This Donkey Boiler is built under special survey in accordance with the approved plan, the Secretary's letters and the Society's Rules, as far as they are applicable. The material used in the construction and the workmanship are of good quality. It is satisfactorily fitted on board and its safety valves were adjusted to a steam pressure of 200 lb. In my opinion this donkey boiler is eligible for notation in the Register Book of 22 (four) pressure 200 lb.*

*Safety valves' numbers: Forw: 15 mm aft: 15.6 mm*

Survey Fee *Rs 188.-*

Travelling Expenses (if any) £

When applied for, *26.7.37*

When received, *27.8 1937*

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

Committee's Minute

Assigned

*See Ham. 22 224444*



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Foundation