

REPORT ON BOILERS.

No. 23097

MAR 22 1939

Received at London Office

Date of writing Report 16th March 1939 When handed in at Local Office

Port of **HAMBURG**

Survey held at **HAMBURG**

Date, First Survey 10th Novemb. 38 Last Survey 10th March 1939

on the **Prin Severn BRITANNIA**

(Number of Visits 16) Gross 9977 Tons Net 5801

Built at **HAMBURG** By whom built **Deutsche Werft A.G.** Yard No. 217 When built 1939.
 Engines made at **Augsburg** By whom made **Maschinenfabrik Augsburg-Königsberg** Engine No. 681450/460 When made 1939.
 Boilers made at **HAMBURG** By whom made **Deutsche Werft A.G.** Boiler No. 762/763 When made 1939.
 Ind nominal Horse Power 1170 Owners **The Texas Co (Norway) A/S** Port belonging to **Oslo**.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel plates: **Mannesmannröhren-Werke Akt. Heinrich Priesner-Hütte of Gladbach** (Letter for Record S)
 Heating Surface of Boilers each boiler 200 sq. metres Is forced draught fitted **yes** Coal or Oil fired **oil fired**
 and Description of Boilers **two single ended multitubular donkey boilers** Working Pressure **12 kg/cm²**
 Tested by hydraulic pressure to **307 lbs** Date of test **23.12.38** No. of Certificate **721, 722** Can each boiler be worked separately **yes**
 Area of Firegrate in each Boiler **-** No. and Description of safety valves to each boiler **two spring loaded safety valves**
 Area of each set of valves per boiler {per Rule 9333 mm² as fitted 11349 mm²} Pressure to which they are adjusted **12 kg/cm²** 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 **460 mm** Is oil fuel carried in the **bunkers** **double bottom** under boilers **yes**
 Smallest distance between shell of boiler and tank top plating **460 mm** Is the bottom of the boiler insulated **yes**
 Largest internal dia. of boilers **4100 mm** Length **2300 mm** Shell plates: Material **S-M-Steel** Tensile strength **47-53 kg/mm²**
 Thickness **25.5 mm** Are the shell plates welded or flanged **flanged, double butt** Description of riveting: circ. seams {end double row zig-zag. inter.} **92.7 mm**
 25.5 mm Are the shell plates welded or flanged **flanged, double butt** Description of riveting: circ. seams {circ. seams 29 mm long. seams 29 mm} Pitch of rivets **185 mm**
 Percentage of strength of circ. end seams {plate 68.7% rivets 42.8%} Percentage of strength of circ. intermediate seam {plate 84.3% rivets 100.5% combined 88.75%}
 Percentage of strength of longitudinal joint {plate 84.3% rivets 100.5% combined 88.75%} Working pressure of shell by Rules **12.03 kg/cm²**
 Thickness of butt straps {outer 25.5 mm inner 25.5 mm} No. and Description of Furnaces in each Boiler **three corrugated furnaces (Morison type)**
 Material **S-M-Steel** Tensile strength **41-47 kg/mm²** Smallest outside diameter **974 mm**
 Length of plain part {top 150 mm bottom 250 mm} Thickness of plates {top 12 mm bottom 12 mm} Description of longitudinal joint **water gas lap welded**
 Dimensions of stiffening rings on furnace or c.c. bottom **-** Working pressure of furnace by Rules **12.4 kg/cm²**
 Plates in steam space: Material **S-M-Steel** Tensile strength **41-47 kg/mm²** Thickness **24 mm** Pitch of stays **460 x 400 mm**
 How are stays secured **washers & strips riveted to shell, nuts inside & outside** Working pressure by Rules **12.3 kg/cm²**
 Front plates: Material {front **S-M-Steel** back **S-M-Steel**} Tensile strength {front **41-47 kg/mm²** back **41-47 kg/mm²**} Thickness {front **24 mm** back **22 mm**}
 Can pitch of stay tubes in nests **208 x 208 mm** Pitch across wide water spaces **360 mm** Working pressure {front **13.5 kg/cm²** back **14.16 kg/cm²**}
 Girders to combustion chamber tops: Material **S-M-Steel** Tensile strength **47-53 kg/mm²** Depth and thickness of girder
 centre **200 mm - 2x12 mm** Length as per Rule **709 mm** Distance apart **200 mm** No. and pitch of stays
 each two **- 210 mm** Working pressure by Rules **12 kg/cm²** Combustion chamber plates: Material **S-M-Steel**
 Tensile strength **41-47 kg/mm²** Thickness: Sides **16.5 mm** Back **19 mm** Top **16.5 mm** Bottom **24 mm**
 Pitch of stays to ditto: Sides **200 x 210 mm** Back **200 x 208 mm** Top **210 x 200 mm** Are stays fitted with nuts or riveted over **margin stays with nuts**
 Working pressure by Rules **13.6 kg/cm²** Front plate at bottom: Material **S-M-Steel** Tensile strength **41-47 kg/mm²**
 Thickness **24 mm** Lower back plate: Material **S-M-Steel** Tensile strength **41-47 kg/mm²** Thickness **24 mm**
 Pitch of stays at wide water space **main stay, pitch diam 514 mm** Are stays fitted with nuts or riveted over **double plates riveted to end plates**
 Working Pressure **14.6 kg/cm²** Main stays: Material **S-M-Steel** Tensile strength **41-47 kg/mm²**
 Diameter {At body of stay, **66.58 mm** or **72.0 mm** over threads} No. of threads per inch **6** Area supported by each stay **460 x 400 = 184000 mm²**
 Working pressure by Rules **13.6 kg/cm²** Screw stays: Material **S-M-Steel** Tensile strength **41-47 kg/mm²**
 Diameter {At turned off part, **35.38 mm** or **39 mm** over threads} No. of threads per inch **9** Area supported by each stay **200 x 208 = 41600 mm²**

Working pressure by Rules 14.4 kg/cm^2 Are the stays drilled at the outer ends ☒ Margin stays: Diameter { At turned off part, 38.38 - 47.
or 42.0 51.
Over threads. }
No. of threads per inch 9 Area supported by each stay $284 \times 370 = 56800 \text{ mm}^2$ Working pressure by Rules 12.65 kg/cm^2
Tubes: Material S-M-Steel External diameter { Plain 76 mm Thickness 3.75 mm No. of threads per inch 9
Stay 76 mm }
Pitch of tubes 104×104 Working pressure by Rules 14.5 kg/cm^2 / Working stress of stay tubes 4.17 kg/cm^2 Manhole compensation: Size of opening
shell plate 320×425 Section of compensating ring 4 (212.5×25.5) No. of rivets and diameter of rivet holes 27 - 29 mm
Outer row rivet pitch at ends ~ 175 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 mm Description of longitudinal joint oxy-acetylene welded & secured by
Diameter of rivet holes 26 mm Pitch of rivets 84 mm Percentage of strength of joint { Plates } welding 60%
Rivets }
Internal diameter 900 mm Working pressure by Rules 14.6 kg/cm^2 Thickness of crown 16 mm No. and diameter
stays - Inner radius of crown 720 mm Working pressure by Rules 14.85 kg/cm^2
How connected to shell pressed flange riveted to shell Size of doubling plate under dome - Diameter of rivet holes and
of rivets in outer row in dome connection to shell 29 mm ϕ - 200 mm

Type of Superheater _____ Manufacturers of { Tubes
Steel forgings
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 off
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 at _____
Rules _____ Pressure to which the safety valves are adjusted _____ Hydraulic test pressure _____
tubes _____ forgings and castings _____ and after assembly in place _____ 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 ☒ yes

The foregoing is a correct description,

17.3.1939

Manufact

Dates of Survey { During progress of work in shops - - 1938. Jan. 1st to 10th, 12th, 21st, 24th
while building { During erection on board vessel - - 1939. Jan. 4, 7, Febr. 24, March 10
Are the approved plans of boiler and superheater forwarded herewith 14.5
(If not state date of approval.)
Total No. of visits 16

Is this Boiler a duplicate of a previous case ☒ yes If so, state Vessel's name and Report No. NUEVA GRANADA Hamburg Report No. 22304
GERMANIA. 2305

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) Material and workmanship of these
donkey boilers are of good quality.

The materials used in the constructions are made at Works recognized by the Committee
and tested by the Society's Surveyors in accordance with the requirements of the Rules.

These donkey boilers having been made under Special Survey in conformity with
the approved plan, the Secretary's letter and otherwise in compliance with the requirements
of the Rules are eligible in my opinion to be classed with notation in the Register.

Two Donkey Boilers - 171 lbs/sq. inch pressure.

Thickness of safety valves' adjusting washers: Port boiler = port 16.9 mm starbd 20.8 mm

Starbd boiler = port 17.9 mm starbd. 22.8 mm

Survey Fee £ 22 No: 537: - When applied for, 17.3 1939.

Travelling Expenses (if any) £ : See: when received, 19

H. Röhrs

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute

FRI 31 MAR 1939

Assigned

See F.E. machy
rpt



© 2021

Lloyd's Register
Foundation