

REPORT ON BOILERS.

No. 9720

26 SEP 1935

Received at London Office

Date of writing Report

21 September 1935

When handed in at Local Office

193

Port of Copenhagen

No. in Survey held at

Reg. Book.

Date, First Survey

4th May

Last Survey

11th September 1932

39855 on the

Steel Single Screw Steamer RAGNA GORTHON

(Number of Visits

16)

Gross 1848.06

Net 1551.82

Master

Built at

Nalborg

By whom built

Nalborg Maskin-
byggeri

Yard No. 53

When built 1935-9

Engines made at

Chinon

By whom made

Helsingør Jensen & Møllerbyggeri

Engine No. 310

When made 1935

Boilers made at

Nalborg

By whom made

Nalborg Maskin-
byggeri

Boiler No. 162

When made 1935

Nominal Horse Power for Sea 230.5

Owners

John Gorthon

Port belonging to

Helsingborg

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

PLATES—FURNACES—STAYS—SCREW STAYS: Wilkowitz Mines Steel Ironworks Corp. of Monrovia
 Manufacturers of Steel TUBES: Harwick & Lloyd's Ltd. Tullarn. RIVETS: Vagle Rølle & Møllerfabr. (Letter for Record 5. ✓)

Total Heating Surface of Boilers $2 \times 160.6 \text{ m}^2 = 321.2 \text{ m}^2$ Is forced draught fitted yes Coal or Oil fired Coal
 Working Pressure $220 \text{ lb}/\text{sq. in.}$

No. and Description of Boilers 2 off single ended return multitubular Tested by hydraulic pressure to $380 \text{ lb}/\text{sq. in.}$ Date of test 14.8.1935 No. of Certificate 573 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 3.92 m^2 No. and Description of safety valves to each boiler 2 off directly spring loaded

Area of each set of valves per boiler 10.80 as fitted 14.20 Pressure to which they are adjusted 220 lb}/\text{sq. in.} Are they fitted with easing gear yes

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

Smallest distance between boilers or uptakes and bunkers or woodwork 15" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 14" Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 3970 1/4" Length 3580 1/4" Shell plates: Material Siemens M. Steel Tensile strength 49.3-53.7 kg/cm²

Thickness 31 1/4" Are the shell plates welded or flanged No Description of riveting: circ. seams double butt strap

long. seams double butt strap Diameter of rivet holes in circ. seams 33 1/4" Pitch of rivets 104 1/4"

Percentage of strength of circ. end seams plate 68.27 rivets 43.4 Percentage of strength of circ. intermediate seam plate 85.4 rivets 85.85

Percentage of strength of longitudinal joint plate 85.4 rivets 85.85 combined 87.9 Working pressure of shell by Rules 15.81 kg/cm² = 224.8 lb}/\text{sq. in.}

Thickness of butt straps outer 23 1/4" inner 26.5 1/4" No. and Description of Furnaces in each Boiler 3 off Monrovia corrugated section

Material Siemens M. Steel Tensile strength 41.8-42.7 kg/cm² Smallest outside diameter 932 1/4"

Length of plain part top 16 1/4" bottom 16 1/4" Description of longitudinal joint double butt strap

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 17.6 kg/cm² = 249.3 lb}/\text{sq. in.}

End plates in steam space: Material Siemens M. Steel Tensile strength 42.3-42.4 kg/cm² Thickness 29 1/4" Pitch of stays 500 x 370 1/4"

How are stays secured Screwed into both plates, nuts inside, washers outside Working pressure by Rules 16.54 kg/cm²

Tube plates: Material front Siemens M. Steel back Siemens M. Steel Tensile strength 42.3-42.7 kg/cm² Thickness 24 1/4"

Mean pitch of stay tubes in nests 236 1/4" Pitch across wide water spaces 364 1/4" Working pressure front 16.9 kg/cm² back 26.5 kg/cm²

Girders to combustion chamber tops: Material Siemens M. Steel Tensile strength 49.7-51.4 kg/cm² Depth and thickness of girder 155 1/4"

at centre 225 1/4" x 20 1/4" x 40 1/4" Length as per Rule 650 1/4" Distance apart 200-225 1/4" No. and pitch of stays 200-225 1/4"

in each 2 off - 210 1/4" Working pressure by Rules 26.2 kg/cm² Combustion chamber plates: Material Siemens M. Steel

Tensile strength 41.7-43.5 kg/cm² Thickness: Sides 18 1/4" Back 18 1/4" Top 18 1/4" Bottom 20 1/4"

Pitch of stays to ditto: Sides 230 1/4" x 190 1/4" Back 200 1/4" x 190 1/4" Top 210 1/4" x 225 1/4" Are stays fitted with nuts or riveted over remaining rivets

Working pressure by Rules 16.86 kg/cm² Top 16.86 kg/cm² Bottom 20.9 kg/cm² Front plate at bottom: Material Siemens M. Steel Tensile strength 42.3-42.7 kg/cm²

Thickness 26 1/4" Lower back plate: Material Siemens M. Steel Tensile strength 42.2-45.3 kg/cm² Thickness 28 1/4"

Pitch of stays at wide water space a = 500 1/4" Are stays fitted with nuts or riveted over outside

Working Pressure 24.0 kg/cm² Main stays: Material Siemens M. Steel Tensile strength 41-47 kg/cm²

Diameter At body of stay, 75 1/4" Over threads 3 1/4"-3" No. of threads per inch 9 Area supported by each stay 18500 1/4"

Working pressure by Rules 16.7 kg/cm² Top 16.7 kg/cm² Bottom 26.0 kg/cm² Screw stays: Material Siemens M. Steel Tensile strength 41-47 kg/cm²

Diameter At turned off part, 1 1/2" Over threads 1 1/4" No. of threads per inch 9 Area supported by each stay 38000 1/4"

Working pressure by Rules 18.9 kg/cm^2 8 atm 18.0 Are the stays drilled at the outer ends *No* Margin stays: Diameter $1\frac{1}{8}$ Corner $2\frac{1}{8}$
 No. of threads per inch *9* Area supported by each stay $53580 \frac{1}{4}$ Working pressure by Rules 20.9 kg/cm^2
 Tubes: Material *Steel* External diameter $89 \frac{1}{4}$ Thickness $4 \frac{1}{4}$ No. of threads per inch *9*
 Pitch of tubes $118 \frac{1}{4} \times 118 \frac{1}{4}$ Working pressure by Rules 15 kg/cm^2 Manhole compensation: Size of opening in
 shell plate $550 \frac{1}{4} \times 450 \frac{1}{4}$ Section of compensating ring *Flanged 902 x 1002 x 31* No. of rivets and diameter of rivet holes $60 \text{ of } 31 \frac{1}{4}$
 Outer row rivet pitch at ends $220 \frac{1}{4}$ Depth of flange if manhole flanged $26 \frac{1}{4}$ Steam Dome: Material *✓*
 Tensile strength *✓* Thickness of shell *✓* Description of longitudinal joint *✓*
 Diameter of rivet holes *✓* Pitch of rivets *✓* Percentage of strength of joint *✓*
 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's patent* Manufacturers of Tubes *Mitteldeutsche Stahlwerke 7/8 Lauchhammer*
 Number of elements *per boiler 48* Material of tubes *solid drawn Siemens 4. Steel* Internal diameter and thickness of tubes $18 \frac{1}{4} \times 3 \frac{1}{4}$
 Material of headers *Cast steel* Tensile strength 30.7 Tons/in^2 Thickness $25 \frac{1}{4} \times 35 \frac{1}{4}$ Can the superheater be shut off and
 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*
 Area of each safety valve $1257 \frac{1}{4} \text{ in}^2$ Are the safety valves fitted with easing gear *yes* Working pressure as per
 Rules 321 kg/cm^2 Pressure to which the safety valves are adjusted 220 lb/in^2 Hydraulic test pressure:
 tubes 1000 lb/in^2 castings 660 lb/in^2 and after assembly in place 660 lb/in^2 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,
 A. HALBORG, MANAGER OF SKIBSBYGGERI, Manufacturer.

Dates of Survey: During progress of work in shops - $1935 \frac{4}{5} - \frac{2}{5} - \frac{3}{6} - \frac{20}{6} - \frac{28}{6} - \frac{2}{7} - \frac{7}{7}$ Are the approved plans of boiler and superheater forwarded herewith
 while building: During erection on board vessel - $16/7 - 19/7 - 26/7 - 14/8$ (If not state date of approval.)
 board vessel - $14/8 - 17/8 - 28/8 - 3/9 - 10/9 - 11/9$ Total No. of visits *16*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boiler and superheater
 have been built under Special Survey, in accordance with the
 requirements of the Rules, the approved plans and the Secretary's
 letters E dated 9/4 and 30/8-1935.
 The material has been tested as required by the Rules as per
 certificates produced and the workmanship is good.
 The boiler and superheater have been installed on board to our
 satisfaction.
 Two simplex feed pumps $200 \frac{1}{4} \times 150 \frac{1}{4} \times 375 \frac{1}{4}$ and one $50 \frac{1}{4}$ feed
 injector have been installed.

Survey Fee ... $\text{£} 516.32$

Travelling Expenses (if any) £ :

When applied for, $25.9.1935$

When received, $19.12.35$

Carl Hoffmann, Schlaesen.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 4 OCT 1935

FRI. 25 OCT 1935

Assigned

see J.E. Machy, Rpt.

WED. 29 JAN 1936



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Foundation