

REPORT ON BOILERS.

Received at London Office

1 DEC 1945

Date of writing Report **5th Dec. 1945** When handed in at Local Office **12th Dec. 1945** Port of **Gothenburg.**

No. in Reg. Book. Survey held at **Gothenburg** Date, First Survey **24th September** Last Survey **15th November 1945.**
(Number of Visits **8**)

25399 on the s.s. **"HALVARD BRATT"** Tons ^{Gross} **1053** _{Net} **531**

Master **---** Built at **Elbing** By whom built **F. Schichau** Yard No. **1102** When built **1921**

Engines made at **Elbing** By whom made **F. Schichau** Engine No. **3160** When made **1921**

Boilers made at **Elbing** By whom made **F. Schichau** Boiler No. **3467-68** When made **1921**

Nominal Horse Power **115** Owners **Rederi A-B. Adolf** Port belonging to **Gothenburg**

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel **---** (Letter for Record **S**)

Total Heating Surface of Boilers **2 x 86 = 172 M² = 1851 #** Is forced draught fitted **No** Coal or Oil fired **Coal**

No. and Description of Boilers **Two circular multitubular (Scotch boilers)** Working Pressure **14 kg/cm² = 199 lb.**

Tested by hydraulic pressure to **---** Date of test **---** No. of Certificate **---** Can each boiler be worked separately **Yes**

Area of Firegrate in each Boiler **2.7 M² = 29 #** No. and Description of safety valves to each boiler **One double spring loaded**

Area of each set of valves per boiler ^{per Rule} **3475 mm²** _{as fitted} **3900 mm²** Pressure to which they are adjusted **205 lbs.** 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 **230 mm.** Is oil fuel carried in the double bottom under boilers **No**

Smallest distance between shell of boiler and tank top plating **---** Is the bottom of the boiler insulated **Yes**

Largest internal dia. of boilers **3050 mm.** Length **3057 mm.** Shell plates: Material **S.M. Steel** Tensile strength **45-53 kg/mm²**

Thickness **24 mm.** Are the shell plates welded or flanged **No** Description of riveting: circ. seams **Double lap**

long. seams **Double butt straps** Diameter of rivet holes in ^{circ. seams} **25 mm.** _{long. seams} **25 mm.** Pitch of rivets ^{inter} **90 mm.** _{end} **156 mm.**

Percentage of strength of circ. end seams ^{plate} **---** _{rivets} **---** Percentage of strength of circ. intermediate seam ^{plate} **---** _{rivets} **---**

Percentage of strength of longitudinal joint ^{plate} **---** _{rivets} **---** _{combined} **---** Working pressure of shell by Rules **---**

Thickness of butt straps ^{outer} **20 mm.** _{inner} **18 mm.** No. and Description of Furnaces in each Boiler **Two Morison**

Material **S.M. Steel** Tensile strength **34-51 kg/mm²** Smallest outside diameter **876 mm.**

Length of plain part ^{top} **---** _{bottom} **---** Thickness of plates ^{crown} **13 mm.** _{bottom} **13 mm.** Description of longitudinal joint **Welded**

Dimensions of stiffening rings on furnace or c.e. bottom **---** Working pressure of furnace by Rules **---**

End plates in steam space: Material **S.M. Steel** Tensile strength **34-41 kg/mm²** Thickness **24 mm.** Pitch of stays **280 x 300 mm.**

How are stays secured **Double nuts and outside washers** Working pressure by Rules **---**

Tube plates: Material ^{front} **S.M. Steel** _{back} **S.M. Steel** Tensile strength **34-41 kg/mm²** Thickness **24 mm.**

Mean pitch of stay tubes in nests **285 mm.** Pitch across wide water spaces **360 mm.** Working pressure **14 mm. 19 in plan (double plate)**

Girders to combustion chamber tops: Material **S.M. Steel** Tensile strength **34-41 kg/mm²** Depth and thickness of girder **---**

at centre **175 & 2x15 mm.** Length as per Rule **600 mm.** Distance apart **190 mm.** No. and pitch of stays **---**

in each **2 - 200 mm.** Working pressure by Rules **---** Combustion chamber plates: Material **S.M. Steel**

Tensile strength **34-41 kg/mm²** Thickness: Sides **16 mm.** Back **15 mm.** Top **16 mm.** Bottom **20 mm.**

Pitch of stays to ditto: Sides **200 x 180 mm.** Back **180 x 175 mm.** Top **190 x 200 mm.** Are stays fitted with nuts or riveted over **Fitted with nuts**

Working pressure by Rules **---** Front plate at bottom: Material **S.M. Steel** Tensile strength **34-41 kg/mm²** Thickness **24 mm.**

Thickness **24 mm.** Lower back plate: Material **S.M. Steel** Tensile strength **34-41 kg/mm²** Thickness **24 mm.**

Pitch of stays at wide water space **340 mm.** Are stays fitted with nuts or riveted over **Fitted with nuts**

Working Pressure **---** Main stays: Material **S.M. Steel** Tensile strength **44-50 kg/mm²**

Diameter ^{At body of stay} **60 mm.** _{or} **---** No. of threads per inch **8 in plan** Area supported by each stay **380 x 380 mm.**

Working pressure by Rules **---** Screw stays: Material **S.M. Steel** Tensile strength **41-47 kg/mm²**

Diameter ^{At turned off part} **---** _{or} **---** No. of threads per inch **10** Area supported by each stay **175 x 180 mm.**

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Working pressure by Rules Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part 34 & 42 mm. or --- Over threads --- }
 No. of threads per inch Area supported by each stay 260 x 175 mm. Working pressure by Rules
 Tubes: Material **Steel** External diameter { Plain 83 mm. Stay 83 mm. } Thickness { 3.5 mm. 8.0 mm. } No. of threads per inch 11
 Pitch of tubes 110 x 110 mm. Working pressure by Rules Manhole compensation: Size of opening in shell plate 400 x 510 mm. Section of compensating ring No. of rivets and diameter of rivet holes 36 x 28 mm.
 Outer row rivet pitch at ends 370 mm. Depth of flange if manhole flanged 70 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** Manufacturers of { Tubes --- Steel forgings --- Steel castings --- }
 Number of elements **12 each boiler** Material of tubes **Steel** Internal diameter and thickness of tubes **15 & 2.5 mm.**
 Material of headers **Cast Steel** Tensile strength --- Thickness **19 mm.** Can the superheater be shut off and the boiler be worked separately 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 --- Are the safety valves fitted with easing gear **Yes** Working pressure as per Rules --- Pressure to which the safety valves are adjusted **205 lbs. per square inch.** Hydraulic test pressure: tubes --- forgings and castings --- and after assembly in place **28 kg/cm²** 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

The foregoing is a correct description.

..... Manufacturer.

Dates of Survey { During progress of work in shops - - } while { During erection on board vessel - - } building
 1945: Sept. 24, Oct. 1, 9, 16, 22, Nov. 9, 13, 15.
 Are the ~~approved~~ plans of boiler ~~and superheater~~ forwarded herewith **Yes**
 Total No. of visits **8**

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.) **The boilers and superheaters opened up and examined with safety valves and mountings and their safety valves and their scantlings checked and found to be in accordance with the plans referred to in the Secretary's letter, initialled "E", of the 14th September 1945, regarding the machinery of this vessel. The boilers found in very good condition and the furnaces, the front tube plate at wide water space and the combustion chamber girders specially examined and found free from distortion.**

The superheaters have been tested in place with water pressure to 28 kg/cm² and found tight.
 The boilers and superheaters found marked.

Boilers,
F.SCHICHAU, ELBING
 1921
 14 ATM.MAX. S.P.
 No. 3467-3468
 28 ATM.PROBEDRUCK.
 25.2.1921

Superheaters:
OTTENSENER EISENWERK A.G.
 ALTONA
DAMPFERHITZER PATENT WILH.SCHMIDT
 No. 3751, 3753
 21.9.1920

Note: The tensile strength of the material given in the report has been taken from the plan. No certificate for the material was available.

Repairs effected due to wear and tear: The insulation of the boilers renewed. The feed check valve lids renewed.

Survey Fee ... £ --- : --- : } When applied for, --- 19 ---
 Travelling Expenses (if any) £ --- : --- : } When received, --- 19 ---

[Signature]
 Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 8 FEB 1946

Committee's Minute
Assigned *see minutes on p/ps 8 & 9*



Rpt. 13.
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