

REPORT ON BOILERS.

No. 12218

Received at London Office FEB 11 1939

Date of writing Report 3rd Febr. 1939 When handed in at Local Office 9th Febr. 1939 Port of **GOTHENBURG**

No. in Reg. Book. **IN SUPPL. 90232** Survey held at **GOTHENBURG** Date, First Survey **7th June 1938** Last Survey **31st Jan 1939**

on the **SINGLE SCREW 1/5 " TRONDHEIM "** (Number of Visits **15**) Gross **8257.82** Tons Net **4950.97**

Master **✓** Built at **GOTHENBURG** By whom built **ERIKSBERGS M.V. AB.** Yard No. **287** When built **1939**

Engines made at **GOTHENBURG** By whom made **ERIKSBERGS M.V. AB.** Engine No. **219** When made **1939**

Boilers made at **GOTHENBURG** By whom made **ERIKSBERGS M.V. AKTIEB.** Boiler No. **591/592** When made **1939**

Nominal Horse Power **644** Owners **A/S TANK** Port belonging to **OSLO**

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Plates: **Colvilles Ltd, Glasgow.**

Furnaces: **Horseley Bridge & Thomas Piggott Ltd, Tipton.**

Total Heating Surface of Boilers **2 x 130 = 260 m²** Is forced draught fitted **Yes** (Letter for Record **S**) Coal or Oil fired **Oil fired** or fired with **oil gas** Working Pressure **142 lbs/0"**

No. and Description of Boilers **Two cylindrical, multitubular.** Tested by hydraulic pressure to **265 lbs/0"** Date of test **7.10.38.** No. of Certificate **308-309** Can each boiler be worked separately **Yes**

Area of Firegrate in each Boiler **✓** No. and Description of safety valves to each boiler **Double spring loaded.** Diam. **67.5 mm.** Pressure to which they are adjusted **142 lbs/0"** Are they fitted with easing gear **Yes**

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler **No main boiler fitted.** Smallest distance between boilers **and AP bulkhead 990 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 **3352 mm.** Length **3350 mm** Shell plates: Material **SM-steel** Tensile strength **44-50 kg/mm²**

Thickness **19 mm.** Are the shell plates welded or flanged **No** Description of riveting: circ. seams **end Double riv. lap** inter. **None**

long. seams **Double butt straps** Diameter of rivet holes in circ. seams **26.5 mm.** Pitch of rivets **79 mm.** as fitted **85.0 mm.** long. seams **24.0 mm** Pitch of rivets **145 mm.**

Percentage of strength of circ. end seams plate **66.5** rivets **60.0** Percentage of strength of circ. intermediate seam plate **✓** rivets **✓**

Percentage of strength of longitudinal joint plate **83.5** rivets **100.0** combined **✓** Working pressure of shell by Rules **10.9 kg/cm²**

Thickness of butt straps outer **14.5 mm.** inner **17.5 mm.** No. and Description of Furnaces in each Boiler **Two Morison** Material **SM-steel** Tensile strength **41-47 kg/mm²** Smallest outside diameter **920 mm.**

Length of plain part top **✓** bottom **✓** Thickness of plates crown **10 mm** bottom **10 mm** Description of longitudinal joint **lap welded** Dimensions of stiffening rings on furnace or c.c. bottom **✓** Working pressure of furnace by Rules **10.8 kg/cm²**

End plates in steam space: Material **SM-steel** Tensile strength **41-47 kg/mm²** Thickness **20 mm.** Pitch of stays **405-350 mm.** How are stays secured **Nuts inside, riveted washers and nuts outside** Working pressure by Rules **12.7 kg/cm²**

Tube plates: Material front **SM-steel** back **SM-steel** Tensile strength **41-47 kg/mm²** Thickness **20 mm.** Mean pitch of stay tubes in nests **265 mm.** Pitch across wide water spaces **330 mm.** Working pressure front **14.3 kg/cm²** back **15.9 kg/cm²**

Girders to combustion chamber tops: Material **SM-steel** Tensile strength **44-50 kg/mm²** Depth and thickness of girder at centre **175 mm & 2 x 16 mm.** Length as per Rule **735 mm.** Distance apart **205 mm** No. and pitch of stays in each **Four, 225 mm.** Working pressure by Rules **10.7 kg/cm²** Combustion chamber plates: Material **SM-steel**

Tensile strength **41-47 kg/mm²** Thickness: Sides **16 mm** Back **18 mm** Top **16 mm** Bottom **16 mm** Pitch of stays to ditto: Sides **225 x 240 mm.** Back **212 x 241 mm** Top **225 x 205 mm** Are stays fitted with nuts or riveted over **As per plan.**

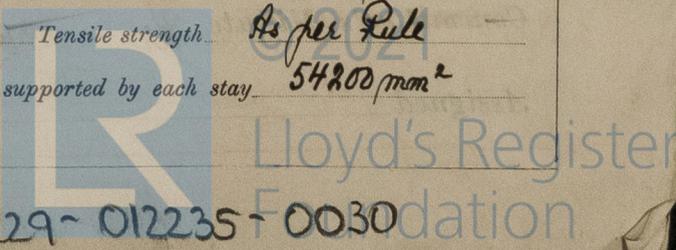
Working pressure by Rules **10.4 kg/cm²** Front plate at bottom: Material **SM-steel** Tensile strength **41-47 kg/mm²** Thickness **20 mm** Lower back plate: Material **SM-steel** Tensile strength **41-47 kg/mm²** Thickness **20 mm.**

Pitch of stays at wide water space **320 mm.** Are stays fitted with nuts or riveted over **Fitted with nuts** Working Pressure **17 kg/cm²** Main stays: Material **SM-steel** Tensile strength **As per Rule**

Diameter At body of stay, or Over threads **2 1/4"** No. of threads per inch **6** Area supported by each stay **142000 mm²**

Working pressure by Rules **As per Rule** Screw stays: Material **SM-steel** Tensile strength **As per Rule**

Diameter At turned off part, or Over threads **1 1/2"** No. of threads per inch **9** Area supported by each stay **54200 mm²**



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Working pressure by Rules 10.4 kg/cm^2 Are the stays drilled at the outer ends No Margin stays: Diameter $\begin{cases} \text{At turned off part.} \\ \text{or} \\ \text{Over threads.} \end{cases} \begin{cases} 1\frac{5}{8}'' \\ 1\frac{5}{8}'' \end{cases}$

No. of threads per inch 9 Area supported by each stay 58300 mm^2 Working pressure by Rules

Tubes: Material *Steel* External diameter $\begin{cases} \text{Plain} \\ \text{Stay} \end{cases} \begin{cases} 2\frac{1}{2}'' \\ 2\frac{1}{2}'' \end{cases}$ Thickness $\begin{cases} \text{LSG No 10} \\ \text{LSG No 1} \end{cases}$ No. of threads per inch 9

Pitch of tubes $95 \times 89 \text{ mm}$ Working pressure by Rules 12.5 kg/cm^2 Manhole compensation: Size of opening in shell plate $405 \times 505 \text{ mm}$ Section of compensating ring $275 \times 25 \text{ mm}$ No. of rivets and diameter of rivet holes $40 - 1\frac{1}{16}''$

Outer row rivet pitch at ends 175 mm Depth of flange if manhole flanged 75 mm Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint $\begin{cases} \text{Plate} \\ \text{Rivets} \end{cases} \begin{cases} \text{Plate} \\ \text{Rivets} \end{cases}$

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 *No superheater fitted* Manufacturers of $\begin{cases} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{cases} \begin{cases} \text{✓} \\ \text{✓} \\ \text{✓} \end{cases}$

Number of elements Material of tubes Internal diameter and thickness of tubes

Material of headers Tensile strength Thickness Can the superheater be shut off and the boiler be worked separately

Area of each safety valve Is a safety valve fitted to every part of the superheater which can be shut off from the boiler

Rules Pressure to which the safety valves are adjusted Hydraulic test pressure: tubes forgings and castings and after assembly in place Are drain cocks or 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,
Eriksbergs Verkstads Aktiefabrig
Boiler Works Manufacturer.

Dates of Survey $\begin{cases} \text{During progress of work in shops} \\ \text{while building} \end{cases} \begin{cases} \text{1938: June 7, 16, July 16, 18, 19, 22, Aug 30} \\ \text{Sept. 2, 17, 23, Oct. 7} \\ \text{1939: Nov. 18, 20, Jan 25, 31} \end{cases}$ Are the approved plans of boiler and superheater forwarded herewith No, 19.437.
 (If not state date of approval.)
 Total No. of visits 15

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. *m/s Solör, Got. report no 11972*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
These Donkey boilers have been built under special survey in accordance with the approved plan and Society's Rules.
The workmanship is good.
Test sheets of the material are attached.

The boilers are marked as below:
No 308 & 309
LLOYD'S TEST 18.6 Kg.
WP 10 Kg
R 7.10.38. SA.

Survey Fee ... *HK* : 354.00 } When applied for, *9th Febr.* 1939
 Travelling Expenses (if any) £ : : } When received, *27. 2* 19 *39*

J. Aspelin
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 24 FEB 1939*
 Assigned *See FE machy rpt.*



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