

# REPORT ON BOILERS.

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Port of **MIDDLESBROUGH** & **Malmö**

No. in Survey held at **STOCKTON.** Date, First Survey **23 Sept** Last Survey **19. 11. 1930.**

on the boiler for **Kockums Mek Verkstads Aktiefelag "FALKEFJELL"** (Number of Visits **8**) Gross **7927** Tons Net **4603**

Built at **Malmö** By whom built **Kockums M. V. A. B.** Yard No. **168** When built **1931.**

Engines made at **Malmö** By whom made **Kockums M. V. A. B.** Engine No. **63264** When made **1931.**

Boiler made at **Stockton** By whom made **Riley Bros. (Bodenmanns) Ltd** Boiler No. **6020.** When made **1930**

Indicated Horse Power **778** Owners **Aktin. Falkefjell** Port belonging to **Oslo.**

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel **Vereinigte Stahlwerke Thyssen, Mulheim** (Letter for Record **S.**)

Total Heating Surface of Boilers **1315 sq. ft.** Is forced draught fitted **Yes** Coal or Oil fired **oil**

No. and Description of Boilers **1 S.B.** Working Pressure **171 lbs.**

Tested by hydraulic pressure to **307 lbs.** Date of test **19. 11. 30.** No. of Certificate **6833.** Can each boiler be worked separately **Yes**

Area of Firegrate in each Boiler **10.6 sq. ft.** No. and Description of safety valves to each boiler **Two direct spring loaded.**

Area of each set of valves per boiler **11.9 sq. ft.** Pressure to which they are adjusted **175 lbs.** Are they fitted with easing gear **Yes**

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler **Yes**

Smallest distance between boilers ~~on uptakes~~ and bunkers ~~on woodwork~~ **3'-8"** Is oil fuel carried in ~~the double bottom~~ **dry tank** under boilers **Yes**

Smallest distance between shell of boiler and tank top plating **1'-8"** Is the bottom of the boiler insulated **Yes**

Largest internal dia. of boilers **11'-2 1/2"** Length **11'-2"** Shell plates: Material **Steel** Tensile strength **29/33.**

Thickness **7/8"** Are the shell plates welded or flanged **No.** Description of riveting: circ. seams **D.R.**

Long. seams **T.R.D.B.S. (5 rivets)** Diameter of rivet holes in **1 1/2"** Pitch of rivets **3 1/4"**

Percentage of strength of circ. end seams **68.2.** Percentage of strength of circ. intermediate seam **46.8.**

Percentage of strength of longitudinal joint **86.1.** Working pressure of shell by Rules **175 lbs.**

Thickness of butt straps **21-32"** No. and Description of Furnaces in each Boiler **2 c.f.**

Material **Steel** Tensile strength **26/30.** Smallest outside diameter **3'-6 1/16"**

Length of plain part **17"** Thickness of plates **32"** Description of longitudinal joint **weld.**

Dimensions of stiffening rings on furnace or c.c. bottom **181 lbs.** Working pressure of furnace by Rules **181 lbs.**

End plates in steam space: Material **Steel** Tensile strength **26/30.** Thickness **27"** Pitch of stays **16 x 13 3/4"**

How are stays secured **D.N.W.** Working pressure by Rules **176 lbs.**

Tube plates: Material **Steel** Tensile strength **26/30.** Thickness **27/32"**

Lean pitch of stay tubes in nests **8 7/8"** Pitch across wide water spaces **13" x 7"** Working pressure **223 lbs.**

Girders to combustion chamber tops: Material **Steel** Tensile strength **28/32.** Depth and thickness of girder **8 1/4"**

Distance apart **8 1/4"** No. and pitch of stays **2.9'**

Working pressure by Rules **269 lbs.** Combustion chamber plates: Material **Steel**

Tensile strength **26/30.** Thickness: Sides **5/8"** Back **5/8"** Top **5/8"** Bottom **5/8"**

Pitch of stays to ditto: Sides **8 1/4" x 9"** Back **8" x 8 1/2"** Top **8 1/4" x 9"** Are stays fitted with nuts or riveted over **nuts**

Working pressure by Rules **181 lbs.** Front plate at bottom: Material **Steel** Tensile strength **26/30.**

Thickness **27/32"** Lower back plate: Material **Steel** Tensile strength **26/30.** Thickness **27/32"**

Pitch of stays at wide water space **13" x 8 1/2"** Are stays fitted with nuts or riveted over **nuts.**

Working Pressure **241 lbs.** Main stays: Material **Steel** Tensile strength **28/32.**

Diameter **2 3/8"** No. of threads per inch **6.** Area supported by each stay **215.5 sq. in.**

Working pressure by Rules **182 lbs.** Screw stays: Material **Steel** Tensile strength **26/30.**

Diameter **1 1/2"** No. of threads per inch **9.** Area supported by each stay **66.2 sq. in.**

Working pressure by Rules **189 lbs** Are the stays drilled at the outer ends **no.** Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \text{ } 1\frac{1}{8}$   
 No. of threads per inch **9** Area supported by each stay **87.2** Working pressure by Rules **174 lbs**  
 Tubes: Material **iron** External diameter  $\left\{ \begin{array}{l} \text{Plain } 2\frac{1}{2} \times 6 \times 2\frac{3}{16} \\ \text{Stay } 2\frac{1}{2} \times 6 \times 2\frac{3}{16} \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 10 \text{ WS.} \\ 7/16 \end{array} \right.$  No. of threads per inch **9**  
 Pitch of tubes **3 1/2 x 3 1/8** Working pressure by Rules **p. 175 lbs. s. 23 lbs** Manhole compensation: Size of opening **4 1/2 - 1 1/2**  
 shell plate **20 x 16** Section of compensating ring **7 1/2 x 1** No. of rivets and diameter of rivet holes **44 - 1 1/2**  
 Outer row rivet pitch at ends **7 1/2** Depth of flange if manhole flanged **no.** Steam Dome: Material **iron**  
 Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_  
 Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$  \_\_\_\_\_  
 Internal diameter \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diameter of rivets \_\_\_\_\_  
 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 \_\_\_\_\_ Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$  \_\_\_\_\_  
 Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ Internal diameter and thickness of tubes \_\_\_\_\_  
 Material of headers \_\_\_\_\_ Tensile strength \_\_\_\_\_ Thickness \_\_\_\_\_ Can the superheater be shut off from the boiler \_\_\_\_\_  
 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 as tested \_\_\_\_\_  
 Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure \_\_\_\_\_  
 tubes \_\_\_\_\_ 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.  
**RILEY BROS. (BOILERMAKERS) LIMITED.**  
 J. D. Shields. SECRETARY

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building } \left\{ \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right. \end{array} \right. \left. \begin{array}{l} 1931 \text{ Sep } 22, 29 \\ 27, 28, 29, 30, 31 \\ 1/3, 1/3, 2/3, 2/3, 3/3, 4/4, 1931 \end{array} \right.$  Are the approved plans of boiler and superheater forwarded herewith **Yes**  
 (If not state date of approval.)  
 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 materials and workmanship are good.**  
**This boiler has been built under special survey in accordance with the Rules and approved Plan. It is being shipped to Sweden.**  
**This donkey boiler has been installed onboard under my supervision and to my satisfaction.**  
**The safety valves have been adjusted under steam to 175 lbs.**  
**The oil fuel burning installation is a single as steam is not required any essential work at sea.**

**Adundin**

Survey Fee ... £ **8-16-0.** When applied for, **Monthly**  
 Travelling Expenses (if any) £ \_\_\_\_\_ When received, \_\_\_\_\_

**P. J. Mac**  
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **TUE. 21 APR 1931**  
 Assigned **Not for classing See F.E. Rep. Committee**

