

REPORT ON BOILERS.

No. 11282

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Date of writing Report 9th June 1937 When handed in at Local Office 11th June 1937 Port of Gothenburg

No. in Survey held at Gothenburg Date, First Survey 17th Dec 1936 Last Survey 27th May 1937

Reg. Book. 89000 on the SINGLE SCREW 4 1/2 "KOLLBJÖRG" (Number of Visits 14) Gross 8259 Tons Net 4978

Master 3/7/35 Built at Gothenburg By whom built ERIKSBERGS M.V. AB Yard No. 264 When built 1937

Engines made at Gothenburg By whom made ERIKSBERGS M.V. ANTIK Engine No. 159 When made 1937

Boilers made at Gothenburg By whom made ERIKSBERGS M.V. ANTIK Boiler Nos. 535 536 When made 1937

Nominal Horse Power 644 Owners AKTIESELSKAPET KOLLBJÖRG Port belonging to OSLO

MULTITUBULAR BOILERS. MAIN, AUXILIARY, OR DONKEY.

Tubes: - Werner & Faber de Meuse.
Plates: - Witkovitzer Bergbau und Eisenhütten Gesellschaft in Witkovitz.

Manufacturers of Steel Plates: Ruhrstahl A.G. Henrichshütte of Kattungen (Letter for Record S)

Total Heating Surface of Boilers 2130-260 m² [2800 sq ft] Is forced draught fitted Yes Coal or Oil fired Oil Working Pressure 14.2 kg/cm²

No. and Description of Boilers Two cylindrical multitubular

Tested by hydraulic pressure to 265 kg/cm² Date of test 30/3/37 No. of Certificate 2939294 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 67.5 m² No. and Description of safety valves to each boiler Double spring loaded.

Area of each set of valves per boiler {per Rule 67.5 m² as fitted 85.0 m² Pressure to which they are adjusted 14.2 kg/cm² Are they fitted with casing gear Yes

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

Smallest distance between boilers 38" Is oil fuel carried in the double bottom under boilers No

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

Largest internal dia. of boilers 3352 mm Length 3350 mm Shell plates: Material S.M. steel Tensile strength 45.2-46.7 kg/cm²

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 27 mm long. seams 23.2 mm Pitch of rivets {79 mm 145 mm

Percentage of strength of circ. end seams {plate 65.8 rivets 61.0 Percentage of strength of circ. intermediate seam {plate 83.7 rivets 96.2

Percentage of strength of longitudinal joint {plate 83.7 rivets 96.2 combined 91.2 Working pressure of shell by Rules 10.2 kg/cm²

Thickness of butt straps {outer 14.5 mm inner 17.5 mm No. and Description of Furnaces in each Boiler Two Morrison

Material S.M. steel Tensile strength 45.7-46.1 kg/cm² Smallest outside diameter 990 mm

Length of plain part {top 10 mm bottom 10 mm Thickness of plates {crown 10 mm bottom 10 mm Description of longitudinal joint Lapwelded.

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 S.M. steel Tensile strength 41.1-45.2 kg/cm² Thickness 20 mm Pitch of stays 405x350 mm

How are stays secured Nuts inside, riveted washers and nuts outside. Working pressure by Rules 12.8 kg/cm²

Tube plates: Material {front S.M. steel back S.M. steel Tensile strength {41.1-44.8 kg/cm² 41.1-41.2 kg/cm² Thickness {20 mm 21 mm

Mean pitch of stay tubes in nests 276 mm Pitch across wide water spaces 330 mm Working pressure {front 11.8 kg/cm² back 14.6

Girders to combustion chamber tops: Material S.M. steel. Tensile strength 46-46.8 kg/cm² Depth and thickness of girder

at centre 175 and 2x16 mm Length as per Rule 735 mm Distance apart 205 mm No. and pitch of stays

in each Two, 295 mm Working pressure by Rules 11.1 kg/cm² Combustion chamber plates: Material S.M. steel.

Tensile strength 43.1-45.5 kg/cm² Thickness: Sides 16 mm Back 18 mm Top 16 mm Bottom 16 mm

Pitch of stays to ditto: Sides 225x240 mm Back 241x212 mm Top 225x205 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 S.M. steel Tensile strength 41.1-44.8 kg/cm²

Thickness 20 mm Lower back plate: Material S.M. steel Tensile strength 41.5-45.2 kg/cm² 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 15.6 kg/cm² Main stays: Material S.M. steel Tensile strength As per Rule

Diameter {At body of stay, 5/4" or 5/4" No. of threads per inch 6 Area supported by each stay 149000 mm²

Working pressure by Rules 11.0 kg/cm² Screw stays: Material S.M. steel Tensile strength As per Rule

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



Working pressure by Rules 10.4 kg/cm^2 Are the stays drilled at the outer ends *No* Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads.} \end{array} \right. 1\frac{5}{8}"$
 No. of threads per inch 9 Area supported by each stay 58300 mm^2 Working pressure by Rules 11.8 kg/cm^2
 Tubes: Material *Steel* External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 2\frac{1}{2}"$ Thickness 1.59 mm No. of threads per inch 9
 Pitch of tubes $95 \times 89 \text{ mm}$ Working pressure by Rules 12.3 kg/cm^2 Manhole compensation: Size of opening in shell plate $490 \times 520 \text{ mm}$ 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 $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. *✓*
 Internal diameter *✓* Working pressure by Rules *✓* Thickness of crown *✓* No. and diameter of stays *✓* Inner radius of crown *✓* Working pressure by Rules *✓*
 How connected to shell *✓* Size of doubling plate under dome *✓* Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell *✓*$

Type of Superheater *None fitted* Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right. *✓*
 Number of elements *✓* Material of tubes *✓* Internal diameter and thickness of tubes *✓*
 Material of headers *✓* Tensile strength *✓* Thickness *✓* Can the superheater be shut off and the boiler be worked separately *✓* Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *✓*
 Area of each safety valve *✓* Are the safety valves fitted with easing gear *✓* Working pressure as per Rules *✓* Pressure to which the safety valves are adjusted *✓* Hydraulic test pressure *✓*
 tubes *✓* forgings and castings *✓* and after assembly in place *✓* Are drain cocks or valves fitted to free the superheater from water where necessary *✓*$

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with *Yes*
 The foregoing is a correct description,
 Eriksbergs Msk. Verkstads Aktiebolag Manufacturer

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right. \left\{ \begin{array}{l} \text{1936: Dec 17, 1937: Jan 5, 22, Feb 5, 19, 26} \\ \text{March 11, 18, 22, 30 April 29 May 6} \end{array} \right.$ Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
 Total No. of visits 14

Is this Boiler a duplicate of a previous case *Yes* If so, state Vessel's name and Report No. *4/5 Amurøy, 4/5 Jotunfjell*

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 & Society's Rules
The workmanship is good.
Test sheets of the material are attached

The boilers are marked as below:
 No. 294 & 293
 LLOYDS TEST 265 LBS
 HP 142 LBS
 SA. 30.3.37.

Survey Fee ... *£* 354:00 } When applied for, *11th June 37*
 Travelling Expenses (if any) *£* : : } When received, *30.6.37*

G. Mander
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI 18 JUN 1937*
 Assigned *See fol. J.C. 11282*

