

## REPORT ON BOILERS.

No. 1187C.

JUN 30 1938

Received at London Office

Date of writing Report 27-6, 1938 When handed in at Local Office 27-6, 1938 Port of Helsingborg

No. in Survey held at Helsingborg Date, First Survey 11-11-1937 Last Survey 18-6, 1938

39236 on the Steel screw Steamer "MIRAMAR" (Number of Visits 11) Gross 1555 Tons Net 856

Master H. W. Wickes Built at Helsingborg By whom built Helsingborgs Værft Yard No. 58 When built 1938

Engines made at Helsingborg By whom made Helsingborgs Værft Engine No. 32 When made 1938

Boilers made at " By whom made " Boilers Nos. 148/9 When made 1938

Nominal Horse Power 165 Owners Ruden &amp; Sörling Port belonging to Gøteborg

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

Manufacturers of Steel Tubes: Messrs. J. Marshall &amp; Co. Plates: Messrs. Colvilles, Ltd. Rivets: The Rivet Bolt &amp; Nut, Co. Ltd. (Letter for Record S)

Total Heating Surface of Boilers  $2 \times 105 = 210 \text{ m}^2$  Is forced draught fitted Yes Coal or Oil fired Coal Working Pressure  $15 \text{ Kg/cm}^2$  (213.4 LBS/sq. in.)

No. and Description of Boilers Two multitubular

Tested by hydraulic pressure to 26 Kg Date of test 10.12.37 No. of Certificate 25/26 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler  $2.5 \text{ m}^2$  No. and Description of safety valves to each boiler 2 spring loadedArea of each set of valves per boiler {per Rule  $2 \times 50 \text{ mm diam}$  as fitted  $2 \times 56 \text{ mm diam}$  Pressure to which they are adjusted 218 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

Smallest distance between boilers or uptakes and bunkers or woodwork 350 mm Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 450 mm Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 3300 mm Length 3352 mm Shell plates: Material S.M. Steel Tensile strength 44-50.5 Kg/mm<sup>2</sup>

Thickness 27.5 mm Are the shell plates welded or flanged No Description of riveting: circ. seams {end Ddl. zig-zag inter. 86 mm

long. seams Ddl. butt straps Diameter of rivet holes in {circ. seams 30 mm long. seams 30 mm Pitch of rivets {plate 200 mm rivets 200 mm

Percentage of strength of circ. end seams {plate 65 % rivets 58 % Percentage of strength of circ. intermediate seam {plate 85 % rivets 98.5 % combined 100 %

Percentage of strength of longitudinal joint {plate 85 % rivets 98.5 % combined 100 % Working pressure of shell by Rules 15.3 Kg/cm<sup>2</sup>

Thickness of butt straps {outer 21 mm inner 24 mm No. and Description of Furnaces in each Boiler 2 Morison corrugated

Material S.M. Steel Tensile strength 43.5-44.3 Kg/mm<sup>2</sup> Smallest outside diameter 928 mm

Length of plain part {top 14 mm bottom 14 mm Thickness of plates {crown 14 mm bottom 14 mm Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 15.3 Kg/cm<sup>2</sup>

End plates in steam space: Material S.M. Steel Tensile strength 41-47 Thickness 23 mm Pitch of stays 410 x 375 mm

How are stays secured With nuts and outside washers Working pressure by Rules 15.3 Kg/cm<sup>2</sup>Tube plates: Material {front S.M. Steel back S.M. Steel Tensile strength {41-47 Kg/mm<sup>2</sup> Thickness {24.5 mm 21 mmMean pitch of stay tubes in nests 267 mm Pitch across wide water spaces 370 mm Working pressure {front 16 Kg/cm<sup>2</sup> back 15.6 Kg/cm<sup>2</sup>Girders to combustion chamber tops: Material S.M. Steel Tensile strength 44-50.5 Kg/mm<sup>2</sup> Depth and thickness of girder

at centre 180 mm 24 mm Length as per Rule 703 mm Distance apart 210 mm No. and pitch of stays

in each 2 x 175 mm Working pressure by Rules 16.6 Kg/cm<sup>2</sup> Combustion chamber plates: Material S.M. SteelTensile strength 41-47 Kg/mm<sup>2</sup> Thickness: Sides 17 mm Back 17 mm Top 17 mm Bottom 18.5 mm

Pitch of stays to ditto: Sides 185 x 165 mm Back 165 x 165 mm Top 175 x 210 mm Are stays fitted with nuts or riveted over Punched over

Working pressure by Rules 15.3 Kg/cm<sup>2</sup> Front plate at bottom: Material S.M. Steel Tensile strength 41-47 Kg/mm<sup>2</sup>Thickness 24.5 mm Lower back plate: Material S.M. Steel Tensile strength 41-47 Kg/mm<sup>2</sup> Thickness 23 mm

Pitch of stays at wide water space 370 x 165 mm Are stays fitted with nuts or riveted over Fitted with nuts

Working Pressure 18.6 Kg/cm<sup>2</sup> Main stays: Material S.M. Steel Tensile strength As per Rule

Diameter {At body of stay, 70 mm No. of threads per inch 6 Area supported by each stay 410 x 375 mm

Over threads 76.2 mm Working pressure by Rules 21 Kg/cm<sup>2</sup> Screw stays: Material S.M. Steel Tensile strength As per Rule

Diameter {At turned off part, 1 1/2" No. of threads per inch 9 Area supported by each stay 165 x 165 mm



Working pressure by Rules  $21 \text{ kg/cm}^2$  Are the stays drilled at the outer ends ☒ No. Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. 1 \frac{3}{4} \text{ in}$   
No. of threads per inch 9 Area supported by each stay  $370 \times 165 \text{ mm}^2$  Working pressure by Rules  $18.6 \text{ kg/cm}^2$   
Tubes: Material S.M. Steel External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 3 \text{ in}$  Thickness  $\left\{ \begin{array}{l} \text{L.S.G. No. 8} \\ \text{9.5 mm} \end{array} \right.$  No. of threads per inch 9  
Pitch of tubes  $108 \times 105 \text{ mm}$  Working pressure by Rules  $16.5 \text{ kg/cm}^2$  Manhole compensation: Size of opening in  
shell plate  $500 \times 390 \text{ mm}$  Section of compensating ring  $25 \times 500 \text{ mm}$  No. of rivets and diameter of rivet holes 42  $32 \text{ mm}$   
Outer row rivet pitch at ends  $210 \text{ mm}$  Depth of flange if manhole flanged  $105 \text{ mm}$  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 Schmidt Manufacturers of Tubes Vithorice Mines Steel & Ironworks Co.  
Steel castings Comp. Gen. des Miners.  
Number of elements  $2 \times 36$  Material of tubes Steel Internal diameter and thickness of tubes  $18 \text{ mm}$   $2.5 \text{ mm}$   
Material of headers Cast steel Tensile strength  $47.1 \text{ tons/in}^2$  Thickness  $30 \text{ mm}$  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  $38 \text{ mm diam}$  Are the safety valves fitted with easing gear Yes Working pressure as per  
Rules Pressure to which the safety valves are adjusted  $224 \text{ Lbs/in}^2$  Hydraulic test pressure:  
tubes  $50 \text{ kg/cm}^2$ , castings  $50 \text{ kg/cm}^2$  and after assembly in place  $224 \text{ Lbs/in}^2$  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,  
Helsingborgs Värms Aktiebolag Manufacturer.

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right. 1937. \text{ Sept. 11, 23, 30. Nov. 5. Dec. 4, 8, 10. Are the approved plans of boiler and superheater forwarded herewith } \text{No.}$   
while building  $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right. 1938. \text{ Jan. 14. May 10, 17. June 18. Total No. of visits 11.}$   
(If not state date of approval.) BOILERS 5.12.34. Superh. 22.11.35.

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No.  $\frac{1}{2}$  "IDENE", Hbg Rpt. No. 1064

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under  
special survey in accordance with approved plans and instructions and  
the Rule requirements have been complied with. The scantlings are  
in accordance with the Society's Rules for a working pressure of  
 $15 \text{ kg/cm}^2$  ( $213.4 \text{ lbs/in}^2$ ). The workmanship is good.

The boilers have been tested in my presence  
on the 10<sup>th</sup> December, 1937, by hydraulic pressure to  $26 \text{ kg/cm}^2$ ,  
showed no signs of weakness and were found tight and sound at  
that pressure. The materials are good and have been tested  
by the surveyors to Lloyd's Register. Opinion as to class  
please see Rpt. 4.

MARKS ON BOILERS:-

Nos. 25 & 26  
LLOYD'S TEST  
 $26 \text{ kg/cm}^2$   
W.P.  $15 \text{ kg/cm}^2$   
P.S. 12.10.37

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

P.O. Fogren  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 5 JUL 1938

Assigned See above & C. report



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Foundation