

REPORT ON BOILERS.

No. 10785

-8 JUL 1936

Received at London Office

Date of writing Report

6th July 1936

When handed in at Local Office

7th July 1936

Port of GOTHENBURG

pening No. in
Reg. Book.

Survey held at

GOTHENBURG

Date, First Survey

8th January

Last Survey

20th June

1936

(Number of Visits 12)

Gross

Tons

Net

on the

JPM

Master

Built at LANDSKRONA

By whom built ÖRESUNDSVARVET AB and No. 42

When built

Engines made at

By whom made

Engine No.

When made

Boilers made at

GOTHENBURG

By whom made

A.B. LINDHOLMEN-MOTALA

Boiler No. 13578

When made 1936

and nominal Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Plates: Withouster Bengtson & Eisenhütten Gesellschaft (Ostrava 10)

Manufacturers of Steel

Stays: Withouster Bengtson & Eisenhütten Gesellschaft, Kiteovice.

Tubes: Withouster Bengtson & Eisenhütten Gesellschaft, Kiteovice.

Rivets: Withouster Bengtson & Eisenhütten Gesellschaft, Kiteovice.

Total Heating Surface of Boilers $2 \times 116.6 = 333.2 \text{ sqm}$ (3580 sqft) Is forced draught fitted

(Letter for Record S ✓)

Coal or Oil fired

No. and Description of Boilers Two cylindrical multitubular. ✓

Working Pressure 14 kg/cm^2 (200 lb/sq in) ✓

Tested by hydraulic pressure to

 24.5 kg/cm^2

Date of test

20.6.36

No. of Certificate

2819282

Can each boiler be worked separately

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

Area of each set of valves per boiler

per Rule
as fitted

Pressure to which they are adjusted

Are they fitted with easing gear

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

Smallest distance between boilers or uptakes and bunkers or woodwork

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Largest internal dia. of boilers

3352 mm

Length

3430 mm

Shell plates: Material

S.M. Steel

Tensile strength As per Rule. ✓

Thickness

25.5 mm

Are the shell plates welded or flanged

No ✓

Description of riveting: circ. seams

end Double riv. lap ✓

Long. seams Double butt straps ✓

Diameter of rivet holes in

circ. seams

30% ✓

long. seams

30+33% ✓

Pitch of rivets

85 mm ✓

Percentage of strength of circ. end seams

plate

59.6

rivets

53.2

Percentage of strength of circ. intermediate seam

plate

85.7

rivets

85.8

combined

85.9

Percentage of strength of longitudinal joint

plate

85.7

rivets

85.8

combined

Working pressure of shell by Rules

14.0 kg/cm² ✓

Thickness of butt straps

outer

20 mm

inner

23 mm

No. and Description of Furnaces in each Boiler Two Morison ✓

Material S.M. Steel

Tensile strength As per Rule ✓

Smallest outside diameter

978 mm ✓

Length of plain part

top

bottom

Thickness of plates

crown

bottom

14 mm ✓

Description of longitudinal joint welded. ✓

Dimensions of stiffening rings on furnace or c.c. bottom

Working pressure of furnace by Rules

14.6 kg/cm² ✓

End plates in steam space: Material S.M. Steel

Tensile strength As per Rule ✓

Thickness

Front 25.5 mm

Back 23.5 mm

Pitch of stays

425 x 400 mm ✓

How are stays secured But inside, riveted washers & nuts outside ✓

Working pressure by Rules

14.3 kg/cm² ✓

End plates: Material

front

back

S.M. Steel

Tensile strength

As per Rule ✓

Thickness

25.5 mm

20 mm ✓

Can pitch of stay tubes in nests

262 mm ✓

Pitch across wide water spaces

390 mm ✓

Working pressure

front

back

16.5 kg/cm² ✓14.7 kg/cm² ✓

Orders to combustion chamber tops: Material S.M. Steel

Tensile strength As per Rule ✓

Depth and thickness of girder

centre

175 x 2 x 25 mm

Length as per Rule

728 mm ✓

Distance apart

210 mm ✓

No. and pitch of stays

each

Three, 180 mm ✓

Working pressure by Rules

15.2 kg/cm² ✓

Tensile strength

As per Rule ✓

Thickness: Sides

16 mm ✓

Back

16 mm ✓

Top

16 mm ✓

Bottom

17 mm ✓

Pitch of stays to ditto: Sides

180 x 160 mm ✓

Back

165 x 165 mm ✓

Top

180 x 210 mm ✓

Are stays fitted with nuts or riveted over

Girder stays & margin

stays fitted with nuts.

Remaining stays riveted over.

Working pressure by Rules

14.3 kg/cm² ✓

Front plate at bottom: Material

S.M. Steel

Tensile strength

As per Rule ✓

Thickness

25.5 mm

Lower back plate: Material

S.M. Steel

Tensile strength

As per Rule ✓

Thickness

23.5 mm ✓

Pitch of stays at wide water space

380 mm ✓

Are stays fitted with nuts or riveted over

Fitted with nuts. ✓

Working Pressure

18.3 kg/cm² ✓

Main stays: Material

S.M. Steel

Tensile strength

As per Rule ✓

Diameter

At body of stay,

70 mm

Over threads

3" ✓

No. of threads per inch

6 ✓

Area supported by each stay

170000 mm² ✓

Working pressure by Rules

17.6 kg/cm² ✓

Screw stays: Material

S.M. Steel

Tensile strength

As per Rule ✓

Thickness

23.5 mm

Diameter

At turned off part,

31 mm

Over threads

1 3/8" & 1 1/2" (guides) ✓

No. of threads per inch

9 ✓

Area supported by each stay

160 x 180 mm & 180 x 210 mm ✓

Working Pressure

18.3 kg/cm² ✓

Main stays: Material

S.M. Steel

Tensile strength

As per Rule ✓

Diameter

At body of stay,

70 mm

Over threads

3" ✓

No. of threads per inch

6 ✓

Area supported by each stay

170000 mm² ✓

Working pressure by Rules

17.6 kg/cm² ✓

Screw stays: Material

S.M. Steel

Tensile strength

As per Rule ✓

Thickness

23.5 mm

Diameter

At turned off part,

31 mm

Over threads

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No. of threads per inch

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Area supported by each stay

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Screw stays: Material

S.M. Steel

Tensile strength

As per Rule ✓

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Tensile strength

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Tensile strength

As per Rule ✓

Working Pressure

18.3 kg/cm² ✓

Main stays: Material

S.M. Steel

Tensile strength

As per Rule ✓

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Working pressure by Rules $16.0 \frac{\text{kg}}{\text{cm}^2}$ Are the stays drilled at the outer ends *No* ✓ Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } 4 \frac{1}{2} \text{ in.} \\ \text{or } 1 \frac{3}{4} \text{ in.} \\ \text{Over threads} \end{array} \right.$ ✓
 No. of threads per inch *9* ✓ Area supported by each stay 45000 mm^2 ✓ Working pressure by Rules $18.3 \frac{\text{kg}}{\text{cm}^2}$ ✓
 Tubes: Material *St. M. steel* External diameter $\left\{ \begin{array}{l} \text{Plain } 3 \frac{1}{2} \text{ in.} \\ \text{Stay } 3 \text{ in.} \end{array} \right.$ ✓ Thickness $\left\{ \begin{array}{l} 15 \text{ mm} \\ 8.8 \text{ mm} \end{array} \right.$ ✓ No. of threads per inch *9* ✓
 Pitch of tubes $108 \times 100 \text{ mm}$ ✓ Working pressure by Rules $15.2 \frac{\text{kg}}{\text{cm}^2}$ ✓ Manhole compensation: Size of opening in shell plate $400 \times 500 \text{ mm}$ ✓ Section of compensating ring $350 \times 25 \text{ mm}$ ✓ No. of rivets and diameter of rivet holes $36 \times 30 \text{ mm}$ ✓
 Outer row rivet pitch at ends 130 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

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 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 ✓, 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 ✓

The foregoing is a correct description,

AKTIEBOLAGET LINDHOLMEN-MOTALA

Hilding Stenholm

Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building} \end{array} \right.$ $\left\{ \begin{array}{l} \text{During erection on board vessel - -} \end{array} \right.$
 1936: Jan 8, 16, 24 Feb 10, 18, 27 March 16 April 9, May 4, 11, June 10, 20
 Are the approved plans of boiler and superheater forwarded herewith *20/1/35*
 (If not state date of approval.)
 Total No. of visits *12*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These boilers have been built under special survey in accordance with the Society's Rules and approved plan.

The workmanship is good.

Test sheets of the material for the above boilers as well as two other boilers which are being made by Messrs Lindholm-Motala for Messrs. C. Sandvarens AB, Landskrona No. 43 are attached.

The boilers have been sent to Landskrona for installation and are marked as below.

*No 281 & 282
 LLOYDS TEST 24.5 KG.
 WP 14 KG.
 P.S. 20.6.36 R.*

Survey Fee ... *£ 435.00* When applied for *7 July 1936*
 Travelling Expenses (if any) *£ 24.8* When received *24.8 1936 26/8*

L. O. Ljogren
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE 9 FEB 1937

Assigned

See Memo. J.E. 1527



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