

REPORT ON BOILERS.

No. 8153.

Received at London Office

18 JAN 1930

Date of writing Report 13 January 1930. When handed in at Local Office

192

Port of Copenhagen

No. in Survey held at

Elsinore

Date, First Survey

8 October 1929

Last Survey

9 January 1930

Reg. Book

(Number of Visits

11

Gross

on the

Tons

Net

Master

Built at

Stockholm

By whom built

Frimboda Vap. Maskinbygger

ard No.

312

When built

Engines made at

Elsinore

By whom made

F. Helsingørsk Maskinbygger

Engine No.

272

When made

1930-1

Boilers made at

Elsinore

By whom made

F. Helsingørsk Maskinbygger

Boiler No.

772

When made

1930-1

Nominal Horse Power

150

Owners

Stockholms Rederiaktiebolag "SVEA"

Port belonging to

Stockholm

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

PLATES—STAYS—SCREW STAYS: Withouster Bergsman Eisenhütte Gussstahlwerk Wittenberg

Manufacturers of Steel

FURNACES: The Pigott & Co Ltd Birmingham

RIVETS: Hinge Bm - Copenhagen

TUBES: Stewart & Lloyd's, Glasgow (Letter for Record S)

Total Heating Surface of Boilers

2736.88 sq ft

2543 m²

Is forced draught fitted

NO

Coal or Oil fired

Coal

No. and Description of Boilers

2 off single ended, return multitubular

Working Pressure

200 lbs per sq in

Tested by hydraulic pressure to

350 lbs per sq in

Date of test

9 January 1930

No. of Certificate

522

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

31.5

No. and Description of safety valves to each boiler

2 off directly spring loaded

Area of each set of valves per boiler

per Rule 7.950

as fitted 11.980

Pressure to which they are adjusted

Yes

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 fitted

Smallest distance between boilers or uptakes and bunkers or woodwork

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

12' - 2"

Length

10' - 6"

Shell plates: Material

Siemens Manganese Steel

Tensile strength

44.5-48.0 kg/mm²

Thickness

1 1/8" + 1/32"

Are the shell plates welded or flanged

NO

Description of riveting: circ. seams

and lap joint, double

long. seams

Double butt strap

rivet welding

Diameter of rivet holes in

circ. seams 1 3/16" + 1/32"

long. seams 1 1/8" + 1/32"

Pitch of rivets

6 7/8"

Percentage of strength of circ. end seams

plate 66.1 %

rivets 46.2 %

Percentage of strength of circ. intermediate seam

plate 83.18 %

rivets 10.7 %

Percentage of strength of longitudinal joint

plate 86.7 %

rivets 10.7 %

combined 86.7 %

Working pressure of shell by Rules

203.03 lbs per sq in

Thickness of butt straps

outer 1 1/32"

inner 1 1/32"

No. and Description of Furnaces in each Boiler

2 off, Deighton's Section corrugated

Material

Siemens Manganese Steel

Tensile strength

27.2 - 28.7 Tons per sq inch

Smallest outside diameter

3' - 7 1/4"

Length of plain part

top

bottom

Thickness of plates

crown 7/8"

bottom 7/8"

Description of longitudinal joint

Working pressure of furnace by Rules

210.8 lbs per sq in

End plates in steam space: Material

Siemens Manganese Steel

Tensile strength

42.2 - 43.0 kg/mm²

Thickness

1 1/16" + 1/32"

How are stays secured

Secured into both plate, nut in end and outside

Working pressure by Rules

233 lbs per sq in

Tube plates: Material

front Siemens Manganese Steel

back Siemens Manganese Steel

Tensile strength

44.3 - 44.7 kg/mm²

Thickness

1"

Mean pitch of stay tubes in nests

9 1/2"

Pitch across wide water spaces

14 1/2"

Working pressure

front 214.6 lbs per sq in

back 399 lbs per sq in

Girders to combustion chamber tops: Material

Siemens Manganese Steel

Tensile strength

44.5 - 44.6 kg/mm²

Depth and thickness of girder

at centre 6 7/8" - 2 x 3/4"

Length as per Rule

2' - 1 7/8"

Distance apart

8 3/4" + 1/32" + 1/64"

No. and pitch of stays

in each 2 off - 8 1/8"

Tensile strength

4/5 - 45.6 kg/mm²

Thickness: Sides

1/16"

Back

5/8"

Top

1/16"

Bottom

3/4"

Pitch of stays to ditto: Sides

8 3/4" x 7 3/8"

Back

7 1/2" x 7 1/16"

Top

8 1/8" x 8 5/16"

Are stays fitted with nuts or riveted over

Nuts in end and outside

Working pressure by Rules

SIDES - 242

BACK - 231

TOP - 230

Front plate at bottom: Material

Siemens Manganese Steel

Tensile strength

44.3 - 44.7 kg/mm²

Thickness

1 1/16" + 1/32" + 1/64" doubling

Pitch of stays at wide water space

a = 15"

Are stays fitted with nuts or riveted over

Nuts in end and outside

Working Pressure

518 lbs per sq in

Main stays: Material

Siemens Manganese Steel

Tensile strength

44 - 50 kg/mm²

Diameter

At body of stay, 2 7/8"

Over threads, 3 1/8" - 2 7/8"

No. of threads per inch

6

Area supported by each stay

297.5 lbs inches

Working pressure by Rules

205.2 lbs per sq in

Screw stays: Material

Siemens Manganese Steel

Tensile strength

41 - 47 kg/mm²

Diameter

At turned off part, 1 1/2"

Over threads, 1 1/2"

No. of threads per inch

9

Area supported by each stay

58.6 lbs



Working pressure by Rules $214 \frac{1}{2} \text{ lbs per sq in}$ Are the stays drilled at the outer ends *No* Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part.} \\ \text{or} \\ \text{Over threads} \end{array} \right. 2" /$
No. of threads per inch $9" /$ Area supported by each stay $85,940"$ Working pressure by Rules $288 \frac{1}{2} \text{ lbs per sq in}$
Tubes: Material *Steel* External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 3\frac{1}{2}" /$ Thickness $5 \frac{1}{8} \text{ W.G. No. 8}$ No. of threads per inch $9" /$
Pitch of tubes $4\frac{3}{4}" \times 4\frac{3}{4}"$ Working pressure by Rules $215 \frac{1}{2} \text{ lbs per sq in}$ Manhole compensation: Size of opening in
shell plate $15\frac{1}{2}" \times 19\frac{1}{2}"$ Section of compensating ring *Flanged* No. of rivets and diameter of rivet holes $36 \text{ H} - 1\frac{1}{32}" /$
Outer row rivet pitch at ends $6\frac{7}{16}" /$ Depth of flange if manhole flanged $3\frac{1}{4}"$ 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's patent* Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right. \text{Beukler-Wake \& Co. of Neuhaus bei Paderborn}$
Number of elements 4 Material of tubes *Steel* Internal diameter and thickness of tubes $19 \text{ mm} \times 3 \text{ mm} /$
Material of headers *Cast steel* Tensile strength $29,4 \text{ Tons per sq in}$ Thickness $25 \text{ mm} \times 18 \text{ mm} /$ 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 *Not fitted*
Area of each safety valve *✓* Are the safety valves fitted with easing gear *✓* Working pressure as per
Rules $320 \text{ lbs per sq in}$ Pressure to which the safety valves are adjusted *✓* Hydraulic test pressure:
tubes $600 \text{ lbs per sq in}$, castings $600 \text{ lbs per sq in}$ and after assembly in place $600 \text{ lbs per sq in}$ Are drain cocks or valves fitted
to free the superheater from water where necessary *Not fitted*

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with *yes*

The foregoing is a correct description,

ACTIESELSKABET
HELSENGERS JERNSKIBS- OG MASKINBYGGERI

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right. 1929: 8/10 - 12/10 - 23/10 - 1/11 - 4/11 - 11/11 - 13/11$
while building $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right. 15/11 - 29/11 - 7/12 - 19/12. 1930: 9/1$

Are the approved plans of boiler and superheater forwarded herewith *yes*
(If not state date of approval.)

Total No. of visits 11

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

These boilers and superheaters have been built under Special Survey, in accordance with the Rules, the approved plans, and the requirements contained in the Secretary's letter E dated 4/7 and 13/11-1929.

The material has been tested as required by the Rules as per Certificates produced and the workmanship is of good description.

Survey Fee *Noted on the Machinery Report* When applied for 192
Travelling Expenses (if any) £ : : When received 192

Intarsen

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

WED. 11 JUN 1930

Assigned

See Skm. Report No 3256



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Foundation