

Rpt. 5a.

REPORT ON BOILERS.

No. 13761

Received at London Office

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Date of writing Report 7th Oct. 1943 When handed in at Local Office 9th Oct. 1943 Port of Eathenburg

No. in Reg. Book. Survey held at Eathenburg Date, First Survey 6th July 43 Last Survey 29th Sept. 1943

on the Finnboda Vær / Gard No. 331 (Number of Visits 24) Tons {Gross - Net -}

Master - Built at Strickholm By whom built AB Finnbo Vær Yard No. 332 When built -

Engines made at - By whom made - Engine No. - When made -

Boilers made at Eathenburg By whom made AB Strickholms Vær Boiler No. 2670/31 When made 1943

Nominal Horse Power - Owners - Port belonging to -

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Arvika Järnvärks AB (Letter for Record 3)

Total Heating Surface of Boilers 2162 m² = 3509 sq ft Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers Two horizontal multitubular Working Pressure 15.5 kg/cm²

Tested by hydraulic pressure to 27 kg/cm² Date of test 29.9.43 No. of Certificate 390/4 Can each boiler be worked separately Yes = 220 lb

Area of Firegrate in each Boiler 4 m² = 43 sq ft 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 4115 mm Length 3429 mm Shell plates: Material SM Steel Tensile strength 44-50 kg/cm²

Thickness 26.5 mm Are the shell plates welded or flanged No Description of riveting: circ. seams {end E.W. inter. -}

long. seams E.W. Diameter of rivet holes in {circ. seams - long. seams -} Pitch of rivets {- -}

Percentage of strength of circ. end seams {plate 85% rivets -} Percentage of strength of circ. intermediate seam {plate 85% rivets -}

Percentage of strength of longitudinal joint {plate 85% rivets - combined -} Working pressure of shell by Rules 15.5 kg/cm²

Thickness of butt straps {outer - inner -} No. and Description of Furnaces in each Boiler 3 American

Material SM Steel Tensile strength 41-47 kg/cm² Smallest outside diameter 1032 mm

Length of plain part {top - bottom -} Thickness of plates {crown 16 mm bottom 16 mm} Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 15.9 kg/cm²

End plates in steam space: Material SM Steel Tensile strength 41-47 kg/cm² Thickness 26.5 mm Pitch of stays 1000 x 50 mm

How are stays secured D.N. with outside washers Working pressure by Rules 17.65 kg/cm²

Tube plates: Material {front SM Steel back SM Steel} Tensile strength {41-47 kg/cm² 41-47 kg/cm²} Thickness {26.5 mm 22 mm}

Mean pitch of stay tubes in nests 249 mm Pitch across wide water spaces 384 mm Working pressure {front 15.6 kg/cm² back 19.8 kg/cm²}

Girders to combustion chamber tops: Material SM Steel Tensile strength 44-50 kg/cm² Depth and thickness of girder at centre T 120 x 34 mm Length as per Rule 746 Distance apart 190 mm No. and pitch of stays in each E.W. Working pressure by Rules 15.7 kg/cm² Combustion chamber plates: Material SM Steel

Tensile strength 41-47 kg/cm² Thickness: Sides 20 mm Back 19 mm Top 20 mm Bottom 20 mm

Pitch of stays to ditto: Sides 185 x 170 mm Back 200 x 180 mm Top - Are stays fitted with nuts or riveted over Pointed over

Working pressure by Rules 15.7 kg/cm² Front plate at bottom: Material SM Steel Tensile strength 41-47 kg/cm²

Thickness 26.5 mm Lower back plate: Material SM Steel Tensile strength 41-47 kg/cm² Thickness 26.5 mm

Pitch of stays at wide water space 384 mm Are stays fitted with nuts or riveted over Fitted with nuts

Working Pressure 22.8 kg/cm² Main stays: Material SM Steel Tensile strength 44-50 kg/cm²

Diameter {At body of stay, 73 mm or 80 mm over threads 80 mm} No. of threads per inch 6 Area supported by each stay 500 x 400 mm

Working pressure by Rules 17.1 kg/cm² Screw stays: Material SM Steel Tensile strength 41-47 kg/cm²

Diameter {At turned off part, - or 38 mm over threads 38 mm} No. of threads per inch 9 Area supported by each stay 200 x 180 mm

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Foundation

Working pressure by Rules 15.7 kg/cm^2 Are the stays drilled at the outer ends ☒ Margin stays: Diameter $\begin{cases} \text{At turned off part} \\ \text{or} \\ \text{Over threads} \end{cases} 48 \text{ mm}$
No. of threads per inch 9 Area supported by each stay $292 \times 180 \text{ mm}^2$ Working pressure by Rules 16.2 kg/cm^2
Tubes: Material *S.M. Steel* External diameter $\begin{cases} \text{Plain } 76.2 \text{ mm} \\ \text{Stay } 76.2 \text{ mm} \end{cases}$ Thickness 8.2 mm No. of threads per inch 9
Pitch of tubes $108 \times 108 \text{ mm}$ Working pressure by Rules 17.5 kg/cm^2 Manhole compensation: Size of opening in
shell plate $570 \times 455 \text{ mm}$ Section of compensating ring $350 \times 34 \text{ mm}$ No. of rivets and diameter of rivet holes *E.W.*
Outer row rivet pitch at ends *✓* Depth of flange if manhole flanged 99 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 $\begin{cases} \text{Plate} \\ \text{Rivets} \end{cases}$
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

☐ Tubes
☐ Steel forgings
☐ Steel castings

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.

AKTIEBOLAGET LINDHOLMENS VARV

Manufacturer

Dates
of Survey
while
building

During progress of
work in shops
During erection on
board vessel

6/43 - 29/43

Are the approved plans of boiler and superheater forwarded herewith

Total No. of visits 24

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.)

These boilers have been built under Special Survey in accordance with the Rules for "Welded Pressure Vessels" class I and the approved plan, and will be fitted in *AB. Finaboda Varv* (Gerd No 33). The workmanship is good. All welded parts of the boilers have been stress-relieved in accordance with the Rules. Test sheets for the material of the boilers are attached. Charpy's certificate of routine tests of welding carried out in my presence and plans showing position and number of x-ray films on which is indicated the category in which each film was placed by *Tekniska Provtjänsterna* are attached. Four representative x-ray films are forwarded herewith. Macro tests have been carried out at the works of *AB. Lindholmens Varv* with satisfactory results. The boilers have been marked: -

MS 393/4
LLOYD'S TEST 380 LB.
WP 220 LB.
SV. 29. 9. 43.

Survey Fee

WP 667 : 00

When applied for,

9th Oct. 1943.

Travelling Expenses (if any) £

When received,

19

Sten Johansson

Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 10 JAN 1947

Committee's Minute

Assigned

Sir F.E. Welch J.P.