

# REPORT ON BOILERS.

Received at London Office 6 OCT 1952

Date of writing Report 4th Sep. 52 When handed in at Local Office 19 Port of HAMBURG

No. in Reg. Book LÜBECK Survey held at M.T. NARVA Date, First Survey 23rd May Last Survey 28th August 1951

for Norrköpings Varv & Verkstad A/B, Norrköping (Number of Visits 18) Tons } Gross  
Net

Built at - By whom built - Yard No. 136? When built -

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

Boilers made at Lübeck By whom made Lübecker Maschinenbau A.G. Boiler No. 1443 When made 1951

Nominal Horse Power md. 147 Owners - Port belonging to -

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Hüttenwerk Huckingen A.G., Duisburg-Wanheim (Letter for Record S)

Total Heating Surface of Boilers 60 sq. m Of Superheaters -

Total for Register Book 2119 sq. ft. Is forced draught fitted - Coal or Oil fired -

No. and Description of Boilers One, Scotch Type, Marine, Single Ended Working Pressure 12.5 Atm.

Tested by hydraulic pressure to 22.25 Atm. Date of test 8.8.51 No. of Certificate 13 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 2550 mm Length 2952 mm Shell plates: Material SMOH steel Tensile strength 45.4 kgs/sqmm

If fusion welded, state name of welding Firm riveted Have all the requirements of the Rules for Class I vessels been complied with - Thickness 18 mm Are the shell plates welded or flanged no Description of riveting: circ. seams { end double riveted inter -

long. seams DB TR with alternate rivets in outer row omitted Diameter of rivet holes in { circ. seams 26mm long. seams 26mm Pitch of rivets { 81.2 mm 78 mm and 156 mm

Percentage of strength of circ. end seams { plate 68 mm rivets 56 mm Percentage of strength of circ. intermediate seam { plate - rivets -

Percentage of strength of longitudinal joint { plate 83.4 mm rivets 134 mm combined 86.1 mm

Thickness of butt straps { outer 18 mm inner 18 mm No. and Description of Furnaces in each Boiler One, Morison Type

Material SMOH steel Tensile strength 44.2 kgs/sq.mm Smallest outside diameter 770 mm

Length of plain part { top - bottom - Thickness of plates 10 mm Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom none

End plates in steam space: Material SMOH steel Tensile strength 44.3 kgs/sq.mm Thickness 24 mm Pitch of stays 440 x 250 mm

How are stays secured Double nuts, Single Washer

Tube plates: Material { front SMOH steel back SMOH steel Tensile strength { 44.3 kgs/sq.mm 43.5 kgs/sq.mm Thickness { 24 mm 20 mm

Mean pitch of stay tubes in nests 214 x 216 mm Pitch across wide water spaces -

Girders to combustion chamber tops: Material SMOH steel Tensile strength 44.9 kgs/mm<sup>2</sup> Depth and thickness of girder at centre 250 x 200 x 16 mm Length as per Rule 525 mm Distance apart 180/160/150 mm No. and pitch of stays in each welded Combustion chamber plates: Material SMOH steel

Tensile strength 43.9 & 43.5 Thickness: Sides 18 mm Back 16 mm Top 18 mm Bottom 18 mm

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

Front plate at bottom: Material SMOH steel Tensile strength 44.3 kgs/sq.mm

Thickness 24 mm Lower back plate: Material SMOH steel Tensile strength 44.3 kgs/sq.mm Thickness 24 mm

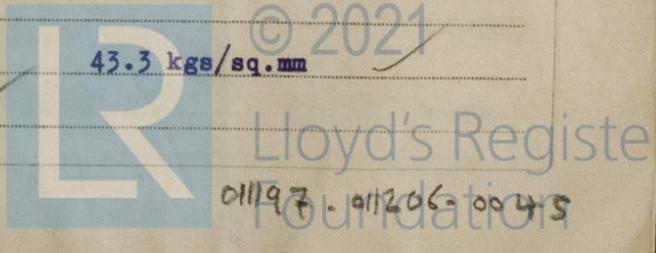
Pitch of stays at wide water space 580 x 425 mm Are stays fitted with nuts or riveted over with nuts & washers

Main stays: Material SMOH steel Tensile strength 43.3 & 50 kgs/sq.mm

Diameter { At body of stay 60 + 65 + 52 mm or 66 + 71 + 58 mm No. of threads per inch 6

Screw stays: Material SMOH steel Tensile strength 43.3 kgs/sq.mm

Diameter { At turned off part 34 mm or 38 mm No. of threads per inch 9



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Are the stays drilled at the outer ends... **no** Margin stays: Diameter <sup>At turned off part, 40mm</sup> <sub>(Over threads, 44.5 mm)</sub>

No. of threads per inch... **9**

Tubes: Material **S.M.O.H. steel** External diameter <sup>Plain, 83 mm</sup> <sub>Stay, 83 mm</sub> Thickness <sup>4 mm</sup> <sub>8 mm</sub> No. of threads per inch... **welded**

Pitch of tubes... **107 + 108** Manhole compensation: Size of opening in shell plate... **600 x 700 mm** Section of compensating ring... **260 x 24 mm** No. of rivets and diameter of rivet holes... **welded**

Outer row rivet pitch at ends... **-** Depth of flange if manhole flanged... **-** Steam Dome: Material... **none**

Tensile strength... Thickness of shell... Description of longitudinal joint...

Diameter of rivet holes... Pitch of rivets... Percentage of strength of joint <sup>Plate</sup> <sub>Rivets</sub>

Internal diameter... Thickness of crown... No. and diameter of stays... Inner radius of crown...

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** Manufacturers of <sup>Tubes</sup> <sub>Steel forgings</sub> <sub>Steel castings</sub>

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...

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...

The foregoing is a correct description,  
**Orenstein-Koppel und Lübecke Maschinenbau** Manufacturer.  
**Aktiengesellschaft**

Dates of Survey while building { During progress of work in shops - - 1951 May: 23, 26, June/ 1, 8, 16, 23, 28, 30, July: 3, 6, 11, 20, 26, Aug.: 4, 8, 25, 28 } Are the approved plans of boiler and superheater forwarded to the Registrar with (If not state date of approval.)

{ During erection on board vessel - - - } Total No. of visits... **17**

Is this Boiler a duplicate of a previous case... If so, state Vessel's name and Report No. ....

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) **This boiler has been constructed under Special Survey in conformity with the Society's Rules and Regulations, the approved plans and the Secretary's letters. The materials and workmanship are good. The boiler has been examined during construction and is eligible, in my opinion, to be installed in a vessel classed with this Society.**

Survey Fee ... **Dm 396** : When applied for, .....19.....  
 Travelling Expenses (if any) **Dm 100** : When received, .....19.....

**For A. Hauser and myself**  
*[Signature]*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute.....  
 Assigned **Sir F. E. Moly. rpt. Skm 8912**

