

# REPORT ON BOILERS

2156.

11 MAR 1943

13<sup>th</sup> May. 43

14<sup>th</sup> May. 43.

Mahrö.

Mahrö

26<sup>th</sup> Sept. 1941

26<sup>th</sup> Aug. 42.

42.

Single Screw Motor Tanker "KATHRINE STENERSEN"

25.

Tons Gross Net

Mahrö

Kockmms M. V. A. O.

220

When built 1942

Mahrö

Kockmms M. V. A. O.

Engine No. 239

When made 1942

Mahrö

Kockmms M. V. A. O.

Boiler No. 980/81

When made 1942

1556

Thuners Svanvaskilrad. II

Port belonging to

Oslo.

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

Manufacturer of Boiler: Mahrö. Vithonice Minner Stahl & Jernv. Corp. Vithonice. (Letter for Record S)

Total Heating Surface of Boilers: 2 x 131 = 262 m<sup>2</sup> Is forced draught fitted? Yes Coal or Oil fired? Oil

No. and Description of Boilers: Two S.O. Working Pressure: 171 lbs./sq. in.

Tested by hydrostatic pressure to: 306 lbs./sq. in. Date of test: 13.11.41 No. of Certificate: 106 & 107 Can any boiler be worked separately? Yes

Area of Firebricks in each Boiler: ✓ No. and Description of safety valves to each boiler: 2. Direct spring loaded.

Area of each set of valves per boiler: 6300 mm<sup>2</sup> Pres. air to which they are adjusted: Not adjusted they fitted with easing gear? Yes

In case of donkey boilers, state whether design from main boilers can be the donkey boiler: The boilers placed on a platform at after end of eng. room

Smallest distance between boilers or uprights and bracing in woodwork: ✓ Is 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? Yes

Largest internal dia. of boilers: 3400 mm. Length: 2600 mm. Shell plates: Material: Steel Tensile strength: 46.7-49.3 kg. mm<sup>2</sup>

Thickness: 22.5 mm. Are the shell plates welded or flanged? No Description of riveting: butt end: 83 mm.

Long seams: F.R. S.O. S. Diameter of rivet holes in: 26 mm. Pitch of rivets: 171.5 mm.

Percentage of strength of circumferential joints: 88.6% Percentage of strength of circumferential intermediate seams: ✓

Percentage of strength of longitudinal joints: 84.0% Working pressure of shell by Rules: 12.1 kg. cm<sup>2</sup>

Thickness of butt str.: 17 mm. No. and Description of Furnaces in each Boiler: Two Corrugated.

Material: Steel. Tensile strength: 42.3-42.9 kg. mm<sup>2</sup> Smallest outside diameter: 1076 mm.

Length of plain part: ✓ Thickness of plates: 13 mm. Description of longitudinal joints: Welded.

Dimensions of stiffening rings in crown of each boiler: ✓ Working pressure of furnace by Rules: 12.2 kg. cm<sup>2</sup>

End plates in crown seam: Steel Tensile strength: 42.1-46.4 kg. mm<sup>2</sup> Thickness: 22 mm. Pitch of stays: 350 x 406 mm.

How are stays secured: Di. mnts. washers & threaded through plate. Working pressure by Rules: 13 kg. cm<sup>2</sup>

Tube plates: Material: Steel. Tensile strength: 42.1-43.1 kg. mm<sup>2</sup> Thickness: 22 mm.

Mean pitch of stay tubes in crown: 240 mm. Pitch of stays in water spaces: 330 mm. Working pressure by Rules: 16.6 kg. cm<sup>2</sup>

Girders in combustion chamber top: Material: Steel Tensile strength: 49.5 kg. mm<sup>2</sup> Depth and thickness of girders: 19.4

at centre: 2 (180 x 20) mm. Length of girder: 735 mm. Distance apart: 210 mm. No. and pitch of stays: Steel

in each: 2 - 22.8 mm. Working pressure by Rules: 15.1 kg. cm<sup>2</sup> Combustion chamber plates: Material: Steel

Tensile strength: 42.5-46.7 kg. mm<sup>2</sup> Thickness: 18 mm. Back: 18 mm. Top: 18 mm. Bottom: 18 mm.

Pitch of stays to tube: 22.8 x 180-190 mm. Back: 216 x 203 mm. Top: 228 x 210 mm. Are stays fitted with nuts or riveted over? Both

Working pressure by Rules: 12 kg. cm<sup>2</sup> Front plate of bottom: Material: Steel Tensile strength: 42.1-43.1 kg. mm<sup>2</sup>

Thickness: 22 mm. Lower part plate: Material: Steel Tensile strength: 46.4 kg. mm<sup>2</sup> Thickness: 22 mm.

Pitch of stays at side water space: 216 x 330 mm. Are stays fitted with nuts or riveted over? Both

Working Pressure: 17.8 kg. cm<sup>2</sup> Main stay: Material: Steel Tensile strength: 44-50 kg. mm<sup>2</sup>

Diameter: 2 3/8" & 3" ends per inch: 6 Area supported by each stay: 142100 mm<sup>2</sup>

Working pressure by Rules: 12.6 kg. cm<sup>2</sup> stays: Material: Steel Tensile strength: 41-47 kg. mm<sup>2</sup>

1 1/2". No. of stays per inch: 9 Area supported by each stay: 4281 mm<sup>2</sup>



Lloyd's Register Foundation

010171-010178-0046

Working pressure by Rules  $12.9 \text{ kg. cm}^2$  No.  $57560 \text{ mm}^2$   $1\frac{1}{2}"$ ,  $1\frac{5}{8}"$  &  $1\frac{3}{4}"$   
 No. of threads per inch 9 Area supported by each stay  $12.5 \text{ kg. cm}^2$   $12.5 \text{ kg. cm}^2$   
 Tubes Material  $\text{Steel}$  External diameter  $2\frac{1}{2}"$   $2.25 \text{ mm.}$   $2.25 \text{ mm.}$   
 Pitch of tubes  $89 \times 92 \text{ mm.}$  Working pressure by Rules  $12.5 \text{ kg. cm}^2$   $12.5 \text{ kg. cm}^2$   
 Shell plate  $400 \times 500 \text{ mm.}$  Section of compensating ring  $14040 \text{ mm}^2$   $14040 \text{ mm}^2$   
 Outer row rivet pitch at ends  $190 \text{ mm.}$  Depth of flange if manhole flanged  $82 \text{ mm.}$   $82 \text{ mm.}$   
 Tensile strength Thickness of shell Description of longitudinal joint  
 Diameter of rivet holes Pitch of rivets Percentage of strength of rivets  
 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 manhole row & dome connecting to shell

The foregoing is a correct description.  
 Kockums Mek. V. A. B.  $sgd/ \text{S. Lindegren}$  /  $\text{S. H. B.}$   
 Approved:  $26-9-42$   
 Date of survey  $26/9, 27/9, 28/9, 29/9, 30/9, 1/10, 2/10, 3/10, 4/10, 5/10, 6/10, 7/10, 8/10, 9/10, 10/10, 11/10, 12/10, 13/10, 14/10, 15/10, 16/10, 17/10, 18/10, 19/10, 20/10, 21/10, 22/10, 23/10, 24/10, 25/10, 26/10, 27/10, 28/10, 29/10, 30/10, 31/10, 1/11, 2/11, 3/11, 4/11, 5/11, 6/11, 7/11, 8/11, 9/11, 10/11, 11/11, 12/11, 13/11, 14/11, 15/11, 16/11, 17/11, 18/11, 19/11, 20/11, 21/11, 22/11, 23/11, 24/11, 25/11, 26/11, 27/11, 28/11, 29/11, 30/11, 1/12, 2/12, 3/12, 4/12, 5/12, 6/12, 7/12, 8/12, 9/12, 10/12, 11/12, 12/12, 13/12, 14/12, 15/12, 16/12, 17/12, 18/12, 19/12, 20/12, 21/12, 22/12, 23/12, 24/12, 25/12, 26/12, 27/12, 28/12, 29/12, 30/12, 31/12, 1/1, 2/1, 3/1, 4/1, 5/1, 6/1, 7/1, 8/1, 9/1, 10/1, 11/1, 12/1, 13/1, 14/1, 15/1, 16/1, 17/1, 18/1, 19/1, 20/1, 21/1, 22/1, 23/1, 24/1, 25/1, 26/1, 27/1, 28/1, 29/1, 30/1, 31/1, 1/2, 2/2, 3/2, 4/2, 5/2, 6/2, 7/2, 8/2, 9/2, 10/2, 11/2, 12/2, 13/2, 14/2, 15/2, 16/2, 17/2, 18/2, 19/2, 20/2, 21/2, 22/2, 23/2, 24/2, 25/2, 26/2, 27/2, 28/2, 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