

# REPORT ON BOILERS.

No. 847

Received at London Office

17 SEP 1928

Date of writing Report 13-9-1928 When handed in at Local Office 15-9-1928 Port of Malmö  
 No. in Survey held at Malmö Date, First Survey 22nd April, 1928 Last Survey 3rd Sept, 1928  
 Book 368 on the Steel Twin Screw "1/2 POLLUX" (Number of Visits 29) Gross 8741.23  
 Tons Net 7874.40  
 Built at Malmö By whom built Hockums M. V. Aktief. Yard No. 156 When built 1928  
 Engines made at Malmö By whom made Hockums M. V. Aktief. Engine No. 17 & 18 When made 1928  
 Boilers made at Malmö By whom made Hockums M. V. Aktief. Boiler No. 883/4 When made 1928  
 Nominal Horse Power 584 Owners Trelleborgs Angf. Nya Aktief. Port belonging to Trelleborg

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Witkowitz Bergbau- & Eisenhütte Gesellschaft, Witkowitz (Letter for Record S.)  
 Total Heating Surface of Boilers 2 x 1092.50 = 2185.0 Is forced draught fitted Yes Coal or Oil fired Oil  
 No. and Description of Boilers Two multitubular Working Pressure 12 kg/cm<sup>2</sup>  
 Tested by hydraulic pressure to 21.5 kg/cm<sup>2</sup> Date of test 6-7-28 No. of Certificate 52 & 53 Can each boiler be worked separately Yes  
 Area of Firegrate in each Boiler ✓ No. and Description of safety valves to each boiler Two, direct springloaded.  
 Area of each set of valves per boiler per Rule 6624 mm<sup>2</sup> Pressure to which they are adjusted 12.3 kg/cm<sup>2</sup> Are they fitted with easing gear Yes  
 In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Steam cannot enter the vertical donkey boiler.  
 Smallest distance between boilers or uptakes daily oil tanks 1200 mm. Is oil fuel carried in the double bottom under boilers ✓  
 Smallest distance between shell of boiler and tank top plating Boilers fixed on a platform at after end of motor-room. Is the bottom of the boiler insulated Yes  
 Largest internal dia. of boilers 3600 mm. Length 3260 mm. Shell plates: Material Steel Tensile strength 44.5-47.6 kg/mm<sup>2</sup>  
 Thickness 24 mm. Are the shell plates welded or flanged None Description of riveting: circ. seams end zigzag  
 Long. seams Double buttstraps Diameter of rivet holes in circ. seams 25 mm. Pitch of rivets 73.5 mm.  
 Percentage of strength of circ. end seams plate 66% rivets 47% Percentage of strength of circ. intermediate seam plate ✓ rivets ✓  
 Percentage of strength of longitudinal joint plate 86% rivets 86% combined 89% Working pressure of shell by Rules 12.4 kg/cm<sup>2</sup>  
 Thickness of butt straps outer 22 mm. inner 22 " No. and Description of Furnaces in each Boiler Two corrugated.  
 Material Steel Tensile strength 41.5-42.7 kg/mm<sup>2</sup> Smallest outside diameter 1078 mm.  
 Length of plain part top ✓ bottom ✓ Thickness of plates 14 mm. Description of longitudinal joint welded  
 Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 13.3 kg/cm<sup>2</sup>  
 End plates in steam space: Material Steel Tensile strength 41.6-46.7 kg/mm<sup>2</sup> Thickness 25 mm. Pitch of stays 412 x 375 mm.  
 How are stays secured Double nuts Working pressure by Rules 13 kg/cm<sup>2</sup>  
 Tube plates: Material front Steel back " Tensile strength 43.7-46.7 kg/mm<sup>2</sup> Thickness 25 mm.  
 Mean pitch of stay tubes in nests 216 x 210 mm. Pitch across wide water spaces 356 mm. Working pressure front 12.8 kg/cm<sup>2</sup> back 12.5 "  
 Girders to combustion chamber tops: Material Steel Tensile strength 45-48 kg/mm<sup>2</sup> Depth and thickness of girder  
 at centre 180 (2 x 20) mm. Length as per Rule 682 mm. Distance apart 205 mm. No. and pitch of stays  
 in each 2-200 Working pressure by Rules 13 kg/cm<sup>2</sup> Combustion chamber plates: Material Steel  
 Tensile strength 41.7-46.4 kg/mm<sup>2</sup> Thickness: Sides 17 mm. Back 17.5 mm. Top 17 mm. Bottom 18 mm.  
 Pitch of stays to ditto: Sides 190 x 200 mm. Back 195 x 208 mm. Top 200 x 205 mm. Are stays fitted with nuts or riveted over Both  
 Working pressure by Rules 12.2 kg/cm<sup>2</sup> Front plate at bottom: Material Steel Tensile strength 43.7-46.7 kg/mm<sup>2</sup>  
 Thickness 25 mm. Lower back plate: Material Steel Tensile strength 41.6-44.9 kg/mm<sup>2</sup> Thickness 25 mm.  
 Pitch of stays at wide water space 340 x 195 mm. Are stays fitted with nuts or riveted over Nuts  
 Working Pressure 13.6 kg/cm<sup>2</sup> Main stays: Material Steel Tensile strength 44-50 kg/mm<sup>2</sup>  
 Diameter At body of stay, 63 mm. Over threads 70 " No. of threads per inch 6 Area supported by each stay 1545 cm<sup>2</sup>  
 Working pressure by Rules 14.5 kg/cm<sup>2</sup> Screw stays: Material Steel Tensile strength 43-45 kg/mm<sup>2</sup>  
 Diameter At turned off part, 34 mm. Over threads 38 " No. of threads per inch 9 Area supported by each stay 410 cm<sup>2</sup>

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Working pressure by Rules  $13.7 \text{ kg/cm}^2$  Are the stays drilled at the outer ends *No* Margin stays: Diameter { At turned off part,  $37 \text{ mm}$  or Over threads  $41.5 \text{ mm}$   
No. of threads per inch  $9$  Area supported by each stay  $534.3 \text{ cm}^2$  Working pressure by Rules  $12.9 \text{ kg/cm}^2$   
Tubes: Material *Steel* External diameter { Plain  $3"$  Stay  $3"$  Thickness {  $3.66 \text{ mm}$   $2.94$  No. of threads per inch  $9$   
Pitch of tubes  $105 \times 108 \text{ mm}$  Working pressure by Rules  $13.5 \text{ kg/cm}^2$  Manhole compensation: Size of opening in  
shell plate  $390 \times 490 \text{ mm}$  Section of compensating ring  $14200 \text{ mm}^2$  No. of rivets and diameter of rivet holes  $42 - 25 \text{ mm}$   
Outer row rivet pitch at ends  $159 \text{ mm}$  Depth of flange if manhole flanged  $85 \text{ mm}$  Steam Dome: Material ☒  
Tensile strength ☒ Thickness of shell ☒ Description of longitudinal joint ☒  
Diameter of rivet holes ☒ Pitch of rivets ☒ Percentage of strength of joint { Plate ☒ 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 outer row in dome connection to shell ☒

Type of Superheater ☒ Manufacturers of { Tubes ☒ 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 ☒ 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 23 inclusive for boilers been complied with *Yes*

The foregoing is a correct description,

KOCKUMS MEKANISKA VERKSTADS

AKTIEBOLAG

Manufacturer

Dates of Survey { During progress of  $23/4, 24/4, 2/5, 5/5, 14/5, 16/5, 18/5, 23/5, 25/5, 30/5, 31/5, 1/6, 6/6, 7/6, 11/6$   
work in shops -  $14/6, 19/6, 4/7, 14/7, 17/7, 19/7, 19/7$   
while building { During erection on  $10/8, 13/8, 15/8, 17/8, 19/8, 23/8, 30/8, 3/9, 1928$   
board vessel - - -

Are the approved plans of boiler and superheater forwarded herewith *Yes* (If not state date of approval.)  $1-6-27$

Total No. of visits  $29$

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

*These boilers have been built under special survey in accordance with the Rules and the approved plan. The materials used in the construction of the boilers has been tested as per Rule. The workmanship is good. The oil fuel burning installation is a single as steam is not required for any essential use at sea. Two feed pumps, each  $150 \times 100 \times 150 \text{ mm}$  dbl. are fitted.*

Survey Fee *See Rpt 4.b.* £ *-* : *-* : *-* } When applied for, ☒ 192  
Travelling Expenses (if any) £ : : } When received, ☒ 192

*Adunden*

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 28 SEP 1928*

Assigned

*See Rpt. attached*



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