

## REPORT ON BOILERS.

No. 16755

10 SEP 1927

Received at London Office

Submitting Report *10 Aug 1927* When handed in at Local Office *1927* Port of *Rotterdam*  
 Survey held at *Rotterdam* Date, First Survey *22 Dec 1926* Last Survey *5 Aug 1927*  
 on the *S.S. "Cottica"* (Number of Visits *19*) Tons {Gross *3800*  
 Net *2163*  
 Built at *Rotterdam* By whom built *Messrs P. Smit* Yard No. *410* When built *1927*  
 Engines made at *Rotterdam* By whom made *Messrs P. Smit* Engine No. *423* When made *1927*  
 Boilers made at *Rotterdam* By whom made *Messrs P. Smit* Boiler No. *510/519* When made *1927*  
 Indicated Horse Power *305* Owners *Kon. Ned. Stoom. Mij.* Port belonging to *Amsterdam*

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

Manufacturers of Steel *Messrs Mannesmannröhrenwerke Abt. Schalk & Neudorf* Letter for Record *(2)* ✓  
 Total Heating Surface of Boilers *550 CM<sup>2</sup>* Is forced draught fitted *Yes* ✓ Coal or Oil fired *Oil* ✓  
 and Description of Boilers *2 Single ended multitubular* Working Pressure *14.44 kg.* ✓  
 Tested by hydraulic pressure to *300 kg.* Date of test *21/4/27* No. of Certificate *063* Can each boiler be worked separately *Yes* ✓  
 Area of Firegrate in each Boiler *153 M<sup>2</sup>* No. and Description of safety valves to each boiler *2 Spring loaded* ✓  
 Area of each set of valves per boiler {per Rule *8640 kg.* as fitted *9072 kg.* Pressure to which they are adjusted *205 kg.* Are they fitted with easing gear *Yes* ✓  
 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 *over 2 feet* Is oil fuel carried in the double bottom under boilers *Yes* ✓  
 Smallest distance between shell of boiler and tank top plating *1 foot* Is the bottom of the boiler insulated *Yes* ✓  
 Largest internal dia. of boilers *4572 mm* Length *3767 mm* Shell plates: Material *S.M. steel* Tensile strength *48 kg.* ✓  
 Thickness *35 mm* Are the shell plates welded or flanged ✓ Description of riveting: circ. seams {end *lap 2 x riv.* inter. ✓  
 Long. seams *Double butt 3x riv.* Diameter of rivet holes in {circ. seams *38 mm* Pitch of rivets {inter. *114 mm* ✓  
 long. seams *36 mm* ✓ *139 mm* ✓  
 Percentage of strength of circ. end seams {plate *66.6%* rivets *42.63%* Percentage of strength of circ. intermediate seam {plate ✓ rivets ✓  
 Percentage of strength of longitudinal joint {plate *84.93%* rivets *85.4%* combined *87%* Working pressure of shell by Rules *15.97 kg.* ✓  
 Thickness of butt straps {outer *27 mm* inner *30 mm* No. and Description of Furnaces in each Boiler *3 Deighton* ✓  
 Material *S.M. steel* Tensile strength *43 kg.* Smallest outside diameter *1143 mm* ✓  
 Length of plain part {top ✓ bottom ✓ Thickness of plates {crown *16 mm* Description of longitudinal joint *Welded* ✓  
 bottom *15* Working pressure of furnace by Rules *14.362 kg.* ✓  
 Dimensions of stiffening rings on furnace or c.c. bottom ✓  
 End plates in steam space: Material *S.M. steel* Tensile strength *43.5 kg.* Thickness *32 mm* Pitch of stays *440 x 460 mm* ✓  
 How are stays secured *Thread in plate, nuts inside washers and nuts outside* Working pressure by Rules *15.5 kg.* ✓  
 End plates: Material {front *S.M. steel* Tensile strength *45 kg.* Thickness {front *22 mm* ✓  
 back *S.M. steel* ✓ *46 kg.* ✓ *22 mm* ✓  
 Pitch of stay tubes in nests *210 x 210 mm* Pitch across wide water spaces *356 mm* Working pressure {front *14.67 kg.* ✓  
 back *10.2 kg.* ✓  
 Ribs to combustion chamber tops: Material *S.M. steel* Tensile strength *40 kg.* Depth and thickness of girder  
 centre *250 x 2 x 10 mm* Length as per Rule *840 mm* Distance apart *215 mm* No. and pitch of stays  
 each *3 x 195 mm* Working pressure by Rules *16 kg.* ✓ Combustion chamber plates: Material *S.M. steel* ✓  
 Tensile strength *44 kg.* Thickness: Sides *17 mm* ✓ Back *17 mm* ✓ Top *17 mm* ✓ Bottom *25.5 mm* ✓  
 Pitch of stays to ditto: Sides *195 x 195 mm* Back *212 x 220 mm* Top *195 x 215 mm* Are stays fitted with nuts or riveted over *fitted with nuts* ✓  
 Working pressure by Rules *15.1 kg.* ✓ Front plate at bottom: Material *S.M. steel* Tensile strength *43 kg.* ✓  
 Thickness *22 mm* ✓ Lower back plate: Material *S.M. steel* Tensile strength *43 kg.* ✓ Thickness *22 mm* ✓  
 Pitch of stays at wide water space *396 mm* ✓ Are stays fitted with nuts or riveted over *fitted with nuts* ✓  
 Working Pressure *19 kg.* ✓ Main stays: Material *S.M. steel* Tensile strength *47 kg.* ✓  
 Diameter {At body of stay, *40.5 mm* or *41 mm* No. of threads per inch *9* ✓ Area supported by each stay *440 x 510 = 224400 mm<sup>2</sup>* ✓  
 Over threads *41.3 mm* ✓ Screw stays: Material *iron* ✓ Tensile strength *35-30 kg.* ✓  
 Working pressure by Rules *15.5 kg.* ✓ No. of threads per inch *9* ✓ Area supported by each stay *220 x 212 = 46640 mm<sup>2</sup>* ✓  
 Diameter {At turned off part, *41.3 mm* or *41 mm* No. of threads per inch *9* ✓



Working pressure by Rules  $14 \frac{1}{2}$  kg. Are the stays drilled at the outer ends *No* ✓ Margin stays: Diameter { At turned off part, ✓  
or Over threads  $50 \frac{1}{8}$  mm ✓  
No. of threads per inch  $9 \frac{1}{2}$  ✓ Area supported by each stay  $67760 \text{ mm}^2$  ✓ Working pressure by Rules  $20 \frac{1}{2}$  kg. ✓  
Tubes: Material *iron* ✓ External diameter { Plain  $46 \text{ mm}$  ✓ Thickness  $4.06 \text{ mm}$  ✓  
Stay  $46 \text{ mm}$  ✓ No. of threads per inch  $9 \frac{1}{2}$  ✓  
Pitch of tubes  $105 \text{ mm}$  ✓ Working pressure by Rules  $17 \frac{1}{2}$  kg. ✓ Manhole compensation: Size of open  
shell plate  $480 \times 580 \text{ mm}$  Section of compensating ring  $770 \times 070 \text{ mm}$  No. of rivets and diameter of rivet holes  $34 \text{ a } 38$  ✓  
Outer row rivet pitch at ends  $154 \text{ mm}$  ✓ Depth of flange if manhole flanged  $05 \text{ mm}$  ✓ 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 diam  
stays ✓ Inner radius of crown ✓ Working pressure by Rules ✓  
How connected to shell ✓ Size of doubling plate under dome ✓ Diameter of rivet holes and  
of rivets in outer row in dome connection to shell ✓

Type of Superheater *Schmidt* ✓ Manufacturers of Tubes *Schmidt'sche Heissdampf G.M.B.H.* ✓  
Number of elements  $05$  ✓ Material of tubes *seamless steel* ✓ Internal diameter and thickness of tubes  $16-21 \text{ mm}$  ✓  
Material of headers *Cast steel* Tensile strength  $43.5 \text{ kg}$  ✓ Thickness  $35-25 \text{ mm}$  ✓ Can the superheater be shut off  
the boiler be worked separately *Yes* ✓ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *Yes* ✓  
Area of each safety valve *diam  $55 \text{ mm} = 2376 \text{ mm}^2$*  ✓ Are the safety valves fitted with easing gear *Yes* ✓ Working pressure  
Rules ✓ Pressure to which the safety valves are adjusted  $14.44 \text{ kg}$  ✓ Hydraulic test pres  
tubes  $40 \frac{1}{2} \text{ kg}$  ✓ castings  $40 \frac{1}{2} \text{ kg}$  ✓ and after assembly in place  $40 \frac{1}{2} \text{ kg}$  ✓ Are drain cocks or valves  
to free the superheater from water where necessary *Yes* ✓  
Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with *Yes* ✓

The foregoing is a correct description,  
MACHINEFABRIK & SCHEEPSWERF

Dates { During progress of work in shops - - *Dec 11 Jan: 10 Feb 10* ✓ Are the approved plans of boiler and superheater forwarded herewith *No* ✓  
while building { During erection on board vessel - - *March 10-17-18-19-22-25-28-30* ✓  
April 5-7-11-15-19-21 June 21 Aug 5 ✓ Total No. of visits  $19$  ✓  
(If not state date of approval.) *6/10/10* ✓

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers have been made under Special Survey in accordance with the approved plans. Society's rules and Secretary's letter material tested as required and workmanship good.*

Survey Fee ... *On machinery* When applied for, 192  
Travelling Expenses (if any) £ *report* When received, 192

Committee's Minute *TUES. 20 SEP 1927*

Assigned *See Rpt attached*

*M. P. P.*  
Engineer Surveyor to Lloyd's Register of Shipping



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Foundation