

4 AUG 1927

Rpt. 5a.

## REPORT ON BOILERS.

No. 16523

20 JUN 1927

Received at London Office

Date of writing Report 3.6.1927 When handed in at Local Office 1927 Port of Rotterdam

No. in Survey held at Rotterdam Date, First Survey 11.1.27 Last Survey 3.5.1927

on the Borden N<sup>o</sup> 442.43 (Number of Visits 12) Gross Tons Net

Master Built at Monfalcone By whom built Cantieri Navali Triestine No. 105 When built

Engines made at Rotterdam By whom made Pott Drooga May Engine No. 156/57 When made 1927

Boilers made at " By whom made " " Boiler No. 442/43 When made 1927

Nominal Horse Power 236 Owners Anacantha Scheep May Port belonging to Willemstad

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

Manufacturers of Steel Messrs Witthoutaer Beagle & Linnh Gemeenschap (Letter for Record 5)

Total Heating Surface of Boilers 4168 sq ft Is forced draught fitted Yes Coal or Oil fired Oil

No. and Description of Boilers 2 Single ended Multitubular Marine Boilers Working Pressure 180 lbs

Tested by hydraulic pressure to 320 lbs Date of test 3.5.27 No. of Certificate 865 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler 2 high lifting spring loaded

Area of each set of valves per boiler per Rule as fitted 40 mill diam 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 No donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 13' 0" Length 12' 3" Shell plates: Material S. M. Steel Tensile strength 20-32 tons

Thickness 1 1/2" Are the shell plates welded or flanged No Description of riveting: circ. seams end lap 2 x riv inter. 3 1/2" x 16"

Long. seams Double butt 3 x riv Diameter of rivet holes in circ. seams 1 1/16" long. seams 1 1/16" Pitch of rivets 8 1/8"

Percentage of strength of circ. end seams plate 62.9% rivets 52.5% Percentage of strength of circ. intermediate seam plate combined 88.1%

Percentage of strength of longitudinal joint plate 85.4% rivets 80% Working pressure of shell by Rules 195 lbs 2 cf

Thickness of butt straps outer 7/8" inner 1" No. and Description of Furnaces in each Boiler 2 Morrison patent

Material S. M. Steel Tensile strength 26-30 tons Smallest outside diameter 3' 11 1/8"

Length of plain part top bottom Thickness of plates crown 2 1/4" bottom 3/2" Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 200 lbs

Stays in steam space: Material S. M. Steel Tensile strength 26-30 tons Thickness 1 1/8" Pitch of stays 17 x 16"

How are stays secured Turned in plates and nutted outside Working pressure by Rules 210 lbs

Stays plates: Material front S. M. Steel back S. M. Steel Tensile strength 26-30 tons Thickness 13/16" 3/4"

Pitch of stay tubes in nests 8"-12" Pitch across wide water spaces 14 3/4" Working pressure front 195 lbs back 185 lbs

Stays to combustion chamber tops: Material S. M. Steel Tensile strength 20-32 tons Depth and thickness of girder

Centre 8 1/2" x 2 x 3/4" Length as per Rule 2' 7 1/2" Distance apart 8 1/2" No. and pitch of stays

Each 2 x 10" Working pressure by Rules 290 lbs Combustion chamber plates: Material S. M. Steel

Tensile strength 26-30 tons Thickness: Sides 7/8" Back 1 1/4" Top 7/8" Bottom 7/8"

Pitch of stays to ditto: Sides 9 1/4" x 10" Back 8 x 7 1/4" Top 10 x 8 1/2" Are stays fitted with nuts or riveted over Riveted over

Working pressure by Rules 207 lbs Front plate at bottom: Material S. M. Steel Tensile strength 26-30 tons

Thickness 13/16" Lower back plate: Material S. M. Steel Tensile strength 26-30 tons Thickness 3/4"

Pitch of stays at wide water space 15 7/8" Are stays fitted with nuts or riveted over Fitted with nuts

Working Pressure 312 lbs Main stays: Material S. M. Steel Tensile strength 26-30 tons

At body of stay, 2 1/2" No. of threads per inch 9 Area supported by each stay 27.25"

Over threads 2 3/4" Screw stays: Material S. M. Steel Tensile strength 26-30 tons

Working pressure by Rules 203 lbs At turned off part, 1 3/8" No. of threads per inch 9 Area supported by each stay 97.5 sq in 85.0"

Over threads 1 1/2"

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Working pressure by Rules *105 lb* Are the stays drilled at the outer ends *Yes* Margin stays: Diameter { At turned off part, *1 1/8"*  
No. of threads per inch *9* Area supported by each stay *840"* Working pressure by Rules *216 lb*  
Tubes: Material *Steel* External diameter { Plain *2 1/4"* Thickness *3/16"* No. of threads per inch *9*  
Pitch of tubes *4"* Working pressure by Rules *207 lb* Manhole compensation: Size of opening in  
shell plate *20 3/4" x 16 3/4"* Section of compensating ring *8 1/4" x 1 1/8"* No. of rivets and diameter of rivet holes *42 x 1 1/16"*  
Outer row rivet pitch at ends *7 1/4"* Depth of flange if *manhole* flanged *5 1/2"* 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  
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  
Number of elements Material of tubes Steel castings  
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

The foregoing is a correct description,  
*ROTTERDAMSCH-DRUGGRIJK MAATSCHAPPIJ* Manufacturer

Dates of Survey { During progress of work in shops - *1/10, 7/17, 22/20, 9/6, 15/20*  
while building { During erection on board vessel - *2/4, 8/5*  
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) *No*  
Total No. of visits *12*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers have been made in accordance with the Society's Rules, Secretary's letters and approved plans, material tested as required and workmanship good, tested by hydraulic pressure as required by the Rules and found sound and tight*

*A copy of this report has been sent to the Trust Surveyors*

Survey Fee ... *203.20* When applied for, *7/6* 1927  
Travelling Expenses (if any) *3.00* When received, *21/6* 1927  
*J. J. Ochoa*  
Engineer-Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUES. 9 AUG 1927*  
Assigned *See Tri. Inf. rpt. No 7634*

