

REPORT ON BOILERS.

No. 18649

Received at London Office 29 JUL 1929

Date of writing Report 19-7-29 When handed in at Local Office 102 Port of Rotterdam.

No. in Survey held at Rotterdam Date, First Survey 1 Dec. 1927 Last Survey 18 July 1929

on the M. 4 "Belgian Gulf" (Number of Visits 24.) Gross 8299. Net 4704.

Master Built at Rotterdam By whom built Messrs Burgerhout Yard No. 115 When built 1929.

Engines made at Rotterdam By whom made Messrs Burgerhout Engine No. 424/425 When made 1929.

Boilers made at Rotterdam By whom made Messrs Burgerhout Boiler No. 698/699 When made 1929.

Nominal Horse Power 905 Owners S.A. Unon: d'Armenement Port belonging to S.A. Unon: d'Industrie & de Commerce

MULTITUBULAR BOILERS - MAIN, AUXILIARY OR DONKEY.

Manufacturers of Steel Mannesmann-Röhrenwerke, Abt. Schulz Kraudt & Hüchingsetter for Record 2. n.)

Total Heating Surface of Boilers 358 cbm² Is forced draught fitted No Coal or Oil fired Oil.

No. and Description of Boilers 2 Single Condensed Marine Boilers Working Pressure 16.5 kg-180 lb.

Tested by hydraulic pressure to 320 lb. Date of test 30 July 28 No. of Certificate 007 Can each boiler be worked separately Yes.

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

Area of each set of valves per boiler (per Rule Diam: 70 mm as fitted 3848 mm²) Pressure to which they are adjusted 180 lb. Are they fitted with easing gear Yes.

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Can't enter.

Smallest distance between boilers or uptakes and bunkers or woodwork over 2 feet Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating Boilers fitted on tween deck Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 4200 mm. Length 3350 mm. Shell plates: Material S.M. Steel. Tensile strength 45-51 kg.

Thickness 29 mm. Are the shell plates welded or flanged Description of riveting: circ. seams (end inter.)

long. seams Double butt 3 x riv. Diameter of rivet holes in (circ. seams 31.7 mm. long. seams 31.7 mm. Pitch of rivets (94 mm. 210 mm.)

Percentage of strength of circ. end seams (plate 66.2% rivets 45.78%) Percentage of strength of circ. intermediate seam (plate 84.9% rivets 99.2% combined 89.6%)

Percentage of strength of longitudinal joint (plate 84.9% rivets 99.2% combined 89.6%) Working pressure of shell by Rules 13.7 kg.

Thickness of butt straps (outer 26 mm. inner 26 mm.) No. and Description of Furnaces in each Boiler 3 Morrison. 3 cf.

Material S.M. Steel. Tensile strength 35-41 kg. Smallest outside diameter 1030 mm.

Length of plain part (top bottom) Thickness of plates (crown 15 mm. bottom 15 mm.) Description of longitudinal joint Welded.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 14.8 kg.

End plates in steam space: Material S.M. Steel Tensile strength 41-47 kg. Thickness 30 mm. Pitch of stays 600 x 430 mm.

How are stays secured screwed in both plates, nuts inside, washers and nuts outside Working pressure by Rules 13.1 kg.

Tube plates: Material (front S.M. Steel. back S.M. Steel.) Tensile strength 41-47 kg. Thickness (23 mm. 21 mm.)

Mean pitch of stay tubes in nests 339 x 220 mm. Pitch across wide water spaces 393 mm. Working pressure (front 19 kg. back 19 kg.)

Girders to combustion chamber tops: Material S.M. Steel. Tensile strength 41-47 kg. Depth and thickness of girder

at centre 210 x 2 x 22 mm. Length as per Rule 020 mm. Distance apart 210 mm. No. and pitch of stays

in each 3 x 200 mm. Working pressure by Rules 15.9 kg. Combustion chamber plates: Material S.M. Steel.

Tensile strength 41-47 kg. Thickness: Sides 16 mm. Back 16 mm. Top 16 mm. Bottom 22 mm.

Pitch of stays to ditto: Sides 200 x 200 mm. Back 186 x 200 mm. Top 200 x 210 mm. Are stays fitted with nuts or riveted over (partly fitted with nuts partly worked over.)

Working pressure by Rules 15.5 kg. Front plate at bottom: Material S.M. Steel. Tensile strength 41-47 kg.

Thickness 23 mm. Lower back plate: Material S.M. Steel. Tensile strength 41-47 kg. Thickness 20 mm.

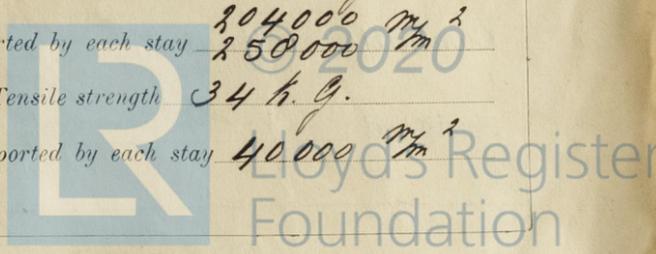
Pitch of stays at wide water space 367 mm. Are stays fitted with nuts or riveted over (fitted with nuts.)

Working Pressure 16.5 kg. Main stays: Material S.M. Steel. Tensile strength 44-50 kg.

Diameter (At body of stay, or Over threads) 3" 3 1/4" No. of threads per inch 9 Area supported by each stay 204000 mm² 250000 mm²

Working pressure by Rules 13.2 kg. Screw stays: Material iron Tensile strength 34 kg.

Diameter (At turned off part, or Over threads) 2" - 1 3/4" - 1 1/2" No. of threads per inch 9 Area supported by each stay 40000 mm²



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Working pressure by Rules 14 k.g. Are the stays drilled at the outer ends No Margin stays: Diameter ^{At turned off part.} 1 3/4" - 2"
 No. of threads per inch 9 Area supported by each stay 56700 mm² Working pressure by Rules 15 k.g.
 Tubes: Material Steel-iron External diameter ^{Plain} 3 1/4" Thickness ^{Stay} 3.65 mm No. of threads per inch 9
 Pitch of tubes 110 x 113 mm Working pressure by Rules 13.5 k.g. Manhole compensation: Size of opening
 shell plate 440 x 540 mm Section of compensating ring 600 x 700 mm No. of rivets and diameter of rivet holes 38 @ 1 5/16"
 Outer row rivet pitch at ends 810 mm Depth of flange if manhole flanged 80 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
 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
 Number of elements _____ Material of tubes _____ Manufacturers of ^{Tubes} _____
 Material of headers _____ ^{Steel castings} _____ Internal diameter and thickness of tubes _____
 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,
BURGERHOUT'S MACHINEFABRIEK & SCHEEPSWERF, N.V.
 Manufacture

Dates of Survey ^{During progress of} 1927 Dec: 1-14-20-28 Are the approved plans of boiler and superheater forwarded herewith 23/9/27
^{while} 1928 Jan: 17-31 Feb: 20 (If not state date of approval.)
^{building} ^{board vessel} March 2-19-29 April 16-23 Total No. of visits 24
May 9-16-19-31 June 28 July 5-16-30 1929 June 4 July 9-16-18.

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 £ 304.20 When applied for, 2/1/27 1927
 Travelling Expenses (if any) £ 12.00 When received, 13.8 1927

M. Young
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 2 AUG 1929
 Assigned See 2.6.27. attached