

# REPORT ON BOILERS.

No. 15312

Received at London Office

JUN 28 1938

Date of writing Report 27 June 1938 When handed in at Local Office

Port of Amsterdam

No. in Survey held at

Amsterdam

Date, First Survey 21 March

Last Survey 13 May 1938

Book.

(Number of Visits 0)

Gross

Tons

Net

on the Single Screw M.F. "CRISTA"

Master

Built at

Schiedam

By whom built

N.V. Werf Gusto

Yard No. 726

When built 1930

Engines made at

Amsterdam

By whom made

N.V. Werkspoor

Engine No.

When made 1930

Boilers made at

Amsterdam

By whom made

N.V. Werkspoor

Boiler No. 2005

When made 1930

Nominal Horse Power

Owners

Port belonging to

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

Manufacturers of Steel The Broomfield Boiler Works Motherwell

(Letter for Record S)

Total Heating Surface of Boilers

1530 sq ft  
142 m<sup>2</sup>

Is forced draught fitted

Yes

Coal or Oil fired oil

No. and Description of Boilers One horizontal marine boiler

Working Pressure 12.65 kg/cm<sup>2</sup>

Tested by hydraulic pressure to 32048 lb Date of test 13-5-38 No. of Certificate 425

Can each boiler be worked separately

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler 2 of sprung loaded

Area of each set of valves per boiler

per Rule 7600 m<sup>2</sup>  
as fitted 7700 m<sup>2</sup>

Pressure to which they are adjusted 100 lb

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

Is oil 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

Largest internal dia. of boilers 3550 mm

Length 3200 mm

Shell plates: Material

SMS

Tensile strength 47.53 kg/cm<sup>2</sup>

Thickness

25 mm

Are the shell plates welded or flanged

Description of riveting: circ. seams

end 46 rivets  
inter. 1

long. seams 46 butt straps tube

Diameter of rivet holes in

circ. seams 26 mm  
long. seams 26 mm

Pitch of rivets

77.5 mm  
176 mm

Percentage of strength of circ. end seams

plate 66  
rivets 43.5

Percentage of strength of circ. intermediate seam

plate 1  
rivets 1

Percentage of strength of longitudinal joint

plate 85  
rivets 87.5  
combined 80

Working pressure of shell by Rules 13.7 kg

Thickness of butt straps

outer 22 mm  
inner 22 mm

No. and Description of Furnaces in each Boiler 3 Morrison's furnaces

Material

SMS

Tensile strength 41.47 kg/cm<sup>2</sup>

Smallest outside diameter 222 mm

Length of plain part

top  
bottom

Thickness of plates

11 mm

Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.e. bottom

Working pressure of furnace by Rules 13.4 kg

End plates in steam space: Material

SMS

Tensile strength 41.47 kg

Thickness 26 mm

Pitch of stays 400 x 420 mm

How are stays secured

46 nuts

Working pressure by Rules 13 kg

Tube plates: Material

front SMS  
back SMS

Tensile strength

41.47 kg  
do.

Thickness

26 mm  
21 mm

Mean pitch of stay tubes in nests

247 mm

Pitch across wide water spaces

360 mm

Working pressure

front 14 kg  
back 14.7 kg

Girders to combustion chamber tops: Material

SMS

Tensile strength

44.50 kg

Depth and thickness of girder

at centre

200 x (2 x 10)

Length as per Rule

650 mm

Distance apart

220

No. and pitch of stays

in each

2 x 210 mm

Working pressure by Rules

10.5 kg

Combustion chamber plates: Material

SMS

Tensile strength

41.47 kg

Thickness: Sides

10 mm

Back

19 mm

Top

10 mm

Bottom 25 mm

Pitch of stays to ditto: Sides

190 x 210

Back

164 x 245

Top

210 x 220

Are stays fitted with nuts or riveted over

welded over

Working pressure by Rules

14.2 kg

Front plate at bottom: Material

SMS

Tensile strength 41.47 kg

Thickness

26 mm

Lower back plate: Material

SMS

Tensile strength 41.47 kg

Thickness 26 mm

Pitch of stays at wide water space

360 x 164 mm

Are stays fitted with nuts or riveted over

with nuts

Working Pressure

24.5 kg

Main stays: Material

SMS

Tensile strength 44.50 kg

Diameter

At body of stay,  
or  
Over threads

2 3/4"

No. of threads per inch

8

Area supported by each stay 1680 cm<sup>2</sup>

Working pressure by Rules

15 kg

Screw stays: Material

SMS

Tensile strength 41.47 kg

Diameter

At turned off part,  
or  
Over threads

1 1/2"

No. of threads per inch

9

Area supported by each stay 342 cm<sup>2</sup>



Lloyd's Register Foundation



Working pressure by Rules 14.4 kg Are the stays drilled at the outer ends Yes Margin stays: Diameter 1 5/8" At turned off part, or Over threads 1 5/8"  
No. of threads per inch 9 Area supported by each stay 500 cm<sup>2</sup> Working pressure by Rules 13.0 kg  
Tubes: Material SN5 External diameter { Plain 2 3/4" Thickness 2.65 mm  
Pitch of tubes 100 x 98 mm Working pressure by Rules 15 kg No. of threads per inch 9  
shell plate 300 x 400 mm Section of compensating ring 640 x 740 x 20 mm No. of rivets and diameter of rivet holes 40 - 20 mm  
Outer row rivet pitch at ends 190 mm Depth of flange if manhole flanged 75 mm Manhole compensation: Size of opening  
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  
of rivets in outer row in dome connection to shell Diameter of rivet holes and pitch

Type of Superheater

Number of elements Material of tubes Manufacturers of Tubes { Steel castings  
Material of headers Tensile strength Internal diameter and thickness of tubes  
the boiler be worked separately Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Can the superheater be shut off, and  
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 22 inclusive for boilers been complied with

The foregoing is a correct description,  
**WERKSPOR N.V.** [Signature] Manufacturer  
Are the approved plans of boiler and superheater forwarded herewith E10-6.37  
(If not state date of approval.)  
Total No. of visits

Is this Boiler a duplicate of a previous case — If so, state Vessel's name and Report No. —

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

The boiler has been made under special survey, in accordance with the approved plans & Secretary's letter. Material duly tested as per rules workmanship throughout good.  
The boiler has been shipped to Rotterdam and will be fitted aboard N.V. Wier Gusto's Yard No. 726 (Schiedam).  
The boiler has been satisfactorily fitted on board.  
[Signature]

Survey Fee ... £ 122 -  
Travelling Expenses (if any) £ —  
When applied for, 20. 1. 1938  
When received, 4. 8. 38

Committee's Minute FRI 6 JAN 1939  
Assigned See R. B. F. E. machy 27660

[Signature]  
Engineer Surveyor to Lloyd's Register of Shipping.