

## REPORT ON BOILERS.

No. 13334<sup>6</sup>

Received at London Office - 8 DEC 1934

Date of writing Report 3 Dec 1934 When handed in at Local Office

Port of Amsterdam

No. in Survey held at Amsterdam

Date, First Survey 24 March

Last Survey 21 Feb 1934

on the

M. V. PERNA

(Number of Visits 30)

Gross  
Tons  
Net

Master Built at Odense

By whom built Odense Skibstjenestværd No. 54 When built 1934

Engines made at Amsterdam

By whom made N.V. Werkspoor

Engine No. When made 1934

Boilers made at Amsterdam

By whom made N.V. Werkspoor

Boiler No. 2660 When made 1934

Nominal Horse Power 502

Owners N.V. Petroleum M<sup>te</sup> "Roe Larina" Port belonging to 's GravenhageMULTITUBULAR BOILERS ~~MAIN~~, ~~AUXILIARY~~, OR DONKEY.Manufacturers of Steel Shub C<sup>o</sup> of Scotland

(Letter for Record)

Total Heating Surface of Boilers 2560 ft<sup>2</sup>

Is forced draught fitted Yes

Coal or Oil fired oil

No. and Description of Boilers One horizontal Multitubular Boiler

Working Pressure 180 lb

Tested by hydraulic pressure to 320 lb Date of test 12 Nov 34 No. of Certificate 380 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler Two spring loaded

Area of each set of valves per boiler

{ per Rule 14.60" ✓  
as fitted 14.70"

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

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 4400 mm

Length 3460

Shell plates: Material SMS

Tensile strength 47.5-38 ton

Thickness 29 mm

Are the shell plates welded or flanged ✓

Description of riveting: circ. seams { end dbl riveted ✓  
inter. ✓long. seams dbl butt straps ✓  
triple rivetedDiameter of rivet holes in { circ. seams 30 mm ✓  
long. seams 20 mm ✓Pitch of rivets { 27 mm ✓  
200 mm ✓Percentage of strength of circ. end seams { plate 61.5% ✓  
rivets 42.3% ✓Percentage of strength of circ. intermediate seam { plate ✓  
rivets ✓Percentage of strength of longitudinal joint { plate 85% ✓  
rivets 85% ✓  
combined 81% ✓

Working pressure of shell by Rules 184 lb

Thickness of butt straps { outer 25 mm ✓  
inner 25 mm ✓

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

Material SMS

Tensile strength 26-30 ton ✓

Smallest outside diameter 1130 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 193 lbs

End plates in steam space: Material SMS

Tensile strength 26-30 ton ✓

Thickness 29 mm ✓

Pitch of stays 440 x 450 mm ✓

How are stays secured double nuts ✓

Working pressure by Rules 190 lbs

Tube plates: Material { front SMS ✓  
back SMS ✓Tensile strength { 26-30 tons ✓  
26-30 tons ✓Thickness { 23 mm ✓  
22 mm ✓

Mean pitch of stay tubes in nests 240 mm

Pitch across wide water spaces 360 mm ✓

Working pressure { front 230 lbs ✓  
back 210 lbs ✓

Girders to combustion chamber tops: Material SMS

Tensile strength 20-32 tons ✓

Depth and thickness of girder

at centre 220 mm x 30 mm

Length as per Rule

780 mm ✓

Distance apart 220 mm ✓

No. and pitch of stays

in each 3. 200 mm ✓

Working pressure by Rules 210 lbs

Combustion chamber plates: Material S.M.S.

Tensile strength 26-30 tons ✓

Thickness: Sides 10 mm ✓

Back 19 mm ✓

Top 10 mm ✓

Bottom 25 mm ✓

Pitch of stays to ditto: Sides 200 x 200 mm

Back 226 mm x 195 mm

Top 200 x 220 mm

Are stays fitted with nuts or riveted over rivets ✓

Working pressure by Rules 196 lbs

Front plate at bottom: Material SMS

Tensile strength 26-30 ton ✓

Thickness 23 mm ✓

Lower back plate: Material SMS

Tensile strength 26-30 ton ✓

Thickness 23 mm ✓

Pitch of stays at wide water space 366 mm ✓

Are stays fitted with nuts or riveted over with nuts ✓

Working Pressure 190 lbs

Main stays: Material SMS

Tensile strength 20-32 ton ✓

Diameter { At body of stay, ✓  
or  
Over threads 3" ✓

No. of threads per inch 8 ✓

Area supported by each stay 306 in<sup>2</sup>

Working pressure by Rules 220 lbs

Screw stays: Material SMS

Tensile strength 26-30 ton ✓

Diameter { At turned off part, ✓  
or  
Over threads 1 1/2" ✓

No. of threads per inch 11 ✓

Area supported by each stay 60.25 in<sup>2</sup>

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Working pressure by Rules 185 lbs Are the stays drilled at the outer ends Yes Margin stays: Diameter { At turn off part,  
or  
Over threads 1 5/8" ✓

No. of threads per inch 11 ✓ Area supported by each stay 77.50" Working pressure by Rules 146 lbs

Tubes: Material Iron External diameter { Plain 2 3/4" ✓  
Stay 2 3/4" ✓ Thickness { 209 L.S.C. ✓  
5/16 - 7/16 ✓ No. of threads per inch 11 ✓

Pitch of tubes 100 x 90 mm ✓ Working pressure by Rules plain = 215 lbs. stay = 195 lbs Manhole compensation: Size of opening in  
shell plate 370 x 470 mm ✓ Section of compensating ring 27 0" 32 No. of rivets and diameter of rivet holes 54 - 32 mm ✓

Outer row rivet pitch at ends 220 mm Depth of flange if manhole flanged 00 mm ✓ Steam Dome: Material C

Tensile strength C Thickness of shell C Description of longitudinal joint C

Diameter of rivet holes C Pitch of rivets C Percentage of strength of joint { Plate C  
Rivets C

Internal diameter C Working pressure by Rules C Thickness of crown C No. and diameter of  
stays C Inner radius of crown C Working pressure by Rules C

How connected to shell C Size of doubling plate under dome C Diameter of rivet holes and pitch  
of rivets in outer row in dome connection to shell C

|   |  |   |   |
|---|--|---|---|
| Type of Superheater   | Manufacturers of   |   |   |
|   | <div style="display: flex; align-items: center;"> <div style="margin-right: 5px;">Tubes</div> <div style="font-size: 2em; margin-right: 5px;">}</div> <div>Steel castings</div> </div> |   |   |
| 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 |
| Area of each safety valve   | Is a safety valve fitted to every part of the superheater which can be shut off from the boiler  | 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 *Yes*

*The foregoing is a correct description,*

Manufacturer.

|                                |                                       |  |
|--------------------------------|---------------------------------------|--|
| Dates of Survey while building | During progress of work in shops - -  | <u>Nov 14-21-26</u> <u>April 6-16</u> <u>May 9-10-20</u> Are the approved plans of boiler and superheater forwarded herewith<br><u>June 5-8-12-18-19-26</u> <u>July 6, 11, 17-21</u> <u>Aug 6-31</u> (If not state date of approval.) <u>17-3-34</u> |
|                                | During erection on board vessel - - - | <u>Sept 11-20-24</u> <u>Oct 4-11-17-19-29</u> <u>Nov 12-21</u> Total No. of visits   |

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

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

This Boiler has been made in accordance with the approved plans and Secretary's letter, material tested as per rules, workmanship throughout good. Boiler hydraulic tested as required found sound & tight.

The Boiler has been forwarded to Odense and will be placed in  
Messrs Odense Maskfabriks Jærn No 54.

|                              |     |     |       |
|------------------------------|-----|-----|-------|
| Survey Fee                   | ... | ... | 204 - |
| Travelling Expenses (if any) |     |     | 10 -  |

When applied for.

19

When received.

27-12

18

LD

29

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

Committee's Minute \_\_\_\_\_ **FRI. 5 APR 1935**

*Assigned*

see F. E. Machz

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