

# REPORT ON BOILERS.

Received at London Office - 8 DEC 1934

Date of writing Report *3 Dec* 19*34* When handed in at Local Office *10* Port of *Amsterdam*

No. in Reg. Book. Survey held at *Amsterdam* Date, First Survey *24 March* Last Survey *21 Feb* 19*34*  
 on the *M. V. PERNA* (Number of Visits *30*) Tons } Gross }  
 Net }

Master \_\_\_\_\_ Built at *Odense* By whom built *Odense Skibstjenest* and 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 *500* Owners *N.V. Petroleum M<sup>y</sup> "Roc Larina"* Port belonging to *Gravenhage*

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

Manufacturers of Steel *Shub Co of Scotland* (Letter for Record \_\_\_\_\_)

Total Heating Surface of Boilers *2560 sq ft* 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 *3204 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* ✓ Diameter 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%* ✓ 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 *190 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 *860 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 *700 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 145 mm* ✓ Top *200 x 220 mm* ✓ Are stays fitted with nuts or riveted over *with nuts* ✓

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 *866 mm* ✓ Are stays fitted with nuts or riveted over *with nuts* ✓

Working Pressure *190 lbs* Main stays: Material *SMS* Tensile strength *20-32* ✓

Diameter { At body of stay, \_\_\_\_\_  
or \_\_\_\_\_  
Over threads *3"* ✓ No. of threads per inch *8* ✓ Area supported by each stay *306* ✓

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* ✓

Working pressure by Rules 185 lbs Are the stays drilled at the outer ends Yes Margin stays: Diameter <sup>At turned off part,</sup> 1 5/8" or 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 <sup>Plain</sup> 2 3/4" <sup>Stay</sup> 2 3/4" Thickness <sup>MS</sup> 5/16 - 7/16" No. of threads per inch 11  
 Pitch of tubes 100 x 90 mm Working pressure by Rules plain = 215 lbs. May, 1956 Manhole compensation: Size of opening in shell plate 370 x 470 mm Section of compensating ring 270" 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 0 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 <sup>Plate</sup> - <sup>Rivets</sup> -  
 Internal diameter - Working pressure by Rules - Thickness of crown - No. and diameter of stays -  
 How connected to shell - Inner radius of crown - Working pressure by Rules -  
 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 <sup>Tubes</sup> - <sup>Steel castings</sup> -  
 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 -  
 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 22 inclusive for boilers been complied with Yes

The foregoing is a correct description,  
*W. M. M. P. M.*  
 Manufacturer.

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

Is this Boiler a duplicate of a previous case No 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 letters, 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 Maskstribraefts Jærd # 54.

Survey Fee ... 204 - When applied for, 19  
 Travelling Expenses (if any) 10 - When received, 27-12-1934

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

Committee's Minute FRI. 5 APR 1935  
 Assigned see J. E. Machy

