

REPORT ON BOILERS.

Received at London Office JUN 21 1939

Date of writing Report 2.6.1939 When handed in at Local Office 1939 Port of Rotterdam

No. in Reg. Book Survey held at Rotterdam Date, First Survey 10.7.38 Last Survey 16-1-1939

on the Donkey boiler M.V. PENDRECHT (Number of Visits 16) Tons { Gross 10746 Net 6367 }

Master — Built at Rotterdam By whom built Pott Drooga My Yard No. 212 When built 1939

Engines made at Bengelo By whom made Geb. Hoek Engine No. 4108 When made 1939

Boilers made at Rotterdam By whom made Pott Drooga My Boiler No. 558 When made 1939

Nominal Horse Power 633 Owners M. Hoorn My "De Maas" Port belonging to Rotterdam

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Bethlehem Steel Company (Letter for Record 5)

Total Heating Surface of Boilers 180 cb² (1926 sq ft) Is forced draught fitted Yes Coal or Oil fired Oil fired

No. and Description of Boilers One Multitubular Marine Boiler Working Pressure 180 lb

Tested by hydraulic pressure to 320 lb Date of test 10.1.39 No. of Certificate 1018 Can each boiler be worked separately Yes

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

Area of each set of valves per boiler { per Rule 12.4 as fitted 3 } 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 —

Smallest distance between boilers or uptakes and bunkers or woodwork Over 5 feet 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 3960 mm Length 3504 mm Shell plates: Material S.M. Steel Tensile strength 44-51 kg/mm²

Thickness 27.5 mm Are the shell plates welded or flanged Butt shape Description of riveting: circ. seams { end lap 2 x 2w inter — }

long. seams double butt straps 3 x riv Diameter of rivet holes in { circ. seams 50 mm long. seams 50 mm } Pitch of rivets { 97 mm 205 mm }

Percentage of strength of circ. end seams { plate 69% rivets 43.3% } Percentage of strength of circ. intermediate seam { plate — rivets — }

Percentage of strength of longitudinal joint { plate 85.3% rivets 95% combined 90.2% } Working pressure of shell by Rules 12.78 kg/cm²

Thickness of butt straps { outer 26 mm inner 26 mm } No. and Description of Furnaces in each Boiler 2 Morrison patent

Material S.M. Steel Tensile strength 41-47 kg/cm² Smallest outside diameter 1136 mm

Length of plain part { top — bottom — } Thickness of plates { crown 14 mm bottom — } Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom — Working pressure of furnace by Rules 12.65 kg/cm²

End plates in steam space: Material S.M. Steel Tensile strength 41-47 kg/mm² Thickness 28.5 mm Pitch of stays 432 mm

How are stays secured Screwed in plate with nuts and washers outside Working pressure by Rules 13.5 kg/cm²

Tube plates: Material { front S.M. Steel back S.M. Steel } Tensile strength { 41-47 kg/mm² } Thickness { 20 mm 19 mm }

Mean pitch of stay tubes in nests 204 x 306 Pitch across wide water spaces 374 mm Working pressure { front 13.1 kg/cm² back — }

Girders to combustion chamber tops: Material S.M. Steel Tensile strength 41-47 kg/mm² Depth and thickness of girder at centre 216 x 2 x 19 mm Length as per Rule 858 mm Distance apart 216 mm No. and pitch of stays in each 2 in 254 mm Working pressure by Rules 14.5 kg/cm² Combustion chamber plates: Material S.M. Steel

Tensile strength 41-47 kg/mm² Thickness: Sides 22 mm Back 19 mm Top 22 mm Bottom 22 mm

Pitch of stays to ditto: Sides 254 mm Back 203 mm Top 254 x 216 mm Are stays fitted with nuts or riveted over Riveted over

Working pressure by Rules 20.5 kg/cm² Front plate at bottom: Material S.M. Steel Tensile strength 41-47 kg/mm²

Thickness 20 mm Lower back plate: Material S.M. Steel Tensile strength 41-47 kg/mm² Thickness 19 mm

Pitch of stays at wide water space 396 mm Are stays fitted with nuts or riveted over Fitted with nuts

Working Pressure 15.8 kg/cm² Main stays: Material S.M. Steel Tensile strength 44-51 kg/mm²

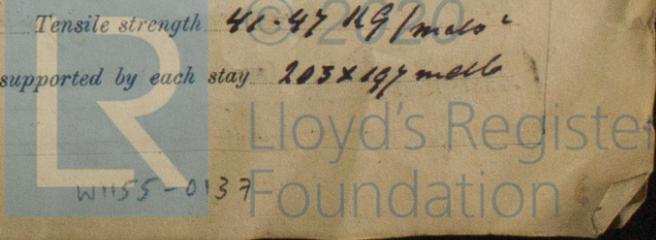
Diameter { At body of stay, 2 1/2 Over threads, 2 3/4 } No. of threads per inch 9 Area supported by each stay 406 x 432 mm²

Working pressure by Rules 13.4 kg/cm² Screw stays: Material S.M. Steel Tensile strength 41-47 kg/mm²

Diameter { At turned off part, 1 7/8 Over threads, 1 3/4 } No. of threads per inch 9 Area supported by each stay 203 x 197 mm²

If not, state whether, and when, any...

In a Report also sent on the Hull of the Ship?



Working pressure by Rules $20,349/600$ Are the stays drilled at the outer ends *No* Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{1}{8}'' \\ \text{Over threads } 1\frac{3}{4}'' \end{array} \right.$

No. of threads per inch 9 Area supported by each stay 59400 mm^2 Working pressure by Rules 13.7 kg/cm^2

Tubes: Material *S M Steel* External diameter $\left\{ \begin{array}{l} \text{Plain } 2\frac{3}{4}'' \\ \text{Stay } 2\frac{1}{4}'' \end{array} \right.$ Thickness $\left\{ \begin{array}{l} 2.5 \text{ cm} \\ 2.8 \text{ mm} \end{array} \right.$ No. of threads per inch 9

Pitch of tubes 102 mm Working pressure by Rules $19\frac{1}{2} \text{ kg/cm}^2$ Manhole compensation: Size of opening in shell plate 425×526 Section of compensating ring $421 \times 812 \times 28.5 \text{ mm}$ No. of rivets and diameter of rivet holes $42 \times 30 \text{ mm}$

Outer row rivet pitch at ends 192 mm Depth of flange if manhole flanged 90 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 $\left\{ \begin{array}{l} \text{Plate } \checkmark \\ \text{Rivets } \checkmark \end{array} \right.$

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 $\left\{ \begin{array}{l} \text{Tubes } \checkmark \\ \text{Steel forgings } \checkmark \\ \text{Steel castings } \checkmark \end{array} \right.$

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 *✓* forgings and 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,
DE ROTTERDAMSCHER DROOGDOEK MIJ. Manufacturer.
W. Nape

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops - } 1938 \text{ } 10/17, 10/29/13, 11/18/19, 12/22/22, 1-18/11, 2-8/12 \\ \text{while building } 1939 \text{ } 2-10-16/1 \end{array} \right.$ Are the approved plans of boiler and superheater forwarded herewith *Retained*
 (If not state date of approval.) $15-4-38$

Total No. of visits 14

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 to the Society's Rules, approved plan and Secretary's letter, material tested as required and workmanship good*

Survey Fee ... 153.60 } When applied for, $20.6.1939$
 Travelling Expenses (if any) 1.00 } When received, $21/7 1939$

J. J. Oelova
 Chief Surveyor to Lloyd's Register of Shipping.

Committee's Minute $1930 \text{ JUN } 1939$
 Assigned *See I.E. machy rpt*

