

## REPORT ON BOILERS.

No. 28311<sup>a</sup>.

Received at London Office

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Date of writing Report 2.6.1939 When handed in at Local Office

19

Port of Rotterdam

No. in Reg. Book. Survey held at

Rotterdam

Date, First Survey 18.7.38

Last Survey 16.1.1939

1939

on the Exhaust Gas Boiler. MV. PENDRECHT

(Number of Visits 10)

Gross 10746  
Tons Net 6367

Master Built at Rotterdam By whom built Potl Drooga My Yard No. 212 When built 1934  
Engines made at Bengelo By whom made Gebr. Hoek Engine No. 4168 When made 1939  
Boilers made at Rotterdam By whom made Potl Drooga My Boiler No. 559 When made 1939  
Nominal Horse Power 633 Owners M. Hoome 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 3170  $\text{m}^2$  Is forced draught fitted Yes Coal or Oil fired Oil or exhaust gas  
No. and Description of Boilers One multitubular exhaust gas boiler Working Pressure 180 lb  
Tested by hydraulic pressure to 320 lb Date of test 16.1.39 No. of Certificate 1019 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 12.95 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  
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 3180 mm Shell plates: Material S. M. Steel Tensile strength 44.5 kg/mm<sup>2</sup>  
Thickness 28 mm Are the shell plates welded or flanged of butt straps Description of riveting: circ. seams end lap 2 x 20 inter  
long. seams Double butt straps 3 x 10 Diameter of rivet holes in circ. seams 28 mm Pitch of rivets 82.2 mm 85.2  
long. seams 28 mm 174 mm  
Percentage of strength of circ. end seams plate 67.1 rivets 42 Percentage of strength of circ. intermediate seam plate rivets  
Percentage of strength of longitudinal joint plate 85.9 rivets 89.9 combined 86.6 Working pressure of shell by Rules 12.8 kg/cm<sup>2</sup>  
Thickness of butt straps outer 22 mm inner 25 mm No. and Description of Furnaces in each Boiler One Morrison patent  
Material S. M. Steel Tensile strength 41.47 kg/mm<sup>2</sup> Smallest outside diameter 938 mm  
Length of plain part top bottom Thickness of plates crown bottom 12 mm Description of longitudinal joint Welded  
Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 12.8 kg/cm<sup>2</sup>  
End plates in steam space: Material S. M. Steel Tensile strength 41.47 kg/mm<sup>2</sup> Thickness 28.5 mm Pitch of stays 475 x 375 mm  
How are stays secured Secured in plates with nuts & washers outside Working pressure by Rules 16.5 kg/cm<sup>2</sup>  
Tube plates: Material front S. M. Steel Tensile strength 41.47 kg/mm<sup>2</sup> Thickness 26 mm back S. M. Steel Tensile strength 41.47 kg/mm<sup>2</sup> Thickness 21.5 mm in previous plan  
Mean pitch of stay tubes in nests 276 x 184 Pitch across wide water spaces Working pressure front back  
Girders to combustion chamber tops: Material Tensile strength Depth and thickness of girder  
at centre Length as per Rule Distance apart No. and pitch of stays  
in each Working pressure by Rules Combustion chamber plates: Material S. M. Steel  
Tensile strength 41.47 kg/mm<sup>2</sup> Thickness: Sides 25.5 mm Back 18.5 mm Top 25.5 mm Bottom 25.5 mm  
Pitch of stays to ditto: Sides Back 200 x 220 Top Are stays fitted with nuts or riveted over riveted over  
Working pressure by Rules 24.5 kg/cm<sup>2</sup> Front plate at bottom: Material S. M. Steel Tensile strength 41.47 kg/mm<sup>2</sup>  
Thickness 26 mm Lower back plate: Material S. M. Steel Tensile strength 41.47 kg/mm<sup>2</sup> Thickness 26 mm  
Pitch of stays at wide water space Are stays fitted with nuts or riveted over Mangon stays fitted with nuts  
Working Pressure Main stays: Material S. M. Steel Tensile strength 44.51 kg/mm<sup>2</sup>  
Diameter At body of stay, 3" No. of threads per inch 9 Area supported by each stay 178125 mm<sup>2</sup>  
Over threads 3" Working pressure by Rules 17.1 kg/cm<sup>2</sup> Screw stays: Material S. M. Steel Tensile strength 41.47 kg/mm<sup>2</sup>  
Diameter At turned off part, 34 mm No. of threads per inch 9 Area supported by each stay 44000  
Over threads 35.6 mm



Working pressure by Rules 12.65 kg/cm<sup>2</sup> Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 42 mm or Over threads 47.6 mm  
No. of threads per inch 9 Area supported by each stay 44 Working pressure by Rules 16 kg/cm<sup>2</sup>  
Tubes: Material S.M. Steel External diameter { Plain 64 mm ✓ Thickness 6.5 mm ✓ No. of threads per inch 9  
Pitch of tubes 92 mm Working pressure by Rules 16 kg/cm<sup>2</sup> Manhole compensation: Size of opening in  
shell plate 410 x 510 mm Section of compensating ring 740 x 840 x 18 mm No. of rivets and diameter of rivet holes 48 @ 28 mm  
Outer row rivet pitch at ends 174 mm Depth of flange of manhole flanged 95 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 of  
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 ✓ Manufacturers of { Tubes ✓ Steel forgings ✓ Steel castings ✓  
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,

Dates of Survey { During progress of work in shops 18/7-18/10 3-16/11 1938  
while building { During erection on board vessel 1-10-16/11 1938

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Retained  
Total No. of visits 9

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 Society's Rules, approved plans and Secretary's letter. Material tested as required and workmanship good.

Survey Fee ... £ 25.5.20 ✓ When applied for, 19  
Travelling Expenses (if any) £ - : When received, 21/7 1939

Committee's Minute

Assigned

See FE machy r/f.

FRI 30 JUN 1939

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



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Foundation