

REPORT ON BOILERS.

No. 1829

Received at London Office

-8 OCT 1936

Date of writing Report 25th Sept 1936 When handed in at Local Office

19

Port of BREMEN

No. in Survey held at BREMEN

Date, First Survey 6th January 1936 Last Survey 7th Sept. 1936

Reg. Book.

(Number of Visits 44)

Gross 20638

25086 on the STEEL TWIN SCREW STEAMER TERJE VIKEN

Tons Net 13931

Master Built at BREMEN

By whom built DEUTSCHE SCHIFF UND MASCHINENBAU A.G. WERK: A.G. WESER Yard No. 914 When built 1936

Engines made at BREMEN

By whom made DESCHIMAG A.G. WESER

Engine No. 2095/96 When made 1936

Boilers made at BREMEN

By whom made DESCHIMAG A.G. WESER

Boilers No. 1989-1994 When made 1936

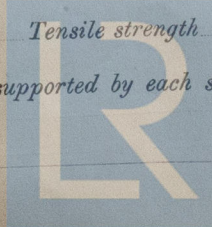
Nominal Horse Power 1448

Owners UNITED WHALERS LTD.

Port belonging to LONDON

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Mann. Mannesmannröhren-Werke, AG. Heinrich Brüdermann & Co. of Krefeld Letter for Record 5

Total Heating Surface of Boilers $6 \times 279 \text{ m}^2 = 1674 \text{ m}^2 = 18070 \text{ sq. ft.}$ Is forced draught fitted ☒ Coal or Oil fired ☒ oil firedNo. and Description of Boilers 6 Multitubular Main Boilers Working Pressure 250 lbs (17.57 kg/cm²)Tested by hydraulic pressure to 425 lbs Date of test 22.4.36 / 23.4.36 / 26.5.36 No. of Certificate 170-175 Can each boiler be worked separately ☒Area of Firegrate in each Boiler ☒ No. and Description of safety valves to each boiler 2 spring loaded Safety ValvesArea of each set of valves per boiler ☒ per Rule 9125 cm^2 as fitted $2 \times 7854 \text{ cm}^2$ Pressure to which they are adjusted 250 lbs 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 1000 mm Is oil fuel carried in the ☒ Is the bottom of the boiler insulated ☒Smallest distance between shell of boiler and tank top plating 500 mm Is the bottom of the boiler insulated ☒Largest internal dia. of boilers 4900 mm Length 3460 mm Shell plates: Material P. M. Steel Tensile strength 47-53 kg/cm²Thickness 44 mm Are the shell plates welded or flanged ☒ flanged Description of riveting: circ. seams ☒ end ☒ inter.Long. seams double butt straps Diameter of rivet holes in ☒ circ. seams 42 mm Pitch of rivets 111.87 mm Percentage of strength of circ. end seams ☒ plate 62 % rivets 45 % Percentage of strength of circ. intermediate seam ☒ plate 84 % rivets 93 %Percentage of strength of longitudinal joint ☒ plate 84 % rivets 93 % combined 89 % Working pressure of shell by Rules 17.8 kg/cm²Thickness of butt straps ☒ outer 34 mm ☒ inner 37 mm No. and Description of Furnaces in each Boiler 4 Morrison FurnacesMaterial P. M. Steel Tensile strength 41-47 kg/cm² Smallest outside diameter 1035 mm Length of plain part ☒ top ☒ bottom Thickness of plates ☒ crown 17.5 mm ☒ bottom 17.5 mm Description of longitudinal joint weldedDimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 17.5 kg/cm²End plates in steam space: Material P. M. Steel Tensile strength 41-47 kg/cm² Thickness 31 mm Pitch of stays 485 x 400 mm How are stays secured ☒ nuts on outside, washers ☒ nuts on inside Working pressure by Rules 17.5 kg/cm²Tube plates: Material ☒ front P. M. Steel ☒ back P. M. Steel Tensile strength 41-47 kg/cm² Thickness 30 mm Lean pitch of stay tubes in nests 208 x 208 mm Pitch across wide water spaces 360 mm Working pressure ☒ front 22 kg/cm² ☒ back 34 kg/cm^2 Girders to combustion chamber tops: Material P. M. Steel Tensile strength 44-50 kg/cm² Depth and thickness of girderAt centre 250 mm 2 x 20 mm Length as per Rule 850 mm Distance apart 210 mm No. and pitch of staysIn each 3 of 220 mm Working pressure by Rules 17.5 kg/cm² Combustion chamber plates: Material P. M. SteelTensile strength 41-47 kg/cm² Thickness: Sides 21 mm Back 24.5 mm Top 21 mm Bottom 25 mm Pitch of stays to ditto: Sides 210 x 195 mm Back 184 x 200 mm Top 210 x 220 mm Are stays fitted with nuts or riveted over ☒ back riveted overWorking pressure by Rules 23 kg/cm² Front plate at bottom: Material P. M. Steel Tensile strength 41-47 kg/cm²Thickness 30 mm Lower back plate: Material P. M. Steel Tensile strength 41-47 kg/cm² Thickness 29 mm Pitch of stays at wide water space 360 mm Are stays fitted with nuts or riveted over ☒ fitted with nutsWorking Pressure 28 kg/cm² Main stays: Material P. M. Steel Tensile strength 44-50 kg/cm²Diameter ☒ At body of stay, 80 mm ☒ Over threads No. of threads per inch 6 Area supported by each stay 400 x 485 mm Working pressure by Rules 20 kg/cm² Screw stays: Material P. M. Steel Tensile strength 41-47 kg/cm²Diameter ☒ At turned off part, 41 mm ☒ Over threads No. of threads per inch 9 Area supported by each stay 210 x 195 mm Lloyd's Register
Foundation

W91-0143

Working pressure by Rules 40 kg/cm^2 Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part, 47 2
or Over threads. 51 2
No. of threads per inch 9 Area supported by each stay $200 \times 280 \text{ mm}^2$ Working pressure by Rules 20 kg/cm^2
Tubes: Material *P.M. Steel* External diameter { Plain 76 2
Stay 76 2 Thickness { 4.5 2
9. 2 No. of threads per inch 9
Pitch of tubes $104 \times 104 \text{ mm}^2$ Working pressure by Rules 21 kg/cm^2 Manhole compensation: Size of opening
shell plate $610 \times 490 \text{ mm}^2$ Section of compensating ring $1230 \times 100 \times 44 \text{ mm}^2$ No. of rivets and diameter of rivet holes 42 rivets of 46 2
Outer row rivet pitch at ends 290 2 Depth of flange if manhole flanged 115 2 Steam Dome: Material *no dome*
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 Diameter of rivet holes and
of rivets in outer row in dome connection to shell

Type of Superheater *fitted only in the 4 wing boilers*
Smoke tube (Schmidt) Manufacturers of { Tubes *Mann. Mannesmann-Röhrenwerke & Remsch*
Steel forgings
Steel castings *Weser*

Number of elements 344 Material of tubes *naml. steel tubes* Internal diameter and thickness of tubes 16 2 3 2
Material of headers *cast steel* Tensile strength $41-55 \text{ kg/mm}^2$ Thickness 25 2 Can the superheater be shut off
the boiler be worked separately *yes* Is a safety valve fitted to every part of the superheater which can be shut off from the boiler *yes*
Area of each safety valve 1590 mm^2 Are the safety valves fitted with easing gear *yes* Working pressure
Rules 17 kg/cm^2 Pressure to which the safety valves are adjusted 250 lbs Hydraulic test pressure
tubes 100 kg/cm^2 forgings and castings 52.7 kg/cm^2 and after assembly in place 52.7 kg/cm^2 Are drain
valves fitted to free the superheater from water where necessary *yes*

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with *yes*

Deutsche Schiff- und Maschinenbau Aktiengesellschaft
Werk: Act. Ges. „Weser“

The foregoing is a correct description,

1936 Jan. 6, 16, 22, 28, Feb. 3, 6, 10, 13, 20, 26, March 2, 5, 9.
Dates of Survey { During progress of work in shops - 11, 18, 23, 25, 28, Apr. 2, 7, 16, 18, 23, 25, 27, 29
while building { During erection on board vessel - June 22, 24, 27, 29, July 9, 22.
Aug. 8, 18, 20, 31, Sept. 2, 7
Are the approved plans of boiler and superheater forwarded herewith *yes*
(If not state date of approval.)
Total No. of visits 44

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.) *These boilers & superheaters have been built under Special Survey in accordance with the appr. plans, the Secretary's letters, and in conformity with the requirements of the Rules. The materials used in the construction are all works recognized by the Committee and tested by the Port Surveyor. Materials & workmanship are of good quality and these boilers are eligible in my opinion to be recorded in the Port Reg. Book with notation of: 250 lbs of pressure.*

Mark on boilers: *16 170-175* LLOYD'S TEST
425 LBS
WP 250 LBS
Date: 27.4.36, 29.4.36, 11.5.36, 26.5.36

Thickness of adjusting washers:
Tom. Rivets Port Centre. Harb.
24, 21, 2 22.5, 19.6 20, 21.4
imp. 28.5 28
41. Rivets 21.2, 23.9 17.2, 20.2 17.7, 17.5
imp. 28.3 26.8

There are further 28 horizontal and 28 vertical Press Boilers installed in the Factory Deck. These boilers are made at Mann. R. Werner & Co. Oslo under the supervision of the Port Surveyor. They have been satisfactorily fitted on board, each of them has a safety valve which has been adjusted to 60 lbs of pressure and the reduction valves in the steam line on each horizontal press boiler have also been set to 60 lbs of pressure.

Survey Fee *included in Rpt. 4* £ : : When applied for, 19
Travelling Expenses (if any) £ : : When received, 19

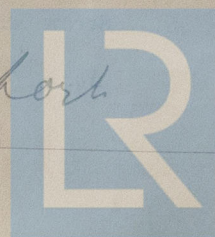
A. Carstensen

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute *FRI. 16 OCT 1936*

Assigned

see G. Machy Report



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