

REPORT ON BOILERS.

No. 19630

Received at London Office

28 NOV 1930

Writing Report 10th November 1930 When handed in at Local Office

193

Port of HAMBURG

Survey held at Hamburg

Date, First Survey 18th October

Last Survey 8th November 1930

Name of the Steel Sec. "SUND"

(Number of Visits 7 Gross 517 Tons Net 221

- 23/ von Halle

Built at Lübeck

By whom built L. B. Flenderwerke A.G.

Yard No. 174

When built 1927

Made at Harburg

By whom made Christiansen & Meyer

Engine No. 751

When made 1927

Made at Harburg

By whom made Christiansen & Meyer

Boiler No. 4633

When made 1927

Horse Power 55

Owners Atlantic Tankreederei G.m.b.H.

Port belonging to Hamburg

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Mannesmann-Röhrenwerke, Abt. Schulz-Knauth of Hückingen/Rhine

(Letter for Record

S

Heating Surface of Boilers

110 m²

1184 sq. ft.

Is forced draught fitted

no

Coal or Oil fired

coal

Description of Boilers

Single ended multitubular 1SB

Working Pressure 13 kg/cm² = 185 lb

Tested by hydraulic pressure to

Date of test

No. of Certificate

Can each boiler be worked separately

Area of Firegrate in each Boiler

3.4 m²

No. and Description of safety valves to each boiler

1, 2 springs loaded

No. of each set of valves per boiler

per Rule

4790 mm²

as fitted

5654 mm²

Pressure to which they are adjusted

185 lb

Are they fitted with easing gear

yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Least distance between boilers

on uptakes and bunkers on woodwork

500 mm

Is oil fuel carried in the double bottom under boilers

no

Least distance between shell of boiler and

top of floors tank top plating

250 mm

Is the bottom of the boiler insulated

no

Internal dia. of boilers

3200 mm

Length 3050 mm

Shell plates: Material

O.H. Steel

Tensile strength 47-54 kg/mm²

Thickness of shell plates

22 mm

Are the shell plates welded or flanged

flanged

Description of riveting: circ. seams

end double

Diameter of rivet holes in

circ. seams

26 mm

long. seams

26 mm

Pitch of rivets

93.7 mm

Percentage of strength of circ. end seams

plate

72.2 %

rivets

48. - %

Percentage of strength of circ. intermediate seam

plate

90.4 %

rivets

Percentage of strength of longitudinal joint

plate

90.4 %

rivets

106 %

combined

48 %

Working pressure of shell by Rules

12.98 kg/cm²

Thickness of butt straps

outer

19 mm

inner

22 mm

No. and Description of Furnaces in each Boiler

2 Morison 2 cf.

Material

O.H. Steel

Tensile strength 34-41 kg/mm²

Smallest outside diameter 924 mm

Thickness of plain part

top

215 mm

bottom

215 mm

Thickness of plates

crown

12 mm

bottom

12 mm

Description of longitudinal joint

welded

Dimensions of stiffening rings on furnace or c.c. bottom

Working pressure of furnace by Rules

13.1 kg/cm²

Plates in steam space: Material

O.H. Steel

Tensile strength 34-41 kg/mm²

Thickness 25 mm

Pitch of stays 350-450 mm

Are stays secured pinned washers, nuts & washers in & outside

Working pressure by Rules

16.75 kg/cm²

Plates: Material

front

O.H. Steel

back

O.H. Steel

Tensile strength

34-41 kg/mm²

Thickness

25 mm

Pitch of stay tubes in nests 220-330 mm

Pitch across wide water spaces 360 mm

Working pressure

front 14.2 kg/cm²back 14.3 kg/cm²

Plates to combustion chamber tops: Material

O.H. Steel

Tensile strength 34-41 kg/mm²

Depth and thickness of girder

Centre 150-218 mm

Length as per Rule 600 mm

Distance apart 200 mm

No. and pitch of stays

Pitch 2-165 mm

Working pressure by Rules

9.96 kg/cm²

Combustion chamber plates: Material

O.H. Steel

Tensile strength 34-41 kg/mm²

Thickness: Sides

10.5 mm

Back

10.5 mm

Top

10.5 mm

Bottom

10.5 mm

Pitch of stays to ditto: Sides

165-165 mm

Back

160-170 mm

Top

165-200 mm

Are stays fitted with nuts or riveted over

riveted over

Working pressure by Rules 16.2, 16.25, 13.1 kg/cm²

Front plate at bottom: Material

O.H. Steel

Tensile strength 34-41 kg/mm²

Thickness 25 mm

Lower back plate: Material

O.H. Steel

Tensile strength 34-41 kg/mm²

Thickness 25 mm

Pitch of stays at wide water space

510 mm

Are stays fitted with nuts or riveted over

nuts & washers

Working Pressure 25.68 kg/cm²

Main stays: Material

O.H. Steel

Tensile strength 34-41 kg/mm²

Pitching

At body of stay,

70 mm

or

76 mm

No. of threads per inch

6

Area supported by each stay 350-450 mm

Working pressure by Rules

15.35 kg/cm²

Screw stays: Material

O.H. Steel

Tensile strength 34-41 kg/mm²

Pitching

At turned off part,

35 mm

or

39 mm

No. of threads per inch

9

Area supported by each stay 170-160 mm



Lloyd's Register Foundation

Hamburg

Continuation of Report No. 19630 dated

on the

Working pressure by Rules $16.75 \frac{lb}{sq. in.}$ Are the stays drilled at the outer ends *no* Margin stays: Diameter $4\frac{1}{2} - 7\frac{1}{2} \frac{in.}{4}$ At turned off part, $4\frac{1}{2} - 7\frac{1}{2} \frac{in.}{4}$ Over threads $5\frac{1}{2} \frac{in.}{4}$

No. of threads per inch 9 Area supported by each stay $53.093 - 34.436 \frac{sq. in.}{2}$ Working pressure by Rules $20.7 - 27 \frac{lb}{sq. in.}$

Tubes: Material *A.S. Steel* External diameter $83 \frac{mm}{in.}$ Thickness $4 - 5 \frac{mm}{in.}$ No. of threads per inch 9

Pitch of tubes $110 \frac{mm}{in.}$ Working pressure by Rules $16 \frac{lb}{sq. in.}$ Manhole compensation: Size of shell plate $400 \times 500 \frac{mm}{in.}$ Section of compensating ring $22 \times 900 \frac{mm}{in.}$ No. of rivets and diameter of rivet holes $52 \times 26 \frac{mm}{in.}$

Outer row rivet pitch at ends $163 \frac{mm}{in.}$ Depth of flange if manhole flanged $85 \frac{mm}{in.}$ Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint $\frac{Plate}{Rivets}$

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

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

Type of Superheater Manufacturers of Tubes 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 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 Rules Pressure to which the safety valves are adjusted Hydraulic test pressure tubes castings and after assembly in place Are drain cocks or valves 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 - -* Are the approved plans of boiler and superheater forwarded herewith *no* (If not state date of approval.)

while building *During erection on board vessel - -* $1930, Oct. 18, 22, 23, 29, Nov. 6, 7, 8$ Total No. of visits 7

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This boiler has been built under the supervision of the German Boiler Authorities (Hamburger Baupolizei) and the materials used in the construction have been tested by their Surveys in accordance with the German Boiler Regulations. The Certificates of test have been seen on board the vessel.*

Examined the boiler internally and externally with mountings opened up, manholes, doors and fastenings, specially examined the front tube plates, girders and c.c. top plates and found all of the parts in good and efficient condition, after the port furnace which was found defective has been set back to original shape. The girders and front tube plate were found free from strain. The seams of the material are as shown in the plan. Under steam found the boiler tight and adjusted its safety valves to 186 lb pressure. Distance of adjusting washers: Port 28. mm, Starb. 26. mm. In my opinion the boiler is in a good and safe working condition and with ref. to the Secretary's Letter E, 27/1/30 for a working pressure of 186 lb and to have notation of BS-11, 30. included in LMC-11, 30. See continuation attached hereto

Survey Fee $£$: : When applied for, 192

Travelling Expenses (if any) $£$: : When received, 192

See Report Form H

Committee's Minute *TUE. 18 DEC 1930*

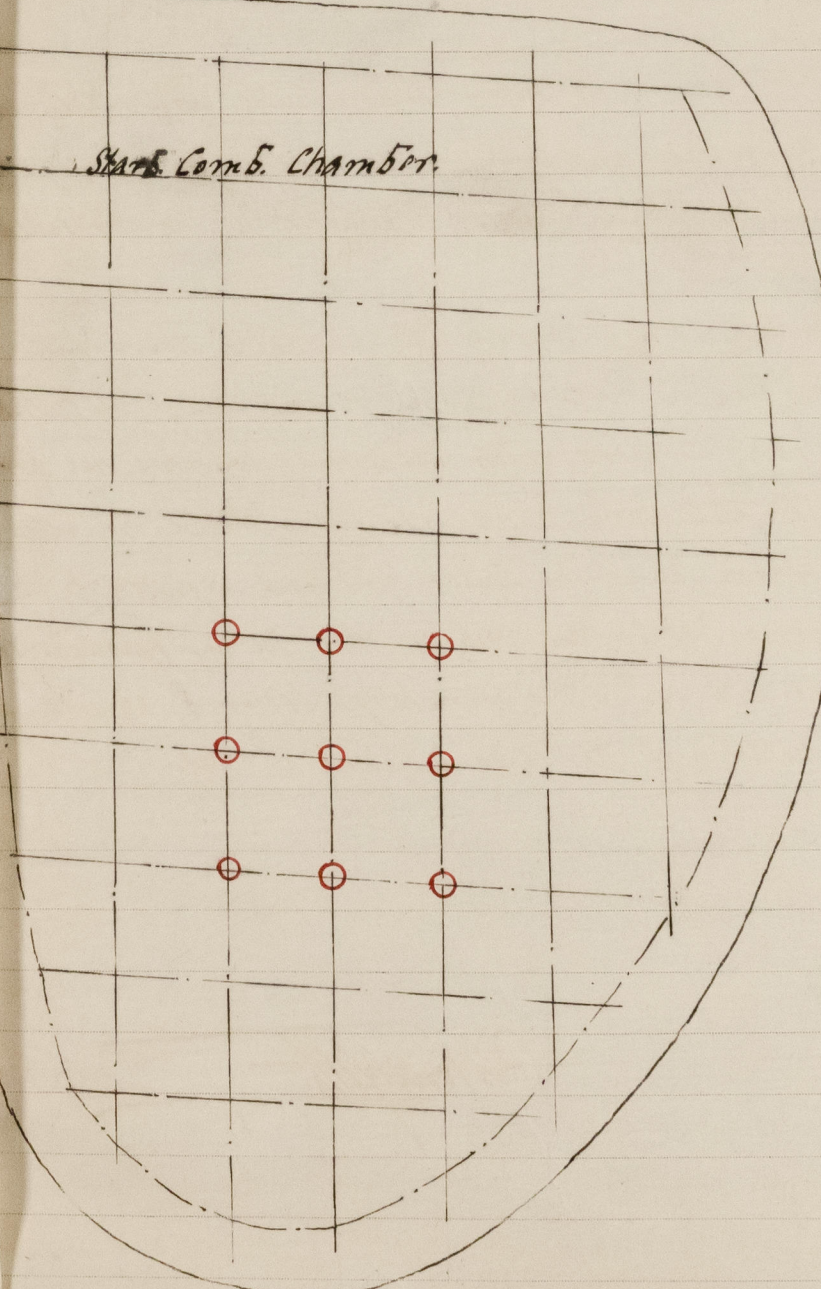
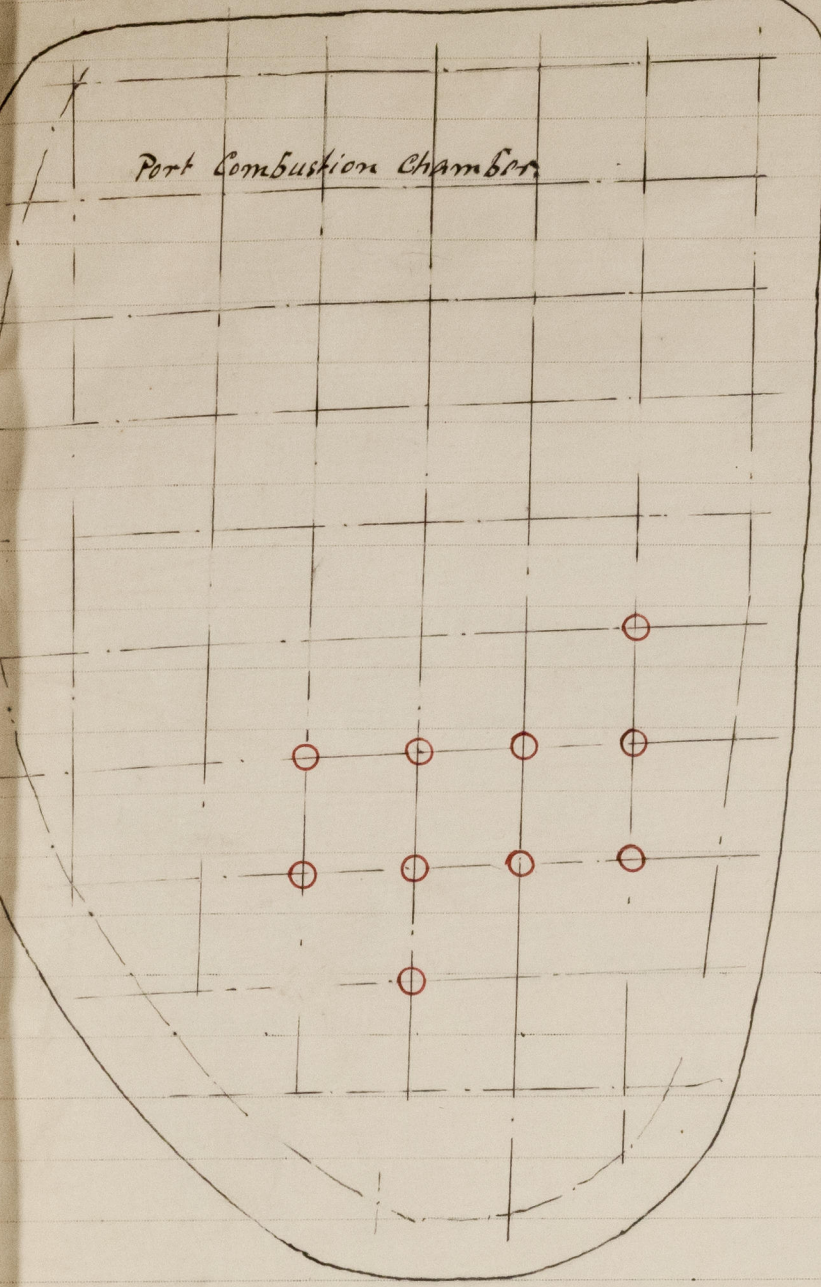
Assigned *See other Ham Rpt*

P. A. Wicks
Engineer Surveyor to Lloyd's Register of Shipping

TUE. 29 SEP 1931

FRI. 12 FEB 1932

FRI. 20 NOV 1931



With reference to the Secretary's Letter E, 29/7/30 it is stated by the Owners Superintendent that the stays made of Thomas steel will be replaced at the first suitable opportunity. These stays are fitted with nuts in the c.c. back plate. They are marked in red.

Hamburg, 10th November, 1930

P. A. Wicks