

## REPORT ON BOILERS.

No. 78793

Received at London Office 28 JAN 1925

Date of writing Report

192

When handed in at Local Office

26/11

1925

Port of

No. in Survey held at  
g. Book.

Pamcastle-on-Tyne

Date, First Survey

7 Jan.

Last Survey

22 Jan 1925

(Number of Visits 11)

Gross 998

1725 on the

S.S. Solbkin

Net 554

Master

Built at

Stettin

By whom built

Stettiner Oderwerke

Yard No.

When built 1921

Engines made at

Stettin

By whom made

Stettiner Oderwerke

Engine No.

When made 1921

Boilers made at

Stettin

By whom made

Stettiner Oderwerke

Boiler No.

When made 1921

Nominal Horse Power

92

Owners British India Steam Nav Co Ltd

Port belonging to

Glasgow

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

Manufacturers of Steel

(Letter for Record)

Total Heating Surface of Boilers

2160  $\text{ft}^2$ 

Is forced draught fitted

no

Coal or Oil fired

Coal

No. and Description of Boilers

2 single ended multitubular 2SB

Working Pressure

200 lbs

Tested by hydraulic pressure to

270

Date of test

No. of Certificate

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

29  $\text{ft}^2$ 

No. and Description of safety valves to each boiler

two direct spring

Area of each set of valves per boiler

per Rule 3.16

as fitted 11.34

Pressure to which they are adjusted

199 lbs

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

9  $\frac{1}{2}$ "

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

14"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

10-4"

Length

10-5  $\frac{3}{16}$ "

Shell plates: Material

steel

Tensile strength

28-32

Thickness

3  $\frac{1}{32}$ "

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end double exp

long. seams

with straps

Diameter of rivet holes in

circ. seams

1  $\frac{3}{16}$ "

long. seams

1  $\frac{3}{16}$ "

Pitch of rivets

4  $\frac{1}{2}$ "

Percentage of strength of circ. end seams

plate

68.2

rivets

53.0

Percentage of strength of circ. intermediate seam

plate

-

rivets

-

Percentage of strength of longitudinal joint

plate

84.15

rivets

118.5

combined

Working pressure of shell by Rules

200 lbs

Thickness of butt straps

outer

3  $\frac{1}{32}$ "

inner

3  $\frac{1}{32}$ "

No. and Description of Furnaces in each Boiler

2 Suspension

Material

steel

Tensile strength

21.6-26 tons

Smallest outside diameter

39  $\frac{1}{16}$ "

Length of plain part

top

-

bottom

-

Thickness of plates

crown

9  $\frac{1}{16}$ "

bottom

9  $\frac{1}{16}$ "

Description of longitudinal joint

welded

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

none

Working pressure of furnace by Rules

223 lbs

End plates in steam space: Material

steel

Tensile strength

21.6-26

Thickness

1  $\frac{5}{16}$ "Pitch of stays 14  $\frac{3}{4}$ " x 14  $\frac{3}{8}$ "

How are stays secured

double nuts and welded washers

Working pressure by Rules

215 lbs

Tube plates: Material

front

steel

back

steel

Tensile strength

21.6-26 tons

Thickness

1  $\frac{5}{16}$ "

25"

32"

Mean pitch of stay tubes in nests

8  $\frac{7}{8}$ "

Pitch across wide water spaces

14  $\frac{3}{8}$ " x 4  $\frac{7}{16}$ "

Working pressure

front

230 lbs

back

293 "

Girders to combustion chamber tops: Material

steel

Tensile strength

22.2-26 tons

Depth and thickness of girder

at centre

6  $\frac{1}{2}$ " x 1  $\frac{9}{16}$ "

Length as per Rule

23  $\frac{7}{8}$ "

Distance apart

4  $\frac{1}{8}$ "

No. and pitch of stays

in each

2 - 4  $\frac{1}{8}$ "

Working pressure by Rules

226.5 lbs

Combustion chamber plates: Material

steel

Tensile strength

21.6-26 tons

Thickness: Sides

3  $\frac{1}{32}$ "

Back

3  $\frac{1}{32}$ "

Top

1  $\frac{1}{16}$ "

Bottom

3  $\frac{1}{32}$ "

Pitch of stays to ditto: Sides

4  $\frac{1}{8}$ " x 4  $\frac{1}{8}$ "

Back

4  $\frac{1}{8}$ " x 4  $\frac{1}{8}$ "

Top

4  $\frac{1}{8}$ " x 4  $\frac{1}{8}$ "

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

240 - 5

264 - 7

Front plate at bottom: Material

steel

Tensile strength

21.6-26

Thickness

1  $\frac{5}{16}$ "

Lower back plate: Material

steel

Tensile strength

21.6-26

Thickness

1  $\frac{5}{16}$ "

Pitch of stays at wide water space

14  $\frac{3}{16}$ " x 4  $\frac{1}{16}$ "

Are stays fitted with nuts or riveted over

nuts

Working Pressure

280 lbs

Main stays: Material

steel

Tensile strength

22.2-26 tons

Diameter

At body of stay,

2  $\frac{1}{2}$ "

or

Over threads

2  $\frac{3}{4}$ "

No. of threads per inch

6

Area supported by each stay

212  $\text{in}^2$ 

Working pressure by Rules

205 lbs

Screw stays: Material

steel

Tensile strength

22.2-26 tons

Diameter

At turned off part,

1  $\frac{1}{4}$ "

or

Over threads

1  $\frac{3}{8}$ "

No. of threads per inch

9

Area supported by each stay

50  $\text{in}^2$

Working pressure by Rules *200* Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part, *1 1/2"*  
 No. of threads per inch *9* Area supported by each stay *75.4"* Working pressure by Rules *203 lbs*  
 Tubes: Material *steel* External diameter { Plain *3 1/2"* Thickness { *5/32"* No. of threads per inch *9*  
 Stay *3 1/4"* Pitch of tubes *4 7/16"* Working pressure by Rules *200 lbs* Manhole compensation: Size of opening in  
 shell plate *5 1/2" diam* Section of compensating ring *4 7/8" x 3 1/32"* No. of rivets and diameter of rivet holes *30 1 3/8"*  
 Outer row rivet pitch at ends *5 3/4"* Depth of flange if manhole flanged *—* Steam Dome: Material *steel*  
 Tensile strength *28-32 lbs* Thickness of shell *7/8"* Description of longitudinal joint *double lap*  
 Diameter of rivet holes *1 3/16"* Pitch of rivets *2 3/4"* Percentage of strength of joint { Plate *40.4*  
 Rivets *130.0*  
 Internal diameter *33 1/16"* Working pressure by Rules *345 lbs* Thickness of crown *7/8"* No. and diameter of  
 stays *none* Inner radius of crown *37 1/8"* Working pressure by Rules *237 lbs*  
 How connected to shell *double welded flange* Size of doubling plate under dome *none* Diameter of rivet holes and pitch  
 of rivets in outer row in dome connection to shell *7/8" dia. 2 1/16" pitch. double welded.*

Type of Superheater *Schmitt* Manufacturers of { Tubes *—*  
 Steel castings *—*  
 Number of elements *24 each Blr* Material of tubes *steel* Internal diameter and thickness of tubes *19 1/32" 1/8"*  
 Material of headers *steel* Tensile strength *—* Thickness *1"* Can the superheater be shut off and  
 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 *3.04"* Are the safety valves fitted with easing gear *yes* Working pressure as per  
 Rules *199 lbs/sq"* Pressure to which the safety valves are adjusted *208 lbs/sq"* Hydraulic test pressure:  
 tubes *—* castings *—* and after assembly in place *400 lbs/sq"* Are drain cocks or valves fitted  
 to free the superheater from water where necessary *yes*

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with *yes*

The foregoing is a correct description,

Manufacturer.

Dates { During progress of  
 of Survey { work in shops --  
 while { During erection on  
 building { board vessel ---

Are the approved plans of boiler and superheater forwarded herewith  
 (If not state date of approval.)

Total No. of visits

# GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

These boilers were examined internally & externally and found to be in  
 good condition. The scantlings were checked, as far as possible, from plans  
 and found to be correct. The boiler mountings were examined and  
 found as put in good condition; cocks were fitted instead of valves  
 to comply with rules section 18 ff 6; the aux<sup>y</sup> check valve of the S.  
 Blr. was renewed to comply with section 22 ff 1. Easing gear workable  
 from the stowhold floor was fitted to the Superheat safety valves.  
 The rivetting & flanging of the steam domes was particularly examined,  
 the lagging being removed, as necessary, to permit of this.  
 The boilers were tested hydraulically to the rule requirements, Bts 350 lbs/sq Superheater  
 400 lbs/sq and found satisfactory. The boilers were examined under steam  
 and the safety valves adjusted to the pressures stated above.  
 Please see also machinery report attached. ✓

Survey Fee ... .. £

When applied for. 192

Travelling Expenses (if any) £

When received. 192

L.R. Horne & Maurice Nelson

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *FRI. 30 JAN. 1925*

Assigned

*See other rpt  
 same No.*



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