

## REPORT ON BOILERS.

No. 29790

12 JUL 1928

Received at London Office

Date of writing Report

192

When handed in at Local Office

11 JULY 1928

Port of Sunderland

No. in  
Book.

Survey held at Sunderland

Date, First Survey

Last Survey

7 July 1928

(Number of Visits)

Gross

5377

Tons

Net

3245

on the

Single Screw Steamer "AMBERTON"

Master

Built at Sunderland By whom built Short Bros Ltd

Yard No. 431

When built 1928

Engines made at

Sunderland

By whom made

Dickinson &amp; Sons, Ltd

Engine No. 889

When made 1928

Boiler made at

-do-

By whom made

-do-

Boiler No. 1093

When made 1928

Nominal Horse Power

380

Owners

R. Chapman &amp; Son

Port belonging to

Newcastle

MULTITUBULAR BOILERS ~~MAIN, AUXILIARY, OR~~ DONKEY.

Manufacturers of Steel

The Steel Company of Scotland, Ltd

(Letter for Record)

(S)

Total Heating Surface of Boilers

1148

Is forced draught fitted

No

Coal or Oil fired

Coal

No. and Description of Boilers

One Single Ended Marine Type - Plain Furnaces Working Pressure 180 lbs

Tested by hydraulic pressure to

320 lbs

Date of test

12-6-28

No. of Certificate

3996

Can each boiler be worked separately

Area of Firegrate in each Boiler

35 sq ft

No. and Description of safety valves to each boiler

Two Direct Spring headed

Area of each set of valves per boiler

per Rule

4.55

as fitted

9.82

Pressure to which they are adjusted

185 lbs

Are they fitted with easing gear

Yes

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

No - non return valve fitted

Smallest distance between boilers or uptakes and bunkers or woodwork

Fitted in two oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

-do-

Is the bottom of the boiler insulated

No

Largest internal dia. of boiler

11'-4 1/8"

Length

10'-6" (full)

Shell plates: Material

Steel

Tensile strength 28 1/2 - 32 1/2 tons

Thickness

15/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

D.R. lap

Long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 1/16"

Pitch of rivets

3"

Percentage of strength of circ. end seams

plate

64.4

Percentage of strength of circ. intermediate seam

plate

51.6

Percentage of strength of longitudinal joint

plate

85.34

Working pressure of shell by Rules

181.8 lbs

Thickness of butt straps

outer

3/4"

No. and Description of Furnaces in each Boiler

Two Plain Furnaces

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

3'-4"

Length of plain part

top

bottom

Thickness of plates

crown

25/32"

bottom

Description of longitudinal joint

Welded

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

Working pressure of furnace by Rules

193 lbs

Plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

15/16"

Pitch of stays

15" x 16"

How are stays secured

d.n.w.

Working pressure by Rules

184 lbs

Tube plates: Material

front

back

Steel

Tensile strength

26-30 tons

Thickness

15/16"

Pitch of stays

15" x 16"

Mean pitch of stay tubes in nests

11 1/4"

Pitch across wide water spaces

13 1/4"

Working pressure

front

214 lbs (W.W. Space)

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

6 5/8" x 13 1/4"

Length as per Rule

29 1/8"

Distance apart

8 1/4"

No. and pitch of stays

in each

2 @ 10"

Working pressure by Rules

184 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

11/16"

Back

11/16"

Top

11/16"

Bottom

15/16"

Pitch of stays to ditto: Sides

8 1/2" x 10"

Back

9 5/8" x 9 1/8"

Top

8 1/4" x 10"

Are stays fitted with nuts or riveted over

Fitted with nuts

Working pressure by Rules

Sides

182.5 lbs

Tops

196

Backs

184.5

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

15/16"

Pitch of stays at wide water space

14" x 9 1/8"

Are stays fitted with nuts or riveted over

Fitted with nuts (inside)

Working Pressure

258 lbs

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay

2 1/2"

No. of threads per inch

6

Area supported by each stay

240 sq in

Working pressure by Rules

184 lbs

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part

1 3/4"

No. of threads per inch

9

Area supported by each stay

Sides

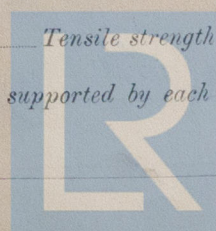
85 sq in

Backs

84.45 sq in

Tops

82.5 sq in


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 Foundation



Working pressure by Rules <sup>Sides 2048 lbs</sup> <sup>Backs 1874 lbs</sup> <sup>Tops 220 lbs</sup> Are the stays drilled at the outer ends no. Margin stays: Diameter <sup>At turned off part.</sup> 1 1/8" <sup>or</sup> <sup>Over threads</sup>

No. of threads per inch 9 Area supported by each stay 108.5 Working pressure by Rules 196 lbs

**Tubes:** Material Wrought Iron External diameter <sup>Plain</sup> 3 1/4" <sup>Stay</sup> 3 1/4" Thickness <sup>8 W.G.</sup> 5/16" No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules Plain 230 lbs Stay 220 lbs Manhole compensation: Size of opening in shell plate 16" x 12" Section of compensating ring 8 1/8" x 1 5/16" No. of rivets and diameter of rivet holes 26 @ 1 1/8"

Outer row rivet pitch at ends 7 1/4" Depth of flange if manhole flanged ✓ **Steam Dome:** Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint <sup>Plate</sup> <sup>Rivets</sup>

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 <sup>Tubes</sup> <sup>Steel castings</sup>

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, 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 23 inclusive for boilers been complied with Yes

The foregoing is a correct description,

W. H. Griffith Manufacturer.

Dates of Survey <sup>During progress of work in shops - -</sup> Please see Mech. Rpt. Are the approved plans of boiler and superheater forwarded herewith <sup>(If not state date of approval.)</sup> Director.

<sup>while building</sup> <sup>During erection on board vessel - -</sup> Total No. of visits

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

The materials and workmanship are good.

The Donkey Boiler has been constructed under Special Survey, and fitted in the vessel.

For notation see Machinery Report.

Survey Fee ... £ Please see Mech. Rpt. When applied for, 192

Travelling Expenses (if any) £ Mech. Rpt. When received, 192

A. H. Griffith.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUES. 17 JUL 1923

Assigned

See Mech. Rpt. attached



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