

REPORT ON BOILERS.

No. 50280

Received at London Office

2 APR 1930

Date of writing Report

192

When handed in at Local Office

26.3.1930

Port of

Glasgow.

No. in
Reg. Book.

Survey held at

Glasgow.

Date, First Survey

15.5.29

Last Survey

21.4.30

1930.

(Number of Visits)

78

Gross 1922

Tons

Net 192.

42333 on the *Steel Twin L.L. St. Patrick*

Master

Built at

Glasgow.

By whom built

A. Stephens & Sons Ltd

Yard No. 525

When built

1930.

Engines made at

Glasgow

By whom made

A. Stephens & Sons Ltd

Engine No. 525

When made

1929.

Boilers made at

do

By whom made

do

Boiler No. 525

When made

1929.

Nominal Horse Power

884

Owners

Great Western Railway

Port belonging to

London.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel Company of Scotland

(Letter for Record

S. ✓)

Total Heating Surface of Boilers

9312 sq ft 10044 sq ft

Is forced draught fitted

Yes.

Coal or Oil fired

oil

No. and Description of Boilers

Four cylindrical Single Ended. 458

Working Pressure

230 lbs.

Tested by hydraulic pressure to

395 lbs.

Date of test

22.10.29

No. of Certificate

18485

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

58.5 sq ft

No. and Description of safety valves to each boiler

2 Cochrans Improved Hush Lift

Area of each set of valves per boiler

per Rule

4.95 sq ft

Pressure to which they are adjusted

230 lbs.

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

Null then.

Is oil fuel carried in the double bottom under boilers

✓

Smallest distance between shell of boiler and tank top plating

None

Is the bottom of the boiler insulated

Largest internal dia. of boilers

14-6"

Length

12-0"

Shell plates: Material

S.

Tensile strength

29/32"

Thickness

1 15/32"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

L.D.R.

long. seams

D.B.S.T.R.

Diameter of rivet holes in

circ. seams

1 1/2"

Pitch of rivets

4 1/2"

Percentage of strength of circ. end seams

plate

66.7

rivets

42.5

Percentage of strength of circ. intermediate seam

plate

✓

Percentage of strength of longitudinal joint

plate

85.54

rivets

86.20

combined

Working pressure of shell by Rules

233 lbs. sq. in.

Thickness of butt straps

outer

1 1/8"

inner

1 1/4"

No. and Description of Furnaces in each Boiler

3 Morrison & Co.

Material

S.

Tensile strength

26/30.

Smallest outside diameter

48 29/32"

Length of plain part

top

✓

Thickness of plates

crown

45/64"

Description of longitudinal joint

weld.

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

✓

Working pressure of furnace by Rules

235 lbs.

End plates in steam space: Material

S.

Tensile strength

26/30.

Thickness

1 5/16"

Pitch of stays 20" x 17"

How are stays secured

D.N.

Working pressure by Rules

234 lbs. per sq. in.

Tube plates: Material

front

S.

back

S.

Tensile strength

26/30.

Thickness

57/64"

Mean pitch of stay tubes in nests

14 1/16" x 7 1/4" x 9 1/16"

Pitch across wide water spaces

13 1/2"

Working pressure

front

232 lbs. per sq. in.

Girders to combustion chamber tops: Material

S.

Tensile strength

28/32

Depth and thickness of girder

at centre

9 1/2" x 1 1/2"

Length as per Rule

23 13/32"

Distance apart

8"

No. and pitch of stays

in each

3 @ 8"

Working pressure by Rules

235 lbs. sq. in.

Combustion chamber plates: Material

S.

Tensile strength

26/30.

Thickness: Sides

43/64"

Back

1 1/16"

Top

2 1/32"

Bottom

27/32"

Pitch of stays to ditto: Sides

8 1/4" x 8 1/4"

Back

8 7/16" x 8 1/4"

Top

8" x 8"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

237 lbs. (back)

Front plate at bottom: Material

S.

Tensile strength

26/30

Thickness

57/64"

Lower back plate: Material

S.

Tensile strength

26/30.

Thickness

57/64"

Pitch of stays at wide water space

13 17/32"

3/4 doubling at bottom

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

240 lbs.

Main stays: Material

S.

Tensile strength

28/32

Diameter

At body of stay,

3 1/4" 3"

No. of threads per inch

6

Area supported by each stay

3 1/4" = 289 sq. in.

Working pressure by Rules

3 = 232

3 1/4 = 236

Screw stays: Material

S

Tensile strength

26/30

Diameter

At turned off part,

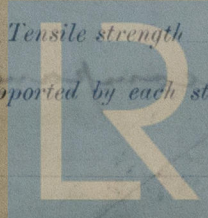
1 3/4"

No. of threads per inch

9

Area supported by each stay

8 7/16" x 8 1/4" = 69.6 sq. in.



Working pressure by Rules ^{lbs.} 260 Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, or Over threads. 1 7/8" }
No. of threads per inch 9 Area supported by each stay 10 15/16 x 8 1/4 = 83.2 Working pressure by Rules 253 40.236
Tubes: Material S.D.S. External diameter { Plain 2 1/2" Stay 2 1/2" } Thickness { 7/16 3/8 7/16 } No. of threads per inch 9
Pitch of tubes 3 1/4 x 3 5/8 x 3 7/8 Working pressure by Rules 238 46. Manhole compensation: Size of opening in shell plate 20 1/2 x 16 1/2 Section of compensating ring x 1 3/16 No. of rivets and diameter of rivet holes 36 @ 1 1/2"
Outer row rivet pitch at ends 10 3/8 Depth of flange if manhole flanged 3 25/32 Steam Dome: Material None
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 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 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,
ALEXANDER STEPHEN & SONS, LIMITED
Manufacturer.

Dates of Survey { During progress of work in shops -- See accompanying machinery Report
while building { During erection on board vessel -- }
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
Total No. of visits 78

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

The Boilers have been built under special License and in accordance with the Rules. The materials and workmanship are good. On completion they have been tested by hydraulic pressure and found tight.
They have been placed on board & efficiently secured in position.

Survey Fee £
Travelling Expenses (if any) £ See Enquiry Report

Geo. F. Munn & Robert Rae
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 1-APR 1930

Assigned See accompanying machinery report



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Lloyd's Register
Foundation

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