

REPORT ON BOILERS.

No. 48624

Received at London Office

21 NOV 1928

Date of writing Report

192

When handed in at Local Office

20-11-1928

Port of GlasgowNo. in
Reg. Book.

Survey held at

Glasgow

Date, First Survey

23-4-28

Last Survey

19-11-

1928

on the

Screw Steamer. "PRINCESS NORAH"

(Number of Visits 74)

Tons

Gross 1845

Net 2731

Master

Built at Glasgow

By whom built

The Fairfield S&EC Ltd

Card No. 632 When built 1928

Engines made at

Glasgow

By whom made

The Fairfield S&EC Ltd

Engine No. 632

When made 1928

Boilers made at

Glasgow

By whom made

Glasgow

Boiler No. 632

When made 1928

Nominal Horse Power

434

Owners

Canadian Pacific Railway Co.

Port belonging to

Vancouver.

FORWARD.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel W. Bradburn & Co. Ltd. D. Cairns & Son Ltd. (Letter for Record S.)

Total Heating Surface of Boilers

2872 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired

Oil

No. and Description of Boilers

One, Cyl. Single End.

Working Pressure 200 lb.

Tested by hydraulic pressure to

350 lb.

Date of test 31-8-28

No. of Certificate

18027

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2 Corbitts Improved High Lift

Area of each set of valves per boiler

{ per Rule 9.908 sq. ft.

{ as fitted 10.814

Pressure to which they are adjusted

200 lb.

Are they fitted with easing gear

Yes

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

Yes

Smallest distance between boilers or uptakes and bunkers or woodwork

15"

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

10"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boiler

16'-0"

Length

12'-0"

Shell plates: Material

S.

Tensile strength

31/55 T.

Thickness

1 1/4"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

{ end 4 DR

{ inter. 2 DR

long. seams

DBS/TR.

Diameter of rivet holes in

{ circ. seams 13/8"

{ long. seams 17/16"

Pitch of rivets

{ 3.79"

{ 9.59"

Percentage of strength of circ. end seams

{ plate 65.8

{ rivets 43.6

Percentage of strength of circ. intermediate seam

{ plate 85.2

{ rivets 88.9

Percentage of strength of longitudinal joint

{ plate 85.2

{ rivets 88.9

{ combined 91.8

Working pressure of shell by Rules

202 lb.

Thickness of butt straps

{ outer 1 1/2"

{ inner 1 3/4"

No. and Description of Furnaces in each Boiler

Three Dighton

Material

S.

Tensile strength

26/30 T.

Smallest outside diameter

48.34"

Length of plain part

{ top 1'

{ bottom 1'

Thickness of plates

{ crown 43/64"

{ bottom 43/64"

Description of longitudinal joint

Weld

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

None

Working pressure of furnace by Rules

204 lb.

End plates in steam space: Material

S.

Tensile strength

26/30 T.

Thickness

17/32"

Pitch of stays

19 3/8" x 15/2"

How are stays secured

DN.

Working pressure by Rules

202 lb.

Tube plates: Material

{ front S.{ back S.

Tensile strength

{ 26/30 T.

Thickness

{ 7/8"

{ 25/32"

Mean pitch of stay tubes in nests

1 1/4" x 7/4"

Pitch across wide water spaces

13/2"

Working pressure

{ front 222 lb.

{ back 225 lb.

Girders to combustion chamber tops: Material

S.

Tensile strength

26/30 T.

Depth and thickness of girder

at centre 10 3/4" x 1 1/2"

Length as per Rule

33.52"

Distance apart

10 3/4"

No. and pitch of stays

in each

3 @ 7'

Working pressure by Rules

201 lb.

Combustion chamber plates: Material

S.

Tensile strength

26/30 T.

Thickness

Sides 1 1/16"

Back 1 1/16"

Top 1 1/16"

Bottom 1 3/16"

Pitch of stays to ditto

Sides 9" x 8 7/8"

Back 9" x 8 7/8"

Top 10 3/4" x 7"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

201 lb.

Front plate at bottom: Material

S.

Tensile strength

26/30 T.

Thickness

7/8"

Lower back plate: Material

S.

Tensile strength

26/30 T.

Thickness

27/32"

Pitch of stays at wide water space

14" x 9"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

210 lb.

Main stays: Material

S.

Tensile strength

28/32 T.

Diameter

{ At body of stay, 27/8"

{ Over threads, 27/8"

No. of threads per inch

6

Area supported by each stay

307 sq. in.

Working pressure by Rules

203 lb.

Screw stays: Material

S.

Tensile strength

26/30 T.

Thickness

At turned off part, 1-61"

1-73"

No. of threads per inch

9

Area supported by each stay

80 sq. in.

Diameter

{ At body of stay, 1 3/4"

{ Over threads, 1 3/4"

No. of threads per inch

9

Area supported by each stay

80 sq. in.

Working pressure by Rules

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203 lb.

Screw stays: Material

S.

Tensile strength

26/30 T.

Working pressure by Rules 227 1/4 Are the stays drilled at the outer ends h Margin stays: Diameter { At turned off part, 1.73 or Over threads 1.78

No. of threads per inch 9 Area supported by each stay 117/16 x 9 Working pressure by Rules 205 1/4

Tubes; Material I External diameter { Plain 2 1/2 Stay 2 1/2 Thickness { 9/16 No. of threads per inch 9

Pitch of tubes 3 3/4 x 378 Working pressure by Rules 264 1/4 Manhole compensation: Size of opening in shell plate 20 x 16 Section of compensating ring 24 x 1 1/4 No. of rivets and diameter of rivet holes 36 - 17/16

Outer row rivet pitch at ends 9 19/32 Depth of flange if manhole flanged 4 Steam Dome: Material h

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 h

Number of elements Material of tubes Manufacturers of { Tubes Steel castings

Material of headers Tensile strength Internal diameter and thickness of tubes

the boiler be worked separately Thickness Can the superheater be shut off and

Area of each safety valve Is a safety valve fitted to every part of the superheater which can be shut off from the boiler

Rules Are the safety valves fitted with easing gear Working pressure as per tubes

Pressure to which the safety valves are adjusted Hydraulic test pressure: castings and after assembly in place

to free the superheater from water where necessary Are drain cocks or valves fitted

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

THE FAIRFIELD SHIPBUILDING AND ENGINEERING CO. MANAG.
The foregoing is a correct description,
R. Strachan Manufacturer.
Are the approved plans of boiler and superheater forwarded herewith Y
(If not state date of approval.)
Total No. of visits 74

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under special survey in accordance with the Rules of the Society and approved plans.
The materials and workmanship are good and the boiler has been efficiently secured on board and its safety valves adjusted.

A.C.
19/11/28.

Survey Fee £ See Accompanying machinery Report.
Travelling Expenses (if any) £ : : :
When applied for, 192
When received, 192

W. Lane J. Macdonald
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 20 NOV 1928
Assigned See Accompanying Machy. Report