

Rpt. 5a.

REPORT ON BOILERS.

No. 48624
21 NOV 1928

Received at London Office

Date of writing Report

192

When handed in at Local Office

20. 11. 1928

Port of Glasgow

No. 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)

Gross

1845

Tons

Net 2731

Master

Built at

Glasgow

By whom built

The Fairfield S.E.C. Ltd No. 632 When built 1928

Engines made at

Glasgow

By whom made

The Fairfield S.E.C. 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.

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

Manufacturers of Steel W. Brindley & Co. Ltd. S. Colville & Sons Ltd. (Letter for Record S.)

Total Heating Surface of Boilers

4170 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Oil

No. and Description of Boilers

Two Cyl. Single End.

Working Pressure 200 lb

Tested by hydraulic pressure to

350 lb

Date of test

13. 8. 28

No. of Certificate

18002

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2 Cylinders Improved High Lift

Area of each set of valves per boiler

per Rule

7. 1930

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

Smallest distance between boilers

18"

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 boilers

13'-6"

Length

12'-0"

Shell plates: Material

S.

Tensile strength

29/33 T.

Thickness

1 3/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end

LDR

long. seams

DBS/TR.

Diameter of rivet holes in

circ. seams

1 1/4"

Pitch of rivets

3.66"

Percentage of strength of circ. end seams

plate

65.8

Percentage of strength of circ. intermediate seam

plate

44.7

Percentage of strength of longitudinal joint

plate

85.15

Working pressure of shell by Rules

200 lb

Thickness of butt straps

outer

29/32"

inner

1 1/32"

No. and Description of Furnaces in each Boiler

Two Single End

Material

S.

Tensile strength

26/30 T.

Smallest outside diameter

48.34"

Length of plain part

top

bottom

Thickness of plates

crown

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

19/32"

Pitch of stays

19" x 19"

How are stays secured

D.N.

Working pressure by Rules

212 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

10.28"

Pitch across wide water spaces

13 1/2"

Working pressure

front

222 lb

back

213

Girders to combustion chamber tops: Material

S.

Tensile strength

26/30 T.

Depth and thickness of girder

at centre

10 1/2" x 1 1/2"

Length as per Rule

33.52"

Distance apart

9 3/4"

No. and pitch of stays

in each

3 @ 7"

Working pressure by Rules

226 lb

Combustion chamber plates: Material

S.

Tensile strength

26/30 T.

Thickness: Sides

1 1/4"

Back

1 1/6"

Top

1 1/6"

Bottom

1 3/16"

Pitch of stays to ditto: Sides

9 1/4" x 8 7/8"

Back

9 1/4" x 8 3/4"

Top

9 3/4" x 7"

Are stays fitted with nuts or riveted over

Nut

Working pressure by Rules

204 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 1/4"

Are stays fitted with nuts or riveted over

Nut

Working Pressure

207 lb

Main stays: Material

S.

Tensile strength

28/32 T.

Diameter

At body of stay,

3 1/4"

No. of threads per inch

6

Area supported by each stay

375 sq in

Working pressure by Rules

214 lb

Screw stays: Material

S.

Tensile strength

26/30 T.

Diameter

At turned off part,

1 1/4"

or

1 3/4"

No. of threads per inch

9

Area supported by each stay

81 sq in

009904-009911-0293

Working pressure by Rules $224\frac{1}{2}$ Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part, $1\frac{7}{8}$ or Over threads $1\frac{7}{8}$ }
No. of threads per inch 9 Area supported by each stay $105\frac{1}{2}$ Working pressure by Rules $201\frac{1}{2}$
Tubes: Material *I* External diameter { Plain $2\frac{1}{2}$ Stay $2\frac{1}{2}$ } Thickness { $5/16$ } No. of threads per inch 9
Pitch of tubes $3\frac{3}{4} \times 3\frac{5}{8}$ Working pressure by Rules $232\frac{1}{2}$ Manhole compensation: Size of opening in shell plate 20×16 Section of compensating ring $22\frac{1}{2} \times 1\frac{3}{16}$ No. of rivets and diameter of rivet holes $40 - 1\frac{1}{4}$
Outer row rivet pitch at ends $8\frac{1}{2}$ Depth of flange if manhole flanged $3\frac{7}{8}$ Steam Dome: Material *h m*
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
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 *h m* 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 23 inclusive for boilers been complied with *yes*

THE FAIRFIELD SHIPBUILDING AND ENGINEERING CO. LTD
The foregoing is a correct description,

Dates of Survey { During progress of work in shops - - } See accompanying machinery Report.
{ During erection on board vessel - - }
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) *yes*
Total No. of visits 74

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been built under Special Survey in accordance with the Rules of the Society and approved plans.
The materials and workmanship are good and the boilers have been efficiently secured on board and their safety valves adjusted.

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

W. L. L. J. S. MacDonald.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 20 NOV 1928

Assigned See accompanying Machinery Report



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