

## REPORT ON BOILERS.

No. 50330

16 APR 1930

Received at London Office

Date of writing Report

192

When handed in at Local Office

12.4.30

Port of

Glasgow

No. in Survey held at  
Reg. Book.

Glasgow

Date, First Survey

7.3.29

Last Survey

9. April

1930.

(Number of Visits

110)

Gross 5251

Tons

Net 3023.

41817.

on the

Swiss S.S. "Princess Joan"

Master

Built at

Glasgow.

By whom built

The Fairfairs S.B. & L<sup>d</sup> Yard No. 639

When built 1929. 1930.

Engines made at

Glasgow.

By whom made

do

Engine No. 639.

When made 1929. 1930.

Boilers made at

do

By whom made

do

Boiler No. 639.

When made 1929. 1930.

Nominal Horse Power

622

Owners

Canadian Pacific Railway

Port belonging to

Victoria B.C.

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

Manufacturers of Steel

D. Colville Sons L<sup>d</sup>.

(Letter for Record

S.)

Total Heating Surface of Boilers

10152  $\text{ft}^2$ 

Is forced draught fitted

Yes.

Coal or Oil fired

oil

No. and Description of Boilers

4 Cylindrical Single Ended.

Working Pressure 250  $\text{lb}/\text{sq. in.}$ 

Tested by hydraulic pressure to

425  $\text{lb}/\text{sq. in.}$ 

Date of test

20.11.29

No. of Certificate

18519

18529

18534

18549

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

89  $\text{sq. ft.}$ 

No. and Description of safety valves to each boiler

4.10.

Pressure to which they are adjusted

250  $\text{lb}/\text{sq. in.}$ 

Are they fitted with easing gear

Yes.

Improved High Lift.

Area of each set of valves per boiler

per Rule 4.10.

as fitted 4.90.

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

will clear

Is oil fuel carried in the double bottom under boilers

Yes.

Smallest distance between shell of boiler and tank top plating

13"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

14' x 9' 1/16"

Length

12' 3'

Shell plates: Material

S.

Tensile strength

L.D.R.

Description of riveting: circ. seams

end L.D.R.

inter. none

Thickness

1 5/32"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

19/16"

Pitch of rivets

4 1/25"

Plate

10.375"

Rivets

4 1/25"

long. seams

D.B.S.T.R.

Diameter of rivet holes in

circ. seams 19/16"

long. seams 19/16"

Percentage of strength of circ. end seams

plate 62.2

rivets 45.5

Percentage of strength of circ. intermediate seam

plate 85.0

rivets 84.8

combined 89.0

Working pressure of shell by Rules

251

Percentage of strength of longitudinal joint

plate 85.0

rivets 84.8

combined 89.0

Working pressure of shell by Rules

251

Thickness of butt straps

outer 1 1/8"

inner 1 1/4"

No. and Description of Furnaces in each Boiler

3 Doughton 3 of

Smallest outside diameter

46 19/32"

Material

S.

Tensile strength

26/30

Description of longitudinal joint

weld

Working pressure of furnace by Rules

252

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

How are stays secured

Double nuts

Tensile strength

26/30

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Tube plates: Material

front S

back S

Tensile strength

26/30

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Mean pitch of stay tubes in nests

11 1/4" x 7 1/4"

Pitch across wide water spaces

13 1/2"

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Girders to combustion chamber tops: Material

S.

Tensile strength

26/30

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

at centre

9 1/2" x 1 1/2"

Length as per Rule

32 1/2"

Distance apart

7 3/4"

No. and pitch of stays

S.

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

in each

3 @ 7 1/8"

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Tensile strength

26/30

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Pitch of stays to ditto: Sides

8 1/8" x 7 1/8"

Back

9" x 8"

Top

7 1/4" x 7 1/8"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays at wide water space

14 1/4" x 9"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

254

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Thickness

15/16"

Working Pressure

255

Main stays: Material

S.

Tensile strength

26/30

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

254

Thickness

15/16"

Diameter

At body of stay, 3 1/4"

Over threads, 3 1/4"

No. of threads per inch

6

Area supported by each stay

322

Working pressure by Rules

250

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

Working pressure by Rules

250

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

250

Thickness

15/16"

Pitch of stays

19 1/2" x 16"

Working pressure by Rules

250

Diameter

At turned off part, 1 5/8"

Over threads, 1 5/8"

No. of threads per inch

9

Area supported by each stay



Side 258  
 Working pressure by Rules **Back 252** Are the stays drilled at the outer ends **No.** Margin stays: Diameter **2"** ☒ At turned off part, or Over threads  
 No. of threads per inch **9** Area supported by each stay **96"** Working pressure by Rules **259**  
 Tubes: Material **Iron** External diameter **2 1/2"** Thickness **8 WG 1/4" + 5/16"** No. of threads per inch **9**  
 Pitch of tubes **3 3/4" x 3 5/8"** Working pressure by Rules **259 (stay)** Manhole compensation: Size of opening in shell plate **20" x 16"** Section of compensating ring **24" x 1 5/32"** No. of rivets and diameter of rivet holes **36 x 1 7/16"**  
 Outer row rivet pitch at ends **10 3/8"** Depth of flange if manhole flanged **4 1/2"** Steam Dome: Material **none**  
 Tensile strength **ped** Thickness of shell **minutell** Description of longitudinal joint **Plate Rivets**  
 Diameter of rivet holes **ped** Pitch of rivets **ped** Percentage of strength of joint **ped**  
 Internal diameter **ped** Working pressure by Rules **ped** Thickness of crown **ped** No. and diameter of stays **ped** Inner radius of crown **ped** Working pressure by Rules **ped**  
 How connected to shell **ped** Size of doubling plate under dome **ped** Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell **ped**

Type of Superheater **ped** Manufacturers of **ped** Tubes **ped** Steel castings **ped**  
 Number of elements **ped** Material of tubes **ped** Internal diameter and thickness of tubes **ped**  
 Material of headers **ped** Tensile strength **ped** Thickness **ped** Can the superheater be shut off and the boiler be worked separately **ped**  
 Is a safety valve fitted to every part of the superheater which can be shut off from the boiler **ped**  
 Area of each safety valve **ped** Are the safety valves fitted with easing gear **ped** Working pressure as per Rules **ped**  
 Pressure to which the safety valves are adjusted **ped** Hydraulic test pressure: tubes **ped** and after assembly in place **ped** Are drain cocks or valves fitted to free the superheater from water where necessary **ped**  
 Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **ped**

The foregoing is a correct description,

Dates of Survey **See Accompanying Machy Report** Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) **ped**  
 During progress of work in shops -- **ped**  
 During erection on board vessel -- **ped**  
 Total No. of visits **110**

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

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

Survey Fee ... £ **See Engrs Report** When applied for. 192  
 Travelling Expenses (if any) £ **See Engrs Report** When received. 192

**Robert Rae**  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 15 APR 1930**

Assigned **See Accompanying Machy. Report**