

REPORT ON BOILERS.

No. 50330

16 APR 1930

Received at London Office

Date of writing Report

192

When handed in at Local Office

12.4.1930

Port of

Glasgow

No. in Reg. Book

Glasgow

Date, First Survey

7.3.29

Last Survey

9. April 1930

(Number of Visits

110)

Gross Tons

5251

Net Tons

3023

41817

on the

Swire S.S. "Princess Joan"

Master

Built at

Glasgow

By whom built

The Fairfield S.B. & L^o

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^o

(Letter for Record

S.)

Total Heating Surface of Boilers

10152 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Oil

No. and Description of Boilers

4 Cylindrical Single Ended

Working Pressure

250 lbs

Tested by hydraulic pressure to

425 lbs

Date of test

20.11.29
29.11.29
9.12.29
13.12.29

No. of Certificate

18519
18529
18534
18549

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

89 sq ft

No. and Description of safety valves to each boiler

Improved High Lift

Area of each set of valves per boiler

per Rule 4.10
as fitted 4.90

Pressure to which they are adjusted

250 lbs

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

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

32/36

Thickness

1 5/16"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end L.D.R.

none

long. seams

D.B.S.T.R.

Diameter of rivet holes in

circ. seams 19/16"

long. seams 19/16"

Pitch of rivets

4 1/2"

See 16/30

Percentage of strength of circ. end seams

plate 62.2

rivets 45.5

Percentage of strength of circ. intermediate seam

plate

rivets

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

Material

S.

Tensile strength

26/30

Smallest outside diameter

46 19/32"

Length of plain part

top none

bottom

Thickness of plates

crowd 5 1/4"

bottom

Description of longitudinal joint

weld

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

none

Working pressure of furnace by Rules

252

End plates in steam space: Material

S.

Tensile strength

26/30

Thickness

15/16"

Pitch of stays 19 1/2" x 16"

How are stays secured

Double nuts

Working pressure by Rules

254

Tube plates: Material

front S

back S

Tensile strength

26/30

Thickness

15/16"

13/16"

Mean pitch of stay tubes in nests

11 1/4" x 7 1/4"

Pitch across wide water spaces

13 1/2"

Working pressure

front 258

back 277

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

32 1/2"

Distance apart

7 3/4"

No. and pitch of stays

in each

3 @ 7 1/8"

Working pressure by Rules

254

Combustion chamber plates: Material

S.

Tensile strength

26/30

Thickness: Sides

2 1/2"

Back

2 3/32"

Top

2 1/32"

Bottom

15/16"

Pitch of stays to ditto: Sides

8 1/8" x 7 1/8"

Back

9" x 8"

Top

7 3/4" x 7 5/8"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

254

Front plate at bottom: Material

S.

Tensile strength

26/30

Thickness

15/16"

Lower back plate: Material

S.

Tensile strength

26/30

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

255

Main stays: Material

S.

Tensile strength

28/32

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

Screw stays: Material

S.

Tensile strength

26/30

Diameter

At turned off part, 1 5/8"

Over threads, 1 5/8"

No. of threads per inch

9

Area supported by each stay

580

Working Pressure

250

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Section 258
 Working pressure by Rules **Back 252** Are the stays drilled at the outer ends **No.** Margin stays: Diameter At turned off part, Over threads **2"**
 No. of threads per inch **9.** Area supported by each stay **96"** Working pressure by Rules **259.**
 Tubes: Material **Iron** External diameter Plain **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 9/16"**
 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 **ped** Description of longitudinal joint **ped**
 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 Manufacturers of Tubes Steel castings
 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,
 Manufacturers **ped**

Dates of Survey During progress of work in shops -- See Accompanying Machinery Report
 while building During erection on board vessel -- See Machinery Report
 Are the approved plans of boiler and superheater forwarded here with (If not state date of approval.) **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.

12/4/30

Survey Fee ... £ ... When applied for. 192
 Travelling Expenses (if any) £ ... When received. 192

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

Committee's Minute **GLASGOW 15 APR 1930**
 Assigned See Accompanying Machinery Report

