

## REPORT ON BOILERS.

No. 50560

Received at London Office

Date of writing Report

19

When handed in at Local Office

11. 6.

1930

Port of

Glasgow

18 JUN 1930

No. in Survey held at  
Reg. Book.

Glasgow

Date, First Survey

7. 9. 28

Last Survey

1. 11. 30

1930

(Number of Plates 211)

Tons

Gross 26,032.28

Net 15,726.35

40199. on the

Swan S.S. "Empress of Japan"

Master

Built at

Glasgow

By whom built

Fairfield S.S. &amp; Eng. Co. Ltd.

Yard No. 634

When built 1930.

Engines made at

Glasgow

By whom made

Fairfield S.S. &amp; Eng. Co. Ltd.

Engine No. 634

When made 1930

Boilers made at

do

By whom made

do

Boiler No. 634

When made 1930.

Nominal Horse Power

6475.

Owners

Canadian Pacific Railway Co.

Port belonging to

London

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

Manufacturers of Steel

David Colville &amp; Co. Ltd.

(Letter for Record S)

Total Heating Surface of Boilers

6676 sq ft

Is forced draught fitted

y/n.

Coal or Oil fired

oil.

No. and Description of Boilers

2 Single ended return tube

Working Pressure 200 lb

Tested by hydraulic pressure to

350 lb.

Date of test

8.2.29

No. of Certificate

181922

Can each boiler be worked separately

y/n.

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2 Improved High Lift

Area of each set of valves per boiler

(per Rule 11.650)

(as fitted 11.880)

Pressure to which they are adjusted

200 lb

Are they fitted with easing gear

y/n.

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

No.

Smallest distance between boilers or uptakes and bunkers or woodwork

30"

Is oil fuel carried in the double bottom under boilers

y/n.

Smallest distance between shell of boiler and tank top plating

21"

Is the bottom of the boiler insulated

y/n.

Largest internal dia. of boilers

17'-8"

Length

11'-6"

Shell plates: Material

S

Tensile strength

31-35 tons

Thickness

1 7/16"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end

inter.

long. seams T.R. D.B. shell

Diameter of rivet holes in

circ. seams

1 9/16"

long. seams

1 9/16"

Pitch of rivets

4-4 1/2"

Percentage of strength of circ. end seams

plate

64.5

rivets

44.4

Percentage of strength of circ. intermediate seam

plate

84.8

rivets

Percentage of strength of longitudinal joint

plate

88.45

rivets

87.4

Working pressure of shell by Rules

201 lb

Thickness of butt straps

(outer 1 3/8"

inner 1 1/4")

No. and Description of Furnaces in each Boiler

4 Daighlin

Material

S

Tensile strength

26-30 tons

Smallest outside diameter

46 5/16"

Length of plain part

(top 2 1/2"

bottom 2 1/2")

Thickness of plates

(crown 2 1/32"

bottom 2 1/32")

Description of longitudinal joint

butt.

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

y/n.

Working pressure of furnace by Rules

207 lb

End plates in steam space: Material

S

Tensile strength

26-30 tons

Thickness

1 3/32"

Pitch of stays 17 1/2 x 16 1/4 x 14 1/2

How are stays secured

nuts inside &amp; outside

Working pressure by Rules

205 lb

Tube plates: Material

(front S

back S)

Tensile strength

26-30 tons

Thickness

2 5/32"

Mean pitch of stay tubes in nests

9 1/8"

Pitch across wide water spaces

13 3/4"

Working pressure

(front 210

back 224)

Girders to combustion chamber tops: Material

S

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

8 1/2 x 1 1/2"

Length as per Rule

31.56

Distance apart

8

No. and pitch of stays

in each

3 @ 4 1/2"

Working pressure by Rules

212

Combustion chamber plates: Material

S

Tensile strength

26-30 tons

Thickness: Sides

1 1/32"

Back

2 1/32"

Top

1 1/32"

Bottom

1 1/16"

Pitch of stays to ditto: Sides

1 1/2 x 8"

Back

8 1/4 x 9"

Top

8 x 7 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

201.5

Front plate at bottom: Material

S

Tensile strength

26-30 tons

Thickness

1 1/8"

Lower back plate: Material

S

Tensile strength

26-30 tons

Thickness

2 1/32"

Pitch of stays at wide water space

14 x 9"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

210

Main stays: Material

S

Tensile strength

28-32 tons

Diameter

(At body of stay, 2 11/32"

or

Over threads

No. of threads per inch

6

Area supported by each stay

244 sq in.

Working pressure by Rules

200

Screw stays: Material

Sintered iron

Tensile strength

Diameter

(At turned off part, 1 1/2 x 1 1/2"

or

Over threads

No. of threads per inch

9

Area supported by each stay

60 x 142



© 2018

Lloyd's Register  
Foundation



Working pressure by Rules 202. Are the stays drilled at the outer ends No. Margin stays: Diameter <sup>At turned off part</sup> <sub>Over threads</sub> 1 1/2 x 2 1/2.

No. of threads per inch 9 Area supported by each stay 94.50 Working pressure by Rules 224.

Tubes: Material Iron External diameter <sup>Plain</sup> <sub>Stay</sub> 2 3/4 Thickness 8/16 No. of threads per inch 9.

Pitch of tubes 4 x 3 1/2 Working pressure by Rules 246 + 222 Manhole compensation: Size of opening in shell plate 20 1/2 x 16 1/2 Section of compensating ring 26 x 1 3/4 No. of rivets and diameter of rivet holes 36 @ 1 1/2.

Outer row rivet pitch at ends 10 11/32 Depth of flange if manhole flanged 1 1/4 Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint <sup>Plate</sup> <sub>Rivets</sub>

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 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

For THE FAIRFIELD SHIPBUILDING

AND ENGINEERING CO., LTD.

The foregoing is a correct description,

*OR Shanks*

Manufacturer.

Dates of Survey while building During progress of work in shops - - - See accompanying machinery report

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Total No. of visits 2 11

Is this Boiler a duplicate of a previous case ☒ If so, state Vessel's name and Report No. ☒

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. They have been tested by hydraulic pressure and found tight and afterwards placed on board and efficiently secured in position.

*A. B.*  
11/6/30.

Survey Fee ... £ 34 : 15 : - When applied for, 12.6.1930

Travelling Expenses (if any) £ ... When received, 15.7.1930

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

Committee's Minute GLASGOW 17 JUN 1930

Assigned See accompanying machy report