

## REPORT ON BOILERS.

No. 48696

Received at London Office

28 DEC 1928

of writing Report

When handed in at Local Office

26. 12. 1928

Port of

Glasgow.

in Book.

Survey held at

Blydebank.

Date, First Survey

1 - 8 - 27

Last Survey

22. 12 1928

on the

Twin Screw "Duchess of Richmond".

(Number of Visits 143)

Gross Tons

Net

Built at

Blydebank

By whom built

John Brown &amp; Co.

Yard No.

523

When built 1928

Lines made at

Blydebank

By whom made

John Brown &amp; Co. Ltd.

Engine No.

523

When made 1928

Boilers made at

Blydebank

By whom made

John Brown &amp; Co. Ltd.

Boiler No.

523

When made 1928

Horse Power

400

Owners

Canadian Pacific Co.

Port belonging to

London.

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

Manufacturers of Steel

J. Colville &amp; Sons Ltd.

(Letter for Record 8. 17)

Total Heating Surface of Boilers

6000 sq. ft.

Is forced draught fitted

Yes

Coal or Oil fired

Oil

Name and Description of Boilers

Two - multitubular

Working Pressure

200

Tested by hydraulic pressure to

350

Date of test

21. 2. 28

No. of Certificate

17789

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2 - S. L. H. L.

Area of each set of valves per boiler

per Rule

10.4 sq. ft.

as fitted

Pressure to which they are adjusted

205

Are they fitted with easing gear

Yes

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

Well clear

Is oil fuel carried in the double bottom under boilers

Yes

Smallest distance between shell of boiler and tank top plating

21"

Is the bottom of the boiler insulated

Yes

Largest internal dia. of boilers

16'-0"

Length

11'-0"

Shell plates: Material

S

Tensile strength

28-32

Thickness

1 7/16"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end J. R.

inter. none

Seams

T. R. I. B. S.

Diameter of rivet holes in

circ. seams

1 1/2"

long. seams

1 7/16"

Pitch of rivets

3.998"

10 1/8"

Percentage of strength of circ. end seams

plate

62.5

rivets

49.2

Percentage of strength of circ. intermediate seam

plate

85.8

rivets

85.8

Percentage of strength of longitudinal joint

plate

85.8

rivets

85.8

combined

88.7

Working pressure of shell by Rules

200

Thickness of butt straps

outer 5/64"

inner 1/16"

No. and Description of Furnaces in each Boiler

3 - Davidson

Material

S.

Tensile strength

26-30

Smallest outside diameter

47 1/4"

Length of plain part

top

bottom

Thickness of plates

crown

2 1/32"

bottom

none

Description of longitudinal joint

weld

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

none

Working pressure of furnace by Rules

203

Material plates in steam space

S

Tensile strength

26-30

Thickness

1 9/32"

Pitch of stays

22 1/4" x 16 1/2"

How are stays secured

J. N.

Working pressure by Rules

200

Material plates

front

S.

back

S.

Tensile strength

26-30

26-30

Thickness

7/8"

7/8"

Working pressure

front

410

back

430

Pitch of stay tubes in nests

8"

Pitch across wide water spaces

13 15/16"

Working pressure

28-32

Depth and thickness of girder

Distance from combustion chamber tops to centre

Material

S.

Tensile strength

28-32

Distance apart

8 1/2"

No. and pitch of stays

Each

2-10"

Working pressure by Rules

207

Combustion chamber plates: Material

S.

Tensile strength

26-30

Thickness: Sides

23/32"

Back

23/32"

Top

23/32"

Bottom

30/32"

Pitch of stays to ditto

Sides 10" x 8 1/2"

Back 10" x 8 1/4"

Top 10" x 8 1/2"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

308

Front plate at bottom: Material

S.

Tensile strength

26-30

Thickness

31/32"

Thickness

7/8"

Lower back plate: Material

S.

Tensile strength

26-30

Thickness

31/32"

Pitch of stays at wide water space

14 15/16" x 8 1/4"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

294

Main stays: Material

S.

Tensile strength

28-32

Diameter

At body of stay,

3"

Over threads

3 3/8"

No. of threads per inch

6

Area supported by each stay

367 sq. in.

Working pressure by Rules

200

Screw stays: Material

Iron

Tensile strength

21.5"

Diameter

At turned off part,

1 3/4"

Over threads

No. of threads per inch

9

Area supported by each stay

85 sq. in.



Working pressure by Rules 212 Are the stays drilled at the outer ends *no* Margin stays: Diameter { At turned off part, or Over threads *1 7/8"*  
No. of threads per inch *9* Area supported by each stay *100"* Working pressure by Rules *210*  
Tubes: Material *Iron* External diameter { Plain *2 3/4"* Thickness { *8 L.S.G.* No. of threads per inch *9*  
Pitch of tubes *3 7/8" x 4"* Working pressure by Rules *275* Manhole compensation: Size of opening in  
shell plate *16 3/4" x 20 3/4"* Section of compensating ring *33" x 38 1/2" x 1 1/4"* No. of rivets and diameter of rivet holes *36 - 1 1/2"*  
Outer row rivet pitch at ends *10 1/2"* Depth of flange if manhole flanged *✓* Steam Dome: Material *none*  
Tensile strength *552* Thickness of shell *✓* Description of longitudinal joint *✓*  
Diameter of rivet holes *5/16"* Pitch of rivets *✓* Percentage of strength of joint { Plate Rivets  
Internal diameter *552* Working pressure by Rules *✓* Thickness of crown *✓* No. and diameter of  
stays *552* 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 *none* 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 *✓* 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

The foregoing is a correct description,

Dates of Survey { During progress of work in shops - *See Accompanying* Are the approved plans of boiler and superheater forwarded herewith *Yes*  
while building { During erection on board vessel - *✓* (If not state date of approval.)  
Machy Report *✓* Total No. of visits *143*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *These boilers have been built under special survey, in accordance with the approved plans, and the Society's Rules and requirements, the materials and workmanship are good they have been securely fitted on board, and the safety valves adjusted under steam.*

Survey Fee ... £ *32-10-0* When applied for *20 DEC 1928*  
Travelling Expenses (if any) £ : : When received, *12 1- 1929*

Committee's Minute *GLASGOW 27 DEC 1928*

Assigned *See Accompanying Machy Report.*

*Jas Cairns*  
Engineer Surveyor to Lloyd's Register of Shipping.



© 2021

Lloyd's Register  
Foundation