

## REPORT ON BOILERS.

No. 5784

Received at London Office 1 OCT 1942

Date of writing Report July 29th 1942 When handed in at Local Office July 29th 1942

Port of Vancouver, B. C.

No. in Reg. Book. Survey held at Vancouver, B. C.

Date, First Survey May 20th, 1942 Last Survey July 29th 1942

on the Steel Single Screw Steamer S.S. "FORT PITT"

(Number of Visits 32)

Tons { Gross 7133.04  
Net 4256.69

Built at North Vancouver, B.C. By whom built Burrard Dry Dock Co. Ltd.

Yard No. 143

When built 1942

Engines made at Montreal, P.Q.

By whom made Dominion Engineering Works Engine No. 25

When made 1942

Boilers made at Vancouver, B. C.

By whom made Dominion Bridge Co. Ltd.

Boiler No. 196

When made 1942

Nominal Horse Power 504

Owners His Majesty's Government in the United Kingdom. Port belonging to

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

Manufacturers of Steel North Steel Co., Lukens Steel Co., American Welding Co., &amp; Bethlehem Steel Co.

(Letter for Record --)

Total Heating Surface of Boilers

7140 Sq. Ft. (all 3)

Is forced draught fitted

Yes

Coal or Oil fired Coal

No. and Description of Boilers

Three Single ended Cylindrical multitubular

Working Pressure 220 lbs.

Tested by hydraulic pressure to 380 lbs.

Date of test 6-6-42

No. of Certificate 198

Can each boiler be worked separately Yes

Area of Firegrate in each boiler

51 Sq. Ft.

No. and Description of Safety valves to each boiler

Two 2 1/4" dia. Morrison High Lift

Area of each set of valves per boiler

per Rule 7.5 Sq. Ins.

as fitted 7.95 Sq. Ins.

Pressure to which they are adjusted 220

Are they fitted with easing gear Yes

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

No donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork

2 Ft.

Is oil fuel carried in the double bottom under boilers

No

Smallest distance between shell of boiler and tank top plating

2 Ft.

Is the bottom of the boiler insulated

Yes

Largest internal diameter of boilers

14'-6-3/16"

Length 11'-9"

ext.

Shell plates: Material

O.H. Steel

Tensile strength 29-33 tons

Thickness 1-13/32"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end Double

Long. seams

Treble Riv. Double butt straps.

Diameter of rivet holes in

circ. seams 1-1/2"

Pitch of rivets 4-3/16" approx.

Percentage of strength of circ. end seams

plate 64.2%

rivets 47.6%

plate 85.1%

rivets 92.8%

combined 88.7%

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate

rivets

combined

Thickness of butt straps

outer 1-3/32

inner 1-7/32

No. and Description of Furnaces in each Boiler 3 Morrison Corrugated Stephen Gourlay end.

Material O.H. Steel

Tensile strength

26-30 tons

Smallest outside diameter 41-9/16"

Length of plain part

top 9-3/16"

bottom 9-3/16"

Thickness of plates

crown 21/32"

bottom 21/32"

Description of longitudinal joint Forge Weld

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

--

End plates in steam space: Material

O.H. Steel

Tensile strength

26-30 tons

Thickness 1-7/16"

Pitch of stays 21"x21"

How are stays secured Double nuts &amp; 6-3/4" x 1/4" washers each end

Tube plates: Material

front O.H. Steel

back O.H. Steel

Tensile strength

26-30 tons

26 to 30 tons

Thickness

31/32

13/16

Mean pitch of stay tubes in nests

9.82"

Pitch across wide water spaces 8-1/4" x 14-1/2"

Girders to combustion chamber tops: Material

O.H. Steel

Tensile strength

29-33 tons

Depth and Thickness of girder

Double 10-1/4" x 7/8"

Length as per Rule

34"

Distance apart

11"

No. and pitch of stays

in each 3- 7-5/8

Combustion chamber plates: Material

O.H. Steel

Tensile strength

26-30 tons

Thickness: Sides

25/32

Back 23/32

Top 25/32

Bottom 25/32

Pitch of stays to ditto: Sides

9"x10-3/16"

Back 9"x9" Wing CC

Top 7-5/8"x11"

Are stays fitted with nuts or riveted over

Nuts

Front plate at bottom: Material

O.H. Steel

Tensile strength

26-30 tons

Thickness 31/32

Lower back plate: Material

O.H. Steel

Tensile strength

26-30 tons

Thickness 29/32

Pitch of stays at wide water space

9" x 14-1/2"

Are stays fitted with nuts or riveted over

Nuts

Main stays: Material

O.H. Steel

Tensile strength

28-32 tons

Diameter

At body of stay 3-1/2"

Over threads 3-3/4"

No. of threads per inch

6

Screw stays: Material

O.H. Steel

Tensile strength

26-30 tons

Diameter

At turned off part 1.606

Over threads 1-3/4"

No. of threads per inch

9

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Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1.856"  
or 2"  
Over threads.

No. of threads per inch 9

Tubes: Material O.H. Steel External diameter { Plain 3" Thickness .16" No. of threads per inch 9  
Stay 3" 3/8" & 5/16"

Pitch of tubes 4-1/8" x 4-1/4" Manhole compensation: Size of opening in end 16" x 12" Section of compensating ring -- No. of rivets and diameter of rivet holes --

Outer row rivet pitch at ends -- Depth of flange if manhole flanged 4-1/4" Upper 3-1/2" Lower -- Steam Dome: Material --

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 -- Thickness of crown -- No. and diameter of stays -- Inner radius of crown --

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 "ELESCO" Smoke box type Manufacturers of { Tubes ( National Tube Co.  
Steel forgings ( Pittsburg, Penna.  
Steel castings

Number of elements 58 Material of tubes S.D. Steel Internal diameter and thickness of tubes .69" .095" (BBWG min.)

Material of headers O.H. Steel Tensile strength 33.5 tons Thickness 1-1/8" min. Can the superheater be shut off and the boiler be worked separately No Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes

Area of each safety valve 1.75 per sq. inch Are the safety valves fitted with easing gear Yes

Pressure to which the safety valves are adjusted 220 Lbs. per Sq. Inch Hydraulic test pressure: 440 lbs. per sq. inch.

tubes 1500 Lbs. per Sq. inch. forgings and castings 600 lbs. per sq. inch. and after assembly in place 440 lbs. per sq. inch. Are drain cocks or valves fitted to free the superheater from water where necessary Yes

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes

The foregoing is a correct description,  
Dominion Bridge Co Ltd Manufacturer.

Dates of Survey { During progress of work in shops -- 1942.  
while building { During erection on board vessel -- May- 20-23-27-29 June 2-6-9 Are the approved plans of boiler and superheater forwarded herewith Plans in U.K.  
Total No. of visits 32

June-12-13-15-17-19-20-22-23  
July-1-8-9-10-11-12-13-15-17-19-20-21, 23-24-25-27-29.

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. S.S. "FORT ST. JAMES" (Ver. Rpt. No. 5718)

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

These boilers have been constructed under Special Survey of tested material in accordance with the approved plans, New York letters and otherwise in conformity with the Society's Rules. On completion the boilers were satisfactorily tested under hydraulic pressure to 380 lbs. per sq. inch. They were fitted on board under Special Survey, examined under working conditions, safety valves adjusted under steam to the working pressure and satisfactory accumulation test carried out.

Cross seam of both end plates is fusion welded by Union Melt process, stress relieved and X-rayed under survey. Certificate attached. Welds ground flush both sides of plate.

Combustion chamber wrapper plates welded to back tube plate and combustion chamber back plate; wrapper plate butts also welded, all hand welding and ground flush and tested as per Rule.

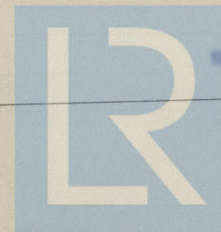
Survey Fee ... £150.00  
Travelling Expenses (if any) £

When applied for, 30th July 1942  
When received, ✓ 19

R. Knox W. E. Baillie  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 10 NOV 1942

Assigned See Ver. 5784



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