

REPORT ON BOILERS.

Received at London Office

7-JUN 1946

Date of writing Report 18th March 1946 When handed in at Local Office 18th March 1946 Port of Vancouver, B. C.

Vancouver and
No. in Reg. Book Survey held at North Vancouver, B. C. Date, First Survey 2nd Nov., 1945 Last Survey 28th Feb., 1946
Constant attendance
(Number of Visits /)

- on the Steel Single Screw Steamer "OTTAWA PALMER" Tons { Gross 911.29
Net 425.55

Built at Vancouver and By whom built Burrard Dry Dock Co. Yard No. 245 When built 1946
North Vancouver, B. C. Ltd.

Engines made at Lachine, P. Q. By whom made Canadian Allis-Chalmers Ltd. Engine No. 580 When made 1946
888

Boilers made at Vancouver, B. C. By whom made Dominion Bridge Co. Ltd. Boiler No. 887 When made 1945

Nominal Horse Power 162 Owners Canadian Government Port belonging to -

42/12.4 MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Carnegie-Illinois Steel Corp., Taylor Forge Furnaces,
The Steel Co. of Canada Ltd., Page-Hersey Tubes. (Letter for Record S ✓)

Total Heating Surface of Boilers 2790 sq.ft. (2 boilers) Is forced draught fitted Yes Coal or Oil fired Oil
200 lbs./

No. and Description of Boilers 2 - Single Ended Cylindrical Multitubular Working Pressure sq.inch.
13-11-45

Tested by hydraulic pressure to 350 lbs. Date of test 8-11-45 No. of Certificate 888 - 887 Can each boiler be worked separately Yes
None

Area of Firegrate in each Boiler fitted No. and Description of safety valves to each boiler 2 - Morrison High Lift ✓

Area of each set of valves per boiler { per Rule 4.05 sq.inch Pressure to which they are adjusted 200 lbs. Are they fitted with easing gear Yes ✓
as fitted 6.28 sq.inch sq.inch

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 12" Is oil fuel carried in the double bottom under boilers Yes ✓

Smallest distance between shell of boiler and tank top plating 18" Is the bottom of the boiler insulated Yes ✓

Largest internal dia. of boilers 11'-6-15/16" Length 11'0" Ext. Shell plates: Material O.H. Steel Tensile strength 65000-77000 lbs.

Thickness 1-1/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end Double ✓
inter -
long. seams Treble Riv. Double Butt Strap Diameter of rivet holes in { circ. seams 1-1/8" ✓ Pitch of rivets { 3 1/4" approx. ✓
long. seams 1-1/8" ✓ 7-13/16" ✓

Percentage of strength of circ. end seams { plate 65.38 Percentage of strength of circ. intermediate seam { plate -
rivets 47.05 rivets -

Percentage of strength of longitudinal joint { plate 85.6 Working pressure of shell by Rules 201.3 lbs. per sq.inch
rivets 91.72
combined 89.53

Thickness of butt straps { outer 25/32 No. and Description of Furnaces in each Boiler 3 Morison Corrugated-Stephen Gourlay
inner 29/32 ✓ end

Material O.H. Steel Tensile strength 55000 - 65000 lbs. Smallest outside diameter 33 1/4" ✓

Length of plain part { top 7 1/4" Thickness of plates { crown 1/2" Description of longitudinal joint Electric Arc Welded ✓
bottom 7 1/4" bottom 1/2"

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 204.4 lbs. sq. inch

End plates in steam space: Material O.H. Steel Tensile strength 58000-68000 lbs. Thickness 1" Pitch of stays 15" x 15" ✓

How are stays secured Double Nuts & 5 1/4" x 1/4" washers at each end Working pressure by Rules 205 lbs. ✓

Tube plates: Material { front O.H. Steel Tensile strength { 58000-68000 lbs. Thickness { 1"
back O.H. Steel 58000-68000 lbs. 25/32" ✓

Mean pitch of stay tubes in nests 9.31" Pitch across wide water spaces 8" x 14" Working Pressure { front 266.1 lbs.
back 252.5 lbs.

Girders to combustion chamber tops: Material O.H. Steel Tensile strength 58000 - 68000 lbs. Depth and thickness of girder

at centre Double 10"x15/16" Length as per Rule 36" Distance apart 10" No. and pitch of stays

in each 3 @ 8 1/2" Working pressure by Rules 208.7 lbs. sq. inch Combustion chamber plates: Material O.H. Steel ✓

Tensile strength 58000 - 68000 lbs. Thickness: Sides 23/32" Back 23/32" Top 23/32" Bottom 23/32" ✓

Pitch of stays to ditto: Sides 10"x8 1/2" wing to shell 10"x8 1/2" wing cc Back 10"x8 1/2" centre Top 10" x 8 1/2" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 210.7 lbs. sq. inch Front plate at bottom: Material O.H. Steel Tensile strength 58000-68000 lbs. ✓

Thickness 1" Lower back plate: Material O.H. Steel Tensile strength 58000-68000 lbs. Thickness 1" ✓

Pitch of stays at wide water space 10" x 14 1/2" Are stays fitted with nuts or riveted over Nuts ✓

Working pressure 232.3 lbs. sq. inch Main stays: Material O.H. Steel Tensile strength 62720 - 71680 lbs. ✓

Diameter { At body of stay 2 1/2" No. of threads per inch 6 Area supported by each stay 225 sq. inch ✓
or
Over threads 2 3/4"

Working pressure by Rules 238.1 lbs. sq. inch Screw stays: Material O.H. Steel Tensile strength 58000 - 68000 lbs. ✓

Diameter { At turned off part - No. of threads per inch 9 Area supported by each stay 85 sq. inch ✓
or
Over threads 1 3/4"

Working pressure by Rules 213.5 lbs. Are the stays drilled at the outer ends No ✓ Margin stays: Diameter { At turned off part, - or Over threads 2" }
No. of threads per inch 9 Area supported by each stay 115 sq. inches Working pressure by Rules 215.2 lbs. sq. inch
Tubes: Material O.H. Steel External diameter { Plain 3" ✓ Thickness { 8 L.S.G. ✓ No. of threads per inch 9 } Stay 3" ✓ 3/8" }
Pitch of tubes 4" x 4 1/4" Working pressure by Rules 250 lbs. sq. inch Manhole compensation: Size of opening in shell plate 21-1/8" x 17-1/8" Section of compensating ring 1-1/16" thick No. of rivets and diameter of rivet holes 32 @ 1-3/8"
Outer row rivet pitch at ends 10" Depth of flange if manhole flanged 3 3/4" Steam Dome: Material -
Tensile strength - Thickness of shell - Description of longitudinal joint -
Diameter of rivet holes - Pitch of rivets - Percentage of strength of joint { Plate - Rivets - }
Internal diameter - Working pressure by Rules - Thickness of crown - No. and diameter of stays - 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 fitted Manufacturers of { Tubes - Steel forgings - 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 - forgings and 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 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 - - } { Constant attendance from 2nd November, 1945 to 28th February, 1946 } Are the approved plans of boiler and superheater forwarded herewith /
while building { During erection on board vessel - - } { for Classification and Owners' Representation. } Total No. of visits -
Forwarded with Vcr. Report No. 6789.

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. S.S. "OTTAWA PANDA" (Vancouver Report No. 6789).

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under Special Survey of tested materials 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 350 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 a satisfactory accumulation test carried out.

Vertical seams of both end plates are fusion welded by Union Melt Process; stress relieved under Survey. Welds ground flush on both sides of plate. Combustion chamber wrapper plates welded to back tube plate and combustion chamber back plate; butts of combustion chamber wrapper plates also welded, all by manual electric welding tested as per Rule and ground flush.

Survey Fee ... \$140.00 } When applied for 28 Feb., 1946
Travelling Expenses (if any) \$15.00 } When received 19

D. J. Archibald
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI. 14 JUN 1946

Assigned

Sir F.E. Machy. rpt.



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Foundation