

## REPORT ON BOILERS.

Received at London Office.

27 MAY 1946

Date of writing Report 15th Feb., 1946 When handed in at Local Office 15th Feb. 1946 Port of Vancouver, B.C.

No. in Survey held at Prince Rupert, B.C. & Vancouver, B.C. Date, First Survey 26 Sept., 1945 Last Survey 4th April, 1946

Reg. Book. (Number of Visits 20) Tons { Gross 898.27  
Net 419.63

on the Steel Single Screw Steamer "OTTAWA PAGET"

Built at Prince Rupert, B.C. whom built Prince Rupert Drydock & Shipyard Yard No. 58 When built 1946

Engines made at Montreal, P. of Quebec By whom made Canadian Allis-Chalmers, Ltd. Engine No. 574 When made 1945

Boilers made at Vancouver, B.C. By whom made Dominion Bridge Co. Ltd. Boiler No. 879 When made 1945

Nominal Horse Power 162 Owners Canadian Government, Ottawa. Port belonging to -

MULTITUBULAR BOILERS—MAIN, ~~XXXXXXXXXXXXXXXXXXXX~~

Manufacturers of Steel Carnegie-Illinois Steel Corp., The Steel Co. of Canada Ltd., Taylor Forge, Page-Harvey 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

No. and Description of Boilers 2 - Single Ended Cylindrical Multitubular Working Pressure 200 lbs. sq. inch

Tested by hydraulic pressure to 350 lbs. Date of test 5-10-45 No. of Certificate 879, 880 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler None 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. sq. inch Are they fitted with easing gear Yes  
as fitted 6.28 " "

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 Riveted 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 Morrison Corrugated - Stephen Gourlay End  
inner 29/32"

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 1/8"

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. sq. inch

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" x 15/16" Length as per Rule 36" Distance apart 10" No. and pitch of stays

in each 3 at 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" x 8 1/2" wing to shell Back { 10" x 8 1/2" wing cc. Top 10" x 8 1/2" Are stays fitted with nuts or riveted over Nuts  
9 x 8 1/2" wing to centre Back { 10" x 8 1/2" centre cc. cc.

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 1/8" No. of threads per inch 6 Area supported by each stay 225 sq. inch.  
or 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 1 3/4"  
Over threads 1 1/4"



Working pressure by Rules 213.5 lbs. sq. inch Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 2" 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" Stay 3" Thickness { 8 L.S.G. 3/8" No. of threads per inch 9

Pitch of tubes 4" x 4 1/2" 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 - - 1945 Sept. 26 Oct. 2, 3, 5, 10, 11, 12 Are the approved plans of boiler and superheater forwarded herewith 7-8-45 (If not state date of approval.)

while building { During erection on board vessel - - 1945 - October 23, 25, December 6, Total No. of visits 20 12, 1946 - January 7, 18, 21, 23, 25, 28, 31 March 31 April 4.

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. S.S. "OTTAWA PANDA" - Ver. Report No. 678

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 22nd Feb., 1946

Travelling Expenses (if any) \$ 15.00 : } When received 19

F.B. Gill Retiring  
Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 7 JUN 1946

Committee's Minute

Assigned See Minute on 7th July Rpt



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Foundation