

REPORT ON BOILERS.

Received at London Office **25 JUN 1946**

Date of writing Report **4th April, 1946** When handed in at Local Office **4th April 19 46** Port of **Vancouver, B. C.**

No. in Reg. Book **Survey held at Prince Rupert, B. C.** Date, First Survey **17th January 1946** Last Survey **4th April, 19 46**

on the **Steel Single Screw Steamer "OTTAWA PALETTE"** (Number of Visits **11**) Tons { Gross **903.66**
Net **422.07**

Built at **Prince Rupert, BC** By whom built **Prince Rupert Dry Dock and Shipyard** Yard No. **59** When built **1946**

Engines made at **Lachine, P.Q.** By whom made **Canadian Allis-Chalmers** Engine No. **583** When made **1946**

Boilers made at **Vancouver, B. C.** By whom made **Dominion Bridge Co. Ltd.** Boiler No. **897, 898** When made **1945**

Nominal Horse Power **162** Owners **Canadian Government** Port belonging to **-**

Spec good

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

Manufacturers of Steel **Carnegie-Illinois Steel Corpn., The Steel Co. of Canada Ltd., Taylor-Forge Furnaces, 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**

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 **18-12-45** No. of Certificate **897, 898** 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**
as fitted **6.28 " "** Pressure to which they are adjusted **200 lbs. sq. inch** 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 **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"**
long. seams **1-1/8"** Pitch of rivets { **3/4" approx.**
7-13/16"

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

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

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

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

Length of plain part { top **7 1/4"**
bottom **7 1/4"** Thickness of plates { crown **1/8"**
bottom **1/8"** Description of longitudinal joint **Electric weld**

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 & 5/4"x1/4" washers at each end** Working pressure by Rules **205 lbs. sq. inch**

Tube plates: Material { front **O.H. Steel**
back **O.H. Steel** Tensile strength { **58000-68000 lbs.**
58000-68000 lbs. Thickness { **1"**
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 @ 8 1/8"** 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 1/8" wing to shell 10"x8 1/8" wing cc** Back **10"x8 1/4" centre cc** Top **10" x 8 1/8"** 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"**

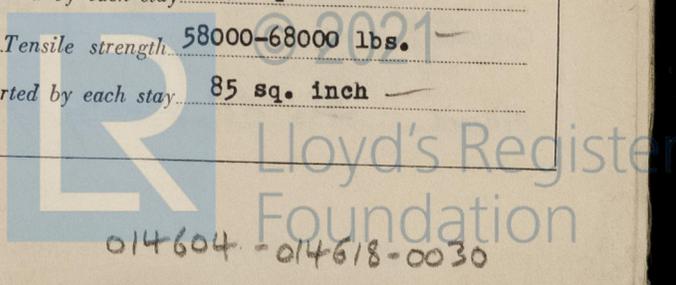
Pitch of stays at wide water space **10" x 14 1/8"** Are stays fitted with nuts or riveted over **Nuts**

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"**
or **2 1/4"** No. of threads per inch **6** Area supported by each stay **225 sq. inch**

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, **- -**
or **1 3/4"** No. of threads per inch **9** Area supported by each stay **85 sq. inch**



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, - - 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 1/4" Working pressure by Rules. 250 lbs. sq. inch Manhole compensation: Size of opening 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 of 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 Manufacture
per J. J. Jones

Dates of Survey { During progress of work in shops - - } 1945 Dec. 13, 14, 18, 20, 21, 29, 31 Are the approved plans of boiler and superheater forwarded herewith 7-8-45
 while building { During erection on board vessel - - } 1946 Jan. 17 Mar. 28 Apr. 2, 4 Total No. of visits 11
 (If not state date of approval.)

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. S.S. "OTTAWA PAGET" - Ver. Report No. 6

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. They were fitted on board under Special Survey, examined under working conditions, safety valves adjusted under steam 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 17 April, 19 46
 Travelling Expenses (if any) 15.00 : } When received ✓ 19 46

R. K. Jones, J. B. Gill
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 5 JUL 1946
 Assigned Sir F. E. Machy, rpt.