

REPORT ON BOILERS.

No. 6872

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 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, B.C. 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 -

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

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

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 combined 89.53 Working pressure of shell by Rules 201.3 lbs. per sq. inch

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 - 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. 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 Over threads 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 Over threads 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" Working pressure by Rules. 215.2 lbs. sq. inch

No. of threads per inch 9 Area supported by each stay 115 sq. inches 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 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 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

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 (If not state date of approval.) During erection on board vessel 1946 Jan. 17 Mar. 28 Apr. 2, 4 Total No. of visits 11

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 Travelling Expenses (if any) 15.00 When applied for 17 April, 19 46 When received 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 5 JUL 1946

Assigned Sir F.E. Macleay, rpt.