

REPORT ON BOILERS.

Received at London Office 19 JAN 1944

Date of writing Report **28th Jan. 1943** When handed in at Local Office **28th Jan. 1943** Port of **Vancouver, B. C.**
Re-typed - **15th Sept., 1943.**

No. in Reg. Book Survey held at **Vancouver, B. C.** Date, First Survey **25th Nov., 1942** Last Survey **22nd January, 1943.**

(Number of Visits **16**) Tons { Gross **7134.05**
Net **4243.98**

on the **Steel Single Screw Steamer, "FORT RAMPART"**

Built at **Vancouver, B.C.** By whom built **West Coast Shipbuilders Limited.** No. **113** When built **1943**

Engines made at **Toronto, Ontario** By whom made **John Inglis & Son** Engine No. **134** When made **1942**

Boilers made at **Vancouver, B.C.** By whom made **Vancouver Iron Works, Ltd.** Boiler No. **(326) (327 & 328)** When made **1942**

Nominal Horse Power **504** Owners **Minister of Munitions and Supply of Canada.** Port belonging to **Canada.**

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

Manufacturers of Steel **Worth Steel Co., American Welding Co., Lukens Steel Co., Algoma Steel Co., Steel Co. of Canada, Page-Hershey** (Letter for Record **-- 5**)

Total Heating Surface of Boilers **7,140 square feet** 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 **3-12-42** No. of Certificate **326** 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 **6.35 sq. ins.** Pressure to which they are adjusted **220 lbs.** Are they fitted with easing gear **Yes**
as fitted **7.95 sq. ins.**

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 feet** Is oil fuel carried in the double bottom under boilers **No**

Smallest distance between shell of boiler and tank top plating **2 feet** Is the bottom of the boiler insulated **Yes**

Largest internal dia. 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**
inter **---**

long. seams **Treble rivetted double butt straps** Diameter of rivet holes in { circ. seams **1-1/2"** Pitch of rivets **4-3/16" approx.**
long. seams **1-1/2"**

Percentage of strength of circ. end seams { plate **64.2%** Percentage of strength of circ. intermediate seam { plate **---**
rivets **47.6%** rivets **---**

Percentage of strength of longitudinal joint { plate **85.1%** Working pressure of shell by Rules **---**
rivets **92.8%**
combined **88.7%**

Thickness of butt straps { outer **1-3/32** No. and Description of Furnaces in each Boiler **3 Morrison Corrugated Stephen Gourlay end**
inner **1-7/32**

Material **O.H. Steel** Tensile strength **26 - 30 tons** Smallest outside diameter **41-9/16"**

Length of plain part { top **10"** Thickness of plates { crown **21/32"** Description of longitudinal joint **Forge weld**
bottom **10"** bottom **---**

Dimensions of stiffening rings on furnace or c.c. bottom **---** Working pressure of furnace by Rules **---**

End plates in steam space: Material **O.H. Steel** Tensile strength **26 - 30 tons** thickness **1-7/16"** Pitch of stays **21" x 21"**

How are stays secured **double nuts and 6-3/4" x 1/4" washers each end** Working pressure by Rules **---**

Tube plates: Material { front **O.H. Steel** Tensile strength { **26 - 30 tons** Thickness { **31/32**
back **O.H. Steel** **26 - 30 tons** **13/16**

Mean pitch of stay tubes in nests **9.82"** Pitch across wide water spaces **8-1/4" x 14-1/2"** Working Pressure { front **---**
back **---**

Girders to combustion chamber tops: Material **O.H. Steel** Tensile strength **29 - 33 tons** Depth and thickness of girder

double 11" x 7/8" Length as per Rule **34** Distance apart **11"** No. and pitch of stays

in each **3 - 7-5/8"** Working pressure by Rules **---** 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" x 10-3/16"** Back **9" x 8 1/2" Cent. C.C.** Top **7-5/8" x 11"** Are stays fitted with nuts or riveted over **nuts**

Working pressure by Rules **---** 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**

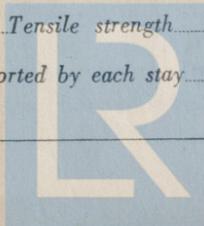
Pitch of stays at wide water space **9" x 14-1/2"** Are stays fitted with nuts or riveted over **nuts**

Working pressure **---** Main stays: Material **O.H. Steel** Tensile strength **28 - 32 tons**

Diameter { At body of stay **3-1/2"** No. of threads per inch **6** Area supported by each stay **---**
or **3-3/4"**

Working pressure by Rules **---** Screw stays: Material **O.H. Steel** Tensile strength **26 - 30 tons**

Diameter { At turned off part, **1.606** No. of threads per inch **9** Area supported by each stay **---**
or **1-3/4"**



Working pressure by Rules. Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1.856" or Over threads. 2" }
 No. of threads per inch 9 Area supported by each stay. Working pressure by Rules.
 Tubes: Material O.H. Steel External diameter { Plain 3" Stay 3" } Thickness { .16" } & 5/16" No. of threads per inch 9
 Pitch of tubes 4-1/8" x 4-1/4" Working pressure by Rules. Manhole compensation: Size of opening in end plate 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. Upper 4-1/4 Lower 3-1/2 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.
 How connected to shell. Inner radius of crown. Working pressure by Rules.
 of rivets in outer row in dome connection 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)
 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 Working pressure as per Rules. Pressure to which the safety valves are adjusted. 220 lbs. per square inch Hydraulic test pressure: tubes 2500 lbs. per sq. inch forgings and castings 550 lbs. per sq. in. and after assembly in place. steam test 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,
VANCOUVER IRON WORKS LTD. Manufacturer.
M. J. Sloan

Dates of Survey { During progress of work in shops - - } 1942 Nov. -23, 24, 27, 28, Dec. -2, 3, 4, 5 Are the approved plans of boiler and superheater forwarded herewith. Approved Plans in D. (If not state date of approval.)
 { During erection on board vessel - - } 1942 Nov. -8, 14, 19, 22. 1943 Jan. -8, 14, 20, 22 Total No. of visits. 16

Is this Boiler a duplicate of a previous case. Yes If so, state Vessel's name and Report No. S.S. "FORT CHILCOTIN" (Ver. Rpt. No. 5764).

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 a satisfactory accumulation test carried out.
 Cross seams of both end plates are fusion welded by Union Melt Process, stress relieved under survey. Welds ground flush both sides of plate, combustion chamber wrapper plate welded to back tube plate and combustion chamber back plate; wrapper plate butts also welded, all by Union Melt Electric Process.
 Furnaces hand electric welded to back tube plate, all welding ground flush on both sides and tested as per Rule.

Survey Fee ... \$150.00 : } When applied for 25th Jan. 1943
 Travelling Expenses (if any) \$ 15.00 : } When received 19

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

Committee's Minute.....
 Assigned..... See for marks, etc.

FRI. 28 JAN 1944

