

REPORT ON BOILERS.

30 AUG 1943

Received at London Office

Date of writing Report **15th July, 1943** When handed in at Local Office **15th July, 1943** Port of **Vancouver, B. C.**

No. in Survey held at **Vancouver, B. C.** Date, First Survey **25th May, 1943** Last Survey **9th July, 1943**

on the **Steel Single Screw Steamer "GREEN GABLES PARK"** (Number of Visits **21**)

Built at **North Vancouver, B.C.** By whom built **North Van Ship Repairs, Ltd.** No. **126** When built **1943**

Engines made at **Lachine, Que.** By whom made **Dominion Engineering Works, Ltd.** Engine No. **97** When made **1943**

Boilers made at **Vancouver, B. C.** By whom made **Dominion Bridge Co. Ltd.** Boiler No. **(470, 475, 480)** When made **1943**

Nominal Horse Power **504** Owners **Minister of Munitions & 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., Bethlehem Steel Co.** (Letter for Record **--**)

Total Heating Surface of Boilers **7140 sq. ft.** 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 **7-6-43, 9-6-43, 11-6-43** No. of Certificate **470, 475, 480** 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** 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 ft.** Is oil fuel carried in the double bottom under boilers **No**

Smallest distance between shell of boiler and tank top plating **2 ft.** 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 Riv. 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"** **10-1/16"**

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 Gourley**
inner **1-7/32"** end.

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

Length of plain part { top **9-3/16"** Thickness of plates { crown **(21/32"** Description of longitudinal joint **Forge Weld.**
bottom **9-3/16"** 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 & 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 to 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 at centre **10-1/4" 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"x10-3/16"** Back **9"x8 1/2" CentCC** 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**



2010-558210-428210

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" ✓ Thickness .16" ✓
 Stay 3" ✓ 3/8" & 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 shell plate 16" x 12" ✓ Section of compensating ring -- Upper No. of rivets and diameter of rivet holes --
 Lower
 Outer row rivet pitch at ends -- Depth of flange if manhole flanged 4-1/4 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 -- 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 "ELESCO" Smoke box type ✓ Manufacturers of { Tubes --
 Steel forgings (National Tube Co.,
 Steel castings (Pittsburgh, Penna.
 Number of elements 58 ✓ Material of tubes S.D. Steel Internal diameter and thickness of tubes .69" .095" (BBWG min
 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 sq. inch ✓ Hydraulic test pressure:
 tubes 2500 lbs. per sq. inch. forgings and castings 550 lbs. per sq. inch. 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,
 Dominion Bridge Co Ltd Manufacturer.

Dates of Survey { During progress of work in shops - - } 1943. May 25, 27, 29. June 1, 3, 7, 9, 11. Are the approved plans of boiler and superheater forwarded herewith Approved
 while building { During erection on board vessel - - } 1943. June 12, 14, 16, 18, 19, 21, 29, 30. July 1, 2, 3, 7, 9. Total No. of visits 21
 (If not state date of approval.) Plans in U.K.

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. S.S. "FORT ST. JAMES"
 (Vancouver Report No. 5718)

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 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 seam of both end plates is fusion welded by Union Melt Process, stress relieved and x-rayed under survey. Welds ground flush both sides of plate.
 Combustion Chamber wrapper plates welded to back tube plate and Combustion Chamber back plate; wrapper plate butts also welded, all hand welding and ground flush and tested as per Rule.

Survey Fee ... \$150.00 : } When applied for 8th July, 1943
 Travelling Expenses (if any) \$ 15.00 : } When received 19

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

Committee's Minute FRI. 3 SEP 1943

Assigned see minute on F.S. Rpt

