

REPORT ON BOILERS.

18 AUG 1943

Received at London Office.

Date of writing Report **8th June 1943** When handed in at Local Office **8th June 1943** Port of **Vancouver, B. C.**

No. in Reg. Book. Survey held at **North Vancouver, B. C.** Date, First Survey **22nd April, 1943** Last Survey **29th May, 1943**

(Number of Visits **24**) Tons { Gross **7127.58**
Net **4246.28**

on the **Steel Single Screw Steamer "FORT CAPOT RIVER"**

Built at **North Vancouver** by whom built **North Van Ship Repairs Limited** Yard No. **124** When built **1943**

Engines made at **Toronto, Ontario** By whom made **John Inglis Co. Ltd.** Engine No. **267M68** When made **1943**

Boilers made at **Vancouver, B. C.** By whom made **Vancouver Iron Works, Ltd.** Boiler No. **442** When made **1943**

Nominal Horse Power **504** Owners **Minister of Munitions & Supply of Canada** Port belonging to **--**

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel **Worth Steel Co., Luken Steel Co., Steel Co. of Canada** (Letter for Record **--**)
Algoma Steel Co.

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 **5-5-43** No. of Certificate **441** Can each boiler be worked separately **Yes**

Area of Firegrate in each Boiler **51 sq. ft.** and Description of safety valves to each boiler **Two- 2 1/2" 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 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

at centre **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 CC** 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**

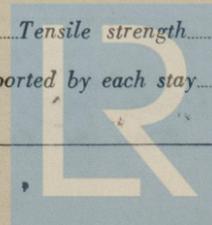
Pitch of stays at wide water space **9" x 14-1/2"** Are stays fitted with nuts or riveted over **Nuts**

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"**



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Working pressure by Rules Are the stays drilled at the outer ends No Margin stays: Diameter At turned off part, 1.856"
 or 2"
 Over threads

No. of threads per inch 9 Area supported by each stay Working pressure by Rules

Tubes: Material O.H. Steel External diameter Plain 3" 3 Thickness .16" 3/8" & 5/16" No. of threads per inch 9
 Stay 3"

Pitch of tubes 4-1/8" x 4-1/4" Working pressure by Rules Manhole compensation: Size of opening in end

steel 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

Type of Superheater "TELESCO" Smoke box type Manufacturers of Tubes Steel forgings (National Tube Co.,
 Steel castings (Pittsburg, 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: Steam test

tubes 2500 lbs. per sq. inch. forgings and castings 550 lbs. per sq. inch. and after assembly in place 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.

Dates of Survey During progress of work in shops 1943 April 22-24-28-30 May 1-5-7-8 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
 While building During erection on board vessel May 11-12-13-15-17-18-19-20-21-23-24-25-26-27-28-29 Total No. of visits 24

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

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 plates. 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 (butt welds); and 2" lap welds to lower front end plate. All welding ground flush on both sides and tested as per Rule.

Survey Fee ... \$150.00 : } When applied for 31st May 19 43
 Travelling Expenses (if any) \$ 15.00 : } When received 19

R. A. Carney
 Engineer Surveyor to Lloyd's Register of Shipping.

TUES. 7 SEP 1943

Committee's Minute

Assigned see minute on 28.8.43



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