

REPORT ON BOILERS.

No. 5859

Received at London Office.

Date of writing Report 7th Jan. 1943 When handed in at London Office 19 Port of VANCOUVER, B.C.

No. in Reg. Book. Survey held at NORTH VANCOUVER, B.C. Date, First Survey 9th November Last Survey 6th January 1943

on the Steel Single Screw Steamer "FORT DREW" (Number of Visits 31) Tons { Gross 7133.91
Net 4243.89

Built at NORTH VANCOUVER By whom built North Van Ship Repairs, Limited Yard No. 115 When built 1942

Engines made at Montreal, Quebec. By whom made Canadian Allis-Chalmers Limited Engine No. 119 When made 1942

Boilers made at Vancouver, B.C. By whom made Vancouver Iron Works, Ltd. Boiler No. 315
317
318 When made 1942

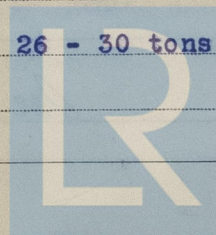
Nominal Horse Power 504 Owners Minister of Munitions & Supply of Canada Port belonging to --

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

Worthington Steel Co. American Welding Co.

Manufacturers of Steel Lukens Steel Co. Algoma Steel Co. Steel Co. Canada, Page-Hersey (Letter for Record --)Total Heating Surface of Boilers 7140 sq. ft. Is forced draught fitted Yes Coal or Oil fired CoalNo. and Description of Boilers Three single ended cylindrical multitubular Working Pressure 220 lbs.Tested by hydraulic pressure to 380 lbs. Date of test 20-11-42 No. of Certificate 315
23-11-42 317
24-11-42 318 Can each boiler be worked separately YesArea of Firegrate in each boiler 51 sq. ft. No. and Description of Safety valves to each boiler Two 2 1/4" dia. Morrison High LiftArea of each set of valves per boiler { per Rule 6.35 sq. ins.
as fitted 7.95 sq. ins. Pressure to which they are adjusted 220 lbs. Are they fitted with easing gear YesIn case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no donkey boilerSmallest distance between boilers or uptakes and bunkers or woodwork 2 ft. Is oil fuel carried in the double bottom under boilers NoSmallest distance between shell of boiler and tank top plating 2 ft. Is the bottom of the boiler insulated YesLargest internal diameter of boilers 14'-6 3/16" Length 11'-9" ext. Shell plates: Material O.H. Steel Tensile strength 29-33 tonsThickness 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"
long. seams 1 1/2" Pitch of rivets { 4 3/16" approx.
10 1/16"Percentage of strength of circ. end seams { plate 64.2%
rivets 47.6%Percentage of strength of circ. intermediate seam { plate --
rivets --Percentage of strength of longitudinal joint { plate 85.1%
rivets 92.8%
combined 88.7%Thickness of butt straps { outer 1 3/32
inner 1 7/32 No. and Description of Furnaces in each Boiler 3 Morrison corrugated Stephen Gourlay endMaterial O. H. Steel Tensile strength 26 - 30 tons Smallest outside diameter 41 9/16"Length of plain part { top 10"
bottom 10" Thickness of plates { crown 2 1/32"
bottom -- Description of longitudinal joint Forge weld

Dimensions of stiffening rings on furnace or c.c. bottom

End plates in steam space: Material O.H. Steel Tensile strength 26-30 tons Thickness 1 7/16" Pitch of stays 21"x21"How are stays secured Double nuts & 6 1/2"x 1/4" washers each end.Tube plates: Material { front O.H. Steel Tensile strength { 26-30 tons
back O.H. Steel Thickness { 31/32
13/16Mean pitch of stay tubes in nests 9.82" Pitch across wide water spaces 8 1/4" x 14 1/2"Girders to combustion chamber tops: Material O.H. Steel Tensile strength 29 - 33 tons Depth and Thickness of girderdouble 11" x 7/8" Length as per Rule 34" Distance apart 11" No. and pitch of staysin each 3 - 7 5/8" Combustion chamber plates: Material O.H. SteelTensile strength 26 - 30 tons Thickness: Sides 25/32" Back 23/32" Top 25/32" Bottom 25/32"Pitch of stays to ditto: Sides 9x10 3/16" Back 9x8 1/2" c.c. Top 7 5/8" x 11" Are stays fitted with nuts or riveted over nutsFront plate at bottom: Material O. H. Steel Tensile strength 26 - 30 tonsThickness 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 nutsMain stays: Material O.H. Steel Tensile strength 28 - 32 tonsDiameter { At body of stay, 3 1/2"
or 3 1/2" No. of threads per inch 6
Over threads 3 1/2"Screw stays: Material O.H. Steel Tensile strength 26 - 30 tonsDiameter { At turned off part, 1.606
or 1 1/2" No. of threads per inch 9
Over threads 1 1/2"

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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

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

Pitch of tubes 4 1/8" x 4 1/4" Manhole compensation: Size of opening in end plate 16" x 12" Section of compensating ring X No. of rivets and diameter of rivet holes X

Outer row rivet pitch at ends X Depth of flange if manhole flanged Upper 4 1/4" Lower 3 1/4" Steam Dome: Material X

Tensile strength X Thickness of shell X Description of longitudinal joint X

Diameter of rivet holes X Pitch of rivets X Percentage of strength of joint { Plate X Rivets X

Internal diameter X Thickness of crown X No. and diameter of stays X Inner radius of crown X

How connected to shell X Size of doubling plate under dome X Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell X

Type of Superheater "ELESICO" 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 (B.B.W.G 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 sq. in. Are the safety valves fitted with easing gear Yes

Pressure to which the safety valves are adjusted 220 lbs. sq. in. Hydraulic test pressure: tubes 2500 lbs. per sq. inch. forgings and castings 550 lbs. 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. D. Fraser

Dates of Survey { During progress of work in shops -- November 9, 11, 16, 17, 20, 23, 24. Are the approved plans of boiler and superheater forwarded herewith Yes. (If not state date of approval.) Approved Plans in building { During erection on board vessel -- Nov. 28, 30 December 1, 3, 4, 5, 7, 8, 9, 10, 12, 14, 15, 16, 17, 18, 19, 21, 22, 23, 24, 28, 29. Jan. 6 Total No. of visits 31

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. S.S. "FORT CHILCOTIN" Vancouver Report 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, 29th Dec. 42
 Travelling Expenses (if any) \$15.00 : When received, ✓ 19 RB

reknor & Stewart
 Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute TUES. 2 MAR 1943

Assigned

See Ver. 26. 5859



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