

REPORT ON BOILERS.

No. 5880

Received at London Office

Date of writing Report 17th Feb. 43 When handed in at Local Office 17th Feb. 43 Port of Vancouver, B. C.

No. in Reg. Book. Survey held at Vancouver, B. C. Date, First Survey 14th December, Last Survey 16th February 43

-- on the Steel Single Screw Steamer "FORT STAGER" (Number of Visits 16) Tons { Gross 7131.76
Net 4244.31

Built at Vancouver, B.C. By whom built West Coast Shipbuilders, Limited Yard No. 114 When built 1943

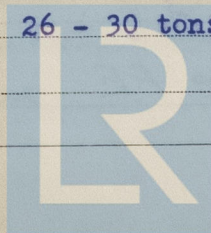
Engines made at Toronto, Ontario By whom made John Inglis & Sons Engine No. 137 When made 1942

Boilers made at Vancouver, B.C. By whom made Vancouver Iron Works, Ltd. Boiler No. 343
345 When made 1942
347

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

MULTITUBULAR BOILERS—MAIN, ~~ALTERNATE DONKEY~~

Algoma Steel Co. Lukens Steel Co. Page-Hersey Co.

Manufacturers of Steel Worth Steel Co., Steel Co. of Canada, American Welding Co. (Letter for Record --)Total Heating Surface of Boilers 7,140 square feet 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 30-12-42 No. of Certificate 345 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. in. 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 boilersSmallest distance between boilers or uptakes and bunkers or woodwork 2 feet Is oil fuel carried in the double bottom under boilers NoSmallest distance between shell of boiler and tank top plating 2 feet Is the bottom of the boiler insulated YesLargest internal diameter of boiler 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 21/32"
bottom -- Description of longitudinal joint forge weldDimensions 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" x 21"How are stays secured double nuts and 6 3/4" x 1/4" washers each endTube plates: Material { front O.H. STEEL
back O.H. Steel Tensile strength { 26 - 30 tons
26 - 30 tons Thickness { 31/32"
13/16"Mean 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 1/8" 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 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 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 29/32Pitch 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 3/4" No. of threads per inch 6Screw stays: Material O.H. Steel Tensile strength 26 - 30 tonsDiameter { At turned off part 1.606
or 1 3/4" No. of threads per inch 9

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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. 2"

No. of threads per inch 9

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" Manhole compensation: Size of opening in end plate 16"x12" 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 -- Thickness of crown -- No. and diameter of stays -- Inner radius of crown --

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 "ELESOCO" Smoke box type Manufacturers of { Tubes National Tube Co. Steel forgings Pittsburg, Penna Steel castings Pittsburg, Penna

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. per sq. inch Hydraulic test pressure: steam test

tubes 1500 lbs. per sq. inch. forgings and castings 550 lbs. per sq. in. 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,
VANCULVER IRON WORKS LTD. Manufacturer.

1942
Dates of Survey { During progress of work in shops - - } Dec. 15, 16, 18, 23, 24, 29, 30, 31 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
while building { During erection on board vessel - - } Jan. 6, 8, 12, 19, 20 Feb. 1, 15, 16 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 ST. JAMES" Ver. Rpt. 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 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, 17 Feb. 19 43
Travelling Expenses (if any) \$ 15.00 : { When received, ✓ 19 43

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

Assigned

See P.E. machy rpt.

FRI. 16 APR 1943



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