Rpt. 5a.

REPORT ON BOILERS.

No. 819-20-21

Received at London Office 30 DEC 1942

Date of writing Report March 26 1942 When handed in at Local Office Oct. 5 1942 Port of TORONTO, CANADA.

No. in Reg. Book. Survey held at Toronto, Canada Date, First Survey Nov. 5th, 1941 Last Survey Sept. 29th 1942

(Number of Visits 17)

on the 10,000 ton Cargo Vessel, S.S. "JASPER PARK" Tons Gross 7128.56 Net 4243.69

Master - Built at Lauzon, Levis, Que By whom built Davie Shipbuilding & Repair Co., Ltd. Yard No. 537 When built 1942

Engines made at Lachine, P. Q. By whom made Dominion Engineering Co. Ltd. Engine No. 21 When made 1942

Boilers made at Toronto, Canada By whom made John Inglis Co., Ltd. Boiler No. 4356 4357 4358 When made 1942

Nominal Horse Power ~~457~~ 505 Owners Wartime Merchant Shipping, Ltd. Port belonging to Montreal

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MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Shell & Heads- Lukens Steel Co. C.C.Pls.- The Steel Co. of Canada. (Letter for Record S)

Total Heating Surface of Boilers 7140 Sq.Ft. Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers Three, 14'9" External Dia. x 11'9" Long, Scotch Marine Working Pressure 220# per Sq. In.

Tested by hydraulic pressure to 380# Date of test 14-1-42 No. of Certificate S 819 Can each boiler be worked separately Yes
14-1-42 C 820
23-1-42 P 821

Area of Firegrate in each Boiler 45 Sq.Ft. No. and Description of safety valves to each boiler One, Cockburn-Morrison, Twin Valve, High Lift.

Area of each set of valves per boiler { per Rule 6.33 Sq.Ins. / as fitted 7.95 Sq.Ins. } Pressure to which they are adjusted 220# Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler -

Smallest distance between boilers or uptakes and bunkers or woodwork 6'-0" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating - 2'-0" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 14'6-3/16" Length 11'9" Over Heads. Shell plates: Material O.H. Steel Tensile strength 29 to 33 tons

Thickness 1-13/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end Double Riveted / inter. - }

long. seams Trip.Riveted Butt Diameter of rivet holes in { circ. seams 1-1/2" / long. seams 1-1/2" } Pitch of rivets { 4.275" / 10-1/16" }

Percentage of strength of circ. end seams { plate 64.6 / rivets 46.8 } Percentage of strength of circ. intermediate seam { plate - / rivets - }

Percentage of strength of longitudinal joint { plate 85. / rivets 93.4 / combined 88.68 } Working pressure of shell by Rules 221.2#

Thickness of butt straps { outer 1-3/32" / inner 1-7/32" } No. and Description of Furnaces in each Boiler Three, Morrison, 3'4-1/4" Dia. x 7'7-11/16" Long

Material O.H. Steel Tensile strength 26 to 30 tons Smallest outside diameter 3'5-9/16"

Length of plain part { top - / bottom } Thickness of plates { crown 21/32" / bottom 21/32" } Description of longitudinal joint Welded and Rolled

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 230.9#

End plates in steam space: Material O.H. Steel Tensile strength 26 to 30 tons Thickness 1-1/32" End Pl. 1-1/32" Doubler. Pitch of stays 21" x 21"

How are stays secured Nuts outside & inside, Spigotted Washers Working pressure by Rules 221#

Tube plates: Material { front O.H. Steel / back O.H. Steel } Tensile strength { 26 to 30 tons / 26 to 30 tons } Thickness { 1-1/32" / 13/16" }

Mean pitch of stay tubes in nests 9.8" Pitch across wide water spaces 14-1/2" x 8-1/4" Working pressure { front 265# / back 252# }

Girders to combustion chamber tops: Material O.H. Steel Tensile strength 29 to 33 tons Depth and thickness of girder at centre 10-1/4" x 2-7/8" Length as per Rule 34" Distance apart 11" No. and pitch of stays in each Three, 7-5/8" Pls. Working pressure by Rules 229.3# Combustion chamber plates: Material O.H. Steel

Tensile strength 26 to 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" x 9" Top 7-5/8"x11" Are stays fitted with nuts or riveted over Fitted with nuts

Working pressure by Rules 224# Front plate at bottom: Material O.H. Steel Tensile strength 26 to 30 tons

Thickness 1-1/32" Lower back plate: Material O.H. Steel Tensile strength 26 to 30 tons Thickness 1-1/32"

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

Working Pressure 302# Main stays: Material O.H. Steel Tensile strength 28 to 32 tons

Diameter { At body of stay, 3-3/4" / or Over threads 3-3/4" } No. of threads per inch 6 Area supported by each stay 441 Sq.Ins.

Working pressure by Rules 244# Screw stays: Material O.H. Steel Tensile strength 26 to 30 tons

Diameter { At turned off part, / or Over threads Back 1-3/4" C.C. Sides 1-7/8" } No. of threads per inch 9 Area supported by each stay Back 81 Sq.Ins. C.C. Sides 91.68 Sq. Ins.

W276-0190

Working pressure by Rules C.C. Sides 232# Back 224# *Are the stays drilled at the outer ends* No *Margin stays: Diameter* {*At turned off part, or Over threads* 2"

No. of threads per inch 9 *Area supported by each stay* 105.75 Sq.Ins. *Working pressure by Rules* 230#

Tubes: *Material* O.H. Steel *External diameter* {*Plain* 3" *Stay* 3" *Thickness* {No.8 L.S.G.(.160") 3/8" & 5/16" *No. of threads per inch* 9

Pitch of tubes 4-1/4" x 4-1/8" *Working pressure by Rules* 236# **Manhole compensation:** *Size of opening in* Back Head *shell plate* 12" x 16" *Section of compensating ring* 1-1/4" x 1/2" *No. of rivets and diameter of rivet holes* -

Outer row rivet pitch at ends - *Depth of flange if manhole flanged* 3-3/4" **Steam Dome:** *Material* None

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 Made by others Smoke Tube *Manufacturers of* {*Tubes* National Tube Co. Penna. *Steel forgings* The Superheater Co. Sherbrooke, P.Q. *Steel castings* " " " " " "

Number of elements 58 *Material of tubes* S.D. Steel *Internal diameter and thickness of tubes* .69" and .095"

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* Yes *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 1.76 sq. ins. *Are the safety valves fitted with easing gear* - *Working pressure as per Rules* - *Pressure to which the safety valves are adjusted* 220 lbs. per sq. ins. *Hydraulic test pressure: tubes* 1500 lbs.persq.in. *forgings and castings* 700 lbs. per sq.in. *and after assembly in place* 400 lbs.per sq.in. *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,

The Inglis Company Limited
Date May 27/42 By Jos McKee *Manufacturer.*

Dates of Survey while building — *During progress of work in shops:* Nov.5,14,18,25,29, Dec.2,9,18,22,26,John Stephen Oct.6/41.N. Jan.6,8,12,14,18,22,23, 1941-Dec.15,16,17,29.Barker John S. Hec Jan.1942-5,14,19,23.Feb.9,13,19,27.Mar. per C.M. *During erection on board vessel:* 6,11,18,24,31,Apr.7,9,13,20,21,27,30. May 5,11,19,27,29.June 3,11. *Total No. of visits* In shops 17. 18,26.July 1,3,10,22,24.Aug.6,12,21:Sept.2,5,10,16(2)22, During erection 48. 29.

Are the approved plans of boiler ~~and superheater~~ forwarded herewith (If not state date of approval.)

Is this Boiler a duplicate of a previous case No *If so, state Vessel's name and Report No.* Inglis S. Marine (N.E.M. type)

GENERAL REMARKS (*State quality of workmanship, opinions as to class, &c.*) The boilers were built under the Special Survey of the Society's Surveyor to the Rule requirements and in accordance with the approved plan. The materials were made at an approved works and were satisfactorily tested by the Society's Surveyors. The workmanship was good and in my opinion the boilers are eligible to be classed in this Society when they have been satisfactorily installed, seen under steam, and their safety valves adjusted.

The boilers were tested to a hydrostatic pressure of 380 lbs. and were approved and stamped:

Boiler No.4356	Boiler No.4357	Boiler No.4358
LLOYD'S TEST	LLOYD'S TEST	LLOYD'S TEST
No.819	No.820	No.821
T.P. 380 lbs.	T.P. 380 lbs.	T.P. 380 lbs.
W.P. 220 lbs.	W.P. 220 lbs.	W.P. 220 lbs.
J.B.14-1-32.	J.B.14-1-42.	J.B.23-1-42.

Spares (1 - Set of 3 Boilers) - 1 Main check valve lid, 184 Firebars, 1 dozen water gauge glasses, 2 dozen washers for glass, 2 spare seats and spindles for water gauges, 15 plain tubes, 3 stay tube for each size fitted, 9 manhole gaskets, 1 spanner for manhole doors, 2 each right and left side ba 2 each right, left, and centre dead plates, 2 each right, and left back bearer plates, 2 bridge pla 2 bottom plates, Metal Patterns for the Following: 3 Firebars, 1 right Dead Plate, 1 left Dead Plat 1 Centre, 1 Bridge Plate, 1 Bridge Bottom Plate, 1 Right Back Bearer Plate, 1 Left Back Bearer Plat 1 Right Side Bar, 1 Left Side Bar.

The boilers of the above vessel have been properly installed and the safety valves adjusted under steam at 220 lbs. per square inch and washers noted.

Survey Fee ... ... £ : $150.00 When applied for, Nov.16 1942

Travelling Expenses (if any) £ : 10.00 When received, 19

John Stephen & F. Barker
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE. 12 JAN 1943

Assigned See Rpt. NE.5750