

# REPORT ON BOILERS.

No. 42965

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No. in Reg. Book Survey held at South Portland, Maine Date, First Survey 15th June, 1942 Last Survey 19th September 42

on the "OCEAN STRANGER" 5/8" Ocean Stranger" (Number of Visits Continuous 8 Tons Gross 7178 Net 4280)

Built at So. Portland, Maine By whom built Todd-Bath Iron Shipbuilding Corp. Yard No. 20 When built 1942

Engines made at Toronto By whom made John Inglis Co. Ltd. Engine No. 85 When made 1942

Boilers made at Schenectady, New York By whom made American Locomotive Co. Boiler No. 84,24,27. When made 1941

Nominal Horse Power 505 Owners British Government Port belonging to London

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

Manufacturers of Steel Worth Steel Company (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 3 Cylindrical Multitubular Working Pressure 220 lbs.

Tested by hydraulic pressure to 380 lbs. Date of test June, 1942 No. of Certificate 84,24,27 Can each boiler be worked separately yes

Area of Firegrate in each boiler 43 sq.ft. No. and Description of Safety valves to each boiler Two spring-loaded special high lift.

Area of each set of valves per boiler {per Rule as approved as fitted 5.52 sq.in. Pressure to which they are adjusted 220 lbs. Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No Donkey Boiler.

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

Smallest distance between shell of boiler and tank top plating 2'4" Is the bottom of the boiler insulated yes

Largest internal diameter of boilers 14'6-3/16" Length 11'8-1/32" Shell plates: Material Steel Tensile strength 65,000-75,000 lbs.

Thickness 1-13/32" Are the shell plates welded or flanged no Description of riveting: circ. seams {end D.R. inter. None

Long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 1/2" long. seams 1 1/2" Pitch of rivets {10" 4.25"

Percentage of strength of circ. end seams {plate 64.6 rivets 47.0 Percentage of strength of circ. intermediate seam {plate NONE rivets NONE

Percentage of strength of longitudinal joint {plate 85.0 rivets 93.5 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.

Material Tensile strength 58,200 - 68,200 lbs. Smallest outside diameter 41 1/2"

Length of plain part {top 9-3/16" bottom Thickness of plates {crown 21/32" Description of longitudinal joint Welded

Dimensions of stiffening rings on furnace or c.c. bottom None

End plates in steam space: Material Steel Tensile strength 58240-68240 lbs. Thickness 1-7/16" Pitch of stays 21 1/4 x 21"

How are stays secured Double Nuts.

Tube plates: Material {front Steel back Steel Tensile strength {58240 - 68240 lbs. Thickness {31/32" 13/16"

Mean pitch of stay tubes in nests 9.45" 9.7 Pitch across wide water spaces 14 1/2" x 8 1/4"

Girders to combustion chamber tops: Material Steel Tensile strength 64960-74960 lbs. Depth and Thickness of girder

at centre 10 1/4 x 1-3/4" Length as per Rule 2'10" Distance apart 11" No. and pitch of stays

in each 3 @ 7-5/8" Combustion chamber plates: Material Steel Tensile strength 58240-68240 lbs. 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 9" Top 11" x 7-5/8" Are stays fitted with nuts or riveted over Nuts

Front plate at bottom: Material Steel Tensile strength 58240 - 68240 lbs.

Thickness 31/32" Lower back plate: Material Steel Tensile strength 58240-68240 lbs. Thickness 29/32"

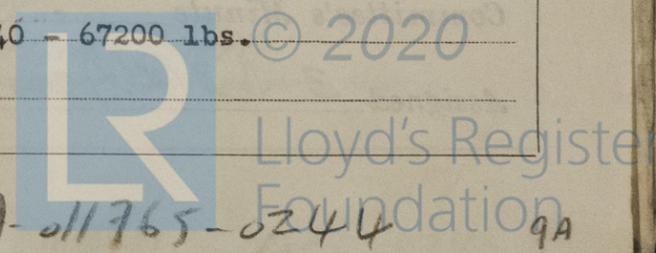
Pitch of stays at wide water space 14 1/2" x 9" Are stays fitted with nuts or riveted over Nuts

Main stays: Material 3 1/2" Tensile strength 62720 - 71680 lbs.

Diameter {At body of stay 3-3/4" or Over threads Steel No. of threads per inch 6

Screw stays: Material Steel Tensile strength 58240 - 67200 lbs.

Diameter {At turned off part 1-3/4", 1-7/8", 2", 2-1/8" or Over threads 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 or 2" and 2-1/8" Over threads

No. of threads per inch 9.

Tubes: Material S.D. Steel External diameter { Plain 3" Stay 3" Thickness { .165" 3/8" & 5/16" No. of threads per inch 9.

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

~~Flange~~ plate 12" x 16" 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 X 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 N.E. Marine Eng. Co. Type Manufacturers of { Tubes Combustion Eng. Co. Steel forgings " " " Steel castings " " "

Number of elements 58. Material of tubes S.D. Steel Internal diameter and thickness of tubes 7/8" x .093"

Material of headers S.D. Steel Tensile strength 62000 lb. Min. Thickness 1-1/8" 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 1.77 sq. in. Are the safety valves fitted with easing gear no

Pressure to which the safety valves are adjusted 220 lb. in.<sup>2</sup> Hydraulic test pressure: tubes 1000 lb. in.<sup>2</sup> forgings and castings 440 lb. in.<sup>2</sup> and after assembly in place 380 lb. in.<sup>2</sup> 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,  
*L. B. Pinkham* Manufacturer.  
 TODD BATH IRON SHIPBUILDING CORP.

Dates of Survey { During progress of work in shops - - } See attached Reports. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

{ During erection on board vessel - - - } Continuous from 15th June, 1942 until 19th September, 1942 Total No. of visits

Is this Boiler a duplicate of a previous case yes If so, state Vessel's name and Report No. s.s. "OCEAN LIBERTY", S85, S87, S89.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers, built under the Special Survey of the Society's Surveyors have now been fitted on board this vessel in accordance with approved plans and the Society's Rules. The workmanship is good. For full particulars see attached boiler reports Nos. S 4, S 24, S 27.

Survey Fee ... .. £ See Machinery Report. When applied for, 10

Travelling Expenses (if any) £ : : : When received, 10

*For A.C. Haskell & self.*  
*R. Rodgers*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK NOV 10 1942

Assigned 3 S B (Sht) 220 lbs.

