

# REPORT ON BOILERS.

No. 43131

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Date of writing Report 18 November 1942 when handed in at Local Office. 19 Port of Portland, Maine (New York) U.S.A.

No. in Reg. Book. Survey held at South Portland, Maine Date, First Survey 27 August Last Survey 23rd October 1942  
on the s.s. "OCEAN ANGEL" (Number of Visits. Continuous Tons } Gross 7178 Net 4280

Built at So. Portland, Maine By whom built Todd-Bath Iron Shipbuilding Corporation Yard No. 26 When built 1942  
Engines made at Lachine, P.Q. By whom made Dominion Eng. Works Ltd. Engine No. 48 When made 1942  
Boilers made at Schenectady, New York By whom made American Locomotive Co. Boiler No. S73,74,76 When made 1941  
Nominal Horse Power. 505 Owners British Ministry of War Transport Port belonging to.

## 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 4,5,7th August, 1941 No. of Certificate S73,74,76 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 12.07 for ordinary valves Pressure to which they are adjusted 220 lbs. Are they fitted with easing gear yes  
as fitted 5.52 sq.in.

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 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 65000-75000 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 31

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 Steel Tensile strength 58200 - 68200 lbs. Smallest outside diameter 41 1/2"

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

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 1/2 x 21"

How are stays secured Double Nuts.

Tube plates: Material { front Steel Tensile strength { 58240 - 68240 lbs. Thickness { 31/32"  
back Steel " " " 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 Steel Tensile strength 62720 - 71680 lbs.

Diameter { At body of stay 3 1/2"  
or 3-3/4" No. of threads per inch  
Over threads 3-3/4"

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

Diameter { At turned off part 1-3/4"  
or 1-7/8" No. of threads per inch  
Over threads 1-3/4", 1-7/8", 2", 2-1/8" 9



Lloyd's Register Foundation

Are the stays drilled at the outer ends No Margin stays: Diameter At turned off part, or Over threads 2" and 2-1/8"

No. of threads per inch 9.

Tubes: Material S.D. Steel External diameter 3" Thickness .165" No. of threads per inch 9.

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

Shell 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

How connected to shell X Inner radius of crown 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 Combustion Eng. Co.

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. ins. Are the safety valves fitted with easing gear no

Pressure to which the safety valves are adjusted 220 lb. Hydraulic test pressure: tubes 1000 lb. in. sq. forgings and castings 440 lb. in. sq. and after assembly in place 380 lb. in. sq. 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,  
*T. 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.)

while building During erection on board vessel - - - Continuous from 27th August until 23rd October, 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. S73, S74, S76.

Survey Fee ... .. £ See Machinery Report. When applied for, 19

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

*For Mr. S. Keller, self.*  
*[Signature]*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK DEC 30 1942

Assigned 3 S.B. (Sht) 220 lbs.

