

# REPORT ON BOILERS.

No. 42562

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No. in Reg. Book. Survey held at SCHENECTADY, N. Y. Date, First Survey May 13th, Last Survey June 22nd, 19 42  
on ~~the~~ One Boiler of U.S. Navy Contract Nos. LL-97320 for 20 Boilers  
S.S. "Ocean Crusader" (Number of Visits 14) Tons {Gross  
Net

Built at - By whom built - Yard No. - When built -  
Engines made at - By whom made - Engine No. - When made -  
Boilers made at Schenectady, N.Y. By whom made American Locomotive Co. Boiler No. #14 When made 1940  
Nominal Horse Power - Owners British Government Port belonging to -

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

Manufacturers of Steel Bethlehem Steel Co. & Worth Steel Co. (Letter for Record S)

Total Heating Surface of Boiler 2380 sq.ft. Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers One (1) Scotch Type Working Pressure 220 lbs.

Tested by hydraulic pressure to 380 lbs. Date of test June 22, 1942 of Certificate S-104 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 -

Area of each set of valves per boiler {per Rule - Pressure to which they are adjusted - Are they fitted with easing gear -  
as fitted -

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 - Is oil fuel carried in the double bottom under boilers -

Smallest distance between shell of boiler and tank top plating - Is the bottom of the boiler insulated -

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 Double lap.  
inter. -

Long. seams T.R.D.B.S. Diameter of rivet holes in {circ. seams 1 1/2" Pitch of rivets {  
long. seams 1 1/2" 5" and 10"

Percentage of strength of circ. end seams {plate 65.2 Percentage of strength of circ. intermediate seam {plate None  
rivets 46.3 rivets -

Percentage of strength of longitudinal joint {plate 85  
rivets 93.5  
combined 88.7

Thickness of butt straps {outer 1-3/32" No. and Description of Furnaces in each Boiler 3 Morison  
inner 1-7/32"

Material Steel Tensile strength 58000/68000 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 -

End plates in steam space: Material Steel Tensile strength 58000/68000 lbs. Thickness 1-7/16" Pitch of stays 21 1/4" x 21"

How are stays secured Double nuts.

Tube plates: Material {front Steel Tensile strength {58000/68000 lbs. Thickness {31/32"  
back Steel 58000/68000 lbs. 13/16"

Mean pitch of stay tubes in nests 10" Pitch across wide water spaces 14 1/2" x 8 1/4"

Girders to combustion chamber tops: Material Steel Tensile strength 65000/75000 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 58000/68000 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 58000/68000 lbs.

Thickness 31/32" Lower back plate: Material Steel Tensile strength 58000/68000 lbs. Thickness 29/32"

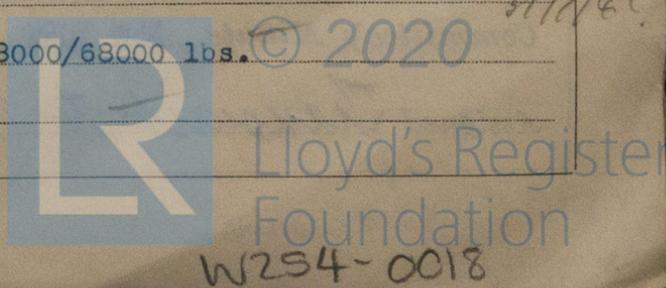
Pitch of stays at wide water space 14 1/2" x 9" Are stays fitted with nuts or riveted over Nuts on margin stays, balance riveted over.

Main stays: Material Steel Tensile strength 60000/70000 lbs.

Diameter {At body of stay 3 1/2" No. of threads per inch Six (6)  
or 3-3/4"  
Over threads 3-3/4"

Screw stays: Material Steel Tensile strength 58000/68000 lbs.

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



Are the stays drilled at the outer ends No Margin stays: Diameter <sup>At turned off part.</sup> 2" & 2-1/8"  
 or Over threads  
 No. of threads per inch Nine (9)  
 Tubes: Material External diameter 3" 3" Thickness .165" 3/8" & 5/16" No. of threads per inch Nine (9)  
 Pitch of tubes 4-1/4" x 4-1/8" Manhole compensation: Size of opening in  
 shell plate None Section of compensating ring - No. of rivets and diameter of rivet holes -  
 Outer row rivet pitch at ends - Depth of flange if manhole flanged - 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 <sup>Plate</sup> - <sup>Rivets</sup> -  
 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 N.E. Marine Engine Co. Manufacturers of Combustion Engineering Co.  
 Tubes " " "  
 Steel forgings " " "  
 Steel castings " " "  
 Number of elements 58 Material of tubes Seamless Carbon Steel Internal diameter and thickness of tubes .689" x .093"  
A.S.T.M. A-192-40 Grade A  
 Material of headers Seamless Carbon Steel Tensile strength 60000 lbs. Thickness 1-1/8" Can the superheater be shut off and  
A.S.T.M. A-106-40 Grade B  
 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  
 Area of each safety valve - Are the safety valves fitted with easing gear  
 Pressure to which the safety valves are adjusted - Hydraulic test pressure:  
 tubes - forgings and castings - 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

*R. J. Smith*  
 The foregoing is a correct description,  
 Mechanical Engineer, American Locomotive Co. <sup>Manufacturer.</sup>

Dates of Survey <sup>During progress of work in shops - -</sup> May 13, 14, 21, 25, 27, 27, 28, 29, June 4, 6, 9, 10, 18, 22, 1942 Are the approved plans of boiler and superheater forwarded herewith No  
 while building <sup>During erection on board vessel - - -</sup> June 4, 6, 9, 10, 18, 22, 1942 (If not state date of approval.) Approved 21st Apr., 1942  
 Total No. of visits -

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "OCEAN VANGUARD" Richmond, Cal.  
Rpt. No. 1

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under  
Special Survey in accordance with the Rules and approved plans. The workmanship and materials  
are good. It has been satisfactorily tested to 380 lbs. hydrostatic pressure in the presence of  
the undersigned. It has been forwarded to Portland, Maine, to be exported to an unknown  
destination arranged between the U.S.A. and British Government Authorities.  
If the boiler is fitted on board a vessel classed with the Society, it will  
be eligible, in my opinion, to receive the notation 220 lbs.

Survey Fee ... .. \$ 100.00 } When applied for, June 29, 1942  
 Travelling Expenses (if any) \$ 40.00 } When received, 19

*W. G. Griffith*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK JUL 1 1942

Assigned Tranquill to Hudson / No Action



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