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REPORT ON BOILERS.

No. 17

Received at London Office

1 - AUG 1942

Date of writing Report JUNE 22nd 1942 When handed in at Local Office JUNE 23rd 1942 Port of RICHMOND, CALIFORNIA

No. in Reg. Book. Survey held at RICHMOND, CALIFORNIA Date, First Survey FEBRUARY 20, 1942 Last Survey APRIL 14th, 1942

(Number of Visits 47)

Tons { Gross 7174  
Net 4272

on the S. S. "OCEAN VETERAN"

Built at RICHMOND, CALIFORNIA By whom built TODD-CALIFORNIA SHIPBUILDING DIVISION Yard No. 17 When built 1942  
of THE PERMANENTE METALS CORPORATION

Engines made at HAMILTON, OHIO By whom made GENERAL MACHINERY CORPORATION Engine No. 6560 When made 1942

Boilers made at SEATTLE, WASHINGTON By whom made PUGET SOUND MACHINERY DEPOT Boiler No. 13, 14, 15 When made 1942

Nominal Horse Power 505 Owners BRITISH GOVERNMENT Port belonging to LONDON

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

Manufacturers of Steel LUKENS, CARNEGIE-ILLINOIS STEEL CO. (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 SINGLE ENDED SCOTCH MULTITUBULAR Working Pressure 220 lbs.

Tested by hydraulic pressure to 380 lbs. Date of test Jan. 20, 27, 29 No. of Certificate 13, 14, 15 Can each boiler be worked separately YES

Area of Firegrate in each boiler 52 sq. ft. No. and Description of Safety valves to each boiler 2 SPRING LOADED, SPECIAL HIGH LIFT

Area of each set of valves per boiler { per Rule APPROVED  
as fitted 5.52" x 2 = 11.04 Pressure to which they are adjusted 220 lbs. Are they fitted with easing gear YES

No 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 NO

Smallest distance between shell of boiler and tank top plating 2 feet Is the bottom of the boiler insulated YES

Largest internal diameter of boilers 14' 6 3/16" Length 11' 6 3/16" Shell plates: Material STEEL Tensile strength 65000/75000 lbs. per sq. in.

Thickness 1 13/32" Are the shell plates welded or flanged Description of riveting: circ. seams { end D.R. per sq. in.  
inter. 5" 43Long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1.5"  
long. seams 1.5" Pitch of rivets { 10"Percentage of strength of circ. end seams { plate 64.7  
rivets 47.0 Percentage of strength of circ. intermediate seam { plate --  
rivets --Percentage of strength of longitudinal joint { plate 85.0  
rivets 93.4  
combined 88.8Thickness of butt straps { outer 1 3/32"  
inner 1 7/32" No. and Description of Furnaces in each Boiler 3 MORRISON TYPE

Material STEEL Tensile strength 58000/68000 lbs. per sq. in. Smallest outside diameter 44 9/16" 41 1/2"

Length of plain part { top 7 13/16"  
bottom 7 13/16" Thickness of plates { crown 21/32"  
bottom 21/32" Description of longitudinal joint FORGE WELD

Dimensions of stiffening rings on furnace or c.c. bottom

End plates in steam space: Material STEEL Tensile strength 58000/68000 lbs. per sq. in. Thickness 1 1/32" R.D. Pitch of stays 21"  
1 1/32"

How are stays secured DOUBLE NUTS

Tube plates: Material { front STEEL  
back STEEL Tensile strength { 58000/68000 lbs. per sq. in.  
Thickness { 1 1/32"  
13/16"

Mean pitch of stay tubes in nests 9.56" Pitch across wide water spaces 14.5" x 4 1/8" &amp; 4 1/4"

Girders to combustion chamber tops: Material STEEL Tensile strength 65000/75000 lbs. per sq. in. Depth and Thickness of girder

at centre 10.25" x 2 @ 7/8" Length as per Rule 2' 10" Distance apart 11" No. and pitch of stays

in each 3 @ 7.625" Combustion chamber plates: Material STEEL

Tensile strength 58000/68000 lbs. per sq. in. Thickness: Sides 25/32" Back 25/32" 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 INSIDE  
RIVETED OUTSIDE

Front plate at bottom: Material STEEL Tensile strength 58000/68000 lbs. per sq. in.

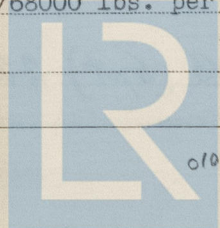
Thickness 1 1/32" Lower back plate: Material STEEL Tensile strength 58000/68000 lbs. per sq. in. Thickness 1 1/32"

Pitch of stays at wide water space 14 1/2" x 9" Are stays fitted with nuts or riveted over NUTS &amp; RIVETED OVER

Main stays: Material STEEL Tensile strength 65000/75000 lbs. per sq. in.

Diameter { At body of stay 3.5"  
or  
Over threads 3.75" No. of threads per inch 6

Screw stays: Material STEEL Tensile strength 58000/68000 lbs. per sq. in.

Diameter { At turned off part --  
or  
Over threads 1 7/8" Sides  
1 3/4" Back 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  
Over threads 2 1/8" - 2" ✓  
No. of threads per inch 9  
Tubes: Material 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  
Shell plate 16"x12" Section of compensating ring NONE 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 --- 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 ELESICO MARINE SUPERHEATER CO Manufacturers of  
EAST CHICAGO, IND.

Tubes DETROIT SEAMLESS STEEL TUBE CO.  
Steel forgings COMBUSTION ENGINEERING CO.  
Steel castings NONE

Number of elements 174 Material of tubes STEEL Internal diameter and thickness of tubes .685" .095"  
Material of headers STEEL Tensile strength 60000 lbs. per sq. in. 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 NO  
Area of each safety valve 1.75 SQ. IN. Are the safety valves fitted with easing gear NO  
Pressure to which the safety valves are adjusted 220 lbs. per sq. in. Hydraulic test pressure  
tubes 1000 lbs. per sq. in. forgings and castings 440 lbs. per sq. in. and after assembly in place 380 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,

Manufacturers

Dates of Survey { During progress of work in shops - - NOV. 19th to Jan. 31st, 1942 Are the approved plans of boiler and superheater forwarded herewith NO  
while building { During erection on board vessel - - - FEB. 25th to APR. 25th, 1942 (If not state date of approval.) July 8th, 1942.  
Total No. of visits 47

Is this Boiler a duplicate of a previous case NO If so, state Vessel's name and Report No. "OCEAN VIGOUR"

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers, constructed under special survey  
(see Seattle Boiler Reports Nos. 3468, 3469, and 3470, attached hereto), have now been fitted on board the vessel,  
in accordance with the approved plans and the requirements of the Rules. The safety valves were adjusted under  
steam to 220 lbs. per sq. in. The boilers were tried under working conditions with good results and, in our  
opinion, are now in a good and safe condition.

Survey Fee ... ✓ £ Inclusive fee { When applied for, 19  
to be charged  
Travelling Expenses (if any) £ in London { When received, 19

Committee's Minute NEW YORK JUL 8 1942

Assigned 35B (Spt) 220 lb □



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