

REPORT ON BOILERS.

pt. 5a.

Received at London Office

19 AUG 1942

Date of writing Report July 15th 1942 When handed in at Local Office July 15th 1942 Port of RICHMOND, CALIFORNIA

Location in Survey held at RICHMOND, CALIFORNIA Date, First Survey MARCH 21st, 1942 Last Survey MAY 15th 1942

on the S. S. "OCEAN VOLGA" (Number of Visits 48) Tons { Gross 7174 Net 4272

built at RICHMOND, CALIF. By whom built TODD-CALIFORNIA SHIPBUILDING DIVISION of Yard No. 20 When built 1942
The Permanente Metals Corporation

Engines made at HAMILTON, OHIO By whom made GENERAL MACHINERY CORP. Engine No. 6565 When made 1942

Boilers made at SEATTLE, WASHINGTON By whom made PUGET SOUND MACHINERY DEPOT Boiler No. 8, 10, 12 When made 1941 & 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 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 SINGLE ENDED, SCOTCH MULTITUBULAR Working Pressure 220

Tested by hydraulic pressure to 380 lbs. Date of test Dec. 22, 1941 No. of Certificate 8, 10, 12 Can each boiler be worked separately YES
January 2, 15, 1942

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 Pressure to which they are adjusted 220 lbs. Are they fitted with easing gear YES
as fitted 5.52 sq. in. $\times 7 = 11.04$

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 NO 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.
D.R. ---

Thickness 1 13/32" Are the shell plates welded or flanged NO Description of riveting: circ. seams { end --- inter ---
long. seams T. R. D. B. S. Diameter of rivet holes in { circ. seams 1.5" Pitch of rivets { 5" 4 3/8"
long. seams 1.5" 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 88.8

Thickness 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./sq. in. Smallest outside diameter 44 9/16" 4 1 1/2"

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

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

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

How are stays secured DOUBLE NUTS

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

Lean pitch of stay tubes in nests 9.56" 9.7 Pitch across wide water spaces 14.5" x 4 1/8" & 4 1/4"

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

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

each 3 @ 7.625" Combustion chamber plates: Material STEEL

Tensile strength 58000/68000 lbs./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./sq. inch

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

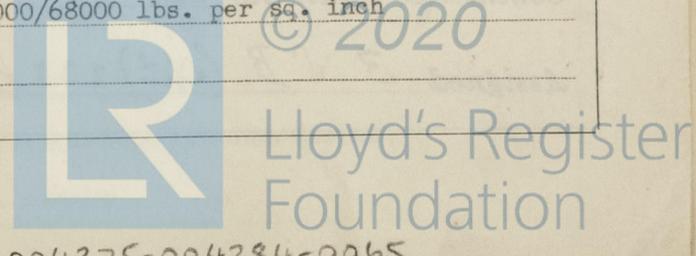
Pitch of stays at wide water space 14 1/2" x 9" Are stays fitted with nuts or riveted over NUTS & RIVETED OVER

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

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

Crew stays: Material STEEL Tensile strength 58000/68000 lbs. per sq. inch

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



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 plate 16" x 12" 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 { Plates --- 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 ELESCO MARINE Manufacturers of { Tubes DETROIT SEAMLESS STEEL TUBES CO. Steel forgings COMBUSTION ENGINEERING COMPANY Steel castings NONE

Superheater Co., East Chicago, Ind.

Number of elements 174 Material of tubes STEEL Internal diameter and thickness of tubes .685", .095"

Material of headers SEAMLESS STEEL Tensile strength 60,000 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. inch Are the safety valves fitted with easing gear NO

Pressure to which the safety valves are adjusted 220 lbs. per sq. inch Hydraulic test pressure: tubes 1000 lbs. per sq.in. forgings 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,
[Signature] Manufacturer.

Dates of Survey { During progress of work in shops Oct. 1, 1941 to Jan. 19, 1942 Are the approved plans of boiler and superheater forwarded herewith NO (If not state date of approval.) July 8, 1941

while building { During erection on board vessel March 21, to May 15, 1942 Total No. of visits 48

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 were constructed under Special Survey (See Seattle Boiler Reports Nos. 3454, 3456, 3458 attached hereto) have now been fitted on board this 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. inch. The boilers were tried under working conditions with good results, and in our opinion, are now in good and safe condition.

Survey Fee ... £ Inclusive fee to be charged in: London { When applied for, 19 When received, 19

Travelling Expenses (if any) £ charged in: London { For self and J. F. Robertson:

[Signature]
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK JUL 29 1942

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

