

REPORT ON BOILERS.

No. S-76

Received at London Office. 5-FEB-1943

Date of writing Report August 8 1941 When handed in at London Office 19 Port of New York

No. in Survey held at Schenectady, N. Y. Date, First Survey July 3rd 1941 Last Survey August 7 1941

Reg. Book. on the British Government Freighters S/S "Ocean Angel" (Number of Visits. 29) Tons { Gross - Net -

Built at Portland, Maine By whom built Todd-Bath Iron Shipbuilding Corporation Yard No. - When built 1941

Engines made at Hamilton, Ohio By whom made General Machinery Corporation Engine No. - When made 1941

Boilers made at Schenectady, N. Y. By whom made American Locomotive Co. Boiler No. S-76 When made 1941

Nominal Horse Power 505 Owners British Government Port belonging to -

MULTITUBULAR BOILERS—MAIN, AUXILIARY OR DONKEY

Manufacturers of Steel Worth 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 One (1) Scotch type Working Pressure 220

Tested by hydraulic pressure to 380 lbs. Date of test Aug. 7, 1941 No. of Certificate S-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 2 spring load high lift

Area of each set of valves per boiler { per Rule 5.52 sq. in. as fitted approved Pressure to which they are adjusted 225 lbs. Are they fitted with easing gear Yes

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 See Installation Report Is oil fuel carried in the double bottom under boilers -

Smallest distance between shell of boiler and tank top plating See Installation Report 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 to 75000 lbs.

Thickness 1-13/32" Are the shell plates welded or flanged No Description of riveting: circ. seams { end Double lap inter. 10" Pitch of rivets { 4.25"

Long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1 1/2" long. seams 1 1/2" Percentage of strength of circ. end seams { plate 64.6 rivets 47.0 Percentage of strength of circ. intermediate seam { plate None rivets

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

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

Length of plain part { top 9-3/16" bottom 9-3/16" Thickness of plates { crown 21/32" bottom 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 to 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 to 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 to 74960 lbs. Depth and Thickness of girder at centre 10 1/2" 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 to 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 to 68240 lbs. Thickness 31/32" Lower back plate: Material Steel Tensile strength 58240 to 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 to 71680 lbs. Diameter { At body of stay 3 1/2" or 3-3/4" No. of threads per inch Six (6) Screw stays: Material Steel Tensile strength 58240 to 67200 lbs. Diameter { At turned off part 1-3/4" 1-7/8" 2" 2-1/8" No. of threads per inch Nine (9)

Are the stays drilled at the outer ends No. Margin stays: Diameter 2" x 2-1/8" or Over threads. No. of threads per inch Nine (9) Tubes: Material Seamless Steel External diameter Plain 3" Stay 3" Thickness .165 3/8" x 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 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 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 N. E. Marine Engine Co. Manufacturers of Tubes Combustion Engineering Co. Steel forgings Steel castings Tubing Stay 2-5/8" ID 3/8" Wall 2-11/16" ID 5/16 Wall Internal diameter and thickness of tubes Plain 2.68 ID- #8 L.S.G. Number of elements 58 Material of tubes Seamless Carbon Steel/ Tensile strength 62000 lbs. Thickness 1-1/8" Can the superheater be shut off and 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 edging 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

The foregoing is a correct description, Mechanical Engineer for American Locomotive Co. Manufacturer.

Dates of Survey During progress of work in shops July 3, 1941 to August 7, 1941 Are the approved plans of boiler and superheater forwarded herewith Approved 24th of March 1941 while building During erection on board vessel Continuous Attendance Total No. of visits Twenty-nine days.

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. Vessel not named. New York Rpt. S-1.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The boiler has been built under special survey in accordance with the Rules and approved plans, and the workmanship and material is good. It has been satisfactorily tested to 30 lbs. by hydraulic pressure in presence of the undersigned. It has been forwarded to S. Portland, Maine to be fitted on board, and when this has been done in accordance with the rules, the vessel will be eligible in my opinion to receive the notation L.M.C. with date, and 20 lbs. and F.D. in the Register Book.

Survey Fee ... £ See Mcky Reports When applied for, 19 Travelling Expenses (if any) £ When received, 19

Thomas Clark Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK DEC 22 1942 Assigned See First Entry Report.