

# REPORT ON WATER TUBE BOILERS.

No. 6615

Date of writing Report 4th October 1938 When handed in at Local Office 4th October 1938 Received at London Office NOV 5 1938

Port of Baltimore, Maryland

No. in Survey held at Baltimore, Maryland Date, First Survey 2nd February Last Survey 2nd September 1938  
 Reg. Bk. 74127 on the Steel Single Screw Tanker "ESSO BALTIMORE" (Hull #4308) (Number of Visits 15) Tons { Gross 7949 Net 4711  
 Master Capt. Page Built at Sparrows Point, Md. By whom built Bethlehem S.B. Corp. When built 1938  
 Engines made at Quincy, Mass. By whom made Bethlehem S.B. Corp. When made 1938  
 Boilers made at Dansville, N.Y. & Carteret, N.J. By whom made Foster-Wheeler Corp. When made 1938  
 Registered Horse Power 3600 Owners Standard Oil Company of New Jersey Port belonging to Wilmington, Del.

**WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.**—Manufacturers of Steel Lukens & Carnegie, Pa.  
 (Letter for Record -) Date of Approval of plan Not built under Special Survey Number and Description or Type of Boilers Two - Foster Wheeler Type "D" Marine Design Press 450 lbs. on board vessel Tested by Hydraulic Pressure to 675 lbs. Date of Test April 8, 1938  
 No. of Certificate Not issued Can each boiler be worked separately Yes Total Heating Surface of Boilers 9856 sq. ft.  
 Is forced draught fitted Yes Area of fire grate (coal) in each Boiler oil burning Total grate area of boilers in vessel including Main and Auxiliary - No. and type of burners (oil) in each boiler 3 - Todd Model "FD" No and description of safety valves on each boiler Two - three inch spring loaded Area of each valve 5.21 approx. Pressure to which they are adjusted 450 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 steel casings 2' - 6" Height of Boiler 20' - 3 1/2" Width and Length 10 - 9 1/8 x 16 - 11 1/8  
 Steam Drums:—Number in each boiler One Inside diameter 42 inches Material of plates Steel O.H. Thickness 1 1/2"  
 Range of Tensile Strength 60,000 and heads 55,000 Are drum shell plates welded or flanged fusion welded Description of riveting:—  
 Cir. seams Fusion welded long. seams Fusion welded Diameter of rivet holes in long. seams - Pitch of Rivets -  
 Lap of plate or width of butt straps None Thickness of straps None Percentage strength of long. joint:—Plate 90% allowed Rivet -  
 Diameter of tube holes in drum 2 1/32 & 1 9/32" Pitch of tube holes 9" - 4 1/2" - 2 3/4" - 2 1/4" Percentage strength of shell in way of tubes 48.7, 51, 54.8  
 If Drum has a flat side state method of staying drums circular Depth and thickness of girders at centre (if fitted) - Distance apart - Number and pitch of stays in each - Working pressure by rules 450 lbs. Steam Drum Heads or Ends:—Material Steel O.H. Thickness 1 11/32" & 1 5/32" Radius or how stayed Convex  
 Size of Manhole or Handhole 12" x 16" Water Drums:—Number in each boiler One Inside Diameter 32"  
 Material of plates Steel O.H. Thickness 1 1/8" Range of tensile strength 60,000 & 55,000 Are drum shell plates welded or flanged Fusion welded Description of riveting:—Cir. seams Fusion welded long. seams Fusion welded Diameter of Rivet Holes in long. seams - Pitch of rivets - Lap of plates or width of butt straps Butt joint Thickness of straps None  
 Percentage strength of long. joint:—Plate 90% allowed Rivet - Diameter of tube holes in drum 2 1/32" & 1 9/32" Pitch of tube holes 9" - 4 1/2" - 2 3/4" & 2 1/4"  
 Percentage strength of drum shell in way of tubes 48.7, 51, 54.8 Water Drum Heads or Ends:—Material Steel O.H. Thickness 1 1/32" & 23/32"  
 Radius or how stayed Convex heads Size of manhole or handhole 12" x 16" Headers or Sections:—Number Two  
 Material Steel Thickness 7/8 wall 7 3/4 sq Tested by Hydraulic Pressure to 675 lbs. on board Material of Stays -  
 Area at smallest part 7 3/4 Sq. Area supported by each stay None C.S. Working Pressure by Rules approved Tubes:—Diameter 2" x 1 1/4"  
 Thickness 10 & 12 gauge Number 147 - 2" 00 414 - 1 1/4" 00 Steam Dome or Collector:—Description of Joint to Shell None  
 Percentage strength of Joint - Diameter - Thickness of shell plates - Material -  
 Description of longitudinal joint - Diameter of Rivet Holes - Pitch of Rivets - Working Pressure of shell by Rules - Crown or End Plates:—Material - Thickness - How stayed -

**SUPERHEATER.** Type Drainable Date of Approval of Plan - Tested by Hydraulic Pressure to 675 lbs. in shop 1350 lbs.  
 Date of Test April 8, 1938 Is a safety valve fitted to each section of the superheater which can be shut off from the Boiler Cannot be shut off.  
 Diameter of Safety Valve 1 1/2" Pressure to which each is adjusted 425 lbs. Is easing gear fitted Yes  
 Is a drain cock or valve fitted at lowest point of superheater Yes Number, diameter, and thickness of tubes 138 - 1 1/4" & #12  
 Spare Gear. Tubes 32 @ 2 & 1 1/4" Gaskets or joints:—Manhole 5 Handhole - Handhole plates 9

The foregoing is a correct description,  
 Foster Wheeler Corp. Manufacturer.

Dates of Survey } During progress of work in shops - - - } Is the approved plan of boiler forwarded herewith See semi-official correspondence with sister vessels  
 while building } During erection on board vessel - - - }  
Feb. 2, 3, 26; Mar. 23, 31; Apr. 8, 29; May 4, 17, 23; June 4, 10; August 8, 12; Sept. 2 Total No. of visits fifteen (15)

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) These boilers were not built under Special Survey but have been installed in place aboard vessel and have been examined and as far as can be seen the workmanship and material are good. The scantlings are in accordance with the Rules of the United States Federal Authorities.

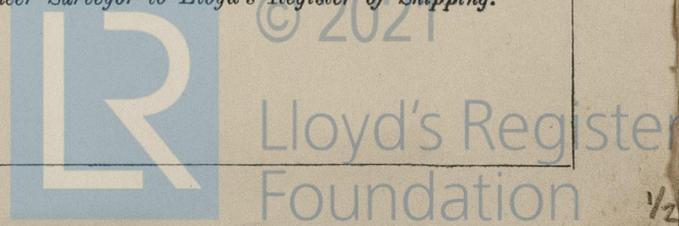
The boilers have been built under supervision of the United States Steamboat Inspectors and Special Survey of the American Bureau of Shipping. The drums are fusion welded in accordance with the Rules of these authorities and

Survey Fee Inclusive fee : : } When applied for, 19  
 Travelling Expenses (if any) £ : : } When received, 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK OCT 26 1938

Assigned 2 W.T.B. (Spt) #50 lbs *just*



S.S. "Esso Baltimore"

WATER TUBE BOILERS

(Cont'd.)

the material and electric welding have been tested by their respective representatives. Reports, it is stated have been made on the fusion welds.

The main boiler elements as assembled have been hydraulically tested to 900 lbs. per sq. inch by the above authorities before fitting on board the vessel and the complete boiler installation to 675 lbs. per sq. inch after fitting on board the vessel in the presence of the undersigned and found good and showing no sign of weakness at that pressure. The boiler drums were examined internally by the undersigned and subsequently under steam and appeared to be good and found tight.

The boilers have been built to withstand a working pressure of 450 lbs. The safety valves have been adjusted and set in the presence of the undersigned to 450 lbs. and the safety valve on the superheater outlet to 425 lbs.

In my opinion these boilers are in good and safe working condition and eligible to receive the notation Two W.T. Boilers 450 lbs. in the Register Book, subject to being submitted to survey annually.

*C. J. Astie*

Surveyor to Lloyd's Register of Shipping

