

## REPORT ON WATER TUBE BOILERS.

No. 9069

3 APR 1950

Received at London Office.

of writing Report: 22nd February 50 When handed in at Local Office: 28th Feb., 19 50 Port of Baltimore, Maryland  
 Survey held at Sparrows Point, Maryland Date, First Survey: 5th July, 1949 Last Survey: 14th February, 19 50  
 Bk. on the S.S. "SAN TOME" (Number of Visits: 9) Tons { Gross 17902  
 Inc. Net 11068  
 When built 1950  
 By whom built: Bethlehem Sparrows Point Shipyard  
 When made 1949  
 By whom made: Bethlehem Steel Company  
 When made 1949  
 By whom made: Foster Wheeler Corp.  
 Port belonging to: Monrovia  
 Owners: Afran Transport Co.  
 Horse Power: 3240

WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.—Manufacturers of Steel: Bethlehem Steel Company  
 of Approval of plan: 25th August, 1948, New York Number and Description or Type  
 Boilers: Two-Type "D" Steam Generators Working Pressure: 675 p.s.i. Tested by Hydraulic Pressure to: 1013 p.s.i. Date of Test: Oct. 27, 1949  
 of Certificate: C 8050 and C 8051 Can each boiler be worked separately: Yes Total Heating Surface of Boilers: 13420 sq. ft. incl. W.W.  
 forced draught fitted: Yes Area of fire grate (coal) in each Boiler: Oil fired  
 and type of burners (oil) in each boiler: 4 Todd-Hexpress No. and description of safety valves on  
 boiler: Two 1 1/2" Crosby Improved High Lift Area of each set of valves per boiler { per rule Drum 3.534 sq. in. Pressure to which they  
 as fitted Supt 1.767  
 adjusted: 660 & 675 p.s.i. Are they fitted with easing gear: Yes In case of donkey boilers state whether steam from main boilers can enter  
 donkey boiler: No Donkey Boiler Not near Height of boiler: 20' - 7 7/8"  
 length and Length: 13'-10 9/16" x 16'-4 3/4" Steam Drums:—Number in each boiler: One Inside diameter: 46 7/8" Average  
 thickness of plates: Wrapper 1 3/16" Tube 3 7/16" Range of Tensile Strength: 70,000 p.s.i. min Are drum shell plates welded  
 flanged: Welded If fusion welded, state name of welding firm: Foster Wheeler Corporation Have all the requirements of the rules  
 Class I vessels been complied with: Yes Description of riveting:—Cir. seams long. seams  
 diameter of rivet holes in long. seams: Pitch of rivets: Thickness of straps: Percentage strength of  
 joint:—Plate Rivet Diameter of tube holes in drum: 3.026", 1.278" Pitch of tube holes: 4.29" GRC, 1 7/8" L.  
 percentage strength of shell in way of tubes: 31.3 Steam Drum Heads or Ends:—Range of tensile strength: 70,000 p.s.i. min  
 thickness of plates: 1 13/16" MH. Radius or how stayed: Ellipsoidal Size of manhole or handhole: 12"x 16" Water Drums:—Number  
 each boiler: one Inside Diameter: 30.5" Thickness of plates: 2 5/16" Range of tensile strength: 70,000 p.s.i. min Are drum shell plates  
 welded or flanged: Welded If fusion welded, state name of welding firm: Foster Wheeler Corporation Have all the requirements of the rules  
 Class I vessels been complied with: Yes Description of riveting:—Cir. seams long. seam  
 diameter of rivet holes in long. seams: Pitch of rivets: Thickness of straps: Percentage strength of  
 joint:—Plate Rivet Diameter of tube holes in drum: 3.026", 1.278" Pitch of tube holes: 4.5" 1 7/8" L.  
 percentage strength of long. joint:—Plate Rivet Diameter of tube holes in drum: 3.026", 1.278" Pitch of tube holes: 4.5" 1 7/8" L.  
 thickness of plates: 13/16" MH. 1 13/16" MH. Radius or how stayed: Ellipsoidal Size of manhole or handhole: 12"x 16"  
 ends:—Diameter: 12", 2", 3" Thickness: 12-9-6 BWG Number: 1252-1 1/4", 66-2" Tested by Hydraulic Pressure to: 1013 p.s.i.  
 to Shell: Inside diameter: Thickness of shell plates: Range of tensile  
 length: Description of longitudinal joint: If fusion welded, state name of welding  
 Have all the requirements of the rules for Class I vessels been complied with: Diameter of rivet holes: Plate Rivet  
 thickness of straps: Percentage strength of long. joint: Radius or how stayed: Inside Diameter: 8"  
 DOWN OR END PLATES:—Range of tensile strength: Thickness: Inside Diameter: 8"  
 SUPERHEATER. Drums or Headers:—Number in each boiler: Two  
 thickness: 1.375" Material: O.H. Seamless Car. Moly. Forging Range of tensile strength: 70,000 p.s.i. Are drum shell plates welded  
 flanged: If fusion welded, state name of welding firm: Have all the requirements of the rules  
 Class I vessels been complied with: Description of riveting:—Cir. seams long. seams  
 diameter of rivet holes in long. seams: Pitch of rivets: Thickness of straps: Percentage strength of  
 joint:—Plate Rivet Header Diameter of tube holes in drum: 10.75" O.D. Thickness: 1 3/4" Range of tensile strength: 70,000 p.s.i.  
 in way of tubes: .47 Drum Header Ends: 12-OD x 12 BWG  
 radius or how stayed: Size of manhole or handhole: Number, diameter, and thickness of tubes: 12-OD x 12 BWG  
 tested by Hydraulic Pressure to: 1013 p.s.i. Date of Test: Is a safety valve fitted to each section of the superheater which  
 be shut off from the boiler: Yes No. and description of Safety Valves: One 1 1/2" Crosby Improved High Lift Area of each set  
 valves: 1.767 Pressure to which they are adjusted: 624 p.s.i. Is easing gear fitted: Yes  
 are Gear. Has the spare gear required by the rules been supplied: Yes

The foregoing is a correct description.

No. 3281 Port  
No. 3282 Std.

Manufacturer.

Yes

this  
to

Is the approved plan of boiler forwarded herewith: Yes  
 Total No. of visits: 17  
 During progress of work in shops: Feb. 9; Mar. 22; April 4, 26; May 26; June 2, 20; July 14, 1949  
 During erection on board vessel: July 5; Aug. 25; Sept. 20, 30; Oct. 21; Dec. 8, 1949  
 Jan. 6, 10; Feb. 14, 1950.

Is this boiler a duplicate of a previous case: Yes If so, state vessel's name and report No. S.S. "JAHA", "BURGAN", "CORO", Rpts. Nos. 8911, 8939 & 9044.  
 These boilers Foster Wheeler No. 3283 and 3284 have

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers Foster Wheeler No. 3283 and 3284 have  
 constructed and now installed on board this vessel under Special Survey, the scantlings and arrangements are in  
 accordance with the approved plans. Please refer to Reports 49351 and 49352 New York, with attached particulars of  
 structural Welding and Physical Tests. The workmanship and fittings throughout are good. Boilers were hydrostatically  
 P.T.O.

When applied for: 9 March, 19 50  
 When received: 19  
 Survey Fee: \$100.00  
 dit New York: \$200.00  
 Travelling Expenses (if any): \$42.00  
 dit New York: \$32.00

Committee's Minute

NEW YORK MAR 15 1950

Signed 2 WTB (SPT) 675 lbs.

Engine Surveyor to Lloyd's Register of Shipping.

Lloyd's Register  
Foundation



tested in place on board with all fittings and piping, and examined under steam working conditions, and are eligible in my opinion to be classed; and receive the notation 2 W.T. Boilers 675 lbs F.D. made in the Register.

The approved plans forwarded herewith are:-

General Arrangement of F.W. Type "D" Steam Generator - Main Sections.

General Arrangement of F.W. Type "D" Steam Generator - Longitudinal Section.

Lower Drum Details.

Upper Drum Details.

Details of Superheater Headers and Elements.

Details of  $7\frac{1}{4}$ " Square Water Wall Headers.

Norm. H.P.

H.S. = B.L.R. 6290

W.W. 420

Sup.H. = 1370

8080

Econ. 4970 = 2485

$\frac{2}{2} \quad 10565 \times 2 (\text{Bars}) = 21130 \text{ sq. ft. H.S.}$

$$M.N. = \frac{675 + 590}{1500} \left( \frac{12500}{6} + \frac{21130}{12} \right)$$

$$= .843 \times 3044.15$$

$$= 3240$$

$$\begin{array}{r} 6290 \\ 420 \\ \hline 6710 \\ 13420 \end{array}$$



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