

REPORT ON WATER TUBE BOILERS.

No. 2340

Date of writing Report Oct. 24, 1960 When handed in at Local Office 19 Port of Cleveland, Ohio
 Received at London Office _____
 No. in Survey held at Barberton, Ohio Date, First Survey April 29th Last Survey Sept. 16th, 1960
 Reg. Book. _____
 on the Two (2) MAIN WATER TUBE BOILERS (Number of Visits 15)
 Built at Uddevalle, Sweden By whom built Uddevalle A/B Yard No. 204 When built _____
 Engines made at _____ By whom made _____ Engine No. _____ When made _____
 Boilers made at Barberton, Ohio By whom made Babcock & Wilcox Co Boiler No. 415-4542 When made 1960
 HS for Register Book _____ Owners _____ Port belonging to _____

WATER TUBE BOILERS—MAIN, AUXILIARY OR DONKEY—Manufacturers of Steel Bethlehem Steel Co

Date of Approval of plan May 27; Aug. 21st & Dec. 29, 1957 and Feb. 25, 1960
 of Boilers Two (2) Two Drum Type Working Pressure 705 psi Tested by Hydraulic Pressure to 1108 No. and Description or Type Various
 No. of Certificate _____ Can each boiler be worked separately _____ Total Heating Surface of Boilers See over Superheaters _____
 Half Economisers Is forced draught fitted Area of Fire Grate (coal) in each Boiler _____
 No. and type of burners (oil) in each boiler _____ No. and description of safety valves on each boiler _____

Area of each set of valves per boiler { per rule _____ as fitted _____ Pressure to which they are adjusted _____
 Are they fitted with easing gear _____ 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 _____ Height of boiler _____
 Width and length _____ Steam Drums:—Number in each boiler One (1) Inside diameter See over
 Thickness of plates See over Range of tensile strength 70,000 psi min Are drum shell plates welded or flanged Welded
 If fusion welded, state name of welding firm Babcock & Wilcox Co Have all the requirements of the Rules for Class I vessels been complied with Yes
 Description of riveting:—Circ. seams _____ long. seams _____
 Diameter of rivet holes in long. seams _____ Pitch of rivets _____ Thickness of straps _____ Percentage strength of long. joint:—Plate _____ Rivet _____ Diameter of tube holes in drum 1.275" Pitch of tube holes 1.75"
 Percentage strength of shell in way of tubes 27.11% Steam Drum Heads or Ends:—Range of tensile strength 70,000 psi min
 Thickness of plates See over Radius or how stayed Ellipsoidal Size of manhole or handhole 12" x 16" Water Drums:—Number in each boiler One (1) Inside diameter See over Thickness of plates See over Range of tensile strength 70,000 psi Are drum shell plates welded or flanged Welded
 If fusion welded, state name of welding firm Babcock & Wilcox Co Have all the requirements of the Rules for Class I vessels been complied with Yes
 Description of riveting:—Circ. seams _____ long. seams _____
 Diameter of rivet holes in long. seams _____ Pitch of rivets _____ Thickness of straps _____ Percentage strength of long. joint:—Plate _____ Rivet _____ Diameter of tube holes in drum 1.275" Pitch of tube holes 1.75"
 Percentage strength of drum shell in way of tubes 27.11% Water Drum Heads or Ends:—Range of tensile strength 70,000 psi min
 Thickness of plates See over Radius or how stayed Ellipsoidal Size of manhole or handhole 12" x 16"
 Headers or Sections:—Number See over Material O H Steel Thickness 1" Tested by hydraulic pressure to 1108 psi
 Tubes:—Diameter See over Thickness _____ Number _____ Steam Dome or Collector:—Description of joint to shell _____ Inside diameter _____ Thickness of shell plates _____ Range of tensile strength _____
 Description of longitudinal joint _____ If fusion welded, state name of welding firm _____
 Have all the requirements for the Rules for Class I vessels been complied with _____ Diameter of rivet holes _____
 Pitch of rivets _____ Thickness of straps _____ Percentage strength of long. joint _____ plate _____ rivet _____
 Crown or End Plates:—Range of tensile strength _____ Thickness _____ Radius or how stayed _____

SUPERHEATER. Drums or Headers:—Number in each boiler Three (3) Inside diameter 7-1/4" Square
 Thickness 1" Material Steel Range of tensile strength 60,000 psi min Are drum shell plates welded or flanged Seamless Pipe
 If fusion welded, state name of welding firm _____ Have all the requirements of the Rules for Class I vessels been complied with _____
 Description of riveting:—Circ. seams _____ long. seams _____
 Diameter of rivet holes in long. seams _____ Pitch of rivets _____ Thickness of straps _____ Percentage strength of long. joint:—Plate _____ Rivet _____ Diameter of tube holes in drum _____ Pitch of tube holes _____ Percentage strength of drum shell in way of tubes _____
 Drum Heads or Ends:—Thickness _____ Range of tensile strength _____
 Radius or how stayed _____ Size of manhole or handhole _____ Number, diameter, and thickness of tubes _____
 Tested by hydraulic pressure to 1108 Date of test Various Is a safety valve fitted to each section of the superheater which can be shut off from the boiler _____
 No. and description of safety valves _____ Area of each set of valves _____ Pressure to which they are adjusted _____ Is easing gear fitted _____

Spare Gear. Has the spare gear required by the Rules been supplied _____
 The foregoing is a correct description, _____
 Manufacturer. _____

Dates During progress of work in shops April 29; May 4/24/25/31; July 14/22/29/
 Survey while building Aug. 11/15/26/30; Sept. 9/14/16 Is the approved plan of boiler forwarded herewith No
 Total No. of visits 15

Is this boiler a duplicate of a previous case _____ If so, state vessel's name and report No. _____

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c. These boilers and components have been built under survey and to approved plans. The workmanship is of good quality and in the opinion of the undersigned, they are considered suitable for installation aboard a vessel classed or intended for classification for a design pressure of 705 psi. See attached Report 10.

Survey Fee ... \$ 960.00 When applied for 10/27/60 19 _____ FOR: Henry Dean, Acting Surveyor
 Travelling Expenses (if any) \$ 110.00 When received _____ 19 _____ J. D. Wallace and self R. I. Aragon
 Engineer Surveyor to Lloyd's Register of Shipping.

Date NEW YORK NOV 2 1960
 Committee's Minute For the information of the Committee.

011259-011266-0189

HEATING SURFACE (per Boiler)

Boiler	8065 sq. ft.
Waterwalls	655 sq. ft.
Superheaters	1185 sq. ft.
TOTAL	9905 sq. ft.

DRUM DATA

	<u>Steam</u>	<u>Water</u>
Inside radius of wrapper sheet	23-11/16" ✓	15" ✓
Inside radius of tube sheet	22-15/64" ✓	14-1/16" ✓
Thickness of wrapper	1-5/32" ✓	25/32" ✓
Thickness of tube	4-1/16" ✓	2-21/32" ✓
Thickness of blankhead	1-5/32" ✓	25/32" ✓
Thickness of manhead	1-27/32" ✓	1-3/16" ✓

HEADERS (per Boiler)

	<u>No.</u>
Side wall header	1
Rear wall header	2
Economizer header	2
Superheater header	3

TUBES (per boiler)

<u>No.</u>	<u>Diameter</u>	<u>Thickness</u>	
1440	1-1/4" ✓	.105" ✓	Generating
240	1-1/2" ✓	.203" ✓	Economizer
188	2" ✓	.120" ✓	SW and RW
4	3-1/4" ✓	.375" ✓	SH Support
3	4-1/2" ✓	.340" ✓	RW Riser
48	1-1/4" ✓	.135" ✓	Superheater
116	1-1/4" ✓	.134" ✓	Superheater

Results of weld tests are attached to this Report.

Copies of this report sent to London, New York and Gothenburg.

