

# REPORT ON WATER TUBE BOILERS.

Received at London Office 12 FEB 1942

Date of writing Report March 12, 1941. When handed in at Local Office \_\_\_\_\_ 19 \_\_\_\_\_ Port of Cleveland, Ohio.

No. in Survey held at Barberton, Ohio. Date, First Survey Jan. 20th, Last Survey Feb. 27th, 1941.

Reg. Bk. \_\_\_\_\_ (Bethlehem Steel Company's Hull No. 1488) \_\_\_\_\_ (Sinclair Refining Oil Company Tanker) \_\_\_\_\_

Master \_\_\_\_\_ Built at \_\_\_\_\_ By whom built \_\_\_\_\_ When built \_\_\_\_\_

Engines made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_

Boilers made at Barberton, Ohio. By whom made Babcock & Wilcox Co. When made 1941

Registered Horse Power \_\_\_\_\_ Owners \_\_\_\_\_ Port belonging to \_\_\_\_\_

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

(Letter for Record 8) Date of Approval of plan August 1940. Number and Description or Type of Boilers (2) Water Tube (Single Drum Type) Working Pressure 500# Tested by Hydraulic Pressure to 750 lbs. Date of Test Jan. 1941

No. of Certificate \_\_\_\_\_ Can each boiler be worked separately \_\_\_\_\_ Total Heating Surface of Boilers \_\_\_\_\_

Is forced draught fitted \_\_\_\_\_ Area of fire grate (coal) in each Boiler \_\_\_\_\_ Total grate area of boilers in vessel including Main and Auxiliary \_\_\_\_\_ No. and type of burners (oil) in each boiler \_\_\_\_\_ No and description of safety valves on each boiler \_\_\_\_\_ Area of each valve \_\_\_\_\_ 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 18'-3-1/4" Width and Length 10'-9 1/2" & 14'-8"

Steam Drums:—Number in each boiler (1) Inside diameter 42-11/16" Material of plates Steel Thickness 25/32" & 1-5/8"

Range of Tensile Strength 70,000 to 82,000 lbs. Are drum shell plates welded or flanged Fusion Welded Description of riveting:—

Cir. seams \_\_\_\_\_ long. seams \_\_\_\_\_ Diameter of rivet holes in long. seams \_\_\_\_\_ Pitch of Rivets \_\_\_\_\_

Lap of plate or width of butt straps \_\_\_\_\_ Thickness of straps \_\_\_\_\_ Percentage strength of long. joint:—Plate 90% Rivet \_\_\_\_\_

Diameter of tube holes in drum 4-1/32" Pitch of tube holes 7" Percentage strength of shell in way of tubes 42.41

If Drum has a flat side state method of staying \_\_\_\_\_ Depth and thickness of girders at centre (if fitted) \_\_\_\_\_ Distance apart \_\_\_\_\_ Number and pitch of stays in each \_\_\_\_\_ Working pressure by rules 512 lbs.

Steam Drum Heads or Ends:—Material Steel Thickness 1-5/16" Radius 33-3/8"

Size of Manhole or Handhole 12" x 16" Water Drums:—Number in each boiler \_\_\_\_\_ Inside Diameter \_\_\_\_\_

Material of plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Are drum shell plates welded or flanged \_\_\_\_\_ Description of riveting:—Cir. seams \_\_\_\_\_ long. seams \_\_\_\_\_ Diameter of Rivet Holes in long. seams \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plates or width of butt straps \_\_\_\_\_ 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 \_\_\_\_\_ Water Drum Heads or Ends:—Material \_\_\_\_\_ Thickness \_\_\_\_\_

Radius or how stayed \_\_\_\_\_ Size of manhole or handhole \_\_\_\_\_ Headers or Sections:—Number (13)

Material Steel Thickness 19/32" Tested by Hydraulic Pressure to 750 lbs. Material of Stays \_\_\_\_\_

Area at smallest part \_\_\_\_\_ Area supported by each stay \_\_\_\_\_ Working Pressure by Rules \_\_\_\_\_ Tubes:—Diameter 1 1/4" & 2"

Thickness .095" & .134" Number 52 Steam Dome or Collector:—Description of Joint to Shell \_\_\_\_\_

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 B&W Date of Approval of Plan August 1940 Tested by Hydraulic Pressure to 750 lbs.

Date of Test Jan. & Feb. 1941. Is a safety valve fitted to each section of the superheater which can be shut off from the Boiler \_\_\_\_\_

Diameter of Safety Valve \_\_\_\_\_ Pressure to which each is adjusted \_\_\_\_\_ Is easing gear fitted \_\_\_\_\_

Is a drain cock or valve fitted at lowest point of superheater \_\_\_\_\_ Number, diameter, and thickness of tubes (195) 1-1/4", .120"

Spare Gear. Tubes \_\_\_\_\_ Gaskets or joints:—Manhole \_\_\_\_\_ Handhole \_\_\_\_\_ Handhole plates \_\_\_\_\_

The foregoing is a correct description,  
*Babcock & Wilcox Co.* Manufacturer.

1941 \_\_\_\_\_ 27.

Dates of Survey } During progress of work in shops - - } January 20, 22, 30. February 5, 11, 17, Is the approved plan of boiler forwarded herewith \_\_\_\_\_

while building } During erection on board vessel - - - } \_\_\_\_\_ Total No. of visits \_\_\_\_\_

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) These boilers, unassembled, comprising steam drums and headers for boilers and superheaters, were built to this Society's Special Survey and approved plans, also in conformity with the Regulations of the U. S. Department of Commerce & Bureau of Marine Inspection & Navigation. The workmanship, materials, X Ray examinations, tension and bend tests of fusion welded joints and hydraulic tests, were found satisfactory.

Survey Fee ... .. £ \$350.00 : } When applied for, 3/18/ 19 41.

Travelling Expenses (if any) £ \$ 14.00 : } When received, \_\_\_\_\_ 19 \_\_\_\_\_

*J. Drummond*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute NEW YORK DEC 23 1941

Assigned see N.Y.K. RPT. 41897.

