

# REPORT ON WATER TUBE BOILERS.

No. 18396

Date of writing Report 23-3-1943 When handed in at Local Office 23-3-1943 Port of W Hartlepool  
 No. in Survey held at Hartlepool Date, First Survey 18<sup>th</sup> March, 1942 Last Survey 17<sup>th</sup> March, 1943  
 Reg. Bk. on the EMPIRE VICEROY (Number of Visits 103) Tons }  
 Built at Barrow By whom built Vickers Armstrong No 858 When built }  
 Engines made at Hartlepool By whom made Richardsons Westgarth & Co. (2734) When made 1943  
 Boilers made at " " " " " " When made 1943  
 Nominal Horse Power 1415 Owners " " " " " " Port belonging to

## WATER TUBE BOILERS—MAIN, AUXILIARY, OR DONKEY.—Manufacturers of Steel Colville Ltd.

Date of Approval of plan 16/4/42 Number and Description or Type  
 of Boilers 2 Foster Wheeler D Type with Economisers Tested by Hydraulic Pressure to 440 LB Date of Test 7.4.43  
 No. of Certificate 492 Can each boiler be worked separately Yes Total Heating Surface of Boilers 15814 Sq. ft.  
 Is forced draught fitted Yes Area of fire grate (coal) in each Boiler 4 Todd (Including Economiser)

No. and type of burners (oil) in each boiler 4 Todd No. and description of safety valves on  
 each boiler one 2" Single HIGH LIFT Area of each set of valves per boiler { per rule 10.4 □ 7.0 for 140 with 257 F. paper  
 as fitted 12.96 □ Pressure to which they

are adjusted 460 lbs/□ Are they fitted with easing gear Yes In case of donkey boilers state whether steam from main boilers can enter  
 the donkey boiler No Smallest distance between boilers or uptakes and bunkers or woodwork None near Height of boiler 16' 6" Drum Centre  
 Width and Length 20'-1/2" x 14'-2 7/8" Steam Drums:—Number in each boiler one Inside diameter 3'-6"  
 Thickness of plates 1 5/8" Range of Tensile Strength 28/32 Are drum shell plates welded

Manufacturer welded If fusion welded, state name of welding firm John Thompson Wolverhampton Have all the requirements of the rules  
 for 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

long. joint:—Plate ✓ Rivet 2" = 55.5 Diameter of tube holes in drum 2" x 1 1/4" Pitch of tube holes 2 1/4" x 3 1/2"  
 Percentage strength of shell in way of tubes 1 1/4" = 44.4 Steam Drum Heads or Ends:—Range of tensile strength 26/30  
 Thickness of plates 1 7/8" & 1 3/4" Radius or how stayed 3'-6" radius Size of manhole or handhole 16" x 12" Water Drums:—Number

in each boiler one Inside Diameter 2'-8" Thickness of plates 1 9/32" Range of tensile strength 28/32 Are drum shell plates  
 welded or flanged welded If fusion welded, state name of welding firm John Thompson Wolverhampton Have all the requirements of the rules  
 for 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 long. joint:—Plate ✓ Rivet 2" = 55.5 Diameter of tube holes in drum 2" x 1 1/4" Pitch of tube holes 2 1/4" x 3 1/2"  
 Percentage strength of drum shell in way of tubes 1 1/4" = 44.5 Water Drum Heads or Ends:—Range of Tensile strength 26/30  
 Thickness of plates 1 1/2" & 1 3/8" Radius or how stayed 2'-8" radius Size of manhole or handhole 16" x 12"

Number of Headers or Sections:—Number 3 Material Steel Thickness 7/8" Tested by Hydraulic Pressure to 740 LB  
 Tubes:—Diameter 2" Thickness 1 1/4" Number 454 Steam Dome or Collector:—Description of  
 joint to Shell ✓ Inside diameter 11 1/4" Thickness of shell plates ✓ Range of tensile  
 strength ✓ Description of longitudinal joint ✓ If fusion welded, state name of welding  
 firm ✓ Have all the requirements of 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 ✓

ROWN OR END PLATES:—Range of tensile strength ✓ Thickness ✓ Radius or how stayed ✓  
 SUPERHEATER. Drums or Headers:—Number in each boiler 2 Inside Diameter 6 1/4" x 6 1/4"  
 Thickness 1 3/8" Material Steel Range of tensile strength 28/32 Are drum shell plates welded  
 flanged weldless 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:—Cir. 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 1/4" Pitch of tube holes 2 3/8" x 1 13/16" Percentage strength of  
 drum shell in way of tubes ✓ Drum Heads or Ends: flat ends Thickness 1 3/8" Range of tensile strength 28/32  
 Radius or how stayed ✓ Size of manhole or handhole 2" Number, diameter, and thickness of tubes 310-1 1/4" + 110.

Tested by Hydraulic Pressure to 1500 LB Date of Test 6<sup>th</sup> 48<sup>th</sup> Feb. 1943 Is a safety valve fitted to each section of the superheater which  
 can be shut off from the boiler Yes No. and description of Safety Valves 2 1/2" double HIGH LIFT. Area of each set  
 of valves 9.82 □ Pressure to which they are adjusted 440 lbs/□ Is easing gear fitted Yes

Spare Gear. Has the spare gear required by the rules been supplied Yes.  
 Economisers  
 Date of Test Port 6/2/43

Dates } During progress of work in shops - - } From 18/3/42 to 19/3/43  
 while } During erection on }  
 building } board vessel - - - }  
 Is the approved plan of boiler forwarded herewith No  
 Total No. of visits

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, etc.) These boilers are being constructed under Special Survey & in accordance with the approved plans & Specification for a working pressure of 460 LB/□. The materials & workmanship have been found good. The boilers have been constructed, as far as practicable,

Survey Fee ... £ See Rpt 4a When applied for, 19  
 Travelling Expenses (if any) £ overleaf When received, 19

Committee's Minute  
 assigned  
 TUES. 14 SEP 1943  
see minute on Bw B. Rpt.

Clive Bell & Cyril H. Johnson  
 Engineer Surveyors to Lloyd's Register of Shipping.

For RICHARDSONS, WESTGARTH & Co. LIMITED.  
 The foregoing is a correct description,  
A. E. W. W. W. Manufacturer.  
 DIRECTOR

Lloyd's Register Foundation

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8262  
 No. for Ch. D.O. 16.4.43

in the Works by the fitting of the drums & main banks of tubes (except floor, rear, side & roof tubes) & these have been hydraulically tested to 740 LB/10" & found tight. The two Superheaters & port economiser have been constructed & completed & have been hydraulically tested to 740 LB/10" & found tight. The construction will be completed by the fitting of the water wall tubes & headers & the starboard economiser on board the vessel & the whole finally tested. The boilers have been despatched to Barrow for completion of construction & final erection on board Messrs. Vickers Armstrong's Vessel No 858. Rpt 4 a will be forwarded when the engines have been completed.

CB

Boilers completed at Barrow & fitted in vessel. On completion the boilers were tested by hydraulic pressure to 740 lbs/10" & found tight & satisfactory. (Certificate No 492 dated 7.4.43)

*Dicky J. [Signature]*

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