

Rpt. 5c.

# REPORT ON WATER TUBE BOILERS.

No. 18639

APR 1945

Received at London Office

Date of writing Report 6/3/1945 When handed in at Local Office 7/3/1945 Port of WEST HARTLEPOOL  
 No. in Survey held at 5/5 "WAVE SOVEREIGN" Date, First Survey 29/2/44 Last Survey 23/3/1945  
 Reg. Bk. (Number of Visits 52) Tons { Gross 8181 Net 4559  
 Built at Hawthorn Steel on Seas By whom built Furness Shipbuilding & S. 364 When built 1945  
 Engines made at Hartlepool By whom made Richardsons, Westgarth & Co. S. 2754 When made 1945  
 Boilers made at Hartlepool By whom made Richardsons, Westgarth & Co. S. 2754 When made 1945  
 Nominal Horse Power 1226 Owners Not known Port belonging to Not known

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

Date of Approval of plan 18/6/42 Number and Description or Type of Boilers 2 Foster Wheeler "D" Type Working Pressure 490 lbs Tested by Hydraulic Pressure to 785 lbs Date of Test 14-3-45  
 No. of Certificate 2046 Can each boiler be worked separately Yes Total Heating Surface of Boilers 6840 sq ft (21 Sph. 230 1660) (12 Economiser 2405 4810)  
 Is forced draught fitted Yes Area of fire grate (coal) in each Boiler Oil fired No. and description of safety valves on each boiler 3 Wallsend Stouden Pressure to which they are adjusted 11.1  
 No. and type of burners (oil) in each boiler One - 2" boreburner Area of each set of valve 11.1 Height of boiler 15-9 Width and Length 17-5 1/2 x 11-7 1/2  
 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 and bunkers or woodwork 3'-6" Thickness of plates 1 1/8"  
 Steam Drums:—Number in each boiler One Inside diameter 3'-6" Range of tensile strength 28/32 tons Are drum shell plates welded or flanged Welded Description of riveting:—  
 Range of Tensile Strength 28/32 tons Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 2"  
 Cir. seams Yes long. seams Yes Thickness of straps 2 1/4" x 2 1/4" x 1 1/2" Percentage strength of long. joint:—Plate 2" = 55.5 Rivet 1 1/4" = 44.4  
 Lap of plate or width of butt straps 2" x 1 1/4" Pitch of tube holes 4 1/2" x 3 1/2" Percentage strength of shell in way of tubes 1 1/4" = 44.4  
 Diameter of tube holes in drum 2" x 1 1/4" Working pressure by rules 26/30 tons Thickness of plates 1 1/8" & 1 1/4"  
 Working pressure by rules 26/30 tons Steam Drum Heads or Ends:—Range of tensile strength 26/30 tons Water Drums:—Number in each boiler One Inside Diameter 2'-9" Thickness of plates 1 1/8" Range of tensile strength 28/32 tons Are drum shell plates welded or flanged Welded Description of riveting:—Cir. seams Yes long. seams Yes Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 2" Lap of plates or width of butt straps 2" x 1 1/4" Thickness of straps 2 1/4" x 2 1/4" x 1 1/2"  
 Percentage strength of long. joint:—Plate 2" = 55.5 Rivet 1 1/4" = 44.4 Working pressure by rules 26/30 tons Water Drum Heads or Ends:—Range of tensile strength 26/30 tons Thickness of plates 1 1/8" Radius or how stayed 2'-9"  
 Percentage strength of drum shell in way of tubes 1 1/4" = 44.4 Working pressure by rules 26/30 tons Headers or Sections:—Number 3 Tubes:—Diameter 2" x 1 1/4"  
 Tensile strength 26/30 tons Thickness of plates 1 1/8" Material Steel Thickness 7/8" Tested by Hydraulic Pressure to 785 lbs Steam Dome or Collector:—Description of Joint to Shell Welded  
 Thickness 7/8" Number 384 + 1040 Range of tensile strength 28/32 tons Diameter of rivet holes 1 1/8" Pitch of rivets 2" Lap of plate or width of butt straps 2" x 1 1/4" Thickness of straps 2 1/4" x 2 1/4" x 1 1/2"  
 Description of longitudinal joint Welded Working pressure by rules 26/30 tons Crown or End Plates:—Range of tensile strength 28/32 tons Inside Diameter 6 1/4" x 6 1/4"  
 Thickness 1 1/8" Radius or how stayed 2'-9" Working pressure by rules 26/30 tons SUPERHEATER. Drums or Headers:—Number in each boiler 2 Material Steel Range of tensile strength 28/32 tons Are drum shell plates welded or flanged Welded Description of riveting:—Cir. seams Yes long. seams Yes Diameter of rivet holes in long. seams 1 1/8" Pitch of rivets 2" Lap of plates or width of butt straps 2" x 1 1/4" Thickness of straps 2 1/4" x 2 1/4" x 1 1/2"  
 Percentage strength of long. joint:—Plate 2" = 55.5 Rivet 1 1/4" = 44.4 Working pressure by rules 26/30 tons Drum Heads or Ends:—Range of tensile strength 26/30 tons Thickness of plates 1 1/8" Radius or how stayed 2'-9" Size of manhole or handhole 2"  
 Percentage strength of drum shell in way of tubes 1 1/4" = 44.4 Working pressure by rules 26/30 tons Number, diameter, and thickness of tubes 300 - 1 1/4" x 11wg Tested by Hydraulic Pressure to 785 lbs  
 Thickness 1 1/8" Range of tensile strength 28/32 tons Is a safety valve fitted to each section of the superheater which can be shut off from the boiler Yes  
 Working pressure by rules 26/30 tons Date of Test 16-1-45 No. and description of Safety Valves 1-2 1/2" boreburner, Sph. High Lift Area of each set of valves 7.96 sq in  
 Pressure to which they are adjusted 489 lbs Is easing gear fitted Yes  
 Spare Gear. Has the spare gear required by the rules been supplied Yes

Richardsons, Westgarth & Co. Limited, The foregoing is a correct description,

R. E. Huxley DIRECTOR Manufacturer.

Dates of Survey { During progress of work in shops - 18.19.23. July 7.18.21. (as in certificate dated) 1945. Jan 3.4.11.6. Feb 7.8.9.25. Mar 5.6.9.14.16.23 } Is the approved plan of boiler forwarded herewith No  
 while { During erection on board vessel - - - } Total No. of visits 52

Is this boiler a duplicate of a previous case Yes. If so, state vessel's name and report No. BOILERS N. 2752 RPT N. 18619.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers, with their superheaters and economisers have been constructed under special survey and in accordance with the approved plans and specification for a working pressure of 490 lbs  
The materials and workmanship have been found good.

Survey Fee ... £ See Rpt When applied for, 19  
 Travelling Expenses (if any) £ to follow When received, 19

See Copy West Hpl. Ltr 11/5/45 attached.

Committee's Minute FRI. 5 APR 1945

Assigned See F.E. Machy, rpt

Arthur W. Oxford  
 Engineer Surveyor to Lloyd's Register of Shipping.



upon completion the boilers, superheater and economisers were hydraulically tested to 785 lbs<sup>2</sup> - and found sound & tight.

These boilers have been despatched to Haverton Hill for fitting on board *Burness S.B. Co's ship* No 364.

These boilers have now been securely fitted on board & examined under working conditions & found satisfactory.

On completion the SV's of both boilers were adjusted under steam, the SV's of the drums to 585 lbs<sup>2</sup> & those of the Superheaters to 489 lbs<sup>2</sup> 10".

*S. Norman Stuart*

E.W. Drums fitted in Boilers.

Steam Drum	E.W.	1430 / 467 H.M.P.	Birmingham	Det No C. 3097
"	E.W.	1431 / 479 H.M.P.	"	" No C 3126.
Water Drum	E.W.	1459 / 456 H.M.P.	"	" No C 3020.
"	E.W.	1470 / 464 H.M.P.	"	" No C 3074.