

# REPORT ON BOILERS.

No. 13085

27 OCT 1927

Received at London Office

MIDDLESBROUGH.

of writing Report 26. 10. 1927 When handed in at Local Office 26. 10. 1927 Port of

MIDDLESBROUGH.

Survey held at Book. Date, First Survey 18. 3. 1927 Last Survey 25. 10. 1927

Sup. on the Tug. "PERIJA" (Number of Visits 48.) Gross 2660 Tons Net 1520.

Built at Newcastle By whom built Palmers S&B Co Yard No. 976 When built 1927. MIDDLESBROUGH. By whom made Richardsons, Westgait & Co. Engine No. 2573 When made 1927. MIDDLESBROUGH. By whom made do. Boiler No. 2573 When made 1927. Owners Gulf Refining Co. Port belonging to Newcastle.

## MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Steel Company of Scotland (Letter for Record S.)

Total Heating Surface of Boilers 4055 # Is forced draught fitted No. Coal or Oil fired oil

Name and Description of Boilers 2. S.E. Marine Working Pressure 180 lbs.

Tested by hydraulic pressure to 320 lbs. Date of test 15. 9. 27 No. of Certificate S. 6574 Can each boiler be worked separately Yes.

Number of Firegrate in each Boiler No. and Description of safety valves to each boiler Pair Spring loaded.

Number of each set of valves per boiler as fitted 16. 58 # Pressure to which they are adjusted 185 lbs. Are they fitted with easing gear Yes.

Use of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Smallest distance between boilers or uptakes and bunkers or woodwork 8' 4" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 1'-11" Is the bottom of the boiler insulated Yes.

Smallest internal dia. of boilers 14'-0" Length 11'-6" Shell plates: Material Steel Tensile strength 28/32

Thickness 1 5/32 Are the shell plates welded or flanged No. Description of riveting: circ. seams end D.R. inter.

Seams T.R.D.B.S. Diameter of rivet holes in circ. seams 13/16 long. seams 13/16 Pitch of rivets 3 1/2 8 5/8

Percentage of strength of circ. end seams plate 66.0 rivets 45.0 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 85.3 rivets 90.6 combined 88.8 Working pressure of shell by Rules 181 lbs.

Thickness of butt straps outer 4/8 inner 1" No. and Description of Furnaces in each Boiler 3 Corrugated 30cf.

Material Steel Tensile strength 26/30 Smallest outside diameter 3'-4 9/16

Thickness of plain part top bottom Thickness of plates crown 14/32 bottom 13/32 Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 189 lbs.

Plates in steam space: Material S Tensile strength 26/30 Thickness 1 1/8" Pitch of stays 19 3/4 x 16

Are stays secured D.N.s Working pressure by Rules 182 lbs.

Front plates: Material Steel Tensile strength 26/30 Thickness 3/16 3/4

Pitch of stay tubes in nests 9 3/4 Pitch across wide water spaces 13 1/2 Working pressure front 188 lbs. back 211 lbs.

Plates to combustion chamber tops: Material Steel Tensile strength 28/32 Depth and thickness of girder

Centre 9 1/4 x 13/16 (double) Length as per Rule 2'-10" Distance apart 9 1/4 No. and pitch of stays

Each 3 - 9 1/4 x 8 Working pressure by Rules 202 lbs. Combustion chamber plates: Material Steel

Tensile strength 26/30 Thickness: Sides 13/16 Back 7/8 Top 5/8 (nutted) Bottom 13/16

Number of stays to ditto: Sides 9 x 8 Back 10 1/4 x 9 Top 9 1/4 x 8 Are stays fitted with nuts or riveted over Riveted (side & back)

Working pressure by Rules 181 lbs. Front plate at bottom: Material Steel Tensile strength 26/30

Thickness 13/16 Lower back plate: Material Steel Tensile strength 26/30 Thickness 1/8

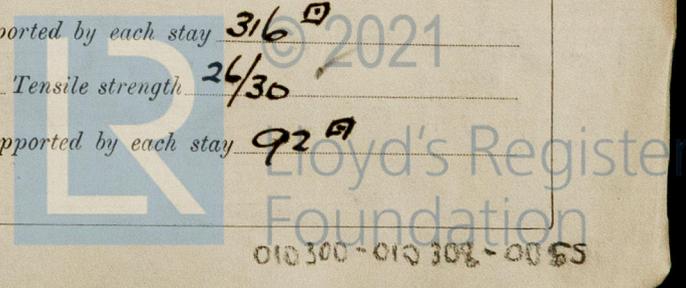
Number of stays at wide water space 13 1/2 x 9 Are stays fitted with nuts or riveted over nuts

Working Pressure 238 lbs. Main stays: Material Steel Tensile strength 28/32

Number of threads per inch 6. Area supported by each stay 3/16

Working pressure by Rules 193 lbs. Screw stays: Material Steel Tensile strength 26/30

Number of threads per inch 9. Area supported by each stay 92



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Working pressure by Rules 196 lbs Are the stays drilled at the outer ends no ✓ Margin stays: Diameter <sup>(At turned off part)</sup> 1 1/8 ✓  
 No. of threads per inch 9 ✓ Area supported by each stay 106 sq Working pressure by Rules 201 lbs  
 Tubes: Material iron ✓ External diameter <sup>Plain</sup> 2 1/2 ✓ <sup>Stay</sup> 2 1/2 ✓ Thickness 9/16 ✓ No. of threads per inch 9 ✓  
 Pitch of tubes 4 x 3 3/4 ✓ Working pressure by Rules p. 230 s. 198 Manhole compensation: Size of opening in  
 shell plate 16 1/2 x 13 ✓ Section of compensating ring 4 3/4 x 1 1/2 ✓ No. of rivets and diameter of rivet holes 32 - 1 3/16 ✓  
 Outer row rivet pitch at ends 8 1/8 ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material \_\_\_\_\_  
 Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_  
 Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint <sup>Plate</sup> \_\_\_\_\_  
 Internal diameter \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diameter of  
 stays \_\_\_\_\_ Inner radius of crown \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_  
 How connected to shell \_\_\_\_\_ Size of doubling plate under dome \_\_\_\_\_ Diameter of rivet holes and pitch  
 of rivets in outer row in dome connection to shell \_\_\_\_\_

Type of Superheater \_\_\_\_\_ Manufacturers of <sup>Tubes</sup> \_\_\_\_\_  
 Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ <sup>Steel castings</sup> \_\_\_\_\_  
 Material of headers \_\_\_\_\_ Tensile strength \_\_\_\_\_ Thickness \_\_\_\_\_ Can the superheater be shut off and  
 the boiler be worked separately \_\_\_\_\_ Is a safety valve fitted to every part of the superheater which can be shut off from the boiler \_\_\_\_\_  
 Area of each safety valve \_\_\_\_\_ Are the safety valves fitted with easing gear \_\_\_\_\_ Working pressure as per  
 Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test pressure:  
 tubes \_\_\_\_\_ castings \_\_\_\_\_ and after assembly in place \_\_\_\_\_ Are drain cocks or valves fitted  
 to free the superheater from water where necessary \_\_\_\_\_

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes ✓

The foregoing is a correct description,  
 For RICHARDSON, WELSH & CO. LIMITED, Manufacturer.  
[Signature]

Dates of Survey <sup>During progress of work in shops - - -</sup> \_\_\_\_\_  
 while building <sup>During erection on board vessel - - -</sup> \_\_\_\_\_  
 See Machy Rpt. ✓  
 Are the approved plans of boiler and appurtenances for use with \_\_\_\_\_  
 (If not state date of approval.) Yes ✓  
 Total No. of visits \_\_\_\_\_

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
 These boilers are duplicate of those fitted in steamers 'Inuaga' and 'Araqua' - Inds Rpts 13024 & 13056.  
 The materials and workmanship are good. These boilers have been built under special survey in accordance with the Rules and approved plan, securely fitted aboard and their safety valves have been adjusted and tested under steam with satisfactory results.

Survey Fee ... .. £ See Machy Rpt. } When applied for, 192  
 Travelling Expenses (if any) £ \_\_\_\_\_ } When received, 192

[Signature]  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute \_\_\_\_\_ TUES. 1 NOV 1927  
 Assigned See Machy Rpt. (Pw. No 8967) attached

