

## REPORT ON BOILERS.

No. 16478

Received at London Office

Date of writing Report 23 April 1927. When handed in at Local Office 27.4.1927 Port of WEST HARTLEPOOL

No. in Reg. Book. Survey held at West Hartlepool Date, First Survey 15 March 1926 Last Survey 22nd April 1927

on the S.S. "ARABISTAN" (Number of Visits ✓) Gross 5736 Tons Net 3201

Master Built at West Hartlepool By whom built Wm Gray & Co. Ltd Yard No. 982 When built 1927  
 Engines made at West Hartlepool By whom made Central Marine Engine Engine No. 982 When made 1927  
 Boilers made at do By whom made Works Boiler No. 982 When made 1927  
 Nominal Horse Power 590 Owners J. L. Smith & Co. Port belonging to London

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

Manufacturers of Steel D. Colville & Sons Ltd (Letter for Record S ✓)  
 Total Heating Surface of Boilers 8874 sq. ft. Is forced draught fitted yes ✓ Coal & Oil fired either ✓  
 No. and Description of Boilers Three single ended ✓ Working Pressure 180 lbs ✓  
 Tested by hydraulic pressure to 320 lbs Date of test 2.2.27 No. of Certificate 3690 Can each boiler be worked separately yes ✓  
 Area of Firegrate in each Boiler 73.3 sq. ft. No. and Description of safety valves to each boiler 2. Cockburns high lift ✓  
 Area of each set of valves per boiler {per Rule 15.174" as fitted 16.58" Pressure to which they are adjusted 185 lbs 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 14" ✓ Is oil fuel carried in the double bottom under boilers no ✓  
 Smallest distance between shell of boiler and tank top plating ✓ Is the bottom of the boiler insulated ✓  
 Largest internal dia. of boilers 16'-0" ✓ Length 12'-0" ✓ Shell plates: Material Steel ✓ Tensile strength 28/30 ✓  
 Thickness 1 5/16" ✓ Are the shell plates welded & flanged yes ✓ Description of riveting: circ. seams {and D.R. lap. inter. J.R. & R. lap. End 1 3/16" inter 1 7/16" Pitch of rivets {End 3 3/4" inter 5" ✓  
 Long. seams J.R. & R. S. ✓ Diameter of rivet holes in {circ. seams End 1 3/16" inter 1 7/16" Pitch of rivets {End 3 3/4" inter 5" ✓  
 Percentage of strength of circ. end seams {plate Shell rivets flanged. Percentage of strength of circ. intermediate seam {plate 71.5 rivets 60.7  
 Percentage of strength of longitudinal joint {plate 85.5 rivets 92 combined 89.4 Working pressure of shell by Rules 181  
 Thickness of butt straps {outer 1" ✓ inner 1 5/8" ✓ No. and Description of Furnaces in each Boiler 4 Deightons ✓  
 Material Steel ✓ Tensile strength 26/30 ✓ Smallest outside diameter 40" ✓  
 Length of plain part {top ✓ bottom ✓ Thickness of plates {crown 9/10" ✓ bottom 9/10" ✓ Description of longitudinal joint welded ✓  
 Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 204  
 End plates in steam space: Material Steel ✓ Tensile strength 26/30 ✓ Thickness 1 5/8" ✓ Pitch of stays 17" x 21 1/4" ✓  
 How are stays secured Double nuts & washers ✓ Working pressure by Rules 182  
 Tube plates: Material {front steel ✓ back steel ✓ Tensile strength {26/30 ✓ Thickness {5" 3/4" ✓  
 Mean pitch of stay tubes in nests 8" x 11 5/8" Pitch across wide water spaces 13 3/4" x 8" ✓ Working pressure {front 182 back 208  
 Girders to combustion chamber tops: Material Steel ✓ Tensile strength 28/32 ✓ Depth and thickness of girder  
 at centre 10" x 1 1/4" ✓ Length as per Rule 34 9/16" ✓ Distance apart 9 1/4" ✓ No. and pitch of stays  
 in each 3-9" ✓ Working pressure by Rules 188 Combustion chamber plates: Material Steel ✓  
 Tensile strength 26/30 ✓ Thickness: Sides 2 1/32" ✓ Back 1/16" ✓ Top 2 1/32" ✓ Bottom 7/8" ✓  
 Pitch of stays to ditto: Sides 9" x 9 1/4" ✓ Back 9 3/4" x 8 5/8" ✓ Top 9" x 9 1/4" ✓ Are stays fitted with nuts or riveted over nuts ✓  
 Working pressure by Rules 180 Front plate at bottom: Material Steel ✓ Tensile strength 26/30 ✓  
 Thickness 7/8" ✓ Lower back plate: Material Steel ✓ Tensile strength 26/30 ✓ Thickness 7/8" ✓  
 Pitch of stays at wide water space 14 1/2" x 10" ✓ Are stays fitted with nuts or riveted over nuts ✓  
 Working Pressure 202 Main stays: Material Steel ✓ Tensile strength 28/32 ✓  
 Diameter {At body of stay, 3" ✓ or No. of threads per inch 6 ✓ Area supported by each stay 17" x 21 1/4" ✓  
 Working pressure by Rules 185 Screw stays: Material Steel ✓ Tensile strength 26/30 ✓  
 Diameter {At turned off part, 1 5/8" ✓ or No. of threads per inch 9 ✓ Area supported by each stay 9 3/4" x 8 5/8" ✓



Working pressure by Rules 181 Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" Over threads 1 7/8" ✓  
 No. of threads per inch 9 ✓ Area supported by each stay 12 1/8" x 8 5/8" Working pressure by Rules 203  
 Tubes: Material Iron ✓ External diameter { Plain 2 3/4" ✓ Stay 2 3/4" ✓ Thickness { 3/16" ✓ 1/4" ✓ 5/16" ✓ No. of threads per inch 9 ✓  
 Pitch of tubes 3 7/8" x 4" ✓ Working pressure by Rules 215 & 197 Manhole compensation: Size of opening in  
 shell plate 16" x 20" ✓ Section of compensating ring 17" x 1 5/16" ✓ No. of rivets and diameter of rivet holes 28 - 1 5/16" ✓  
 Outer row rivet pitch at ends 10" ✓ Depth of flange if manhole flanged Bottom manhole 3 1/2" ✓ Steam Dome: Material none ✓  
 Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_  
 Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint { Plate \_\_\_\_\_ Rivets \_\_\_\_\_  
 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 None ✓ Manufacturers of { Tubes \_\_\_\_\_ Steel castings \_\_\_\_\_  
 Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ Internal diameter and thickness of tubes \_\_\_\_\_  
 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 ✓

FOR THE CENTRAL MARINE ENGINE WORKS,  
 The foregoing is a correct description,  
M. S. S. S. ✓  
 MANAGING DIRECTOR, C.M.E.W.

Dates of Survey { During progress of work in shops - - - } Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) yes ✓  
 while building { During erection on board vessel - - - } See machinery report Total No. of visits 1

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

See accompanying machinery report.

Survey Fee ... .. £ :  
 Travelling Expenses (if any) £ : ✓

When applied for, 192  
 When received, 192

R. D. Shilstone & Robert Rae  
 Engineer Surveyors to Lloyd's Register of Shipping

Committee's Minute FRI. 6 MAY 1927

Assigned See minute on Hpl Rpt  
16478 attached



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