

## REPORT ON BOILERS.

No. 60231

Received at London Office

SEP 30 1938

Date of writing Report 20<sup>th</sup> Sept 1938 When handed in at Local Office 28:9:38 Port of Blangow.

No. in Reg. Book. Carfin Date, First Survey 8:2:38 Last Survey 20<sup>th</sup> Sept 1938

on the Boiler No 3507 M.V. "AFRICA SHELL" (Number of Visits 13) Tons { Gross } Net

Master Greenock Built at Greenock By whom built George Brown & Co (Marine) Yard No. 207 When built

Engines made at Carfin By whom made Alex Anderson & Sons Engine No. 3507 When made 1938

Boilers made at Carfin By whom made Alex Anderson & Sons Boiler No 3507 When made 1938

Nominal Horse Power 180 Owners Port belonging to

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

Manufacturers of Steel Coleville & Co (Letter for Record S.)

Total Heating Surface of Boilers 612 Is forced draught fitted Coal or Oil fired

No. and Description of Boilers 1 - S.E. multitubular Working Pressure 180 lbs

Tested by hydraulic pressure to 320 lbs Date of test 20.9.38 No. of Certificate 20268 Can each boiler be worked separately

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler

Area of each set of valves per boiler { per Rule } as fitted 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 Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating Is the bottom of the boiler insulated

Largest internal dia. of boilers 8'-3" Length 8'-9" Shell plates: Material Steel Tensile strength 29/33

Thickness 11/16" Are the shell plates welded or flanged No. Description of riveting: circ. seams { end } D.R. Lap inter. 2.75"

long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams } 13/16" Pitch of rivets { long. seams } 5.75"

Percentage of strength of circ. end seams { plate } 70.4 rivets 43.6 Percentage of strength of circ. intermediate seam { plate } rivets —

Percentage of strength of longitudinal joint { plate } 85.75 rivets 47.25 combined 91.25 Working pressure of shell by Rules 183 lbs

Thickness of butt straps { outer } 9/16" inner 11/16" No. and Description of Furnaces in each Boiler 1 - Morrison Section

Material Steel Tensile strength 26/30 Smallest outside diameter 3'-5 1/4"

Length of plain part { top } 13/32" bottom 13/32" Thickness of plates { crown } 13/32" Description of longitudinal joint welded bottom 13/32"

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 186 lbs

End plates in steam space: Material Steel Tensile strength 26/30 Thickness 13/16" Pitch of stays 13" x 15 3/4"

How are stays secured Double Nuts & Loose Washers Working pressure by Rules 182 lbs

Tube plates: Material { front } Steel back Steel Tensile strength { } 26/30 Thickness { } 13/16" 25/32"

Mean pitch of stay tubes in nests 8 3/4" Pitch across wide water spaces 11" Working pressure { front } 218 lbs back 210 lbs

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

at centre 6 1/2" x 22 5/8" Length as per Rule 1'-10 7/32" Distance apart 6 1/2" to 9 1/4" No. and pitch of stays

in each 22 6 27/32" Working pressure by Rules 192 Combustion chamber plates: Material Steel

Tensile strength 26/30 Thickness: Sides 11/16" Back 11/16" Top 19/32" Bottom 11/16"

Pitch of stays to ditto: Sides 6 13/32" x 6 1/4" Back 6 5/8" x 6 5/8" Top 9 1/4" x 6 27/32" Are stays fitted with nuts or riveted over Yes except marginal stays

Working pressure by Rules 186 lbs Front plate at bottom: Material Steel Tensile strength 26/30

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

Pitch of stays at wide water space Are stays fitted with nuts or riveted over Yes except marginal stays

Working Pressure 194 lbs Main stays: Material Steel Tensile strength 28/32

Diameter { At body of stay, } 2 3/4" No. of threads per inch 6 Area supported by each stay 306 sq inch Over threads 2 3/4"

Working pressure by Rules 180 lbs Screw stays: Material Steel Tensile strength 26/30 2020

Diameter { At turned off part, } 1 1/2" + 1 3/8" No. of threads per inch 9 Area supported by each stay 63.3 + 43.9 sq inch Over threads 1 1/2" + 1 3/8"



Working pressure by Rules 198 lbs. Are the stays drilled at the outer ends Yes Margin stays: Diameter { At turned off part, or Over threads 1 5/8" Working pressure by Rules 223 lbs.  
No. of threads per inch 9 Area supported by each stay 68.4 sq. inch Thickness 9 L. S. G. 7 No. of threads per inch 9  
Tubes: Material L. W. I. External diameter { Plain 2 1/2" Stay 2 1/2" Thickness 5/16" 4 3/8" Pitch of tubes 3 1/2" x 3 1/2" Working pressure by Rules 230 lbs. Manhole compensation: Size of opening in shell plate 19 1/2" x 16 1/2" Section of compensating ring 14" x 3/4" No. of rivets and diameter of rivet holes 46 2 3/16"  
Outer row rivet pitch at ends 5.75" Depth of flange if manhole flanged 3" McNeil Steam Dome: Material Nil.  
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 Diameter of rivet holes and pitch  
How connected to shell Size of doubling plate under dome  
of rivets in outer row in dome connection to shell

Type of Superheater Nil

Manufacturers of { Tubes Steel forgings Steel castings Internal diameter and thickness of tubes

Number of elements Material of tubes 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 forgings and 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 22 inclusive for boilers been complied with

The foregoing is a correct description, Per. J. W. Anderson & Sons Ltd. Manufacture.

Dates of Survey { During progress of work in shops - - 1938 Feb. 3. 14. 23 Mar. 2. 9. 15. 22 Are the approved plans of boiler and superheater forwarded herewith Yes  
while building { During erection on board vessel - - - Apr. 7 June 20 July 8. 14 Aug 4 Total No. of visits 13  
Sep. 20

Is this Boiler a duplicate of a previous case No If so, state Vessel's name and Report No.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This Boiler has been built under

Special Survey in accordance with the Rules and approved plan.

Materials and workmanship good  
This Boiler is to the order of George Brown & Co (Maine) Ltd Greenock and intended for their Yard No 207

The Boiler has been fitted on board M.V. "Africa Shell" at Greenock. J. W. Anderson 3/2/39

Rob 25/9/38

Survey Fee ... £ 4 : 4 : 0 } When applied for, 27 SEP 1938  
Travelling Expenses (if any) £ : : } When received, 16th Nov. 1938

S. H. Macdonald  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 29 SEP 1938 JMT  
Assigned TRANSMIT TO LONDON

GLASGOW 14 FEB 1939  
SEE ACCOMPANYING MACHINERY REPORT.

