

REPORT ON BOILERS.

No. 13889

21 NOV 1929

Received at London Office

Date of writing Report 20. 11. 1929 When handed in at Local Office 20. 11. 1929 Port of MIDDLESBROUGH.

No. in Survey held at Reg. Book.

STOCKTON

Date, First Survey 17 July

Last Survey

14. 11. 1929

on the donkey boiler for the new steel S.S. "Anglo African"

(Number of Visits 12)

Gross Tons
Net

Master Built at Sunderland By whom built Shat Bros. Yard No. When built

Engines made at By whom made Engine No. When made

Boilers made at Stockton By whom made Riley Bros. (Boilermakers) Ltd Boiler No. 5887 When made 1929

Nominal Horse Power Owners Port belonging to

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Appleby Iron Co. Ltd

(Letter for Record S.)

Total Heating Surface of Boilers 1330 ft²

Is forced draught fitted no

Coal or Oil fired coal

No. and Description of Boilers 1 S.B.

Working Pressure 120

Tested by hydraulic pressure to 230 lbs. Date of test 14. 11. 29 No. of Certificate 6750. Can each boiler be worked separately

Area of Firegrate in each Boiler 40 ft² No. and Description of safety valves to each boiler 2 Super spring loaded

Area of each set of valves per boiler (per Rule 12.4" as fitted 14.18" Pressure to which they are adjusted 120 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 18"

Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating on tween decks.

Is the bottom of the boiler insulated no

Largest internal dia. of boilers 12'-0" Length 10'-6"

Shell plates: Material steel

Tensile strength 28/32

Thickness 11/16" Are the shell plates welded or flanged no

Description of riveting: circ. seams end DR. inter.

long. seams T.R.D.B.S. (4 wires) Diameter of rivet holes in circ. seams 15/16" long. seams 13/16"

Pitch of rivets 3 3/8"

Percentage of strength of circ. end seams plate 68.6 rivets 54.6

Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 84.9 rivets 86.3 combined 91.3

Working pressure of shell by Rules 120 lbs.

Thickness of butt straps outer 17/32" inner 21/32"

No. and Description of Furnaces in each Boiler 2 Plain

Tensile strength 26/30

Smallest outside diameter 45"

Length of plain part top 6'-5 3/4" bottom 7'-1 1/4" Thickness of plates crown 21/32" bottom 3/32"

Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom

Working pressure of furnace by Rules 120 lbs.

End plates in steam space: Material steel Tensile strength 26/30

Thickness 25/32" Pitch of stays 16 1/2" x 15 1/2"

How are stays secured D.N.W.

Working pressure by Rules 120 lbs.

Tube plates: Material front steel back steel

Tensile strength 26/30

Thickness 25/32"

Mean pitch of stay tubes in nests 10 1/4"

Pitch across wide water spaces 14 1/4" x 8 3/4"

Working pressure front 149 lbs. back 130 lbs.

Girders to combustion chamber tops: Material steel

Tensile strength 28/32

Depth and thickness of girder

at centre 7' x 5 1/8" (double) Length as per Rule 31"

Distance apart 8 1/2"

No. and pitch of stays

in each 2 - 9 1/2" Working pressure by Rules 128 lbs.

Combustion chamber plates: Material steel

Tensile strength 26/30 Thickness: Sides 9/16" Back 19/32" Top 9/16" Bottom 1 1/16"

Pitch of stays to ditto: Sides 9 1/2" x 8 1/2" Back 10" x 9 3/4" Top 9 1/2" x 8 1/2"

Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 124 lbs.

Front plate at bottom: Material steel

Tensile strength 26/30

Thickness 3/32" Lower back plate: Material steel

Tensile strength 26/30

Thickness 25/32"

Pitch of stays at wide water space 14 1/4" x 9 3/4"

Are stays fitted with nuts or riveted over nuts

Working Pressure 166 lbs.

Main stays: Material steel

Tensile strength 28/32

Diameter At body of stay, or Over threads 2 1/4"

No. of threads per inch 6

Area supported by each stay 268 in²

Working pressure by Rules 129 lbs.

Screw stays: Material steel

Tensile strength 26/30

Diameter At turned off part, or Over threads 1 3/8"

No. of threads per inch 9

Area supported by each stay 80 3/4 in²

Working pressure by Rules **125 lbs.** Are the stays drilled at the outer ends **no** Margin stays: Diameter { At turned off part, **1 5/8"** or Over threads **1 5/8"** ✓
 No. of threads per inch **9** ✓ Area supported by each stay **118 sq** Working pressure by Rules **128 lbs.**
 Tubes: Material **iron** External diameter { Plain **3 1/4" to 3 7/16"** Thickness { **8 w.g.** No. of threads per inch **9** ✓
 Pitch of tubes **4 1/2" x 4 3/8"** ✓ Working pressure by Rules **p. 230 lbs. s. 169 lbs.** Manhole compensation: Size of opening in shell plate **20" x 16"** ✓ Section of compensating ring **7" x 15"** ✓ No. of rivets and diameter of rivet holes **40- 5/16"** ✓
 Outer row rivet pitch at ends **6"** ✓ 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 { 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 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 22 inclusive for boilers been complied with

Yes FOR
RILEY BROS. (BOILERMAKERS) LIMITED.
 The foregoing is a correct description,
J. B. Shields SECRETARY Manufacturer.

Dates of Survey { During progress of work in shops - - - **1929 July 17, 19, 20 Aug 26 Sep 2, 5, 12, 20 Oct 2, 9 Nov 6, 12, 14** Are the approved plans of boiler and superheater forwarded herewith **Yes** (If not state date of approval.)
 while building { During erection on board vessel - - -
 Total No. of visits **12**

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

This boiler is a duplicate of then: Riley's No 5881 (Mab. Rpt. No 13744).

The materials and workmanship are good.

This boiler has been built under special survey in accordance with the Rules and approved Plan. It will be fitted aboard at Sunderland.

Drum, Boilers & mountings received from Riley Bros.
 Drum, Boilers secured in place, examined under steam & safety valves adjusted.

Survey Fee ... £ **8-18-0** When applied for, **Monthly** 1929
 Travelling Expenses (if any) £ : When received, 1929

A. J. Mac William Bates.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **TUE 24 DEC 1929**

Assigned

See Report attached



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