

# REPORT ON BOILERS.

No. 13349  
13 SEP 1928

Received at London Office - 2 III 1928

Date of writing Report 30-6-1928 When handed in at Local Office 30-6-1928 Port of MIDDLESBROUGH

No. in Reg. Book. Survey held at Stockton Date, First Survey 25-5-28 Last Survey 29-6-1928  
on the S.T. "MUDA" (Number of Visits 7) Tons {Gross 82.17 Net ✓

Master Built at Leith By whom built H. Robertson & Co. Yard No. 109 When built 1928  
Engines made at Boatbridge By whom made W. Beardmore & Co. Ltd. Engine No. 647 When made 1928  
Boilers made at Stockton By whom made Riley Bros (Boilermakers) Ltd. Boiler No. 5829 When made 1928  
Nominal Horse Power 54. Owners Beira Boating Co. Ltd. Port belonging to London.

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

Manufacturers of Steel Wm. Beardmore & Co. (Letter for Record 5)

Total Heating Surface of Boilers 1080 sq. ft. Is forced draught fitted no. Coal or Oil fired Coal.

No. and Description of Boilers One S.B. Working Pressure 140 lbs.

Tested by hydraulic pressure to 260 lbs. Date of test 29-6-28 No. of Certificate 6654. Can each boiler be worked separately

Area of Firegrate in each Boiler 36 sq. ft. No. and Description of safety valves to each boiler Double - Spring Loaded.

Area of each set of valves per boiler {per Rule 8.64 sq. ft. as fitted 9.8 sq. ft. Pressure to which they are adjusted 143 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 9" 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 No.

Largest internal dia. of boilers 10' 10 1/2" Length 10' 3" Shell plates: Material Steel - Tensile strength 29/33

Thickness 3/4" Are the shell plates welded or flanged no. Description of riveting: circ. seams {end D.R. inter. ✓

Long. seams T.R.D.B.S (4 rivets) Diameter of rivet holes in {circ. seams 1 1/16" long. seams 15/16" Pitch of rivets {3 1/4" 6 1/2" 5 3/4"

Percentage of strength of circ. end seams {plate 67.3 rivets 43.4 Percentage of strength of circ. intermediate seam {plate 83.7 rivets 95.1 Working pressure of shell by Rules 148 lbs.

Percentage of strength of longitudinal joint {plate 83.7 rivets 95.1 combined 91.1

Thickness of butt straps {outer 1/2" inner 5/8" No. and Description of Furnaces in each Boiler 2 Corrugated

Material Steel - Tensile strength 26/30 Smallest outside diameter 3' 2 1/16"

Length of plain part {top bottom ✓ Thickness of plates {crown 13/32 bottom 3/2 Description of longitudinal joint Weld

Dimensions of stiffening rings on furnace or c.c. bottom ✓ Working pressure of furnace by Rules 151 lbs.

End plates in steam space: Material Steel - Tensile strength 26/30 Thickness 3/4" Pitch of stays 15 x 14"

How are stays secured D.N.W. Working pressure by Rules 145 lbs.

Tube plates: Material {front back Steel - Tensile strength {26/30 Thickness {3/4 2 1/32 Working pressure {front 140 lbs. back 195 lbs.

Mean pitch of stay tubes in nests 10 3/8" Pitch across wide water spaces 14" Working pressure {front 140 lbs. back 195 lbs.

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

at centre 6 3/4 x 7/8 (double) Length as per Rule 2' 5" Distance apart 8" No. and pitch of stays

in each 2 - 8 1/2" Working pressure by Rules 142 lbs. Combustion chamber plates: Material Steel -

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

Pitch of stays to ditto: Sides 8 1/4 x 8 1/2" Back 8 3/8 x 9 1/8" Top 8 x 8 1/2" Are stays fitted with nuts or riveted over nuts.

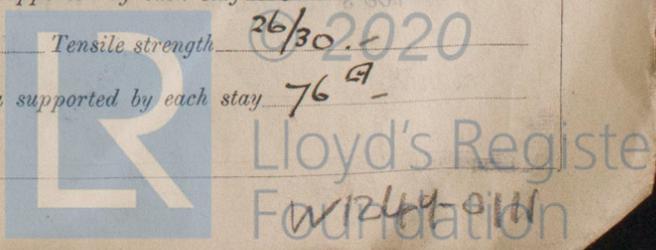
Working pressure by Rules 14 lbs. Front plate at bottom: Material Steel - Tensile strength 26/30 Thickness 3/4" Lower back plate: Material Steel - Tensile strength 26/30 Thickness 3/4"

Pitch of stays at wide water space 14 x 8 3/8" Are stays fitted with nuts or riveted over nuts

Working Pressure 171 lbs. Main stays: Material Steel - Tensile strength 28/32

Diameter {At body of stay or Over threads 2 3/8" No. of threads per inch 6 Area supported by each stay 210 sq. in.

Working pressure by Rules 144 lbs. Screw stays: Material Steel - Tensile strength 26/30 Diameter {At turned off part or Over threads 1 1/2" No. of threads per inch 9 Area supported by each stay 76 sq. in.



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Working pressure by Rules 164 lbs Are the stays drilled at the outer ends no Margin stays: Diameter 1 5/8  
 No. of threads per inch 9 Area supported by each stay 96 sq Working pressure by Rules 158 lbs  
 Tubes: Material iron External diameter 3 1/4 to 3 5/16 Thickness 9 WG No. of threads per inch 9  
 Pitch of tubes 4 3/8 x 4 3/8 Working pressure by Rules p. 180 s. 299 lbs Manhole compensation: Size of opening  
 shell plate 20 x 16 Section of compensating ring 7 x 1 No. of rivets and diameter of rivet holes 40 - 1 1/16  
 Outer row rivet pitch at ends 7 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  
 Internal diameter Working pressure by Rules Thickness of crown No. and diameter  
 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  
 Number of elements Material of tubes Steel castings  
 Material of headers Tensile strength Thickness Can the superheater be shut off  
 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,  
 J. B. Shields SECRETARY

Dates of Survey 1928 During progress of work in shops - - May 25, Jun 6, 8, 15, 19, 22, 29 Are the approved plans of boiler and superheater forwarded herewith Yes  
 while building During erection on board vessel - - 1928 Aug 21, 30, 31 Total No. of visits 10

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
 This boiler has been built under special survey in accordance with the Rules & Approved Plan. The materials & workmanship are good.  
 This boiler has been efficiently fitted on board. When steam was raised, the safety valves were adjusted to 143 lbs per sq inch & found satisfactory.  
 John Houston  
 Leith.

Survey Fee ... £ 4:4:0 When applied for, MONTHLY A/c  
 Travelling Expenses (if any) £ : : When received, 192  
 M. Maun & S. Wood  
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUE. 18 SEP 1928  
 Assigned See Pth. Expt. No. 17448

