

Rpt. 5a.

## REPORT ON BOILERS.

No. 13349  
13 SEP 1928

Received at London Office - 2 JUL 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  
on the S.T. "MUDA"

Date, First Survey 25-5-28 Last Survey 29-6-1928

(Number of Visits 7) Tons { Gross 82.17  
Net ✓

Master Built at Leith By whom built H. Robertson & Co. Ward 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 &amp; Co. (Letter for Record S. / )

Total Heating Surface of Boilers 1080  $\text{sq. ft.}$  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  $\text{sq. ft.}$  No. and Description of safety valves to each boiler Double - Spring Loaded.Area of each set of valves per boiler { per Rule 8.64  $\text{sq. in.}$   
as fitted 9.8  $\text{sq. in.}$  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" x 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 ✓  
rivets JAPercentage of strength of longitudinal joint { plate 83.7.  
rivets 95.1 Working pressure of shell by Rules 148 lbs.  
combined 91.1Thickness 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 ✓ Thickness of plates { crown 13"  
bottom 3/32 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 Steel Tensile strength { 26/30 Thickness { 3/4"  
back 3/32Mean 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 3/8" Top 8 x 8 1/2" Are stays fitted with nuts or riveted over nuts.

Working pressure by Rules 141 lbs. Front plate at bottom: Material Steel Tensile strength 26/30

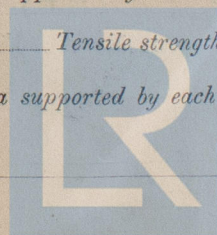
Thickness 3/4" Lower back plate: Material Steel Tensile strength 26/30 Thickness 3/4"

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, 2 1/2" No. of threads per inch 6 Area supported by each stay 210  $\text{sq. in.}$ 

Working pressure by Rules 144 lbs. Screw stays: Material Steel Tensile strength 26/30

Diameter { At turned off part, 1 1/2" No. of threads per inch 9 Area supported by each stay 76  $\text{sq. in.}$ Lloyd's Register  
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Working pressure by Rules 164 lbs Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8"  
Over threads 158 lbs  
No. of threads per inch 9 Area supported by each stay 96 sq Working pressure by Rules 158 lbs  
Tubes: Material iron External diameter { Plain 3 1/4" to 3 5/8" Thickness { 9 WG No. of threads per inch 9  
Stay 3 1/4" to 3 1/2" Thickness { 5/16"  
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 1/8"  
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 { Plate  
Rivets  
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  
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

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

Dates of Survey { During progress of work in shops - - 1928 May 25, Jun 6, 8, 15, 19, 22, 29 Are the approved plans of boiler and superheater forwarded herewith Yes  
(If not state date of approval.)  
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

A. J. Macdonald & S. Wood  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute TUE. 18 SEP 1928  
Assigned See Lth. Expt. No. 17048