

# REPORT ON BOILERS.

No. 8655.

Received at London Office 17 AUG 1928

Date of writing Report 9-8-1928. When handed in at Local Office 1928 Port of Dundee.

No. in Reg. Book. Survey held at Dundee. Date, First Survey 8-7-27. Last Survey 7-8-1928.

4765 on the Steel S.S. "ATLANTIAN" (Number of Visits 71) Gross Tons Net

Master Built at Dundee By whom built Caledon S.B. & E.C. Ltd. Yard No. 316 When built 1928.

Engines made at Dundee By whom made Caledon S.B. & E.C. Ltd. Engine No. 516 When made 1928.

Boilers made at Dundee By whom made Caledon S.B. & E.C. Ltd. Boiler No. 516 When made 1928.

Nominal Horse Power Owners F. Lyland & Co. Ltd. Port belonging to Liverpool

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

Manufacturers of Steel Messrs. Wm Beardmore & Co. Ltd. Messrs Dorman & Lang Ltd. (Letter for Record S.)

Total Heating Surface of Boilers 11748 sq ft Is forced draught fitted Yes Coal or Oil fired Coal

No. and Description of Boilers Four single ended, return tube 45B. Working Pressure 215 lbs

Tested by hydraulic pressure to 375 Date of test 3-2-28 No. of Certificate 1023 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 61.8 sq ft No. and Description of safety valves to each boiler 2 Spring loaded Highlift.

Area of each set of valves per boiler per Rule 10.6 sq ft as fitted 11.8 sq ft Pressure to which they are adjusted 220 lbs. Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes

Smallest distance between boilers or uptakes and bunkers or woodwork 2'-0" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 18" Is the bottom of the boiler insulated Yes

Largest internal dia. of boilers 15'-9" Length 11'-4" Shell plates: Material Steel Tensile strength 28-32 tons

Thickness 1 7/32" Are the shell plates welded or flanged No Description of riveting: circ. seams end D.R. inter.

long. seams T.R.D.B.S. Diameter of rivet holes in circ. seams 1 9/16" long. seams 1 9/16" Pitch of rivets 4.64" 10 3/4"

Percentage of strength of circ. end seams plate 66 rivets 45 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 85.46 rivets 89.7 combined 88 Working pressure of shell by Rules 215 lbs.

Thickness of butt straps outer 1 5/32" inner 1 9/32" No. and Description of Furnaces in each Boiler Three Duplon Section 3cf.

Material Steel Tensile strength 26-30 tons Smallest outside diameter 3'-10 7/16"

Length of plain part top bottom Thickness of plates crown 2 3/32" bottom 1/32" Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 227 lbs.

End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1 5/32" Pitch of stays 16" x 16"

How are stays secured Double nuts Working pressure by Rules 228 lbs.

Tube plates: Material front back Steel Tensile strength 26-30 tons Thickness 13/16"

Mean pitch of stay tubes in nests 8 7/8" 9 3/8" Pitch across wide water spaces 13 1/2" Working pressure front 217 lbs back 273 lbs

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

at centre 9" 2 @ 7/8" Length as per Rule 2'-9 5/32" Distance apart 8 1/2" No. and pitch of stays

n each 3 @ 7 3/4" Working pressure by Rules 236 lbs. Combustion chamber plates: Material Steel

Tensile strength 26-30 tons Thickness: Sides 2 1/32" Back 2 1/32" Top 2 1/32" Bottom 2 7/32"

Pitch of stays to ditto: Sides 7 3/4" x 8 1/2" Back 7 1/2" x 8 3/8" Top 7 3/4" x 8 1/2" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 223 lbs. Front plate at bottom: Material Steel Tensile strength 26-30 tons

Thickness 13/16" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 7/8"

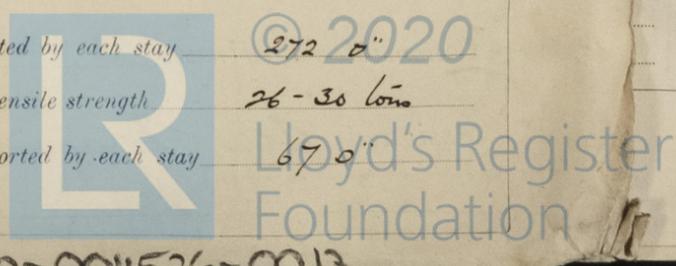
Pitch of stays at wide water space 14 3/4" Are stays fitted with nuts or riveted over Nuts

Working Pressure 217 lbs. Main stays: Material Steel Tensile strength 28-32 tons

Diameter At body of stay, or Over threads 2 5/8" No. of threads per inch 6 Area supported by each stay 272 sq in

Working pressure by Rules 218 lbs. Screw stays: Material Steel Tensile strength 26-30 tons

Diameter At turned off part, or Over threads 1 5/8" No. of threads per inch 9 Area supported by each stay 67 sq in



Working pressure by Rules 227 lbs. Are the stays drilled at the outer ends no Margin stays: Diameter <sup>At turned off part,</sup> 2" or <sup>Over threads</sup> 2"

No. of threads per inch 9 Area supported by each stay 95" 0" Working pressure by Rules 260 lbs.

Tubes: Material Iron External diameter <sup>Plain</sup> 2 1/2" Thickness <sup>W.G.</sup> 3/8", 7/16", 1/2" No. of threads per inch 9

Pitch of tubes 3 3/4" Working pressure by Rules 300 lbs. Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 13 1/2" x 17 1/2" No. of rivets and diameter of rivet holes 32 — 1 9/16"

Outer row rivet pitch at ends 10 3/4" Depth of flange if manhole flanged 3" Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint <sup>Plate</sup> <sup>Rivets</sup>

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 <sup>Tubes</sup> <sup>Steel castings</sup>

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

FOR AND ON BEHALF OF THE GALE & NEAVE ENGINEERING CO. LTD.  
 The foregoing is a correct description,  
 J. J. [Signature] Manufacturer.  
 SECRETARY

Dates of Survey while building: During progress of work in shops - 1927, July 8, Aug. 8, 15, 17, 19, 29, Sept. 7, 12, Oct. 21, 27, Nov. 1, 9, 22, Dec. 22, 29.  
 During erection on board vessel - 1928, Jan. 11, 26, Feb. 3, July 12, Aug. 7

Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) no

Total No. of visits 27

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

The boilers have been built under Special Survey in accordance with the approved plans & Rules.

The materials & workmanship are of good description.

The boilers have been efficiently fitted on board the vessel & examined under working conditions & the safety valves adjusted under steam.

Survey Fee ... .. £ : : When applied for, 192

Travelling Expenses (if any) £ : : When received, 192

[Signature]  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 31 AUG 1928

Assigned see memo on  
Dem R/L 1855

