

# REPORT ON BOILERS.

No. 13091

Received at London Office 4 NOV 1927 FEB 1928

Date of writing Report 2. 11. 1927 When handed in at Local Office 3. 11. 1927 Port of MIDDLESBROUGH.

No. in Survey held at STOCKTON. Date, First Survey 16. 9. 27 Last Survey 2. 11. 1927

No. of opening 4641 Sup of the donkey boiler for S.S. "LLANOVER" (Men: Riley Nos N° 5708). (Number of Visits 9) Tons { Gross Net

Master Built at Sunderland. By whom built Barham & Sons. Yard No. 261 When built 1927.

Engines made at STOCKTON By whom made Blain & Co. Engine No. 1967. When made 1927.

Boilers made at do. By whom made do. Boiler No. 1967. When made 1927.

Nominal Horse Power. Owners Anne Thomas S.S. Co Ltd Port belonging to London.

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel David Colville & Sons. (Letter for Record S.)

Total Heating Surface of Boilers 1550 sq. ft. Is forced draught fitted no. Coal or Oil fired coal.

No. and Description of Boilers One S.E. Marine Working Pressure 120 lbs.

Tested by hydraulic pressure to 230 lbs. Date of test 2. 11. 27. No. of Certificate 6590. Can each boiler be worked separately

Area of Firegrate in each Boiler 50 sq. ft. No. and Description of safety valves to each boiler Pair Springloaded.

Area of each set of valves per boiler { per Rule 14.3 as fitted 14.2 Pressure to which they are adjusted 125 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 2'-0" Is oil fuel carried in the double bottom under boilers no.

Smallest distance between shell of boiler and tank top plating 3'-6" Is the bottom of the boiler insulated no.

Largest internal dia. of boilers 12'-6" Length 11'-0" Shell plates: Material Steel Tensile strength 28/32.

Thickness 23/32 Are the shell plates welded or flanged no. Description of riveting: circ. seams { end D.R. inter. 2 3/4 x 5 1/2

Long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 17/16 long. seams 13/16 Pitch of rivets { 5 15/16

Percentage of strength of circ. end seams { plate 68.7 rivets 42.4 Percentage of strength of circ. intermediate seam { plate rivets

Percentage of strength of longitudinal joint { plate 86.3 rivets 93.6 combined 87.3 Working pressure of shell by Rules 123 lbs.

Thickness of butt straps { outer 9/16 inner 11/16 No. and Description of Furnaces in each Boiler 3 Corrugated

Material Steel Tensile strength 26/30 Smallest outside diameter 2'-11 3/4"

Length of plain part { top bottom Thickness of plates { crown 3/8 bottom Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 147 lbs.

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

How are stays secured D.N.W. Working pressure by Rules 121 lbs.

Tube plates: Material { front Steel back Tensile strength { 26/30 Thickness { 11/16 9/8"

Lean pitch of stay tubes in nests 10" Pitch across wide water spaces 13 9/8" Working pressure { front 123 lbs back 137.

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

Centre 8 x 9/8 (double) Length as per Rule 2'-8" Distance apart 10" No. and pitch of stays

Each 2 - 10 1/2 x 10 Working pressure by Rules 146 lbs. Combustion chamber plates: Material Steel

Tensile strength 26/30 Thickness: Sides 9/8 Back 7/32 Top 9/8 Bottom 9/8"

Pitch of stays to ditto: Sides 10 x 10 1/2 Back 8 1/2 x 9 1/4 Top 10 x 10 1/2 Are stays fitted with nuts or riveted over nuts.

Working pressure by Rules 121 lbs. Front plate at bottom: Material Steel Tensile strength 26/30

Thickness 11/16 Lower back plate: Material Steel Tensile strength 26/30 Thickness 21/32

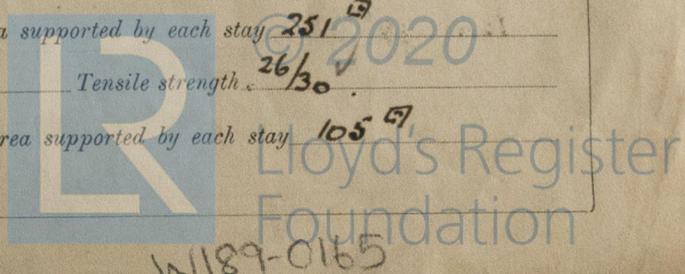
Pitch of stays at wide water space 13 9/8" Are stays fitted with nuts or riveted over nuts.

Working Pressure 120 lbs. Main stays: Material Steel Tensile strength 28/32

Diameter { At body of stay, or Over threads 2 1/8" No. of threads per inch 6 Area supported by each stay 251 sq. in.

Working pressure by Rules 120 lbs. Screw stays: Material Steel Tensile strength 26/30

Diameter { At turned off part, or Over threads 1 3/4" No. of threads per inch 9 Area supported by each stay 105 sq. in.



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Working pressure by Rules 120 lbs. Are the stays drilled at the outer ends no. Margin stays: Diameter <sup>At turned off part.</sup> 1 1/2" or Over threads

No. of threads per inch 9. Area supported by each stay 104 sq Working pressure by Rules 120 lbs.

Tubes: Material iron External diameter <sup>Plain</sup> 3 1/4 to 3 5/16 Thickness <sup>10WG.</sup> 5/16 No. of threads per inch 9.

Pitch of tubes 4 3/8 x 4 1/4 Working pressure by Rules p = 130 s = 257 lbs. Manhole compensation: Size of opening in shell plate 16 x 20 Section of compensating ring 7 x 11 No. of rivets and diameter of rivet holes 44 - 5/16

Outer row rivet pitch at ends 6" 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

How connected to shell Inner radius of crown Working pressure by Rules

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 Yes

**RILEY BROS. (BOILERMAKERS) LIMITED**  
 The foregoing is a correct description,  
*J. S. Shields* Manufacturer.  
**SECRETARY**

Dates of Survey <sup>During progress of work in shops - -</sup> 1927 Sep 16. Oct 3. 6. 12. 18. 21. 24. 28. Are the approved plans of boiler and superheater forwarded herewith Yes (If not state date of approval.)

<sup>while building</sup> <sup>During erection on board vessel - -</sup> Nov 2. Total No. of visits 9

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) 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 by Messrs Blair & Co at Stockton.

This boiler has been securely fitted aboard and its safety valves adjusted under steam and tested for accumulation with satisfactory results.

Survey Fee ... .. £ 10-6-0. When applied for, **MONTHLY A/C**

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

*M. J. McA...*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUES. 6 MAR 1928

Assigned See Indb 5<sup>th</sup> 13217

