

# REPORT ON BOILERS.

No. 97977.

10 DEC 1930

Received at London Office

LIVERPOOL

Date of writing Report 19 When handed in at Local Office -8 DEC. 1930 Port of

No. in Reg. Book. 4153 on the Survey held at Birkenhead Date, First Survey Oct 16<sup>th</sup> Last Survey Dec 1<sup>st</sup> 1930

(Number of Visits 12) Tons {Gross 339 Net 180}

Master Built at Dublin By whom built Dublin Dockyard Co Yard No. ✓ When built 1905  
Engines made at Glasgow By whom made Ross & Duncan Engine No. ✓ When made 05  
Boilers made at Birkenhead By whom made Messrs. Cammell Laird & Co Boiler No. 2163 When made 1930  
Nominal Horse Power Owners W.R. Davies S.S. Co Port belonging to Fleetwood

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

Manufacturers of Steel David Colville & Sons Ltd & Edgely Dudley Rm. Letter for Record S ✓

Total Heating Surface of Boilers 1474 sq ft ✓ Is forced draught fitted ho ✓ Coal or Oil fired Coal ✓

No. and Description of Boilers one Cylindrical multitubular Working Pressure 125 lb sq in ✓

Tested by hydraulic pressure to 237 1/2 lb sq in Date of test 8-11-30 No. of Certificate 2375 Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 40 sq ft No. and Description of safety valves to each boiler Two spring loaded ✓

Area of each set of valves per boiler {per Rule 6.6 sq ft as fitted 7.95 sq ft} Pressure to which they are adjusted 130 lb sq in 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 No change Is oil fuel carried in the double bottom under boilers No ✓

Smallest distance between shell of boiler and tank top plating No change Is the bottom of the boiler insulated No ✓

Largest internal dia. of boilers 12'-9" Length 10'-0" Shell plates: Material Steel Tensile strength 28-32 tons sq in ✓

Thickness 25/32" Are the shell plates welded or flanged No ✓ Description of riveting: circ. seams {end DR lap inter. ✓} Pitch of rivets {2.745" 6.3" ✓}

long. seam Jucker double butts Diameter of rivet holes in {circ. seams 15/16" long. seams 15/16" ✓} Percentage of strength of circ. end seams {plate 66 rivets 53 ✓} Percentage of strength of circ. intermediate seam {plate ✓ rivets ✓}

Percentage of strength of longitudinal joint {plate 85.1 rivets 107 combined 91.7 ✓} Working pressure of shell by Rules 130 lb sq in ✓

Thickness of butt straps {outer 5/8" inner 3/4" ✓} No. and Description of Furnaces in each Boiler 2 plain ✓

Material Steel Tensile strength 26-30 tons sq in ✓ Smallest outside diameter 3'-10 1/4" ✓

Length of plain part {top 72 1/2" bottom 72 1/2" ✓} Thickness of plates {crown 2/32" bottom 2/32" ✓} Description of longitudinal joint weld ✓

Dimensions of stiffening rings on furnace or o.c. bottom none Working pressure of furnace by Rules 130 lb sq in ✓

End plates in steam space: Material Steel Tensile strength 26-30 tons sq in Thickness 1 1/16" Pitch of stays 22x17 3/4" ✓

How are stays secured Double nuts & small washers Working pressure by Rules 130 lb sq in ✓

Tube plates: Material {front Steel back Steel ✓} Tensile strength {26-30 tons sq in 26-30 ✓} Thickness {7/8" 13/16" ✓}

Mean pitch of stay tubes in nests 13 5/16" Pitch across wide water spaces 14 1/4" Working pressure {front 135 lb sq in back 134 lb sq in ✓}

Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons sq in Depth and thickness of girder at centre 6 1/4" x 7 1/8" Length as per Rule 29 3/4" Distance apart 8 1/2" No. and pitch of stays in each 209 Working pressure by Rules 130 lb sq in ✓

Combustion chamber plates: Material Steel Tensile strength 26-30 tons sq in Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 7/8" ✓

Pitch of stays to ditto: Sides 9x8 3/4" Back 9x8 3/4" Top 9x8 1/2" Are stays fitted with nuts or riveted over Nutted ✓

Working pressure by Rules 137 1/4 lb sq in ✓ Front plate at bottom: Material Steel Tensile strength 26-30 tons sq in ✓

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26-30 tons sq in Thickness 3/4" ✓

Pitch of stays at wide water space 14 1/4" x 9 3/4" Are stays fitted with nuts or riveted over Nutted ✓

Working Pressure 152 lb sq in ✓ Main stays: Material Steel Tensile strength 28-32 tons sq in ✓

Diameter {At body of stay, 2 5/8" Over threads 2 5/8" ✓} No. of threads per inch 6 Area supported by each stay 390 sq in ✓

Working pressure by Rules 130 lb sq in ✓ Screw stays: Material Steel Tensile strength 26-30 tons sq in ✓

Diameter {At turned off part, 1 3/8" Over threads 1 3/8" ✓} No. of threads per inch 9 Area supported by each stay 790 sq in ✓

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Working pressure by Rules 130 lbs Are the stays drilled at the outer ends No Margin stays: Diameter <sup>At top of plate</sup> 1 7/8" <sup>Over threads</sup> 1 7/8"  
 No. of threads per inch 9 Area supported by each stay 113 sq" Working pressure by Rules 134 lbs  
 Tubes: Material Iron External diameter <sup>Plain</sup> 3 1/4" <sup>Stay</sup> 3 1/4" Thickness 1/2" No. of threads per inch 9  
 Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 198 lbs Manhole compensation: Size of opening in shell plate 21 1/4" x 17 1/4" Section of compensating ring 7 7/8" x 7/8" thick No. of rivets and diameter of rivet holes 52 @ 1 5/16"  
 Outer row rivet pitch at ends 6.3" Depth of flange if manhole flanged 3 1/4" Steam Dome: Material Iron  
 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 22 inclusive for boilers been complied with Yes  
 The foregoing is a correct description,  
**GAMMELL LAIRD AND COMPANY LIMITED** Manufacturer.

Dates of Survey <sup>During progress of work in shops - -</sup> Oct 16, 22, 24, 29, 30, 31 Are the approved plans of boiler and superheater forwarded SECRETARY (If not state date of approval.)  
<sup>while building</sup> <sup>During erection on board vessel - - -</sup> Nov 3, 6, 7, 9, 25 Dec 1 Total No. of visits 12

Is this Boiler a duplicate of a previous case No If so, state Vessel's name and Report No.

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

*This boiler has been constructed under special survey and is in accordance with the Rules and the approved plan. It has been satisfactorily fitted on board and examined under steam & is eligible in my opinion for record of + N.B. 12.30 in Register books*

Survey Fee ... £ 9. 16. 0 When applied for, 9 DEC. 1930  
 Travelling Expenses (if any) £ ... When received, 31. 12. 1930  
 J. J. Milton  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **LIVERPOOL** - 9 DEC. 1930

Assigned + N.B. 12.30

