

# REPORT ON BOILERS.

No. 93783

Received at London Office 29 MAY 1928

24 MAY 1928

Date of writing Report 1928 When handed in at Local Office 24 MAY 1928 Port of Liverpool  
 No. in Survey held at Birkenhead Date, First Survey 1st June 127 Last Survey 16th May 1928  
 Name of vessel S.S. 'Gretafield' (Number of Visits 137) Gross Tons 10190  
 Net Tons 6070  
 Built at Birkenhead By whom built Messrs Cammell Laird & Co No. 931 When built 1928  
 Engines made at Birkenhead By whom made Messrs Cammell Laird & Co Engine No. 931 When made 1928  
 Boilers made at Do By whom made Do Boiler No. 931 When made 1928  
 Indicated Horse Power 794 Owners Hunting & Son Port belonging to Newcastle

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

RETAIN

Manufacturers of Steel J. Colville & Sons (Letter for Record 15)  
 Heating Surface of Boilers 4474 sq ft Is forced draught fitted Yes Fuel oil  
 Description of Boilers Two single ended return tube cylindrical Working Pressure 180 lb sq in  
 Test pressure by hydraulic pressure to 320 lb Date of test 28.10.27 No. of Certificate 2297  
 Can each boiler be worked separately Yes  
 Description of safety valves to each boiler Two @ 2 1/2" dia' Spring loaded  
 No. and Description of safety valves to each boiler Two @ 2 1/2" dia' Spring loaded  
 Pressure to which they are adjusted 180 lb Are they fitted with easing gear Yes  
 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 39" Is oil fuel carried in the double bottom under boilers Yes  
 Smallest distance between shell of boiler and tank top plating 30" Is the bottom of the boiler insulated Yes  
 Smallest internal dia. of boilers 13' 9 7/8" Length 12' 6" Shell plates: Material steel Tensile strength 28-32 tons sq in  
 Thickness 1 3/32" Are the shell plates welded or flanged No Description of riveting: circ. seams Double R. lap.  
 Diameter of rivet holes in circ. seams 1 3/16" Pitch of rivets 3.047" circ.  
long. seams 1 3/16" 8.337" long.  
 Percentage of strength of circ. end seams plate 61.7% Percentage of strength of circ. intermediate seam plate 85.7%  
rivets 57.7% combined 89.2% Working pressure of shell by Rules 183.5 lb sq in  
3 Cf.  
 No. and Description of Furnaces in each Boiler Three corrugated (Suspension' Bull)  
 Tensile strength 26/30 tons sq in Smallest outside diameter 3' 2 1/4"  
 Thickness of plates 1 3/32" Description of longitudinal joint weld  
 Working pressure of furnace by Rules 186 lb sq in  
 Plates in steam space: Material steel Tensile strength 26/30 tons sq in Thickness 1 3/16" Pitch of stays 20" x 20"  
 Are stays secured Double nuts & plain washers Working pressure by Rules 186 lb sq in  
 Plates: Material steel Tensile strength 26-30 tons sq in Thickness front 3/32"  
back 3/16" Working pressure front 184 lb sq in  
back 213 lb sq in  
 Pitch of stay tubes in nests 9 1/16" Pitch across wide water spaces 13 3/4" Working pressure front 184 lb sq in  
back 213 lb sq in  
 Material steel Tensile strength 28-32 tons sq in Depth and thickness of girder  
 Length as per Rule 36 19/32" Distance apart 9 1/2" No. and pitch of stays  
 Working pressure by Rules 183 lb sq in Combustion chamber plates: Material steel  
 Thickness: Sides 2 1/32" Back 2 1/32" Top 2 1/32" Bottom 7/8"  
 Are stays fitted with nuts or riveted over nuts  
 Working pressure by Rules 185 lb sq in Front plate at bottom: Material steel Tensile strength 26/30 tons sq in  
 Lower back plate: Material steel Tensile strength 26-30 tons sq in Thickness 27/32"  
 Are stays fitted with nuts or riveted over nuts  
 Main stays: Material steel Tensile strength 28-32 tons sq in  
 No. of threads per inch 6 Area supported by each stay 400  
 Working pressure by Rules 196 lb sq in Screw stays: Material steel Tensile strength 26-30 tons sq in  
 No. of threads per inch 9 Area supported by each stay 81 sq in + 68.8 sq in girder

Working pressure by Rules 220 lb Are the stays drilled at the outer ends no Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \left. \begin{array}{l} 1 \frac{1}{8}'' \\ 1 \frac{1}{8}'' \end{array} \right.$

No. of threads per inch 9 Area supported by each stay 990'' Working pressure by Rules 214 lb

Tubes: Material B3B Iron lap welded External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \left. \begin{array}{l} 2 \frac{3}{4}'' \\ 2 \frac{3}{4}'' \end{array} \right.$  Thickness Plain 1/8 WS No. of threads per inch 9

Pitch of tubes 3 7/8 Working pressure by Rules 188 lb Manhole compensation: Size of opening

shell plate 2 1/4 x 17 1/4 Section of compensating ring 8 3/4 x 1 7/32 No. of rivets and diameter of rivet holes 46 @ 1 7/16 dia

Outer row rivet pitch at ends 8 3/8 Depth of flange if manhole flanged 3 1/4 Steam Dome: Material

Tensile strength  Thickness of shell  Description of longitudinal joint

Diameter of rivet holes  Pitch of rivets  Percentage of strength of joint  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. \left. \begin{array}{l} \text{Rivets} \\ \text{Rivets} \end{array} \right.$

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  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right. \left. \begin{array}{l} \text{Steel castings} \\ \text{Steel castings} \end{array} \right.$

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 casing 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

The foregoing is a correct description,  
GAMMELL LAURENCE AND COMPANY LIMITED Manufacture

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right. \left. \begin{array}{l} \text{See Machinery Report.} \\ \text{See Machinery Report.} \end{array} \right.$  Are the approved plans of boiler and superheater forwarded herewith yes  
 (If not state date of approval.)

$\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right. \left. \begin{array}{l} \text{See Machinery Report.} \\ \text{See Machinery Report.} \end{array} \right.$  Total No. of visits 137

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

*These Donkey boilers have been constructed under special survey and are in accordance with the Rules & approved plan. They have been satisfactorily fitted aboard of 'Gretapfield', examined under steam when safety valves adjusted.*

Survey Fee ... .. £ 27 : 8 : 0 } When applied for, 25 MAY 1928  
 Travelling Expenses (if any) ... .. } When received, 14.6.28

J. S. Milton & W. S. Shiel  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 25 MAY 1928

Assigned See Machy Rpt.



Rpt. 13.  
 RE  
 Date of writing  
 No. in Su  
 Reg. Book.  
 41031 on  
 Built at  
 Owners  
 Electric Li  
 System of  
 Pressure of  
 Direct or A  
 If alternating  
 Has the Auto  
 Generators,  
 are they over  
 Where more  
 series with ea  
 Are all termi  
 short circuited  
 Position of  
 is the ventila  
 if situated  
 are their ax  
 Earthing,  
 their respecti  
 Main Switc  
 a fuse on ea  
 Switchboa  
 are they pro  
 woodwork on  
 are they con  
 permanently  
 with mica o  
 and is the fi  
 Yes  
 bars  
 Main Swi  
 Instrume  
 Earth Te  
 Switches,  
 Joint Bo