

# REPORT ON BOILERS.

No. 93783

Received at London Office

29 MAY 1928

24 MAY 1928

Form of writing Report

192 When handed in at Local Office

Port of

Liverpool

No. in Survey held at

Birkenhead

Date, First Survey

1<sup>st</sup> June 1927

Last Survey

16<sup>th</sup> May 1928

on the

S.S. 'Gretapfield'

(Number of Visits 137)

Gross 10190

Net 6070

By whom built

Birkenhead

By whom made

Messrs. Cammell Laird & Co.

Engine No.

When built 1928

By whom made

Birkenhead

By whom made

Messrs. Cammell Laird & Co.

Engine No.

When made 1928

Boiler No.

Bo

By whom made

Bo

Boiler No.

When made 1928

Principal Horse Power

794

Owners

Hunting & Son

Port belonging to

Liverpool

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

Manufacturers of Steel

J. Colville & Sons

(Letter for Record

5)

Heating Surface of Boilers

4474 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

oil

Pressure and Description of Boilers

Two Single ended return tubes Cylindrical

Working Pressure

180 lb sq in

test pressed by hydraulic pressure to

320 lb

Date of test

28.10.27

No. of Certificate

2297

Can each boiler be worked separately

Yes

No. and Description of safety valves to each boiler

oil fired

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

Least distance between boilers or uptakes and bunkers or woodwork

39"

Is oil fuel carried in the double bottom under boilers

Yes

Least distance between shell of boiler and tank top plating

30"

Is the bottom of the boiler insulated

Yes

Greatest 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

end

Double R. lap.

seams

Double Riv. D. Bulbs

Diameter of rivet holes in

circ. seams

1 3/16"

Pitch of rivets

3.047 circ.

8.337 long.

Percentage of strength of circ. end seams

plate

61.7%

rivets

57.7%

Percentage of strength of circ. intermediate seam

plate

85.7%

rivets

88.6%

Percentage of strength of longitudinal joint

plate

85.7%

rivets

88.6%

Working pressure of shell by Rules

183.5 lb sq in

3 Cf.

No. and Description of Furnaces in each Boiler

7/8"

No. and Description of Furnaces in each Boiler

Three Corrugated (Suspension Bulbs)

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

front

steel

back

Tensile strength

26-30 tons sq in

Thickness

front 3 1/32"

back 3 1/4"

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

plates to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons sq in

Distance apart

9 1/2"

No. and pitch of stays

Length as per Rule

36 19/32"

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"

of stays to ditto: Sides

9" x 9"

Back

9" x 8 3/8"

Top

9 1/2" x 7 1/4"

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

2 7/32"

of stays at wide water space

14 1/4" x 8 3/8"

Are stays fitted with nuts or riveted over

nuts

Main stays: Material

Steel

Tensile strength

28-32 tons sq in

At body of stay, or Over threads

3"

3 1/4"

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

At turned off part, or Over threads

1 3/4"

1 7/8"

No. of threads per inch

9

Area supported by each stay

81 1/2" x 18.8 girders



Working pressure by Rules 220 lb. Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" or Over threads 1 7/8"  
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 { Plain 23 1/4" Thickness Plain 1/8" 1/8" 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 { 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 pit  
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 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, LARK & COMPANY LIMITED Manufacture

Dates of Survey { During progress of work in shops - - } See Machinery Report. Are the approved plans of boiler and superheater forwarded herewith yes  
while building { During erection on board vessel - - } (If not state date of approval.)  
Total No. of visits 137

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

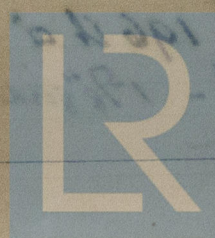
These Donkey boilers have been constructed under special survey and are in accordance with the Rules approved plan. They have been satisfactorily fitted on board of "Gretapfield", examined under steam when safety valves adjusted.

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. Shield  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 25 MAY 1928

Assigned See Mach's Rpt.



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Foundation

Rpt. 13.  
**RE**  
Date of writing  
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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 ventil  
if situated  
are their are  
Earthing,  
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Main Swit  
a fuse on ea  
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are they pro  
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