

Rpt. 5a.

REPORT ON BOILERS.

No. 113157

Received at London Office

27 SEP 1939

Date of writing Report

10

When handed in at Local Office

21 SEP 1939

Port of

LIVERPOOL.

No. in Reg. Book

Survey held at

Date, First Survey

May 26th/39

Last Survey

Sept 13th 1939

(Number of Visits)

9

Gross

180

Tons

Net

on the

Master

Built at

Northwich

By whom built

W.J. Yarwood & Son

Yard No.

625

When built

1939

Engines made at

Northwich

By whom made

W.T. Yarwood & Sons

Engine No.

158

When made

1939

Boilers made at

Birkenhead

By whom made

Cammell Laird & Co. Ltd.

Boiler No.

2210

When made

1939

Nominal Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY OR DONKEY~~

Manufacturers of Steel

Calverley Ltd.

(Letter for Record

(5)✓

Total Heating Surface of Boilers

1445 sq. ft.

Is forced draught fitted

Coal or Oil fired

No. and Description of Boilers

1. S.B.

Working Pressure

200 lb.

Tested by hydraulic pressure to

350 lb.

Date of test

13-9-39

No. of Certificate

2513

Can each boiler be worked separately

Area of Firegrate in each Boiler

53 1/2 sq. ft.

No. and Description of safety valves to each boiler

DOUBLE-1 3/4" dia IMP. HIGH LIFT.

Area of each set of valves per boiler

{per Rule

4.20

{as fitted

4.810

Pressure to which they are adjusted

Are they fitted with easing gear

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

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Largest internal dia. of boilers

13' 0"

Length

10' 6"

Shell plates: Material

Steel

Tensile strength

29/33 Tons.

Thickness

1 5/32"

Are the shell plates welded or flanged

NO.

Description of riveting: circ. seams

{end

D.R.

long. seams

T.R. - D.B.S.

Diameter of rivet holes in

{circ. seams

1 3/16"

Pitch of rivets

{circ. seams

3.01"

Percentage of strength of circ. end seams

{plate

60.6

{rivets

50.0

Percentage of strength of circ. intermediate seam

{plate

85.8

{rivets

85.2

Percentage of strength of longitudinal joint

{plate

85.8

{rivets

85.2

{combined

88.6

Working pressure of shell by Rules

201 lb.

Thickness of butt straps

{outer

1"

No. and Description of Furnaces in each Boiler

3. Beighton Section

Material

Steel

Tensile strength

26-30 Tons.

Smallest outside diameter

3' 2 1/4"

Length of plain part

{top

✓

Thickness of plates

{crown

9/16"

Description of longitudinal joint

WELD.

Dimensions of stiffening rings on furnace or c.c. bottom

Working pressure of furnace by Rules

213 lb.

End plates in steam space: Material

STEEL

Tensile strength

26-30 Tons.

Thickness

1 3/32"

Pitch of stays

18 1/2" x 17"

How are stays secured

D.N. + W.

Working pressure by Rules

15 1/16" 204 lb.

Tube plates: Material

{front

STEEL

Tensile strength

26-30 Tons.

Thickness

7/8"

Mean pitch of stay tubes in nests

11.6"

Pitch across wide water spaces

14 1/4"

Working pressure

{front

213 lb.

{back

206 lb.

Girders to combustion chamber tops: Material

STEEL

Tensile strength

28-32 Tons.

Depth and thickness of girder

at centre

9 1/4" x 1 1/2"

Length as per Rule

2' 5 3/32"

Distance apart

10 1/2" max.

No. and pitch of stays

in each

3 @ 4"

Working pressure by Rules

216 lb.

Combustion chamber plates: Material

STEEL

Tensile strength

26-30 Tons.

Thickness: Sides

1 1/16"

Back

2 1/32"

Top

1 1/16"

Bottom

1 3/16"

Pitch of stays to ditto: Sides

9 1/8" x 7 1/4"

Back

8 3/4" x 8"

Top

10 1/2" x 4"

Are stays fitted with nuts or riveted over

NUTS.

Working pressure by Rules

202 lb.

Front plate at bottom: Material

STEEL

Tensile strength

26-30 Tons.

Thickness

1 5/16"

Lower back plate: Material

STEEL

Tensile strength

26-30 Tons.

Thickness

7/8"

Pitch of stays at wide water space

15"

Are stays fitted with nuts or riveted over

NUTS.

Working Pressure

205 lb.

Main stays: Material

STEEL

Tensile strength

28-32 Tons.

Diameter

{At body of stay,

3"

{Over threads

No. of threads per inch

6

Area supported by each stay

30.40"

Working pressure by Rules

214 lb.

Screw stays: Material

STEEL

Tensile strength

26-30 Tons.

Diameter

{At turned off part,

1 5/8"

{Over threads

No. of threads per inch

9

Area supported by each stay

73.50"

Working pressure by Rules 205 lb. Are the stays drilled at the outer ends NO. Margin stays: Diameter { At turned off part, 1 3/4" & 1 7/8" or Over threads 2 11 lb
No. of threads per inch 9 Area supported by each stay 100.60" Working pressure by Rules 230 lb
Tubes: Material IRON External diameter { Plain 3 1/4" Thickness { N° 8. L. S. G. No. of threads per inch 9
Pitch of tubes 4 1/2" x 4 7/16" Working pressure by Rules 230 lb Manhole compensation: Size of opening in
shell plate 21 1/4" x 17 1/4" Section of compensating ring 9 1/2" x 1 1/4" No. of rivets and diameter of rivet holes 48 - 1 1/4"
Outer row rivet pitch at ends 8 3/4" Depth of flange if manhole flanged 3 1/2" Steam Dome: Material ✓
Tensile strength Thickness of shell Description of longitudinal joint
Diameter of rivet holes 250 Pitch of rivets 1 1/2" Percentage of strength of joint { Plate Rivets
Internal diameter 221 Working pressure by Rules 230 lb Thickness of crown 1/8" No. and diameter of
stays 10 Inner radius of crown 10 Working pressure by Rules 230 lb
How connected to shell 10 Size of doubling plate under dome 10 Diameter of rivet holes and pitch
of rivets in outer row in dome connection to shell 10

Type of Superheater Manufacturers of { Tubes Steel forgings 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 easing gear Working pressure as per
Rules Pressure to which the safety valves are adjusted Hydraulic test pressure:
tubes forgings and 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.

FOR AND ON BEHALF OF
GAMMELL LAIRD & Co., LIMITED

The foregoing is a correct description,

W. H. Sutherland Manufacturer.

Dates of Survey { During progress of work in shops - - May 26, June 5, 15, 19, 27, 28, Sept 5, 12, 13. Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Yes
while building { During erection on board vessel - - - Total No. of visits 9.

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The boiler has been built under Special Survey, to approved plans in accordance with the Society's Rules. Materials and workmanship are good. It is intended for Messrs W. J. Farwood Sons Yard No 625.

Survey Fee ... £ 9 : 12 : 00 When applied for, 21 SEP 1939
Travelling Expenses (if any) £ : : When received, 21 SEP 1939

H. Sutherland
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute LIVERPOOL 26 SEP 1939

Assigned Transmit to London.



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Foundation