

Rpt. 5a.

REPORT ON BOILERS.

No. 119126

Lpool F.E. Report No 119767

28 JUL 1943

Received at London Office

Date of writing Report 22/2 43 When handed in at Local Office 2 MAR 1943

Port of Liverpool

No. in Reg. Book. Survey held at Birkenhead Date, First Survey 12-3-41 Last Survey 1-3-42

on the Main Boiler No 2242 Steam Coaster "C. 614."

Number of Visits 22

Tons { Gross Net

Master Built at Northwich By whom built W J Yarwood & Son Yard No. 713 When built 1943

Engines made at Northwich By whom made W J Yarwood & Son Ltd Engine No. 209 When made 1943

Boilers made at Birkenhead By whom made Cammell Laird & Co Boiler No. 2242 When made 1943

Nominal Horse Power

Owners

Port belonging to

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Colvilles Ltd.

(Letter for Record (5) ✓)

Total Heating Surface of Boilers 1105 sq ft ✓

Is forced draught fitted No

Coal or Oil fired Coal

No. and Description of Boilers 15 ft ✓

Working Pressure 200 lb ✓

Tested by hydraulic pressure to 358 lb ✓

Date of test 19-2-43 ✓

No. of Certificate 2593 ✓

Can each boiler be worked separately ✓

Area of Firegrate in each Boiler 35 sq ft ✓

No. and Description of safety valves to each boiler 2-13 1/4" Improved High Lift ✓

Area of each set of valves per boiler { per Rule 3.23 0" 3.213 as fitted 4.82 ✓

Pressure to which they are adjusted 200 lb ✓ 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 8" ✓

Is oil fuel carried in the double bottom under boilers Open bottom ✓

Smallest distance between shell of boiler and tank top plating Open bottom ✓

Is the bottom of the boiler insulated No

Largest internal dia. of boilers 10'-6" ✓

Length 11'-13 1/4" ✓

Shell plates: Material Steel ✓

Tensile strength 29/33 Ton ✓

Thickness 31/32" ✓

Are the shell plates welded or flanged No ✓

Description of riveting: circ. seams { end DR. integr. ✓

long. seams T.R.-D.B.S. ✓

Diameter of rivet holes in { circ. seams 1" ✓ long. seams 63. ✓

Pitch of rivets { 2.695" ✓ 6.15/16 ✓

Percentage of strength of circ. end seams { plate 63. rivets 48. ✓

Percentage of strength of circ. intermediate seam { plate 85. rivets 84. ✓

Percentage of strength of longitudinal joint { plate 85. rivets 84. combined 88. ✓

Working pressure of shell by Rules 207 lb ✓

Thickness of butt straps { outer 3/4" inner 7/8" ✓

No. and Description of Furnaces in each Boiler Two Brighton Sections ✓

Material Steel ✓

Tensile strength 26-30 Ton ✓

Smallest outside diameter 3'-15/16" ✓

Length of plain part { top ✓ bottom ✓

Thickness of plates { crown 17/32" bottom ✓

Description of longitudinal joint weld ✓

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

Working pressure of furnace by Rules 206 lb ✓

End plates in steam space: Material Steel ✓

Tensile strength 26-30 Ton ✓

Thickness 29/32" ✓

Pitch of stays 14 3/4" x 14 1/4" ✓

How are stays secured D.R. & loose washers ✓

Working pressure by Rules 206 lb ✓

Tube plates: Material { front Steel ✓ back ✓

Tensile strength { 26-30 Ton ✓

Thickness { 29/32" ✓ 27/32" ✓

Mean pitch of stay tubes in nests 10 7/8" ✓

Pitch across wide water spaces 14" ✓

Working pressure { front 214 lb ✓ back 216 lb ✓

Girders to combustion chamber tops: Material Steel ✓

Tensile strength 28-32 Ton ✓

Depth and thickness of girder ✓

at centre 4 1/4" x 3/4" dble. ✓

Length as per Rule 2-5 31/32" ✓

Distance apart 4 3/8" ✓

No. and pitch of stays ✓

in each 2 @ 9 1/2" ✓

Working pressure by Rules 206 lb ✓

Combustion chamber plates: Material Steel ✓

Tensile strength 26-30 Ton ✓

Thickness: Sides 11/16" ✓

Back 21/32" ✓

Top 11/16" ✓

Bottom 7/8" ✓

Pitch of stays to ditto: Sides 9 1/2" x 8" ✓

Back 8 7/8" x 8 1/8" ✓

Top 9 1/2" x 4 3/8" ✓

Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 214 lb ✓

Front plate at bottom: Material Steel ✓

Tensile strength 26-30 Ton ✓

Thickness 29/32" ✓

Lower back plate: Material Steel ✓

Tensile strength 26-30 Ton ✓

Thickness 29/32" ✓

Pitch of stays at wide water space 14 1/4" ✓

Are stays fitted with nuts or riveted over nuts ✓

Working Pressure 250 lb ✓

Main stays: Material Steel ✓

Tensile strength 28-32 Ton ✓

Diameter { At body of stay, or Over threads 2 1/2" ✓

No. of threads per inch 6 ✓

Area supported by each stay 14 3/4" x 14 1/4" ✓

Working pressure by Rules 210 lb ✓

Screw stays: Material Steel ✓

Tensile strength 26-30 Ton ✓

Diameter { At turned off part, or Over threads 1 5/8" - 1 3/4" - 1 7/8" ✓

No. of threads per inch 9 ✓

Area supported by each stay 76" (side) 70" (top) boiler ✓

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Working pressure by Rules 216^{th} Are the stays drilled at the outer ends up Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part, } 1\frac{3}{4}'' \\ \text{Over threads } 1\frac{1}{8}'' \end{array} \right.$ Corners $1\frac{7}{8}''$
No. of threads per inch 9 Area supported by each stay $89.3''$ $102.4''$ Working pressure by Rules 203^{th}
Tubes: Material $Iron$ External diameter $\left\{ \begin{array}{l} \text{Plain } 3'' \\ \text{Stay } 3'' \end{array} \right.$ Thickness $\left\{ \begin{array}{l} 8 \text{ gauge} \\ 3/8'' \end{array} \right.$ No. of threads per inch 9
Pitch of tubes $4\frac{1}{8}'' \times 4\frac{1}{8}''$ Working pressure by Rules $Manhole compensation: Size of opening in$
shell plate $21\frac{1}{4}'' \times 17\frac{1}{4}''$ Section of compensating ring $2\frac{1}{2}'' \times 2\frac{1}{2}'' \times 1''$ No. of rivets and diameter of rivet holes $54 - 1''$
Outer row rivet pitch at ends $6\frac{1}{16}$ Depth of flange if manhole flanged $3\frac{1}{2}''$ Steam Dome: Material
Tensile strength Thickness of shell Description of longitudinal joint
Diameter of rivet holes Pitch of rivets Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$
Internal diameter Working pressure by Rules Thickness of crown No. and diameter of
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 $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right.$
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 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

The foregoing is a correct description,
GAMMELL LAIRD & CO. LIMITED, Manufacturer.
W. H. HENNESSY
Director & Engineering Manager
Dates of Survey $\left\{ \begin{array}{l} \text{During progress of } \text{Mar 12. 26. Apr 9. 20. May 25. June 25. 27.} \\ \text{work in shops - } \text{July 9. 13. 27. Aug 24. Sept 9. 29. Oct 12. 29.} \\ \text{while building } \text{Nov 13. 25. Dec 28. Jan 6. 14. Mar 1.} \end{array} \right.$ Are the approved plans of boiler and superheater forwarded herewith yes
(If not state date of approval.)
Total No. of visits 22

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

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

This boiler has been built under Special Survey to approved plans in accordance with the Society's Rules. Materials and workmanship are good

*Fitted onboard ss "C. 614"
Yarrow No 713*

*C. W. Reed
Liverpool 5/7/43.*

Survey Fee NB £ $7-8-0$ When applied for, 10
Travelling Expenses (if any) £ : : When received, 10

Committee's Minute

Assigned *Transmit to London.*

Suthers
Engineer Surveyor to Lloyd's Register of Shipping.

see minute on file E. R. R. R.
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