

## REPORT ON BOILERS.

No. 67859

RECEIVED

16 DEC 1943

Date of writing Report

10

When handed in at Local Office

13.12.43

Received at London Office

18 DEC 1943

IN D.O.

No. in Survey held at

Reg. Book.

"EMPIRE VERA"

Date, First Survey

7.8.42

Last Survey

13-12-

1943

(Number of Visits 15)

Tons { Gross  
Net

Master

Built at

Selby

By whom built

Cochran &amp; Sons Ltd.

Yard No. 1302

When built 1945

Engines made at

Providence, Rhode Island

By whom made

Franklin Machine &amp; Foundry Co.

Engine No. 1020

When made 1943

Boilers made at

Glasgow

By whom made

Barclay Curle &amp; Co. Ltd.

Boiler No. 42/3

When made 1943

Nominal Horse Power

Owners

Ministry of War Transport

Port belonging to

Managed by United Towing Co. Ltd. &amp; Hull.

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

Manufacturers of Steel

Girdles Ltd.

(Letter for Record S)

Total Heating Surface of Boilers

1786 sq ft

Is forced draught fitted

YES

Coal or Oil fired

Oil

No. and Description of Boilers

One Single-ended

Working Pressure 220 lb.

Tested by hydraulic pressure to

380 lb.

Date of test

18-11-42

No. of Certificate

21255

Can each boiler be worked separately

Area of Firegrate in each Boiler

45 sq ft

No. and Description of safety valves to each boiler

2" I.H.L. donkey

Area of each set of valves per boiler

per Rule 4.74  
as fitted 6.28 sq ft

Pressure to which they are adjusted

226 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

BLK TO DFT = 6'-0" BLK TO FOR'D HD = 20"

Is oil fuel carried in the double bottom under boilers

NO DBT UNDER BLK.

Smallest distance between shell of boiler and tank top plating

NONE

Is the bottom of the boiler insulated

YES

Largest internal dia. of boilers

13'-0"

Length

11'-6"

Shell plates: Material

S

Tensile strength

29/32 tons

Thickness

1 1/4"

Are the shell plates welded or flanged

NO

Description of riveting: circ. seams { end  
inter.

Date

long. seams

DBS TR

Diameter of rivet holes in { circ. seams 1 3/16"  
long. seams 1 5/16"Pitch of rivets { 3.09"  
9/8"Percentage of strength of circ. end seams { plate 65.3  
rivets 45.2Percentage of strength of circ. intermediate seam { plate  
rivetsPercentage of strength of longitudinal joint { plate 85.6  
rivets 87.8  
combined 89.7

Working pressure of shell by Rules

Thickness of butt straps { outer 1"  
inner 1 1/8"

No. and Description of Furnaces in each Boiler

3 Deighton

Material

S

Tensile strength

26/30 tons

Smallest outside diameter

37 1/4"

Length of plain part { top  
bottomThickness of plates { crown 19/32"  
bottom

Description of longitudinal joint

Welded

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

Working pressure of furnace by Rules

End plates in steam space: Material

S

Tensile strength

26/30 tons

Thickness

1 7/32" Pitch of stays 16" x 19"

How are stays secured

DH

Working pressure by Rules

Tube plates: Material { front  
back

S

Tensile strength { 26/30 tons

Thickness { 1 5/16"  
2 5/32"

Mean pitch of stay tubes in nests

9.75"

Pitch across wide water spaces

14"

Working pressure { front  
back

Girders to combustion chamber tops: Material

S

Tensile strength

28/32 tons

Depth and thickness of girder

at centre

2 @ 8 1/2" x 5 7/8"

Length as per Rule

2'-7 1/32"

Distance apart

7"

No. and pitch of stays

in each

2 @ 10"

Working pressure by Rules

Combustion chamber plates: Material

S

Tensile strength

26/30 tons

Thickness: Sides

1 1/16"

Back

1 1/16"

Top

1 1/16"

Bottom

3/4"

Pitch of stays to ditto: Sides

7" x 10"

Back

8" x 9 1/4"

Top

7" x 10"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

Front plate at bottom: Material

S

Tensile strength

26/30 tons

Thickness

1 5/16"

Lower back plate: Material

S

Tensile strength

26/30 tons

Thickness

2 7/32"

Pitch of stays at wide water space

14"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

Main stays: Material

S

Tensile strength

28/32 tons

Diameter { At body of stay,  
or  
Over threads

2 7/8"

No. of threads per inch

6

Area supported by each stay

Working pressure by Rules

Screw stays: Material

S

Tensile strength

26/30 tons

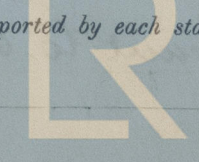
Diameter { At turned off part,  
or  
Over threads

1 3/4"

No. of threads per inch

9

Area supported by each stay

Lloyd's Register  
Foundation

005118-005131-0097



Working pressure by Rules *Are the stays drilled at the outer ends* *no* Margin stays: Diameter *At turned off part, or Over threads* *1 7/8"*

No. of threads per inch *9* Area supported by each stay Working pressure by Rules

Tubes: Material *S* External diameter *Plain 3" Stay 3"* Thickness *8 kg 5/16" + 3/8"* No. of threads per inch *9*

Pitch of tubes *4 1/8" x 4 1/4"* Working pressure by Rules Manhole compensation: Size of opening in shell plate *20 1/2" x 16 1/2"* Section of compensating ring *9 3/4" x 1 1/4"* No. of rivets and diameter of rivet holes *40 @ 1 5/8"*

Outer row rivet pitch at ends *9 1/8"* Depth of flange if manhole flanged *3 7/8"* 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 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 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

valves fitted to free the superheater from water where necessary

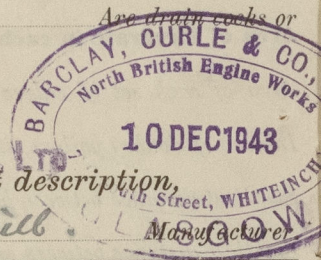
Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with

YES *W.S.L.*

The foregoing is a correct description.

*Alexander Macneil*

*Chief Draughtsman*



Dates of Survey *During progress of work in shops - - 1942 Aug 7, 21, 31, Sep 8, 16, 30, Oct 2, 9, 15, 22, 29, Nov 12, 18, 26, Dec 4, 13*

Are the approved plans of boiler and superheater forwarded herewith *Yes* (If not state date of approval.)

Total No. of visits *15*

Is this Boiler a duplicate of a previous case *Yes*

If so, state Vessel's name and Report No. *B.C. & R. H. 42/2. 40 Rpt. 66511*

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) *This boiler has been built under special survey in accordance with the Rules and approved plans, and the materials and workmanship are good. As this boiler is unallocated, it has been placed in storage meantime. The specification requirements have been carried out satisfactorily.*

*Above boiler installed in "EMPIRE VERA" by Amos & Smith, Hull and tested under working conditions, safety valves adjusted to 226 lb (Ring size P 11/32 S 3/8) accumulation test held. Boiler found satisfactory on completion of all tests. W.S. Shields, Hull.*

Survey Fee ... £ *11 : 18 :*

When applied for *14 DEC 1943*

Travelling Expenses (if any) £ *2 : 19 : 6*

When received, *19*

*Spec? Fee*

*W.S. Shields*  
Engineer Surveyor to Lloyd's Register of Shipping.

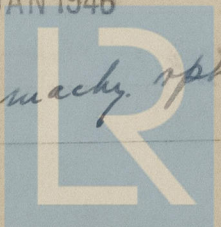
Committee's Minute

GLASGOW *14 DEC 1943*

FRI. 11 JAN 1946

Assigned *Transmit to Wokingham*

*See F.E. machy. rpt*



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