

# REPORT ON BOILERS.

No. 51945

Received at London Office 9 DEC 1931

Form of Writing Report

When handed in at Local Office 2. 12. 1931

Port of Glasgow

No. in Survey held at Book.

Glasgow

Date, First Survey 1<sup>st</sup> Oct 1930 Last Survey 26<sup>th</sup> Nov 1931

No. on the

Steel Twin Screw Steamer "Carthage"

(Number of Visits 148)

Gross 14304.

Tons Net 7810.

ster

Built at Glasgow

By whom built A. Stephen & Sons Ltd.

Yard No. 535 When built 1931.

ines made at

Glasgow

By whom made A. Stephen & Sons Ltd.

Engine No. 535 When made 1931.

lers made at

Glasgow

By whom made A. Stephen & Sons Ltd.

Boiler No. 535 When made 1931.

iminal Horse Power

2994.

Owners P. & O. Steam Navigation Co.

Port belonging to London.

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel Company Newcastle

(Letter for Record S)

al Heating Surface of Boilers

5616 sq ft

Is forced draught fitted

Yps.

Coal or Oil fired oil.

and Description of Boilers

2 Single End Return Tube

Working Pressure 230 lbs.

tested by hydraulic pressure to

395 lbs.

Date of test 20.3.31.

No. of Certificate 18946.

Can each boiler be worked separately Yps.

ea of Firegrate in each Boiler

61.2 sq ft

No. and Description of safety valves to each boiler

2 Improved High Lift

ea of each set of valves per boiler

per Rule 8.5

as fitted 9.8

Pressure to which they are adjusted

230 lbs.

Are they fitted with easing gear Yps.

case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

No.

allest distance between boilers or uptakes and bunkers or woodwork

Will clear.

Is oil fuel carried in the double bottom under boilers Yps.

allest distance between shell of boiler and tank top plating

2'-2"

Is the bottom of the boiler insulated Yps.

rgest internal dia. of boilers

15'-3"

Length

11'-9"

Shell plates: Material

S

Tensile strength 29-33 tons

ickness

1 1/2"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end D.R. overlaps

g. seams

23.37.5 inches in pitch

Diameter of rivet holes in

circ. seams 1 7/16"

long. seams 1 3/4"

Pitch of rivets

4 1/16"

10 1/2"

centage of strength of circ. end seams

plate 64

rivets 42.4

Percentage of strength of circ. intermediate seam

plate

85.4

centage of strength of longitudinal joint

plate 85.1

rivets 84.6

Working pressure of shell by Rules

232.

ickness of butt straps

outer 1 5/16"

inner 1 3/4"

No. and Description of Furnaces in each Boiler

3 Morrison

aterial

S

Tensile strength

26-30 tons

Smallest outside diameter

46 3/32"

ngth of plain part

top

bottom

Thickness of plates

erown 4 1/4"

bottom 3 5/16"

Description of longitudinal joint

Weld.

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

Working pressure of furnace by Rules

235.

d plates in steam space: Material

S

Tensile strength

26-30 tons

Thickness

1 3/8"

Pitch of stays 21 x 17 1/2"

no are stays secured

Nuts inside & outside

Working pressure by Rules

238.

be plates: Material

front S

back S

Tensile strength

26-30 tons

Thickness

15 1/16"

29 3/32"

an pitch of stay tubes in nests

9.06"

Pitch across wide water spaces

13 1/2"

Working pressure

front 231

back 362.

rders to combustion chamber tops: Material

S

Tensile strength

28-32 tons

Depth and thickness of girder

centre

9 1/2" x 1 9/16"

Length as per Rule

2'-8 3/8"

Distance apart

8 3/4"

No. and pitch of stays

each

30 8"

Working pressure by Rules

246

Combustion chamber plates: Material

S

nsile strength

26-30 tons

Thickness: Sides

4 3/4"

Back

4 3/4"

Top

1 1/16"

Bottom

24 3/32"

ch of stays to ditto: Sides

8 1/4" x 8"

Back

8 1/4" x 8"

Top

8 3/4" x 8"

Are stays fitted with nuts or riveted over

Nuts

orking pressure by Rules

238

Front plate at bottom: Material

S

Tensile strength

26-30 tons

ickness

15 1/16"

Lower back plate: Material

S

Tensile strength

26-30 tons

Thickness

29 3/32"

ch of stays at wide water space

13 1/2"

Are stays fitted with nuts or riveted over

Nuts

orking Pressure

234

Main stays: Material

S

Tensile strength

28-32 tons

iameter

At body of stay, 3 3/8"

Over threads

No. of threads per inch

6

Area supported by each stay

367.5 sq in.

orking pressure by Rules

238.

Screw stays: Material

S

Tensile strength

26-30 tons

iameter

At turned off part, 1 3/8"

Over threads

No. of threads per inch

9

Area supported by each stay

660 sq in.

002725-002735-0257

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Working pressure by Rules **231.** ✓ Are the stays drilled at the outer ends **No.** ✓ Margin stays: Diameter { At turned off part,  $1\frac{1}{8}$  ✓  
or Over threads  $1\frac{1}{8}$  ✓  
No. of threads per inch **9.** ✓ Area supported by each stay **84.0"** ✓ Working pressure by Rules **245.** ✓  
Tubes: Material **Top Welded Steel** ✓ Internal diameter { Plain  $3\frac{1}{2}$  ✓ Thickness {  $3\frac{1}{16}$ ,  $3\frac{1}{8}$ ,  $3\frac{1}{4}$  ✓ No. of threads per inch **9.** ✓  
Pitch of tubes  **$3\frac{5}{8} \times 3\frac{5}{8}$**  ✓ Working pressure by Rules **230.** ✓ Manhole compensation: Size of opening in  
shell plate  **$20\frac{1}{2} \times 16\frac{1}{2}$**  ✓ Section of compensating ring  **$28 \times 1\frac{1}{4}$**  ✓ No. of rivets and diameter of rivet holes  **$36 @ 1\frac{1}{32}$**  ✓  
Outer row rivet pitch at ends  **$10\frac{1}{2}$**  ✓ Depth of flange if manhole flanged  **$3\frac{1}{8}$**  ✓ 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 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, 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

ALEXANDER STEPHEN & SONS, LIMITED.

The foregoing is a correct description,

Manufacture

Dates of Survey { During progress of  
work in shops - -  
while building { During erection on  
board vessel - - -

SEE ACCOMPANYING MACHINERY REPORT.

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

Total No. of visits **148**

Is this Boiler a duplicate of a previous case **Yes.** If so, state Vessel's name and Report No. **1/3 "Corfu"**

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

These Boilers have been built under Special Survey and in accordance with the Rules. The materials & workmanship are good.

They have been specifically secured in position on board. The Safety valves have been adjusted and the trials examined under steam and found in order.

Survey Fee ... £  
Travelling Expenses (if any) £

When applied for,

19

When received,

19

See Machinery Report

*John Murray*  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 8 - DEC 1931**

Assigned **SEE ACCOMPANYING MACHINERY REPORT.**



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