

REPORT ON BOILERS.

No. 34401

12 FEB 1946

Received at London Office

Date of writing Report

When handed in at Local Office

11 FEB 1946

Port of

Sunderland.

No. in Survey held at
Rtg. Book.

Sunderland

Date, First Survey

Last Survey

8 Feb 1946

on the

"EMPIRE MOMBASA"

(Number of Visits

Tons

Gross 7319

Net 5179

1946

Built at

By whom built

Shipbuilding Corpth (Leas Brand)

Yard No.

When built

1945

Engines made at

Chesterfield

By whom made

Marshall & Co L^{td}

Engine No.

When made

A 154.

Boilers made at

Sunderland

By whom made

G. Clark (1938) L^{td}

Boiler No.

When made

1362

1945

Nominal Horse Power

Owners

Ministry of War Transport.

Port belonging to

Sunderland.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colvilles L^{td}

(Letter for Record

S.

Total Heating Surface of Boilers

4248 sq ft + 2790 for Opt. = 10,038 total

Is forced draught fitted

Yes.

Coal or Oil fired

Coal

No. and Description of Boilers

Three Single Ended Multitubular return tube marine

Working Pressure

220 lbs/sq. in.

Tested by hydraulic pressure to

380 lbs/sq. in.

Date of test

19/2/45

No. of Certificate

4582

Can each boiler be worked separately

Yes.

Area of Firegrate in each Boiler

55 sq ft

No. and Description of safety valves to each boiler

2 Lockhart Imp' high lift.

Area of each set of valves per boiler

per Rule 6.40"

as fitted 4.950"

Pressure to which they are adjusted

220

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

3'-9"

Is oil fuel carried in the double bottom under boilers

no.

Smallest distance between shell of boiler and tank top plating

2'-3"

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

15'-0 1/16"

Length

11'-6" mean

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

1 15/32"

Are the shell plates welded or flanged

no.

Description of riveting: circ. seams

end

inter.

DR lap.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams 1 1/2"

long. seams

Pitch of rivets

4 1/8"

10 3/8"

Percentage of strength of circ. end seams

plate 63.6

rivets 46.2

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 85.5

rivets 86.2

combined 88.3

Thickness of butt straps

outer 1 1/8"

inner 1 1/4"

No. and Description of Furnaces in each Boiler

Three Corrugated (Leighton)

Material

Steel

Tensile strength

26/30

Smallest outside diameter

3'-9 3/4"

Length of plain part

top

bottom

Thickness of plates

top 1 1/16"

bottom

Description of longitudinal joint

Welded.

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

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

1 13/32"

Pitch of stays

19 3/4" x 19 5/8"

How are stays secured

Leather nuts.

Tube plates: Material

front Steel

back

Tensile strength

26/30

Thickness

15/16"

25/32"

Mean pitch of stay tubes in nests

9 3/16"

Pitch across wide water spaces

14" x 8 1/4"

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32

Depth and thickness of girder

at centre

10 1/2" x 13 1/8" (2)

Length as per Rule

2'-9 1/4"

Distance apart

9 1/4"

No. and pitch of stays

in each

3 @ 8"

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

1 1/16"

Back

1 1/16"

Top

1 1/16"

Bottom

4/8"

Pitch of stays to ditto: Sides

9 1/4" x 8"

Back

9 1/4" x 8"

Top

9 1/4" x 8"

Are stays fitted with nuts or riveted over

nuts.

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

24/32"

Pitch of stays at wide water space

14" x 8"

Are stays fitted with nuts or riveted over

nuts.

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay or Over threads

3 1/4"

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part or Over threads

1 3/4"

No. of threads per inch

9



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Are the stays drilled at the outer ends no Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. 1\frac{7}{8} \times 2$

No. of threads per inch 9.

Tubes: Material S.D. Steel External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 3\frac{3}{4}$ Thickness $\left\{ \begin{array}{l} 8 \text{ LB.} \\ 5/16 - 3/8 \end{array} \right.$ No. of threads per inch 9.

Pitch of tubes 4'4" x 4'8" Manhole compensation: Size of opening in shell plate (In end plate) Section of compensating ring - No. of rivets and diameter of rivet holes -

Outer row rivet pitch at ends - Depth of flange if manhole flanged 4'4" Steam Dome: Material -

Tensile strength - Thickness of shell - Description of longitudinal joint -

Diameter of rivet holes - Pitch of rivets - Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

Internal diameter - Thickness of crown - No. and diameter of stays - Inner radius of crown -

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 N.E.M. (head end) Smoke tube Manufacturers of Stewart & Lloyd.

Number of elements 144. Material of tubes S.D. Steel Internal diameter and thickness of tubes 15 1/4" x 2 1/2"

Material of headers Infed steel Tensile strength 26/30 Thickness 1/8" Can the superheater be shut off and the boiler be worked separately Yes.

Area of each safety valve 3.14 sq" Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes.

Pressure to which the safety valves are adjusted 220 lbs. Are the safety valves fitted with easing gear Yes.

tubes 1500 lbs. forgings and castings 600 lbs. and after assembly in place 440 lbs. Hydraulic test pressure: Yes.

valves fitted to free the superheater from water where necessary Yes.

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

The foregoing is a correct description,
 GEORGE CLARK (1938) LTD. Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right.$ Please see Rpt 4 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) Yes.

$\left\{ \begin{array}{l} \text{while} \\ \text{building} \end{array} \right.$ $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right.$ Total No. of visits Yes.

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. Empire Promé 34184.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under Special Survey in accordance with the approved plan, specification & the rules of the Society. The materials and workmanship are good. On completion they were tested by hydraulic pressure of 380 lbs. & found tight & sound at that pressure. They have been securely fixed on board the vessel & safety valves adjusted to working pressure as above.

In recommendation please see Machy Rpt.

Survey Fee ... £ See Machy Rpt. When applied for, 19

Travelling Expenses (if any) £ See Machy Rpt. When received, 19

J. H. Krasw.
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 1 MAR 1946

Assigned See F.H. machy. rpt.

