

## REPORT ON BOILERS.

No. 33287

Received at London Office - 7 JAN 1942

Date of writing Report

192

When handed in at Local Office

- 5 JAN 1942

Port of

SUNDERLAND.

No. in Survey held at  
Reg. Book.

SUNDERLAND.

Date, First Survey

Last Survey

2 Jan 1942

(Number of Visits

Gross

7037

Tons

Net 4947

on the

S. EMPIRE NEWTON

Master

Built at Sunderland

By whom built Short Bros. Ltd

Yard No. 468 When built 1942

Engines made at Sunderland

By whom made H.E. Mac. Sug. Co. (1938), Ltd

Engine No. 4004 When made 1942

Boilers made at

do.

By whom made

do.

Boiler No. do. When made do.

Nominal Horse Power

510

Owners

M.O.W.T

C. H. Cockburn &amp; Co.

Port belonging to

Sunderland

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Steel Co. of Scotland

(Letter for Record S)

Total Heating Surface of Boilers

7248 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

No. and Description of Boilers

3 S.E. cylindrical

Working Pressure 220 lbs.

Tested by hydraulic pressure to

380 lb

Date of test 22.9.41

No. of Certificate

4377

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 Improved High Lift

Area of each set of valves per boiler

per Rule

6.5 sq ft

as fitted

7.94 sq ft

Pressure to which they are adjusted

220 lb

Are they fitted with casing 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

Is oil fuel carried in the double bottom under boilers

no

Smallest distance between shell of boiler and tank top plating

2'-0 1/2"

Is the bottom of the boiler insulated

yes

Largest internal dia. of boilers

15'-0 1/8"

Length

11'-8 1/32"

Shell plates: Material

Steel

Tensile strength

29/33

Thickness

1 5/32"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

D.R.L.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

long. seams

}

1 1/2"

Pitch of rivets

4/8"

10 3/8"

Percentage of strength of circ. end seams

plate

63.6

rivets

46.1

Percentage of strength of circ. intermediate seam

plate

—

rivets

—

Percentage of strength of longitudinal joint

plate

85.5

rivets

86.2

combined

88.3

Working pressure of shell by Rules

225 lbs.

Thickness of butt straps

outer

1 1/8"

inner

1 1/4"

No. and Description of Furnaces in each Boiler

3 Brighton: Stephen Gurlay neck

Material

Steel

Tensile strength

26/30

Smallest outside diameter

3'-9 3/4"

Length of plain part

top

—

bottom

—

Thickness of plates

crown

bottom

}

1 1/16"

Description of longitudinal joint

weld

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

Working pressure of furnace by Rules

220 lbs.

End plates in steam space: Material

Steel

Tensile strength

26/30

Thickness

1 3/32"

Pitch of stays

19 3/4" x 19 5/8"

How are stays secured

double nuts

Working pressure by Rules

240 lbs.

Tube plates: Material

front

{ Steel

back

Tensile strength

{ 26/30

Thickness

15/16"

25/32"

Mean pitch of stay tubes in nests

9 7/8"

Pitch across wide water spaces

14" x 8 1/4"

Working pressure

front 229 lbs.

back 224 lbs.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28/32

Depth and thickness of girder

at centre

10 1/2" x 13 3/8"

Length as per Rule

3 1/2"

33 3/32"

Distance apart

9 1/4"

No. and pitch of stays

in each

3 x 8"

Working pressure by Rules

262 lbs.

Combustion chamber plates: Material

Steel

Tensile strength

26/30

Thickness: Sides

1 1/16"

Back

1 1/16"

Top

1 1/16"

Bottom

7/8"

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 fitted

Working pressure by Rules

221 lbs.

Front plate at bottom: Material

Steel

Tensile strength

26/30

Thickness

15/16"

Lower back plate: Material

Steel

Tensile strength

26/30

Thickness

27/32"

Pitch of stays at wide water space

14" x 8"

Are stays fitted with nuts or riveted over

nuts fitted

Working Pressure

224 lbs.

Main stays: Material

Steel

Tensile strength

28/32

Diameter

At body of stay,

3 1/8"

Over threads

3 1/2"

No. of threads per inch

6

Area supported by each stay

19 3/4" x 19 5/8"

Working pressure by Rules

220 lbs.

Screw stays: Material

Steel

Tensile strength

26/30

Diameter

At turned off part,

1 3/4"

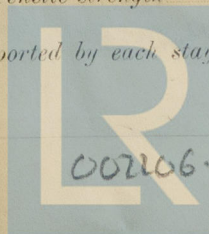
Over threads

No. of threads per inch

9

Area supported by each stay

9 1/4" x 8"

Lloyd's Register  
Foundation



Working pressure by Rules 244 lbs Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 1 7/8" or Over threads

No. of threads per inch 9 Area supported by each stay 11 5/8" x 8" Working pressure by Rules 230 lbs

Tubes: Material Steel External diameter { Plain 3" Stay 3" Thickness { 8 W.G. 3/8", 5/16" No. of threads per inch 9

Pitch of tubes 4 1/4" x 4 1/8" Working pressure by Rules 228 lbs Manhole compensation: Size of opening END

Shell plate 16" x 12" 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 1/4" Steam Dome: Material —

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

Diameter of rivet holes — Pitch of rivets — Percentage of strength of joint { 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 yes.

The foregoing is a correct description, Y. L. Shuibet Manufacturer

Dates of Survey { During progress of work in shops - - } Please see Rpt 4 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

{ During erection on board vessel - - - }

Total No. of visits —

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

These boilers have been constructed under special survey in accordance with the approved plans, Secretary's letters and the requirements of the Rules. Workmanship and materials are good. In recommendation please see Rpt 4.

I. R. Horne

Survey Fee	...	...	£	:	:	When applied for,	192
Travelling Expenses (if any)	£	:	:	:	:	When received,	192

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 23 JAN 1942

Assigned See fe. mach. rpt.