

REPORT ON BOILERS.

No. 13753

Received at London Office

6 OCT 1944

Date of writing Report

19

When handed in at Local Office

19

Port of Belfast.

No. in Survey held at
eg. Book.

Belfast

Date, First Survey 20th March 1943 Last Survey 16th May 1944

on the M.V. "EMPIRE SATURN"

(Number of Visits 15)
Tons { Gross 8224
Net 4789

Built at Belfast

By whom built Harland & Wolff Ltd.

Yard No. 1242. When built 1944

Engines made at Glasgow.

By whom made Harland & Wolff Ltd

A/MS/M. 93.

Boilers made at Belfast.

By whom made Harland & Wolff Ltd

Engine No. 8462/4 When made 1944

Nominal Horse Power 490.

Owners Ministry of War Transport Port belonging to Belfast.

Boiler No. 8459 When made 1943.

MULTITUBULAR BOILERS ~~MAIN~~ ~~AUXILIARY~~ OR DONKEY.

Manufacturers of Steel

Charles & Co.

(Letter for Record 5)

Total Heating Surface of Boilers 2 x 1918 x 5 ft

Is forced draught fitted

yes ✓ Coal Oil fired EXH^T GAS.

No. and Description of Boilers 2 Single ended multitubular

Working Pressure 150/1650

Tested by hydraulic pressure to 275/1650 Date of test 30/7/43 No. of Certificate 1244

Can each boiler be worked separately yes ✓

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

Two. 2 1/4" dia Improved High Lift

Area of each set of valves per boiler

per Rule 14.50"

Pressure to which they are adjusted

150 lb. Are they fitted with easing gear yes.

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

Clearance distance between boilers or uptakes and bunkers or woodwork will clear

Is oil fuel carried in the double bottom under boilers No.

Clearance distance between shell of boiler and tank top plating will clear.

Is the bottom of the boiler insulated yes.

Largest internal dia. of boilers 12'-6"

Length 11'-0"

Shell plates: Material

Steel

Tensile strength 29-33 tons

Thickness 7/8"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end DR

Circ. seams TR. DBS.

Diameter of rivet holes in

circ. seams

1 3/32

long. seams

1 1/32

Pitch of rivets

3.038"

6 1/16"

Percentage of strength of circ. end seams

plate 64

rivets 56.1

plate 84.6

rivets 106.7

combined 90.5

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate 106.7

rivets 90.5

Working pressure of shell by rule 154.6/1650

Thickness of butt straps

outer 1 1/16"

inner 1 3/16"

No. and Description of Furnaces in each Boiler

Yes Corrugated Height Section

Material Steel

Tensile strength 26-30 tons

Smallest outside diameter

42"

Length of plain part

top

bottom

Thickness of plates

crown 1/2"

bottom 1/2"

Description of longitudinal joint

Fire weld.

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

Plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

15/16"

Pitch of stays

various

Are stays secured

Nuts and washers inside and outside

Front plates: Material

Steel

Tensile strength

26-30 tons

Thickness

7/8"

1 1/16"

Pitch of stay tubes in nests

8.54"

Pitch across wide water spaces

13 1/2"

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

Centre 8 1/4" x 2 x 3/4"

Length as per Rule 29.94

Distance apart

11"

No. and pitch of stays

Each 3 @ 7 1/4"

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

3/4"

Back

3/4"

Top

3/4"

Bottom

3/4"

Of stays to ditto: Sides

8 1/4" x 9 3/4"

Back

8" x 9 1/4"

Top

7 1/4" x 11"

Are stays fitted with nuts or riveted over all other riveted.

Plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

15/16"

Of stays at wide water space

13"

Are stays fitted with nuts or riveted over

riveted over.

Stays: Material

Steel

Tensile strength

28-32 tons

At body of stay,

2 1/2"

No. of threads per inch

6

Over threads

Stays: Material

Steel

Tensile strength

26-30 tons

At turned off part,

1 1/2" x 8.2"

No. of threads per inch

9

Over threads

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Are the stays drilled at the outer ends

ho.

Margin stays: Diameter { At turned off part, or Over threads 15/8

No. of threads per inch

9

Tubes: Material

Steel

External diameter

Plain 2 1/2
Stay 2 1/2

Thickness

10/56
1/4, 5/16, 3/8

No. of threads per inch

9

Pitch of tubes

3 3/4 x 3 7/8

shell plate

18" x 14"

Section of compensating ring 2(10 x 3/4 (1 x 1))

No. of rivets and diameter of rivet holes

28 @ 1 7/32

Outer row rivet pitch at ends

9

Depth of flange if manhole flanged

3 3/8 in. packed plate

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

Thickness of crown

No. and diameter

stays

Inner radius of crown

Diameter of rivet holes and pitch

How connected to shell

Size of doubling plate under dome

of rivets in outer row in dome connection to shell

Type of Superheater

Manufacturers of

Tubes
Steel forgings
Steel castings

Internal diameter and thickness of tubes

Number of elements

Material of tubes

Thickness

Can the superheater be shut off a

Material of headers

Tensile strength

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 casing gear

Hydraulic test pressure

Pressure to which the safety valves are adjusted

and after assembly in place

Are drain cocks

tubes

forgings and castings

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

FOR HARLAND AND WOLFF, LIMITED
The foregoing is a correct description,

M. Hanhill
Secretary

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

1944
Mar 20 May 8, 17, 25, 28 June 10, 23
25, 28 July 3, 10, 17, 30
Apr 21 May 16

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

Total No. of visits

Is this Boiler a duplicate of a previous case

If so, state Vessel's name and Report No.

GENERAL REMARKS

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

These boilers have been constructed under Special Survey in accordance with the Society's rules and approved plans. The materials and workmanship are good.

These boilers have been efficiently installed on board the vessel.
L. D. Philston.

These boilers have been examined under full working conditions and their safety valves adjusted under steam to the working pressure with satisfactory results. Compression washers signs. Port Boiler No. 12. P. 3/8" S. 1 1/32" Starboard Boiler No. 1244. P. 2 1/64" S. 3/8"
G. E. Murdoch.

Survey Fee

£ 25 : 10 : -

When applied for,

Q3-5-1944

Traveling Expenses (if any) £

: - : -

When received,

19

Committee's Minute

Assigned

SEE ACCOMPANYING MACHINERY REPORT. No. 68850.

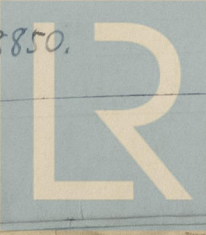
L. Shaw.

Engineer Surveyor to Lloyd's Register of Shipping

MIDSHIP

COLLISION
AFTER P

STEEL



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