

REPORT ON BOILERS.

No. 13212

Received at London Office 16 APR 1942

Date of writing Report

19

When handed in at Local Office

19

Port of Belfast.

Visits included in 7. E. mch.

No. in
Reg. Book

Survey held at

Belfast.

Date, First Survey

Last Survey

19

on the MV. EMPIRE GRACE

(Number of Visits

Gross 3477.9
Tons Net 9440.5

Built at

Belfast.

By whom built

Harland & Wolff Ltd.

Yard No. 1051

When built 1942

Engines made at

Belfast.

By whom made

Harland & Wolff Ltd.

Engine No. 1051

When made 1942

Boilers made at

Belfast.

By whom made

Harland & Wolff Ltd.

Boiler No. 1051

When made 1941

Owners

The Ministry of War Transport

Port belonging to

Belfast.

VERTICAL DONKEY BOILER.

Made at Belfast

By whom made

Harland & Wolff Ltd.

Boiler No. 1051

When made 1941

Where fixed

Upper Deck
Engine Room

Manufacturers of Steel

Colville's Ltd

Total Heating Surface of Boiler

300 sq ft

Is forced draught fitted

Yes

Cooler

Oil fired waste heat

No. and Description of Boilers

Two Clarkson type

Bogate 300

Working pressure

100 lbs sq

Tested by hydraulic pressure to

200 lbs sq

Date of test

30/9/41

6/10/41

No. of Certificates

1146-1147

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

1 1/4" double set main ordinary lift type

Area of each set of valves per boiler

per rule 3.26 sq

as fitted 4.81 sq

Pressure to which they are adjusted

100 lbs sq

Are they fitted with easing gear

Yes

State whether steam from main boilers can enter the donkey boiler

Yes

Smallest distance between boiler or uptake and bunkers

or woodwork

Yes

Is oil fuel carried in the double bottom under boiler

No

Smallest distance between base of boiler and tank top plating

Is the base of the boiler insulated

No

Largest internal dia. of boiler

5' 11 1/8"

Height

17' 1 1/2"

Shell plates: Material

Steel

Tensile strength

26/32 tons

Thickness

13/32"

Are the shell plates welded or flanged

Description of riveting: circ. seams

end top single lift double

inter. Single

long. seams

DR. DBS

Dia. of rivet holes in

circ. seams 25/32"

long. seams 25/32"

Pitch of rivets

top 1 1/8" bottom 2 1/8"

Percentage of strength of circ. seams

plate 56.9

rivets 53.8

of Longitudinal joint

plate 72.75

rivets 126.5

combined

Working pressure of shell by rules

113.6 lbs

Thickness of butt straps

outer 3/8"

inner 3/8"

Shell Crown:

dished partial spherical, ~~flat~~

Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/8"

Radius

66"

Working pressure by rules

100.3 lbs sq

Description of Furnace:

Plain, ~~spherical~~ dished crown

yes

Material

Steel

Tensile strength

26/30 tons

Thickness

3/8"

External diameter

top 4' 7 1/2"

bottom 4' 7 1/8"

Length as per rule

2' 4 1/2"

Working pressure by rules

125.3 lbs sq

Pitch of support stays circumferentially

none

and vertically

Yes

Are stays fitted with nuts or riveted over

Yes

Diameter of stays over thread

1 1/8"

Radius of spherical or dished furnace crown

48"

Working pressure by rule

170.6 lbs

Thickness of Ogee Ring

1 1/8"

Diameter as per rule

D

Working pressure by rule

147.7 lbs

Combustion Chamber: Material

Steel

Tensile strength

26/30 tons

Thickness of top plate

5/8"

Radius if dished

36"

Working pressure by rule

206 lbs

Thickness of plate

25/32"

Diameter if circular

3' 1 9/16"

Length as per rule

7'-0"

Pitch of stays

stays 6"

Are stays fitted with nuts or riveted over

Yes

Diameter of stays over thread

1 1/8"

Working pressure of back plate by rules

115 lbs

Tube Plates: Material

front

Tensile strength

Thickness

Mean pitch of stay tubes in nests

If comprising shell, Dia. as per rule

front

Pitch in outer vertical rows

Dia. of tube holes FRONT

stay

BACK

stay

Is each alternate tube in outer vertical rows a stay tube

Yes

Working pressure by rules

front

back

Girders to combustion chamber tops: Material

Yes

Tensile strength

Depth and thickness of girder at centre

Yes

Length as per rule

Distance apart

No. and pitch of stays in each

Yes

Working pressure by rule

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Crown stays: Material _____ Tensile strength _____ Diameter { at body of stay, _____ or _____ over threads _____
 No. of threads per inch _____ Area supported by each stay _____ Working pressure by rules _____
Screw stays: Material _____ Tensile strength _____ Diameter { at turned off part, _____ or _____ over threads _____ No. of threads per inch _____
 Area supported by each stay _____ Working pressure by rules _____ Are the stays drilled at the outer ends _____
Tubes: Material Steel thinble tubes ✓ External diameter { plain 2 3/4 dia holes ✓ or 6.42 inches ✓ Thickness 4 B.W.G. ✓
 No. of threads per inch _____ Pitch of tubes Vertical ✓ Working pressure by rules as approved ✓
Manhole Compensation: Size of opening in shell plate 16" x 12" ✓ Section of compensating ring 7/8" x 1 1/2" ✓ No. of rivets and diameter _____
 of rivet holes 40 - 1 3/16" ✓ Outer row rivet pitch at ends 3 7/8" ✓ Depth of flange if manhole flanged in shell cover 3" ✓
Uptake: External diameter 21 1/16" ✓ Thickness of uptake plate 7/32" ✓
Cross Tubes: No. none ✓ External diameters { _____ Thickness of plates _____

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

The foregoing is a correct description,
For HARLAND & WOLFF, LIMITED.

W. Manhall
Secretary

Manufacturer.

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

Is the approved plan of boiler forwarded herewith (If not state date of approval.)

Total No. of visits _____

Is this Boiler a duplicate of a previous case yes ✓ If so, state Vessel's name and Report No. EMPIRE HOPE (Yard No. 1050) Rpt No. 130

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under special survey in accordance with the Rules and approved plans
The materials and workmanship are good.
These boilers have been efficiently installed on board, examined under steam and the safety valves adjusted to 100 lbs. accumulation test carried out with satisfactory results
The boilers are eligible in our opinion to have record of + 2 DB 100 lbs.

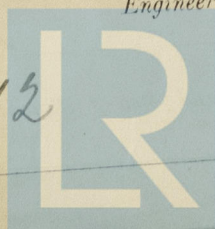
Survey Fee ... £ : : When applied for, 19
 Travelling Expenses (if any) £ : : When received, 19

Shaw - Rhee - Amell
 Engineer Surveyor to Lloyd's Register of Shipping.

FRI. 24 APR 1912

Committee's Minute
 Assigned

See Bel. JE 13212



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 Subject -