

REPORT ON BOILERS.

No. 13111

Received at London Office

Date of writing Report

19

When handed in at Local Office

20. 11. 19

Port of

Belfast.

Visits in A.R. machinery report

No. in Reg. Book.

Survey held at

Belfast

Date, First Survey

Last Survey 12 November 1941

on the

MV. EMPIRE DIAMOND

(Number of Visits)

Gross 8235

Tons Net 4794.

Built at

Belfast

By whom built

Harland & Wolff Ltd

Yard No. 1053

When built 1941

Engines made at

Belfast.

By whom made

Harland & Wolff Ltd

Engine No. 1053

When made 1941

Boilers made at

Belfast

By whom made

Harland & Wolff Ltd

Boiler No. 1053 P.S.

When made 1941

Nominal Horse Power

502

Owners

Ministry of War Transport

Port belonging to

Belfast.

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

Manufacturers of Steel

Messrs Colvilles Ltd.

(Letter for Record)

5

Total Heating Surface of Boilers

3836 Sq ft.

Is forced draught fitted

yes

Coal or Oil fired OIL & EXHAUST GAS

No. and Description of Boilers

Two single ended cylindrical multitubular

Working Pressure

150 lbs/sq in

Tested by hydraulic pressure to

275 lbs/sq in

Date of test

24. 4. 41

No. of Certificate

1137

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

One double improved high lift type

Area of each set of valves per boiler

per Rule as fitted

2 - 2 1/4"

Pressure to which they are adjusted

150 lbs/sq in

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

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

Separate Sole House

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/sq in

Thickness

7/8"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

inter.

long. seams

Diameter of rivet holes in

circ. seams

1 3/32"

Pitch of rivets

3.038"

Percentage of strength of circ. end seams

plate

64

rivets

56.1

Percentage of strength of circ. intermediate seam

plate

rivets

Percentage of strength of longitudinal joint

plate

84.6

rivets

106.7

combined

90.5

Working Pressure of Shell by Rules 154.6 lbs/sq in

Thickness of butt straps

outer 11/16"

inner 13/16"

No. and Description of Furnaces in each Boiler

Two Corrugated "Seighton" section

Material

Steel

Tensile strength

26-30 tons/sq in

Smallest outside diameter

42"

Length of plain part

top

bottom

Thickness of plates

crown

bottom

Description of longitudinal joint

Fire weld.

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

End plates in steam space: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

15/16"

Pitch of stays

various

How are stays secured

nuts & washers inside and outside

Tube plates: Material

front

Steel

Tensile strength

26-30 tons/sq in

Thickness

7/8"

Mean pitch of stay tubes in nests

8.54"

Pitch across wide water spaces

9.47"

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons/sq in

Depth and thickness of girder

at centre

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

Length as per Rule

29.94"

Distance apart

11"

No. and pitch of stays

in each

3 @ 7 1/4"

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness: Sides

3/4"

Back

3/4"

Top

3/4"

Bottom

3/4"

Pitch of stays to ditto: Sides

8 1/4" x 9 3/4"

Back

9 1/4" x 8"

Top

11 x 7 1/4"

Are stays fitted with nuts or riveted over

Marginal & side stays riveted

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

7/8"

Lower back plate: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

15/16"

Pitch of stays at wide water space

13"

Are stays fitted with nuts or riveted over

Riveted over

Main stays: Material

Steel

Tensile strength

28-32 tons/sq in

Diameter

At body of stay, or Over threads

2 1/2"

No. of threads per inch

6

Screw stays: Material

Steel

Tensile strength

26-30 tons/sq in

Diameter

At turned off part, or Over threads

1 1/2", 1 7/8", 2"

No. of threads per inch

9

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Are the stays drilled at the outer ends no.

Margin stays: Diameter { At turned off part, or Over threads 1 5/8"

No. of threads per inch 9

Tubes: Material Weldless Steel

External diameter { Plain 2 1/2" Stay 2 1/2"

Thickness { 10 LSG. 1/4 5/16 3/8

No. of threads per inch 9

Pitch of tubes 3 3/4" x 3 5/8"

shell plate 16 1/2" x 12 1/2"

Section of compensating ring 2 x [10 x 3/4" + (1 x 1)]

No. of rivets and diameter of rivet holes 28 @ 1 7/32 dia holes.

Outer row rivet pitch at ends 9"

Depth of flange if manhole flanged 3 3/8" in and 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 of stays ✓

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 ✓

Manufacturers of { Tubes ✓ Steel forgings ✓ 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 ✓

Area of each safety valve ✓

Is a safety valve fitted to every part of the superheater which can be shut off from the boiler ✓

Pressure to which the safety valves are adjusted ✓

Are the safety valves fitted with easing gear ✓

tubes ✓

forgings and castings ✓

and after assembly in place ✓

Hydraulic test pressure: 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,

Manufacturer. Manhall

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

Are the approved plans of boiler and superheater forwarded herewith 22/2/40 (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. "DERWENTDALE" Report No. 13058, Jan 1/052

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, all safety valves adjusted under steam and accumulation tests carried out with satisfactory results.

Survey Fee £ 25 : - : - When applied for, 20. 11. 10 41.

Travelling Expenses (if any) £ : : When received, 19

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

TUE. 2 DEC 1941

Assigned

See Bel. 7.C. 13111



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