

## REPORT ON BOILERS.

No. 12.276

Received at London Office

DEC 28 1938

Date of writing Report

19

When handed in at Local Office

24. 12. 1938

Port of Belfast

Visits included in 7.2. mch

No. in  
Reg. Book

Survey held at

Belfast

Date, First Survey

Last Survey

19

73547 on the

TW. S. DURBAN CASTLE GIL ENGINES

(Number of Visits)

Tons

Gross

Net

Built at Belfast

By whom built

Harland &amp; Wolff Ltd

Yard No. 987

When built 1938

Engines made at Belfast

By whom made

Harland &amp; Wolff Ltd

Engine No. 987

When made 1938

Boilers made at Belfast

By whom made

Harland &amp; Wolff Ltd

Boiler No. 987

When made 1938

Owners Union Castle Mail Steamship Co

Port belonging to London.

## VERTICAL DONKEY BOILER.

Made at Belfast

By whom made

Harland &amp; Wolff Ltd

Boiler No. 987

When made 1938

Where fixed Up per Dk in E.R.

Manufacturers of Steel

Colvilles Ltd

Total Heating Surface of Boiler

1200 sq ft.

Is forced draught fitted

Yes.

Coal or Oil fired or Both gas

No. and Description of Boilers

One Clarkson Alternative Exhaust gas or oil fired

Working pressure 100 lbs

Tested by hydraulic pressure to

200 lbs

Date of test

31-8-38

No. of Certificate 1049

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler 1-2 1/2 C.I. double opening Marine Improved 44.

Area of each set of valves per boiler

per rule 6.5  
as fitted 9.82 sq ft.

Pressure to which they are adjusted

100 lbs

Are they fitted with easing gear

Yes

State whether steam from main boilers can enter the donkey boiler

Smallest distance between boiler or uptake and bunkers

or woodwork

Is oil fuel carried in the double bottom under boiler

Smallest distance between base of boiler and tank top plating

Is the base of the boiler insulated

No.

Largest internal dia. of boiler

8'-7 1/2"

Height 2.4'

Shell plates: Material

S.

Tensile strength

28/32 tons

Thickness

1/2"

Are the shell plates welded or flanged

Built &amp; trapped ends

Description of riveting: circ. seams

end top S.R. L.A.D.R.

long. seams D.R.

Dia. of rivet holes in

circ. seams 5 1/4"  
long. seams 5 1/2"

Pitch of rivets

2 3/4" 2 7/8"  
3 1/4"

Percentage of strength of circ. seams

plate 57.  
rivets 42.7.

of Longitudinal joint

plate 73.5.  
rivets 98.5.  
combined 96.5

Working pressure of shell by rules

100.5

Thickness of butt straps

outer 7/16"  
inner 7/16"

Shell Crown: Whether complete hemisphere, dished partial spherical, or flat

Yes

Material

S

Tensile strength

24/30 tons

Thickness

27/32"

Radius

7'-0"

Working pressure by rules

102 lbs

Description of Furnace: Plain, spherical, or dished crown

Plain

Material

S

Tensile strength

24/30 tons

Thickness

3/4"

External diameter

top 7'-1 3/8"  
bottom 7'-1 1/2"

Length as per rule

3'-7 1/2"

Working pressure by rules

133 lbs

Pitch of support stays circumferentially

and vertically

Are stays fitted with nuts or riveted over

Diameter of stays over thread

Radius of spherical or dished furnace crown

7'

Working pressure by rule

100.2 lbs

Thickness of Ogee Ring

1"

Diameter as per rule

D 8'-7 3/4"  
d 7'-1 3/4"

Working pressure by rule

100.2 lbs

Combustion Chamber: Material

S

Tensile strength

24/30 tons

Thickness of top plate

3/4"

Radius if dished

5'-0 3/4"

Working pressure by rule

104 lbs

Thickness of back plate

1 3/8"

Diameter if circular

5'-8 1/2"

Length as per rule

10'-11 1/2"

Pitch of stays

Are stays fitted with nuts or riveted over

Diameter of stays over thread

Working pressure of back plate by rules

136.5 lbs

Tube Plates: Material

front  
back

Tensile strength

Thickness

Mean pitch of stay tubes in nests

of comprising shell, Dia. as per rule

front  
back

Pitch in outer vertical rows

Dia. of tube holes FRONT

stay  
plain

BACK

stay  
plain

Is each alternate tube in outer vertical rows a stay tube

Working pressure by rules

front  
back

Girders to combustion chamber tops: Material

Tensile strength

Depth and thickness of girder at centre

Length as per rule

Distance apart

No. and pitch of stays in each

Working pressure by rule

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Foundation

002630-002638-0024



REPORT ON BOILER

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 \_\_\_\_\_

Thimbles  
Tubes: Material S External diameter { plain 4" ✓ stay \_\_\_\_\_ Thickness { 9/32 ✓

No. of threads per inch Plain ✓ Pitch of tubes 8 3/4" x 7.55" Working pressure by rules \_\_\_\_\_

Manhole Compensation: Size of opening in shell plate 12 x 16" Section of compensating ring 5 1/16" x 3/4" No. of rivets and diameter \_\_\_\_\_

of rivet holes 40 x 7/8" Outer row rivet pitch at ends 3 1/2" Depth of flange if manhole flanged Crown plate 3 1/8"

Uptake: External diameter 3' 5 5/8" Thickness of uptake plate 1 1/16"

Cross Tubes: No. \_\_\_\_\_ External diameters { \_\_\_\_\_ Thickness of plates \_\_\_\_\_

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with \_\_\_\_\_

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

*A. J. Marshall* Manufacture  
Secretary

Dates of Survey { During progress of work in shops - - } Is the approved plan of boiler forwarded herewith (If not state date of approval.) \_\_\_\_\_

while building { During erection on board vessel - - } Total No. of visits \_\_\_\_\_

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

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

This boiler was built under special survey & to an approved design. The material and workmanship are good. It was tested by hydraulic pressure, efficiently installed & fastened on an upper deck in the motor room. The safety valves were adjusted under steam, accumulation tests were satisfactory. It is adapted for use of Exhaust gas or oil fuel. In our opinion it is eligible for use on a vessel classed with the Society.

Survey Fee ... When applied for, 19

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

*See machinery report*

Committee's Minute  
Assigned *See FE machy rpt*

TUE 3 JAN 1939

*Charles J. Hunter & R. Lee Arnold*  
Engineer Surveyor to Lloyd's Register of Shipping.

