

REPORT ON BOILERS.

No. 11.353

Received at London Office

-5 SEP 1934

Date of writing Report

19

When handed in at Local Office

4th Sept 1934 Port of BelfastNo. in Survey held at
Reg. Book.

Belfast

Date, First Survey 4th April 1934Last Survey 31st August 1934

(Number of Visits 22)

Gross 10779

Tons Net 6538

on the

TWIN SCREW WAIRANGI

Built at

Glasgow

By whom built

Harland & Wolff Ltd.

Yard No. 924 G. When built 1934

Engines made at

do.

By whom made

do.

Engine No. 924 G. When made 1934

Boilers made at

By whom made

Boiler No.

When made

Owners

Shaw Savill & Albion Co. Ltd.

Port belonging to

Southampton

VERTICAL DONKEY BOILER.

Made at Belfast

By whom made

Harland & Wolff Ltd.

Boiler No. 924 G.

When made 1934 Where fixed

* Forward end of engine room top platform.

Manufacturers of Steel

Bolton's Ltd.

Total Heating Surface of Boiler

2 of 275 sq ft

Is forced draught fitted

No. Exhaust gas

Coal or Oil fired Yes

No. and Description of Boilers

Two Blackston Thimble type Waste Heat

Working pressure 100 lbs.

Tested by hydraulic pressure to

200 lbs.

Date of test

17.8.34

23.8.34

No. of Certificate 979-980

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

Two Spring-loaded

Area of each set of valves per boiler

per rule 3.54 sq ft
as fitted 4.8 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

* Well clear

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

* 1/2" asbestos put down
between boiler
shells & stools.

Largest internal dia. of boiler

5'-11 1/2"

Height of shell 15'-0"

Shell plates: Material

Steel

Tensile strength

28-32 tons

Thickness

1 1/2"

Are the shell plates welded or flanged

at butt ends

Description of riveting: circ. seams

end Single top Double bottom
inter. Single long. seams double

Dia. of rivet holes in

circ. seams 27/32"
long. seams 29/32"

Pitch of rivets

1 1/2"
2 7/8"

Percentage of strength of circ. seams

plate 56.9
rivets 53.5

of Longitudinal joint

plate 72.8
rivets 126.5
combined 108.8

Working pressure of shell by rules

113 lbs.

Thickness of butt straps

outer 3/8"
inner 3/8"

Shell Crown:

Whether complete hemisphere, dished partial spherical, or flat

Yes

Material Steel

Tensile strength

26-30 tons

Thickness

2 1/2"

Radius

5'-6"

Working pressure by rules 118 lbs.

Description of Furnace: Plain, spherical, or dished crown

Yes

Material Steel

Tensile strength 26-30 tons

Thickness

3/4"

External diameter

top
bottom

Length as per rule

Working pressure by rules

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

5'-6"

Working pressure by rule 100 lbs.

Thickness of Ogee Ring

Diameter as per rule

D
d

Working pressure by rule

Combustion Chamber: Material

Steel

Tensile strength

26-30 tons

Thickness of top plate

3/8"

Radius if dished

36"

Working pressure by rule

Thickness of back plate

1/16"

Diameter if circular

36"

Length as per rule

72"

Pitch of stays

Thimble 6' x 5.337" long

Are stays fitted with nuts or riveted over

Diameter of stays over thread

Thimble 2 3/4"

Thickness No. 9. 14.5

Working pressure of back plate by rules

210 lbs.

Tube Plates: Material

front
back

Tensile strength

Thickness

Mean pitch of stay tubes in nests

If comprising shell, Dia. as per rule

front
back

Pitch in outer vertical rows

Dia. of tube holes FRONT

stay
plain

BACK

stay
plain

Working pressure by rules

front
back

Is each alternate tube in outer vertical rows a stay tube

Tensile strength

Length as per rule

Working pressure by rule

Girders to combustion chamber tops: Material

Depth and thickness of girder at centre

Distance apart

No. and pitch of stays in each

send Gls.

W1158-0180

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Lloyd's Register
Foundation

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 _____ External diameter { plain _____ stay _____ Thickness { _____
 No. of threads per inch _____ Pitch of tubes _____ Working pressure by rules _____
Manhole Compensation: Size of opening in shell plate $16" \times 12"$ ✓ Section of compensating ring $4\frac{3}{4}" \times \frac{13}{16}"$ ✓ No. of rivets and diameter _____
 of rivet holes $38 - \frac{13}{16}"$ ✓ Outer row rivet pitch at ends $2\frac{7}{8}"$ ✓ Depth of flange if manhole flanged $3"$ ✓
Uptake: External diameter $21\frac{1}{4}"$ ✓ Thickness of uptake plate $\frac{17}{32}"$ ✓
Cross Tubes: No. _____ External diameters { _____ Thickness of plates _____
 Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes

The foregoing is a correct description,
 FOR HARLAND AND WOLFE LIMITED
A. Marshall Manufacturer.

1934
 Dates of Survey { During progress of work in shops - - Apr 14, 19, 24, 27, May 2, 15, 28 June 26 Is the approved plan of boiler forwarded herewith Yes
 while building { During erection on board vessel - - July 4 Aug 1, 2, 6, 7, 8, 9, 10, 13, 14, 20, 23, 30, 31 (If not state date of approval.)
 Total No. of visits 22

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
 These boilers were constructed under Special Survey & to an approved design. The materials and workmanship are sound & good. They were tested by hydraulic pressure in accordance with the rules with satisfactory results and have been forwarded to Loran for installation.
 * The boilers have been fitted in the vessel at forward end of engine room - top platform level - examined under steam & safety valves adjusted as above.
J. B. Boyle
Glasgow, 8/2/35.

Survey Fee ... £ 8 : 8 : } When applied for, 4th Sept. 1934
 Travelling Expenses (if any) £ : : } When received, 18.9.34

Alfred Ames
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 12 FEB 1935**
 Assigned SEE ACCOMPANYING MACHINERY REPORT.

