

REPORT ON BOILERS.

No. 11966

NOV 10 1937

Received at London Office JUN 29 1937

Date of writing Report

1937

When handed in at Local Office 28. 6. 1937

Port of Belfast

No. in Survey held at
Reg. Book.Date, First Survey 7th Oct. 1936

Last Survey 17 June 1937

1838 on the

M.V. "Broomdale"

(Number of Visits 31)

Gross 8334.22.
Net 4967.35.

Master

Built at Govan

By whom built Harland & Wolff Ltd.

Yard No. 973G When built 1937.

Engines made at

Finneston

By whom made

Harland & Wolff Ltd.

Engine No. 973G When made 1937

Boilers made at

Belfast

By whom made

Harland & Wolff Ltd.

Boiler No. 973G When made 1937.

Nominal Horse Power

Owners

The Admiralty.

Port belonging to London.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colvilles & Co.

(Letter for Record S. ✓)

Total Heating Surface of Boilers

1495⁰⁰ ✓

Is forced draught fitted Yes ✓

Coal or Oil fired Oil

No. and Description of Boilers

One S.E. cylindrical ✓

Working Pressure 150 lbs ✓

Tested by hydraulic pressure to

275 lbs

Date of test 17.6.37

No. of Certificate 1032

Can each boiler be worked separately Yes ✓

Area of Firegrate in each Boiler

✓

No. and Description of safety valves to each boiler

One 2" double spring High Lift (app't) ✓

Area of each set of valves per boiler

per Rule 5.7⁰⁰as fitted 6.28⁰⁰ ✓

Pressure to which they are adjusted

150 lbs ✓

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 yes. ✓

Smallest distance between shell of boiler and tank top plating

1'-6" ✓

Is the bottom of the boiler insulated yes. ✓

Largest internal dia. of boilers

11'-4¹³/₃₂" ✓

Length

11'-7" ✓

Shell plates: Material

S. ✓

Tensile strength 29/33 tons ✓

Thickness

5¹/₁₆" ✓

Are the shell plates welded or flanged

No ✓

Description of riveting: circ. seams

end double ✓

long. seams

T.R.D.B. ✓

Diameter of rivet holes in

circ. seams 1¹/₈" ✓long. seams 1¹/₈" ✓

Pitch of rivets

2.993" ✓

6.375" ✓

Percentage of strength of circ. end seams

plate 66.7.7.

rivets 48.4.7.

Percentage of strength of circ. intermediate seam

plate ✓

rivets ✓

Percentage of strength of longitudinal joint

plate 85.2.7.

rivets 100.1.7.

combined 90.6.2

Working pressure of shell by Rules 155 lbs

Thickness of butt straps

outer 5¹/₈" ✓inner 3¹/₄" ✓

No. and Description of Furnaces in each Boiler

Two Dighton ✓

Material

S. ✓

Tensile strength

26/30 tons ✓

Smallest outside diameter

35⁷/₈" ✓

Length of plain part

top ✓

bottom ✓

Thickness of plates

crown 7¹/₁₆" ✓bottom 7¹/₁₆" ✓

Description of longitudinal joint

Weld. ✓

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

✓

Working pressure of furnace by Rules 174 lbs

End plates in steam space: Material

S. ✓

Tensile strength

26/30 tons ✓

Thickness

3¹/₃₂" ✓

Pitch of stays 16" x 16" ✓

How are stays secured

Double nuts ✓

Working pressure by Rules 168 lbs

Tube plates: Material

front S

back S

Tensile strength

26/30 tons ✓

Thickness

3¹/₃₂" ✓13¹/₁₆" ✓

Mean pitch of stay tubes in nests

9.375" ✓

Pitch across wide water spaces

13¹/₂" ✓

Working pressure

front 167.5 lbs

back 269 lbs

Girders to combustion chamber tops: Material

S ✓

Tensile strength

28/32 tons ✓

Depth and thickness of girder

at centre

8³/₄" x 13¹/₄" ✓

Length as per Rule

34¹/₂" ✓

Distance apart

11¹/₂" ✓

No. and pitch of stays

in each

3 at 9" ✓

Working pressure by Rules

157.3 lbs

Combustion chamber plates: Material

S ✓

Tensile strength

26/30 tons ✓

Thickness: Sides

1¹/₁₆" ✓

Back

1¹/₁₆" ✓

Top

1¹/₁₆" ✓

Bottom

3¹/₄" ✓

Pitch of stays to ditto: Sides

9 x 9" ✓

Back

8³/₈" x 8³/₈" ✓

Top

9 x 11¹/₂" ✓

Are stays fitted with nuts or riveted over

C.C. centre stays riveted over inside. All others riveted ✓

Working pressure by Rules

165

Front plate at bottom: Material

S ✓

Tensile strength

26/30 tons ✓

Thickness

3¹/₃₂" ✓

Lower back plate: Material

S ✓

Tensile strength

26/30 tons ✓

Thickness

3¹/₃₂" ✓

Pitch of stays at wide water space

13 x 8³/₈" ✓

Are stays fitted with nuts or riveted over

Nuts ✓

Working Pressure

208 lbs

Main stays: Material

S ✓

Tensile strength

28/32 tons ✓

Diameter

At body of stay, 2¹/₂" ✓

Over threads

No. of threads per inch

6 ✓

Area supported by each stay

240⁰⁰ ✓

Working pressure by Rules

184.6 lbs

Screw stays: Material

S ✓

Tensile strength

26/30 tons ✓

Diameter

At turned off part, 1¹/₂" 1¹/₈" 1¹/₄" ✓

Over threads

No. of threads per inch

9 ✓

Area supported by each stay

81. 70.4 108.5⁰⁰ ✓

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Working pressure by Rules 154.64 Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 3/8" or Over threads
No. of threads per inch 9 Area supported by each stay 89.4" Working pressure by Rules 170.4
Tubes: Material W.I. External diameter { Plain 2 1/2 Stay 2 1/2 Thickness { 10154 1/2" 3/32" 3/16" No. of threads per inch 9
Pitch of tubes 3 3/4" x 3 3/4" Working pressure by Rules 166.5 Manhole compensation: Size of opening in
shell plate 16 x 12" Section of compensating ring 2'8" x 3'0" x 3/4" No. of rivets and diameter of rivet holes 28 - 1 3/16"
Outer row rivet pitch at ends 9" Depth of flange if manhole flanged - 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 Working pressure by Rules Thickness of crown No. and diameter of
stays Inner radius of crown Working pressure by Rules
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
Number of elements Material of tubes Manufacturers of { Tubes Steel castings
Material of headers Tensile strength Thickness Can the superheater be shut off and
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 easing gear Working pressure as per
Rules Pressure to which the safety valves are adjusted Hydraulic test pressure:
tubes castings and after assembly in place 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,
For HARBOR ROYAL WOLFE LIMITED Manufacturers
Assistant Secretary 22/8/36
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
Total No. of visits 31

Dates of Survey { During progress of work in shops - 04.7.9.16.17.22 Nov 5.11.13.14.20.24
while building { During erection on board vessel - Dec. 3.7.16.17.20.23 1 Feb 2.5.17 Mar 17.22
Apr 12.21 May 3.5.10.11.14.17.27 June 17

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
This boiler has been constructed under special survey and to an approved design. The workmanship & materials are good. It has been tested by hydraulic pressure in accordance with the Rules & is eligible in my opinion for use on a vessel classed with the Society. It is intended for use on a vessel building at Govan.
This boiler has been efficiently secured on board the M.V. 'Broomdale'. The safety valves have been adjusted under steam and tested for accumulation of pressure, and the boiler tried under working conditions and found satisfactory.

26/11/37

Survey Fee ... £ 10 : 0 : 0 When applied for, 28.6.1937
Travelling Expenses (if any) £ : : When received, 24.7.1937 (per Louder)

Charles G. Hunter, R. Campbell.
Engineer Surveyors to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 9-NOV 1937
Assigned See Gls. Rpt. No. 59000.