

REPORT ON BOILERS.

No. 11966

Received at London Office JUN 29 1937

Date of writing Report

192

When handed in at Local Office

28-6-1937

Port of Belfast

Please see other report

No. in Survey held at

Belfast

Date, First Survey

Last Survey 17 June

1937

Reg. Book.

(Number of Visits)

Gross

8334.22

Tons

Net

4967.35

21838 on the

M.V. BROONDALE.

Master

Built at

Govan

By whom built

Harland & Wolff Ltd

Yard No. 9736 When built 1937

Engines made at

Finneston

By whom made

Harland & Wolff Ltd.

Engine No. 9739 When made 1937

Boilers made at

Belfast

By whom made

Harland & Wolff Ltd.

Boiler No. 9736 When made 1937

Nominal Horse Power

Owners The Admiralty.

Port belonging to London.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colvilles Ltd

(Letter for Record S)

Total Heating Surface of Boilers

2602

Is forced draught fitted Yes

Coal or Oil fired & Exhaust gas

No. and Description of Boilers

One cylindrical with exhaust gas flue in centre

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

1-2 3/4" double opening Highlift (app)

Area of each set of valves per boiler

per Rule 9.85"

Pressure to which they are adjusted 150 lbs/10"

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

13'-4 3/16"

Length 11'-6"

Shell plates: Material S

Tensile strength 29/33 tons

Thickness

2 9/32"

Are the shell plates welded or flanged No.

Description of riveting: circ. seams

end DR.

long. seams T.R. DR.

Diameter of rivet holes in

circ. seams 1 1/8"

Pitch of rivets

3-0 1/2"

Percentage of strength of circ. end seams

plate 64.5%

rivets 50.6%

Percentage of strength of circ. intermediate seam

Percentage of strength of longitudinal joint

plate 85.7%

rivets 92.6%

combined 89.9%

Working pressure of shell by Rules 152 lbs

Thickness of butt straps

outer 1 1/8"

inner 1 3/8"

No. and Description of Furnaces in each Boiler

Two Deighton

Material S

Tensile strength 26/30 tons

Smallest outside diameter 2'-11 1/8"

Length of plain part

top

bottom

Thickness of plates

crown 7/16"

bottom 7/16"

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 1 1/32"

Pitch of stays 20 1/2" x 16 1/2"

How are stays secured

Double nuts

Working pressure by Rules 165 lbs

Tube plates: Material

front S

back

Tensile strength 26/30 tons

Thickness 2 9/32"

1 3/16"

Mean pitch of stay tubes in nests

9-8"

Pitch across wide water spaces 13 3/4"

Working pressure front 163.6 lbs

back 247 lbs

Girders to combustion chamber tops: Material S

Tensile strength 28/32 tons

Depth and thickness of girder

at centre 8" x 1 3/4"

Length as per Rule 30 15/32"

Distance apart 11 3/4"

No. and pitch of stays

in each 3 @ 7 1/4"

Working pressure by Rules 159 lbs

Combustion chamber plates: Material S

Tensile strength

26/30 tons

Thickness: Sides 1 1/8"

Back 2 3/32"

Top 1 1/8"

Bottom 3/4"

Pitch of stays to ditto: Sides

7 1/4" x 10 1/2"

Back 9 x 8"

Top 11 3/4" x 7 1/4"

Are stays fitted with nuts or riveted over

CC centre of stays riveted over inside. All other riveted.

Working pressure by Rules

167 lbs

Front plate at bottom: Material S

Tensile strength 26/30 tons

Thickness

2 9/32"

Lower back plate: Material S

Tensile strength 26/30 tons

Thickness 1 5/16"

Pitch of stays at wide water space

13"

Are stays fitted with nuts or riveted over Nuts

Working Pressure

289 lbs

Main stays: Material S

Tensile strength 28/32 tons

Diameter

At body of stay, 2 5/8"

Over threads

No. of threads per inch 6

Area supported by each stay 310"

Working pressure by Rules

160 lbs

Screw stays: Material S

Tensile strength 26/30 tons

Diameter

At turned off part, 1 1/2" 1 5/8" 2"

Over threads

No. of threads per inch 9

Area supported by each stay 76" 85-25"

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Working pressure by Rules 165 lb Are the stays drilled at the outer ends No Margin stays: Diameter { At turned off part, 1 5/8" or Over threads

No. of threads per inch 9 Area supported by each stay 94" Working pressure by Rules 160 lb

Tubes: Material W.I. External diameter { Plain 2 3/4" C 2 1/2" W Wing Thickness { 10 L S G 1/4" 5/16" 3/8" 1/2" No. of threads per inch 9

Pitch of tubes 4 x 3 7/8" C 3 3/4 x 3 5/8" W Working pressure by Rules 178 lb Manhole compensation: Size of opening in shell plate 16 x 12 Section of compensating ring 2'8" x 3'0" x 1 3/4" No. of rivets and diameter of rivet holes 28 - 1 1/4"

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 Internal diameter and thickness of tubes

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 HARRY WOLFE & SONS LTD
A. J. Marshall Manufacturer

Dates of Survey { During progress of work in shops - - - } Are the approved plans of boiler and superheater forwarded herewith 26/8/36 (If not state date of approval.)

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

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 materials and workmanship are good. It has been tested by hydraulic pressure in accordance with the Rules and is eligible in my opinion for use on a vessel classed with the Society. It is intended for 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. *HB*

26/11/37

Survey Fee ... £ 17 : 6 : When applied for, 28 . 6 . 1937.

Travelling Expenses (if any) £ : : When received, 24 . 7 . 1937 (per hour)

Charles J. Hunter - W. Campbell
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 9-NOV 1937

Assigned See G.L. Rpt. No. 59000.