

REPORT ON BOILERS.

No. 9745

Received at London Office

Date of writing Report

192

When handed in at Local Office

31st May 1927

Port of

Belfast - 7 DEC 1927

No. in Survey held at
Reg. Book.

Date, First Survey

2nd March

Last Survey

27 May 1927

1927

on the

M. V. "PAULA"

(Number of Visits 14)

Gross
Tons
Net

Master

Built at

Glasgow

By whom built

Harland & Wolff Ltd

Yard No.

748 G.

When built

1927-11

Engines made at

do. By whom made

do.

Engine No.

do. When made

do.

Boilers made at

Belfast

By whom made

Harland & Wolff Ltd

Boiler No.

748 G.

When made

Nominal Horse Power

Owners

Port belonging to

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

Manufacturers of Steel

David Colville & Sons Ltd

(Letter for Record 5)

Total Heating Surface of Boilers

891 ft²

Is forced draught fitted

Yes

Coal or Oil fired

Oil

No. and Description of Boilers

One single ended cylindrical

Working Pressure

150 lbs

Tested by hydraulic pressure to

200 lbs

Date of test

27.5.27

No. of Certificate

895

Can each boiler be worked separately

Area of Firegrate in each Boiler

26 ft²

No. and Description of safety valves to each boiler

2 - Direct Spring (Buckham High Lift)

Area of each set of valves per boiler

per Rule 8.1 ins²
as fitted 9.8 ins²

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

Well clear

Is oil fuel carried in the double bottom under boilers

Smallest distance between shell of boiler and tank top plating

At engine room middle platform

Is the bottom of the boiler insulated

Largest internal dia. of boilers

10' 6"

Length

9' 6"

Shell plates: Material

Steel

Tensile strength

29 3/4 to 33 tons

Thickness

2 3/32"

Are the shell plates welded or flanged

No

Description of riveting

(end double
inter.)

long. seams

hebble

D.A.S.

Diameter of rivet holes in

circ. seams 15/16"
long. seams 15/16"

Pitch of rivets

2 6 5/16"

Percentage of strength of circ. end seams

plate 64.6
rivets 56

Percentage of strength of circ. intermediate seam

plate
rivets

Percentage of strength of longitudinal joint

plate 84.2
rivets 119
combined 91.9

Working pressure of shell by Rules

151.8 lbs

Thickness of butt straps

outer 9/16"
inner 7/16"

No. and Description of Furnaces in each Boiler

Two maison

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

34 7/8"

Length of plain part

top
bottom

Thickness of plates

crown 7/16"
bottom 7/16"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

178 lbs

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 3/32"

Pitch of stays

21" x 15 1/2"

How are stays secured

double nuts and washers

Working pressure by Rules

160 lbs

Tube plates: Material

front Steel
back Steel

Tensile strength

26-30 tons

Thickness

3/4"

Mean pitch of stay tubes in nests

8"

Pitch across wide water spaces

14"

Working pressure

front 28 3/4 lbs
back 29 1/4 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 lbs

Depth and thickness of girder

at centre

7 1/2" - 1 1/2"

Length as per Rule

29"

Distance apart

10 3/4"

No. and pitch of stays

in each

Two 9"

Working pressure by Rules

160 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

3/4"

Back

3/4"

Top

3/4"

Bottom

3/4"

Pitch of stays to ditto: Sides

8" x 10"

Back

9" x 8 3/8"

Top

10 3/4" x 9"

Are stays fitted with nuts or riveted over

riveted over

Working pressure by Rules

160 lbs

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

1 3/32"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

1 1/2"

Pitch of stays at wide water space

13" x 8 3/8"

Are stays fitted with nuts or riveted over

nuts on margin stays only

Working Pressure

369 lbs

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay
or
Over threads

3"

No. of threads per inch

Five

Area supported by each stay

310.0 sq"

Working pressure by Rules

280 lbs

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part
or
Over threads

1 1/2"

No. of threads per inch

Ten

Area supported by each stay

80 sq"

Working pressure by Rules 157 1/2 Are the stays drilled at the outer ends yes ✓ Margin stays: Diameter { At turned off part, 1 1/8" ✓
Over threads
No. of threads per inch 2en ✓ Area supported by each stay 92.1250 Working pressure by Rules 165 lbs.
Tubes: Material iron ✓ External diameter { Plain 2 3/4" Thickness { no. 7 2 1/2" ✓
Stay 2 3/4" No. of threads per inch 2en ✓
Pitch of tubes 4" ✓ Working pressure by Rules 264 lbs Manhole compensation: Size of opening in
shell plate 16" x 12" ✓ Section of compensating ring 26 x 32 x 1/8 double ✓ No. of rivets and diameter of rivet holes 28 - 15/16" ✓
Outer row rivet pitch at ends 9" ✓ Depth of flange if manhole flanged ✓ Steam Dome: Material none ✓
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 Manufacturers of { Tubes
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. 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 23 inclusive for boilers been complied with.

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

Dates of Survey { During progress of 21 Mar 2. 11. 15. 25. 29. 31 Are the approved plans of boiler and superheater forwarded herewith app. 18.6.26
work in shops - - -
During erection on 21 Mar 2. 11. 15. 25. 29. 31 (If not state date of approval.)
building board vessel - - - Total No. of visits 14

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
This Double Boiler has been constructed under special Survey to the Society's rules and approved designs. The materials and workmanship are sound & good. It has been satisfactorily tested by hydraulic pressure and is eligible, in my opinion, for installing in a classed vessel.

This Boiler has been properly fitted in the vessel at Glasgow. The safety valves (2 - 2 1/2" "Bockburn" High Lift") have been adjusted under steam to 150 lbs./sq. in. working pressure.
J.D. Boyle
Glasgow 25/11/27.

Survey Fee ... £ 5 : 18 : ✓ When applied for, 31 May 1927
Travelling Expenses (if any) £ : : When received, 8.7.1927
Low. Letter. Final

R. Lee Armes
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 6 - DEC 1927

Assigned See Glasgow Report No. 47350.