

REPORT ON BOILERS.

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 11)

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 ft ✓

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

300 lbs ✓

Date of test

27.5.27 ✓

No. of Certificate

895 ✓

Can each boiler be worked separately

Yes ✓

Area of Firegrate in each Boiler

26 ft ✓

No. and Description of safety valves to each boiler

2 - Direct Spring (Lock down - 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

Yes ✓

Smallest distance between boilers or uptakes and bunkers or woodwork

Well clear ✓

Is oil fuel carried in the double bottom under boilers

Yes ✓

Smallest distance between shell of boiler and tank top plating

At least at engine room middle platform ✓

Is the bottom of the boiler insulated

Yes ✓

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

Welded ✓

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 6/8" ✓
5 15/16" ✓

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 3/2" ✓

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 ✓
26-30 tons ✓

Thickness

3/4" ✓
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 1/2 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

welded over ✓

Working pressure by Rules

167 lbs ✓

Front plate at bottom: Material

Steel ✓

Tensile strength

26-30 tons ✓

Thickness

1 3/2" ✓

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 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

Two ✓

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 3/8" ✓
 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 ✓
 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 36" 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.
J. E. Beck

Dates of Survey { During progress of work in shops - - - 21 May 2. 11. 15. 25. 29. 31 Are the approved plans of boiler and superheater forwarded herewith App'd 15.6.26
 (If not state date of approval.)
 During erection on board vessel - - - 2. 7. 11. 27 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 Ames
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 6 - DEC 1927

Assigned See Glasgow Report No. 47350.

