

21 OCT 1931

5a.

REPORT ON BOILERS.

No. 10.545

-3 MAR 1931

Received at London Office

Writing Report

to

When handed in at Local Office

2-3-1931

Port of

Belfast

Survey held at

Belfast

Date, First Survey

8th Oct. 1930

Last Survey

19th Feb. 1931

(Number of Visits

20

Gross

8375

Tons

Net

4948

on the

M.V. CLIONA

Built at

Glasgow

By whom built

Harland & Wolff Ltd

Yard No.

9086

When built

1931

Engines made at

Glasgow

By whom made

Harland & Wolff Ltd

Engine No.

908

When made

1931

Boilers made at

Belfast

By whom made

Harland & Wolff Ltd

Boiler No.

9089

When made

1931

Final Horse Power

Owners

Anglo Saxon Petroleum Co. Ltd

Port belonging to

London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Ed. Colville & Sons Ltd.

(Letter for Record 5.)

Heating Surface of Boilers

2404 sq ft

Is forced draught fitted

Yes

Coal or Oil fired

Yes

Description of Boilers

Two single-ended cylindrical

2 SB

Working Pressure

150 lbs/sq in

Tested by hydraulic pressure to

300 lbs/sq in

Date of test

19.2.31

No. of Certificate

957

Can each boiler be worked separately

No. of Firegrate in each Boiler

No. and Description of safety valves to each boiler

No. of each set of valves per boiler

per Rule
as fitted

Pressure to which they are adjusted

Are they fitted with easing gear

Use of donkey boilers, state whether steam from main boilers can enter the donkey boiler

Least distance between boilers or uptakes and bunkers or woodwork

Is oil fuel carried in the double bottom under boilers

Least distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

Greatest internal dia. of boilers

11'9" mean Length 10'6"

Shell plates: Material

Steel

Tensile strength 29 3/4 to 33 tons/sq in

Thickness

27/32"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end double

Seams

healed d.t.s.

Diameter of rivet holes in

circ. seams 17/16"

long. seams 15/16"

Pitch of rivets

2.97"

Percentage of strength of circ. end seams

plate 64.2
rivets 54.9

Percentage of strength of circ. intermediate seam

plate
rivets

Percentage of strength of longitudinal joint

plate 85.7
rivets 90.3
combined 89.49

Working pressure of shell by Rules

164 lbs/sq in

Thickness of butt straps

outer 2 1/2"
inner 25/32"

No. and Description of Furnaces in each Boiler

Two main

2.9'

Material

Steel

Tensile strength

26-30 tons/sq in

Smallest outside diameter

39 15/16"

Length of plain part

top
bottom

Thickness of plates

crown 15/32"

bottom 3/32"

Description of longitudinal joint

weld

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

Working pressure of furnace by Rules

168 lbs/sq in

Plates in steam space: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

15/16"

Pitch of stays 16 1/2" x 16"

Are stays secured

Double nuts and washers

Working pressure by Rules

178 lbs/sq in

Front plates: Material

front Steel

back Steel

Tensile strength

26-30 tons/sq in

Thickness

13/16"

Pitch of stay tubes in nests

8"

Pitch across wide water spaces

14" x 8"

Working pressure

front 176 lbs/sq in
back 293 lbs/sq in

Boards to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons/sq in

Depth and thickness of girder

Centre

7 1/2" - 1 1/2"

Length as per Rule

31"

Distance apart

8 7/8"

No. and pitch of stays

Each

Two 10 1/2"

Working pressure by Rules

182 lbs/sq in

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness: Sides

3/4"

Back

3/4"

Top

3/4"

Bottom 3/4"

Pitch of stays to ditto: Sides

10" x 7 3/4"

Back

9" x 8 1/2"

Top

10 1/2" x 8 1/8"

Are stays fitted with nuts or riveted over

nuts on margin stays only

Working pressure by Rules

165 lbs/sq in

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

3/8"

Lower back plate: Material

Steel

Tensile strength

26-30 tons/sq in

Thickness

13/16"

Pitch of stays at wide water space

13" x 9"

Are stays fitted with nuts or riveted over

nuts on margin stays only

Working Pressure

215 lbs/sq in

Main stays: Material

Steel

Tensile strength

28-32 tons/sq in

At body of stay, or

Over threads

2 3/4"

No. of threads per inch

Five

Area supported by each stay

243.75 sq in

Working pressure by Rules

268 lbs/sq in

Screw stays: Material

Steel

Tensile strength

26-30 tons/sq in

At turned off part, or

Over threads

1 1/2" - 1 5/8"

No. of threads per inch

Seven

Area supported by each stay

77.5 lbs/sq in

Working pressure by Rules *161 lbs* Are the stays drilled at the outer ends *Yes* Margin stays: Diameter { At turned off part, *1 3/4" 1 3/8"* Over threads *1 3/4" 1 3/8"* ✓

No. of threads per inch *2 1/2* ✓ Area supported by each stay *96.750* ✓ Working pressure by Rules *187 lbs* ✓

Tubes: Material *ht low* External diameter { Plain *2 3/4"* Stay *2 3/4"* Thickness { No. 7 *5.149* 4" *9/32"* 7/16" ✓ No. of threads per inch *2 1/2* ✓

Pitch of tubes *4" x 4"* ✓ Working pressure by Rules *Stay 264 lbs* Manhole compensation: Size of opening *28 - 1 1/2"* ✓

shell plate *16" x 12"* ✓ Section of compensating ring *36" x 32" x 3/16" double* ✓ No. of rivets and diameter of rivet holes *28 - 1 1/2"* ✓

Outer row rivet pitch at ends *10"* Depth of flange if manhole flanged *thickened 3"* ✓ 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 rivets

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 *none* 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 from the boiler

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

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*

For HARLAND AND WOLFE LIMITED

The foregoing is a correct description,

A. J. Marshall
Assistant Secretary

Dates of Survey { During progress of work in shops - *1930 Dec 8, 14, 19 Nov 4, 20, 24, 28 Dec 16* Are the approved plans of boiler and superheater forwarded herewith *Yes* (If not state date of approval.)
while building { During erection on board vessel - *1931 Jan 1, 7, 14, 25, 30 Feb 6, 9, 16* Total No. of visits *20*

Is this Boiler a duplicate of a previous case *No* If so, state Vessel's name and Report No. ✓

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

This boiler have been constructed under Special Survey and to an approved plan. The materials and workmanship are sound and good. They have been satisfactorily tested by hydraulic pressure to 300 lbs as required by the specification. They are to be forwarded to Glasgow for fitting aboard.

Survey Fee ... £ *16* : - : - When applied for, *2nd March 1931*
Travelling Expenses (if any) £ : : : When received, *Low Loe 30/3/31*

R. Lee A. Jones

Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute *GLASGOW 20 OCT 1931*

Assigned *See Glasgow Report No. 51840*



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