

REPORT ON BOILERS.

No. 10.627

2 JUN 1931

Received at London Office

Date of writing Report

19

When handed in at Local Office

1st June 1931

Port of

Beefast

No. in Reg. Book

Survey held at

Beefast

Date, First Survey

12 Feb.

Last Survey

27 Mar. 1931

69502 on the

STEEL SC. DUNAFRIC

(Number of Visits

8

Gross 3489
Tons Net 2134

Master

Built at

Glasgow

By whom built

Barclay Curle & Co. Ltd. Yard No.

When built 1909-3

Engines made at

Glasgow

By whom made

Burmester & Main Oil Eng. Co.

Engine No.

When made 1914

Boilers made at

Beefast

By whom made

Harland & Wolff Ltd.

Boiler No.

5016/812 When made 1931

Nominal Horse Power

Owners

Bank Line Ltd.

Port belonging to

Glasgow.

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Colville's Ltd.

(Letter for Record S.)

Total Heating Surface of Boilers

995 sq

Is forced draught fitted

No.

Coal or Oil fired

Oil

No. and Description of Boilers

One single ended Cylindrical

Working Pressure 120 lbs

Tested by hydraulic pressure to

230 lbs

Date of test

26-3-31

No. of Certificate

962

Can each boiler be worked separately

✓

Area of Firegrate in each Boiler

30 sq

No. and Description of safety valves to each boiler

Two spring-loaded Improved high lift.

Area of each set of valves per boiler

per Rule 299.21 sq
as fitted 6.28 sq

Pressure to which they are adjusted

120 lbs

Are they fitted with easing gear

✓

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

None in vicinity

Is oil fuel carried in the double bottom under boilers

No.

Smallest distance between shell of boiler and tank top plating

18"

Is the bottom of the boiler insulated

No.

Largest internal dia of boilers

11'0"

mean length

10'0"

Shell plates: Material

Steel

Tensile strength

28-32 tons

Thickness

3/32"

Are the shell plates welded or flanged

No.

Description of riveting: circ. seams

end double
inter. ✓

long. seams

heble d.b.s. ✓

Diameter of rivet holes in

circ. seams 5/16"

long. seams 5/16"

Pitch of rivets

2.97"

Percentage of strength of circ. end seams

plate 68.4
rivets 58.1

Percentage of strength of circ. intermediate seam

plate ✓
rivets ✓

Percentage of strength of longitudinal joint

plate 82.9
rivets 44.2
combined 95.3

Working pressure of shell by Rules

132.5 lbs

Thickness of butt straps

outer 17/32"
inner 21/32"

No. and Description of Furnaces in each Boiler

Two horizontal

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

36 3/8"

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

169 lbs

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

5/16"

Pitch of stays

22 x 16"

How are stays secured

double nuts & washers

Working pressure by Rules

125 lbs

Tube plates: Material

front Steel
back Steel

Tensile strength

26-30 tons

Thickness

5/16"

Mean pitch of stay tubes in nests

9 1/4"

Pitch across wide water spaces

14 x 8"

Working pressure

front 233 lbs
back 235 lbs

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

at centre

7 1/2"

Length as per Rule

30"

Distance apart

11"

No. and pitch of stays

in each

200-10"

Working pressure by Rules

132 lbs

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

5/8"

Back

19/32"

Top

5/8"

Bottom

5/8"

Pitch of stays to ditto: Sides

11 x 8 3/4"

Back

10 x 9"

Top

11 x 10"

Are stays fitted with nuts or riveted over

nuts ✓

Working pressure by Rules

122 lbs

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

5/16"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

5/16"

Pitch of stays at wide water space

13 x 10"

Are stays fitted with nuts or riveted over

nuts on top margin stays only.

Working Pressure

250 lbs

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay,
or
Over threads

2 1/2"

No. of threads per inch

16

Area supported by each stay

307.5 sq

Working pressure by Rules

144 lbs

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part,
or
Over threads

1 5/8"

No. of threads per inch

16

Area supported by each stay

121 sq

Working pressure by Rules *125 lbs* Are the stays drilled at the outer ends *No* Margin stays: Diameter *At turned off part, 1 3/8" - 1 1/2"*
No. of threads per inch *len* Area supported by each stay *129.75 sq in 126.50 sq in* Working pressure by Rules *165 lbs 143 lbs*
Tubes: Material *low* External diameter *Plain 2 3/4" Stay 2 3/4"* Thickness *No. 8. 1 1/2" 5/8" - 3/4"* No. of threads per inch *nine*
Pitch of tubes *4" x 4"* Working pressure by Rules *Main 275 lbs Stay 191 lbs* Manhole compensation: Size of opening in
shell plate *16" x 12"* Section of compensating ring *McNeil 36" x 32" x 1/16"* No. of rivets and diameter of rivet holes *28 - 1 1/16"*
Outer row rivet pitch at ends *9 1/2"* Depth of flange if manhole flanged *thickened to 3" depth* 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 *✓* 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 22 inclusive for boilers been complied with *Yes*

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

Manufacturer

Dates of Survey *During progress of work in shops - 1931 Feb 12, 16, 27 Mar 12, 14, 19, 26* Are the approved plans of boiler and superheater forwarded herewith
while building *During erection on board vessel - 27* (If not state date of approval.)
Total No. of visits *8*

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

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

*This boiler has been constructed under special survey and to an approved plan. The materials and workmanship are sound & good. It has been tested in accordance with the rules.
This boiler has been installed and efficiently fastened in the vessel.
The safety valves have been adjusted under steam to 120 lbs sq in.*

Survey Fee ... £ *6 : 12 :*

When applied for, *1st June 1931*

Travelling Expenses (if any) £ *...*

When received, *23.6.31*

Ree Amess & John K. Williams.
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute *TUE. 16 JUN 1931*

Assigned

*See other report
Del 10627*



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Foundation