

REPORT ON BOILERS.

No. 49349

Date of writing Report

192

When handed in at Local Office

17.6

1929

Port of

Glasgow

Received at London Office 19 JUN 1929

No. in Reg. Book.

Surrey held at

Paisley

Date, First Survey

22. 10. 29

Last Survey

7th June 1929

on the

Twin Sc. S.S. 'RATA'

(Number of Visits)

4

Gross

974

Tons

375

Master

Built at

Paisley

By whom built

Messrs Bow & MacLachlan

No. 481

When built

1929

Engines made at

Paisley

By whom made

Messrs Bow & MacLachlan & Co. Ltd.

Engine No. 39834

When made

1929

Boilers made at

Paisley

By whom made

Messrs Bow & MacLachlan & Co. Ltd.

Boiler No. 1191-2

When made

1929

Nominal Horse Power

193

196

Owners

The Anchor Shipping & Foundry Co.

Port belonging to

Nelson

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Wm Beardmore & Co. Ltd. & D. Colville & Sons Ltd.

Total Heating Surface of Boilers

3636 sq ft

Is forced draught fitted

no

(Letter for Record)

S

No. and Description of Boilers

Two Cylinder Return tube

2 S.B.

Working Pressure

190 lb.

Tested by hydraulic pressure to

335 lbs

Date of test

5-4-29

No. of Certificate

18244

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

57.75 sq ft

No. and Description of safety valves to each boiler

3" Double spring marine type

Area of each set of valves per boiler

per Rule

11.08 sq in.

as fitted

14.14 sq in.

Pressure to which they are adjusted

190 lb.

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

4'-0"

Is oil fuel carried in the double bottom under boilers

✓

Smallest distance between shell of boiler and tank top plating

Is the bottom of the boiler insulated

mats

Largest internal dia. of boilers

13'-6"

Length

10'-9"

Shell plates: Material

Steel

Tensile strength

28-32 tons

Thickness

1 3/16"

Are the shell plates welded or flanged

no

Description of riveting: circ. seams

end

D.R. Lap

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 3/16"

long. seams

1 3/16"

Pitch of rivets

3.683"

8.25"

Percentage of strength of circ. end seams

plate

61.0

rivets

60.9

Percentage of strength of circ. intermediate seam

plate

✓

rivets

✓

Percentage of strength of longitudinal joint

plate

85.6

rivets

87.0

combined

88.6

Working pressure of shell by Rules

3 C.F.

194 lbs.

Thickness of butt straps

outer

3/32"

inner

1/16"

No. and Description of Furnaces in each Boiler

Two Corrugated Deighton Section

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

43.1875"

Length of plain part

top

✓

bottom

✓

Thickness of plates

crown

19/32"

bottom

✓

Description of longitudinal joint

Welded

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

Working pressure of furnace by Rules

200 lbs.

End plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 3/16"

Pitch of stays

18 1/2" x 16"

How are stays secured

Nuts inside & outside

Working pressure by Rules

228 lbs.

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26-30 tons

Thickness

1"

Mean pitch of stay tubes in nests

9.81"

Pitch across wide water spaces

18 3/4"

Working pressure

front

192 lb

Girders to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

back

208 lb

at centre

8"-2 off 1/16"

Length as per Rule

29.125"

Distance apart

8 1/2"

in each

3 off 7/2"

Working pressure by Rules

195 lb

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

5/8"

Back

1/16"

Top

5/8"

Bottom

3/4"

Pitch of stays to ditto: Sides

8 1/2" x 7 1/2"

Back

8 1/2" x 7 1/2"

Top

8 1/2" x 7 1/2"

Are stays fitted with nuts

yes

Working pressure by Rules

190.2 lb

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

1"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

7/8"

Pitch of stays at wide water space

13 3/4"

Are stays fitted with nuts

yes

Working Pressure

206 lb

Main stays: Material

Steel

Tensile strength

28-32 tons

Diameter

At body of stay,

2 7/8"

or

Over threads

No. of threads per inch

6

Area supported by each stay

296 sq inches

Working pressure by Rules

206 lb

Screw stays: Material

Steel

Tensile strength

26-30 tons

Diameter

At turned off part,

1 5/8"

or

Over threads

No. of threads per inch

9

Area supported by each stay

63.75 sq inches

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Working pressure by Rules **238 lbs.** Are the stays drilled at the outer ends **no** Margin stays: Diameter **1 7/8"**
No. of threads per inch **9** Area supported by each stay **90.3 sq. inch** Working pressure by Rules **236 lbs.**
Tubes: Material **Wrought iron** External diameter **3 3/4"** Thickness **3/8" + 7/16"** No. of threads per inch **9**
Pitch of tubes **4 1/4" x 4 1/4"** Working pressure by Rules **230 lbs.** Manhole compensation: Size of opening in
shell plate **16" x 12"** Section of compensating ring **8" x 1 3/4"** No. of rivets and diameter of rivet holes **36 off 1 3/16"**
Outer row rivet pitch at ends **8 1/2"** Depth of flange if manhole flanged **3 1/2"** Steam Dome: Material
Tensile strength **184** Thickness of shell **3/8"** Description of longitudinal joint
Diameter of rivet holes **5/8"** Pitch of rivets **1 1/2"** Percentage of strength of joint **Plate**
Internal diameter **5-10 1/2"** Working pressure by Rules **230 lbs.** Thickness of crown **3/8"** No. and diameter of
stays **5-10 1/2"** Inner radius of crown **3 1/2"** Working pressure by Rules **230 lbs.**
How connected to shell **by doubler 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
Number of elements _____ Material of tubes _____ Steel castings
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**

Bow, Macmillan & Co., Ltd.

John Macmillan

The foregoing is a correct description,

Manufacturer.

Dates of Survey: During progress of work in shops - - - **See accompanying**
while building (During erection on board vessel - - -) **machinery Report**
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) **yes**
Total No. of visits **4**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **These boilers have been built**
under survey in accordance with the Rules and approved plan
the materials and workmanship are good
They have been properly secured on board, safety valves adjusted under
steam, and found satisfactory

Survey Fee ... £ ... When applied for, 192
Travelling Expenses (if any) £ ... When received, 192

G. E. Murdoch
Engineer Surveyor to Lloyd's Register of Shipping.

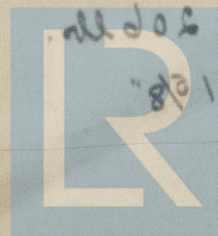
Committee's Minute

GLASGOW

18 JUN 1929

Assigned

See accompanying machinery report.



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