

REPORT ON BOILERS.

No. 97224

MAR -3 1939

Received at London Office

Date of writing Report

19

When handed in at Local Office

1st Mar 1939. Port of

NEWCASTLE-ON-TYNE

No. in Survey held at
Reg. Book.

Newcastle-on-Tyne.

Date, First Survey

24 Feb 1938

Last Survey

28 Feb

1939.

87781. on the

Steel SS. "DARONIA"

(Number of Visits —)

Gross 8139.
Net 4840

Master

Built at

Newcastle-on-Tyne (Newburn)

By whom built

R & W Hawthorn Leslie & Co Ltd

Yard No.

617

When built

1939.

Engines made at

Newcastle-on-Tyne (St Peter's)

By whom made

R & W Hawthorn Leslie & Co Ltd

Engine No.

3954

When made

1939.

Boilers made at

Newcastle-on-Tyne (St Peter's)

By whom made

R & W Hawthorn Leslie & Co Ltd

Boiler No.

3954

When made

1939.

Nominal Horse Power

502

Owners

Anglo Saxon Petroleum Co Ltd

Port belonging to

London.

MULTITUBULAR BOILERS — ~~MAIN, AUXILIARY, OR~~ DONKEY.Manufacturers of Steel (Plate) The Steel Comp^y of Scotland (Furnaces) Horsley Bridge & Thomas Riggett Ltd. (Letter for Record 5.)

Total Heating Surface of Boilers

2464 sqft.

Is forced draught fitted

Yes

Coal or Oil fired

Oil.

No. and Description of Boilers

One Single Ended.

Working Pressure

180 lb/sq in.

Tested by hydraulic pressure to

320 lb/sq in.

Date of test

18/11/38

No. of Certificate

802.

Can each boiler be worked separately

Yes

Area of Firegrate in each Boiler

No. and Description of safety valves to each boiler

2 Spring loaded.

Area of each set of valves per boiler

per Rule

as fitted

16 sq in.

Pressure to which they are adjusted

180 lb

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

Yes

Is oil fuel carried in the double bottom under boilers

No.

Smallest distance between shell of boiler and tank top plating

Yes

Is the bottom of the boiler insulated

Yes.

Largest internal dia. of boilers

14' - 3 3/8"

Length

11' - 6"

Shell plates: Material

Steel

Tensile strength

28 - 32 tons

Thickness

1 3/16"

Are the shell plates welded or flanged

neither

Description of riveting: circ. seams

end

D.R. cap

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

1 1/4"

Pitch of rivets

3 1/2"

Percentage of strength of circ. end seams

plate

64.2%

rivets

48.4%

Percentage of strength of circ. intermediate seam

plate

85.7%

rivets

Percentage of strength of longitudinal joint

plate

85.7%

rivets

91%

combined

89.4%

Working pressure of shell by Rules

183 lb/sq in.

Thickness of butt straps

outer

2 1/2"

inner

1 1/2"

No. and Description of Furnaces in each Boiler

3 Corrugated Morrison Section.

Material

Steel

Tensile strength

26 - 30 tons

Smallest outside diameter

3' - 7 1/8"

Length of plain part

top

8 1/4"

bottom

Thickness of plates

crown

9 1/16"

bottom

Description of longitudinal joint

welded.

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

none

Working pressure of furnace by Rules

189 lb/sq in.

End plates in steam space: Material

Steel

Tensile strength

26 - 30 tons

Thickness

1 1/32"

Pitch of stays

21" x 17 3/4"

How are stays secured

Double nuts

Working pressure by Rules

183 lb/sq in.

Tube plates: Material

front

Steel

back

Steel

Tensile strength

26 - 30 tons

Thickness

1 1/16"

Mean pitch of stay tubes in nests

9 1/4"

Pitch across wide water spaces

13 3/4" x 7 3/4"

Working pressure

front 242 lb/sq in.

back 285 lb/sq in.

Girders to combustion chamber tops: Material

Steel

Tensile strength

28 - 32 tons

Depth and thickness of girder

at centre

10 @ 1 1/2"

Length as per Rule

2' - 10 1/2"

Distance apart

10"

No. and pitch of stays

in each

3 @ 8"

Working pressure by Rules

194 lb/sq in.

Combustion chamber plates: Material

Steel

Tensile strength

26 - 30 tons

Thickness: Sides

4 5/64"

Back

4 5/64"

Top

4 5/64"

Bottom

7/8"

Pitch of stays to ditto: Sides

8" x 8"

Back

8" x 8"

Top

8" x 10"

Are stays fitted with nuts or riveted over

MARGIN STAYS. NUTS

Working pressure by Rules

180 lb/sq in.

Front plate at bottom: Material

Steel

Tensile strength

26 - 30 tons

Thickness

1 5/16"

Lower back plate: Material

Steel

Tensile strength

26 - 30 tons

Thickness

2 7/32"

Pitch of stays at wide water space

15" x 8"

Are stays fitted with nuts or riveted over

MARGIN STAYS NUTS. REMAINDER RIVETTED.

Working Pressure

200 lb/sq in.

Main stays: Material

Steel

Tensile strength

28 - 32 tons.

Diameter

At body of stay,

or

Over threads

3"

No. of threads per inch

6

Area supported by each stay

372.75 sq in.

Working pressure by Rules

181 lb/sq in.

Screw stays: Material

Steel

Tensile strength

26 - 30 tons

Diameter

At turned off part,

or

Over threads

1 1/2" & 1 5/8"

No. of threads per inch

9

Area supported by each stay

64 sq in.

Working pressure by Rules 196 lb/sq Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, or Over threads. 1 3/4"
No. of threads per inch 9 Area supported by each stay 92 sq Working pressure by Rules 197 lb/sq
Tubes: Material Iron External diameter { Plain 2 3/4" Thickness { 9 w.g. No. of threads per inch 9
Pitch of tubes 4" x 3 1/4" Working pressure by Rules 215 lb/sq Manhole compensation: Size of opening
shell plate 21" x 17" Section of compensating ring 21" x 1 3/16" No. of rivets and diameter of rivet holes 40 @ 1 1/4"
Outer row rivet pitch at ends 8 3/4" Depth of flange if manhole flanged 3 1/2" 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
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 forgings 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 forgings and castings and after assembly in place Are drain cocks
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,
R. B. Johnson Manufacturer
DIRECTOR

Dates of Survey { During progress of work in shops - - } See mainy report
while building { During erection on board vessel - - - }
Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)
Total No. of visits

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "DAPHNELLA" No. R.N. 96399

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
The boiler has been constructed under Special Survey in accordance with the Society's Rules & approved plan. The materials & workmanship are sound and good. The boiler was efficiently installed on board and its safety valves adjusted under steam to the approved working pressure.

Survey Fee ... £ See mainy Rpt When applied for, 19
Travelling Expenses (if any) £ When received, 19

L. P. Skett & H. Pemberton
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute TUE 7 MAR 1939
Assigned See FE mainy rpt