

REPORT ON BOILERS.

No. 69438

Date of writing Report

19

When handed in at Local Office

19. 3. 1945

Port of

Glasgow

No. in Survey held at
Reg. Book

Glasgow

Date, First Survey

16. 3. 44

Last Survey

8. 3.

1945

(Number of Visits

35)

Gross 1553.73

Tons

Net 897.58

on the

SS "FIREBEAM"

Master

Built at

Aberdeen

By whom built Hall Russell & Co. Ltd

Yard No. 785

When built 1945

Engines made at

Glasgow

By whom made

David Rowan & Co. Ltd

Engine No. 1133

When made 1945

Boilers made at

- do -

By whom made

- do -

Boiler No. 1133

When made 1945

Nominal Horse Power

184

Owners

Gas. Light & Coke Co. Ltd

Port belonging to

London.

MULTITUBULAR BOILERS—MAIN, ~~AUXILIARY~~, OR ~~DONKEY~~.

Manufacturers of Steel

The Steel Company of Scotland

(Letter for Record S.)

Total Heating Surface of Boilers

2750 $\frac{1}{2}$

Is forced draught fitted

Yes

Coal or Oil fired

Coal

No. and Description of Boilers

One single ended

Working Pressure 200 LBS/SQ. IN.

Tested by hydraulic pressure to

350 LBS/SQ. IN.

Date of test 26-2-45

No. of Certificate 21889

Can each boiler be worked separately

✓

Area of Firegrate in each Boiler

63.2 $\frac{1}{2}$

No. and Description of safety valves to each boiler

2 - 3 $\frac{1}{4}$ " dia. double spring.

Area of each set of valves per boiler

per Rule 15.99 $\frac{1}{2}$ "as fitted 16.59 $\frac{1}{2}$ "

Pressure to which they are adjusted

Are they fitted with easing gear

See Abn 21635

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

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

Largest internal dia. of boilers

15' - 9 $\frac{1}{4}$ "

Length 11' - 6"

Shell plates: Material

S.

Tensile strength 29/33 Tons/SQ. IN.

Thickness

1 $\frac{3}{8}$ "

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end DR.

long. seams

T.R.D.B.S.

Diameter of rivet holes in

circ. seams

B.E. 1 $\frac{3}{8}$ " F.E. 1 $\frac{5}{8}$ "

Pitch of rivets

B.E. 3.94" F.E. 3.364"

Percentage of strength of circ. end seams

plate B.E. 63.5 F.E. 61.0

rivets B.E. 47.8 F.E. 46.5

Percentage of strength of circ. intermediate seam

plate

✓

Percentage of strength of longitudinal joint

plate 85.16

rivets 89.3

combined 88.4

Working pressure of shell by Rules

✓

Thickness of butt straps

outer 1 $\frac{3}{4}$ "inner 1 $\frac{1}{4}$ "

No. and Description of Furnaces in each Boiler

3 Deighton

Material

S.

Tensile strength

26/30 Tons/SQ. IN.

Smallest outside diameter

3' - 11 $\frac{5}{8}$ "

Length of plain part

top

Thickness of plates

crown 2 $\frac{1}{32}$ "bottom 3 $\frac{1}{32}$ "

Description of longitudinal joint

Welded.

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

✓

Working pressure of furnace by Rules

✓

End plates in steam space: Material

S.

Tensile strength 26/30 Tons/SQ. IN.

Thickness 1 $\frac{3}{8}$ "

Pitch of stays 22" x 20"

How are stays secured

D.N.

Working pressure by Rules

✓

Tube plates: Material

front S.

back

Tensile strength

26/30 Tons/SQ. IN.

Thickness

2 $\frac{9}{32}$ "2 $\frac{5}{32}$ "

Mean pitch of stay tubes in nests

10.75"

Pitch across wide water spaces

14"

Working pressure

front ✓

back ✓

Girders to combustion chamber tops: Material

S.

Tensile strength

28/32 Tons/SQ. IN.

Depth and thickness of girder

at centre 2 @ 8 $\frac{7}{8}$ " x $\frac{7}{8}$ "

Length as per Rule

2' - 10 $\frac{1}{32}$ "

Distance apart

7 $\frac{1}{4}$ " C. 9" W.

No. and pitch of stays

in each 3 @ 8 $\frac{1}{4}$ "

Working pressure by Rules

✓

Combustion chamber plates: Material

S.

Tensile strength 26/30 Tons/SQ. IN.

Thickness: Sides

2 $\frac{1}{32}$ "

Back

7 $\frac{1}{16}$ "

Top

2 $\frac{1}{32}$ "

Bottom

2 $\frac{5}{32}$ "

Pitch of stays to ditto: Sides

8 $\frac{1}{4}$ " x 9"

Back

8" x 9 $\frac{1}{2}$ "8" x 9 $\frac{1}{2}$ "

Top

8 $\frac{1}{4}$ " x 9"8 $\frac{1}{4}$ " x 7 $\frac{1}{4}$ "

Are stays fitted with nuts or riveted over

Nuts.

Working pressure by Rules

✓

Front plate at bottom: Material

S.

Tensile strength

26/30 Tons/SQ. IN.

Thickness

2 $\frac{9}{32}$ "

Lower back plate: Material

S.

Tensile strength

26/30 Tons/SQ. IN.

Thickness

2 $\frac{5}{32}$ "

Pitch of stays at wide water space

13 $\frac{1}{2}$ "

Are stays fitted with nuts or riveted over

Nuts.

Working Pressure

✓

Main stays: Material

S.

Tensile strength

28/32 Tons/SQ. IN.

Diameter

At body of stay, 3 $\frac{1}{4}$ " x 3"

Over threads

No. of threads per inch

6

Area supported by each stay

✓

Working pressure by Rules

✓

Screw stays: Material

S.

Tensile strength

26/30 Tons/SQ. IN.

Diameter

At turned off part, 1 $\frac{5}{8}$ " x 1 $\frac{3}{4}$ " W. & C.

Over threads

No. of threads per inch

9

Area supported by each stay

✓

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Working pressure by Rules ☒ Are the stays drilled at the outer ends No Margin stays: Diameter ^{At turned off part.} _{or} ^{Over threads} 1 1/2", 1 3/8", 2", 2 1/4"
No. of threads per inch 9 Area supported by each stay ☒ Working pressure by Rules ☒
Tubes: Material S. External diameter ^{Plain} 3" ^{Stay} 3" Thickness 8 W.G. 1/4", 5/16", 3/8" No. of threads per inch 9
Pitch of tubes 4 1/4" x 4 1/8" Working pressure by Rules ☒ Manhole compensation: Size of opening in
end shell plate 16" x 12" Section of compensating ring ☒ No. of rivets and diameter of rivet holes ☒
Outer row rivet pitch at ends ☒ Depth of flange if manhole flanged 4" 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 Smoketube

Manufacturers of

Tubes
Steel forgings
Steel castings

See Newcastle
Cent. No. C. 19754

Number of elements 63 Material of tubes S.D. Steel Internal diameter and thickness of tubes 17 1/4" 2 1/2"
Material of headers Forged Steel Tensile strength 26-30 tons Thickness 7/8" Can the superheater be shut off and
the boiler be worked separately No Is a safety valve fitted to every part of the superheater which can be shut off from the boiler Yes
Area of each safety valve 1.76 sq" Are the safety valves fitted with easing gear Yes Working pressure as per
Rules ☒ Pressure to which the safety valves are adjusted Hydraulic test pressure:
tubes 1500 lb. ☒ forgings and castings 660 lb. ☒ and after assembly in place 500 LBS/sq" ☒ Are drain cocks or
valves fitted to free the superheater from water where necessary Yes

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with Yes

The foregoing is a correct description,
For David Rowan T.B. & Co. Manufacturer.
Arch. H. Grierson

Dates of Survey ^{During progress of} _{work in shops - -} See attached machinery report Are the approved plans of boiler and superheater forwarded herewith Yes
^{while} _{building} ^{During erection on} _{board vessel - - -} Total No. of visits

Is this Boiler a duplicate of a previous case Yes If so, state Vessel's name and Report No. "William Pearman" Glasgow Rpt
No 65197

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built
under special survey and in accordance with the Rules. The materials &
workmanship are good. It has been sent to Aberdeen for installation in the
vessel.

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

Geo. Stevenson
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 20 MAR 1945

Assigned

FRI. 29 JUN 1945

Su F.E. machy, rph.

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