

# REPORT ON BOILERS.

No. 69438

Received at London Office 21 MAR 1945

Date of writing Report

19

When handed in at Local Office

19. 3. 1945

Port of

Glasgow

No. in Reg. Book

Survey held at

Glasgow

Date, First Survey

16. 3. 44

Last Survey

8. 3. 1945

(Number of Visits 35)

Tons { Gross 1553.73  
Net 897.58

on the

SS "FIRE BEAM"

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 sq ft

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

Yes

Area of Firegrate in each Boiler

63.2 sq ft

No. and Description of safety valves to each boiler

2 - 3 1/2" dia. double spring

Area of each set of valves per boiler

per Rule 15.99 sq in

as fitted 16.59 sq in

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 1/2"

Length 11' - 6"

Shell plates: Material

S

Tensile strength 29/33 Tons/sq in

Thickness

1 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 3/8" F.E. 1 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

rivets

Percentage of strength of longitudinal joint

plate 85.16

rivets 89.3

combined 88.4

Working pressure of shell by Rules

Yes

Thickness of butt straps

outer 1 3/4"

inner 1 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 1/2"

Length of plain part

top

bottom

Thickness of plates

crowd 2 1/2"

bottom 3/32"

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 3/8"

Pitch of stays 22" x 20"

How are stays secured

D.N.

Working pressure by Rules

Yes

Tube plates: Material

front S

back

Tensile strength 26/30 Tons/sq in

Thickness

29/32"

25/32"

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 3/8" x 7/8"

Length as per Rule 2' - 10 1/2"

Distance apart 7 1/2" C. 9" W.

No. and pitch of stays

in each 3 @ 8 1/4"

Working pressure by Rules

Combustion chamber plates: Material

S

Tensile strength 26/30 Tons/sq in

Thickness: Sides 2 1/2"

Back 1 1/2"

Top 2 1/2"

Bottom 2 5/32"

Pitch of stays to ditto: Sides 8 1/4" x 9"

Back 8" x 9 1/2"

8" x 9 1/2"

Top 8 1/4" x 9"

8 1/4" x 7 1/4"

Are stays fitted with nuts or riveted over

Nuts

Working pressure by Rules

Yes

Front plate at bottom: Material

S

Tensile strength 26/30 Tons/sq in

Thickness 29/32"

Lower back plate: Material

S

Tensile strength 26/30 Tons/sq in

Thickness 25/32"

Pitch of stays at wide water space

13 1/2"

Are stays fitted with nuts or riveted over

Nuts

Working Pressure

Yes

Main stays: Material

S

Tensile strength 28/32 Tons/sq in

Diameter

At body of stay, 3 1/4" x 3"

or Over threads

No. of threads per inch

6

Area supported by each stay

Working pressure by Rules

Yes

Screw stays: Material

S

Tensile strength 26/30 Tons/sq in

Diameter

At turned off part, 1 5/8" x 1 3/4" W. & C.

or 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 <sup>At turned off part.</sup> <sub>or</sub> <sup>Over threads</sup> *1 1/4", 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 <sup>Plain</sup> *3"* <sup>Stay</sup> *3"* Thickness <sup>8 W.G.</sup> *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 <sup>Plate</sup> <sub>Rivets</sub> \_\_\_\_\_

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 <sup>Tubes</sup> \_\_\_\_\_ <sup>Steel forgings</sup> *See Newcastle Cent. No. C. 19754* <sup>Steel castings</sup> \_\_\_\_\_

Number of elements *63* Material of tubes *S.D. Steel* Internal diameter and thickness of tubes *1 7/8" x 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 lbs.*  forgings and castings *650 lbs.*  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 <sup>During progress of work in shops</sup> *See attached machining report* Are the approved plans of boiler and superheater forwarded herewith *Yes* (If not state date of approval.)

<sup>while building</sup> <sup>During erection on board vessel</sup> \_\_\_\_\_ 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 Report* } When applied for, 19

Travelling Expenses (if any) £ \_\_\_\_\_ } When received, 19

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

Committee's Minute *GLASGOW 20 MAR 1945* *Urb* FRI. 29 JUN 1945 © 2021 Lloyd's Register Foundation

Assigned \_\_\_\_\_ *Su F.E. machy, rph.*