

REPORT ON BOILERS.

No. 43457

Received at London Office

WFD. 19 MAR. 1924

Writing Report 13th March, 1924 When handed in at Local Office 15th March, 1924 Port of Glasgow.

Survey held at Glasgow Date, First Survey 20.9.1923 Last Survey 13.3.1924

on the Boiler No. B322 $\frac{3}{4}$ N^o 477 (Number of Visits 12) Tons { Gross Net

Built at Kallbommel By whom built Messrs Meyer. Yard No. 477 When built 1924

made at Coatbridge By whom made Wm Beardmore & Co. Ltd. Engine No. 601 When made

made at Glasgow By whom made D. Rowan & Co. Ltd. Boiler No. B322 When made 1924

nominal Horse Power Owners James Dredging Co Port belonging to

WATER TUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Mannesmann-Rohrwerke, Abteilung Grille, Guntke, J. Spencer & Sons Ltd., W. Beardmore & Co. Ltd. Letter for Record S. ✓

Heating Surface of Boilers 1980 ft^2 Is forced draught fitted - Coal or Oil fired -

Description of Boilers One Single Ended ✓ 15B Working Pressure 180 $\text{lbs}/\text{sq. in.}$

Tested by hydraulic pressure to 320 $\text{lbs}/\text{sq. in.}$ Date of test 13.3.24 No. of Certificate 16455 Can each boiler be worked separately -

Area of Firegrate in each Boiler 50 sq. ft. No. and Description of safety valves to each boiler - 2 spring loaded ✓

Area of each set of valves per boiler { per Rule - as fitted - 3" diam ✓ Pressure to which they are adjusted - 180 lbs. Are they fitted with easing gear - 4 ✓

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 14'-0" ✓ Length 11'-6" ✓ Shell plates: Material Steel ✓ Tensile strength 28/32 $\text{tons}/\text{sq. in.}$

Thickness 1 5/32" ✓ Are the shell plates welded or flanged No ✓ Description of riveting: circ. seams { end D.R.L.A.P. ✓

Long. seams T.R.D.B.S. ✓ Diameter of rivet holes in { circ. seams 1 3/16" ✓ Pitch of rivets { 3.2" 3.32" ✓

Percentage of strength of circ. end seams { plate 62.8F 64.2B ✓ rivets 49.3F 47.6B ✓ Percentage of strength of circ. intermediate seam { plate - rivets -

Percentage of strength of longitudinal joint { plate 85.18 ✓ rivets 97.3 ✓ combined 89.7 ✓ Working pressure of shell by Rules 181 $\text{lbs}/\text{sq. in.}$

Thickness of butt straps { outer 7/8" ✓ inner 1" ✓ No. and Description of Furnaces in each Boiler Two Dighton ✓

Material Steel Tensile strength 26/30 $\text{tons}/\text{sq. in.}$ Smallest outside diameter 4'-1 1/32" ✓

Length of plain part { top - bottom - Thickness of plates { crown 3/4" ✓ bottom 5/16" ✓ Description of longitudinal joint weld ✓

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 180 $\text{lbs}/\text{sq. in.}$

End plates in steam space: Material Steel ✓ Tensile strength 26/30 $\text{tons}/\text{sq. in.}$ Thickness 1 1/32" ✓ Pitch of stays 19 7/8" x 18 3/4" man

How are stays secured D. nuts ✓ Working pressure by Rules 185 $\text{lbs}/\text{sq. in.}$

Tube plates: Material { front Steel ✓ back Steel ✓ Tensile strength { 26/30 $\text{tons}/\text{sq. in.}$ ✓ Thickness { 7/8" ✓ 3/4" ✓

Mean pitch of stay tubes in nests 10.5" ✓ Pitch across wide water spaces 14 1/4" ✓ Working pressure { front 181 $\text{lbs}/\text{sq. in.}$ back 181 $\text{lbs}/\text{sq. in.}$

Girders to combustion chamber tops: Material Steel ✓ Tensile strength 28/32 $\text{tons}/\text{sq. in.}$ Depth and thickness of girder

at centre 8 7/8" x 2 @ 7/8" ✓ Length as per Rule 34 19/32" ✓ Distance apart 9 3/4" ✓ No. and pitch of stays

in each 3 @ 8 3/8" ✓ Working pressure by Rules 185 $\text{lbs}/\text{sq. in.}$ Combustion chamber plates: Material Steel ✓

Tensile strength 26/30 $\text{tons}/\text{sq. in.}$ Thickness: Sides 21" / 32" ✓ Back 21" / 32" ✓ Top 21" / 32" ✓ Bottom 13" / 16" ✓

Pitch of stays to ditto: Sides 8 3/8" x 9 3/4" ✓ Back 8 3/4" x 9 3/4" ✓ Top 8 3/8" x 9 3/4" ✓ Are stays fitted with nuts or riveted over Nuts ✓

Working pressure by Rules 180 $\text{lbs}/\text{sq. in.}$ Front plate at bottom: Material Steel ✓ Tensile strength 26/30 $\text{tons}/\text{sq. in.}$

Thickness 7/8" ✓ Lower back plate: Material Steel ✓ Tensile strength 26/30 $\text{tons}/\text{sq. in.}$ Thickness 3/4" ✓

Pitch of stays at wide water space 13 1/4" x 8 3/4" ✓ Are stays fitted with nuts or riveted over Nuts ✓

Working Pressure 180 $\text{lbs}/\text{sq. in.}$ Main stays: Material Steel ✓ Tensile strength 28/32 $\text{tons}/\text{sq. in.}$

Diameter { At body of stay, 3" x 2 3/4" ✓ No. of threads per inch 6 ✓ Area supported by each stay 397.5" x 337.8" ✓

Working pressure by Rules 193 $\text{lbs}/\text{sq. in.}$ Screw stays: Material Steel ✓ Tensile strength 26/30 $\text{tons}/\text{sq. in.}$

Diameter { At turned off part, 1 5/8" ✓ No. of threads per inch 10 ✓ Area supported by each stay 83.125" ✓

Working pressure by Rules 183 $\frac{1}{2}$ Are the stays drilled at the outer ends \checkmark Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. 1\frac{3}{4} \checkmark$

No. of threads per inch 10 \checkmark Area supported by each stay 99.53 \square Working pressure by Rules 182 $\frac{1}{2}$

Tubes; Material *R.W.W.I.* \checkmark External diameter $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 3\frac{1}{2} \checkmark$ Thickness $\left\{ \begin{array}{l} 8 \text{ w.g.} \\ 1\frac{1}{4} \text{ w.g.} \end{array} \right. \checkmark$ No. of threads per inch 9 \checkmark

Pitch of tubes $4\frac{3}{4} \times 4\frac{5}{8} \checkmark$ Working pressure by Rules 215 $\frac{1}{2}$ Manhole compensation: Size of \checkmark

shell plate $19\frac{1}{2} \times 15\frac{1}{2} \checkmark$ Section of compensating ring $9 \times 1\frac{5}{32} \checkmark$ No. of rivets and diameter of rivet holes 32 Rivets, $1\frac{1}{2}$ \checkmark

Outer row rivet pitch at ends $8\frac{1}{2} \checkmark$ Depth of flange if manhole flanged *Comp. Ring flanged 3 to 16 x 12 manhole.* Steam Dome: Material *None* \checkmark

Tensile strength - Thickness of shell - Description of longitudinal joint -

Diameter of rivet holes - Pitch of rivets - Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. -$

Internal diameter - Working pressure by Rules - Thickness of crown - No. and dia

stays - Inner radius of crown - Working pressure by Rules -

How connected to shell - Size of doubling plate under dome - Diameter of rivet holes and

of rivets in outer row in dome connection to shell -

Type of Superheater *None* \checkmark Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right. -$

Number of elements - Material of tubes - Internal diameter and thickness of tubes -

Material of headers - Tensile strength - Thickness - Can the superheater be shut off

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 a

Rules - Pressure to which the safety valves are adjusted - Hydraulic test press

tubes - , castings - and after assembly in place - Are drain cocks or valves

to free the superheater from water where necessary -

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with -

The foregoing is a correct description,
for David Rowan & Co. Ltd.

Arch. W. Grierson

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of} \\ \text{work in shops} \end{array} \right. 1923 \text{ Sep 20 Nov 20 29 Dec 18 24 1924 Jan 8 22 28$ Are the approved plans of boiler and superheater forwarded herewith *sent with*

while building $\left\{ \begin{array}{l} \text{During erection on} \\ \text{board vessel} \end{array} \right. 26 4 18 28 29 Mar 13$

(If not state date of approval) Rpt. N^o 43345 on Boiler N^o 83.

Total No. of visits 12

GENERAL REMARKS

(State quality of workmanship, opinions as to class, &c.) This boiler has been constructed under Special Survey in accordance with the Rules and approved Plan; the Materials and workmanship are good.

The boiler is a duplicate of the boilers N^{os} 3320 & 3321, Glasgow Reports N^{os} 43345 & 43346.

Annual Survey Request

Survey Fee £ 13 : 4 : 0

Travelling Expenses (if any) £ : : :

When applied for, 18 MAR 1924

When received, 20 May 1924

A.B. Forster

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 18 MAR 1924

FRI 7 NOV 1924

Assigned TRANSMIT TO LONDON



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Foundation