

## REPORT ON BOILERS.

No. H3456

Received at London Office 29 SEP. 1914  
WFO. 19 MAR. 1924

Date of writing Report 13<sup>th</sup> March, 1924 When handed in at Local Office 15<sup>th</sup> March, 1924 Port of Glasgow

No. in Reg. Book. Survey held at Glasgow Date, First Survey 20. 9 1923 Last Survey 13. 3. 1924

on the Boiler N<sup>o</sup> B322 (Number of Visits 14) Tons { Gross Net

Master Built at By whom built Yard No. When built

Engines made at Coatbridge By whom made W. Beardmore & Co. Ltd. Engine No. 600 When made

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

Nominal Horse Power Owners Port belonging to

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

Manufacturers of Steel Thannemann & Söhne, Abteilung Grillo Funke, J. Spencer & Sons Ltd, W. Beardmore & Co. Ltd (Letter for Record S)

Total Heating Surface of Boilers 1980 Is forced draught fitted—No Coal or Oil fired—Coal

No. and Description of Boilers One Single Ended Working Pressure 180 lbs./sq.

Tested by hydraulic pressure to 320 lbs./sq. Date of test 13.3.24 No. of Certificate 16454 Can each boiler be worked separately—

Area of Firegrate in each Boiler 50 No. and Description of safety valves to each boiler—2 Spring

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—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 over 5'-0" Is oil fuel carried in the double bottom under boilers Open Bulgers

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 tons/sq.

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

long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 1 3/16 Pitch of rivets { 3.2 F. 3.32 B. long. seams 1 1/4 8 7/8

Percentage of strength of circ. end seams { plate 62.8 F. 64.2 B. rivets 49.3 F. 47.6 B. 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 lbs./sq.

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

Material Steel Tensile strength 26/30 tons/sq. Smallest outside diameter 4'-1 3/32

Length of plain part { top — bottom — Thickness of plates { crown 3/32 bottom 5/64 Description of longitudinal joint weld.

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 180 lbs./sq.

End plates in steam space: Material Steel Tensile strength 26/30 tons/sq. Thickness 1 3/32 Pitch of stays 19 7/8" x 18 3/4" mean

How are stays secured D. Nuts Working pressure by Rules 185 lbs./sq.

Tube plates: Material { front Steel back Steel Tensile strength { 26/30 tons/sq. Thickness { 7/8 3/4

Mean pitch of stay tubes in nests 10'-6" Pitch across wide water spaces 14 1/4" Working pressure { front 181 lbs./sq. back 181 lbs./sq.

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons/sq. Depth and thickness of girder

at centre 8 7/8" x 2 @ 7/8" Length as per Rule 34 15/32 Distance apart 9 3/4" No. and pitch of stays

in each 3 @ 8 3/8" Working pressure by Rules 185 lbs./sq. Combustion chamber plates: Material Steel

Tensile strength 26/30 tons/sq. Thickness: Sides 2 1/32 Back 2 1/32 Top 2 1/32 Bottom 1 3/16

Pitch of stays to ditto: Sides 8 3/8" x 9 3/4" Back 8 3/4" x 9 1/2" Top 8 3/8" x 9 3/4" Are stays fitted with nuts or riveted over Nuts

Working pressure by Rules 180 lbs./sq. Front plate at bottom: Material Steel Tensile strength 26/30 tons/sq.

Thickness 7/8 Lower back plate: Material Steel Tensile strength 26/30 tons/sq. 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 lbs./sq. Main stays: Material Steel Tensile strength 28/32 tons/sq.

Diameter { At body of stay, 3" x 2 3/4" No. of threads per inch 6 Area supported by each stay 397.6" x 337.8"

Working pressure by Rules 193 lbs./sq. Screw stays: Material Steel Tensile strength 26/30 tons/sq.

Diameter { At turned off part, — No. of threads per inch 10 Area supported by each stay 83.126" x 4"

Over threads 1 5/8"



Working pressure by Rules 182 lbs/sq. in. Are the stays drilled at the outer ends No. Margin stays: Diameter { At turned off part, — or 1 3/4" Over threads 1 3/4"  
No. of threads per inch 10 Area supported by each stay 99.53 sq. in. Working pressure by Rules 182 lbs/sq. in.  
Tubes; Material A. W. W. Iron External diameter { Plain 3 1/2" Stay 3 1/2" Thickness { 8 w.g. 1/4" x 5/16" No. of threads per inch 9  
Pitch of tubes 4 3/4" x 4 5/8" Working pressure by Rules 215 lbs/sq. in. Manhole compensation: Size of opening in  
shell plate 19 1/2" x 15 1/2" Section of compensating ring 9" x 1 5/8" No. of rivets and diameter of rivet holes 32 Rivets 1 1/4" dia. holes  
Outer row rivet pitch at ends 8 1/2" Depth of flange if manhole flanged Comp. Ring flanged 3" to 16" x 12" manhole 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 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 None Manufacturers of { Tubes — 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 —, 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 23 inclusive for boilers been complied with —

The foregoing is a correct description,  
For David Koway & Co. L<sup>td</sup> Manufacturer,  
Aitch. W. Grierson

Dates of Survey { During progress of work in shops - - 1923 Sep 20 Nov 20 29 Dec 4, 10, 18, 24 1924 Jan 8  
while building { During erection on board vessel - - - 22, 28 Feb 4, 18, 28 Mar 13.  
Are the approved plans of boiler and superheater forwarded herewith Sent with 26.  
(If not state date of approval.) Report N<sup>o</sup> 43345 on Boiler N<sup>o</sup> B320  
Total No. of visits 14

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.  
This boiler is a duplicate of the boilers N<sup>os</sup> B320 & B321, Glasgow Reports N<sup>os</sup> 43345 & 43346

Annual Survey Request

Survey Fee ... £ 13 : 4 : 0 When applied for, 18 MAR 1924  
Travelling Expenses (if any) £ : : When received, do mey 1924

A. B. Forster.

Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 18 MAR 1924

FRI. 3 OCT 1924

Assigned TRANSMIT TO LONDON



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Foundation