

## REPORT ON BOILERS.

No. 93815

Received at London Office

-2 JUN 1936

Date of writing Report 29<sup>th</sup> May, 1936 When handed in at Local Office 29<sup>th</sup> May, 1936 Port of NEWCASTLE-ON-TYNENo. in Survey held at Newcastle-on-Tyne Date, First Survey 30 June Last Survey 29<sup>th</sup> May, 1936

on the

BLACKHEATH

(Number of Visits)

Gross

Tons

Net

Master Built at Dundee By whom built Caledon L.B. Co. Ltd. Yard No. 353 When built 1936

Engines made at Wallsend-on-Tyne By whom made R. E. Marine Eng. Co. Ltd. Engine No. 2844 When made 1936

Boilers made at Wallsend-on-Tyne By whom made R. E. Marine Eng. Co. Ltd. Boiler No. 2844 When made 1936

Nominal Horse Power 404 Owners Britain S.P. Co. Ltd. Port belonging to London

(Watts, Watts &amp; Co. Ltd., Engrs.)

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel The Steel Company of Scotland, Ltd. (Letter for Record S)

Total Heating Surface of Boilers 1680 sq. ft. Is forced draught fitted No Coal or Oil fired Coal

No. and Description of Boilers One Single Ended Working Pressure 220 lbs./sq. in.

Tested by hydraulic pressure to 380 Date of test 22.4.36 No. of Certificate 665 Can each boiler be worked separately -

Area of Firegrate in each Boiler 38.5 sq. ft. No. and Description of safety valves to each boiler two direct spring loaded

Area of each set of valves per boiler { per Rule 8.9 sq. ft. as fitted 9.82 sq. ft. Pressure to which they are adjusted - Are they fitted with easing gear geo.

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 - 4'6" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating - 2'0" Is the bottom of the boiler insulated - yes

Largest internal dia. of boilers 13'-0 15/32" Length 10'-6" Shell plates: Material Steel Tensile strength 29/33 tons/sq. in.

Thickness 1 17/64" Are the shell plates welded or flanged No Description of riveting: circ. seams { end D.R. Lap. inter. -

Long. seams T.R.D.B.S. Diameter of rivet holes in { circ. seams 15/16" long. seams 15/16" Pitch of rivets { 33/4" 9/8"

Percentage of strength of circ. end seams { plate 65 rivets 45.2 Percentage of strength of circ. intermediate seam { plate - rivets -

Percentage of strength of longitudinal joint { plate 85.6 rivets 87.1 Working pressure of shell by Rules 222 lbs./sq. in.

Thickness of butt straps { outer 31/32" inner 1 1/32" No. and Description of Furnaces in each Boiler Two Brightons

Material Steel Tensile strength 26/30 tons/sq. in. Smallest outside diameter 3'-8 5/8"

Length of plain part { top - bottom - Thickness of plates { crown 11/16" bottom 11/16" Description of longitudinal joint weld.

Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 225 lbs./sq. in.

End plates in steam space: Material Steel Tensile strength 26/30 tons/sq. in. Thickness 1 31/64" Pitch of stays 22" x 16"

How are stays secured D. nuts Working pressure by Rules 223 lbs./sq. in.

Tube plates: Material { front Steel back Steel Tensile strength { 26/30 tons/sq. in. Thickness { 31/32" 13/16"

Mean pitch of stay tubes in nests 10.2 Pitch across wide water spaces 14 1/2" Working pressure { front 225 lbs./sq. in. back 228 lbs./sq. in.

Girders to combustion chamber tops: Material Steel Tensile strength 29/33 tons/sq. in. Depth and thickness of girder

at centre 9 1/2" x 20 25/32" Length as per Rule 2'-8" Distance apart 10 3/16" No. and pitch of stays

in each 2 @ 9 1/2" Working pressure by Rules 236 lbs./sq. in. Combustion chamber plates: Material Steel

Tensile strength 26/30 tons/sq. in. Thickness: Sides 25/32" Back 25/32" Top 25/32" Bottom 25/32"

Pitch of stays to ditto: Sides 10" x 9 1/2" Back 10 3/16" x 9 1/2" Top 10 3/16" x 9 1/2" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 224 lbs./sq. in. Front plate at bottom: Material Steel Tensile strength 26/30 tons/sq. in.

Thickness 31/32" Lower back plate: Material Steel Tensile strength 26/30 tons/sq. in. Thickness 15/16"

Pitch of stays at wide water space 15" x 9 1/2" Are stays fitted with nuts or riveted over nuts

Working Pressure 229 lbs./sq. in. Main stays: Material Steel Tensile strength 28/32 tons/sq. in.

Diameter { At body of stay, 3" No. of threads per inch 6 Area supported by each stay 352 sq. in.

Over threads - Working pressure by Rules 223 lbs./sq. in. Screw stays: Material Steel Tensile strength 26/30 tons/sq. in.

Diameter { At turned off part, 2" No. of threads per inch 9 Area supported by each stay 96.78 sq. in.

Over threads -

Working pressure by Rules 223 lbs./sq. in.

Diameter { At turned off part, 2" No. of threads per inch 9 Area supported by each stay 96.78 sq. in.

Over threads -

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Working pressure by Rules 256 lbs/sq in Are the stays drilled at the outer ends no Margin stays: Diameter { At turned off part, 2 1/8" or Over threads 2 1/8"  
No. of threads per inch 9 Area supported by each stay 111.6 sq in Working pressure by Rules 256 lbs/sq in  
Tubes: Material 1/2" Steel External diameter { Plain 3 1/4" Stay 3 1/4" Thickness { 3/16" 5/16" No. of threads per inch 9  
Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules plain 230 lbs/sq in Stay 257 lbs/sq in Manhole compensation: Size of opening in  
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 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 22 inclusive for boilers been complied with yes  
The foregoing is a correct description,  
Herbert Forster Manufacturer

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

Is this Boiler a duplicate of a previous case no If so, state Vessel's name and Report No. -

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 being forwarded to Dundee to be installed in the vessel.

*[Faint handwritten notes and stamps in the background, including dates like 10/11/35, 10/12/35, 10/13/35, 10/14/35, 10/15/35, 10/16/35, 10/17/35, 10/18/35, 10/19/35, 10/20/35, 10/21/35, 10/22/35, 10/23/35, 10/24/35, 10/25/35, 10/26/35, 10/27/35, 10/28/35, 10/29/35, 10/30/35, 10/31/35, 11/1/35, 11/2/35, 11/3/35, 11/4/35, 11/5/35, 11/6/35, 11/7/35, 11/8/35, 11/9/35, 11/10/35, 11/11/35, 11/12/35, 11/13/35, 11/14/35, 11/15/35, 11/16/35, 11/17/35, 11/18/35, 11/19/35, 11/20/35, 11/21/35, 11/22/35, 11/23/35, 11/24/35, 11/25/35, 11/26/35, 11/27/35, 11/28/35, 11/29/35, 11/30/35, 12/1/35, 12/2/35, 12/3/35, 12/4/35, 12/5/35, 12/6/35, 12/7/35, 12/8/35, 12/9/35, 12/10/35, 12/11/35, 12/12/35, 12/13/35, 12/14/35, 12/15/35, 12/16/35, 12/17/35, 12/18/35, 12/19/35, 12/20/35, 12/21/35, 12/22/35, 12/23/35, 12/24/35, 12/25/35, 12/26/35, 12/27/35, 12/28/35, 12/29/35, 12/30/35, 12/31/35, 1/1/36, 1/2/36, 1/3/36, 1/4/36, 1/5/36, 1/6/36, 1/7/36, 1/8/36, 1/9/36, 1/10/36, 1/11/36, 1/12/36, 1/13/36, 1/14/36, 1/15/36, 1/16/36, 1/17/36, 1/18/36, 1/19/36, 1/20/36, 1/21/36, 1/22/36, 1/23/36, 1/24/36, 1/25/36, 1/26/36, 1/27/36, 1/28/36, 1/29/36, 1/30/36, 1/31/36, 2/1/36, 2/2/36, 2/3/36, 2/4/36, 2/5/36, 2/6/36, 2/7/36, 2/8/36, 2/9/36, 2/10/36, 2/11/36, 2/12/36, 2/13/36, 2/14/36, 2/15/36, 2/16/36, 2/17/36, 2/18/36, 2/19/36, 2/20/36, 2/21/36, 2/22/36, 2/23/36, 2/24/36, 2/25/36, 2/26/36, 2/27/36, 2/28/36, 2/29/36, 2/30/36, 3/1/36, 3/2/36, 3/3/36, 3/4/36, 3/5/36, 3/6/36, 3/7/36, 3/8/36, 3/9/36, 3/10/36, 3/11/36, 3/12/36, 3/13/36, 3/14/36, 3/15/36, 3/16/36, 3/17/36, 3/18/36, 3/19/36, 3/20/36, 3/21/36, 3/22/36, 3/23/36, 3/24/36, 3/25/36, 3/26/36, 3/27/36, 3/28/36, 3/29/36, 3/30/36, 3/31/36, 4/1/36, 4/2/36, 4/3/36, 4/4/36, 4/5/36, 4/6/36, 4/7/36, 4/8/36, 4/9/36, 4/10/36, 4/11/36, 4/12/36, 4/13/36, 4/14/36, 4/15/36, 4/16/36, 4/17/36, 4/18/36, 4/19/36, 4/20/36, 4/21/36, 4/22/36, 4/23/36, 4/24/36, 4/25/36, 4/26/36, 4/27/36, 4/28/36, 4/29/36, 4/30/36, 5/1/36, 5/2/36, 5/3/36, 5/4/36, 5/5/36, 5/6/36, 5/7/36, 5/8/36, 5/9/36, 5/10/36, 5/11/36, 5/12/36, 5/13/36, 5/14/36, 5/15/36, 5/16/36, 5/17/36, 5/18/36, 5/19/36, 5/20/36, 5/21/36, 5/22/36, 5/23/36, 5/24/36, 5/25/36, 5/26/36, 5/27/36, 5/28/36, 5/29/36, 5/30/36, 5/31/36, 6/1/36, 6/2/36, 6/3/36, 6/4/36, 6/5/36, 6/6/36, 6/7/36, 6/8/36, 6/9/36, 6/10/36, 6/11/36, 6/12/36, 6/13/36, 6/14/36, 6/15/36, 6/16/36, 6/17/36, 6/18/36, 6/19/36, 6/20/36, 6/21/36, 6/22/36, 6/23/36, 6/24/36, 6/25/36, 6/26/36, 6/27/36, 6/28/36, 6/29/36, 6/30/36, 7/1/36, 7/2/36, 7/3/36, 7/4/36, 7/5/36, 7/6/36, 7/7/36, 7/8/36, 7/9/36, 7/10/36, 7/11/36, 7/12/36, 7/13/36, 7/14/36, 7/15/36, 7/16/36, 7/17/36, 7/18/36, 7/19/36, 7/20/36, 7/21/36, 7/22/36, 7/23/36, 7/24/36, 7/25/36, 7/26/36, 7/27/36, 7/28/36, 7/29/36, 7/30/36, 7/31/36, 8/1/36, 8/2/36, 8/3/36, 8/4/36, 8/5/36, 8/6/36, 8/7/36, 8/8/36, 8/9/36, 8/10/36, 8/11/36, 8/12/36, 8/13/36, 8/14/36, 8/15/36, 8/16/36, 8/17/36, 8/18/36, 8/19/36, 8/20/36, 8/21/36, 8/22/36, 8/23/36, 8/24/36, 8/25/36, 8/26/36, 8/27/36, 8/28/36, 8/29/36, 8/30/36, 8/31/36, 9/1/36, 9/2/36, 9/3/36, 9/4/36, 9/5/36, 9/6/36, 9/7/36, 9/8/36, 9/9/36, 9/10/36, 9/11/36, 9/12/36, 9/13/36, 9/14/36, 9/15/36, 9/16/36, 9/17/36, 9/18/36, 9/19/36, 9/20/36, 9/21/36, 9/22/36, 9/23/36, 9/24/36, 9/25/36, 9/26/36, 9/27/36, 9/28/36, 9/29/36, 9/30/36, 10/1/36, 10/2/36, 10/3/36, 10/4/36, 10/5/36, 10/6/36, 10/7/36, 10/8/36, 10/9/36, 10/10/36, 10/11/36, 10/12/36, 10/13/36, 10/14/36, 10/15/36, 10/16/36, 10/17/36, 10/18/36, 10/19/36, 10/20/36, 10/21/36, 10/22/36, 10/23/36, 10/24/36, 10/25/36, 10/26/36, 10/27/36, 10/28/36, 10/29/36, 10/30/36, 10/31/36, 11/1/36, 11/2/36, 11/3/36, 11/4/36, 11/5/36, 11/6/36, 11/7/36, 11/8/36, 11/9/36, 11/10/36, 11/11/36, 11/12/36, 11/13/36, 11/14/36, 11/15/36, 11/16/36, 11/17/36, 11/18/36, 11/19/36, 11/20/36, 11/21/36, 11/22/36, 11/23/36, 11/24/36, 11/25/36, 11/26/36, 11/27/36, 11/28/36, 11/29/36, 11/30/36, 12/1/36, 12/2/36, 12/3/36, 12/4/36, 12/5/36, 12/6/36, 12/7/36, 12/8/36, 12/9/36, 12/10/36, 12/11/36, 12/12/36, 12/13/36, 12/14/36, 12/15/36, 12/16/36, 12/17/36, 12/18/36, 12/19/36, 12/20/36, 12/21/36, 12/22/36, 12/23/36, 12/24/36, 12/25/36, 12/26/36, 12/27/36, 12/28/36, 12/29/36, 12/30/36, 12/31/36]*

Survey Fee £ See report on When applied for, 19  
Travelling Expenses (if any) £ Machinery When received, 19  
H. B. Forster  
Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute GLASGOW 14 JUL 1936  
Assigned SEE ACCOMPANYING MACHINERY REPORT  
FRI. 31 JUL 1936  
see Mv. 94007  
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