

REPORT ON BOILERS.

No. 46630

Received at London Office 30/11/1927

Date of writing Report 17/5/27 1927 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 15.1.26 Last Survey 4.5.1927
(Number of Visits 54) Gross 8701 Tons Net 5215

Master Built at Glasgow By whom built Barclay Curle & Co. Ltd. Yard No. 615 When built 1927

Engines made at Glasgow By whom made Barclay Curle & Co. Ltd. Engine No. 615 When made 1927

Boilers made at Glasgow By whom made Barclay Curle & Co. Ltd. Boiler No. 615 When made 1927

Nominal Horse Power Owners Port belonging to

MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY

Manufacturers of Steel D. Colville Sons Ltd & W. Beardmore & Co. Ltd (Letter for Record (S))

Total Heating Surface of Boilers 2267 sq ft Is forced draught fitted Yes Coal or Oil fired Coal Working Pressure 225 lb/sq in

No. and Description of Boilers One, Single ended, Marine type Tested by hydraulic pressure to 388 lb/sq in Date of test 24/6/26 No. of Certificate 14157 Can each boiler be worked separately Yes

Area of Firegrate in each Boiler 56.3 sq ft No. and Description of safety valves to each boiler 2 Cochran high lift Area of each set of valves per boiler (per Rule 7.85 sq ft as fitted 7.96 sq ft) Pressure to which they are adjusted 230 lb/sq in Are they fitted with easing gear Yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler Yes Smallest distance between boilers or uptakes and bunkers or woodwork 2'-9" Is oil fuel carried in the double bottom under boilers No

Smallest distance between shell of boiler and tank top plating 2'-2" Is the bottom of the boiler insulated No Largest internal dia. of boilers 14'-3" Length 12'-6" Shell plates: Material Steel Tensile strength 28 1/2 - 32 1/2

Thickness 1 1/2" Are the shell plates welded or flanged No Description of riveting: circ. seams end DR. inter. DR. Pitch of rivets 3.925"

long. seams T.R.-D.B.S. Diameter of rivet holes in (circ. seams 1 1/16" long. seams 1 1/16" Pitch of rivets 10" Percentage of strength of circ. intermediate seam (plate 63.37. rivets 46.94. combined 88.52.) Working pressure of shell by Rules 225 lb/sq in

Percentage of strength of longitudinal joint (plate 85.62. rivets 56.38. combined 88.52.) Thickness of butt straps (outer 13/32" inner 17/32") No. and Description of Furnaces in each Boiler Three - Brighton Section

Material Steel Tensile strength 26-30 Smallest outside diameter 3'-6 5/16" Length of plain part (top 21" bottom 32") Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 242 lb/sq in Thickness 1 1/32" Pitch of stays 15 1/2" x 19 1/8"

End plates in steam space: Material Steel Tensile strength 26/30 Thickness 1 1/32" How are stays secured D.N. Working pressure by Rules 228 lb/sq in

Tube plates: Material (front Steel back Steel) Tensile strength 26-30 Thickness 61/64" 1/8" Working pressure (front 226 lb back 276 lb)

Mean pitch of stay tubes in nests 9.2 Pitch across wide water spaces 14 5/16" Working pressure 276 lb Depth and thickness of girder 8 1/4"

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 Distance apart 8 1/4" No. and pitch of stays 4 @ 8"

at centre 10 3/8" x 1 13/16" Length as per Rule 40.4" Working pressure by Rules 238 lb/sq in Combustion chamber plates: Material Steel Thickness 21" 32" Bottom 7/8"

Tensile strength 26-30 Thickness: Sides 32" Back 32" Top 32" Bottom 7/8" Are stays fitted with nuts or riveted over nuts

Pitch of stays to ditto: Sides 8 1/2" x 8" Back 4 1/4" x 8 1/8" Top 8" x 8 1/4" Working pressure by Rules 227 lb/sq in Front plate at bottom: Material Steel Tensile strength 26-30 Thickness 27/32"

Thickness 61/64" Lower back plate: Material Steel Tensile strength 26-30 Thickness 27/32" Pitch of stays at wide water space 14 5/16" Are stays fitted with nuts or riveted over nuts

Working Pressure 226 lb/sq in Main stays: Material Steel Tensile strength 28-32 Area supported by each stay 15 1/2" x 19 1/8"

Diameter (At body of stay, 3" No. of threads per inch 6. Area supported by each stay 26-30 Working pressure by Rules 227 lb/sq in Screw stays: Material Steel Tensile strength 26-30

Diameter (At turned off part, 1 5/8" No. of threads per inch 9. Area supported by each stay 26-30

Working pressure by Rules **236 lb.** Are the stays drilled at the outer ends **no** Margin stays: Diameter { At turned off part, **1 1/8"** ✓
 Over threads **Crown 2 1/8"** ✓
 Working pressure by Rules **225 lb.** ✓
 No. of threads per inch **9** ✓ Area supported by each stay **126 sq"**
 Tubes: Material **Iron** ✓ External diameter { Plain **3"** ✓ Thickness { **8 wt.** ✓
 No. of threads per inch **9** ✓
 Pitch of tubes **4 1/4" x 4 1/8"** ✓ Working pressure by Rules **250 lb.** ✓ Manhole compensation: Size of opening in
 shell plate **20 1/2" x 16 1/2"** ✓ Section of compensating ring **16 3/4" x 1 27/64"** ✓ No. of rivets and diameter of rivet holes **40 x 1 1/16"** ✓
 Outer row rivet pitch at ends **10 7/8"** ✓ Depth of flange if manhole flanged **4 1/4"** ✓ 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 **Smoke tube** Manufacturers of { Tubes **North Eastern Marine** ✓
 Steel castings
 Number of elements **48** Material of tubes **Steel** Internal diameter and thickness of tubes **1 7/8" - 2 1/5"** ✓
 Material of headers **Mild Steel** Tensile strength Thickness **1/2" at neck** ✓ Can the superheater be shut off and
 the boiler be worked separately **yes** ✓ 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 **3.1416 sq"** ✓ Are the safety valves fitted with easing gear **yes** ✓ Working pressure as per
 Rules Pressure to which the safety valves are adjusted **230 lb.** ✓ Hydraulic test pressure:
 tubes, castings and after assembly in place **500 lb.** ✓ Are drain cocks or valves fitted
 to free the superheater from water where necessary **yes** ✓
 Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with **yes** ✓

The foregoing is a correct description,
John Hayward Manufacturer.

Dates of Survey { During progress of **See accompanying** ✓ Are the approved plans of boiler and superheater forwarded herewith
 works in shops - - - (If not state date of approval.)
 while building { During erection on **machinery report** ✓ Total No. of visits **5** ✓
 board vessel - - -

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)
See engine report. This boiler has been built under special survey in accordance with the Rules and has been efficiently fitted on board.

a.l.
 17/5/27

Survey Fee £ : ✓ : } When applied for, 192
 Travelling Expenses (if any) £ : ✓ : } When received, 192

H. L. Sutherland *John Hayward*
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **GLASGOW 17 MAY 1927**
 Assigned **See accompanying mach. report.**
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