

## REPORT ON BOILERS.

No. 57494

-8 OCT 1936

Received at London Office

Date of writing Report 19 When handed in at Local Office 6. 10. 1936 Port of Glasgow

No. in Reg. Book 89902 on the M.V. "Queen Adelaide" Date, First Survey 29. 1. 36 Last Survey 25. 9. 36. 19

(Number of Visits 14) Gross 4932.6 Tons Net 2999.4

Master Built at Glasgow By whom built Barclay Curle & Co. Ltd. Yard No. 658 When built 1936

Engines made at Glasgow By whom made Barclay Curle & Co. Ltd. Engine No. 658 When made 1936

Boilers made at Glasgow By whom made Barclay Curle & Co. Ltd. Boiler No. 658 When made 1936

Nominal Horse Power 112 Owners T. Dunlop & Son. Port belonging to Glasgow

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

Manufacturers of Steel Messrs J. Clarke & Sons Ltd. (Letter for Record (3))

Total Heating Surface of Boilers 1684 SQUARE FEET. Is forced draught fitted Coal or Oil fired OIL FIRED.

No. and Description of Boilers 1 SINGLE BOILER. Working Pressure 120 lbs/sq. in.

Tested by hydraulic pressure to 230 lbs/sq. in. Date of test 25/6/36. No. of Certificate 19762. Can each boiler be worked separately.

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler Two - double Imp. High Lift.

Area of each set of valves per boiler {per Rule 15.6 sq. in. as fitted 7.94 sq. in. Pressure to which they are adjusted 120 lbs/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.

Smallest distance between boilers or uptakes and bunkers or woodwork well clear. Is oil fuel carried in the double bottom under boilers Yes.

Smallest distance between shell of boiler and tank top plating 30". Is the bottom of the boiler insulated Yes.

Largest internal dia. of boilers 12'-9" Length 11'-0" Shell plates: Material STEEL. Tensile strength 29-33 Tons/sq. in. end DOUBLE RIVETED.

Thickness 23/32". Are the shell plates welded or flanged No. Description of riveting: circ. seams {inter. 2-4/16" long. seams KEBLE RIVETED. D.B.S. Diameter of rivet holes in {circ. seams 13/16" long. seams 13/16" Pitch of rivets {plate 5-7/8" rivets 5-7/8".

Percentage of strength of circ. end seams {plate 66.36 rivets 47.41 Percentage of strength of circ. intermediate seam {plate 85.86 rivets 93.28.

Percentage of strength of longitudinal joint {plate 85.86 rivets 93.28. Working pressure of shell by Rules 123 lbs/sq. in.

Thickness of butt straps {outer 9/16" inner 11/16". No. and Description of Furnaces in each Boiler 3 DELIGHTON SECTION.

Material STEEL Tensile strength 26-30 Tons/sq. in. Smallest outside diameter 3'-1 1/4".

Length of plain part {top 1' bottom 1' Thickness of plates {crown 3/8" bottom 3/8" Description of longitudinal joint weld.

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 142 lbs/sq. in.

End plates in steam space: Material STEEL. Tensile strength 26-30 Tons/sq. in. Thickness 13/16". Pitch of stays 18 1/2" x 18".

How are stays secured DOUBLE NUTS. Working pressure by Rules 121 lbs/sq. in.

Tube plates: Material {front STEEL back STEEL. Tensile strength {26-30 Tons/sq. in. Thickness {23/32" 11/16".

Mean pitch of stay tubes in nests 10 1/2". Pitch across wide water spaces 14 1/2". Working pressure {front 125 lbs/sq. in. back 152 lbs/sq. in.

Girders to combustion chamber tops: Material STEEL. Tensile strength 28-32 Tons/sq. in. Depth and thickness of girder at centre 8" DEEP x 13 1/2" THK. DOUBLE Length as per Rule 2'-9 3/4". Distance apart 9 1/2". No. and pitch of stays in each 2-10 1/2" PITCH. Working pressure by Rules 121 lbs/sq. in. Combustion chamber plates: Material STEEL.

Tensile strength 26-30 Tons/sq. in. Thickness: Sides 13/32" Back 9/16" Top 19/32" Bottom 19/32".

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

Working pressure by Rules 121 lbs/sq. in. Front plate at bottom: Material STEEL. Tensile strength 26-30 Tons/sq. in.

Thickness 23/32". Lower back plate: Material STEEL. Tensile strength 26-30 Tons/sq. in. Thickness 2 1/32".

Pitch of stays at wide water space 14". Are stays fitted with nuts or riveted over NUTS.

Working Pressure 165 lbs/sq. in. Main stays: Material STEEL. Tensile strength 28-32 Tons/sq. in.

Diameter {At body of stay, 2 1/2" No. of threads per inch 6 Area supported by each stay 18 1/2" x 18"

Working pressure by Rules 135 lbs/sq. in. Screw stays: Material STEEL. Tensile strength 26-30 Tons/sq. in.

Diameter {At turned off part, 1 1/2" No. of threads per inch 9 Area supported by each stay 9 1/2" x 9 1/8".



Working pressure by Rules 144 lbs/sq Are the stays drilled at the outer ends No. Margin stays: Diameter 1 5/8"  
No. of threads per inch 9. Area supported by each stay 11 3/4" x 9 1/8" Working pressure by Rules 151 lbs/sq  
Tubes: Material S.D. STEEL. External diameter 3" Thickness 10 n.g. No. of threads per inch 9  
Pitch of tubes 4 1/4" x 4 1/8" Working pressure by Rules 140 lbs/sq Manhole compensation: Size of opening in  
shell plate 20" x 16" Section of compensating ring 2' 9" x 2' 5" x 2 3/32" No. of rivets and diameter of rivet holes 44 x 1 5/16" Dia. Holes.  
Outer row rivet pitch at ends 6" 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 ✓  
Internal diameter ✓ Working pressure by Rules ✓ Thickness of crown ✓ No. and diameter of Engi  
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 ✓ Manufacturers of ✓  
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 ✓

The foregoing is a correct description,

James B McPhee Manufacturer.

Dates of Survey During progress of work in shops - - 1936 Jan. 29 Feb. 7-11 Mar. 6 Apr. 11 Are the approved plans of boiler and superheater forwarded herewith  
while building During erection on board vessel - - 21.30 May. 5.15 22 June 9.15.35 (If not state date of approval.)  
Total No. of visits 14

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This boiler has been built under Special Survey, to approved plans in accordance with the Society's Rules. Materials and workmanship are good.

This boiler has been efficiently secured in position on board ship!  
under strain and found in order.

6/10/36

Survey Fee £ 11/4/0.

Travelling Expenses (if any) £ :

When applied for, 6 - OCT 1936

When received, 24 - 11 - 36

H. Sutherland  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 6 - OCT 1936

Assigned SEE ACCOMPANYING MACHINERY REPORT.



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