

# REPORT ON BOILERS.

No. 76086

1 DEC 1950

Received at London Office

Date of writing Report 19... When handed in at Local Office 18.9.50 Port of GLASGOW.  
 No. in Survey held at GLASGOW Date, First Survey 16.9.48 Last Survey 29.8.1950  
 on the M.V. "POWELL" (Number of Visits 48) Gross... Tons Net...  
 Built at PORT GLASGOW By whom built LITHGOWS LTD. Yard No. 1046 When built 1950.  
 Engines made at GLASGOW By whom made DAVID ROWAN & CO. LTD. Engine No. 1218 When made 1950  
 Boilers made at GLASGOW By whom made DAVID ROWAN & CO. LTD. Boiler No. 1218 When made 1950  
 Nominal Horse Power... Owners... Port belonging to...

## MULTITUBULAR BOILERS ~~WATER~~ ON DONKEY.

Manufacturers of Steel Colvilles Ltd. (Letter for Record S)  
 Total Heating Surface of Boilers 2505 sq. ft. x 2 Is forced draught fitted Yes Coal or Oil fired Oil  
 No. and Description of Boilers 2 single ended multitubular Working Pressure 180 lbs/sq.in.  
 Tested by hydraulic pressure to 320 lbs/sq.in. Date of test PT.24.5.50 23166 SD.18.5.50 23156 Can each boiler be worked separately Yes  
 Area of Firegrate in each Boiler - No. and Description of safety valves to each boiler 3 1/2" dia (double) spring loaded  
 Area of each set of valves per boiler per Rule 16 sq.in. as fitted 16.59 sq.in. Pressure to which they are adjusted 185 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 Separate boiler flat 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 Yes  
 Largest internal dia. of boilers 14'0" Length 12'0" Shell plates: Material Steel Tensile strength 29-33 tons  
 Thickness 1 1/8" Are the shell plates welded or flanged - Description of riveting: circ. seams end D.R. inter -  
 g. seams T.R.D.B.S. Diameter of rivet holes in circ. seams 1.3/16" long. seams 1.3/16" Pitch of rivets 3 1/2" 8.5/16"  
 Percentage of strength of circ. end seams plate 62.7% rivets 48.9% Percentage of strength of circ. intermediate seam plate - rivets -  
 Percentage of strength of longitudinal joint plate 85.8% rivets 88.2% combined 89% Working pressure of shell by Rules 181.5 lbs/sq.in.  
 Thickness of butt straps outer 27/32" inner 31/32" No. and Description of Furnaces in each Boiler 3 Corrugated (Deighton)  
 Material Steel Tensile strength 26-30 tons Smallest outside diameter 41.1/32"  
 Length of plain part top - bottom - Thickness of plates crown 33/64" bottom - Description of longitudinal joint weld  
 Dimensions of stiffening rings on furnace or c.c. bottom - Working pressure of furnace by Rules 181 lbs/sq.in.  
 Plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1.1/8" Pitch of stays 19"x17"  
 Are stays secured nuts inside and outside Working pressure by Rules 180 lbs/sq.in.  
 Front plates: Material Steel Tensile strength 26-30 tons Thickness 27/32" 11/16"  
 Pitch of stay tubes in nests 9.25" Pitch across wide water spaces 13 1/2" Working pressure front 207 lbs/sq.in. back 195 lbs/sq.in.  
 Girders to combustion chamber tops: Material Steel Tensile strength 28-32 tons Depth and thickness of girder  
 Centre (8 1/8"x7/8") x 2 Length as per Rule 32.7" Distance apart 9 1/8" No. and pitch of stays  
 Each 3 @ 8" Working pressure by Rules 186 lbs/sq.in. Combustion chamber plates: Material Steel  
 Tensile strength 26-30 tons Thickness: Sides 11/16" Back 5/8" Top 11/16" Bottom 11/16"  
 Pitch of stays to ditto: Sides 10 1/2"x8 1/4" Back 9" x 8" Top 8" x 9 1/8" Are stays fitted with nuts or riveted over nuts except wings to shell  
 Working pressure by Rules 180 lbs/sq.in. Front plate at bottom: Material Steel Tensile strength 26-30 tons  
 Thickness 27/32" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 3/4"  
 Pitch of stays at wide water space 13 1/2" x 8" Are stays fitted with nuts or riveted over nuts  
 Working pressure 182 lbs/sq.in. Main stays: Material Steel Tensile strength 28-32 tons  
 Diameter At body of stay 2 1/2" x 2 3/4" No. of threads per inch 6 Area supported by each stay 19 5/8" x 18 1/2"  
 Working pressure by Rules 181 lbs/sq.in. Screw stays: Material Steel Tensile strength 26-30 tons  
 Diameter At turned off part 1 5/8" 1 3/4" 1 3/8" No. of threads per inch 9 Area supported by each stay 8" x 9 1/8"

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Working pressure by Rules. 208 lbs/sq.in. Are the stays drilled at the outer ends. No ✓ Margin stays: Diameter 1 1/2" At turned off part, or Over threads. 1 1/2" No. of threads per inch. 9 Area supported by each stay 11 1/2" x 8" Working pressure by Rules. 201 lbs/sq.in. Tubes: Material. Steel External diameter 2 1/2" Plain 2 1/2" Thickness 5/16, 3/8, 7/16 No. of threads per inch. 9 Pitch of tubes 3 3/4" x 3 5/8" Working pressure by Rules. 228 lbs/sq.in. Manhole compensation: Size of opening shell plate 19 1/2" x 15 1/2" Section of compensating ring 8 3/4" x 1 1/8" No. of rivets and diameter of rivet holes. 36 @ 1.3/16" Outer row rivet pitch at ends. 7 5/8" Depth of flange if manhole flanged. 3" 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 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. Manufacturers of Tubes. Steel forgings. 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 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 casing gear. Working pressure Rules. Pressure to which the safety valves are adjusted. Hydraulic test pressure tubes. forgings and castings. and after assembly in place. Are drain 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,  
For David Rowan & Co. Ltd.  
Archd. H. Grierson.

Dates of Survey while building During progress of work in shops - - - See Rpt on oil Eng. Are the approved plans of boiler and superheater forwarded herewith Yes (If not state date of approval.) During erection on board vessel - - - Total No. of visits. 48

Is this Boiler a duplicate of a previous case. Yes If so, state Vessel's name and Report No. D. Rowan 1215 Gls. Rpt. 7552

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) These Boilers have been constructed under Special Survey in accordance with the Society's Rules and the Approved plan. Materials and workmanship are good. The Boilers have been efficiently installed on board the vessel which has been towed to Port Glasgow for completion.

These Boilers have been run under steam, safety valves adjusted to 185 lbs/sq.in. and accumulation tests as per Rules, carried out satisfactorily.

For recommendations please see G.R.K. & Co. Rpt No 24249.

H. C. C. J. J. J.  
Greenock  
Oct 1/50.

Survey Fee ... £ 67 : 0 : 0 When applied for. 20 SEP 1950  
Travelling Expenses (if any) £ : : When received. 19

R. Shaw.

Engineer Surveyor to Lloyd's Register of Ships

Committee's Minute GLASGOW 20 SEP 1950

Assigned. Superseded for completion



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