

# REPORT ON BOILERS.

No. 48411

Received at London Office 27 SEP 1928

Date of writing Report 1928 When handed in at Local Office 21.9.1928 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 8.2.28 Last Survey 20-9-1928

Reg. Book. on the new steel 5/5" KERMA. (Number of Visits 46) Gross Tons 4333

Master Built at Glasgow By whom built W & W. Henderson & Co. Ltd. Yard No. 831 When built 1928

Engines made at Glasgow By whom made W & W. Henderson & Co. Ltd. Engine No. 831 When made 1928

Boilers made at Glasgow By whom made W & W. Henderson & Co. Ltd. Boiler No. 831 When made 1928

Nominal Horse Power 346 Owners Port belonging to London

## MULTITUBULAR BOILERS MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Dain & Whille & Sons Ltd (Letter for Record (S))

Total Heating Surface of Boilers 1265 sq ft Is forced draught fitted no Coal or Oil fired coal

No. and Description of Boilers one single ended Working Pressure 120

Tested by hydraulic pressure to 230 Date of test 20-8-28 No. of Certificate 18017 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 Improved High Lift.

Area of each set of valves per boiler per Rule 6.959 as fitted 7.96 Pressure to which they are adjusted 122 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 5'-0" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating no tank Is the bottom of the boiler insulated no

Largest internal dia. of boilers 12'-0" Length 10'-6" Shell plates: Material steel Tensile strength 28-32 tons

Thickness 11/16" Are the shell plates welded or flanged no Description of riveting: circ. seams end DR inter. -

long. seams WBS. TR Diameter of rivet holes in circ. seams 1" long. seams 13/16" Pitch of rivets 4" 5 13/32"

Percentage of strength of circ. end seams plate 75.0 rivets 46.9 Percentage of strength of circ. intermediate seam plate rivets

Percentage of strength of longitudinal joint plate 84.9 rivets 85.9 combined 91.4 Working pressure of shell by Rules 120

Thickness of butt straps outer 5/8" inner 3/4" No. and Description of Furnaces in each Boiler Two plain

Material steel Tensile strength 26-30 tons Smallest outside diameter 43.25"

Length of plain part top 82" bottom 80" Thickness of plates crown 31/32" bottom 31/32" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom 3 1/2 x 3 1/2 x 2 1/2 Working pressure of furnace by Rules 122

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 53/64 Pitch of stays 17x15"

How are stays secured WN Working pressure by Rules 121

Tube plates: Material front steel back " Tensile strength 26-30 tons Thickness 27/32" 21/32"

Mean pitch of stay tubes in nests 9" Pitch across wide water spaces 1-2 1/4 Working pressure front 123 back 227

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder

at centre 2 @ 8 1/4 x 5/8 Length as per Rule 33 Distance apart 9 No. and pitch of stays

in each 2 @ 10 Working pressure by Rules 127 Combustion chamber plates: Material steel

Tensile strength 26-30 tons Thickness: Sides 19/32 Back 19/32 Top 19/32 Bottom 19/32

Pitch of stays to ditto: Sides 9x10 Back 9 1/2 x 10 Top 9x10 Are stays fitted with nuts or riveted over WN

Working pressure by Rules 130 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 43/64

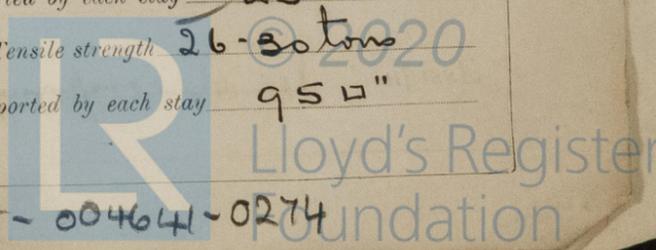
Pitch of stays at wide water space 14 1/4 Are stays fitted with nuts or riveted over nuts

Working Pressure 121 Main stays: Material steel Tensile strength 28-32 tons

Diameter At body of stay, 2 1/2 No. of threads per inch 6 Area supported by each stay 251

Working pressure by Rules 176 Screw stays: Material steel Tensile strength 26-30 tons

Diameter At turned off part, 1 1/2 No. of threads per inch 9 Area supported by each stay 950"



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Working pressure by Rules 132 Are the stays drilled at the outer ends no Margin stays: Diameter <sup>At turned off part,</sup> 1 5/8  
 No. of threads per inch 9 Area supported by each stay 115 Working pressure by Rules 132  
 Tubes: Material Iron External diameter <sup>Plain 3 1/4</sup> Thickness <sup>Stay 3 1/4</sup> 9 W.S. No. of threads per inch 9  
 Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules 180 Manhole compensation: Size of opening in  
 shell plate 16" x 20" Section of compensating ring 8 1/2" x 13 1/4" No. of rivets and diameter of rivet holes 46 @ 1 3/16"  
 Outer row rivet pitch at ends 5 13/32" Depth of flange if manhole flanged 3" Steam Dome: Material none  
 Tensile strength 168 Thickness of shell 11/16" Description of longitudinal joint  
 Diameter of rivet holes 108 Pitch of rivets 1 1/2" Percentage of strength of joint 100  
 Internal diameter 188 Working pressure by Rules 180 Thickness of crown 11/16" No. and diameter of  
 stays 188 Inner radius of crown 11/16" Working pressure by Rules 180  
 How connected to shell none Size of doubling plate under dome none Diameter of rivet holes and pitch  
 of rivets in outer row in dome connection to shell none

Type of Superheater none Manufacturers of none Tubes none  
 Number of elements none Material of tubes none Steel castings none Internal diameter and thickness of tubes none  
 Material of leaders none Tensile strength 168 Thickness 11/16" 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  
 Area of each safety valve none Are the safety valves fitted with easing gear yes Working pressure as per  
 Rules 132 Pressure to which the safety valves are adjusted 132 Hydraulic test pressure:  
 tubes 168 castings 168 and after assembly in place 168 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,  
 For DAVID & WILLIAM HENDERSON & CO., LTD.  
 Manufacturer.  
 Director.

Dates of Survey See accompanying Are the approved plans of boiler and superheater forwarded herewith  
 while building See accompanying machinery Report, (If not state date of approval.)  
 Total No. of visits 46

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)  
The materials and workmanship are good.  
The boiler has been constructed under special survey in accordance with  
the Rules, satisfactorily fitted in the vessel and its safety valves adjusted  
under steam.

*A. L. M.*  
 21/9/28

Survey Fee ... £ 8 : 8 : When applied for, 26 SEP 1928  
 Travelling Expenses (if any) £ 0 : 0 : When received, 2.10.1928

*S. C. Davis*  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 26 SEP 1928  
 Assigned See accompanying Machy Report *W.M.*

