

REPORT ON BOILERS.

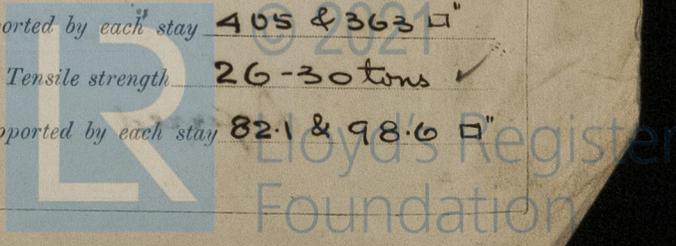
No. 47058

Received at London Office 21 SEP 1927

Date of writing Report 1927 When handed in at Local Office 19-9-1927 Port of Glasgow
 No. in Reg. Book. 521 Survey held at Glasgow Date, First Survey 26-1-27 Last Survey 19-9-1927
 on the new steel S/S "PENTON" (Number of Visits 59) Tons {Gross Net
 Master Built at Burntisland By whom built Burntisland SBCo Yard No. 141 When built 1927
 Engines made at Glasgow By whom made W. Rowan & Co Ltd Engine No. 860 When made 1927
 Boilers made at Glasgow By whom made W Rowan & Co Ltd Boiler No. 860 When made 1927
 Nominal Horse Power Owners Barnett & Co Port belonging to London

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel Phoenix Abt. Hender Nerein of Hoerde, Germany (Letter for Record S)
 Total Heating Surface of Boilers 6201 sq ft Is forced draught fitted no Coal or Oil fired coal
 No. and Description of Boilers three single ended Working Pressure 180
 Tested by hydraulic pressure to 320 Date of test 9-8-27 No. of Certificate 17526 Can each boiler be worked separately yes
 Area of Firegrate in each Boiler 57.75 sq ft No. and Description of safety valves to each boiler two direct spring
 Area of each set of valves per boiler {per Rule 13.25" as fitted 14.12" Pressure to which they are adjusted 185 lb. 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 8'-0" Is oil fuel carried in the double bottom under boilers no
 Smallest distance between shell of boiler and tank top plating 2'-6" Is the bottom of the boiler insulated yes
 Largest internal dia. of boilers 14'-9 9/16" Length 11'-0" Shell plates: Material steel Tensile strength 28-32 tons
 Thickness 1 1/32" Are the shell plates welded or flanged no Description of riveting: circ. seams {end DR inter. DR
 long. seams DBS. TR Diameter of rivet holes in {circ. seams 7/16" B 1 1/2" Pitch of rivets {circ. seams 3.19 B 3.46 long. seams 1/4" 8 5/8"
 Percentage of strength of circ. end seams {plate 62.7 B 63.9 rivets 46.8 B 47.8 Percentage of strength of circ. intermediate seam {plate 85.5 rivets 89.5 combined 89.06 Working pressure of shell by Rules 181
 Thickness of butt straps {outer 29" inner 1 1/32" No. and Description of Furnaces in each Boiler three Weighton
 Material steel Tensile strength 26-30 tons Smallest outside diameter 3'-7 3/8"
 Length of plain part {top bottom Thickness of plates {crown 35" bottom 64" Description of longitudinal joint welded
 Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 184
 End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 1/4" Pitch of stays 19 3/4" x 20 1/2"
 How are stays secured D.N. Working pressure by Rules 182
 Tube plates: Material {front steel back " Tensile strength {front 26-30 tons back " Thickness {front 27" back 23" 32" 32"
 Lean pitch of stay tubes in nests 10.26" Pitch across wide water spaces 13 7/8" Working pressure {front 183 back 183
 Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder
 centre 2 @ 7 3/4" x 7 1/8" Length as per Rule 32.625" Distance apart 9 1/2" No. and pitch of stays
 each 2 @ 10 3/8" Working pressure by Rules 181 Combustion chamber plates: Material steel
 Tensile strength 26-30 tons Thickness: Sides 23/32" Back 21/32" Top 23/32" Bottom 23/32"
 Pitch of stays to ditto: Sides 9 1/2" x 10 3/8" Back 9 1/2" x 8 7/8" Top 9 1/2" x 10 3/8" Are stays fitted with nuts or riveted over nuts
 Working pressure by Rules 182 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 1/8" Are stays fitted with nuts or riveted over nuts
 Working Pressure 181 Main stays: Material steel Tensile strength 28-32 tons
 Diameter {At body of stay, or Over threads 3" & 2 3/4" No. of threads per inch 6 Area supported by each stay 405 & 363 sq in
 Working pressure by Rules 182 Screw stays: Material steel Tensile strength 26-30 tons
 Diameter {At turned off part, or Over threads 1 5/8" 1 3/4" No. of threads per inch 9 Area supported by each stay 82.1 & 98.6 sq in



Working pressure by Rules 185 lb Are the stays drilled at the outer ends no Margin stays: Diameter ^{At turned off part.} 1 3/4" or Over threads 1 3/4"

No. of threads per inch 9 Area supported by each stay 99.20" Working pressure by Rules 182

Tubes: Material Iron External diameter ^{Plain} 3 1/4" ^{Stay} 3 1/4" Thickness 9 W.S. No. of threads per inch 9

Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 180 Manhole compensation: Size of opening in shell plate 19 1/2" x 15 1/2" Section of compensating ring 7 1/2" x 1 1/2" No. of rivets and diameter of rivet holes 32 @ 1 5/16"

Outer row rivet pitch at ends 9 1/2" Depth of flange if manhole flanged 3" Steam Dome: Material Iron

Tensile strength 141 Thickness of shell 1/2" Description of longitudinal joint None

Diameter of rivet holes 0.008 Pitch of rivets 2 1/2" Percentage of strength of joint ^{Plate} 80% ^{Rivets} 80%

Internal diameter 0.008 Working pressure by Rules 180 Thickness of crown 1/2" No. and diameter of stays 0.008 Inner radius of crown 1/2" 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 ^{Tubes} None ^{Steel castings} None

Number of elements None Material of tubes None Internal diameter and thickness of tubes None

Material of headers None Tensile strength None Thickness None Can the superheater be shut off and the boiler be worked separately None

Area of each safety valve None Are the safety valves fitted with easing gear None Working pressure as per Rules None

Pressure to which the safety valves are adjusted None Hydraulic test pressure: tubes None and after assembly in place None Are drain cocks or valves fitted to free the superheater from water where necessary None

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with Yes

The foregoing is a correct description,
 For David Rowan & Co. Ltd. Manufacturer.
 Arch. H. Grierson

Dates of Survey ^{During progress of work in shops - - -} See Accompanying Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) See Machinery report

^{During erection on board vessel - - -} See Machinery report Total No. of visits 59

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The materials and workmanship are good.
 The boilers have been constructed under special survey in accordance with the Rules and have been sent to Burntisland to be fitted in the vessel.
 The boilers have been satisfactorily fitted and run in the vessel, steam raised and the safety valves adjusted to 185 lbs per sq. inch.

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19/9/27

Survey Fee See Machinery Report When applied for 20 SEP 1927

Travelling Expenses (if any) None When received 192

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

Committee's Minute GLASGOW 20 SEP 1927

FRI. 18 NOV 1927

Assigned Deferred

See Rth. J.S.
 rpt. No. 17275

