

# REPORT ON BOILERS.

No. 43891

Received at London Office 20 AUG 1924

Date of writing Report 14<sup>th</sup> August 1924 When handed in at Local Office 14<sup>th</sup> August 1924 Port of Glasgow

No. in Survey held at Glasgow Date, First Survey 9/8/23 Last Survey 5<sup>th</sup> August, 1924

g. Book. 02.57 on the " S.S. PENTRAETH" (Number of Visits 49) Tons { Gross 2480 Net 1500

Master Burntisland Built at Burntisland By whom built Burntisland S.B. Co. Ltd. Yard No. 129 When built 1924

Engines made at Glasgow By whom made D. Rowan & Co. Ltd. Engine No. 785 When made 1924

Boilers made at Glasgow By whom made D. Rowan & Co. Ltd. Boiler No. 785 When made 1924

Nominal Horse Power                      Owners The Pentwyn Steamship Co. Ltd. Port belonging to Cardiff

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

Manufacturers of Steel The Steel Company of Scotland Ltd. and The Lanarkshire Steel Co. Ltd. (Letter for Record S)

Total Heating Surface of Boilers 805 sq ft Is forced draught fitted no Coal or Oil fired Coal

No. and Description of Boilers One Single Ended Working Pressure 100 lbs/sq in

Tested by hydraulic pressure to 200 lbs/sq in Date of test 7.5.24 No. of Certificate 16490 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 30 sq ft No. and Description of safety valves to each boiler Two Spring loaded

Area of each set of valves per boiler { per Rule 8.69 sq ft as fitted 9.82 sq ft Pressure to which they are adjusted 100 lbs Are they fitted with easing gear yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler no

Smallest distance between boilers or uptakes and bunkers or woodwork - 15" Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating -                      Is the bottom of the boiler insulated - yes

Largest internal dia. of boilers 10'-0" Length 9'-6" Shell plates: Material Steel Tensile strength 28/32 tons/sq in

Thickness 19/32" Are the shell plates welded or flanged no Description of riveting: circ. seams { end D.R. LAP inter.                     

long. seams T.R. LAP Diameter of rivet holes in { circ. seams 15" long. seams 15" Pitch of rivets { 2.71" 3 1/16"

Percentage of strength of circ. end seams { plate 65.4 rivets 70.6 Percentage of strength of circ. intermediate seam { plate                      rivets                     

Percentage of strength of longitudinal joint { plate 74.6 rivets 77.6 combined                      Working pressure of shell by Rules 104 lbs/sq in

Thickness of butt straps { outer                      inner                      No. and Description of Furnaces in each Boiler 2 plain

Material Steel Tensile strength 26/30 tons/sq in Smallest outside diameter 2'-11 1/4"

Length of plain part { top 5'-11 1/16" bottom 6'-6 3/8" Thickness of plates { crown 17/32" bottom                      Description of longitudinal joint weld

Dimensions of stiffening rings on furnace or e.c. bottom None Working pressure of furnace by Rules 102 lbs/sq in

End plates in steam space: Material Steel Tensile strength 26/30 tons/sq in Thickness 7/8" Pitch of stays abt. 21 3/4" x 13"

How are stays secured D. nuts Working pressure by Rules 109 lbs/sq in

Tube plates: Material { front Steel back Steel Tensile strength { 26/30 tons/sq in Thickness { 7/8" 21/32"

Mean pitch of stay tubes in nests 12-3" Pitch across wide water spaces 13 1/4" Working pressure { front 150 lbs/sq in back 100 lbs/sq in

Girders to combustion chamber tops: Material Steel Tensile strength 28/32 tons/sq in Depth and thickness of                     

at centre 6 1/2" x 20 9/16" Length as per Rule 25 25/32" Distance apart 12" No. and pitch of stays                     

in each 20 8 1/4" Working pressure by Rules 104 lbs/sq in Combustion chamber plates: Material Steel

Tensile strength 26/30 tons/sq in Thickness: Sides 9/16" Back 9/16" Top 9/16" Bottom 3/4"

Pitch of stays to ditto: Sides 12" x 8 1/4" Back 10 3/4" x 9 1/4" Top 12" x 8 1/4" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 102 lbs/sq in Front plate at bottom: Material Steel Tensile strength 26/30 tons/sq in

Thickness 7/8" Lower back plate: Material Steel Tensile strength 26/30 tons/sq in Thickness 7/8"

Pitch of stays at wide water space 12" x 9 1/4" Are stays fitted with nuts or riveted over nuts

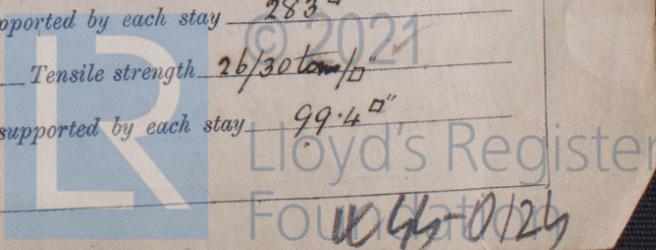
Working Pressure 272 lbs/sq in Main stays: Material Steel Tensile strength 28/32 tons/sq in

Diameter { At body of stay 2" or Over threads                      No. of threads per inch 6 Area supported by each stay 283 sq in

Working pressure by Rules 118 lbs/sq in Screw stays: Material Steel Tensile strength 26/30 tons/sq in

Diameter { At turned off part                      or Over threads 1 3/8" No. of threads per inch 10 Area supported by each stay 99.4 sq in

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Working pressure by Rules 101 lbs/sq Are the stays drilled at the outer ends No Margin stays: Diameter At end of top 1 1/2"  
 No. of threads per inch 10 Area supported by each stay 106.2 sq Working pressure by Rules 119 lbs/sq  
 Tubes: Material L.W.W. Iron External diameter Plain 3 1/2" Thickness 9 W.G. No. of threads per inch 9  
Stay 3 1/4" Pitch of tubes 4 1/2" x 4 3/8" Working pressure by Rules 180 lbs/sq Manhole compensation: Size of opening in  
 shell plate 19 1/2" x 15 1/2" Section of compensating ring 6 1/2" x 7/8" No. of rivets and diameter of rivet holes 32 Rivets 15/16" holes  
 Outer row rivet pitch at ends 4.75" Depth of flange if manhole flanged Comp. Ring flanged 2" to 16" Manhole Steam Dome: Material None  
 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 None Manufacturers of Tubes - 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 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 23 inclusive for boilers been complied with Yes.

The foregoing is a correct description,  
 for David Rowan & Co. Ld  
 Arch. W. Gibson Manufacturer.

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

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) This donkey boiler has been constructed under Special Survey in accordance with the Rules and Approved Plan; the materials and workmanship are good. The boiler has been forwarded to deck to be fitted on board the vessel.  
This boiler has been securely fitted on board of said satisfactory safety valves adjusted under steam to 100 lbs per sq in. 7 1/2" 15" 32 32  
See machinery report for record

Survey Fee £ 4 : 4 : 0 When applied for, 15/8/24  
 Travelling Expenses (if any) £ : When received, 15/8/24

Ed  
 H. B. Forster & R. J. Easthope  
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute GLASGOW 19 AUG 1924

FRI, 12 SEP 1924  
 FRI, 3 OCT 1924

Assigned Deferred.