

Rpt. 5a.

# REPORT ON BOILERS.

No. 46633

Received at London Office

31 MAY 1927

Date of writing report 1927 When handed in at Local Office 5.5.27 1927 Port of Glasgow

No. in Reg. Book Survey held at Glasgow Date, First Survey 26.10.26 Last Survey 5.5.1927

on the new steel S/S "CALEDON". (Number of Visits 48) Tons {Gross Net

Master Built at Burntisland By whom built Burntisland S/B Co Yard No. 140 When built 1924

Engines made at Glasgow By whom made W. Rowan & Co Ld Engine No. 849 When made 1924

Boilers made at Glasgow By whom made W. Rowan & Co Ld Boiler No. 849 When made 1924

Nominal Horse Power 154 Owners Howard Smith Ltd Port belonging to Sydney N.S.W.

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

Manufacturers of Steel The steel company of Scotland, Glasgow-Scottish Iron Works (Letter for Record 15)

Total Heating Surface of Boilers 2904 sq ft Is forced draught fitted no Coal or Oil fired coal

No. and Description of Boilers two single ended main Working Pressure 180

Tested by hydraulic pressure to 320 Date of test 20.4.27 No. of Certificate 17385 Can each boiler be worked separately yes

Area of Firegrate in each Boiler 33.30 sq ft No. and Description of safety valves to each boiler Two direct spring

Area of each set of valves per boiler {per Rule 9.307 sq ft as fitted 9.8 sq ft 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 feet Is the bottom of the boiler insulated yes

Largest internal dia. of boilers 12'-4" Length 10'-8" Shell plates: Material steel Tensile strength 28.32 tons

Thickness 1 1/4" Are the shell plates welded or flanged no Description of riveting: circ. seams {end DR inter. as fitted

long. seams DBS. TR Diameter of rivet holes in {circ. seams } 1 1/16" Pitch of rivets { 2.93" 7 23/32"

Percentage of strength of circ. end seams {plate 63.7 rivets 48.8 Percentage of strength of circ. intermediate seam {plate rivets

Percentage of strength of longitudinal joint {plate 86.2 rivets 86.6 combined 89.7 Working pressure of shell by Rules 181 lbs

Thickness of butt straps {outer 3/4" inner 1/8" No. and Description of Furnaces in each Boiler Two Deighton

Material steel Tensile strength 26.30 tons Smallest outside diameter 41.03"

Length of plain part {top bottom Thickness of plates {crown 33" bottom 64" Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 181

End plates in steam space: Material steel Tensile strength 26.30 tons Thickness 1 1/2" Pitch of stays 16" x 16 3/4"

How are stays secured DN. Working pressure by Rules 183

Tube plates: Material {front steel back " Tensile strength { 26.30 tons Thickness { 7/8" 2 1/2"

Mean pitch of stay tubes in nests 10.219" Pitch across wide water spaces 13 7/8" Working pressure {front 180 back 180

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

at centre 2 @ 7 5/8" x 7/8" Length as per Rule 31.625 Distance apart 8 1/2" No. and pitch of stays

in each 2 @ 10 3/4" Working pressure by Rules 181 Combustion chamber plates: Material steel

Tensile strength 26.30 tons Thickness: Sides 45" 64" Back 21" 32" Top 45" 64" Bottom 45" 64"

Pitch of stays to ditto: Sides 10 3/4" x 8 1/2" Back 9 1/2" x 8 1/2" Top 10 3/4" x 8 1/2" Are stays fitted with nuts or riveted over nuts

Working pressure by Rules 180 Front plate at bottom: Material steel Tensile strength 26.30 tons

Thickness 7/8" Lower back plate: Material steel Tensile strength 26.30 tons Thickness 3/4"

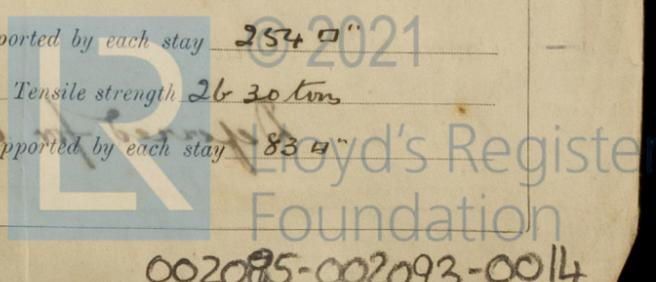
Pitch of stays at wide water space 13 7/8" x 8 1/2" Are stays fitted with nuts or riveted over nuts

Working Pressure 198 Main stays: Material steel Tensile strength 28.32 tons

Diameter {At body of stay, 2 1/2" or Over threads No. of threads per inch 6 Area supported by each stay 254 sq in

Working pressure by Rules 210 Screw stays: Material steel Tensile strength 26.30 tons

Diameter {At turned off part, 1 5/8" or Over threads No. of threads per inch 9 Area supported by each stay 83 sq in



Working pressure by Rules 183 Are the stays drilled at the outer ends no Margin stays: Diameter <sup>(At turned off part)</sup> 1 3/4  
 No. of threads per inch 9 Area supported by each stay 99 sq" Working pressure by Rules 183  
 Tubes: Material Iron External diameter <sup>Plain</sup> 3 1/4" Thickness <sup>8 W.S.</sup> 3/4" No. of threads per inch 9  
 Pitch of tubes 4 1/2" x 4 1/2" Working pressure by Rules 230 Manhole compensation: Size of opening in  
 shell plate 15 1/2" x 19 1/2" Section of compensating ring 6 1/2" x 1 1/4" No. of rivets and diameter of rivet holes 34 @ 1 1/8"  
 Outer row rivet pitch at ends 7 1/8" Depth of flange if manhole flanged 3" Steam Dome: Material none  
 Tensile strength 001 Thickness of shell 1 1/2" Description of longitudinal joint 1 1/2"  
 Diameter of rivet holes 1 1/8" Pitch of rivets 2 1/2" Percentage of strength of joint <sup>Plate</sup> 80  
 Internal diameter PA8 Working pressure by Rules 230 Thickness of crown 1 1/2" No. and diameter of  
 stays PA8 Inner radius of crown 1 1/2" Working pressure by Rules 230  
 How connected to shell 1 1/2" Size of doubling plate under dome 1 1/2" Diameter of rivet holes and pitch  
 of rivets in outer row in dome connection to shell 1 1/2"

Type of Superheater none Manufacturers of <sup>Tubes</sup> 1 1/2"  
 Number of elements 1 1/2" Material of tubes 1 1/2" <sup>Steel castings</sup> 1 1/2"  
 Internal diameter and thickness of tubes 1 1/2"  
 Material of headers 1 1/2" Tensile strength 1 1/2" Thickness 1 1/2" Can the superheater be shut off and  
 the boiler be worked separately 1 1/2" Is a safety valve fitted to every part of the superheater which can be shut off from the boiler  
 Area of each safety valve 1 1/2" Are the safety valves fitted with easing gear 1 1/2" Working pressure as per  
 Rules 1 1/2" Pressure to which the safety valves are adjusted 1 1/2" Hydraulic test pressure:  
 tubes 1 1/2" <sup>castings</sup> 1 1/2" and after assembly in place 1 1/2" Are drain cocks or valves fitted  
 to free the superheater from water where necessary 1 1/2"  
 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  
 Arch. N. Grierson Manufacturer.

Dates of Survey <sup>During progress of</sup> See Accompanying Are the approved plans of boiler and superheater forwarded herewith  
 while <sup>work in shops - -</sup> See Accompanying <sup>(If not state date of approval)</sup>  
 building <sup>During erection on</sup> Machinery report Total No. of visits 4 8  
 board vessel - - -

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 now been satisfactorily fitted and secured in the vessel,  
 steam raised and the safety valves adjusted to 185 lbs. per sq. inch

A.L.  
 5/5/27

Survey Fee See Rpt. A £ 192 When applied for,  
 Travelling Expenses (if any) £ 192 When received,

L. C. Davis. A. J. Morrison  
 Engineer Surveyor to Lloyd's Register of Shipping.

TUES. 19 JUL 1927

Committee's Minute GLASGOW 10 MAY 1927

Assigned Deferred for compln

