

# REPORT ON BOILERS.

No. 7198

Received at London Office 2 NOV. 1927

Date of writing Report 1927 When handed in at Local Office 31.10.1927 Port of Glasgow

No. in Reg. Book. Survey held at Glasgow Date, First Survey 9.5.27 Last Survey 24.10.1927

on the S. Astra III (Number of Visits 36) Gross Tons 5640 Net Tons 3322

Master Built at Monfalcone Italy By whom built Cantiere Navale Tristino Yard No. 186 When built 1927

Engines made at Glasgow By whom made David Rowan & Co L<sup>td</sup> Engine No. 866 When made 1927

Boilers made at Glasgow By whom made David Rowan & Co L<sup>td</sup> Boiler No. 866 When made 1927

Nominal Horse Power 651 Owners Port belonging to

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

Manufacturers of Steel Fried Krupp A.G. Friedrich Alfred Hütte of Rheinhausen (Letter for Record (S) ✓)

Total Heating Surface of Boilers 9615 sq ft Is forced draught fitted yes ✓ Coal or Oil fired oil ✓

No. and Description of Boilers Three single ended 3SB. Working Pressure 200 ✓

Tested by hydraulic pressure to 350 Date of test 14.10.27 No. of Certificate 17639 Can each boiler be worked separately yes ✓

Area of Firegrate in each Boiler No. and Description of safety valves to each boiler two direct spring ✓

Area of each set of valves per boiler per Rule 22.36 as fitted 25.130" Pressure to which they are adjusted Are they fitted with easing gear

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 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

Largest internal dia. of boilers 16'-3" Length 12'-0" Shell plates: Material steel Tensile strength 28-32 tons

Thickness 1 1/2" Are the shell plates welded or flanged no Description of riveting: circ. seams end DTR ✓

long. seams DBS. TR Diameter of rivet holes in circ. seams F 1 5/8" B 1 1/2" Pitch of rivets F 3.41" B 4.17" ✓

Percentage of strength of circ. end seams plate F 61.5 B 64 rivets F 44.5 B 47.5 Percentage of strength of circ. intermediate seam plate ✓

Percentage of strength of longitudinal joint plate 85.45 rivets 89.3 Working pressure of shell by Rules 200 ✓

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

Material steel Tensile strength 26-30 tons Smallest outside diameter 46.28" ✓

Length of plain part top 41" bottom 64" Thickness of plates crown 41" bottom 64" Description of longitudinal joint welder ✓

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 202 ✓

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 3/8" Pitch of stays 23x18" ✓

How are stays secured 10 N Working pressure by Rules 208 ✓ 201 ✓

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

Mean pitch of stay tubes in nests 10.281 Pitch across wide water spaces 13 1/2" Working pressure front 207 back 208 ✓

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

at centre 2 @ 8 1/8" x 1 1/8" Length as per Rule 34.56" Distance apart 9" No. and pitch of stays

in each 3 @ 8 1/2" Working pressure by Rules 200 Combustion chamber plates: Material steel ✓

Tensile strength 26-30 Thickness: Sides 21/32" Back 21/32" Top 21/32" Bottom 27/32" ✓

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

Working pressure by Rules 201 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 51/64 ✓

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

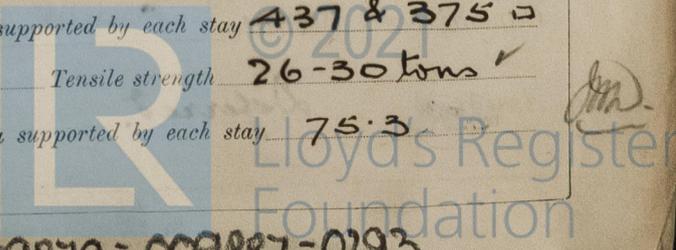
Working Pressure 203 Main stays: Material steel Tensile strength 28-32 tons ✓

Diameter At body of stay, 3 1/4" x 3" No. of threads per inch 6 Area supported by each stay 437 & 375 sq ✓

Working pressure by Rules 212 & 209 Screw stays: Material steel Tensile strength 26-30 tons ✓

Diameter At turned off part, or 1 5/8" No. of threads per inch 9 Area supported by each stay 75.3 ✓

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Working pressure by Rules 202 Are the stays drilled at the outer ends no Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \frac{178}{16}$

No. of threads per inch 9 Area supported by each stay 94.50 Working pressure by Rules 225

Tubes: Material Iron External diameter  $\left\{ \begin{array}{l} \text{Plain } 2\frac{1}{2} \\ \text{Stay } 2\frac{1}{2} \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 8 \text{ WS } \\ \frac{3}{8} \end{array} \right.$  No. of threads per inch 9

Pitch of tubes  $3\frac{3}{4} \times 3\frac{3}{8}$  Working pressure by Rules 275 Manhole compensation: Size of opening in shell plate  $15\frac{1}{2} \times 19\frac{1}{2}$  Section of compensating ring  $8\frac{3}{4} \times 1\frac{15}{32}$  No. of rivets and diameter of rivet holes 32 @  $1\frac{1}{2}$

Outer row rivet pitch at ends  $10\frac{1}{2}$  Depth of flange if manhole flanged 3 Steam Dome: Material none

Tensile strength 1001 Thickness of shell 3 Description of longitudinal joint

Diameter of rivet holes 12 Pitch of rivets 12 Percentage of strength of joint  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$

Internal diameter 12 Working pressure by Rules 275 Thickness of crown 12 No. and diameter of stays 12 Inner radius of crown 12 Working pressure by Rules 12

How connected to shell 12 Size of doubling plate under dome 12 Diameter of rivet holes and pitch of rivets in outer row in dome connection to shell 12

Type of Superheater none

Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

Number of elements 12 Material of tubes 12 Internal diameter and thickness of tubes 12

Material of headers 12 Tensile strength 12 Thickness 12 Can the superheater be shut off and the boiler be worked separately 12

Area of each safety valve 12 Are the safety valves fitted with easing gear 12 Working pressure as per Rules 12

Pressure to which the safety valves are adjusted 12 Hydraulic test pressure: tubes 12 castings 12 and after assembly in place 12 Are drain cocks or valves fitted to free the superheater from water where necessary 12

Have all the requirements of Sections 14 to 23 inclusive for boilers been complied with 12

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

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right.$  See accompanying machinery report Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.) 12

Total No. of visits 36

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

The boilers have been constructed under special survey in accordance with the Rules. They are about to be dispatched to Trieste to be fitted in the vessel.

A.B.  
 25/10/27

Survey Fee See Mech Rpt When applied for, 192

Travelling Expenses (if any) See Mech Rpt When received, 192

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

Committee's Minute LAGOW 1- NOV 1927

TUES. 13 MAR 1928

Assigned Deferred.

