

201  
1927  
12.12.1927  
26.4.27  
6-12-1927  
52  
666  
227  
1578

# REPORT ON BOILERS.

No. 47390

DEC 1927

Received at London Office

Date of writing Report 1927 When handed in at Local Office 12.12.1927 Port of Glasgow

No. in Survey held at Reg. Book. Date, First Survey 26.4.27 Last Survey 6-12-1927

on the new steel 515" VOCO: (Number of Visits 52) Tons Gross Net

Master Built at Port Glasgow By whom built Lithgows Ltd Yard No. 803 When built 1927

Engines made at Glasgow By whom made David Rowan & Co Ltd Engine No. 865 When made 1927

Boilers made at Glasgow By whom made David Rowan & Co Ltd Boiler No. 865 When made 1927

Nominal Horse Power 666 Owners Vacuum Oil Co Ltd Port belonging to London

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

W rapper plate - steel c. of Scotland.

Manufacturers of Steel August Thyssen Hütte Gesellschaft of Hülheim Ruhr (Letter for Record (5) ✓)

Total Heating Surface of Boilers 9300 sq ft Is forced draught fitted yes ✓ Coal or Oil fired oil ✓

No. and Description of Boilers Three S.E. 35B Working Pressure 220 ✓

Tested by hydraulic pressure to 380 Date of test 27-9-27 No. of Certificate 17596 Can each boiler be worked separately yes ✓

Area of Firegrate in each Boiler oil fuel No. and Description of safety valves to each boiler two improved high lift. ✓

Area of each set of valves per boiler {per Rule 13.190" as fitted 14.120"} Pressure to which they are adjusted 225 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 3:0" Is oil fuel carried in the double bottom under boilers no ✓

Smallest distance between shell of boiler and tank top plating 3:0" Is the bottom of the boiler insulated yes ✓

mean longest internal dia. of boilers 16:0" Length 12-1 7/8" Shell plates: Material steel Tensile strength 30-34 tons ✓

Thickness 1 3/64" Are the shell plates welded or flanged no Description of riveting: circ. seams {double riveted lap inter. none} ✓

long. seams DBS. TR Diameter of rivet holes in {circ. seams F 1 3/8, B 1 1/2" long. seams 1 9/16"} Pitch of rivets {F 3.428", B 4.16" 10 3/8"} ✓

Percentage of strength of circ. end seams {plate F 59.9 B 63.9 rivets F 44.9 B 43.9} Percentage of strength of circ. intermediate seam {plate 84.9 rivets 89.3 combined 87.8} Working pressure of shell by Rules 221 ✓

Percentage of strength of longitudinal joint {plate 84.9 rivets 89.3 combined 87.8} No. and Description of Furnaces in each Boiler 3 Deighton corrugated ✓

Thickness of butt straps {outer 1 1/8" inner 1 1/2"} Material steel Tensile strength 26-30 tons Smallest outside diameter 44 7/8" ✓

Length of plain part {top bottom} Thickness of plates {crown 1 1/16" bottom 1 1/16"} Description of longitudinal joint welded ✓

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules 225 ✓

End plates in steam space: Material steel Tensile strength 26-30 tons Thickness 1 25/64" Pitch of stays 23 1/2" x 1 6 3/4" ✓

How are stays secured N.N. Working pressure by Rules 221 ✓

Tube plates: Material {front steel back " } Tensile strength {26-30 tons " } Thickness {7/8" 3/4"} ✓

Mean pitch of stay tubes in nests 9 1/4" Pitch across wide water spaces 13 1/2" Working pressure {front 220 back 234} ✓

Girders to combustion chamber tops: Material steel Tensile strength 28-32 tons Depth and thickness of girder at centre 2 @ 10 1/8" x 7/8" Length as per Rule 36.5" Distance apart 9" No. and pitch of stays in each 4 @ 7 3/8" Working pressure by Rules 248 ✓

Tensile strength 26-30 tons Thickness: Sides 31/32" Back centre 21/64" Top 21/32" Bottom 21/32" ✓

Pitch of stays to ditto: Sides 8 x 7 3/8" Back centre 8 1/2 x 7 3/8" Top 9 x 7 3/8" Are stays fitted with nuts or riveted over nuts ✓

Working pressure by Rules 221 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 13/16" ✓

Pitch of stays at wide water space 13 1/2" x 7 3/8" Are stays fitted with nuts or riveted over nuts ✓

Working Pressure 227 Main stays: Material steel Tensile strength 28-32 tons ✓

Diameter {At body of stay, 3 1/4" & 3" Over threads} No. of threads per inch 6 Area supported by each stay 403 sq" & 344 sq" ✓

Working pressure by Rules 229 & 228 Screw stays: Material steel Tensile strength 26-30 tons ✓

Diameter {At turned off part, 1 5/8" Over threads} No. of threads per inch 9 Area supported by each stay 66.9 sq" ✓

Working pressure by Rules **229** Are the stays drilled at the outer ends **no** ✓ Margin stays: Diameter { At turned off part, **1 3/4"** ✓  
 No. of threads per inch **9** ✓ Area supported by each stay **75.60"** ✓ Working pressure by Rules **240**  
 Tubes: Material **Iron** ✓ External diameter { Plain **2 1/2"** ✓ Thickness { **9 w.s.** ✓ No. of threads per inch **9** ✓  
 Pitch of tubes **3 7/8" x 3 3/4"** ✓ Working pressure by Rules **230** Manhole compensation: Size of opening  
 shell plate **19 1/2" x 15 1/2"** ✓ Section of compensating ring **10 1/2" x 19 1/16"** ✓ No. of rivets and diameter of rivet holes **34 @ 1 9/16"** ✓  
 Outer row rivet pitch at ends **10 1/2"** ✓ Depth of flange if manhole flanged **3"** ✓ 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 \_\_\_\_\_  
 Internal diameter \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_ Thickness of crown \_\_\_\_\_ Rivets \_\_\_\_\_ No. and diameter  
 stays \_\_\_\_\_ Inner radius of crown \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_  
 How connected to shell \_\_\_\_\_ Size of doubling plate under dome \_\_\_\_\_ Diameter of rivet holes and  
 of rivets in outer row in dome connection to shell \_\_\_\_\_

Type of Superheater **none** Manufacturers of { Tubes \_\_\_\_\_  
 Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ Steel castings \_\_\_\_\_ Internal diameter and thickness of tubes \_\_\_\_\_  
 Material of headers \_\_\_\_\_ Tensile strength \_\_\_\_\_ Thickness \_\_\_\_\_ Can the superheater be shut off  
 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  
 Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted \_\_\_\_\_ Hydraulic test press  
 tubes \_\_\_\_\_ castings \_\_\_\_\_ and after assembly in place \_\_\_\_\_ Are drain cocks or valves  
 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. Ltd. Manufactured  
 Arch. W. Grierson

Dates of Survey { During progress of work in shops - - - } **See accompanying**  
 while building { During erection on board vessel - - - } **machinery report**  
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
 Total No. of visits **52**

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, satisfactorily fitted in the vessel and their safety valves adjusted under test.**

Survey Fee ... .. £ **See Machinery Report** } When applied for, 192  
 Travelling Expenses (if any) £ : : } When received, 192

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

Committee's Minute **GLASGOW 20 DEC 1927**

Assigned **See accompanying machinery report.**



**A.L.**  
**12/12/27**