

REPORT ON BOILERS.

No. 47390

Received at London Office

Date of writing Report

192

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

(Number of Visits 52)

Gross

Tons

Net

on the new steel 515" VOCO

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. Rappin plate - steel C. of Scotland.

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

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. 358 ✓ 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 3/4" ✓ Are the shell plates welded or flanged no Description of riveting: circ. seams { end double riveted lap inter. none ✓

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

Percentage of strength of longitudinal joint { plate 84.9 rivets 89.3 combined 87.8 Working pressure of shell by Rules 221 ✓

Thickness of butt straps { outer 1 1/2" inner 1 1/2" No. and Description of Furnaces in each Boiler 3 Deighton corrugated ✓

Material steel Tensile strength 26-30 tons Smallest outside diameter 44 1/8" ✓

Length of plain part { top bottom Thickness of plates { crown 1 1/2" bottom 1 1/2" 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 3/4" ✓ Pitch of stays 23 1/2" x 1 1/2" ✓

How are stays secured D.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 1/2" 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 ✓ Combustion chamber plates: Material steel ✓

Tensile strength 26-30 tons Thickness: Sides 3/32" Back centre 3/16" Top 3/32" Bottom 3/32" ✓

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" ✓ No. of threads per inch 6 Area supported by each stay 403 sq in & 344 sq in ✓

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

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

Over threads

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 1 9/16" ✓ 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 208 Thickness of shell 1 1/2" Description of longitudinal joint none
Diameter of rivet holes 208 Pitch of rivets 2 1/2" Percentage of strength of joint { Plate 100% ✓
Internal diameter 208 Working pressure by Rules 230 Thickness of crown 1 1/2" No. and diameter
stays 208 Inner radius of crown 10 1/2" Working pressure by Rules 230
How connected to shell none Size of doubling plate under dome none Diameter of rivet holes and
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
the boiler be worked separately none Is a safety valve fitted to every part of the superheater which can be shut off from the boiler none
Area of each safety valve none Are the safety valves fitted with easing gear none Working pressure as
Rules none Pressure to which the safety valves are adjusted none Hydraulic test pressure
tubes none, castings none and after assembly in place none Are drain cocks or valves
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. Manufactured
Arch. H. 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.) yes
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

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.



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