

# REPORT ON BOILERS.

No. 54510

Received at London Office

16 MAY 1934

Date of writing Report

19

When handed in at Local Office

8. 5. 1934

Port of

Glasgow

No. in Survey held at

Glasgow

Date, First Survey

11. 5. 33

Last Survey

5-5-1934

(Number of Visits 71)

Tons { Gross 4118  
Net 2479

on the new steel S/S "ARGOW."

Master

Built at Port Glasgow

By whom built Lithgows Ltd

Yard No. 866 When built 1934

Engines made at

Glasgow

By whom made David Rowan & Co Ltd

Engine No. 963 When made 1934

Boilers made at

Glasgow

By whom made David Rowan & Co Ltd

Boiler No. 963 When made 1934

Indicated Horse Power

352

Owners Argow Shipping Co Ltd

Port belonging to London

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

Manufacturers of Steel

Bohills Ltd

(Letter for Record (S) )

Total Heating Surface of Boilers

1390 sq ft

Is forced draught fitted no

Coal or Oil fired coal

No. and Description of Boilers

One single ended

Working Pressure 220

Tested by hydraulic pressure to

380

Date of test 24-8-33

No. of Certificate 19274

Can each boiler be worked separately -

Area of Firegrate in each Boiler

40 1/4 sq ft

No. and Description of safety valves to each boiler

Two Improved high lift

Area of each set of valves per boiler

per Rule 3.69 sq ft

as fitted 4.8 sq ft

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

away between MBS Is oil fuel carried in the double bottom under boilers no

Smallest distance between shell of boiler and tank top plating

2'-1"

Is the bottom of the boiler insulated yes

Largest internal dia. of boilers

12'-6"

Length 10'-6"

Shell plates: Material steel

Tensile strength 29-33 tons

Thickness

1 1/16"

Are the shell plates welded or flanged no

Description of riveting: circ. seams

Long. seams

MBS, TR

Diameter of rivet holes in

circ. seams 1 1/16" B 1/4"

Pitch of rivets { F 3.2" B 3.46"

Percentage of strength of circ. end seams

plate F 62.9 B 63.8

rivets F 46.1 B 47.3

Percentage of strength of circ. intermediate seam

Percentage of strength of longitudinal joint

plate 85.7

rivets 87.7

combined 87.8

Working pressure of shell by Rules 220

Thickness of butt straps

outer 29/32"

inner 1 1/32"

No. and Description of Furnaces in each Boiler

Two Deighton

Material

Steel

Tensile strength 26-30 tons

Smallest outside diameter 45.3875"

Length of plain part

top

Thickness of plates

crown 1 1/16"

Description of longitudinal joint welded

Dimensions of stiffening rings on furnace or c.c. bottom -

Working pressure of furnace by Rules 222

End plates in steam space: Material

steel

Tensile strength 26-30 tons

Thickness 1 3/8"

Pitch of stays 15" x 15 1/2"

How are stays secured

10N

Working pressure by Rules

220

Tube plates: Material

front steel

back "

Tensile strength { 26-30 tons

Thickness { 15/16"

13/16"

Mean pitch of stay tubes in nests

10 1/4"

Pitch across wide water spaces

14"

Working pressure { front 222

back 225

Girders to combustion chamber tops: Material

steel

Tensile strength 28-32 tons

Depth and thickness of girder

at centre

2 @ 7 3/8" x 7 1/8"

Length as per Rule 28.5"

Distance apart 8 1/2"

No. and pitch of stays

in each

2 @ 9 3/8"

Working pressure by Rules 243

Combustion chamber plates: Material steel

Tensile strength

26-30 tons

Thickness: Sides 25/32"

Back 1/16"

Top 25/32"

Bottom 25/32"

Pitch of stays to ditto: Sides

9 3/8" x 7 1/2"

Back 8 1/2" x 8 1/4"

Top 8 1/2" x 9 3/8"

Are stays fitted with nuts or riveted over nuts

Working pressure by Rules

236

Front plate at bottom: Material steel

Tensile strength 26-30 tons

Thickness

15/16"

Lower back plate: Material steel

Tensile strength 26-30 tons

Thickness 13/16"

Pitch of stays at wide water space

13 1/4"

Are stays fitted with nuts or riveted over nuts

Working Pressure

220

Main stays: Material steel

Tensile strength 28-32 tons

Diameter

At body of stay, 2 3/4" & 2 1/2"

or Over threads

No. of threads per inch 6

Area supported by each stay 240 & 235 sq in

Working pressure by Rules

272 & 227 1/2"

Screw stays: Material steel

Tensile strength 26-30 tons

Diameter

At turned off part, 1 5/8" & 1 3/4"

or Over threads

No. of threads per inch 9

Area supported by each stay 70 & 79.5 sq in

Working pressure by Rules 220 & 228 Are the stays drilled at the outer ends no Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. \underline{1\frac{7}{8}"} \checkmark$   
 No. of threads per inch 9 Area supported by each stay 90 Working pressure by Rules 236  
 Tubes: Material Iron External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. \underline{3\frac{1}{4}"} \checkmark$  Thickness  $\left\{ \begin{array}{l} \text{BWS} \\ \text{5/16"} \text{ 3/8"} \text{ 1/2"} \end{array} \right. \checkmark$  No. of threads per inch 9  
 Pitch of tubes 4<sup>3/8</sup> x 4<sup>1/2</sup>" Working pressure by Rules 230 Manhole compensation: Size of opening in shell plate 15<sup>1/2</sup> x 19<sup>1/2</sup>" Section of compensating ring 9<sup>1/2</sup> x 1<sup>3/16</sup>" No. of rivets and diameter of rivet holes 34 @ 1<sup>1/4</sup>"  
 Outer row rivet pitch at ends 8<sup>3/4</sup>" Depth of flange if manhole flanged 3" Steam Dome: Material ✓  
 Tensile strength \_\_\_\_\_ Thickness of shell \_\_\_\_\_ Description of longitudinal joint \_\_\_\_\_  
 Diameter of rivet holes \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Percentage of strength of joint  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right. \checkmark$   
 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 ✓ Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right. \checkmark$   
 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 22 inclusive for boilers been complied with yes  
 The foregoing is a correct description,  
 For David Rowan & Co. Ltd. Manufacturers.  
 Arch. H. Grierson

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops - -} \\ \text{while building} \end{array} \right. \left\{ \begin{array}{l} \text{During erection on board vessel - - -} \end{array} \right.$   
 Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)  
 Total No. of visits \_\_\_\_\_  
**SEE ACCOMPANYING MACHINERY REPORT.**

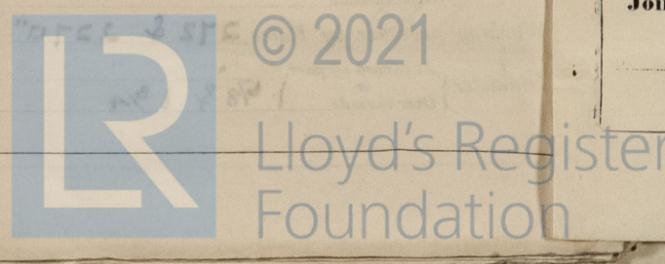
Is this Boiler a duplicate of a previous case no If so, state Vessel's name and Report No. \_\_\_\_\_

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.)  
The materials and workmanship are good.  
The boiler has been constructed under special survey, satisfactorily fitted in the vessel and its safety valves adjusted under steam.  
7/3/34

Survey Fee ... £ \_\_\_\_\_ When applied for, 10  
 Travelling Expenses (if any) £ \_\_\_\_\_ When received, 10

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

Committee's Minute **GLASGOW 15 MAY 1934**  
 Assigned **SEE ACCOMPANYING MACHINERY REPORT.**



Rpt. 13  
 R  
 Date of  
 No. in Reg. B  
 3858  
 Built a  
 Owners  
 Electric  
 Is the V  
 System  
 Pressur  
 Direct  
 If altern  
 Has the  
 Genera  
 are they  
 Where m  
 series wi  
 Are all t  
 short cir  
 Position  
 is the ve  
 if situa  
 are their  
 Earthin  
 their res  
 Main S  
 a fuse on  
 Switch  
 are they  
 woodwor  
 are they  
 permanen  
 with mic  
 and is th  
 bars  
 Main S  
 Instrum  
 Earth  
 Switch  
 Joint