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# REPORT ON BOILERS.

No. 55948

24 JUL 1935

Received at London Office

Writing Report

to

When handed in at Local Office

17. 7. 1935

Port of

Glasgow

in Survey held at

Glasgow

Date, First Survey

1. 3. 35

Last Survey

10-7

1935

on the

new steel ship

AURETTA

(Number of Visits 32)

Gross Tons

Net

er

Built at

Burntisland

By whom built

Burntisland SBCOL. Yard No. 86

When built 1935

es made at

Glasgow

By whom made

David Rowan & Co Ltd

Engine No. 980

When made 1935

rs made at

Glasgow

By whom made

David Rowan & Co Ltd

Boiler No. 980

When made 1935

mal Horse Power

283

Owners

Port belonging to

## WATER TUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel

Lochmills Ltd

(Letter for Record (6) )

Heating Surface of Boilers

3300 sq ft

Is forced draught fitted

yes

Coal or Oil fired

coal

Description of Boilers

Two single ended

Working Pressure

220 lb

Tested by hydraulic pressure to

380

Date of test

6.6.35

No. of Certificate

19852

Can each boiler be worked separately

yes

Area of Firegrate in each Boiler

40.5 sq ft

No. and Description of safety valves to each boiler

Impressed high lift

1 3/4"

Pressure of each set of valves per boiler

per Rule 4.388 sq"

as fitted 4.8 sq"

Pressure to which they are adjusted

220 lb

Are they fitted with easing gear

yes

In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler

-

Least distance between boilers or uptakes and bunkers or woodwork

18"

Is oil fuel carried in the double bottom under boilers

No

Least distance between shell of boiler and tank top plating

2'-6"

Is the bottom of the boiler insulated

yes

Least internal dia. of boilers

13'-0"

Length

11'-6"

Shell plates: Material

Steel

Tensile strength

29-33 tons

Thickness

1 1/4"

Are the shell plates welded or flanged

No

Description of riveting: circ. seams

end OR

Percentage of strength of circ. end seams

WBS TR

Diameter of rivet holes in

circ. seams F 1 3/16 B 1 5/16

long. seams 1 5/16"

Pitch of rivets

F 3.169 B 3.6"

Percentage of strength of circ. intermediate seam

plate rivets

F 62.5 B 63.5

Percentage of strength of circ. intermediate seam

plate rivets

Percentage of strength of longitudinal joint

plate rivets combined

85.4 90.7 88.9

Working pressure of shell by Rules

223 lbs

Thickness of butt straps

outer 1 1/2" inner 1 1/16"

No. and Description of Furnaces in each Boiler

Three Deighton

Material

Steel

Tensile strength

26-30 tons

Smallest outside diameter

3'-1 1/8"

Length of plain part

top bottom

Thickness of plates

coron bottom

9" 7"

Description of longitudinal joint

welded

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

Working pressure of furnace by Rules

220 lb

Plates in steam space: Material

Steel

Tensile strength

26-30 tons

Thickness

1 9/32"

Pitch of stays

15 1/2" x 18"

Are stays secured

19 N

Working pressure by Rules

221 lb

Front plates: Material

front steel back "

Tensile strength

26-30 tons

Thickness

1 5/16"

2 7/32"

Pitch of stay tubes in nests

9.7"

Pitch across wide water spaces

14"

Working pressure

front 229 back 232

Doors to combustion chamber tops: Material

Steel

Tensile strength

28-32 tons

Depth and thickness of girder

Centre

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

Length as per Rule

2'-7 1/16"

Distance apart

8"

No. and pitch of stays

Each

2 @ 10"

Working pressure by Rules

223

Combustion chamber plates: Material

Steel

Tensile strength

26-30 tons

Thickness: Sides

2 3/32"

Back

2 1/32"

Top

2 3/32"

Bottom

2 3/32"

Pitch of stays to ditto: Sides

8" x 10"

Back

8 1/2" x 8"

Top

8" x 10"

Are stays fitted with nuts or riveted over

nuts

Working pressure by Rules

220

Front plate at bottom: Material

Steel

Tensile strength

26-30 tons

Thickness

1 5/16"

Lower back plate: Material

Steel

Tensile strength

26-30 tons

Thickness

1 3/16"

Pitch of stays at wide water space

13 7/16"

Are stays fitted with nuts or riveted over

nuts

Working Pressure

220

Main stays: Material

Steel

Tensile strength

28-32 tons

Area supported by each stay

At body of stay, 2 3/4"

No. of threads per inch

6

Area supported by each stay

282 sq"

Working pressure by Rules

232

Screw stays: Material

Steel

Tensile strength

26-30 tons

Area supported by each stay

At turned off part, 1 5/8" 1 3/4" 1 7/8"

No. of threads per inch

9

Area supported by each stay

68 sq", 82.5 sq", 93.5 sq"

Lloyd's Register Foundation W230-0296

Working pressure by Rules **220 lb** Are the stays drilled at the outer ends **no** Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads} \end{array} \right. 1\frac{3}{4}"$   
 No. of threads per inch **9** Area supported by each stay **82.5"** Working pressure by Rules **220 lb**  
 Tubes: Material **Iron** External diameter  $\left\{ \begin{array}{l} \text{Plain} \\ \text{Stay} \end{array} \right. 3"$  Thickness  $\left\{ \begin{array}{l} \text{8WS} \\ \frac{1}{4}" \frac{5}{16}" \frac{3}{8}" \frac{1}{2}" \end{array} \right.$  No. of threads per inch **9**  
 Pitch of tubes **4 1/8" x 4 3/16"** Working pressure by Rules **250** Manhole compensation: Size of opening **15 1/2" x 19 1/2"** Section of compensating ring **12 1/2" x 1 1/4"** No. of rivets and diameter of rivet holes **34 @ 15"**  
 Outer row rivet pitch at ends **9"** 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  $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right.$  \_\_\_\_\_  
 Internal diameter \_\_\_\_\_ Working pressure by Rules \_\_\_\_\_ Thickness of crown \_\_\_\_\_ No. and diam 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 **Smoke tube** Manufacturers of **See particulars see Nuc Cert C2750**  
 Number of elements \_\_\_\_\_ Material of tubes \_\_\_\_\_ Internal diameter and thickness of tubes \_\_\_\_\_  
 Material of headers \_\_\_\_\_ Tensile strength \_\_\_\_\_ Thickness \_\_\_\_\_ Can the superheater be shut off from the boiler? **yes**  
 the boiler be worked separately **no** Is a safety valve fitted to every part of the superheater which can be shut off from the boiler? **yes**  
 Area of each safety valve **1.770"** Are the safety valves fitted with easing gear? **yes** Working pressure \_\_\_\_\_  
 Rules \_\_\_\_\_ Pressure to which the safety valves are adjusted **225 lbs** Hydraulic test pressure \_\_\_\_\_  
 tubes \_\_\_\_\_, castings \_\_\_\_\_ and after assembly in place **440 lbs** Are drain cocks or valves to free the superheater from water where necessary? **yes**  
 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  
 Archd. N. 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) \_\_\_\_\_  
 SEE ACCOMPANYING MACHINERY REPORT.  
 Total No. of visits \_\_\_\_\_

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 and is being sent to Burntisland to be fitted in the vessel.  
 J. J. 17/7/35

The boilers have been efficiently fitted on board, examined under steam, safety valves adjusted & found satisfactory.  
 C.R.R.

Survey Fee £ \_\_\_\_\_ When applied for, 19 \_\_\_\_\_  
 Travelling Expenses (if any) £ \_\_\_\_\_ When received, 19 \_\_\_\_\_

**L. J. Adams**  
 Engineer Surveyor to Lloyd's Register of Shipping

Committee's Minute **GLASGOW 23 JUL 1935**  
 Assigned **SEE ACCOMPANYING MACHINERY REPORT.**

