

# REPORT ON BOILERS.

18 APR 1931

Received at London Office

Date of writing Report 16/4/31 When handed in at Local Office 16/4/31 Port of **NEWCASTLE-ON-TYNE.**

No. in Reg. Book. **90379** on the **Scotswood** M.V. **"ELISE"** Date, First Survey **21<sup>st</sup> May 1930** Last Survey **16<sup>th</sup> April 1931**

(Number of Visits) Tons {Gross **7910**  
Net **4719**

Master Built at **Walker.** By whom built **Sir W.G. Armstrong Whitworth & Co Ltd** Yard No. **1068** When built **1931.**

Engines made at **Scotswood** By whom made **Sir W.G. Armstrong Whitworth & Co Ltd.** Engine No. **96.** When made **1931.**

Boilers made at **Scotswood** By whom made **Sir W.G. Armstrong Whitworth & Co Ltd.** Boiler No. **96.** When made **1931.**

Nominal Horse Power **776.** Owners **Care Beck** Port belonging to **Tvedestrand.**

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

Manufacturers of Steel **D. Colville & Sons Glasgow (Plates) J. Thompson & Sons Wolverhampton (Furnaces)** (Letter for Record **S.**)

Total Heating Surface of Boilers **2175 sq ft.** Is forced draught fitted **Yes.** Coal or Oil fired **oil.**

No. and Description of Boilers **One S.F. Multitubular** Working Pressure **150 lb/sq in**

Tested by hydraulic pressure to **275 lb/sq in** Date of test **24.9.30** No. of Certificate **504** Can each boiler be worked separately **Yes.**

Area of Firegrate in each Boiler **✓** No. and Description of safety valves to each boiler **2. Spring Loaded. (High lift).**

Area of each set of valves per boiler {per Rule **19.70 x 1/2 = 9.85**  
as fitted **9.80** Pressure to which they are adjusted **150 lb/sq in** 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 **✓** 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 **Yes.**

Largest internal dia. of boilers **18'-10 1/8"** Length **12'-0"** Shell plates: Material **Steel** Tensile strength **29-33 tons**

Thickness **15/16"** Are the shell plates welded or flanged **No.** Description of riveting: circ. seams {end **D.R. Lap**  
inter. **3.27"**

long. seams **T.R. Double Butt Straps** Diameter of rivet holes in {circ. seams **1 1/16"**  
long. seams **1"** Pitch of rivets {**7 3/16"**

Percentage of strength of circ. end seams {plate **67%.**  
rivets **46.0%.** Percentage of strength of circ. intermediate seam {plate **✓**  
rivets **86.0%.**

Percentage of strength of longitudinal joint {plate **87.0%.**  
rivets **89.4%.** Working pressure of shell by Rules **152 lb/sq in**

Thickness of butt straps {outer **3/4"**  
inner **7/8"** No. and Description of Furnaces in each Boiler **3. Brighton Section.**

Material **Steel** Tensile strength **26-30 tons** Smallest outside diameter **3'-5"**

Length of plain part {top **✓**  
bottom **✓** Thickness of plates {crown **7/16"**  
bottom **7/16"** Description of longitudinal joint **Welded.**

Dimensions of stiffening rings on furnace or c.c. bottom **None** Working pressure of furnace by Rules **152 lb/sq in**

End plates in steam space: Material **Steel** Tensile strength **26-30 tons** Thickness **1 1/16"** Pitch of stays **19 1/2" x 17 1/4"**

How are stays secured **Nuts & washers inside & outside** Working pressure by Rules **152 lb/sq in**

Tube plates: Material {front **Steel**  
back **Steel** Tensile strength {**26-30 tons**  
**26-30 tons** Thickness {**7/8"**  
**7/8"**  
**1 1/16"**

Mean pitch of stay tubes in nests **9 3/8"** Pitch across wide water spaces **13 1/2"** Working pressure {front **159 lb/sq in**  
back **191 lb/sq in**

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

at centre **8 1/2" x 1 1/2"** Length as per Rule **2'-10"** Distance apart **9 1/2"** No. and pitch of stays

in each **3 @ 8"** Working pressure by Rules **153 lb/sq in** Combustion chamber plates: Material **Steel**

Tensile strength **26-30 tons** Thickness: Sides **19/32"** Back **5/8"** Top **19/32"** Bottom **7/8"**

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

Working pressure by Rules **157 lb/sq in** 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 **2 3/32"**

Pitch of stays at wide water space **14" x 9 1/2"** Are stays fitted with nuts or riveted over **hooked.**

Working Pressure **173 lb/sq in** Main stays: Material **Steel** Tensile strength **26-30 tons.**

Diameter {At body of stay, **2 3/4"**  
or  
Over threads **2 3/4"** No. of threads per inch **6.** Area supported by each stay **341 sq ins.**

Working pressure by Rules **162 lb/sq in** Screw stays: Material **Steel** Tensile strength **26-30 tons.**

Diameter {At turned off part, **1 1/2"**  
or  
Over threads **1 1/2"** No. of threads per inch **9.** Area supported by each stay **82 sq ins.**

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Working pressure by Rules  $152 \frac{1}{2}$  Are the stays drilled at the outer ends No. Margin stays: Diameter  $\left\{ \begin{array}{l} \text{At turned off part, } 1 \frac{3}{4} \times 1 \frac{1}{8} \\ \text{Over threads} \end{array} \right.$

No. of threads per inch 9. Area supported by each stay  $107.5 \text{ Sq. in. } \& 126 \text{ Sq. in.}$  Working pressure by Rules  $168 \frac{1}{2}$

Tubes: Material Steel External diameter  $\left\{ \begin{array}{l} \text{Plain } 2 \frac{1}{2} \\ \text{Stay } 2 \frac{1}{2} \end{array} \right.$  Thickness  $\left\{ \begin{array}{l} 10 \text{ wg. } \\ 1/4 \times 5/16 \end{array} \right.$  No. of threads per inch 9.

Pitch of tubes  $3 \frac{3}{4}$  Working pressure by Rules Plain  $175 \frac{1}{2}$  Stay  $176 \frac{1}{2}$  Manhole compensation: Size of opening in shell plate  $20 \frac{1}{2} \times 16 \frac{1}{2}$  Section of compensating ring  $20 \times 15 \frac{1}{16}$  No. of rivets and diameter of rivet holes  $44 @ 1 \frac{1}{8}$

Outer row rivet pitch at ends  $8 \times 4$  Depth of flange if manhole flanged  $3 \frac{3}{8}$  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 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 None. Manufacturers of  $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel castings} \end{array} \right.$

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,  
OR  
W. G. ARMSTRONG WHITWORTH & COMPANY (ENGINEERS) LIMITED Manufacturer.

Dates of Survey  $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right.$  See Machinery Report Are the approved plans of boiler and superheater forwarded herewith Yes.

Total No. of visits

Is this Boiler a duplicate of a previous case Yes. If so, state Vessel's name and Report No. M.V. ATILA NWE R/N No. 86497.

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) The boiler has been built under Special Survey & in accordance with the Society's Rules & approved plan. The materials & workmanship are sound & good. The boiler was hydraulically tested as per Rules & found satisfactory. The safety valves were adjusted under steam to the approved working pressure.

Survey Fee ... .. £ For Fees. When applied for, 19

Travelling Expenses (if any) £ See Machinery Rpt. When received, 19

L. Pickett.  
Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute FRI. 24 APR 1921

Assigned See F.C. Rpt.

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