

REPORT ON BOILERS.

Received at London Office 18 APR 1931

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

No. in Reg. Book. **90379.** on the **M.V. "ELISE"** Date, First Survey **21st May 1930** Last Survey **16 June 1931**

Survey held at **Scotswood.** (Number of Visits) Gross **7910** Tons 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 **1240 sq. ft.** Is forced draught fitted **Yes.** Coal or Oil fired **Waste Heat. & oil fired.**

No. and Description of Boilers **One SE. multitubular.** Working Pressure **150 lb/sq. in.**

Tested by hydraulic pressure to **275 lb/sq. in.** Date of test **25.8.30.** No. of Certificate **493.** 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 11.3" x 1/2" = 5.60"** 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 **11' - 1 3/8"** Length **10' - 6"** Shell plates: Material **Steel** Tensile strength **29-33 tons**

Thickness **13/16"** Are the shell plates welded or flanged **No.** Description of riveting: circ. seams **end D.R. Lap**

long. seams **D.R. Double Butt Straps** Diameter of rivet holes in **circ. seams 1"** Pitch of rivets **3.2"**

Percentage of strength of circ. end seams **plate 69.7%** rivets **46.6%** Percentage of strength of circ. intermediate seam **plate**

Percentage of strength of longitudinal joint **plate 81.0%** rivets **81.0%** combined **89.5%** Working pressure of shell by Rules **153 lb/sq. in.**

Thickness of butt straps **outer 1 1/16"** inner **1 3/16"** No. and Description of Furnaces in each Boiler **3. Deighton Section.**

Material **Steel** Tensile strength **26-30 tons** Smallest outside diameter **2' - 6"**

Length of plain part **top ✓** Thickness of plates **top 3/8"** bottom **3/8"** Description of longitudinal joint **welded.**

Dimensions of stiffening rings on furnace or c.c. bottom **none.** Working pressure of furnace by Rules **176 lb/sq. in.**

End plates in steam space: Material **Steel** Tensile strength **26-30 tons** Thickness **1 9/16"** Pitch of stays **17 1/2" x 15"**

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** Thickness **1 5/16"** **1 1/16"**

Mean pitch of stay tubes in nests **8 7/8"** Pitch across wide water spaces **13 7/8"** Working pressure **front 165 lb.** back **212 lb.**

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

at centre **7 3/4" x 1 3/8"** Length as per Rule **2' - 7"** Distance apart **9 3/8"** No. and pitch of stays

in each **2 @ 9 1/2"** Working pressure by Rules **201 lb/sq. in.** Combustion chamber plates: Material **Steel**

Tensile strength **26-30 tons** Thickness: Sides **5/8"** Back **1 9/32"** Top **5/8"** Bottom **5/8"**

Pitch of stays to ditto: Sides **10" x 8 7/8"** Back **8 7/8" x 8 3/4"** Top **9 3/8" x 9 1/2"** Are stays fitted with nuts or riveted over **tubed.**

Working pressure by Rules **151 lb/sq. in.** Front plate at bottom: Material **Steel** Tensile strength **26-30 tons.**

Thickness **1 9/16"** Lower back plate: Material **Steel** Tensile strength **26-30 tons** Thickness **1 5/16"**

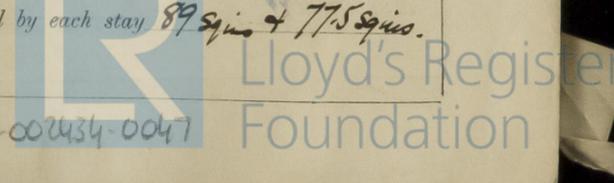
Pitch of stays at wide water space **14" x 8 3/4"** Are stays fitted with nuts or riveted over **tubed.**

Working Pressure **265 lb/sq. in.** Main stays: Material **Steel** Tensile strength **28-32 tons.**

Diameter **At body of stay 2 1/2"** No. of threads per inch **6.** Area supported by each stay **262.5 sq. ins.**

Working pressure by Rules **168 lb/sq. in.** Screw stays: Material **Steel** Tensile strength **26-30 tons**

Diameter **At turned off part 1 1/2" x 1 5/8"** No. of threads per inch **9.** Area supported by each stay **89 sq. ins. + 77.5 sq. ins.**



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Rpt. 5a.
Date of writing
No. in Reg. Book. 90379 on the
Master
Engines made at
Boilers made at
Nominal Horse

Working pressure by Rules 169/64 161/66. Are the stays drilled at the outer ends no Margin stays: Diameter 1 5/8" & 1 3/4"
 No. of threads per inch 9. Area supported by each stay 97.5 sq. in. & 162 sq. in. Working pressure by Rules 154/66 & 177/66/0
 Tubes: Material Steel External diameter { Plain 3 1/4" & 2 1/2" Thickness 9/16" & 1/2" No. of threads per inch 9
 Pitch of tubes 3 3/8" x 3 1/2" & 4 3/8" x 4 1/2" Working pressure by Rules Plain 175/6/0 Stay 202/6/0 Manhole compensation: Size of opening in shell plate 20 1/2" x 16 1/2" Section of compensating ring 19" x 1 3/16" No. of rivets and diameter of rivet holes 38 @ 1 1/2"
 Outer row rivet pitch at ends 6 3/4" Depth of flange if manhole flanged 3 1/8" 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 { Plate Rivets
 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 { Tubes Steel castings
 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 W. G. ARMSTRONG WHITWORTH & COMPANY (ENGINEERS) LIMITED Manufacturer.

Dates of Survey { During progress of work in shops - - - See Inch Report Are the approved plans of boiler and superheater forwarded herewith Yes
 while building { During erection on board vessel - - - 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. ATTILA. Nwe. Rpt 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 and 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 fee. When applied for, 19
 Travelling Expenses (if any) £ See Inch Rpt. When received, 19

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

Committee's Minute FRI. 24 APR 1931
Assigned See F. C. Rpt.



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