

# REPORT ON BOILERS.

No. 84933

Received at London Office 11 NOV 1929

NEWCASTLE-ON-TYNE

Date of writing Report 1929 When handed in at Local Office 6<sup>th</sup> Nov 1929. Port of

No. in Reg. Book Survey held at Newcastle-on-Tyne. Date, First Survey 4 Feb Last Survey 21<sup>st</sup> Nov 1929.

on the Steel. Se. "KITTY TAYLOR" (Number of Visits —) Gross Tons 4640 Net Tons 2785

Master Built at Willington Quay. By whom built Sir W. G. Armstrong Whitworth & Co. Ltd. No. 1054 When built 1929.

Engines made at Scotswood. By whom made Sir W. G. Armstrong Whitworth & Co. (Eng'g) Ltd. Engine No. 82 When made 1929.

Boilers made at Scotswood By whom made Sir W. G. Armstrong Whitworth & Co. (Eng'g) Ltd Boiler No. 82. When made 1929.

Nominal Horse Power 419. Owners Eros Steamship Co Ltd. Port belonging to London.

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

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

Total Heating Surface of Boilers 6870 sq ft. Is forced draught fitted No. Coal or Oil fired Coal

No. and Description of Boilers 3 Single Ended Multitubular 3 SB Working Pressure 180 lbs/sq in

Tested by hydraulic pressure to 820 lbs/sq in Date of test 28.5.28, 4.6.28, 10.6.28 No. of Certificates 350, 355, 356 Can each boiler be worked separately Yes.

Area of Firegrate in each Boiler 64 sq ft No. and Description of safety valves to each boiler 2 Spring Loaded. Area of each set of valves per boiler (per Rule 14.7 sq ins. as fitted 16.58 sq ins. Pressure to which they are adjusted 180 lbs/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 Yes. Smallest distance between boilers or uptakes and bunkers 2'-4" Is oil fuel carried in the double bottom under boilers No.

Smallest distance between shell of boiler and tank top plating 2'-0" Is the bottom of the boiler insulated No. Largest internal dia. of boilers 15'-0 1/2" Length 11'-0" Shell plates: Material Steel Tensile strength 28-32 tons D.R. Lap.

Thickness 1 1/4" Are the shell plates welded or flanged neither Description of riveting: circ. seams end 1 5/16" inter. 3.85" long. seams T.R. Double Butt Straps Diameter of rivet holes in circ. seams 1 5/16" long. seams 1 5/16" Pitch of rivets 9"

Percentage of strength of circ. end seams plate 66.4% rivets 45.9% Percentage of strength of circ. intermediate seam plate 85.4% rivets 92% combined 89.6% Working pressure of shell by Rules 181 lbs/sq in

Percentage of strength of longitudinal joint plate 85.4% rivets 92% combined 89.6% Working pressure of shell by Rules 181 lbs/sq in Thickness of butt straps outer 3/32" inner 1/32" No. and Description of Furnaces in each Boiler 3. Deighton Section 3 CF.

Material Steel Tensile strength 26-30 tons Smallest outside diameter 3'-8 3/4" Length of plain part top 7 1/2" bottom Thickness of plates crown 9/16" bottom Description of longitudinal joint Weld.

Dimensions of stiffening rings on furnace or c.c. bottom None Working pressure of furnace by Rules 182 lbs/sq in End plates in steam space: Material Steel Tensile strength 26-30 tons Thickness 1/4" Pitch of stays 20" x 20 1/2"

How are stays secured Tube washers inside & outside Working pressure by Rules 183 lbs/sq in Tube plates: Material front Steel back Steel Tensile strength 26-30 tons Thickness 1 5/32" 1 3/16"

Mean pitch of stay tubes in nests 11" Pitch across wide water spaces 14 1/4" Working pressure front 197 lbs/sq in back 196 lbs/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 33.5" Distance apart 9 1/4" No. and pitch of stays

in each 2 @ 10 1/2" Working pressure by Rules 180 lbs/sq in Combustion chamber plates: Material Steel Tensile strength 26-30 tons Thickness: Sides 23/32" Back 2 1/32" Top 23/32" Bottom 1/8"

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

Working pressure by Rules 185 lbs/sq in Front plate at bottom: Material Steel Tensile strength 26-30 tons Thickness 1 1/32" Lower back plate: Material Steel Tensile strength 26-30 tons Thickness 1 29/32"

Pitch of stays at wide water space 14 3/4" x 8 3/4" Are stays fitted with nuts or riveted over Trussed Working Pressure 212 lbs/sq in Main stays: Material Steel Tensile strength 28-32 tons

Diameter At body of stay, or Over threads 3 1/4" No. of threads per inch 6. Area supported by each stay 410 sq ins. Working pressure by Rules 195 lbs/sq in Screw stays: Material Steel Tensile strength 26-30 tons

Diameter At turned off part, or Over threads 1 3/4" No. of threads per inch 9. Area supported by each stay 97.125 sq ins.



Lloyd's Register Foundation

W163-0048

Working pressure by Rules 185 lbs/sq in Are the stays drilled at the outer ends No. Margin stays: Diameter <sup>At turned off part,</sup> 1 7/8" <sup>or</sup> <sup>Over threads</sup>

No. of threads per inch 9. Area supported by each stay 103 sq ins. Working pressure by Rules 206 lbs/sq in

Tubes: Material Iron External diameter <sup>Plain</sup> 3 1/4" <sup>Stay</sup> 3 1/4" Thickness <sup>9 W.G.</sup> 1/4" <sup>No. 5/16"</sup> 7/16" No. of threads per inch 9.

Pitch of tubes 4 1/2" Working pressure by Rules Stay 205 lbs/sq in Plain 180 lbs/sq in Manhole compensation: Size of opening in shell plate 20" x 16" Section of compensating ring 33" x 37" x 1 1/4" No. of rivets and diameter of rivet holes 40 x 1 5/16"

Outer row rivet pitch at ends 9" Depth of flange if manhole flanged 3 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 <sup>Plate</sup>  <sup>Rivets</sup>

Internal diameter  Working pressure by Rules  Thickness of crown  No. and diameter of stays

How connected to shell  Inner radius of crown  Working pressure by Rules

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 <sup>Tubes</sup>  <sup>Steel castings</sup>

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. FOR

**SIR W. G. ARMSTRONG WHITWORTH & COMPANY (ENGINEERS) LIMITED**  
 The foregoing is a correct description,  
*H. Kewney* Manufacturer.

Dates of Survey <sup>During progress of work in shops - -</sup>  <sup>During erection on board vessel - - -</sup>

Are the approved plans of boiler and superheater forwarded herewith 20/12/28. (If not state date of approval.)

Total No. of visits

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) These boilers have been constructed under Special Survey and in accordance with the approved plans. The materials & workmanship are sound and good. The hydraulic tests found satisfactory. These boilers have been efficiently installed on board the above vessel and their safety valves adjusted under steam.

Survey Fee ... .. £ See Mech Report When applied for, 192

Travelling Expenses (if any) £ See Mech Report When received, 192

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

Committee's Minute FRI 15 NOV 1928

Assigned See Report attached

