

REPORT ON BOILERS.

No. 95095

JUN -1 1937

Received at London Office

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Date of writing Report 19 When handed in at Local Office 31/5/37 Port of **NEWCASTLE-ON-TYNE**

No. in Survey held at **South Shields** Date, First Survey 11 May 1936 Last Survey 17 May 1937

1515 on the **S.S. BALTISTAN** (Number of Visits) Tons { Gross 6803.46 Net 4194.01

Master **H. V. Peck** Built at **S. Shields** By whom built **J. Readhead & Sons Ltd** No. 508 When built 1937

Engines made at **South Shields** By whom made **J. Readhead & Sons Ltd** Engine No. 508 When made 1937

Boilers made at **South Shields** By whom made **J. Readhead & Sons Ltd** Boiler No. 508 When made 1937

Original Horse Power Owners **Strick Line (1923) Ltd** Port belonging to **London**

ULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

Manufacturers of Steel **Steel Company of Scotland Ltd** (Letter for Record **S**)

Total Heating Surface of Boilers **9496 sq ft** Is forced draught fitted **Yes** Coal or Oil fired **Both**

Number and Description of Boilers **3 Single ended multitubular** Working Pressure **220 lb/sq in**

Tested by hydraulic pressure to **390** Date of test **5-11-36** No. of Certificate **692**

Area of Firegrate in each Boiler **63.3 sq ft** No. and Description of safety valves to each boiler **2 Double spring loaded (Hyants H.L.)**

Pressure of each set of valves per boiler { per Rule **11.20** as fitted **11.980** } Pressure to which they are adjusted **220 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 **Yes**

Smallest distance between boilers or uptakes and bunkers or woodwork **3'-0"** Is oil fuel carried in the double bottom under boilers **Yes**

Smallest distance between shell of boiler and tank top plating **2'-4"** Is the bottom of the boiler insulated **Yes**

Largest internal dia. of boilers **16'-0"** Length **12'-0"** Shell plates: Material **S.M. Steel** Tensile strength **30-34 Tons/sq in**

Thickness **1 1/2"** Are the shell plates welded or flanged **No** Description of riveting: circ. seams { end **D.R.L.J.** inter. **4 1/4"** }

Longitudinal seams **T.R.D.B.S.** Diameter of rivet holes in { circ. seams **1 1/2"** long. seams **1 1/2"** } Pitch of rivets **10"**

Percentage of strength of circ. end seams { plate **64.8** rivets **42.5** } Percentage of strength of circ. intermediate seam { plate **85.0** rivets **84.67** }

Percentage of strength of longitudinal joint { plate **85.0** rivets **84.67** combined **86.92** } Working pressure of shell by Rules **221.4 lb/sq in**

Thickness of butt straps { outer **1 5/32"** inner **1 9/32"** } No. and Description of Furnaces in each Boiler **4 Deighton Type**

Material **S.M. Steel** Tensile strength **26-30 Tons/sq in** Smallest outside diameter **2'-11 15/16"**

Thickness of plain part { top **1 1/2"** bottom **1 1/2"** } Thickness of plates { crown **1 1/2"** bottom **3/2"** } Description of longitudinal joint **Double butt**

Dimensions of stiffening rings on furnace or c.c. bottom Working pressure of furnace by Rules **240 lb/sq in**

Stays in steam space: Material **S.M. Steel** Tensile strength **26-30 Tons/sq in** Thickness **1 1/2"** Pitch of stays **20 x 21"**

How are stays secured **Double nut, washers outside (12 3/4 dia x 1 thick)** Working pressure by Rules **228 lb/sq in**

Front plates: Material { front **S.M. Steel** back **S.M. Steel** } Tensile strength { **26-30 Tons/sq in** } Thickness { **1 15/16"** }

Minimum pitch of stay tubes in nests **9 5/8"** Pitch across wide water spaces **14"** Working pressure { front **229 lb/sq in** back **237 lb/sq in** }

Boilers to combustion chamber tops: Material **S.M. Steel** Tensile strength **29-33 Tons/sq in** Depth and thickness of girder

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

Each **22 9 1/4"** Working pressure by Rules **222 lb/sq in** Combustion chamber plates: Material **S.M. Steel**

Tensile strength **26-30 Tons/sq in** Thickness: Sides **3/4"** Back **25/32"** Top **3/4"** Bottom **7/8"**

Thickness of stays to ditto: Sides **3/4 x 9 1/8"** Back **9 x 10 5/16"** Top **9 1/2 x 9 1/4"** Are stays fitted with nuts or riveted over **Nuts**

Working pressure by Rules **225 lb/sq in** Front plate at bottom: Material **S.M. Steel** Tensile strength **26-30 Tons/sq in**

Thickness **1 5/16"** Lower back plate: Material **S.M. Steel** Tensile strength **26-30 Tons/sq in** Thickness **7/8"**

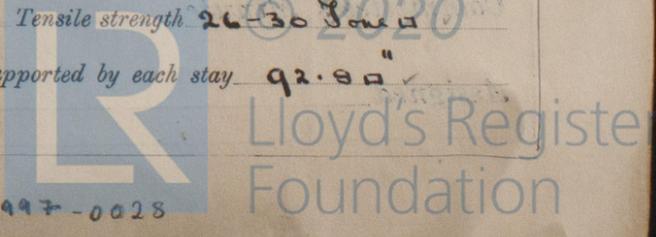
Thickness of stays at wide water space **14 x 9"** Are stays fitted with nuts or riveted over **Nuts**

Working Pressure **226 lb/sq in** Main stays: Material **S.M. Steel** Tensile strength **28-32 Tons/sq in**

At body of stay, meter { **3 5/8"** } No. of threads per inch **6** Area supported by each stay **456 sq in**

Working pressure by Rules **223 lb/sq in** Screw stays: Material **S.M. Steel** Tensile strength **26-30 Tons/sq in**

At turned off part, meter { **1 7/8"** } No. of threads per inch **9** Area supported by each stay **92.8 sq in**



Working pressure by Rules $231 \frac{lb}{sq\ in}$ Are the stays drilled at the outer ends Margin stays: Diameter $\left\{ \begin{array}{l} \text{At turned off part,} \\ \text{or} \\ \text{Over threads.} \end{array} \right\} 2 \frac{1}{2} \text{ dia}$

No. of threads per inch 9 Area supported by each stay 109.60 Working pressure by Rules $225 \frac{lb}{sq\ in}$

Tubes: Material Iron External diameter $\left\{ \begin{array}{l} \text{Plain } 3 \frac{1}{2} \text{ dia} \\ \text{Stay } 3 \text{ dia} \end{array} \right\}$ Thickness $\left\{ \begin{array}{l} 8.1.5.9 \\ 3 \frac{1}{8} - 3 \frac{1}{16} \end{array} \right\}$ No. of threads per inch 9

Pitch of tubes $11 \frac{1}{2} \times 8 \frac{1}{4}$ Working pressure by Rules $247 \frac{lb}{sq\ in}$ Manhole compensation: Size of opening in shell plate 16×12 Section of compensating ring 8×12 No. of rivets and diameter of rivet holes $29 \times 1 \frac{1}{2} \text{ dia}$

Outer row rivet pitch at ends 10 Depth of flange if manhole flanged Steam Dome: Material

Tensile strength Thickness of shell Description of longitudinal joint

Diameter of rivet holes Pitch of rivets Percentage of strength of joint $\left\{ \begin{array}{l} \text{Plate} \\ \text{Rivets} \end{array} \right\}$

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 The Superheater B/S Manufacturers of $\left\{ \begin{array}{l} \text{Tubes} \\ \text{Steel forgings} \\ \text{Steel castings} \end{array} \right\}$ See separate certificates

Number of elements 68 Material of tubes S.S. Steel Internal diameter and thickness of tubes $16 \frac{1}{4} \text{ in} - 2 \frac{1}{2} \frac{1}{4} \text{ in}$

Material of headers Forged Steel 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 3.54 sq in Are the safety valves fitted with easing gear Working pressure as per Rules $220 \frac{lb}{sq\ in}$ Pressure to which the safety valves are adjusted $225 \frac{lb}{sq\ in}$ Hydraulic test pressure: tubes $1000 \frac{lb}{sq\ in}$ forgings and castings $660 \frac{lb}{sq\ in}$ and after assembly in place $450 \frac{lb}{sq\ in}$ 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

The foregoing is a correct description,
FOR JOHN READHEAD & SONS, LTD Manufacturer.

Dates of Survey $\left\{ \begin{array}{l} \text{During progress of work in shops} \\ \text{while building} \end{array} \right\}$ See *See Mchly Report* Are the approved plans of boiler and superheater forwarded herewith (If not state date of approval.)

Total No. of visits *J. H. Matthews*
 CHAIRMAN & MANAGING DIRECTOR.

Is this Boiler a duplicate of a previous case If so, state Vessel's name and Report No. **ARMANISTAN. N^o 94636**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.)

The boilers have been built under special survey in accordance with rule requirements & approved plans. Materials & workmanship are good. Hydraulic test satisfactory. They have been efficiently installed & fixed in vessel, examined under steam & the safety valves adjusted under steam to the approved pressure.

Survey Fee ... £ *See Mchly Report* When applied for, 19

Travelling Expenses (if any) £ : : When received, 19

J. H. Matthews
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute

FRI 4 JUN 1937

Assigned

See Nvoc. J.C. 95095



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