

REPORT ON BOILERS.

Received at London Office

Date of writing Report 1922 When handed in at Local Office 4 NOV. 1932 Port of Sunderland.

No. in Reg. Book Survey held at Sunderland. Date, First Survey Last Survey 31 Oct 1932 (Number of Visits) Gross Tons 1314 Net Tons 731

Master Built at Sunderland. By whom built S.P. Austin & Co. Ltd. Yard No. 326 When built 1932 Engines made at Sunderland. By whom made J. Dickinson & Sons. Ltd. Engine No. 912 When made 1932 Boilers made at Sunderland. By whom made J. Dickinson & Sons. Ltd. Boiler No. 912 When made 1932 Nominal Horse Power 142.47 Owners London Power Co. Ltd. Port belonging to London.

MULTITUBULAR BOILERS—MAIN, AUXILIARY, OR DONKEY.

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

Total Heating Surface of Boilers *2240 sq ft* Is forced draught fitted *No.* Coal or Oil fired *coal.*

No. and Description of Boilers *1 Single Ended Multitubular* Working Pressure *200 lbs.*

Tested by hydraulic pressure to *360 lbs.* Date of test *25-7-32* No. of Certificate *4136* Can each boiler be worked separately *-*

Area of Firegrate in each Boiler *61 sq ft* No. and Description of safety valves to each boiler *2 Spring-loaded, High Lift.*

Area of each set of valves per boiler *per valve 6.65 sq ft as fitted 7.96 sq ft* Pressure to which they are adjusted *205* 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 *17"* Is oil fuel carried in the double bottom under boilers *No.*

Smallest distance between shell of boiler and *open floor* *20"* Is the bottom of the boiler insulated *Yes.*

Largest internal dia. of boilers *15'-6 3/16"* Length *10'-6"* Shell plates: Material *Steel* Tensile strength *28/32 Tms.*

Thickness *1 13/32"* Are the shell plates welded or flanged *No.* Description of riveting: circ. seams *end Double Lap.*

long. seams *T.R. Double butt strap* Diameter of rivet holes in *circ. seams 1 1/2" long. seams 1 1/2"* Pitch of rivets *4" 10 1/16"*

Percentage of strength of circ. end seams *plate 62.5 rivets 51.6* Percentage of strength of circ. intermediate seam *plate - rivets -*

Percentage of strength of longitudinal joint *plate 85.1 rivets 96.2 combined 89.4* Working pressure of shell by Rules *200*

Thickness of butt straps *outer 1 1/8" inner 1 1/4"* No. and Description of Furnaces in each Boiler *3 corrugated, Dayton section.*

Material *Steel* Tensile strength *26/30 Tms.* Smallest outside diameter *3'-10 5/16"*

Length of plain part *top - bottom -* Thickness of plates *crown 2 1/32" bottom -* Description of longitudinal joint *Weld.*

Dimensions of stiffening rings on furnace or c.c. bottom *-* Working pressure of furnace by Rules *200-26*

End plates in steam space: Material *Steel* Tensile strength *26/30 Tms.* Thickness *1 7/32"* Pitch of stays *18 1/2" x 20 1/2"*

How are stays secured *Nuts.* Working pressure by Rules *204.8*

Tube plates: Material *Steel* Tensile strength *26/30 Tms.* Thickness *7/8"*

Mean pitch of stay tubes in nests *11 3/4" x 9"* Pitch across wide water spaces *13 1/2"* Working pressure *front 206.6 back 218.8*

Girders to combustion chamber tops: Material *Steel* Tensile strength *28/32 Tms.* Depth and thickness of girder at centre *7 1/2" x 2"* Length as per Rule *2'-8 5/16"* Distance apart *8 7/8"* No. and pitch of stays in each *2 at 10 1/2"* Working pressure by Rules *210* Combustion chamber plates: Material *Steel*

Tensile strength *28/32 Tms.* Thickness: Sides *2 5/32"* Back *2 3/32"* Top *2 5/32"* Bottom *2 5/32"*

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

Working pressure by Rules *201.2* Front plate at bottom: Material *Steel* Tensile strength *26/30 Tms.*

Thickness *7/8"* Lower back plate: Material *Steel* Tensile strength *26/30 Tms.* Thickness *2 7/32"*

Pitch of stays at wide water space *13 1/4"* Are stays fitted with nuts or riveted over *Nuts.*

Working Pressure *203.4* Main stays: Material *Steel* Tensile strength *28/32 Tms.*

Diameter *At body of stay, or Over threads 3 1/4"* No. of threads per inch *6* Area supported by each stay *379.25 sq in*

Working pressure by Rules *212* Screw stays: Material *Steel* Tensile strength *28/30 Tms.*

Diameter *At turned off part, or Over threads 1 3/4"* No. of threads per inch *9* Area supported by each stay *87.9 sq in*

Working pressure by Rules **206** Are the stays drilled at the outer ends **No.** Margin stays: Diameter ^{At turned off part,} **1 7/8**
 No. of threads per inch **9** Area supported by each stay **100.01** Working pressure by Rules **212**
 Tubes: Material **W.I. Lap welded** External diameter ^{Plain} **3 1/4** Thickness ^{8 W.G.} **5/16** No. of threads per inch **9**
 Pitch of tubes **4 1/2** Working pressure by Rules **213.5** Manhole compensation: Size of opening in
 shell plate **16" x 12"** Section of compensating ring **-** No. of rivets and diameter of rivet holes **-**
 Outer row rivet pitch at ends **✓** Depth of flange if manhole flanged **3 7/8** Steam Dome: Material
 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 Manufacturers of ^{Tubes} **W. Robertson** ^{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,
 W. Robertson Manufacturer.

Dates of Survey ^{During progress of work in shops - - -} **Please see Machinery Report** Are the approved plans of boiler and superheater forwarded herewith
 while building ^{During erection on board vessel - - -} (If not state date of approval.)
 Total No. of visits

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **This boiler has been built under special survey. The materials & workmanship are good. On completion it was satisfactorily fitted in the vessel and examined under a full head of steam. The safety valves were adjusted under steam and the accumulation test found to be satisfactory. For notation, please see machinery report.**

Survey Fee £ **Charged with Machinery** When applied for, 192
 Travelling Expenses (if any) £ **Charged with Machinery** When received, 192

W. Robertson
 Engineer Surveyor to Lloyd's Register of Shipping.

Committee's Minute **FRI. 11 NOV 1932**
 Assigned **See M. rpt attached**

3pt. 4
 Date of
 No.
 Reg/
 Mast
 Boil
 Own
 VE
 Mad
 teste
 No.
 ente
 Ran
 dril
 rule
 fur
 pre
 cro
 pla
 Dic
 Ex
 W
 rin
 of
 bu
 G
 (The Surveyors are requested not to write on or below the space for Committee's Minutes.)