

# REPORT ON BOILERS.

No. 48950

Received at London Office 13 MAR 1929

Name of vessel *T. S. S. Viceroy of India* When handed in at Local Office *9.3.1929* Port of *Glasgow*  
 No. in Survey held at *Glasgow* Date First Survey *28.10.27* Last Survey *4.3.1929*  
 on the *T. S. S. Viceroy of India* (Number of Visits *141* Gross *19648* Tons Net *10069*)  
 Master *✓* Built at *Glasgow* By whom built *A. Stephen & Son Ltd No 519* When built *1929*  
 Engines made at *Rugby* By whom made *British Thomson Houston & Co Engine No. ✓* When made *1929*  
 Donkey Boilers made at *Glasgow* By whom made *A. Stephen & Son Ltd* Boiler No. *519* When made *1928*  
 Nominal Horse Power *3565* Owners *Peninsular & Oriental Steam Navigation Co Ltd Glasgow*

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

Manufacturers of Steel *The Steel Co of Scotland Ltd.* (Letter for Record *S.*)  
 Total Heating Surface of Boilers *4200 sq ft* Is forced draught fitted *Yes* Coal or Oil fired *Oil*  
 No. and Description of Boilers *Two Cyl. Mult. Single Ended* Working Pressure *230 lb*  
 Tested by hydraulic pressure to *395 lb* Date of test *24.2.28* No. of Certificate *7794* Can each boiler be worked separately *Yes*  
 Area of Firegrate in each Boiler *✓* No. and Description of safety valves to each boiler *2 Cochran. Imp. High Lift*  
 Area of each set of valves per boiler *per Rule 6.25* Pressure to which they are adjusted *230 lb* 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 *9' 6"* Is oil fuel carried in the double bottom under boilers *Yes*  
 Smallest distance between shell of boiler and tank top plating *27"* Is the bottom of the boiler insulated *Yes*  
 Largest internal dia. of boilers *14' 0"* Length *11' 6"* Shell plates: Material *S.* Tensile strength *30 lb*  
 Thickness *1 3/8"* Are the shell plates welded or flanged *Yes* Description of riveting: circumferential *✓*  
 Long. seams *D.B.S./T.R.* Diameter of rivet holes in *17/16"* Pitch of rivets *9 7/8"*  
 Percentage of strength of circumferential seams *66.25* Percentage of strength of circumferential intermediate seams *✓*  
 Percentage of strength of longitudinal joints *86.00* Working pressure of shell by Rules *233 lb*  
 Thickness of butt straps *1 1/16"* No. and Description of Furnaces in each Boiler *Three Morrison*  
 Material *S.* Tensile strength *26/30 T.* Smallest outside diameter *41 7/16"*  
 Length of plain part *24 1/2"* Thickness of plates *24 1/2"* Description of longitudinal joint *Weld*  
 Dimensions of stiffening rings on furnace or c.g. bottom *None* Working pressure of furnace by Rules *233 lb*  
 End plates in steam space: Material *S.* Tensile strength *26/30 T.* Thickness *1 7/16"* Pitch of stays *21" x 18 1/4"*  
 How are stays secured *D.N.W.* Working pressure by Rules *231 lb*  
 Tube plates: Material *S.* Tensile strength *26/30 T.* Thickness *59/64"*  
 Mean pitch of stay tubes in nests *8.8"* Pitch across wide water spaces *14"* Working pressure *231 lb*  
 Girders to combustion chamber tops: Material *S.* Tensile strength *28/32 T.* Depth and thickness of girder *✓*  
 at centre *C. 31.23"* Length as per Rule *W. 31.20"* Distance apart *C. 7' 9"* No. and pitch of stays *✓*  
 in each *3 @ 7 1/2"* Working pressure by Rules *C 243 lb W. 238 lb* Combustion chamber plates: Material *S.*  
 Tensile strength *26/30 T.* Thickness: Sides *21/32"* Back *W. 45/64"* Top *W. 45/64"* Bottom *25/32"*  
 Pitch of stays to ditto: Sides *8 1/2" x 7 1/2"* Back *W. 8 1/4" x 8 1/2"* Top *W. 9 7/8" x 7 1/2"* Are stays fitted with nuts or riveted over *Nuts*  
 Working pressure by Rules *233 lb* Front plate at bottom: Material *S.* Tensile strength *26/30 T.*  
 Thickness *59/64"* Lower back plate: Material *S.* Tensile strength *26/30 T.* Thickness *15/16"*  
 Pitch of stays at wide water space *14" x 8 1/2"* Are stays fitted with nuts or riveted over *Nuts*  
 Working Pressure *238 lb* Main stays: Material *S.* Tensile strength *28/32 T.*  
 Diameter *3 1/2"* No. of threads per inch *6* Area supported by each stay *394 sq in*  
 Working pressure by Rules *241 lb* Screw stays: Material *S.* Tensile strength *26/30 T.*  
 Diameter *1 3/4"* No. of threads per inch *9* Area supported by each stay *74.4 sq in*



Working pressure by Rules **244 lb** Are the stays drilled at the outer ends **Yes** Margin stays: Diameter **2 1/2** At turned off part.  
 No. of threads per inch **9** Area supported by each stay **96.6 sq in** Working pressure by Rules **256 lb**  
 Tubes: Material **I** External diameter **2 1/2** Thickness **9 W.G.** No. of threads per inch **9**  
 Pitch of tubes **3 7/8 x 3 3/4** Working pressure by Rules **252 lb** Manhole compensation: Size of opening **36-19/16**  
 shell plate **20 1/2 x 16 1/2** Section of compensating ring **11 7/8 x 1 1/16** No. of rivets and diameter of rivet holes **36-19/16**  
 Outer row rivet pitch at ends **9 7/8** Depth of flange if manhole flanged **3 1/16** Steam Dome: Material **None**  
 Tensile strength **912** Thickness of shell **2 1/2** Description of longitudinal joint **None**  
 Diameter of rivet holes **3/16** Pitch of rivets **3/16** Percentage of strength of joint **100**  
 Internal diameter **2 1/2** Working pressure by Rules **252 lb** Thickness of crown **2 1/2** No. and diameter of rivets in crown **36-19/16**  
 stays **2** Inner radius of crown **2 1/2** Working pressure by Rules **252 lb**  
 How connected to shell **None** Size of doubting plate under dome **None** Diameter of rivet holes in dome **36-19/16**  
 of rivets in outer row in dome connection to shell **None**

Type of Superheater **None** Manufacturers of **None** Tubes **None**  
 Number of elements **None** Material of tubes **None** Internal diameter and thickness of tubes **None**  
 Material of headers **None** Tensile strength **None** Thickness **None** Can the superheater be shut off from the boiler?  
 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 **None** Are the safety valves fitted with rising gear **None** Working pressure **None**  
 Rules **None** Pressure to which the safety valves are adjusted **None** Hydraulic test pressure **None**  
 tubes **None** castings **None** and after assembly in place **None** Are drain cocks or valves fitted to free the superheater from water where necessary **None**

Have all the requirements of Sections 14 to 22 inclusive for boilers been complied with **Yes**

The foregoing is a correct description,  
**ALEXANDER STEPHEN & SONS, LIMITED, Manufacturers**

Dates of Survey **See Accompanying Machy Report** Are the approved plans of boiler forwarded to the Registrar **Yes**  
 (During progress of work in shops - -) **See Accompanying Machy Report** (If not state date of approval.)  
 (During erection on board vessel - -) **See Accompanying Machy Report** Total No. of visits **141**

GENERAL REMARKS (State quality of workmanship, opinions as to class, &c.) **These boilers have been constructed in strict accordance with the Society's rules. The materials and workmanship employed in their manufacture are sound and good. They have been fitted on board the ship in a satisfactory manner and their safety valves adjusted in accordance with the rules.**

Survey Fee **See Rpt. 42** When applied for **192**  
 Travelling Expenses (if any) **2** When received **192**

**W. H. D.**  
 Engineer Surveyor to Lloyd's Register of Ships

Committee's Minute **GLASGOW 12 MAR 1929**

Assigned **See Accompanying Machy Report**