

Rpt. 5a.

## REPORT ON BOILERS.

Old No. 24344  
No. 5995

Date of writing Report 26/10/09 When handed in at Local Office 26<sup>th</sup> Oct 1909 Port of Middlebrough-on-Tees  
 No. in Survey held at Stockton-on-Tees Date, First Survey 13<sup>th</sup> Aug. Last Survey 21<sup>st</sup> Oct. 1909  
 Reg. Book. S. S. Cacique (Number of Visits 14) Gross 4890  
 on the S. S. Cacique Tons Net 3013  
 Master James Short-Pan Built at Sunderland By whom built James Short-Pan When built 1909/1910  
 Engines made at ✓ By whom made ✓ when made 1910.  
 Boilers made at Stockton By whom made James Riley Bros Ltd (No 4061) when made 1909/1910  
 Registered Horse Power Boiler 81 Owners Grace Bros. Port belonging to London

**MULTITUBULAR BOILERS** ~~MAIN, AUXILIARY OR DONKEY.~~ — Manufacturers of Steel J. Spencer & Sons  
 (Letter for record (S)) Total Heating Surface of Boilers 1210 Is forced draft fitted No No. and Description of Boilers One single Ended Working Pressure 120 lbs Tested by hydraulic pressure to 240 lbs Date of test 21.10.09  
 No. of Certificate 4330 Can each boiler be worked separately ✓ Area of fire grate in each boiler 39 No. and Description of safety valves to each boiler Two direct spring Area of each valve 5.410 Pressure to which they are adjusted 125 lbs  
 Are they fitted with easing gear yes In case of donkey boilers, state whether steam from main boilers can enter the donkey boiler No  
 Smallest distance between boilers or uptakes and bunkers or woodwork 18 Inside dia. of boilers 12'-0" Length 10'-9 1/2"  
 Material of shell plates steel Thickness 3/4" Range of tensile strength 28-32 Are the shell plates welded or flanged no  
 Descrip. of riveting: cir. seams 2 Riv lap long. seams 2 Riv - 3 Riv Diameter of rivet holes in long. seams 15/16 Pitch of rivets 7"  
3 Rivs per pitch 5 Rivs per pitch  
 Top of plates in width of butt straps 1 1/2" x 3/4" Per centages of strength of longitudinal joint rivets 98.0 Working pressure of shell by rules 132 lbs. Size of manhole in shell 16" x 12" Size of compensating ring 9" x 12" No. and Description of Furnaces in each boiler 3 plain Material steel Outside diameter 37 3/8 Length of plain part top 76 1/2" Thickness of plates crown 1 1/16" bottom 7/8"  
 Description of longitudinal joint welded No. of strengthening rings none Working pressure of furnace by the rules 141 Combustion chamber plates: Material steel Thickness: Sides 1/2" Back 5/8" Top 1/2" Bottom 1 1/2" Pitch of stays to ditto: Sides 10" x 7" Back 9" x 9 1/4"  
 Top 7 1/2" x 7" If stays are fitted with nuts or riveted heads nuts Working pressure by rules 162 Material of stays steel Diameter at smallest part 1.36" Area supported by each stay 83.25 Working pressure by rules 139 End plates in steam space: Material steel Thickness 7/8"  
 Pitch of stays 16" x 15" How are stays secured nuts & 8 x 5/8" loose washers Working pressure by rules 150 Material of stays steel Diameter at smallest part 2.04  
 Area supported by each stay 240 Working pressure by rules 141 Material of Front plates at bottom steel Thickness 7/8" Material of Lower back plate steel Thickness 7/8" Greatest pitch of stays 14" x 9 1/4" Working pressure of plate by rules 189 Diameter of tubes 3"  
 Pitch of tubes 4 1/4" x 4 1/4" Material of tube plates steel Thickness: Front 7/8" Back 1 1/16" Mean pitch of stays 11 1/4" Pitch across wide water spaces 14" Working pressures by rules 140 lbs Girders to Chamber tops: Material steel Depth and thickness of girder at centre 7 1/2" x 1 1/4" web Length as per rule 32 Distance apart 9" centre Number and pitch of Stays in each 2 @ 7"  
 Working pressure by rules 124 Superheater or Steam chest: how connected to boiler none Can the superheater be shut off and the boiler worked separately ✓ Diameter ✓ Length ✓ Thickness of shell plates ✓ Material ✓ Description of longitudinal joint ✓ Diam. of rivet holes ✓ Pitch of rivets ✓ Working pressure of shell by rules ✓ Diameter of flue ✓ Material of flue plates ✓ Thickness ✓  
 If stiffened with rings ✓ Distance between rings ✓ Working pressure by rules ✓ End plates: Thickness ✓ How stayed ✓  
 Working pressure of end plates ✓ Area of safety valves to superheater ✓ Are they fitted with easing gear ✓

FOR THE FOREGOING IS A CORRECT DESCRIPTION,  
 RILEY BROS. (BOILERMAKERS) LIMITED

A. Lued Manufacturer.

Dates of Survey During progress of work in shops - - 19 09 Aug. 13 24 27 30 Sept 3 7 15 17 21 28 Oct 11 14 Is the approved plan of boiler forwarded herewith yes  
 while building During erection on board vessel - - 18 21 Total No. of visits 14

**GENERAL REMARKS** (State quality of workmanship, opinions as to class, &c.) This boiler has been built under Special Survey in accordance with the approved plan, the Secretary's letter E-28.7.09 and in general conformity with the Rules. The materials and workmanship are sound and good and on completion the boiler was tested by hydraulic pressure with satisfactory results, secured in place, mounted & tested under steam.

Survey Fee ... £ 4-1-0 When applied for monthly  
 Travelling Expenses (if any) £ ✓ When received 7 Dec 1909

Wm Morrison  
 Engineer Surveyor to Lloyd's Register of British and Foreign Shipping.

Committee's Minute

FRI. 18 FEB 1910

Assigned