

Rev 22/5/76

Made by <sup>Port</sup> Messrs Rankin & Blackmore, Greenock, for  
Greenock 20<sup>th</sup> May 1876  
"built at Sunderland" tons

Details of Main Boiler of the Steam Ship

Diameter 11' 3" Length 9' 8"  
 Thickness of shell plates  $\frac{26}{32}$ "  
 Direction of riveting of longitudinal joints treble riveted of circumferential joints single  
 Number of rivets ditto 5" ditto  $3\frac{3}{4}$ "  
 Diameter of rivets ditto 1' 8" ditto 1' 8"  
 Diameter of girders ditto  $4\frac{1}{2}$ " ditto  $4\frac{1}{4}$ "  
 Diameter of holes in circular shell  $15\frac{1}{2}" \times 12"$   
 Material used for flat ring  $4\frac{1}{2}" \times \frac{3}{4}"$   
 Number of furnaces in boiler Three  
 Diameter of furnaces 2' 9" Length of furnaces 7' 0"  
 Thickness of furnace plates  $\frac{7}{16}"$   
 Direction of joint of furnaces butt joints fitted with double  
 Lengthened with rings per rings Greatest length between rings  
 Thickness of combustion chamber plating  $\frac{7}{16}"$   
 Diameter of screw stays to ditto  $1\frac{1}{4}"$  (riveted) pitch of stays  $8\frac{3}{4}" \times 8\frac{3}{4}"$   
 Thickness of longitudinal stays to end plates 2" pitch of ditto  $15" \times 15"$   
 Direction of stay secured by double butts  
 Diameter of tubes  $3\frac{1}{2}"$  pitch of tubes  $4\frac{5}{8}"$   
 Thickness of tube plates  $\frac{10}{16}"$   
 Direction of stay secured by double butts  
 Diameter of tubes screwed fitted with double butts pitch of stays  $1\frac{1}{4}" \times 1\frac{1}{4}"$   
 Direction of steam receiver Same on top of Boiler  
 Diameter of ditto 3' 9" length of ditto 4' 6"  
 Thickness of plating of ditto  $\frac{9}{16}"$  top  $\frac{7}{16}"$   
 Direction of stay secured by three vertical stays 2" dia. secured by double butts.

Donkey Boiler 4' 6" dia x 4' 6" high, Shell plating  
 Single riveted, inside plating  $\frac{7}{16}"$ .

James Morrison  
 Engineer Surveyor to Lloyd's Register of Shipping  
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IRON 517-0063

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Formula  $\frac{51520 \times 1.56 \times \frac{75}{100} \times 7 \text{ rivets}}{133.4 \times 6.5} = 69 \text{ lbs}$

Formula for flat plates  $\frac{100 \times 49}{76} = 64 \text{ lbs}$

Formula for Stues  $\frac{89,600 \times .19}{33" \times 4'} = 43 \text{ lbs}$

Longitudinal Stays 2" dia. 15" x 15" pitch = 465 lbs per sq

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