

14 28 Iron

S. S. Frederic Franch

No. 1 and Description of Boilers

Two, Round, Horizontal, 13' 0" dia. x 9' 9" long with 3  
 Furnaces fired from forward, and one Longitudinal Steam  
 Receiver partly enclosed in Smoke Box.  
 Working Pressure 70 lbs

Shell plating  $\frac{1}{4}$ " (Bowling) plates in the circumference and  
 3 widths in the length. Circumferential joints lapped  
 6", double riveted, rivets 1", holes punched,  $3\frac{1}{4}$ " pitch. Longitudinal  
 joints have double butt straps x  $12\frac{1}{2}$ " broad, double riveted  
 rivets 1", holes punched,  $3\frac{1}{4}$ " pitch. End plating  $\frac{1}{4}$ " flanged  
 4" double riveted (Gigzag)  $4\frac{1}{4}$ " pitch. Manholes have rings  
 fitted round them.

$$\text{Formula } \frac{51,520 \times 1.75 \times 69.2}{155.25 \times 6.5} = 61.8 \text{ lbs}$$

Combustion Chamber plating  $\frac{1}{4}$ " (Bowling) The top is rounded  
 no stays fitted to it, screw stays immediately under the round  
 of top.  $7\frac{1}{4}$ " dia = 1.22" sect. area.  $\frac{1}{4}$ " x 8" pitch = 58" area = 332 lbs

$$\text{Formula for Flat plates } \frac{100 \times 64}{5.8} = 110.3 \text{ lbs}$$

Furnace plating  $\frac{1}{4}$ " (Bowling) They are 7' 0" long x 3' 2" dia.  
 flanged to inside at mouths and riveted to front plate  
 No anticollapsing rings fitted

$$\text{Formula for Stays } \frac{89,600 \times .25}{4' \times 3.8} = 84.2 \text{ lbs}$$

Tube plates  $\frac{1}{4}$ " protected by 59 tubes  $3\frac{3}{8}$ " dia in centre chamber  
 & 10 solid stays  $1\frac{1}{8}$ " dia. 62 tubes in side chambers & 9 solid  
 stays  $1\frac{1}{8}$ " dia. also 2 stays  $1\frac{1}{8}$ " dia between chambers

$$\text{Longitudinal Stays } 1\frac{1}{8}" \text{ dia} = 2.76 \text{ sect area} \times 14\frac{1}{2} \times 14" \text{ pitch} \\ = 203" \text{ area} = \frac{514.8}{5000} \text{ lbs per inch}$$

Steam Receiver, 11' 6" long x 3' 11" dia, plating  $\frac{1}{4}$ " (Bowling) rounded  
 ends. Two plates in the circumference lapped joints double riveted  
 3 widths of plate in the length, edges lapped, single riveted

Glasgow

James Morrison  
 Aug 17<sup>th</sup> 1873