

16210 ton.

Port *Sunderland*

787

Details of Main Boilers of the Steam Ship

"Berrington"

tons

Diameter *10' 0" outside* Length *9' 6"*Thickness of shell plates *$\frac{3}{4}$ "*Description of riveting of longitudinal joints *Double zigzag* of circumferential joints *Double zigzag*Pitch of rivets ditto *$\frac{3}{8}$* ditto *3*Diameter of rivets ditto *1"* ditto *1"*Lap of plating ditto *5"* ditto *8"*Size of manholes in circular shell *$14\frac{1}{2} \times 11\frac{1}{2}$* How compensated for *11 rings found holes $4\frac{1}{2}" \times \frac{3}{4}$* Number of furnaces in boiler *2*Diameter of furnaces *2' 10"* Length of furnaces *7' 0"*Thickness of furnace plates *$\frac{1}{2}"$* Description of joint of furnaces *Lap joint single riveted*Whether strengthened with rings *No* Greatest length between ringsThickness of combustion chamber plating *$\frac{1}{2}"$* Diameter of screw stays to ditto *to sides $1\frac{1}{4}"$ to back $1\frac{1}{2}"$* pitch of stays *to sides $8\frac{1}{2} \times 8\frac{5}{8}$ to back $8\frac{5}{8} \times 8\frac{3}{4}$* End plates, thickness *$\frac{3}{4}"$* Diameter of longitudinal stays to end plates *2' 4"* pitch of ditto *$14\frac{1}{2} \times 12\frac{7}{8}$* How stays are secured *nuts inside and out. Stays swelled at thread*Diameter of tubes *$3\frac{1}{2}"$* pitch of tubes *$5\frac{3}{8} \times 4\frac{1}{8}$* Thickness of tube plates *$\frac{3}{4}"$* Stayed by *Stay tubes* pitch of stays *$14\frac{5}{8} \times 14\frac{5}{8}$* Description of steam receiver *Annular Superheater*Diameter of ditto *Inside $4' 3"$ Outside $6' 9"$* length of ditto *7' 0"*Thickness of plating of ditto *$\frac{1}{2}"$ Double riveted longitudinally. Single circumferentially*Ends, how stayed *$\frac{13}{16}"$ rivets $2\frac{1}{8}"$ pitch longitudinally $1\frac{1}{8}"$ circumferentially**Inside tube stiffened with rings $2' 6"$ apart. 10 stays $1\frac{1}{8}"$ dia in**circumference of superheater. Vertical pitch of stays $2' 2"$*

$$\text{Working pressure of shell} = \frac{51520 \times 1\frac{1}{2} \times .68}{118.5 \times 6.5} = 68 \text{ lbs}$$

$$\text{Furnaces to collapse} = \frac{89600 \times \frac{1}{2}}{4 \times 34} = 94 \text{ lbs}$$

$$\text{Flat surfaces between screwed stays} = \frac{800 \times 8^2}{8\frac{1}{2} \times 8\frac{3}{4}} = 85 \text{ lbs}$$

James Bain

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