

PARTICULARS OF BOILERS.

Shipbuilder Short Brothers
 Yard No. 223
 Engineer John Dickinson
 Yard No. 410
 Shaft as per Rule.....
 Size of Cyls.....
 Stroke.....
 Total heating surface.....
 Grate surface, 1 boiler.....
 Working pressure 160 lbs
 No. of Boilers 1
 Descrip. & Material Ordinary marine type
 Diameter 14'-6"
 Length 10'-6"

CALCULATIONS.

SHELL. { Plate..... $\frac{P-D}{P} = \frac{8.5 - 1.375}{8.5} = 83.82\%$
 Rivet..... $\frac{a \times n}{P \times T} = \frac{1.484 \times 5 \times 1.75}{8.5 \times 1.28125} = 101 \text{ riv}$
 $\frac{C \times T \times B}{D} = \frac{20 \times (20.5 - 2) \times 83.8}{174} = 178 \text{ lbs}$
 Top end plate..... $\frac{C \times T^2}{P^2} = \frac{185 \times 16^2}{17.25^2} = 160 \text{ lbs}$
 Stays for ditto..... $\frac{A \times C}{P^2} = \frac{5 \times 9,000}{297.258} = 174 \text{ lbs}$
 Back bottom..... $\frac{C \times T^2}{P^2} = \frac{175 \times 11^2}{11.75^2} = 153 \text{ r/sdilling plate}$
 Stays at water space at back..... $\frac{A \times C}{P^2} = \frac{1.73 \times 8,000}{10 \times 8.25} = 167 \text{ lbs}$
 Comb. at sides..... $\frac{C \times T^2}{P^2} = \frac{135 \times 9^2}{8.25^2} = 160 \text{ lbs}$
 Stays for ditto..... $\frac{A \times C}{P^2} = \frac{1.45 \times 8,000}{68} = 170 \text{ lbs}$
 Comb. at backs..... $\frac{C \times T^2}{P^2} = \frac{135 \times 9^2}{8.25^2} = 160 \text{ lbs}$
 Stays for ditto..... $\frac{A \times C}{P^2} = \frac{1.45 \times 8,000}{69} = 170 \text{ lbs}$
 Comb. at tops..... $\frac{C \times T^2}{P^2} = \frac{135 \times 9^2}{8.25^2} = 160 \text{ lbs}$
 Comb. at stays, outer row..... $\frac{A \times C}{P^2} = \frac{1.73 \times 8,000}{8.25 \times 10} = 167 \text{ lbs}$
 Girders..... $\frac{C \times d^2 \times T}{(L-P) \times D \times L} = \frac{99.00 \times 7.75 \times 6^2}{(33 - 8.75) \times 7.5 \times 33} = 160 \text{ lbs}$
 Furnace..... $\frac{89,600 \times T^2}{L \times D} = \frac{89,600 \times 49^2}{64} = 208 \text{ lbs}$
 $\frac{C \times (T-2)}{D} = \frac{88.00 \times 49}{142 \times 64} = 168 \text{ lbs}$
 $\frac{C \times T}{D} = \frac{1000 \times 10.75 - 2}{42} = 239$
 Tube plates..... $\frac{140 \times T^2}{P^2} = \frac{140 \times 11^2}{92} = 209$
 $\frac{C \times T^2}{P^2} = \frac{100 \times (11 + \frac{10}{2})^2}{9 \times 9} = 316$
 Stay tubes, top row $\frac{A \times C}{P^2} =$
 side..... $\frac{A \times C}{P^2} =$
 corners $\frac{A \times C}{P^2} =$

DOME. none

SHELL. { Plate..... $\frac{P-D}{P} =$
 Rivet..... $\frac{A \times N}{P \times T} =$
 $\frac{C \times T \times B}{D} =$