

Port

Dundee

June

1876

## Details of Main Boilers of the Steam Ship

Queen

178.03

tons

Diameter

10' 0" outside dia

Length

8' 0" inside of plates

Thickness of shell plates

 $\frac{3}{4}$ " inches

Description of riveting of longitudinal joints

Double Lap

of circumferential joints

Double Lap

Pitch of rivets

ditto

 $3\frac{1}{8}$ " inches

ditto

 $3\frac{1}{8}$ " inches

Diameter of rivets

ditto

1" inches

ditto

 $\frac{3}{4}$ " inches

Lap of plating

ditto

6" "

ditto

5" "

Size of manholes in circular shell

15" x 12"

How compensated for

by Malleable iron ring riveted on  $5" \times 7\frac{1}{8}"$ 

Number of furnaces in boiler

Two

Diameter of furnaces

33" front &amp; 29" back end

Length of furnaces

5" 6"

Thickness of furnace plates

 $\frac{7}{16}$ " inches

Description of joint of furnaces

Lap joint

Whether strengthened with rings

None

Greatest length between rings

— — —

Thickness of combustion chamber plating

 $\frac{1}{2}$ " inch

Diameter of screw stays to ditto

 $1\frac{5}{16}$ " inches dia

pitch of stays

 $9\frac{1}{2} \times 9\frac{1}{2}$ 

End plates, thickness

 $\frac{5}{8}$ " inches

Diameter of longitudinal stays to end plates

2" inches dia

pitch of ditto

 $16\frac{3}{4} \times 14$  inches

How stays are secured

Through ends with Nuts and Washers both sides of plates

Diameter of tubes

 $3\frac{1}{4}$ " outside dia

pitch of tubes

 $4\frac{1}{4} \times 4\frac{1}{4}$ 

Thickness of tube plates

 $\frac{9}{8}$ " inches

Stayed by

Tube Stays &amp; Nuts

pitch of stays

 $16\frac{3}{4} \times 16\frac{3}{4}$ 

Description of steam receiver

Vertical Domb

Diameter of ditto

3' 0"

length of ditto

4' 10"

Thickness of plating of ditto

 $\frac{3}{8}$ " inches

ends

 $\frac{1}{2}$ " inch

Ends, how stayed

by Vertical Rod Stays passing through shell of Boiler and top of Domb with Nuts & Washers on both sides  $1\frac{3}{4}$ " dia

Working pressure of shell

$$\frac{51520 \times 1.5 \times 67.9}{118.5 \times 6.5} = 68 \text{ lbs}$$

do do Furnaces

$$\frac{89600 \times .18}{5.5 \times 31} = 99 "$$

do do Rod Stays

$$\frac{100 \times 100}{16.75 \times 14} = 42.6 "$$

do do Screw "

$$\frac{64 \times 100}{9.5 \times 9.5} = 70 "$$

" " Rod Stays @ 65 lbs = 4856 lbs

" " Screw do " " = 4512 "

Engineer Surveyor to Lloyd's Register of Shipping

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