

19470 Iron.

Port

Barrow 5<sup>th</sup> Sept 1877

Details of Main Boilers of the Steam Ship

"Glenamnac"

506.70 tons

Diameter 14' 0"

Length 10' 9" Recd 10/11/77

Thickness of shell plates  $\frac{15}{16}$ "

Description of riveting of longitudinal joints {Double butt straps double riveted of circumferential joints double riveted laps

Pitch of rivets ditto 4" ditto  $3\frac{7}{8}$ "

Diameter of rivets ditto  $1\frac{1}{8}$ " ditto  $1\frac{1}{8}$ "

Butt straps Lap of plating ditto 11" wide ditto  $5\frac{1}{2}$ "

Size of manholes in circular shell 16" x 12" through steam chest


How compensated for plate ring

Number of furnaces in boiler Three

Diameter of furnaces 3' 6" Length of furnaces 7' 6"

Thickness of furnace plates  $\frac{7}{16}$ " top  $9/16$ " bottom

Description of joint of furnaces Welded

Whether strengthened with rings Yes  Greatest length between rings 4' 0"

Thickness of combustion chamber plating  $\frac{7}{16}$ "

Diameter of screw stays to ditto  $1\frac{1}{2}$ " pitch of stays 9" x 9"

End plates, thickness  $\frac{1}{16}$ " bottom  $\frac{3}{4}$ " top

Diameter of longitudinal stays to end plates 2" pitch of ditto 16" x 15"

How stays are secured Nuts and washers

Diameter of tubes  $3\frac{1}{2}$ " O.D. pitch of tubes  $4\frac{7}{8}$ " x  $5\frac{1}{8}$ "

Thickness of tube plates  $\frac{5}{8}$ " back  $\frac{1}{16}$ " front

Stayed by Stay tubes pitch of stays  $14\frac{7}{8}$ " x  $15\frac{3}{8}$ "

Description of steam receiver Vertical circular

Diameter of ditto 3' 6" Height of ditto 5' 0"

Thickness of plating of ditto  $\frac{1}{2}$ " ends  $\frac{5}{8}$ "

Ends, how stayed Egg ended

Rivet holes in shell plating are drilled in place.

Screwed stays to combustion chamber are fitted with nuts.

Top of combustion chamber stayed with bridges and bolts  $7\frac{1}{2}$ " apart

J. G. Viningham

Engineer Surveyor to Lloyd's Register of Shipping.



"Glenannox" 19470 Jan

Shell plating  $\frac{51.520 \times 1.874 \times .71}{168 \times 6.0} \}$  68 lbs.

Per cent of strength in joints  $\left\{ \frac{(4 - 1.125) \times 100}{4} \right\} = 71\%$

Per cent of strength in rivets  $\left\{ \frac{(994 \times 4) \times 100}{4 \times .937} \right\} = 105\%$

Furnaces  $\frac{89600 \times .191}{4.0 \times 42} \}$  = 101 lbs.

Flat plates  $\frac{120 \times 49}{81} \}$  = 72 lbs.

Steam chest  $\frac{51.520 \times 1 \times .60}{42 \times 6.5} \}$  = 113 lbs

2 Bracket plates are fitted to back plates and shell of boiler between furnaces at back end.

J. G. Kinghorn



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