

Titanic's Coaling Outriggers

Introduction

Along the outboard bulwarks of Titanic's "A" deck are triangular structures known as "coaling outriggers". (Figs. 1&2) It has been known for years that these structures were used during the loading of coal but their exact method of deployment and operation has never been explained in any detail. This article will attempt to fill in many of the blanks in the understanding of their function.

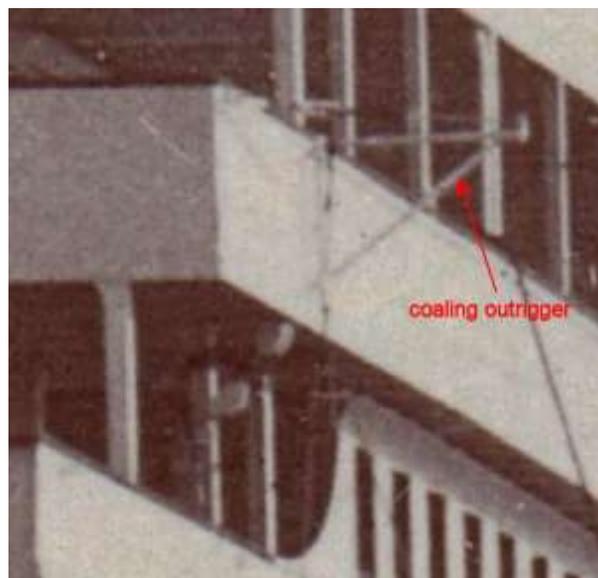


Figure1

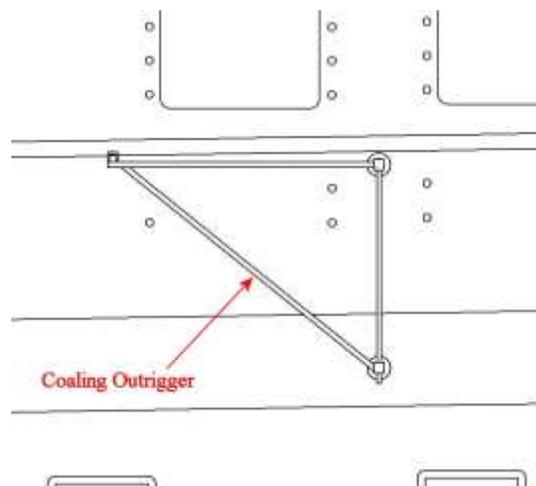


Figure 2

Analysis

The heart of the equipment used for loading coal is the gin block. This is a heavy duty, all-metal block. (Figure 3)

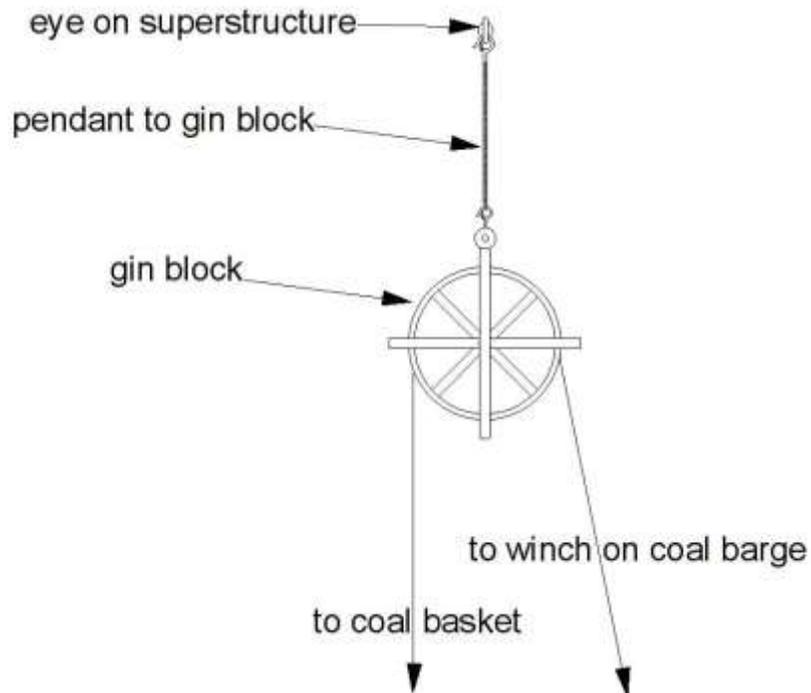


Figure3

It is the type of block which was used on Titanic for hoisting baskets of coal from the coal barge to the level of the coal doors where the coal was loaded. To function effectively, the block had to hang freely and had to be positioned over the coal barge and the individual coal doors. The gin block had a line attached to it called a pendant. This pendant was attached to eyes on the superstructure which were positioned vertically over each of the coal doors. The eyes were located on the superstructure bulwarks so they could be reached over the bulwark by the crew. If the gin block was simply attached to one of the eyes via a pendant, it would not hang freely and be positioned over the coal barge. The reason why is because of the tumblehome of the sides of the ship.

If one examines liners which are contemporary to Titanic, he will see that the use of coaling outriggers was very limited. The reason their use was limited, I believe, was because of Titanic's design and size. The slope of the ships sides amidships toward the midline is known as

“tumblehome”. While Titanic did not have excessive tumblehome as compared to her contemporaries, her size meant that the extent of the tumblehome was pronounced at the level of the superstructure decks.

Titanic had superstructure decks which overhung the main hull sides. This overhang mitigated the tumblehome to a certain extent but not enough so that lines with gin blocks could be hung directly from the bulwarks. I believe that the primary purpose of the coaling outriggers was to support an outrigger line which rove through the outriggers at their ends. This outrigger line had the purpose of holding the gin blocks further away from the sides of the ship. If you look at the drawing in Figure 4, you will see the relationship of the relationship of the tumblehome, superstructure overhang, and coaling outriggers. With the pendant attached to the gin block extended outboard, the gin block hoisting line now is directly over the coaling barge.

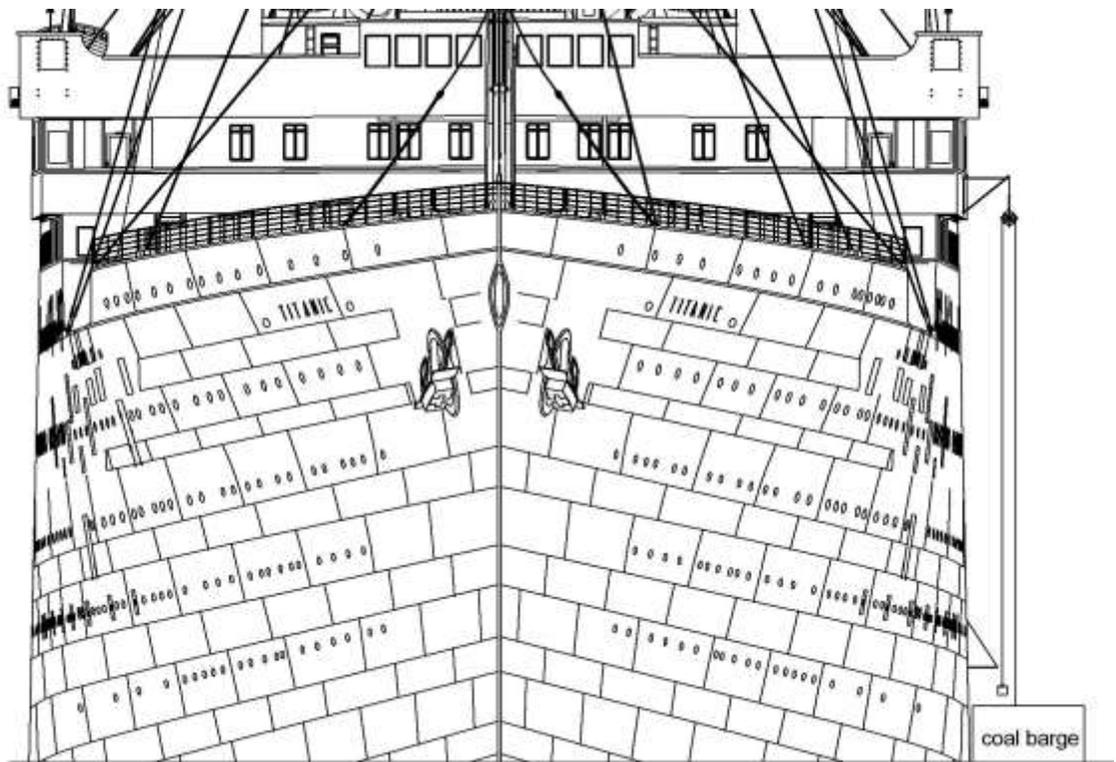


Figure 4

Figure 5 shows the outriggers deployed and the gin bloc assembly thrown over the outrigger to position it further outboard and over the coal barge.

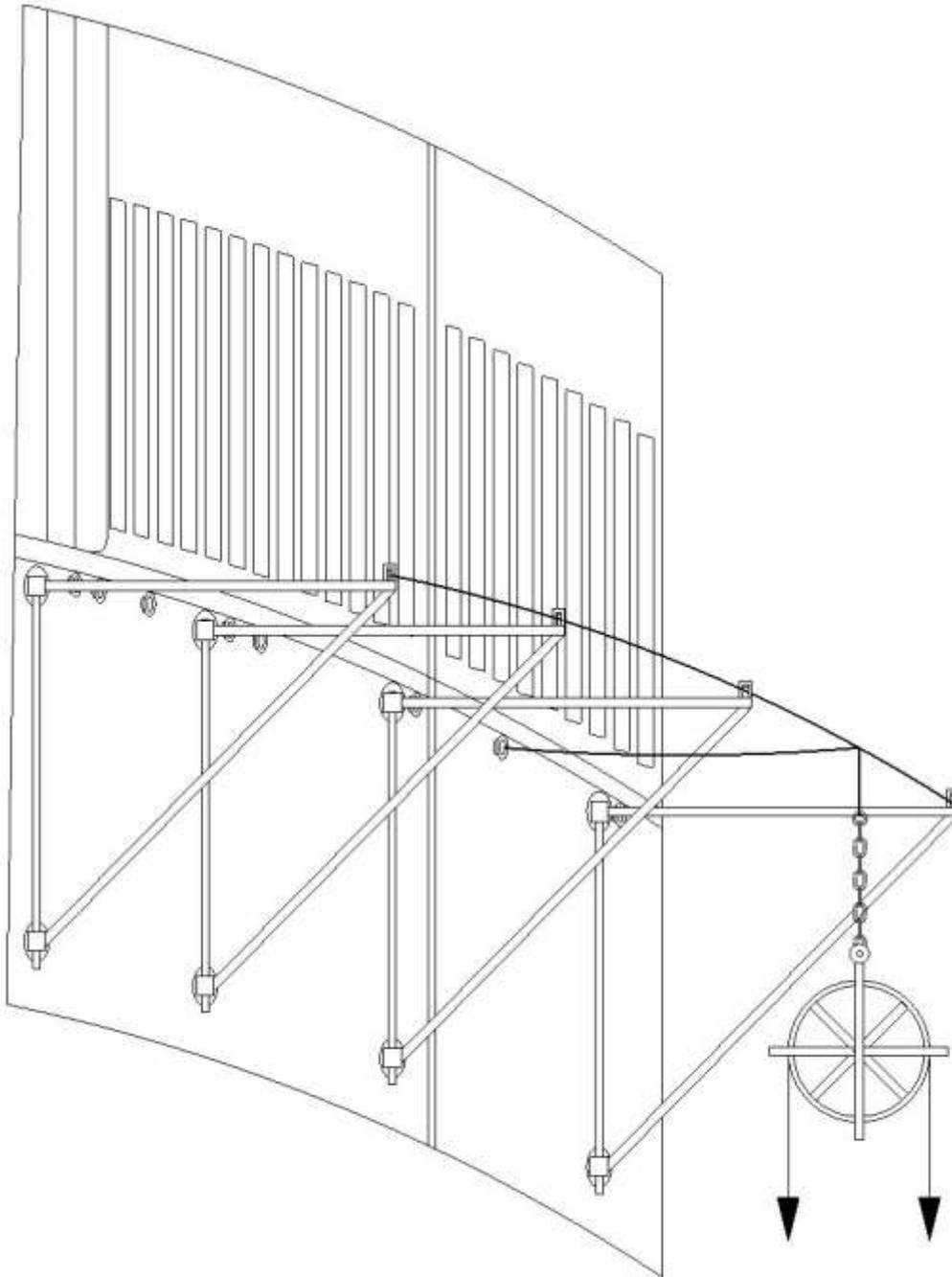


Figure 5

The outriggers were divided into two functional groups. In Figure 6, the coal doors are shown in red for the forward section and blue for the aft section. Figure 7 is a Titanic photo showing both functional groups. The forward and aft functional groups of the coaling outriggers are indicated with red being forward and blue being aft.

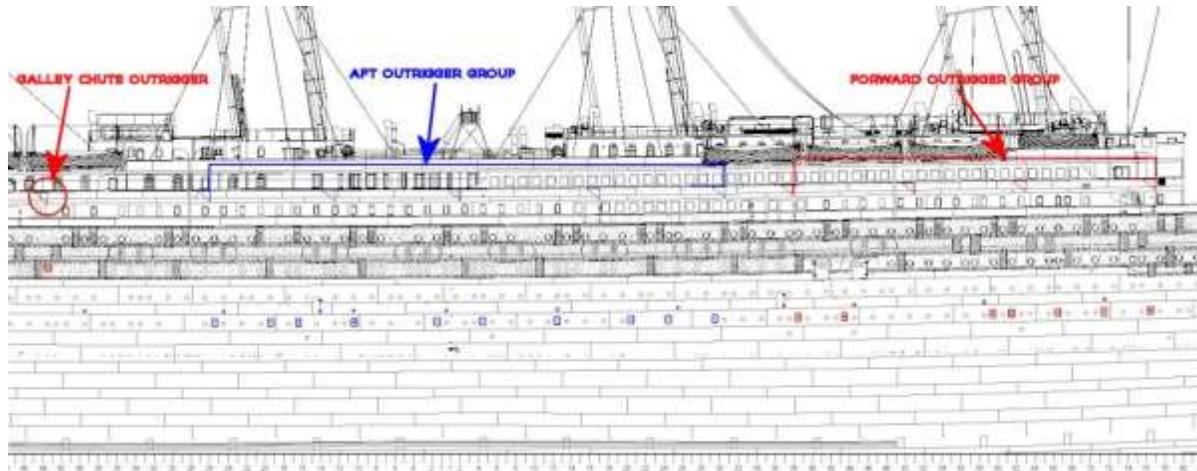


Figure 6

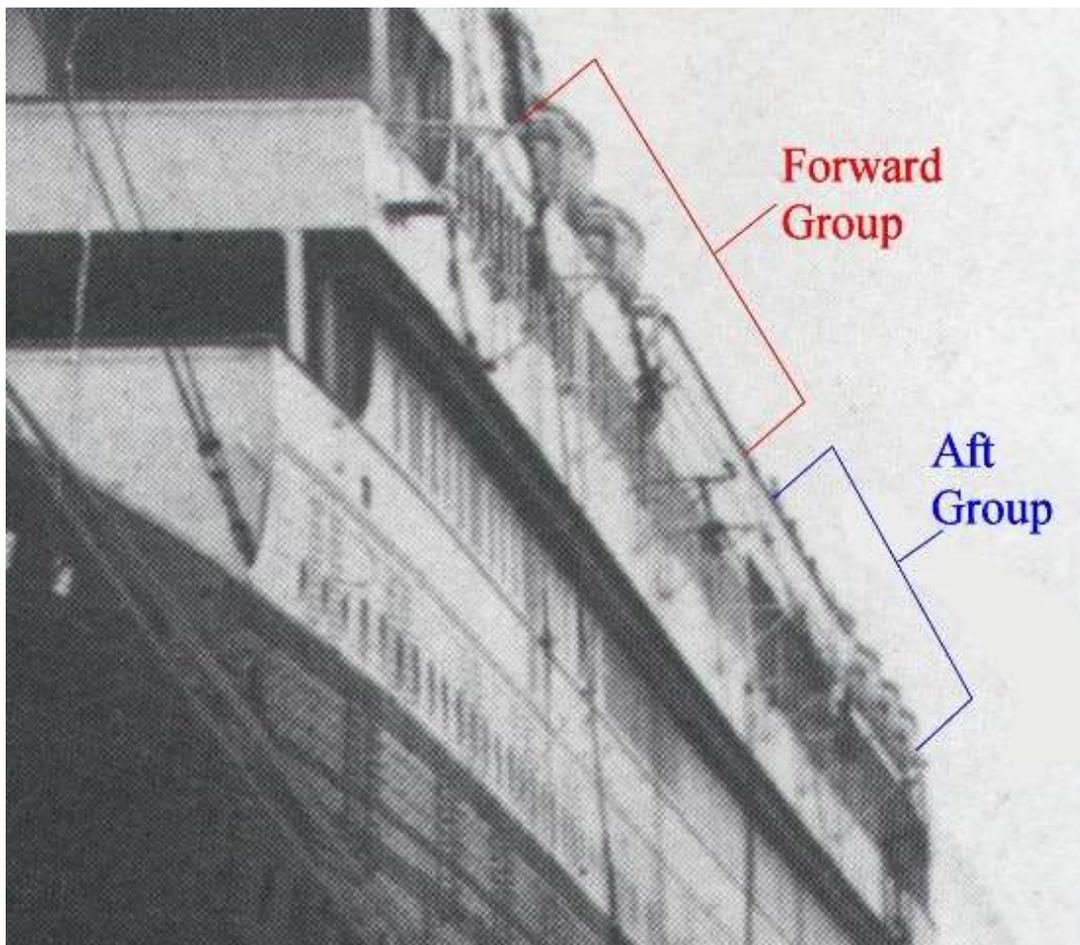


Figure 7

The individual coaling outriggers had only two functional positions:

1. When fully deployed, they were rotated out perpendicular to the sides of the ship.
2. When stowed, they were rotated aft against the bulwark.

The lack of any visible latches to secure the outriggers in the stowed position has led me to speculate about the nature of the outrigger hinge. I believe that it may be that the hinge could rotate but could be locked in the two functional positions. If this were in fact the case, to deploy the outriggers they could be lifted vertically to disengage them from their stowed, locked position. They could then be rotated out to their operational position and dropped down into the hinge lock which would hold the outrigger in the deployed position.

The outrigger line was connected to the forward and aft outriggers in a functional group. In Figure 7 it appears that at both ends of the line there may have been turnbuckles to tension the outrigger line. At both ends of the forward functional group there are stay rods which brace the forward and aft outriggers. In the aft functional group, there is a stay rod on the forward outrigger but there doesn't appear to be one on the aft outrigger in this section. It may be that this outrigger was braced via a line connected to it which could pass aft through a mooring port in the bulwark and belay inside the bulwark.

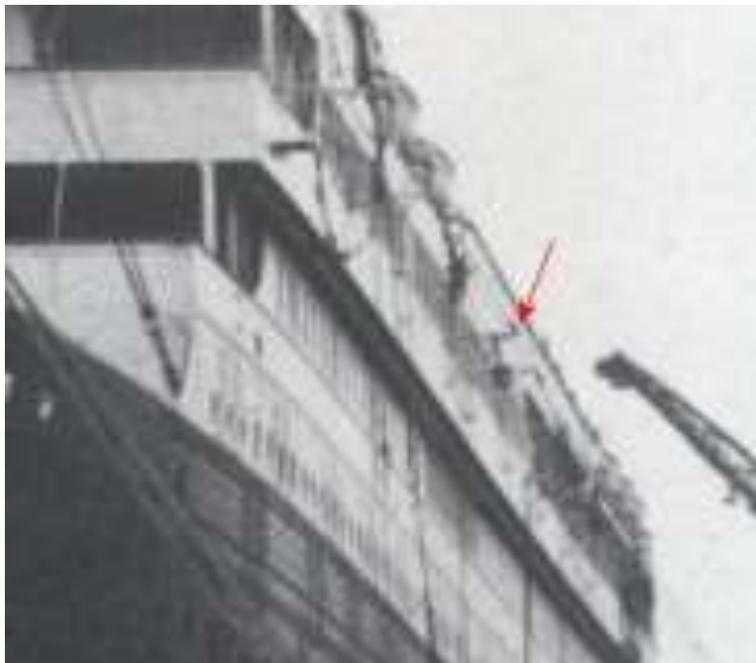


Figure 8

When the outriggers were fully deployed, then the gin blocks could be deployed. On the free end of the gin block pendant line, a hook would be fastened to one of the eyes over whatever coal door was to be loaded. The hauling line and gin block could then be heaved outboard over the outrigger line. The hauling line would drop to the workers below so that they could begin coaling operations as shown in Figure 4 above.

To conclude, I would like to offer the possible procedures for deploying and using the coaling outriggers. I will use the forward outrigger section in my example.

1. In the forward outrigger section the outrigger line is reeved through the outrigger eyes.
2. Over the "A" deck promenade bulwark each coaling outrigger in the forward section is lifted and rotated forward slightly to disengage it from its locked position.
3. The coaling outriggers are rotated and locked in their functional position perpendicular to the side of the ship.
4. The turnbuckles attached to the outrigger line and the forward and aft coaling outriggers are adjusted to take the slack out of the outrigger line.
5. The braces to the forward and aft coaling outriggers in the section are rotated and fastened to an eye on the bulwark.
6. The coal doors to be loaded in this section are identified. For each one, a gin block with pendant and hauling line is prepared. The hauling line is coiled alongside the gin block. The hook at the end of the pendant is hooked into the eye over the coal door to be loaded. The gin block and hauling line coil are heaved over the coaling outrigger line where the hauling line uncoils down to the workers at the coal door.
7. Coaling operations can now commence.

Conclusion

The purpose of the coaling outriggers appears to be to position an outrigger line at their ends, which provides a means for holding a gin block at a sufficient distance from the ship so that it can function freely. Exact procedures used in the deployment of the outriggers can be debated because no definitive reference or photos have been found which enumerate all the procedures. This should not hinder us from seeing the fundamental purpose of the coaling outrigger system.

It should be noted that this article deals primarily with Titanic. Olympic had a slightly different setup. No known photos show Britannic's outriggers deployed. Though there may have been slight differences in the setup among the sister ships, the fundamental purpose of the outriggers remains the same.