

Titanic's Cargo Hatch Covers and Associated Structures

By Bob Read, D.M.D.

Introduction

After having observed the many inaccuracies of Titanic model kit representations of her cargo hatch covers and associated structures, I decided to write a research article which will show how these structures were rigged. Not every photo in this article will be from *Titanic* but the equipment she used to secure the cargo hatches was fairly common among ships of the period. Individual structures will be illustrated and explained with text, photos, and drawings. Only the structures on the weather decks will be examined. The features below decks are not within the scope of this article because they are rarely modeled.

Common Aspects of the Cargo Hatches

Most of the cargo hatches on *Titanic* had similar arrangements to cover and secure them with the exception of hatch #1. Because of the special treatment of hatch #1, there are two aspects which all the hatches have in common. The first is that the nominal height of the hatch coamings was 30 inches. In various references one will find minor height discrepancies of this 30-inch height. I refer to it as the "nominal" height because it was the design figure. The minor discrepancies found in references are because these are "as measured" figures.

The second aspect common to all of *Titanic's* cargo hatches is that all radius corners have a radius of 12 inches. Some of the hatches have squared corners where they meet deckhouses but all the radius corners are uniform.

Cargo Hatch Structures

The following photos will be used to identify the cargo hatch structures which will be discussed later in the article with more specificity as they relate to *Titanic*.

[Go to next page](#)

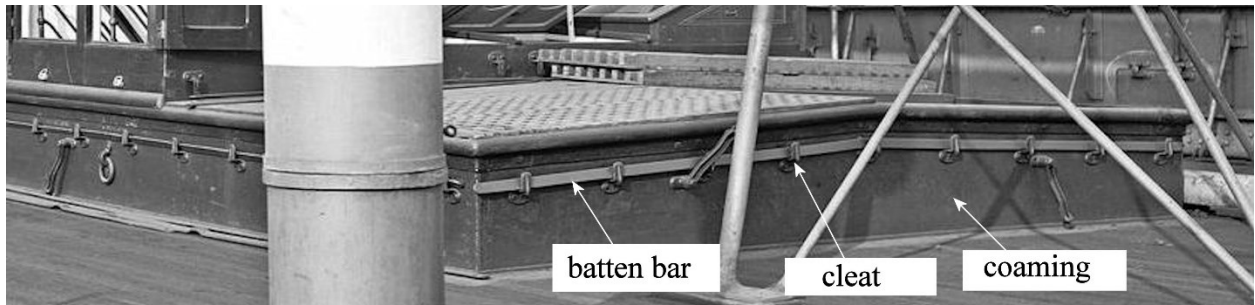


Figure 1

Cargo hatch structures

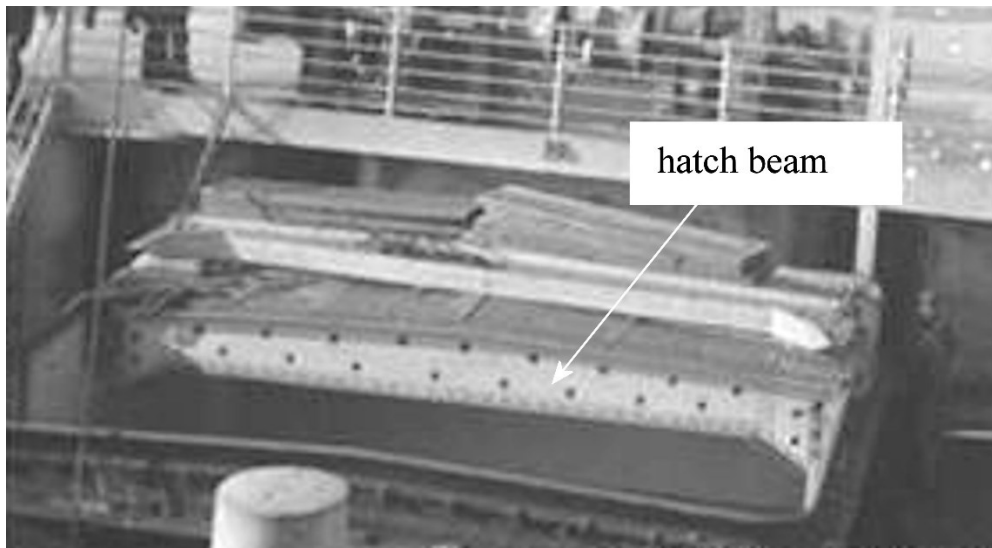


Figure 2

Cargo hatch structures (cont.)

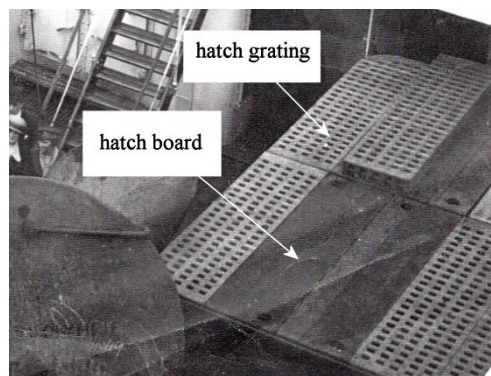


Figure 3

Cargo hatch structures (cont.)

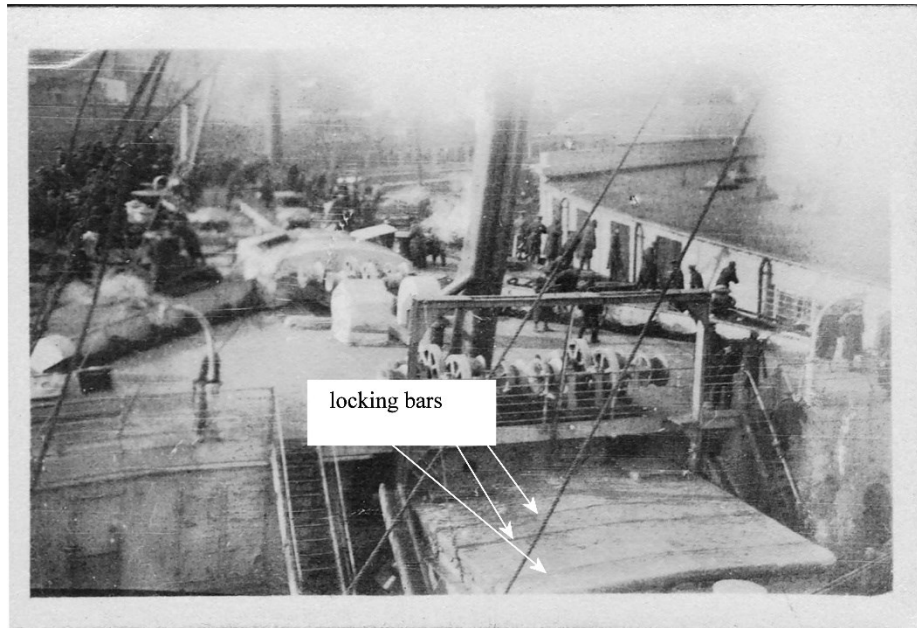


Figure 4

Cargo hatch structures (cont.)

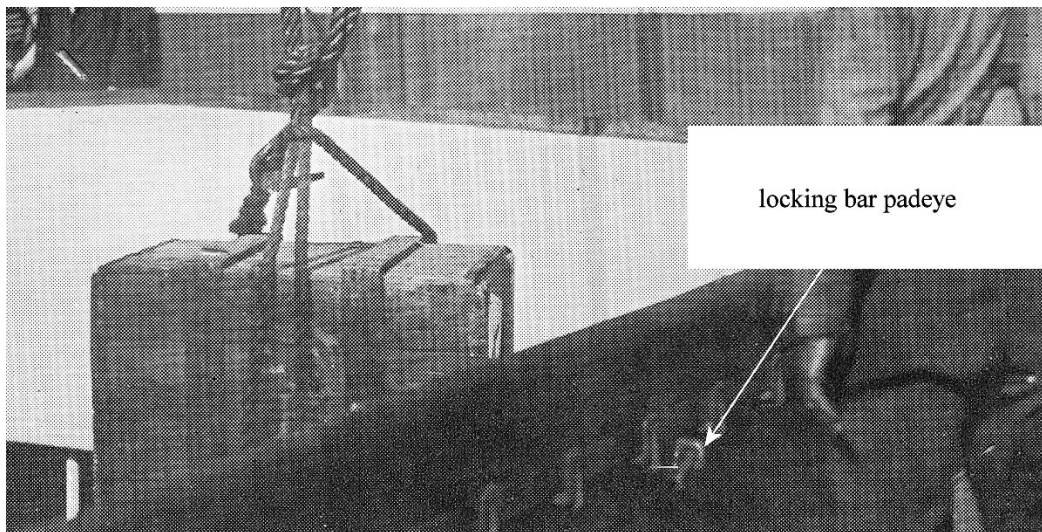


Figure 5

Cargo hatch structures (cont.)

Explanation of Cargo Hatch Structures

1. Coaming - The coaming is the raised steel barrier above the hatch opening. On earlier ships, the coaming was only a few inches high. It was only there to prevent water on the deck from running into the open hatch. On *Titanic* the hatch coamings were raised to 30 inches for safety purposes.

2. Cleats – The cleats supported the ends of the canvas hatch cover and the batten bars.
3. Batten bar – The galvanized iron batten bars secured the ends of the canvas hatch cover.
4. Hatch beam – The hatch beam supported the hatch gratings and hatch boards. The beams were removable and were not in place during cargo operations.
5. Hatch gratings and hatch boards – The hatch gratings and hatch boards rested on bearing surfaces on the perimeter of the hatch coaming and on the hatch beams. The hatch gratings allowed ventilation of the cargo hold when not covered. The hatch boards provided a solid surface for the canvas hatch cover.
6. Locking bars – The locking bars were rigged during foul weather and/or boarding seas to secure the canvas hatch cover and hatch boards.
7. Locking bar padeyes - The locking bar padeyes on the inboard and outboard sides of hatches #2 and #3 were used as a belaying point for chains from the locking bars.

Cargo Hatch Locations

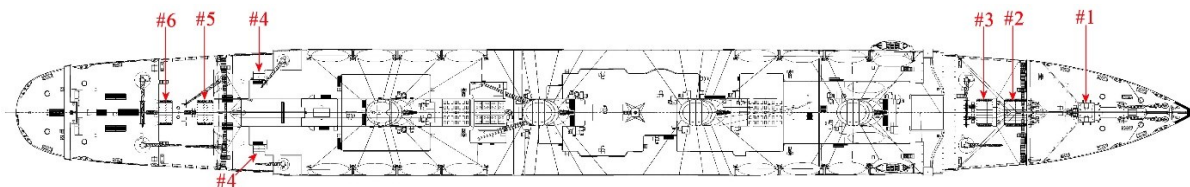


Figure 6

Cargo hatch locations

Individual Hatch Descriptions

Hatch #1 – Dimensions: 14 ft. (port to starboard), 12 ft. (fore and aft). Hatch #1 was unique among *Titanic's* cargo hatches. Positioned on the forecastle it was subject to more extreme conditions than the other hatches. To accommodate this exposure the hatch coaming was strengthened by steel brackets bolted to the deck on the forward and outboard sides. Experience with *Olympic* led to a redesign of the hatch cover. The hatch cover was steel with four bullseye windows on the top surface to admit light and two hinged panels which could be opened to admit air. The forward aspect of the cover was angled to deflect boarding seas. On top of the forward coaming brackets a steel plate was bolted to deflect boarding seas. Another improvement over *Olympic's* original steel cover is that the number of securing bolts for the cover was increased. At the aft corners of the hatch the forecastle breakwaters were attached. Figure 6 shows *Titanic's* #1 cargo hatch with steel cover installed.

Go to next page

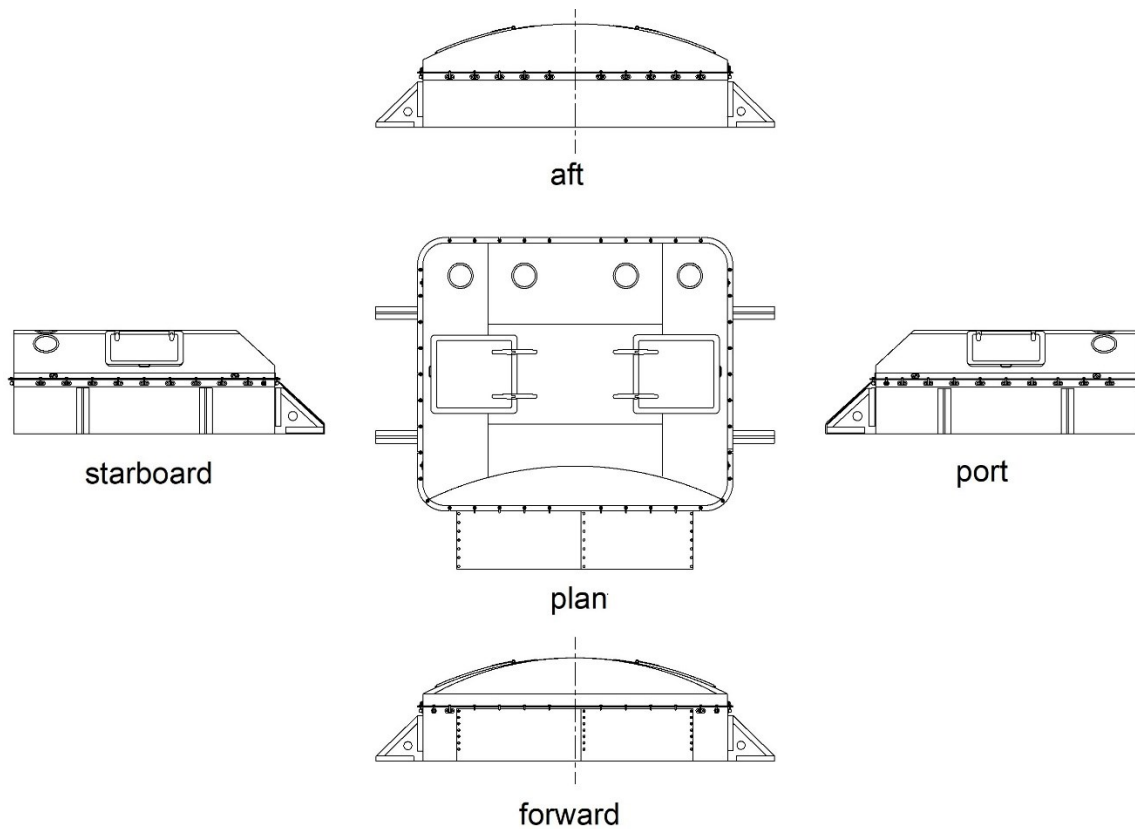


Figure 7

Cargo hatch #1 with cover in place

Hatch #2 – Dimensions: 20 ft. (port to starboard), 16 ft. 6 in. (fore and aft). Cargo hatch #2 is the largest of all the hatches. Since it is located in the forward well deck, it is more protected than hatch #1 but is still subject to more exposure to damage than the aft hatches. Cleats on this hatch coaming are more closely spaced than the aft hatches. Hatches #2 and #3 also have locking bars to secure the canvas cover and hatch boards beneath it. These locking bars were only rigged in severe weather/sea conditions. The coaming also has an aft steel angle bar reinforcement for strength. Hatch #2 has three hatch beams Figure 8 shows details of hatch #2.

Go to next page

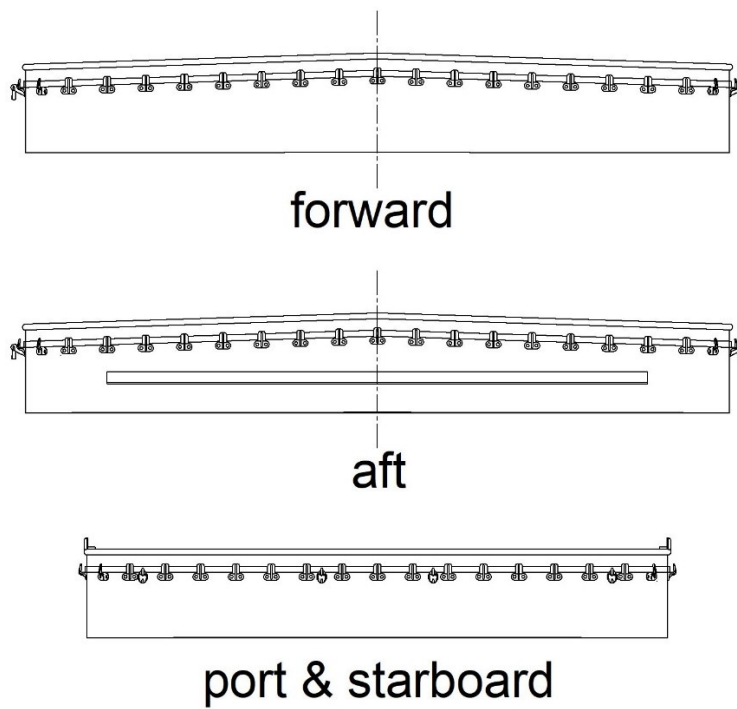


Figure 8
Cargo hatch #2 details

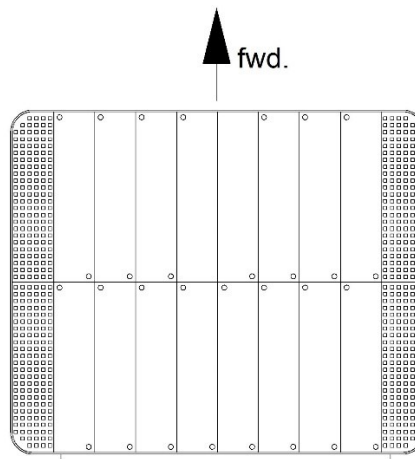


Figure 9
Hatch #2 with hatch gratings and hatch boards rigged

Hatch #3 – Dimensions: 20 ft. (port to starboard), 12 ft. (fore and aft). This hatch was also known as the “bunker hatch”. Other than the size, its features were much the same as hatch #2. This hatch had two hatch beams.

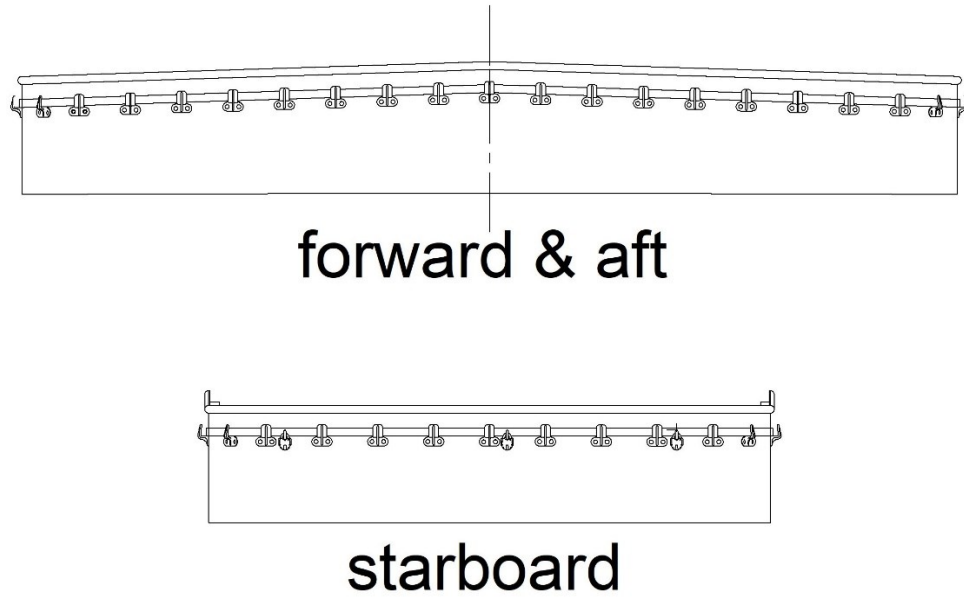


Figure 10

Cargo hatch #3 details

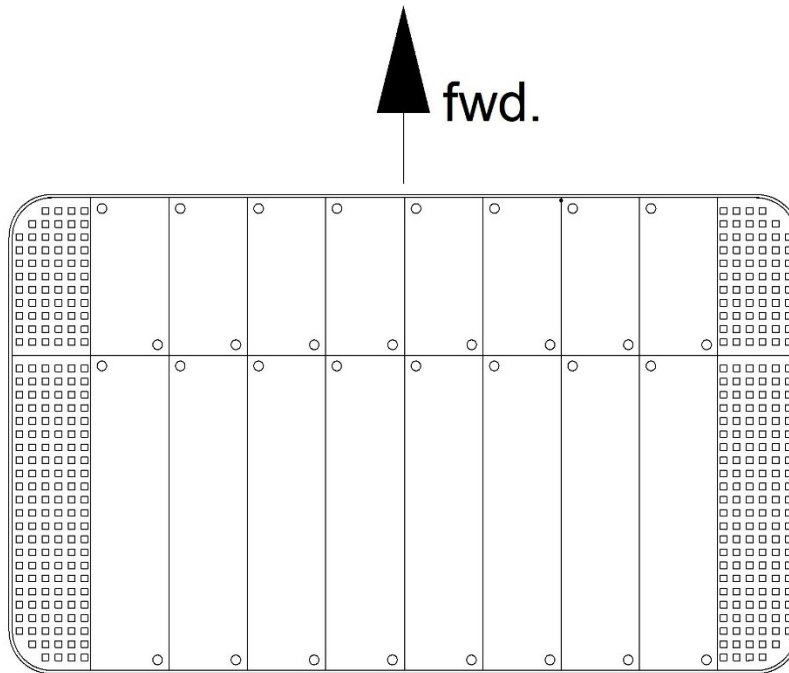


Figure 11

Hatch #3 with hatch gratings and hatch boards rigged

Hatch #4 – Dimensions: 9 ft. (port to starboard), 6 ft. 6 in. (fore and aft). This hatch is actually two hatches, one port and one starboard at the aft end of B deck. These were the smallest cargo hatches on *Titanic*. They were used for galley stores. These are the first hatches that are not free-standing. The B deck deckhouse forms the forward and inboard sides of the hatch. On these sides, there were cleats attached to the deckhouse bulkheads to secure the canvas hatch cover. These cleats were inverted. Standard cleats were attached to the outboard and aft sides of the hatch coamings. There was one hatch beam for each hatch coaming (port and starboard).

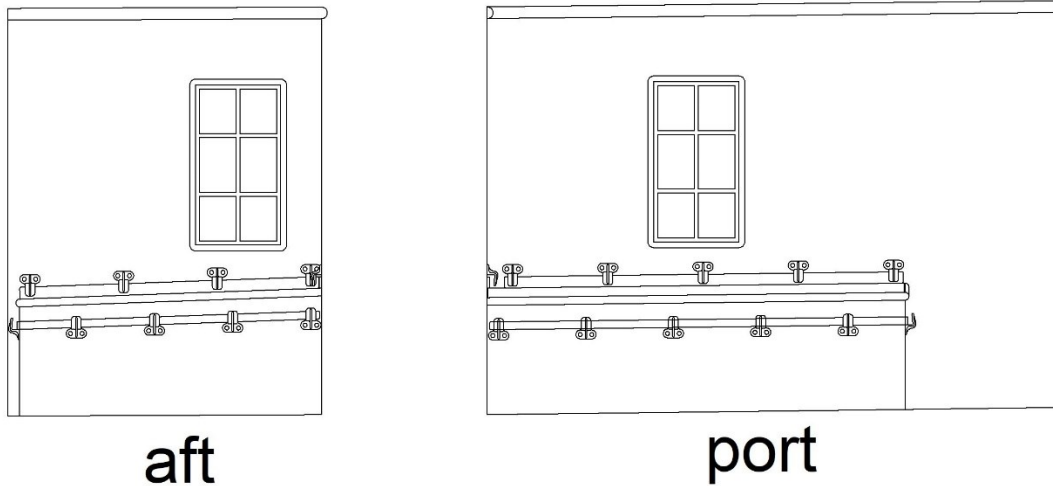


Figure 12

Cargo hatch #4 details (port)

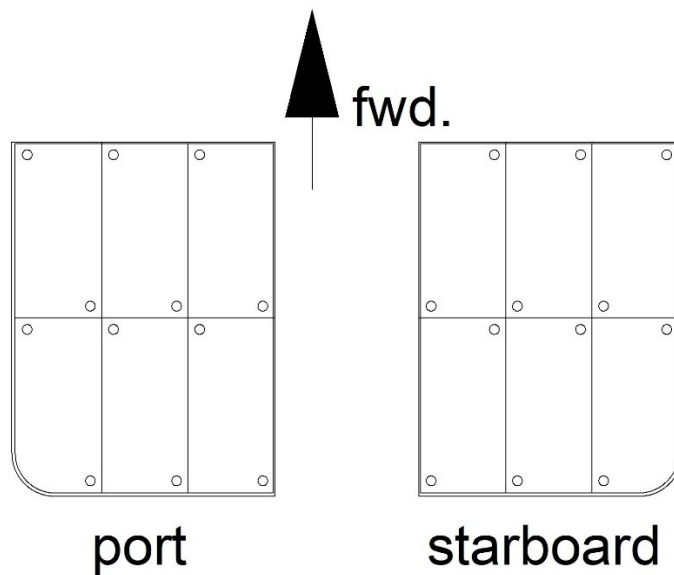


Figure 13

Hatch #4 with hatch boards rigged

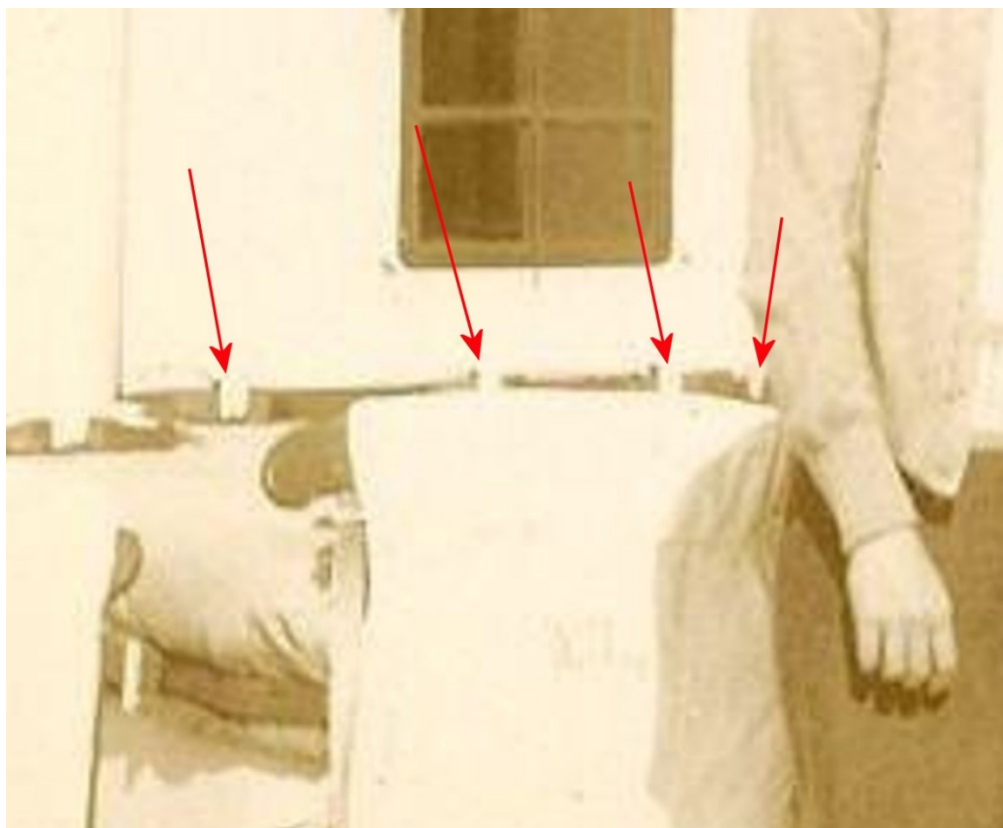
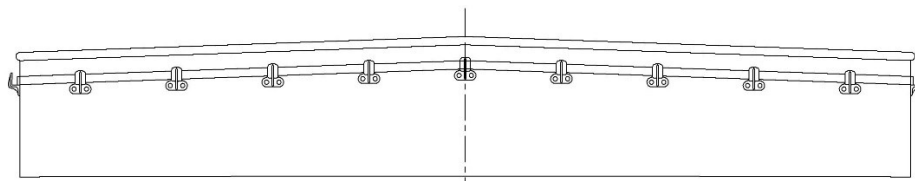


Figure 14

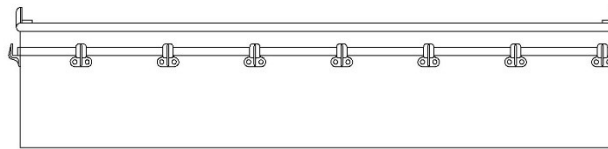
Inverted cleats on B deck deckhouse above port cargo hatch #4

Hatch #5 – Dimensions: 18 ft. (port to starboard), 12 ft. (fore and aft) This cargo hatch in the aft well deck is similar to those in the forward well deck. The main difference is that there is no provision for locking bars for the hatch covers. Being located so far aft, the hatches in the aft well deck did not bear the brunt of boarding seas like those in the forward well deck could. This hatch had two hatch beams. The forward end of hatch #5 shared a common bulkhead with the C deck deckhouse similar to the #4 hatches. Unlike the #4 hatches there were no inverted cleats on the bulkhead. It appears that this end of the canvas hatch cover was secured by tucking it under the hatch board ends.

Go to next page



aft



starboard

Figure 15

Cargo hatch #5 details

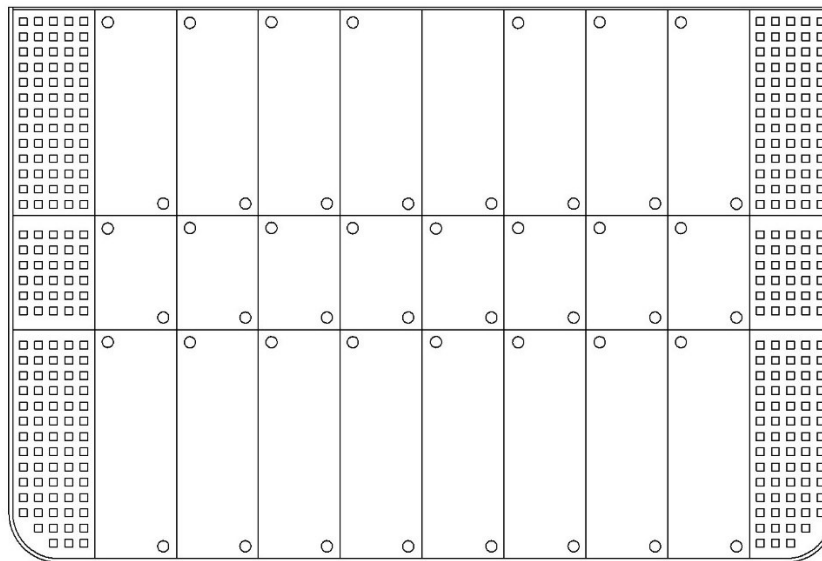
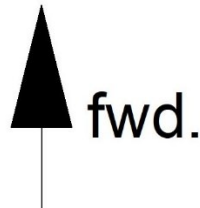


Figure 16

Hatch #5 with hatch gratings and hatch boards rigged

Hatch #6 – Dimensions: 18 ft. (port to starboard), 10 ft. (fore and aft). This hatch is smaller than #5 but all the general details of hatch #5 apply to this hatch with the exception of the number of hatch beams. There is one hatch beam for this hatch.

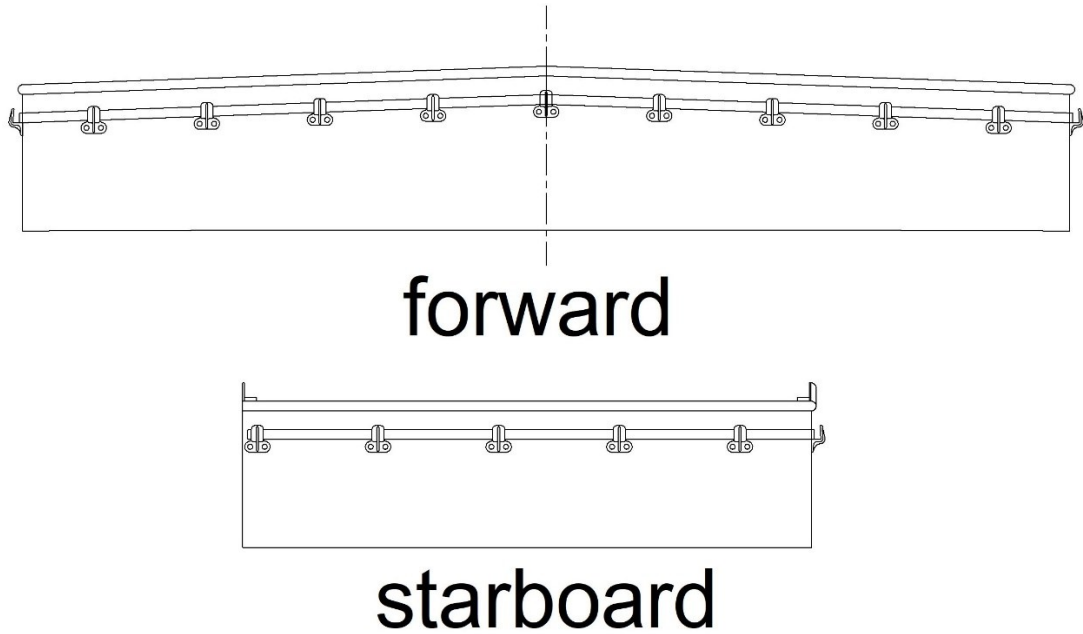


Figure 17

Cargo hatch #6 details

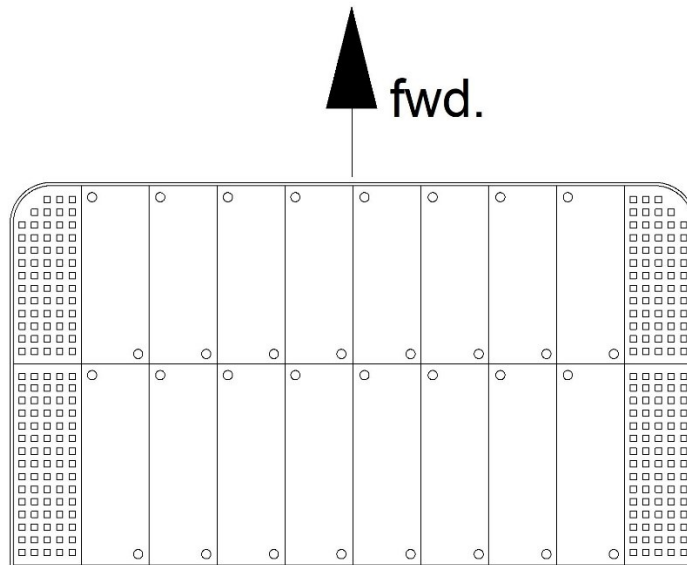


Figure 18

Hatch #6 with hatch gratings and hatch boards rigged

Colors

All evidence points to the hatch coamings on *Titanic* being painted black. The #4 hatch coamings are an exception being painted white. The explanation for this is found in a previous article I wrote [here](#). The interior surfaces of the hatch coamings were painted white. The batten bars were unpainted galvanized iron. The hatch gratings and hatch boards were unpainted pitch pine as were the wooden wedges used to secure the batten bars. The canvas cover was natural canvas. On *Titanic* canvas covers would have been new and as such wouldn't have become dark with dirt and weathering. Figure 16 shows the starboard side of hatch #3.

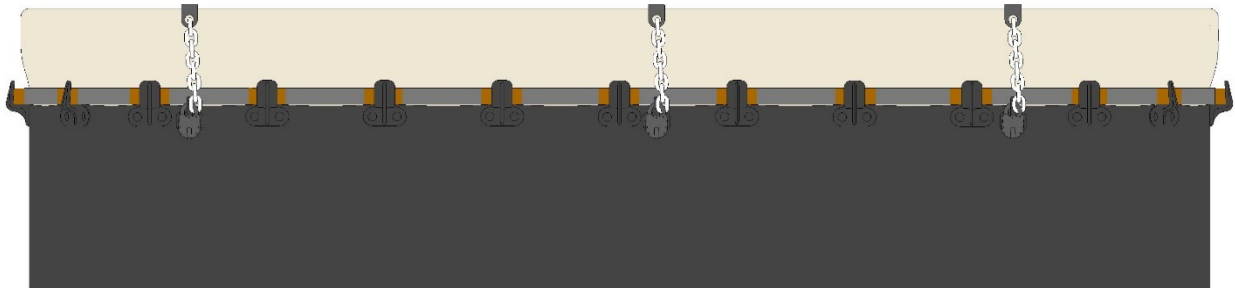


Figure 19

Hatch #3 (starboard side) representative colors

Supplemental Details

Hatch beams – The hatch beams are shown in various photos but they are only partially shown in most of these photos. Figure 20 shows an elevation of a typical hatch beam.

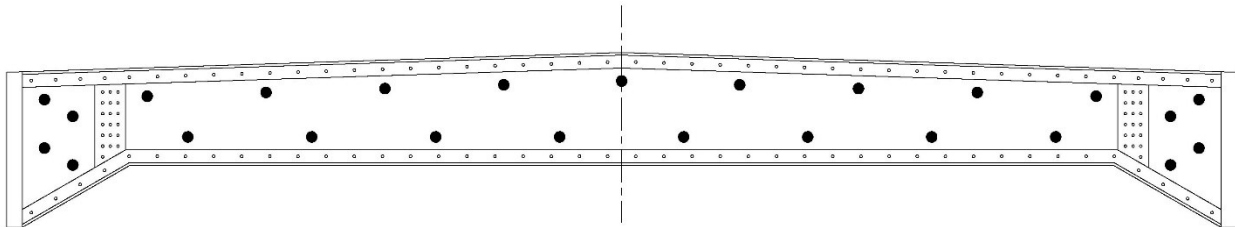


Figure 20

Hatch beam

Locking bars: Hatches #2 and #3 have locking bars which would be applied in the event of severe weather and/or boarding seas. The bars were secured to padeyes on the outboard sides of the hatch coamings with Yale padlocks. Figure 21 shows a plan view of hatch #2 with locking bars rigged. Figure 22 shows a plan view of hatch #3 with locking bars rigged.

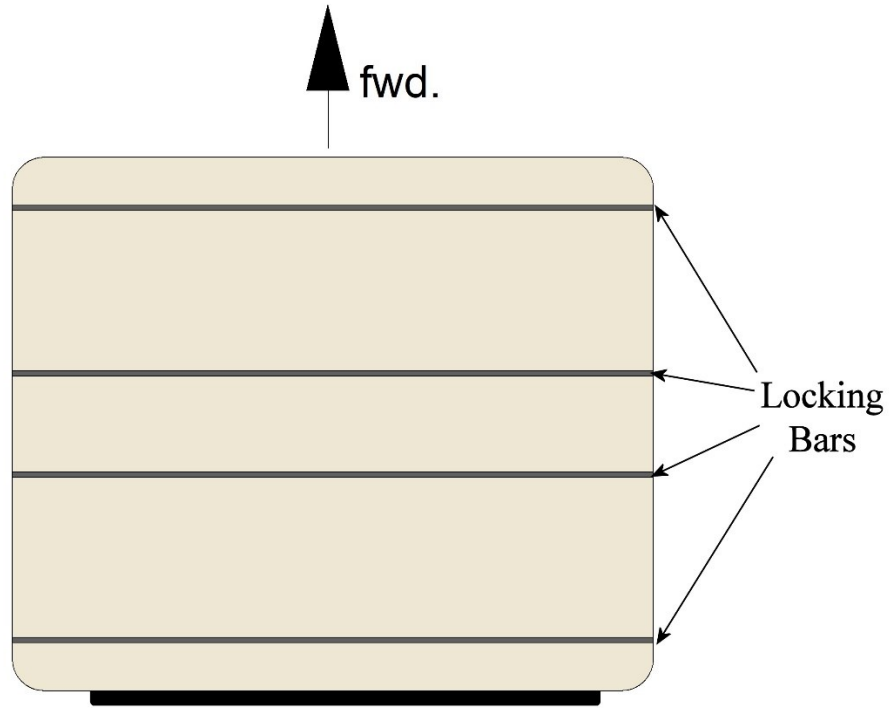


Figure 21

Plan view of locking bars rigged on hatch #2

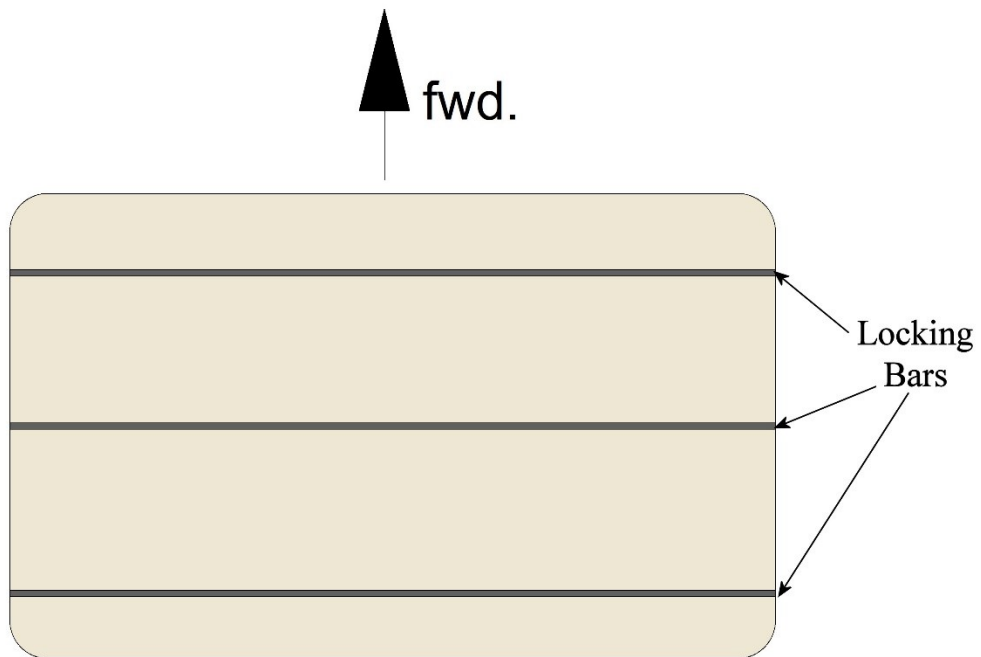


Figure 22

Plan view of locking bars rigged on hatch #3

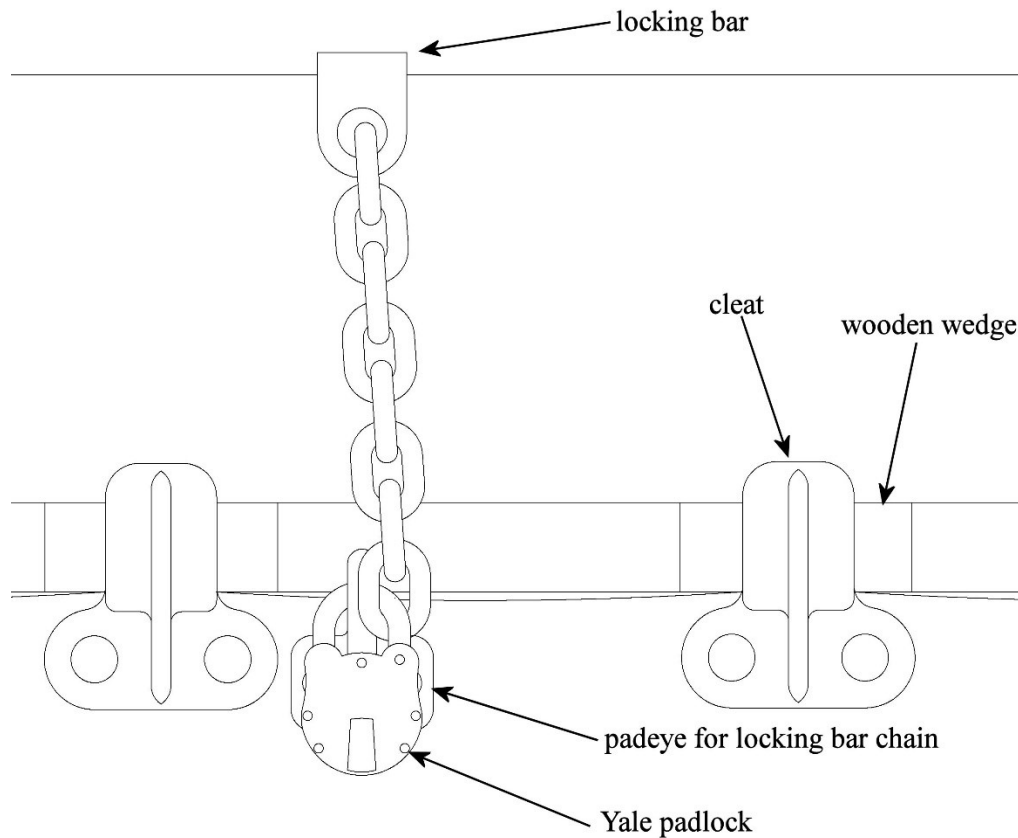


Figure 23

Details of locking bar attachment to padeye

Conclusion

This article has examined the Titanic's weather deck cargo hatch covers and associated structures. With the information included in this article, modelers will be more be able to more accurately model *Titanic's* cargo hatches.

