

Shell Plating at the Midline of *Titanic's* Stern Counter

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Introduction

The purpose of this article is to address a particular error in models which has been made with regard to the midline shell plates of *Titanic's* stern counter. Otherwise excellent models have been compromised by the inaccuracy of this aspect of the models. Confusion is somewhat understandable because of the lack of clear plans and photos covering this area. Existing plans, photos, and drawings will be used to illustrate how this midline area of the stern counter is plated.

The Problem

The inaccuracy I have seen in models is that in the plating the midline of the stern counter, modelers have applied plates to both the port and starboard sides and have created a visible fore and aft flush midline butt seam. These plating butt junctions on the model form an unstaggered seam from strake to strake the length of the stern counter. In most models I've seen with this feature, it seems to be confined to the plating area of the stern counter below the lower knuckle. This arrangement is not correct. I will show why it is not correct and then demonstrate the correct plating. Figure 1 shows in red where this incorrect midline seam is located on models.



Figure 1

Framing

In order to answer questions about the plating of the stern counter, one has to first understand the underlying framing. For every other part of the hull strength girder, all the frames are *perpendicular* frames. Perpendicular frames are set perpendicular to the keel. The stern counter is framed with *cant* frames. Cant frames attach to web frame 148A and are set at angles forming a fan shape. Figure 2 shows the disposition of the cant frames on one side of the midline on the 400/01 half breadth plan.

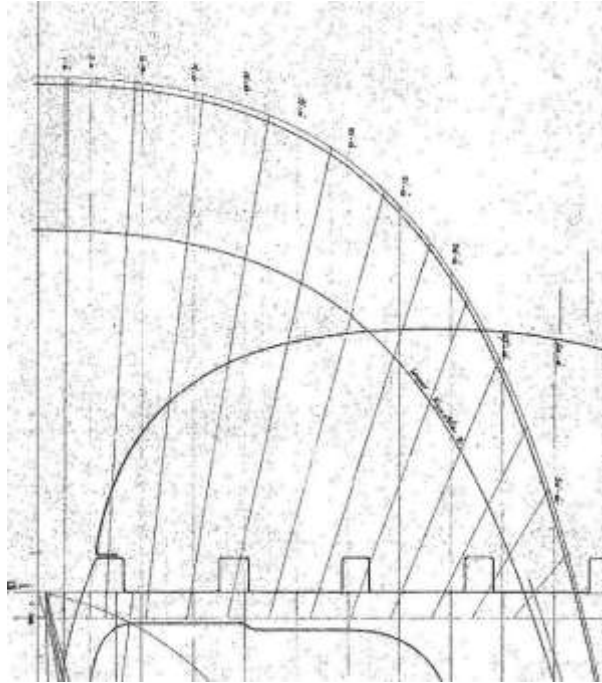


Figure 2

There are a total of 24 cant frames for the stern counter. Twelve are set on the starboard side of the midline and twelve on the port side. An important detail which should be noted is that there is *no* midline frame structure.

Figure 3 shows the furthest aft perpendicular frame 148A. It is a special frame. Frame 148A comprises both port and starboard sides. It is a web frame because the port and starboard aspects of the frame are joined by sheet steel. It is to this sheet steel that the cant frames are attached. In Figure 3 the attachment areas for the cant frames are shown highlighted in red. The attachment area of the frame to the sternpost is highlighted in blue.

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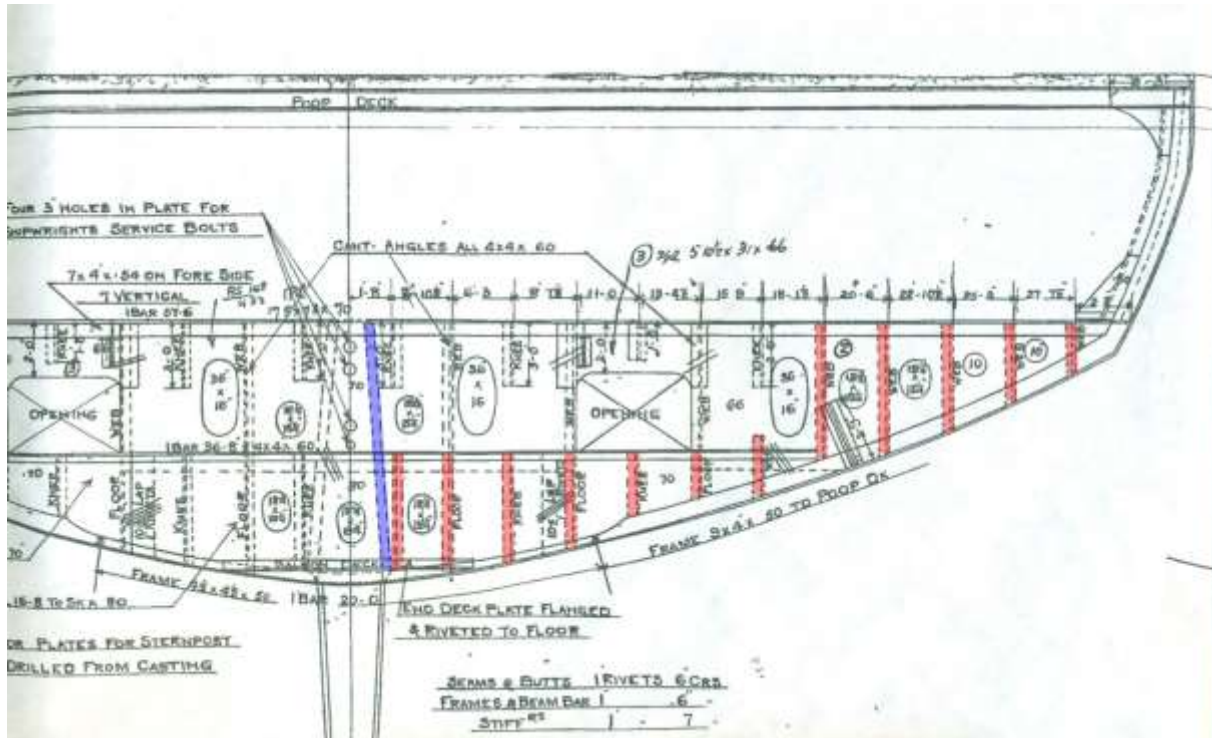


Figure 3

The Plating

For most of the hull shell plating, plates in any strake were joined by means of plate *butt laps*. Forward plates overlapped aft plates and the overlap area was riveted. In some other areas the plates were butted end to end. The plates were then joined by a plate called a *butt strap*. This plate was placed over the two plates whose ends were butted against each other. The strap was then riveted to the two plate ends thereby joining their ends. Another way plates were joined was by means of doubling plates which were placed over multiple plates and sometimes multiple strakes. The doubling plate added strength and joined the multiple plates together.

One of the cardinal rules regarding the joints of individual plates to each other in any particular strake is that the joints in adjoining strakes can't be directly over each other. In actual practice, these plate joints were staggered by several feet from strake to strake.

Even if the plates joined in the midline of the stern counter and were joined by any of methods previously mentioned, the positioning of these joints in a straight line would still introduce structural weakness. The only theoretical method to have a midline seam would be if a very strong midline structure like an extension of the sternpost extended along the midline. There is no plan or photo which verifies this kind of structure. It is only with a strength structure like an

extension of the sternpost that you could have all the plates of the stern counter meet in the midline.

Since there is no underlying midline strength structure like a sternpost extension to which the plates were attached, we now have to look at how the midline plating was actually accomplished. Figure 4 shows what may be our best photo of the arrangement of the stern counter plating of the *Olympic* class ships. It show *Olympic* prior to launch.

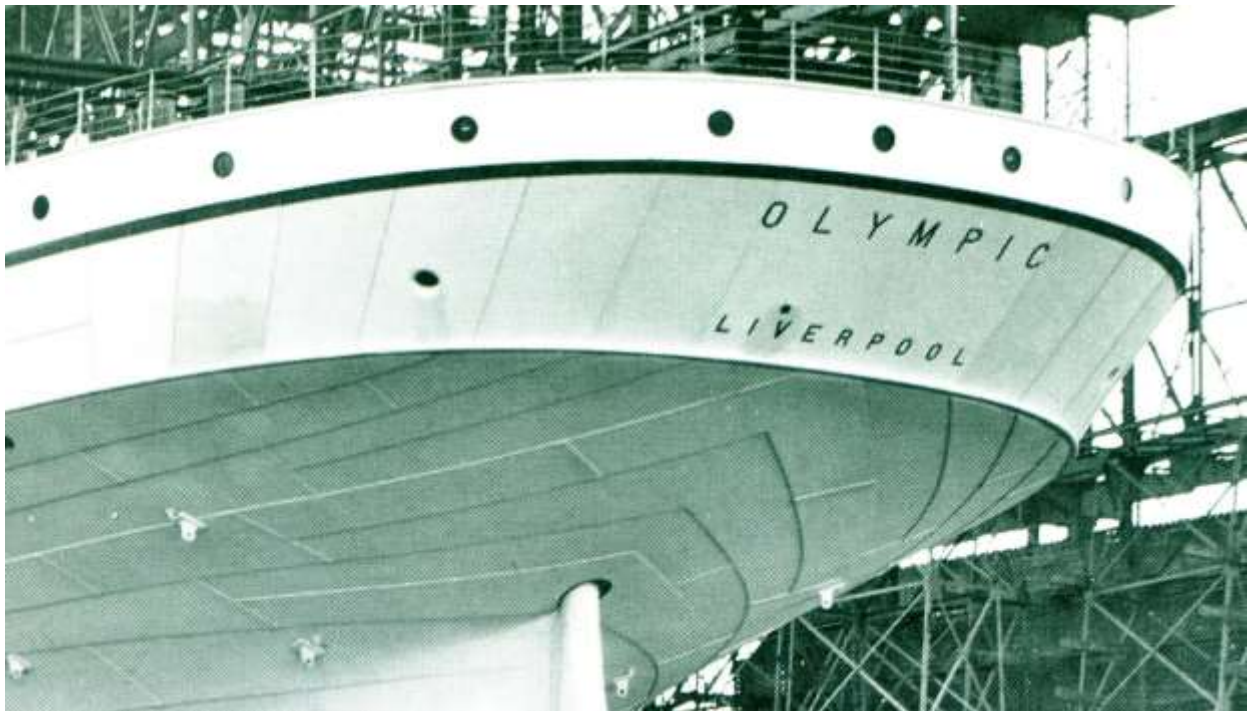


Figure 4

In Figures 5-10 we see the extents of each midline plate starting at the lowest and nearest to frame 148A up to the poop deck level.

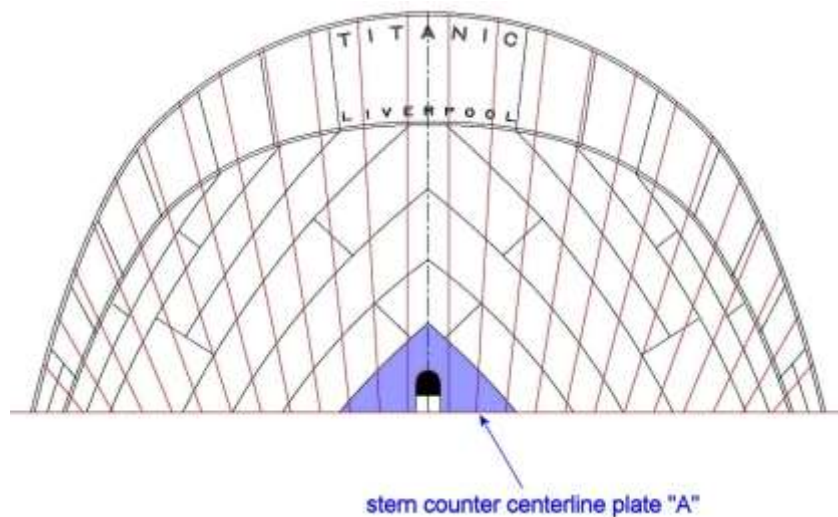


Figure 5

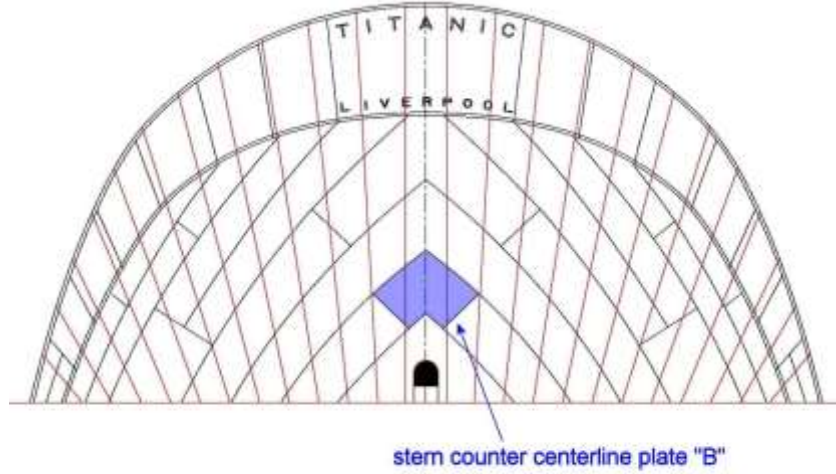


Figure 6

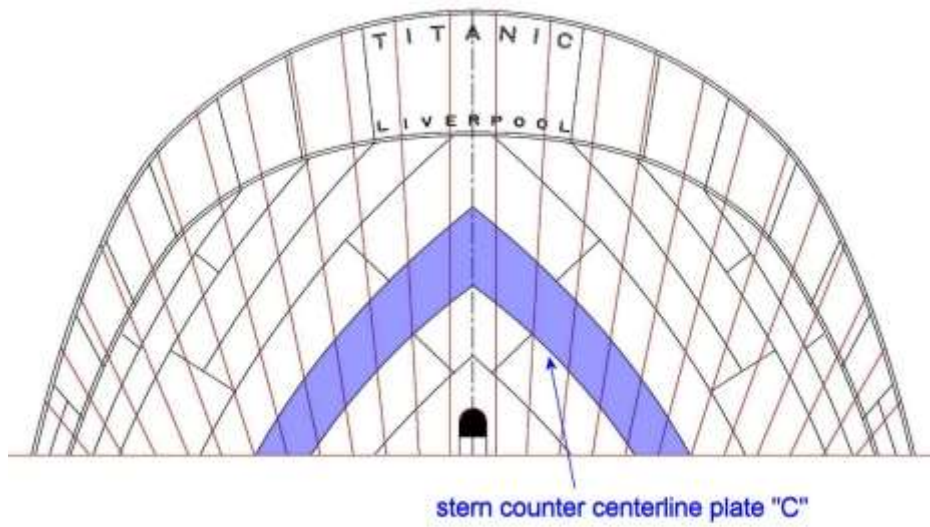


Figure7

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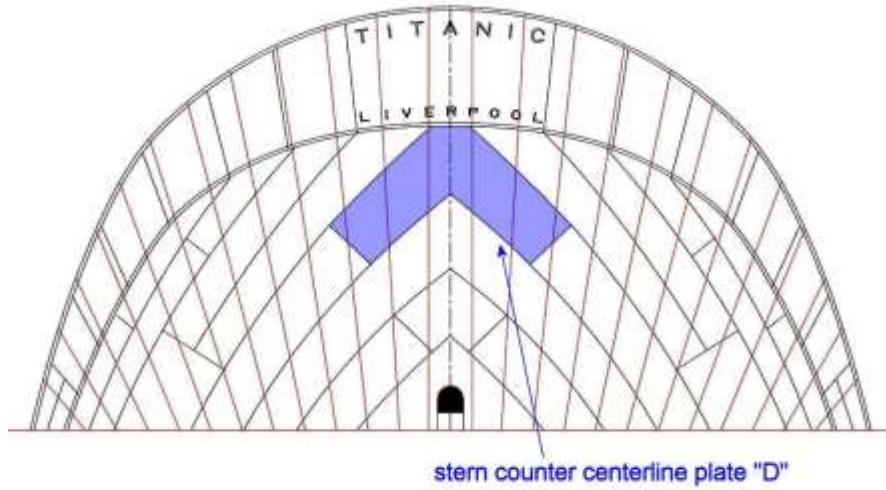


Figure 8

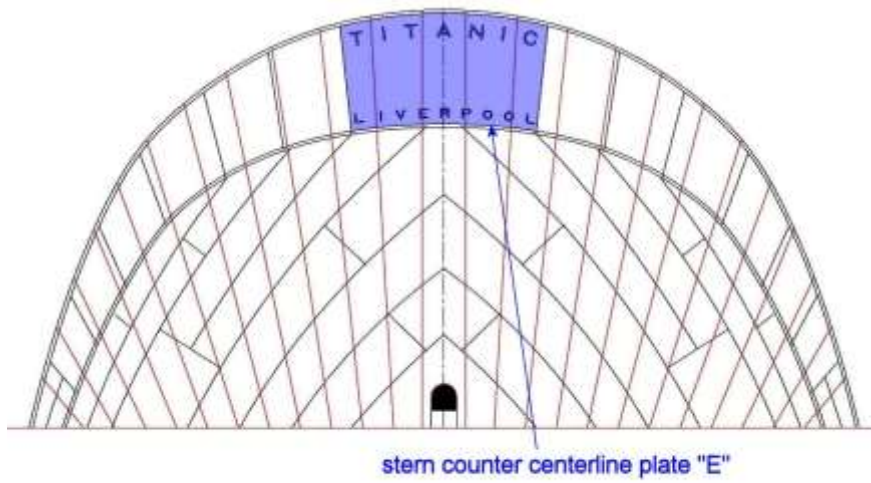


Figure 9

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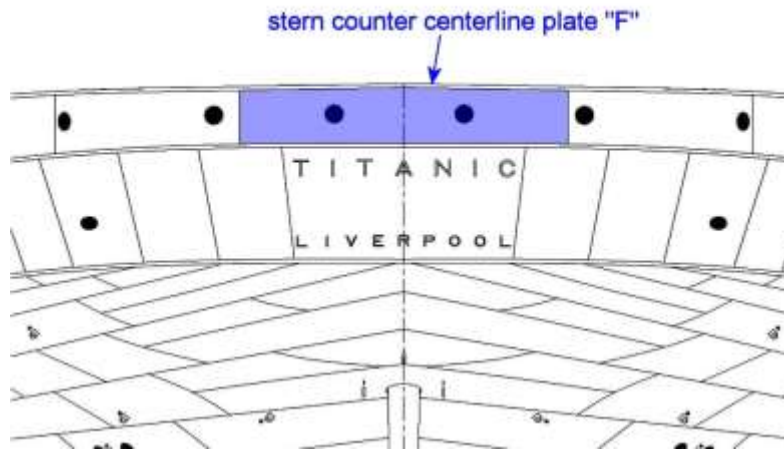


Figure 10

These plates have been arbitrarily designated as plates A-F. Each plate crosses the midline. Some of the plates have forward extents which extend forward of frame 148A. These plates are only shown up to where they cross frame 148A. This arrangement satisfies the rule that plate junctions are staggered from strake to strake. Figure 11 shows a comparison of the incorrect visible midline counter seam and the correct arrangement with no visible midline seam.

As one looks at the plates which cross the midline, some of them like "C" are quite large. There is some thought that single plates this large either could not be manufactured or that their manufacture would have been either impractical or not cost effective. There is a possibility that multiple plates could have been used to produce a plate like plate "C". If multiple plates were used, they were not joined by simple butt lap joints. They would have to have been joined by internal butt straps or possibly forge welding. Such joints would be practically invisible in all but the closest photos. Even though the joints would not be readily visible, they would still have to conform to plating conventions where plate joints were staggered from strake to strake. Whatever methods were used to manufacture the plates which crossed the midline, there was no visible seam in the midline of the stern counter.

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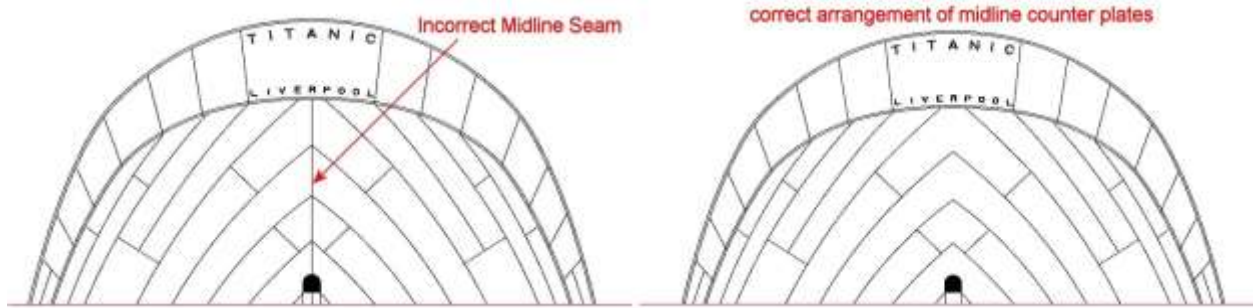


Figure 11

The Fix

Since this article is primarily directed at modelers, a correction to the incorrect configuration should be briefly discussed. To eliminate a midline seam is a relatively easy task. Depending on the material the modeler has used several options are available to fill the seam. Some of the options are modelers putty and gap filling super glue. The key is sparing application. After the filling material has dried it is sanded until completely smooth and the two plates appear as one in the midline. The filled area can then be painted or repainted and the problem is solved.

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Summary

Various *Titanic* models have erroneously plated the stern counter with visible midline plate butt joints in each strake. The actual practice which has been described and illustrated is that the midline plates of the stern counter straddled the midline with no visible plate butt joints found on the midline.