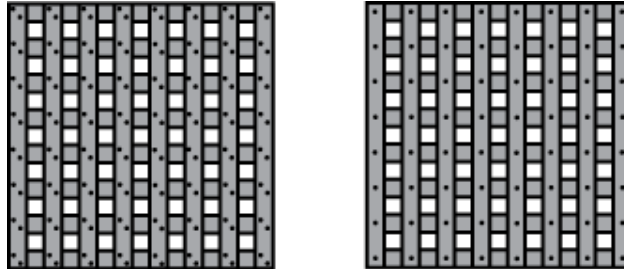


Hatch Cover Gratings on Model Ships

By Clare Hess



The hatch cover grating is one feature that appears on nearly every sailing ship model, whether kit built or scratch built. For the kit builder, the gratings are assembled from interlocking wooden strips. For the scratch builder or advanced kit builder, they might use one of many techniques that have been published over the years in ship modeling books and magazines. Most construction techniques involve interlocking pieces of some form, and this is what I will assume for the purposes of this article.

Regardless of whether one builds from kit or from scratch, there are three details that stand out. Many ship modelers ignore at least one of the three, but most of the issues are easy to fix. They are the size of the grating holes, the fit of the gratings to the hatch, and the alignment of the gratings.

Grating Holes

One of the first details that ship modelers learn about is the size of the openings of the gratings. In reality, the size of the openings are no more than about $2\frac{3}{4}$ ". This figure is cited by many ship-modeling sources. But, the actual size of an opening can vary because real gratings were custom built to fit the specific hatch, so the holes in the gratings were often slightly smaller, but never larger.

According to one source, the size limit prevented the heels of the sailor's shoes from getting stuck in them.

Scale	Max Hole Size	Hole Size Approximations	
		in.	mm
1/24	.115"	1/8" (.125")	3
1/32	.086"	3/32" (.094")	2
1/48	.057"	1/16" (.063")	1.5
1/64	.043"	3/64" (.047")	1
1/96	.029"	1/32" (.031")	.75

Gratings of the right size aren't necessarily that difficult to make, but it is certainly far easier to buy pre-made grating strips if they can be found in the appropriate size. 1:48-scale seems to be about the ideal scale for finding appropriate sized gratings strips. Smaller scales, particularly down to 1:96-scale and smaller, are next to impossible to find from commercial suppliers.

What's in a Kit

Here's a sample of some gratings from kits to give you an idea of what you get in a kit. This is not to pick on any manufacturers in particular. These are just kits that I happen to have easy access to. I'm using millimeter sizes for the scale measures as they're easier to compare than fractional inches.

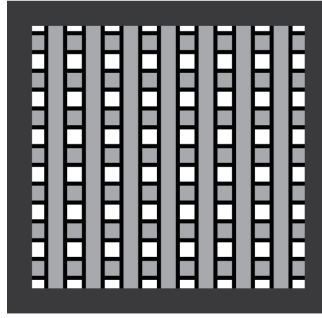
As you can see from the examples below, what is provided in a kit can be extremely out of scale. Note that if these were scaled up to full size, some would have holes more than 6" across. A sailor would get a lot more than a heel stuck in something of that size.

Kit and Scale	Proper Size	Kit Size	Full Size Holes
Mantua/Panart HMS Victory 1:78-scale	0.9 mm	1.56 mm	4.8"
Corel HMS Victory 1:98-scale	0.71 mm	1.67mm	6.4"
Caldercraft HMY Chatham 1:64-scale	1.1 mm	1.03 mm	2.6"

Some manufacturers are certainly more scale oriented than others, but this is not an attempt to beat up or single out any manufacturers. Just be aware that this is a feature that's commonly off and one you might want to try correct with 3rd-party fittings or by making your own (More on 3rd-party fittings at the end of this article).

Fit of the Grating

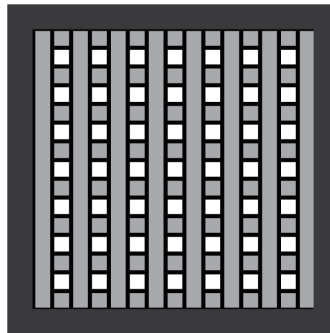
I've seen many models carefully crafted and beautifully done, right up until the gratings go on. Many modelers build their hatches and then try to fit gratings to them. Certainly, real gratings are made to fit the hatches. But real gratings don't come in one-size-fits-all strips. As a result, such gratings sometimes magically fit, maybe with a little sanding. But, all too often, the builder ends up with strange mini-holes at two or more edges.



Unfortunately, this detail can stand out enough to draw the eye right to it, especially if the grating isn't visually centered. And this is even more noticeable on models that are very well done.

Short of making custom gratings for each hatch, there is a cheat that works very well and no one will ever notice. That is to simply make your grating first, as close as possible to the size they should be, and *then* build your hatch coaming around that.

Is this accurate? No. But, no one is going to measure your hatches against your plans to see if they're perfect. For kit builders, most kits aren't perfectly accurate in all their measurements anyway, so the hatch being 1/32" too wide or long shouldn't cause anyone to lose any sleep.



If the hatch size is more critical, you can compensate a little with the thickness of the coaming itself or by sanding the grating down a little.

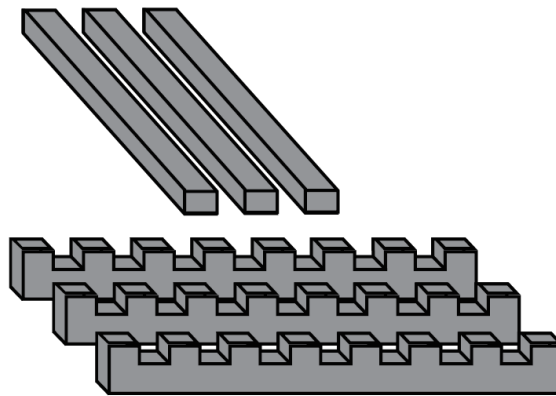
Direction of the Grating

The last detail that I'm mentioning here may be the least obvious if you're not aware of it, and perhaps this is where a little knowledge is a dangerous thing, as it often stands out like a sore thumb once you are aware of it.

Real gratings almost always fit in a specific direction. And many ship modelers lay them down without thinking about this. On some models, you'll see the gratings of various hatches lying in random directions.

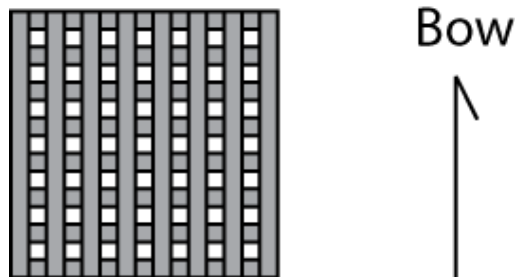
Before discussing these in detail, let's look at how wooden gratings are actually made. Real gratings aren't made of similar interlocking pieces. Instead they are made of narrow strips called battens, which lay into notches cut into the supporting pieces that are called ledges. The ledges of any given hatch are identical to one another.

Battens and Ledges: the Main Components of the Grating

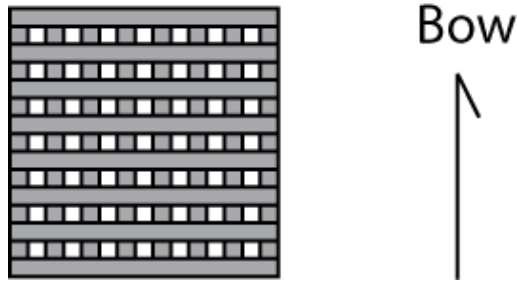


Ledges almost always run athwart ships, that is they run side-to-side or perpendicular to the keel. The battens lie on top of the ledges and run fore-and-aft. When you look at a grating from above then, the battens should form unbroken lines fore-and-aft with the "teeth" of the ledges showing in between them.

This Way



NOT This Way



Do they actually have to be made this way? Where gratings are flat, I don't believe that they did. I spoke with a modern day shipwright at the San Francisco National Maritime Historic Park about the subject and he didn't indicate that it was a rule, rather, that's how he liked to do it because it looked better.

But in the older ships where the gratings have camber, tops of the ledges were easily constructed with a curve, and battens were then simple and straight, laying across them..

Some Commercial Suppliers of Gratings

There are a number of companies that sell gratings, but it's often hard to tell who is actually manufacturing them and I haven't researched this side of things yet. However, these are known manufacturers whose products are readily available online.

Amati Model Most fittings that are sold by ship model dealers in the US generally come from Amati as they have a good distribution network through Amati Model USA, which is operated by the online shop Ages of Sail. Even companies that don't specify the brand of parts may be selling Amati products. Amati sells a number of grating sets. The smallest size that I'm aware of is their set with 1mm holes, which is a good size down to about 1:72-scale or so – <http://www.agesofsail.com>

BlueJacket While most of the fittings BlueJacket sells are Britannia metal, they do sell laser-cut basswood grating strips. They are only available in one size, however, and that is with 1/16" holes. This is good for 1/4"-scale models – <http://www.bluejacketinc.com>

The Lumberyard for Model Shipwrights I've purchased cherry laser-cut grating strips from the Lumberyard and found their 1/4"-scale strips are nice, though the edges of the wood are severely charred. Rather than list their sizes by actual hole size, they size them by scale. This would be very handy except that because of manufacturing tolerances, they've chosen to oversize the smaller scale pieces without telling you. So, while they sell what they call 1/8"-scale gratings, they are far from being the correct size. This is just something to be aware of, like the size of gratings that come in kits – <http://www.dlumberyard.com>

Syren Ship Model Company Chuck Passaro now makes some very unique grating sets for both flat and cambered gratings in laser-cut boxwood. Assembling these is much like constructing real gratings. The grating kits creating gratings with 1.19mm holes, making them ideal for 3/16" scale (1:64) models, but usable as well on 1/4" scale (1:48) models as well – <http://www.syrenshipmodelcompany.com>

Further Grating Details

The immediate purpose of this article was simply to provide some simple construction suggestions for kit and basic scratch modelers. Further details that can be added to gratings at larger scales, but that will be left to a possible follow-up article if it seems warranted.