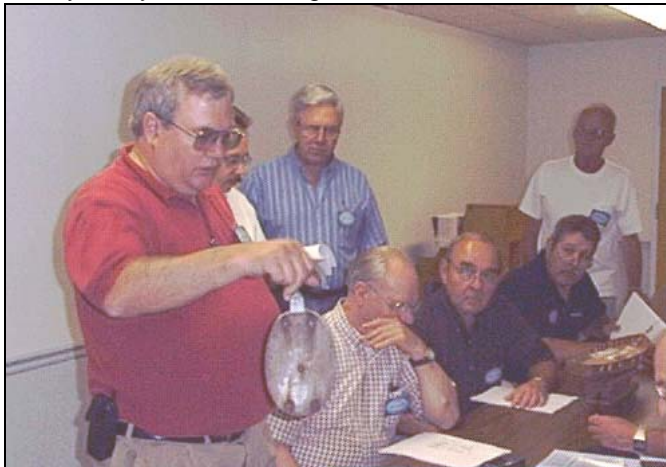


Miniature Blocks

By Tim Riggs

Blocks, the things that landlubbers and farmers call pulleys, help to make a sailing ship a sailing ship. All of today's merchant and navy ship's mastheads and flagstaves continue to have blocks where flags are flown. They come in a variety of sizes and shapes, depending on their intended use, and in some cases the period in history that you are dealing with.



Tim explains the anatomy of a ship's block.

Whenever blocks and line are combined, they become a 'tackle'. Ground, gun, fish, jeer, boom, bowline, luff, reef, top, stay, runner, jigger, burton, and truss are just a few of the many tackles found on a sailing ship.

Speaking of line or rope, the size of a block is determined by the size of the line that will be passing through it. Line is measured by its circumference. Thus a 3" line has about a 1" diameter. Remember your math? $\text{Pi} \times \text{circumference} = \text{diameter}$, or $3.14 \div 3 = 1.0$. As a rule, larger line is required to handle the weight and forces of the lower yards and sails, whereas higher up the mast, smaller yards and sails require lighter line. Therefore, if line size determines block size, then big blocks will be found on lower yards and small blocks on smaller yards. Makes sense, huh?

In rigging a model, one should be aware of documented practices for block sizes. Big blocks in upper rigging always look out of place, and this tends to be common in kit models where a 'one-size-fits-all' mentality prevails. Another problem with kit blocks is that they don't look authentic. A real block is oval in profile with well rounded edges to prevent snagging or tearing, whereas kit blocks are invariably square with sharp corners. If you're not inclined to reshape kit blocks, or make your own, then try Warner Woods West. This company makes a realistic looking product in a number of different sizes.



When I decided to make my first full rigged miniature, I knew that incredibly small blocks would be a requirement. My first efforts were less than successful. I made them by cutting a 1/32" x 1/32" strip of boxwood, drilled a small hole through it, scratched some stropping groves, and cut the block from the strip. It just didn't look right. Big problem? Not really.

Miniaturists have one huge advantage over you big model guys. Due to the smallness of our work, we can sometimes fake things. Surprised? OK, so maybe you kind of suspected it all along.

Anyway, the solution was not to make the block out of a single chunk, but to use two pieces of paper-thin oval shaped wood, with wire sandwiched in between them. Sounds a little shoddy? Well, at 1:192 or 16 feet to the inch, a block that measures 1/16" is huge. The blocks I used on my *Bermuda Sloop* measured .024, .031, and .040, and the method of construction was indiscernible. Lloyd McCaffrey also recommends this process in his book, *Ship Modeling in Miniature*.

What made this procedure work for me was the fabrication of three small oval punches. Using tool steel, I turned them down to the desired shape on my lathe, and drilled them out with a .020" bit. The hole was then opened up to the desired size and shape with a dental burr.



Actual construction of the blocks is done on the sticky side of a Post-It note. It has just enough tack to hold the tiny assemblies in place, and the dimensions of the desired tackle can be marked to ensure accuracy. Gus Agustin gave me a great tip for straightening strips of wire. Place the wire between two sheets of glass, and roll it back and forth. It comes out straight as an arrow!

Well, that's about it. When it comes to miniature blocks, never say never. While you may not have a need for a block this size today, perhaps a time will come when you will. A block or two for a flag halyard, some gun tackle, a topgallant or brace may call for tackle smaller than you had anticipated.

Editor's Note

Tim Riggs gave this presentation at the June meeting, and it was every bit as good as his editorial. He came up with a great training aid, composed of paper cutouts, sticks and Velcro, which clearly demonstrated his technique. This wasn't the only example of his excellent preparation. Each member received a 37 page handout containing various tables on block and line sizes. Everyone left the meeting enlightened concerning miniature blocks. Well, there was one question. How did he get the Velcro so small on the actual blocks? ... Hmmmmm.

