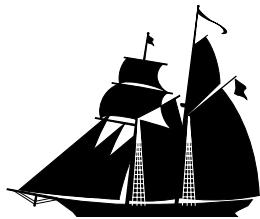


INSTRUCTION MANUAL



MODEL SHIPWAYS
• QUALITY KITS SINCE 1946 •

Modeling The **US Brig Syren** **1803**



Kit No. MS2260

Scale: 3/16" = 1 ft.

Overall Length: 33"

Height: 27"

Instructions and model prototype
prepared by Chuck Passaro

MADE IN THE USA WITH PRIDE BY
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Introduction

The US brig Syren USS Syren, a 240-ton brig, was built by Nathaniel Hutton at Philadelphia in 1803. On September 27th, she set sail for Gibraltar under the command of Lt. Charles Stewart.

Syren cruised the Mediterranean during the spring and summer of 1804 and participated in the attacks on Tripoli. She remained there for almost a year after the peace treaty with Tripoli was signed on June 10, 1805. Departing Gibraltar on May 28 of 1806, she reached the Washington Navy Yard in early August, where she was laid up until her reactivation in 1807.

During her service in the War of 1812, she was captured by the 74-gun HMS Medway after an 11-hour chase.

Bibliography of sources

A Model of an English Brig of War - Notes and Photographs by Erik A. R. Ronnberg, Jr.
Nautical Research Journal Vol.35 No.4 December 1990

A Naval Architectural Study of the U.S. Brig Argus - W.M.P. Dunne Nautical Research Journal Vol.34 No.3 September 1989

The Search For Speed Under Sail - Howard Chapelle

Naval Documents Related to Quasi War Between the United States and France

Naval Documents Related to the United States Wars with the Barbary Powers

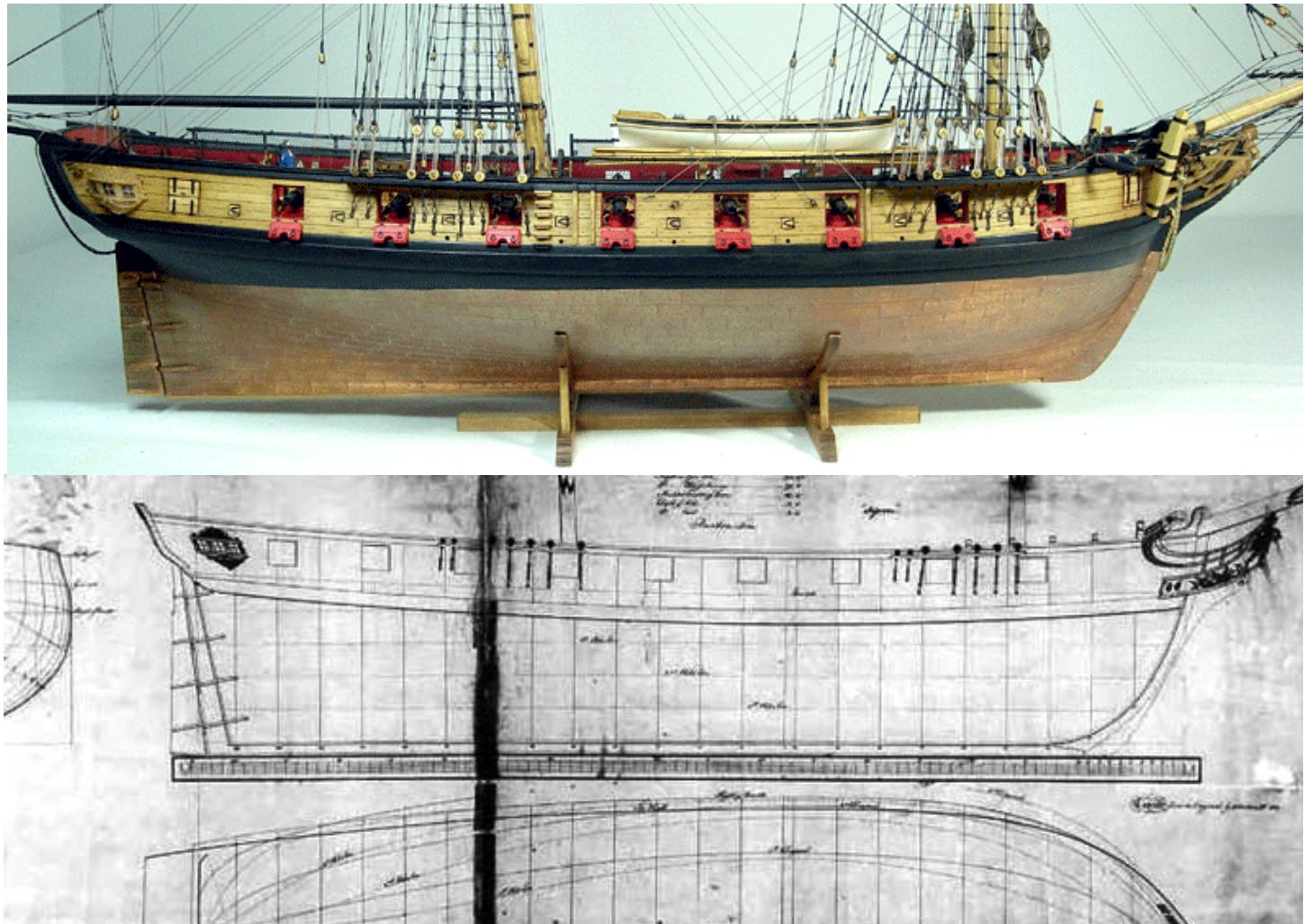
Shipbuilders Repository (London 1789)

The Masting and Rigging of English Ships of War - James Lees

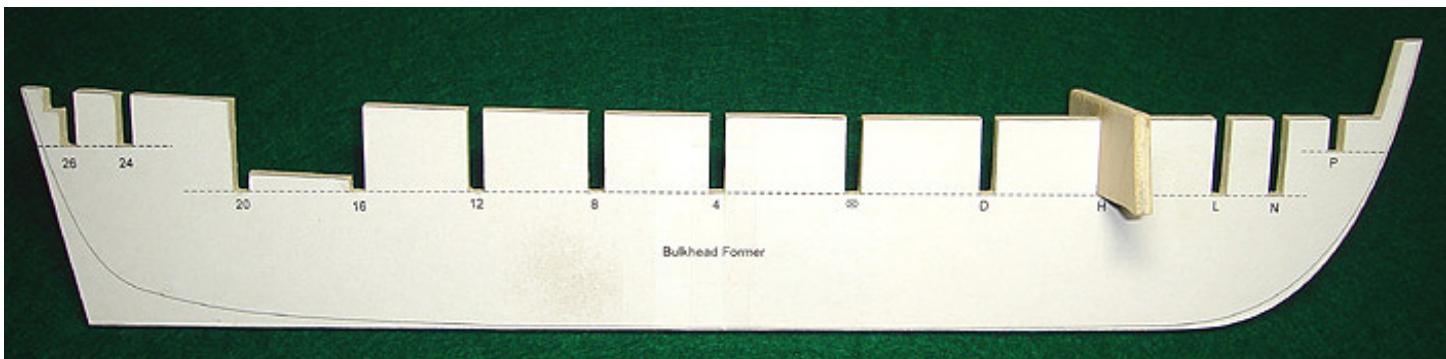
The History of the American Sailing Navy - Howard Chapelle

Sailing Warships of the US Navy - Donald Canney

The Construction and Fitting of the English Man of War - Peter Goodwin



A copy of the original draft for the Brig Syren designed by Benjamin Hutton. Built by Nathaniel Hutton of Philadelphia.



The bulkhead former has been removed and the slots tested for a proper fit. Paper templates were used while building the prototype but all of the reference lines shown in the photo have been laser-etched onto each part for you.

CHAPTER ONE - The Bulkhead Former, Rabbet, Keel and Stem Knee

Remove the bulkhead former which has been laser cut for you. Remove one of the bulkheads as well or test the slot width by using a scrap piece of wood the same thickness. Slide it into each slot to see if they fit well. They should fit snug into them. If they are too tight you may have to sand them so you will have a better fit. The bulkheads should not fit loosely into the slots either. If this should happen you can shim the slots for a tighter fit.

You will notice that the bulkhead former has been scribed by the laser cutter to create some reference lines. The reference line that runs along the bottom of the bulkhead former is the bearding line. You will use this reference to cut the rabbet. Some other reference lines appear on the starboard side of the bulkhead former only. These scribed lines appear directly under the bulkhead slots and will help you position each bulkhead properly.

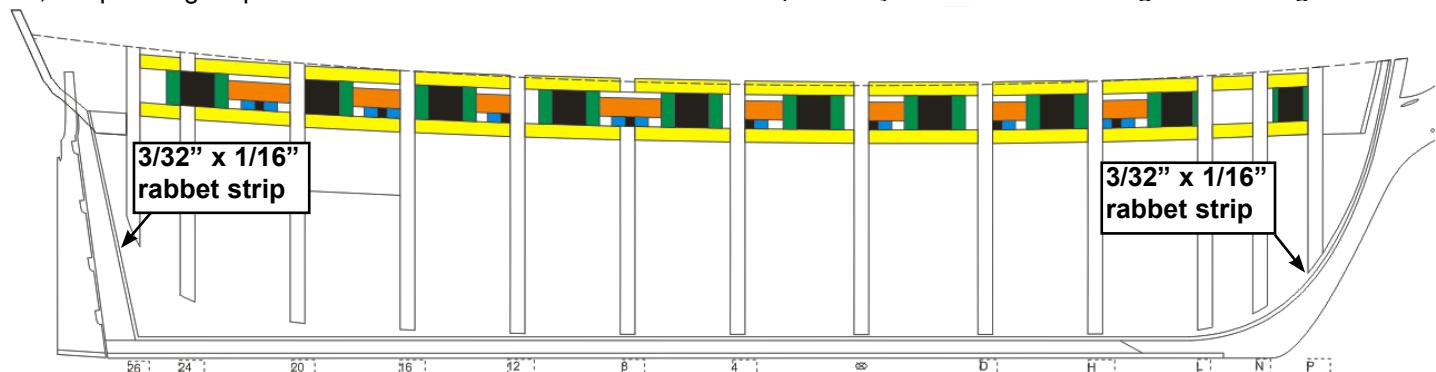
The photos presented through out this instruction booklet show the prototype model being built. Paper templates were used on the bulkhead former and other materials and you will see them quite frequently. These templates were used to locate the reference lines during the prototypes design and construction. Upon its completion, these reference lines were scribed into each piece with the laser in order to make it easier for you to assemble.

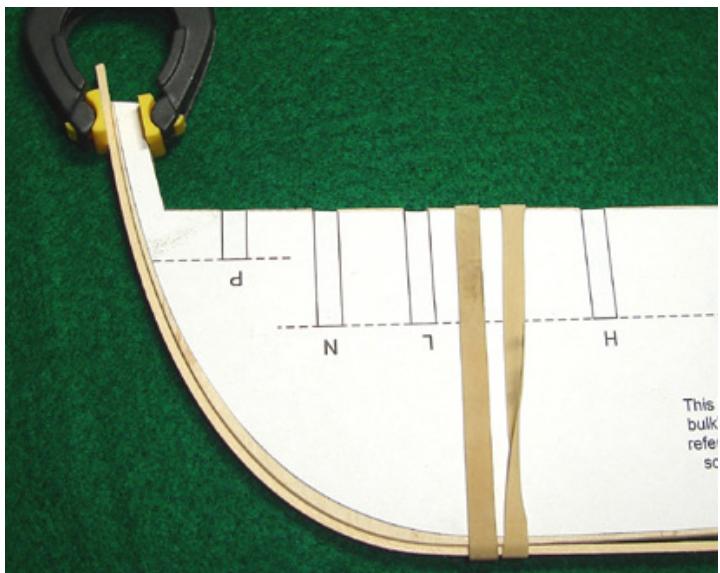
Now it is time to form the rabbet along the outside edge of the bulkhead former. See the illustration below. Creating the rabbet will make planking much easier. Most kits available commercially make no mention of the rabbet or why it should be created. As you plank the outside of the hull, the planking strips are inserted into the rabbet. This

creates a neat, clean edge where the planking meets the keel, stem and sternpost. The planks are also held in place better as you bend them around the sharp curve at the bow.

To create the rabbet, a $3/32'' \times 1/16''$ basswood strip is glued to the bottom edge of the BF. An additional piece is also glued along the stern. The strip is not as wide as the BF so after it is glued into position there will be a gap on either side of it. Be sure to center the strip as it is being glued. Pre-form the basswood strip first by soaking it in water for ten minutes. Then clamp it around the BF with a small clamp and a rubber band. Once it is dry, the strip will hold its shape well and this will make it much easier to glue into position. If you don't pre-form the strip, it would be difficult to get it centered properly while trying to forcefully bend it onto the BF. See the photo provided which shows the strip being shaped after it was clamped around the bulkhead former (next page).

After you glue the strip into position let the glue dry overnight. The following day you can start shaping the rabbet. There needs to be a smooth taper from the bearding line into the rabbet. This is very important because without such a smooth transition, your hull can not be planked properly. You will end up having to do a lot more sanding; and after all of it, the hull will probably not have the correct shape anyway. Score the bulkhead former with a sharp #11 blade along the bearding line. Don't make the cut too deep. Only apply enough pressure to score the wood in order to create a slight cut mark. The cut will act as a stop and prevent you from over shooting the bearding line as

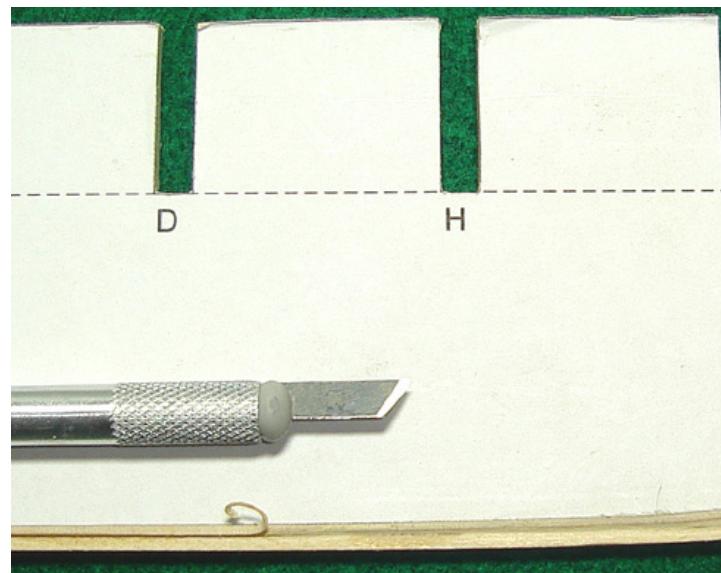




Pre-forming the rabbet strip before gluing it to the bulkhead former.

you carve. Use a sharp blade (like the one shown) to carve the taper from the bearding line to the edge of the rabbet strip. It really isn't that difficult but may make a big mess. Sand it smooth afterwards.

The port side of the bulkhead former has not been laser etched with reference lines. The laser cutter can only mark one side of the wood sheet. But the laser was periodically allowed to perforate through to the other side. You can see the holes and all you need to do is trace them to establish the bearding line on the other side. Once you do this, simply carve the rabbet as you did on the first side of the bulkhead former.

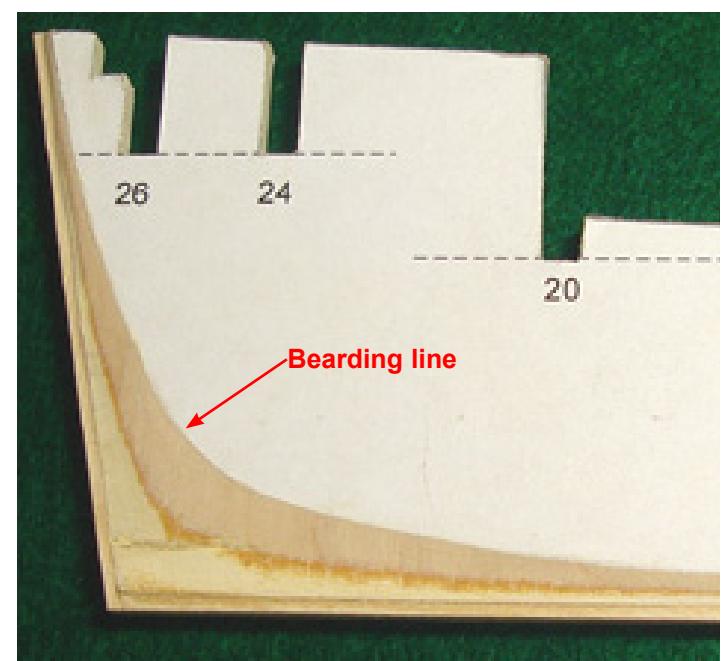
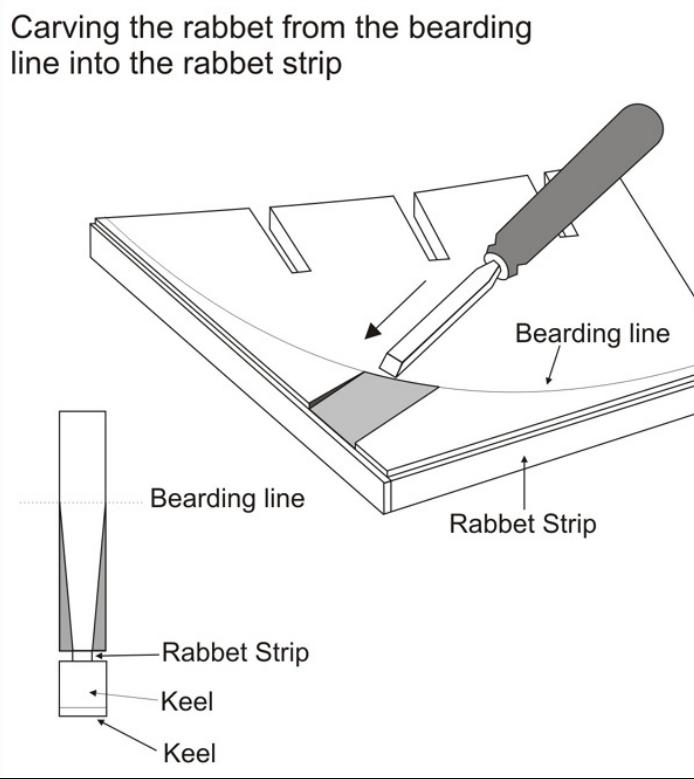


Carving the taper towards the rabbet from the bearding line with a sharp blade in my hobby knife.

Once the bulkhead former is prepared you can remove the stem knee using a sharp blade.

The stem knee also tapers to a slimmer thickness. See the illustration on page 5. The taper can be sanded into both sides of the stem knee with a sanding block. Be careful not to sand the inside edge of the stem knee. That should remain at $3/16"$ thick. If you do happen to sand it down accidentally, the rabbet will not be deep enough once you glue it onto the bulkhead former. The stem knee should only be tapered where the figurehead will be positioned. Then it gradually increases in thickness back to $3/16"$. Double check the thickness along the rabbet before you glue it on. If you need to carve the rabbet deeper afterwards, it would be an acceptable remedy as well. When you glue the stem knee to the bulkhead for

Carving the rabbet from the bearding line into the rabbet strip

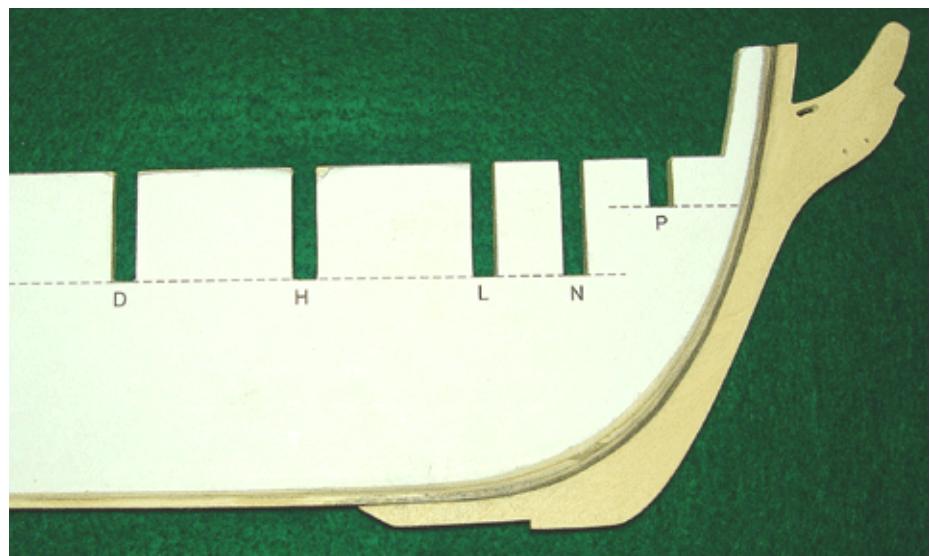


The taper towards the rabbet is completed at the stern.

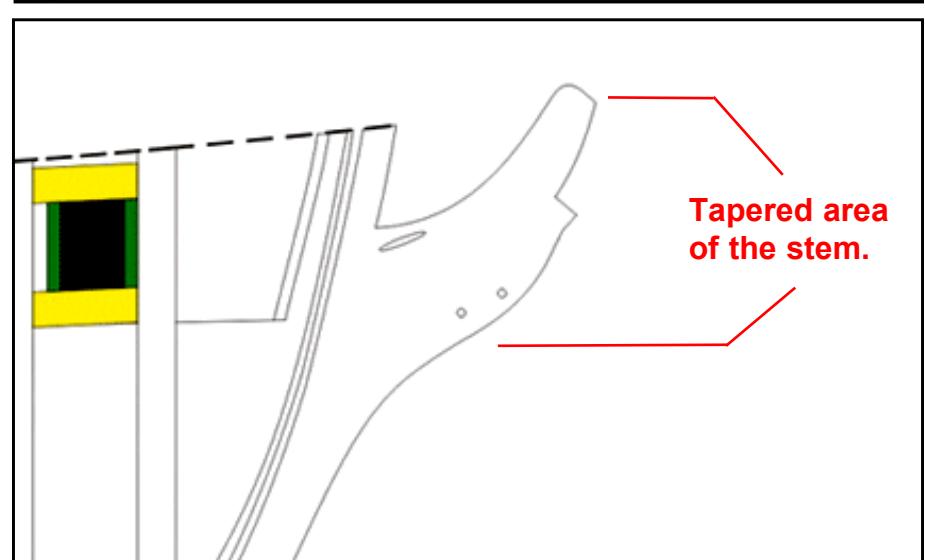
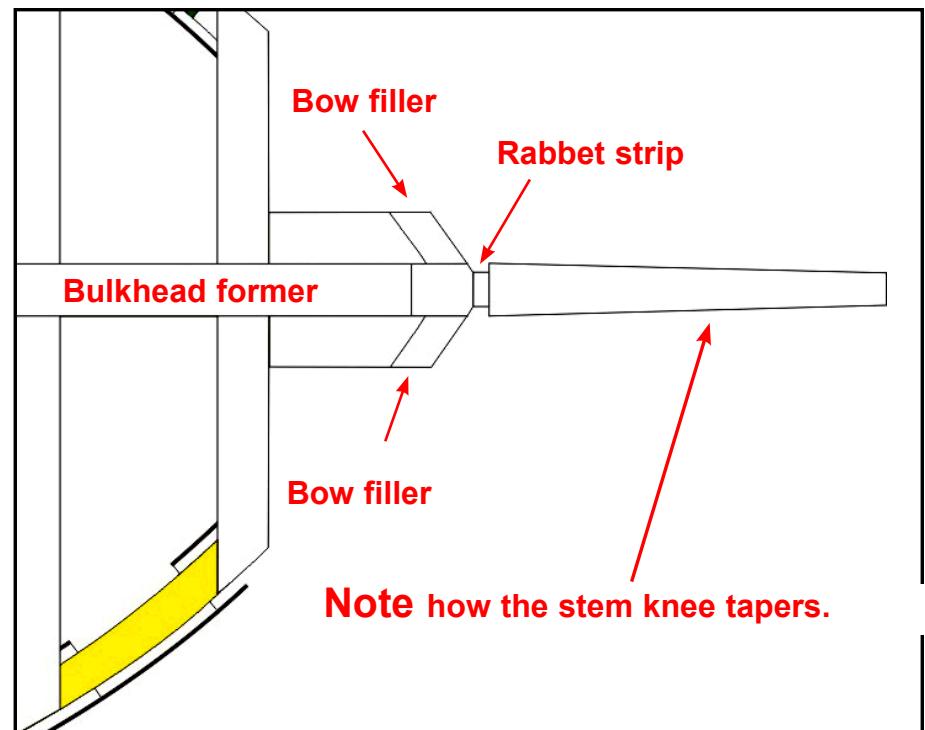
mer make sure there is equal space on either side of the rabbet. Since the stem is wider than the rabbet strip, this is what will ultimately create your rabbet. See the photo above which shows the stem knee glued into position.

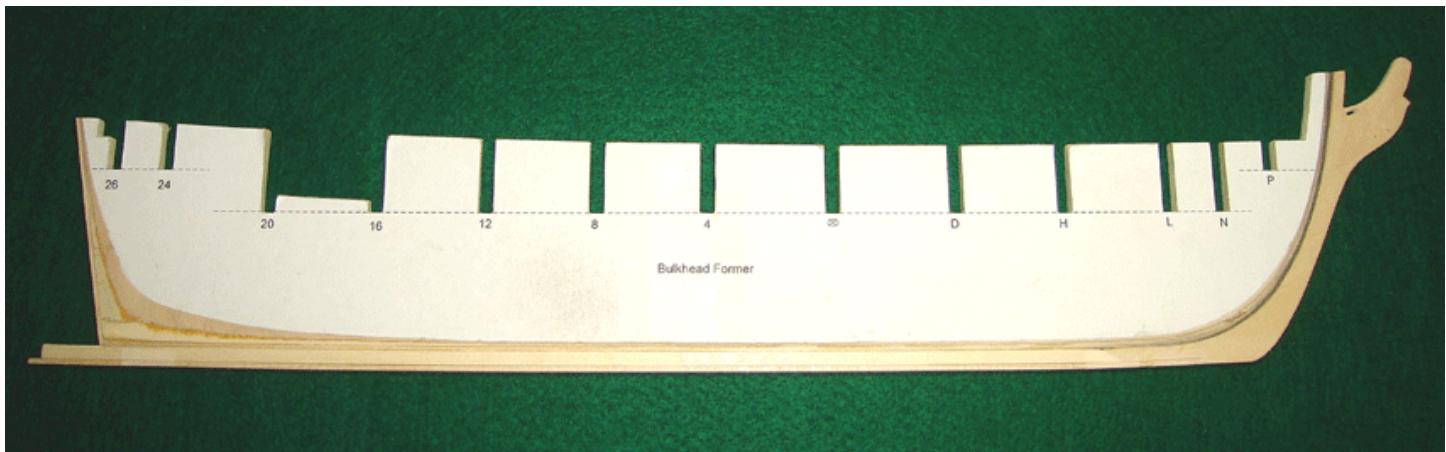
You will be using a $3/16" \times 3/16"$ basswood strip for the keel. Glue it into position and let it hang off the end of the bulkhead former at the stern. Center it on the rabbet strip like you did with the stem knee. The rabbet formed by the keel should be the same depth on both sides of the bulkhead former. Notice in the photo above that the stem is notched out to accept the false keel. There should be $1/16"$ space left on the bottom of the keel where we will eventually glue the false keel into position. The false keel was placed on ships during this period so it would take the brunt of any damage if the ship were to hit bottom. In fact it was only held onto the keel with nails and was designed to even fall off if the damage was severe. This thin strip was easier to replace than an entire keel. The Syren will have a copper-plated hull. The keel included. The false keel however, was not copper plated. Therefor we will not permanently glue it into position at this time. Tape the $1/16" \times 3/16"$ Basswood strip into position temporarily. This will keep the hull flat on your work table. It will also prevent the bottom corner of the stem knee from getting damaged as you work. After the hull and keel is coppered we will glue the false keel into place permanently.

You will also notice in the last photo (next page) that the keel and *temporary* false keel were left extra long. They extend about $3/4"$ off the end of the bulkhead former at the stern. The stern post won't be added until after the hull has been completely planked. It will be easier to run the planks right off the end of the bulkhead former at the stern. This way you won't have to try and cut each plank to fit in the rabbet as you proceed. All of the planking can be trimmed perfectly to the edge of the rabbet before you add the stern post later. It makes for a much neater job. This technique also seems to save a lot of time. So rather than guess how long the keel should be now, leave it extra long until after the stern post has been glued into position. Then you will be able to neatly trim the keel and *temporary* false keel with more accuracy.



Stem knee has been glued onto the bulkhead former. The holes for the gammoning slot and bobstays were drilled first.





Keel (3/16" x 3/16") was glued to the bottom of the bulkhead former. Note how it was left longer and runs off the end of the bulkhead former at the stern. The false keel was temporarily taped in position until after the hull has been planked and copper plated.

