

Modeling The Pride of Baltimore Chapter 1



A Practicum by Robert E. Hunt

1. ASSEMBLING THE FRAMEWORK.....	1
1.1 Introduction	1
1.2 Format of This Practicum.....	2
1.3 A Word About Tools	3
1.4 The Framework	14
1.5 Chapter Summary	39

1. Assembling The Framework

The first step in constructing any model ship is to build the basic framework of the model. This chapter covers that construction and shows you how to prepare the parts that make up the framework and how to construct a solid and true foundation upon which the entire model can evolve from. With a good foundation, your model of the Pride of Baltimore will be much easier to construct and in return, more fun to construct.

1.1 Introduction

Of course, there are certain things that should be explained before we begin our construction of the model. This practicum is based on the Model Shipways kit, Pride of Baltimore II, MS2120. This is a plank on bulkhead model based on the actual ship which is docked in Baltimore, MD. The Pride II is a typical schooner of the Baltimore Clipper type built primarily in the early 1800's. The Baltimore Clippers were light and fast and were used mainly as privateers during the war of 1812. The Pride of Baltimore is a replica of those ships and our model is based on this replica.

A private forum has been set up on my website (<http://www.lauckstreetshipyard.com/forum.html>) for all practicum participants. You must send me your username so that I can give you access to the private forum. There you can get assistance from me as well as other practicum participants whenever needed.

This course is meant to be an alternate to the Sophomore Course of the College of Model Shipbuilding. Although the Pride is not nearly as large or complex as the Constitution, this kit presents a number of challenges and is more complex than the Freshman course, Armed Virginia Sloop. Therefore, I felt it would compliment the College nicely as an alternate to the Constitution model or Sophomore course.

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From time to time, I will refer you to the kits plans or instruction booklet to see a drawing. However, you should not try to use the kits instructions along with this practicum or you may get confused. I do not follow the same construction sequence and often do not follow the same construction methods either. This practicum is meant to replace the kits instruction booklet completely and it will guide you through the construction process in complete detail, step by step.

1.2 Format of This Practicum

I will be using a special format throughout this practicum. First, each chapter will be broken down into sections and sections will be broken down into subsections. For example, Chapter 1 is on the Assembling The Framework. That chapter is broken down into several sections:

- 1.1 Introduction
- 1.2 Format of This Practicum
- 1.3 A Word About Tools

Subsections will be numbered according to their section numbers. An example:

- 1.1.1 Cleaning the Laser Parts
- 1.1.2 Cutting the Rabbet
- 1.1.3 Attaching the Keel, Stem and Sternpost

At the end of each subsection, a summary will be provided with checkboxes that you can use to check off the construction as it is completed.

Summary

- Remove all laser parts that make up the keel, center keel and bulkheads from their billets, using a #11 X-acto blade in your knife.
- Using a sanding block, such as the True Sander or other hard block, clean up the edges of the laser cut parts, removing the angled cut caused by the laser.
- Trace the center keel from your plans and mark the bearding line. ...

This will enable you to first read the subsection to understand what you must do, and then keep track of your completion as you progress. It is hoped that this format will help you to simplify the complexity of building the model and to complete this practicum.

1.3 A Word About Tools

This kit can be built with a minimum of power tools and a very basic collection of hand tools typically used in ship modeling. You will need certain basic hand tools and supplies to build your Pride of Baltimore kit. One power tool will be needed and it is a common tool used by most modelers. This section will outline all of the tools and supplies you will need to build your kit.

To cut some of the larger pieces from basswood stock, you will need a #13 Xacto blade as shown in figure F1.3-1.



F1.3-1

You can purchase these blades at most hobby and craft shops. The blade fits most standard hobby knife handles, also available from a number of hobby and craft stores as well as Walmart or K-Mart.

You will use a #10 Xacto blade to trim parts, taper planks and cut pieces from the basswood stock supplied in the kit. Figure F1.3-2 shows the #10 Xacto blade. A similar blade but a little larger is the #22 blade.



F1.3-2

Another commonly used Xacto blade is the #11 blade as shown in figure F1.3-3. This blade is good for trimming the laser cut parts from their billets. You can use the sharp point to cut through the tabs that hold the parts in the billets.



F1.3-3

This blade has a very sharp point and is useful for making straight cuts with the top of the blade. Also, because of the angle of the blade, you can get into small areas to make cuts or clean up parts.

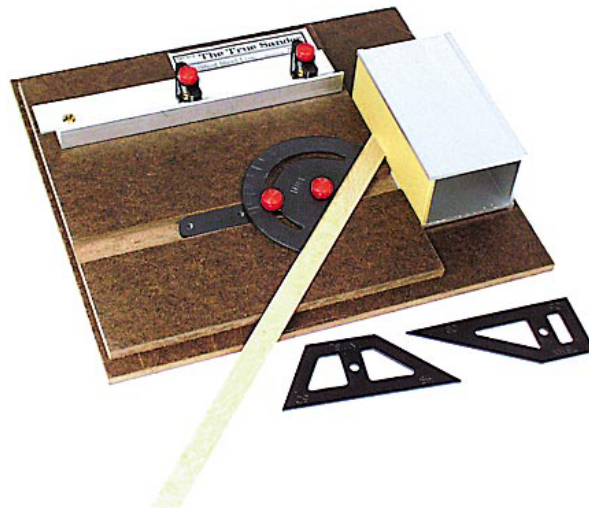
Of course, you'll need a handle to hold these blades. There are many such handles available but we've come to like the soft grip handles as shown in photo P1.3-1.



P1.3-1

These handles have a tightening knurled end that is opposite of the blade and make it much easier to tighten the handle down onto the blade. There's also a small nut at the back end of the handle that prevents the knife from rolling around and off of your workbench.

Once you have cut the tabs from laser cut parts using your #10 Xacto, the part edges will need to be sanded with a hard sanding block. One very useful tool for sanding is the True Sander as shown in photo P1.3-2.



P1.1.3-2

The True Sander can be purchased from Micro Mark (<http://www.micromark.com>) and the part number is 14475.

The sanding block that comes with the True Sander is a hard metal block. You can easily attach self stick sanding paper (after cutting) to all four sides of this block. You can use different grits of sandpaper on each side which will result in a very versatile sanding tool to use in cleaning up the edges of your kit parts.

When sanding, try to keep the sanding block flat against the part edge. This will prevent you from distorting the edges. Your parts have been laser cut and the edges are not perpendicular to the surface due to the nature of laser cutting. This angle needs to be squared up so that parts fit

properly when glued. The true sander comes in handy for sanding the edges of parts to remove the burned wood and square up the edge to the surface.

Another useful sanding tool is the ADC Mini Sander made by Applied Design Corporation. This sander is shown in photo P1.3-3.



P1.3-3

This sander has a layer of rubber between the adjustable plastic block and fixed sanding belt. The belts come in different grits and are continuous with no hardware to get in your way. You will need a companion sanding block with a small metal clip allows you to use off the shelf sandpaper cut in strips as shown in photo P1.3-4.



P1.3-4

You can purchase these items at many local hobby or craft stores as well as on the web from such online stores as Hobbylinc (<http://www.hobbylinc.com>).

A similar sanding block is the Zona Tool Company's Mini Sander as shown in photo P1.3-5 (<http://www.zonatool.com>).



P1.3-5

These blocks are useful for sanding curved areas. Many of the parts in your kit have a curved edge which might need some cleaning up. A hard block such as the True Sander block can not get into these tight areas. This is where the ADC or Zona Mini Sander comes in handy.

You'll also want a supply of sandpaper in various grits starting from 100 grit. We use 100, 150, 220, 320, 400 and 600 grit paper throughout or model construction. There are many brands and manufacturers available and sandpaper can be found at most local hardware stores.

In addition to sandpaper, we use #0000 steel wool to get an ultra smooth, satin finish on our models. This is another product that can be found in most hardware stores and many brands are available.

You're going to need a good glue to glue your parts together. There are many types of glue on the market for wood but one has become my favorite because of its strong bonding characteristics and its ability to be debonded should a mistake be made. That glue is Weldbond as shown in photo P1.3-6.



P1.3-6

Weldbond is white but dries clear. It can be debonded by soaking the joint in rubbing alcohol for several hours. And when joints with wet Weldbond are sanded, the dust from sanding combines

with the glue to form a filler that blends well with the surrounding wood. It also has superior bonding properties and it can bond more than just wood.

A power tool you will need is a motor tool, commonly referred to as a Dremel tool. Many companies manufacture a similar product but I have come to prefer the Dremel brand as shown in photo P1.3-7.



P1.3-7

With the small drum sander attachment shown in this photo, the tool can be used for a number of shaping situations such as the beveling of bulkheads or the shaping of filler blocks. The variable speed gives you versatility when using different cutters or accessories. This tool can be found in most hardware and building supply stores such as Ace Hardware, Lowes or Home Depot.

Also useful in your kit assembly are rulers. Several inexpensive rulers will be handy for taking measurements when locating the placement of parts. A good metal 6" or 12" ruler such as the ones shown in photo P1.3-8 can be very useful for these situations.



P1.3-8

These rulers can be purchased from Micro Mark as well (item numbers are shown in the photo).

Another useful ruler is the mini-square ruler as shown in photo P1.3-9.



P1.3-9

With the square edge, you can quickly locate lines at a 90° angle to the edge of a part. The small length also allows you to take measurements in a smaller, more confined area. This ruler is sold by Micro Mark as well and its item number is 82147.

Another glue that will help you in your construction is super glue. I've always found Zap A Gap to be the ideal super glue for model shipbuilding as shown in photo P1.3-10. I use it to apply the planks to the hull.



P1.3-10

Zap is a medium cure super glue and thicker than most others. You can find it in most hobby shops and through Micro Mark. The item number is 80878.

To dispense the glue, we've found that Z-Ends, a special silicon tip, work very well. These tips include a silicon tube that inserts into the tip. With the tip and tube, you are able to dispense very small amounts of the glue and have better control over where the glue is dispensed. Z-Ends may also be purchased at most hobby shops or Micro Mark, item number 80890, and can be seen in photo P1.3-11.



P1.3-11

Often you will have to glue two parts together and you will need some sort of clamp to hold the parts until the glue has set up. I often use office clips found in most office supply stores, Walmart and K-Mart. These can be seen in photo P1.3-12.



P1.3-12

Of course, a good pencil will be needed to mark lines and points of reference and our favorite is the inexpensive mechanical pencil such as Bic shown in photo P1.3-13.



P1.3-13

From time to time it will be necessary to drill small holes in some parts. A pin vise is the simple solution here and can be seen in photo P1.3-14.



P1.3-14

These come in a variety of sizes and can be purchased from Micro Mark also. Items numbers are shown in this photo.

To go with your pin vise, you'll need some small drill bits. These can be purchased individually at most hobby shops or in a set as seen in photo P1.3-15.



P1.3-15

Because of their small size, these drill bits are referenced by a size number and not their physical dimension. This particular kit contains sizes 61 through 80 and will fit most modeling applications. However, at times a larger bit may be needed and will be pointed out in these instructions if applicable.

Small parts can be very difficult to handle and will require a pair of tweezers to pick up and position on the model. When rigging a model, small blocks can be a challenge to manipulate. I recommend a set of tweezers in different sizes to aid in working with such small parts. Micro Mark offers a number of tweezer products in various sizes and shapes such as the set shown in photo P1.3-16.



P1.3-16

A handy little tool to have when drawing lines perpendicular to an edge on wood is a miniature carpenter's square. This item can also be found at Micro Mark and is shown in photo P1.3-17.



P1.3-17

And of course, you'll want to put a finish on your model to protect the paint and enhance the beauty of the natural wood. For years I've been using Minwax Wipe On Polyurethane. This is a very thin polyurethane product and is applied with a soft rag such as a piece from an old T-shirt. Photo P1.3-18 shows this product which can be found at most hardware stores such as Lowes, Home Depot or Ace Hardware. It comes in both satin and gloss finishes but our preference is for the satin finish.



P1.3-18

Modeling The Pride of Baltimore A Practicum by Robert E. Hunt

1. Assembling The Framework 1.4 The Framework

For sealing the soft basswood, I prefer Minwax Polycrylic as shown in photo P1.3-19. This is a water based acrylic finish and comes in both gloss and satin. A few coats on the soft basswood before painting and a light sanding will greatly improve the appearance of the painted wood.



P1.3-19

There will be times when office clips are too small to clamp parts being glued. For these clamping situations, we use mini-clamps found in most hardware stores as shown in photo P1.3-20.



P1.3-20

A few other items you will find useful in constructing your model are toothpicks, tracing paper, card stock, rubber cement and wax paper. We prefer to use the round toothpicks because they are a bit sturdier. You can find these in most any super market. Wax paper is the common product found in super markets for wrapping food in and comes on a roll. Card stock can be found at any office supply store as can rubber cement.

With the tools outlined in this section, you should be able to build your Pride of Baltimore kit to completion. All of these tools are very common to model shipbuilding and will be used often if you plan to build additional models. A small investment in these basic tools will pay off later on as you complete other models and display them for family and friends on a mantle or table.

**Modeling The Pride of Baltimore
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**1. Assembling The Framework
1.4 The Framework**

Summary of Tools and Supplies needed:

- #13 Xacto blades
- #10 Xacto blades
- #11 Xacto blades
- Knife handle
- True Sander
- Mini-Sander
- Weldbond
- Dremel tool with drum sanders
- Metal rulers
- Mini-square ruler
- Zap A Gap
- Z-Ends
- Office clips
- Mechanical pencils
- Double coated Scotch tape
- Pin vise
- Small drill bits
- Tweezers
- Mini carpenter's square
- Minwax Wipe On Poly
- Minwax Polycrylic
- Mini clamps
- Sandpaper
- #0000 steel wool
- Toothpicks
- Wax paper
- Tracing Paper
- Card Stock
- Rubber Cement

1.4 The Framework

And so we begin. The first thing you will want to do is to clean up the edges of the center keel piece. This is the piece shown in photo P1.4-1. You'll notice that on the right hand lower edge of the keel, I have sanded the burned wood off with my True Sander sanding block.



P1.4-1

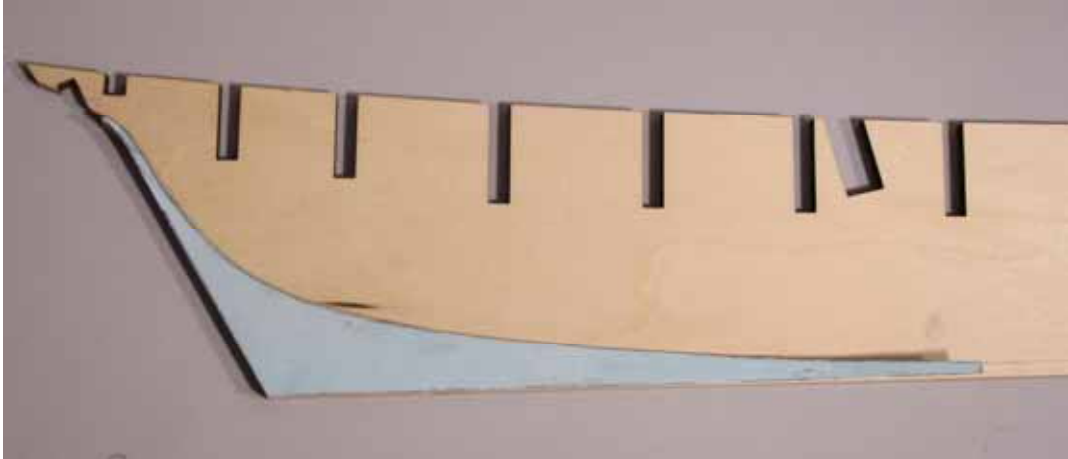
You want to sand around the outer edges of the piece removing the burned wood and squaring the edge to the surface. The laser cutting process produces an edge that is not perpendicular to the surface. Do not sand the slots that the bulkheads fit into. I use 100 grit sandpaper on my true sander for this purpose.

Next, we need to transfer the bearding line from the plans to the surface of the center keel so that we can cut the rabbet joint into the keel. Look at sheet 2 of your plans. The drawing at the bottom labeled **Keel/Stem, Sternpost & Rudder Taper** shows the bearding line. Primarily you are only concerned with the area at the stern as shown in photo P1.4-2.



P1.4-2

Here you can see that I have used the tracing paper to trace this pattern of the bearding line. The pattern is cut out and glued to a piece of card stock using rubber cement. After the tracing has been cemented to the card stock, cut the tracing out and use it as a pattern to draw the bearding line onto the center keel as shown in photo P1.4-3.



P1.4-3

The remaining portion of the bearding line can be drawn across the forward portion of the keel at a distance of $\frac{3}{32}$ " from the edge. Carry the line all the way up to the top of the stem. Repeat the drawing of the bearding line on the other side of the keel as well. Photo P1.4-4 shows the complete bearding line drawn onto the center keel.



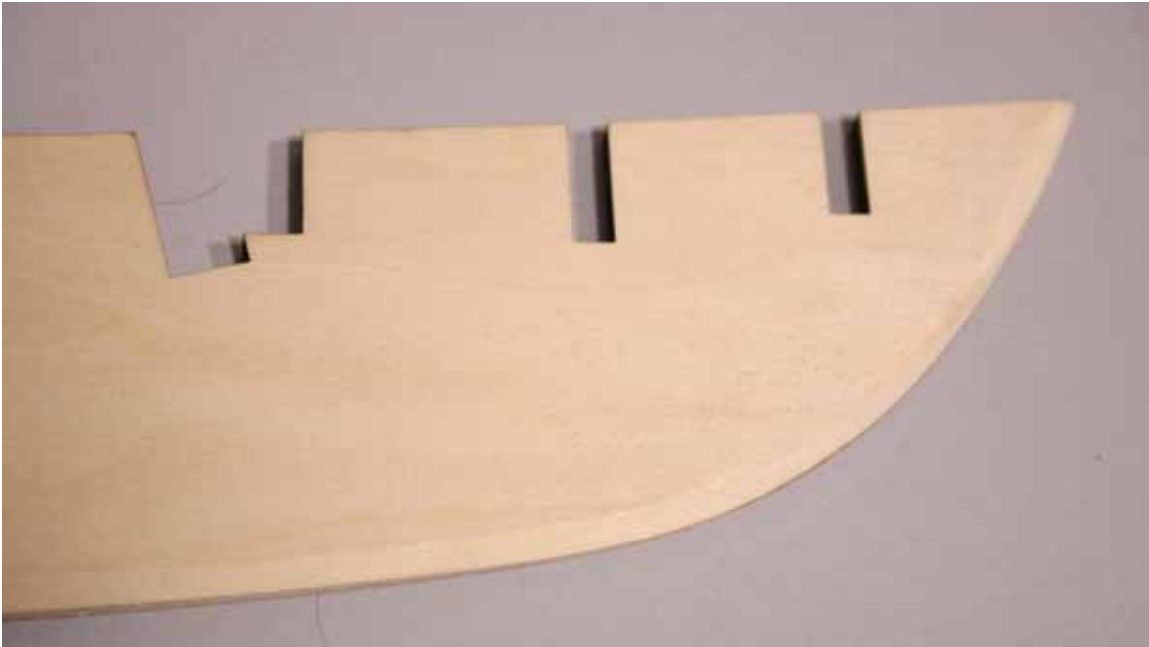
P1.4-4

Now we will use our #10 Xacto to trim the wood from the bearding line outward to the edge of the keel. Before we do that, we want to draw a line around the edges of the keel $\frac{1}{16}$ " from the surface as shown in photo P1.4-5. The line is repeated on both sides of the keel.



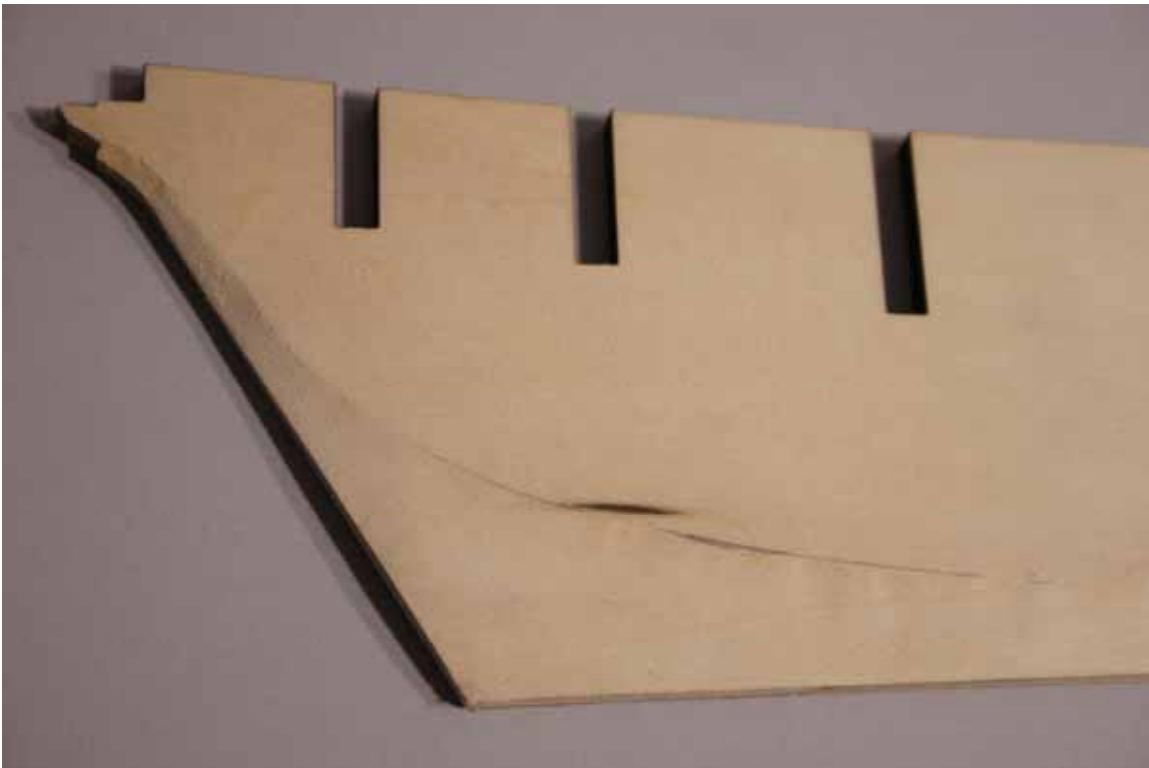
P14-5

You will use the #10 Xacto to trim from the bearding line to the line around the edge of the keel. This will produce a bevel along the forward edges of the keel as shown in photo P1.4-6.



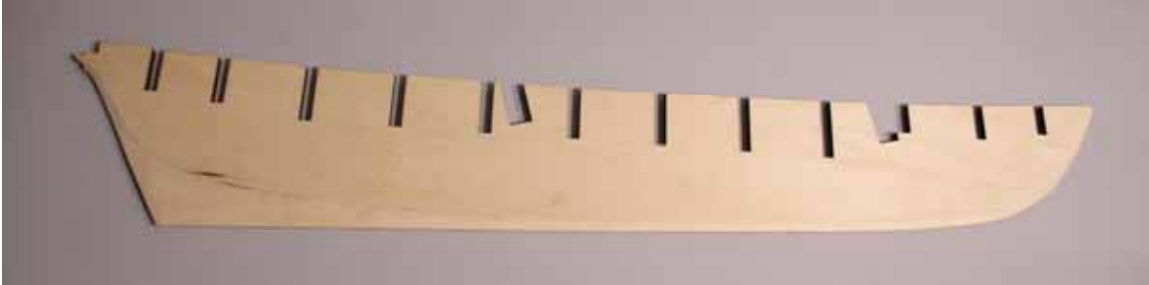
P1.4-6

At the stern, where the bearding line rises and produces a large curve, the bevel is much broader as seen in photo P1.4-7.



P1.4-7

And in photo P1.4-8, you can see the complete rabbet joint. You can see a drawing in your instruction booklet on page 10 labeled figure 2 to get a better idea of how the rabbet joint is cut at the stern.



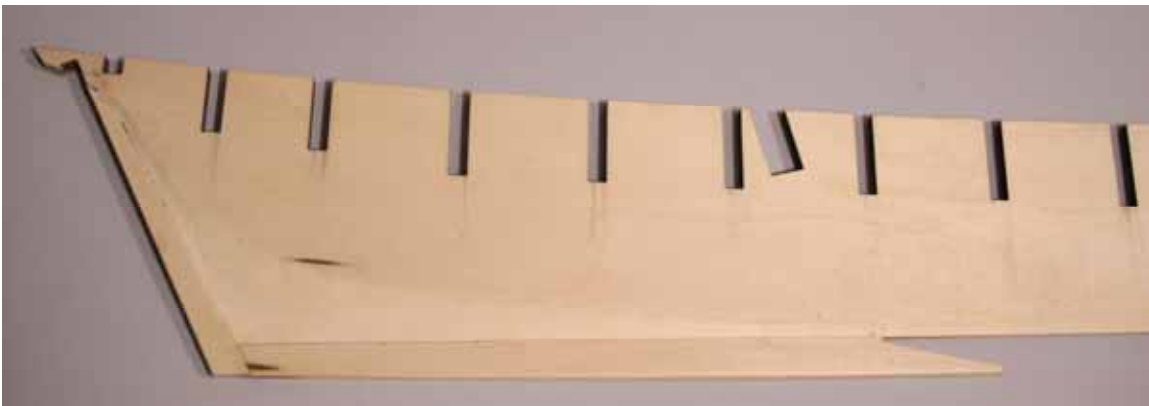
P1.4-8

You'll notice in this photo that I've broken two pieces off of the keel by accident. I was able to glue them back in place when I installed the bulkheads but you should be careful and try not to break any of the parts.

The other side of the keel is also trimmed in this manner from the bearding line outward to the edges. The joint will be completed when the keel, sternpost and stem are installed. The purpose of the rabbet joint is to give the planking a place to seal where it meets the keel, sternpost and stem. This is not just a modeling thing but actual practice in ship construction.

Your kit comes with laser cut keel pieces (2), stem and sternpost. You will want to use your #11 Xacto to remove these pieces by cutting the tabs that hold them in the billets. After removing them, use the True Sander sanding block to clean up the edges and square them to the surface.

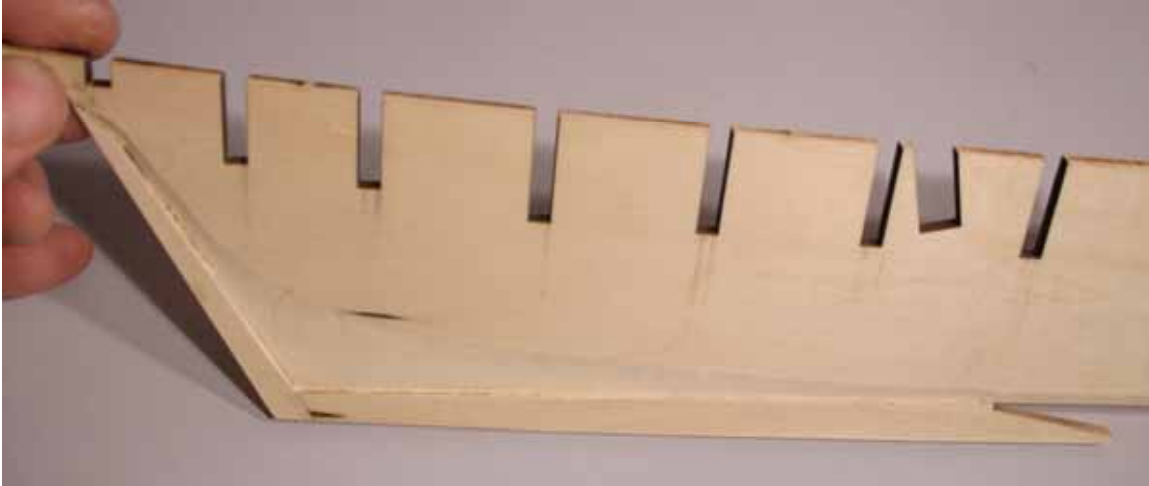
First, we'll attach the sternpost and aft keel section as shown in photo P1.4-9.



P1.4-9

The sternpost is glued into place first centering it on the stern of the center keel and using Weldbond. Be sure to wipe away any excess glue that oozes out when it is glued into place. You should test fit the keel part before gluing because the position of the sternpost must be such that it protrudes sufficiently at the bottom to mate with the keel part as can be seen in this photo.

The keel piece is also centered on the center keel forming the rabbet joint as seen in photo P1.4-10.



P1.4-10

You can see by the angle I am holding the assembly that the beveled edge on the center keel forms a recessed area where the sternpost and keel are attached. Later we will install planking which will fit into this recessed area.

After the Weldbond has dried, attach the other forward keel piece and stem. Photo P1.4-11 shows the entire assembly at this stage.



P1.4-11

With the center keel and keel parts now completed, we are ready to install the bulkheads. These are also laser cut and need to be removed from their billets. However, do not clean up the edges at this time with your True Sander. We will be fairing the hull once all of the bulkheads have been attached to the center keel and this will take care of the edges. Do not sand the slots in the bulkheads either. They should fit the slots in the center keel snugly. Test fit each one first. Bulkhead A goes at the bow, then B and so forth moving aft until you reach bulkhead M at the small slot at the stern.

Once you are satisfied that the bulkheads fit well, site down the dry fitted assembly and see how they line up. My hull lined up very well and no adjustments were needed. If you see a bulkhead that is too high or too low, you will have to adjust its position when you glue them in place.

Start with bulkhead A applying Weldbond to the slot in the bulkhead and to the slot in the center keel. Photo P1.4-12 shows bulkheads A and B in place. You can see some of the Weldbond on the center keel.



P1.4-12

You will inevitably have glue that oozes out between the slots. Use a toothpick to spread the glue along the seams of the joint on both sides. Neatness isn't a necessity here because you will never see any of this once the model is complete.

Notice how the tops of the bulkheads align with the top of the center keel in this photo. All of your bulkheads should align with the top of the center keel. Also notice how the bottom of the bulkheads align with the bearding line. On bulkhead a, because it is beveled at the bow, the aft side of the bulkhead aligns with the bearding line.

You want to make sure that the bulkheads are square to the center keel. This is where your machinist square comes in handy to check the squareness of the bulkheads as shown in photo P1.4-13.



P1.4-13

Give the glue some time to dry before moving on to the next bulkhead. Weldbond sets up pretty quickly and 15 minutes should be sufficient.

In photo P1.4-14, we now have 5 bulkheads installed.



P1.4-14

And in photo P1.4-15, you can see how they line up as you look at the assembly from the bow.



P1.4-15

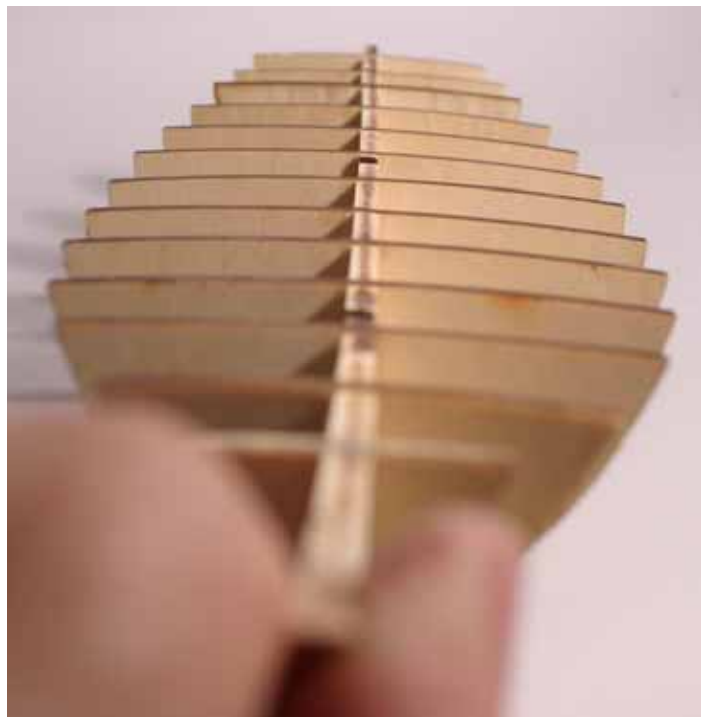
Notice how the tops align with the top of the center keel and that they are not tilted to one side or the other. The tops have a slight camber to them as well.

Continue to glue your bulkheads in place until all of them have been glued to the center keel as shown in photo P1.4-16.



P1.4-16

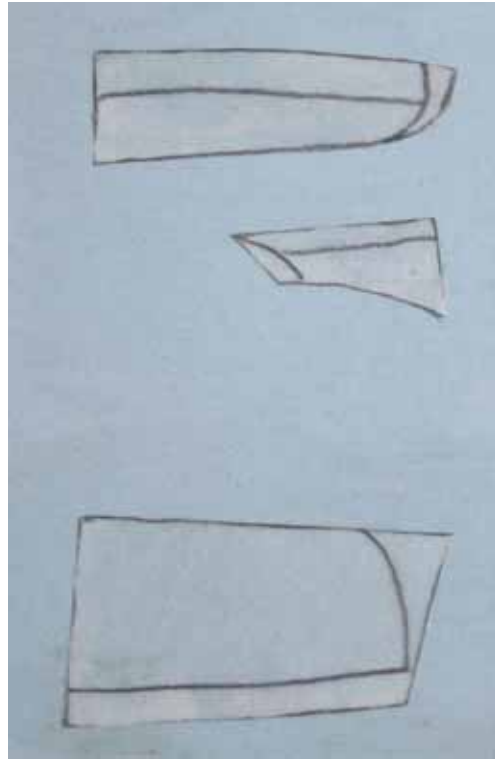
Sight down the bow of the assembly as shown in photo P1.4-17.



P1.4-17

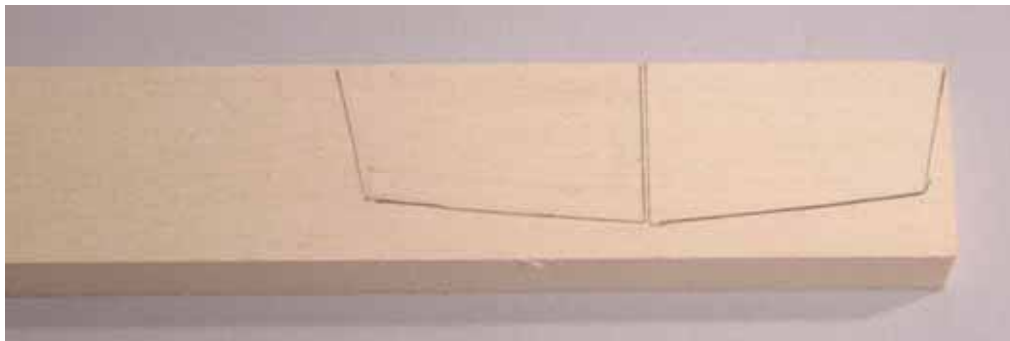
You can see how the bulkheads all line up.

With the keel and bulkheads now assembled, we need to make some filler blocks for the stern and bow area. Sheet 1 of your plans shows the filler block in the drawing labeled **Filler Block Aft of Bulkhead M** on the left side of the plan. You will need to make tracings of top, back and side patterns as shown in photo P1.4-18.



P1.4-18

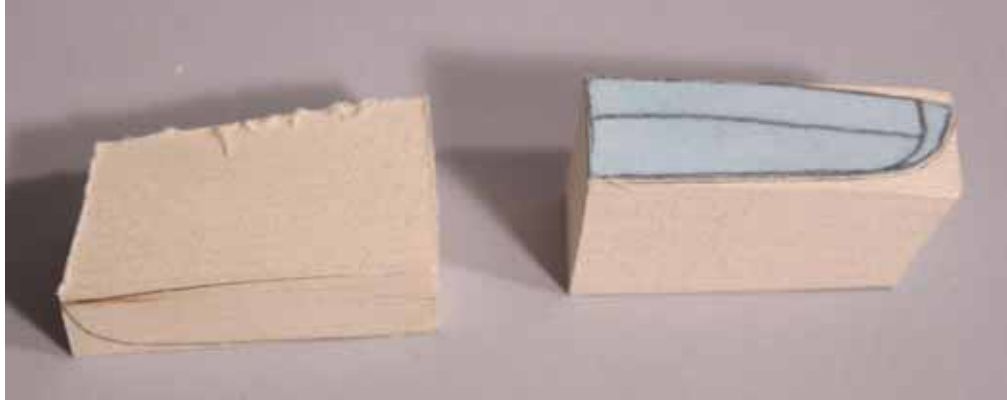
After cutting out the patterns which were rubber cemented to card stock, draw the top pattern onto the 1/2" x 1" x 6" piece of basswood in your kit. This can be seen in photo P1.4-19.



P1.4-19

Now the tough part is going to be cutting these pieces out. You can start with a #11 Xacto and score the lines repeatedly. You can also use your #13 Xacto to saw the parts on the lines. Try not to distort the edges but keep them as close to being perpendicular to the surface as possible.

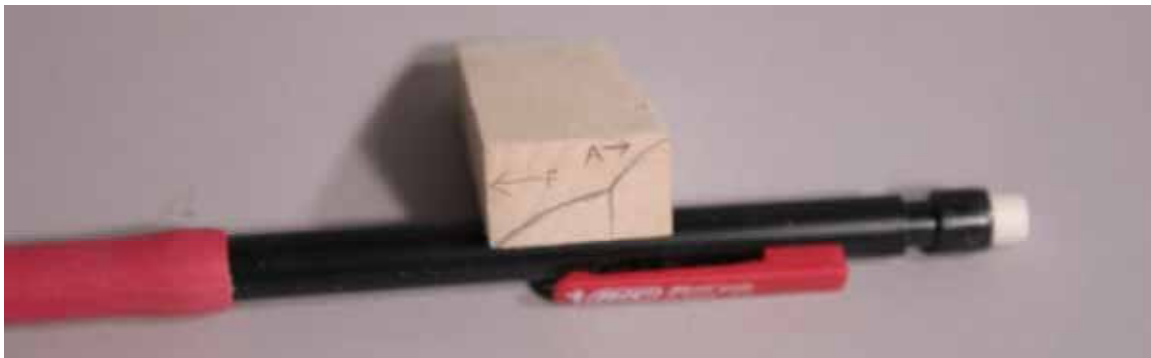
In photo P1.4-20, the two pieces have been cut out and the drawing from the stern view is transferred to each piece.



P1.4-20

This pattern shows the camber of bulkhead M on the top surface and the curve of the hull and bulkhead M on the bottom outside surface.

The last pattern that needs to be transferred to these blocks is the end pattern as shown in photo P1.4-21.



P1.4-21

The fore side is on the left while the aft side is on the right. With the various patterns now transferred to the block, you can shape the block using your Dremel tool with drum sander or with a #10 Xacto. Start by carving the top surface matching it with the camber in bulkhead M. Then carve the bottom surface. Photo P1.4-22 shows the block at this stage.



P1.4-22

Check the shape by placing the block against the back side of bulkhead M. Once you are satisfied with the shape at this stage, carve the counters by using the end drawing as shown in photo P1.4-23.



P1.4-23

The concave surfaces are carved easily with the Dremel tool and drum sanding attachment. Now you can glue the part to the aft side of bulkhead M and the center keel as shown in photo P1.4-24.



P1.4-24

Notice how the sides are curved and match the curvature of bulkhead M. The bottom of the counter meets the bottom of bulkhead M.

Repeat the process for the other side as well. You'll notice in the photo that my bulkheads are now clean of burned wood. This is from fairing the hull which you will want to begin doing once your filler blocks have been attached that the stern. For this, I use the mini sander with 100 grit sandpaper. Sand lightly across the bulkheads moving from the center of the ship out to the stern. As you approach the stern, the bulkheads begin to become beveled due to the angle of the hull. You will not need to put the bevel in bulkhead M, leave it as is. But bulkhead L and K are beveled considerably. Sand until all of the burned wood is removed and one bulkhead blends into the next when the sanding block is laid across the two. You can see how the flow from one bulkhead to the next is by laying a plank of wood across them. You want a smooth flow from one bulkhead to the next. Photo P1.4-25 gives you a good view of the stern and how the bulkheads are beveled from the fairing.

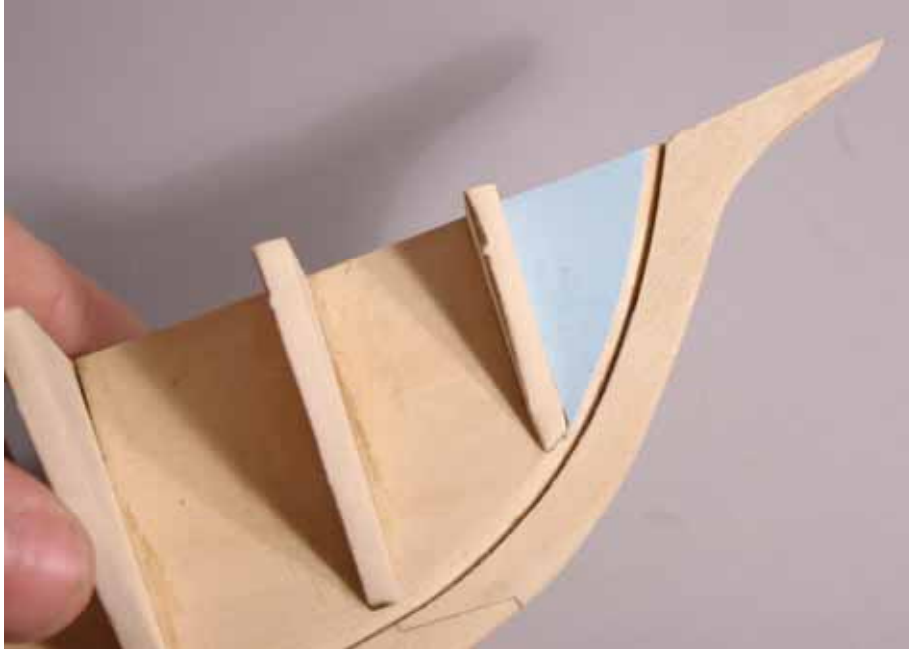


P1.4-25

This photo also gives you a good view of the filler blocks that form the counters and stern transom.

Now the plans do not show filler blocks at the bow. However, I found that there was still enough wood left in the 1/2" x 1" x 6" block used to make the stern blocks that a bow block could be made as well.

First make a card stock template of the bow area from bulkhead A to the bearding line as shown in photo P1.4-26.



P1.4-26

Now transfer that pattern to the remaining part of the wood block and cut two of them out gluing them to the center keel and to the fore side of bulkhead A as shown in photo P1.4-27.



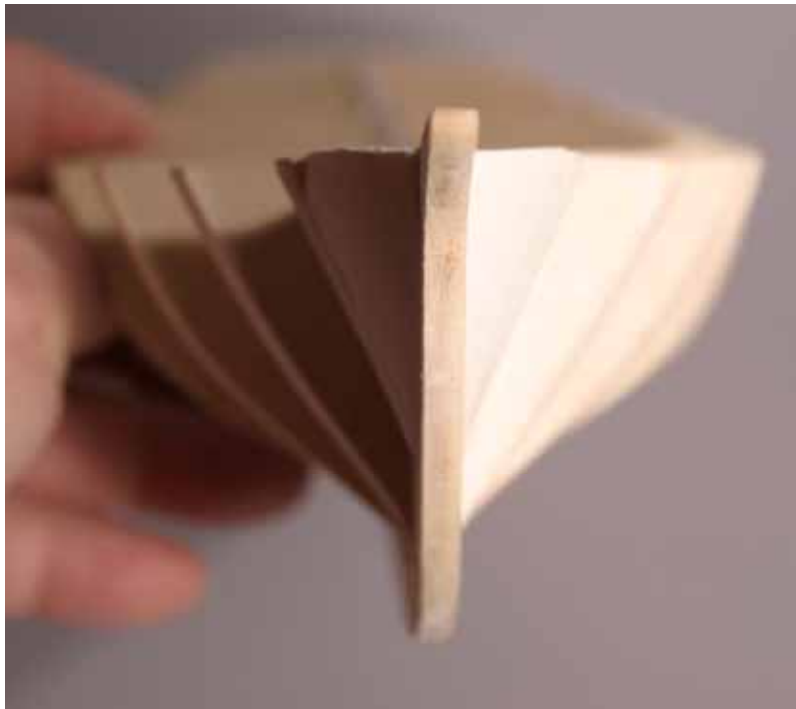
P1.4-27

The blocks may be a little short in width compared to the width of bulkhead A. But that's okay, it won't hurt things. Next, shape the block using bulkhead A as the outside edge and the bearding line as the inside edge as shown in photo P1.4-28. Here's where the #10 Xacto comes in handy.



P1.4-28

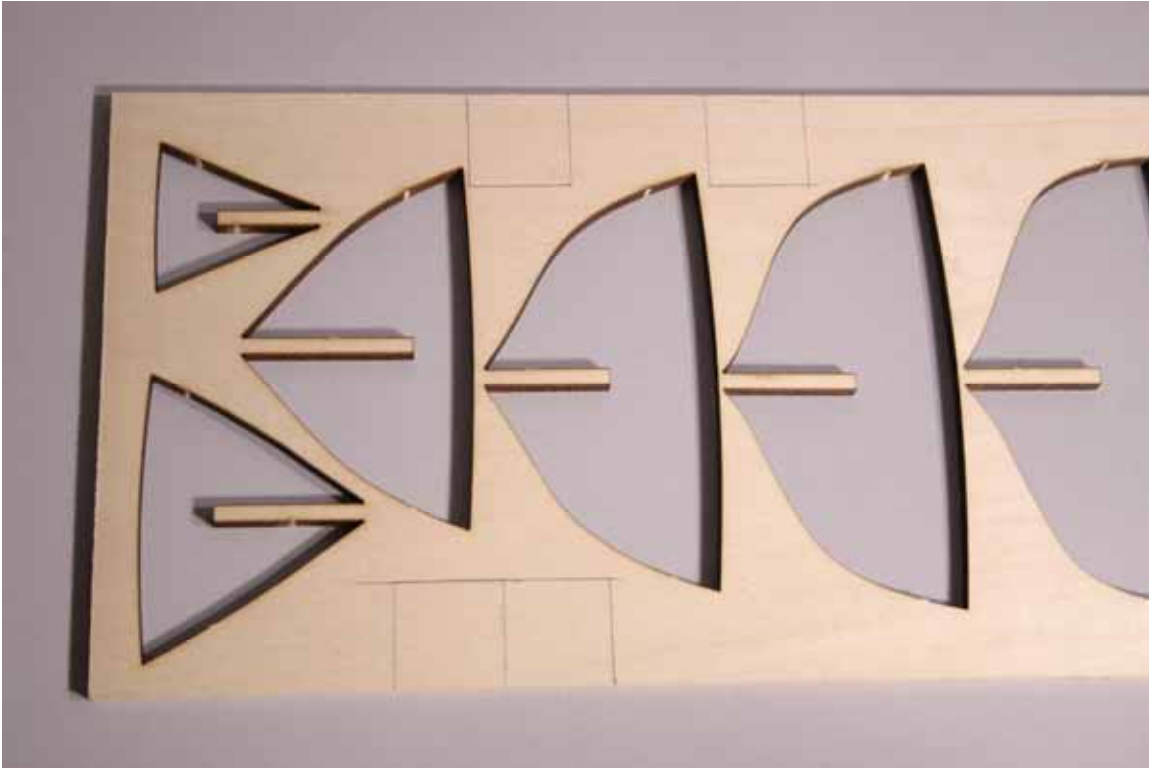
The blocks have been shaped and sanded and the forward area of the bulkheads has been faired. The bevel on bulkhead A blends right into the block which blends right into the rabbet joint. Planks should lie nicely across the bulkheads in a straight line with no peaks or valleys. Photo P1.4-29 shows the faired hull from the bow.



P1.4-29

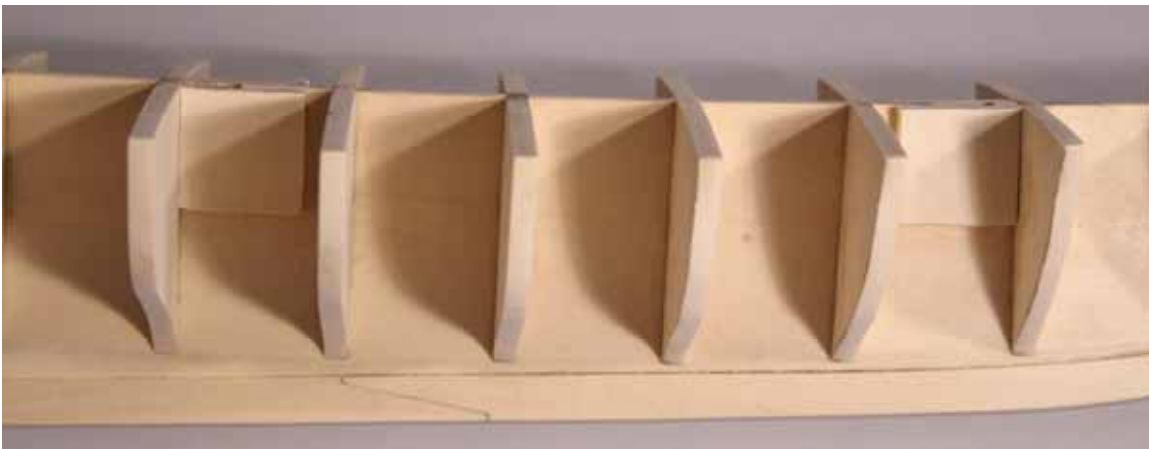
You'll also want to sand the tops of the bulkheads to make sure they are fair and even. Be sure and sand until all of the burned wood is gone and make sure there are no bulkheads protruding above the center keel in the center area.

Before we start to apply any planking, you will need to add some scrap pieces of wood on each side of the mast mortises. I used 1" squares cut from the bulkhead billets as shown in photo P1.4-30.



P1.4-30

Glue one on each side of the center keel covering the mast mortises as shown in photo P1.4-31.



P1.4-31

Now we're ready to start some basic planking that will aid us in the full planking of the lower hull. The first thing you are going to want to do is identify your packages of planking material. Find the taped package that contains the 1/16" x 3/32" planks.

Once you've untapped the package, you're going to need a way to easily identify these pieces later when needed. What I do is paint the ends of the planks first, before I untape them. Photo

P1.4-32 shows how I used some inexpensive acrylic paints found at a craft store to paint the ends of these planks.

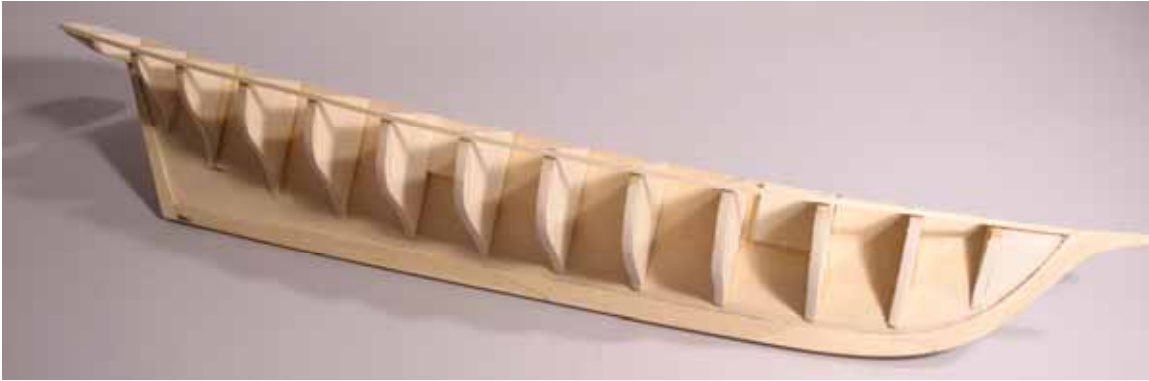


P1.4-32

The color you choose does not matter, so long as each bundle is painted a different color. To help in identifying the planks, put a dab of paint on your parts list as well, next to the dimensioned wood you just painted. Then you can remove the tape around the bundle and put the loose planks in your kit box.

On top of the bulkheads and at the outside edges is the planksheer. This is a laser cut piece with holes in it. Actually, there are two pieces for each side.

I found that my pieces were not quite long enough. In addition, the curvature of the pieces did not match the curvature of my hull. To correct this problem, I first soaked the pieces in water for 15 minutes. While the pieces were soaking, I applied the first plank using the 1/16" x 3/32" stock as shown in photo P1.4-33.

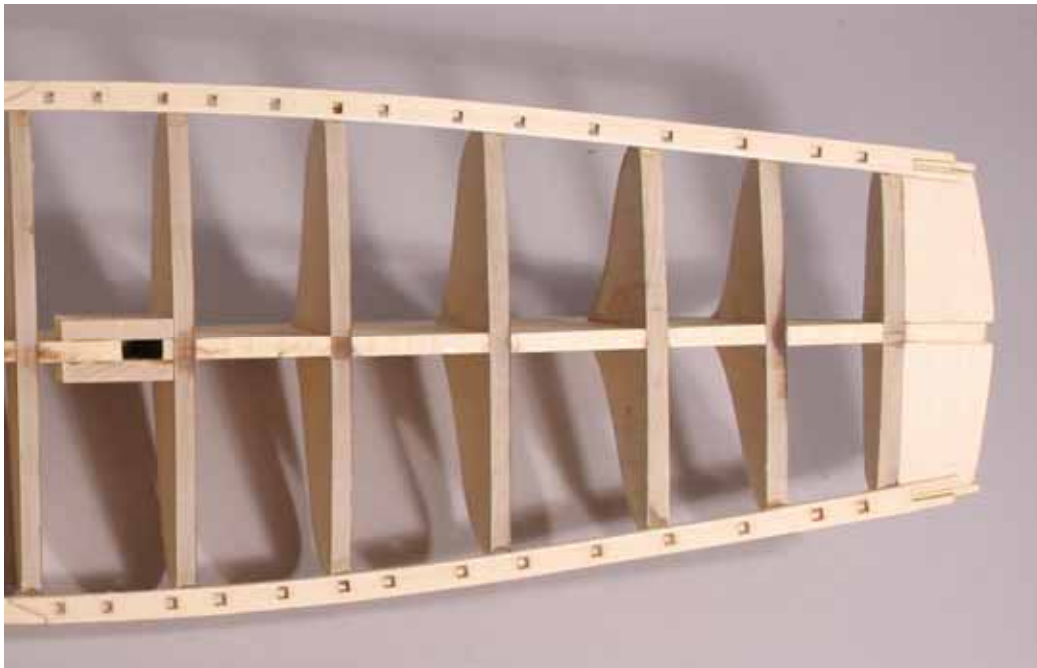


P1.4-33

The plank is slightly beveled and angled at the bow so that it fits into the rabbet joint. I applied the plank as one long, continuous plank. It is aligned on the top edge with the top of the bulkheads and ends at the stern transom.

I used super glue to glue this plank in place, applying the glue to a few bulkheads at a time as I applied the plank. Of course, you will add the plank to the other side as well.

With the plank in place, measure and mark a line 1/8" from the aft edge of bulkhead M placing the mark on the stern filler blocks top surface. Then take the planksheer piece with the rectangular notch in one end and align the end of the notch with the line you just marked. Photo P1.4-34 shows this portion of the planksheer installed.



P1.4-34

Take a look at the slot in the plank sheer at the stern. You can see from this photo that the end of the slot (fore end) is 1/8" from the aft edge of bulkhead M.

The planksheer hangs out past the plank you installed leaving a lip or overhang as shown in photo P1.4-35. The best way to achieve this overhang consistently is to align the outside edges of the square holes with the outside surface of the plank. This will produce a lip of about 1/32" to 3/64" of overhang.



P1.4-35

There should be no gap between the plank you installed and the planksheer. They are glued to each other and the planksheer is glued to the tops of the bulkheads. You may use Weldbond here but you will have to pin the planksheer to the bulkheads until the glue has dried. I used my favorite, super glue.

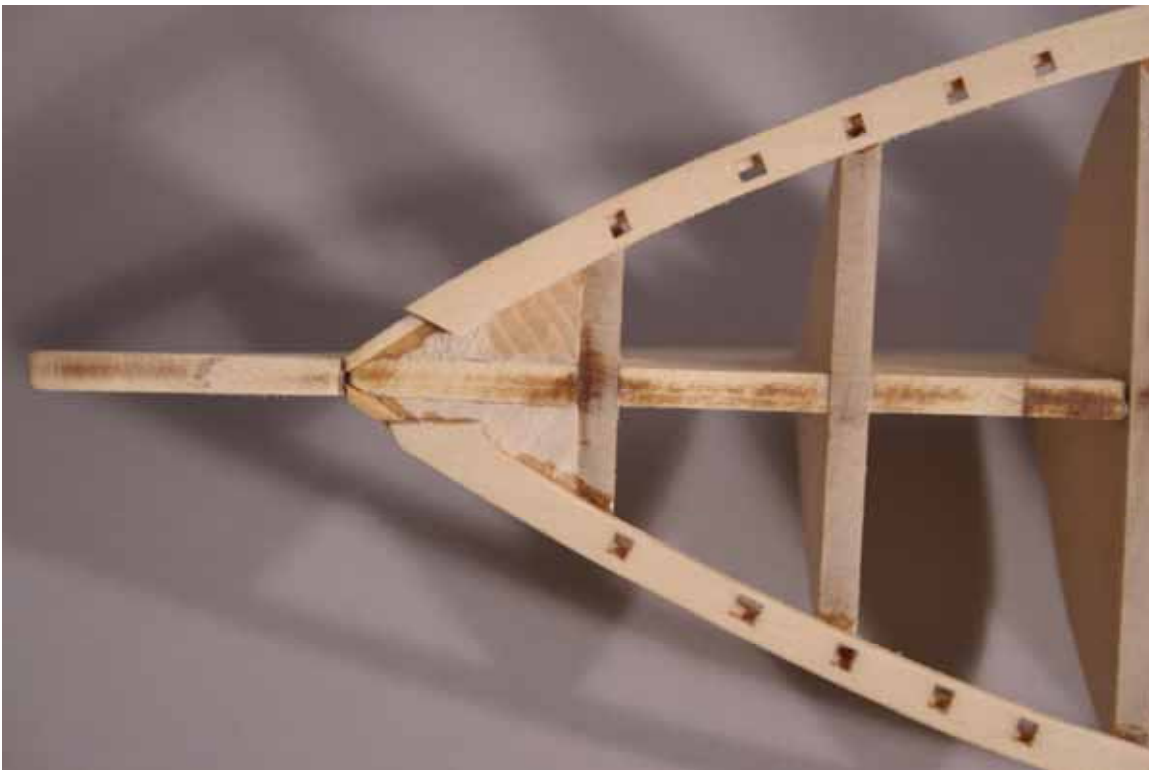
You will find that the curvature of the planksheer does not precisely follow the curvature of the hull. However, by soaking the planksheer in water beforehand, it will bend easily to correct this problem.

After the aft planksheer piece has been glued in place, glue the fore piece in place mating the scarf joint which should just fit perfectly. As you approach the bow, your piece will come up short but that is okay. We will fix that problem next. The key point to remember is to keep the outside edge of the planksheer consistent in the overhang and in relationship with the first plank you installed. Photo P1.4-36 shows the overhang at the bow.



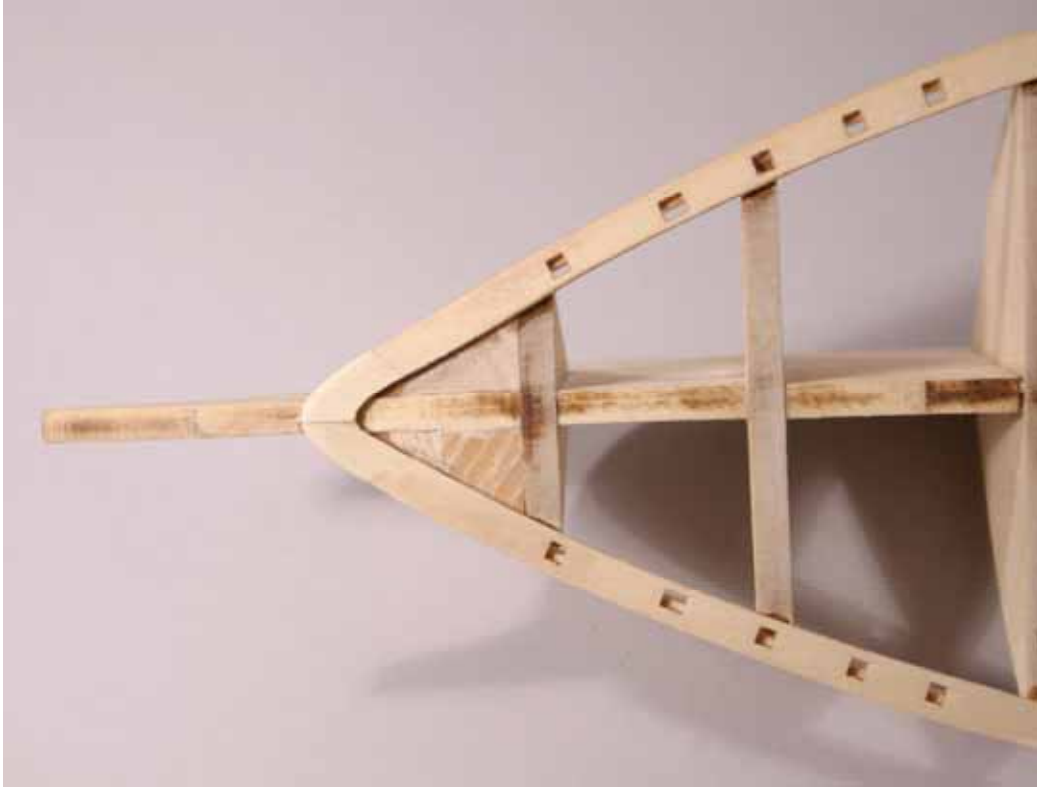
P1.4-36

Now for the bow area. Let's look at photo P1.4-37.



P1.4-37

On the starboard side you can see that I've used my #10 Xacto to trim the end of the planksheer so that it just comes to a clean end (as compared to the port side which has not been trimmed yet). You want to trim both sides cleanly as shown. We will then take some scrap wood from the billet that the planksheer came in and build a new bow area piece on each side as shown in photo P1.4-38.



P1.4-38

As you can see, the problem has been fixed. The two added pieces end in the center of the center keel; they connect to the ends of the planksheers cleanly and retain the original shape and appearance. Later, this will be painted and you will not know the difference. We could have requested new pieces from Model Expo but chances are the new pieces would not fit either because this is a flaw in the design of the kit. Now we've fixed the problem and can move on with our construction.

The final step to framing the hull will be to add the wale planks. These are thick planks below the first plank we installed. You will use $\frac{3}{32}$ " x $\frac{3}{32}$ " stock from your kit. Again, I painted the ends of the planks to help identify them later after I've removed the tape that bundled them together.

The fore end of the wale planks must be beveled to match the angle at the bow as shown in photo P1.4-39.



P1.4-39

As you can see, the wale plank does not fit into the rabbet joint. Instead, it is beveled and angled so that it lies flat against the stem. You could cut the rabbet joint wider at this point if you wanted to. I found it easier just to angle the plank accordingly and glue it in place. But, before you glue the plank in place, read a little more on the shaping of the wale planks.

At the stern, the wale must be tapered some. This taper starts at bulkhead J. First measure $1/16$ " from the top edge of the plank where it ends at the stern transom and make a mark. Then use a ruler to draw a line from that mark to the point where the plank crosses bulkhead J. This line represents the trim line. You can hold the plank in place as you mark the stern transom location and bulkhead J location. Then you can remove the plank, cut it off at the transom and take your measurement at that point before drawing your line.

After you've trimmed the plank with your #10 Xacto, use the True Sander sanding block to sand the trimmed edge so that you're sure you have a clean, smooth edge blending it into the remaining untrimmed edge. Then glue the plank in place. Now to get a good, clean planking job on my hulls, I've come to use and trust super glue. It's messy, you'll probably glue your fingers to the hull a few times until you learn how much glue is enough glue, but it adheres almost instantly so there's no need to devise a clamping system, and it is very strong. In the 13+ years I've been building model ships, I've always used super glue and I've never had a plank spring loose or become a problem.

You must also edge glue each plank in place. This means that you will apply the super glue first to the bulkheads and then to the edge of the plank above (or below, depending on which direction you're planking). When you install the plank, it is pressed against the bulkheads by pushing down with your fingers and it is installed against the plank above it by pushing upwards with your fingers. This ensures that the plank is not only attached to the hull but is also sealed with the plank above it. Any gaps that may appear can be corrected with a small bead of glue and some

sanding to produce sawdust that will mix with the glue. Later, when the hull is painted, these small gaps will disappear. And you will never know the difference.

At times, because of the curvature of the hull, you will have to bevel the edge of the plank you are installing so that it mates cleanly with the plank above it. This can be seen in the kits instruction booklet on page 16, figure 18.

We will install 3 wale planks in all on each side. I chose to install these planks at their full length simply because it's easier to do so. However, when we plank the lower hull, we will do so much differently. Photo P1.4-40 shows the first wale plank at the stern. Notice the taper.



P1.4-40

Lay two more of the 3/32" x 3/32" strips tapering at the stern so that the bottom of the third plank ends at the bottom of the stern transom or just slightly below it. Photo P1.4-41 shows the three planks at the stern.



P1.4-41

You can clearly see the taper of the planks. You can also see that the wale planks are thicker than the first plank we laid. You can see that the planks fit tightly against each other as well.

When I lay planking, I always sand my planks as I go. If a plank lays a little higher than adjacent planks, I use the #10 Xacto to trim the plank down instead of trying to sand it down. If you try to sand it down, you will also be sanding the adjacent planks and that will reduce their thickness as well. But trimming the high area with the Xacto before sanding, this reduction in thickness will be minimal. These high areas are caused by inaccurate milling and by the curvature of the hull in certain places. It can not be avoided. The trick is to recognize it and correct it accordingly.

Photo P1.4-42 shows the bow area of the wales and photo P1.4-43 shows the completed framework with the wales installed. This completes chapter 1 and the framing of our model.



P1.4-42



P1.4-43f

Once you've completed the construction, you can use your mini sander to sand the wale planks and keel parts using 150 grit sandpaper. Finish up with 320 grit sandpaper and set the hull aside for the next chapter.

Summary

- Sand the outside edges of the center keel removing the burned edges and correcting the angle of the edges to the surface which is caused by the laser cutting process. The True Sander sanding block works best for this operation. Do not sand the slots for the bulkheads.
- Trace the bearding line and glue it to some card stock using rubber cement.
- Cut out the tracing and transfer the bearding line to the center keel on both sides.
- Measure 1/16" from the surface of the center keel along the outside edge on both sides to be used as a guide for beveling the rabbet joint.
- Use your #10 Xacto or a Dremel tool with drum sander to sand the rabbet joint from the bearding line to the outside edge of the keel.

- Clean the edges of the sternpost, keel parts and stem with your True Sander sanding block.
- Glue the sternpost, keel parts and stem to the center keel centering them side to side and thus forming the rabbet joint.
- Remove the bulkheads from their billets and test fit each one in its appropriate slot.
- Glue the bulkheads into the slots using a machinist square to check squareness. Use Weldbond and sight down the front of the model to check alignment.
- Add 1" blocks cut from scrap bulkhead billets on each side of the masts mortises.
- Take tracings of the top, back and side of the stern filler block from sheet 1 of your plans and make card stock templates.
- Using the 1/2" x 1" x 6" wood block, cut out two stern filler blocks using the top template you just made.
- Shape the filler blocks with your Xacto or Dremel using the side and back templates.
- Glue the filler blocks to the aft side of bulkhead M and the center keel.
- Use your mini sander and 100 grit sandpaper to fair the bulkheads.
- Use the remaining wood block to make filler blocks at the bow by making a card stock template from the fore side of bulkhead A to the bearding line. Shape with the Dremel or Xacto and fair into the bulkheads.
- Locate the 1/16" x 3/32" stock and paint the ends before removing the tape that holds the bundle together.
- Install one plank on each side aligning the top edge of the plank with the tops of the bulkheads.
- Remove the planksheer planks from their billets and soak them in water for 15 minutes.
- Measure 1/8" from the aft side of bulkhead M and mark the top of the filler block.
- Install the aft planksheer piece so that the fore end of the slot in it is aligned on the mark you just made. The planksheer can be bent to follow the curvature of the hull and overhangs the plank installed by about 1/32". Use the outside edges of the square holes in the planksheer to align them with the outside surface of the plank installed.
- Install the fore section of the planksheer and trim the end so that a new forward piece can be made and installed from the billeting material these parts were made from.
- Make new fore pieces from the billeting material retaining the curved fore end and install mating them to the ends of the forward planksheer.
- Locate the wale stock which is 3/32" square and paint the ends before removing the tape that holds the bundle together.
- Install 3 wale planks on each side tapering the stern end from bulkhead J aft so that the bottom of the third plank ends at or slightly below the stern transom.
- Sand the wales with 150 and 320 grit sandpaper.

1.5 Chapter Summary

This completes our first chapter on the construction of the Pride of Baltimore II. In our next chapter, we will plank the lower hull beginning with the starboard side. You should have a solid and true structure at this point that is faired out and ready for planking.