

# **Modeling The Bluenose**

## **Chapter 1, Assembling The Framework**



**A Practicum from the Lauck Street Shipyard, LLC**  
**By**  
**Robert E. Hunt**



1. Assembling The Framework.....	1
1.1 Introduction.....	1
1.1.1 Format Of These Instructions .....	1
1.1.2 A Word About Your Kit Parts .....	2
1.1.3 Tools And Supplies Needed .....	2
1.1.4 Contact Information.....	11
1.1.5 Copyright Notice and License Agreement .....	11
1.2 Preparing The Center Keel .....	13
1.3 Adding The Bulkheads .....	15
1.4 Chapter Summary .....	18

## 1. Assembling The Framework

In this chapter you will be assembling the basic framework of our model. The proper assembly of the framework is essential in laying the groundwork for planking and future details. In this chapter we will cover this procedure step by step to assure that we have a true and properly framed assembly

### 1.1 Introduction

Thank you for purchasing the Prep School Course, Modeling The Bluenose. This course is part of a series of progressive courses that I have written and which make up *The College of Model Shipbuilding*.

I've designated this course as the Prep School course primarily because the planking of the hull is much easier than the planking found in my other courses. I feel that it is essential that a new modeler learn basic planking techniques correctly before bad habits are formed. Hull planking is probably one of the more difficult tasks in building a model ship. The hull of the Bluenose is fairly simple in comparison to other hulls I have planked and requires less trimming and tapering of the planks. It is this fitting that gives new modelers so much trouble.

These instructions will guide you through every step of construction providing you with photos as well as drawings when needed to help explain the construction of each assembly of the model. If you should have problems or need assistance, a private forum on the internet is available where I will answer your questions. The forum website address is:

<http://www.lauckstreetshipyard.com/forum.html>

Once you have registered on the forum, you will need to email me with your username so that I can give you access to the private Bluenose forum. My email address can be found later in this chapter.

All of the photos shown in these instructions are also located on optional photo CD's in

high resolution JPEG format. They can be viewed on most computers with a graphics program which usually comes installed on new machines. Many photos on the CD are not in these instructions either.

I am here to help you succeed in your construction of this kit. I want you to succeed, because a successful modeler will come back to buy other practicums and build other kits. I value your business and look forward to serving you.

Thank you,

Bob Hunt  
<http://www.lauckstreetshipyard.com>  
Lauck Street Shipyard, LLC  
129 Abby Lane  
Strasburg, VA 22657

### 1.1.1 Format Of These Instructions

These instructions are laid out in a manner that will make them easy to follow. They are broken down into chapters. Each chapter covers the assembly of certain parts which will result in various sub-assemblies that are then put together to form the full structure for that chapter. As each chapter is completed, these structures will eventually be assembled together to form the model. This is **Chapter 1** and it covers the assembly of the **framework** of your model.

Each chapter is broken down into sections. For example, this is section **1.1** and it is an introduction to these instructions. This section has been broken down into sub-sections. This sub-section, **1.1.1**, explains the format of these instructions.

The process of building this model should start by reading the chapter in its entirety first. This enables you to become familiar with the processes involved. Then you should read the section for the first assembly process and become better familiar with its assembly sequences. As you follow those sequences, you should begin to get a sense of the procedures I follow in assembling a kit. Although each kit is different, there are many similar structures and procedures for building them.

By following these simple procedures, you will not have to look at the total construction process which can be overwhelming to most new modelers. Instead, you can break the assembly process down into simple, short and manageable processes that make it less intimidating and make the task of building the model much more manageable.

### 1.1.2 A Word About Your Kit Parts

Except for planking stock and fittings, a lot of the parts in your kit are attached to billets of wood. The wood billets are in different thicknesses depending on the parts it contains.

Your kit parts have been cut out by a laser and the nature of the laser causes the edges to be burned. Burned edges do not glue well and need to be removed by sanding. In section 1.1.3 I recommend the True Sander and its sanding block. This sanding block will prove to be invaluable for removing the burned edges of your laser cut parts.

Another property of laser cut parts is that the laser beam loses intensity as it penetrates the wood. This causes the cut to be angled, or not perpendicular to the surface of the wood. Sanding the burned edges should remove this angle if done correctly. Just keep in mind that the sanding block needs to maintain a perpendicular relationship with the surface of the wood.

### 1.1.3 Tools And Supplies Needed

You will need certain basic hand tools and supplies to build your kit. Two power tools will be needed and they are common tools used by most modelers. This section will outline all of the tools and supplies you will need to build your kit.

To remove your kit parts from their billets, you can use a #13 X-acto blade as shown in figure F1.1.3-1.



F1.1.3-1

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.

To remove a part from its billet, use the #13 blade to saw through the tabs. Once the part has been removed from its billet, you can use a #10 X-acto blade to remove the tabs still remaining. Figure F1.1.3-2 shows the #10 X-acto blade. A similar but larger blade is the #22 which I often use as well.



F1.1.3-2

Be careful when trimming the tabs from the part with your #10 X-acto. The wood has a grain in it. You will find that if you cut in one direction, the wood might chip before the cut is completed. But if you reverse the direction of the cut this chipping will not occur. You should always take very thin slices from the tabs as you remove them to prevent any initial chipping from damaging the part. However, if you do get a small chip in the edge of the part, it will usually not show once the part is assembled with other parts. If small chips do show, a little bit of glue and sanding will fill in the chipped area with sawdust that forms a kind of wood filler.

Another commonly used X-acto blade is the #11 blade as shown in figure F1.1.3-3.



F1.1.3-3

This blade has a very sharp point and is useful for making straight cuts with the tip of the blade. Also, because of the angle of the blade, you can get into small areas to make cuts or clean up parts. This blade can also be used to cut the tabs of parts to remove them from their billets.

Of course, you'll need a handle to hold these blades. There are many such handles

Modeling The Bluenose  
A Practicum from the Lauck Street  
Shipyards, LLC

1. Assembling The Framework  
1.1 Introduction

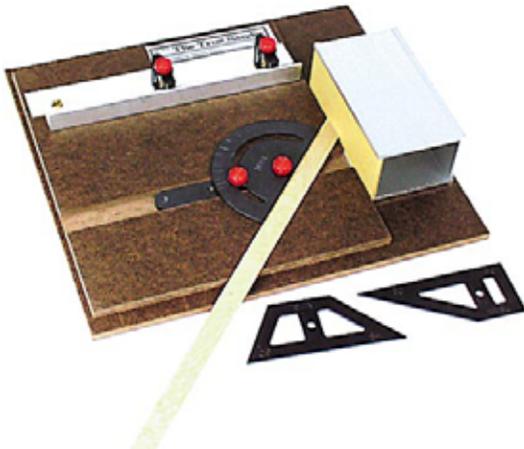
available but I've come to like the soft grip handles as shown in photo P1.1.3-1.



P1.1.3-1

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. The knife handles shown in the photo come from Micro Mark (<http://www.micromark.com>) and their part number is shown next to the handle.

Once you have removed the tabs from parts using your #10 X-acto, the part edges will need to be sanded with a hard sanding block to remove the burned edges and true up the angle formed from laser cutting. One very useful tool for sanding is the True Sander as shown in photo P1.1.3-2.



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 milled with a precision machine and the edges are perpendicular to the surface. This needs to be maintained so that parts fit properly when glued.

Another useful sanding tool is the ADC Mini Sander made by Applied Design Corporation. This sander is shown in photo P1.1.3-3.



P1.1.3-3

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. There is a companion sanding block with a small metal clip which allows you to use off the shelf sandpaper cut in strips as shown in photo P1.1.3-4.



P1.1.3-4

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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>).

These mini-sanding 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 Mini Sander comes in handy.

You'll also want a supply of sandpaper in various grits starting with 60 grit. I use 60, 80, 100, 150, 220, 320, 400 and 600 grit paper throughout my model construction. There are many brands and manufacturers available and sandpaper can be found at most local hardware stores.

In addition to sandpaper, I use #0000 steel wool to get an ultra smooth, satin finish on my 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 P1.1.3-6.

## 1. Assembling The Framework 1.1 Introduction



P1.1.3-6

Standard Weldbond is white but dries clear. The Professional Weldbond is yellow but also dries clear. Both 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.

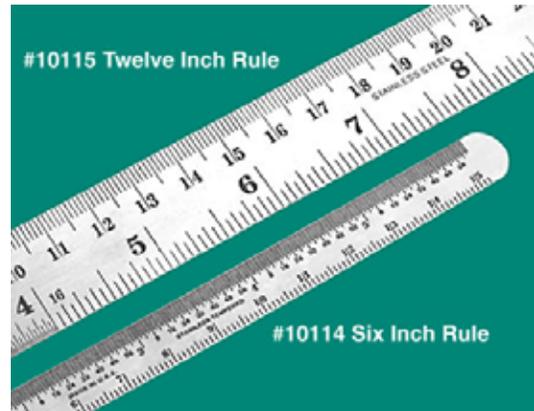
One of the power tools you will need is a motor tool, commonly referred to as a Dremel tool. Many companies manufacture a similar product but I have come to prefer the Dremel brand as shown in photo P1.1.3-7.



P1.1.3-7

With the small drum sander attachment shown in this photo (top left), the tool can be used for a number of shaping situations such as 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.

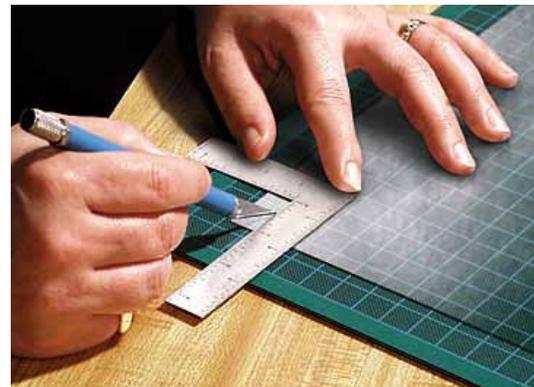
Also useful in your kit assembly are rulers. Several inexpensive rulers will be handy for taking measurements when locating the placement of parts. A good metal 6" or 12" ruler such as the ones shown in photo P1.1.3-8 can be very useful for these situations.



P1.1.3-8

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 P1.1.3-9.



P1.1.3-9

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 P1.1.3-10.



P1.1.3-10

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, I'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 P1.1.3-11.



P1.1.3-11

One other glue you may use in constructing your model is an epoxy. It can be substituted for Weldbond but keep in mind,

debonding parts that have been epoxied together is more difficult.

This is a two part glue that must be mixed, usually in small amounts, at the time of use. I prefer a 5 minute epoxy which sets in 5 minutes and usually cures to its maximum hardness in a few hours. There are many brands on the market today which can be found in any hardware store.

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, and Walmart or K-Mart. These can be seen in photo P1.1.3-12.



P1.1.3-12

Of course, a good pencil will be needed to mark lines and points of reference and my favorite is the inexpensive mechanical pencil such as the Bic shown in photo P1.1.3-13.



P1.1.3-13

You'll also find a need for a roll of double sided Scotch tape. It can be used to temporarily attach patterns to wood for cutting out parts or for holding parts to drawings when assembling them. Poster tape works well and is not quite as sticky. These tapes have an adhesive surface on both sides and can be found in most office

Modeling The Bluenose  
A Practicum from the Lauck Street  
Shipyards, LLC

1. Assembling The Framework  
1.1 Introduction

supply stores, Walmart or K-Mart as seen in  
photo P1.1.3-14.



P1.1.3-14

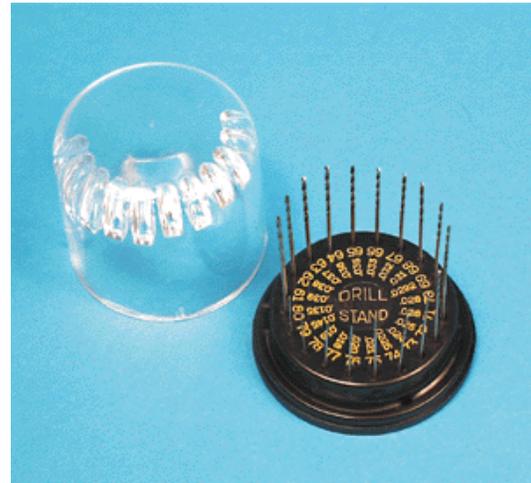
From time to time it will be necessary to drill  
small holes in some parts. A pin vise is the  
simple solution here and can be seen in  
photo P1.1.3-15.



P1.1.3-15

These come in a variety of sizes and can be  
purchased from Micro Mark also. Item  
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 P1.1.3-16.



P1.1.3-16

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. 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 P1.1.3-17.



P1.1.3-17

A handy and necessary little tool to have  
when constructing a model ship is a  
miniature carpenter's square. This item can  
also be found at Micro Mark and is shown in  
photo P1.1.3-18.



P1.1.3-18

And of course, some will want to put a natural finish on their model to protect it and enhance the beauty of the wood rather than use paint. 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 P1.1.3-19 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 my preference is for the satin finish.



P1.1.3-19

A few other items you will find useful in constructing your model are toothpicks and wax paper. I 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.

There will be times when office clips are too small to clamp parts being glued. For these clamping situations, I use mini-clamps found in most hardware stores as shown in photo P1.1.3-20.



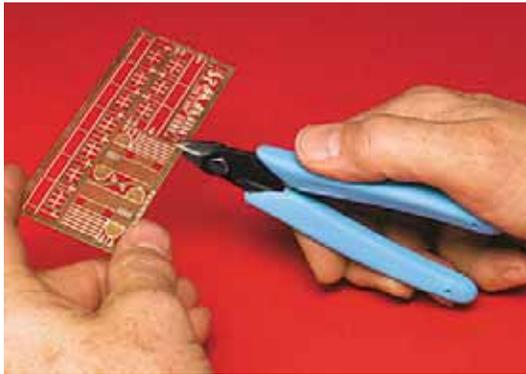
P1.1.3-20

A most invaluable tool that I use all of the time is not actually a tool designed for hobby use. It was designed for the nail care industry and the tool is a series of sanding sticks as shown in photo P1.1.3-21. I purchased these sticks at my local Walmart store in the women's cosmetic department. They come in various sizes and grits and work great for light sanding and cleaning up parts.



P1.1.3-21

To cut photo etched parts from their brass sheets, you'll need a good pair of cutters. I use the Photo Etched Shear from Micro Mark, item 81308 shown in photo P1.1.3-22.



P1.1.3-22

One other tool you might consider to make the gudgeons and pintles and the chainplates is a good soldering iron. Although the kit has been designed so that even this tool is not a requirement, some modelers may prefer to solder these parts from scratch rather than use the kits parts. Weller's electronic soldering station works very well and I've used one for many years. You can also purchase this at Micro Mark, item 81014 shown in photo P1.1.3-23.



P1.1.3-23

Micro Mark also offers a very fine pencil tip for the Weller which I prefer and use in mine. This tip is item 81015 and can be seen in photo P1.1.3-24.



P1.1.3-24

You'll also need some flux and solder. Item 80822 from Micro Mark is ideal for soldering small parts. This is shown in photo P1.1.3-25.



P1.1.3-25

A soldering pad may also be used to solder parts on. These pads ensure that you do not burn your work surface and are fire proof. Item 80751 from Micro Mark is excellent and sufficient for this purpose as shown in photo P1.1.3-26.



P1.1.3-26

Some of the brass parts such as the gudgeons and pintles or the chainplates must be hand painted. I recommend using a solvent based paint such as Floquil Engine Black. The Micro Mark item number for this paint is 60106 as shown in photo P1.1.3-27.



P1.1.3-27

And a good fine tipped paint brush such as the sable #0 paint brush item 27142 from Micro Mark works quite well. See photo P1.1.3-28.



P1.1.3-28

To rig your model, blocks included in your kit have to be seized to eyebolts, yardarms or other rigging. To make this process easier, I use a jig called the Triple Grip Third Hand from Micro Mark, item 21120 shown in photo P1.1.3-29.



P1.1.3-29

You'll need sandpaper of various grits ranging from 80 to 400 or higher. You'll need #0000 steel wool, toothpicks and wax paper. A sharp pair of scissors will help in cutting out patterns which you will use to construct certain parts. And some beige sewing thread will be needed to seize the blocks to your rigging.

With the tools outlined in this section, you should be able to build your 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 your museum quality models and display them for family and friends on a mantle or table.

**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

- 5 minute epoxy
- Office clips
- Mechanical pencils
- Double coated Scotch tape
- Pin vise
- Small drill bits
- Tweezers
- Mini carpenter's square
- Minwax Wipe On Poly
- Mini clamps
- Photo Etch Shears
- Soldering iron with solder
- Soldering flux
- Soldering pad
- Black paint
- Paint brush, #0
- Triple grip third hand
- Sandpaper
- #0000 steel wool
- Toothpicks
- Wax paper
- Sanding Sticks
- Scissors
- Beige thread

**1.1.4 Contact Information**

If at any time you need to contact me, you may do so by email or regular mail. Please use the forum mentioned above for all technical questions about constructing your kit. My contact information is:

Bob Hunt  
Lauck Street Shipyards, LLC  
129 Abby Lane  
Strasburg, VA 22657  
<http://www.lauckstreetshipyards.com>  
(540) 435-5912 (orders only)

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Modeling The Bluenose  
A Practicum from the Lauck Street  
Shipyards, LLC

1. Assembling The Framework  
1.1 Introduction

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### 1.2 *Preparing The Center Keel*

The center keel is the backbone of your model. This is true for all model ships. It is made of three parts labeled parts 1, 2 and 3 which can be seen on sheet 2 of your plans.

The first thing we must do is glue these parts together. First remove the parts from their billets using your #13 or #11 X-acto blade. The edges need to be cleaned up with the True Sander. You don't want to be too aggressive in your sanding. You want to remove the burned edge without changing the shape of the part.

Once the parts have been cleaned, lay them across your plans matching edges where the parts are joined. The important thing to look for is that the top and bottom edges match up so that when glued, the three parts form one continuous piece. If your pieces don't fit together properly, it may be necessary to trim the tabs some on adjoining pieces.

Once you are satisfied with the fit, remove the parts from the plans and lay them across some wax paper. Use Weldbond to glue the edges to each other forming the full center keel assembly. The waxpaper will ensure that the parts don't stick to your work surface. You can also place some weights on top of the parts to ensure that they lie flat against the work surface. Try not to disturb the parts once you've glued them. It will take several hours for the glue to dry.

Once the glue has dried, I like to add some thin strips of 1/16" basswood over the glue joints to reinforce them. Your kit contains a billet that is 1/16" thick and some scraps can be cut from this billet. Photo P1.2-1 shows the aft joint with a strip of 1/16" wood glued over the joints. Glue a strip on both sides and be sure that the strip does not obstruct any of the slots in the center keel. But before you glue these strips to your keel, you will need to mark the bearding line.



P1.2-1

You will notice a line drawn across the face of the center keel. This line was taken from the plans and is called the bearding line. Another line found below the bearding line is the rabbet line. The area between these two lines form the rabbet joint.

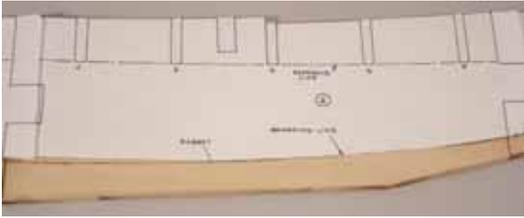
The rabbet joint is a cut out area on the keel that is used to tuck the planking into. This seals the hull planking to the keel so that water can't enter the hull. We want to duplicate this feature on our model as a matter of common construction practice.

To transfer these two lines from the kits plans to the model, you will need to create a copy of the profile drawing on sheet 2 of your plans. You can either trace the center keel with the bearding line and rabbet line using tracing paper or you can create copies on a copying machine as I have done. Photo P1.2-2 shows the copy laid out on my center keel. Notice that I have cut the copy on the bearding line. This is so that I can run my pencil along the edge and thus transfer the bearding line to the center keel of my model.



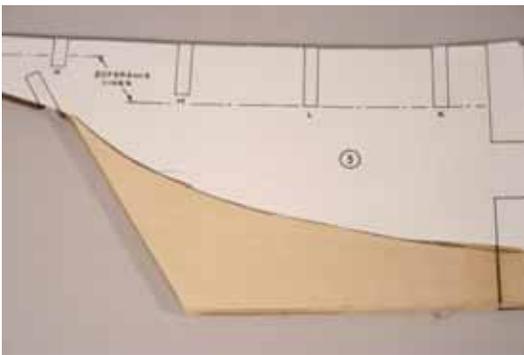
P1.2-2

Photo P1.2-3 shows a close up of the forward portion of the center keel. The bearding line has been transferred to the center keel.



P1.2-3

And in photo P1.2-4, you see the aft portion of the center keel. At the aft end, the bearding line rises in a curve to the top of what would be the sternpost.



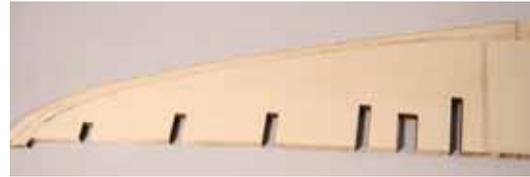
P1.2-4

Once the bearding line has been marked on both sides of the center keel, you can glue the reinforcement strips over the joints in the keel as shown in photo P1.2-1 above.

You'll notice in photo P1.2-1 that the rabbet line has also been drawn. The rabbet line at the stern is just a straight line but at the bow, it rises and runs parallel to the bearding line. The area between these two lines is cut to form the rabbet joint.

The rabbet joint does not go all the way through the keel. So care must be taken when cutting this joint. Remember that you must cut it on both sides of the center keel and if you cut too deep, you will easily cut all the way through and turn your center keel into more parts than it should be!

The joint is more of a bevel. Start by just scoring the wood along the rabbet line with a #11 X-acto. Then using a #10 or #22 X-acto, you can cut from the bearding line down to the rabbet line making your cut slightly angled. Photo P1.2-5 shows the rabbet joint cut at the bow.



P1.2-5

The rabbet joint at the stern is much broader because the bearding line rises upwards while the rabbet line remains parallel to the keel. Photo P1.2-6 shows the rabbet joint at the stern.



P1.2-6

Here you can see that the joint is not deep, perhaps 1/16" but no more. Repeat this process on both sides of your center keel. Once you have finished cutting your rabbet joint, use a strip of 100 grit sandpaper folded several times to sand the joint. Try to keep the rabbet line, which should have been cut perpendicular to the surface of the keel, clean. Remember that the planking must fit snugly in this joint and the edge of the planks must fit tightly against the rabbet line edge.

With your center keel now prepared for framing, we can move on to the next step in our construction, adding the bulkheads.

### 1.3 Adding The Bulkheads

With our center keel now prepared, we can add the bulkheads. We've cut our rabbet joint which extends from the bearding line to the rabbet line. Later we will add planking to the hull and this joint will be used to seal the hull planking where it joins the keel.

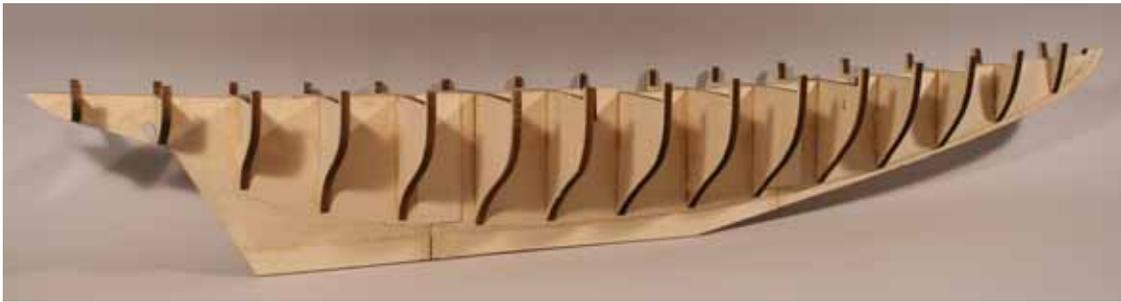
Each bulkhead must be removed from its parts billet just as you did with the center keel. It's not necessary to sand the edges of the bulkheads before installing them. Once the hull has been framed, we will be sanding it in a process called *fairing the hull*.

Each bulkhead is labeled from A to O. You should install the bulkheads in a logical sequence. I usually start at the bow and work aft. This is a fairly simple procedure but before you begin, test fit each bulkhead in its appropriate slot.

The bulkheads should fit snugly but not so snug that you have difficulty installing and removing them. If they are too loose, you could run into an alignment problem. Bulkheads that fit too tightly can be loosened by using your X-acto to trim small amounts from either the bulkhead slot or the center keel slot or both.

If the bulkheads fit too loosely, thin strips of wood can be added in the slots for a better fit. But in most instances, you'll find that the bulkheads fit just right.

Apply a bead of Weldbond to both slots and only glue one bulkhead at a time. When gluing the bulkhead to the center keel, use your carpenter's square to check the alignment and ensure that the bulkhead is perpendicular to the center keel. The tops of the bulkheads should meet the top of the center keel as shown in photo P1.3-1.



P1.3-1

As you can see, the bulkheads all meet at the top with the top of the center keel. They still show the laser burns as well. The bottoms of the bulkheads should fall at or slightly below the bearding line. Usually they will fall below the bearding line at the bow.

You should allow the assembly to dry for several hours, even a day before moving on to the next step, fairing the hull. This is so that the glue has had ample time to set. Sanding the hull in the fairing process can put pressures on the bulkheads causing them to break loose if the glue has not had ample time to set up.

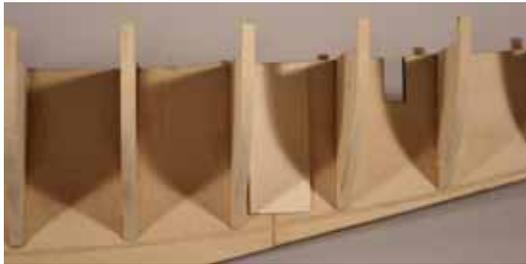
The objective in fairing the hull is to produce a smooth surface for the planking to lie against. Right now the hull has a stair stepped look to it when viewed from the bow or stern. We need to remove this by using our sanding block. Earlier in this chapter I recommended a sanding block that had a rubber pad on it, the mini-sander. I find this to be an excellent tool for fairing the hull.

I like to start with 80 or 100 grit sandpaper and get the bulkheads faired by sanding lengthwise across the hull. This requires a light touch. The wood is soft and will sand quite easily. If you use too hard of a touch when sanding, chances are you'll break a

## Modeling The Bluenose A Practicum from the Lauck Street Shipyards, LLC

bulkhead or break a glue joint. You're sanding parallel to the center keel.

Photo P1.3-2 shows the edges of some of the bulkheads at the bow. Notice that the burned edges have been removed by the sanding.



P1.3-2

In photo P1.3-3, you see the forward most bulkhead, bulkhead A and the edges are beveled from the sanding.



P1.3-3

A good way to test the fairness of your hull is to place a strip of planking across the hull. The strip should lie flat and touch all bulkheads. There should not be any dips or valleys and where the hull curves around to the bow, the planks should lie flat against each bulkhead. The inside edges of the bulkheads above the deck line should also be faired. You will add a waterways plank in chapter 2 and it needs to fit flush against the inside of the bulkheads.

At the stern, the bulkheads are faired right down to the center keel as shown in photo P1.3-4.

## 1. Assembling The Framework 1.3 Adding The Bulkheads

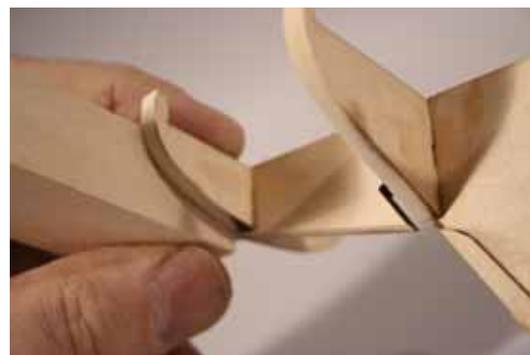


P1.3-4

In this photo you can see that the sternpost has been added. Identify the part from your kit and glue it to the aft end of the center keel keeping the bottom aligned. An edge is formed where you trimmed the rabbet joint and planks will fit into this joint remaining flush with the surface of the sternpost.

Remember that you want to create a smooth flow across your hull in all areas. The top surface of the bulkheads should also be sanded so that the deck planking lays flush against the tops of each bulkhead.

At the very stern of the model we need to cut and shape a filler block. Your kit contains a piece of basswood that is  $\frac{3}{4}$ " x 1" x 3". This piece is used to make this filler block. First hold the block against the center keel and behind the last bulkhead as shown in photo P1.3-5. Using a pencil, mark the outline of the last bulkhead across the face of the block as shown.

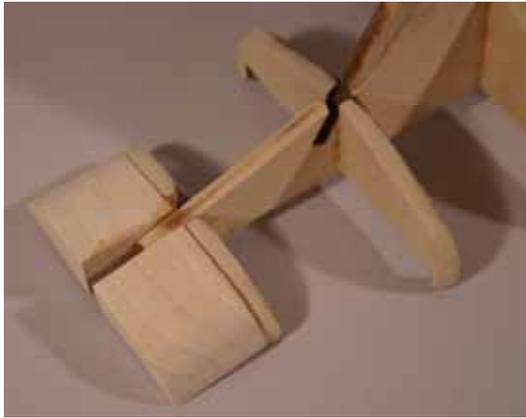


P1.3-5

Modeling The Bluenose  
A Practicum from the Lauck Street  
Shipyard, LLC

1. Assembling The Framework  
*1.3 Adding The Bulkheads*

Once you've marked the shape of the block you can cut it out. This can be a bit tricky if you do not have a scroll saw. It can be cut by hand with a jewelers saw. Another approach is to cut the block in half and then use your Dremel tool with the drum sanding attachment to shape the block. Photo P1.3-6 shows the block cut out and glued to each side of the center keel with a block glued to bulkhead O on each side.



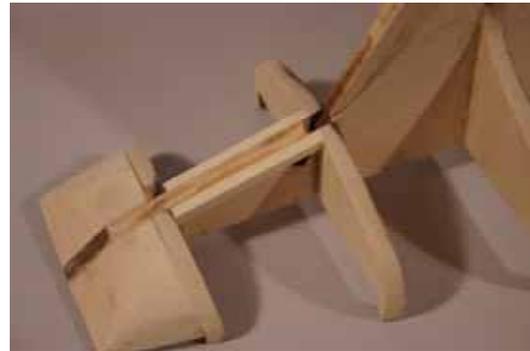
P1.3-6

Once these blocks have been cut out and attached, they must be shaped to blend into the hull. The aft end must be cut to match the aft end of the center keel. And they must be trimmed and sanded to follow the curvature of the hull smoothly. Photo P1.3-7 shows the blocks after shaping and fairing.



P1.3-7

Photo P1.3-8 shows the blocks from their underside.



P1.3-8

Here you also see two strips of wood glued to the sides of the center keel between bulkheads N and O. These are called the horn timbers (see the profile drawing on sheet 2 of your plans). They are cut from 1/8" strips provided in your planking. You will have to bevel the ends to get a good fit between the bulkheads due to the angle of the center keel in relationship to the bulkheads.

You are now finished with the basic assembly of your model.

***1.4 Chapter Summary***

In this chapter we have learned about the rabbet joint and how it is derived. We've prepared our center keel for framing by transferring the bearding line and rabbet line from our plans and we've cut the rabbet joint on both sides of the center keel.

Once the keel was prepared, we installed our bulkheads and faired the hull with a sanding block. A filler block was added at the aft end to form the final shape of the stern.

In our next chapter we will begin planking our hull.