

# Modeling a Muscongus Bay lobster smack

An authentic scale model of a real boat

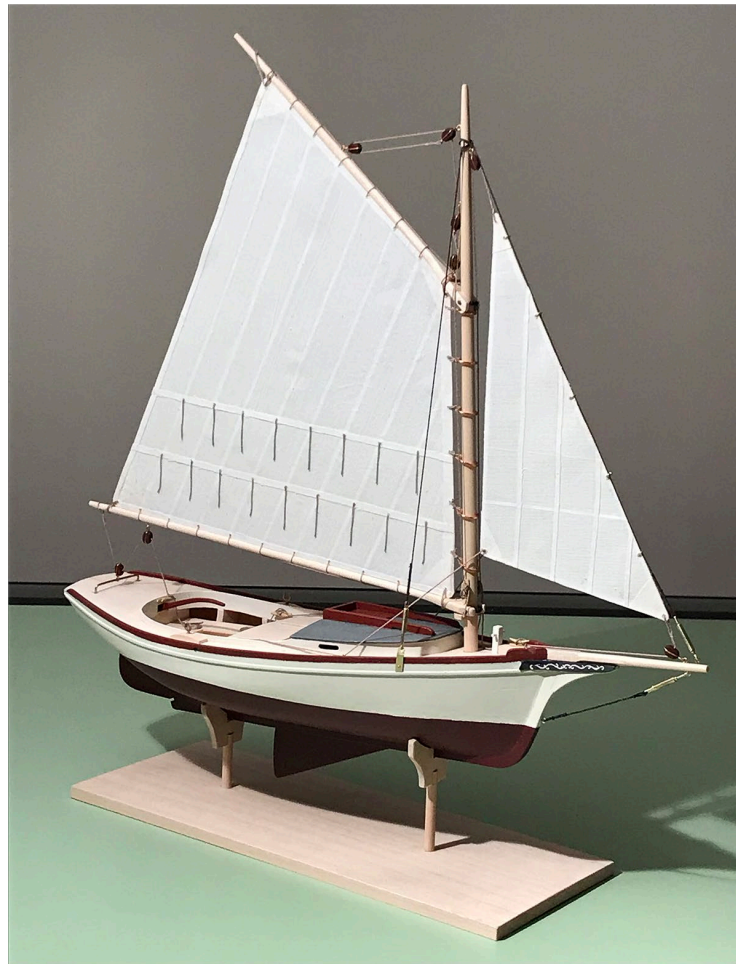
*The third in a series of progressive model tutorials*

Kit number MS1472

Scale 1:24 (1/2" = 1' 0")

Model overall length 14½", width 3¾", height 14"

Baseboard: 4" by 10"



Model design and instruction book by David Antscherl

Made in the USA with pride  
by Model Shipways,  
a division of Model Expo



© Model Expo 2019, 2020  
Visit us at:  
[www.modelexpo-online.com](http://www.modelexpo-online.com)

## *Lobster smack model parts list:*

*Your kit should contain the following:*

- 1 sheet  $\frac{1}{4}$ " basswood 4" x 12"
- 1 sheet  $\frac{3}{16}$ " basswood 3" x 12"
- 1 sheet  $\frac{5}{32}$ " basswood 3" x 12"
- 2 sheets  $\frac{1}{8}$ " basswood 4" x 12"
- 1 sheet  $\frac{3}{32}$ " basswood 4" x 12"
- 1 sheet  $\frac{1}{16}$ " basswood 4" x 12"
- 1 sheet  $\frac{3}{64}$ " basswood 4" x 6"
- 7 sheets  $\frac{1}{32}$ " basswood 4" x 12", and 1 4" x 6"
- 2 12" lengths of  $\frac{1}{16}$ " x  $\frac{1}{32}$ " basswood strip
- 2 12" lengths of  $\frac{3}{32}$ " square basswood strip
- 1 6" length of  $\frac{3}{16}$ " dowel

Sail cloth

- 0.4 mm beige line
- 0.7 mm beige line

- 6" of  $\frac{1}{8}$ " wide brass strip
- 24" of thin copper wire (24SWG)
- 12" of thick copper wire (18SWG)
- 12"  $\frac{1}{16}$ " brass rod

*Fittings:*

- 4 turnbuckles
- 8 single blocks
- 2 brass pins
- 12  $\frac{1}{16}$ " eyebolts
- 6 cleats
- 6 split rings
- 2 rowlocks

## *Tools and materials:*

Please read pages 34-37 for a description of all the tools and materials that you will need to build the model successfully. You will already have most of these if you have already built the Model Shipways MS1470 Lowell Grand Banks dory and MS1471 Norwegian sailing pram models. Additional tools needed for this model are shown on page 37.



*Trail board appliques*

*Paint needed:*

- Primer
- Warm White MS4832
- Hull Red MS4968
- Hull Copper Red MS4814
- Deck Medium Gray MS4826

## *Please read this first!*

**This is not a ‘first time’ beginner’s kit. I want you to be successful, so strongly recommend that you build the Model Shipways dory or pram kit first. You will learn the basic skills and techniques needed to successfully complete this model.**

### **Plans:**

Some drawings included are for reference and may not be exactly to size. Review and study both drawings, photographs and assembly instructions before starting so that you understand how the parts come together. Please follow the recommended building sequence!

### **Make allowances:**

You may need to adjust and compensate for small differences as your model shapes up and how the parts relate to each other. As long as it looks right, it is right. Again, study the photographs.

### **Kit lumber:**

This kit contains laser cut basswood parts. A word about laser cutting: a common misconception is that the parts should simply be punched out of the carrier sheet. Not so! Laser cut parts are held in the carrier sheet by small bridges of uncut wood called *tabs*. These may be oriented at any direction relative to the grain.

It is always better to *cut* through all tabs rather than try to push out parts and risk breakage. You may need to cut through not only the tabs but any part of the outline not cut completely through the sheet. Turn the carrier sheet over and cut from the back to release parts without damaging them.

Preparation is needed before gluing laser cut parts. The laser cutter burns through the wood leaving a brown, shiny surface. This does not allow for good glue adhesion. I recommend lightly sanding or scraping away the char before gluing. It is not necessary to remove all the char unless a finished wood surface is to show. Sometimes simply scraping using the back edge of a #11 blade (see the **tools and materials** sheet) is sufficient.

### **Take your time:**

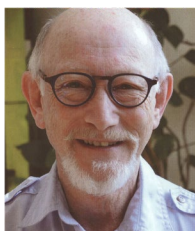
Building a model is not a race! Take the time to read the instructions over first to give yourself an overall view of the process and to familiarize yourself with the parts’ names.

The *sequence* of building a model is important. You don’t want to paint yourself into a corner and find out that you should have fitted something first that is now difficult or impossible to add. I’ve worked out the best order of things for you to make it easy.

In summary, enjoy the process of building a ‘real’ boat model. The skills you are developing as you constructed previous models will give you confidence as you tackle this more challenging one.

So, you'd like to build another ship model? Well, here you are again! For this kit, some experience is necessary. If you've not built a kit before, I strongly recommend you start by building the Model Shipways Lowell dory or Norwegian pram model first.

Let me introduce myself first. My name – Antscherl, also spelled Ančerl – was originally Bohemian-Moravian. However, I was born and brought up in England close to the National Maritime Museum at Greenwich. I've been building model ships since I was about six years old, which is a long time now. I became a professional model-maker in 2000 and have been happily sharing what I've learned over many years by way of articles and books, as well as giving workshops in both the U.S. and Canada. This progressive series of models is yet another way of helping folk like you either become model makers or better model makers. I'm glad you've decided to join me. So, let's get to it!



Each model in the series will teach you new ideas, skills and tricks that prepare you for the next one. Please take a few moments to read about **tools and materials**, pages 31-33. You can add to these gradually as needed, as you progress to building more complex models.

First, a little background on the Muscongus Bay lobster smack. Muscongus Bay is located on the East Coast north-east of Portland, Maine. The place name comes from the Abenaki First Nation word for “fishing place,” or “many rock ledges.” John Smith recorded the river in 1616 as Nusconcus, also spelled Nuscongus. The boats, sometimes known as Friendship sloops, were also called sloop boats or Maine lobster sloops.

These boats had sleek lines and were fast sailors with two holding wet tanks for their catch. They had a pivoting centerboard to help reduce leeway drift when the wind was on the beam.

Our model is at a scale of 1:24. One half-inch on the scale represents one foot in real life, or 24 times smaller than the real boat.

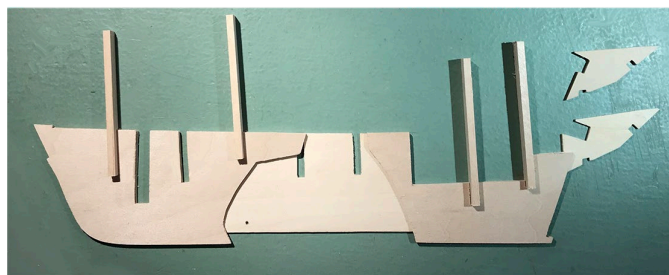
**Important note:** the photographs in this booklet are of the prototype model, so may not be exactly the same as your production model.

You will find some interesting challenges to build this model well. This is the first model that you will be planking using *carvel* or flush strakes. Don't rush; it's the journey, not the destination, that's important! **Red numbers** refer to the laser cut sheets.

### 1. The central spine - Part A **Sheets 1, 2, 3**

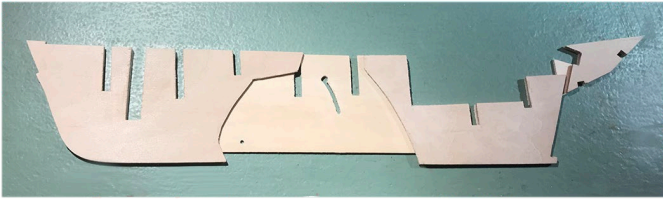
To accommodate a working centerboard, the keel and central spine in this model is made of several pieces. To begin, you will need the starboard spine piece and the three center pieces. Carefully remove these from the sheets, taking care not to break off anything along the grain. Do not clean off the char at this point.

Lay down one spine piece on a flat surface. The three center pieces are to be white glued to this so that the slots and top surfaces all align perfectly. To prevent the pieces sliding as you glue them up, put spacers, provided, into the slots as shown below. If you are working on a dining table, put either clear cling wrap or waxed paper underneath before using glue!



Glue down the two larger pieces first. Make sure the spacers are not accidentally glued in. Clamp or weight the assembly flat and allow the glue to dry. Once this is firm and flat, glue and weight the third, smaller piece

in place. Your model should now look like the next photograph.



## 2. The centerboard

Sheet 4

Remove and clean up this part from the carrier sheet. Sand round all the edges and corners.

### *Optional extra detail:*

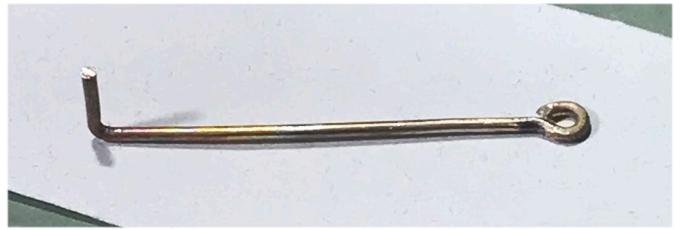
For a centerboard that you can raise or lower, take some  $\frac{1}{16}$ " brass rod, anneal it (see below) and pass it through the pivot point holes. Cut off a length that will protrude slightly each side of the assembly once the second spine side piece is in place.

*If you prefer a fixed centerboard, skip ahead to section 3.*

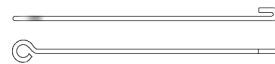
Cut a  $1\frac{3}{4}$ " length of  $\frac{1}{16}$ " brass rod and *anneal* one end of this. Annealing softens the metal and is done as follows:

You will need a micro butane torch (see tools and materials, page 34) and a soldering pad. Make sure that there are no combustible materials nearby. Turn down room lights. Now fire up the torch and play the tip of the blue part of the flame on one end of the rod until it glows cherry red. This should take about half a minute. Turn off the torch and allow to cool. **Caution!** The metal will be hot for several minutes after it stops glowing. Now that part of the rod will be soft, not springy, and you can continue.

Measure  $1\frac{3}{8}$ " along the rod and soften the other end in the same way. Do not heat the whole rod! Allow to cool. Bend the end of the rod into a loop to the pattern using round-nose pliers and cut off any excess with cutters. Adjust its shape as needed. Now bend a  $\frac{1}{4}$ " of

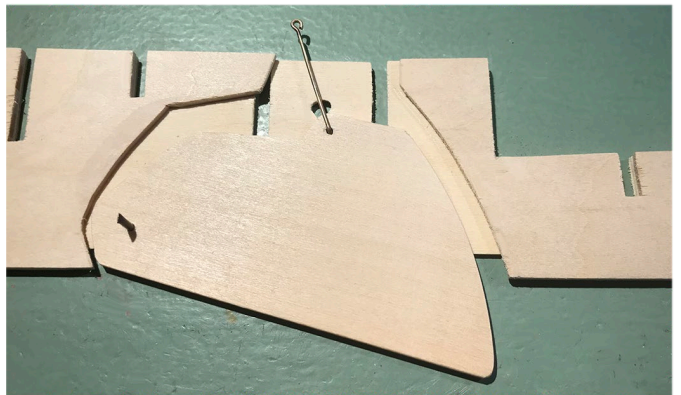


the other end to a right angle at right angles to the loop with parallel pliers. Use the pliers to straighten the wire if needed. Use fine wet-and-dry carborundum paper to shine up the completed metalwork. This completes the centerboard pull rod.

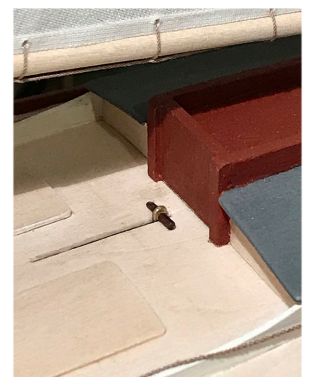


*Pattern for centerboard pull rod*

Now hook the end of the rod through the hole in the centerboard and bend it around as shown below. *Make sure that the hook is in the direction shown and the long part of the rod is on the correct (port) side!* Place the centerboard in the slot of the keel structure with pull rod in the groove. Make sure that this moves freely when the pivot rod is in position as well. You are now ready to proceed.



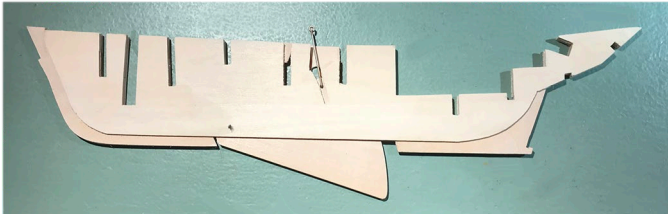
Make a small handle from a round toothpick about  $\frac{3}{8}$ " to  $\frac{1}{2}$ " long to insert in the loop later in the build. I painted mine to resemble mahogany.



### 3. The central spine - Part B

Sheet 5

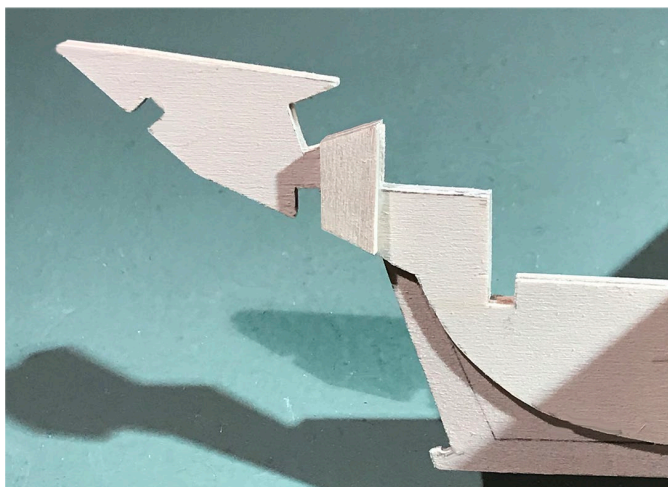
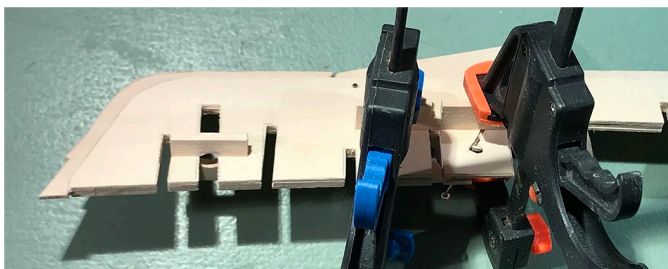
The model is now ready to have the other spine piece attached. If opting for a fixed centerboard, glue this in place now, either in the up or down position. Repeat using the spacers and weight or clamp sequence to attach the second spine piece. If you have a moving centerboard, make sure it isn't accidentally glued in!



### 4. Reinforcing pieces

Sheet 3

There are four pairs of pieces. The forward pair, A, help locate the mast accurately later on. These glue port and starboard sides. (Port side is the left side as you look forward from aft.) The middle pair, B, help support the half-bulkheads. Make sure this lines up with the marks on the spine. The next pair, C, reinforce a weak area. The last pair, D, will provide support for plank ends under the transom.



### 5. The bulkhead frames

Sheets 1, 3, 6

Let the whole assembly dry thoroughly under weight while you free the bulkheads for the hull. While this model has authentic planking, framing has been simplified for this intermediate level model. Clean varnish off the gluing surfaces in the slots. Dry-fit the frames and make any adjustments needed now. Note that frame number 4 is in halves to allow the centerboard to move, if you have chosen that option.

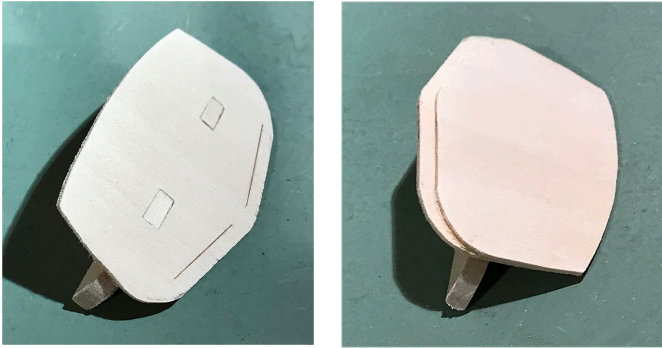
Once satisfied that the frames fit perfectly with their tops flush with the spine, remove the cockpit floor piece. Dry-fit all the frames and floor. Frames 9 and 10 slot in from below.



Glue the frames in carefully in the following sequence, making sure that they are at right angles to the spine as seen from above and not tilted to one side. The sequence to use when attaching the frames is:

4, 5, 3, 6, 7, 8, cockpit floor, 9, 2, 1

Be sure *not* glue in frame 10 yet! The transom needs to be assembled with this frame and it is far easier to do off the model.

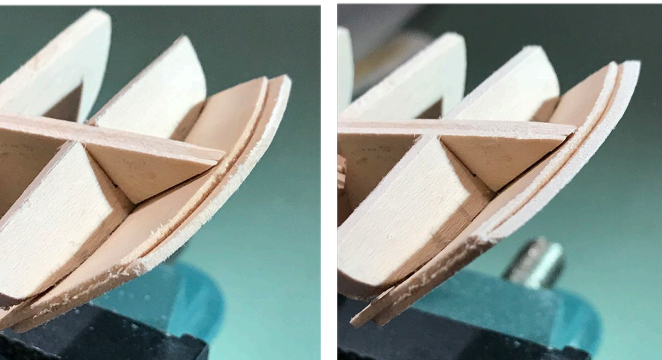


## 6. Frame 10 and transom

Sheet 2

The transom is slightly curved, and made of two layers. Wet one side of the inner piece and it will begin to bend. Glue it in place on the tabs of frame 10 (above left).

When dry, add the outer piece over the top in the same way, but offset the second layer upward to the marked lines as shown (above right). Make sure that there is adequate glue spread and good contact between the two layers. When dry, glue this assembly to the spine.

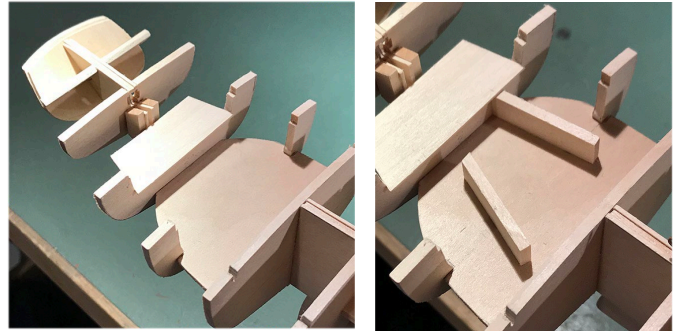


The upper surface of the transom (above left) now needs to be sanded level. Using the aft two frame tops as a guide, sand the top of the transom until it is flush to the top of the spine at the center (above right). The inner layer may not be flush; this is not important. The framing is now complete.

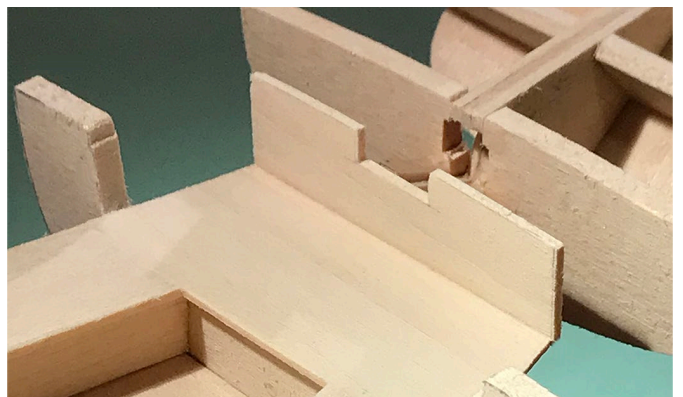
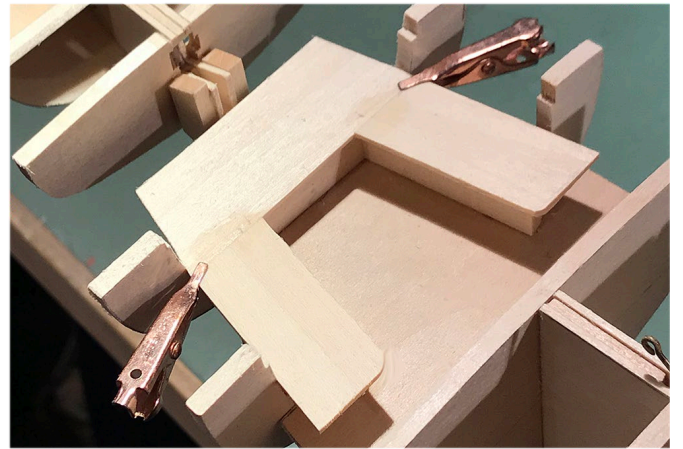
## 7. Cockpit seats

Sheets 4, 8

It is best to install these now. First glue in the aft seat (next column, top left). Next take the two seat supports and cut or sand one end to an angle as shown



(above right). Make sure that they fit nicely under the lip of the aft seat. Sand a little if necessary. Glue the pieces along the guide lines. Glue in the two outboard seats as shown below, making sure that they are level with the aft seat. I used clips for this (below).

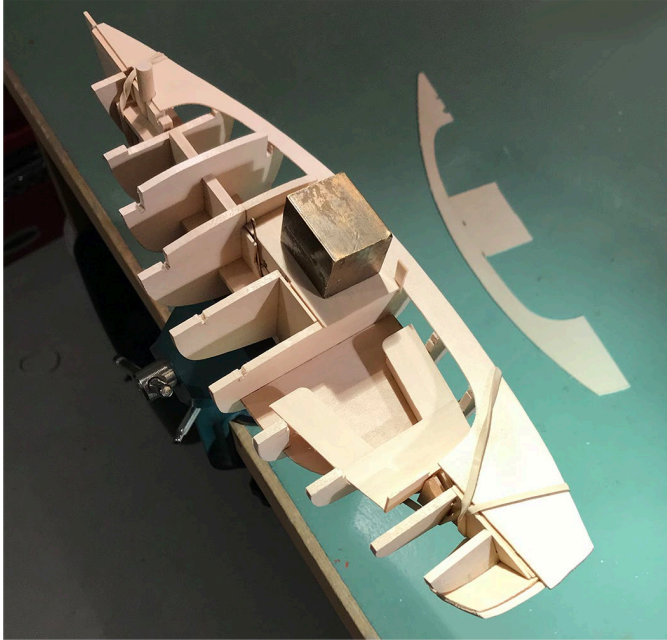


Finally, glue in the seat back as shown. While this area is still accessible, you may choose to finish it with paint or varnish.

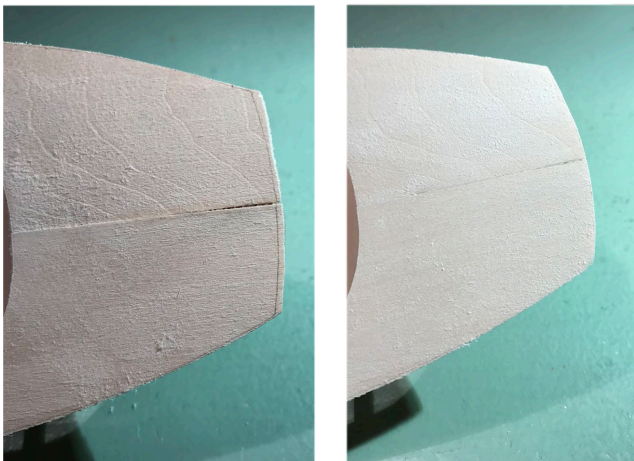
## 8. The deck

### Sheet 7

This curves in two planes. To make installation easier, it is in two halves. I recommend placing a 1/4" dowel or drill bit in the mast socket to help locate the deck accurately.

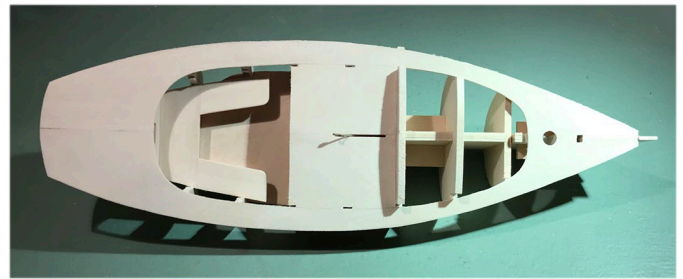


Dampen the top surface of one half of the deck to make it more pliable. It will curl a little, which is normal. Have a number of elastic bands on hand. Spread white glue over the tops of the frames and spine, place the deck and position it. Use the elastic bands and small weights to hold the roundup and sheer of the deck while the glue sets. Make sure that the stub mast or centerboard rod (if installed) are not glued in!

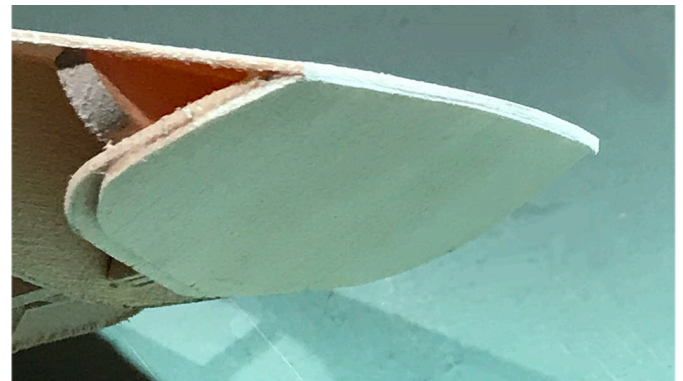


Add fillets of glue under the deck to make sure of good adhesion to the frames, especially the outer edges. This is important when it comes to fairing the frames. If there is any slight gap, make sure it is glued down or add small slivers of wood or card to ensure a smooth sheer curve. Repeat this process with the second half.

When gluing in the second deck piece, try to abut the joint together on the centerline as tightly as you reasonably can. If there is a slight gap anywhere, this can be filled with wood dust and white glue later (photographs below left).



The deck at this stage should look like the photograph above. If an area is not glued down tightly, wet the area and press it into place. When thoroughly dry, sand smooth. The fore edge of the cockpit will need to be sanded flush to the bulkhead and the edge rounded over.



Now sand the deck overhang vertically at the transom as shown. The edge should be an even width all the way across the top of the transom. Your model is beginning to take shape. However, there is still much left to do!



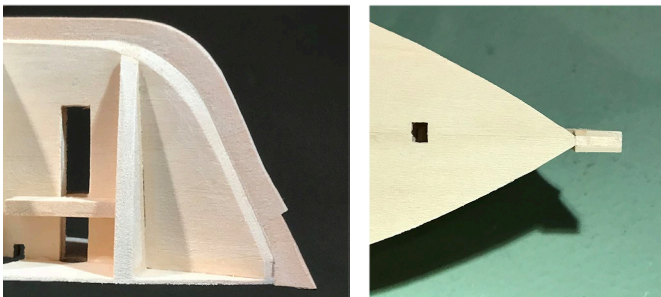
## 9. Fairing the hull

Sheet 11

This will require a flexible sanding stick. Start by rubber cementing a strip of 100 or 150 grit sandpaper onto the of  $\frac{1}{32}$ " wood strip from the carrier sheet. Place the hull upside down on a soft surface such as an old towel. A swivel vise is also very helpful. For the hollow area near the stern, make another sanding stick around a piece of dowel.

There is no need to sand the surfaces smooth with finer grades of sandpaper. Rough surfaces will help key glue when planking is applied. Go gently and do not over-sand. All char should almost disappear.

There are two areas that require extra attention. The first is at the bow. The outer layers of the spine need to be beveled as shown in the photograph. Make sure that the bevel extends all the way to the central spine without any step. A sharp blade may help here.



A similar bevel is needed near the stern. Here the sanding dowel will be most useful in the hollow areas. Study the photograph below to understand what is needed. Attention to this now will result in a smooth planking job later.

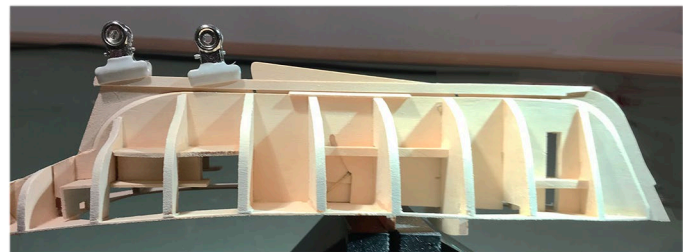


Check that your fairing work results in nice, smooth curves all over the hull bottom.

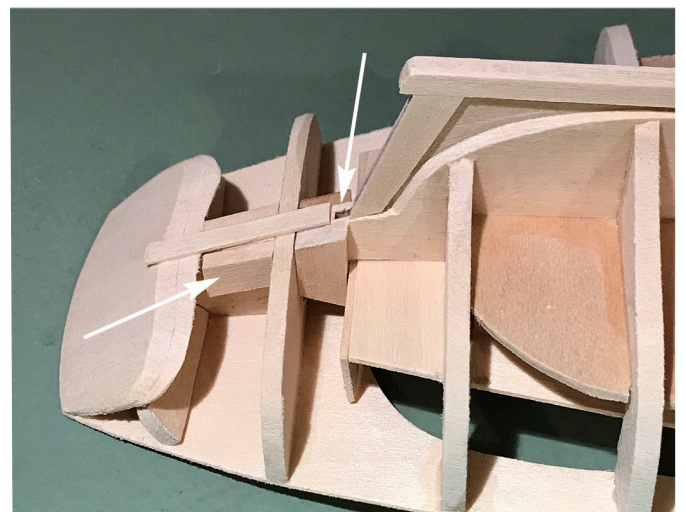
## 10. Stem, keel and sternpost

Sheets 2, 5

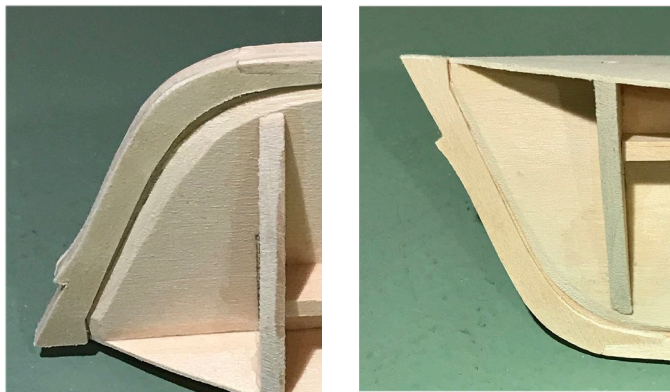
The outer layers of these can now be added. The keel pieces go on first. Glue these on carefully, one at a time, flush to the bottom of the central spine. Glue the stern section down first with a  $\frac{1}{32}$ " spacer placed as shown below to create a groove, called the *rabbet*, for the first or *garboard* plank. Avoid gluing the spacer or movable centerboard, if you have installed it. When the glue has set, glue down the fore part of the keel. Repeat this process on the other side of the model. Finally, sand the bottom surface of the keel smooth.



Next, add the stern post pieces on each side, flush to the aft edge of the spine. Make sure that the two pieces that will support plank ends (arrowed, below) are flush with the spine. Then add the central plank as shown. Make sure that the gap at the stern post (also arrowed) for the rudder pivot rod is not blocked by this plank! Leave the aft end of the plank long over the transom for now.



Finally add the two stem pieces in the same way. Sand the forward surface smooth (photograph below left). Finally, sand the top of the stemhead flush to the deck (below right). You are now ready to begin planking the hull.



**Planking hints:** Carvel or smooth edge-to-edge planking requires shaped planks. Straight planks are only suitable for a flat surface such as the side of a house. The planks supplied are in sequence, and each is a specific shape designed to sit properly over the frames. Remove only one plank at a time from the carrier sheer; don't get them mixed up! Some planks will need their edges beveled slightly for a tight seam.

This next stage of building is the most exacting and should not be rushed. **Take your time on each plank.** I strongly recommend you that use a swivel vise while planking your model (see tools and materials).

Unlike many other model kits, there is only one layer of planking, just like the real thing. Although curved, these planks will still need to be bent and twisted. This can be done wet or dry. If you steam or soak a plank, it must be allowed to dry out before you glue it on. If you don't it will subsequently shrink, leaving unsightly gaps.

It is good practice to plank a strake at a time on alternate sides of the hull. If you plan on painting the hull, then you can afford to be a little less meticulous, but I still recommend being as careful as you can.

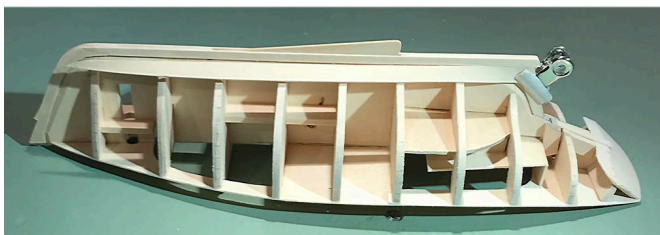
## 11. The garboard

**Sheets 9, 10**

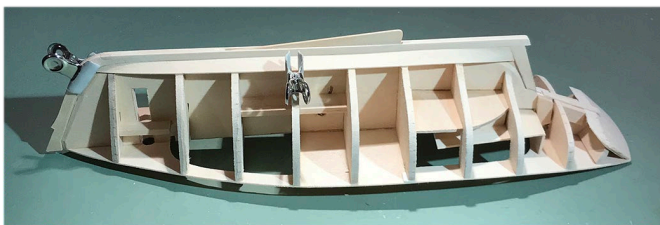
This strake has the most extreme twist to it. Soak the plank in hot water for five minutes or until pliable. Clip and rubber band it in position on the hull and let it dry thoroughly. Make sure that the plank sits in the rabbet or groove along the keel. As with all planking, take your time with it.

*I do not recommend using pins, as the plank may split and besides, there would be a lot of holes to fill later.*

Once dry, fine-tune the fit of the plank ends to the rabbet at the stern and bow. Once it fits nicely, glue the aft end of the plank to the stern rabbet first. Let this set (photograph below).



Glue in the rest of the plank, making sure not to glue it into the part of the rabbet where the centerboard sits. Make sure that the edge of the plank is firmly in the rabbet along its length. If you have shaped the plank properly, very little clamping or clips will be needed while the glue sets (photo below). Repeat this process on the other side of the hull.



## 12. Strake 1

**Sheets 9, 10**

We count the strakes up from (but not including) the garboard. You will see that the next plank, while flat, is a different shape to the garboard in order to fit neatly along the hull. (Technically, a *strake* can consist of more than one plank.)

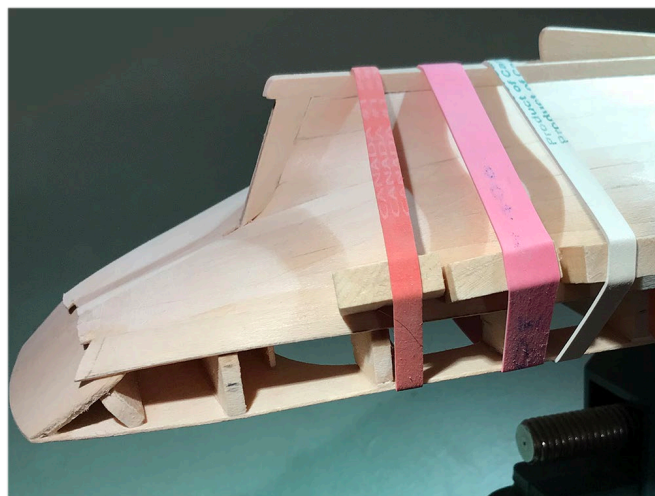
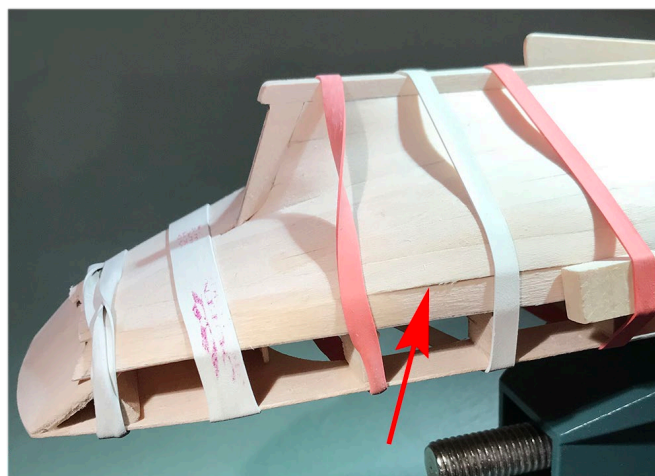
As before, soak the plank well to soften it, then clip it to the bow and form it along the hull. Make sure it is snug against the edge of the garboard all the way along. This plank is longer than required, so will need trimming later. Clip the overhang across the stern post for the moment. Let things dry thoroughly. Check for any area that is not sitting smoothly or tight to the garboard. Re-wet where needed and provide suitable hold-downs while it dries.



**More hints:** If you accidentally dent a plank, re-wet the spot and the wood will swell back into shape.

If a plank is not quite level with the previous plank (top photo, next column), wet it again in that area, then wait until it is soft. You can then gently push and mold it into position (middle photo).

If there is a gap between the planks anywhere, wet as before to soften the plank, run a little diluted white glue into the joint, then push it tight using clips or some other way to secure the plank until it dries. The improved result is seen in the third photograph.



There are small tick marks on frames 3, 6 and 9 to guide you as to whether your planking is getting out of line. If so, you can adjust subsequent strakes so that the sheer strake ends up in the correct place.

Once dry, mark and trim the aft end of the plank to fit in the rabbet at the stern post, then glue in the plank as you did the garboard. Repeat on the other side of the hull.

### 13. Strakes 2 and 3 Sheets 9, 10

These are dealt with in exactly the same way as before. Once strake 3 is in place the job gets easier as there is much less twist to the planks at the stern. Make sure that each plank is well soaked and pliable before fitting. Check that each butts tightly against the previous strake all the way along, then allow adequate drying time before gluing it in.

The aft end of Strake 3 is the most tricky. It has a sharp turn and twist at the stern post. After wet shaping and allowing it to dry, glue just the end of the plank in the rabbet up to the stern post. Allow this to set completely before proceeding. Wet the plank along the area over the two aftermost frames, then glue and mold it into place using elastic bands and wood scraps as hold-downs. Allow to dry again. You can then glue the rest of the plank down in the usual way.

As you proceed, check the marks on frames 3, 6 and 9 to confirm that you are not getting too much 'creep' of the strakes as you plank up.

### 14. Strakes 4 to 9 Sheets 9, 10, 11, 12

These strakes will be much easier to run than the previous ones. At the aft end, the plank abuts the short central plank that you glued on in Step 10.

Wet and bend in the strake in the usual way and allow it to dry. You may need to shave a little off the bow end for a good fit.

Fit strakes 6 to 9 carefully, as these twist considerably toward the stern. Make sure that they are well soaked and use elastic bands to help form them to the transverse curves as well.

### 15. The sheer strake Sheets 11, 12

These are the final pair of planks on the topside. They are deliberately made a little too wide and will stick up above the deck line. Extra width is provided in case the previous strakes were laid a little short of where they should be. After the sheer planks are glued in and leveled, the hull is ready for finishing.

### 16. Finishing the bottom planking

This step will be the most dusty, so have a vacuum handy for clean-up!

Despite your best efforts, there will most likely be areas that are a little low and a few planks seams that are not tight. A little filler will fix this problem.



If possible, use a raking light source that will show up bad areas. I used LePage's 'Natural' wood filler in the tube. Apply and spread filler with a palette knife and allow adequate drying time before sanding.

A word about sanding. The natural tendency is to sand along the planking. This will cause flat areas to develop. Use a light touch and sand *diagonally* across the planks instead. Start with a piece of 150 grit folded over and sand lightly as if you are polishing. A light touch is more effective for a smooth curved surface. Don't over-sand! The wood is only  $\frac{1}{32}$ " thick.

There may be a few small unfair areas apparent after initial sanding. Add filler where necessary, allow to dry and lightly sand again. Finish with 240 grit.



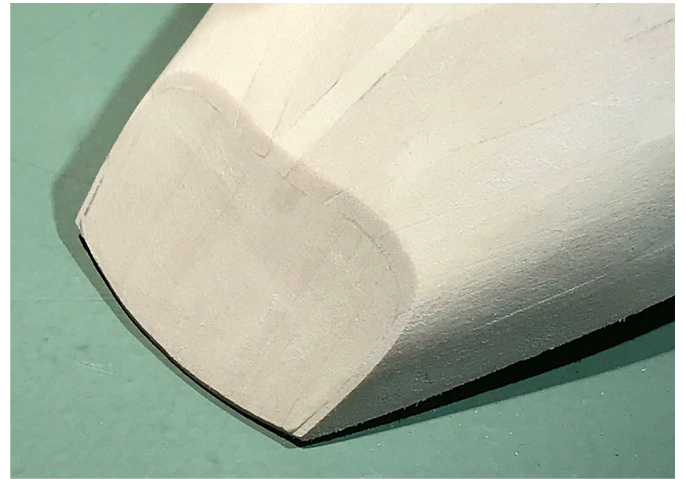
### 17. Top of the hull

Next trim or sand the protruding sheer plank down to the level of the deck (near side, photo below). The junction should be tight to the deck edge all the way along the hull. Correct any spots if necessary.



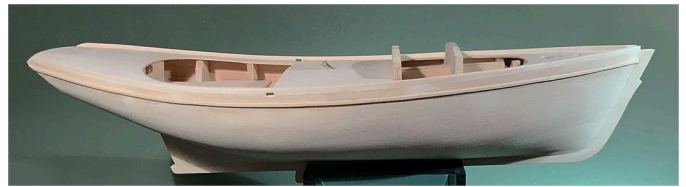
### 18. The transom

There are a number of ragged plank ends to trim flush to the transom. If you use a sharp blade to remove the bulk of excess wood, always cut carefully in towards the transom. If you cut the other way, you risk splintering or breaking off pieces of plank. Once you get close to flush, switch to sanding sticks until the surface is smooth with a nice edge all around. Finally, sand the small pointed ends at the upper corners flush to the rim you created in Step 8 (photograph top of next column). If there are any small gaps, fill and sand as before.



### 19. Toe rails

These are strips of wood along the edge of the side added for safety. They are glued on flush to the outer planks. The  $\frac{3}{32}$ " square section pieces of basswood are too thick to bend in hot water. You will need to steam them to shape over a kettle of boiling water. Let them dry out before gluing them in place, a section at a time. Use raking light to align them with the sheer plank.



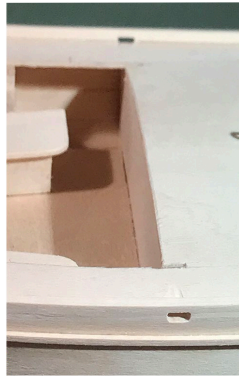
Aft, the end of the rail rounds down as shown at right. Some filler may be required outboard along the seam. Carefully check using raking light and make good any further defects.



### *Optional extra detail:*

In the actual boat, there were slots in the toe rail for water to drain off the deck. You can carefully drill and slot them using a #15 saw blade, as seen the photograph on the next page. Drill from the inside, back-

ing the hull with a block of scrap wood to prevent tear-out when the drill tip exits. Carefully insert the tip of the saw from outside, remembering to tip it at the angle of the deck's round up with the side. Clean up the slots using a small flat file.



## 20. Rub rails

These run along the hull sides parallel to the toe rail 6" ( $\frac{1}{4}$ " at model size) below the top of that rail. However, there is a refinement. Aft of the deck house the rail rises in a smooth curve until, at the transom, it is about  $1\frac{1}{2}$ " ( $\frac{1}{16}$ "") below the top of the transom. This detail gives a handsome sweep to the hull. The photographs on the previous page shows this feature.

Take a length of  $\frac{1}{16}$ " x  $\frac{1}{32}$ " strip wood and cut one end at an acute angle to fit against the side of the stem. Mark the side of the model at intervals as a guide, then glue the rail on, a few inches at a time, beginning at the bow. You will need to use finger pressure until the glue holds. Wash off excess glue with damp brush. Remember to let the rail rise gradually towards the transom. Repeat on the second side.

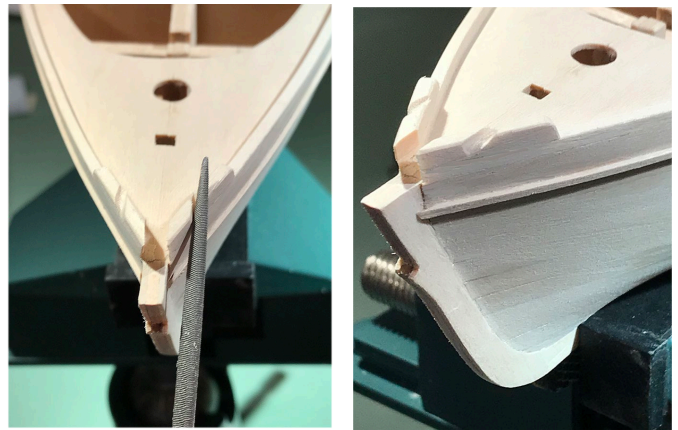
## 21. Fairleads

Sheet 14

These sit on top of the rails at the bow. Their function is to prevent mooring lines fraying as they come inboard.

Cut the forward ends at an angle to fit the stem as shown (top of next column) and glue them to the rail. Take a small round Swiss file and file a groove in the middle of each piece parallel to the keel of the boat, as seen in the photo.

Round down the outboard edges of the grooves. Also round over the edges of the fairleads. Fill any visible seam on the outer sides and sand smooth.

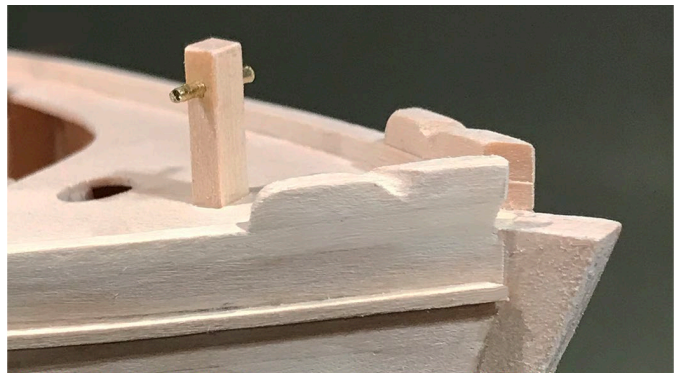


## 22. Samson post

Sheet 14

This is the stout post on the fore deck that anchors the aft end of the bowsprit. It has a round bar through it on which to belay lines. Remove the post pieces from the carrier sheet and remove the char. File or saw a shallow groove along the marks across both pieces. These will form a hole when the halves are glued together. Make sure that these grooves meet. Open the hole slightly using a broach, correcting the hole if needed. Use your broach set until the hole fits a  $\frac{1}{16}$ " brass rod. Bevel the corners and top of the post at  $45^\circ$  and finish-sand the sides of the post.

File the end of the brass rod flat and square. Mark off a  $\frac{3}{8}$ " length. Score the rod all around using a sharp blade while rolling the rod with it on a hard surface. Grip the short part in your parallel pliers at the score line and work the long end back and forth until it snaps off. File the ends of the piece smooth.



Insert the rod into the post until both sides protrude equally. Secure it with a spot of cyanoacrylate (CA) glue or epoxy. Insert the post in the square hole on the deck. If it does not go in smoothly, file the hole slightly until it slides home. Do not glue the post in place yet! It will need to be painted first.

### 23. Oarlock pads

Sheet 3

Remove these from the carrier, clean up and shape the bevels as indicated. Glue these to the deck on their marks. Make sure that their inner sides align with the edge of the cockpit.



### 24. Coaming

Sheet 5

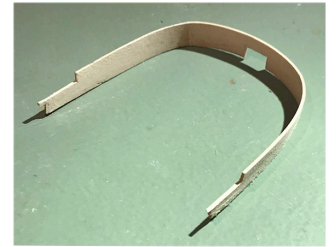
The coaming is the rim around the cockpit at the deck. This is continuous with the cabin sides. Because of the extreme length and curvature you will need to soak this in boiling water for a few minutes. (Ideally the grain should run vertically rather than along such pieces, but the basswood stock is not wide enough for this.)

Make sure that the wood is hot and very flexible, then work it into place and clamp it. Allow it to dry. It will

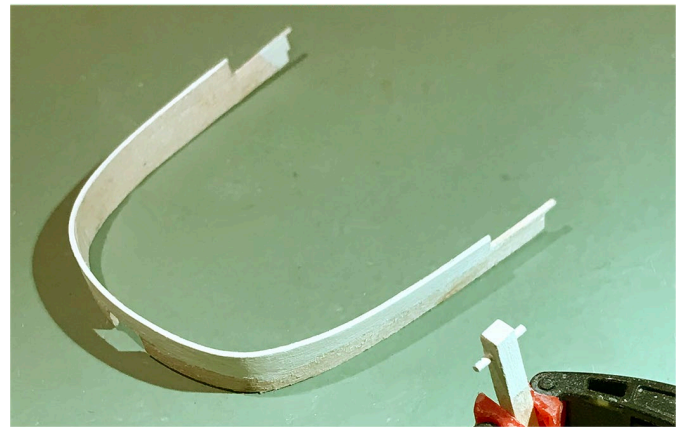


probably need re-wetting in places and coaxing to lie against the deck edge all round. Take your time to repeat this process until you have a good fit.

Next, remove the piece and cut out the central hole for the tiller. Use a razor saw for the vertical cuts and then a sharp blade to remove the excess wood in stages.



Before installing the coaming, paint the outer sides to about half-way down. This will save awkward masking off the deck later on. In ship modeling, it is always good to plan ahead! The inner sides can be painted later. While I had the paint out, I also painted the samson post. I used Warm White, MS4832.



The coaming was then glued into position. Check that it sits 3" ( $\frac{1}{8}$ " actual) above the deck all around. A scrap piece of  $\frac{1}{8}$ " carrier sheet makes a good height gauge. Begin by gluing the center aft, making sure that the forward ends are level with the top of the oarlock pads. Then progressively glue each side to the edge of the deck and the oarlock pads.

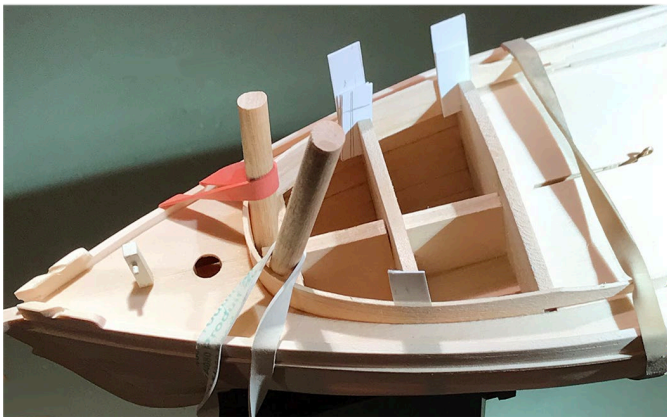
**Hint:** if the coaming sits more than  $\frac{1}{8}$ " above the deck on one side – mine did – mark the correct height using a height gauge and pencil (see photo overleaf), then sand down to the line. It can be re-painted later on.



At this point, glue in the samson post. Make sure that it is vertical as viewed from ahead. It will appear to lean forward in its socket. This will look correct when the model is mounted, as she floats stern down.

### 25. Cabin sides Sheet 5

The piece for this is dealt with in the same way as the coaming. Because of its length, I used a large frying pan to boil it in. Make sure that the wood is really flexible, or it will very likely fracture at the extreme curves. Bend the cabin sides into place and allow them to dry. Note the dowels and card spacers that help the strip to fit tightly against the deck. Take time and care to shape it further as necessary.

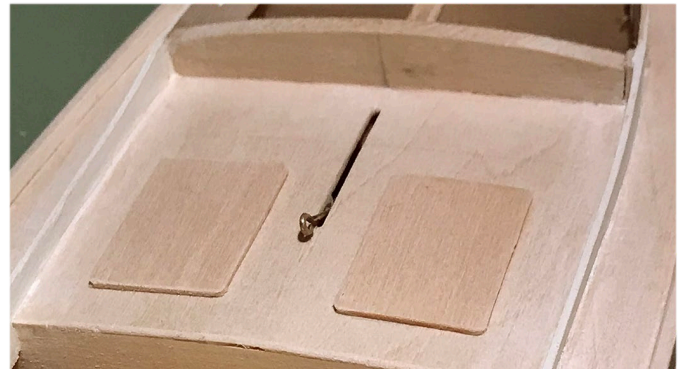


Trim the aft ends to abut the coaming. If there are slight gaps at the joint, these can be filled later. Remove the piece to paint the upper part as before. Don't forget to paint the edges of the cabin lights (windows) as well. When dry, rub the first coat down with 240 grit and repaint.

Glue the cabin sides into place. Check that the top edge of the cabin is 6" (1/4" actual size) above the deck. If more, then mark and sand it down as you did for the coaming. A little filler may be required inboard at the joints with the coaming.

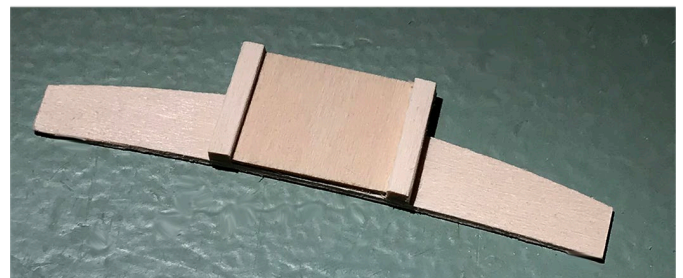
### 26. Wet well covers Sheet 7

The wet wells for the live catch are below deck on either side of the centerboard case. Before gluing the covers down, round off their top edges and corners. Wet the top surface of the covers before painting glue on the underside and positioning them over the guide marks. If you do not do this, the water content in white glue will curl the thin wood upward off the deck.



### 27. Cabin bulkhead Sheets 5, 14

This bulkhead should first be fitted against bulkhead frame 5 to make sure it sits snugly inside the coaming. Once fitted, lay the bulkhead on your work surface and glue on the companion cover (door) as indicated, rounded corners up. Next, glue the two side guides on each side of the companion cover. If you wish to paint the bulkhead, do this before attaching it. Glue the completed unit to the model.





### 28. Cabin roof

Sheet 13

Check the fit of the roof. When satisfied, round off the edges and corners using a piece of 240 grit sandpaper folded into a 'U'. Wet the top surface of the roof to help it form the round up, then glue and hold in place using elastic bands. Allow to dry thoroughly.



You may leave the roof in wood or, as I did, paint it for contrast. I used MS4826 Medium Grey to represent painted canvas. I left a small area unpainted for attaching the hatch. Sand with 240 grit after the first coat of paint.

### 29. Sliding cabin hatch cover

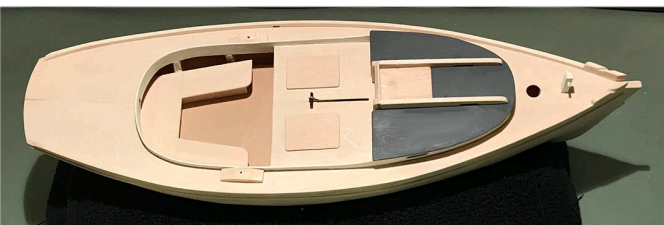
Sheet 7

Paint first if you wish, then carefully glue down, wetting the top first as you did for the wet well covers.

### 30. Sliding hatch runners

Sheet 1

These pieces run along the roof on each side of the cover. These allow the cover to the companion way to slide forward, allowing adequate headroom to access the cabin. Make sure that they fit well by rubbing them on a piece of sandpaper placed on the roof. Bevel the edges as usual before gluing in place.



### 31. Beakhead

Sheet 3

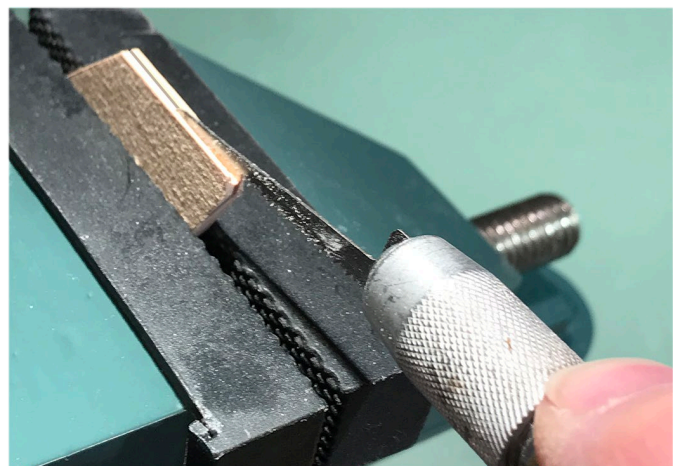
Prepare the beakhead piece to fit the stem of the boat. The upper surface should be flush to the stemhead and deck, or the bowsprit will not sit correctly. For security, I used five-minute epoxy on this joint, holding the model vertical in the vise while the glue set. Sand and fair in the piece, beveling off the corners as usual.



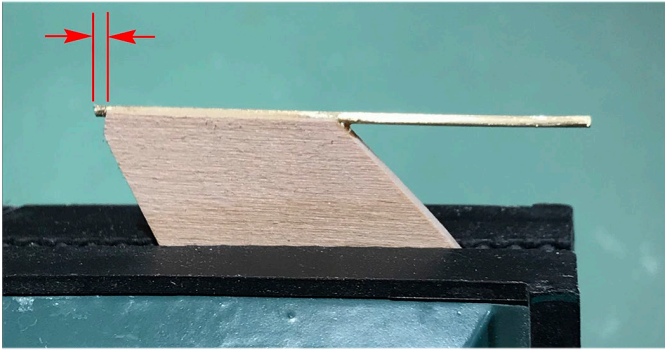
### 32. Rudder

Sheet 14

Clean the edges of the rudder as usual. Next, the straight fore edge needs to be grooved for the pivot rod. Use your #111 keyhole saw blade to produce a groove to fit a piece of 1/16" brass rod along. Refine this with a round Swiss file.

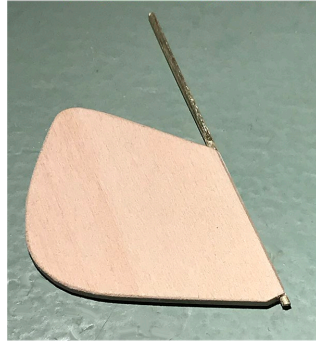


Cut a 2" length of rod and lightly sand its surface. Glue the rod to the rudder making sure that the lower end protrudes by just 1/32". Again, I used epoxy, but one could use cyanoacrylate instead (photograph overleaf).



Round off the edges of the rudder with a sanding stick as usual.

**Optional:** Add a fillet of filler along the junction of the rod and rudder each side and round off the rudder smoothly, as shown on the right.



Your model is now ready to temporarily mount on its pedestals and display board.

### 33. Display pedestals and baseboard Sheets 3, 8

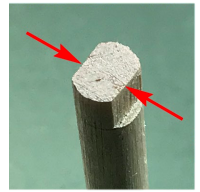
The longer pedestal is the forward one, so that the keel slopes down; the stern being deeper in the water.



Once the fore and aft support tops are cleaned up they need to be mounted on lengths of  $\frac{3}{16}$ " dowel. Cut two pieces to the lengths on the patterns above. Take one length and draw a line around it  $\frac{1}{4}$ " from one end. Saw a shallow cut at that line. With either a sharp chisel blade or file, cut a flat as shown. Now place the dowel, flat down, on the edge of a piece of scrap wood. Mark a line to show the upper center point. Repeat the shallow saw cut here and cut another

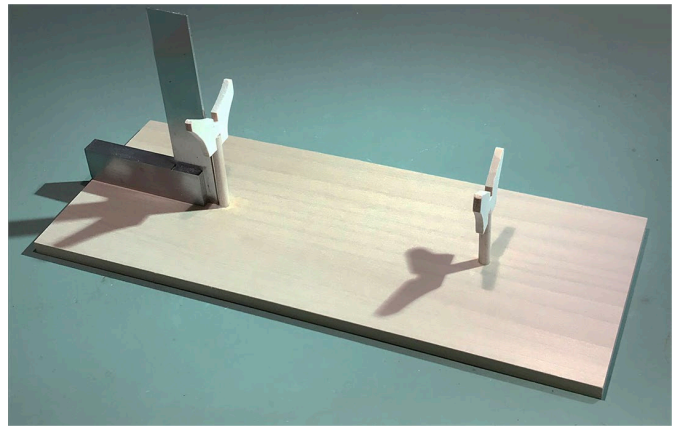


er flat. This should be parallel to the first flat. The distance across the flats should be filed until it fits the slot in the pedestal top.



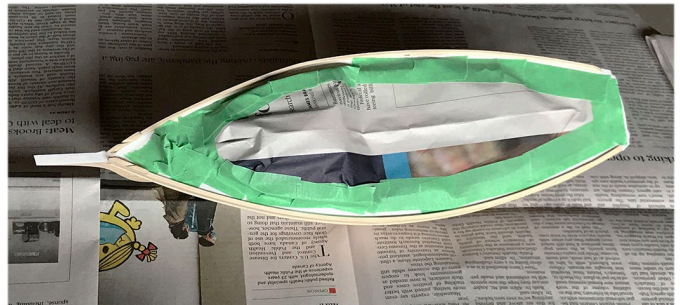
Repeat this process with the other dowel. Once both tops are a nice snug fit, glue them to the posts.

When the glue is dry, glue the dowels into the display base. Make sure that they are vertical as seen from the ends and the sides using your square.



### 34. Masking and priming

Some time should be taken to mask off the hull carefully. I use Tamiya flexible tape for curved edges, but, with some fiddling, a thin strip of regular green painters' tape, well rubbed down, can substitute. The edges of the deck inside the toe rail were first masked with Tamiya tape. As insurance, I then used newspaper and painters' tape to cover the deck and deckhouse, as seen below.

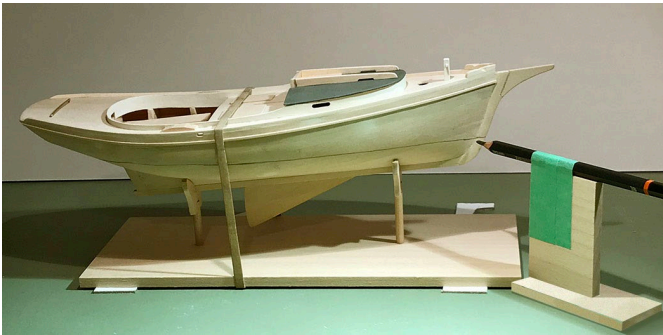


If using water-based paint, first spray the hull with primer from a rattle can. This will prevent the raised grain that will occur with moisture on basswood. Alternatively, rub the grain down after the first coat using 240 grit sandpaper.

### 35. Marking the waterline

Sheet 14

Take a pencil and attach it to the waterline marking device, assembled as shown. If the model has a tendency to rock, use an elastic band to stabilize it and put a card spacer each end under the base as shown below to stabilize the base and model. Run the pencil lightly around the model. Don't press and indent the soft wood! Remove the model from its base.



*Optional detail:* Often the paint at the waterline is raised slightly at the bow and stern to prevent an optical illusion of drooping. You can adjust the line of masking to show this if you wish.

### 36. Painting the hull

First, decide on your color scheme. I painted my hull Hull Red MS4968 below the waterline and Warm White MS4832 above. However, other schemes might be green underwater and either white or black above. Choose a scheme to suit your own taste.

The lightest color should go on first. I also decided that the toe rail should imitate mahogany, so that was masked off to protect it from unwanted paint. Remove masking soon after painting; do not leave it on too long. Allow adequate time for paint to dry before re-masking and painting the next area.

Remember to paint the rudder as well. Once the hull painting is complete, it is almost ready to mount permanently on its pedestals.

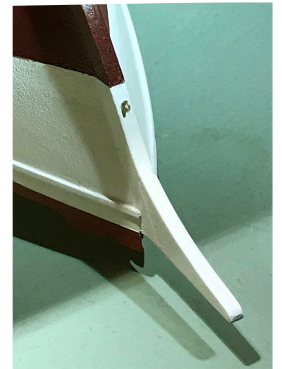
*Hint:* sometimes paint builds up in a little ridge along the edge of the tape. Use little piece of 1500 grit wet-and-dry paper, (hardware store) wet it and gently polish down the ridge. Generally two coats of paint should be sufficient.

*Optional detail:* I also painted the toe rails and cabin bulkhead to resemble varnished mahogany. For this I used MS4814, Hull Copper Red. Again, the edges were taped off first.



### 37. Bobstay eyebolt

Drill a small hole in the stem just above the waterline and epoxy or cyanoacrylate glue in a small eyebolt. Snip the bolt short if necessary. Mount the model permanently on its pedestals.



### 38. Traveler

There are a number of rigging points on the hull to attend to. The first is the traveler at the stern. This is very similar to that on the pram dinghy. The one difference is that it is of metal rod instead of rope. Bend a piece of  $\frac{1}{16}$ " brass rod to the pattern given here.

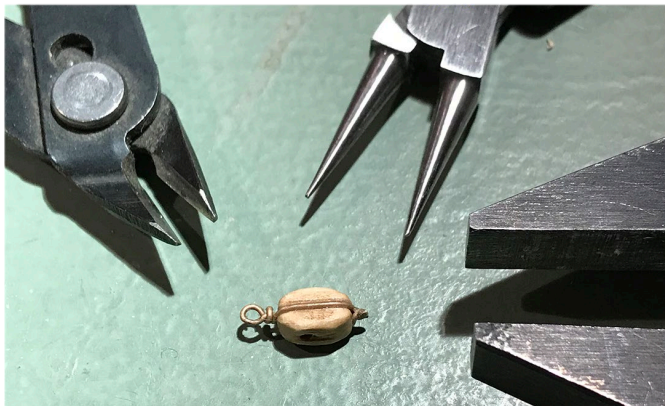


Next, take one of the single blocks supplied.

**Optional:** The blocks with the kit can be improved if you wish. They can be shortened and rounded off. The profile should be more oval and the groove in each end deepened. The photograph below will give you the idea. Reshape the end *away* from the hole using a chisel-edge blade, sanding stick and files. Finish the block with either stain, paint or a little wax.



Take a length of thin copper wire. Shape a loop in it, as in the photograph below. Pass the two ends around the block and twist them tight. *The hole in the block should be closer to the loop end.* Trim off excess wire. Also see section 49 for more detailed instructions.



Thread the loop of this block on the traveler bar and press the bar into place in the holes on the stern of the model. To secure it, use a small amount of cyanoacrylate glue or epoxy.



### 39. Tiller and rudder

Sheet 14

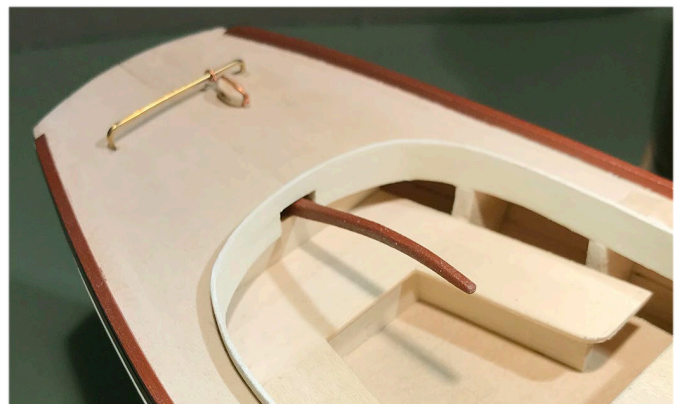
After cleaning up the tiller, round off the fore end for  $\frac{1}{2}$ " or so and lightly bevel the edges along the rest of it. Next, file or saw a deep 'V' into the aft end. Paint or finish the tiller to taste. I painted mine mahogany color. Next, take a scrap block of wood about  $\frac{5}{8}$ " high and 2" long. Place this across the bench seats.

After abrading the top of the rod for better adhesion, feed the rudder rod up through the hole in the hull and seat the lower end in the recess at the foot of the stern post. This sets the rudder in place.

Mix some slow setting epoxy to give you time for adjustment, put a generous blob in the notch of the tiller and push the 'V' notch against the top of the rudder rod. I found a small flashlight helpful to see what I was doing. Rest the tip of the tiller on the scrap block.

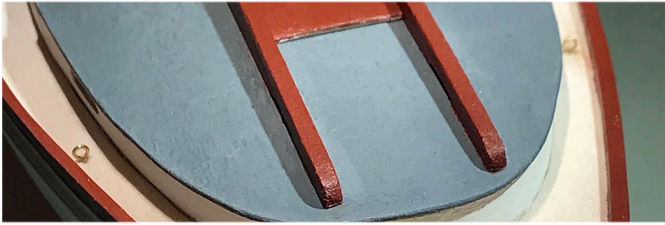


Before the epoxy sets up, look at the rudder and tiller from astern to make sure they align (above). Allow the epoxy adequate setting time before sliding the wood block out. The tiller and rudder should now swing from side to side. Handle gently!



#### 40. Fairleads

One eyebolt is needed in the deck on each side of the cabin for the jib sheet – more about that later – to pass through. Epoxy or cyanoacrylate these in place with the eyes facing fore and aft, as shown below.



#### 41. Trail boards

These support the beakhead on each side. As these are of thin, cross-grained wood to take the bend, handle them *very* gently, or they will break! Carefully scrape the paint on the beakhead and behind the aft end of the boards so that the glue will 'take'. Glue and clamp one side at a time. Make sure that the trail board is glued down aft as far as the beakhead/stem joint as shown.

Sheet 5



Trail boards were usually painted white or black, often with a decorative scroll or leaf-work along them. If you prefer plain boards, simply paint to taste. Alternatively, cut out and glue on the paper ones found printed on page 2. Be careful applying these, as the ink may not be water resistant.

Glue the trail board, then position the decorative paper with its top edge level with the board. Gently press down by rolling a Q-tip along. When dry, trim the lower edge with a fresh #11 blade. Touch up the edges

of the trail boards with a little black paint or ink. Paint the top of the beakhead, although this will be partially hidden by the bowsprit.



#### 42. The bowsprit

Sheet 15

This is interesting to make. The inboard end of it is square in section, then octagonal and the outboard portion round. It is also not quite symmetrical.

Clean up the blank in the usual way. Mark the flat face 'bottom'. Then taper the two sides so that the tip of the spar is square in section when viewed end-on.



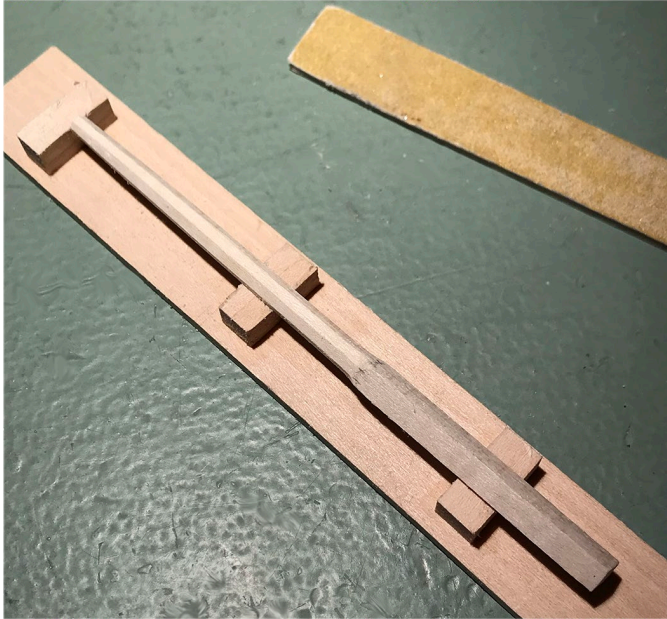
Next, drill three small holes, top to bottom near the tip of the spar at the spots shown on the sail and spar plan. Mark the outer part of the spar for eight-square using the 7:10:7 proportional scale below.



*7:10:7 octagon scale*

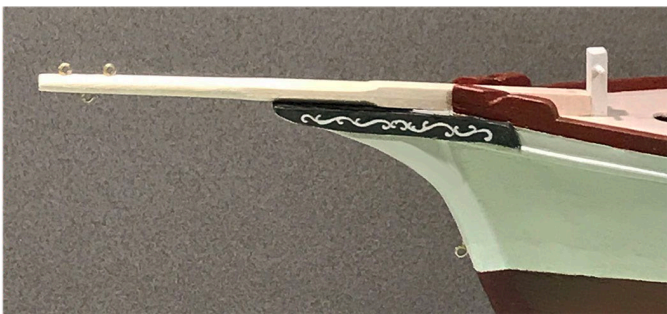
***Details for how to use this scale and the spar holder (Sheets 8 and 14) are given on pages 31 and 32.***

Place the spar in the 45° holder and either sand or cut down to the marks until the outer spar is octagonal (below). Finally sand the outer 3' 0" (1½" actual) round. Remember to check the angle of the heel so that it sits nicely against the samson post.



The spar may be varnished or painted a buff color, according to taste. I left mine in natural wood. Finally install small eyebolts in the three holes in the outer end of the bowsprit, secured with a little cyano or epoxy glue. The two eyebolts are on top of the spar.

Make sure that the opening at the bow is wide enough for the bowsprit to pass through, then glue the spar in place. Make sure it is straight when viewed from ahead.



### 43. Chainplates for the backstays

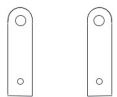
There is a single backstay supporting the mast on each side. Place them 2¼" aft of the trail boards. To get their angle correct, slide a dowel or length of wood into the mast socket and measure up 9½" from the deck. Attach a thread here and run it down over the side to mark the shroud and chainplate angle.



*Please be sure to read the following safety instructions carefully!*

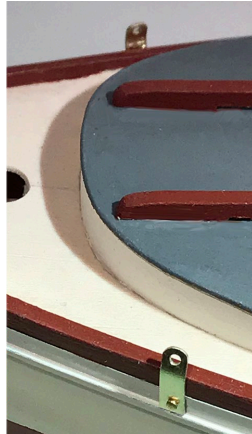
The chainplate is made from a ⅛" wide length of brass strip. Take length of several inches and anneal it on a soldering mat. Use a propane torch under dim light. ***Make sure there is nothing inflammable nearby.*** Heat the metal to cherry red. Allow it to air cool. This will soften the brass for working it.

Make one chainplate at a time from the end of a longer strip, then part it off. Begin by marking, center-punching and drilling a hole close to one end of the strip. Clamp the strip to a backing of scrap wood so that it does not catch and spin, hitting your fingers. Your hand is not the best clamp! A small drill press is helpful, but you can manage without. I used both hands to keep my Proxxon drill steady and vertical. Use a #55 bit to drill. You will need another, smaller hole for a pin. A #71 bit is suitable for this. Patterns for the chainplates are given here:



File one end to a semi-circle and polish up with 240 grit sandpaper. A higher finish can be made using a

rotary abrasive wheel. Illustrated is a Scotch-Brite™ bristle disk. Cut the piece to length and file smooth. Next, position the chain plate on the boat's side and drill a #7I hole for the pin. Drill slightly downward to avoid breaking through the deck. Bend the protruding 'ear' inward by about 20° using parallel pliers. Epoxy or CA the plate and pin in place. Repeat on the opposite side.



#### 44. Cleats and turnbuckles

Several cleats are needed for tying lines to. There are three in the cockpit, two opposite the rowlock pads and the third above the tiller slot. Another is on top of the bowsprit heel and two on the mast.

File the bottom of the cleats flat and remove any flash, then attach them to masking tape to paint them (photo at right). Install cleats using either CA or epoxy. I prefer epoxy as it gives time to position the cleat. Bend the base of the cleat above the tiller (the metal is soft) to match the curve of the cockpit before gluing it with the model clamped vertically in your vise.



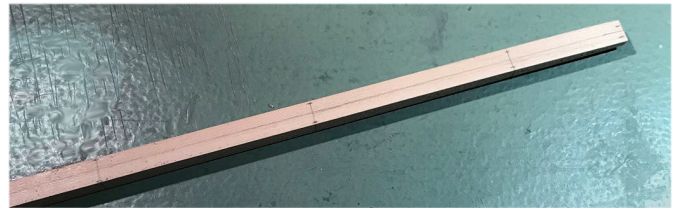
Attach a turnbuckle by its hook to each chainplate and another to the eyebolt under the bowsprit. Another attaches to the outer eyebolt on top of the bowsprit.

#### 45. Mast

Sheet 16

This is a substantial item. You will be shaping this from squared wood, not dowel. Remove the mast halves from the carrier sheet and clean off the char. Glue and clamp the halves back to back. Clear out the three holes needed for eyebolts. Next, follow the marking out instructions at the back of this booklet.

Mark out one of the cleaned sides, then shape the spar to four-square spar. Next, use the 7:10:7 gauge to mark out the octagon and use your 45° jig to cut the spar eight-square.



From eight-square, use your vise and sanding strips to round off the spar. Again, there are detailed instructions on this process are on page 31.

This completes the basic mast. There are a number of fittings to add now.

#### 46. Mast fittings

Sheets 1, 3

The first of these is the *boom saddle*. This supports the inner end of the boom. It is mounted 5/8" above the deck on the *aft* side of the mast. The recess for the mast in the saddle is a little under-sized to allow for fitting. Shape to fit and glue this in place.

There are three eyebolts for rigging. Make sure that the upper and lower ones face aft and the middle one faces forward! Epoxy or CA glue will secure these.

There are two small *stop cleats*, one on either side of the mast, as shown on the plan. Take the oversize pieces from the carrier sheet. The two pieces are correct length but much wider, making them easy to pick up. Hollow one edge to fit the mast. Glue on these oversize pieces, one on each side. When dry, cut the cleats down using a sharp blade. (One is shown after cutting down, below.) Stop cleats prevent the stays from slipping down the mast.



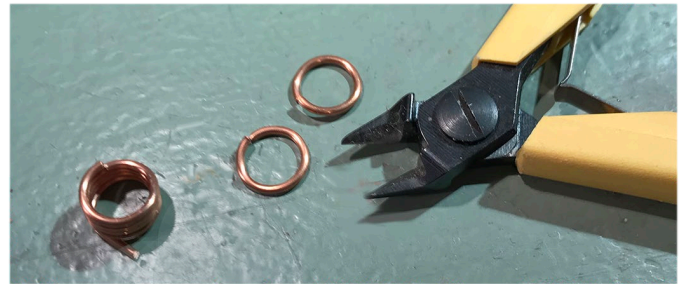
**Optional detail:** The two holes representing the sheave in the masthead can be refined using a small round Swiss file, as shown above.

There are two more cleats for securing lines near the base of the mast. One is needed on each side for the hal-yards. See the sail and spar plan for their placement.

Last are the *mast hoops*. You will need six of these. Take a regular pencil and clamp it in your vise. Wrap a length of thick copper wire around the pencil tightly



at least eight times. The wire will form a coil and will also work-harden. Slide the coil off and snip through along it in a straight line, producing a number of loops (below). Flatten each ring using a soft-headed hammer on a wood block and gently squeeze the sides using parallel pliers so that the ends come together. If you haven't got a soft hammer, use a regular one over another block of wood. Slide these rings over the mast head and down to the boom saddle for now.



#### 47. Boom

**Sheets 5, 15**

Shape the boom as you did the mast. However, the jaws at the inner end transition from a round section to rounded off corners, seen in the photograph (top of next page). Before rounding, make sure the holes on the inner and outer ends for the sail lacing and a third for the main sheet block are open. Once shaped, epoxy an eyebolt in this hole facing downward.

Two stop cleats are also needed at the outer end of the boom for the *topping lift*. These are made and added in the same way as those on the mast.

**Optional detail:** The jaws of the boom are kept close to the mast by a *parral*. Wooden beads called *parral trucks* are threaded on this line between the jaws of the boom and around the mast. Use small seed beads for the trucks. If unavailable, just use a piece of 0.7 mm brown line or omit this altogether. Drill a hole through each jaw and file a groove on the inner side as shown. Fitting a parral is described in section 52.





#### 48. Gaff

Sheet 15

This is the upper spar for the main sail. Similar to the boom, it also has a set of jaws. In this case, the inside surface of the jaws is angled to match the angle that the gaff is set at. It, too is fitted with a parrel. Shape the spar as you did the boom after clearing the holes for the two eyebolts and lacing. Fit the eyebolts in the usual way.

#### 49. Stropping blocks

Strops, also called *straps*, are the bands that go around the blocks. You already have stropped the sheet block that is on the traveler (section 38).

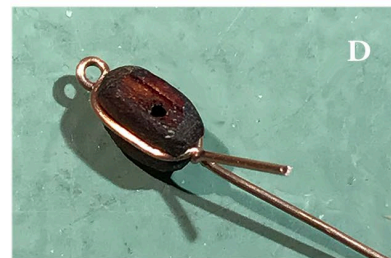
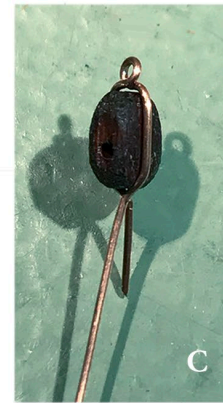
Seven more blocks are needed. Only two of these have a loop at one end and a hook at the other. Before starting to strop, improve the blocks by at least filing the grooves in the ends deeper. You may also shorten and round off the blocks as you did before.

To make a loop and hook, first form a small loop using the round-nose pliers (A). Next, bend the two legs as shown and fit the block into the space between (B). Make sure that the hole in the block is at the *opposite* end to the loop. Holding the block and wire legs in your parallel pliers, squeeze the ends together at the other end of the block with the round-nose pliers (C). Holding both legs close to the block end with the round nose pliers, twist one full turn (D). This should snug the wire at the top down into its groove. Snip one leg off close to the twist and form the hook using the

round nose pliers. Trim the other end to length (E). And that's it! It may take a bit of practice to get a neat strop but, as wire is not expensive, do this over until you can get consistent, neat results.

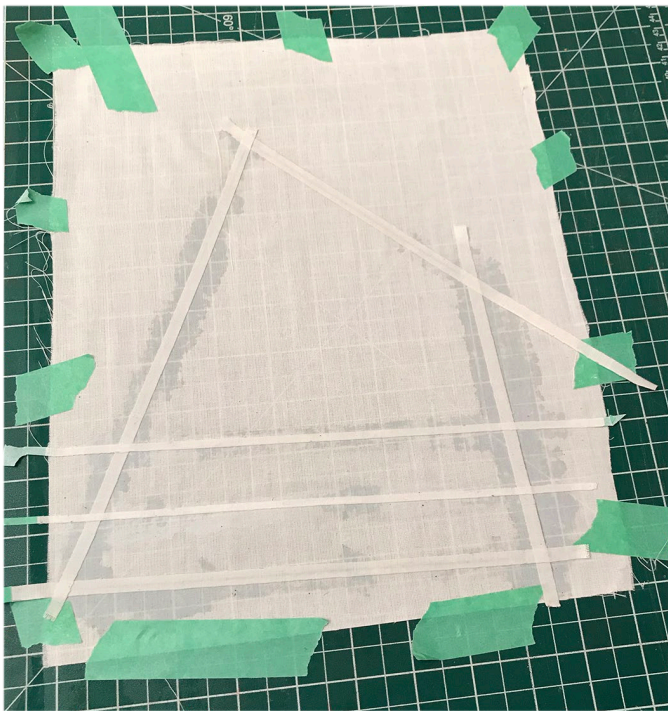
**Optional detail:** Paint or stain the blocks a mid-brown for contrast as I did. I used Fiebing's Shoe Dye. Take care not to spill or get this anywhere you don't want it! I finished the blocks with a little soft paste wax.

For the five blocks with only a hook, omit step A. When fitting the blocks to the eyebolts on the spars, close the hook a little around the eyebolt to prevent the block from coming off again.



## 50. Mainsail

Finally we get to rigging this model! The patterns for the mainsail and jib are given on the **plan sheet**. First process the sailcloth as described on page 32. Mark out the sail in pencil, then add the reinforcing strips. The one on the luff of the sail is  $\frac{1}{4}$ " wide and the rest are  $\frac{1}{8}$ ". In addition there are two  $\frac{1}{8}$ " wide *reefbands*. These reinforce the sail along the line of the reef points. The bands are placed 2' 3" ( $1\frac{1}{4}$ " full size) apart, parallel to the foot of the sail.



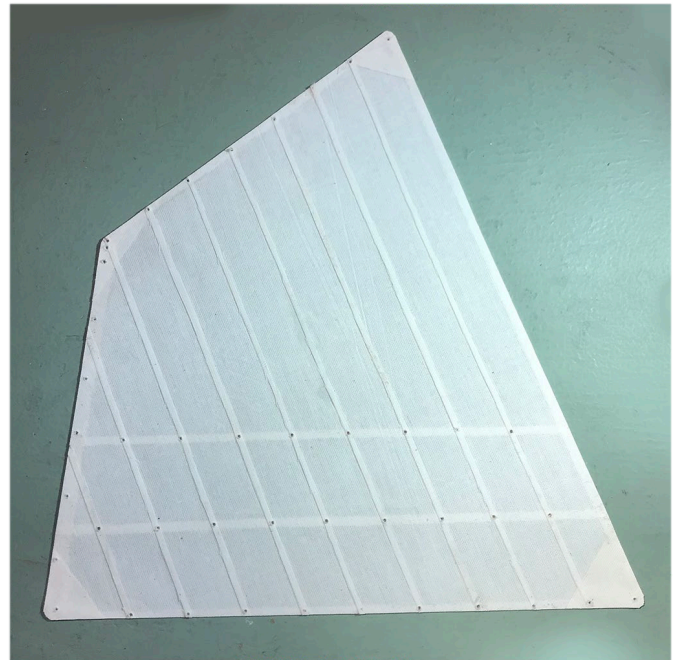
As with the pram, the sails will look ugly until the glue has dried. Once dry, peel the sail off and turn it over. Add the corner reinforcing gussets.

**Optional detail:** The seams of the cloths that the sail is made up from may be added if you wish. A simple method is to pencil either single or double lines at 18" ( $\frac{3}{4}$ " full size) intervals starting from and parallel to the leech. If drawing double lines, space them about  $\frac{1}{16}$ " apart. The model is at far too small a scale to actually sew seams. Stitches, however small, would look far too large and clumsy.

A more realistic appearance can be made at this scale by gluing down  $\frac{1}{16}$ " wide strips of material. To be successful, cut the strips along the weave of material that has been first stiffened with dilute white glue and dried.

Whichever method you use, once the sails are dry you can cut them out. Use a new, sharp blade and straight-edge. Next, holes need to be drilled for the lashings and *hanks*. Hanks are the attachments of the mainsail to the mast hoops and the jib to the jib stay.

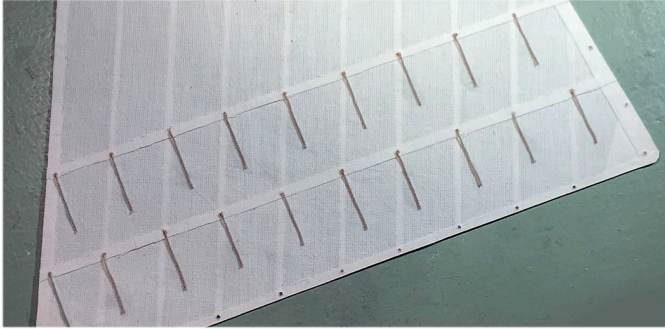
I drilled these holes with a #55 bit. Make sure that you have a solid piece of hardwood as a backing block while you drill.



## 50. Reef points

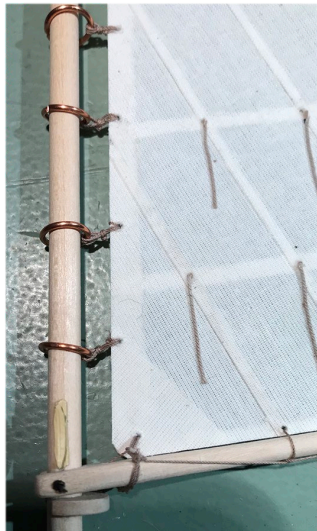
The next step is the reef points. These are lengths of light line used to shorten the sail in windy conditions. You will need 38 pieces of 0.4 mm tan colored line. Unspool the line, wet and stretch it before using to get out the kinks. Cut pieces about 1" long so that you can trim them to length later.

The easiest way to add reef points is to glue them onto each side. On a real sail, one length of line is used that is passed through the reef band, knotted on each side of the sail and then cut to length. Glue the points down so that, when the sail is raised, they hang down vertically. When the glue has set, trim the ends down to  $\frac{3}{4}$ ", turn the sail over and repeat.



### 51. Attaching the mainsail

Next is to attach the sail to the mast hoops. It is most easily done on the work surface rather than in the air. This is the reason that the mast has not yet been stepped. Pass lengths of 0.4 mm line through the holes along the luff of the sail. Again, use a needle for this. Knot the end of the line to the sail. Take the line around the hoop and through the sail three or four times. Note that there is a gap between the mast and sail edge (above). Now wrap the line around the turns you have made between the sail and hoop to pull the lashing tight. Finish with a half hitch or two and a spot of white glue, then trim. Repeat for all six hoops.



### 52. Attaching the sail to the gaff

There are two ways, both of which are done. The first are corner lashings, stretching the head of the sail along the spar. Details are given on page 33. The sec-

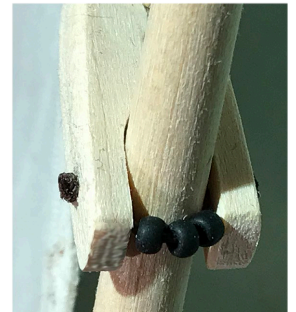
ond attachment is the lacing. This is also described on page 33.

### 53. Attaching the sail to the boom

This is done in a similar way with corner lashings and lacing along the boom.

### 54. Attaching the gaff and boom to the mast

Put a knot in one end of a length of brown line and thread it through one hole in the gaff jaws from out to inside. Thread on the beads if you have them. Take the line around the front of the mast and thread the line through the second jaw and knot it on the outer side as shown in the photo. This line should have a little slack in it.

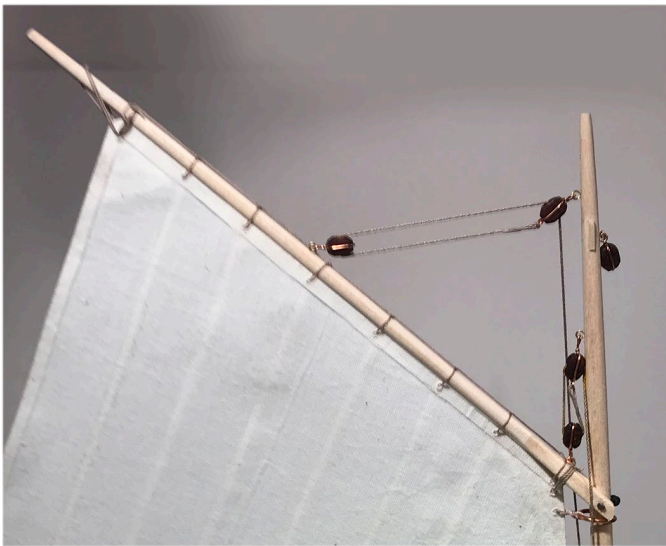


Repeat the same sequence for attaching the boom to the mast. It is always easier to carry out as much rigging as possible off the model.



### 55. Throat halyard

The throat halyard raises the inner end of the gaff. Begin with a length of 0.7 mm of beige line. Attach this to the loop in the block on the mast above the inner end of the gaff (refer to the photo below and plan sheet). Form a false glued eye splice (see plan) through the loop or simply knot the line on. Run the line through the inner block on the gaff, up again through the upper block, then down to belay at the cleat near the foot of the mast on the starboard (right) side. *Do not permanently attach this or the following lines yet. This allows for fine adjustment later.*

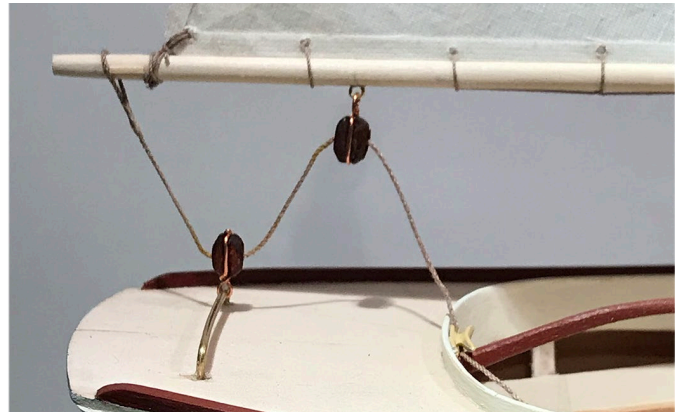


### 56. Peak halyard

This is run in a similar way from the loop in the upper block on the mast to the outer block on the gaff, up again and down to belay on the port side cleat (photograph above and refer to the plan sheet). Now you can slide the mast into its socket, but do not glue it in!

### 57. Main sheet

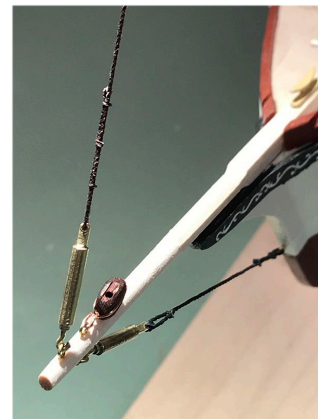
This line controls the swing of the boom. Form an eye splice in one end of a length of 0.7 mm beige line that is just large enough to slip over the end of the boom. Take the line down through the block on the traveler, up again through the block on the boom, then down to the cleat above the tiller. Belay it loosely for the moment to the cleat above the tiller.



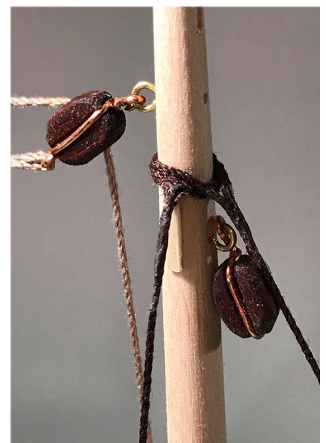
### 59. Bobstay and fore stay

Usually the standing rigging is set up first. However, this has been delayed as it would have been in the way.

Attach a length of brown 0.7 mm line by three thread lashings to the turnbuckle under the bowsprit. Secure the lashings with dilute white glue. Reeve the other end of the line through the eyebolt in the stem and tighten, then lash the line to itself and trim it (right).



Take a length of brown 0.7 mm line and take it around the mast head just above and resting on the stop cleats. Either put a false splice in the line to make an eye fairly tight to the mast, or neatly knot the line and trim any excess. Make sure that the eye cannot slip down past the stop cleats. Repeat twice more to provide the two back stay lines and the fore stay (photo above right).



Take the other end of the fore stay, pass it through the eye of the turnbuckle at the end of the bowsprit

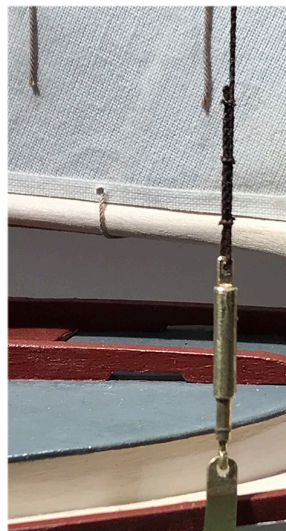
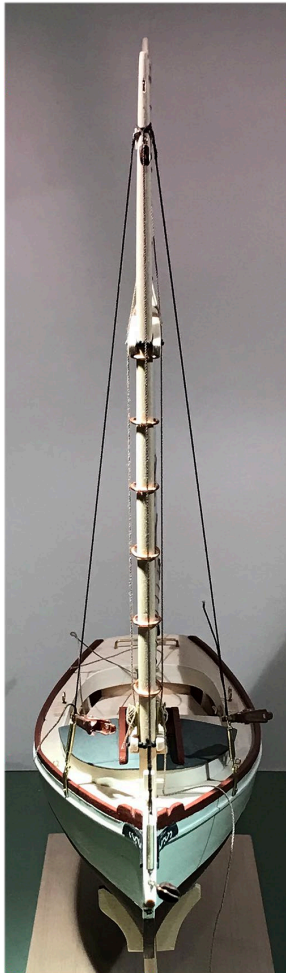
and tighten the line. This will pull the mast forward a little. Clip the line to itself while you apply three knotted thread lashings as seen on the photo at the bottom of the previous page. Glue and trim the lashings, then remove the clip to complete the stay.

### 60. Back stays

These are completed in the same way as the fore stay, but with one modification. Gradually tighten these lines while looking at the mast from ahead. Make sure that the mast stays vertical and is not pulled to one side or the other. Once you have adjusted things to your satisfaction, clip and tie off the lines with small thread lashings as you did the fore stay (photo at right).

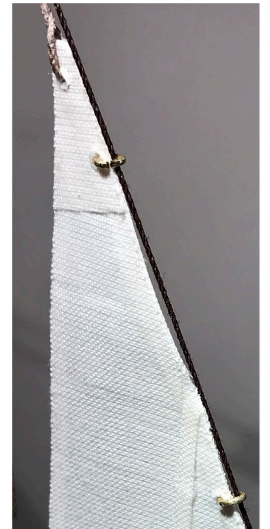
### 61. The jib sail

Make the jib sail according to the plan. It is suspended from the fore stay by *hanks*. These are either in the form of rope ties or small rings. We will use small split rings. The first step is to open the ring up enough for the sail and stay to pass through. Use your round nose pliers with the ring flat on your work surface and slowly spread the ring as shown (right).



Thread the rings on to the sail and prevent them slipping off using a small dab of white glue.

Next, attach a 18" length of 0.7 mm beige line for the *jib halyard* from the upper corner of the sail using either a false splice or knot. Similarly, attach another 6" length of line to the lower outer corner of the sail. This is the *downhaul* or inhaul.



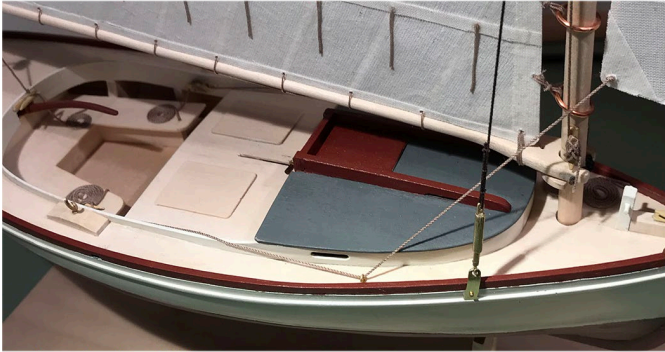
Now attach the jib to the fore stay by first passing the halyard through the block on the fore side of the mast to raise it. Temporarily tie it off to the samson post. Next, pass the stay through the open hanks, then squeeze each hank gently closed using parallel pliers. If this is too difficult for you to manage, tie pieces of line as shown on the sail plan.

Take the downhaul through the block at the end of the bowsprit and belay it to the cleat on the inner end of the bowsprit (photo below). Adjust all line tensions before securing them.



## 62. The jib sheet

Take a long length of 0.7 mm beige line and thread it through the hole on the inner corner of the jib sail. Have an equal length either side of the sail. Make a knot on each side of the sail to retain the line. Carry each end aft through the fairlead beside the cabin, then into the cockpit to belay on the cleat at the inside of the coaming. There will be extra line which you can cut and coil on the cockpit floor. (See section 64.)



## 63. Topping lift

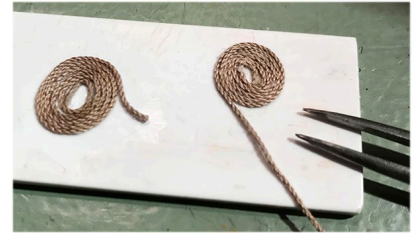
This is the last line! Take a length of 0.7 mm line and make a small eye splice at one end to fit the end of the boom. Slip this over and snug it up to the main sheet. Carry the line up to the upper hole in the mast head, through it and down to belay at the samson post.



## 64. Making rope coils

I coil line separately from the fall and glue it to the deck over the end of the line. I make up the coil on a piece of plastic sheet using white glue, let it dry, and then carefully slide a palette knife under to free it.

Another method which may work better with nylon line is to use transparent double sided tape to build it on.



## 65. Tidying up

Adjust all the remaining lines, belay them and coil any extra line in suitable places. Belay the jib halyard permanently to the port side cleat at the foot of the mast.

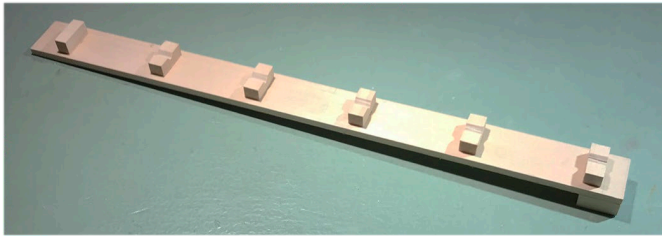
Check the decks for any loose bits of cut line or fluff and dust off carefully. Look to see if any paint needs touching up. Finally, add the two rowlocks to your model. Then sit, relax and enjoy the end result of all your work. Congratulations on successfully completing a very lovely model!



## Additional instructions

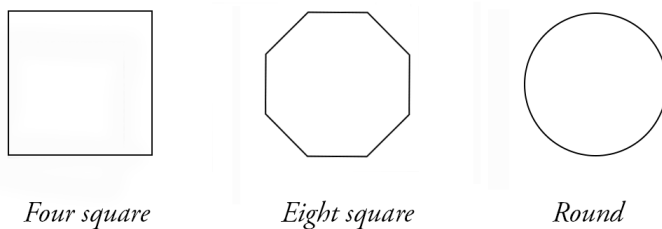
### 42. Spar holder

The pieces are assembled from the parts on **Sheets 8 and 14**. The completed spar shaping jig should look like the photograph below. The bench hook piece is glued on the underside at the opposite end to the end block (at right in the photo below).



### 45. Mast making

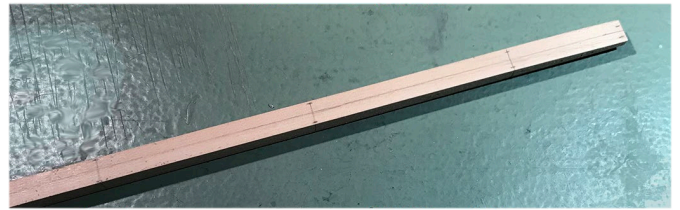
The first thing to understand are the stages in shaping a mast or yard. The first step is to mark out the spar on one face for its tapering profile. This is then cut to shape by cutting two opposite sides. One of these cut faces is re-marked, then the other two sides are cut to make it *four square*, as it is called. Next the spar is marked out for an octagon (see below) and cut to *eight square*. In the shipyard the spar is then shaped *sixteen square*. However this is unnecessary at model scale. Finally the spar is rounded off.



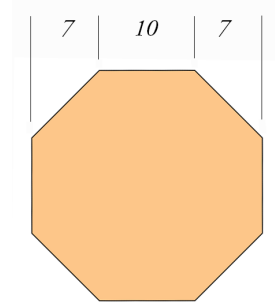
For this model the spars are already shaped on two sides of the four square, so all you need do is mark out one of these sides once the char is removed.

Draw a centerline down one shaped side. Mark this off at about 2" intervals and transfer the widths from the shaped surface to the unshaped ones using a very sharp pencil point (photo top of next column).

Using either a small plane, sharp chisel or sandpaper, remove wood until you reach the marks on each side. This gives you a four square spar.



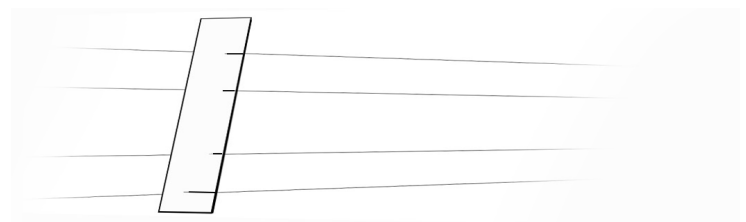
Next mark out the spar for cutting it to an octagon. Here use the 7:10:7 scale. This proportion is used for laying out an octagon, which is the next stage in converting a square sectioned piece of wood to round.



7:10:7 octagon scale

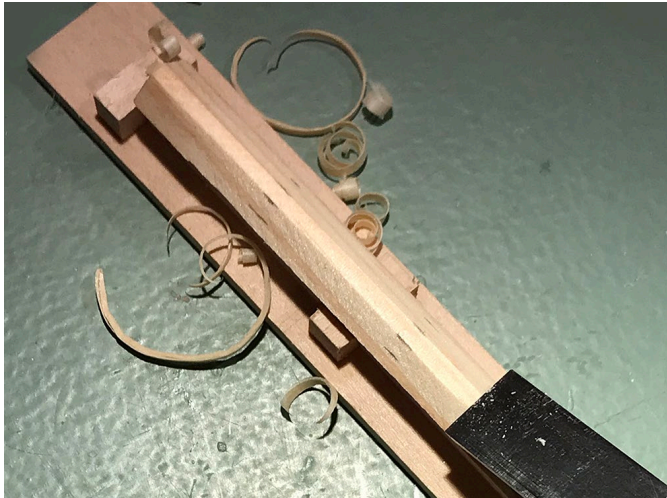
Here's how to use the scale: Mark the width of the spar across the four-square at a specific point along its length on a paper tick strip. Slide the strip along the scale until the outer lines coincide with the tick marks.

Transfer the inner lines to this strip, then transfer these new marks back to the spar on all four sides. Repeat at different points along the spar.



Place the mast on the shaping jig. It will sit at 45° in the grooves and should snug up against the stop. **If any section should remain square, mark and tape it off with masking tape.** Shave the uppermost surface, keeping your tool edge horizontal, down to the marks.

Either use a miniature plane if you have one, or use a sharp chisel blade, bevel down. Reverse your direction of cut if grain is an issue. Repeat this process to bevel off the other three corners along the spar.

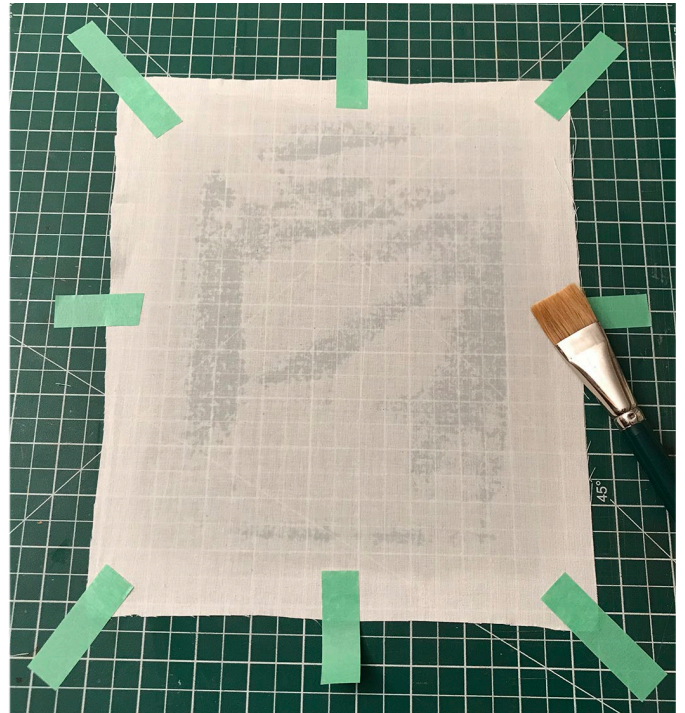


Next, put the octagonal mast in your vise and sand off the corners using a sanding strip with a to-and-fro motion (photo below). Turn the spar frequently to make sure that you shape all sides evenly. For fragile spars, do a section at a time. **If there are octagonal sections to a spar, make sure not to round them off!** A piece of masking tape wrapped around will act as a reminder. Sand only until the flats just disappear.



## 50. Sail material

There is more to a sail than just a piece of material. Cut a piece of sailcloth larger than the main sail and place it on a non-stick surface such as your cutting mat. Make sure that the mat is clean. Stretch the fabric out using pieces of masking tape as follows: Stick pieces on the center of two opposite sides, then on the centers of opposite ends. Finally stick pieces diagonally in all four corners, pulling very slightly.



Dilute some white glue to about the consistency of cream and paint the material with it. Allow this to dry. The mixture will stiffen the material, flatten it and prevent fraying when it is cut.

## 52. Attaching a sail

Lashings are needed to tie the upper corners of the sail to the gaff. There are different ways to do this. Use 0.3 mm line. The simplest way is as follows:

Pass one end of an 8" length of line through the hole on the peak corner of the sail. Make two half hitches and dab on dilute white glue to set this. Take a smear



of white glue and roll it into the other end between your fingers to stiffen it. Once the glue is dry, trim any line past the knot off. Thread the other end of the line through the hole in the outer end of the gaff from above. Make sure that this eye is closer to the *luff* end of the sail before continuing. Pass the thread loosely two or three times through the peak corner hole of the sail and gaff.

Tie off at the inner *throat* end of the gaff and sail corner in the same way. Gradually tighten the threads so that the sail hangs equally in from both ends of the gaff, then tie off the ends, glue them and trim.

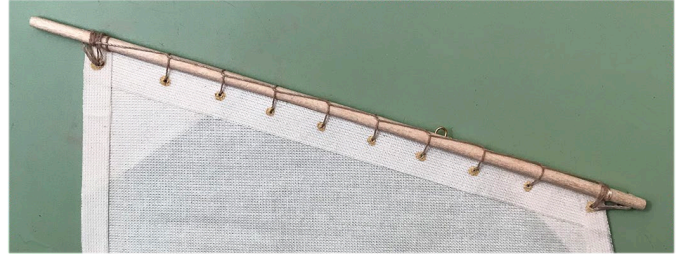
A more shipshape method is to pass two turns as before, then two more turns as shown in the photograph. (The next two photos are from the pram kit, and are slightly different to the smack main sail.)



Use at least a 12" length of 0.3 mm line for the lacing. Begin by taking two half-hitches around the gaff at the peak end of the spar beyond the lashing that is already in place. Glue these down. Stiffen the far end of the line for threading, as before. Loop the line through the first hole in the sail, hitch it around itself and so on. When you reach the luff end, finish off with two more half-hitches around the other lashing.

When using nylon line, wetting it will help tame it.

Also use dilute white glue on it once everything is snugged up. Alternatively, buy a reel of cotton thread. This may be easier to work with. Again, a little water on the line is your friend.



## TOOLS AND MATERIALS

You should already have these tools and materials from building previous models. **New items for this model are shown on page 37. Most of the items listed below are available from Model Expo.**

### Glues



The most often used glues are polyvinyl alcohol (PVA) white glue or aliphatic yellow carpenters' glue. Both are easy to use and clean up with water before setting. Available from your local hardware store. These glues can be dissolved using rubbing alcohol (see below).

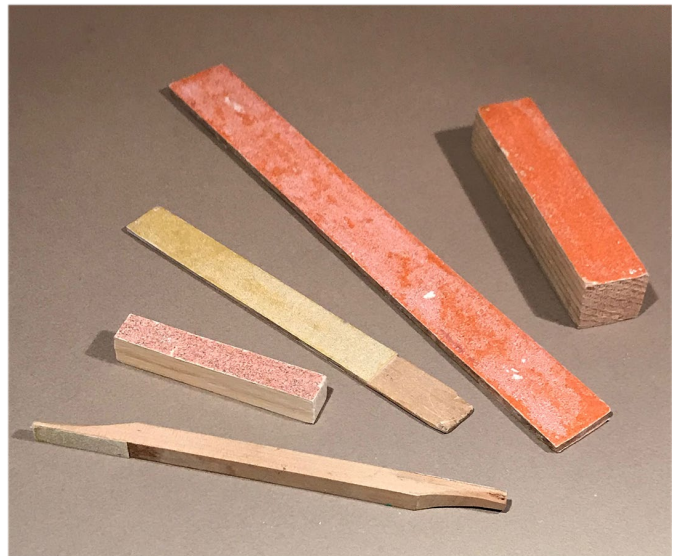
Another useful glue is rubber cement. This is used like contact cement. Coat both surfaces to be joined and allow the cement to dry. They will then stick to each other. Excess dry glue can be rubbed off with a piece

of crêpe rubber, or use a regular rubber band like an eraser. This is very useful for sanding sticks. Rubber cement is available at your local craft store.

### Rubbing alcohol

You will need this to separate a glue joint if something goes wrong. Try to get 95% grade or higher, available from your local drug store. The 70% has higher water content and wood will need time to dry out before re-gluing. Do not use near a source of ignition!

### Sandpaper and sanding sticks



Sandpaper comes in a wide variety of grades. Two useful grades for our purpose are 150 grit and 220 grit. Coarser grades cut too aggressively and finer ones produce very fine dust without finishing the surface any better. Find these at your local hardware store.

Sanding sticks are very helpful. They can be easily made by sticking sandpaper to a piece of flat or curved scrap wood, or even heavy card, as needed (photo above). You can control the sanding process much better by moving the item to be sanded than holding a piece of sandpaper or the sanding stick in your hand. Move the piece back and forth along the stick.

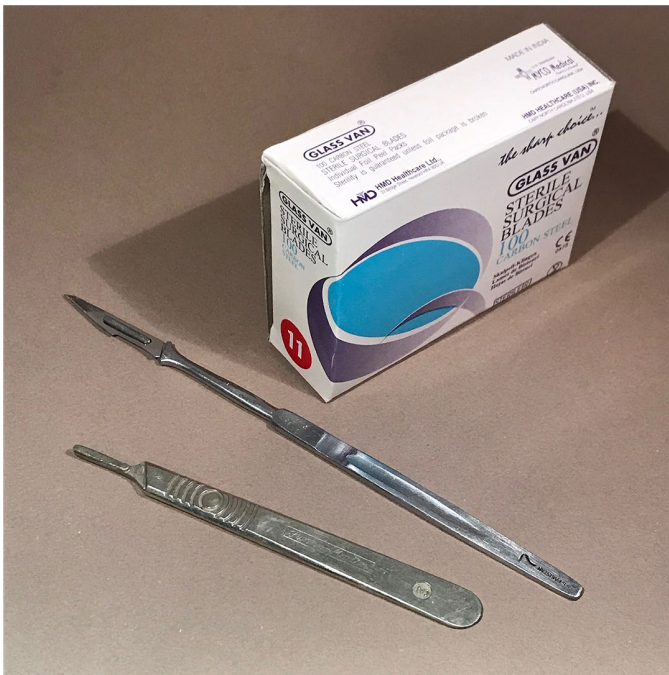
I use rubber cement (see *glues*) to stick sandpaper to the stick. When dulled, the paper can be peeled off and replaced with a new piece. You could use white or yellow glue instead, but then you can't peel off used sandpaper to replace it.

Coat the back of the sandpaper and the stick with rubber cement and let it dry. When both surfaces are ready, press the stick onto the sandpaper. Trim the paper using a disposable box-cutter style blade.

### Cutting surface

A plastic self-healing cutting mat is a must, particularly if building on the dining room or kitchen table! It will save a lot of grief or explaining. Get the largest size that will work best for your situation.

### Knife and blades



For these kits, a basic knife such as an X-Acto or Excel with #11 blades is a start. However, these blades get blunt and need to be replaced quite often, so the cost can add up. You might wish to consider a surgical scalpel handle, such as Swann Morton. A box of 100 #11 blades will last you a long time. These are

available from medical supply houses or from Model Expo on-line. I recommend changing blades using small flat-nose pliers\*; even dull blades can cut. Don't ask how I know this! Dispose of used blades in a sharps disposal container, please. A small supply of  $\frac{3}{8}$ " wide chisel-end blades such as #17 size\* will also be useful.

### Set square



A small steel or plastic engineer-style set square will be very useful.

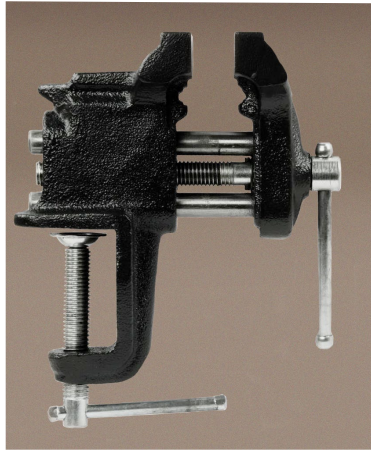
### Saw

A small razor saw with replaceable blades such as X-Acto or Excel (above) is a very helpful tool to have.

### Clamp-on vise

I prefer the kind that clamp onto the table edge. There are suction-mount ones available, but I find that they always come loose when you don't want them to! A small vise is all that is needed, such as a 3" Irwin, DeWalt or Bessey. A more expensive option is a universal or rotating vise which is very helpful for building this model. Find one at your local hardware store or on-line.

So that you do not mar the workpiece, line the jaws with a softer material. I custom cut pieces of cardboard to size and rubber cement them on. They are easily replaced when they get chewed up, as will happen.



### Paint brushes



For model work I find ‘flat’ brushes best. Please buy quality brushes and look after them – cheap brushes that you replace cost more in the long run and will probably shed hairs in your paint! I find  $\frac{3}{8}$ " or  $\frac{1}{2}$ " wide ones for acrylic paint the most useful. Also from your local art or craft store.

For glue, I use a number 1 or 2 size artists’ round brush. Wash it out well after every session. Should glue dry on it, rubbing alcohol will rescue the brush.

**Care:** wash your brush out well with soap and water after use. Should paint dry on the brush (please try not to let this happen!) you can dissolve acrylic paint in rubbing alcohol. When washed and clean, rub a little

soap into the hairs to re-shape them before storing. Never, *ever* leave your brushes bristles down in a water jar! They will splay out permanently. I have brushes over 20 years old that are still in good shape because of the care suggested here.

### Paint

Any good acrylic paint for models such as the Model Expo range will perform well.

### Tweezers



A good pair of fine pointed stainless steel tweezers are a useful item to have, but not essential for this first model.

### Clips

2" mini-spring clamps with rubber tips are very helpful. ‘Bulldog’ style binder clips are also occasionally useful. An assortment of smaller sizes can be found on-line or at your local stationery store. Buy more in the sizes you need, as you need them. One can never have enough clamping gizmos!

### Elastic bands

These are handy and inexpensive items to have. Keep a number of different sizes on hand.

## Extra tools for building the lobster smack

### Swivel vise

A swivel vise that clamps to the edge of your work surface is really helpful. Suction style vises always fail to stick at crucial moments!



### Butane micro-torch

This refillable torch is very useful when working metal. Used for both annealing (softening) both copper and brass, as well as for silver soldering.



### Soldering mat

When using heat from the torch on metals, a heat-proof soldering mat is a must. Even so, place the mat on a surface without a fine finish.

### Cyanoacrylate glue (CA)

This is recommended for use only sparingly. It is to join metal to wood as a substitute for epoxy resin glue.

### Needle-nose pliers

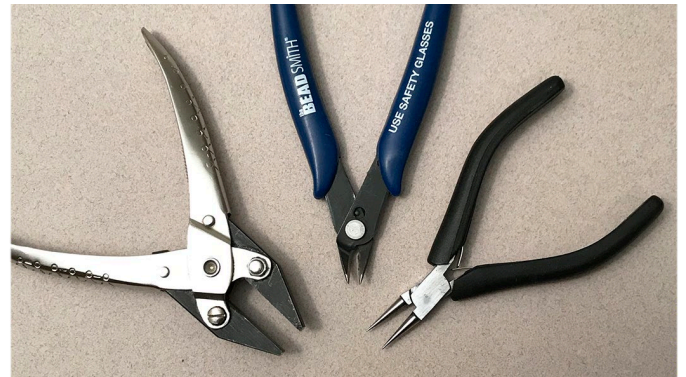
Also called round-nose pliers, these very small pliers are excellent for bending small wire loops and hooks. It pays to buy a quality pair with a box joint.

### Parallel pliers

These are different from other pliers in that the jaws stay parallel as they open and close. They act like a small vise. Excellent for holding or flattening metal strips and for closing up wire loops.

### Flush cutting wire snips

Make sure that these have hardened jaws. Some snips will only cut soft copper wire. The BeadSmith ones (shown below) are excellent.



### Center punch

This tool is used to dimple a surface, providing a positive, accurate center for drilling holes. The punch is spring-loaded and its power can be varied by turning the knob at the top of the handle.



### Masking tape

One can use green masking tape, but Tamiya brand flexible plastic tape is far superior. I used 5 mm width.





**MODEL SHIPWAYS**  
QUALITY KITS SINCE 1946

# Scale Model Kits Made in the USA!

America's leading authority of historically accurate wooden model kits.

## Look for Our Full Line of Products

### HMS BOUNTY'S LAUNCH

Length 17-1/4"  
Height 14-3/4"  
Beam 5-3/8"  
Scale (1:16)

No. MS1850



### DAPPER TOM

Length 24"  
Height 18"  
Scale 5/32" = 1 ft.

No. MS2003



### NEW BEDFORD WHALEBOAT, C. 1850-1870

Length 24"  
Height 4-5/8"  
Scale 3/4" = 1 ft. (1:16)

No. MS2033



### HARRIET LANE

Length 19-1/2"  
Height 9-1/2"  
Scale 3/32" = 1 ft.

No. MS2010



### PINNACE

Length 11-3/4"  
Width 2-1/2"  
Scale 1/2" = 1 ft. (1:16)

No. MS1458



### 18TH CENTURY LONGBOAT

Length 11-3/4",  
Scale 1/4" = 1 ft.

No. MS1457



### PHANTOM, NEW YORK PILOT BOAT

Length 13-1/2"  
Height 13-1/2"  
Scale 1/8" = 1 ft.

No. MS2027



### FLYING FISH

Length 36"  
Height 22-1/2"  
Scale 1/8" = 1 ft. (1:96)

No. MS2018



### MAYFLOWER, 1620

Length 22"  
Height 17"  
Scale 5/32" = 1 ft.

No. MS2020



### FAIR AMERICAN

Length 26-1/2"  
Height 22"  
Scale 1/4" = 1 ft. (1:48)

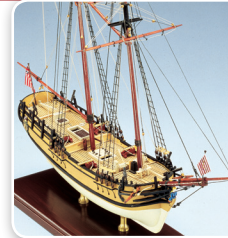
No. MS2015



### SULTANA

Length 17"  
Height 15" Scale 3/16" = 1 ft. (1:64)

No. MS2016



### RATTLESNAKE, PRIVATEER, 1780

Length 28"  
Height 18"  
Scale 3/16" = 1 ft. (1:64)

No. MS2028



### GUNBOAT PHILADELPHIA

New from Bob Crane, designer of USN Picket Boat No. 1

No. MS2263



### WILLIE L. BENNETT, SKIPJACK

Length 24"  
Height 16"  
Scale 3/8" = 1 ft. (1:32)

No. MS2032



### USS ESSEX

Length 27"  
Height 8"  
Scale 5/32" = 1 ft. (1:76.8)

No. MS2041



### USS CONSTITUTION, 1797

Length 48"  
Height 32"/Width 16"  
Scale 5/32" = 1 ft. (1:76.8)

No. MS2040



### BENJAMIN W. LATHAM

Length 33"  
Height 27"  
Scale 1/4" = 1 ft. (1:48)

No. MS2109



### PRIDE OF BALTIMORE II

Length 32"  
Height 22-1/2"  
Scale 3/16" = 1 ft. (1:64)

No. MS2120



### BLUENOSE, CANADIAN FISHING SCHOONER

Length 32"  
Height 26-1/2"  
Scale 3/16" = 1 ft (1:64)

No. MS2130



### CHARLES W. MORGAN, WHALING BARK

Length 25" Scale 3/16" = 1 ft. (1:64)

No. MS2140



### EMMA C. BERRY LOBSTER SMACK

Length 26-3/8"  
Height 28-1/2"  
Scale 3/8" = 1 ft (1:32)

No. MS2150



### ARMED VIRGINIA SLOOP

Length 31"/Height 18"/Width 8-1/4"  
Scale 1/4" = 1 ft. (1:48)

No. MS2160



### GLAD TIDINGS, PINKY SCHOONER

Length 29-1/2"  
Height 23" /Scale 1/2" = 1 ft. (1:24)

No. MS2180



### CHAPERON, STERNWHEELER

Length 34-1/2"/Beam 7-1/2"/Height 12"/ Scale (1:48)

No. MS2190



### NIAGARA, U.S. BRIG 1813

Length 36-1/2"  
Height 24-1/2"  
Scale (1:64)

No. MS2240



### SYREN, US BRIG 1803

Length 33"  
Height 27"/ Scale 3/16" = 1 ft (1:64)

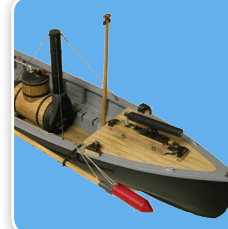
No. MS2260



### U.S.N. PICKET BOAT NO. 1, 1864

Length 22-1/2"  
Width 5"/Scale 1:24 (1/2" = 1 foot)

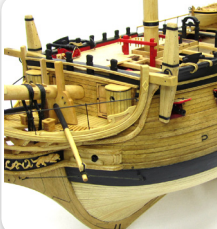
No. MS2261



### CONFEDERACY

Length 35"  
Height 8-1/2"  
Scale 3/16" = 1 ft

No. MS2262



### CIVIL WAR RUCKER AMBULANCE

Length 8" · Width 4-1/2" · Height 6-1/8" · Scale 1:16  
**No. MS4017**



### WHITWORTH 12-POUNDER

Length 10" · Width 4" · Height 3-1/4" · Scale 1:16 · Weight 1 lb. 4 oz.  
**No. MS4001**



### NAPOLEON CANNON, 12-POUNDER

Length 10" · Width 4" · Height 3-1/4" · Scale 1:16 · Weight 1 lb. 4 oz.  
**No. MS4003**



### PARROTT RIFLE

Length 8" · Width 4-1/2" · Height 3-1/3" · Scale 1:16 · Weight 1 lb. 4 oz.  
**No. MS4008**



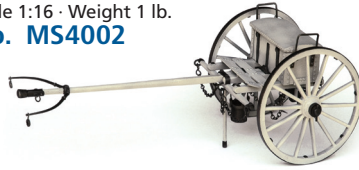
### CAISSON, AMMUNITION CARRIAGE

Length 8-1/4" · Width 4" · Height 3-1/2" · Scale 1:16 · Weight 1 lb.  
**No. MS4009**



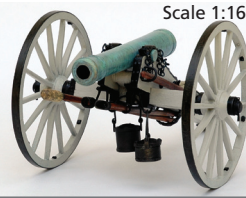
### CIVIL WAR LIMBER

Length 10" · Width 4" · Height 3-1/4" · Scale 1:16 · Weight 1 lb.  
**No. MS4002**



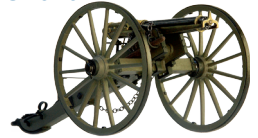
### JAMES CANNON, 6-POUNDER

Length 8-1/4" · Width 4-1/2" · Height 4" · Scale 1:16 · Weight 1 lb. 4 oz.  
**No. MS4007**



### GATLING GUN

Length 7-7/8" · Width 3-3/4" · Height 3-1/4" · Scale 1:16  
**No. MS4010**



### ORDNANCE RIFLE

Length 8" · Width 3-3/4" · Height 3-1/4" · Scale 1:16  
**No. MS4013**



### BATTERY FORGE

Length 7-7/8" · Width 3-3/4" · Height 3-1/4" · Scale 1:16  
**No. MS4012**



### MOUNTAIN HOWITZER

Length 5" · Width 3-1/2" · Height 2-3/4" · Scale 1:16  
**No. MS4014**



### DOUBLE BARREL CANNON

Length 7-3/4" · Width 3-3/4" · Height 3-3/4" · Scale 1:16  
**No. MS4015**



### COFFEE WAGON

Length 5-7/8" · Width 4-1/2" · Height 4-1/2" · Scale 1:16  
**No. MS4016**



### NAPOLEON CANNON, 12-POUNDER BRASS BARREL SIGNATURE SERIES

Length 8-1/4" · Width 4" · Height 3-1/2" · Scale 1:16  
**No. MS4003SS**



### CIVIL WAR LIMBER SIGNATURE SERIES

Length 10" · Width 4" · Height 3-1/4" · Scale 1:16  
**No. MS4002SS**



### 18th Century Naval Cannon Models

#### 32-POUNDER CARRONADE

L 8-1/4" W 4-1/2" H 3-1/2" · Scale 1:24  
**No. MS4004**

#### NAVAL DECK CANNON

L 8-1/4" W 5-1/4" H 3" · Scale 1:24  
**No. MS4005**

#### 18TH CENTURY SEA MORTAR

L 4" W 3" H 2-3/4" · Scale 1:16  
**No. MS4011**



# Model Trailways

1:12 Scale Models of Horse-drawn Vehicles

### BUCKBOARD WAGON

Length 9-3/4" · Height 5-1/4" · Scale (1:12)  
**No. MS6004**



### CONCORD STAGECOACH

Length 13-3/4" · Height 8-3/4" · Scale (1:12)  
**No. MS6001**



### CONESTOGA WAGON

Length 19" · Height 9" · Width 6" · Scale (1:12)  
**No. MS6002**



### DOCTOR'S BUGGY

Length 5-1/2" · Height 5" · Width 8" · Scale (1:12)  
**No. MS6003**



## MODEL AIRWAYS



1:16 Scale Models of Vintage Aircraft

The ultimate collection of renowned aircraft model kits.



### NIEUPORT 28

Wingspan 20" · Fuselage 15-3/4" · Scale 1:16 · Weight: 1.9 lb.  
**No. MA1002**



### THE WRIGHT FLYER, 1903

Wingspan 30" · Length 15" · Scale 1:16  
**No. MA1020**



### SOPWITH CAMEL F.1, 1917

Wingspan 21" · Fuselage 14-1/16" · Scale 1:16 (3/4" = 1 ft.)  
**No. MA1030**

### CURTISS JN4D 'JENNY'

Wingspan 32-1/2" · Fuselage Length 20-1/2" · Scale 1:16  
**No. MA1010**



### ALBATROS D.VA, RED BARON'S AIRPLANE

Wingspan 22-1/2" · Fuselage 18-1/4" · Scale 1:16 · Weight 1 lb. 14 oz.  
**No. MA1001**

