



Chapter Sixteen Bowsprit, Jibboom and Flying Jibboom

The Bowsprit - is made using a $\frac{1}{4}$ " dia. dowel. See the photo above. The Bowsprit (as for all of the masts and spars) should be tapered. An easy way to do this would be to place the dowel in a power drill and taper it to shape with some medium sandpaper as it turns. Note in the photo and on the plans that there is a square tenon at the heel of the bowsprit. Use a sharp #11 blade to carve this tenon. Keep in mind the angle and size of the tenon shown on the plans. The tenon must fit easily into the opening you made for it in the bowsprit bits. Check it periodically while shaping it to avoid removing too much material.

The outboard end of the bowsprit gradually changes shape. You must form a square profile and tenon as shown on the plans. The pieces that form the bees will not fit properly unless they are glued against a flat squared edge. The bees consist of two main elements, the seating and the bee blocks. The seating "sits" on top of the blocks. The blocks are made from a length of $\frac{3}{32}$ " x $\frac{1}{16}$ " wood. You must notch the wood using the plans as a guide to find their exact positions. Use a sharp blade and some files to make them. Then create two appropriately sized sheaves to fill the slots. These will not be working sheaves but make sure you allow enough room on either side for some rigging to pass through them. Make the sheaves from any suitable scrap wood and sand them flush with the inside edge of the bee blocks. Note how there is only one sheave for each block. Check the plans to be sure you are placing them in their correct slots.

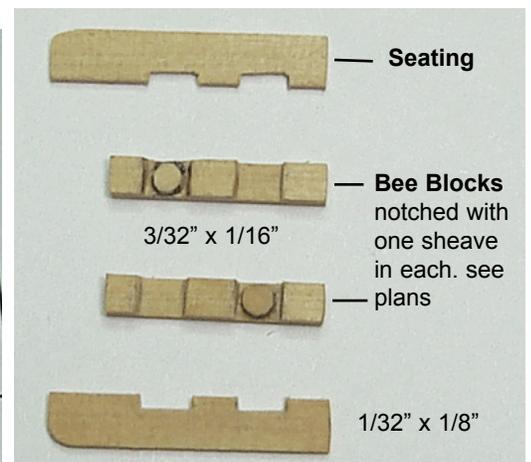
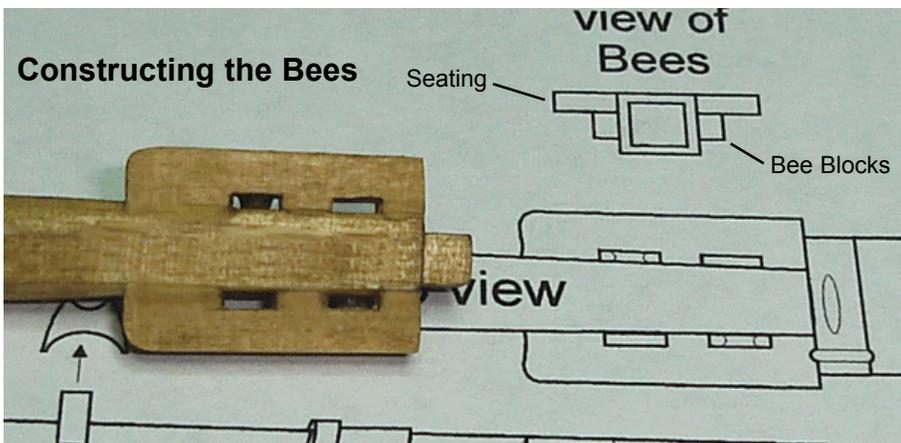
The seat for the bees is made using a $\frac{1}{8}$ " x $\frac{1}{32}$ " strip. Notch them to line up with the notches you made in the bee blocks. Glue them onto the end of the bowsprit first followed by the bee blocks underneath them. To avoid a blotchy appearance you can stain all of these elements before assembly.

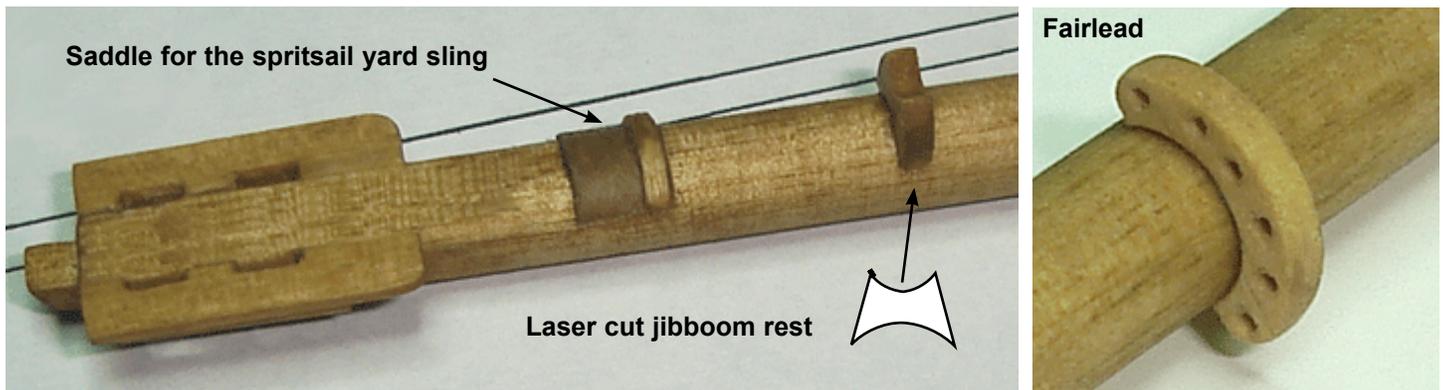
The saddle for the spritsail yard sling is also made of two elements. The first layer is made using some stiff card or a manila office folder. Cut the material to size and glue it onto the bowsprit after staining it. There is a thinner ($\frac{1}{32}$ " x $\frac{1}{16}$ " strip of wood glued on top of the aft end of this first layer which will complete the saddle. Soak it well before attempting to bend it to fit the bowsprit. The jibboom rest has been laser cut for you and can be glued into position as well.

A fairlead is positioned under the Bowsprit. It has been laser cut for you but six holes will still need to be drilled through it. Take your time and don't apply too much pressure while drilling them. It is recommended that you actually drill the holes before you remove the fairlead from the $\frac{1}{16}$ " thick laser cut sheet. This piece is very fragile and could split if you aren't careful. Glue it into position when completed.

There are five gammon chocks which are made from $\frac{1}{32}$ " x $\frac{1}{32}$ " strip wood. Some folks prefer to cut them to length and glue them onto the bowsprit. Then they shape them with a sharp blade afterwards. Note how each chock slopes aft. It might be tricky to pre-shape such tiny pieces before they are glued firmly into place first. There is another chock/cleat on the bottom of the bowsprit (directly under the jibboom rest).

To complete the bowsprit, simply use the supplied $\frac{1}{16}$ " wide pinstripe tape to simulate the three iron bands inboard. Take their locations from the plans. Rather than install the completed bowsprit on the model now, it will be easier to complete the entire assembly first. This includes the jibboom, flying jibboom, jack staff and dolphin





striker. Once painted and completed, you can also attach any blocks ahead of time because this is also easier to do while not installed on the model.

The Bowsprit cap - has been laser cut (1/8" thick) for you. It was cut slightly longer than needed because as you can see in the photos provided, you must sand the top and bottom of the cap to their correct angles. Note on the plans that while the cap is positioned vertically the top and bottom are angled to match the run of the bowsprit assembly when installed. Two holes are laser cut through the cap. One of them is square. These two holes need to be filed to that same angle. The square hole needs to fit the tenon you carved on the forward end of the bowsprit. Check the fit periodically as you shape the hole in the cap. There is a third smaller hole on the forward side of the cap (port side). This hole is made to accept the tenon on the heel of the flying jibboom. It should not be drilled all the way through the cap.

The jack staff is secured to the aft side of the cap. It will fit into a channel that you can file on the starboard side. You can see this channel in the photos provided and on the plans. The bees should also have a notch filed into it which will line up with the channel you made to accommodate the jack staff. Lastly, the cap has seven eye bolts inserted into pre-drilled holes. Check the plans for their locations and paint them black. Glue the cap onto bowsprit.

The jibboom — is made using a 5/32" diameter dowel. It should be tapered to fit through the bowsprit cap and sit comfortably on the jibboom rest. The heel of the jibboom is eight sided and should be shaped as shown on the plans. You will also notice a large sheave that you must create through the heel of the jibboom. The outboard end should be carved or filed to shape as well. See the photos provided on the next page. The tip of the jibboom has a groove

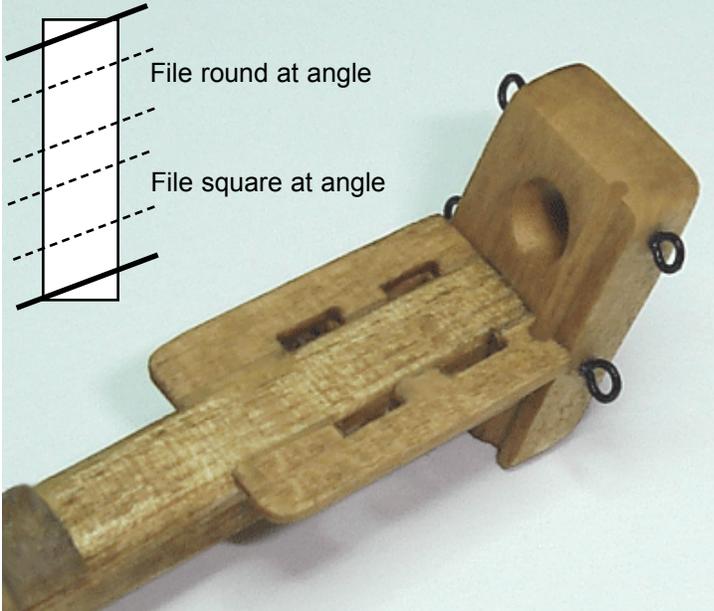
filed into it. This will be used to rig the fore topgallant stay. Then wrap some 1/16" wide black pinstripe tape around the tip of the jibboom. This iron band is positioned just behind the groove. It will simulate the first half of the jibboom iron shown on the plans. A corresponding band will be wrapped around the flying jibboom in line with this one. A photo etched brass strip will connect the two bands and secure the two together. But before you move ahead and construct the flying jibboom it would be a good idea to make the traveler for the jib stay. It would be difficult to slip onto the jibboom after the flying jibboom is glued into position.

The traveler ring - is made out of 28 gauge black wire. See the series of photos provided. The first photo shows the wire bent to shape. Simply crimp the wire to form the tighter bend at the top. Then bend the wire around an appropriate sized dowel to form the larger ring. Overlap the end of the wire as shown in the first photo. Then use a wire cutter to cut through the larger ring where the wire overlaps. This will ensure a precise seam where the two ends meet. Lastly, wrap some fine wire around the top of the traveler as shown in the second photo. This completes the fabrication of a simple traveler. Paint it black when you are finished. You can see it slipped onto the end of the jibboom in the photo provided. You will actually need two of these. A second smaller traveler ring will be needed for the flying jibboom. See the plans for details.

The flying jibboom — is tapered from a 1/8" diameter dowel. The heel is eight sided like the jibboom but at this scale it would be perfectly fine to leave it round. Create a small tenon in the heel of the flying jibboom. It will be inserted into the small hole you made in the cap for it. Check its fit periodically as you are shaping it. The outboard end is shaped much like the jibboom's. Create the groove on the tip and the sheave as shown. To position the iron band (1/16" pinstripe tape) simply hold the flying jibboom in place on the assembly. Then mark the location



1/8" thick laser cut cap. It has been cut longer than needed so you can sand the top and bottom to the correct angles. See the plans for details. The holes should be filed at the same angle. The smallest hole on the forward side will only be drilled part way through. Its for the heel of the flying jibboom.

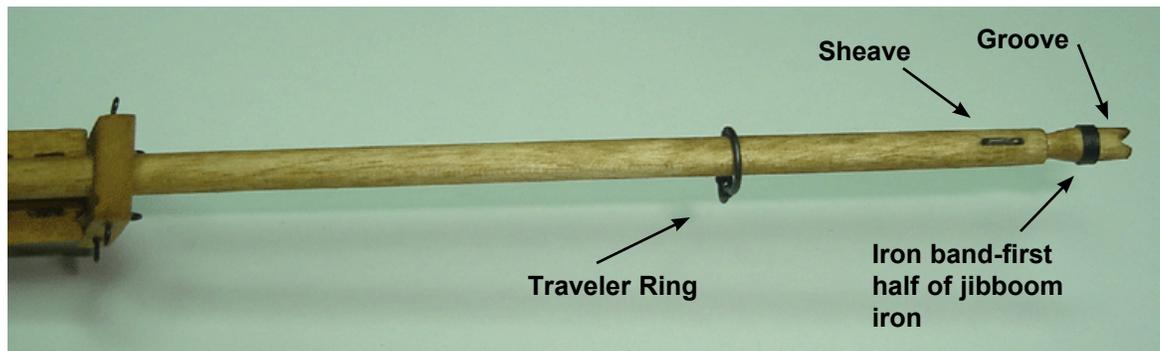
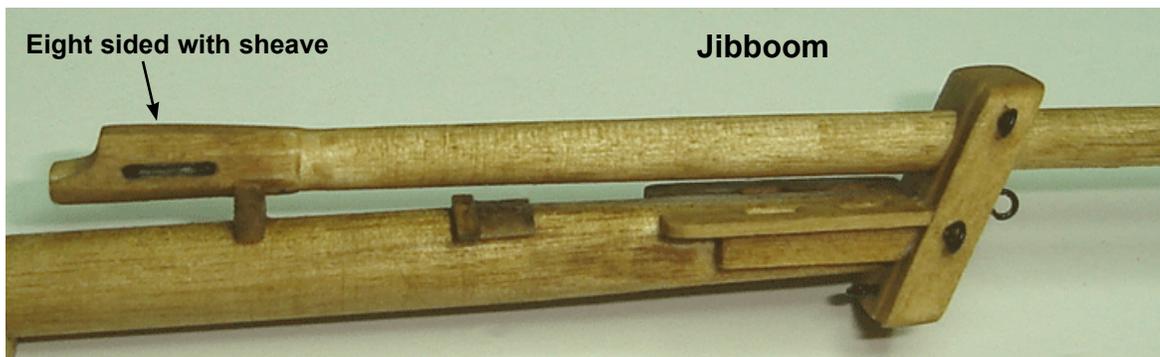


Bowsprit Cap

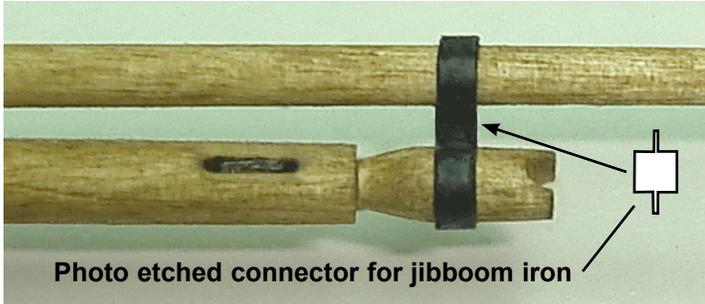
for it directly adjacent to the band on the jibboom. To connect the two bands, use the brass photo etched piece that completes the simulated jibboom iron. The photo etched piece has two pins on either end. These pins will be glued into pre-drilled holes through the pinstripe tape bands. Mark the locations for the holes to ensure the flying jibboom is positioned at the proper angle in relation to the jibboom. Then pre-punch through the pinstripe tape with a sharp awl or pin. This is very important. If you don't punch a starter hole through the tape it will certainly get caught up in the drill bit as you drill your holes. It will tear up the taped bands and you will need to redo them. Glue the photo etched piece into the band on the jibboom. Once it dries you can glue the flying jibboom into position. See the photos attached. Remember to have your traveler ring on the jibboom before you glue the flying jibboom into place. Paint the jibboom iron black when you are finished

At this point in the construction of the bowsprit assembly it would be a good time to attach the 3/32" single blocks to the cap as called for on the plans. You could also add the two 3/32" single blocks to the end of the flying jibboom for the outer martingale stays. This will be easier to do now before adding the dolphin striker and jack staff. You can also see in the photos that follow how the bowsprit and jibboom were painted. The cap and portions of the jibboom (including its heel) and bowsprit were painted black. The jibboom is also lashed to the bowsprit using .028 black rigging line as shown on the plans.

The jack staff is made using a 1/16" thick dowel. Taper it and add a ball truck/cap on the top. This can be made from a scrap piece of 1/16" thick planking. Sand or file the ball truck to its round shape and drill a small divot in the center of one side. Create the divot so it will fit on the



Flying Jibboom



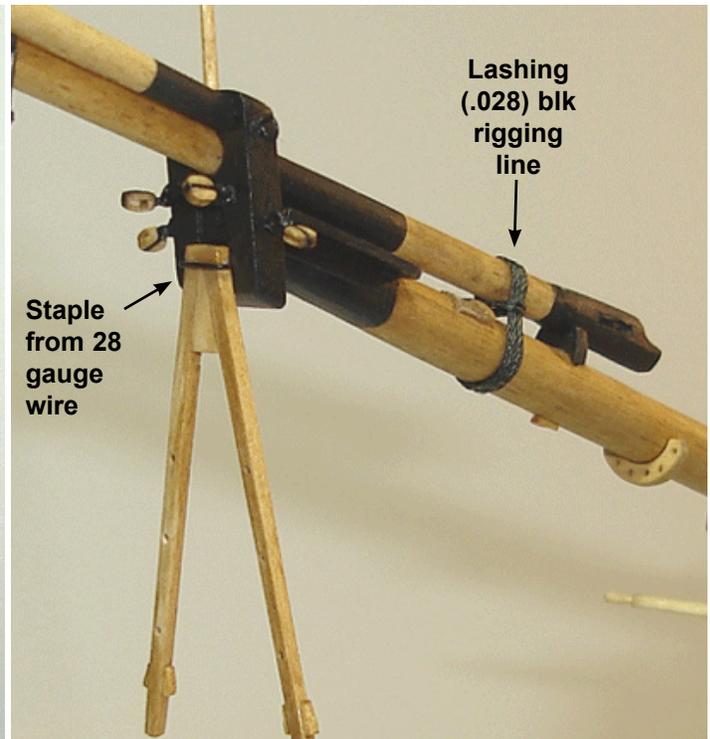
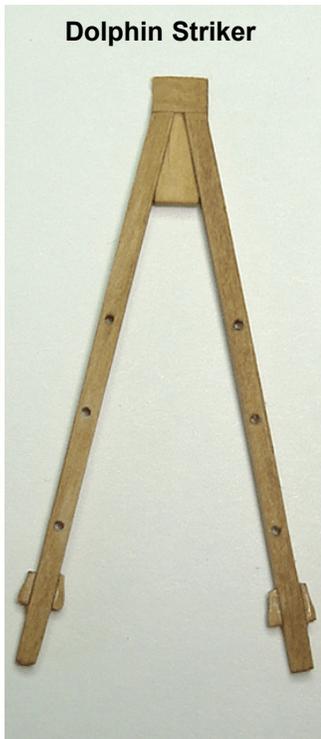
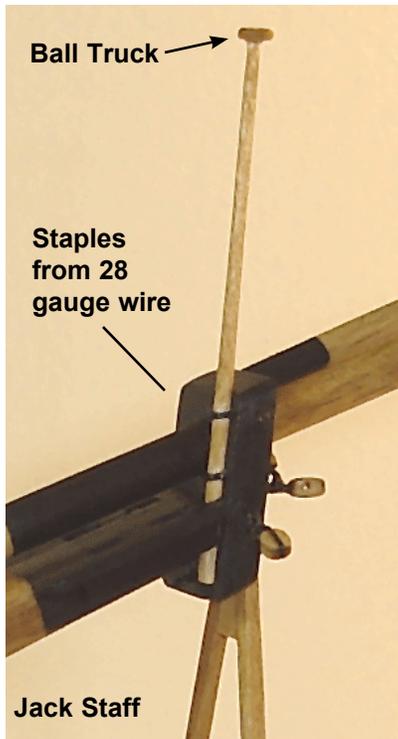
To finish it off cap the top of the assembly with length of 1/16" x 1/8" strip as shown in the photo provided. The dolphin striker will be painted black but was not done on the prototype until after it was mounted so you could see more details in the photos. Paint it before you glue it onto the fore side of the bowsprit cap. The dolphin striker is also attached to the cap with some simulated staples. One or two would work just fine. Use 28 gauge wire as you did earlier.

tip of the jack staff where you should glue it into position. Paint the ball truck black. The jack staff should slide into the groove you created on the aft side of the cap. Glue it into place and paint the part of the staff that overlaps with the cap black. The jack staff would have been secured to the cap with staples. You don't have to drill any holes into the cap for these. Instead just bend a small length of 28 gauge black wire to make the staples and glue them onto the jack staff. This will do a great job of simulating the actual staples if their ends just touch the face of the cap.

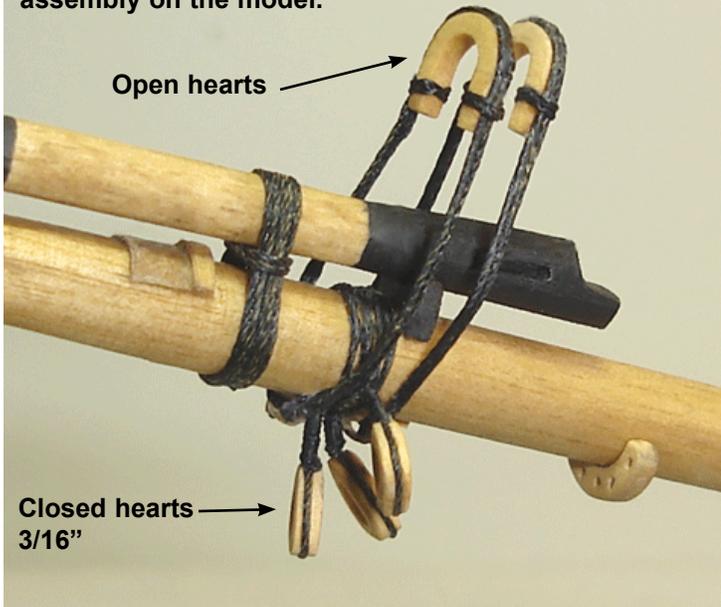
The Double dolphin striker is made primarily from 1/16" x 1/16" strips. Cut them to length and drill the three holes through them as shown on the plans. Create the small cleats for the bottom of each strip using 1/32" x 1/32" strips. These two pieces will be attached to a triangle piece of wood that is also 1/16" thick. This piece will create the proper angles for each side of the dolphin striker.

You can now create the bowsprit collars for the Bobstays, fore stays and bowsprit shrouds. The order that they appear on the model is very important. Be sure to examine the plans carefully. You should use .021 black rigging line to create them. There are four closed hearts (3/16") and two open hearts required for the collars. These are all laser cut for you but the grooves will need to be filed along their edges for the rigging line. Try to sand off all of the laser burn marks but be very careful as they are delicate. The hearts are only 1/16" thick and may split along the grain if you apply too much pressure on them. But don't worry since there are plenty of them laser cut if you need extras.

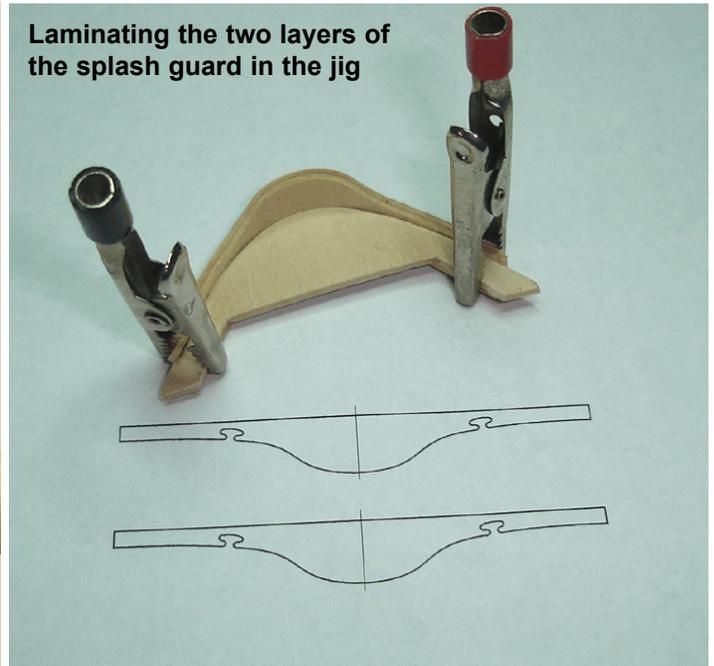
It is now time to glue the entire bowsprit assembly on the model permanently. To do this you must first file the slot in the bow so the bowsprit will sit nicely into it. Use a round file to create the shape the opening. The bowsprit should sit about half way into the rounded notch. It will need to be



Bowsprit collars are added before mounting the assembly on the model.



Laminating the two layers of the splash guard in the jig



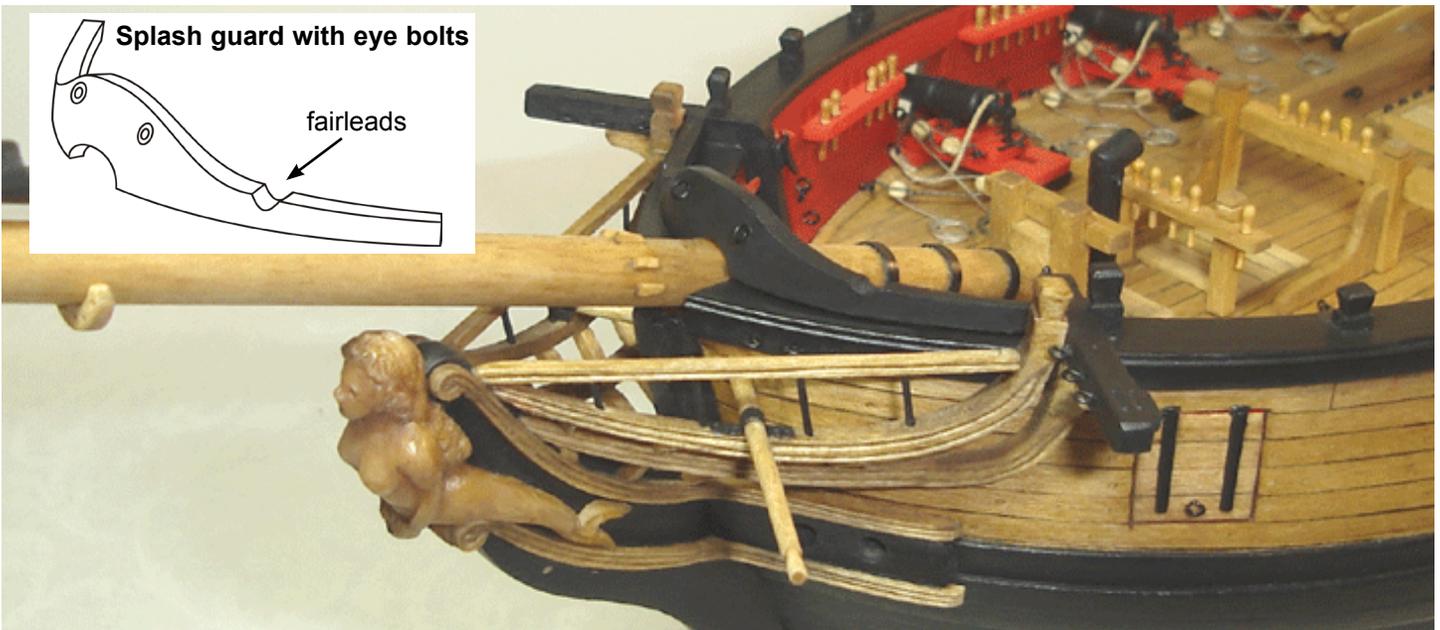
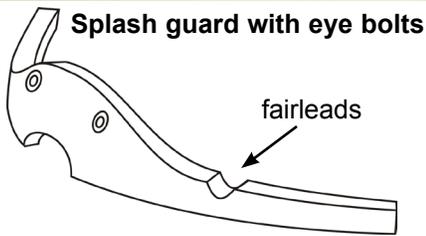
filed on an angle in order to sit properly. Test it periodically as you shape it. Be careful not to damage the top of the figurehead in the process. The tenon on the heel of the bowsprit should fit nicely into the bowsprit bitts. This will create the proper angle for the entire bowsprit assembly. The bowsprit should be between 1/16" and 3/32" above the top of the figurehead. Adjust your notch at the bow accordingly until the angle is in that range. Then glue it into position permanently.

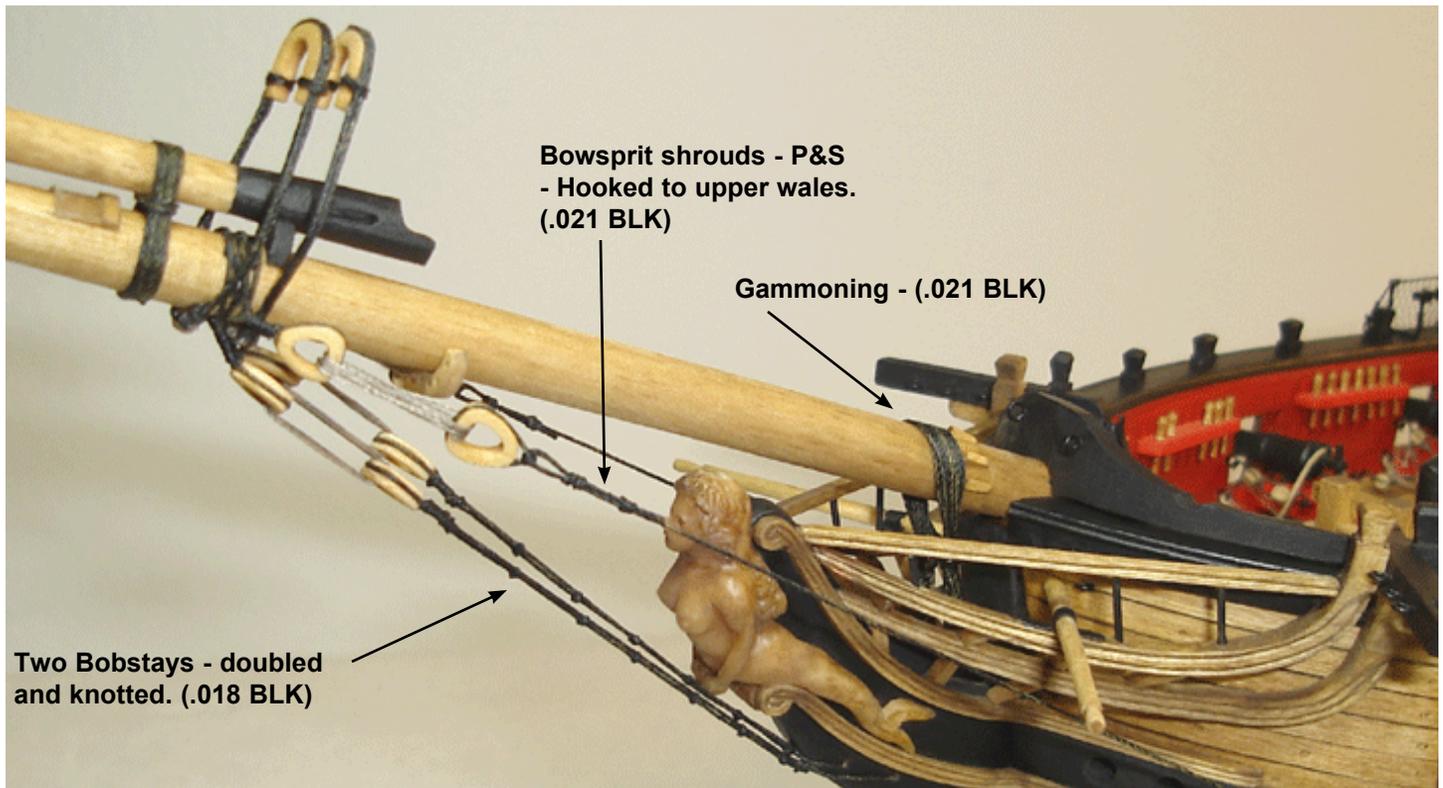
Sitting on top of the cap rail and the bowsprit is a splash guard. This splash guard has a fairlead notched into both sides. See the plans for details. The splash guard is made in two layers which are 1/32" thick. They are quite fragile as laser cut since the grain of the wood runs top-to-bottom. This will allow you to bend them with ease around the sharp bend of the bow. The two layers will be lami-

nated together with the aid of a jig. The jig is laser cut for you. Glue the two layers together using either white glue or yellow carpenter's glue. **DO NOT USE CYANO.** You want the two layers to adjust themselves as you clamp them into the jig. Clamp both glued layers into the jig quickly before the glue sets. See the photo provided. The jig is cut to approximate the curve at the bow and the splash guard will hold that shape when the glue dries.

You will notice that the two layers don't have the fairleads cut into them yet. The larger notch on the bottom of the splash guard will need to be shaped as well. The pieces would certainly have split along the grain had they been cut ahead of time. Once the glue dries you can use a round file to create the larger notch on the bottom of the piece. It should sit nicely on top of the bowsprit. The notch should be filed at an angle to match the angle of the bowsprit. Mark the locations for the small fairleads on each side of

Splash guard with eye bolts





the splash guard. Don't file them into the splash guard yet. Instead, wait until after you glue the splash guard into position.

Create a simplified notch to represent each fairlead. The more complex shape shown on the plans would be very difficult to create at this scale. There is a high probability that the splash guard would split while doing so (even after it is glued into position). Use a small round file to create the simplified notches. The fairleads should run parallel to the centerline of the ship. Add two eye bolts on the fore side of the splash guard and paint it all black. See the photo showing the splash guard painted and positioned at the bow.

Some of the rigging on the Bowsprit can be done at this time. The details are listed below and presented in the order they were completed on the prototype.

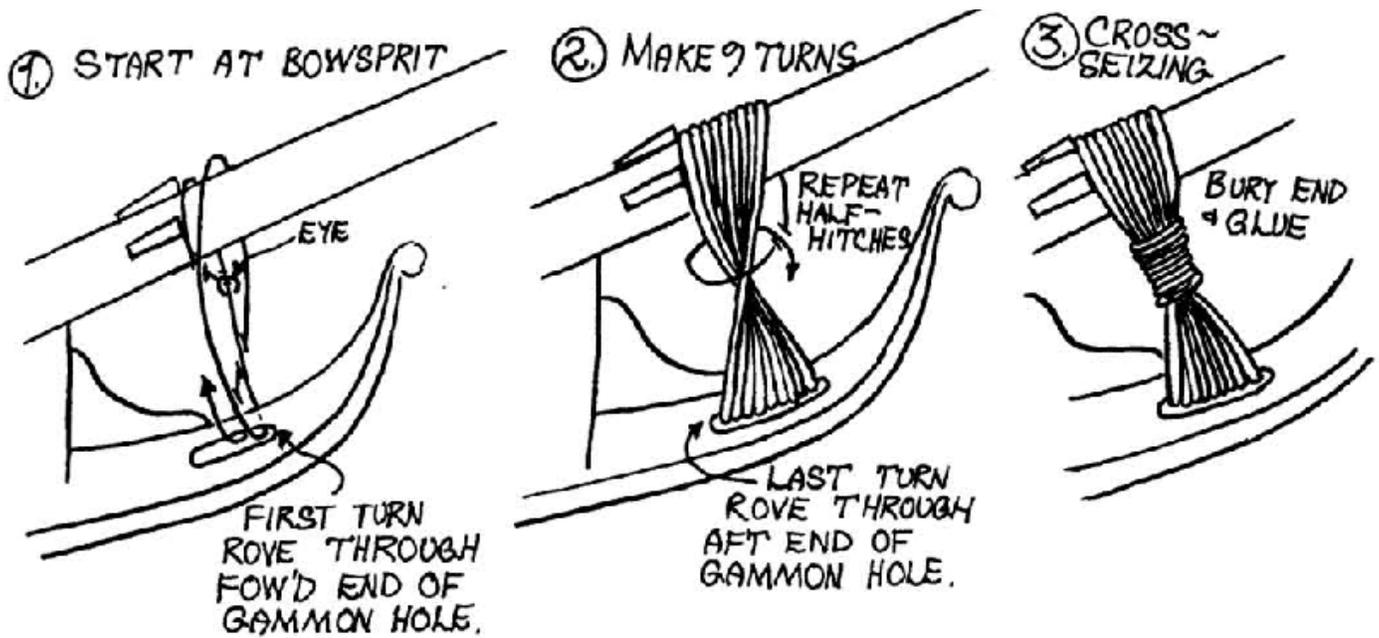
The Gammoning on the bowsprit was rigged using .021 BLK line. See the illustration on the next page for the typical gammoning on a ship like the Syren.

The Bobstays (.018 BLK)- There are two bobstays that need to be set up with closed 3/16" hearts. Lash them to their corresponding hearts with .008 tan rigging line. Try and keep the space between the two hearts consistent. The bobstays are doubled their entire length and many knots are tied along their length. See the plans for details. Run only a single strand of each bobstay through the holes on the stem and carry it back up toward the hearts. This will create the doubling. Then tie some overhand knots along their length and secure them with some super glue. Use a nail clippers to cut off the excess from the knots.

The Bowsprit Shrouds (.021 BLK) - Seize a generous length of .021 BLK rigging line to a 3/16" closed heart. Lash it to the corresponding heart on the bowsprit. There will be two bowsprit shrouds (one on each side). Keep the spacing between the lashed hearts consistent. Create a hook from some 28 gauge black wire and hook it onto an eye bolt on the hull. The eye bolt is glued into a pre-drilled hole on the upper wales as shown on the plans. While the hook is in position you can run the loose end of the shroud through it. Pull it taught but not overly tight. You don't want to pull the bowsprit out of alignment. Use a drop of super glue to secure the line temporarily so you can seize it securely to the hook. Then trim the excess line from the seizing with a nail clippers. The nail clippers is a great tool for rigging your model. The clippers will allow you to trim the line closely to any seizing or knots.

Inner Martingale Stays (.018 BLK) P & S - Seize the rigging line to the tip of the jibboom as shown on the plans. Take the loose end of the stay through the top hole of the dolphin striker. Then run it through the inner-most hole of the fairlead under the bowsprit. From here you will need to set it up with a lanyard at the bow. The Inner Martingale stay will be secured to the eye bolt closest to the bowsprit among the three eye bolts at the bow.

On the actual ship these lines would have a bullseye spliced into their ends. This would be lashed to the eye bolt with a lanyard. On our little model the scale prevents us from using actual bullseyes. Instead we will simulate them by siezing an eye onto the end of the stay. Determine the length of the stay ahead of time by holding it up close to the eye bolt on the bow. Don't apply so much tension that the jibboom is pulled downward and bent out of alignment. Form the eye and apply some super glue to it. Then take a



sharp awl and insert it into the eye. Twist the awl to help form it into a round circle. The super glue will dry quickly and preserve its shape. Remove the awl and apply another final coat of glue on the eye. The eye will be quite stiff when dry and does a good job of simulating a bullseye. Keep in mind all of this needs to be accomplished while the stay is rigged through the dolphin striker and fairlead. Depending on your skill level you may opt to simply seize the line at the bow rather than form a lanyard through

a simulated bullseye. The choice is yours. Finally use some tan sewing thread to set up the lanyard at the bow. See the photo which shows the stays set up in this manner. Touch up the glued bullseyes with some black paint since the glue will dry shiny and that is undesirable.

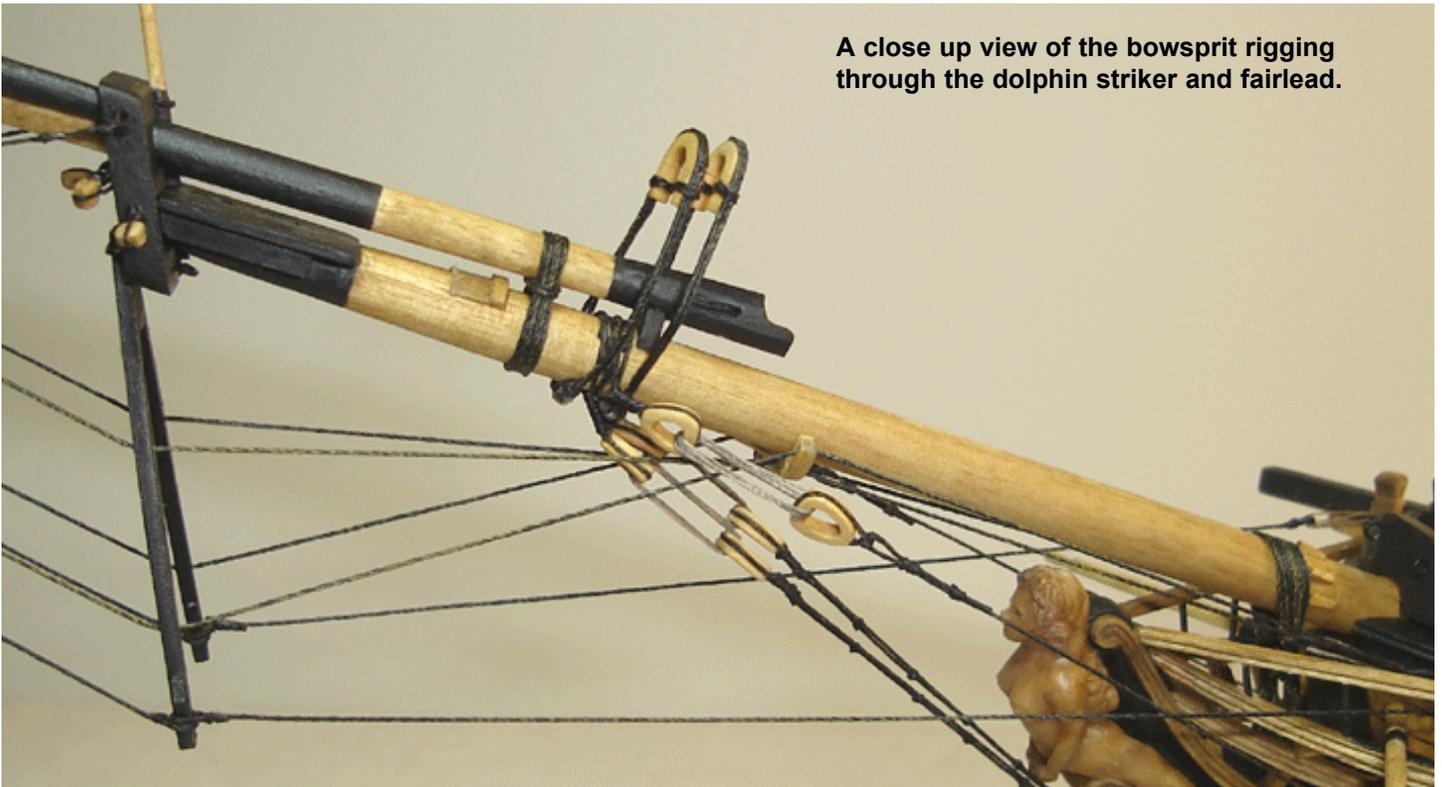
Outer Martingale Backrope (.012 BLK) P & S - is seized to the bottom of the dolphin striker. The cleats will keep the back rope positioned correctly. The loose ends are



Note how the Martingale stays and back ropes are set up at the bow. Simulate the bullseyes by forming an eye and stiffening them with some super glue. Lash with tan sewing thread

Bowsprit shrouds hooked to eye bolts

A close up view of the bowsprit rigging through the dolphin striker and fairlead.



taken directly to the upper rail of the headrails. Here they are set up with a lanyard as the inner martingale stays were. Don't make these so taut that it pulls the dolphin striker back. The dolphin striker is very fragile.

Outer Martingale stays (.012 BLK) P & S -Seize this stay to the bottom of the dolphin striker (just under the seizing for the backropes). Then take the loose end through the 3/32" single blocks on the end of the flying jibboom. From here, run it back through the lowest hole on the dolphin striker. Then take it through the outer-most hole on the fairlead under the bowsprit. The end of this stay is set up at the bow just like the inner martingale. However it is secured to the outer-most eyebolt at the bow. see the belaying plan for details. There is a detailed view of how all of these lines are secured at the bow in the upper left hand corner of the plan sheet.

Footropes (.012 BLK) P & S - The foot ropes are seized to the tip of the flying jibboom and the jibboom. There are two sets on each side of the model. They are rigged separately. The larger span is actually seized to the eye bolt on the bowsprit cap as shown on the standing rigging plan. Once they are in position you can finish them off by making a series of knots spaced evenly along them. See the photo on the next page. These footropes will not lay properly unless you treat the lines first. Soak them with

water and then hang a length of line to dry. Clip some weights on the end so they dry without any kinks. This will help them hang with a more natural swag. Wait until they are completely dry before rigging them on the model. The weight of a few alligator clips on the bottom of the lines are usually enough to straighten them out sufficiently.

Touch up all of your shiny glue spots on the lines with black paint when you are finished.

You will notice in the photo below that the entire bowsprit assembly seems to be slightly bent downward. This is from the tension of the martingale stays. Try not to create excessive tension in your lines to keep this bend to a minimum. The bending shown is actually OK. When the fore stays are rigged it will apply opposite tension and spring them back into position. A little bending is OK. A lot of bending is NOT. When in doubt use less tension.

