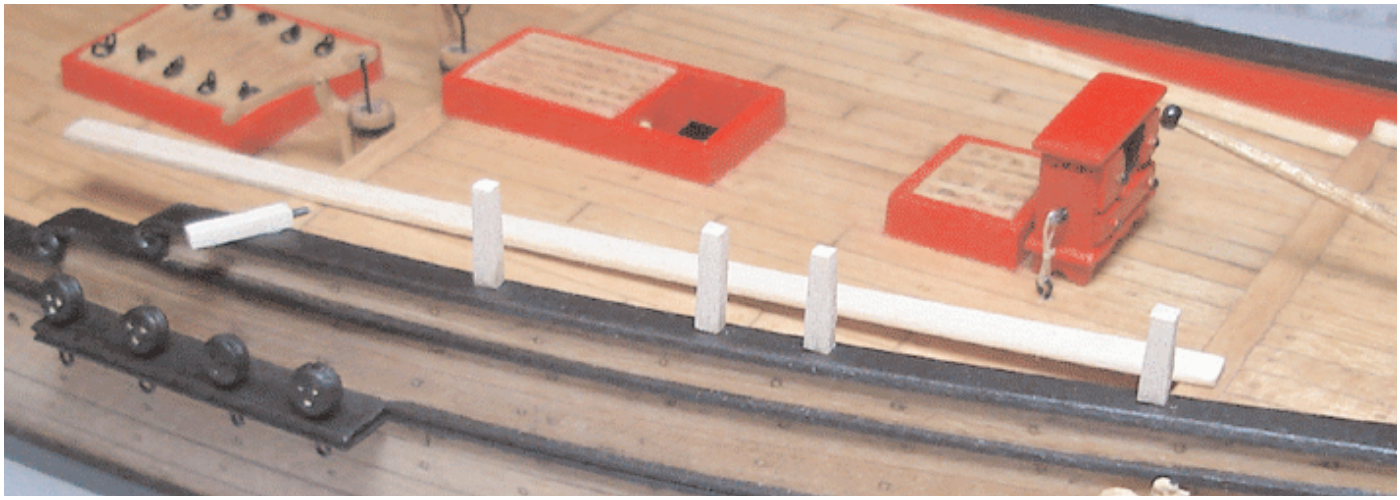
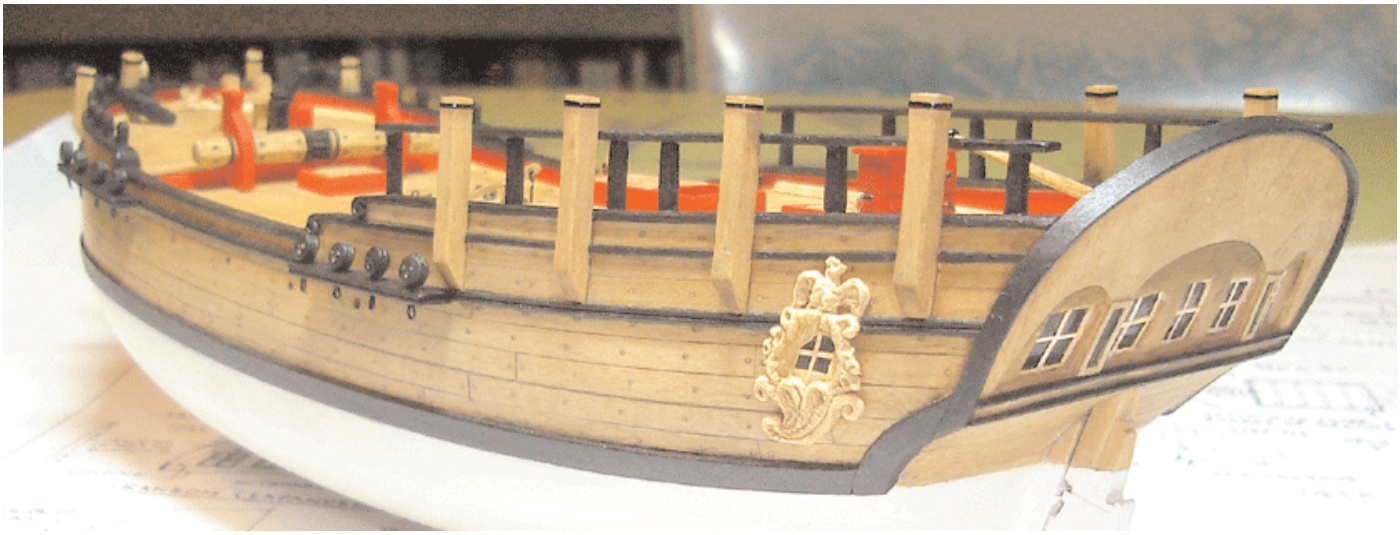


Poop Rails…

The rails for the poop and quarter deck are the last major project before building the masts and bowsprit. Building the rails was fairly straight forward. The first thing I did was create the cap for the rail. It was easier to do this now before the rail stanchions were installed. I used a basswood sheet that was 1/32" thick. The sheet was held firmly in place on top of the bulwarks so I could trace its actual shape. The cap for the poop rail will be an exact match. I wouldn't have been able to do this had the stanchions been in place. The edges of the cap were rounded with some fine sandpaper. I would prefer not to leave any hard edges. You can see the cap laying on deck in the photo above.

With the cap for the rail finished, I started building the rail stanchions. Basswood strips 2mm x 2mm were used. Place some reference points along the bulwarks where the stanchions will be placed. Take their positions from the plans. Please note that the stanchions become shorter as the rail progresses towards the stern. The stanchions also have a slight taper to them. Each is larger at it's base and should be sanded as such.

When the rail is finished it will be very delicate. The stanchions need should be reinforced so they don't break free later. To do this, I placed a pin (22 gauge wire) into the bottom of each stanchion. I pre drilled a hole then glued the pin in position. See the photo above. Corresponding holes were drilled along the bulwarks to accept these pins. I didn't glue any of the stanchions in place permanently. I pushed them into the holes so I could double check their height first. I placed the cap for the rail on top of the stanchions in order to see if they required some adjustments. Only after I was satisfied did I glue them in place permanently. You might notice that I didn't pin the cap to the rail stanchions. Super glue will be sufficient here. If the rail was going to break free it would do so at the base of each stanchion. The completed rail is shown below. It

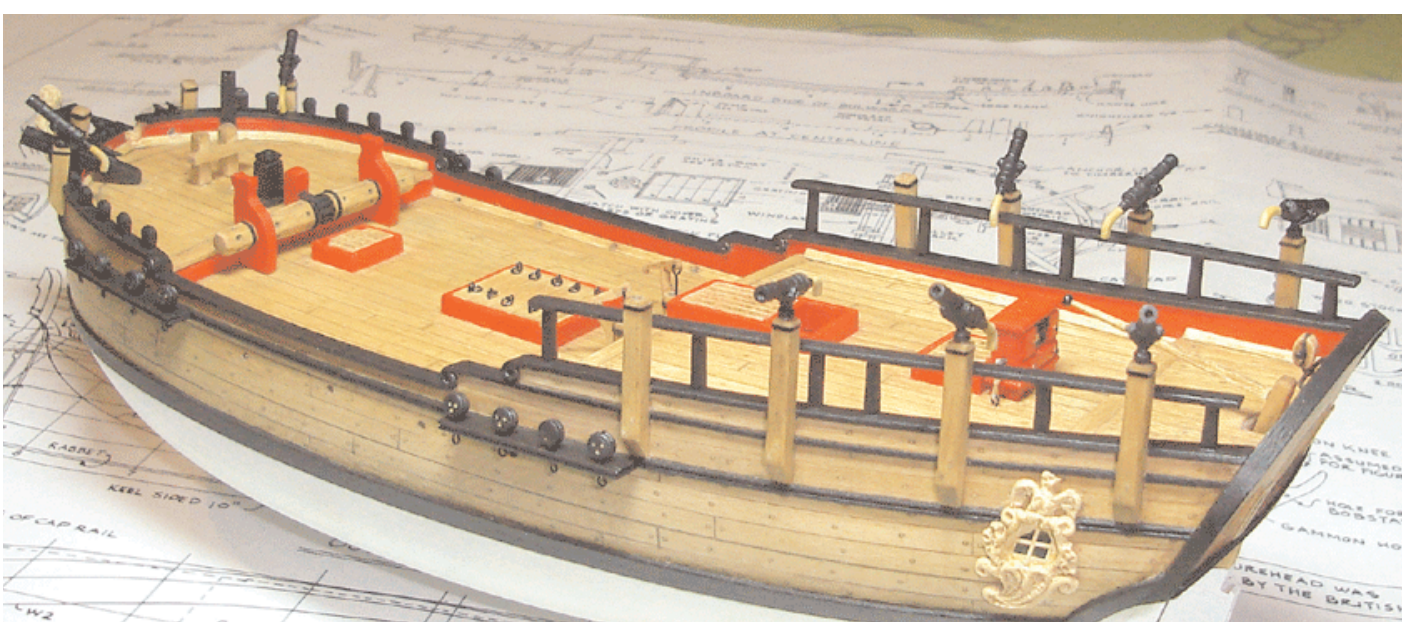


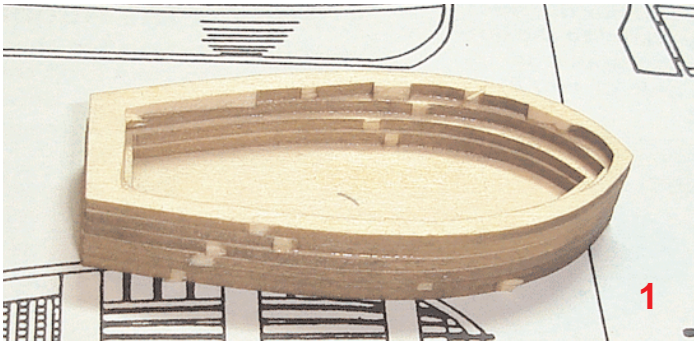
was painted black. It is also worth mentioning that the stanchions were placed at a right angle to the waterline. They should be straight up and down. I have seen many completed Sultana models that had the stanchions and gun stocks raked drastically towards the bow or stern. The plans clearly show the vertical orientation for both. This is a simple observation which seems to be over looked often.

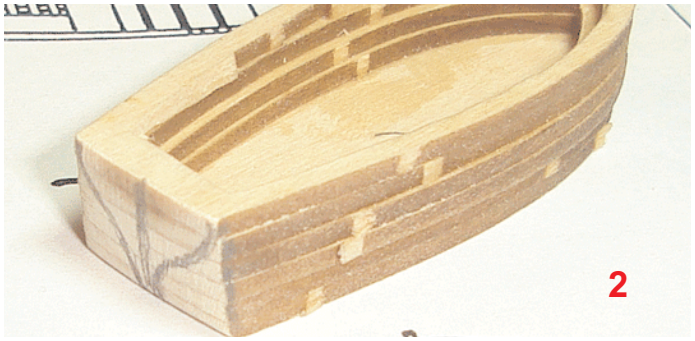
Gun Stocks and Swivel Guns…

I added the swivel gun stocks along the quarter deck rail. The location for each of them was taken from the plans. They were made the same way that the four gun stocks were created along the bow (only these are longer). After they were shaped I chamfered the two outside edges to give them more detail. A thin length of pinstripe tape was wrapped around the top of each stock to simulate the iron band. I also drilled a small hole into the top of each gun stock to accept the swivel guns.

Rather than notch the gun stocks, I decided to notch the molding along the hull before gluing them on permanently. Their locations were carefully established before the notches were made. I haven't decided yet if I will paint the gun stocks black or keep them stained as shown in the photo above. I realize that most of the images and models show the stocks painted black but I really like the way they look this way. After I glued them to the hull, several treenails were simulated for the gun stocks the same way I did for the hull and deck planking. See the photo above.







I was going to scratch-build the swivel guns. After close examination of those supplied with the kit I felt they were satisfactory. I'm not thrilled with them, but after I clean them up they will look just fine. I weighed the time needed to build new ones from scratch vs. the time saved if I used them. The difference in appearance would not warrant such a time expenditure. I used some sand paper and files to remove the casting marks. The handles for the swivel guns were too thick for my tastes so I carefully thinned them down. I painted them black and did my best to match the handles to the color of stained wood. The Sultana carried only eight swivel guns. I placed six of them along the quarter deck rail and the two remaining at the bow. See the photo provided on the previous page.

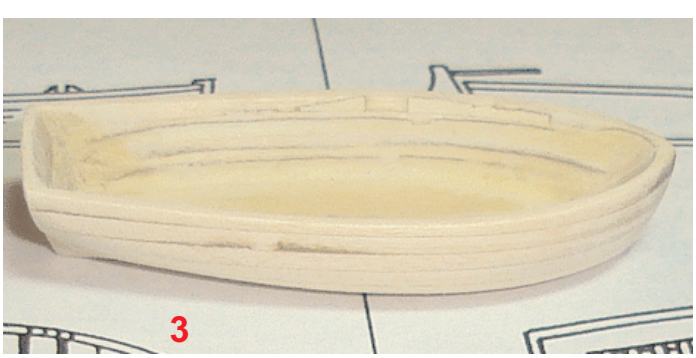
The Ship's Boat…

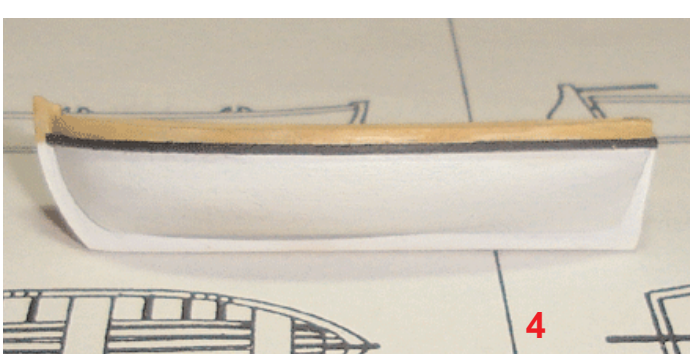
The Sultana clearly carried a small boat. It was most likely a small yawl or "jolly boat". I have been researching how this boat would have been secured on deck. What surprised me was the lack of information available. Not only with the kit but with all of the plans and drawings I have for the Sultana. In my opinion the boat would have been towed behind the Sultana and only stored on deck during long voyages. I was going to build the model without it but have given it a second thought. I don't pretend to be a naval historian but will try to document my decisions here because I know how frustrating the lack of information available can be. Take it all with a grain of salt and decide for yourself if this makes any sense.

I have been looking at the small laser cut lifts supplied with the kit. I am very curious how fine a boat these pieces will make. Rather than scratch-build one I will give the "mini-kit" a try. If it turns out horrible I can always build another one afterwards. I will of course build it differently than described in the instructions.

First, there are seven lifts supplied. The instructions say to glue only 4 together and add the remaining 3 later in the building process. I threw caution to the wind and glued six of the lifts together. I removed the seats (thwarts) from lift # 5 because I will add more realistic thwarts later. Look at the photo on the cover of the instruction manual. The boat has a strange shape. It looks too high and "boxy" in my opinion. In an attempt to remedy this I will only use the six lifts mentioned. See photo #1 above. The lifts were glued together with super glue.

Once dry, I established the correct angles of the bow and stern. The bow was rounded under and the stern was raked. When I was satisfied I established a center line down the bottom of the

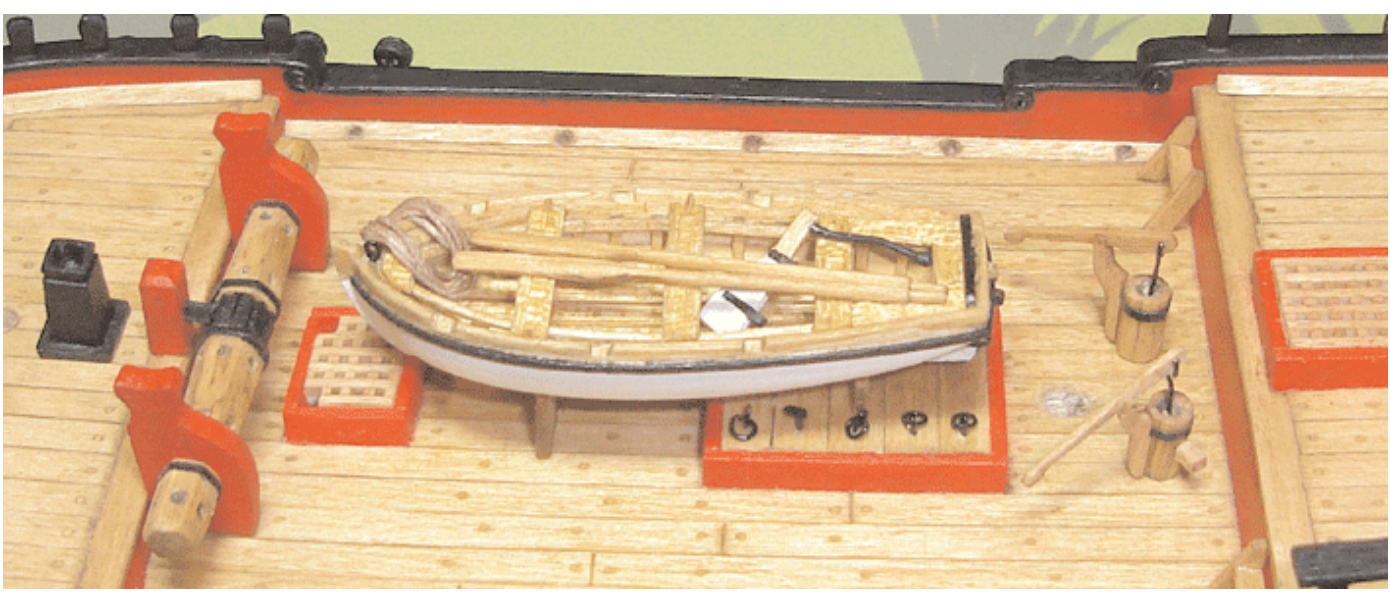


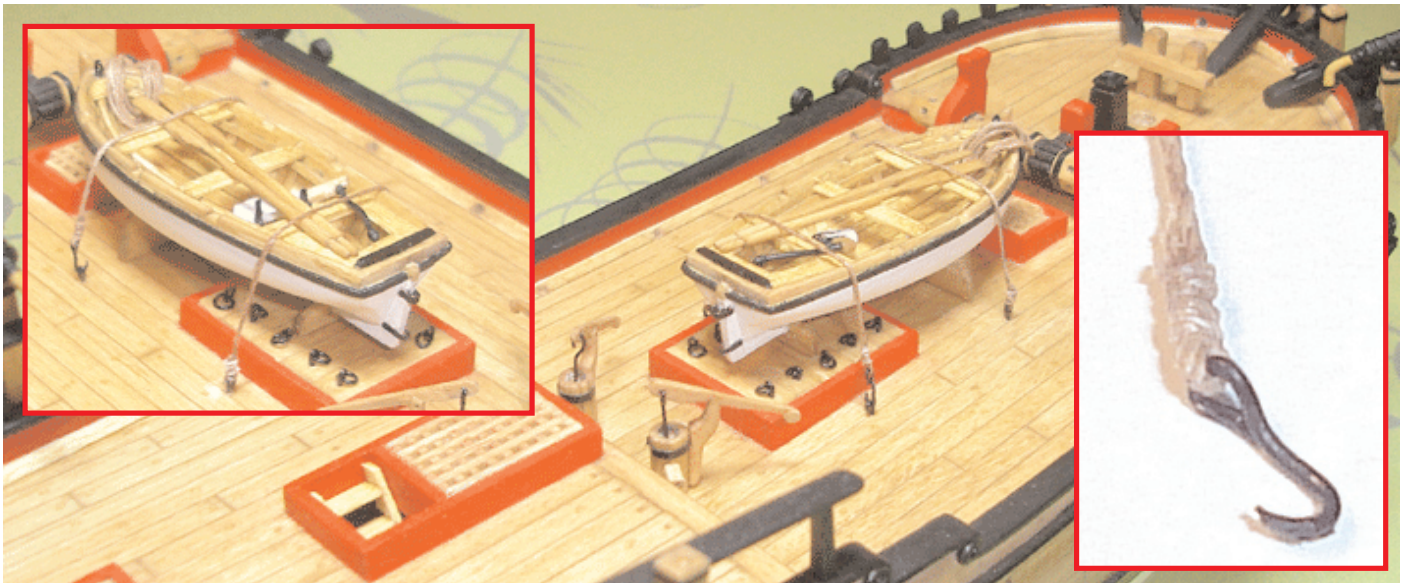


boat (along the keel). I carried this line up the stern and bow as well. The general shape of the stern was drawn as you can see in Photo #2. An Xacto blade (#11) was used to rough- carve the boat's shape. I started working on the outside of the hull first (opposite of what the instructions say). Using various grades of sandpaper I managed to shape the hull to a satisfactory appearance. The sides of the hull were very thin in some areas and left little room to carve the interior. To solve this problem I coated the interior of the hull with wood filler and allowed it to dry. Not only did this build up the thin areas of the hull but it rounded the bottom as well. I was worried that the boat would look too flat-bottomed. I carefully sanded the interior of the boat until the sides were 1/32" thick. Photo #3 shows the boat after I completed this stage of the project.

Rather than fitting the interior of the boat with details I decided to paint the exterior first. Several coats of paint were used to get a finish I was satisfied with. I wanted to get the first coat out of the way. The color scheme chosen was a simple one. I added a thin strip of molding 1/16" below the top of the bulwarks. This molding was painted black. I painted it before gluing it to the hull. The hull below this molding was painted white. Everything else including the interior will be stained "Golden Oak". Photo 4 shows the boat after the first coat was painted.

Progress on the interior went smoothly. The bottom of the yawl was 'flat-bottomed' even though I used some wood filler to round it off. To compensate for this, I decided to fake the boat's frames. Normally the frames would be steam bent to span across both sides of the hull. Because the bottom is so flat this wasn't possible. Instead, I cut some .5 mm thick strips of bass wood to use as the floor boards and glued them into position. Five strips were used as shown in photo 5. A small space was left



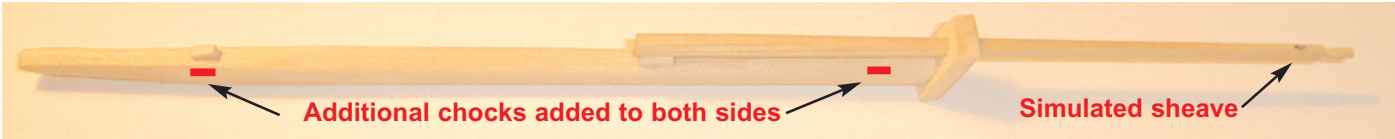


between each floor board. Then the frames were glued individually along the boat's sides. They simply rested on the edge of the floor boards. Basswood strips .75 x .75 mm were used for the frames. The frames were spaced about 1/8" apart. You can see one side of the frames completed in the same photo # 5. Also note that the frames do not extend to the top of the bulwarks. Each frame terminates about 1/16" below the top edge.

In photo 6 the risers were added. The riser is the strip of wood shown glued across the frames. The thwarts (seats) will rest on top of these risers. Basswood strips .75 x .75 mm were used for the risers. I added the thwarts as shown in the same photo. The thwarts were made from .5 mm thick strips. To finish it up I used thin brass strips to simulate the gudgeons for the rudder. These strips were painted black. The yawl will be placed on some cradles and lashed to the deck. It will be located over the main hatch. To make it more interesting I made some small accessories which were placed in the boat. I made a small rudder with pintles (small brass strips). The tiller for the rudder was made using a length of 22 gauge wire painted black. It was inserted into a pre drilled hole in the rudder. Two oars were made using the plans as a guide for their size and shape. A tow rope was coiled neatly with one end seized to an eye bolt in the stem. See the photos showing the boat completed and lashed to the deck.
Normally the yawl would have been towed behind the Sultana. It would only be stored like shown on long journeys. The Sultana is a small ship with little room on deck for the sailors to move about. Even though this is the case, the yawl makes the model more pleasing and interesting to look at. The cradles used to store the boat are different sizes. A larger cradle was used under the bow to lift the ship above the height of the main hatch. A smaller one was placed on the center cover board of the main hatch. It was used to stabilize the keel of the boat and doesn't need to be very large. The yawl will be lashed tightly to the deck.

The boat was lashed to four eye bolts glued into the deck. The eyebolts were placed alongside the boat's cradles. See the photo above. The rigging I used was .018 tan rigging line from Model Shipways. Two hooks were fabricated out of 28 gauge black wire. I used a needle nosed pliers to bend the wire into shape. One end of each lashing had the hook seized to it. A close up of a seized hook is also shown above. After I hooked the eyebolt, the remaining free end of each lashing was seized directly to the eye bolt on the opposite side of the boat. I alternated the lashings so a hook would be visible on both sides of the model.

Tan rigging line was used for all of the running rigging on this model. I don't like the fact that it looks so new and clean. Before the lashing was placed on the model permanently, I pulled the line through an oil pastel. I use oil pastels in



place of beeswax. You can choose any color to your liking which will add some depth to the rigging lines. I chose a warm brown oil pastel. After you run it through the pastel, pull the line through your fingers to even it out. The color will settle in between each strand of the rope giving it a richer appearance. The oil pastels are very soft and also "knock" down any fuzz on the line. A yellow ochre oil pastel will be used to achieve the same results on the black standing rigging for the model. I will be using 3 diameters of rigging line for the model (.008, .018, and .028). I purchased them from Model shipways in two colors (black and Beige) for the running and standing rigging. The kit doesn't come supplied with enough variety and if you really wanted to strive for accuracy, up to 6 different diameters of each color could be used. The rigging plan shows the true scale diameter for each line to be rigged. Based on these measurements I carefully marked the plan with the size line I want to use. This will make it easier for me when the rigging begins. I prefer not to contemplate which size is more appropriate along the way which would slow me down.

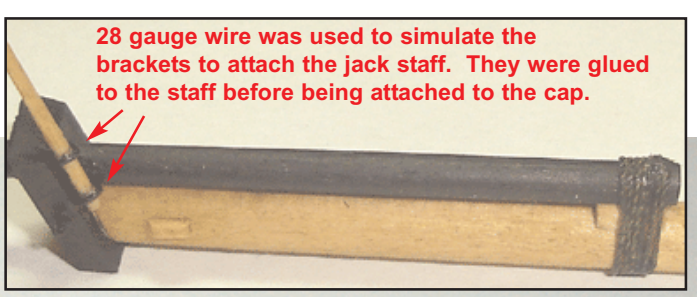
Bowsprit and Jib Boom…

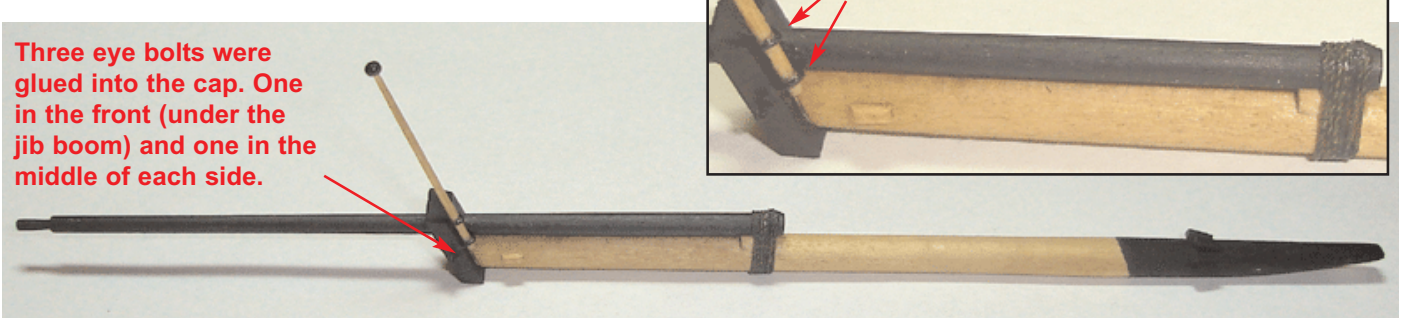
The rigging plan has all of the measurements and construction details for the masts and spars. I followed these plans but have also made a few changes along the way. These changes will be noted as I proceed. I made the bowsprit from a length of wood that was square. It was easier for me to create the eight sided portion of the bowsprit from square stock rather than a round dowel. I used a #11 blade to shave the eight sided portion to shape and afterwards it was cleaned up with some sandpaper. The plans indicate that the inboard portion of the bowsprit was square and then progressed to eight sided. I did not create it this way. That end of the bowsprit was made entirely octagonal.

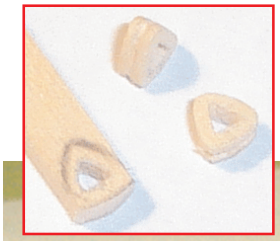
When I was satisfied with the eight sided end of the bowsprit, the forward end was rounded by hand using sandpaper. The eight sided detail is difficult to see in the photograph above but should be clearly visible. I established the proper angle of the inboard end and test fit the bowsprit in place. Small adjustments were made until the bowsprit sat with the correct rake as shown on the plans. The notch in the bow may also need some tinkering in order to establish that angle. Then I carved a tenon into the forward end of the bowsprit so it could be slipped into the hole of the cap.

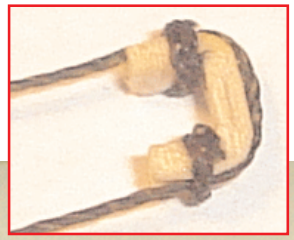
I added the small chocks to prevent the bowsprit gammoning from slipping. One chock is shown on the plans but I used three. An additional chock was glued along side the original as shown with a red line in the photo above. Another pair of chocks were glued into position just aft of the cap (one on each side). These prevent the bobstay and shroud collars from slipping and were not shown on the plans. The replica in Maryland was rigged this way and it was a generally accepted practice at that time.

I made the cap and jib boom next. These were easily made using the plans as a guide. A tiny

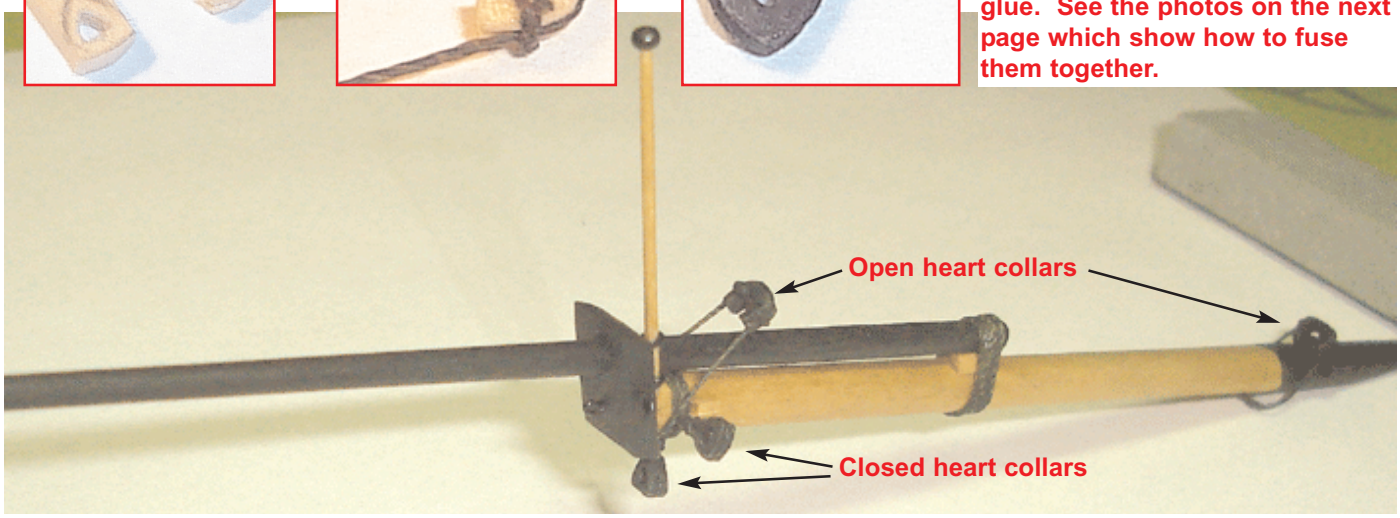








Collars for the closed hearts (bobstay and shrouds) were rigged to the bowsprit by fusing the ends of the collar with super glue. See the photos on the next page which show how to fuse them together.



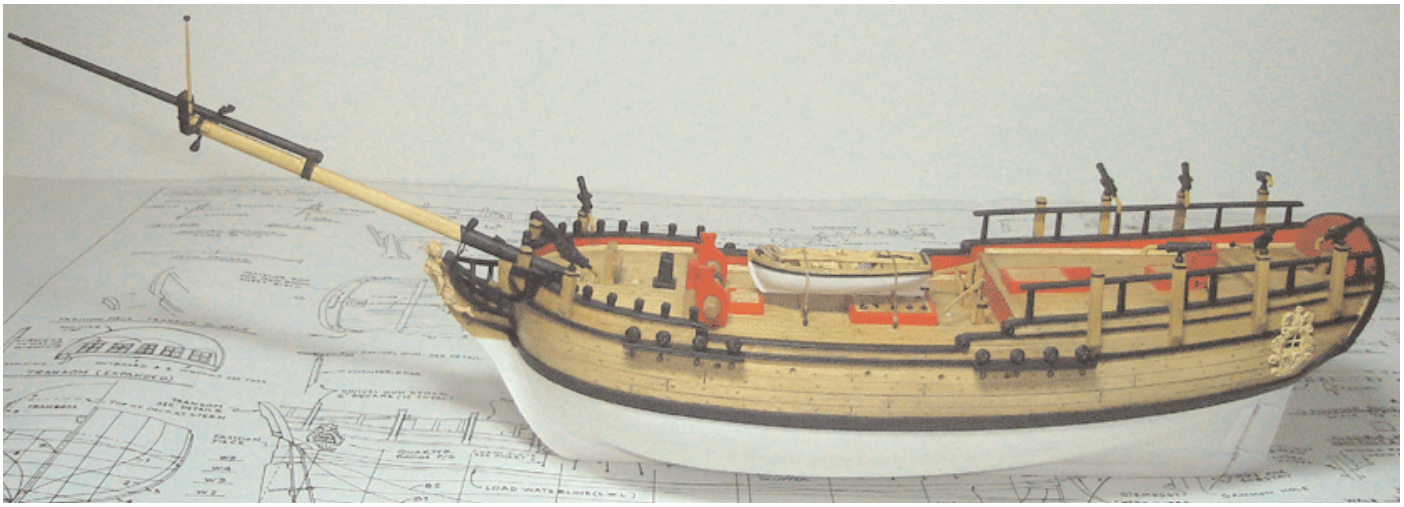
sheave was simulated in the forward end of the jib boom. Two holes were drilled through the jib boom .75 mm apart. The space between each hole was recessed. I used the tip of a nail to form the recess between the holes. This did a good job of simulating a sheave, especially for one that is this tiny. The jib boom was slid through the upper hole of the cap and rests atop the "saddle" or "jib boom rest" as it's called. This completes the initial assembly of the bowsprit. I painted and stained the individual pieces before I glued them together. You can see the color scheme I chose in the photos that follow. This is a personal choice and you may opt to use a different approach.

Some additional details were added before I glued the bowsprit onto the model. Three eye bolts were made out of 28 gauge black wire. One of these was glued into a pre-drilled hole in the front of the cap. This eye bolt will have a single block seized to it. It will be used for the tackle of the outer jib stay. The two remaining eye bolts were glued into the side of the cap (one on each side).

I lashed the jib boom to the bowsprit with .018 black rigging line. The line was treated with a yellow ochre oil pastel as mentioned earlier. These details can be seen in the photographs. The jack staff was added to the assembly next.

A dowel was hand-sanded to the correct diameter. It was tapered to a slender point and a small black bead glued on it's tip. The bead was used to simulate the ball cap of the jack staff. The jack staff would have been secured to the inside of the bowsprit cap. I bent two small lengths of 28 gauge wire into a "u" shape and glued them onto the jack staff. This was done before the jack staff was glued onto the cap. After the staff was finally glued to the cap it looked as though the "brackets" were drilled into the cap which was the impression I wanted to simulate. I decided not to paint the jack staff at this time and will live with the stained finish for now. I will complete more of the model before I commit to painting it black.

The collars for the bobstay, shrouds and stays were also added to the bowsprit before it was glued onto the model. You will need three closed hearts and two open hearts for these collars. I used a bass wood strip 1/8" wide and 1/16" thick to create the closed hearts. The finished hearts are 3.25 mm on each side. I started by drawing the outline of a heart on the end of the strip. Through this I drilled the center hole of the heart. The hole was shaped further using a neddle file to obtain it's triangular shape. Only after I was satisfied with the shape of the hole did I cut the heart free from the strip. To finish it up I filed a groove along the edges of the heart with another small file. This isn't a quick process. We will



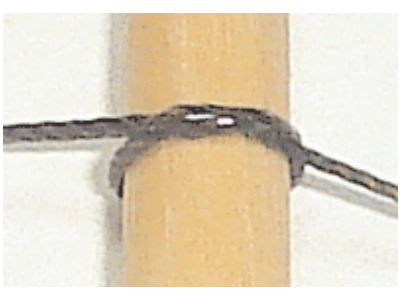
need many hearts for the model. I only needed three for this procedure so they were the only ones I made. The same process was used to create the open hearts but they will be larger. The open hearts were 4mm on each side. See the photos on the previous page.

Black .018 rigging line was used for these collars. You can see how they were seized to the hearts in same photos. The hearts were all painted black. Please note on the plans that the collar for the bowsprit shrouds have two hearts. I decided to create individual collars for both of them instead. Once they are rigged on the bowsprit that detail would be lost do to the models small scale. Because of the small scale I also opted not to form small eyes in the ends of each collar. I simply used super glue to fuse the ends of the collar together neatly. I didn't tie a double knot. This would have looked sloppy. I crossed the ends (1/16" overlap) and applied the glue along the seam where they overlapped. I used a scrap piece of 28 gauge wire as my applicator. A drop of glue was placed on the tip of the wire and neatly applied to the seam of the collar. This is more than sufficient and is quite strong. The super glue soaks into the thread and both lines fuse together as one.

The shroud collars were also placed on the bowsprit followed by the two open heart collars. The open heart collars were left longer than the others. They won't be permanently glued to the bowsprit. They will hang loose until their partner hearts are secured with a laniard. You could add these later but I found it easier to do so at this time. The bowsprit can now be glued into it's final resting place on the model. Be careful and try to establish the correct angle and position before the glue dries. The photo above shows the bowsprit glued onto the model.

How to *Fuse* a line together with super glue

1. Make a simple overhand knot. Not a double knot. Just criss-cross the line once.

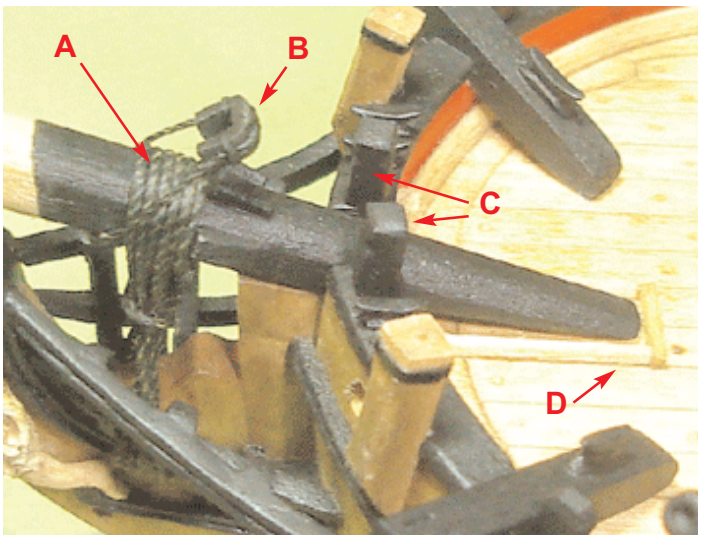


2. Apply glue neatly to the seam with an applicator. Allow it to dry fully. The glue in this photo is not dry and appears shiny

3. Cut off the loose ends with a very sharp blade.

This is a double knot. This should not be used for your collars.

A. Bowsprit Gammoning
B. Fore Stay Collar
C. Knightheads
D. Framed bowsprit with .75 mm bass wood strips

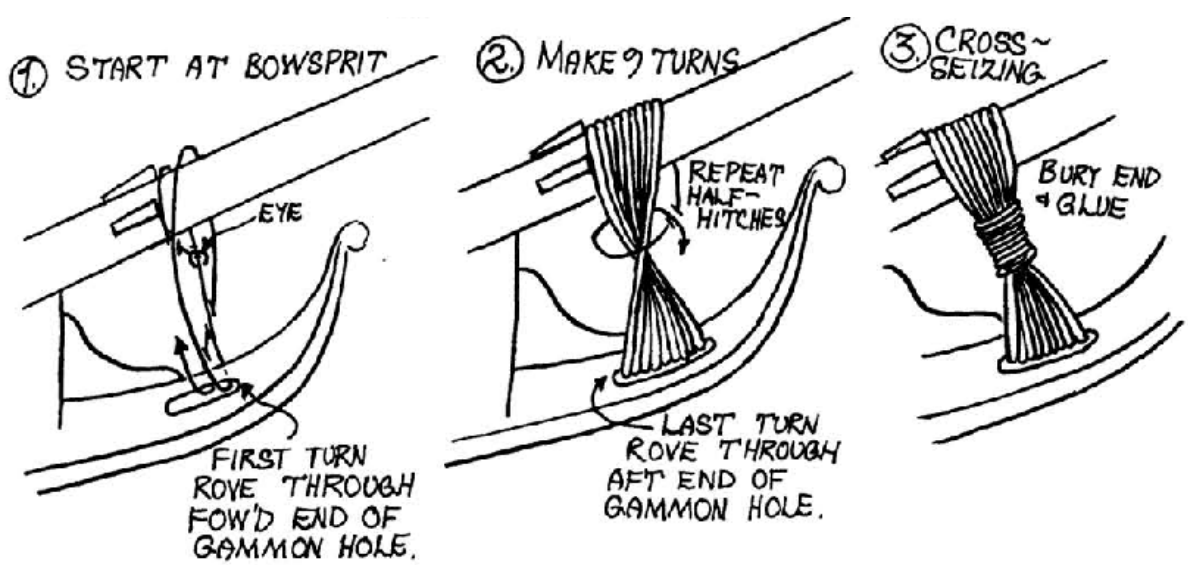


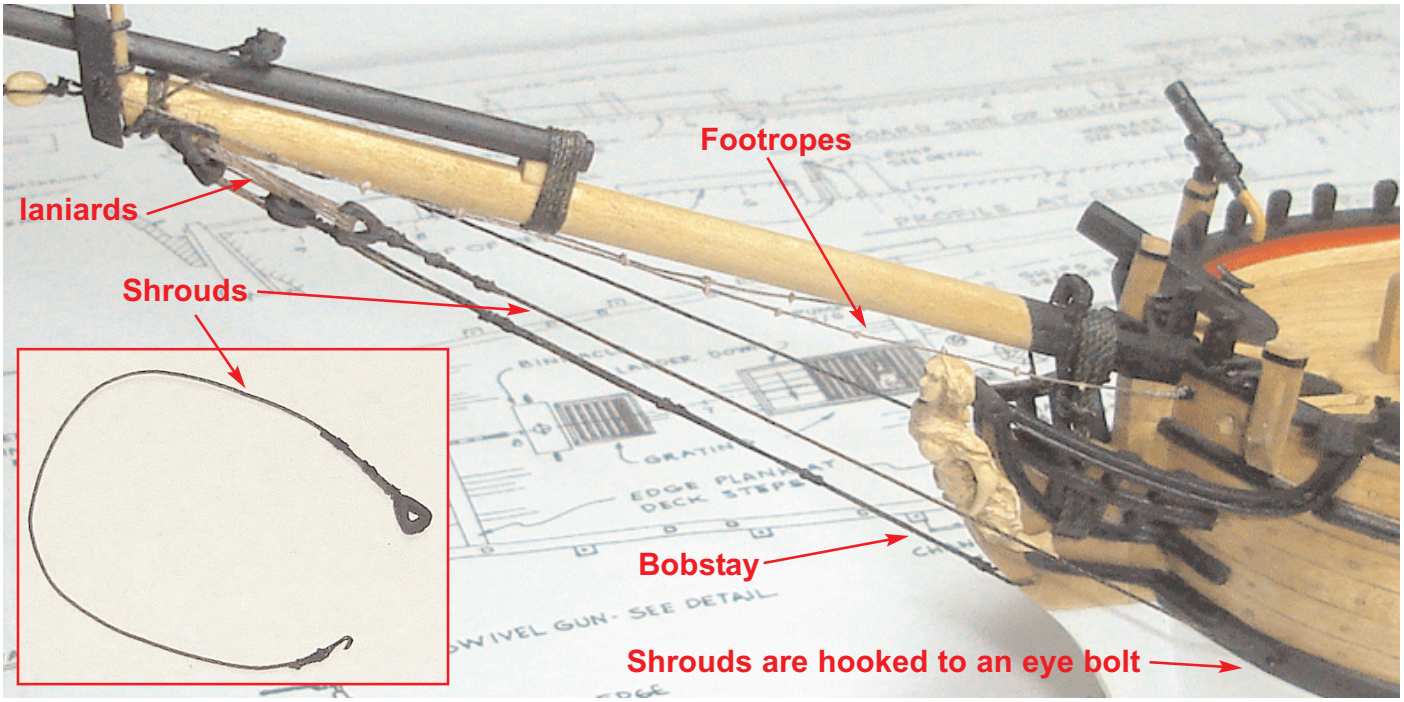
Now that the bowsprit has been glued onto the model I can finish up some additional details. The knightheads were made from 3mm x 3mm strips of wood and glued on the cap rail. One was placed on each side of the bowsprit. You can see them in the photo above. I used a round needle file to create the detailing around the top of each knighthead. I painted them black. Afterwards I used .75mm x .75mm strips to frame the inboard end of the bowsprit on deck.

The gammoning for the bowsprit was done with .028 black rigging line. Detailed instructions on how to set up proper gammoning is not provided in the kit supplied manual. There is however a very well done illustration in the kit supplied manual for Model Shipways Fair American. This manual is available for download in PDF format from the www.modelexpo-online.com website. I have reproduced that illustration below and highly recommend that you take a look at the entire section on rigging there. The Fair American kit is a larger scale but is rigged using similar modeling techniques. It is interesting to note how such detailed information varies from one kit to another. I guess the Sultana kit contains less detail because it is considered an entry level project.

I seized a small eye into the end of the rigging line and followed the procedures shown in that illustration. Please note how the fore stay collar on my model was positioned on the forward side of the bowsprit gammoning. The kit-supplied plans have that collar positioned close to the hull next to the stem. I decided to change its location based on where it was located on the replica in Maryland in addition to other sources. You can go either way and it would be considered accurate depending on whom you talk to.

Much of the standing rigging on the Sultana was served. Certain rigging lines were wrapped entirely with a smaller rope and then coated. The serving protected the rigging line from getting chaffed by the sails and damaged by other lines that might come in contact with them. On a larger model it is possible to show this level of detail. Our model of the Sultana may be too small for many of us to show served lines neatly and accu-





rately. I have decided not to serve the standing rigging for this model. I think that the served lines would look too heavy. You would need to start with a .018 line or smaller in order for it to look good after the serving was completed. That size line would not be thick enough to use for the shrouds where only a portion of them need to be served.

The bobstay was rigged with .018 black rigging line. It is doubled along its entire length. I seized the end of the line around a heart. Three additional hearts were carved for the bobstay and shrouds. Another seizing was made around the doubled stay 3/4" from the heart. One loose end was left generously long. The other was trimmed close to that seizing. I reeved the long end through the hole in the stem. I used an alligator clamp to hold the bobstay at the stem while I established the correct distance between the heart and its collar. I left a space just over a 1/4" between the two hearts. After I established that distance the bobstay was seized at the stem. I placed additional seizings along the entire length of the bobstay which was doubled. It was finished with a laniard as shown. (Tan .008 rigging line was used for the laniards)

The bowsprit shrouds were added next (.018). There is one on each side of the bowsprit. The shrouds will have a tiny hook seized into one end and a heart on the other. You can see one of the shrouds in the photo above. The hook will be placed into an eye bolt glued on the hull. Take its position from the plans. It should be placed into the wales. The heart was placed at the opposite end with three seizings. As before, the hearts should be spaced about 1/4" from its partner on the shroud collars. The easiest way to establish the correct distance would be to hook the end of the line into the wales first. Use an alligator clamp to hold the heart on the other end. You can make any adjustments with the clamp in place. When you are satisfied with the placement of the heart unhook the shroud leaving the alligator clamp in place. With the clamp in place you will still be able to seize the heart permanently with some sewing thread. It was finally secured with a laniard after it was hooked to the eye bolt.

The footropes were finally added to the model. I seized one end of the footrope to an eybolt and then glued that eyebolt into the bow of the model. I used .008 tan rigging line for the footropes. The other end was seized to the eybolt on the side of the cap. Dont pull the foot rope taught. Instead leave it loose so it hangs as shown in the photo above. To finish it up, tie some knots along the entire length of the footrope at 1/4" intervals.