INSTRUCTION MANUAL

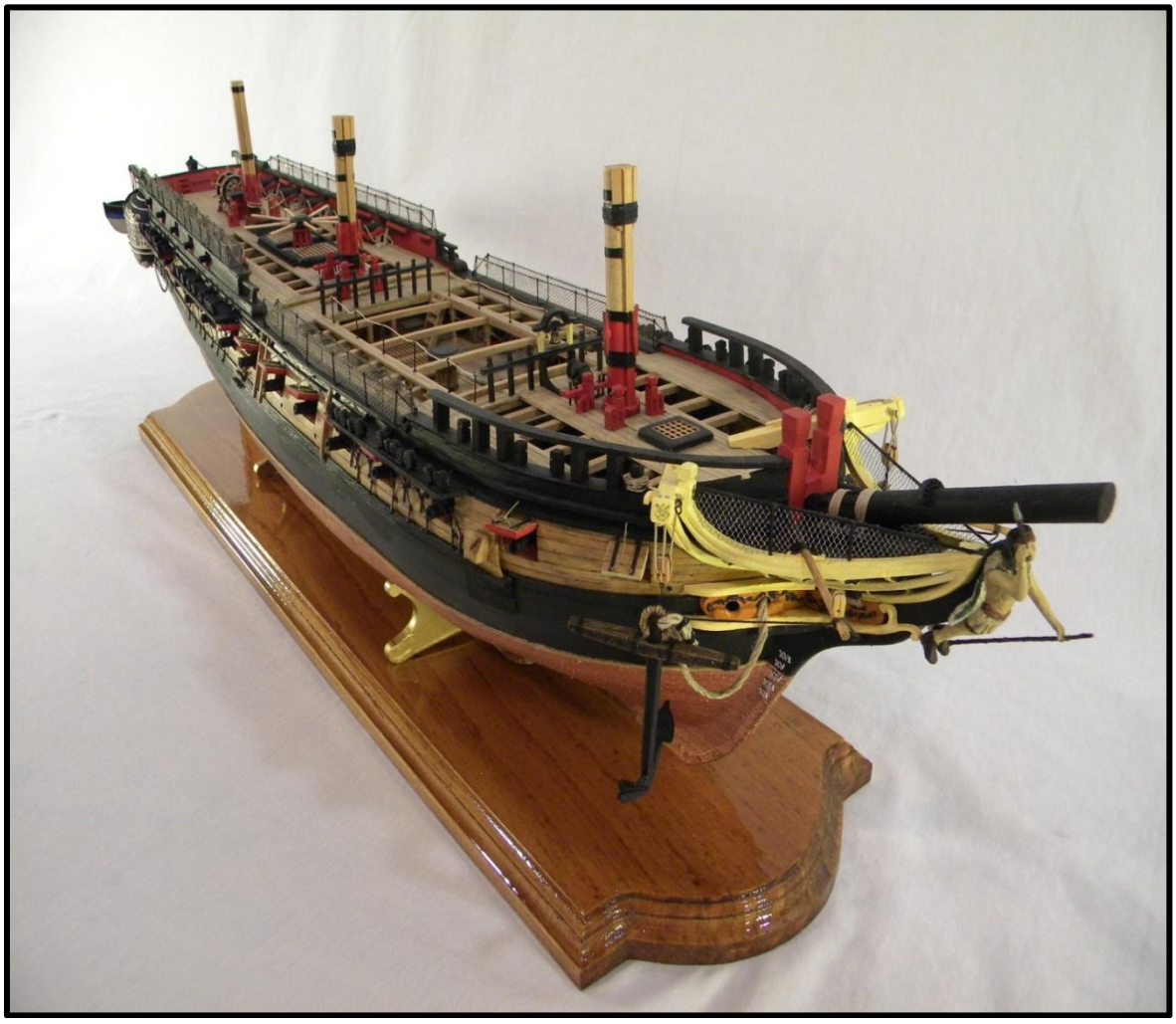
MODEL SHIPWAYS
• QUALITY KITS SINCE 1946 •

Modeling The US Frigate

ESSEX

c. 1799

MS KIT No. MS2041



Instructions and model prototype prepared by Samuel Cassano, Jr.

Manufactured by Model Shipways, Inc – Hollywood Florida
Download the full color version of these instructions – www.modelexpo-online.com

ESSEX
c. 1799

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ACKNOWLEDGEMENTS

Although many have contributed to the process and development of this model I would like to acknowledge the following people personally:

Marc Mosko – Model Expo
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I would like to offer a special word of thanks to Chuck Passaro. Without his assistance, critical assessment endless depth of modeling and historic knowledge and most importantly his friendship, this project would not have been possible.

APPEARANCE

As with most ships of the sailing era the appearance of the ESSEX changed over the course of her career. This was due to repair, damage (from battle or age), Department of the Navy directive, available materials, or just the desire of her Commanding Officer(s). The ship that was captured at Valparaiso looked significantly different then when launched at Salem 14 years earlier. In addition to the previously mentioned amendments, her head had been boarded in, additional gun ports were added (two chasers on Her stern, and the original sixth port on the Quarter Deck). The figure head was replaced with a billet head, her boats were now stowed on quarter davits, and her paint scheme more resembled that most often associated with the CONSTITUTION of 1812 – black hull with a much narrower white gun stripe, and a mostly green interior works. Her mast / yard / sail configuration was changed over time as well. We are fortunate with the ESSEX that a majority (not all) changes were document by some involved party. These include the materials and information available in the book THE ESSEX PAPERS, the personal journals of her Captains, the Josiah Fox survey and what is now known as the Howard painting. Unfortunately there is one glaring omission from all corroborated sources and that is the appearance of her stern. Although it is partially represented by the artist Ropes depicting her battle at Valparaiso, it is not known if Ropes actually had firsthand knowledge of her appearance at this time. The Howard painting, which is recognized as representing her very early in Her career (within the first year), does not show the stern at all.

The proto-type model shown here is based on the Howard painting which can be corroborated with the indents and notes presented in the ESSEX PAPERS regarding her construction (not the survey taken by Josiah Fox in 1807) and the papers of her first Captain, Edward Preble. The most obvious characteristic is the lack of a fifth gun port on the Quarter Deck. This is not shown in the Howard painting and Preble, in his papers, notes that the port was closed over as the position was directly fouled by the Main Mast rigging rendering the gun unusable.

COLOR SCHEDULE

Outboard:

- Hull below water line and including rudder – Coppered with a wood batten
- Hull from water line to top of main wale and two courses above and from channel wale up to and including rails and all moldings – Black
- Hull along gun ports and outer gun port lids – Yellow Ochre (this may be as a result of being payed over with tar) or was painted
- Inner gun port lids – Red / Bridle Port lid – Yellow Ochre
- Cheek knees, rails, timbers, catheads and boomkins – Yellow Ochre or Black
- Trail boards, between cheek knees – Orange Ochre (background) with Green leaves, Red flowers
- Figurehead – Black hair and eyes, tan skin, white cape with a green border, brown staff and war club with stone mallet, tan moccasins, natural skirt with dark green and red trim, two light feathers in his hair. His head wrap any muted color
- Quarter Galleries and Stern - Black with White trim / moldings and White window frames, White name badge, vine decoration can be Green with a Red ribbon or White.

Inboard:

- Gun Deck and bulk head – Light Yellow
- Quarter / Fore Decks and Waist – Red
- Guns – Black / Carriages – Red
- Knight Heads – Red
- Lower Masts (coats) – Red
- Bowsprit – Black
- Decking – Natural to Light Grey including waterways
- Ladders – Natural
- Coamings – Natural, Red or Black
- Hatch Gratings – Natural
- Chain Pumps – Red or Natural
- Stove – Black
- Elm Pumps – Natural
- Capstans – Spindle, pawl & pawl ring – Natural / Drum Head Natural, Black
- Belfry – Natural or Black with accent color
- Barricade – Black or Natural
- Pin Rails / Bitts – Natural or Red
- Wheel – Natural / standards Natural or Red
- Binnacle – Natural or Red

Ships Boats:

- Outboard – White, Blue or Black rubbing strake and Black cap
  Inboard – Natural or Yellow Ochre

Rigging:

- Standing Rigging – Black (tar)
- Running Rigging –Tan
- Blocks – Natural
- Deadeyes – Black (tar)

PAINTS & STAINS

MODEL SHIPWAYS HISTORIC MARINE PAINTS are a historically accurate acrylic based flat paint that have been specially formulated for ship models. They can be thinned with water (ideal for airbrushing) and easy clean up. A high quality set of paint brushes (either red sable or golden nylon) is recommended for a good finish.

- Bulwarks Dark Green – MS 4801
- Bulwarks/Gun Carriage Red – MS 4802
- True Blue – MS 4964
- Hull Yellow Ochre – MS 4829
- Black – MS 4830
- White – MS 4831
- English Oak (stain) – MS 4975
- Pale Yellow Trim – MS 4804
- Primer - MS4839
- Deep Brown – MS 4818

BEFORE YOU BEGIN

Before you begin some familiarization, preparation and planning should be undertaken. First, check all parts and pieces against the manifest. Second, spend some time familiarizing yourself with the kit, plans and instructions. Study and review the plans thoroughly and read this book completely before beginning. It is not recommended that you release any of the laser cut or photo – etch parts until they are needed.

ESSEX is an exact scale model based on historic documentation, contemporary practice and source information, although some concessions have been made to scale in representing certain details and aspects of the ship. While the kit is manufactured and pre-fabricated with the latest laser cutting, photo – etching and casting techniques available to facilitate ease of building, it is still a complicated and detailed project. Some previous experience and familiarity with square rigged and Man-O-War ship models is recommended. Estimated build time is 300 hours.

Patience is all important and necessary. Consider each aspect of the build process as a project within itself. Read ahead and plan ahead. Most importantly take your time and have fun.

BIBLIOGRAPHY

Anatomy of the Ship, The 32-Gun Frigate ESSEX	P. Takakjian
The Frigate ESSEX Papers	PCF Smith, WA Baker
American Light and Medium Frigates, 1794-1836	M. Lardas
The History of the American Sailing Navy	H. Chapelle
Historic Ship Models	W. Zu Monfeld
(TLB) The Seafarers / The Frigates	H. Gruppe
Planking The Built-Up Ship Model *and* Modeling the Salem Frigate ESSEX, 1799	J. Roberts
The Art of Ship Modeling	B. Frolich
Seaways Ships In Scale (Periodical)	Various Authors/Articles
Hackett Draught 41-9-1L	National Archives
Papers of Captain Edward Preble	National Archives
Peabody Museum	

CHAPTER 1

BULK HEAD FORMER
KEEL, STEM, STERN POST

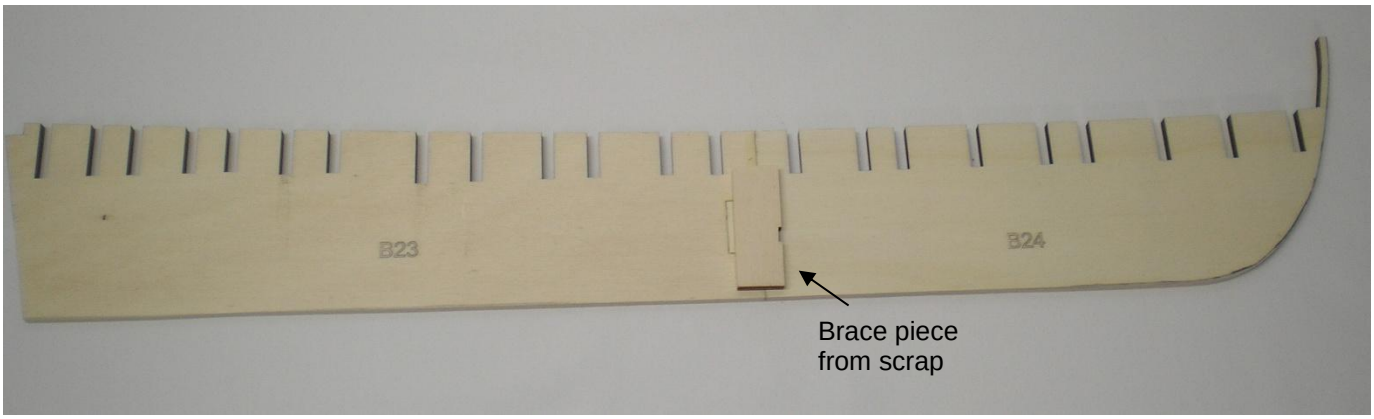


Fig 1a Note: Brace piece spanning joint. Lower deck openings not cut yet.

PART ONE: BULK HEAD FORMER

Cut the bulkhead former pieces (BH 23, 24) from the plywood sheet using a sharp knife. Avoid if possible using a saw as the width of the blade could possibly split the wood along the grain. Score the plywood on both sides several times until the pieces drop out. As shown on the plans it is possible if you wish to show a series of open hatches on the Gun Deck. If you want to show the hatch detail(s) cut the areas out along the dashed lines on the formers. Lightly sand any excess material left at the attachment points on the bulkhead former. Also sand very lightly all edges burned from the laser cutting. This will ensure a complete bond when glued. Be extremely careful not to distort or misshape the pieces. If you find either of the bulk head former pieces to be warped try the following.

Take the piece and soak it in water for several minutes until it is saturated. Place the piece on a flat solid (heat resistant) surface and run a hot iron over it, literally steaming the piece. Leave it on the flat surface and then place another flat and heavy object on top (book or a piece of weighted down board). Leave this “sandwich” to dry overnight.

Not all 3/16” plywood is created equal so before assembling the bulkhead formers take a scrap piece of plywood from the sheet(s) that the bulkheads are cut from and test all the slots on the bulkhead formers. If you find any slots to be too tight lightly file them until the test piece fits snuggly. Conversely if the piece is loose place a piece of scrap wood into the slot to tighten up the fit. Be sure to leave all edges and surfaces smooth.

Glue the two bulkhead former pieces together making sure that they are in line and squared to one another. Some builders prefer to lay them a flat hard surface until the glue has set up. It is recommended that for additional structural strength that you take two small pieces of scrap plywood and glue them across the joint(s) as bracing pieces. See Figure 1a above. Clamp the pieces on and leave the entire assembly overnight to dry. Also, take one piece of 1/16” x 3/32” basswood strip and place it in water so that at least the first 10” – 14” are submerged.

PART TWO: RABBET STRIP Now is the time to form the rabbet along the outside edge of the bulkhead former. See Figure 1b. Creating the rabbet will make planking much easier. As you plank the outside of the hull the planking strips are inserted into a groove (the rabbet). This creates a clean neat edge where the planking meets the keel, stem and sternpost. The planks are also held in place more securely as you bend them around the hull.

To create the rabbet take the piece of 1/16” x 3/32” strip basswood you’ve been soaking. This will be glued to the bottom edge of the bulkhead former. An additional piece will be glued to the stern of the

The strip is not as wide as the former so after it is glued into place it will leave a gap on either side of it.

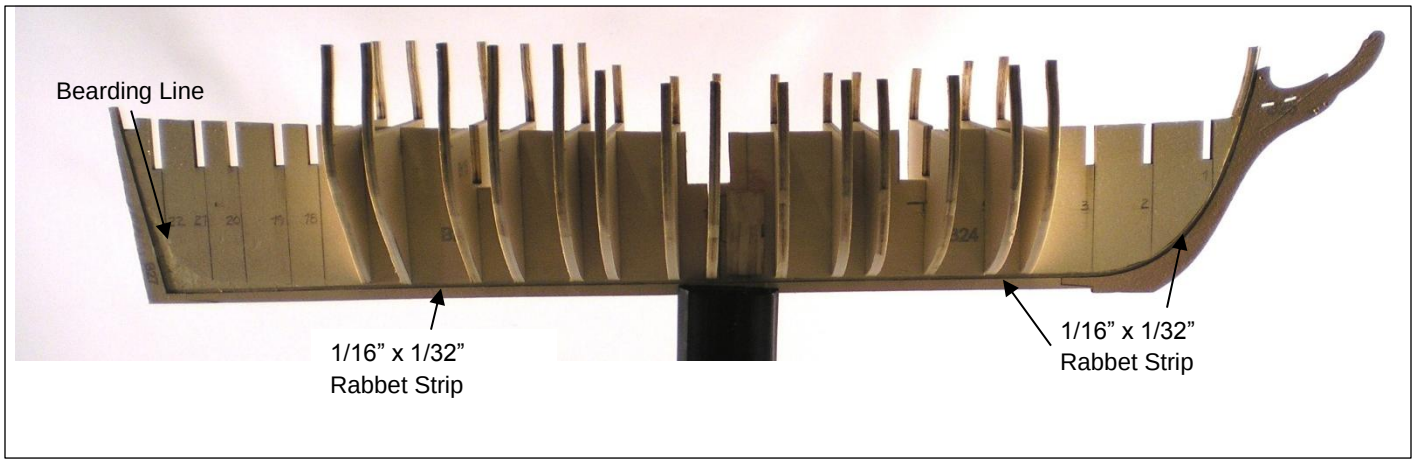


Fig 1b

Be sure to center the strip as it is being glued. The rabbet strip will be attached so that it leaves a depth of 1/16” and a width of 3/32”. See Figure 1b. The strip should be extremely flexible at this time and can either be pre-formed by clamping it on the bulkhead former, allowing it to dry and then attaching it or gluing it on directly. The piece can be either clamped or pinned into place. Allow it to run just slightly longer at the end of the former. See Figures 1c and 1d. Also attach a second piece on the stern end of the former.

As with the first piece it is important to keep the pieces centered on the former. Once the pieces are held in place remove any glue that has seeped out into what will become the rabbet slot as once this is dry it will interfere with the insertion of your planks. Allow the glue to dry overnight. When the glue is dry gently cut the end of the rabbet extending long and sand the joint smooth.

Fig 1c

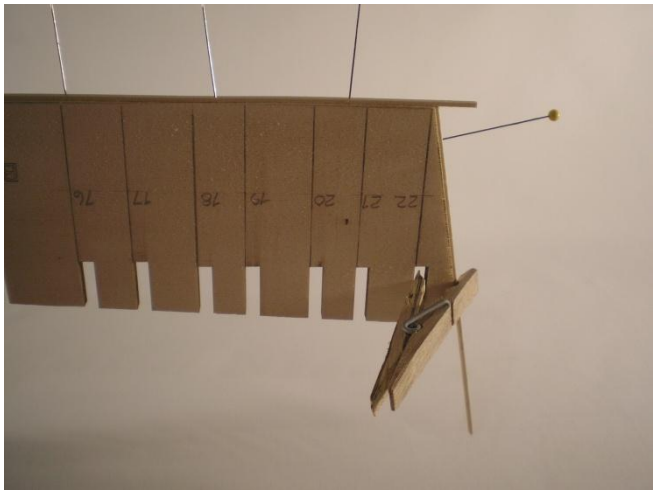


Fig 1d

PART THREE: STERN POST, KEEL, STEM

Prior to beginning the next step take a minute or two and examine the rabbet strip. Make sure it is centered on the bulk head former and that no glue has seeped into the channel that is formed.

The next step is the installation of the stern post, keel and stem. As previously, release the parts from their respective sheets. As you will notice these parts are cut out of basswood. Even though the ESSEX will be coppered, there are parts of the stem and stern post that will be painted. The keel is out of bass wood to remain consistent in width with the two previously mentioned parts. The rudder will also be out of bass wood.

The first piece to be installed is the stern post. The stern post is first because the corner angle locks the piece in place assuring proper placement .From that point forward the keel and stem will be installed sequentially. If you were to start with the stem or keel you could position them incorrectly causing severe problems further along in construction.

Prior to beginning installation dry fit the three pieces both on the former and on a flat hard surface. Make sure that the ends join tightly and evenly. If there is an issue very lightly sand or trim with a #11 x-acto blade to fit. Also do not forget to sand the burn marks from the edges. Be careful not to misshape the pieces when sanding.

Put a thin bead of white glue (carpenter's glue) on the area that the stern post will attach to. Put a drop or two of instant glue on the stern post and set it in place. This will allow you to set the piece quickly. Then allow the glue to dry as per manufacturer's instructions.

Before the glue has set up a straight edge should be used to verify that the stern post is centered on the bulk head former and rabbet strip, (see Figure 1e.). As with the rabbet strip, constantly check to make sure that no glue has seeped out into the channel.

Once the stern post has dried you can install the keel in the same fashion. As with the stern post don't forget to check for glue seeping out and keep the piece centered/ flush (see Figures 1 f & g). Allow to dry as directed.

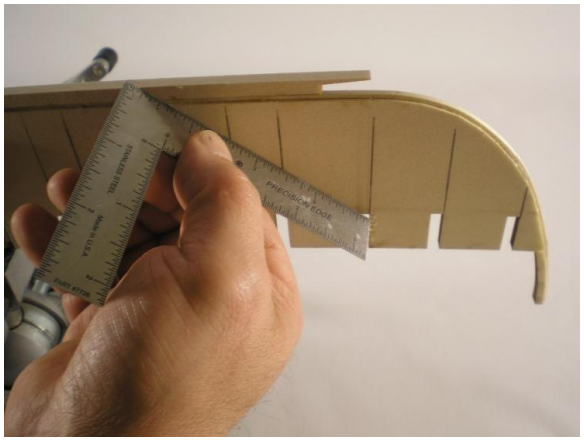


Fig 1e

Once the keel has dried install the stem in the same method. (Figure 1 h). Allow the entire assembly to dry overnight. When you return to work check the entire assembly to make sure everything is square and clean. If any glue has dried in the channel now is the time to gently remove it. If you find that the channel is uneven or inconsistent at any point you can lightly sand, file or scrape the channel even. If you have to, just remember to keep everything smooth when finished.

Before moving forward it is recommended that you pin the stern post, keel and stem. Take a pin vice and a fine drill bit and make a couple of holes through the pieces, the rabbet strip and into the former. Be very careful not to split or angle outside the rabbet strip. Take a little nail or straight pin and insert it into the holes with a little glue. If your pins or nails have a head DO NOT leave it on. Clip it off. Once dry, sand / file the area smooth. The pins are recommended as these pieces will bear additional stresses later in the building process.

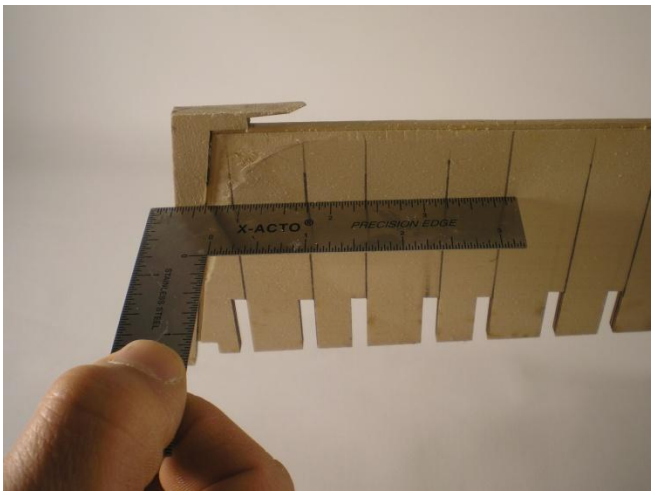


Fig 1f

Fig 1g

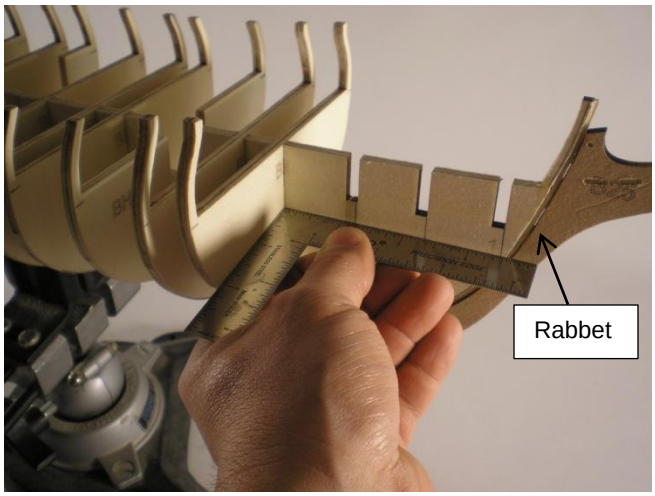


Fig 1h

PART THREE: BEARDING LINE

It is now time to establish the bearding line. It works in conjunction with the rabbet to create an even flow for the planking. This is very important as without these two elements it is impossible to plank your hull correctly. You will end up having to do a lot more sanding and your hull still won't be shaped properly.

Take the two, (Port & Starboard) templates from the back of this manual for the bearding line. Lay the former assembly on a hard flat surface. Position the template on the former so that all edges are flush. Tape or glue (use an adhesive that will allow you to remove the template when done like a child's glue stick or rubber cement). Trace the contour of the template onto the former.

Score the line you've made with a sharp #11 blade. Don't make the cut too deep. Only apply enough pressure to score the top layer of the plywood former. The cut will act as a stop and prevent the top layer of the former from splitting along the bearding line as you carve. Remove the template.

Use a sharp blade or chisel (like the one shown) to carve the bearding line area. You should be forming a taper from the line to the edge of the rabbet strip. It really isn't that difficult but it will make somewhat of a mess. Sand it smooth when done but maintain the tapered effect. See Figure 1i. Repeat on the opposite side.

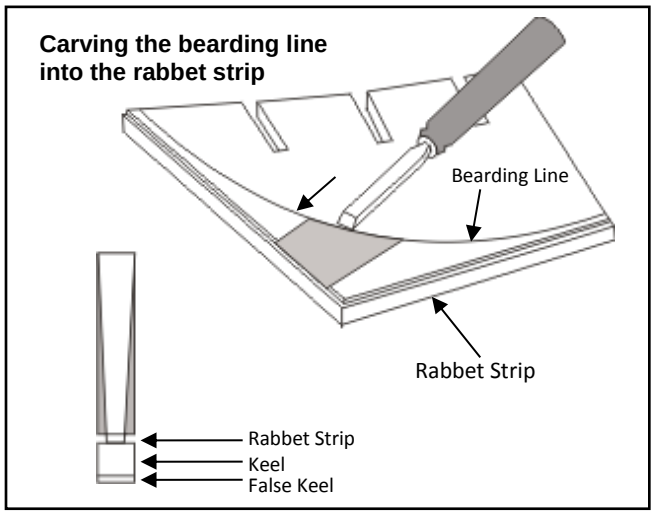
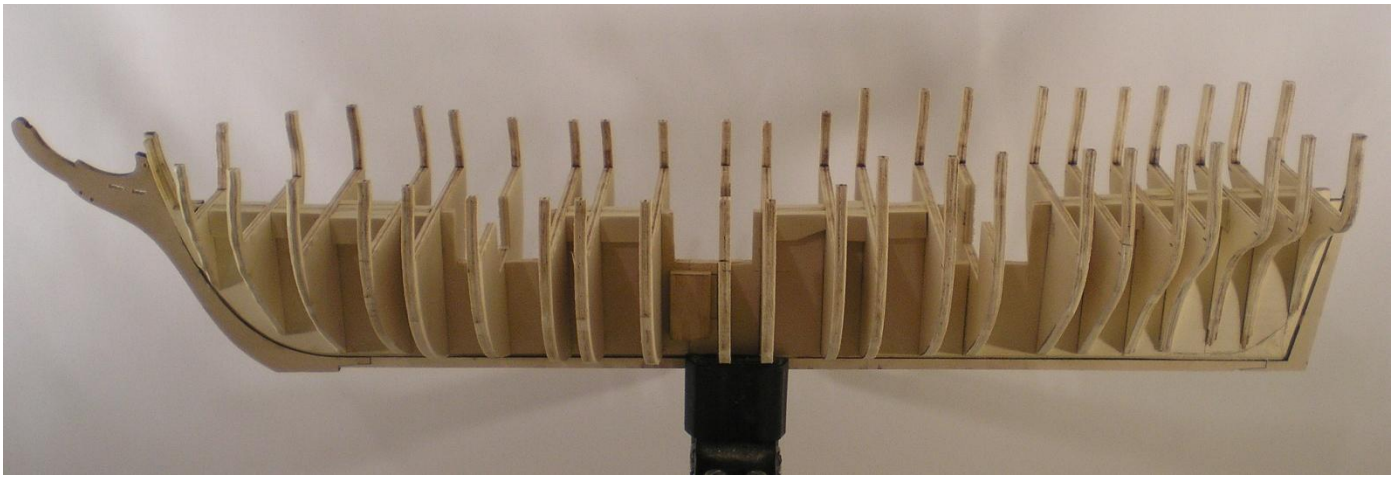


Fig 1i

CHAPTER 2

BULK HEADS, FILLERS & OPTIONAL DECKS



Note* If you are going to configure the ESSEX to show the lower decks cut out the former on the lines marked and substitute BH's numbers 6, 10, 15 with drop.

Release bulk heads 1 – 22 from their sheets (do not discard the sheets as it will be used as filler / stiffener once the bulk heads have been installed). Gently sand the edges of all bulk heads of burn residue without distorting their shape.

Dry fit all bulk heads into their respective slots. If any are too tight lightly sand the bulk head evenly on each side of its slot until it fits snugly onto the former. Remember not to take too much off as this will distort the shape of the hull as the bulk head will not sit centered into the former. If the bulk head is too loose mark it and set it aside. Make sure all bulk heads sit entirely down into their respective slots and that all centers of the bulk heads sit flush with the top of the former. If a bulk head is too high, sand a small amount in the slot until it sits flush. If a bulk head is too low, mark it and set it aside.

Once you have test fit all the bulk heads you can begin permanent placement. A keel clamp is not necessary for this step but is a great aid allowing the former to bear the weight and not the newly glued bulk heads. When constructing the proto- type the mid-section bulk heads (6 – 15) were installed first. This allows the former to be handled from either end while installing. Using carpenters glue put a very light coat on both the former and the bulk head. Insert the bulk head. Inserting the bulk head will force some of the glue out. Wipe this off as the dried glue will get in the way of your filler pieces. It's not necessary (or recommended) that you nail the bulk heads in place. This will make it very hard (if not impossible) to square any that are out of alignment and to permanently straighten your former. Set the mid-section bulk heads and let dry overnight. You can check them for square with a small hobby square as shown in Figures 2a and 2b. Even when dry they will have some flex to them. Make sure that they are flush with the top of the former.

If a bulk head was sitting too low when dry fit put a small piece of scrap plywood in the slot on the former raising it up to its proper height. If the bulk head was too loose in testing, take very thin pieces of scrap stock and shim the piece from both sides until firmly in place, NOTE: Make certain when shimming that the bulk head is not shifted or leaning to one side as this will distort the hull shape when planking.

After letting the mid-section bulk heads dry over-night you can install the remaining bulk heads in the same fashion. Always take care to wipe away any excess glue that seeps out. See Figure 2c-2f.

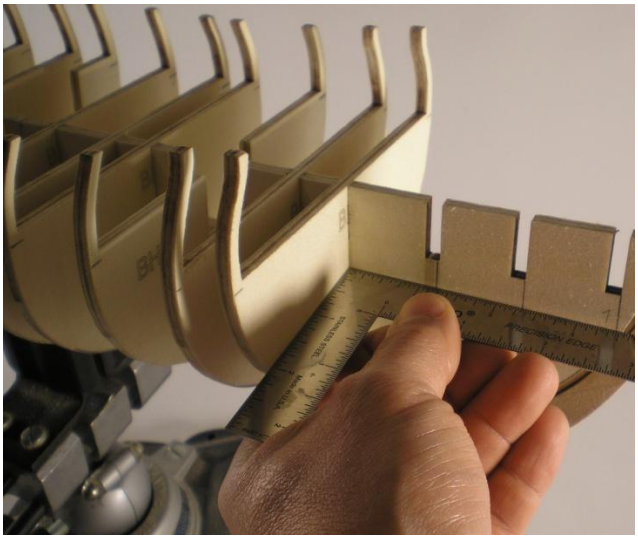


Fig 2a

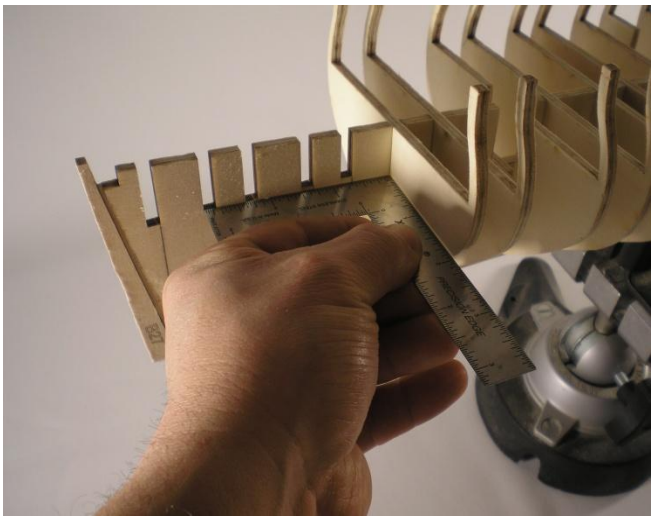


Fig 2b

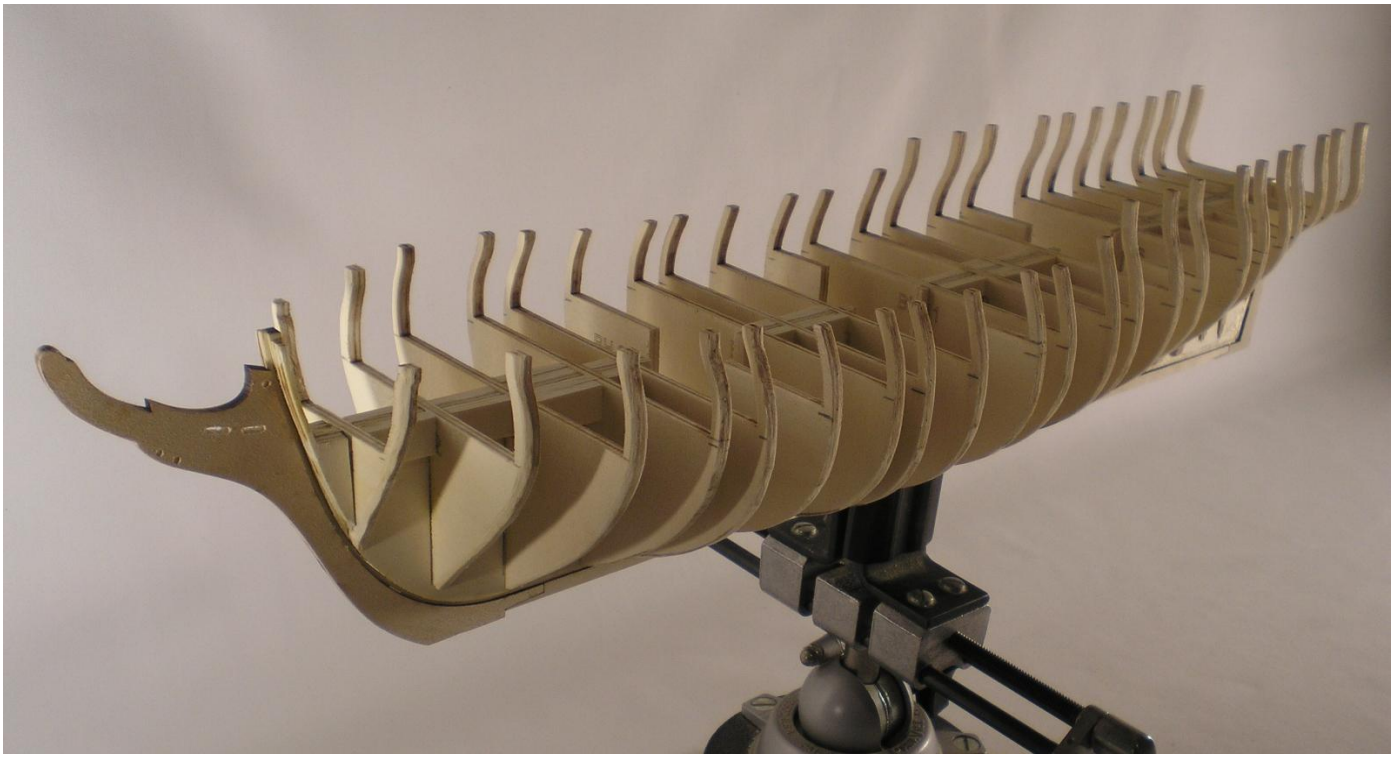


Fig 2c Note: Filler blocks installed along Former

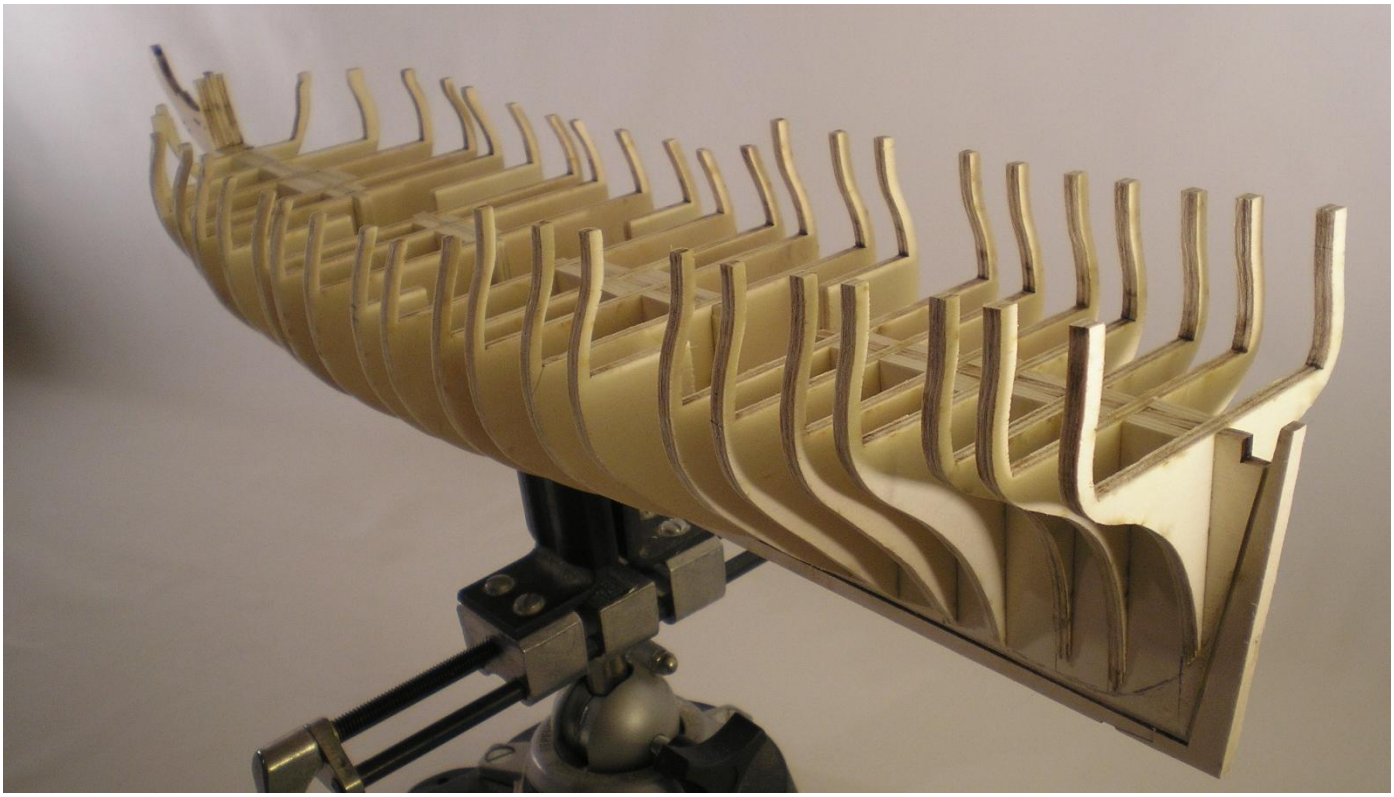


Fig 2d

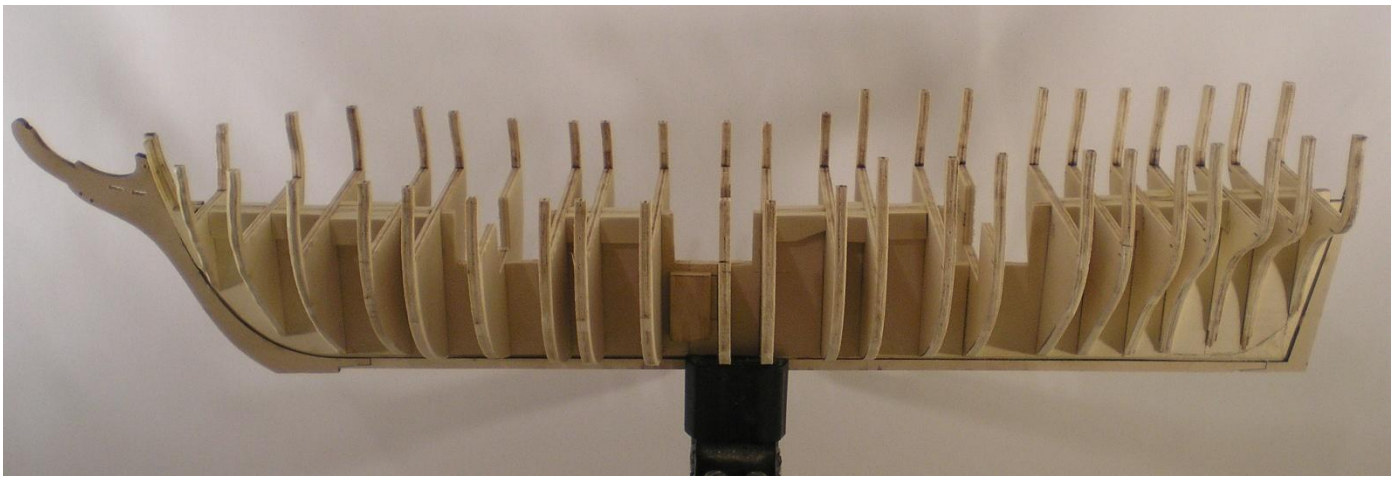


Fig 2e

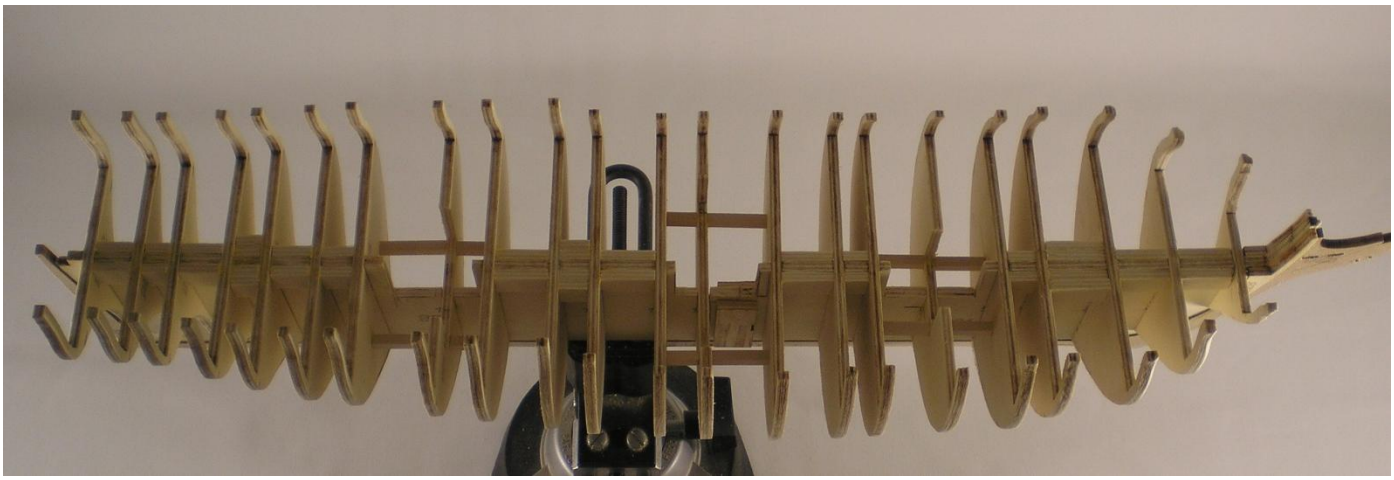
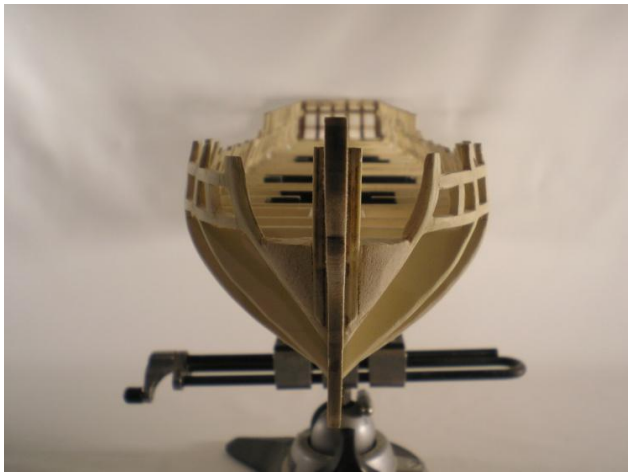


Fig 2f

BULK HEAD FILLERS

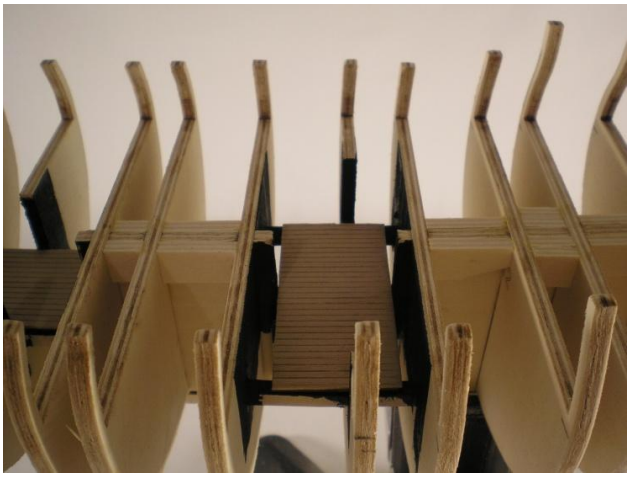
Take the sheet of plywood that the bulk heads were attached to and cut it into strips about 1”-1/2” - 2” wide. Cut pieces to fit between each bulk head on both sides. Be careful not to force the piece(s) in as this will distort the bulk heads and ultimately your hull. The insertion of the fillers will add a great amount of strength to your assembly.

Take filler block material and glue it onto both sides of the stem. Carefully sand / shape them to the contours of the bow. You may find that you will have to “work” them a little more once you start planking but that’s OK. The stern will also have fillers but those will be added later. You can also add in and shape filler blocks if you intend to mount your ship on pedestals, (see sheet 1 for locations.



If you have decided to use the drop down bulk heads you will also need to extend the filler blocks out wide enough to accept decking. These bulk heads will be used to simulate a lower deck platform and at mid ship spare anchor storage. These are only recommended if you are going to plank your ship with an “open” planking configuration. Otherwise just use the solid bulk heads.

With the filler blocks completed you can plank the lower deck platforms with 1/8”x 1/16” basswood strips. Run a pencil on one side of the planking to simulate the caulking that was used between them. You can stain / finish the boards as you like. The proto-type’s were “weathered” grey.



FAIRING THE HULL

Fairing the hull is a term used when referring to the process of shaping the hull properly prior to planking. The hull for the ESSEX is now at the stage where this can be started. How will you know when the hull has been faired properly? While shaping the outboard edges of the bulkheads, periodically use a strip of 1/8”x1/16” strip to check your progress.

The hull will be faired when the strip lays flat and smooth across all of the bulkhead edges. A properly faired hull will make planking incredibly easier and provide much better results. The exterior can be sanded to shape using a piece of fairly rough grit sandpaper that is long enough to span three bulkheads. It should be on a flat block as long. Sand the edges until the sandpaper rests flat along the entire edge removing all of the laser char that is left from production.

As you are shaping the hull imagine it as a solid block of wood and you are sanding it to flow evenly without any high or low points.

The frames (bulk heads we are most concerned with are the ones leading into the bow and stern, (BH’s 1,2,3,4 forward and 18,19,20,21,22 aft).

The interior of the hull will not be faired now. It is recommended that you wait until the exterior planking is complete as the bulk head legs will be stronger and more ridged at that time allowing you to work more securely.

Fairing the hull (exterior and interior) will reduce the bulkheads so they are thin and slender which will give the frigate an elegant and in scale appearance. They should be reduced with planking inboard and out to no more than 1/4” maximum with 7/32” being more desirable. This means ultimately your bulkhead legs will be sanded down to approximately 1/8” if your exterior and interior planking is comprised of 1/16” thick stock that will be sanded as well.

CHAPTER 3

STERN FRAMING

The stern framing of any ship model can be complicated. ESSEX's stern framing has been simplified as much as possible without compromising the final appearance or shape. Once again it is important to remember that we're not building an actual ship but a model and our goal is to replicate her appearance. If you follow the steps accurately you'll have excellent results.

Release the eight stern frames and the stern frame spacers from their plywood sheets.

Take two pieces of 1/8" bass wood and glue them to either side of the bulk head former as shown on the framing plan (sheet 1). Allow the glue to dry thoroughly. Next take two stern frames and glue them on either side of the scrap pieces, butting their ends onto BH 22. The shape of the end of the stern frames when against the bulk head will provide the correct angle of installation. Clamp this assembly together and allow the glue to dry, Fig 3a.

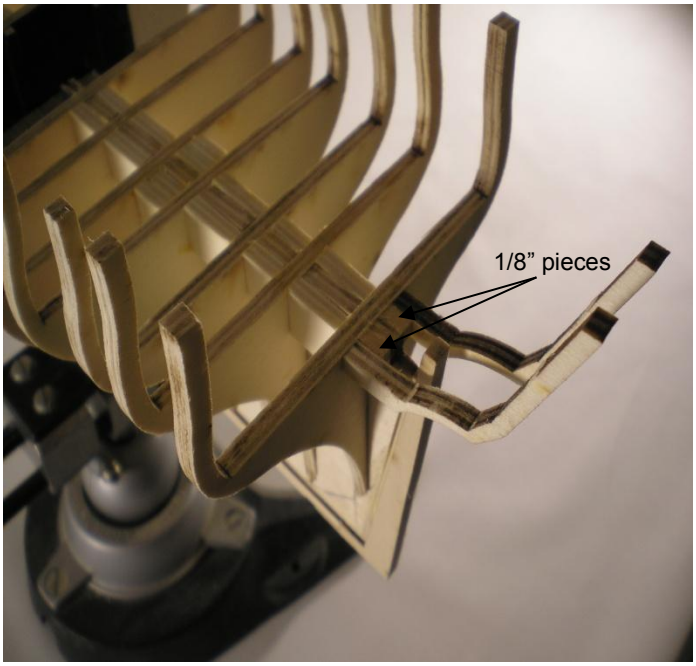


Fig 3a

While the filler pieces and the first two stern frames are drying you can glue up the two outer- most stern frames into a "double". Simply do this by gluing two stern frames together. Do this with four frames total so you have two "double" frames, (Fig 3b).

When the double frames are dry as well you can assemble the rest of the frames. Take a spacer and glue it on the first inner most two frames that you installed. Once this is dry you can glue in middle frames and once these are dry you can install your two double outer frames, (Fig 3c) next page.

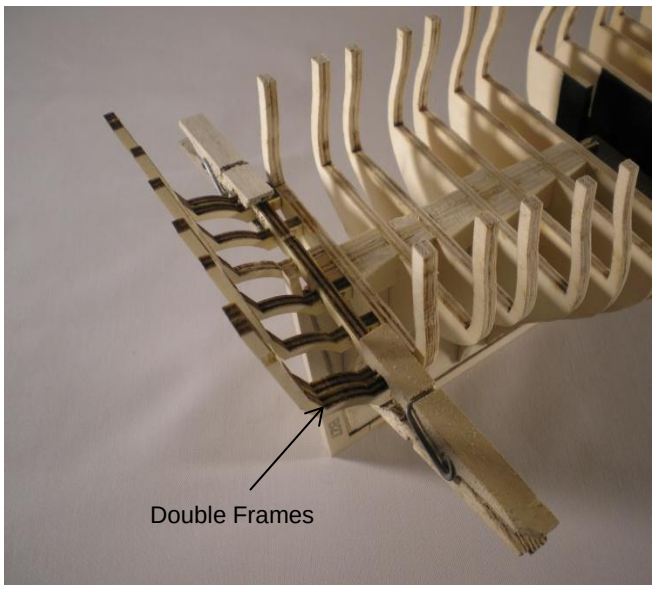


Fig 3b

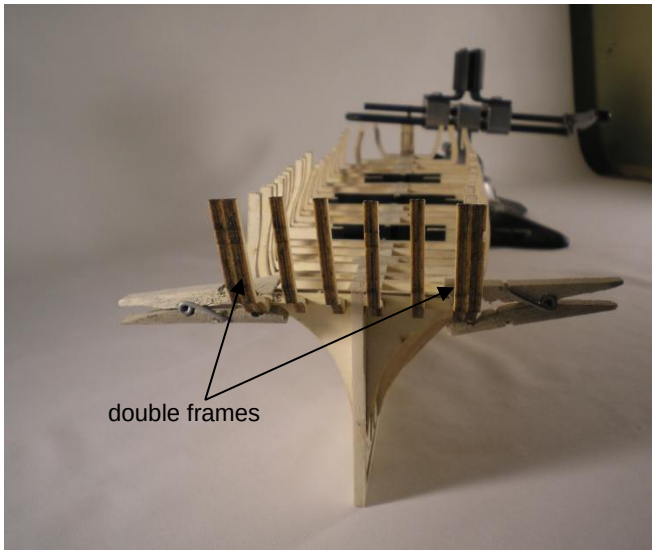


Fig 3c

The next step in constructing the stern will be to frame in the window openings. As we discussed in the opening of this manual there really isn't a recognized representation of ESSEX's stern, including how many windows. Some modelers choose to show seven and others five. We will be installing five. This is based on the assumption that being a "smaller" frigate the width across the stern allows for only five reasonably sized windows to ventilate and light the Great Cabin once all the actual framing is in place. Also the Quarter Galleries are sufficiently ventilated and lit with their side windows so rear windows are not really necessary.

Take the second spacer and clamp it on the stern frames as shown, (Fig 3d). This will produce the correct width to fit in your window frames.

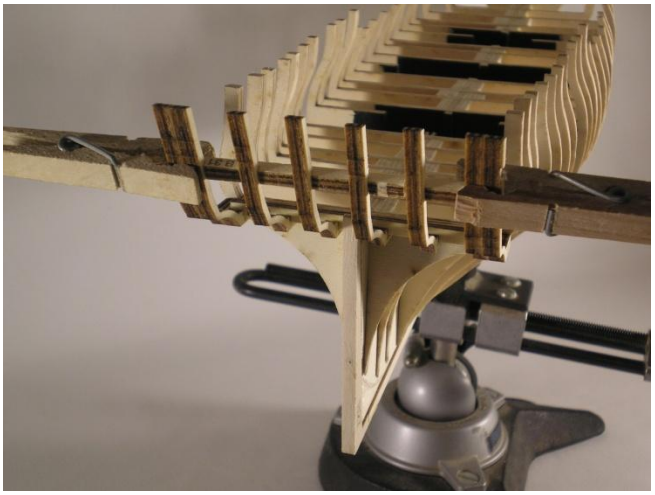


Fig 3d

Do not glue the second spacer on as it is only temporary to provide strength and positioning as you install the window frames.

Cut a series of 3/16"x3/16" pieces of bass wood and place them at the bottom (sill) of the windows as shown on plan sheet one. Make sure that the top of the sill is level. Don't worry if there is an open area inboard as this will be covered over when planked and not affect strength or appearance. Even though the spacer is clamped on the stern frames, be careful not to force the pieces in as this can bow the frames. Once again cut a series of pieces and place them at the top of the window openings (lintel). As with the sills make sure that the piece is level. A quick tip, to make sure your window openings are the correct height, cut a piece of scrap wood the height of the window frames and use it as a guide when installing the lintels. Try not to use the actual window frames as they are somewhat delicate and the less handling before they are permanently installed - the better. Fill in the remaining space of the frames up to the top above each window, (Fig 3e).

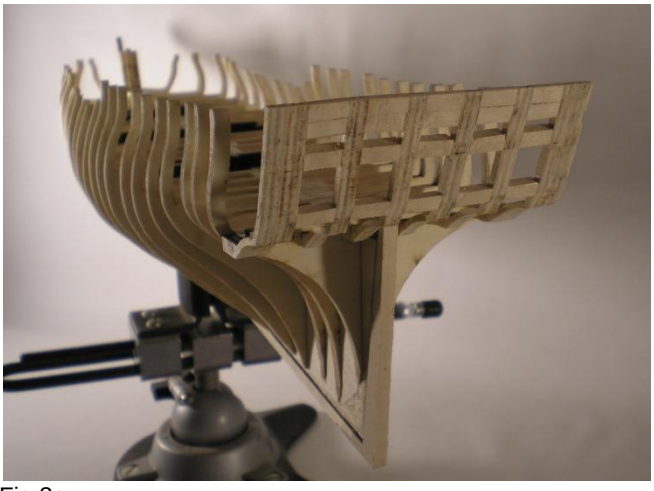


Fig 3e

Measure the width of the stern framing and make a small tic mark on top at center. Take the stern template at the back of this manual and temporarily attach it to the stern aligning the center marks and then trace around it,
(Fig 3f & 3g).

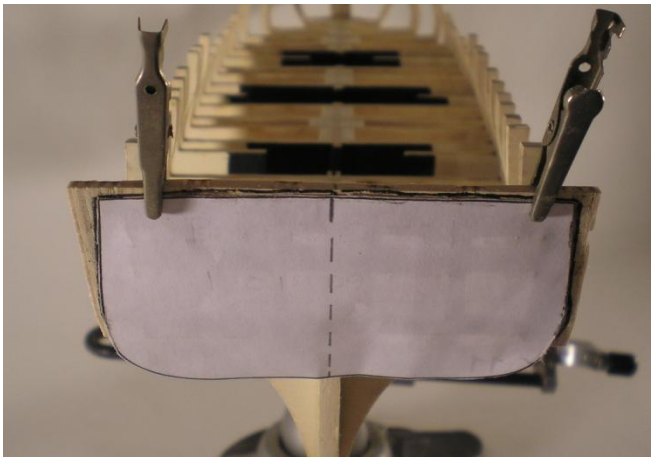


Fig 3f

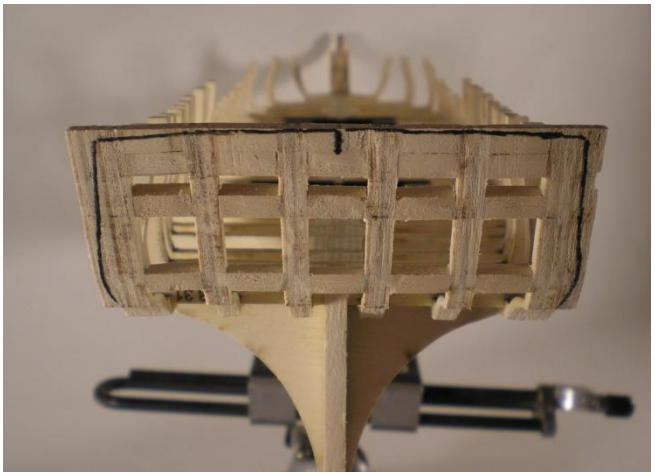


Fig 3g

After removing the template, sand / shape the stern to match the outline you've just transferred. Be very careful as the assembly is at its weakest point. Don't forget to shape the lower part of the outside double frames to continue the curvature of BH 22, (Fig 3h).

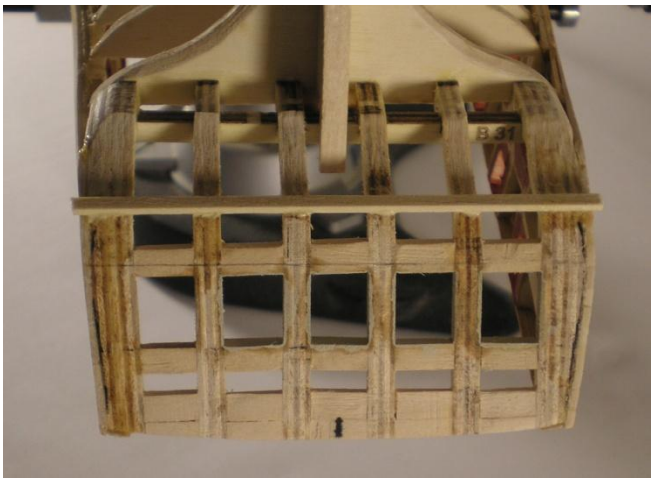


Fig 3h

The next step will stiffen the entire quarter deck area and go a long way to strengthening your entire hull.

There is a slight rise in the line of the bulwarks on the quarter deck and although the bulkheads are roughly at length we need to fair the tops so your railings sit properly and stiffen and strengthen the stern.

Take a strip of your hull planking material, (3/16"x1/16") and clamp it at the top of BH 13 and at your stern framing, (Fig 3i).

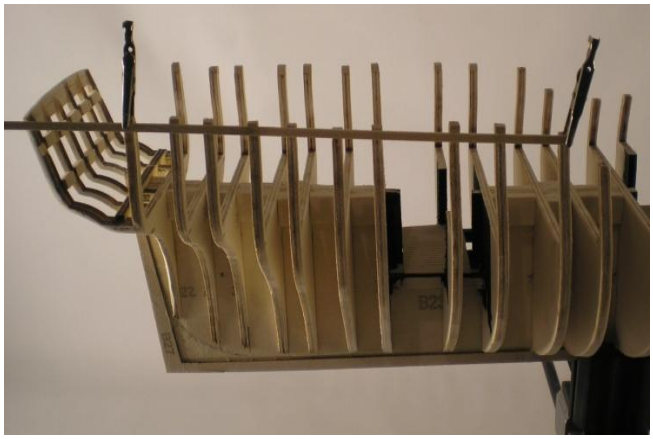


Fig 3i

You'll notice that the tops of your bulk heads are slightly above the strip. Gently file the tops down to meet the strip. Complete on both Port and Starboard. Now take the strips of 1/64"x1/8" Tanganyka and glue them on the tops of each bulk head, (Fig 3j). Do not try to nail the strip as it will split. With this step complete you should be able to feel a noticeable difference in the stiffness of your hull.

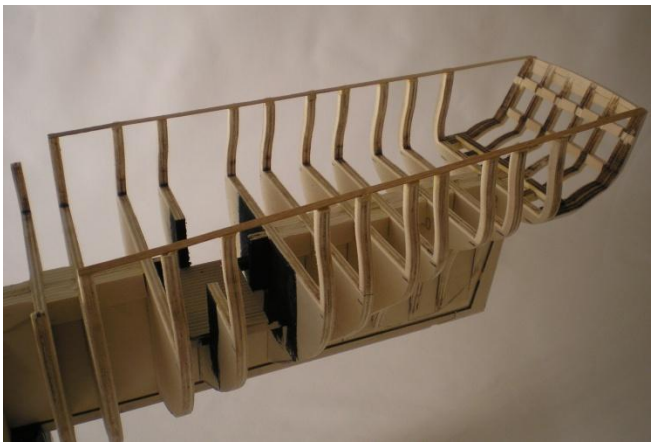


Fig 3j

CHAPTER 4

GUN PORT FRAMING

Fig 4a

STEP ONE (GUN PORT SILLS)

The gun ports (sills and lintels (bottoms and tops)) are made up of 3/16”x3/16” strip stock. We’ll set those before we install the sides.

You’ll notice that the deck of the ESSEX has a very slight rise at both the bow and stern. The gun ports follow these elevations for the length of the gun deck.

To establish the height of the ports, take a piece of 1/8”x1/8” stock and using it as a guide make a series of tic marks on the outside of the bulk heads 1/8” above the rough deck level (tops of the bulk heads).

Once you have done this on both sides you can attach a batten along the marks to view it for a continuous and even flow. If there are any irregularities you should be able to see it in the line of the batten.

For a clear visual a tape batten was used on the proto-type for the photos, fig 4b.

Cut the pieces of 3/16”x3/16” strip stock to fit snuggly between the bulk head but so tight that they spread or distort them. If they do it will cause all types of problems down the road so be very careful. You can just use glue to set the framing as the planking later will lock everything into place.

If the 3/16” stock sticks out a bit that’s ok as you’ll sand it back later. Also one very important aspect to watch for – your sills should be level across inside to out not tilted up or down. This too is very important.

You’ll also notice that the 3/16” is not wide enough as you get near the bow. That’s ok we’ll sand that down later so add on a second piece to make the sill wide enough.

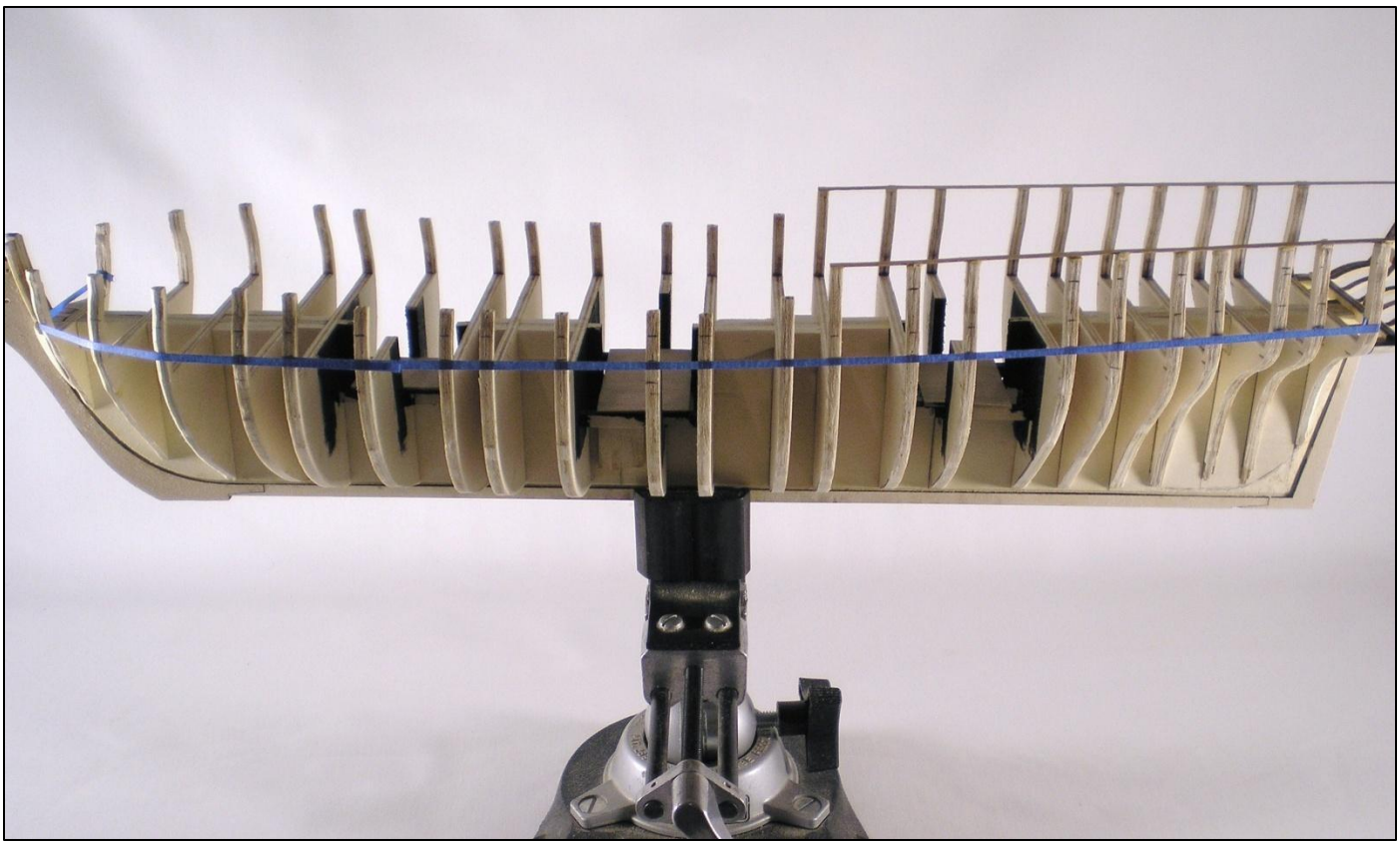


Fig 4b

STEP TWO (LINTELS)

The next step is to install the lintels (tops) of the gun ports. These are also made out of 3/16”x3/16” stock.

The gun ports are 3/8” of an inch high. Take two pieces of scrap you’ve accurately cut to no more than 3/8” and clamp on two bulk heads in the same “gap”. You can now set a piece of 3/16”x3/16” strip directly on top of them. They’ll act as spacers against both bulk heads. Repeat this for the entire hull.

As with the sills the lintels must be level. Also you will need additional stock at the bow again.

STEP THREE (SIDES)

The next step in framing the gun ports are the verticals (sides). If you look at the plans page 1, you’ll see that there is a variety of different size strips needed to achieve the correct placements. The one thing in common is that all the pieces are 3/16” by whatever other dimension is required. The 3/16” remains consistent on the frame.

The simplest method to get a consistent and uniform opening is to make a plug or jig that you can use for a spacer. The gun ports are 7/16” (no less) of an inch wide. Take your time and make sure that all the verticals are straight (plumb) up and down. You’ll notice that BH 13 goes right through a gun port. This is not a problem. First install the two sides as required. Now with everything dry simply take a sharp knife or a small saw blade and cut the bulk head away.

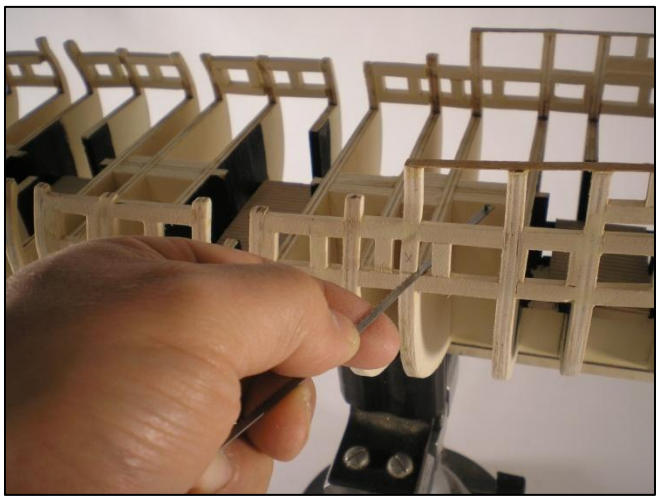


Fig 4c

STEP FOUR (FAIRING THE FRAMES)

With this step you should go over the entire hull and sand down and shape all the framing members that are protruding both in and outboard.

At the bow are it's a little bit more tricky as you have the curvature you've established when your faired the bulk heads to open this chapter. Start with the exterior and shape the gun port framing to follow the bulk heads and blend in with the flow of the hull.

On the interior (as mentioned earlier) you will have to reduce the legs of the bulk heads a bit to be the correct width as you move forward. Here's one way of maintaining the lines you've established.

Fig 4d

Take a pair of dividers and run the point along the outside edge of your framing and the lead on top to scrip the curvature. Set the divider at the appropriate width to re-establish the legs' size. From there you'll have a guide to sanding everything in.

Don't forget that the ESSEX has a slight outward flair as it moves forward and up from the gun deck as shown.

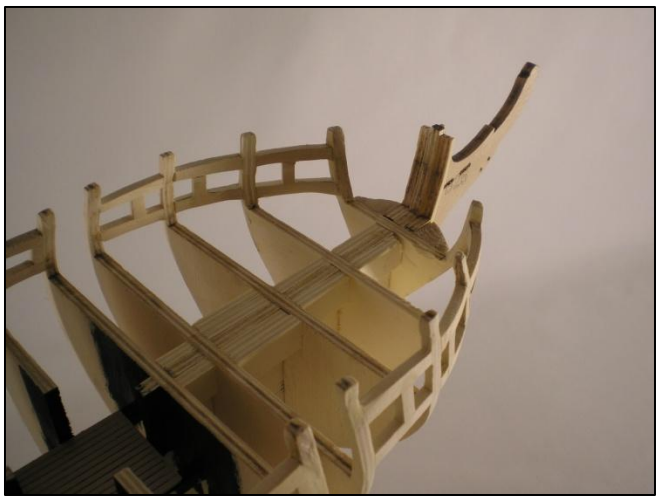


Fig 4e

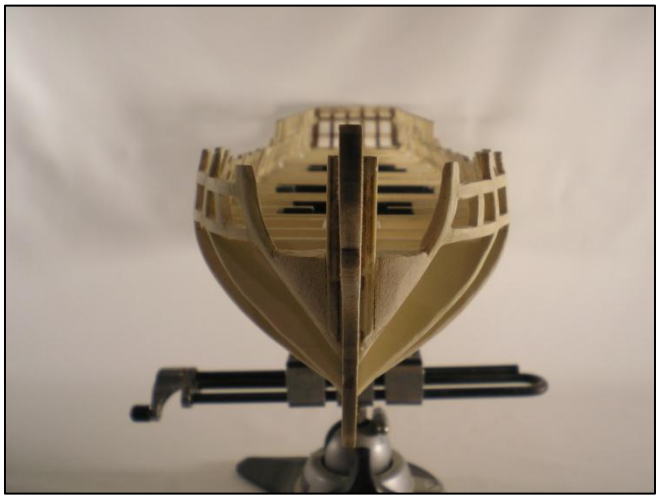


Fig 4f

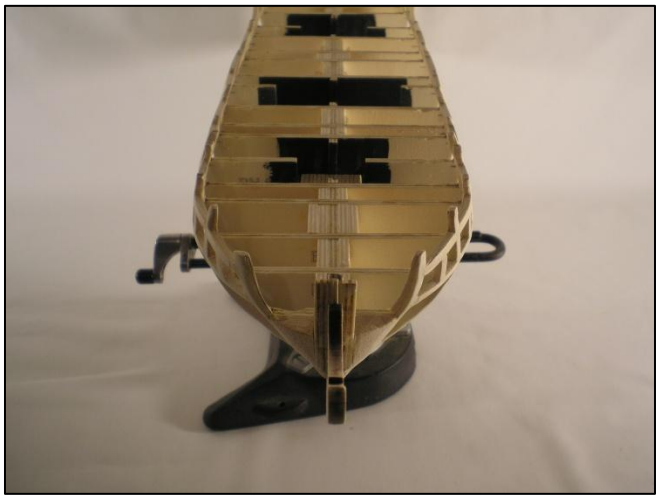


Fig 4g

CHAPTER 5

PLANKING THE HULL

The ESSEX's hull will be planked in a single layer of 1/16" thick basswood strips. As has been stated previously the ESSEX is not a project for a first time builder therefore we'll assume that you have some experience in planking P-O-B hulls. However experienced you are there is an excellent book available at www.modelexpo-online.com that discusses planking techniques in great detail. "PLANKING THE BUILT-UP SHIP MODEL" by Jim Roberts. It is a step-by-step procedural guide to the historically and technically accurate methods of planking ship models. It is highly recommended and will become a valuable addition to your ship modeling library. With any process of ship modeling, we have all developed our own preferences and short cuts to achieving a well planked model. The ESSEX is no different. What we hope to achieve is a smooth surface that will allow us to finish the hull in a clean and aesthetically pleasing manner.

It will be easier to successfully plank the hull if we break it down into smaller incremental steps so here we go……

STEP ONE (UPPPER PLANKS)

Take a 1/8"x1/16" strip and run it along both sides even with the height of the deck line of the bulk heads.

Fig 5a

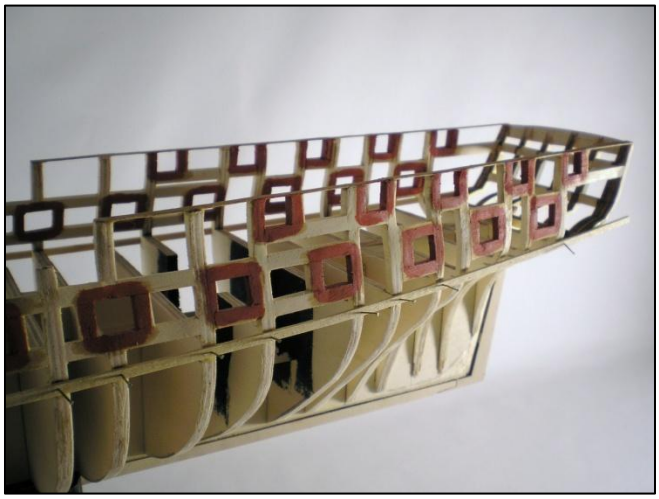


Fig 5b

These are the first planks of the process. You may choose to glue, nail or dowel them on but remember that the area of the gun ports is "finished" wood so you'll want that to be the most pristine area.

Continue up both sides with the strips making sure that the joints are tight and the run of the planks is true. Also remember that there should be no joints in between gun ports. So use full pieces between the openings. The planking should be no more than 1/32" back from the perimeters of the gun ports. You can either cut this in with each individual strip or cut them back (shown method) after all planking is complete.

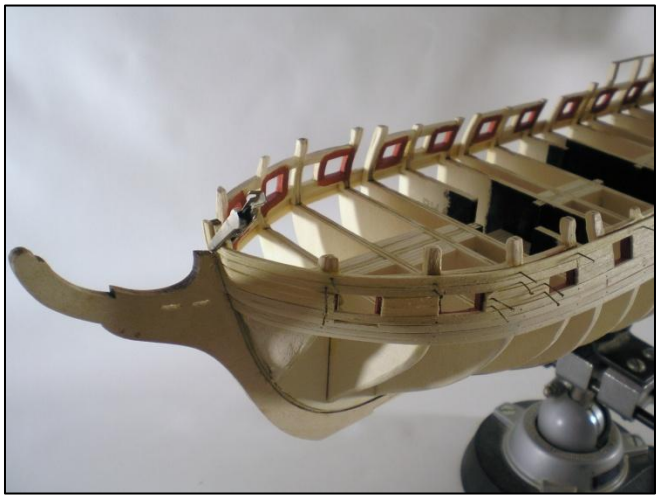


Fig 5c

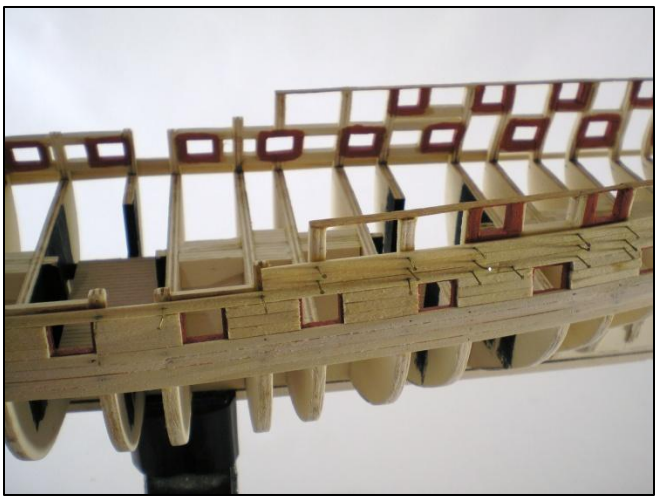


Fig 5d

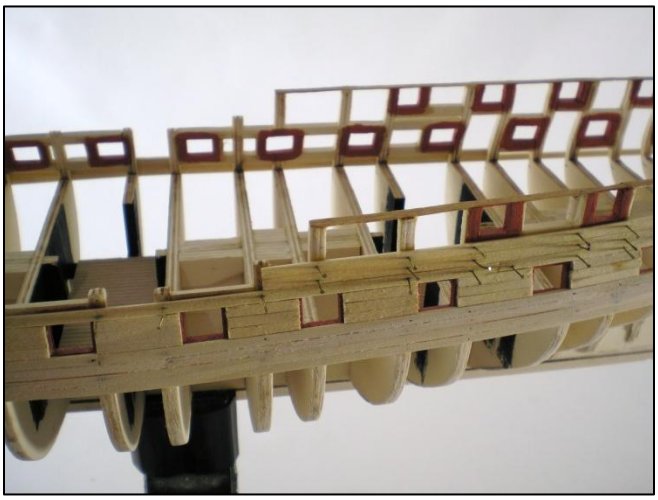


Fig 5e

Fig 5f

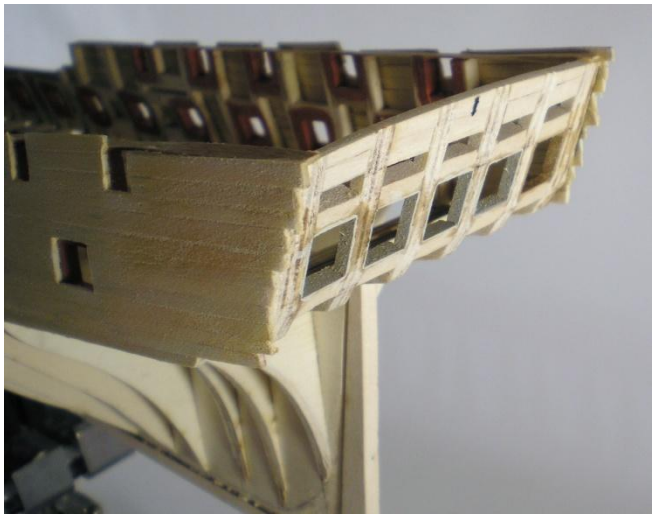


Fig 5g

Once you have completed planking to the tops of the frames at all levels sand the planking smooth. If there are any imperfections a light coat of wood filler will do the trick. Be careful of the gun port stripe area as this will be stained and most wood fillers will not accept stain well (if at all).

If you hadn't established the margin around the gun port openings as you planked you can mark them off and cut them with a sharp # 11 x-acto blade.

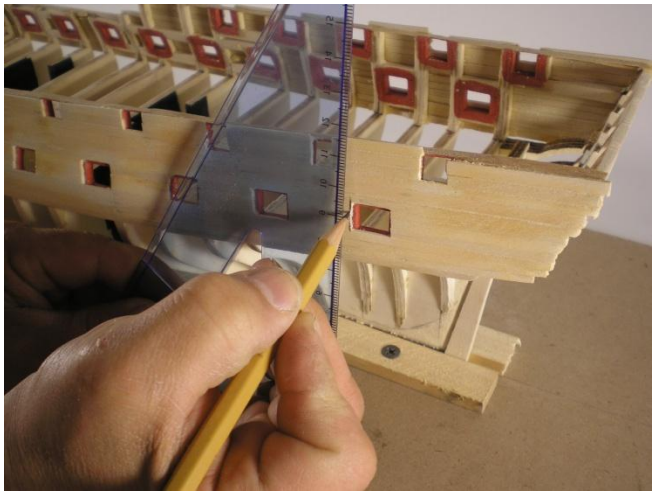


Fig 5h

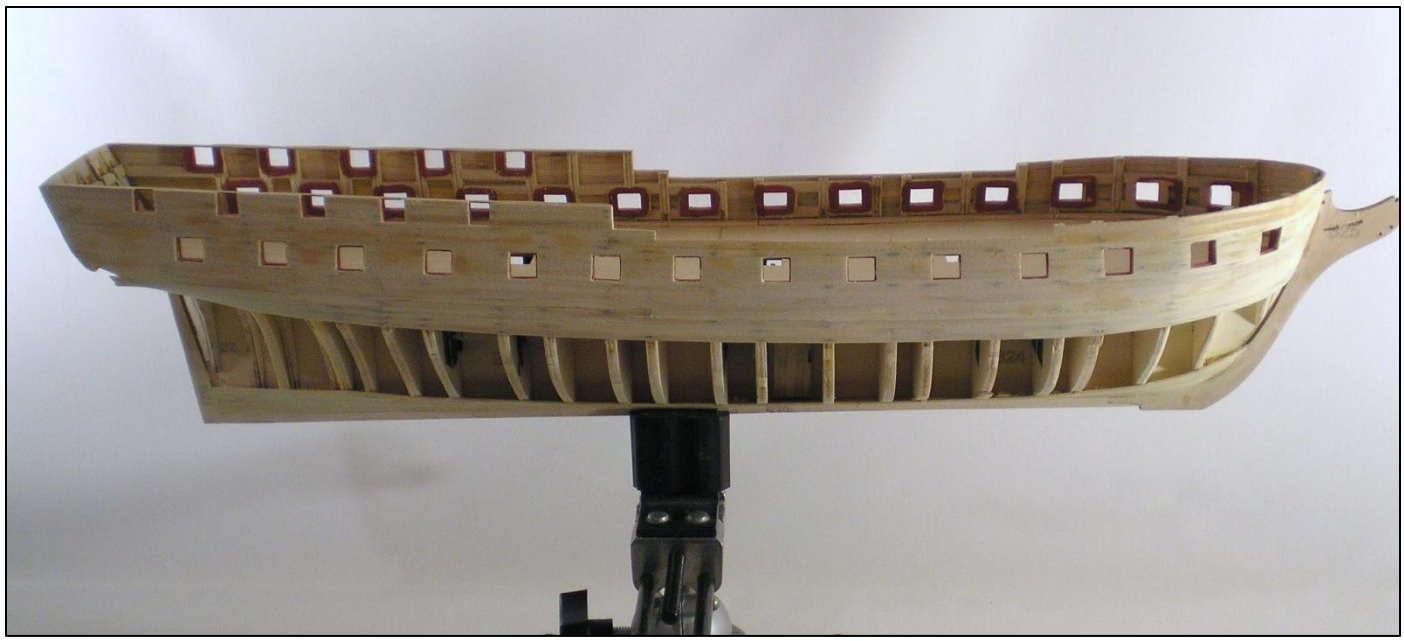


Fig 5i

STEP TWO (STERN Part One Upper)

With the upper portion of the hull planked we'll now turn our attention to the (upper portion) of the Stern. Like the sides use 1/8"x1/16" bass wood strips.

At the lower break of the Stern Frame(s) set your first plank.

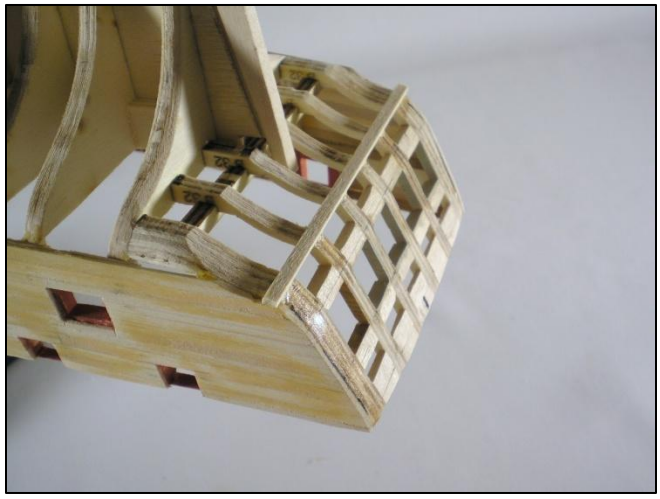


Fig 5j

From that point upward continue to lay in planks until you reach the top of the Stern. For the sake of ease it is not necessary to plank horizontally between the window frames. These areas can be filled in with a vertical strip as this will all be painted later. Once you have planked to the top sand and fill as you did with the sides as necessary.

Take the template you used to mark off the shape prior to sanding the stern frames and re-mark the now planked stern. There may be a little more material to remove now that the stern is planked. Wait to sand again until the entire hull is planked so you can "blend" all the lines into one another and your hull will be perfectly shaped.

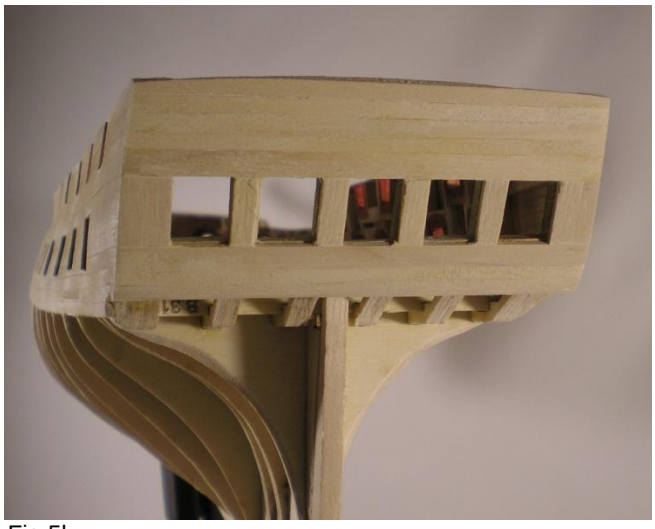


Fig 5k

STEP THREE (GARBOARD STRAKES)

The next step in the process of planking will be the Garboard Strakes at the keel. Take 3 per side (1/16”x3/16”) strips. Run them the entire length of the hull shaping them to fit into the rabbit and follow the contour of the hull but ending with a level line at top. See Fig(s) 5l &5m.

Fig 5l

Fig 5m

STEP FOUR (MIDSHIPS INFILL DOWNWARD)

The next step will be the “infill” of the center of the hull as we break the process into smaller tasks. From the bottom of the first planks you installed continue down to the Garboard Strake planks with 1/8”x1/16” planks between bulk heads number 6 to BH 15. These will lay pretty straight and flat, fig 5n.

Fig 5n

Fig 5o

STEP FIVE (PLANKING INTO THE STERN)

With step five we’ll continue planking the hull from mid ship towards the stern. It’s recommended that you insert some filler pieces (scrap builder provided) at the stern to provide solid backing for the planks as they curve into the post.

There are a number of different methods to address the mathematical occurrence (geometry) that takes place when planking the bow and stern of almost any hull. What happens is that the area at the stern (and later the bow) gets (narrow) faster than the center (mid ship) so processes of stealers have been develop to allow planks to lay in and continue on an a (natural) run. These usually involve measurements, division and a lot of “back-and-forth”.

We’ll simplify it here and allow the planks to do the math for us……..

With the proto-type the following was done. Continue with 1/8”x1/16” planks towards the stern from mid ship alternating one high and then one low. You’ll eventually see the spacing narrowing as you approach the stern.

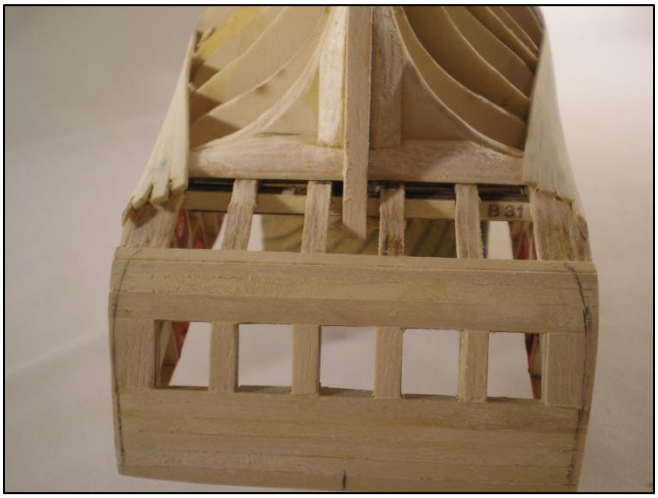


Fig 5p NOTE: Template shape traced on hull


Fig 5q

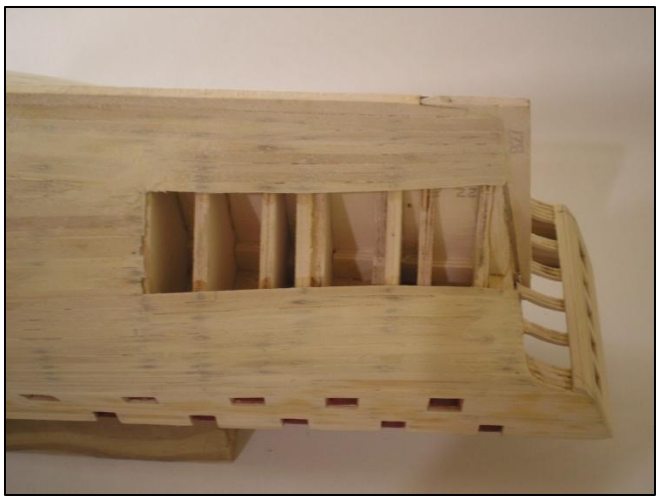


Fig 5r


Fig 5s

The next plank to be installed would be placed in the center of the two widest and taken back to the closet bulk head where full coverage occurs.

Any overlapped planks would be notched and so on until the planking is filled in. The “steps” are to continue to set the next plank installed in the middle of the widest point at the stern and back only until the closest bulk head. You cut back the overlap towards mid ship (creating your stealer / joggle).

See Figure 5t to see an illustration of where the next three planks would go to finish this area.

Fig 5t

Fig 5u

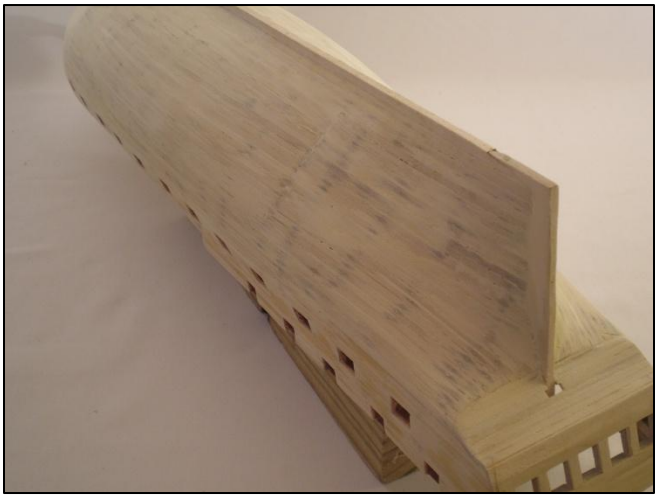


Fig 5v

Once you have completed planking towards the stern and have trimmed your planking back you can then plank in the counter of the stern working down toward. Don't forget to leave a hole foe the rudder to pass through.

STEP SIX (PLANKING TO THE BOW)

The process to blank forward towards the bow follows the same process as the stern. Alternating planks from top to bottom and then infilling the middle when the space requires.

Figure 5w shows how only a couple planks installed will start to clearly illustrate the narrowing space as you move towards the bow. You will have to insert partial planks more often than you did at the stern.

Fig 5w

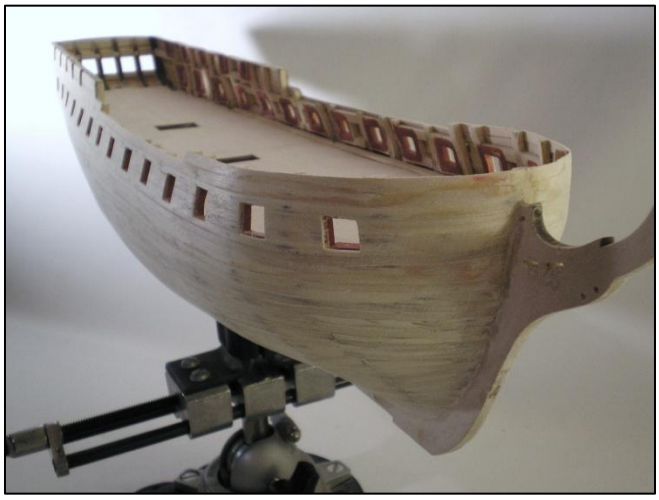


Fig 5x

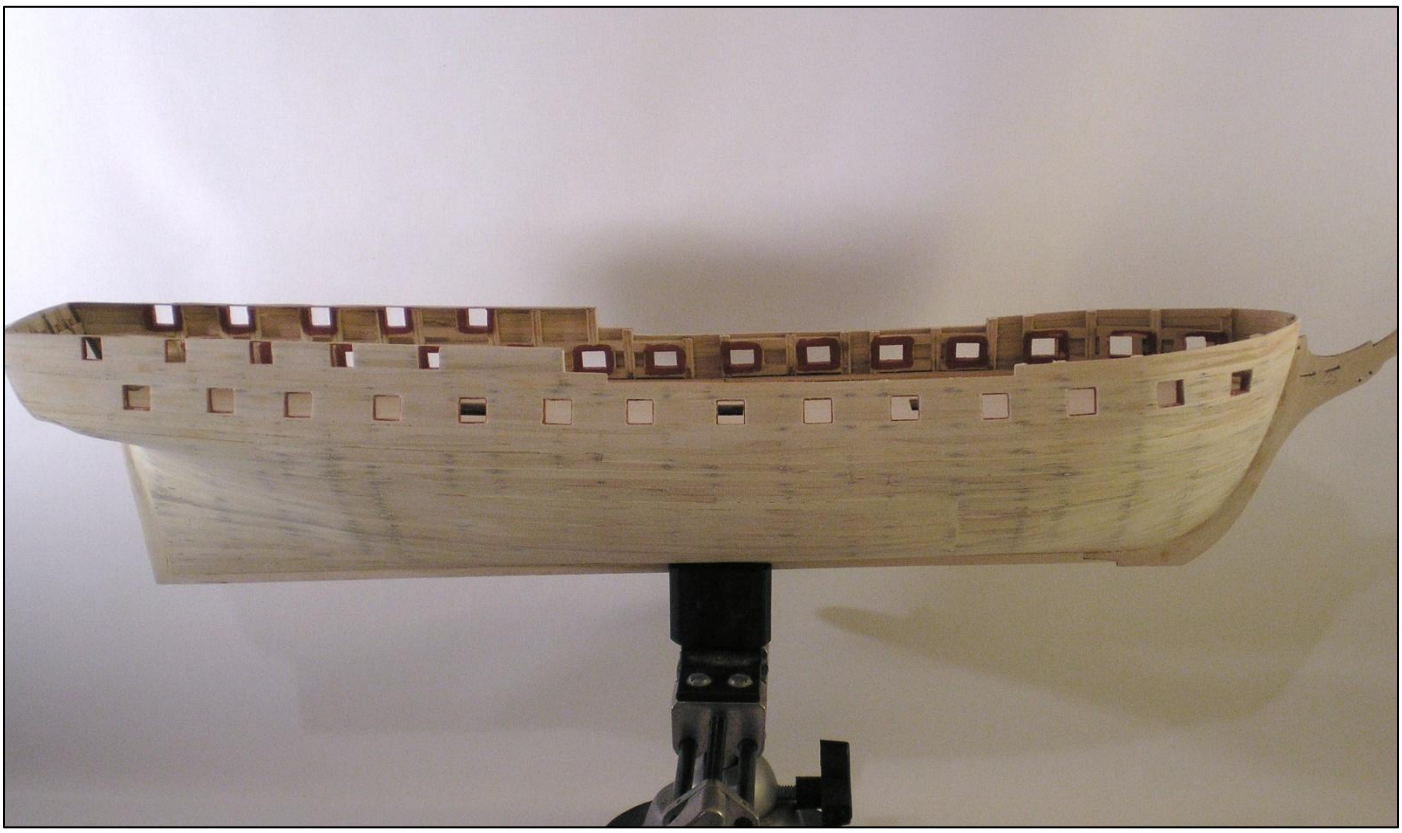


Fig 5y

Once you finished planking the bow look at the hull from all angles looking for any low or high spots. Fill where necessary and give the entire hull a sanding with finer grit paper until she's smooth to the touch. Don't forget to sand in the final shape on your stern. Wipe down the entire hull of any dust so your finishes are perfect, always being mindful of the gun port stripe area.

Before applying any finishes the last step is to create the sheaves that are installed into the sides of the ESSEX. You can see them illustrated on the plans sheets 4 and 5. These would be where tack lines were led into the hull and belayed on the inboard cleats we'll be installing later.

On larger models (Model Shipways CONFEDERACY for example) it is possible to actually install a sheave (of sorts) In our scale we'll have to make a few concessions. The proto-type's were simply two holes drilled straight through on the correct angle. In between the holes the strip was worked with a needle file to create a small impression. Once stain and finish was applied the holes were darkened with a lead pencil (don't use a marker as the ink may bleed into the wood). The indented area was also darkened. This will produce the look of a sheave. Once the stain was applied a light box was drawn around the sheave as well to give the impression of the insert that the sheave would be in. This technique will be used throughout the build. Give it a try on some scrap pieces until you get the hang of it. When blended in with all the other details of the hull the appearance will be surprisingly real.

From here you can start to apply some of the exterior finishes. The hull was stained and finished with several coats of oak stain with sanding in between coats.

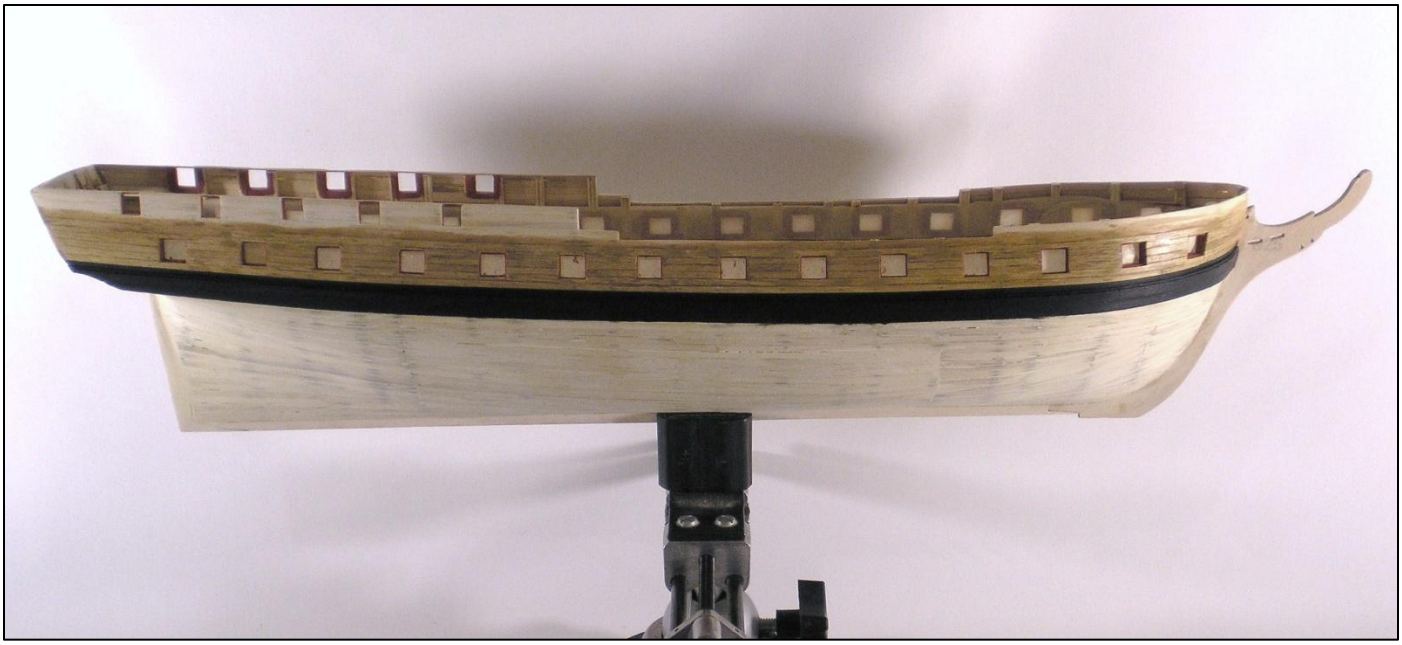


Fig 5z

CHAPTER 6

INBOARD PLANKING

PART ONE (FALSE DECK)

Release the two halves of the false deck. If you are showing any of the lower hatches cut out the corresponding opening. NOTE: The ESSEX's false decks are not an alignment tool. They will fit loosely around the bulkheads. They are intended as a base for the gun deck planking only. Glue the decks down to each bulkhead and any fillers that are available. The more glue (contact) between the false deck and the skeleton of the ship the stronger the deck surface.

Once the glue has dried, you can drill the mast holes. You will not have to drill very deep. Check the individual rake angles from the plans (page 5). Verify the locations prior to drilling. A small guide can be used to help facilitate the mizzen mast rake angle, fig 6a.

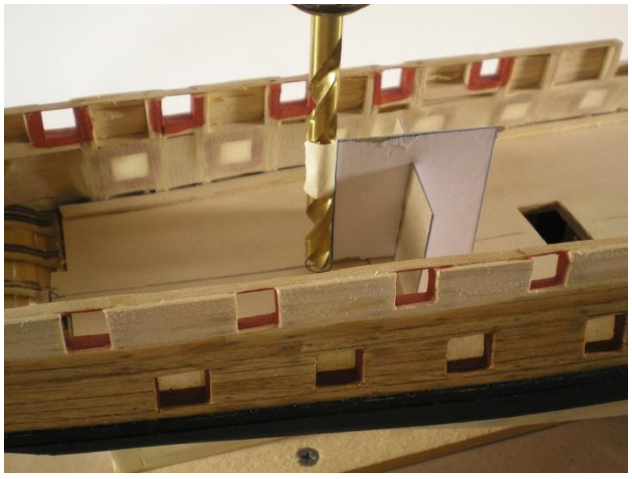


Fig 6a

The last task prior to decking is to mark a center line the entire length of the gun deck. This will establish the position of the first plank installed, Fig 6b.

STEP TWO (DECKING)

Release one of the five piece sets of the margin planks. Dry fit all the pieces. It may be necessary to lightly sand a section due to the sanding (shaping) done to the gun port framing previously. If you want, you can blacken the butt joints between sections to simulate caulking. Once you are comfortable with the fit, glue them in place.

We'll be running all gun deck planking the full length and then just simulating the butt joints.

The first deck plank installed is a 3/32"x1/16" strip. It will be centered on the line you marked previously. If you are blackening the edges, blacken both sides for this plank. Let the plank run over the mast holes. Once this plank is dry you can begin to install the decking which is 1/8"x1/16" strips. Blacken the outside edge of each one prior to installing. Once you have a few installed you can round out the mast holes so you don't lose them. Let the pieces run wild at the stern, you'll clean them up later.

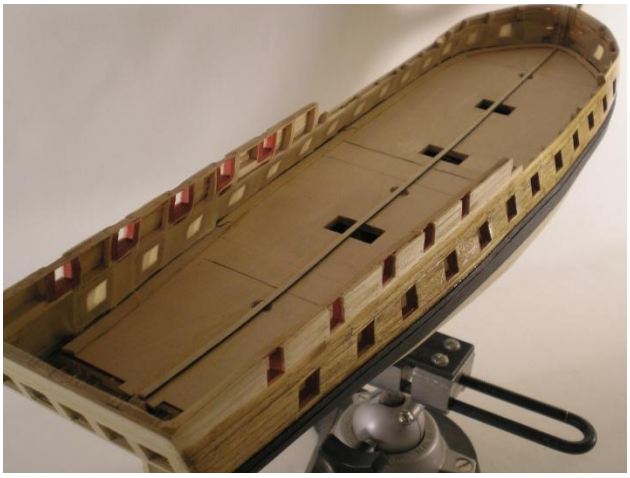


Fig 6b

The deck planking will be joggled into the margin plank. The first several planks moving outward do not need to be joggled. Install them flush to the margin plank. The remainder of the planks along the side of the hull should be joggled. The planks will also be joggled into the margin planks as they meet moving towards the stern. See page 4 of the plans and Figs 6c and 6d below.

Fig 6c

Fig 6d

Once all the planking is installed sand it smooth with a progressive series of finer paper(s). You can now cut the planking at the stern even. You can also now decide what finish you want on your deck. You can just seal it natural or stain it as you prefer. The proto-type's deck was stained driftwood to give it a greyed (aged) appearance. If necessary re-open your mast holes.

STEP THREE (PLANKING the BULWARKS)

The interior of the hull is planked with 1/8"x1/16" strips. As with the deck we'll be using full strips wherever possible. Start at on side of the stem and run your first strip along the bottom of the gun ports the entire length of the hull. From here, infill down to the margin plank. If you are short of the margin plank that's ok as long as it's within a 1/16" as the waterway will cover this gap. If it is too tight you can substitute a 1/16"x1/16" strip or scribe the 1/8" piece to fit. There should be no joints between gun ports so you can now cut strips and plank between all the ports. Your planks should be flush with the framing on the inside. If necessary lightly sand them back but do not lose the "square" of your ports. Do not plank higher than the tops of your port openings. If necessary substitute a 1/1/16" wide strip as needed. You should now be fully planked from the top of the gun ports down to the deck. As with the first plank you installed run a continuous plank along the tops of the gun ports. From here on moving upward to the tops of the bulk heads you can if you wish use shorter strips. Plank all the way to the tops of the bulwarks. Plank the stern after the sides keeping the joints tight. Make sure your planks are tight and straight. When the glue is dry you can sand it smooth with a series of finer paper(s). You'll have a gap in your planks at the stem when done. Take a 1/'8"x 3/32" piece of wood and attach it from the deck to the top of the stem. Cut you planking if necessary so they butt flush against this piece.

Take two pieces of 1/16"x1/16" strip and lightly round over one edge of each. With the rounded edge at the top and facing inboard glue these from the stem to the stern in the corner of the deck/bulwarks. These will serve as the waterways.

Once installed you can drill shallow holes to simulate the scupper holes where shown on the plans. DO NOT try to drill all the way through.

It is almost impossible to get them to line up from inboard to out and is not necessary.

STEP FOUR (BEAM POCKET STRIP)

Release the beam pocket strips. These are very delicate so be careful. There are three pieces per side.

From the plans pages 3 and 4 establish and mark off the elevation of each piece. This is very important so double and triple check all your measurements. Install the waist piece first using the location of a beam on relation to a gun port opening as a lateral alignment bench mark. Once the waist pieces are installed proceed to the quarter and fore deck strips. Be especially careful with the fore deck strip as it will have to bend slightly with the hull.

Once these are complete you can paint the interior. A lead pencil can be used to darken the interior of the scupper holes.

Fig 6e

Fig 6f

As a final detail you can take a mechanical pencil and simulate the deck butt joints and nails. The decking will follow a “three butt shift”. See page 4 of the plans for an example. Do not make the lines very dark as these should be barely visible at our scale.

CHAPTER 7

COPPER

The copper plating on the bottom of the hull adds a tremendous amount of detail and beauty to the finish of any model ship.

The application of the copper plates to the hull of an actual ship was a multi-layer process combining not only copper but felt, paper, natural coatings and wood. We'll reproduce the final appearance with copper tape and a few other items.

The process of coppering your model is not exceptionally difficult but it is somewhat labor intensive. You'll make and apply hundreds of individual plates but if you take your time and keep an eye for detail you'll find yourself with a beautifully coppered hull when you're all done.

At the end of this chapter is one of the methods which has become popular for creating the plates. It is not the only one, but it is the method used here. Take your time with it, be patient and you'll see tremendous results.

PART ONE

The first step in coppering ESSEX is establishing the Low Water Line (LWL) and the Gore Belt Line (GBL). The simple explanation for the GBL is it is an adjustment of the lay of the rectangular plates to account for the curvature of the hull as we move from the keel upward. The ESSEX in 1799 would have had several GBL's but for the sake of scale we'll include just one.

The first thing to do is to establish (mark) the LWL along the sides of the hull. You can use a commercially made line marker or create one yourself, whatever method you've become comfortable with Fig 7a.

Fig 7a

Please note, you can't just mark the line, the hull has to be elevated 1/8" at the bow to account for the hull's curvature. See Figure 7.2. (next page). Once you have the hull elevated set your marker at the height from the Plans page 1. Once this is complete do the same for the GBL. Check your points against the drawings at several points.

PART TWO (Lower Belt)

When applying the copper you should start off with at least 500 pre-made plates 5/8"x1/4" - you'll go through those and need more. But at that point you should be able to guess reasonably how many more, so you don't spend a lot of time making plates unnecessarily.

You'll be working with the hull keel up. A tip for setting a solid base (and saving the stem from breaking off) is to set the hull on a block of 4"x4" wood, (the type that fences are made of). It should fit between the sides of the boat. Cover it with a piece of cloth so you don't mar your deck.

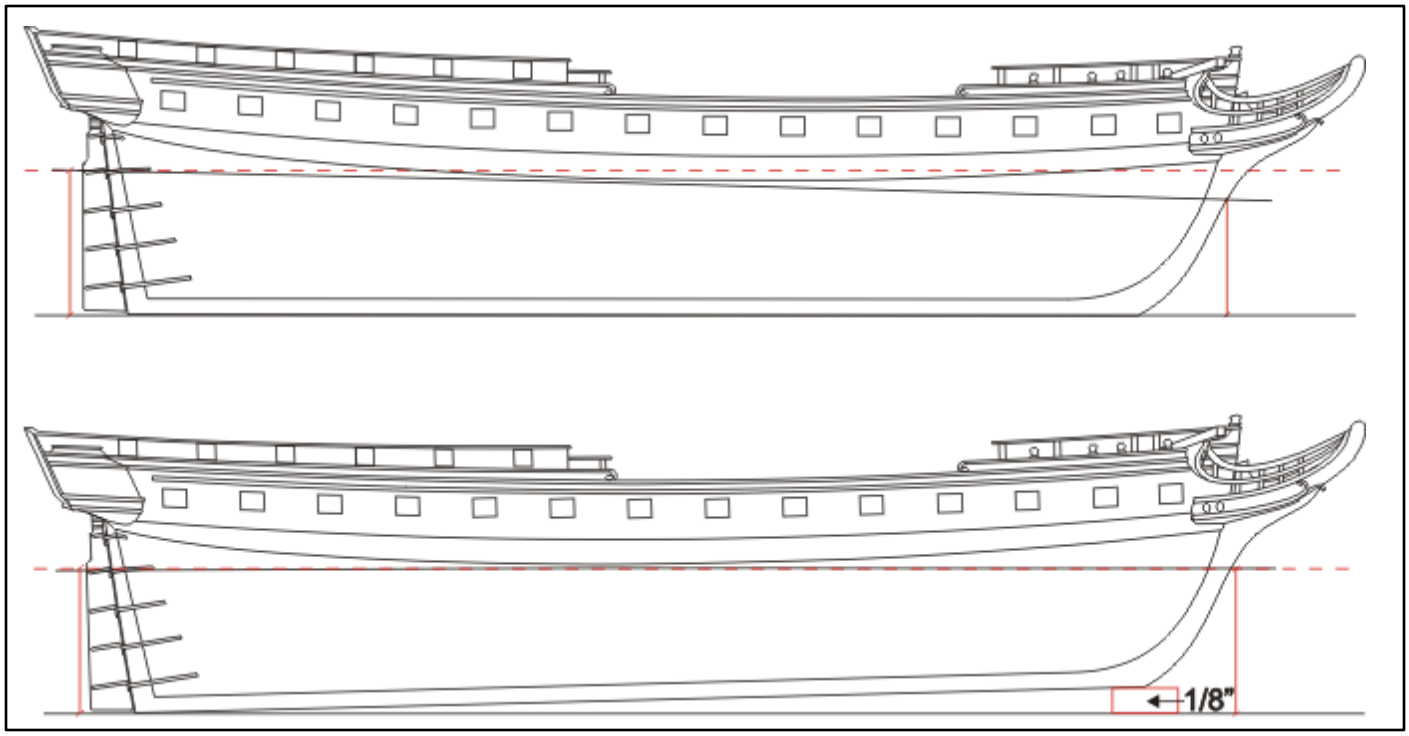


Fig 7b

The first plates are run along the bottom of the keel. Run them parallel with the keel without exposing any bit along the bottom. You'll overlap course to course by half a plate. You'll overlap the edges moving forward and upward.
Allow them to follow the flow of the hull as well.

As they run up the rudder post allow them to hang out and then just trim them back with a sharp #11 blade. Fig 7c

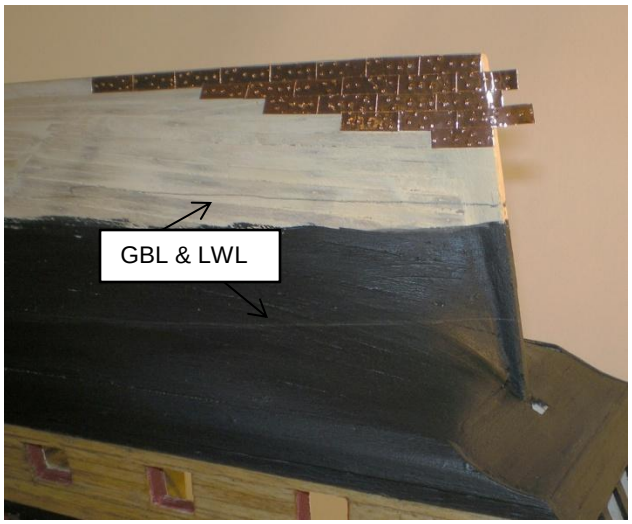


Fig 7c

them in a "brick pattern" with them overlapping exposing any bit along the bottom. You'll apply them in a "brick pattern" with them overlapping Continue to run them along the keel until you reach the bow. Set a course of plates (A) to cover the curvature of the keel as it transfers into the stem. Then continue the original course of plates on the keel forward and level to the stem, (arrow) Fig 7d.

Fig 7d

Continue to fill in plates along the hull on both sides working your way forward from the stern and upward towards the GBL. Take your time and constantly check to make sure that there is no "wave" in your lines or courses. If there is, the

plates (tape) are strong enough to be removed and repositioned. Figs 7e, 7f

Fig 7e

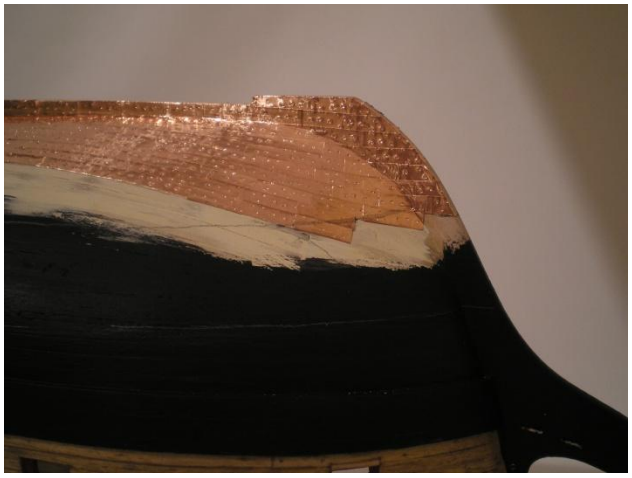


Fig 7f

Continue to infill remembering to work from stern to bow and keel up towards the GBL. As you reach the GBL allow the plates to just cross the line as seen in Fig 7.6. That's as far as you have to take the bottom belt. Continue to infill towards the middle upwards. As you intersect the belt remark it by hand so it's not lost, also Fig 7f, at the stem moving aft.

Figs 7g, 7h and 7i illustrate the staggered look you'll have when you reach the GBL. When all plates have risen to meet the GBL take a look at the hull from all angles. Make sure no corners are up and no plates are crooked. With everything in good order it's time to move on to the next belt.

Fig 7g

Fig 7h

Fig 7i

PART THREE (Upper Belt)

With the Lower Belt complete you'll now move to the Upper Belt. Starting at the stern you will start placing full plates as you did with the Lower Belt but this time along the line that you've transferred on top of the Lower Belt. Start new and don't worry about aligning with the Lower Belt. The change in curvature is due to the shape of the hull.

Continue plating up to the LWL. As your plates approach and or reach the LWL you can stop them short if they are within a full plate's height of the LWL.

Once you have completed both sides working up to the LWL you then can install a "dress band" of plates. This is an additional course that runs with their top edges on the LWL, capping off the Upper Belt and producing a finished edge.

Along the stem and stern post you then take a plate center it and bend it over "capping the edges. Remember to move from bottom to top.

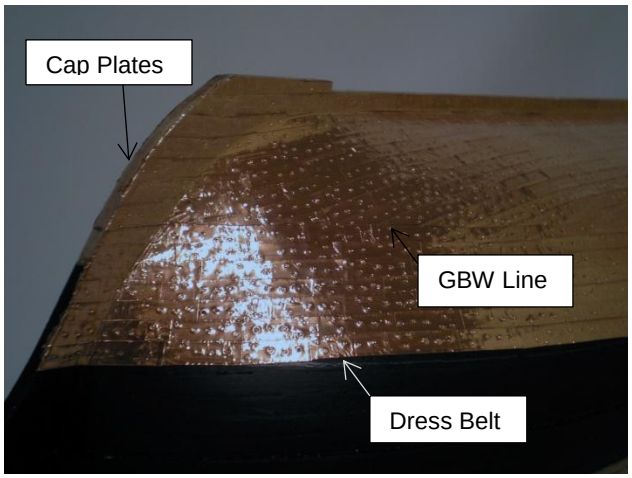


Fig 7j

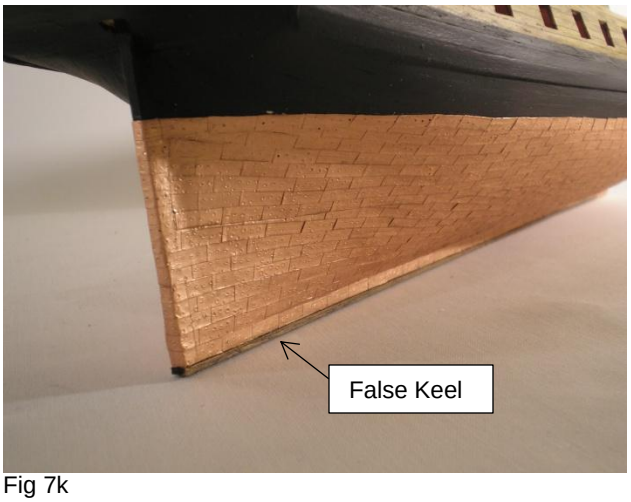


Fig 7k

Fig 7l

Starting at the break in the bottom of the stem take a strip of 3/32"x1/6" walnut and run it aft to the end of the stern post. Cut it off flush (following the angle) with the stern post. This is the false keel.

Once this is completed take a 1/16"x1/32" strip and run it along the top length of the copper. This batten was used to pin down and seal the top edges of the plating. You can stain the piece a little darker if you want or leave it natural, Fig 7m.

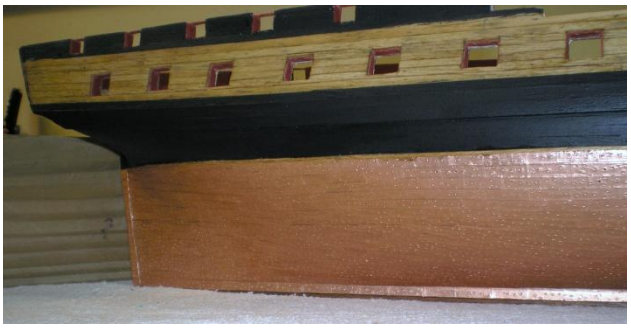


Fig 7m

Before we move on to the Rudder it's important to give some discussion to the finish on the copper. Some people choose to leave it shiny (natural). Others will try to create a patina that would be more greenish in hue. The proto-type's finish is one coat of a spray on clear matte lacquer. After that it's allowed to patina naturally. Regardless of what finish you choose try to handle the bottom as little as possible once the coppering portion of your build is complete as the oils from your fingers will actually stain (over time) the plates (tape).

PART FOUR (Rudder)

The first step in the rudder installation involves shaping the rudder. The rudders were rounded on the leading edges. Gently round over the edges of your rudder, it should be a graceful curve not square, Figs 7n & 7o.

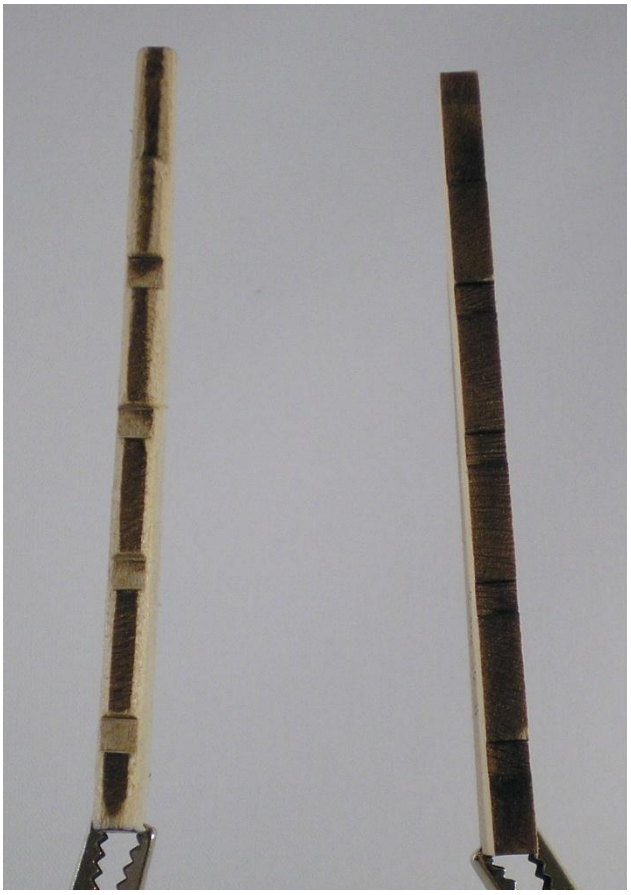


Fig 7n

Fig 7o

The false keel extends to the bottom of the rudder as well so now would be the time to attach a piece of the walnut strip and shape it as well.

The rudder was painted above the water line and coppered below so that's first. Prime around the cutouts of the rudder with copper paint and then bend a piece of tape into each opening. Once this is done copper the rudder in the same fashion as the hull working forward and up. Use a series of plates to cap the leading edge as well up to LWL point on the rudder.

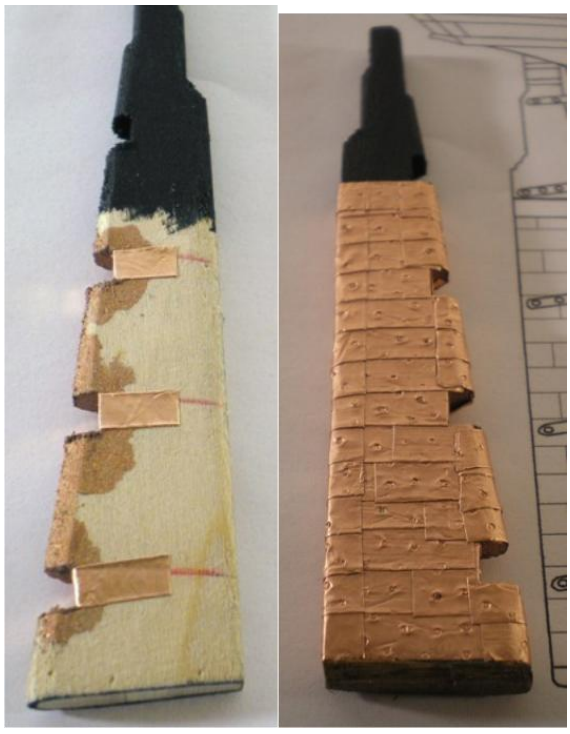


Fig 7p

Next step are the pintles and gudgeons which are for a simpler definition, hinges. There are no commercial ones available that work in scale so we'll make a very convincing yet easy reproduction ourselves. Start by taking a strip of brass a 1/16" of an inch wide and about a half inch longer than what is shown for each set on the drawings. Remember to double the length on the drawing to account for the "other side"! Take a short piece of brass rod and bend the pintle (the piece that goes on the rudder) in half. Glue it on the fold onto the rod. Immediately below, glue it's "partner" (gudgeon) going in the opposite direction, Fig 7q.

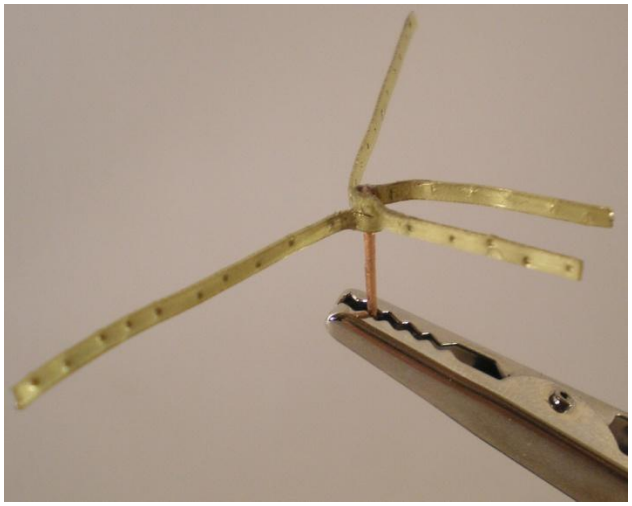


Fig 7q

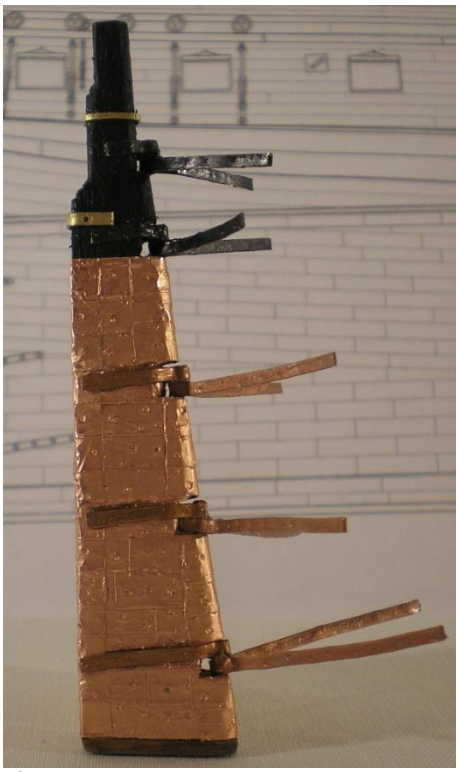


Fig 7r

Once the glue is dry cut the rod off flush with the bottom. Continue to make the remaining sets needed. You can also impress the look of nails if you like. When your sets are done prime and paint them copper. Once they are dry you can install them on the rudder gluing the pintles at the angle shown on the drawing. The brass will easily conform to the shape of the rudder. Cut them off on each end if they are a little longer than the drawing shows Fig 7r. You can also add the full strap at the very top of the post and the partial strap where the preventer chains attach. These are also brass and will be painted black. Don't forget to paint the P&G's that will be on the hull black and not copper.

NOTE: it's also easier now to drill a hole on each side (visible) on the preventer chain strap to insert an eyelet into with the chains than once the rudder is installed. Prior to installing the rudder, and with your hull still upside down install the wing transom margin plank. It's a 1/16"x16" piece of stock Fig 7s.

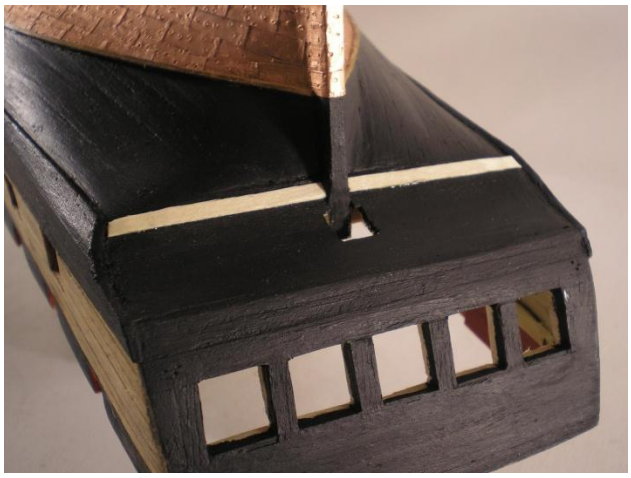


Fig 7s

The next step is to install the rudder itself. Insert it into the hole in the lower counter leaving it even with the keel. Remember to keep it centered on the stem post. There are a couple of different methods of suspending the rudder inside the hull. The first is to “sandwich” the inserted rudder post with a block on each side glued to the lower counter and the post. The other is to mark the intersection point of the post and the inside of the counter’s planking and then drill a small hole and reinsert the post with a dowel through the hole creating a stop of sorts. Either method when glued will adequately secure and suspend the rudder.

The next step is to attach the gudgeons onto the hull. Take a small piece of cardboard or wood equal to the distance between the rudder and the stern post and insert it unglued.

This will maintain the spacing between the two. Glue the gudgeon straps at the correct angles onto the hull. You’ll be surprised how strong the rudder attachment will be once the gudgeons are complete. Touch up the P&G’s with your copper paint.

The next step with for the rudder installation is the rudder boot. On the real ESSEX it would have been a leather shroud nailed onto the hull and the rudder to prevent water (weather) from entering and anything from falling out.

We’re going to improvise here…. Take a coffee filter (yes a coffee filter) and cut a piece into the shape shown in Fig 7t.

Fig 7t

Make a slit in it from the hole to the outside edge so you can wrap it around the rudder. Take some undiluted white glue and coat the boot material. Now wrap it around the rudder and form it up and around the rudder post and onto the lower counter. You can form some wrinkles into it to give it a realistic look. Wipe any excess glue off the rudder or hull with a little warm water. Once dry you can paint it a leather color – either dark brown or black.

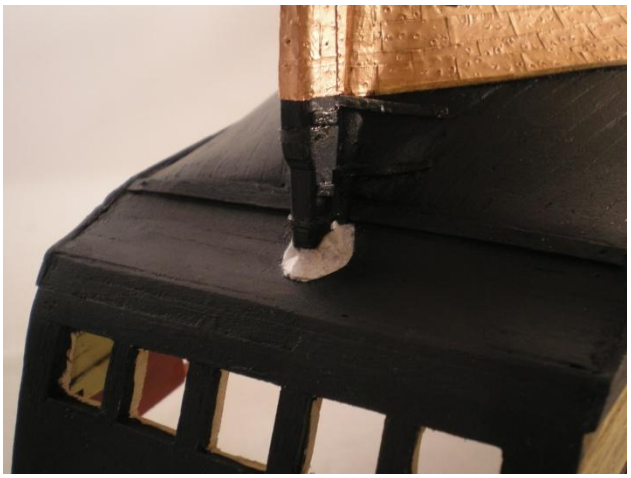


Fig 7u

The last part of the rudder installation is the preventer chains themselves. Take two pieces of the chain provided and set them up as in Fig. 7v with 2 eyes and a lanyard at the end.

Fig 7v

Insert one eye into the hole(s) you drilled into each side of the strap on the rudder. Drill a small hole and insert the second eye into it on the margin plank you just installed. Leave a pleasant looking swag in to the chain. The remaining end with the lanyard will be inserted into the hull through another hole later in construction.

Fig 7w

STEP FIVE (Draught Marks)

The last step in the copper process is the installation of the draught marks. Release them from the photo-etch sheet and paint them either white or red and glue them on.

Fig 7x

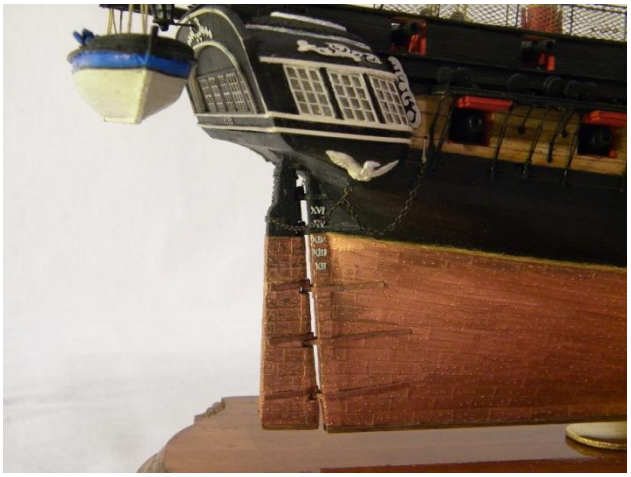


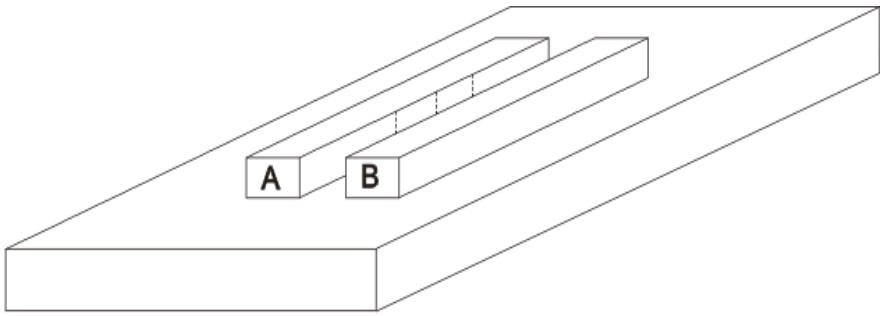
Fig 7y

Instructions For Building a JIG To Create The Nail Pattern On The Copper (Tape) Plates For ESSEX

(Illustrations Not To Scale)

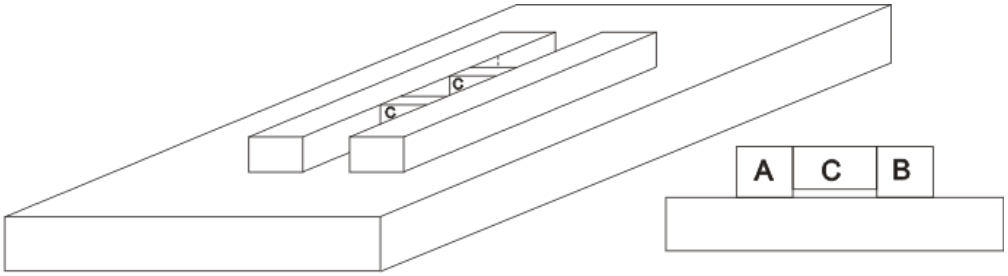
Step One

Take a scrap board and glue two 3/16”x 1/4” strips (A &B) down the center. Leave a ¼” of space between the two strips. This will be just enough space to slide a strip of copper tape between them. The strips can be about 6” long, or whatever length you become comfortable working with. On the inside strip of ‘A’ mark in pencil 3 reference lines to indicate two copper plates side-by-side. The length of each plate for ESSEX will be 1/2”. These are shown by the dashed lines in the illustration.



Step Two

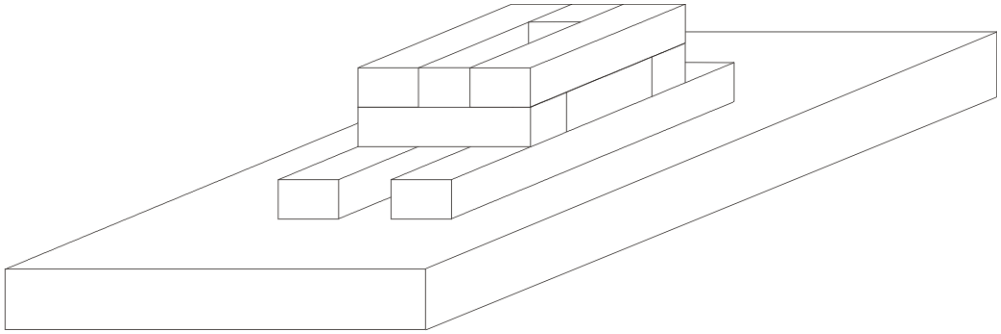
Place two smaller pieces of wood ¼” wide (c) between the other two strips. They should form an opening which is the exact dimension of the first plate as marked earlier. The third red line should still be visible as it will act as a guide when you slide your copper tape through the channel. It is where you will line up the edge of the stamped plate so the next one will be aligned properly. Be sure to leave ample room under these pieces (c) so you can slide the copper tape under them. But don’t leave too big a space as it will also serve to hold down your copper tape to keep it from bending.



Side view showing the space beneath the pieces marked “C”.

Step Three

Once the initial opening for stamping is completed you can build up several layers higher to make the “well” deeper. Use more1/4”x3/16” strips and stack them up like Lincoln logs. Two layers should be sufficient. The opening should not be too tight that the stamp will not slide into it easily. But it shouldn’t be too loose either.

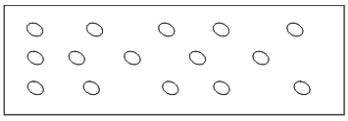


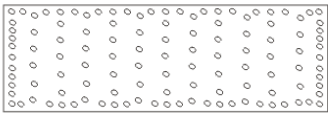
Step Four

Take a block of wood “D” the same dimensions as the actual copper plate. Make sure it fits into the “well” of your base. The block of wood should be a little higher than your well is deep.

Place another slightly larger piece “E” on top of the block so you will have more surface area to hit/press down on. Drill some holes on the bottom of the stamp in a random pattern trying to approximate the actual pattern illustrated. Given the scale of our project it is impossible to reproduce the actual pattern so we are trying to give the appearance of nail heads on the plates – nothing more.

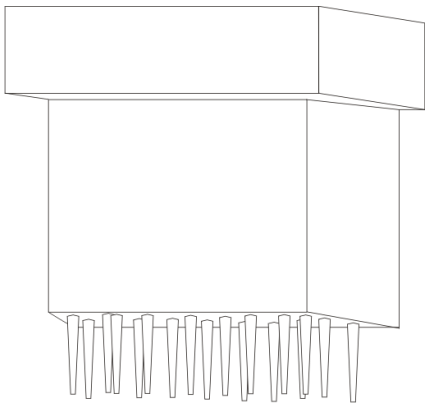
Snip the heads off of some tiny brass nails and insert them into each hole. A drop of cyno glue for each shoul set them in permanently. File the tips of the nails flat so they don’t pierce the copper tape. Make sure they are all flat and the same length so they all contact the copper tape.





Recommended nail pattern vs.

Actual ESSEX nail pattern.

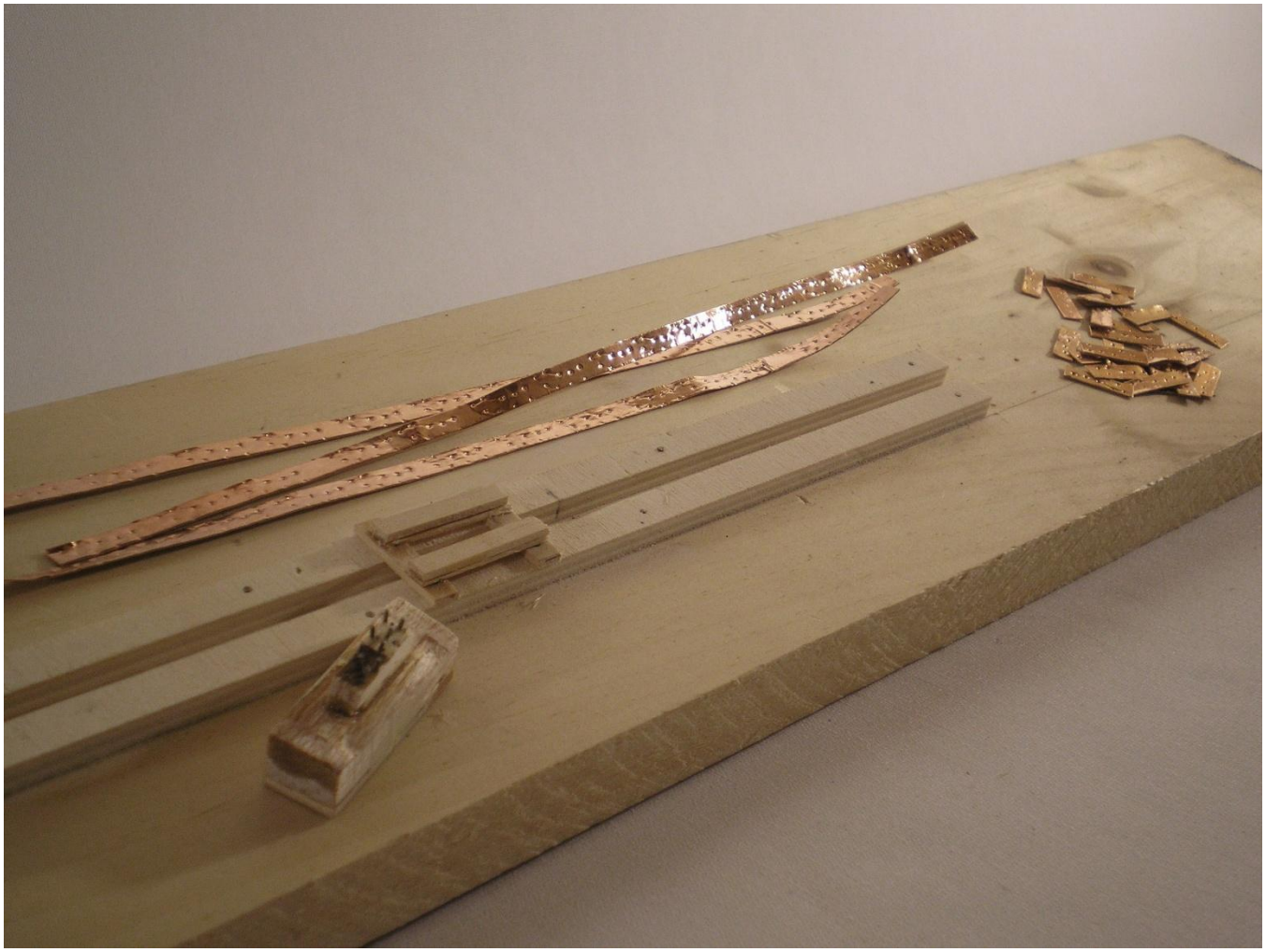


General appearance of your stamp

Step Five (Making the Plates)

Slide a 6’- 12” strip of copper tape (whatever you’re comforatble working with) into position, face up. Use a mini (jewler’s hammer) or just hand pressure to stamp the nail pattern onto the copper tape. It may take a few trys to get a feel of how much pressure to apply regardless of method. Then slide the strip through the “well” until you see the nail pattern line up with the reference mark you made. This is the last dashed line that should still be visable on the inside of the wodden strip “A”. You can make your next plate immpression and continue the process until the entire strip of copper tape is fiiled up.

Remove the copper tape and burnish the nail heads flat. You can now cut the tape into individual plates with a pair of sharp scissors.



Courtesy of Chuck Passaro

CHAPTER 8

GUN DECK DETAILS

The gun deck details are comprised of a number of different items that will start to bring your model to life and give it a personality that is unique to every individual model ship. Some of the items are very detailed (stove) or really simple (mast coats) and every measure in between. Like many of the previous steps in construction (and many too come) approach each as its' own individual "mini project" and you'll be just fine……

STEP ONE (CLEATS)

Release 6 of the laser cut cleats and install them as located on the plans page 4.

STEP TWO (MAST COATS)

Release the two large laser cut mast coats (without the notch). Lightly sand any burn marks. Take a file or fine saw blade and cut in grooves to simulate the wedge joints. You can also round the top edge a bit. You may also want to file the inside to allow for the slight mast rake of the main and fore masts. You can stain or paint these as you wish. Glue them in place.

STEP THREE (BULK HEAD)

Release the two laser cut sections of the bulk head and one deck beam. Although the parts are laser cut from the original drawings you'll more than likely have to sand the edges of the bulk head a bit to fit your inner hull. Take only the back piece and finding its' location sand/file it to fit. Remember to keep it centered as you do this or the top "arch" of the bulk head will be off center. Once you have a fit you like, glue the front (panel) section onto the back piece. Once the glue is dry, gently shape the panel section equal to the back. You can paint the bulk head the same light yellow used for the internal bulwarks on the gun deck. You can also detail in door hardware as you like using a marker or mechanical pencil. Be careful not to overdo these details as they would be very small in our scale.

Glue the bulk head assembly in place making sure that it is located accurately and is plumb (straight up and down). Once dry you can take a piece of 1/16"x1/16" and glue it across the bottom between the waterways. Paint to match the bulk head or the waterways.

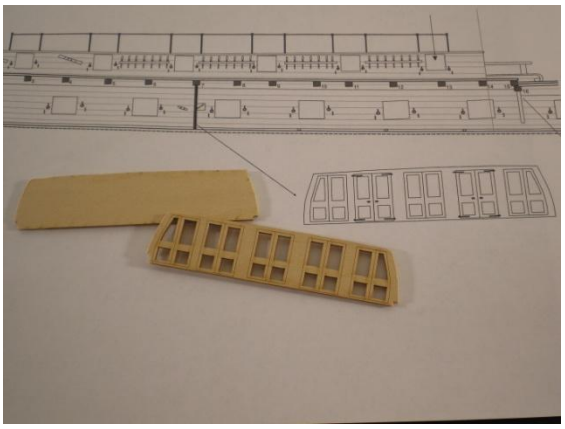


Fig 8a

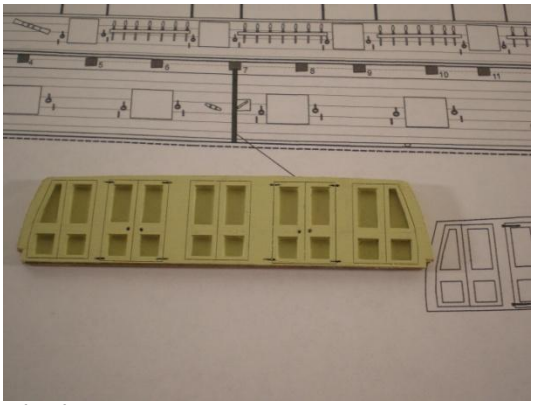


Fig 8b

STEP FOUR RING BOLTS (EYE BOLTS FOR GUN RIGGING)

If you intend on rigging the 12lbdrs on the gun deck you'll have to install some of the ring bolts now. Due to scale we'll simplify the item and just use eye bolts for them. There are two each side of the gun ports and one on the deck for each gun placement. Locate the locations for the two each side of the gun ports and drill a pilot hole for each. Insert only the top eyelet for each one as the lower ring will be attached to the breach tackles. For the train tackles on the deck insert and eyelet and bend it over as if the ring were laying on the deck. See page 4 and 5 of the plans for measurements and the rigging pics for the guns later this chapter. It is not necessary to rig the four guns behind the bulk head. If you want you can place rings at the bridle port. Hold off on the train bolts for this as they will actually be placed on the fore bitts when installed.

STEP FIVE (BOLSTERS)

Take the two laser cut bolsters and finish as you wish (paint or stain) off of the boat. You can use a mechanical pencil to indicate the mortises on the bottom. Glue the bottom one below the hawes holes. Glue the top immediately above the hawes holes. It may be necessary to lightly sand them, shaping them to your bow. On each side of your hawes holes insert a vertical piece of 1/16"x1/16" strip stock for the buckle bars. See fig 8c.

STEP SIX (MANGER)

The manger was used to pen in livestock and to help direct run-off water from the anchor cables into the scuppers. Take a 1/16"x1/8" strip and stain/finish including caulk joints. Take two pieces of 1/32"x1/32" strip and finish them as well. Glue the 1/32" strip as shown and glue up a series of the 1/16"x1/8" stock as shown as well in pic 8c. Take two pieces of 1/16"x1/16" strip (finish) and install as posts. You can "detail" the tops if you like. These should be placed as wide as your bitts.

Fig 8c (bolsters, manger, scuttle, bitts and mast coat

STEP SEVEN (GUNS)

The ESSEX carried a variety of sizes and purposed guns throughout her career. At launch (as we're representing her here) she is armed with 26 12lb long guns on her gun deck and 10 6lb guns on her quarter deck. Both size guns are built the same way so you can elect to build all of them now or break it down into two times, now and when you reach the quarter deck – it's up to you…….

There are a number of steps to complete a single gun, ready for installation, so we'll try to make it as clear and simple as possible.

First take the gun itself and clean off any cast lines or flash that may be left from production. With a small round file or even a drill bit just between your fingers clean out if necessary the bore of the barrel. It doesn't have to be deep, just enough to give the impression of being bored.

You'll see that the breach rope runs through a ring that is not present on the guns as provided. Take .20 gage wire and make a series of rings (the shank of a drill bit is perfect for this). Once you've made enough, glue them on the barrel and button. Use a bit of cyno to fill in any gaps. Make sure they are consistent in size and straight. They should be perpendicular to the trunnions.

Prime the guns with a thin coat of primer and paint black (or whatever color you're using to represent black metal). Use a series of very thin coats so that no brush strokes are showing.

Next are the carriages. The actual carriages were a complicated and built up piece of equipment. Unfortunately due to scale ours are simplified, but with a bit of care we can still achieve a high degree of detail and realism.

Take the carriage base and two sides. Glue them together. The sides are straight up and against the base, not on it. The axles have been left heavier for production. Shave off a little on each one so that they can fit through the holes of the wheels. The front wheels are slightly larger than the rear pair.

Slide the wheels on and glue. You can nip the axle(s) back a bit so they just extend past the wheel itself.

You can paint the carriages, red, light yellow, brown or stain them brown. Paint the wheels either black or brown.

There are a few small details left to bring a little more realism to the guns before you set your guns onto them.

On each side drill two holes in the locations shown in the illustration. In the one on the left insert an eye bolt. Make sure the shank of the bolt doesn't go through and interfere with your barrel when set. This is the gun tackle loop. The forward hole is for the breaching ring that will be set later.

You can take a marker or paint and simulate the bolt heads on the tops of the sides of the carriage if you wish.

If you are intending on rigging your guns with train tackles you can insert a small eyebolt on the rear bottom edge of the sled. This is very difficult, be careful you don't split the sled.

Finally, take 1/32" strip stock and cut a series of wedges to represent the quoins. Glue these into place making sure that they will contact the barrel but not interfere with its level. You can also insert a small piece of wire into the quoin and build up the end to represent the handle of the quoin. Paint the quoin as the carriage.

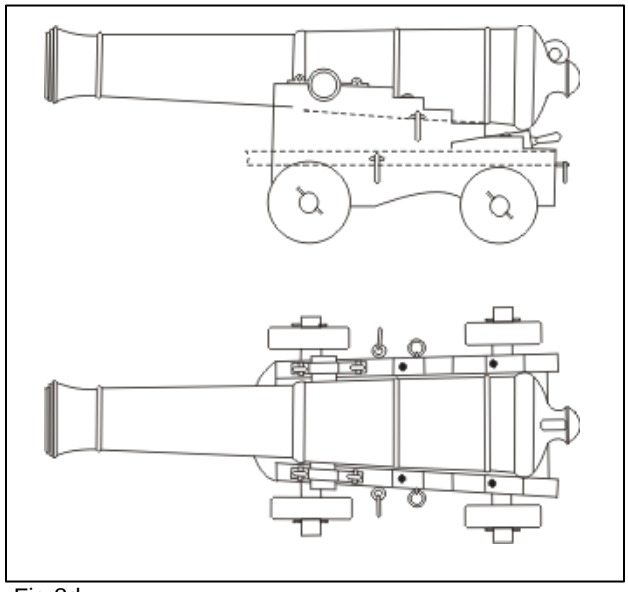


Fig 8d

With these details complete it's now time to set your guns. A drop of cyno under each trunnion is all that should be necessary to secure the gun. Make sure the gun is seated into the slot for the trunnions. If necessary, file the slot until it will accept the gun. Make sure your guns are at least level and relatively equal in height to one another. Check to see that the quoins are touching the barrels but not interfering with the elevation. You can take a strip of pinstripe tape and place it over the trunnions to simulate the capsquare.

The next part of assembly is to rig the breaching rope. This is done much easier off the model than on. Here's one way of going about it…….

Take a length of .95 line (about 3" for the 12lbdrs and (.42) 2-3/4" for the 6lbdrs). At one end tie on an eyebolt, (this will become one of the breaching bolt rings that will eventually be set into the bulwark. Next slide another eyebolt onto the line, (this is the breaching eyebolt that will be inserted into the carriage. Pass the line through the loop of the barrel. Next slide another eyebolt onto the line, (this is the opposite breaching eyebolt that will also be inserted into the other side of the carriage).

Finally tie on another eyebolt to the end of the line for the “other” breaching bolt. The proto-type used builder made eyebolts from.28 gage wire. Don’t forget to clip the leg of the eyebolts a bit as they’ll be too long if left as they’re supplied. Fig 8e is of a 6lbdr being rigged.

Fig 8e

Once the breaching line is complete the two inner ring bolts can be inserted into their respective holes on the carriage.

With this done the gun(s) can be glued into place. Make sure they are straight into the deck and that they are centered in the gun port openings. A drop of cyno under the wheels is all that is needed to hold them in place.

The next step in rigging the guns are the gun tackles. As with the guns themselves these take a fair amount of work prior to installation but when done they provide a tremendous amount of detail.

The typical “kit block” is somewhat square. The actual blocks were rounded and the blocks on the proto – type were modified as such. This is up to you as sanding blocks this small is tedious at best but the results are noticeably better. A small hook is shaped out of .28 gauge wire using needle nose pliers. These hooks were glued into pre-drilled holes one end of each single block. Be careful when drilling the holes as too much pressure will split the blocks. It may seem a daunting task but it is doable. Once all the blocks are “hooked” take a length of .28 line and seize it around one of the blocks. A simple knot can be used to do this. Run the line through another hooked block and then back again through the first block. This will complete your tackle which is now ready to be rigged on the model. Pay close attention to the direction of each hook and try not to twist the line as this will make installing these much easier.

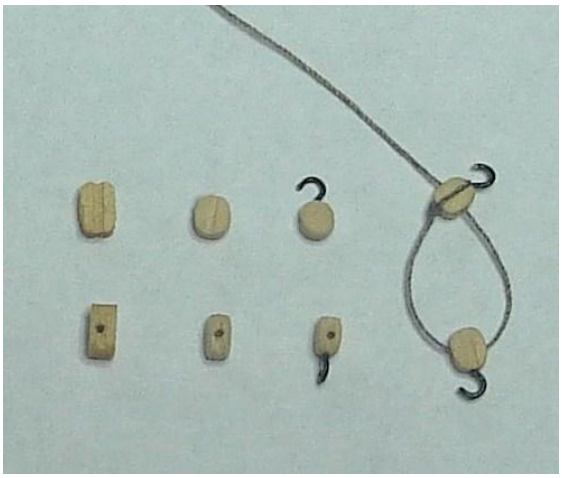


Fig 8f

The next step is to install them. With a pair of tweezers hook the block that the line IS NOT tied on into the eye bolt that is in the bulwarks. Now take the other block and hook it into the eye bolt that is inserted into the carriage. Assuming that your guns are pulled forward (cleared for action) the gun tackles would have been slacked at that time. A small drop of cyno will help them lay on the deck. The loose end that is hanging through the forward block on the bulwarks can be tacked down onto the deck as well. Don’t try to coil this line it’s way too hard to do. Just tack the end down and make coils off the boat (using whatever method you prefer) out of the same .28 line and glue them on top of the end line.

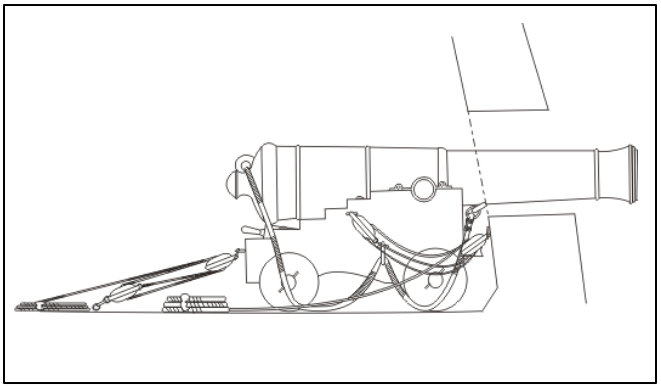


Fig 8g

The same method(s) can be used if you decide to rig the Train tackles.

Fig 8h

STEP EIGHT (HATCHES)

There are several hatches/gratings of various sizes on the ESSEX all are built basically the same way. For brevity sake we'll show the construction of the main hatch and the hatch/capstan bed combination. If you've chosen to utilize drop down bulk heads you can build the coamings the exact same way but leave the gratings off.

The main hatch; Locate the two laser cut grating pieces that are for the main hatch. You'll need several strips of 1/8"x1/8" and 3/32"x1/16" stock. We will use a lap joint construction method. It may seem a little confusing at first but once you get the hang of it, it's not hard at all and produces a great looking hatch.

Take your two gratings and a piece of 3/32" strip as long as the gratings. Measure the total width of these three elements and cut a piece of 1/8" stock this length plus 1/4" more (to allow for 1/8" extra on each end. Repeat this so you now have a center strip (the 3/32") and two long sides (the 1/8"+) pieces. At each end of the 1/8" strips cut away a 1/8" wide notch 1/16" deep at both ends. In the center cut away a 1/16" deep 3/32" wide notch, Fig 8c.

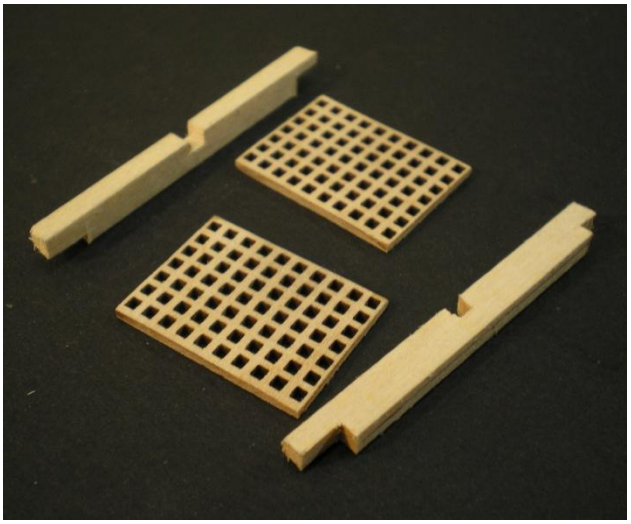


Fig 8i

Take a piece of 1/8" stock and cut it as long as the gratings plus a 1/4" (again). As before, cut a notch 1/8" wide and 1/16" deep at both ends. Make two of these for the sides. Fig 8d shows all the pieces ready to assemble. Take the two 1/8" strips with the notch facing up and glue in the 3/32" strip into the center notch. Turn this assembly over and set the two hatch gratings against the center strip and pieces and glue the edges in, Flip back over. This will position the gratings are the "top" of the hatch. Take the two end pieces and glue them in tight against the gratings.

Trim the ends if necessary. Sand the entire assembly and slightly round the top edges of the 1/8" strips. Paint or stain as preferred.

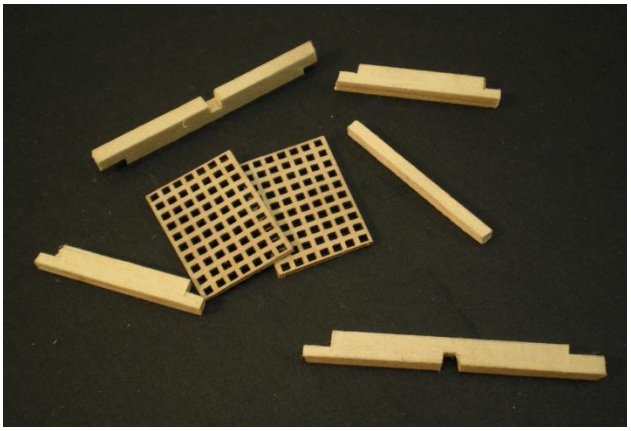


Fig 8j

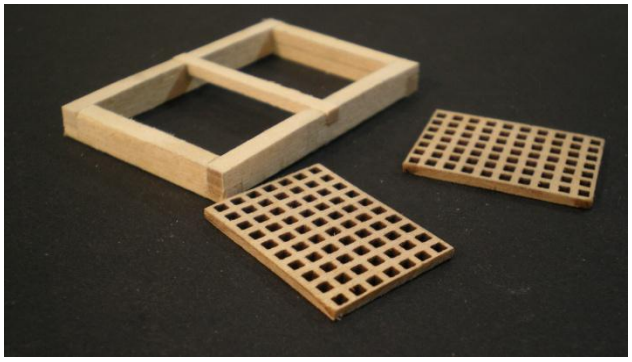


Fig 8k

Take strips of the laser shot garlands and cut stain/paint as desired. Glue on the cannon balls. Position the hatch assembly on the deck in position and lightly mark its location. If you wish you can paint black under the hatch before installing it and the garlands.

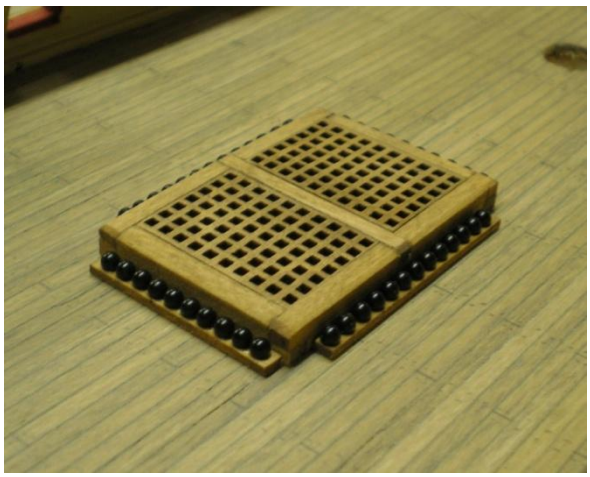


Fig 8l

You'll use this same method for the construction of the gun deck fore hatch.

There are two hatch / capstan bed assemblies (one on the gun deck the other on the quarter deck) that are built just have just a couple of additional steps.

Release the two laser cut gratings for the hatch. Take some of the left over decking strips and glue them on edge as if you're creating a sheet of decking. Don't forget to "caulk" the edges as you did for the gun deck and finish them the same way. Once this "decking sheet" is complete cut it the same size as the gratings with the decking running the same direction as the gun deck itself.

Take these three elements and frame them with 1/8"x1/16" strips. Glue the decking into this frame but not the gratings. From here around the gratings build up the frame with 1/8"x1/8" strip stock as you did the main hatch. Glue the gratings at the top as before. Sand and finish.

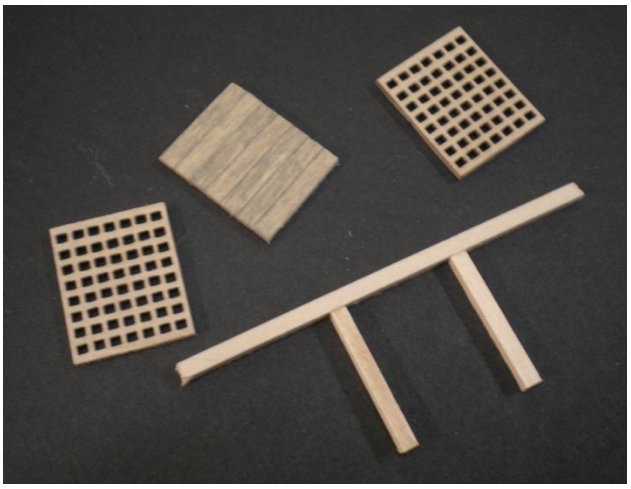


Fig 8m

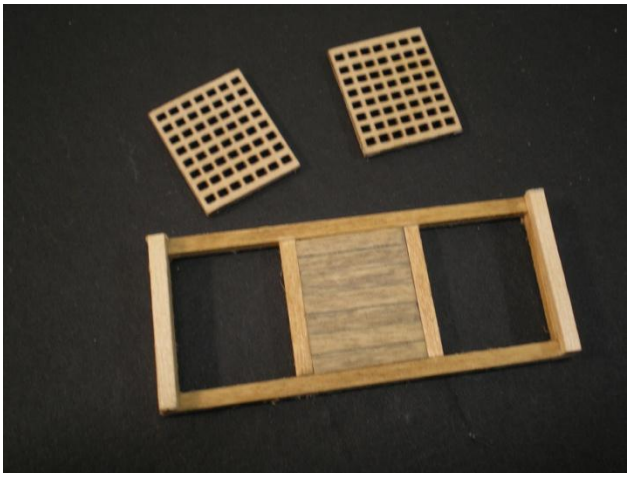


Fig 8n

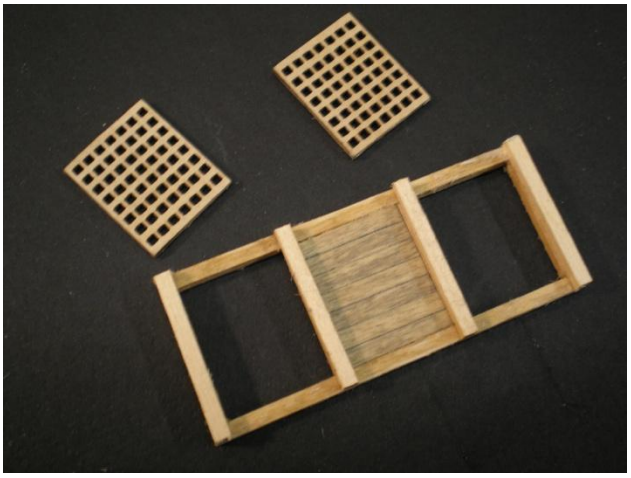


Fig 8o

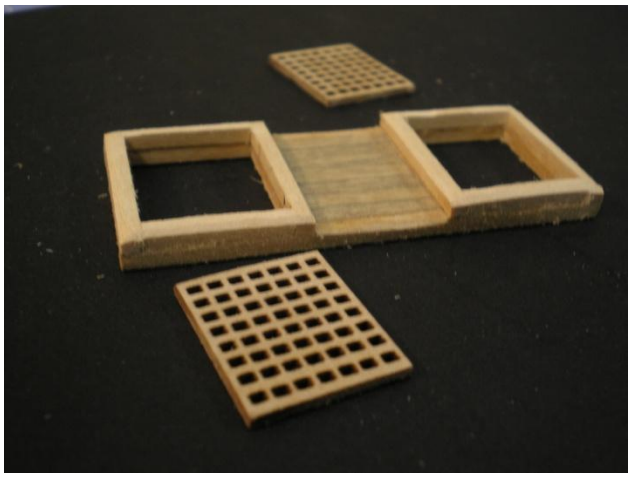


Fig 8p

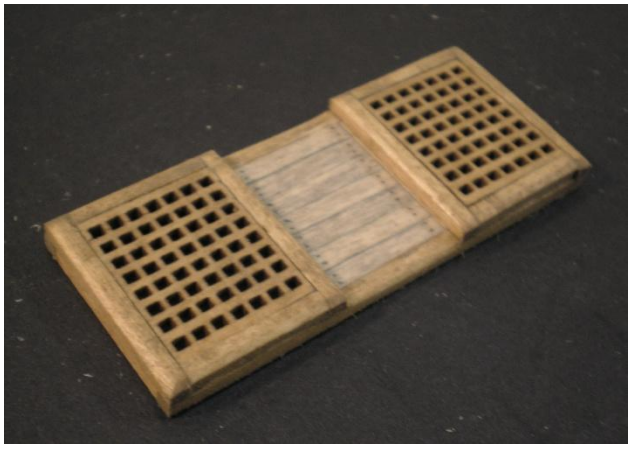


Fig 8q

Finish with shot garlands as before and install. You'll make an exact duplicate for the quarter deck. Repeat this construction process for the remaining hatches on the gun deck. If you wish you can also build the required hatches for the quarter and fore decks and set them aside. Don't forget that the coamings on those exposed upper hatches are painted on the proto-type. You can paint the hatches in any combination you wish.

STEP NINE (BITTS)

The gun deck contains two sets of bitts, the main cable bitts and the fore riding bitts. They are built basically the same. Release both sets of laser cut bitt legs, (the larger pair belong to the cable bitts). Cut the uprights the height shown on the plans, page 3. Use 3/16" square for the cable bitts and 1/8" square for the riding bitts. Where shown on the plans cut/file in a shallow notch to receive the cross piece. The tops of the uprights can be beveled if you like. Take two pieces (one each 1/8" square and 3/32" square) and cut them the length of the cross pieces. Also to this same length cut two pieces of 1/16" x 1/8" and 1/16"x3/32" to the same length(s) and glue them onto the cross pieces. Groove the ends of the cross pieces and assemble. Finish as shown. You can simulate the bolt heads on the legs with a marker, pencil or drops of paint.

Fig 8r

Fig 8s

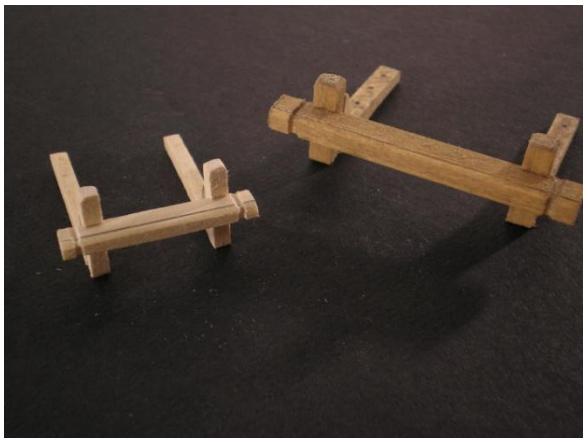


Fig 8t

You should wait to install the bitts until several other elements of the deck are constructed because their placement is inter-related.

STEP TEN (CAPSTANS)

There are three capstans on the ESSEX, all are built the same way with one (main jeer capstan) being slightly larger than the other two.

The first step is to assemble the drum head. Take the three disks (two full and one with notches). Glue them together with the notched disk in the middle. Take the small disk and glue that centered on top. You can lightly sand over the edges of this small disk. Take a dowel and cut it the shown length on the plans, page 3. Glue this centered on the drum head (opposite side of the small disk).

Take the welps and glue them on the dowel under the solid areas of the center disk. Make sure they are straight and evenly spaced on the dowel.

With scrap 1/32” stock cut small chocks (wedges) and place two rows between the welps as shown on the plans. Be careful to keep them level all the way around. You can finish the capstans a number of ways. For the main jeer capstan you can make a bed of glued up decking strips and a frame, fig 8v.

Fig 8u

One of the two smaller capstans is placed on the combined hatch/capstan bed assembly. This capstan will have a spindle (dowel) from the top of its drum head to the underside of the capstan above it on the quarter deck. This will be installed when the deck beams are in place.

Fig 8v

STEP ELEVEN (STOVE)

The stove is one of the most detailed items on the model and contains 25+ individual parts. If you take it as a series of smaller assemblies you'll have no problem and have a great looking stove when you're finished.

The first step is to build the basic box that is the body of the stove. Take the bottom, front, sides (2) and internal panel and assemble them as shown. The small blocks inside are just for stability and to keep the box square. You'll notice that the internal panel is placed at the dotted lines on the inside of the side panels.

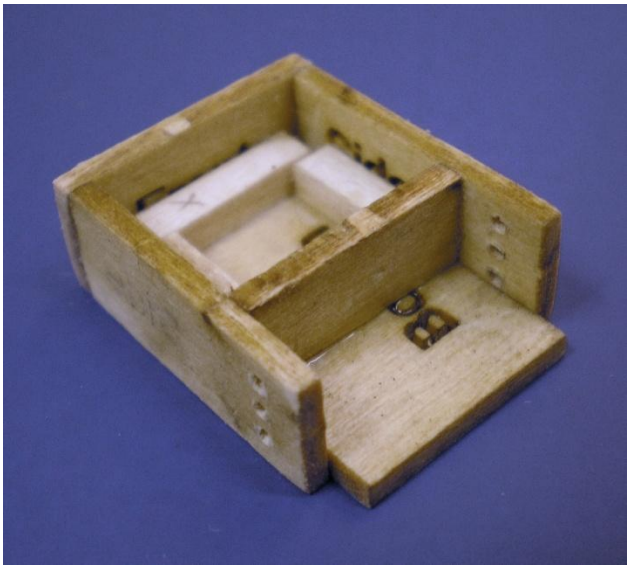


Fig 8w

Take three straight pins and run them through the vertical line of holes from side to side. Glue them into place. Once dry, file them off flush with the sides. You can now start to paint the stove. Once construction advances, it will be difficult to get into some of the smaller areas. You may also want to apply a clear sealer coat to the pieces and lightly sand to remove grain as you are assembling. This will help in achieving a "smooth" metal finish at the end.

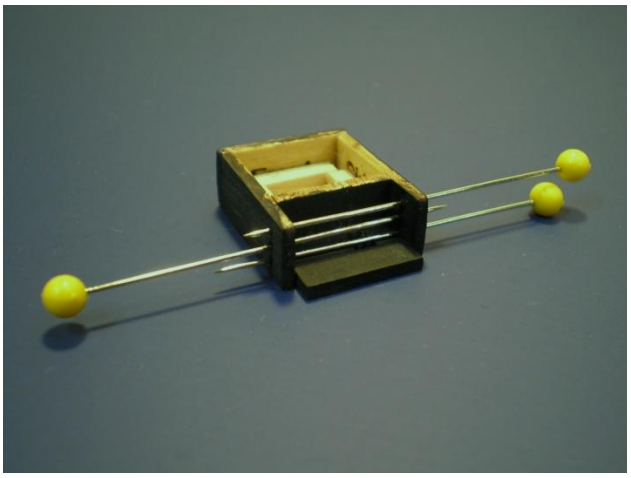


Fig 8x

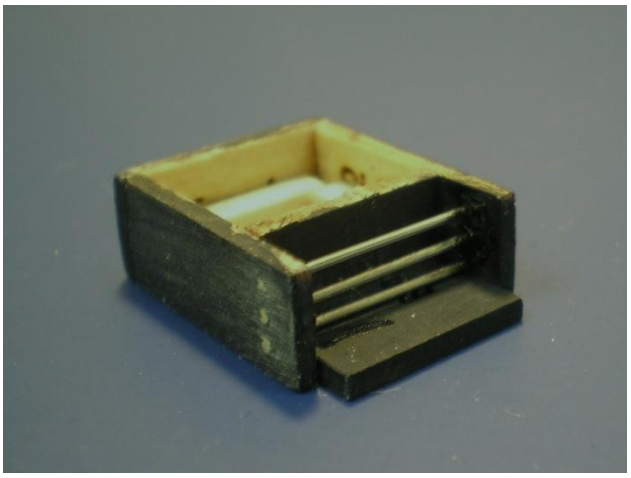


Fig 8y

The next step is to attach the side frames that provide the legs, rack forks and frame build outs. Don't forget to continue to seal and sand the parts as you assemble them.

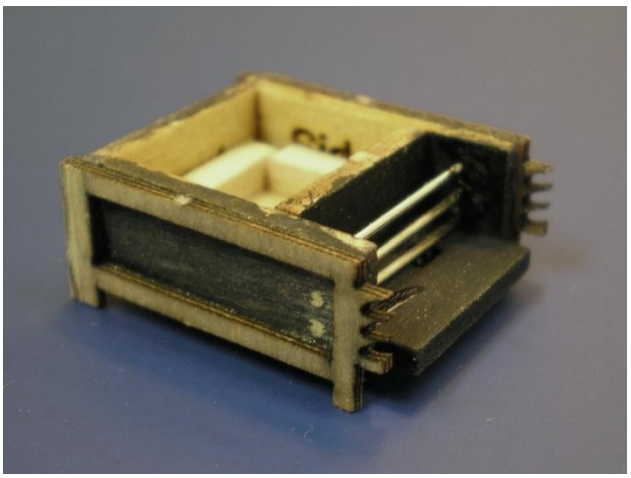


Fig 8z

The next section to address is the top. Do this off the stove body and only attach it when you are complete and satisfied with it.

Take the two plates that form the top and glue them together. The smaller of the two goes on top all the way to the front edge. This will allow you to bevel the sides and leave a lower deck area to rest the stack on.

Once you have the two plates assembled and beveled you can attach the lids. Off center you can file in a groove that would signify the split in the kettles of the stove. Bend .20 gauge wires for the handles. You can also glue the side doors on the stove body at this time as well. A small gauge styrene tube (builder supplied) can be used as the drains and vents. These are the white pieces in the photos.

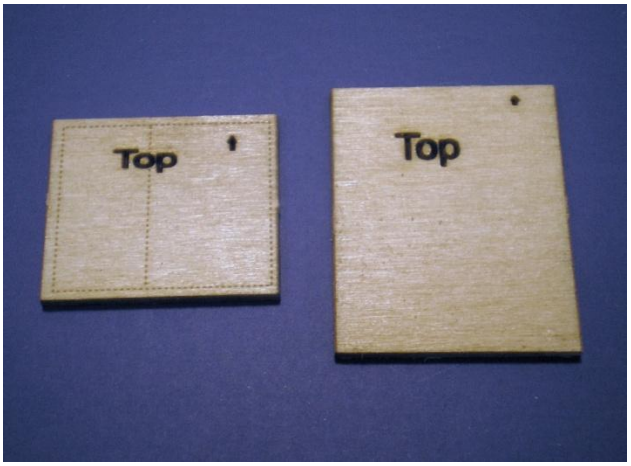


Fig 8aa

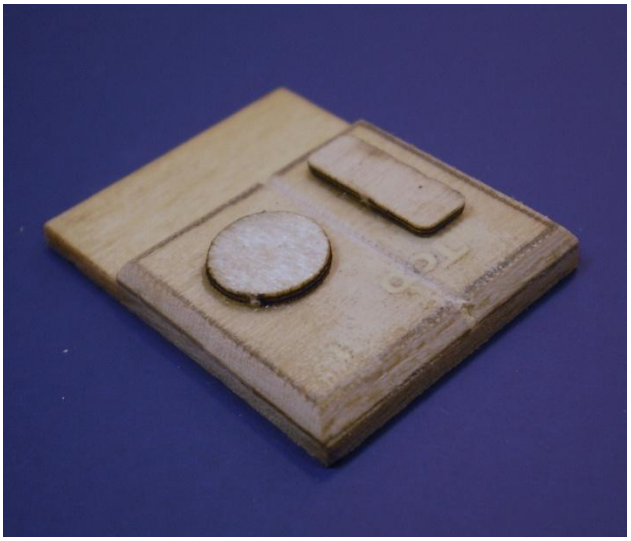


Fig 8bb

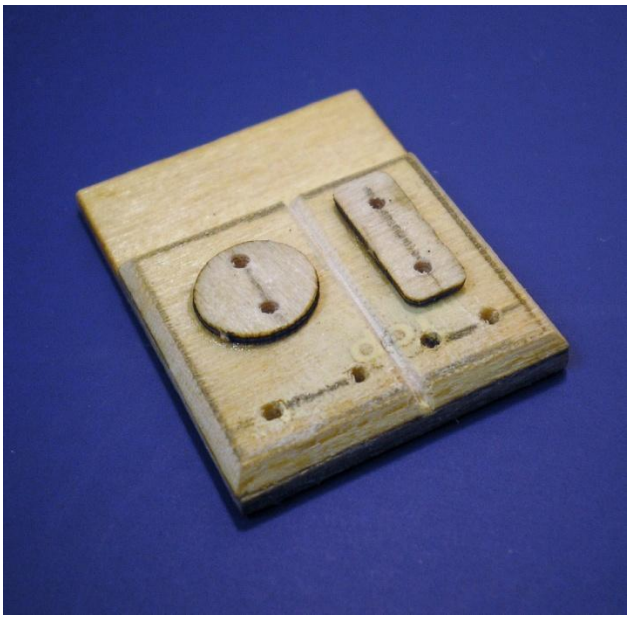


Fig 8cc


Fig 8dd

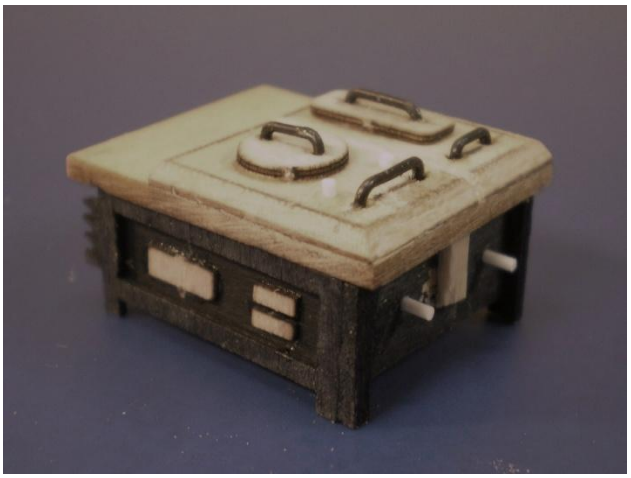


Fig 8ee

The next step in constructing the stove is the stack/chimney along with the pulley system. Take the laser cut stack and insert a straight pin as shown in the photo. Before doing this make sure that the pin will fit into the hole of the pulley. Make sure that pin is straight and extends out far enough. Glue on a pulley wheel. Take another straight pin and glue on two more pulley wheels, one at each end. Take this "double wheel" and rest it into one of the sets of forks on the stove. Make sure that the two wheels (high and low on the side of the stove are in alignment and the opposite side doesn't extend too far out. The pulley cable/chain is just a length of thread glued around the wheels. It was coated with cyno to stiffen it and reduce any "fuzzies".

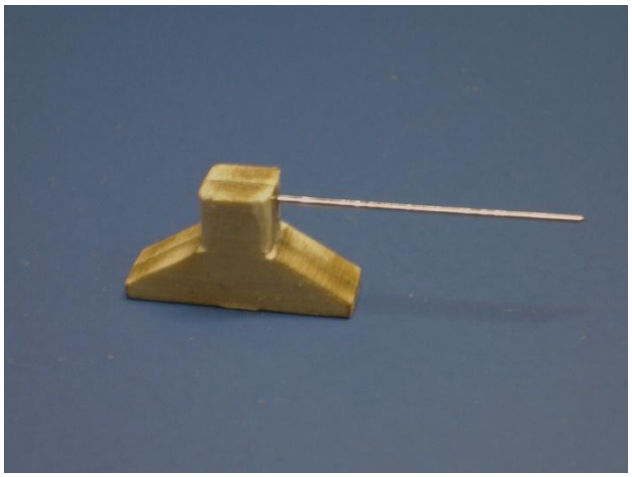


Fig 8ff

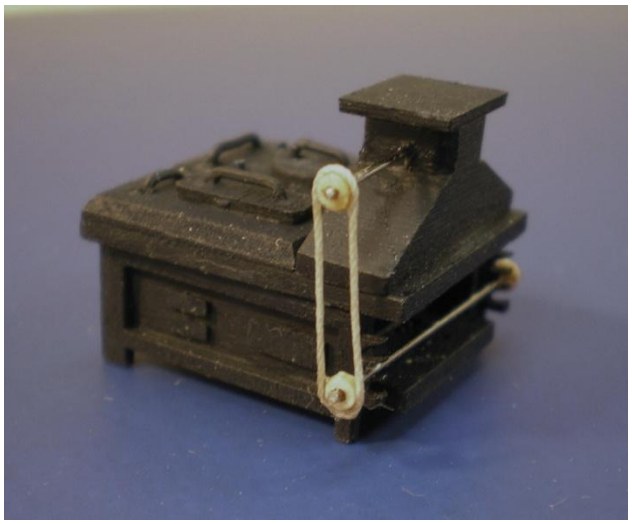


Fig 8gg

The final step is to take three pieces of .28 gage wire and bend the guards that are located around the front and two sides of the stove.

From this point forward you can use cyno or a thicker glue to embellish bolt heads and joints on the stove. Continue to layer thin coats of paint on until you get a smooth "old metal" look you're happy with. Although metal, the stove would not have had any type of sheen to it.

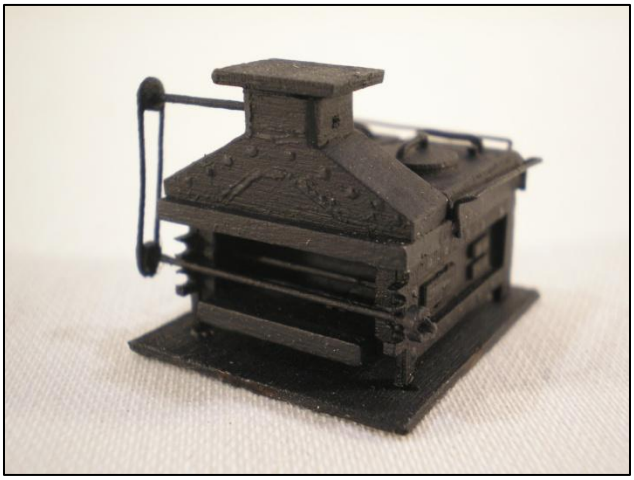


Fig 8hh

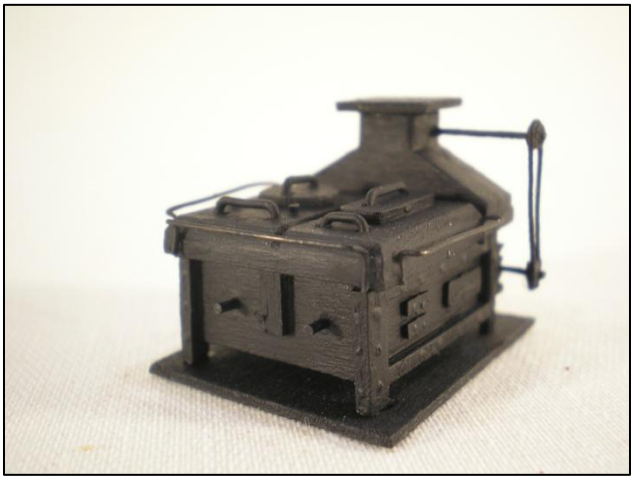


Fig 8ii

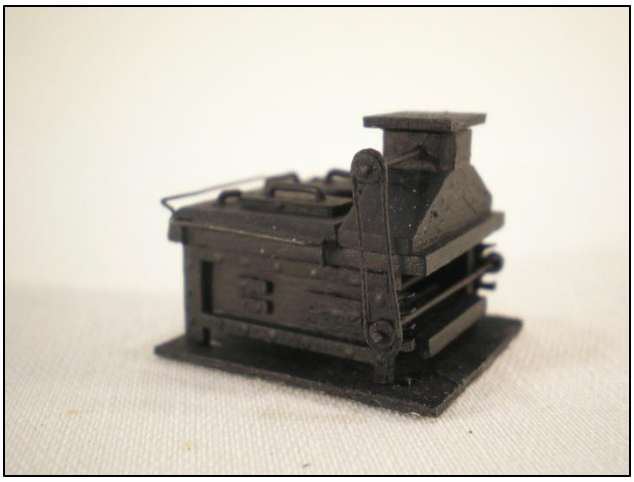


Fig 8jj

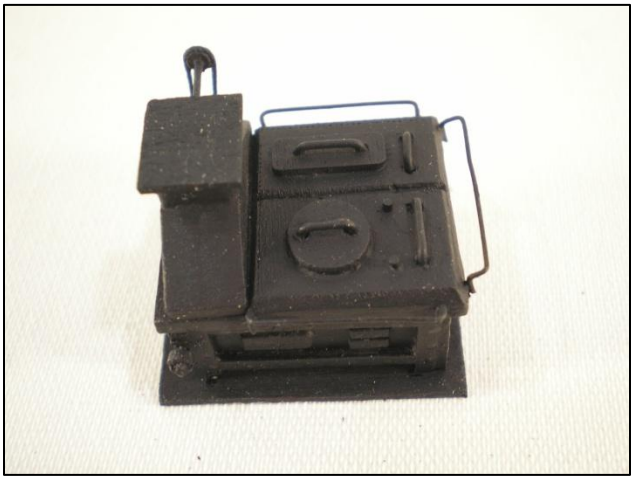


Fig 8kk

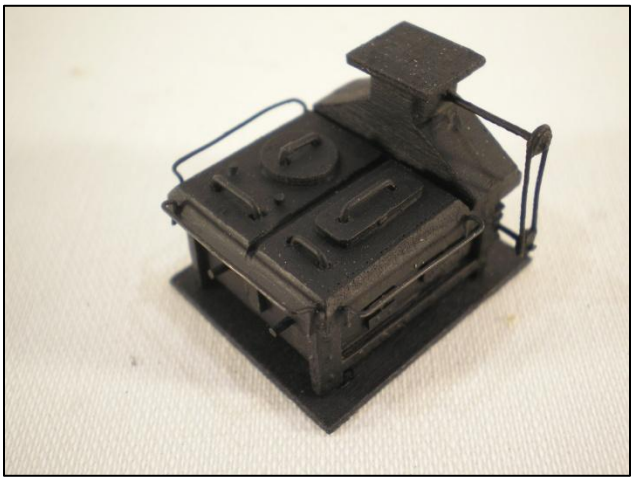


Fig 8ll

With your stove complete you can install all of the components from the main hatch forward if you haven't already. Double check everything before you glue them into place. At this point you should have the installed the main hatch with garlands, the main jeer capstan with base the forward hatch with garlands, both sets of bitts, scuttle, manger and bolsters. At this point you can now install the anchor cables.

Take the anchor line provided (treat as you wish) and cut it in half. Very carefully cut out the front corners of the main hatch gratings ,just enough for the cable to be inserted. Due to scale we'll forgo a lot of the secondary anchor cable details such as messengers, rollers etc. Insert one end of the line into the notch of the hatch grating. At progressive points dab a drop of cyno to keep the line laying flat as if it were very heavy. When you reach the main bitts wrap the line around the ends as shown and proceed to move the line forward and then out the inner hawes holes.

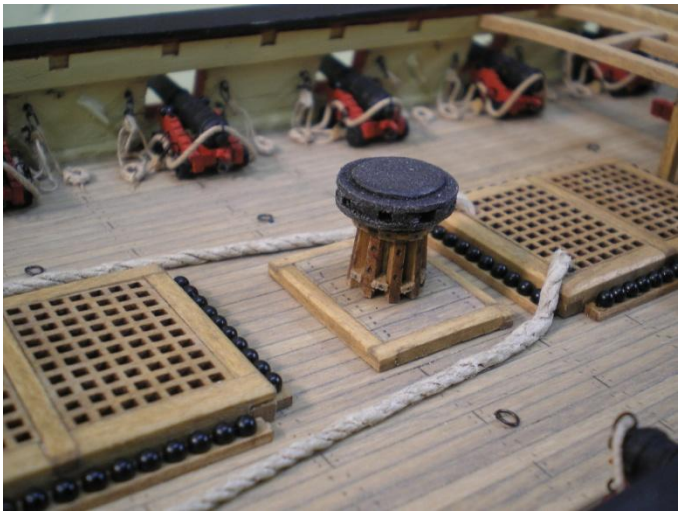


Fig 8mm

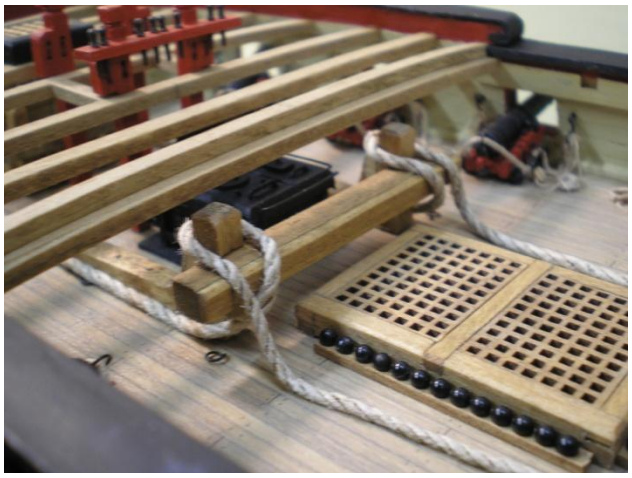


Fig 8nn

STEP TWELVE (PUMPS ELM & CHAIN)

Although not directly recorded it's assumed the ESSEX carried at least two elm pumps. These are fairly easy to make. Cut a two pieces of 1/8" dowel based on the plans. These would have a slight bevel on the bottom as well. Sand the dowels to give them eight sides. Next, slightly hollow out one end of the pump. Take the laser cut pump handles (be very careful) and glue them into position. Stain or finish as you like. Take a couple of pieces of pinstripe tape to replicate the iron bands.

Fig 8oo

The next component of the ESSEX's pumps are the chain pumps. As with the stove or the guns there are a number of repetitious steps required. The process is neither fast nor easy but will return excellent results.

Start by releasing the four pump profiles that are laser cut. Take strips of 1/16"x1/32" bass and lay them up on all sides of the pumps. Do the front and back first and then the sides. Sand these and then stain/finish as you wish. You can plank the dome if you wish. The proto-type's was left off. You can use a pencil to indicate the planking on the front of the cap. Take 1/8"x1/16" decking and glue up to make a platform for the entire pump assembly. Take the size off of the plans.

Drill holes large enough for a .22 wire to fit through centered immediately above the side planking. Take a short piece of wire and attach two pump units together. See plans for spacing. When this is done glue the pump pairs onto decking base. When this is dry glue this to the gun deck. Make sure the location is spot on based on the plans page 4.

Fig 8pp

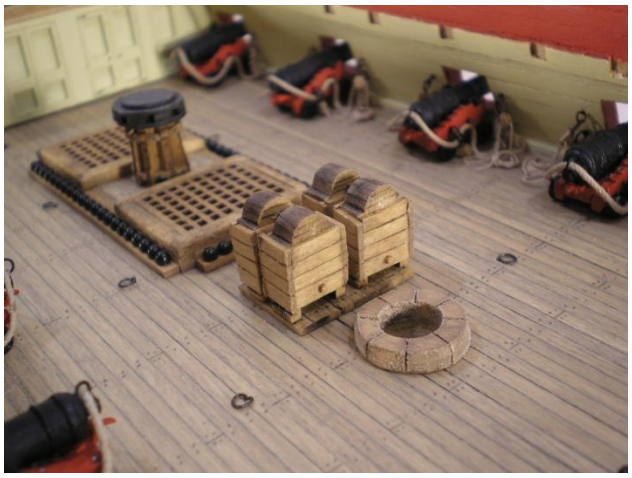


Fig 8qq

At this time also make sure that the capstan and it's hatch assembly is also in place along with the shot garlands. When setting the hatches make sure that they align with the beam pocket strip correctly as this will set exactly below the same assembly on the Quarter deck.

Take two 1/16"x1/16" posts and set them against the hatch assembly after drilling holes in them also large enough to accept the .22 gauge wire. Insert a short piece of wire into each one and then into the rear pumps.

Off of the plans take two pieces of .22 gauge wire and bend them as shown on the drawings for the forward handles.

Once this is done take four more pieces of 1/16" square stock and drill holes in them at the correct height for the handles. On two of the posts drill the holes all the way through. On the other two drill the holes just deep enough to set the wire.

Slide the posts with the holes all the way through first from the rear of the handles (leave loose). At the front end insert the two remaining posts. Set the wire end into the front pumps and glue the center posts down where they are shown on the plans. Be careful to keep them equally spaced moving forward. Glue down the front posts when set.

Take four pieces of 1/8"x1/8" and cut them at angles to represent the discharge pumps if you want. You can now set the elm pumps where indicated as well.

Fig 8rr

Fig 8ss

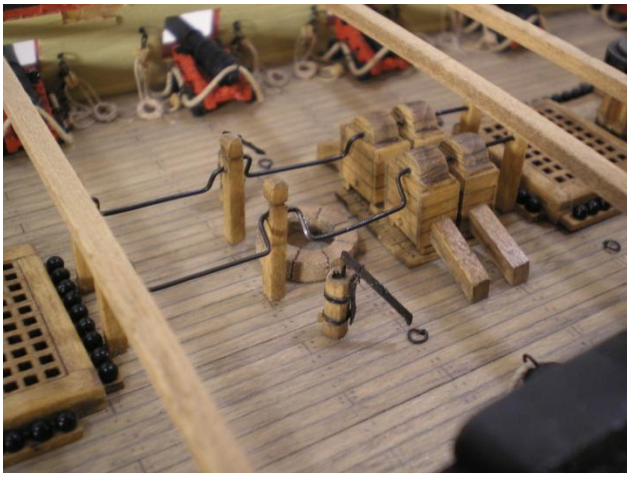


Fig 8tt

CHAPTER 9

EXTERIOR DETAILS

STEP ONE (CAP RAILS)

Release the cap rails from their sheet. There should be 8 pieces. Center them on their respective surfaces and glue them on. Make sure they are thoroughly attached as any loose areas can cause issue down the road.

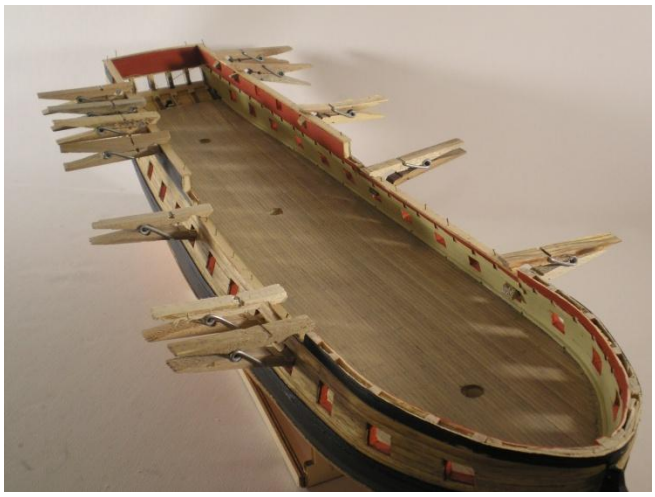


Fig 9a

Once all the rails are secured edge them all internally and externally with 1/16”x1/16” strip stock except for the exterior waist rail as a full hull length moulding will be attached here in a later step.

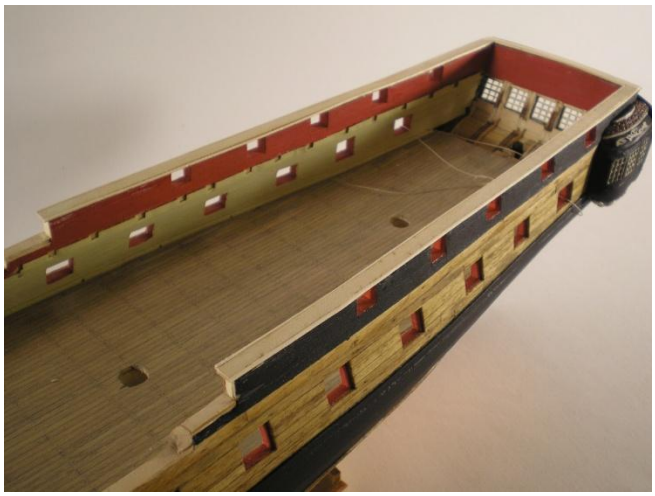


Fig 9b

STEP TWO (STERN and QUARTER GALLERIES)

Before releasing the 5 window frames from their sheets paint them white. Once dry release them. Also paint the inside of the window openings white. Glue the frames flush forward with the stern planking. Once dry, paint them white again, and edge in the black as necessary to get a clean edge all the way around. The proto-type’s windows were “glazed” with a commercial glass liquid that is spread in the frames and stretched out. Once dry it is opaque and appears to be actual glass. Use whatever method / products you are comfortable with.

Release the laser cut stern arch. Take 1/32”x1/32” stock and glue them around the perimeter of the arch as shown to create as mouldings. You can if you wish round the edges of the stock once on. Paint the arch black (both sides) and the mouldings white. Release the stern scroll and the lettering to spell ESSEX from the photo-etch sheet. Prep them as you desire and paint white. Once ready, install them on the arch. You can now glue the completed arch onto the stern. Be careful of it’s alignment both vertically and horizontally. Once dry, you can take a piece of 1/16”x1/32” stock and place it above the window frames as a moulding/header. Paint this black as well.

The last step in the stern arch installation is the lower counter board. Take a piece of 1/16”x1/4” and glue it to the bottom of the arch following the angle inward. It is necessary to sand the intersecting edge on the board so it rests squarely on the bottom of the stern arch. When done, paint this black on all sides.

Fig 9c

The last step in the stern arch installation is the lower counter board. Take a piece of 1/16”x1/4” and glue it to the bottom of the arch following the angle inward. It is necessary to sand the intersecting edge on the board so it rests squarely on the bottom of the stern arch. When done, paint this black on all sides.

Fig 9d

STEP THREE (QUARTER GALLERIES)

The quarter galleries of any ship are comprised of a number of different shapes and angles as well as being decorated with scroll, various carvings and windows. The proto-type’s galleries have attempted to achieve this through a combination of cast parts, laser cutting and photo-etch parts.

Take the six cast pieces that comprise the two galleries (port & starboard) and lay them on a flat hard surface. Each gallery is comprised of a drop, a window section and the top. The pieces are not interchangeable, meaning only the port pieces will work with each other and the same for starboard. With the pieces still in front of you, dry-fit them together making sure that there is a tight fit on all surfaces and all edges are clean and sharp. If necessary take a small file and gently touch-up and inconsistencies from the casting process.
You can use any type of glue/adhesive you are comfortable with t attach the galleries although a strong bonding is recommended such as an epoxy.

IT IS NOT recommended that you assemble the pieces off the ship but rather in sequence on the ship.

The first piece to be installed is the drop. The curvature of this piece should closely match and be aligned with the lower counter of your stern. The rear angle that contacts the stern board and transom should fit snugly against these pieces. If a small line exists do not file the piece to fit as this may alter the angle of it and negatively affect the other pieces to follow. Just use a spot of thick cyno on the line as this will all be painted eventually.

Fig 9e

Once the drops are firmly attached to the hull the next installed pieces are the window sections. Whether you choose to paint the gallery assembly on or off the model is your choice but it is recommended that you install the window frames before installing the section as these are very delicate.
As with the drop make sure all edges are clean and if necessary address the rear angle as it rests against the transom. It is most important that the forward edges meet and are aligned to provide the correct front curvature when complete.

Fig 9f

The final cast pieces are the tops. As with the window sections and the drops check the pieces for fit and alignment prior to installing them.

Fig 9g

The moulding strips are 1/32”x1/64” strip stock. The lower two align with the bottom mouldings of the transom. Release the two photo-etch decorations and finish them as shown. On the proto-type, the vertical scroll against the gallery was lightly traced around with a pencil and then this area was painted black before attaching the scroll.

You can now take the end of the lanyard from the preventer chains and drill a hole to insert it through. Inboard a small eyebolt was set in the deck and both ends were brought to it and tied off.

STEP FOUR (MOULDINGS)

The next installation is the moulding strips that run the length of the hull. There are two, one at the level of the channels and a second that is at the level of the waist rail that was left off in Step One (this chapter). See the plans page 5. The lower strip is 1/8”x1/16” and the upper is 1/16”x1/32”.

STEP FIVE (HANCES)

VERY CAREFULLY, release the scroll hances from their sheets. Glue them on their respective locations as per the plans page(s) 4 & 5 both in and out board. The shorter pieces are for the small runs inboard at the waist. Make sure they flow evenly and are free of any waves which are possible due to their fine weight.

Fig 9h

Fig 9i

STEP SIX (KNIGHT HEADS)

At the bow locate the center point on the top rail. To install the knight heads it will be necessary to cut out this area. The width of the opening is 7/8” of an inch or 14/16” in each direction from the center point. Make sure the vertical cuts are straight and smooth and the bottom is flat.

The knight heads are made out of 1/4”x 1/4" stock. They are 1-3/16” tall and can be stylized at top as shown.

Fig 9j

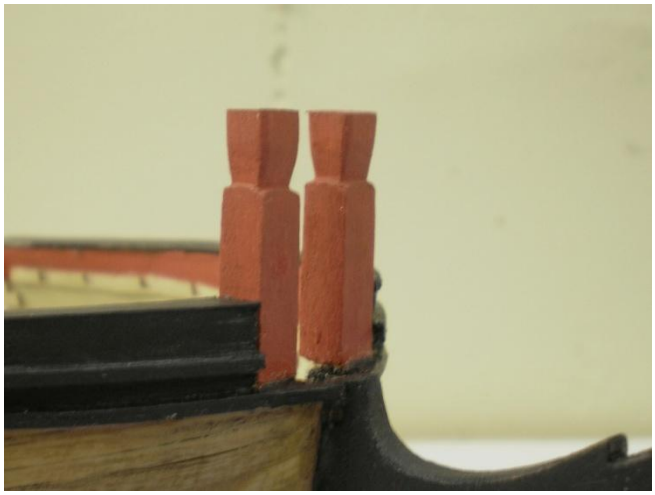


Fig 9k

STEP SEVEN (CHANNELS)

Release the six channels and the laser cut knees from their sheets. Locate the channels along the lower moulding strip installed previously and mark their locations. With a sharp #11 blade cut and remove the moulding to allow the channels to rest against the hull. It may be necessary to shape the back-side of the channels to match your hull contour. It’s recommended that a few small pins also be inserted into the channels and into the hull for extra strength as the channels will eventually bear the stress of rigging. Take the small knees and place them along the tops of the channels as indicated on the plans. The knees should fit up to the moulding strip above. If they are a little tight you can trim them back.

STEP EIGHT (FENDERS, CHESSTREES & STEPS)

The four fenders (two each side) are made out of 1/16”x1/16” strip that is lightly shaped to fit the contour of the hull. Locate their positions on the drawings and cut out the moulding strips as necessary for a tight fit. Be careful to keep them exactly straight up and down.

The chesstrees (one each side) is made in a similar fashion but out of 1/8”x1/8” stock. The chesstree is slightly rounded and has what would have been a sheave in it for the main tack. The sheave can be represented in the same fashion as previous sheaves on the hull. Sand a slight curvature on the exterior of the chesstree. As with the fenders locate it’s position off the drawings and cut the moulding strips back for a tight fit.

The steps are 3/32”x1/32” strip stock cut to length with their edges rounded off. The lower support piece is just 1/32”x1/32” stock cut slightly shorter.

Be careful when installing the steps that you maintain a straight run going upward.

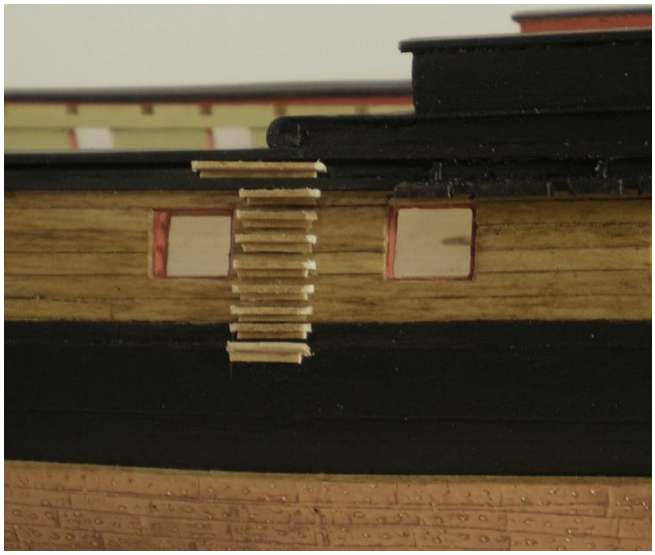


Fig 9l

Fig 9m

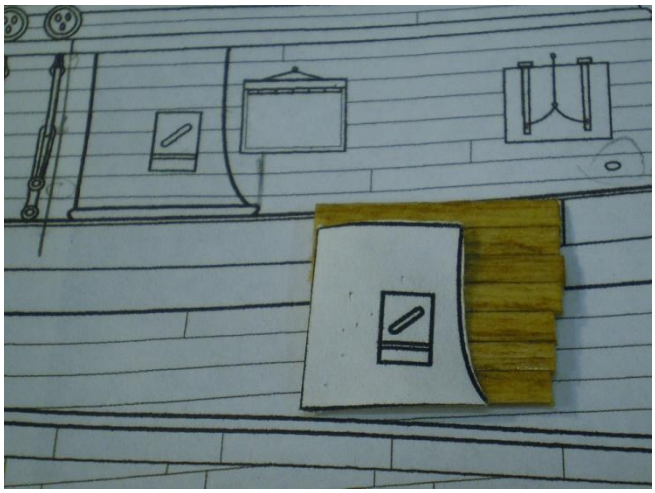


Fig 9o

Fig 9n

Fig 9p

STEP NINE (BILLBOARD / ANCHOR BLOCK)

Take 1/8”x1/16” strip and glue them up to make a “sheet”. Trace the billboard shape onto a piece of paper and lay this shape out on the laid-up strips. Cut and shape the laid-up strips into this shape and then set aside.

Take a 3/16”x3/16” strip the correct length and sand a profile into it as shown in fig 9p. Glue this at the top of the wale. Below attach three 1/8”x1/16” strips the same width.

To make the anchor block take a piece of 3/16”x3/16” stock and cut it to size as per the drawings. File a bevel on the front extending down almost but not to the bottom. File/cut in an angled notch for the anchor fluke. Glue this to the previously constructed billboard. The billboard should reach up to the lower moulding.

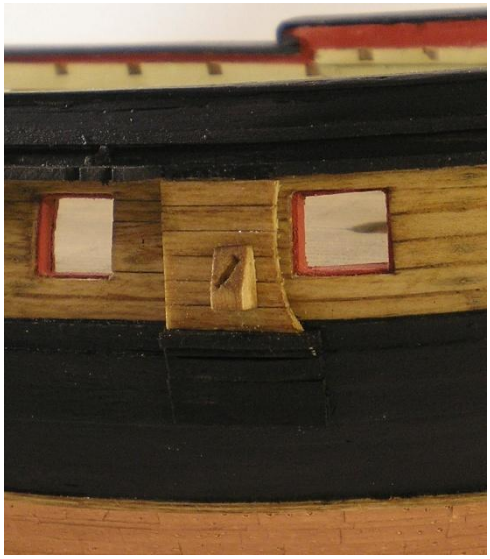


Fig 9q

SCUPPERS: In the locations shown on the plans drill shallow holes with a 1/16” drill bit. Darken with a lead pencil.

CHAPTER 10

FORE & QUARTER DECK

Chapter 10 is one of the more varied steps in constructing the ESSEX. In this chapter you'll frame and plank the fore and quarter decks as well as complete some gun deck details that are multi-decked in their construction.

Working with the beams. You will notice that all the beams are the same length This is so that there is no margin of error in where to install any given beam. You will have to measure each beam prior to installation though. You'll also see that there is a small tic mark on the side of each beam, this is the center. When measuring the inside distance prior to installing the beam it will be necessary to take that measurement and divide it in half. Take that half number and measure out in each direction from the tic. This will allow you to keep the beams centered as they have a slight camber (upward curve) to them as an actual deck would.

It is also recommended that you lightly sand off any laser burn residue prior to installation for appearance sake and that you finish (paint or stain) prior to installation as well. You will also have to taper the ends of the beam as they follow the line of the hull moving fore and aft.

STEP ONE (DECK BEAMS THAT RELATE TO MULTI-DECK ITEMS)

As the introduction to this chapter stated there are several beams that are related to aspects of a two deck assembly, these are; the bulk head @ beam #7, the main jeer bitts @ beam #14, the main topsail sheet bitts @ beam #'s15&16, the fore jeer bitts @ beam #28, the fore topsail sheet bitts @ beam #29 and the bowsprit step @ beam #31. This is illustrated on your plans page 5. We'll install these beams first (even if out of numeric sequence) because it will be easier to detail the assemblies with the least number of beams installed.

We'll begin at beam #7. This beam should drop in directly on top of the previously placed bulkhead on the gun deck. This will be the beam directly in front of the mizzen mast.

The next beam to be installed is beam # 31 that supports the bowsprit step. Take a beam, prep and install it as required into the correct location.

To build the mast step take a 1/8"x18" strip and cut two pieces long enough to stand on the gun deck and reach just to the top of the beam as they stand inside the fore riding bitts. At the top of each post cut in a rabbit joint the height and depth of the beam. Take five pieces of the 1/8" strip and cut them to length so the assembled piece will be as wide as the inside dimension of the fore bitts. Glue them together off the model and finish. A pencil was use to simulate the bolts holding the posts on the beam and to secure the stack pieces up the sides.

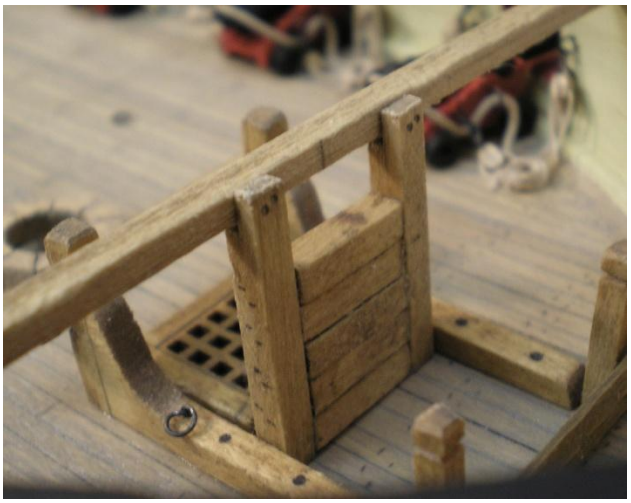


Fig 10a

Install beam #29 as per process. We'll now start to construct the fore jeer and fore topsail sheet bitts.

Take a 1/8"x1/8" strip and cut four lengths to match the four upright (legs) of the bitts. Take theses dimensions from the drawings page 5. You will see that there is a slight taper near the bottom of each leg, sand / file this in now. Take a "v" shaped needle file and file the head detail no more than a 1/16" from the top on all four legs. With a pencil

lightly mark where top of the deck beam will be on each one. Take four 1/4” pieces of the 1/8” strip and “create” a sheave in them. This is done by drilling two holes and them filing a small indentation between them. When finished this impression is blackened giving the appearance of a sheave. Glue these four pieces on the corresponding sides of the legs about a “light” 1/16” of an inch above the deck beam mark you made. This should allow the decking to slide under them when installed later. Round over the top edges of the sheave block. Drill a hole from side to side on each leg and insert a short straight pin through. Finally file in a groove wide enough to accept the pin rail for each set. Paint these red and install as shown.

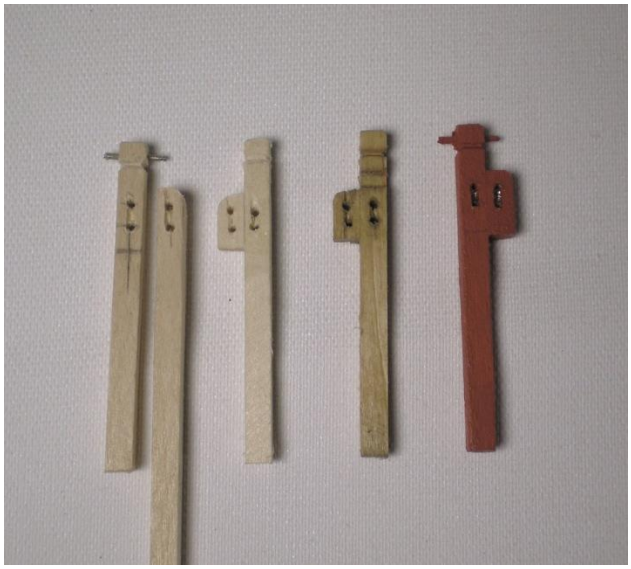


Fig 10b

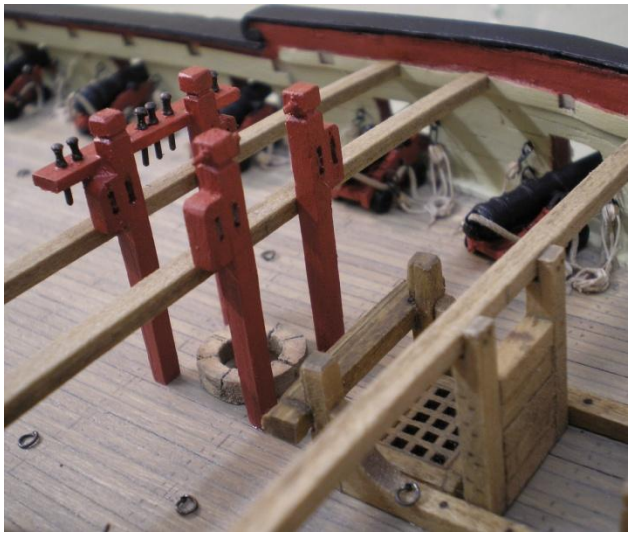


Fig 10c

Fig 10d

Fig 10e

You can now install beam #14 in the same fashion as the previous beams. Construct and install the main jeer bitts in the same method as the fore bitts just completed.

The next and final beam to be installed at this point is a combination beam consisting of beams #15 & #16. These beams form the break in the quarter deck onto the gangways.

Take the measurements of both beams and cut the blanks to length. Finish them as the others. Before permanently installing them dry-fit them into place to make sure they rest slightly on one another (#15 on #16). When you are certain they will seat correctly glue them together off the model and when dry install them as a one piece unit.

Construct and install the main topsail sheet bitts as you have the prior bitts. The lower cross piece is a 1/16”x1/16” strip. Be very careful of their placement around the chain pump handles.

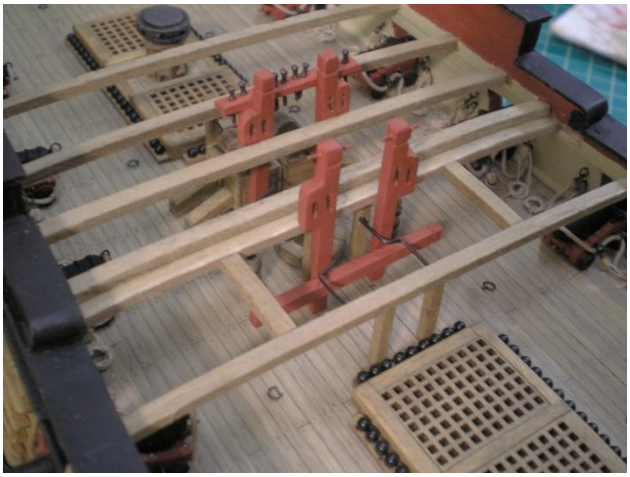


Fig 10f

STEP TWO (REMAINING DECK BEAMS and FRAMING)

You can proceed to install the remaining deck beams and associated perpendicular framing members. Pay close attention to the plans (page 4) and the photos as to the size of the perpendicular framing pieces and their relevance to the decking to come. These are 3/16”x1/8” strip and 1/8”x1/8” strip stock.

When setting in the waist beams, #’s 17, 19, 21 and 23 span the entire length (skid beams).

The method to install the shortened beams #’s 18, 20, 22 and 24 is to follow the “standard” process for determining their length and cutting them as such. You would then install the perpendicular pieces between the skid beams. Once this is done measure from the bulwarks on each side to the perpendicular and then cut the correct length off of each end of the beam so you maintain the camber.

Fig 10g

Fig 10h

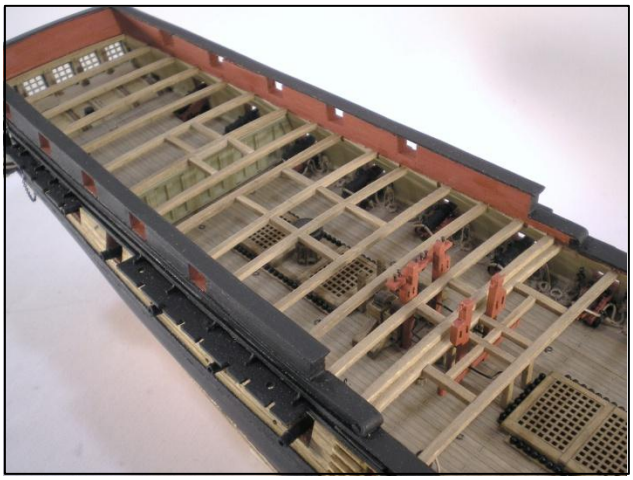


Fig 10i

STEP THREE (GANGWAY POSTS, QUARTER and FIRE DECK GRATINGS & PLANKING PREPARATION)

Step three is fairly brief but important in that it sets us up for Step Four which is planking.

First take the eight cast gangway posts and paint them however you wish. The proto-type's were finished to resemble wood. White or a dark brown would also be acceptable. Place one under each skid beam (P&S) where the beam would be intersected by the perpendicular. If necessary file them to fit. Take it from the top so the more visible bottom remains consistent.

Fig 10k

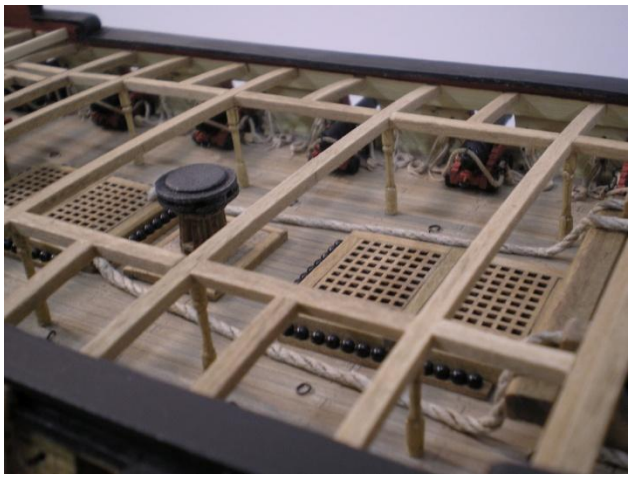


Fig 10j

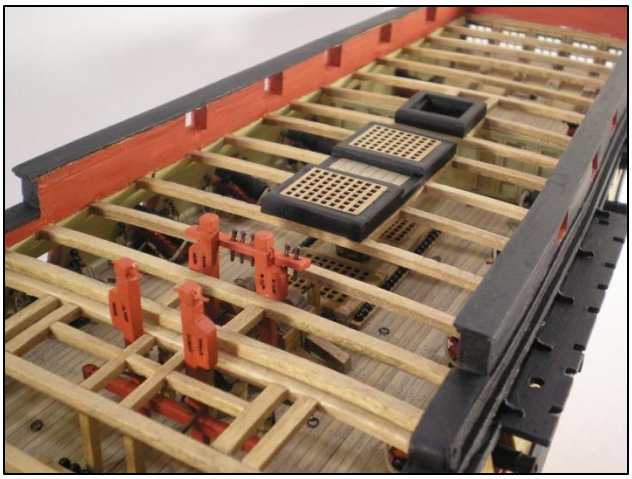


Fig 10l

The next element(s) are the hatches for the upper decks. If you haven't constructed these already do so as with the gun deck hatches. These would be the steam hatch on the fore deck, fig 10k, the companionway on the quarter deck, fig 10m and the capstan bed/double hatch also on the quarter deck, fig 10l.

In fig 10m note the dowel on the lower capstan and the ledge inside the hatch coaming for the grating to rest on when in place. Do not install any shot garlands at this time they rest on the decking.

Fig 10m

Before beginning planking it will be necessary to set in some backing pieces for the edges of the planking strips to rest on where there is no fixed support. You can do this with scrap material as none of it will be visible once the decking is installed. The locations are at the perimeter of the hatches and forward at the bow from beam #33 forward. You may also wish to put a ledger along the stern if you wish.


Fig 10n

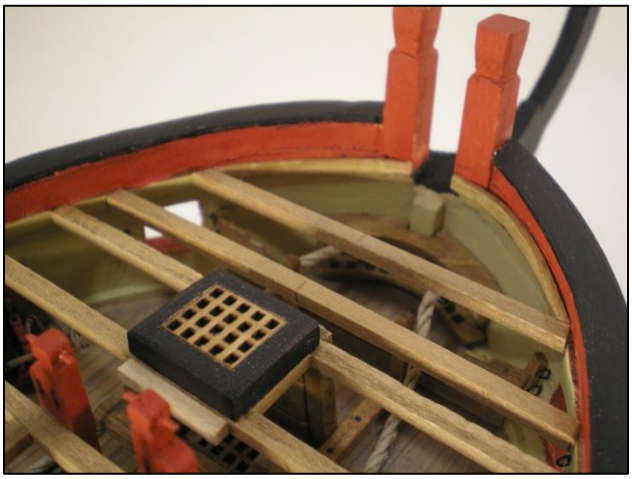


Fig 10o

STEP FOUR (DECK PLANKING)

You'll now have to decide how you want to plank the upper decks and what aspects of the gun deck details you want to leave visible. There are as many answers as there are builders, so here's a chance to make ESSEX really yours!

Take the second set of margin planks and prepare them and install them as you did on the gun deck. Make sure their fit is tight against the bulwarks.

Before installing them at the two deck breaks take a piece of 3/32"x1/16 strip and run it from side to side. You can ease the edge slightly as well. At the bow cut back the margin planks to allow the bowsprit to pass through.


Fig 10p

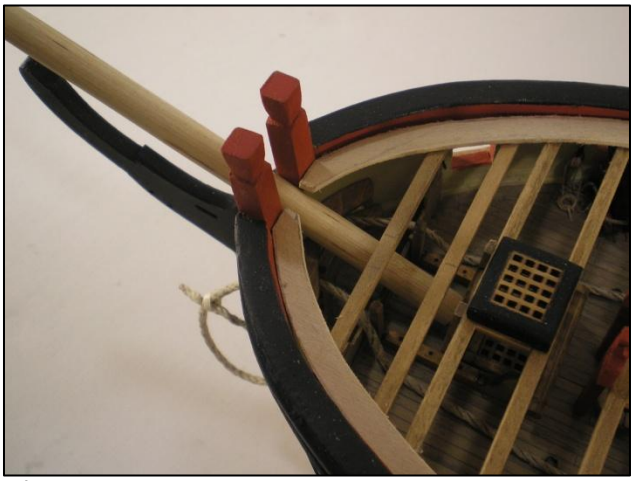


Fig 10q

As with the gun deck begin your planking with a “king plank” of 3/32”x 1/16” running down the mid line of the ship. From here forward you can lay in planks or 1/8”x1/16” as you did previously on the gun deck. Keep the planks in line from deck to deck.

You’ll joggle the planks into the margin plank at the bow and on the quarter deck as on the gun deck. Don’t forget to darken the edges of the planks to simulate caulking as you did previously. Butt the decking into the hatch coamings and slide it under the sheave blocks of your bitts. When done sand and finish the decking as you like. Don’t forget to leave the decking back to allow the bowsprit to pass through and also allow for your masts to be inserted. You can also draw in the butt joints and nail heads as you did on the gun deck.

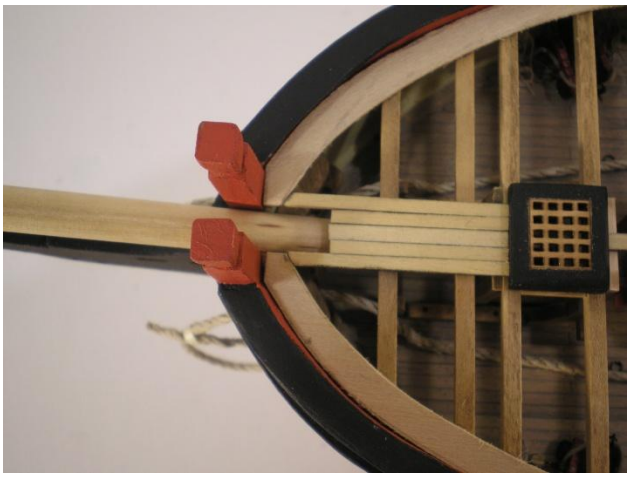


Fig 10t

Fig 10u

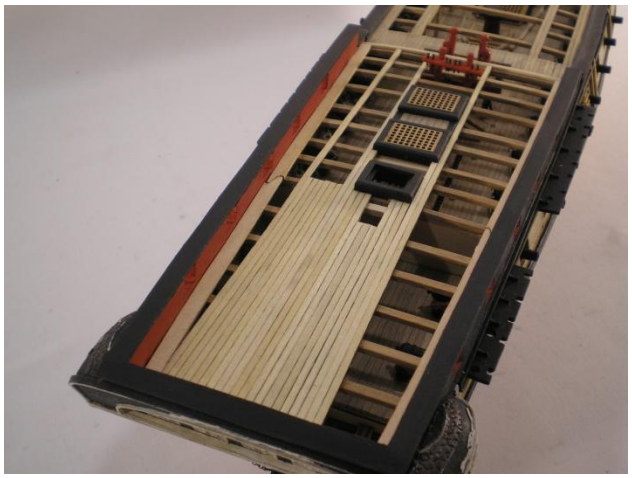


Fig 10r

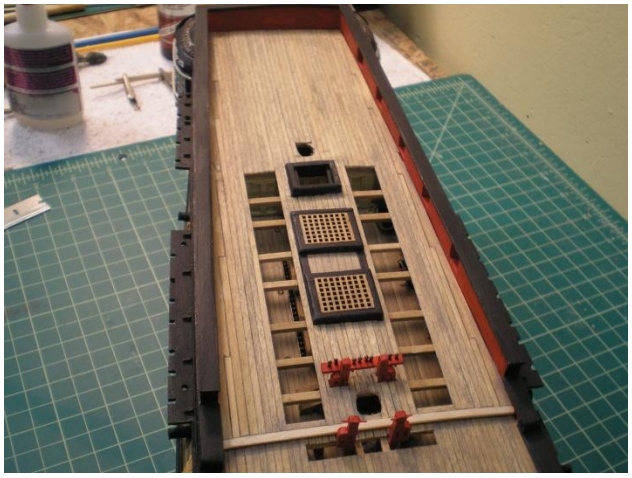


Fig 10s

Fig 10v

Fig 10w

CHAPTER 11

DETAILS INBOARD & OUT BOARD

This chapter is made up of all the smaller details inboard and out board that will bring your model very near completion. None of them is lengthy in nature but as with all work take your time and the results will be excellent.

STEP ONE (LANTERN)

Take the cast lantern and clean and prep and paint as normal. The lantern has one solid side (door) that would face inward. Below this is a slight indent where you are to glue in a straight piece of .20 gage wire. On the stern drill a hole, centered at a location that will allow the lantern to reach above the stern arch. Glue the lantern into this. Take the dimensions from the drawings for distance from the stern horizontally. Next take two pieces of .20 wire that are long enough to reach from the cap of the lantern onto the stern rail. With a hammer or pliers flatten both ends of the wire. Glue these onto the lantern cap and at an outward angle onto the rail.

STEP TWO (STERN DAVITS)

Cut two pieces of 1/8"x3/16" strip the correct length as per the plans for the davits. You'll notice that the inboard ends have a slight taper to them so sand that in now. At the farthest outboard end take a thin strip of card stock and wrap it around to simulate an iron band (this will be painted later). Drill in and create a double sheave on each davit for the boat tackles.

Attach them to the rails as per the drawings. Set a laser cut cleat on each one and if you wish a drop or two built up cyno at the inboard ends to represent the heavy bolt heads holding them down.

You have to also insert an eye bolt on each davit on the outward side at the prescribed location.

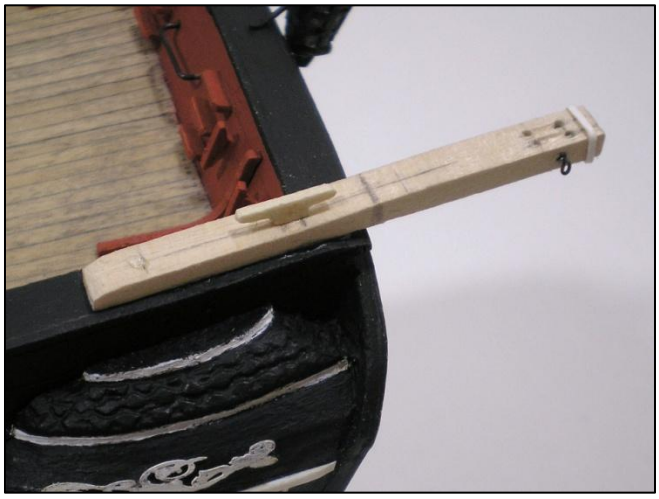


Fig 11a

Fig 11b

STEP THREE (SPLASH BOARDS)

Release the two laser cut splash boards from their sheet. The boards should follow the line of the rail so with whatever method you prefer create a slight curve on them. They will butt against the knight heads so it will be necessary to bevel the leading edge slightly for a tight fit. They should be placed in the center of the rail.

The proto-type's are painted black, you can if you wish paint them black or red as the timber heads.

STEP FOUR (CAT HEADS)

They are one of the more "tricky" elements to make as they have a number of different angles and cuts. It's not really possible to laser cut them as the laser can cut only in one direction and not the three dimensions needed for the cat heads. With a little patience they can be made very convincingly.

Take two pieces of 3/16"x3/16" stock cut to length from the plans. Next, on each piece mark on what will be the bottom where the cat head will cross over the rail. Start very shallow at first to remove some material so the cat head starts to sit on the rail. You'll see from the illustration on page 4 that this mortise cut is angled. Start to angle you removal as well. When the inboard end starts to touch the deck you can begin beveling this to lay flat on the deck. The proto-type's cat head is approximately 1/16" thick at the inboard end and the bevel extends about a 1/2" down the stock. Take your time, taking only a little off at a time and then re-fitting and you'll have them perfect in very short order.

Once the geometry of the cat head is completed, drill a double sheave as you did for the stern davits. You can also add on a strip of card stock as an iron band. In reality the cat head would've had a triple sheave but due to scale the 3/16" stock would be two weak with three holes at it's end so we'll go with two. Add an eye bolt on the inboard side as indicated. Also drill a single hole all the way through at the shown location.

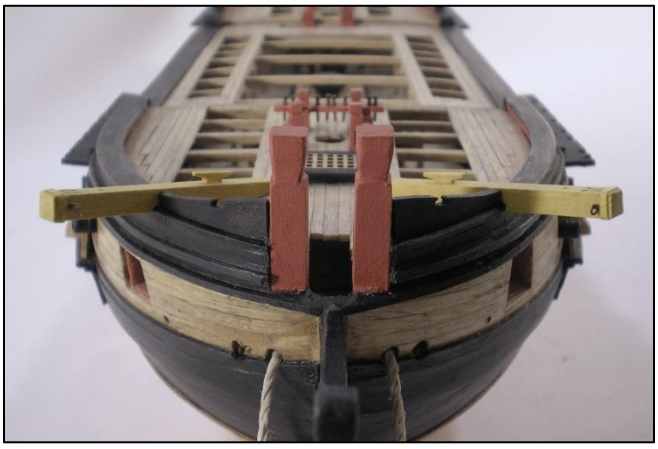


Fig 11c

The last aspect of the cat head are the outboard sheaves. Once again due to scale we'll only represent the item. Take a 3/32"x1/16" strip and cut two small pieces for each cat head. Glue these together "staggered" as in fig xxxx. You can round the edges on this. Glue this on each cat head.

You can if you want draw on a cat's face emblem on the end of the cat head as you'll see on the proto-type's later in this manual.

STEP FIVE (ROUGH TREE RAIL, TIMBER HEADS)

Next take the rail from it's sheet. At it's center point split it into two pieces. The rail will rest directly on top of the splash boards at the knight heads so fit it tight to them at this level. Following the plans shorten the rail slightly if you wish and round the edges. The posts holding the rail are 3/16"x1/8" strip cut and place these where indicated on the plans page 4. Also construct the short rail at the waist.

The timber heads are 1/8"x1/8" stock. You can detail them as you wish. If you look closely at page 4 of the plans (INTERNAL PLANKING BEAM SEQUENCE) image you'll see on the two forward posts of the rail that there are rings to rig a gun This would be for the bow chasers when called into action. Although the rings are not included on the proto-type you can add this detail in if you wish. If you do don't forget the ring on the fore deck for the train tackle.

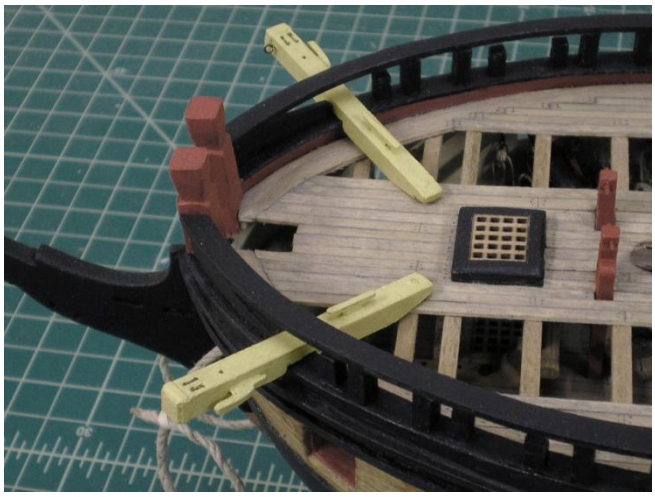


Fig 11d

Fig 11e

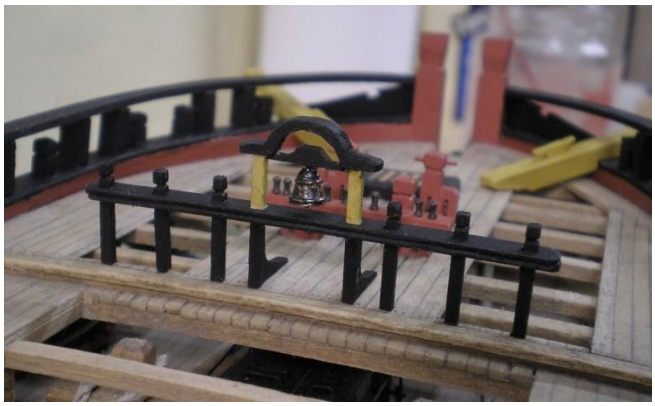


Fig 11f

STEP SIX (GALLEY STOVE STACK PIPE)

Prep and paint the galley stove stack black (metal). Take a couple of pieces of scrap decking and glue up as a base. Finish as you wish (either deck color or darker). Glue into place.

STEP SEVEN (BELFRY & GANGWAY BARRICADE)

Although at opposite ends of the waist the belfry and the barricade are constructed in a very similar fashion and can be constructed and installed at the same time.

For both (to start) release the four (two each) laser cut rail pieces. See plans, page 4. Before gluing together the two halves of each rail take a small flat file and gently ease one continuous edge of each half. When you glue these two edges against each other it will create a slight indent and profile detail (visible in fig 11f and fig 11g). When this is done glue each set together minding to keep the holes aligned.

Next, take 1/16”x16” strip and cut 14 pieces the same length (as per plans) and detail the tops to make the posts for both structures. Install these in the barricade (which now will be complete) and into the belfry.

The next step in the belfry is to cut and install the two tall posts that support the bell cowl. Cut these as per the plans and install. Release the two rear support legs that go against these posts and under the rail and attach them. Off of the belfry take the cowl, the cross piece and the cast bell and assemble them. When complete rest the cowl on the posts and paint/finish.

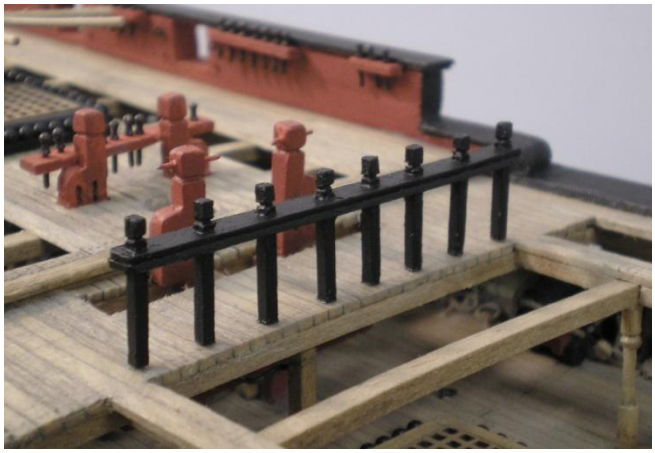


Fig 11g

STEP EIGHT (STERN INBOARD, PIN RAILS, CLEATS, LADDERS, SHOT GARLANDS)

Step eight is comprised of a series of smaller detail items that should be installed prior to the remainder of the primary items.

a) If you intend on rigging your 6lb guns install the rings around the gun ports in the same fashion as the gun deck for the 12 lbdrs.
b) Install the laser cut pin rails at their designated locations along the bulwarks.
c) Install the four laser cut cleats on the gangway
d) Construct and install the two gangway ladders and the companionway ladder
e) Install (if you haven’t already) any shot garlands at the rails or against the hatches.
f) Install the range cleats, steps and traveler on the bulwarks and stern.

The traveler is a piece of .22 gage wire. The steps are 1/32”x1/8” strip pieces with their edges rounded.

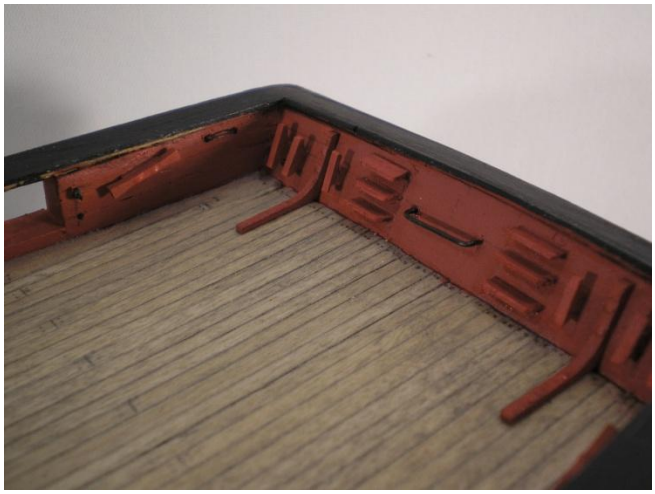


Fig 11h

STEP NINE (6lb GUNS)

If you haven't already assembled the 6lb guns and carriages as you did the 12lbdrs for the gun deck. Use .42 line for the breach rope. If you wish to install train tackles (as the proto-type) they will be installed *with-out* any blocks. Use .28 line. There are no mass produced commercial blocks available that are close to scale for the required blocks. Even modifying the smallest block Model Shipway's provides is out of scale. If you do a good job with the line itself the omission of blocks is hardly (if at all) noticeable.

Fig 11i

STEP TEN (CAPSTAN)

As with previous multiple location items install the quarter deck capstan. It's constructed in the same manner as the two previous gun deck capstans. The proto-type has the capstan bars installed. These are made out of 1/16"x1/16" strip stock. See plans page 4 for length and detail.

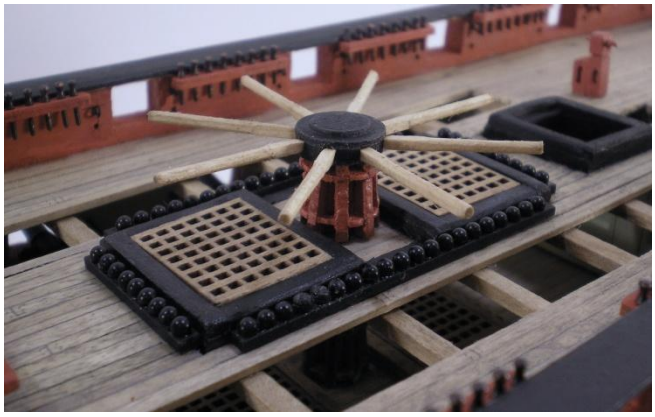


Fig 11j

STEP ELEVEN (BINNACLE)

The location and style of the ESSEX's binnacle has often been a topic of (sometimes heated) discussion. Although surprisingly missing from most renderings it is assumed that she would have carried one as standard equipment. The proto-type has a cabinet style that is simply a series of glued up pieces to create the details. Release the blank center, the rear and front pieces as shown on page 4 of the plans. Assemble them first. Next attach the sides and then the top. The vent stack can be a finer dowel pulled through a draw plate or a round tooth pick. Rig it in place with eyebolts and .42 line.

Fig 11k

Fig 11l

STEP TWELVE (WHEEL)

The original Hackett draught shows a single wheel while references seem to imply that the wheel was more than likely a double wheel as was the more common.

The wheel is shown on page 4 of the plans. Use a piece of 1/8" dowel as the drum. Cut to length as per the drawings. Take the largest of the three size discs and glue it centered on each end of the dowel (drum).

The two cast wheels and the drum were painted to look like wood. You can finish them as such or paint them any appropriate color for the time period.

The inner and outer rings of the wheels were also painted to resemble an iron ring with drops of cyno built up as bolts. Once this is done finish the two laser cut standards as you want and attach the wheel/drum assembly to them. Cap the exterior ends with the next two size discs. The bands on the standards' legs are pinstripe tape.

Locate the position of the wheel assembly on the deck and lightly mark a spot on each side of the drum on the deck one slightly forward of the other. Drill a small hole on both (it doesn't have to go all the way through the deck). Cap the whole with the eyelets. Take a length of .28 line and wrap it around the drum. With a drop of cyno set one end of the line into the eyelet on it's side. When this is dry make sure the wrappings on the drum are tight and even and insert the other end in the opposite hole and glue with a tensioned line. These lines would have run down to the tiller.

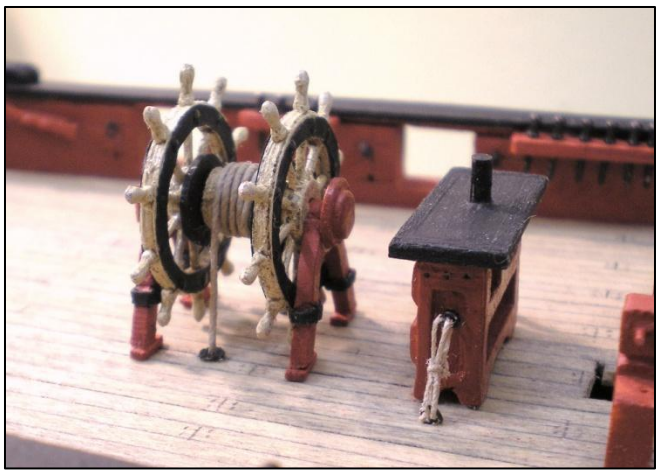


Fig 11m

STEP THIRTEEN (GUN PORT LIDS)

Release the 28 laser cut gun port lids from their sheet and paint them red. Take six strips of your hull planking stock 1/8"x1/16" and glue up as two three strip piece as you've done previously. Stain and finish this glued up assembly to match the "gun port stripe" area of the hull. Take the gun port lids and glue them on these pieces with at least one edge even with the long edge of the planking. Leave at least 1/16" between the gun port pieces. With a very sharp blade separate (cut apart) this assembly leaving 1/32" on the remaining three sides of the gun port.

You should now have 28 gun port lids that are planked on one side (to match your hull) and on the opposite side they have a 1/32" border on three sides. Paint the edges and the exposed planking on the back red as well.

Release the fifty-six photo-etch hinges prep and finish black. Glue a pair evenly spaced on each lid with the "hinge block" (the square part) hanging over the flush edge of your lids.

Take a pair of needle pliers and bend all the "hinge blocks at an angle you want your lids to raise to. You can glue both the hinge block and the flush edge of the port lids against the hull for a very strong bond.

The lid lanyard is simply two pieces of .28 wire, one bent into a "V", painted white and glued onto the hinges long enough to contact the hull at a realistic angle. It is not necessary to drill into the hull to set them. A small drop of cyno is all that is really needed for a realistic look.

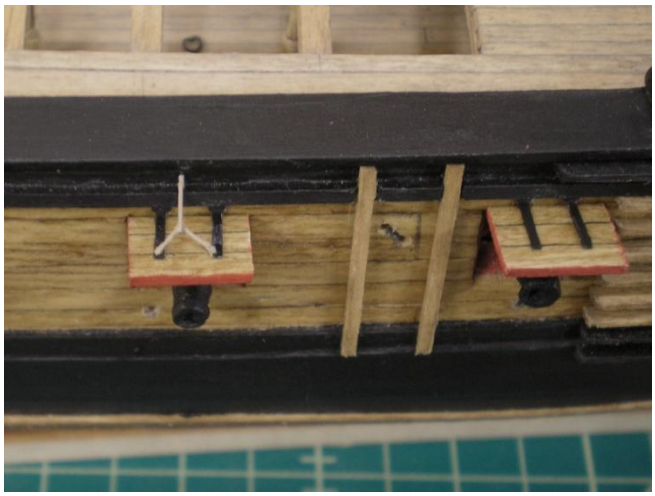


Fig 11n

STEP FOURTEEN (DEAD EYES & CHAINPLATES)

First, release the channel support legs from the photo-etch sheet. With a pair of small pliers bend the two tabs so one will lay flat against the bottom of the channel and the other will rest squarely against the hull. A drop of cyno on each tab is all that is needed to attach 3 – 4 per channel. They should be painted black.

Take both the large and small dead eyes supplied and finish them as you wish. They can be stained or painted. Some builders prefer a dark brown others black. Either is acceptable.

Take the photo-etch strop rings (large for large and small for small, prep and finish these to represent blackened metal. Also release both the large and small middle links and finish as well.

Fig 11o

Set the deadeyes into their respective size ring and also insert a middle link (appropriate size) into the bottom of the ring. With a pair of needle nose pliers pinch the ring around the deadeye and also close the top of the middle link that is through the strop ring. The bottom of the middle link should still be "open" as this will be inserted into the bottom link.

Next, take the bottom links from the photo-etch sheet and finish as before. (Due to scale the kit has combined the bottom link and the backing plate for ease of assembly). Take the open end of the lower link and insert it into the bottom link. Although they are squeezed closed the assembly should still have an amount of "looseness" to it.

Set the assembled deadeyes into their respective slots on the channels as per the drawings. Before setting the links permanently into the hull take a strip of 1/16"x1/16" and cap the channel. You can if you wish file in a moulding profile for a bit more detail, fig 11o .

Don't forget that the chain plate assembly will to a large degree follow the angle of the line attached to it. To attach the backing links to the hull establish their location and put a drop of cyno on each one and set into place. You can now with a pin vise drill a pilot hole through each backing link to insert a small nail.

The larger chain plates stretch downward to the whale while the shorter angle back to the hull higher up, see fig 11o.

STEP FIFTEEN (RAILINGS)

There are two railing locations on ESSEX as shown, one around the companionway hatch on the quarter deck and the other at the waist inboard on the gangways. Regarding the gangways rails, it is believed that the original wooden rail system was replaced by ESSEX's first Captain, Edward Preble with a rope assembly to prevent splinter from being thrown if the wooden rail was struck in battle. That is the rail we are presenting with the proto-type.

Follow the same steps for the companionway as with the gangway assembly.

Locate the rail stanchions on the photo-etch sheet. Cut the top close to the eyelet (ball). Cut the bottom leaving the connecting brass sprue to act as a pin when setting the rails.

Take a pin vise and drill pilot holes at the indicated locations for the companionway and gangway posts. After painting the posts black, set all the posts in place with a drop of cyno. Take a thin line and make a knot at one end. Insert it into the first stanchion and touch it with a drop of glue. Continue to run it through the remaining stanchions in the same fashion allowing for a little sag in the line.

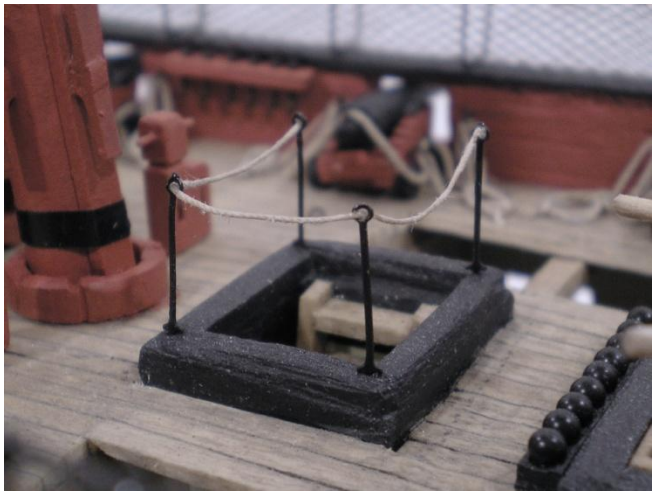


Fig 11p

STEP SIXTEEN (HAMMOCK CRANES)

The final detail installations are the hammock cranes at the waist and on the quarter deck rail. They are constructed the same fashion. You'll notice that there are two sizes of the cranes, one slightly taller than the other. The shorter of the two go on the quarter deck rail and the taller are installed at the waist. After prepping and finishing them to be black release them from the photo-etch sheet. As with the rail stanchions leave the bottom brass sprue on to serve as a pin for added installation strength.

Mark on the rails the location of each crane. They are centered on the rails. As with the stanchions drill a series of pilot holes and then glue the left on point as well as the bottom of the crane to the rail. They will be fairly rigid at this point. Take care to keep them square and even on the rails.

Take eye bolts and install them where the guidelines for all four sets of cranes will originate from.

Here is how to make the cranes extremely strong and rigid. Take a long enough piece of the appropriate size line to pass through the holes and tie it to one of the eye bolts. Without worrying about them being straight for the moment, pass the line through all the holes on one side of the cranes. Let the end hang loose for the moment. Repeat this step with the other line so the set of cranes has both guidelines installed but loose.

Next, with a bottle of cyno at the ready, in one hand take the two loose ends of line and pull them taught. While holding the lines position the first crane (opposite end of the loose ends) straight up and even. Touch both eyes where the line passes through with cyno and allow it to dry. You'll see that the crane now is very strong and the line remains tight at it. Repeat for the next crane and you'll now see that the lines remain tight between the cranes. Continue all the way to the end, one crane at a time. When all the cranes are positioned, pull the two loose ends through the eye bolt taught and touch with cyno. Tie off when dry and cut the extra off. You can paint the line black to hide any "flashes" from the glue.

Here's one method of working with the supplied netting……..

Take a piece of netting just a little larger than is required to cover the two sides and bottom. The netting will probably not lay flat at this time so under a damp towel run a warm iron over for a few seconds. This will soften the netting up. The next step is to "thicken" the look a bit. So take a can of flat black spray paint and lightly spray a coat or two on the netting making sure that all the openings are unclogged. Once this is dry take a "dry brush" with a light grey and "scrub" a little pigment onto the netting. This will take the color from all black to a more weathered appearance.

Once you have the look you want run a bead of cyno on the horizontal rail and glue the netting to it making sure it is level. Once this is dry apply cyno on the stanchions on the side you started on and attach the netting to that. When dry repeat the process on the bottom, then the opposite side and top rail.

Fig 11q

Fig 11r

CHAPTER 12

HEAD RAILS

STEP ONE (HAIR and SCROLL BRACKETS)

Locate and release two each of the Hair and Scroll Brackets, (be especially careful with the Scroll as it is extremely fragile). These will be the first two pieces of the Head Assembly. Very gently sand the laser burn from the pieces. In place of using a needle file or sand paper a small emery board is all that is necessary. These pieces have been left intentionally longer than required to allow for variations in the shape of the bow from builder to builder after planking and sanding.

The first step is to establish their length. Start with the Hair Bracket and mark it off so it follows the curve of the stem. The end that should be cut is the one that contacts the Bow. Once this is done set the pieces aside and repeat with the Scroll portion. You can use a scrap piece of wood or card stock cut the width of the Trail Boards as a vertical spacer. You will notice in the photo Fig 12a, that the outer end of the scroll extends just slightly past the stem. This creates a “stand” for the figure head.

The molding groove can be made on the pieces with a little bit of patience and a steady hand. Start by making a pencil line down the center of all the pieces, (now is the time to establish a Port and Starboard “set”). With a sharp #11 blade gently score along the line taking care when crossing the grain. The next step is to take a tapered round needle file and impress the point into the wood as you follow the kerf made by the #11 blade. It’s not a back and forth motions, just a firm “tracing”. You should start to see an impression into the wood. Repeat this several times until a groove is established. Take an angle shaped needle file and follow the groove with a little more “filing” motion. Lastly take a folded piece of sand paper and clean up the groove. You can take your emery board and gently ease the exterior corners of the pieces to create a more rounded/ molded appearance.

The pieces should be painted light yellow. Once you are satisfied with their final appearance glue them into place using the Trail Board size spacer for their final correct location(s) Fig 12a.

Fig 12a

STEP TWO (THE KNEES)

The next step is the knees. Release four from the sheet. Lightly sand off the laser burn taking care not to distort or reduce the shape.

The knees are not perfectly level (parallel) with the water line but have a very slight downward angle, (see fig 12c) and the corresponding illustration on the plans.

First, lightly mark a pair for Port and Starboard as well as upper and lower. Fit them into the bow and stem. If necessary, sanding as little as possible, shape them to meet both the bow, and the angle of the brackets. The knees should flow into the brackets. Once again you can use a spacer to determine distance apart.

If you detailed the brackets with a molding groove you can also repeat the process on the edges of the knees. Once you have the correct shapes and angles for all four knees you can paint them light yellow and then install them.

You can use a little fill and blend in the joint lines and intersection points between the knees and the brackets and then touch-up paint for a near seamless appearance.

Fig 12b

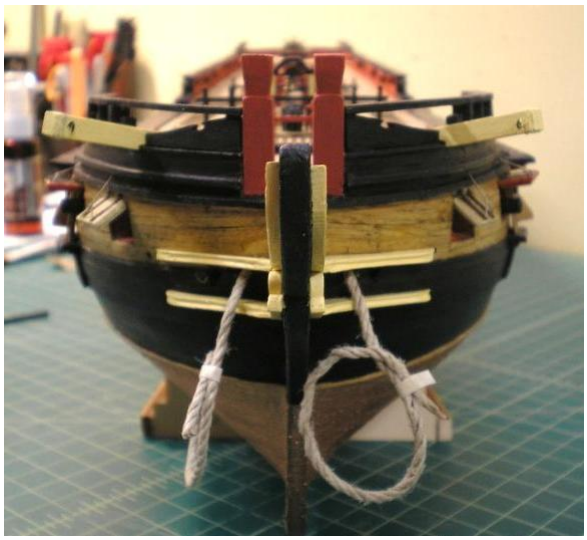


Fig 12c

STEP THREE (TRAIL BOARDS and FILLERS)

The next steps are the pieces that make up the trail board assembly. Release the parts of the trail board (2 each of) filler piece, bolster, trail boards (2 with holes two for stem), wash cant (four pieces)

The first installed piece is a combination of two 1/8" pieces that together form the wash cant. Glue two pieces together and then fit them into the corner formed by the bow and stem. Once you've done this, bevel the piece back towards the corner in from all corners leaving it at least 1/16" thick at the leading edge Fig 12d. This is painted black.

Next take the two fillers and the four trail board pieces. Establish a port and starboard set you don't fit a piece and then try to install it on the wrong side. The filler piece has the larger holes, is slightly longer and goes in first. Test these on each side for fit. If your hawse holes are off a bit now is the time to adjust them with the locations of the pieces. The pieces should conform to the curve of the bow but if necessary you can bend them with just your fingers or a little warm water first. Once you're comfortable with the placement, paint all the pieces a warm orange ochre and install. Next take the trail board pieces for stem, fit them as before, paint and install.

Take the laser cut bolster pieces and round over the edges, paint and install under the hawse holes on each side. If necessary file down the cup so the full hawse hole is exposed. On the stem take four small pieces of 1/32" strip stock and install between the gammoning holes and the bottom of the upper cheek on each side. Round the edges and paint. These are the gammoning bolsters.

You can now if you wish install the photo-etch vines. Paint these green with red berries.

Fig 12d

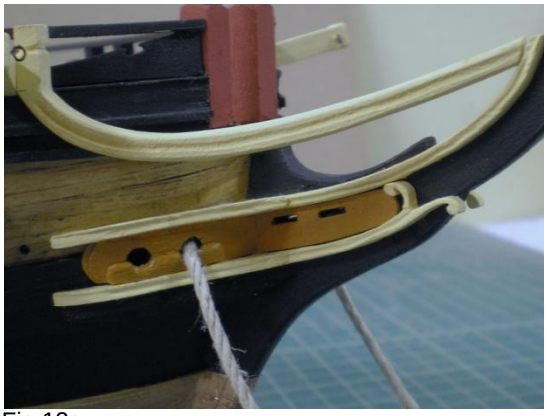


Fig 12e

STEP FOUR (UPPER RAIL - UR)

Take the four pieces that form the upper rails and glue two each together. If you wish you can once again file in a molding line to give the rail a little more detail (as in fig 12e). The upper rails take a number of steps to shape and fit them properly, take your time with each one. They are left intentionally a little long because of the compound angle that has to be sanded into the end that intersects the upper cheek.

The first step is to taper the UR from the bottom of the timber head towards the forward end. The UR should be about half its width at the leading end, see Fig 12g. Now with the timber head (the upright / vertical) mark the molding strip that is the fore plank sheer. Take a sharp knife cut and remove to allow the timber head to rest against into the corner formed by the cats head and upper bow.

With the UR resting against the cathead the point where it turns vertical (x) should be at the bottom of the cathead. With this point held you can now start to file the angles on the opposite end that meet the upper cheek (y) at its highest point Fig 12f. The angle (y) is a compound angle allowing the UR to intersect vertically and laterally. Take your time file this in, constantly checking your work. Take a little off at a time.

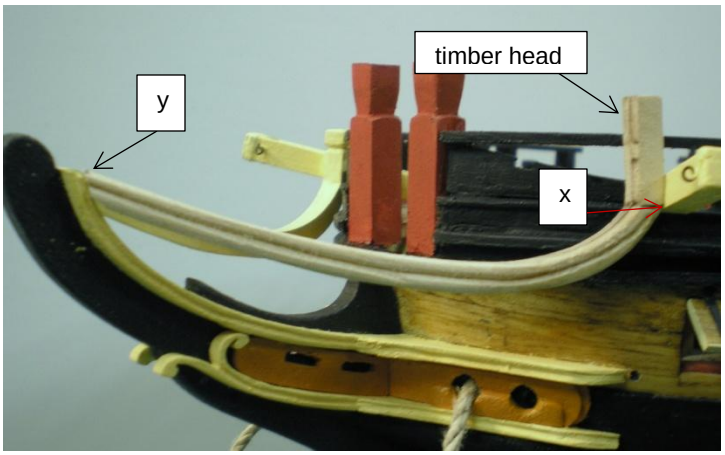


Fig 12f

When you have the correct angle at (y) and the timber head can rest perfectly vertical the UR should almost be able to hang without any help. When you are pleased with your fit mark the timber head level to the height of the rough tree rail and cut the timber head off at this point. You can now file into the timber head a decorative top element, paint the UR's and install them.

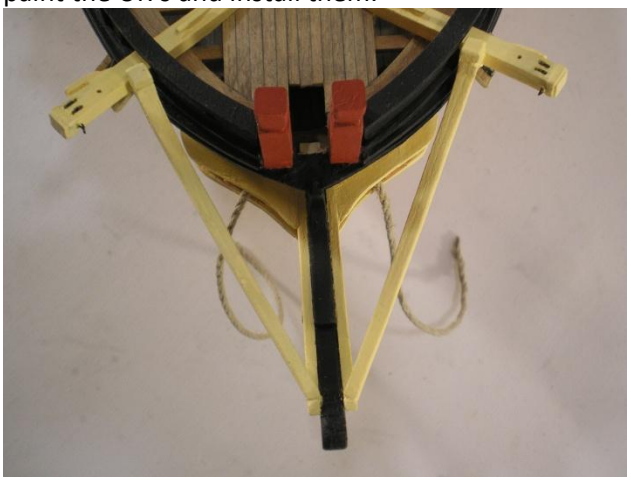


Fig 12g

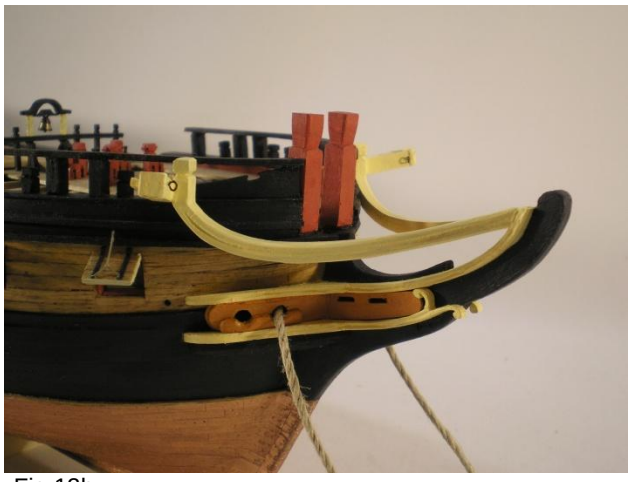


Fig 12h

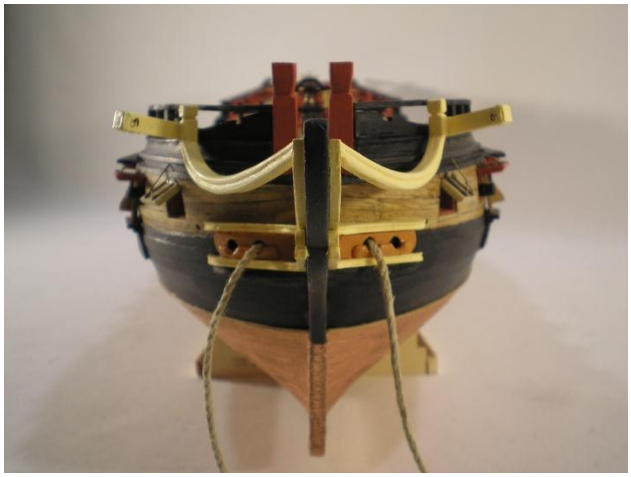


Fig 12i

STEP FIVE (HEAD BEAMS HEAD TIMBERS)

Take 1/8”x1/16” strip stock and install 6 pieces as shown on the plans and the photo below. They are all placed at the bottom edge of the upper rail and are horizontal and level. DO NOT angle them to follow the curve of the UR, (see 12l). Note- the second from left is notched around the stem.

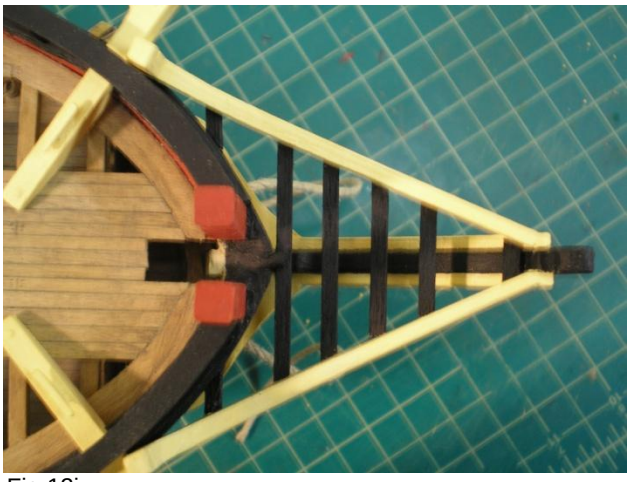


Fig 12j

There are five head timbers (3 being one piece and two having two pieces each). They should slide over the stem and come into contact with the bottoms of the head beams just installed. The widest head timber will sit under the 3rd head beam from the left. The next two sizes in order follow moving forward. The head beam that is notched receives the largest split pair. They butt against the stem. The last pair go under the short beams to the rear of the assembly. They will need to be beveled to fit snugly against the hull. They can be painted black, yellow or a combination as shown on the proto-type.

Fig 12k

Fig 12l

STEP SIX (MIDDLE RAIL, ECKING PIECE, CAT HEAD SUPPORTER)

The next step(s) assembly is probably the hardest aspect of the head rail construction. Simply because there is no easy way to illustrate it, photograph it or write it out. This is one of the places where your experience will be called upon.

First take the two pieces that are the middle rail(s) (MR) and as before if you like file a detail groove. The timber heads with your kit will have a notch in them facilitating where the MR will contact the hull. As with the upper rail the MR is a little longer than needed due to the angles at the hull and stem.

Continue to file (sand) the ends until the MR rests in the notch solidly against the hull and stem.

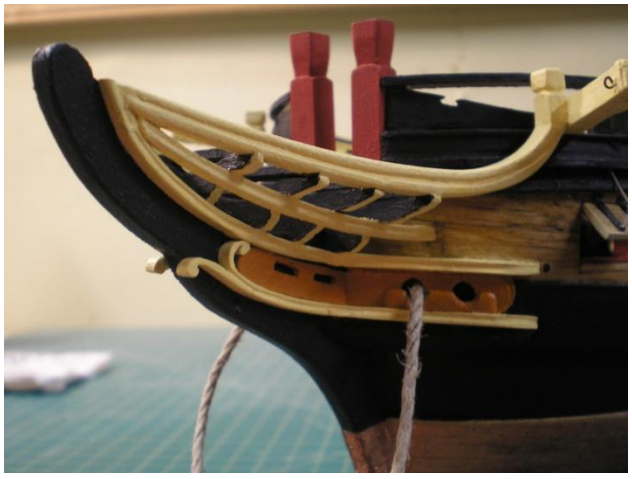


Fig 12m

The next part in our process is the Eking piece. As with the other pieces you can file in a groove for detail starting at where it will join the MR. Wait to do this until you have worked it to length. It has also been left a little long to account for variances in individual builders' hulls and assemblies. You'll have to notch in the plank sheer and lower mouldings to allow the piece to sit flush on the hull. Continue to work both ends until it butts against the cathead and flows into the middle rail. Once you are satisfied with it you can paint it and install it. It should lay flat against your hull for the entire length.

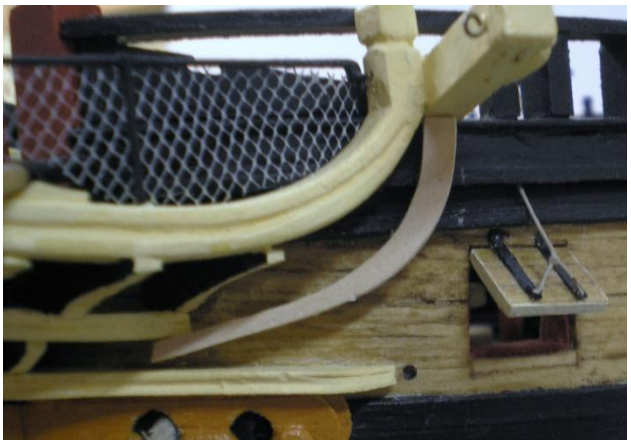


Fig 12n

Fig 12o

The last piece in the assembly is the hardest – the cathead supporter. It is a piece that follows the underside of the cathead, the curve and taper of the eking piece and the rise of the hull on the eking piece.

It is impossible to laser cut this piece. Providing a cast piece would only make it more difficult (if not

impossible) to match it perfectly to your hull. So you have been provided with a piece that is significantly wider and a little longer than necessary to allow you to shape it correctly to each side of your hull. You'll actually glue one of the thin profiles onto the larger piece to create an oversized blank, fig 12p.

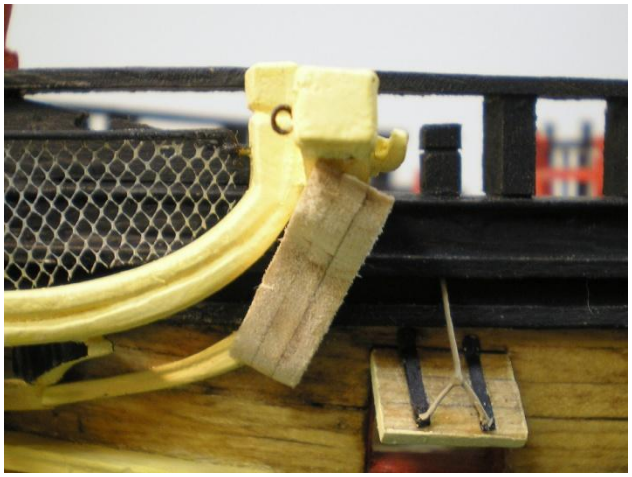


Fig 12p

The first step is to file/sand the top edge so it rests flush onto the bottom of the cathead and then the backside so it rests against the eking piece flush, figs 12q & 12r.

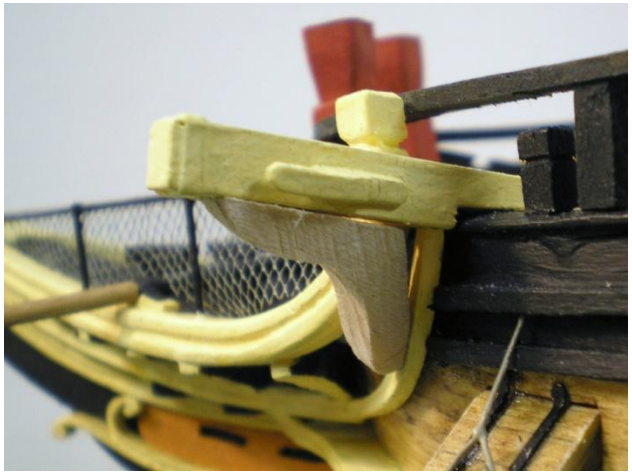


Fig 12q

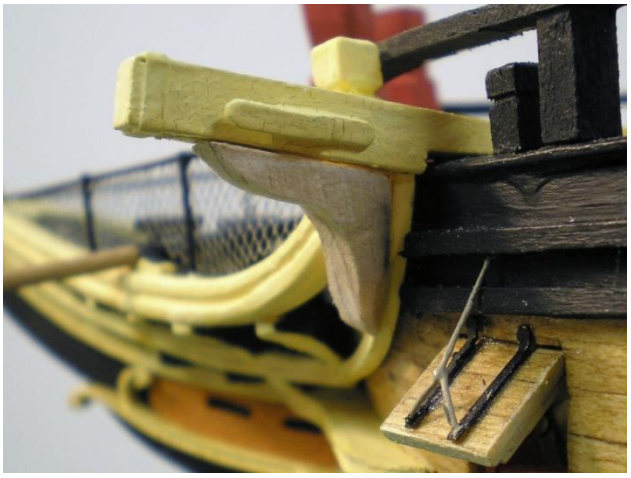


Fig 12r

The next step will be to start to shape the supporter piece to match the curvature of the eking piece, fig 12s.

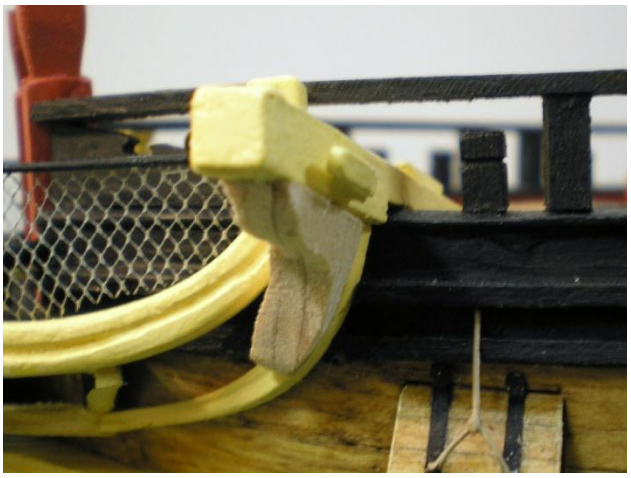


Fig 12s

Continue to slowly shape the supporter constantly checking it against the eking piece and cathead. You will realize that there is a significant reduction in size as you finally reach the end. In fig 12t the piece on the right is the one shown in the previous two photos and the one on the left is the final shape/size.

Fig 12t

On the back side of the supporter you can if you like carve a bit of detail to your liking. When you're satisfied paint and install.

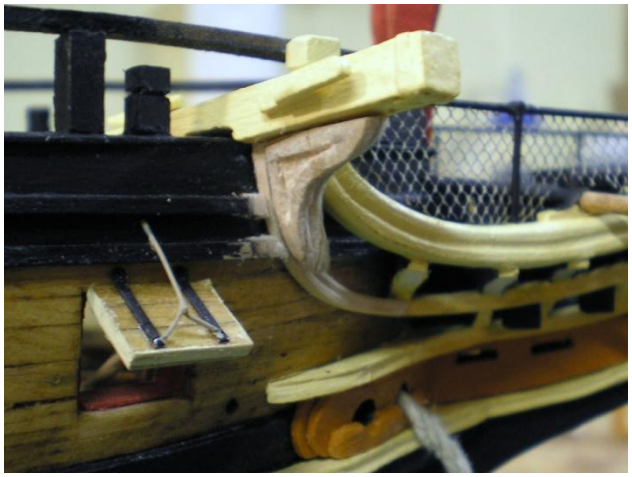


Fig 12u

STEP SEVEN (HEAD GRATINGS, BOOMKINS SEATS OF EASE, HEAD KNEE, HORSE RAIL and NETTING & FIGURE HEAD)

Take the laser cut head grating and install it as shown below. Note that there is a slight reveal of the front and rear head beams. This will allow the placement of additional grating strips.

The additional grating strips are 1/32"x1/32" stock. Paint a strip first and then cut the pieces to length and glue them in. Touch-up afterwards is much easier. For the pieces forward of the grating set the middle piece first and then work outwards. Leave just a slight gap between each piece. Once these are complete you can install the laser cut bolter where the UR meets the stem.

The boomkins are relatively easy compared to the head rails you've just completed. Take 1/16" dowel and cut it to the length shown on the plans page 4. The boomkins have a slight taper as they head outward and a defined "head" You can achieve this with a little sandpaper and a needle file. Release the two laser cut cradles and locate them on the upper rail as per the plans. The boomkins butt into the front face of the knights heads so a slight angle is necessary on their ends to align them correctly. When installed there is also a slight down ward angle to them as well. The rigging (either Admiralty or full rig) will place a considerable amount of tension on them so it is recommended that a small pin be inserted into their end and the knights head as they are glued for more strength.

A strip of pinstripe tape applied over the boomkin at the cradle and painted will represent the iron strap holding them down.

Prior to installing the seats of ease some builders prefer to install the bowsprit and gammoning. If you wish to, go to CHAPTER 14 MASTS and follow the instructions on the construction and installation of the bowsprit.

Release the four laser cut seats and glue each on a piece of 3/16"1/8" stock. Each seat should be about a 1/8" above the grating with the drop tube ending just at the upper cheek. The forward seat(s) will be just a little higher in view as the grating is rising towards the stem but still maintaining the 1/8" height. Paint them black and install them in the two pairs of openings each side of the stem. You can now also paint and install the head knee.

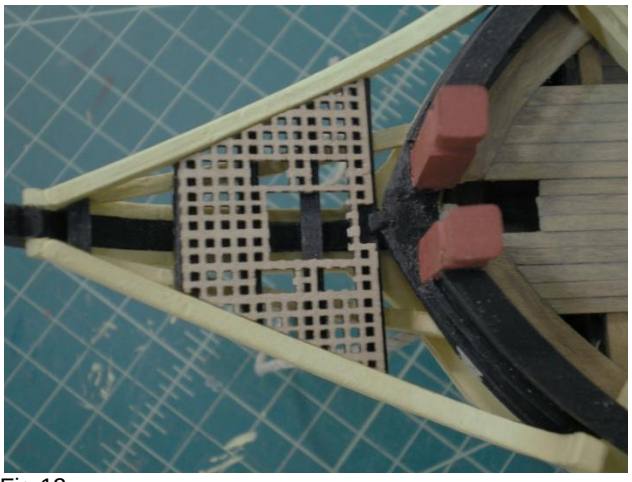


Fig 12v

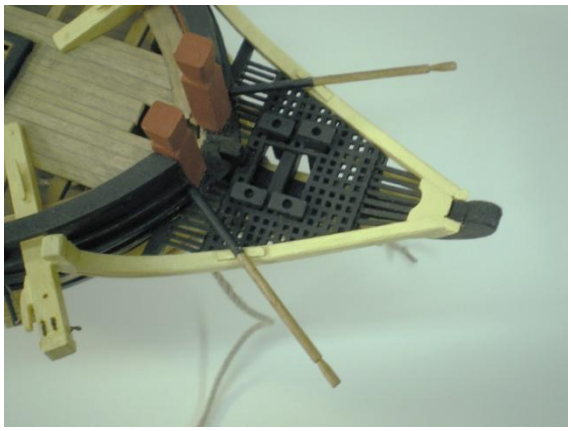


Fig 12w

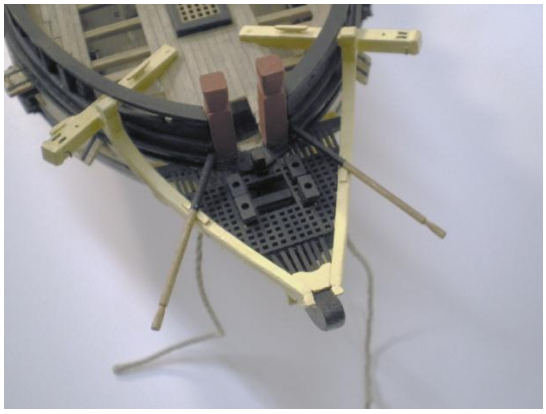


Fig 12x

The next step of the head rails are the horse rails and netting.

At a point level with the top of the upper cheek/upper rail insert an eyelet into each timber head. Take a piece of .28 gauge wire and flatten a small spot on one end. This will rest on top of the cheek/rail. The other end has a small “L” bend and is inserted into the timber eye. The rail should be level from it’s forward point moving back. As per the drawings take two small pieces of wire per side and after making a hole for each in it’s final location on the UR insert them and cut them off flush with the top of the horse rail.

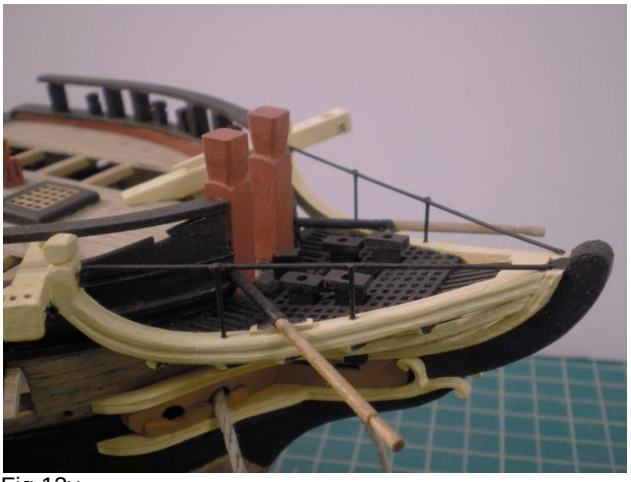


Fig 12y

You can prep the netting as you did in Chapter Eleven for the hammock cranes prior to installation on the Horse Rails. Once you have the look you want run a bead of cyno on the horizontal rail and glue the netting to it making sure it is level. Once this is dry you can work and fit the netting down the uprights and notch it over the boomkins.

Fig 12z

Fig 12z

The colors of the figure head are based on the Howard Painting. The “scheme” is described earlier in this manual. It’s recommended that the figure head be assembled and painted off the model and then attached, (use whatever type of glue you are comfortable working with cast pieces). Attach the left arm (staff) at a downward angle. The staff is just a piece of .22 gauge wire with several (thick) coats of brown paint. Insert it in his hand and allow it to rest on his boot. If you haven’t installed the bowsprit, put a temporary dowel in place for the next step. Tape the figure head onto the stem in its proper place. Take the right arm and war club and determine an angle that will not interfere with the bowsprit. Once you have established this, glue them together. Paint – once dry install on the stem…….

Fig 12aa

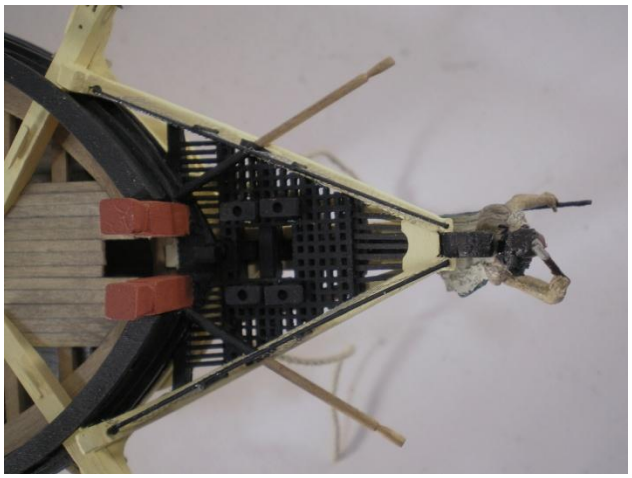


Fig 12bb

Fig 12cc

STEP EIGHT (RIGGING THE BOOMKINS)

From the drawings locate and install 4 eye bolts (two each side) for the boomkin shrouds.

If you wish you can re-shape the two 1/4" blocks supplied to a more accurate appearance. Strop these with a very fine thread and attach to the end(s) of the boomkins.

Take a length of .25 line long enough to travel from eye bolt to boomkin to the other eye bolt along with a little extra. Treat the line as you wish (wax, crayon, etc.) At one end of the line create a small eye by looping the line around a thin drill bit shank, tying it off and then after removing it from the bit coating it in cyno to harden it. Be careful not to fill the eye in.

With a fine line create a lanyard with the forward eyebolt, leaving about a 1/8" spread.

Take the shroud and bring it up to the boomkin and loop it around in back of the block. Keep tension on the line forward but not so much that you bend the boomkin. It's easier than it sounds.

Take one of the small photo-etched hooks and tie it into the other end of the shroud moving aft, just long enough to hook into the aft hull eye bolt.

Fig 12dd

CHAPTER 13

ANCHORS

STEP ONE (CONSTRUCTION)

There are a few different methods to present the anchors on your model. The proto-type has them hanging with anchor cable and cat head block.

If you wish to show them in a different fashion there are any number of excellent rigging books and magazine articles that will illustrate how.

There are two main elements of the anchors, the anchor itself and the stock. Both require a bit of prep work prior to assembly and installation.

We'll start with the anchor itself. Take the two cast anchors and with a small file lightly remove any cast lines. The alloy that the anchors are cast from is fairly soft so it should be easy to get them cleaned up.

Take the two brass split rings and insert them into the hole at the top of the anchor. They do not have to go all the way through, just seat into it. They are perpendicular to the flukes of the anchor. Secure them with a drop of cyno on each side. You can now prime and paint the anchor. Coat the ring as well. Although it will be covered in our next step this will prevent any chance of a reflection showing through.

Take a length of .25 line and glue one end of it at the point of the ring where it seats into the hole. Once the glue is dried put a couple of drops of cyno on the ring and start to tightly wrap your line around the ring. This is the "pudding" of the anchor ring. When done you can paint the line the same color as the anchor if you wish. The proto-type's was done with a lighter color line and eventually stained a dark brown before installation.

Fig 13a

Release the four anchor stock pieces and lightly remove any laser burn from them first. Although the stock pieces are shaped in one direction they must be completed by the builder. As you find them in the sheet is their outward face (if you will). You must work the opposite side. Shape the "inside" surfaces to match the illustration below. The views from top down are the "face" view of the stock, next is looking down from above. The dotted red line is the shape you are attempting to create. The final image is the stocks assembled.

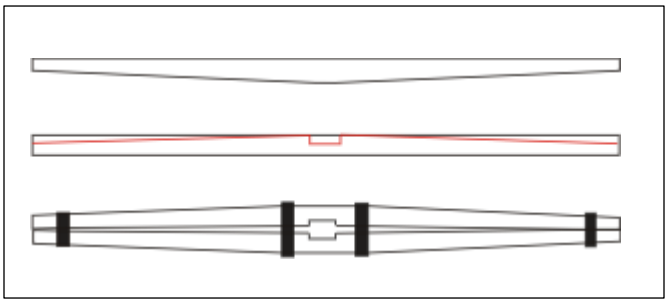


Fig 13b

When done correctly the center notches should be able to wrap around the shaft of the anchor right below the ring. From that point out in both directions they will taper outwards to no more than their original thickness at both ends. Once you have gotten them to this point you can paint or stain them black or dark brown. With the stocks perpendicular to the flukes glue the anchor between the two stocks. Don't worry about the outer edges at this point. Just make sure the anchor is securely in place. Once the glue is dry put a drop of cyno at each end and using an alligator clip or even a clothes pin clamp the ends until the glue has dried.

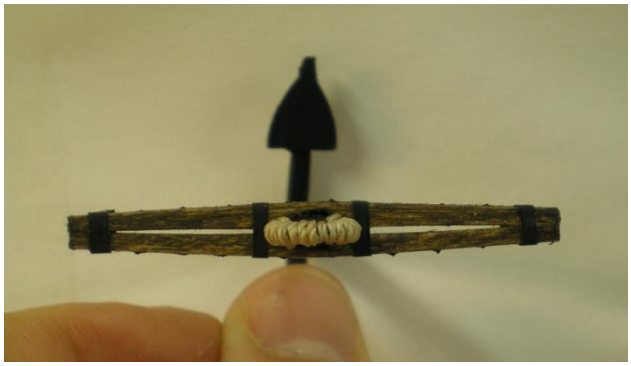


Fig 13c

You can finish the details with strips of pin stripe tape as the metal bands. The nail heads are just a series of drops of paint applied with the point of a straight pin. They are built up for depth.

STEP TWO (RIGGING)

There are two aspects of the anchor rigging; the anchor cable and the cathead block and tackle. We'll start with the anchor cable.

You can tie the cable to the ring in two ways. One is to just loop it through the ring and secure it with a couple of lashings. Or if you wish you can use a more historically accurate knot shown in fig 13d. This is known as an Inside Clinch knot. It was used for larger anchors. Either way you'll want to leave enough cable to hang in a pleasing drop that will allow the anchor to attach to the cat block and hook about 1" below the cat head. If you use the inside clinch start it directionally coming in from the stem to the ring and don't forget to reverse direction from port to starboard. The cable would have been extremely heavy in reality so allow it to lay down against the anchor/stock and then return to the hawes hole.

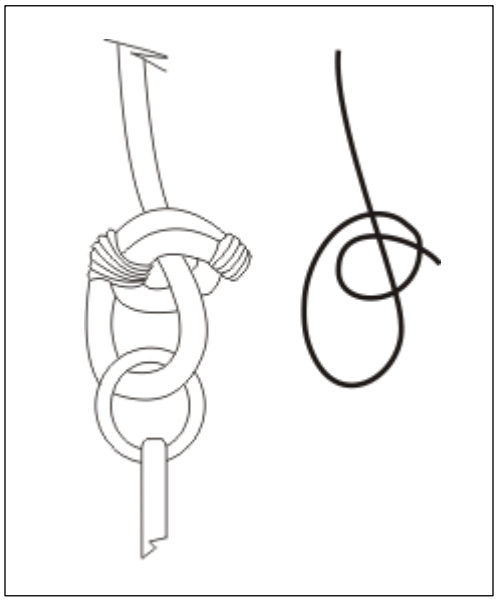


Fig 13d

The next step is the installation of the cat head block. Take the two 9/32" blocks and round their edges to give a more historically accurate shape and stain/finish as you prefer. Take the two photo-etched anchor block hooks and paint them black. Once this is done, you can strop the large hooks to each block. Use a fine thread so there is not much (if any) knot. Take the .42 line and tie a small knot in one end. Pass the line through the ring bolt on the inside of the cat head. Rig the block right to left back to front as you see it. When the line passes through the cat head upward for the last time, run it back to the timber head and tie it off. Figs 13e, 13f, 13g & 13h. If you are having difficulty getting your anchor to hang naturally try wetting the cable and block lines with a little diluted white glue and attaching a small weight of some sort to the anchor until the lines dry.

Fig 13e

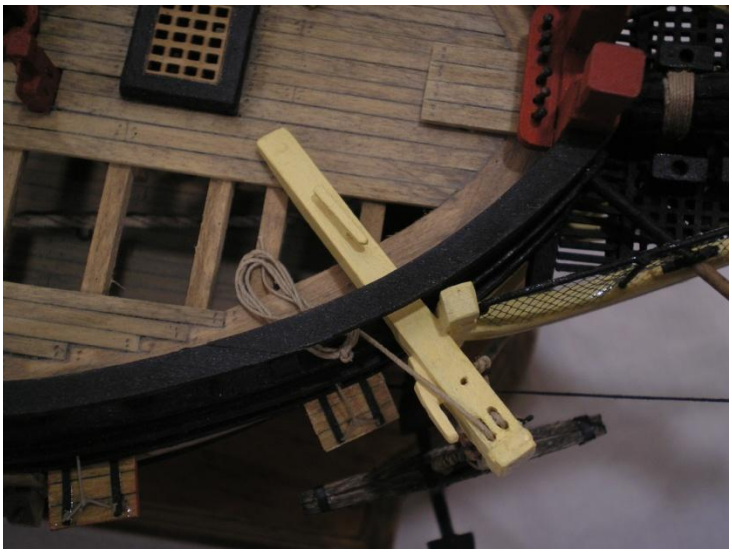


Fig 13g

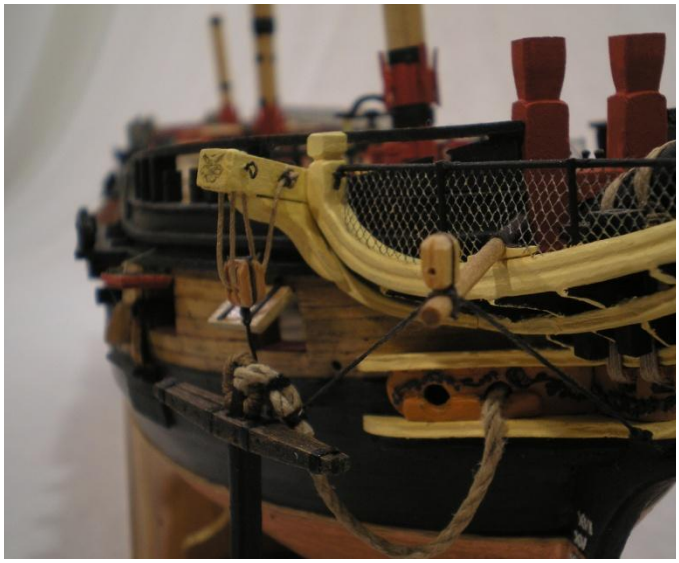


Fig 13f

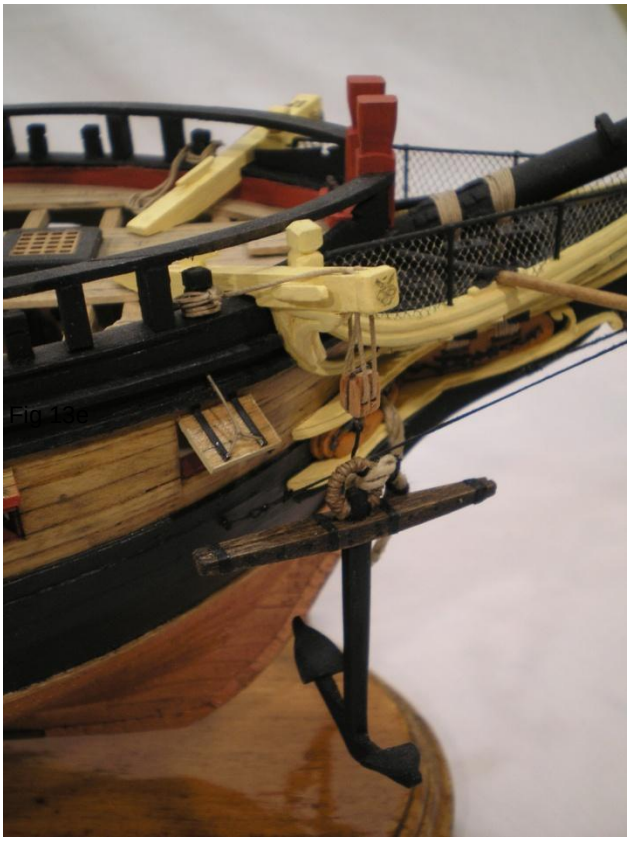


Fig 13e

Fig 13h

CHAPTER 14

MASTS

The ESSEX's masts for the Admiralty version are stubbed. The lengths were chosen to show the most detail without becoming too "involved" with extraneous details that would start to move into the realm of full masts. Some Admiralty versions show no masts what so ever and you can choose to present your ESSEX that way if you wish.

The Fore, Main and Mizzen masts are all built in the same way with the Bow Sprit being the "odd" one so that's where we'll start.

Take a 5/16" size dowel and cut it to length and with the angles shown on page 5 of the plans. While constructing the head rails you should have made several checks to make sure that the bow sprit will fit between the knight heads and through the fore deck planking to meet the bow sprit partners.

Take the laser cut bow sprit fairlead and glue it on the designated location as per the plans.

Cut approximately 8 – 10 pieces of 1/32"x1/32" stock and glue them onto the bow sprit for the two sets of gammoning stops. Once the glue is dried on them you can easily sand/file their tops and sides down to the correct shape.

Fig 14a

Once you've checked for fit and angle you can paint the bow sprit black. You can if you wish add the metal bands shown with pinstripe tape. A touch of cyno glue will help the adhesion of the tape. You can also coat them with a flat if you wish to tone down their sheen a bit. If all is set you can permanently set the bow sprit. Make sure you keep it at the correct angle and with the fairlead centered upward. Just a touch of glue on the top of the stem is all that is really necessary to hold it in place.

The next step is the gammoning. Due to scale we'll make a few concessions in process. Take an adequate length of beige .42 line. Put a small spot of cyno on the side of the bow sprit in front of the rear gammoning stops and attach one end of the line. Once the glue is dry pass the loose end down through the gammoning hole on the stem and then up and over the bow sprit and repeat making 7 – 9 turns. The direction of the line should be down to the front of the gammoning hole and to the back against the previous turn on top of the bow sprit. Do not make the line too tight. Once you have completed your turns you can wrap the line around itself between the bottom of the bow sprit and the stem and tie it off with a simple hitch. A spot of glue will hold it and cut off any extra line. Repeat for the forward position.

Once the bowsprit is set take a piece of 1/4"x1/4" and cut it to fit between the knight heads. This is the bowsprit chock. File an arch into it to fit snugly onto the bowsprit. On the fore deck finish and glue up planking for the mast partners at the base of the bowsprit as it passes through the fore deck. Install the pin rail as shown on the plans.

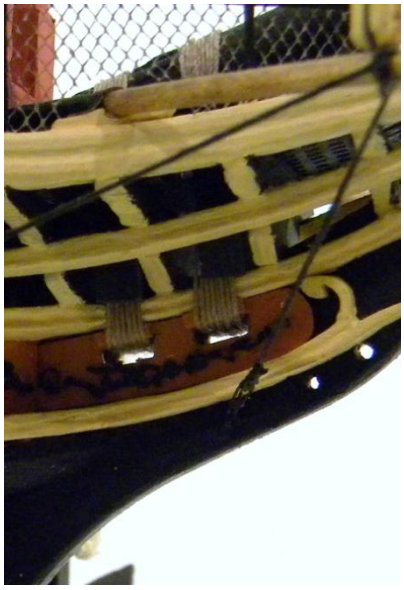


Fig 14b

The next step is the Fore, Main and Mizzen masts. Their construction process is basically the same with the only difference being the size of the dowels and the mizzen being a little less complicated.

We'll build the Main here and you can repeat and apply the process to the Fore and Mizzen.

The proto-types masts extend approximately 4" above the fore and quarter decks. Cut the appropriate size dowel, (3/8" for Main and Fore, 5/16" for the Mizzen) as shown on the plans.

The gun deck mast coats should already be in place, with the Mizzen not having one. Slightly taper one end of the dowel about 1/8" up. This will make setting it into the coat a little easier.

Whether you are staining, painting or leaving your masts natural color this is the time to apply the first coat. Also where indicated apply the first series of metal bands with the pinstripe tape.

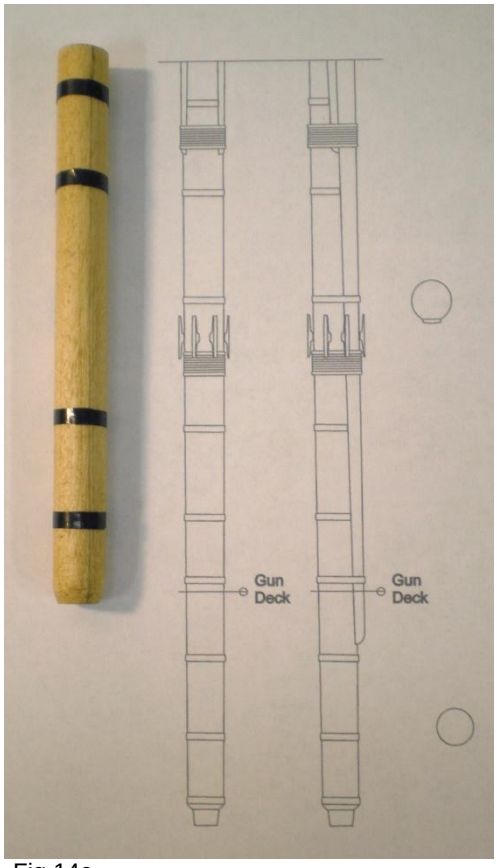


Fig 14c

Next, take a piece of 1/8"x1/16" strip stock and finish it to match your mast. Run one piece the length of the mast for the front fish and another two pieces to length as shown as the cheeks. Don't forget to bevel their ends as shown.

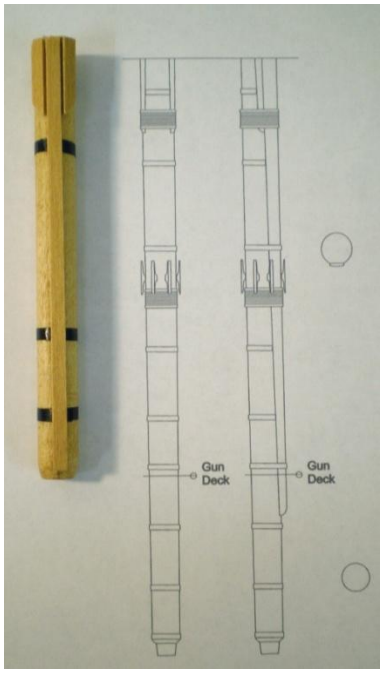


Fig 14d

The Howard Painting (our primary source for appearance) shows the ESSEX's masts painted red from the coats up to about six feet high. Determine where this area would be on your masts and paint in your red color.

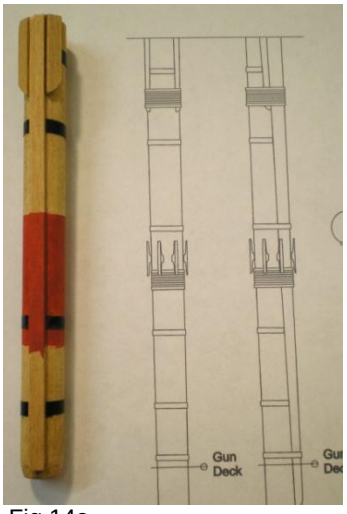


Fig 14e

The next step will be to add the next set of bands and woolings. For the woolings use the beige .42 line. Set the bottom band, make your turns for the wooling and then the top band. Don't forget to use a little cyno to make sure the tape and woolings stay tight. When you're done you can coat them with a flat clear or even paint them black to even out the color.

When that's done very carefully install the laser cut cleats in their positions. Then paint the entire area red.

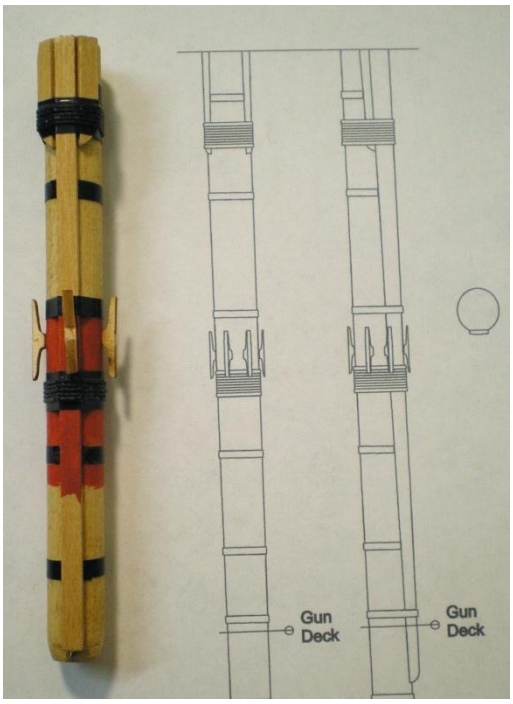


Fig 14f

The last step is to set the mast coat(s) into place. For the Main and Fore masts they'll be the ones with the notch for the fish. As with the gun deck coats cut in the wedge lines first. These too will be painted red. Before you glue the masts and coats permanently dry fit everything to make sure it fits and you have all the masts aligned and straight.


Fig 14g

CHAPTER 15

SHIPS BOAT

Release the first six fillets that comprise the hull of the ESSEX's ship's boat and glue them together centered on one another.

Begin to sand and shape this assembly until it (begins) to resemble the hull of the boat. Bring the stern area in and up creating the "V" of the stern. See drawings page 5.

Fig 15a

Fig 15b

Sand the sides and hollow the interior out to as thin as possible >1/32" if possible. It may be necessary to apply some wood filler if you sand right through as in fig 15b above at the bow.

Fig 15c

Once you are happy with the basic shape and thickness of your hull blank attach the last remaining full fillet and the four half –fillets bow and stern. It will be necessary to fill in across the stern with a piece of scrap.

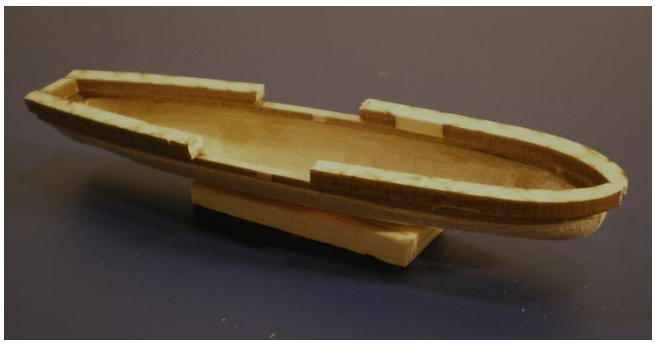


Fig 15d

Blend these new elements into the hull and taper the bow and stern aspects towards the waist as shown on the drawings page 5. If need be use a bit of wood fill in transition.

Continue to create the "V" stern shape and sand the sides as thin as possible. When held up to a light the brightness should almost "glow" through the sides.

When done coat the entire hull inside and out with wood filler and sand out any imperfections for a smooth finish. Apply a sanding sealer over this and sand off any roughness with reducing grits of paper.

Fig 15e

Fig 15f

Fig 15g

Next take a 1/16”x1/8” strip and attach it down the center line along to form the keel and stern post. It may be necessary to soak or heat the strip to make the bend at the bow. Leave the piece long at the bow it will be cut back later.

Fig 15h

The next step if you choose to follow it will add a tremendous amount of realism to our little boat – we’re going to plank it with card stock.

Take some medium weight card stock and cut it into strips about a 1/8” wide and at least an inch longer than the hull. Make a mixture of carpenter’s yellow glue and water at about 50% - 50%. Dip the strips (one at a time) into the mix. Starting at the keel (as you would in any planking procedure) lay the strips on working your way up the hull. “Plank” the stern horizontally. Let the entire assembly dry overnight. When you return the next day you should have a fairly realistic and surprisingly strong little hull. Cut off the long ends.

Fig 15i

Fig 15j

Fig 15k

Next in constructing the boat are the internal frames. At the locations shown on the plans take strips of 1/8”x1/16” stock and glue them into place. It may be necessary to wet or heat the pieces first. When this is done you can paint the interior either to look like wood or white. You can also lay in the floor boards as shown.

Fig 15l

Once done, you can set in the ledgers along the sides using 1/16”x1/32”strips. Next take the grating material provided and cut two platforms that fit into your hull fore and aft.

Fig 15m

On the ledgers place the seats made out of 1/8”x1/16” strip. Release the laser cut seat and front breast hook and install.

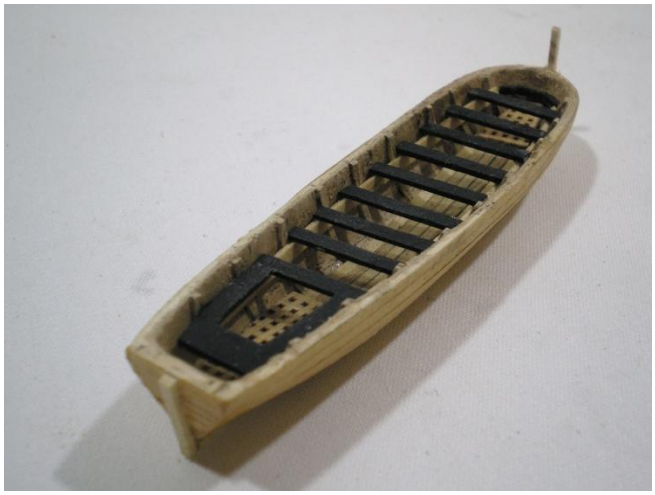


Fig 15n

Before installing the cap rail shape and insert 3-4 more 1/8”x1/16” strips as the front platform.

Fig 15o

Release the laser cut cap rail and install. Also install the front and rear splash boards. Take another piece of 1/8”x16” strip and set it on edge as the seat back. If you haven’t yet you can shorten the stem piece.

Fig 15p

Fig 15q

Take the laser cut rudder and drill a small hole at top. A piece of .22 gauge wire was bent to shape with a drop or two of cyno at the end for the handle. The rudder was “planked” as the hull with card stock strips about 1/16” wide and then painted. The pintles and gudgeans for the boat are just pinstripe tape. You can choose to hang your rudder (just glue it on) or stow it inboard.

Being very careful finish the oars as you like. The proto-type’s were just stained and marked to match the boat. They were bundled and set into place.

Also where indicated on the plans install two eyebolts on their respective seats to receive the tackle hooks.

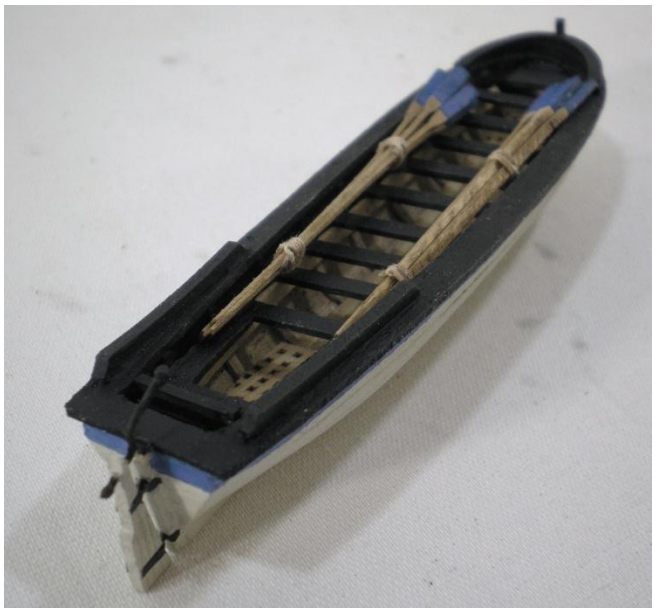


Fig 15r

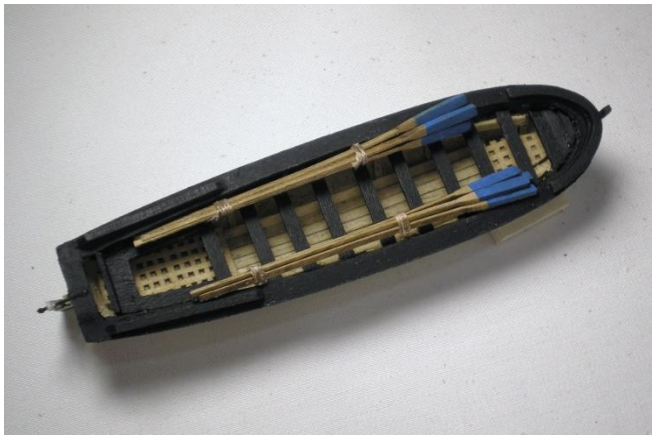


Fig 15s

We’ll install the boat as shown in the Howard painting, hanging from the two stern davits. Take the two 1/8” blocks and .20 line and prep them as you wish. The tricky part in rigging the boat will be the appearance of weight as it hangs from the hooks. Here’s how the proto-type’s was done.

First take the two small photo-etch hooks, finish them as you wish and strop them onto the blocks with a fine thread. Make a small stopper knot in the line and run it through the outside eye on the davits and through the blocks heading back to the stern cleat. Leave about an inch hang in each one. Take a scrap piece of wood and insert it through the loop of the tackle and pull the line tight on it. Now coat the line with a diluted white glue mixed with water so the

lines will dry stiff. When you are satisfied with the stiffness of the tackle remove the block. Your tackles should be hanging straight down as if they were “heavy”. Tie the line end on the davit cleat if you haven’t already and hang a rope coil on it for a realistic look.

Fig 15t

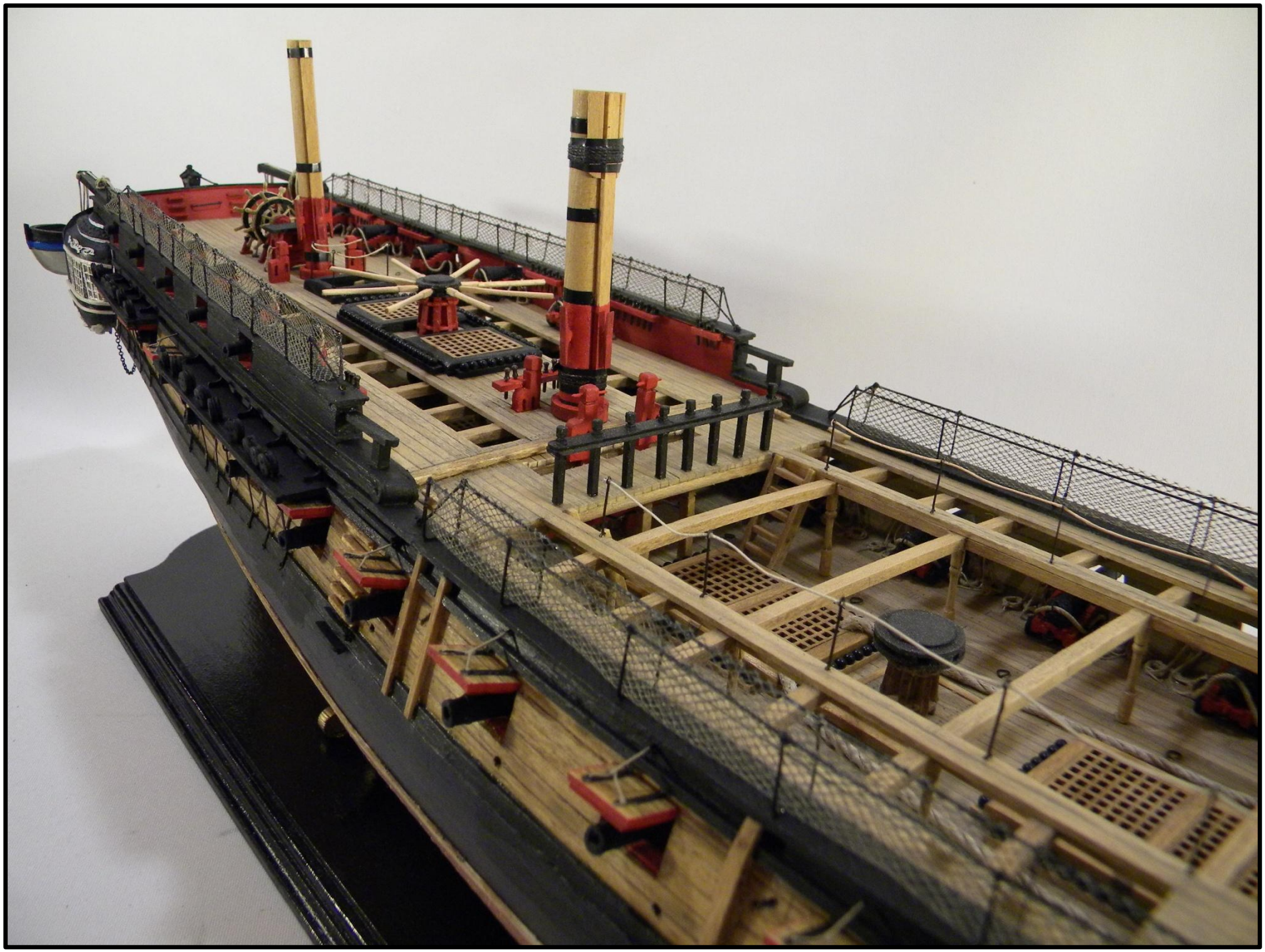
You can now hang the boat on the hooks through the inboard eyelets. If you wish you can gently apply a little downward pressure on the boat and recoat the lines until you’re satisfied.

Fig 15u

CONCLUSION

There are two mounting stands included in the kit. These are the ones the proto-type is resting on. They were assembled, sealed with a lacquer, sanded and then coated with a gold spray paint you can purchase at any hardware or hobby store. Prior to finishing they were drilled through and a screw inserted into the holes in the keel for stability. The entire model was glued onto the base which is available through Model Expo or at your local hobby store.

We're at the end of our project - hopefully you are happy with YOUR ESSEX and the kit from which it originated from. **CONGRATULATIONS!**



PARTS

ITEM	QUANTITY	NUMBER
PLANS	1 SET (6 SHEETS)	
PHOTO-ETCH	1 SHEET	
LASER CUT PARTS	MULTIPLE (SEE PLANS)	

CASTINGS

ANCHORS	2	
FIGURE HEAD	1 (3 PIECES)	
GALLEY STOVE STACK	1	
BELL	1	
WHEEL	2	
LANTERN	1	
QUARTER GALLERIES (P&S)	2 (3 PIECES EACH)	
GANGWAY POSTS	8	
12LB GUNS	26	
6LB GUNS	10	

FITTINGS

WIRE .28g	5ft	WP 123 119
WIRE .22g	5ft	WP 123 121
COPPER TAPE 1/4”	1 ROLL	WP 0976
CHAIN	1ft	WP 0481
NAILS	100	WP 0940
EYE BOLTS	420	WP 0429
NETTING	1	WP 2828
AIRPORT	2	WP 2839
CANNON BALLS	200	WP 1182
SPLIT RINGS	2	WP 0956
BELAYING PINS	72	WP 412B
PINSTRIPE TAPE	1	WP 7-04
BRASS STRIPS (1/64”X1/16”X12”)	2	WP 0888
DEADEYES WALNUT (3/16”)	40	WP 0340
DEADEYES WALNUT (5/32”)	20	WP 2308

FITTINGS (cont.)

ITEM	QUANTITY	NUMBER
BLOCKS WALNUT (1/8") S	2	WP 0302
BLOCKS WALNUT (1/8") D	2	WP 0308
BLOCKS WALNUT (3/16") D	2	WP 0310
BLOCKS WALNUT (3/32") S	216	WP 0301
LINE BEIGE (2.0mm)	3ft	WP 284
LINE BEIGE (.95mm)	1	WP 1244
LINE BEIGE (.28mm)	1	WP 1246
LINE BEIGE (.42mm)	1	WP 1247
LINE BLACK (.12mm)	1	WP 2589

WOOD

(All wood basswood strip)

1/32"x1/32"x24"	14	WP 3600
1/32"X1/16"X24"	6	WP 3602
1/32"X3/32"X24	2	WP 3603
1/32"X1/8"X24"	3	WP 3604
1/16"X1/16"X24"	25	WP 3618
1/16"X3/32"X24"	11	WP 3619
1/16"X1/8"X24"	195	WP 3620
1/16"X3/16"X24	6	WP 3622
1/16"X1/4"X24"	1	WP 3623
1/8"X3/32"X24"	1	WP 3626
3/32"X3/16"X24"	1	WP 3628
1/8"X1/8"X24"	17	WP 3631
3/16"x1/8"x24"	8	WP 3633
3/16"X3/16"X24"	17	WP 3640
1/4"X1/4"X24	1	WP 3643

DOWELS

1/16"X24"	1	WP 5100
1/4"X24"	1	WP 5104
5/16"X24"	1	WP 5105
3/8"X24"	2	WP 5106

TEMPLATES