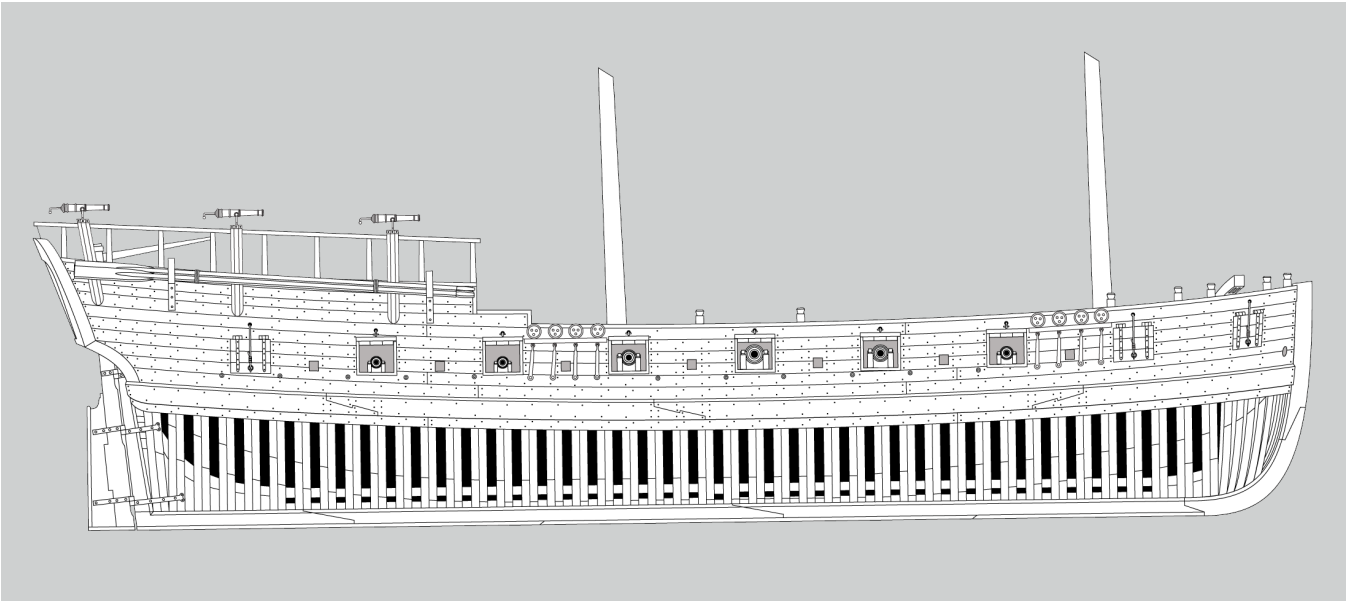
Continental Galley

Washington ~ 1776

Written and Illustrated
by
Jeffry W. Staudt



A Nautical Research Guild Publication

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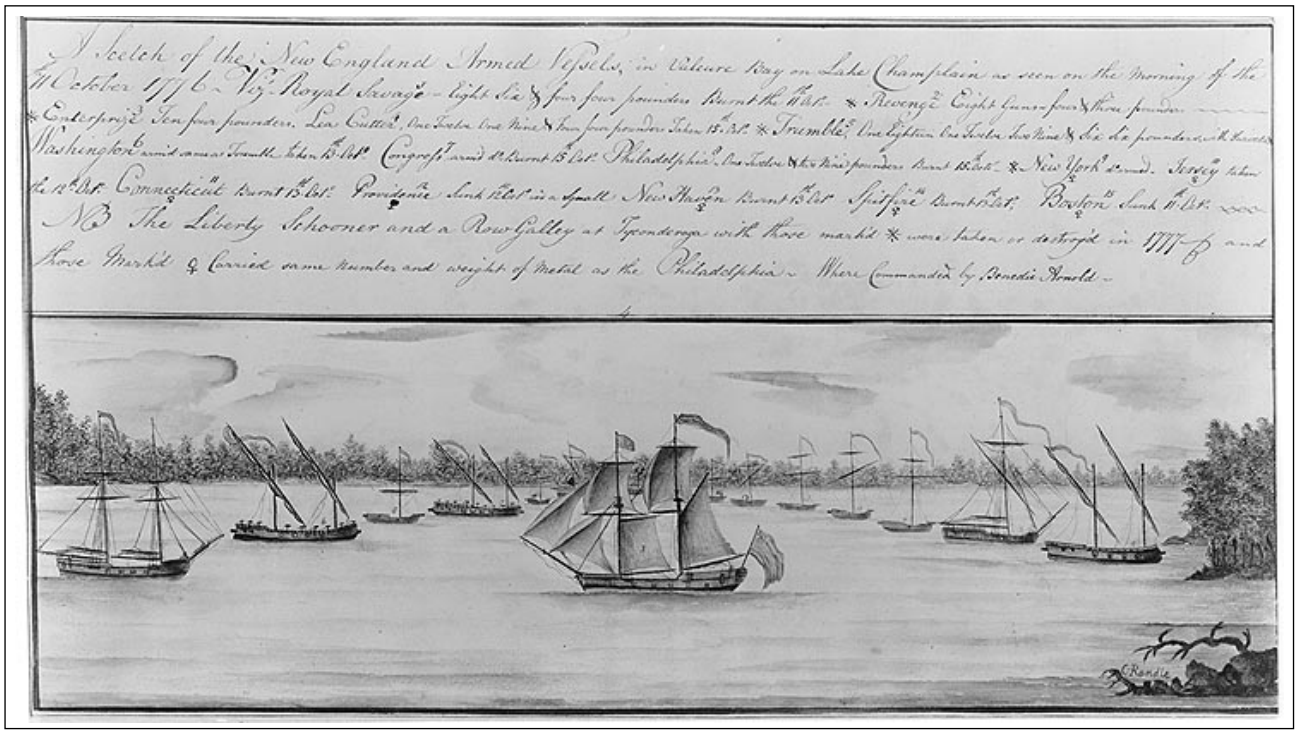
INTRODUCTION

The Continental Galley Washington was a lateen-rigged, two-masted row galley built in the autumn of 1776 on Lake Champlain at Skenesboro N.Y. On October 6 1776, she joined the small fleet established and commanded by Brigadier General Benedict Arnold. The fleet consisted of schooners *Royal Savage*, *Revenge* and *Liberty*. Also the sloop *Enterprise*, and 8 gundalows outfitted as gunboats: *New Haven*, *Providence*, *Boston*, *Spitfire*, *Philadelphia*, *Connecticut*, *Jersey*, *New York,* and the cutter *Lee*. *Washington* was among three row galleys built, the others being the *Congress* and *Trumbull*. During the Battle Arnold commanded the fleet from the galley *Congress*.



A Sketch of the New England Armed Vessels, in Valcure Bay on Lake Champlain as seen in the morning of 11 October 1776 A Contemporary watercolor drawing of the American line of battle by Charles Randle. In the drawing Washington is shown as the second ship from the left.

Commanded by Brigadier General David Waterbury, Arnold's second in command, *Washington* was among Arnold's ships that anchored in the narrow body of water between the western shore of Lake Champlain and Valcour Island to await the expected English move. When that lakeward push began, Captain Thomas Pringle, RN, led the British fleet past Valcour Island on October 11th in search of the Americans. After passing it Pringle sighted the fleet and attacked from leeward. As a result of the battle *Washington* suffered the heaviest damage to the American fleet. The events of the action are best described in Arnold's official battle report to General Gates:

Schuyler's Island, October 12, 1776.

Dear General :—Yesterday morning, at eight o'clock the enemy's fleet, consisting of one ship mounting sixteen guns, one snow mounting the same number, one schooner of fourteen guns, two of twelve, two sloops, a bomb-ketch and a large vessel (that did not come up) with fifteen or twenty flat bottomed boats or gondolas, carrying one twelve or eighteen, pounder in their bows, appeared off Cumberland Head. We immediately prepared, to receive them. The galleys and Royal Savage were ordered under way; the rest of our fleet lay at an anchor. At eleven o'clock they ran under the lee of Valcour and began the attack. The schooner, by some bad management, fell to leeward and was first attacked; one of her masts was wounded and her rigging shot away. The captain thought prudent to run her on the point of Valcour, where all the men were saved. They boarded her, and at night set fire to her. At half past twelve the engagement became general, and very warm. Some of the enemies ships and all their gondolas beat and rowed up within musket shot of us. They continued a very hot fire with round and grape shot until five o'clock, when they thought proper to retire to about six or seven hundred yards distance, and continued the fire till dark.

The Congress and Washington have suffered greatly, the latter lost her First Lieutenant killed, Captain and Master wounded. The New York lost all her officers except the captain. The Philadelphia was hulled in so many places, that she sunk about one hour after the engagement was over. The whole killed and wounded amounted to about sixty. The enemy landed a large number of Indians on the Island and each shore, who kept an incessant fire on us but did little damage. The enemy had, to appearance, upwards of one thousand men in bateaux prepared for boarding. We suffered much for want of seamen and gunners. I was obliged, myself to point most of the guns on board the Congress, which I believe did good execution. The Congress received seven shot between wind and water; was hulled a dozen times: had her main mast wounded in two places and her yard in one. The Washington was hulled a number of times; her mainmast shot through and must have a new one. Both vessels are very leaky, and want repairing.

On consulting with General Waterbury and Colonel Wigglesworth, it was thought prudent to return to Crown Point, every vessel's ammunition being nearly three-fourths spent, and the enemy greatly superior to us in ships and men. At seven o'clock Colonel Wigglesworth, in the Trumbull, got under way; the gondolas and small vessels followed, and the Congress and Washington brought up the rear. The enemy did not molest us. Most of the fleet is this minute come to an anchor. The wind is small to the southward.

The enemy's fleet is under way to leeward, and beating up. As soon as our leaks are stopped, the whole fleet will make the utmost despatch to Crown Point, where I beg you will send ammunition, and your further orders for us. On the whole I think we have had a very fortunate escape, and have great reason to return our humble and hearty thanks to Almighty God for preserving and delivering so many of us from our more than savage enemies.

I am, dear General, your affectionate servant,

B. Arnold.

Arnold regrouped his fleet and slipped past Pringle's in a desperate attempt to escape. However, the British caught the retreating Continental force on October 13th, at Split Rock near Crown Point. Arnold describes the events in his report to General Schuyler:

Ticonderoga, October 15, 1776.

Dear General :—I make no doubt before this you have received a copy of my letter to General Gates of the 12th instant, dated at Schuyler's Island, advising of an action between our fleet and the enemy the preceding day, in which we lost a schooner and a gondola. We remained no longer at Schuyler's Island than to stop our leaks, and mend the sails of the Washington. At two o'clock P. M., the 12th, weighed anchor with a fresh breeze to the southward. The enemy's fleet at the same time got under way; our gondola made very little way ahead. In the evening the wind moderated, and we made such progress that at six o'clock next morning we were about off Willsborough, twenty-eight miles from Crown Point. The enemy's fleet were very little way above Schuyler's Island; the wind breezed up to the southward, so that we gained very little by beating or rowing, at the same time the enemy took a fresh breeze from the northeast, and by the time we had reached Split-Rock, were alongside of us. The Washington and Congress were in the rear, the rest of our fleet were ahead except two gondolas sunk at Schuyler's Island. The Washingion galley was in such a shattered condition, and had so many men killed and wounded, she struck to the enemy after receiving a few broadsides. We were then attacked in the Congress galley by a ship mounting twelve eighteen-pounders, a schooner of fourteen sixes, and one of twelve sixes, two under our stern, and one on our broadside, within musket-shot. They kept up an incessant fire on us for about five glasses, with round and grape-shot, which we returned as briskly. The sails, rigging, and hull of the .Congress were shattered and torn in pieces, the First Lieutenant and three men killed, when, to prevent her falling into the enemy's hands, who had seven sail around me, I ran her ashore in a small creek ten miles from Crown-Point, on the east side, when, after saving our small-arms, I set her on fire with four gondolas, with whose crews, I reached CrownPoint through the woods that evening, and very luckily escaped the savages, who waylaid the road in two hours after we passed. At four o'clock yesterday morning I reached this place, exceedingly fatigued and unwell, having been without sleep or refreshment for near three days.

Of our whole fleet we have saved only two galleys, two small schooners, one gondola, and one sloop. General Waterbury, with one hundred and ten prisoners, were returned by Carleton last night. On board of the Congress we had twentyodd men killed and wounded. Our whole loss amounts to eighty odd.

I am, dear General, your most affectionate, humble servant, B. Arnold.

After her capture *Washington* was repaired, re-rigged as a brig, and put into British service on the lake. It was during this period that her lines were also taken off. This was a process by which drawings were made to show graphically how the ship appeared. The National Maritime Museum in Greenwich, UK retains an original copy of this drawing, and is the basis on which the plans for the model were created.

— * —

The purpose of this monograph is to guide you through the steps to create a model of the Washington. General in nature it won't get into the "nuts and bolts" of specific tools or procedures used to build the ship. For an indepth discussion on any aspects of the project I'd suggest starting a build log at the NRG Model Ship World website. Here you will find many knowledgable individuals and experts in the art of model shipbuilding. I will also be available there to discuss things in greater detail.

The Continental Galley Washington is designed to be built as a plank-on-frame (POF) model. By leaving the hull unplanked this style shows the construction of the ship, various areas of framing and specific details. If this is your first attempt at this type of model you will find it a relatively basic design with some details of a more challenging nature. Using information available on the Washington, along with common shipbuilding practices of the period, every effort has been made to keep the plans historically accurate. How much detail to show on the plans can be an issue at 1:48 scale. This is especially true with small items like the guns, stove, etc. As a builder you can determine how much detail to include in these instances. The plans also include the extensive use of trenails to the planking. Depending on your personal preference, you can install less, or no trenails at all to the model.

Above all else make this an enjoyable project for yourself. You'll become more knowledgable in the construction of this style of ship building, and with a little patience and perseverance create a model which you can be proud of.

BUILDING BOARD

Take some time to familiarize yourself with the plans. I'll be making reference to specific sheets and details as we go along. The plans are designed to aid in the overall model construction while following a logical progression from one step to the next. They also contain the templates that you'll need to construct the various components. The easiest way to use these is to cut each from the plans as needed. You could also make copies, leaving the sheets intact. If you choose this route, it's extremely important that the scale doesn't get altered in any way from the original.

We'll begin by making a building board. See Figure 1. Although this is simply a wooden surface on which the model will be built, it's an important first step. Use something that's large enough to accommodate the framing guide on Sheet 3 of the plans. A piece that's 12” wide x 24” long x 3/4” thick would be an ideal size. Make sure that it's flat, without any bowing or cupping.

Add two strips of wood under the board to offset it from the workbench top. This will allow the use of any clamping device used to attached various alignment jigs during the model's construction. On both ends measure and mark the center of the width of the board. Draw a pencil line the entire length.

Attach the framing guide from the plans to the board, aligning the centerline to that which you've just drawn on it.

Now at the indicated locations carefully drill and add the two alignment pins. I'd suggest a 3/32” section of brass rod for this, however a wooden dowel would work as well. We don't want it to protrude completely through the keel so make sure it's less than 1/4” in height. This will keep the keel aligned properly, as well as everything secure to the building board while the framing construction progresses.

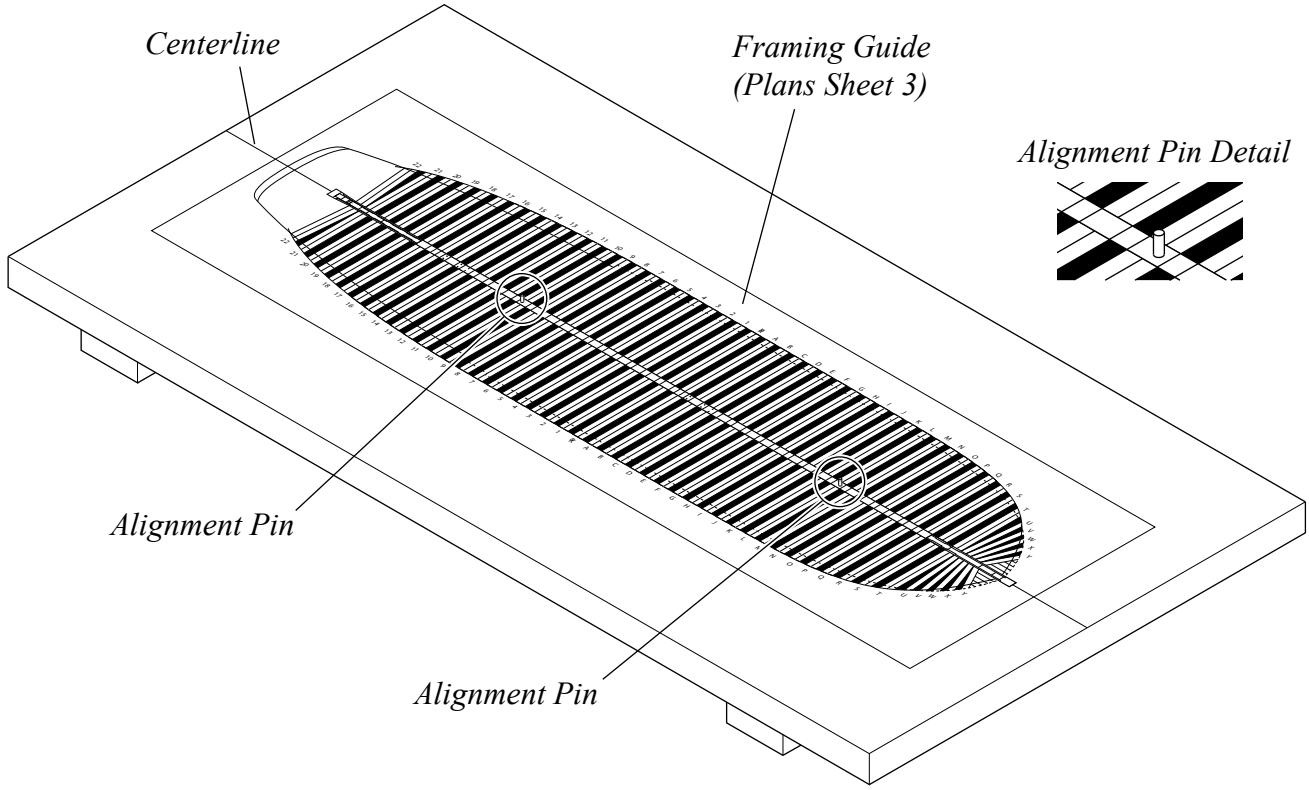


Figure 1 - Building Board

KEEL CONSTRUCTION

The keel consists of three pieces with scarph joints between. Using the templates cut and assemble the individual parts, making sure that they're straight along the length and width. Add the false keel to the bottom. See Figure 2.

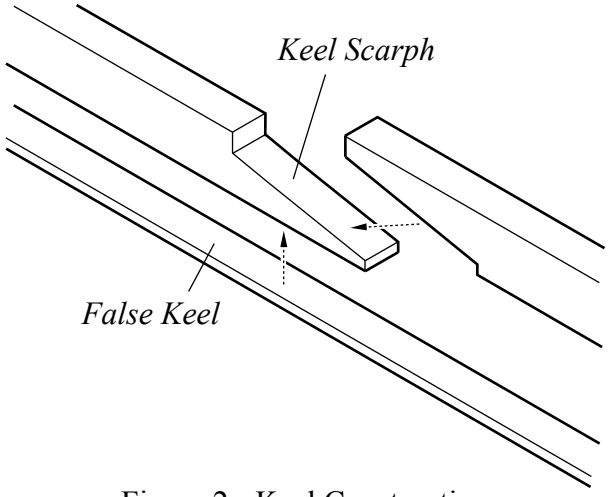


Figure 2 - Keel Construction

Now that the basic keel is completed it's time to add the final details. Start by adding the rabbet along both sides. Carefully measure and cut the recesses into the top. This surface will be where the frames attach and it's important that this is consistent along the entire length of the keel, and match the framing guide and plan details. See Figure 3.

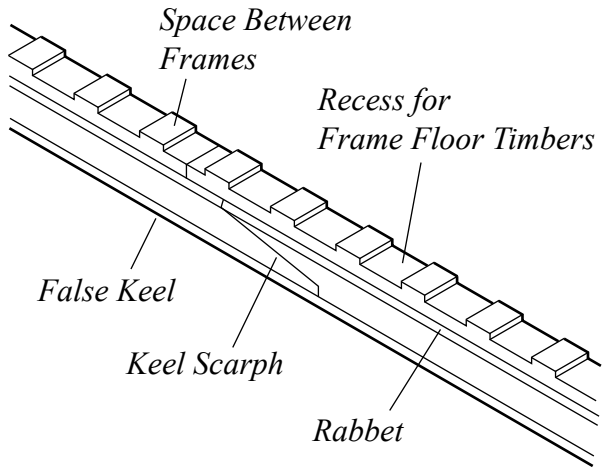


Figure 3 - Finishing the Keel

BOW AND STERN

We're ready to build and attach the bow and stern to the keel. See sheet 3 of the plans for the templates. I'll start with the bow. Cut out and assemble the stem post and apron pieces. See Figure 4. Once completed add the recessed surfaces as indicated. These areas will be where we'll attach the forward half frames later.

Assemble the bow to the keel making sure that everything continues to be aligned properly, and maintains a straight profile along the length, and height.

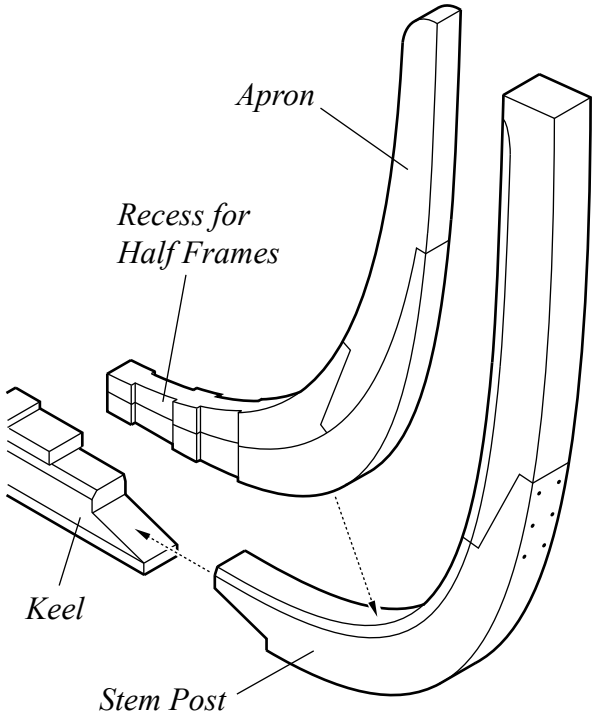


Figure 4 - Bow Construction

The stern is constructed with several parts; stern post, inner post, and deadwood. Using the provided templates cut out and assemble all of these pieces. See Figure 5.

Like the bow, the stern has recessed surfaces to accept several sets of half frames. After adding these also make the notched area to the inner post. This area is where we'll be fitting one of the transom pieces later.

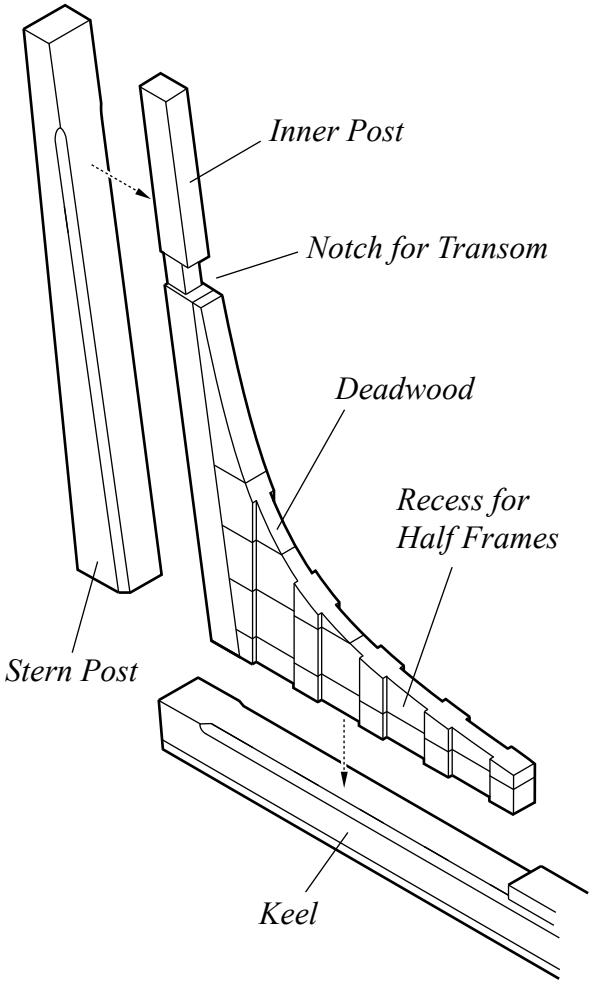


Figure 5 - Stern Construction

Assemble the stern to the keel, and as before continue to keep the profile straight. Do a visual inspection to make sure the overall assembly (keel, bow, and stern) matches that of the plans in length and height. All of the recessed areas along the top of the keel have to match their corresponding locations on the building board framing guide as well.

Using the information provided on the plans measure and drill two bind holes up into the bottom of the keel. These locations are where we'll be inserting the alignment pins when the keel is placed on the building board. They only need to be deep enough to allow the part to fit flush against the top.

Now using the alignment pins as a guide, carefully place the keel assembly on the building board. The recesses and spacing between the frames need to line up correctly, along with the overall length. See Figure 6. The fit should be tight enough to hold things secure but allow the ability to remove the model when we'll sand and fair up all of the framing later.

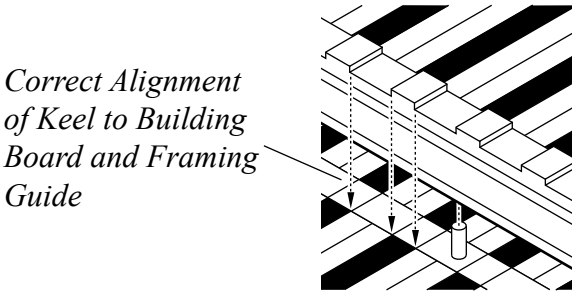


Figure 6 - Placing Keel on Building Board

Make two simple alignment fixtures to hold the bow and stern square to the building board. See Figure 7.

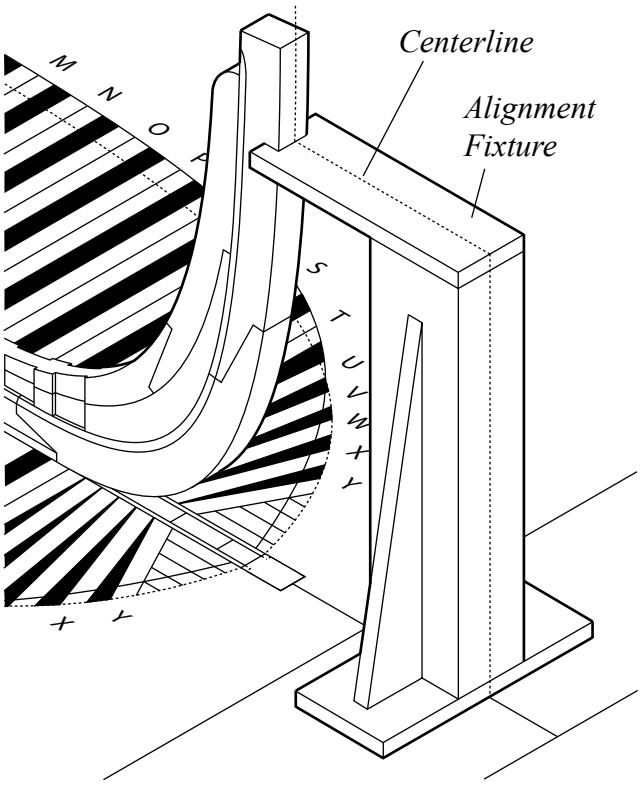


Figure 7 - Alignment Fixture at Bow

Once you've established the correct square alignment of the bow and stern permanently attach the fixtures to the top of the board. We now have a solid backbone on which to start adding the frames.

SQUARE FRAMES

We're ready to begin framing our model. All of the square and half frames are of a double design, consisting of forward and aft pieces. Start with the midship frame denoted by the symbol ⊠ Cut out the floor timbers, futtocks, and top timbers for each half. Assemble and add the drift bolts at each joint location. Also as you go along add the notches for the gun and sweep port upper and lower sills on the appropriate frames. See Figure 8.

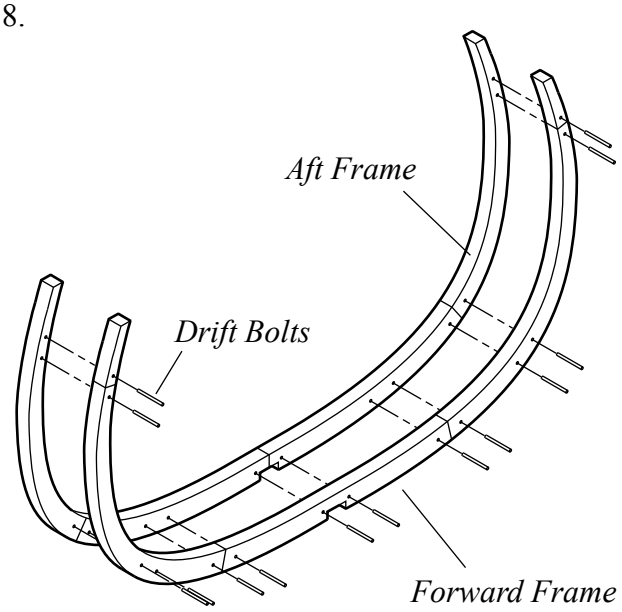


Figure 8 - Square Frame Detail

Using the template as a guide mark the level waterline (LWL) location on both port and starboard outside surfaces. Now would also be a good time to indicate the location of the deck clamp on the inside.

To keep all of the framing consistent throughout the building process a simple frame squaring jig should be made. Draw a line indicating the level waterline at the correct height from the top of the building board. Adding a vertical centerline would also be helpful. See Figures 9 and 10.

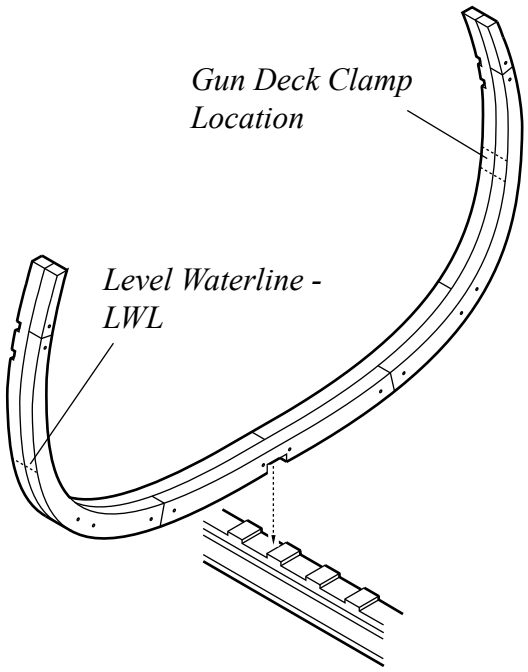


Figure 9 - Placement of Midship Frame

To attach the frame align it with the correct corresponding recess and attach to the keel. Using the frame squaring jig line up the level waterlines you've indicated on jig and frame. This will insure that its properly square with the building board, and parallel with the top surface. Clamp the frame in place until the glue has set.

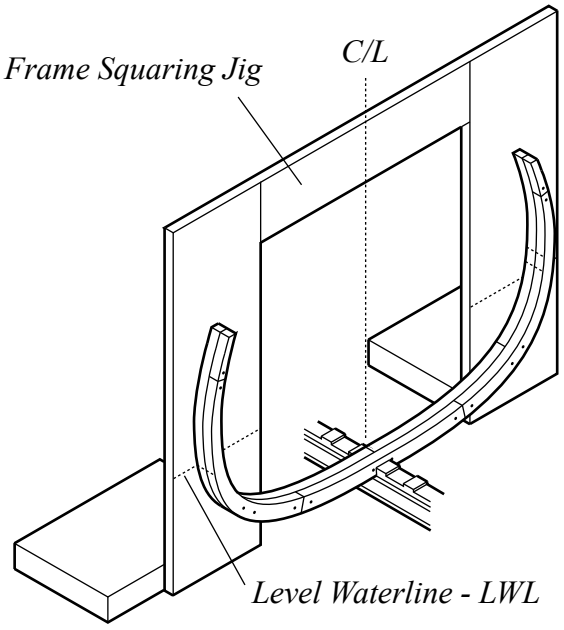


Figure 10 - Frame Alignment Procedure

Frames A to F forward of midship, and 1 to 7 aft are all dead flat frames that follow the same shape and curvature of the midship frame. Notice however that the elevation of the top timbers rise as the frames progress forward and aft of midship. While they can be cut to the correct height, it would be advisable to add a little additional length to the tops, and after all of the framing is done trim everything to the correct finished height. Using the templates cut and assembly all thirteen dead flat frames.

Continue to progress forward and aft attaching each individual set of frames to the keel as described previously. Add fillers in the open spaces between each set of top timbers to keep the alignment correct, as well as adding strength to the structure. Attach the gun port and sweep sills in place as you go along as well. See Figure 11.

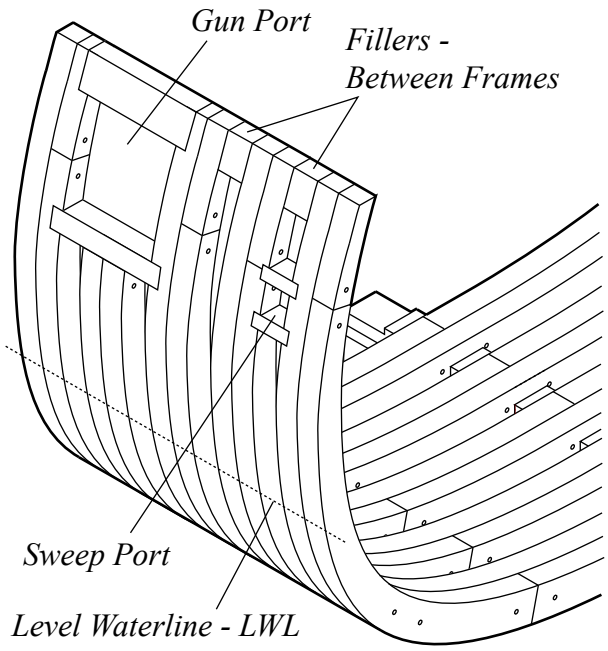


Figure 11 - Frame Construction Details

The basic principles used to build the midship and dead flat frames will be the same for the remaining framing. You'll notice, however, that the hull will now start changing in shape and contour, as well as beveling towards the bow forward and stern aft. See Figure 12.

As the frames are built sand the surfaces to match the degree of bevel indicated. Once installed they should blend from one set of frames to the next fairly well but need not be to the exact finished shape yet. All of the hull will be faired up once everything's in place and the finish sanding and blending will be done then.

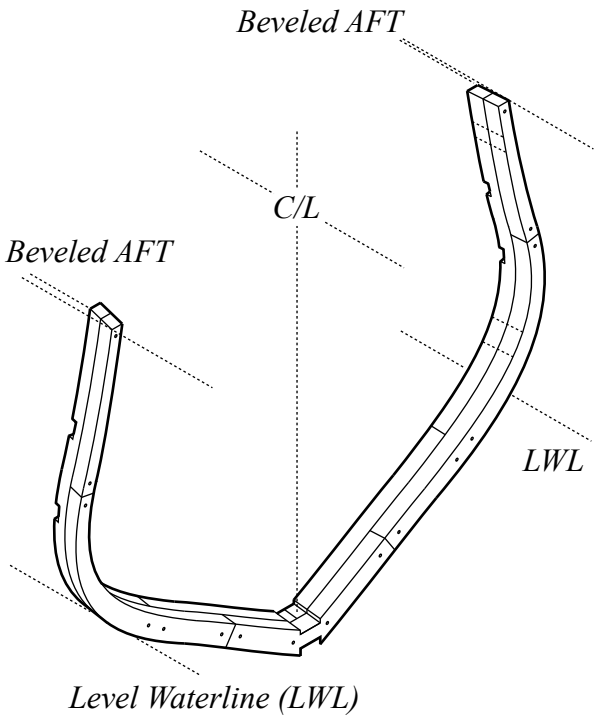


Figure 12 - Aft Frame Bevel Detail

Add the remaining full square frames to the hull forward (Frame R), and then towards the aft (Frame 17). Keep the waterline alignment correct and as the hull shape progresses and visually inspect to insure that each set of frames continue to blend correctly with the previous.

SQUARE HALF FRAMES

Now that all of the full square frames are in place we now need to add all of the half square frames. There are two sets at the bow (Frames S and T) and four sets (Frames 18 to 21) at the stern. Cut each set, assemble, and shape to the correct contour. Staring at the bow add each half to the recesses in the apron. See Figure 13.

Using the frame squaring jig align in the same manner as before making sure the waterline is maintained, as well as a visual inspection of the transition from the previous frame.

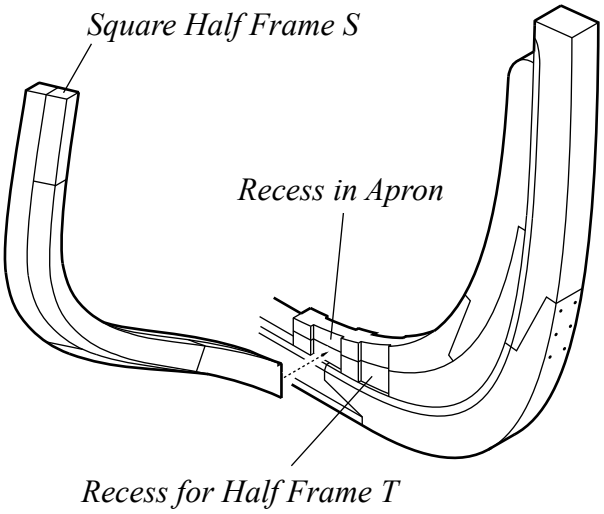


Figure 13 - Square Half Frames at Bow

Now repeating this process attach half frames 18 to 21 to the recesses in the stern deadwood. See Figure 14. Install the gun port sills between frames 17 to 19, and add the top timber pieces from frame 18.

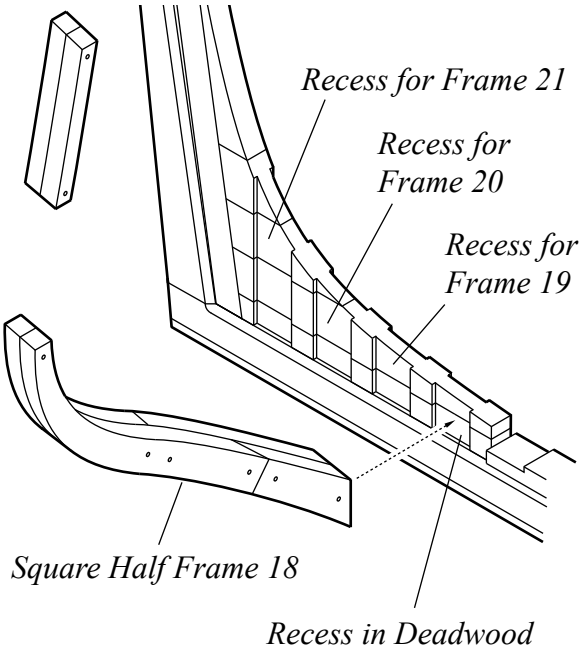


Figure 14 - Square Half Frames at Stern

STERN FRAMES AND TRANSOM

Now that all of the square framing has been installed on the model we're ready to complete the remainder of the bow and stern. Because of the extreme contour of the hull, especially at the bow, we will be adding sets of cant frames. Instead of being installed perpendicular to the centerline of the vessel they are angled as necessary to follow the contour of the hull.

We'll start at the stern. All of the templates and construction details for the following steps are found on sheet 7 of the plans. We'll cut out and assemble cant frames 22 as well as build the stern transom. These parts are numbered 1-8 on the plan sheet.

In order for cant frame 22 to be installed correctly we'll need to cut out and install the gun deck transom (Part 1) from the plans. Install this into the notch on the inner post. See Figure 15.

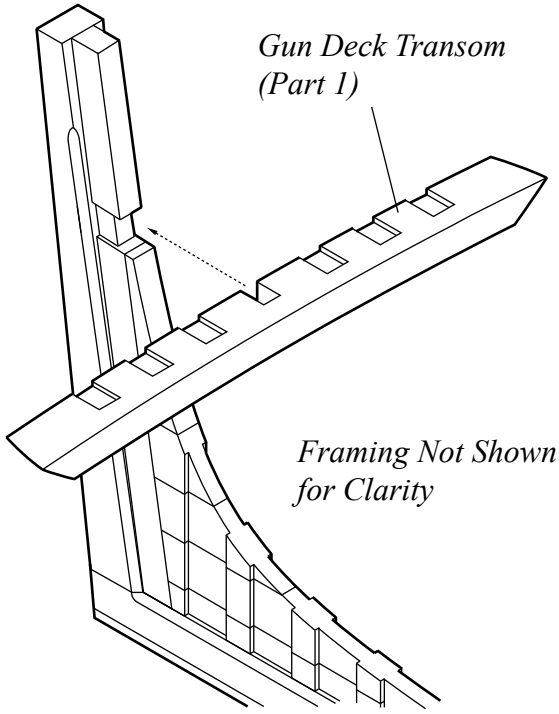


Figure 15 - Installation of Gun Deck Transom

Now cut out cant frame 22. Attach to the stern deadwood directly behind frame 21. The forward frame section attaches to the front of the gun deck transom, while the shorter aft section of the frame butts up against the bottom of the transom. See Figure 16.

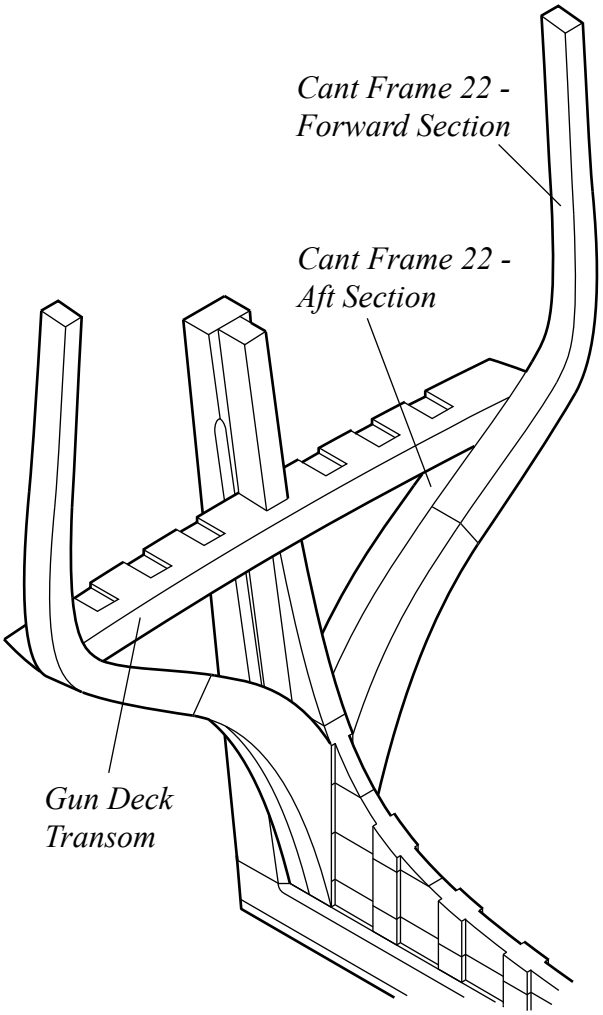


Figure 16 - Installation of Cant Frames

We're ready to start building the stern transom. Start by cutting out the counter timbers (Parts 2 – 4) followed by the transom beam (Part 6). Assemble the counter timbers to the gun deck transom at the recessed locations. See Figure 17. Now attach the transom beam to the counter timbers at the location shown on the plans and Figure 18.

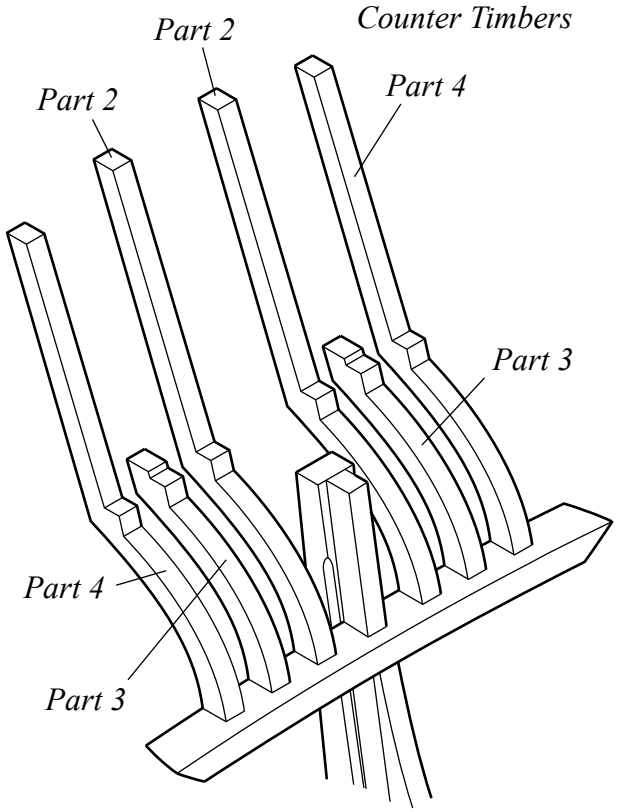


Figure 17 - Installation of Counter Timbers

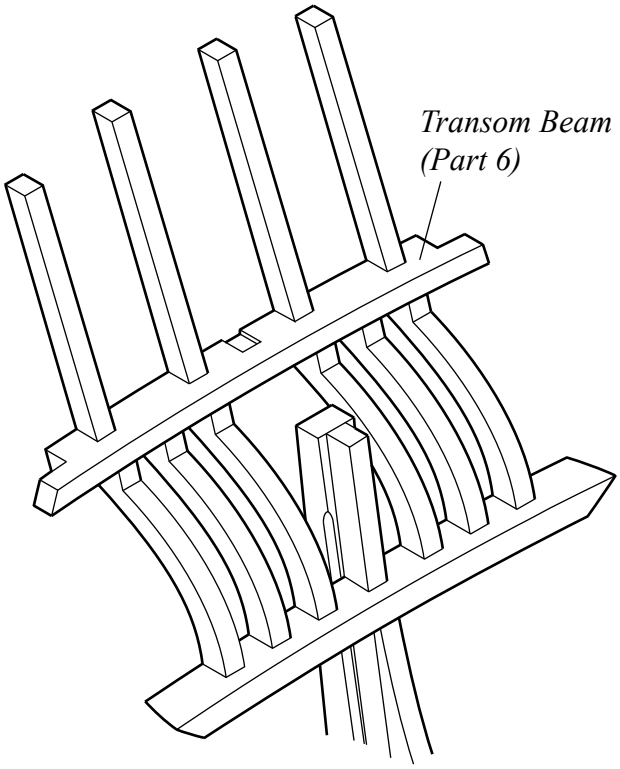


Figure 18 - Installation of Transom Beam

Now cut out and add the quarter deck transom (Part 7) to the correct location on the counter timbers. Add the filling timbers to finish the framing around the openings for the light sashes and top area above the quarter deck transom. See Figure 19.

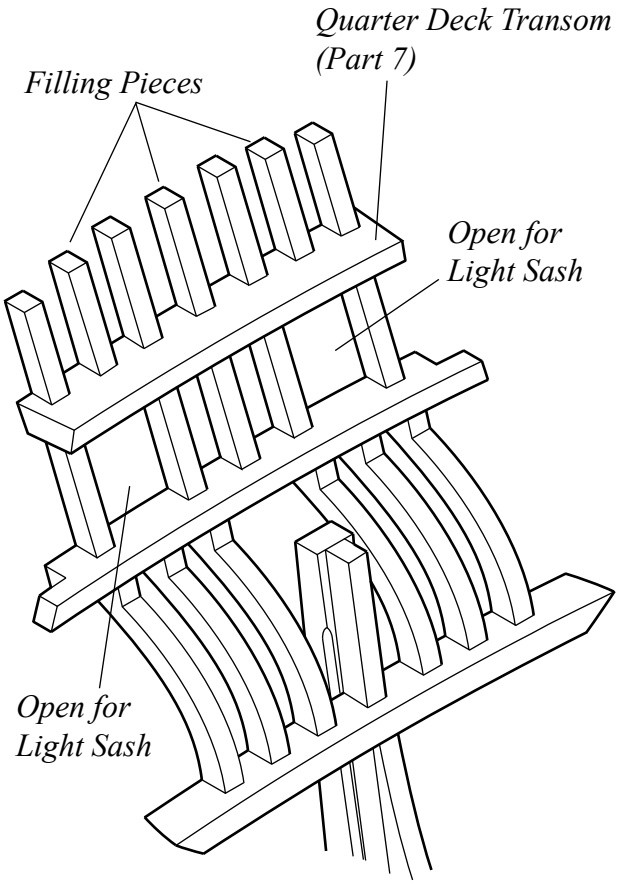


Figure 19 - Installation of Quarter Deck Transom and Filling Pieces

To complete the transom start by cutting out and installing the taffrail (Part 8). Add the side counter timbers (Part 5) to finish the stern. These timbers are somewhat complex in shape and care should be taken to sand them to the correct contour that follows the bevel of the hull framing. Add the filling timbers between cant frame 22 and the side counter timbers. Complete by adding the lower filling transoms and pieces. Sand as needed to blend these parts into the lower aft portion of cant frame 22. See Figure 20.

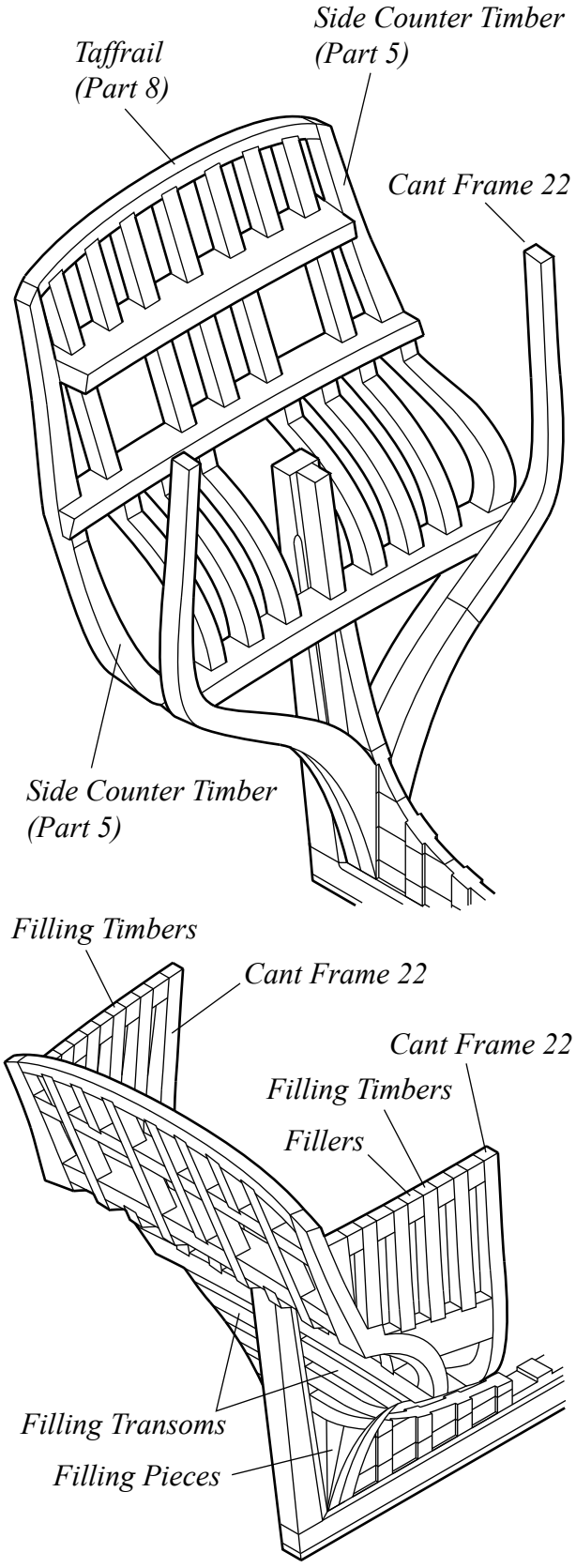


Figure 20 - Stern Transom Completed

BOW CANT FRAMES

We'll complete the hull framing by adding the cant frames at the bow. The templates for these (cant frames U - Y), as well as the hawse pieces, are found on sheet 5 of the plans.

Cut out each set of frames making sure that the tapered surfaces are correct. Using the framing guide on the building board, and a simple jig to maintain the proper alignment, attach the first set (cant frame U) to the apron. See Figure 21. Notice that the angle increases as you install each set forward of the last. Repeat this process until all of the cant frames, as well as the fillers and gun port sills are in place.

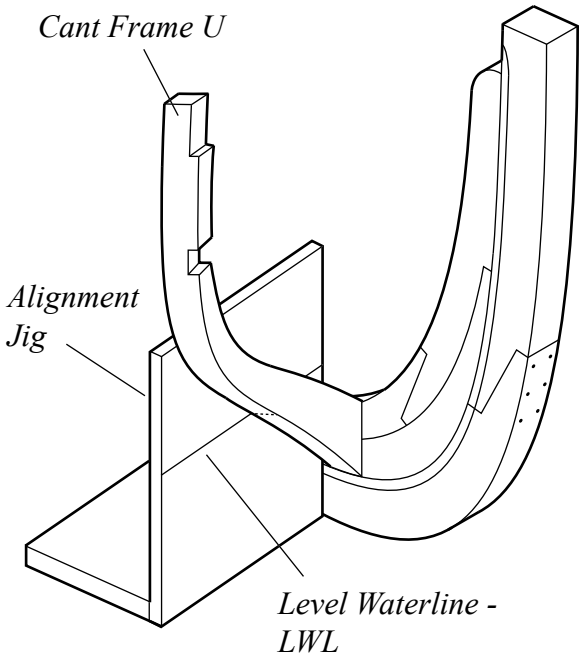


Figure 21 - Bow Cant Frame Installation

Once all of the cant frames are in place the only thing left to complete is adding the hawse pieces. See Figure 22. Start by studying the detail on the plans. Make the basic part by gluing together five pieces roughly to the final size and shape. Using the leading edge of cant frame Y, and the apron as a guide fashion the piece to it's final shape. It will take a little trial and error to get the shape correct and creating a cardboard template as an aid would be helpful.

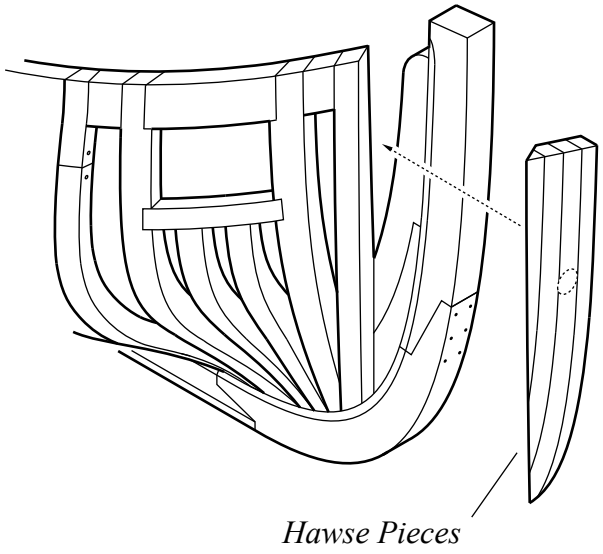


Figure 22 - Hawse Piece Installation

The holes in the hawse piece are for the anchor rope and won't be added until later when the inside and outside planking is in place. Figure 23 show the completed bow.

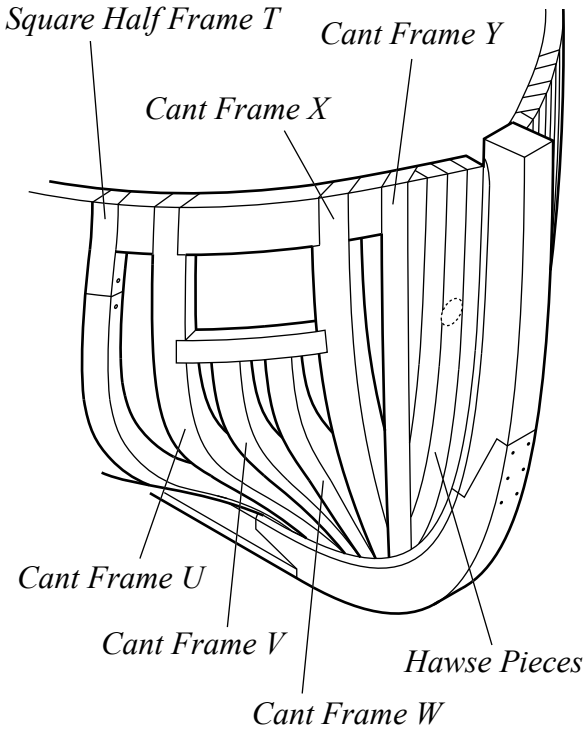


Figure 23 - Bow Completed

KEELSON INSTALLATION

The keelson attaches above and fastened to the keel in order to stiffen and strengthen the framework. It consists of five pieces with scarph joints and is found on sheet 3 of the plans. Start by attaching the forward section and one piece of straight timber to the apron at the bow. See Figure 24.

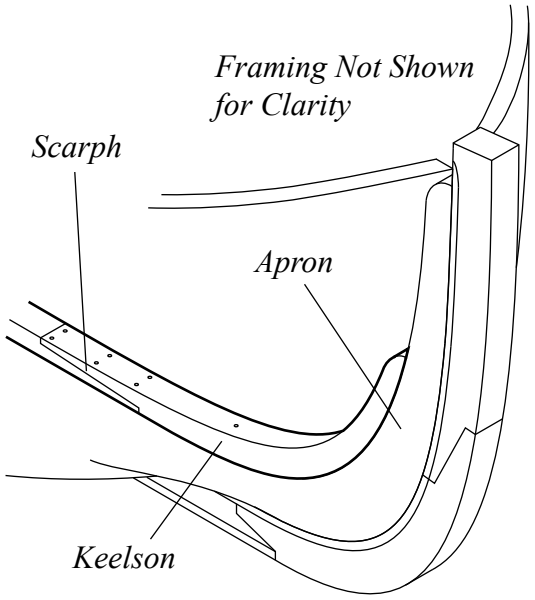


Figure 24 - Keelson at Bow

Next install the stern portion, along with one section of straight timber to the top of the stern deadwood. See Figure 25.

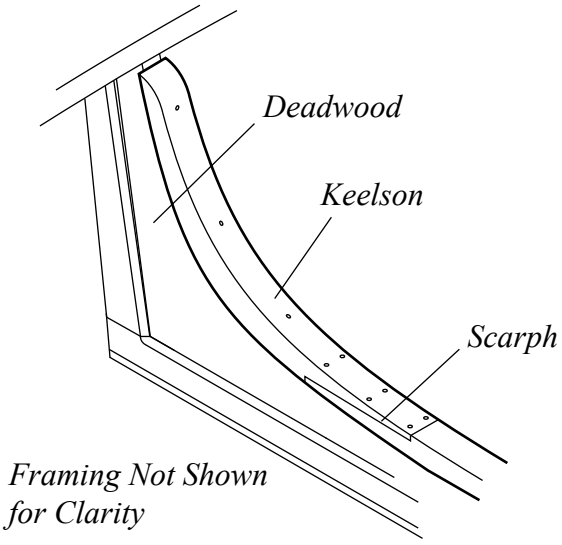


Figure 25 - Keelson at Stern

Finally add the remaining straight portions between. See Figure 26. Check the measurements of these pieces to make sure to get a nice tight fit along the entire length of the keelson. Add drift bolts as desired.

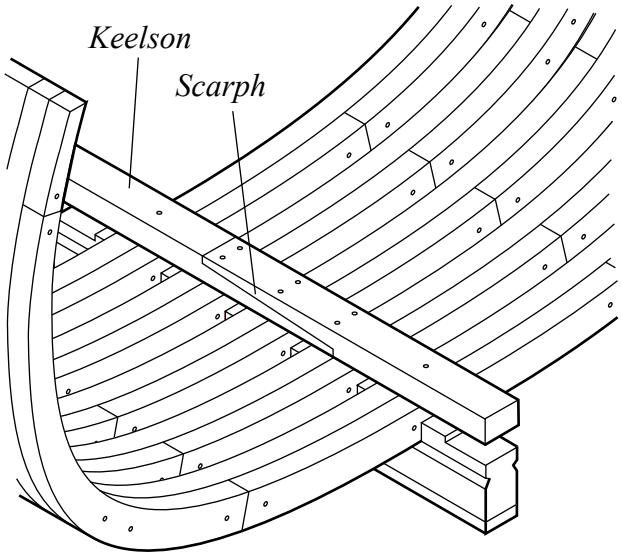


Figure 26 - Keelson at Midship

FAIRING THE HULL AND ADDING DECK CLAMPS

Before beginning the inside hull we need to fair the framing. Inspect the overall surfaces of the frames to make sure that each blends smoothly to the next. Fair (sand) where needed to remove any uneven areas. Finish by sanding the entire hull interior to achieve a nice even surface on which to add the deck clamps and planking details. Be careful not to damage the keelson during this process.

Deck clamps are horizontal timbers attached to the framing to support the deck beams and will also add strength to the structure. Cut out the gun deck and quarter deck clamps. Because of the extreme length of the gun deck the clamp will be in three pieces. After fairing you may have to re-mark the locations for these on the framing timbers. After doing so install the clamps on both port and starboard sides. See Figure 27.

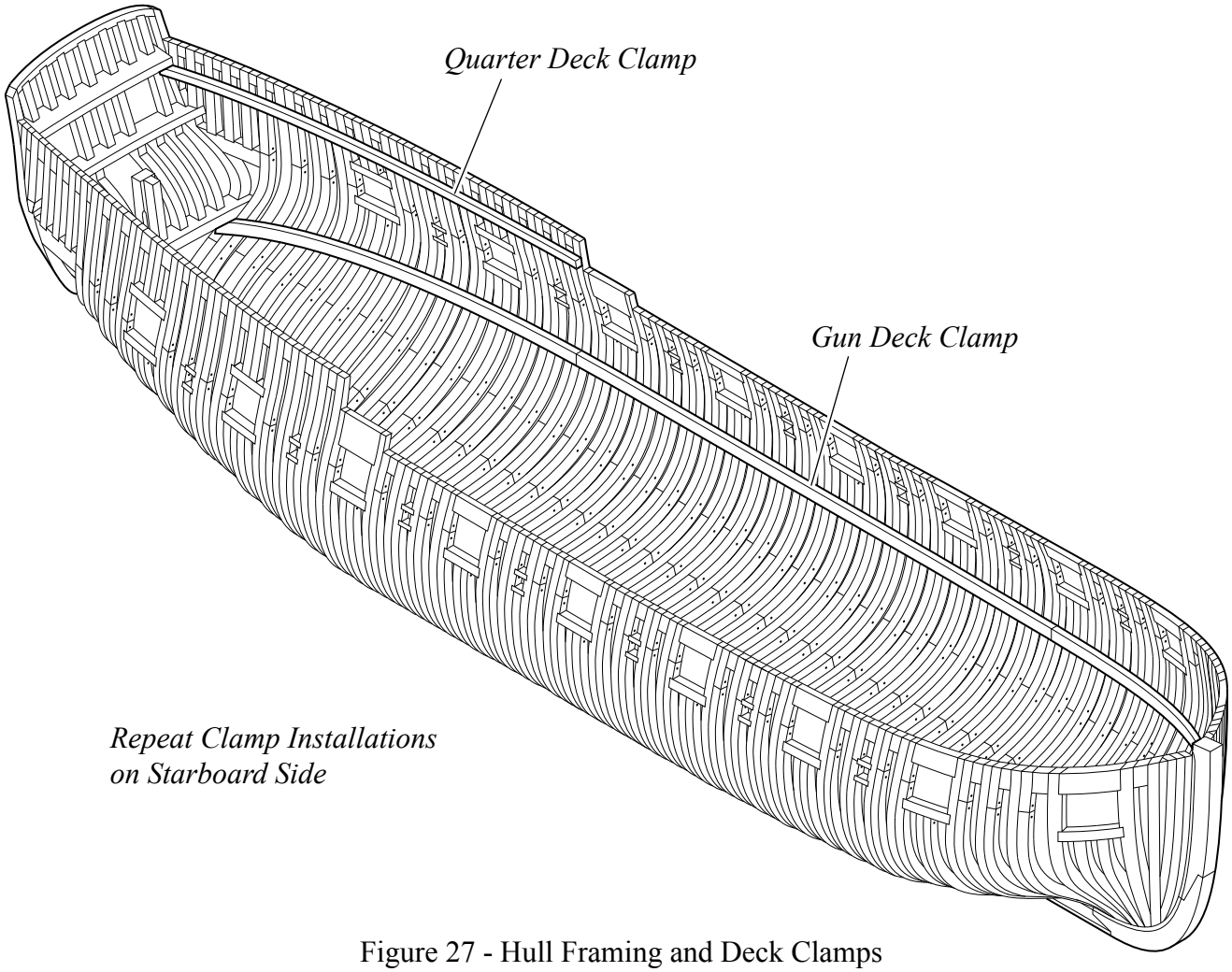


Figure 27 - Hull Framing and Deck Clamps

Now that the clamps are in place the model is structurally strong enough to fair the outside surfaces of the framing. Repeating the process for the inside, inspect and fair the outside framing. Be careful not to damage the keel, bow, and stern details.

MAST AND CAPSTAN STEP INSTALLATION

Washington has two masts – main and fore, and a capstan. We'll need three steps on which to secure these to the hull. Using the templates on sheet 8 of the plans make the three steps. Notice that two have a square recess to accept the heel of the masts, while the capstan a round recess.

Mark the correct locations on the keelson and assemble the steps to the hull as shown on sheet 8 and Figures 28 and 29.

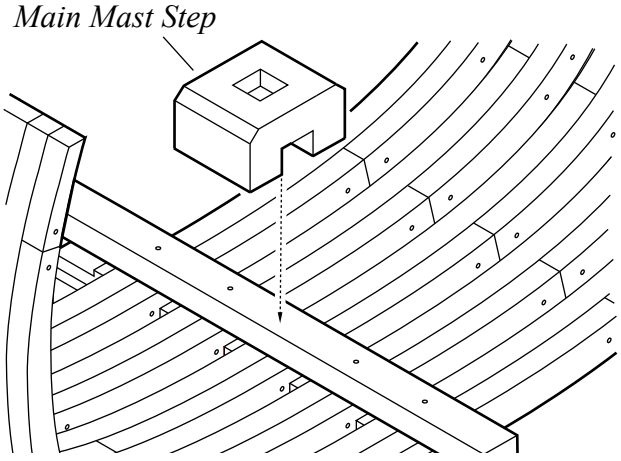


Figure 28 - Main Mast Step Installation

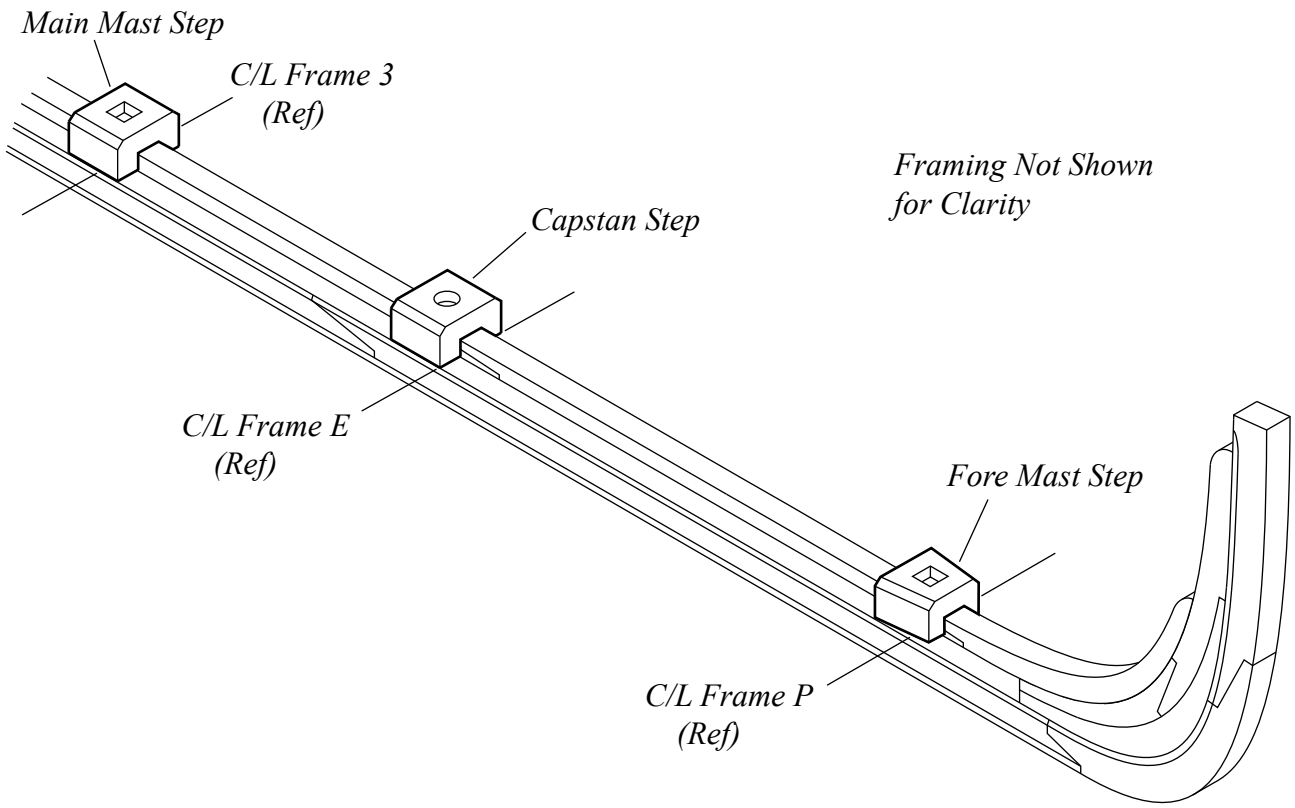


Figure 29 - Mast and Capstan Step Locations

LIMBER PASSAGE

The limber passage is a channel on each side of the keelson, and runs the entire length of the floor to permit the bilge water to flow to the pumps. It consists of two limber strakes, one on each side of the keelson. The upper part is formed by limber boards. These are used to keep out dirt and obstructions from entering the passage way and are made in short removable sections for access purposes. Figure 30 shows a profile view of the passage at midship.

Using sheet 8 of the plans make the limber strakes and boards. These are built using scarph joints between pieces. The inner sides have a rabbet cut into them to accept the limber boards. Assemble to the hull as shown on Figures 31 and 32. Trenail as desired.

Now make and add the limber boards. Both edges need to be beveled – the lower rests in the rabbet in the strake, the top rests against the side of the keelson. The small removable boards also have two holes. These would be used in removing them when inspecting the passage below. Follow Figure 31 and 32 for installation.

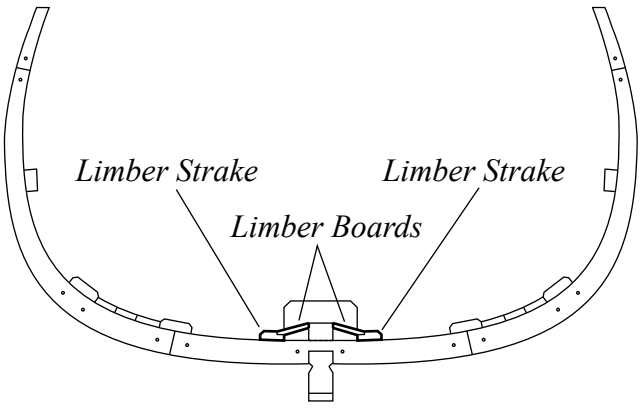


Figure 30 - Limber Passage at Midship

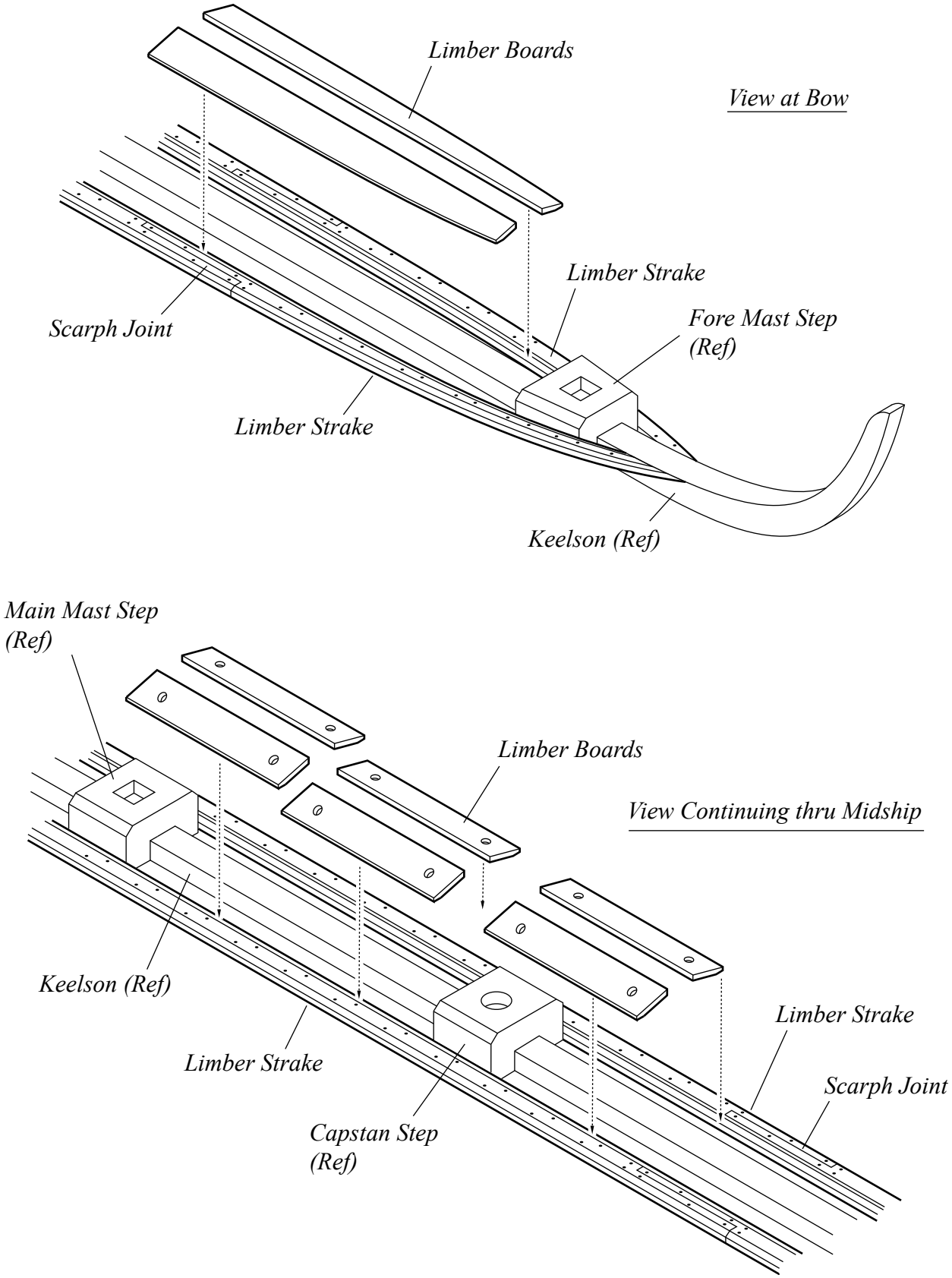


Figure 31 - Limber Strake and Board Installation

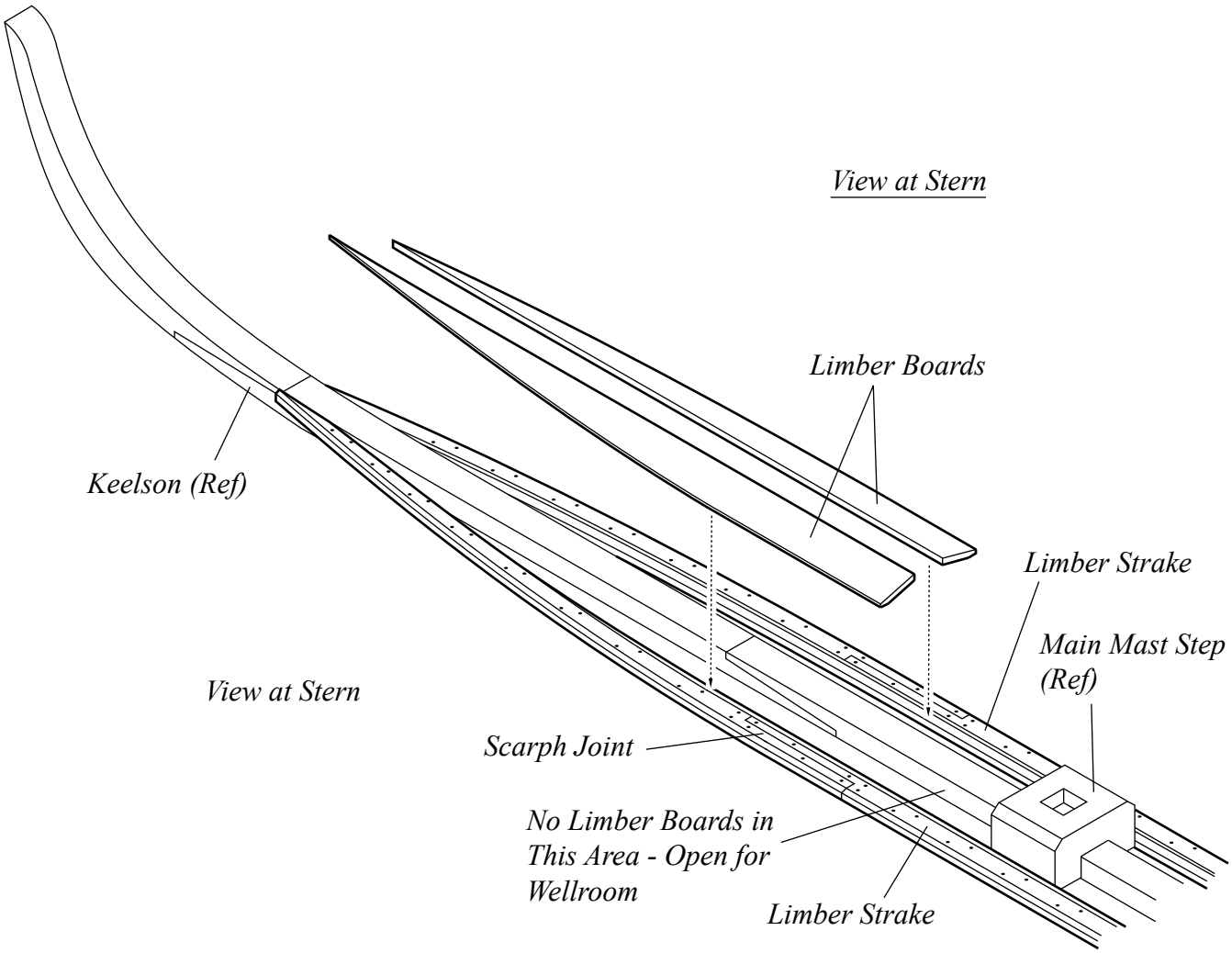


Figure 32 - Limber Strake and Board Installation at Stern

THICKSTUFF AND PLANKING

The inside lower hull surfaces of the Washington model will not be entirely planked. We will however add a portion, the thickstuff and planking. Thickstuff is a term used for timbers exceeding four inches in thickness. These timbers and planking will be used as a surface upon which to rest the platform, as well as to add some additional interest to the model. Figure 33 shows the profile of these at the midship location.

Continue to use sheet 8 of the plans for making these parts. Cut out the lower portion of thickstuff and assemble the pieces to the hull using scarph joints. The three rows of planking between will be added next, followed by the upper portion of thickstuff which is assembled in the same manner as the lower portion. See Figure 34. Trenail as desired.

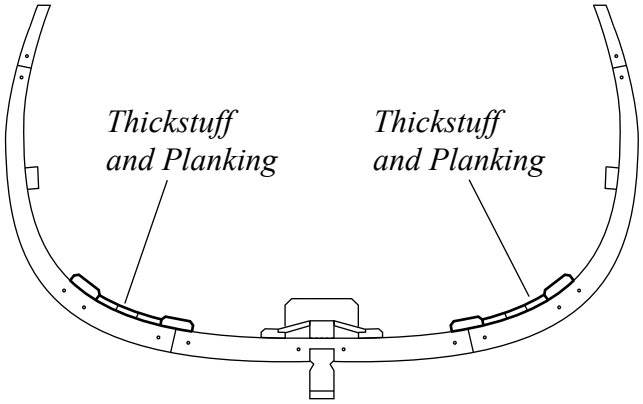


Figure 33 - Thickstuff and Planking at Midship

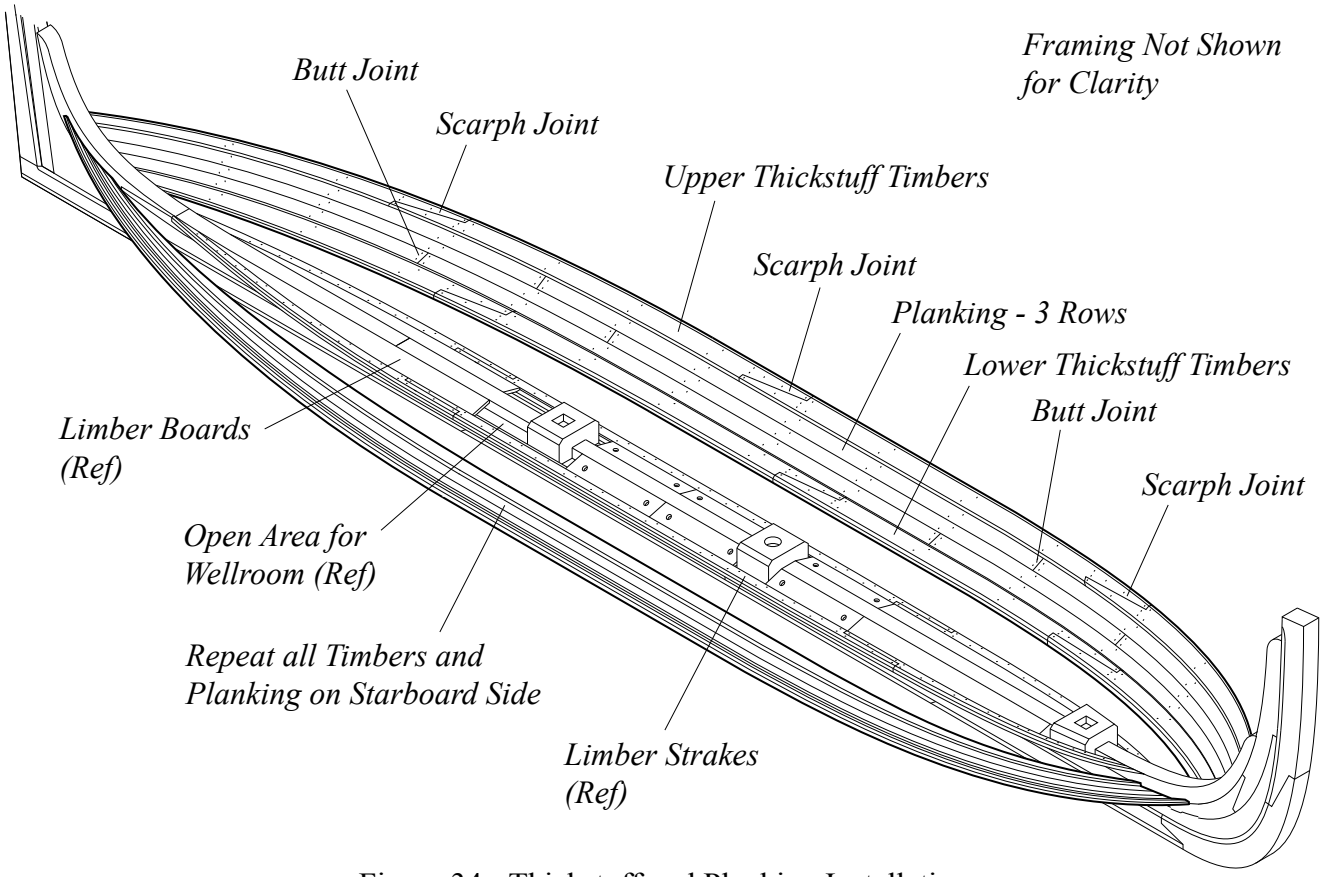


Figure 34 - Thickstuff and Planking Installation

BREASTHOOK, CRUTCH AND RIDING BITT

Now we're ready to add the breasthook, crutch, and riding bitt. The breasthook is a timber that strengthens the framing crosswise at the bow, while the crutch reinforces the half frames at the stern.

Using sheet 8 of the plans make the breasthook and crutch. Each part fits across the keelson with the outside surfaces mounting flush against the framing. Check the contour of the framing in these areas using a cardboard template and transfer this shape to the parts as needed to make sure of a good fit. Assemble as shown on sheet 8 and Figures 35 and 36.

Riding bitts were used on ships to secure the cable of a dropped anchor. Using detail C on sheet 2 of the plans cut out and assemble the three parts. Assemble to the hull as shown on sheet 8 and Figure 36.

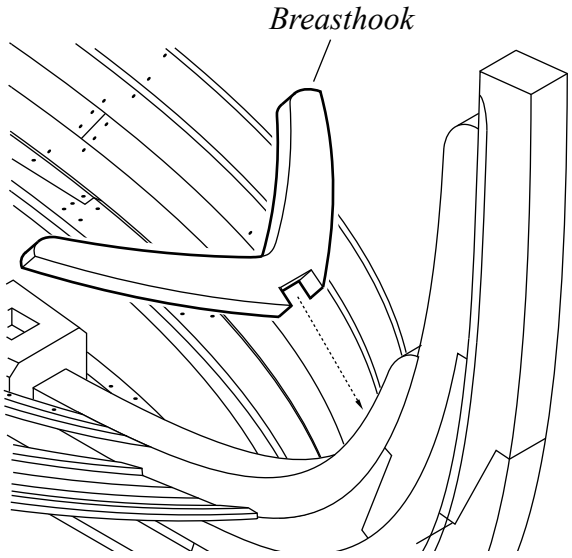
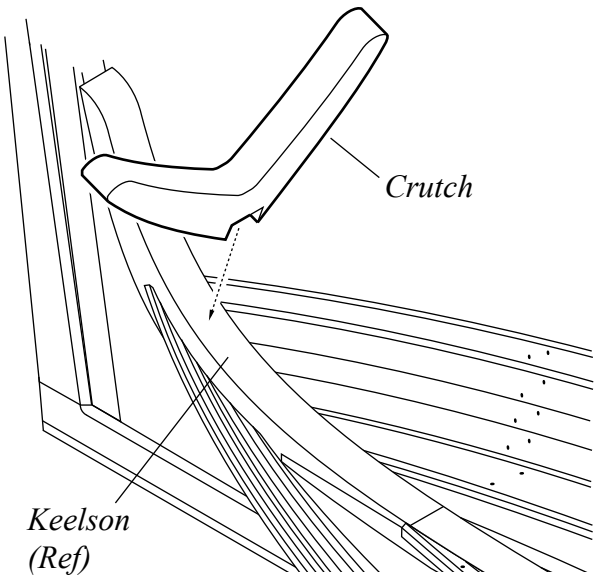


Figure 35 - Breasthook Installation



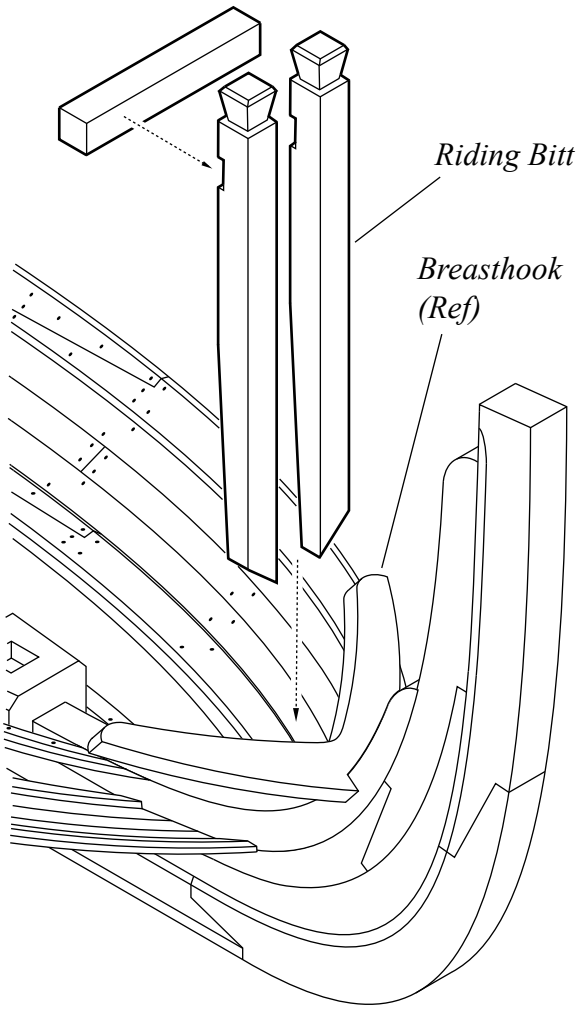


Figure 36 - Crutch and Riding Bitt Installation

HOLD INTERIOR

No documented evidence has been found to support just how the Washington may have been configured inside the hull below the gun deck. Based on research of ships from the period the model has been designed to include the following components – a platform, well with shot lockers, and a cook stove. These items were somewhat common in ships of similar size and design and will add some interesting details in an otherwise empty hull. They should not be considered historically authentic to the ship, but rather a conceptual interpretation.

PLATFORM

The platform is a simple design in nature compared to the gun deck above it. It's purpose was to create a flooring area on which the crew could move freely about, and also may be used to stow various items. For our design it allows access to the wellroom and stove. The open area in the center would allow the removal of the limber boards as required.

All of the parts needed to build the platform are found on sheet 8 of the plans. Begin by cutting out the beams, two carlings, and support timber. The ends of the beams are beveled to fit flush against the planking on the hull sides. Check each width to ensure that they are set to the correct elevation as shown in the midship view on the plans and Figure 37. Assemble all to the hull, followed by adding the floor planking. See Figure 38. Trenail deck as desired.

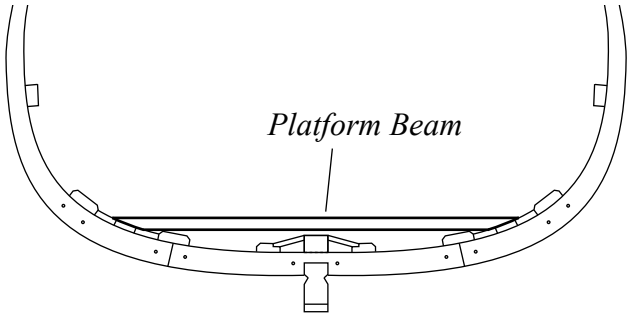


Figure 37 - Elevation of Platform at Midship

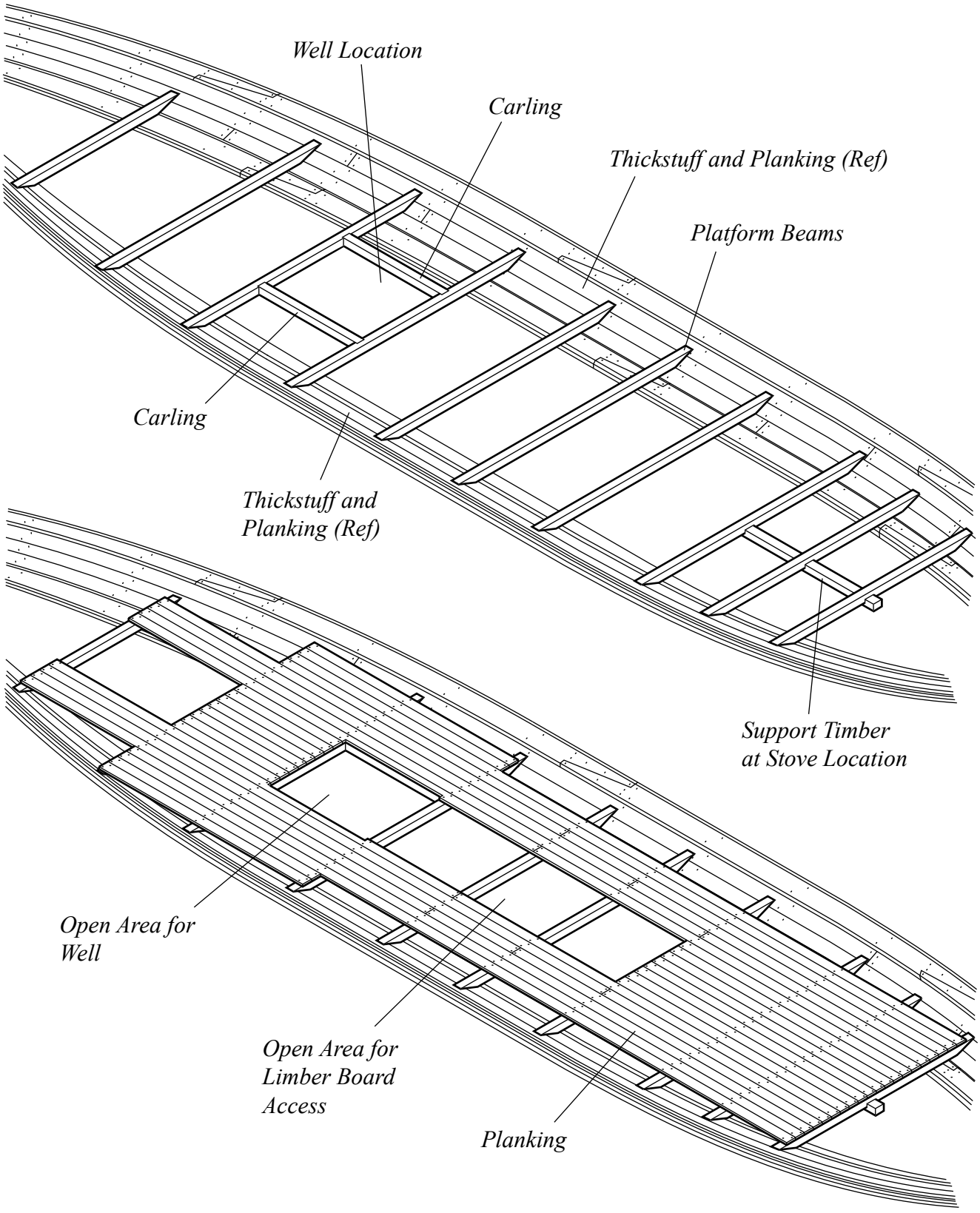


Figure 38 - Platform Installation

WELL AND SHOT LOCKERS

The well is a simple enclosure that protects the pumps from being damaged. A single door located on the aft side bulkhead would give access to inspect or repair the pumps. As was a common practice the main mast and step are also enclosed in the well.

To build the well cut out the bulkhead pieces, four stanchions, and parts for the door. As you progress check to make sure that the enclosure will fit into the opening in the platform. Following Figure 39 assemble the four bulkhead sides to the stanchions, then build and add the inspection door.

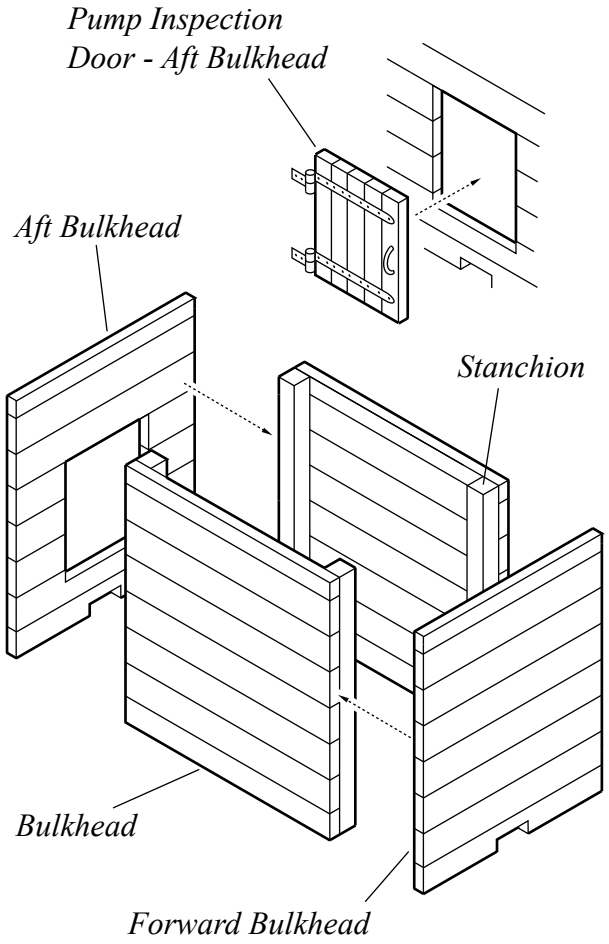


Figure 39 - Well Assembly

Install the well enclosure to the hull by fitting it into the opening on the platform. The slots in the bottom of the forward and aft bulkheads will rest on the top of the keelson when in place. See Figure 40.

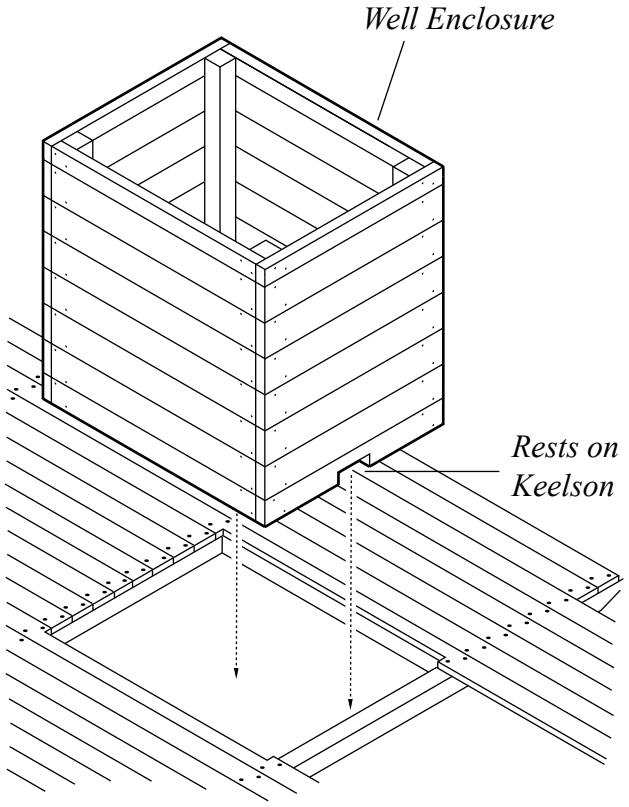


Figure 40 - Well Installation

We'll complete the well by adding two shot lockers. These were compartments in which the shot for the guns would have been stored. It was a common practice for them to be built as part of the overall well enclosure.

The lockers are built in a similar manner as the well. Cut out the forward and aft bulkheads, side, top, stanchions, and hinged lid. The well bulkhead will act as the inside wall and the platform the base. Following Figure 41 assemble all the pieces as shown and install the lockers to the well enclosure and platform.

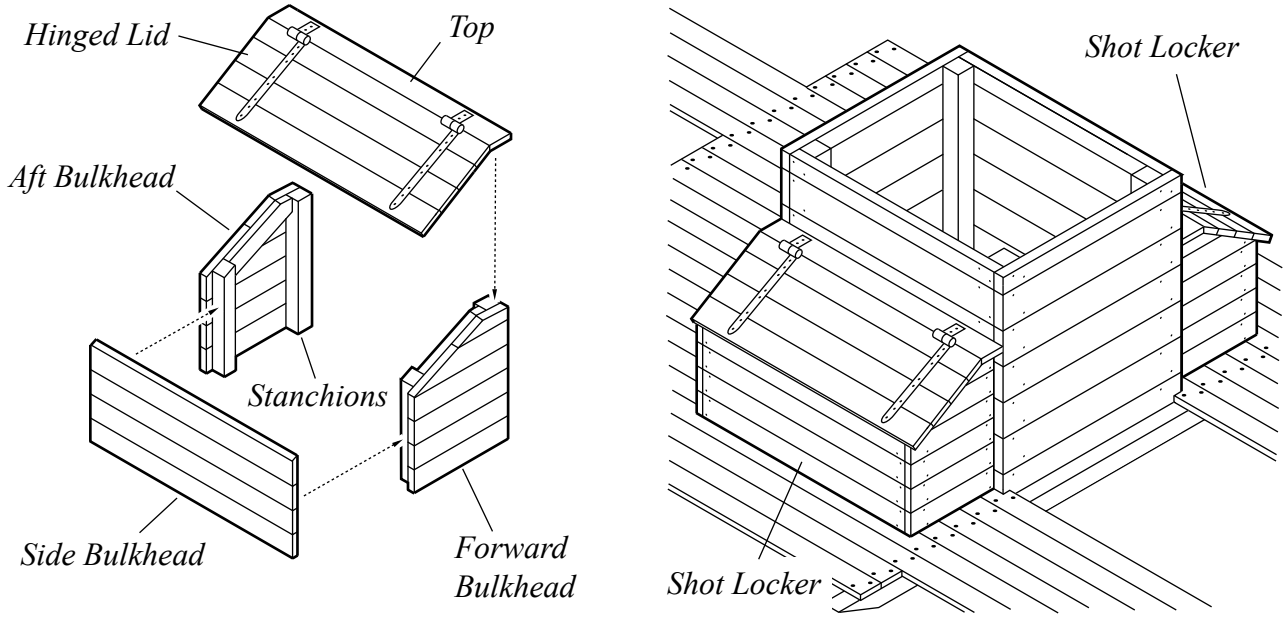


Figure 41 - Shot Locker Assembly and Installation

STOVE

No evidence exists to support whether or not the Washington had a stove on board. However, we do know for certain that the gunboat Philadelphia, also part of the Continental squadron, was equipped with a brick fire box. It's entirely possible that the Washington also had some type of stove available for feeding her crew.

By the mid 1700's iron stoves were replacing much heavier brick fire hearths. A predecessor to the Brodie stove, which wouldn't appear until the 1780's, iron stoves were more compact, lighter in weight, and easier to load in the vessel than the earlier brick versions. Our model is equipped with this type. Depending on your skill level there are two methods that can be used to build the stove. One is to construct it from brass, the second, a simpler wooden version.

Start by building the basic fire box, then add the oven doors, top, and kettle lids. See the plans and Figure 42. Following Figure 43 complete the oven and make the brickwork. Finish by blackening the brasswork, or painting the wooden parts flat black. Install to the platform.

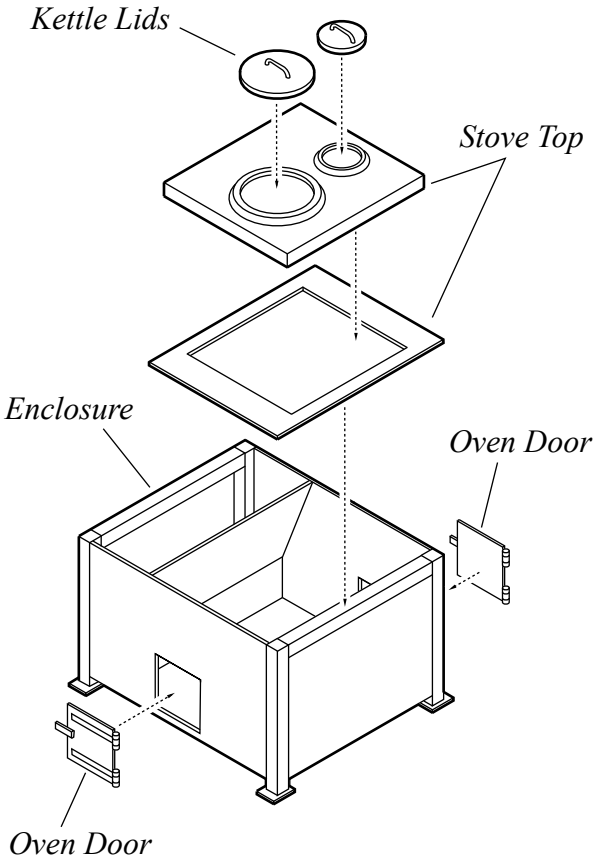


Figure 42 - Stove Assembly

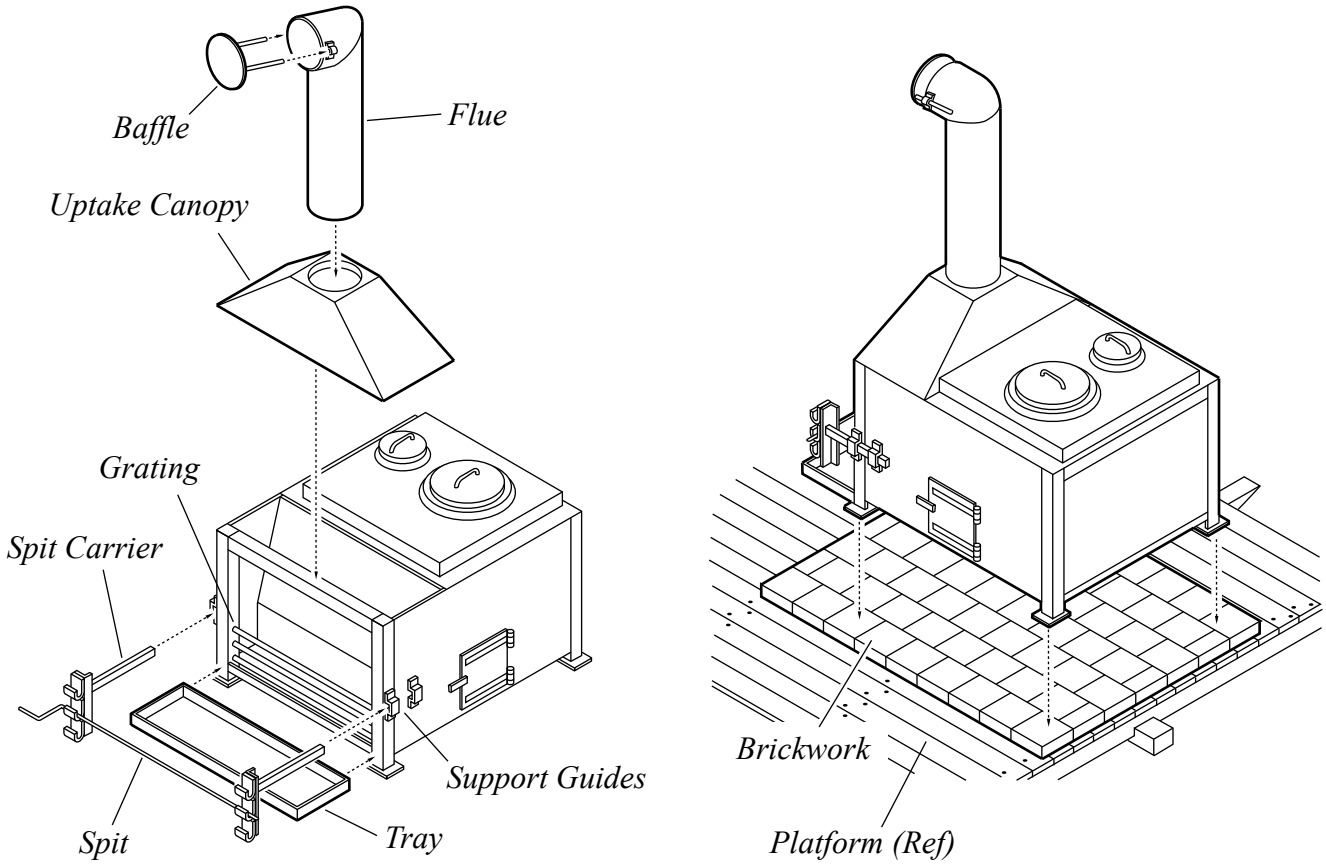


Figure 43 - Stove Assembly and Installation

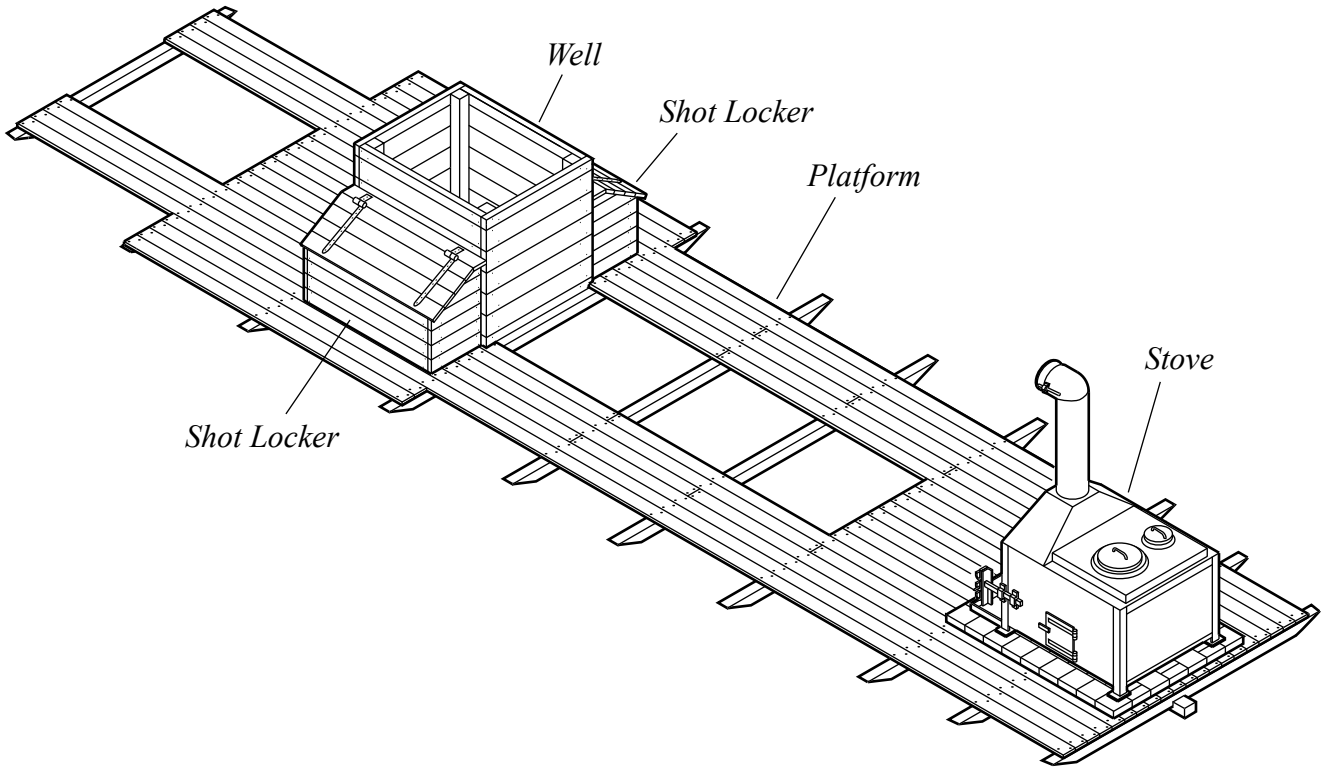


Figure 44 - Hold Components Completed

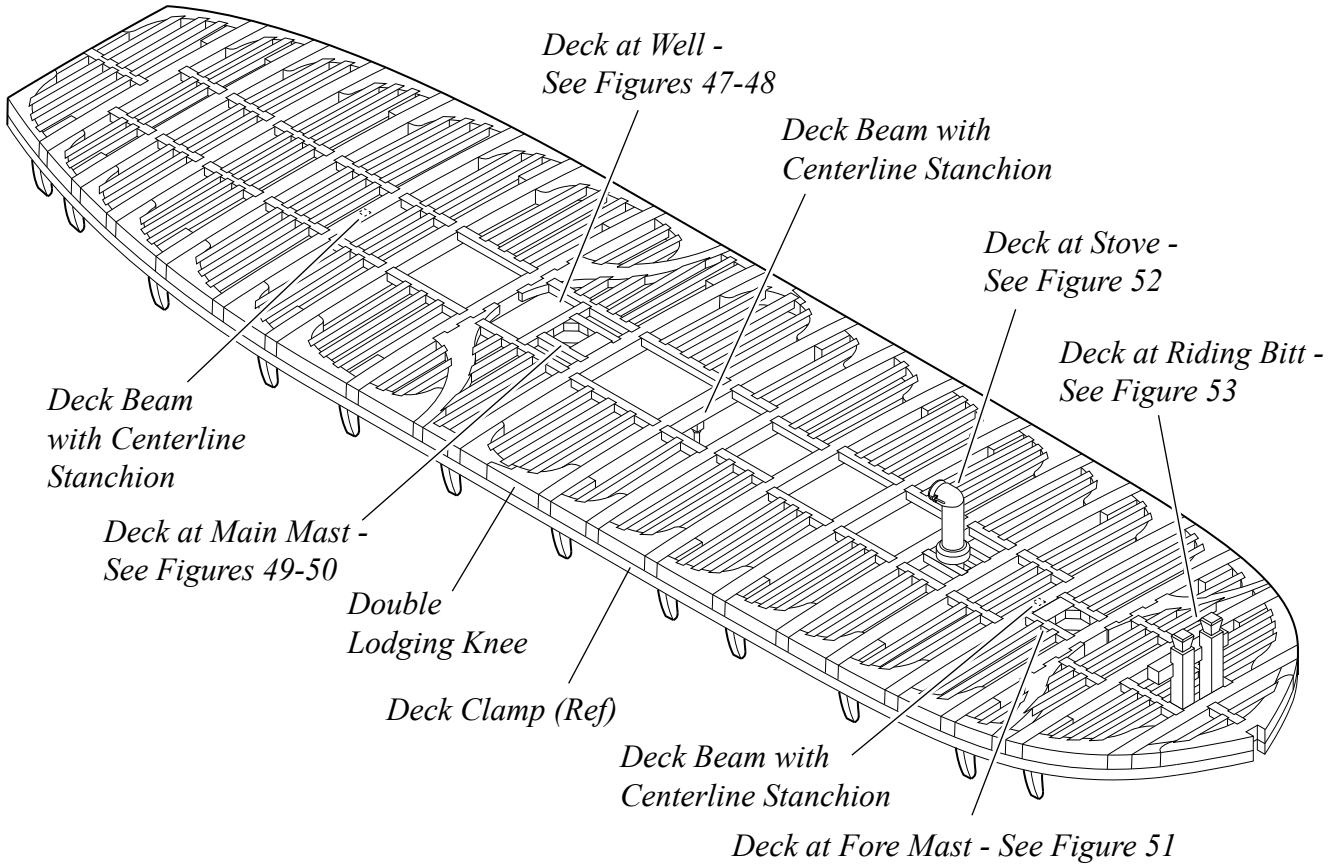


Figure 45 - Gun Deck

GUN DECK

The Washington had only one main, or gun deck. Among the various ship activities it is used primarily for the mounting of the guns. Although appearing somewhat complex in nature, the gun deck is constructed primarily of several timber types – beams, carling and ledges, hanging, and lodging kneees. Before beginning study the layouts on sheet 9 of the plans, and Figure 45 above.

We'll begin with the deck beams. These are the major timbers that span across the ships width. Deck beams are not flat and have a camber, and curve downwards at the sides in order to allow water that washed onto the deck to spill off. See Figure 46. When cutting the beams check the width to make sure that it fits against both sides of the frames, and rests on top of the deck clamps.

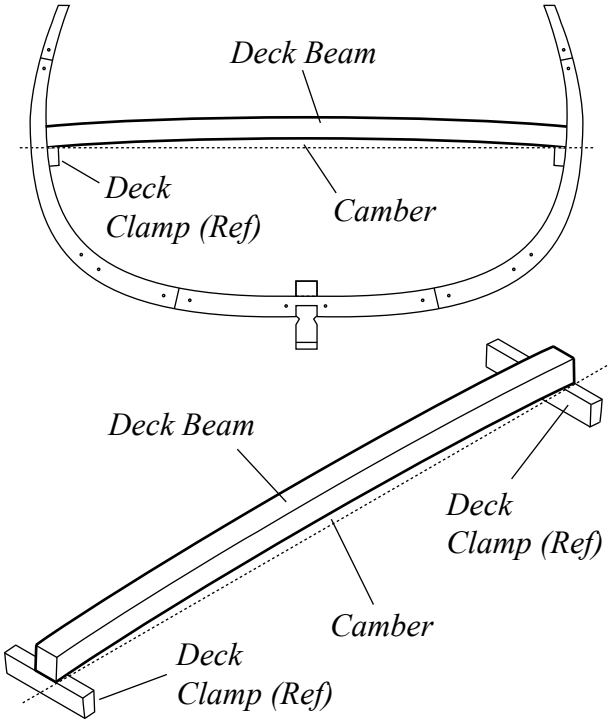
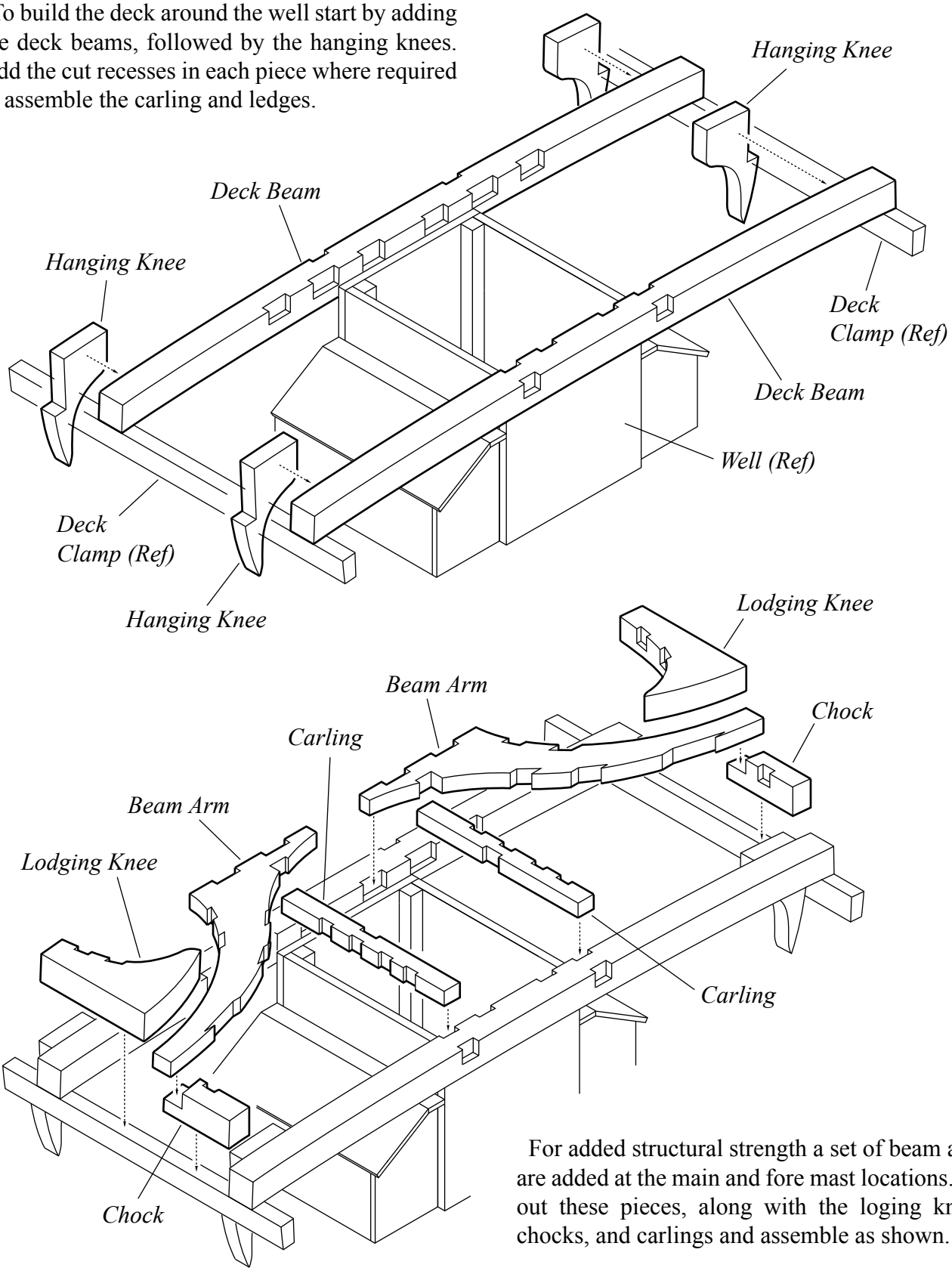


Figure 46 - Deck Beam

To build the deck around the well start by adding the deck beams, followed by the hanging knees. Add the cut recesses in each piece where required to assemble the carling and ledges.



For added structural strength a set of beam arms are added at the main and fore mast locations. Cut out these pieces, along with the loging knees, chocks, and carlings and assemble as shown.

Figure 47 - Gun Deck at Well Location

Now add the ledges. Follow this basic order of assembly (beams, hanging knees, carlings, lodging knees, and ledges) as you progress throughout the entire deck.

At the midship area add the double lodging knees, calings, and ledges. For support add the centerline stanchion. There are three required. See plan sheet 9 for the locations.

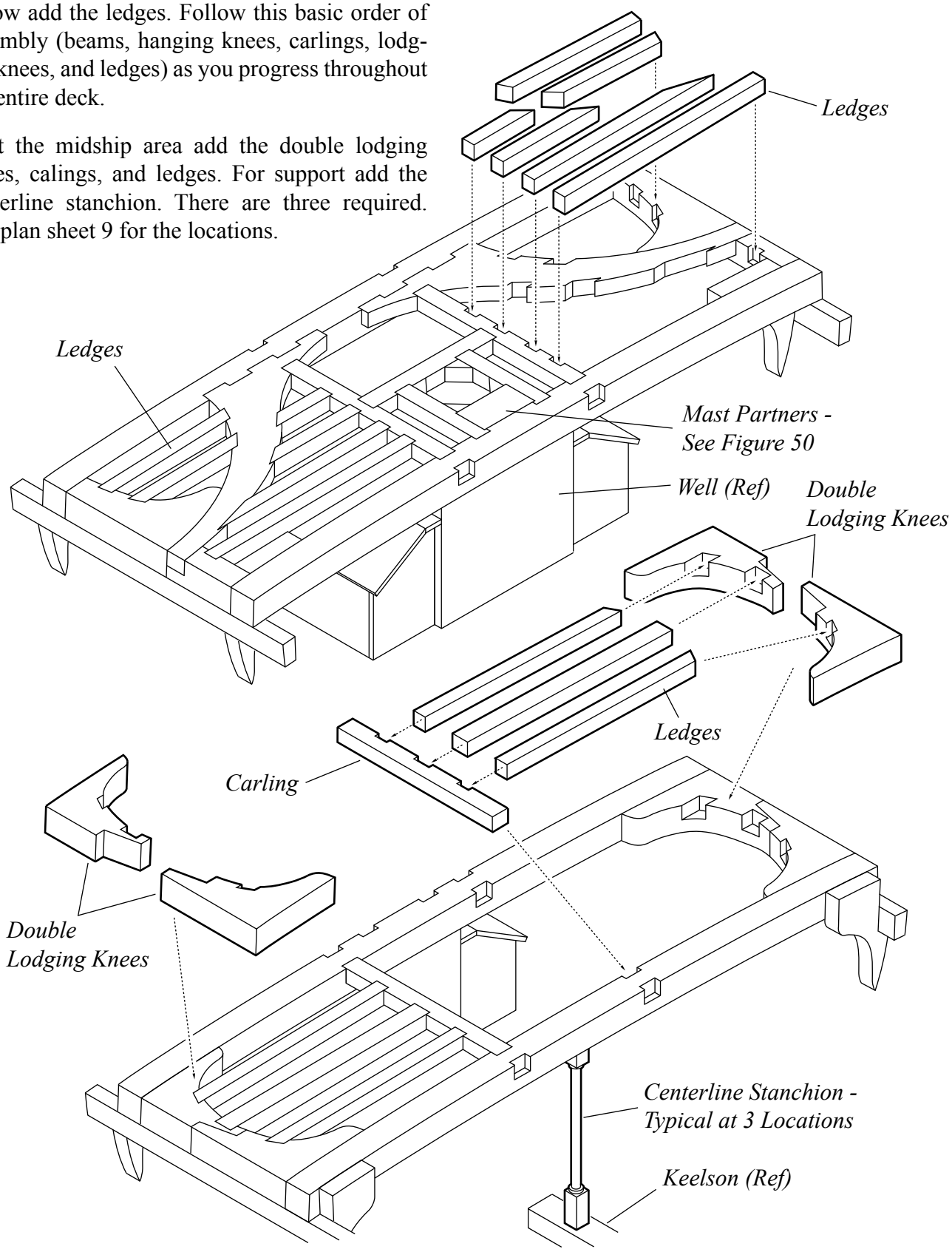


Figure 48 - Gun Deck at Well Location (Cont.)

Before adding the timbers around the main mast location we need to determine the rake, or angle of the vessel's mast from its vertical position. Using Figure 49 as reference go to sheet 2 of the plans and measure the offset distance back from vertical at the gundeck elevation.

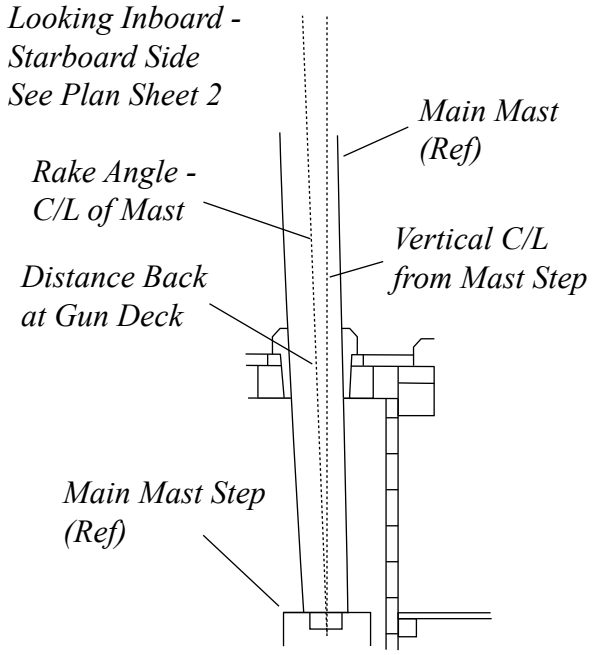


Figure 49 - Main Mast Rake

Using Figure 50 as reference cut and assemble the beam and mast partner timbers. The center of the opening for the mast will be the offset distance back determined in the step above. Adjust the size of the partner chock if needed, and install it along with the four filling chock pieces. Finish by adding the deck trim piece on top.

The fore mast also is raked. Following the same assembly and installation procedure for the main mast, cut and assemble the fore mast partners as shown in Figure 51.

Continue to cut and install all of the remaining deck timbers. Figure 52 shows the details at the stove location. After all of the framing is in place add the coaming pieces around the stove flue. Following Figure 53 add the pieces at the riding bitt and bow location.

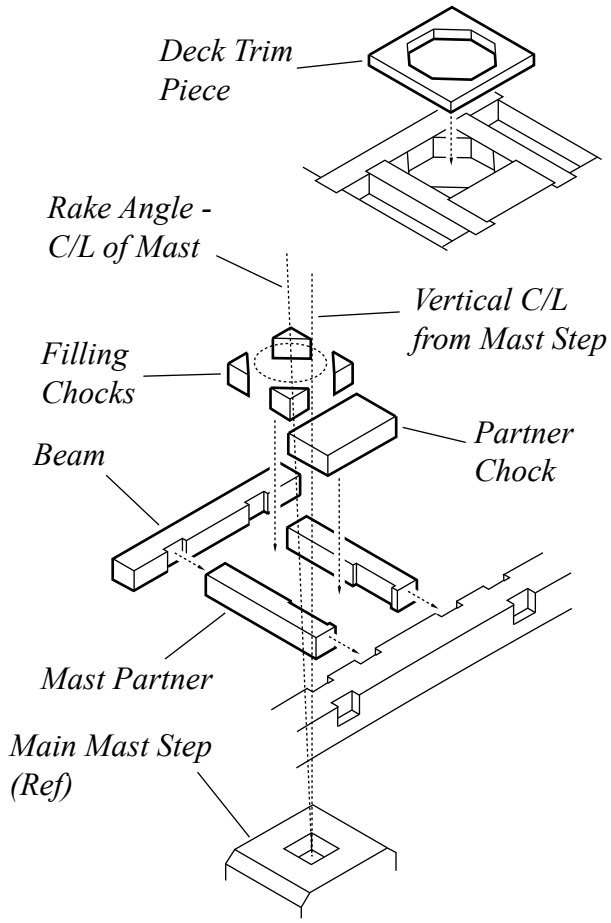


Figure 50 - Main Mast Partners

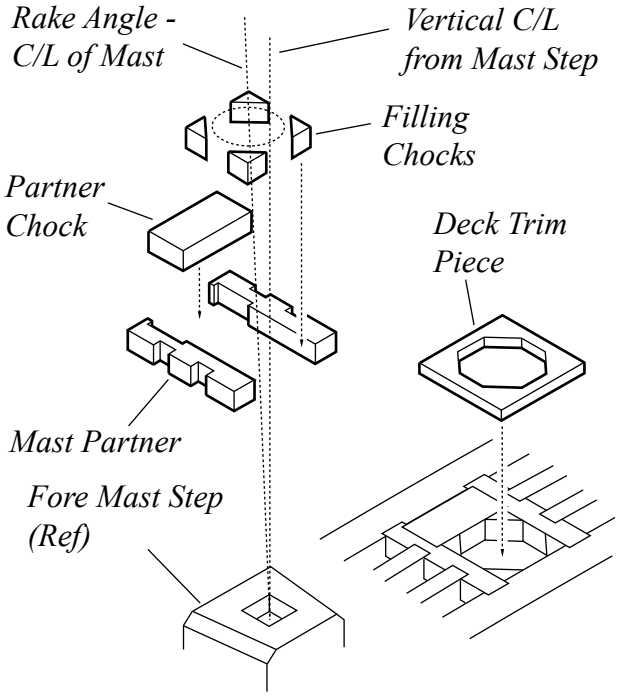


Figure 51 - Fore Mast Partners

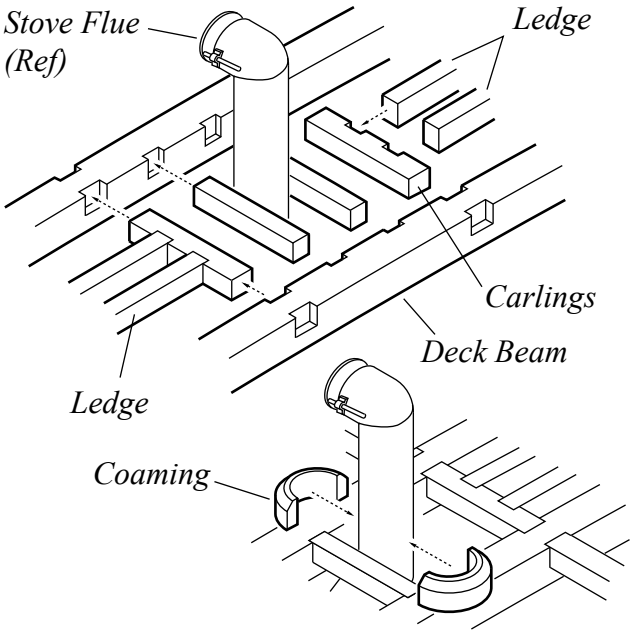


Figure 52 - Deck at Stove Location

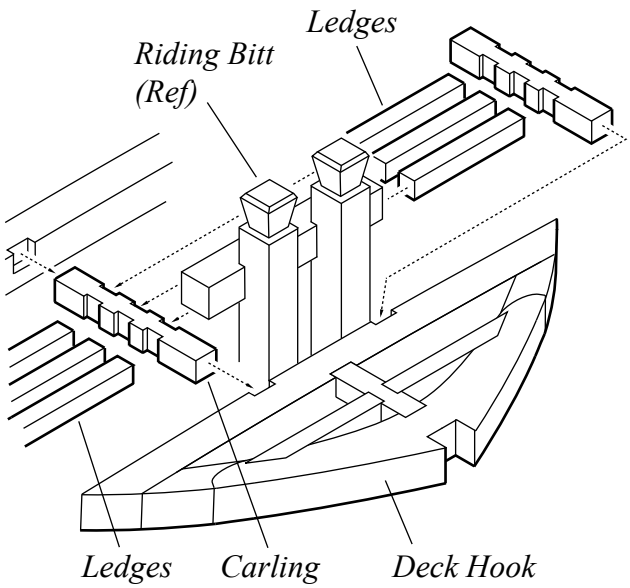


Figure 53 - Deck at Riding Bitt Location

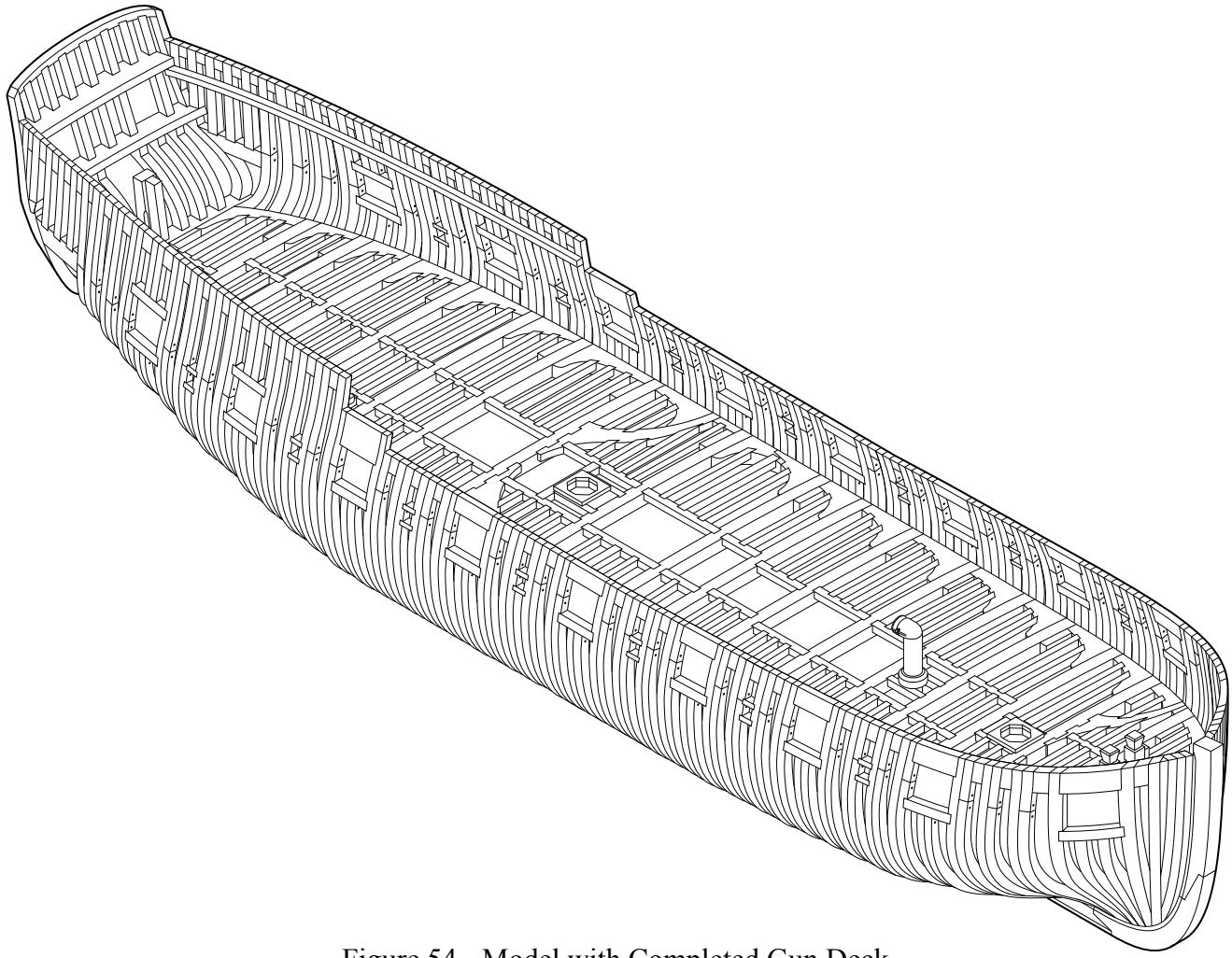


Figure 54 - Model with Completed Gun Deck

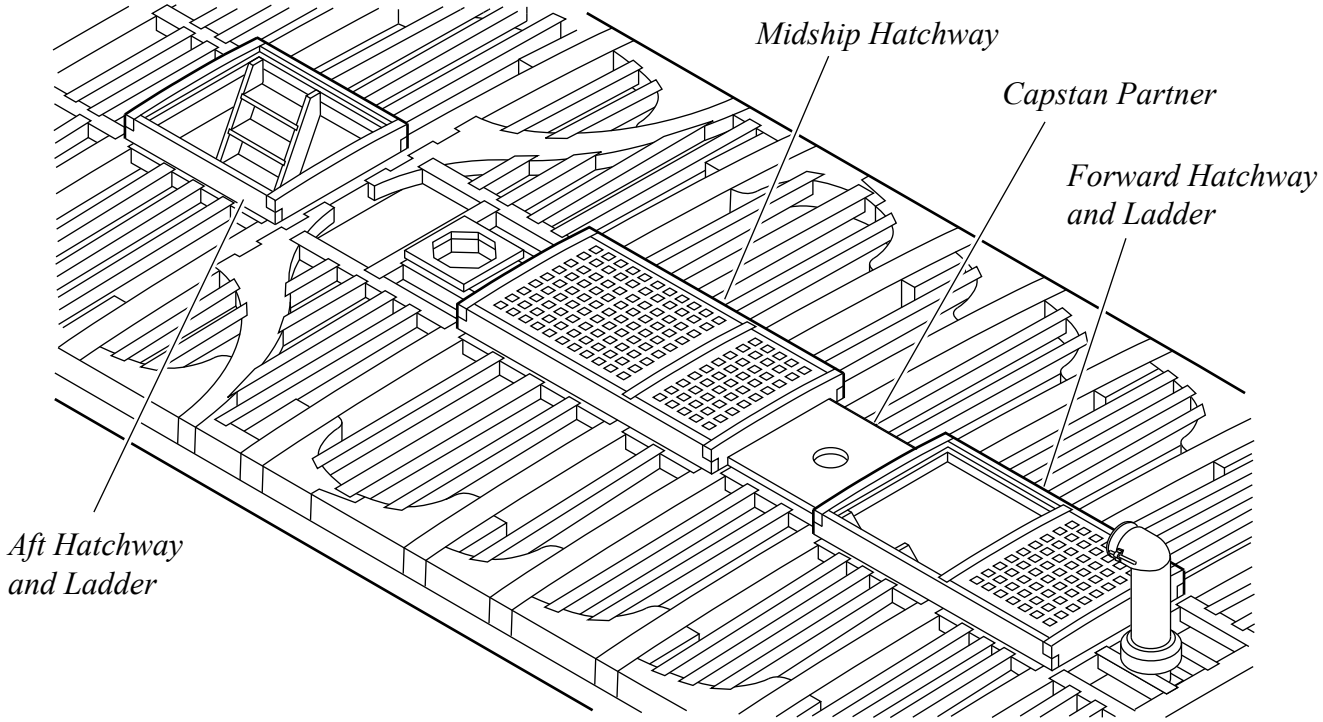


Figure 55 - Hatchways

HATCHWAYS

Hatchways are openings in the deck allowing access to the hold. Hatches frame the opening and are constructed using two head ledges and coaming pieces. Batten is attached on the inside for a surface to rest the grating on. Following Figure 56 cut and build the aft hatch.

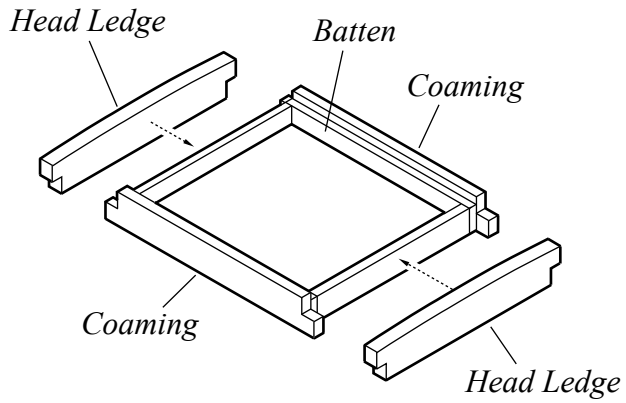


Figure 56 - Aft Hatch Construction

Two ladders access the hold. Build the ladder for the aft hatchway. Assemble the hatch and ladder to the deck as shown in Figure 57.

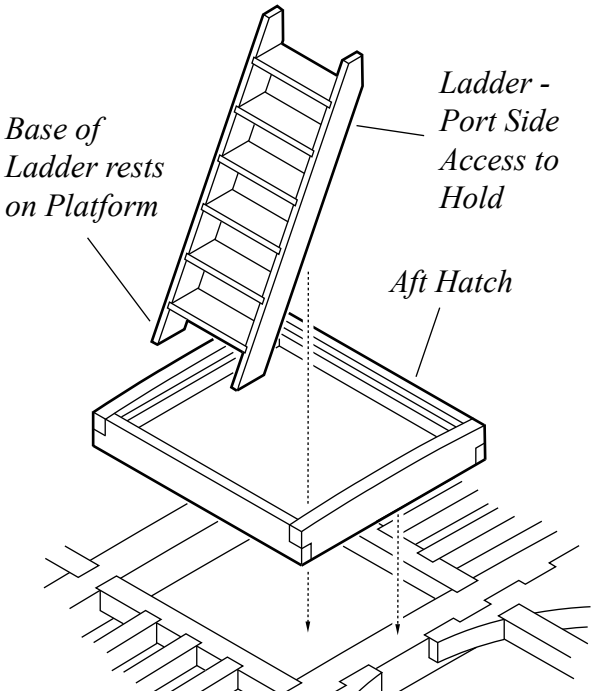


Figure 57 - Aft Hatchway

The midship and forward hatches are constructed the same manner as the aft except with the addition of a dividing piece. Add as shown in Figure 58.

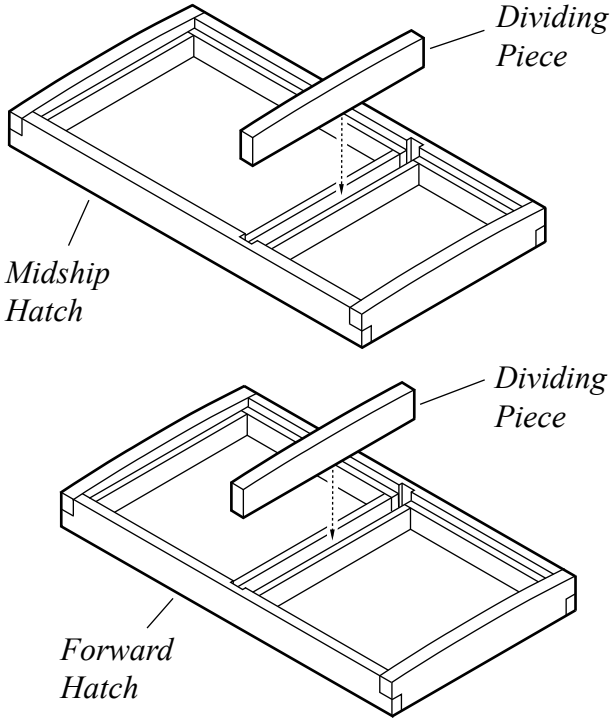


Figure 58 - Midship and Forward Hatch

Grating are lattice coverings of the hatchways, which are made with openings to admit air, or light. On the model we'll build three - two for the midship hatch, and one for the forward. We'll leave the covers off of the hatches where the ladders are located to show the extra details there.

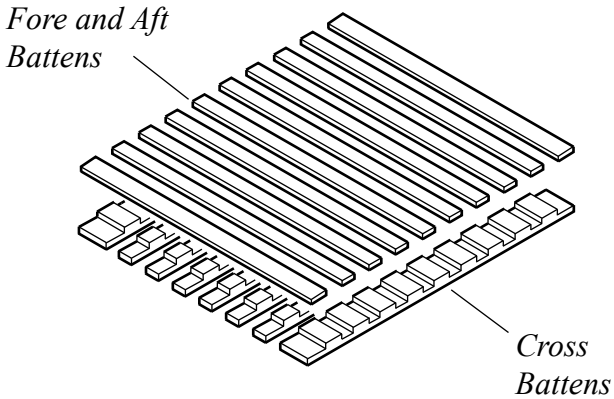


Figure 59 - Grating Construction

The gratings are constructed using fore and aft, and cross battens. Following Figure 59 cut and assemble the individual pieces. Make sure each cover fits into the opening of the hatch, has a round-up, and is flush with the top. Assemble the midship hatch and grating to the deck as shown in Figure 60.

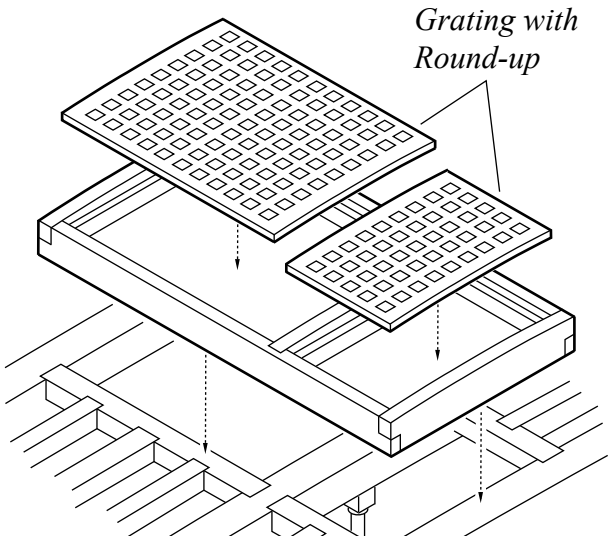


Figure 60 - Midship Hatchway

Build the second ladder for the forward hatchway. Assemble the hatch, grating, and ladder to the deck as shown in Figure 61.

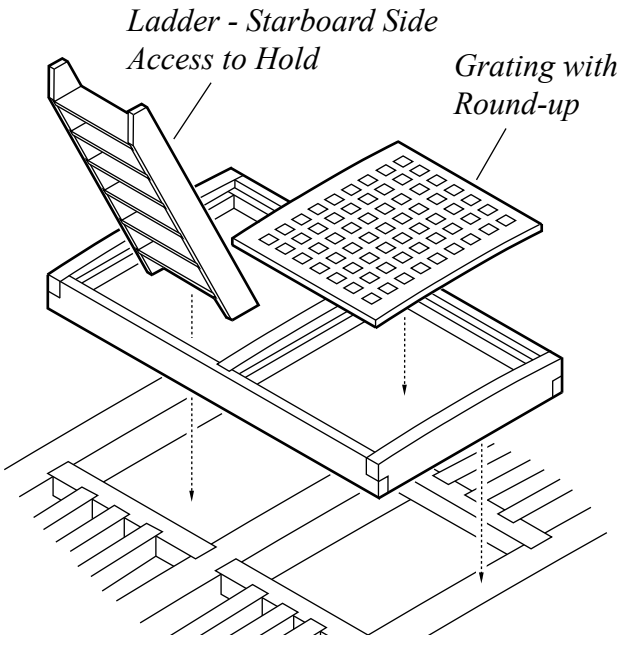


Figure 61 - Forward Hatchway

Prior to planking the gun deck one additional part, the capstan partner, needs to be made. This is the base for the capstan to rest on. Make the part and assemble it to the deck aligning the hole for the spindle directly above the step as shown in Figure 62.

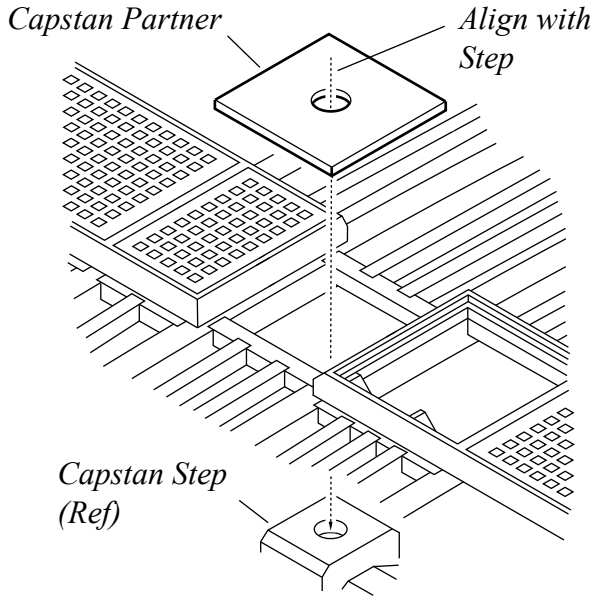


Figure 62 - Capstan Partner

GUN DECK PLANKING

Planking the gun deck is a straight forward process. All of the information needed to construct the planking can be found on sheet 9 of the plans. We'll plank the starboard side only, leaving the port side deck details exposed for display. Make the waterway that runs along the outside parimeter of the deck. Using a template transfer the curve of the hull to the part to ensure that it fits flush against the side framing. The waterway can be made in several pieces if desired.

Starting with the row closest to the waterway, begin planking the deck. Continue adding rows and plank around the hatchways, partners, stove, and riding bitt ending with the last row at the vessels centerline. Offset the butt joints using the four plank shift method.

Add additional planking to cover the area above the well. Drill two holes for the pumps at this location. See Figure 63 below.

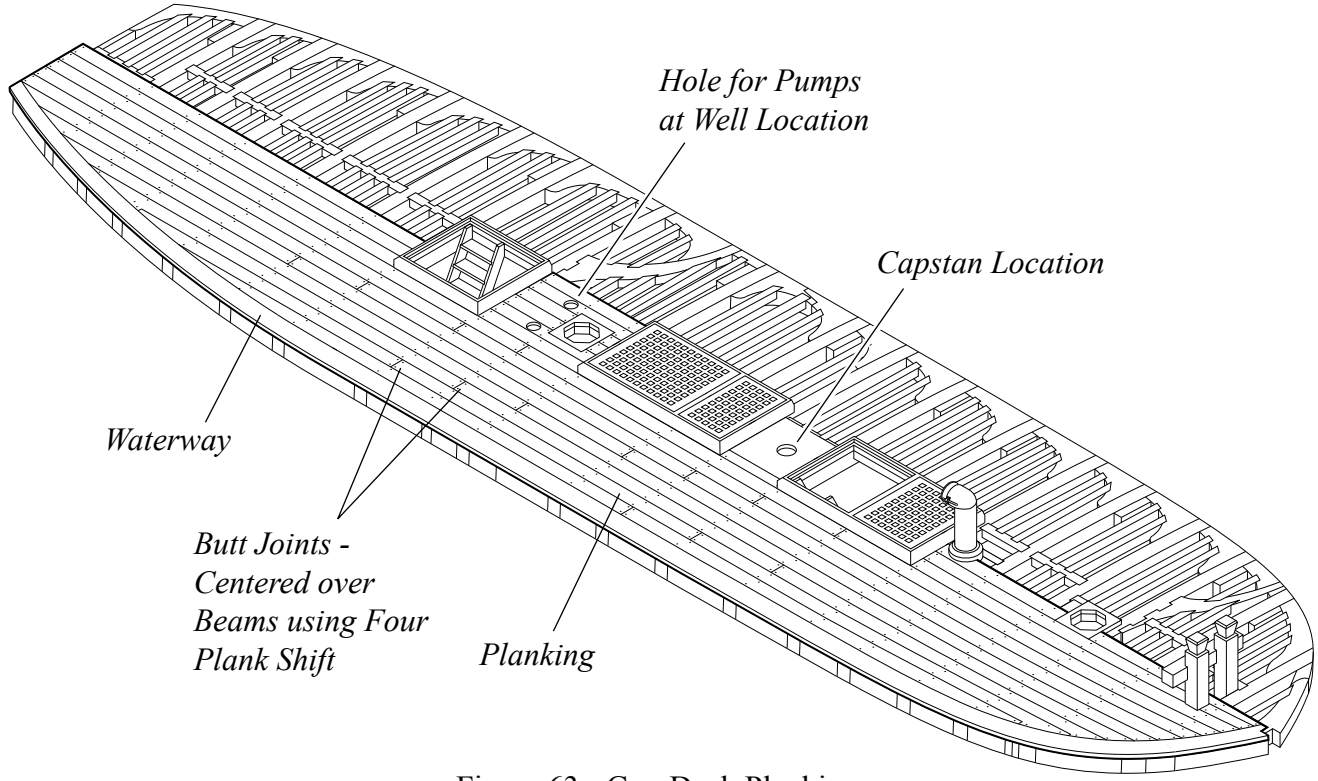


Figure 63 - Gun Deck Planking

PUMPS

Two hand pumps were used to remove bilge water from the hold. Using sheet 2 of the plans, and following Figure 64 below, cut and assemble the parts for the pumps.

Install the pumps by inserting each through the holes in the deck planking. The pump body will be inside the well enclosure and the base will rest in the limber passage channel along each side of the keelson.

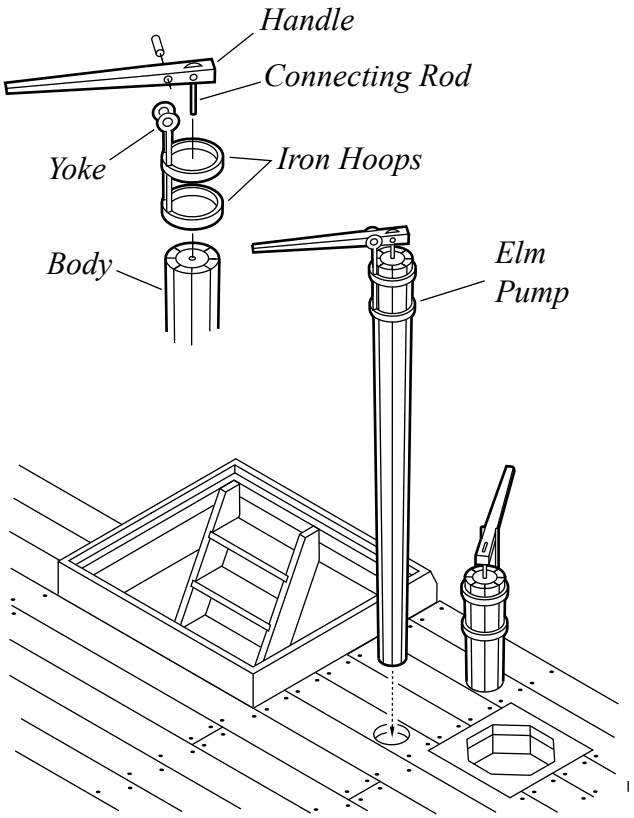


Figure 64 - Pumps

CAPSTAN

The capstan is a vertical, spool-shaped rotating drum around which cable is wound for hoisting the anchors. Details for building the capstan are also found on sheet 2 of the plans.

Start by making the spindle. Check that its overall vertical length allows the heel to fit into the recess of the step in the hold and the drum to rest on top of the partner piece above.

Continue to cut and assemble the individual pieces as shown in Figure 65 below. Install by inserting the spindle through the hole with the drum resting on top of the partner piece and the heel of the spindle into the step.

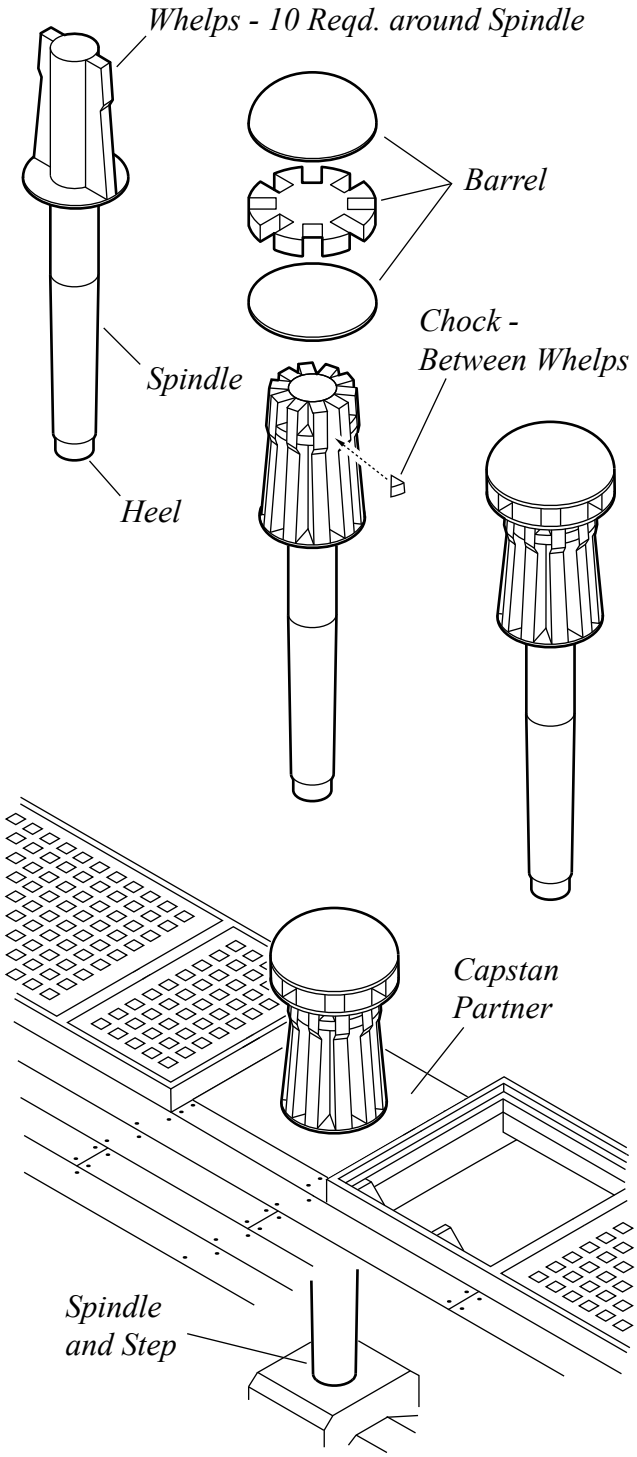
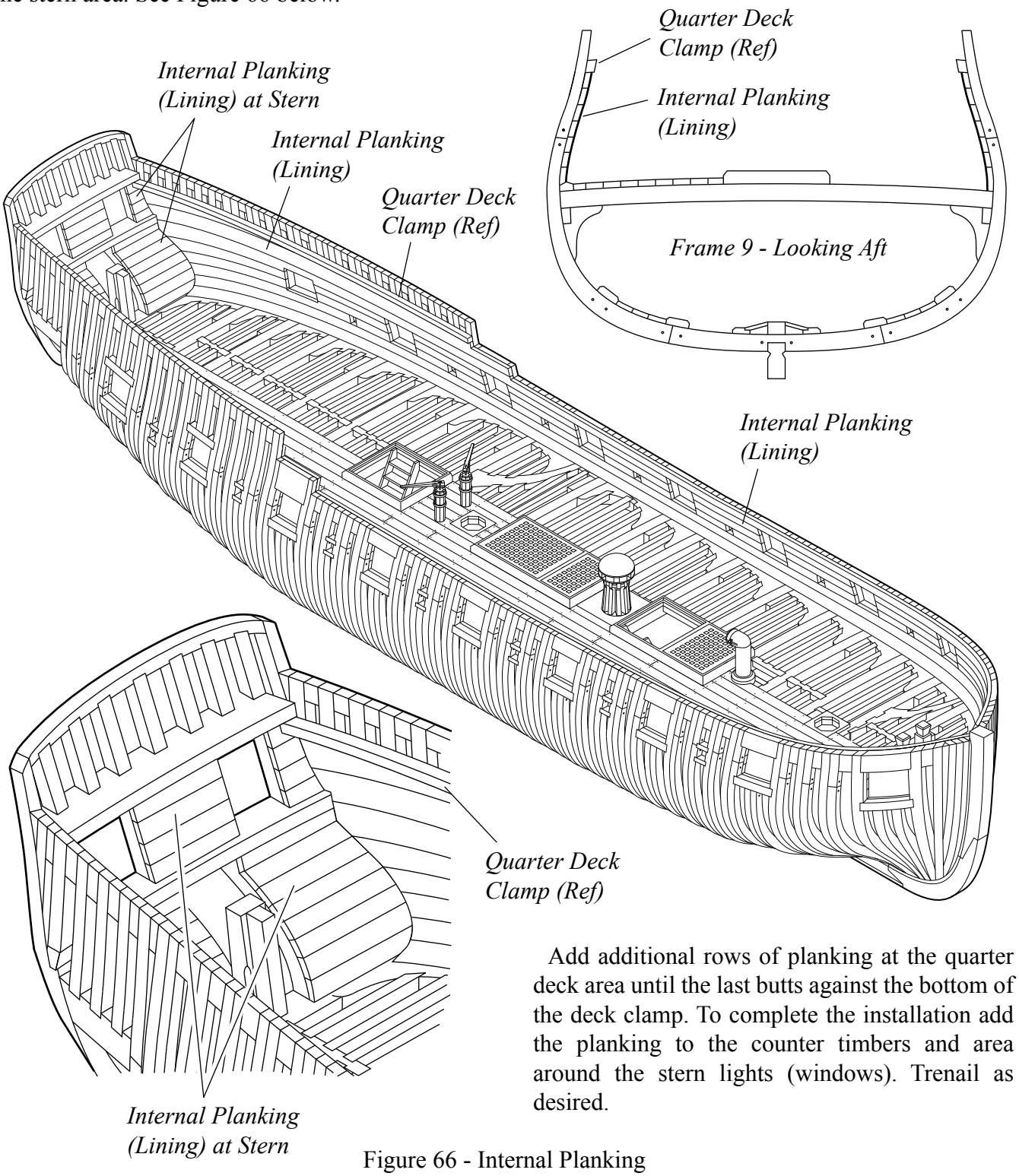


Figure 65 - Capstan

INTERNAL PLANKING

We're ready to add the internal planking, or lining. All of the surfaces, on both the port and starboard side, will be covered. We'll also plank the stern area. See Figure 66 below.

Start by adding the lowest row of planks at the gundeck level. Continue to work upward around the gun and sweep ports and finish with the last row flush with the top of the framing.



Add additional rows of planking at the quarter deck area until the last butts against the bottom of the deck clamp. To complete the installation add the planking to the counter timbers and area around the stern lights (windows). Trenail as desired.

Figure 66 - Internal Planking

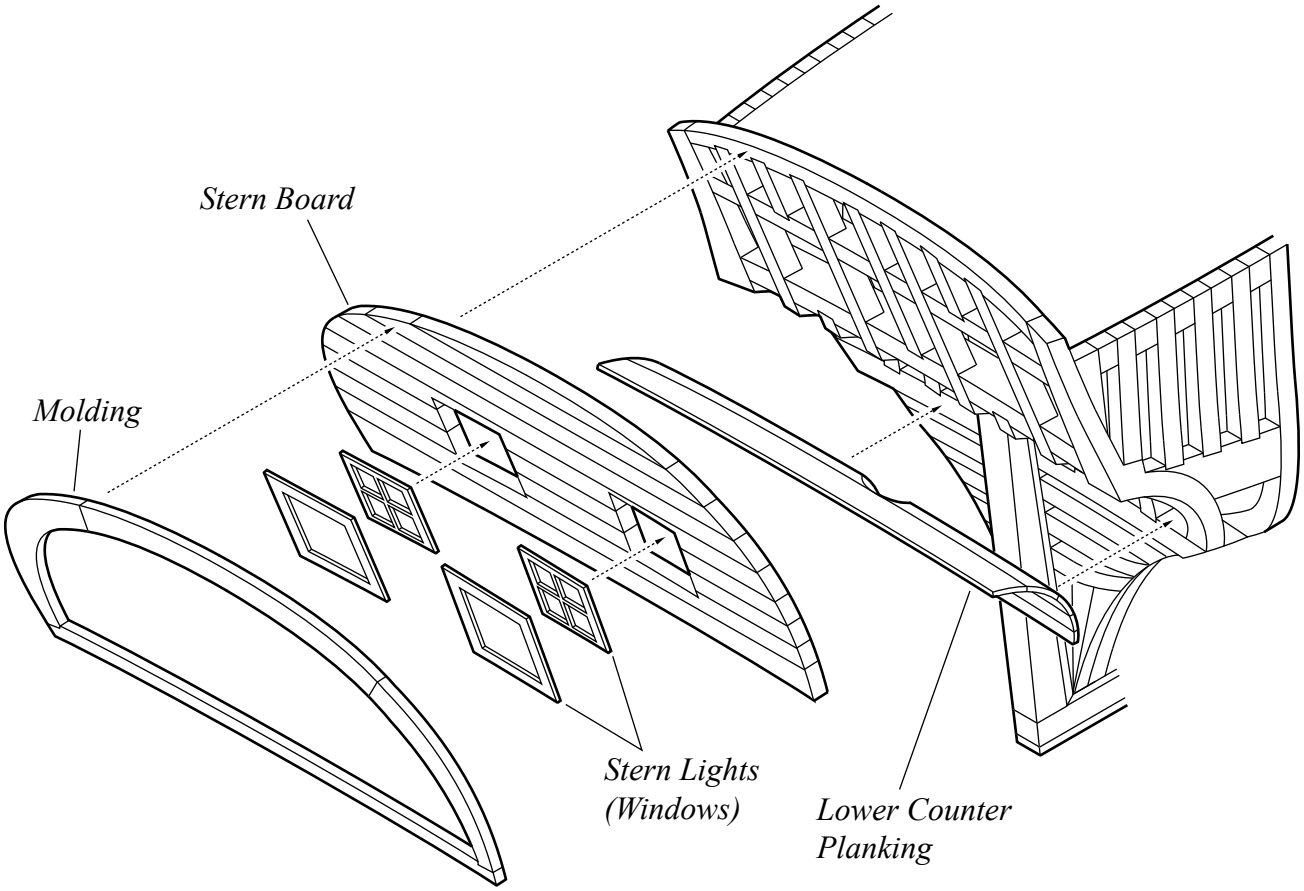


Figure 67 - Stern Planking

PLANKING THE STERN

To add the exterior planking we'll begin with the stern. Following sheet 2 of the plans and the assemble procedure in Figure 67, make the stern board first. This consists of a series of planks forming the flat part of the stern, and covering the counter timbers. Install this to the hull.

Next cover the lower counter area with five rows of planking, fitting around the stern post and opening for the helm port.

Build and install the stern lights (windows) and trim. A thin piece of clear acrylic can be used for the glass, or can be omitted if desired. Finish by adding the molding to the stern board, and finishing pieces at both sides. See Figure 68. Add trenails as desired.

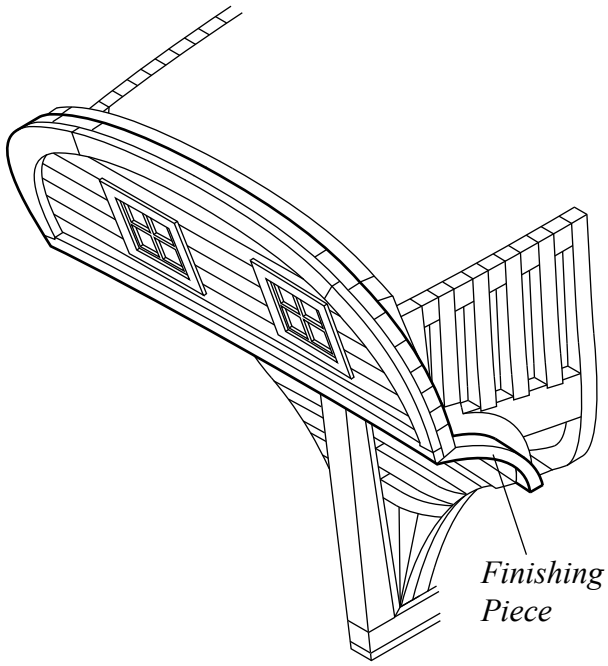


Figure 68 - Stern Planking Completed

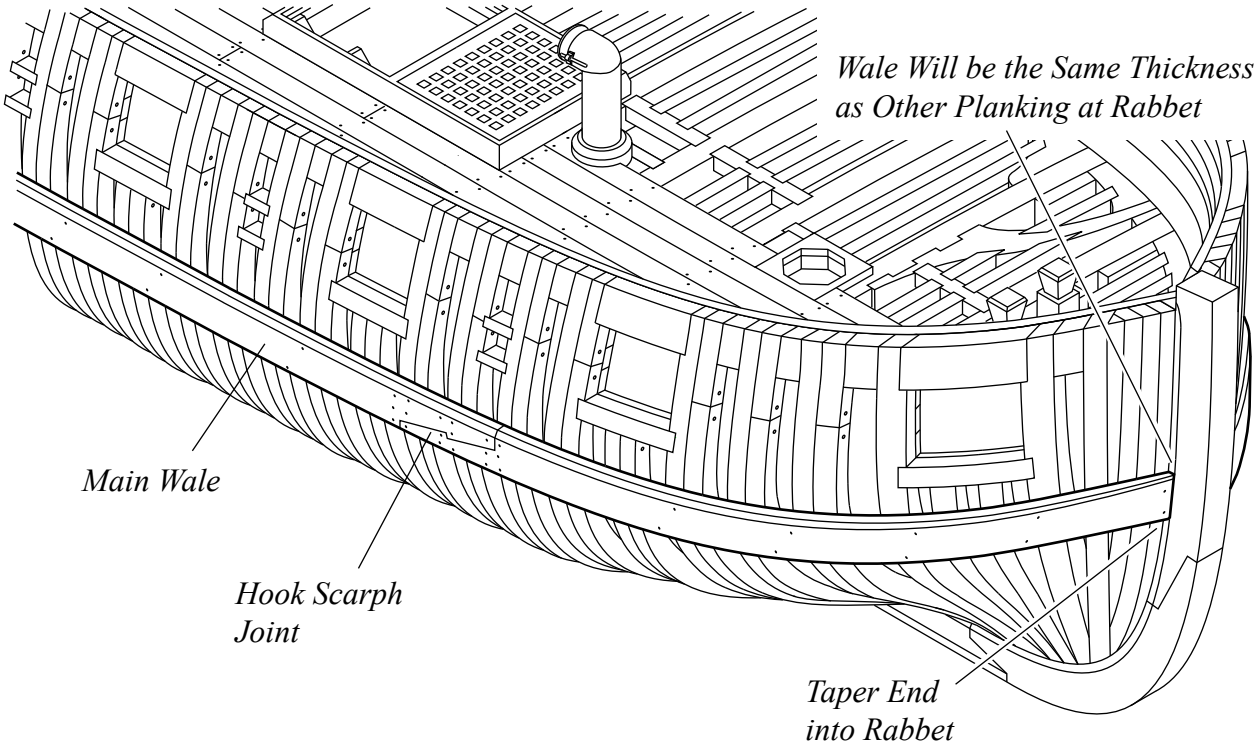


Figure 69 - Main Wale Installation

EXTERIOR PLANKING

Start the exterior planking by adding the thickest planking - the main wales to the port and starboard sides. It's constructed with four pieces joined by a hook scarph. See Figure 69 above. Because of the curvature at the bow and stern the wale will need to be bent. The easiest way to do this is to soak the piece in a pan of hot water until it's pliable enough to shape to the hulls contour. Clamp it to the hull temporarily until it has dried and the shape is set.

Starting at the bow taper the end of the wale piece, and attach into the rabbet. Terminate the wale at the tuck at the stern. Continue by adding one row of planking below the main wale. This also forms a tuck at the stern. Moving upwards from the wale add rows until the last is flush with the tops of the framing. Like the wales the planks at the bow will need bent to follow the curvature. The ends of the planking at the stern will butt against the stern board. Trenail as desired.

Prior to installing the guns, and port lids we'll need to do some additional work with the planking and lining. Above each gun port, center and drill a hole thru the planking and lining. This will be for the halyard which raises or lowers the cover. Next make the cleats for belaying the halyard. Install these at each gun port location on the inside lining. On the port side only there are also two yard fall cleats needed for the rigging. Make and install these as well.

For the the purpose of the model we'll only be rigging the breeching of the guns. This requires adding two ring bolts at each gun port location.

Add the two hawse holes to the bow. Start by marking their locations and drilling a small thru hole. Finish by enlarging the holes to their final diameter using a small file or sandpaper around a dowel, etc.

Finish by adding ring bolts at the deck centerline for the main and fore mast stays. See Figure 70.

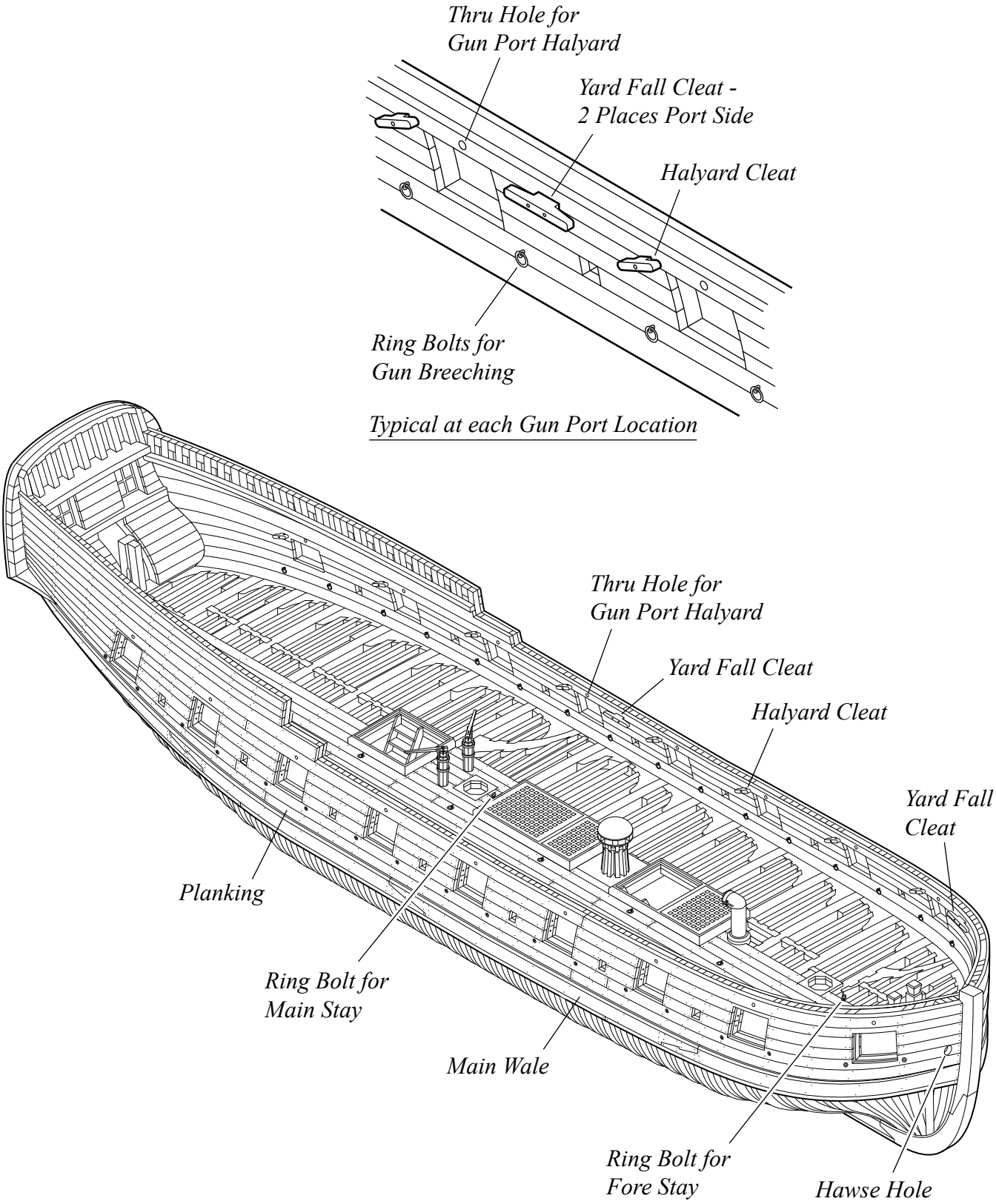


Figure 70 - Planking Completed

GUNS AND GUN PORT LIDS

Once the quarter deck is in place it will be very difficult to add the additional details on the gun deck below. Because of this the procudures to build the guns, and port lids will be covered next. You can make and install all of them at this stage of the models construction, or just those that are necessary (one 4-pounder gun and four gun port lids) prior to building the quarter deck.

Guns were difficult to obtain for the squadron, especially those of one caliber, making Washington's armament a variety of several. According to the captain's receipt she carried two 18-pounders, two 12's, two 9's, four 4's, and several swivel guns. Additional research suggests that she may have carried several 6-pounders as well. See Figure 71.

How Washington's guns were configured on the deck is unknown. For the models design I chose to concentrate the most fire power towards midship, leaving guns of a lesser caliber towards the bow and stern.

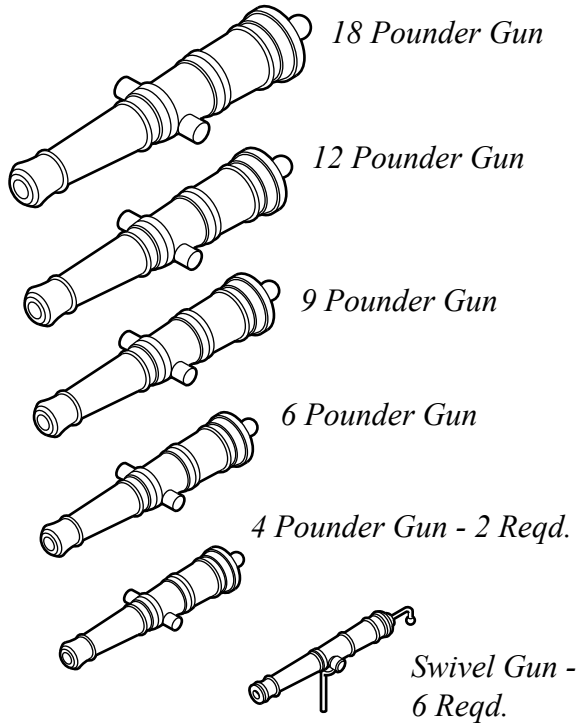


Figure 71 - Washington Guns

All of the guns are made in the same manner with the only difference being the size of the carriage and barrel based upon its caliber.

Follow sheet 9 of the plans, and Figure 72 for the construction of the guns. Start with the carriage. Cut out the two side brackets. Add the axles and trucks, and finally the stool bed and transom. Finish the carriage by adding the breeching ring bolt to each side of the bracket.

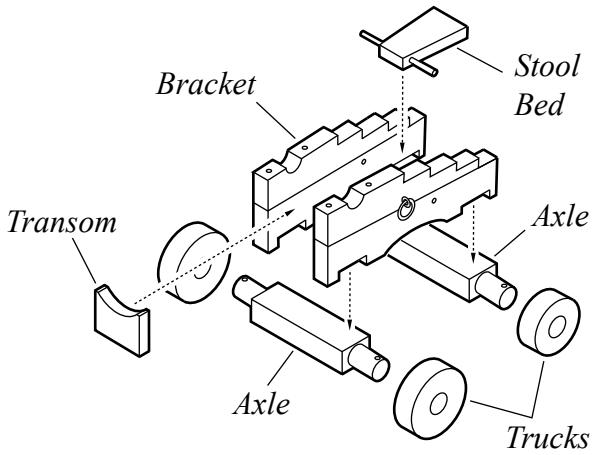


Figure 72 - Gun Carriage Assembly

Making the gun barrels will require the use of a lathe. They can be made of wood or brass, depending on the resources you have. You may also be able to purchase barrels online. Complete the gun assembly by attaching the barrel to the carriage. Add the two cap squares on top of the trunnions. The quion acts as a wedge to set the gun barrel elevation. See Figure 73.

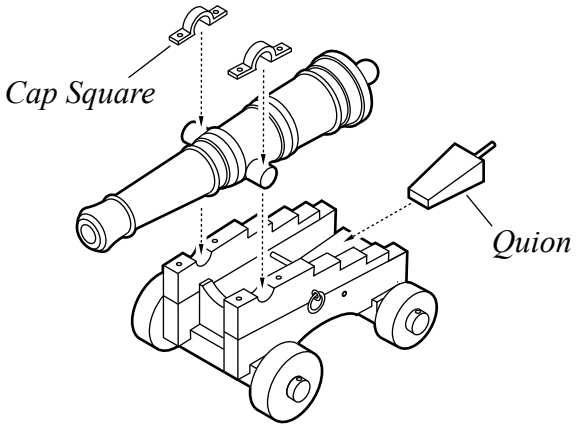


Figure 73 - Gun Assembly

Before adding the guns to the deck the gun port lids will be made and installed. Each gun port will have a lid. Ports without guns will have the lid in the closed position. This includes all on the port side, and three on the starboard.

Make the gunport lids by attaching three rows of outside planking to the three vertical stiffening planks on the inside surface. See Figure 74. The shape of the lid needs to match the contour (sheer) of the planking around the opening. Add the hinges, gudgeon and three ringbolts - two on the inside, and one centered on the outside.

Attach the lids to the side of the vessel, in either the open or closed position based on the gun locations.

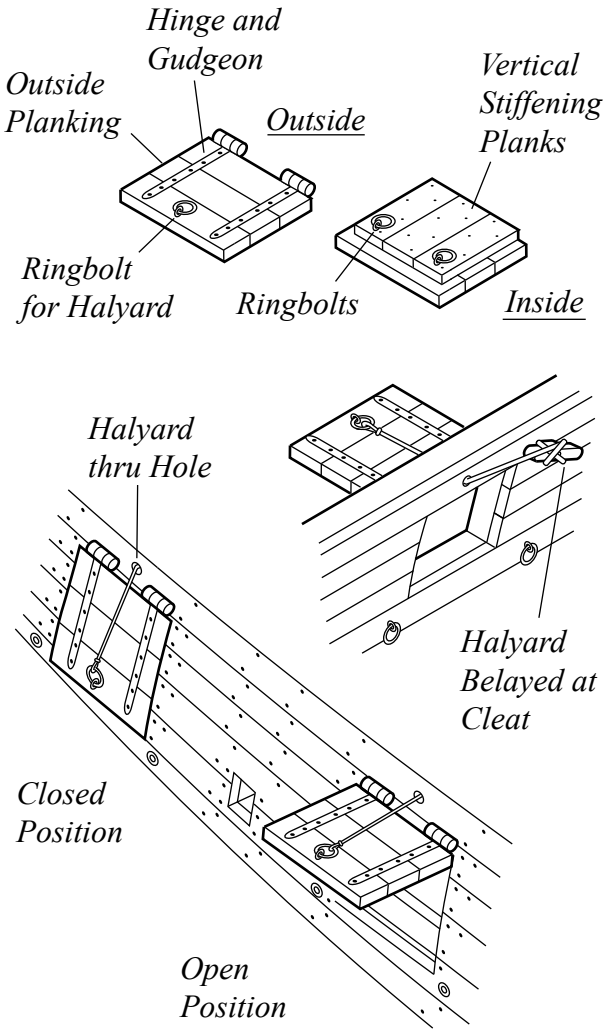


Figure 74 - Gun Port Lids

We'll complete the gunport lid installation by adding the rigging. Start by cutting a length of rope to be used as the halyard. Make it long enough to wrap a couple of times around the cleat on the inside lining. Tie off one end to the ringbolt on the outside of the lid. Thread the halyard thru the hole in the outside planking and pull through until taunt. Belay (secure) the loose end to the cleat. Repeat this procedure for each gun port lid.

Install the guns to the deck with the barrels protuding through and centered in the gun port opening. See Figure 75.

Add the breeching to the gun by looping the rope around the cascabel. Thread the two loose ends through the ringbolts in the gun carriage sides. Make sure to allow a little slack in the rope which would allow for the gun to recoil. Tie off each end at the ringbolts on the side lining.

At each gun location there will be a rack holding solid shot for quick access in battle. These will be different sizes based on the caliber of the gun. Using sheet 9 of the plans make each and install to the deck.

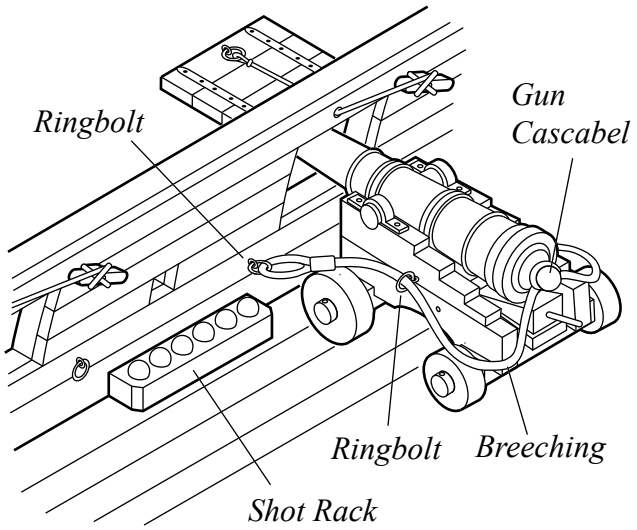


Figure 75 - Gun Rigging

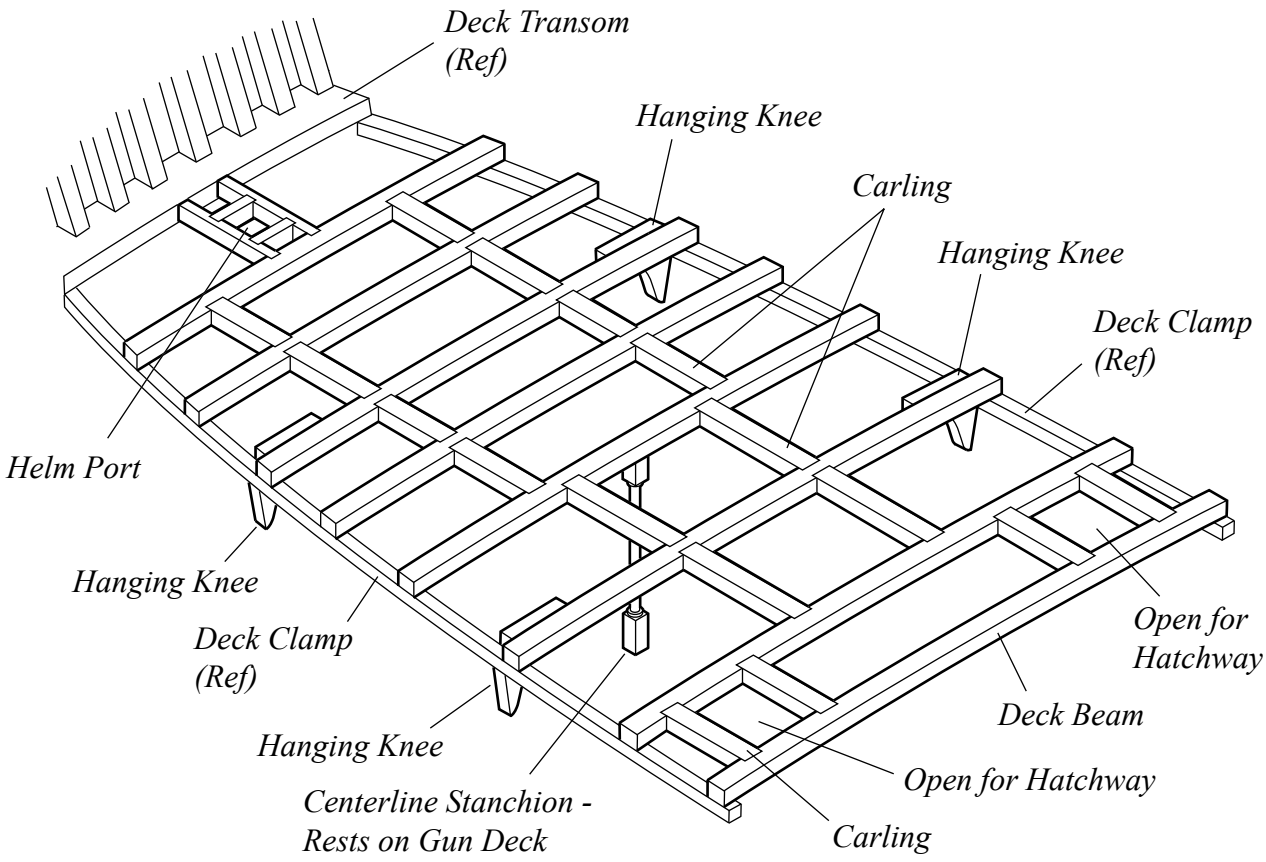


Figure 76 - Quarter Deck Framing

QUARTER DECK

The quarter deck is a much simpler design than the gundeck and is constructed using deck beams, hanging knees, and carlings. Start by cutting out all of the deck beams. Like those for the gun deck, they will have a camber. Install to the hull resting each on the deck clamps. Add the four hanging knees, and centerline stanchion. Finish by installing the carlings between the beams and the framing detail at the helm port. See Figure 76 above.

Two hatchways give access from the gun deck below. Build the two hatches and ladders in the same manner as those made previously. There will be no covers or gratings installed so leave the battens off of the inside surfaces of the hatches. Install to the deck centering over the opening in the framework, and add the ladders resting the bases on the deck below. See Figure 77.

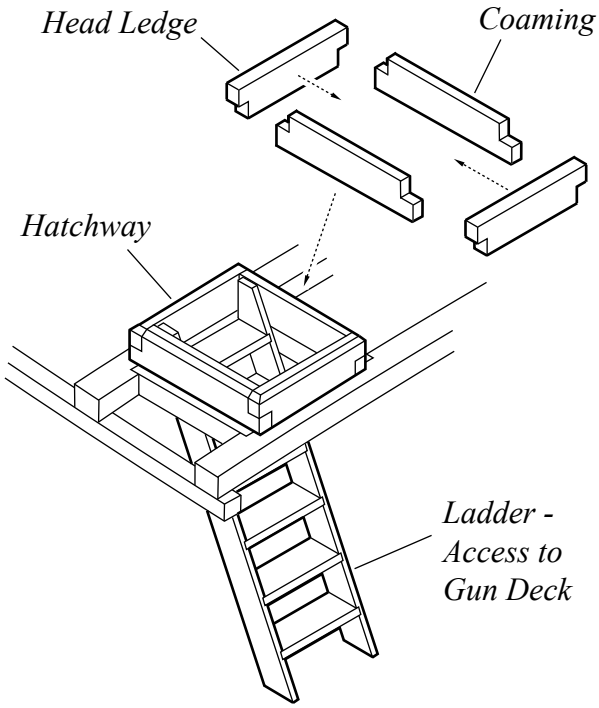


Figure 77 - Hatchway and Ladder

Like the gun deck the quarter deck will be planked to the centerline. Starting at the edge, install the waterway. Progress inward working around the hatchway. The final row at the centerline will have a cut out for the helm port. Finish by adding the cross plank. Trenail as desired.

Complete the area by adding the internal planking (lining) to the sides and stern. Make one cleat for the yard brace and add it to the port side only.

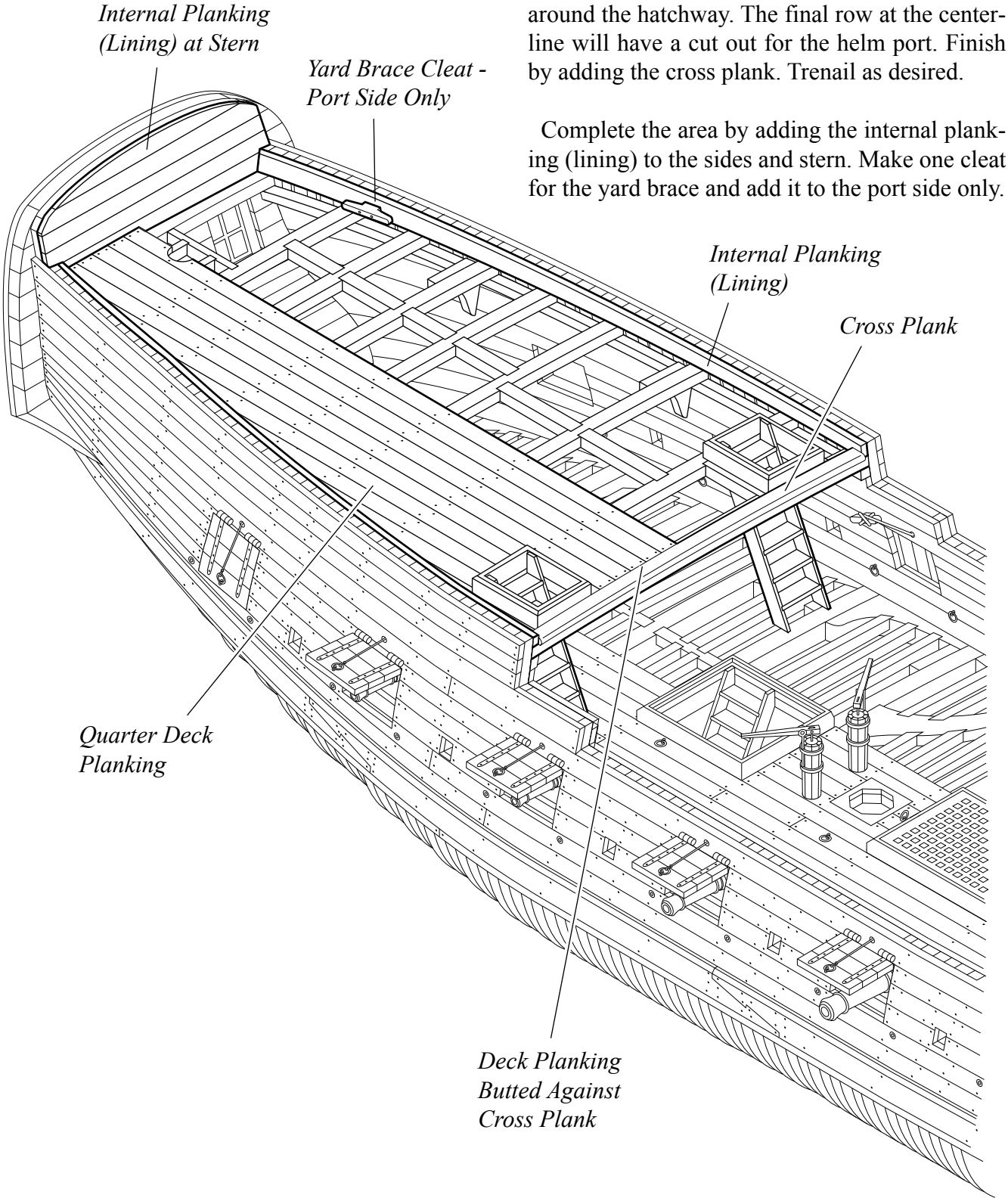
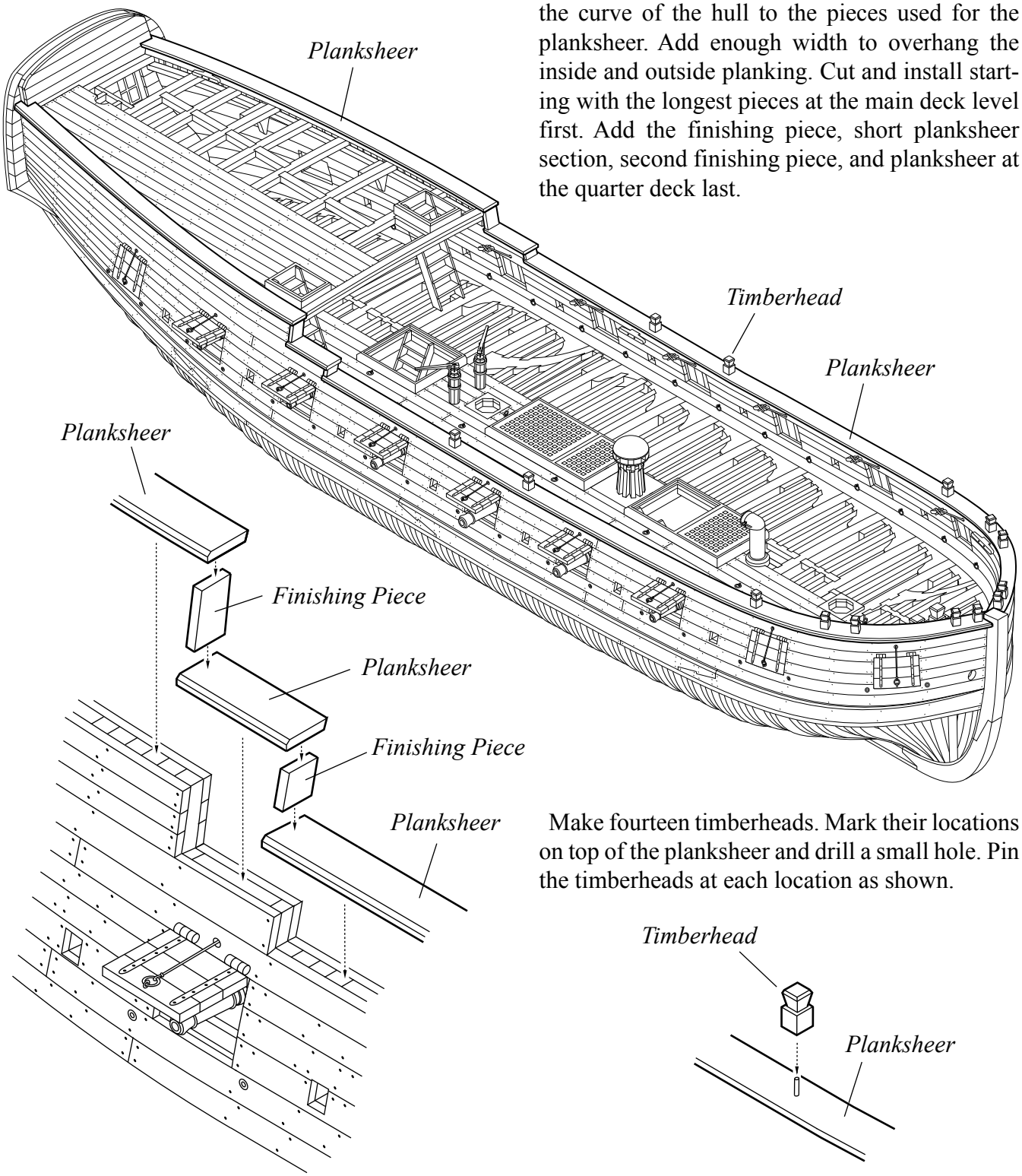


Figure 78 - Quarter Deck Completed

PLANKSHEER

The plankshear is the covering on top of all of the framing. Using a cardboard template, transfer the curve of the hull to the pieces used for the plankshear. Add enough width to overhang the inside and outside planking. Cut and install starting with the longest pieces at the main deck level first. Add the finishing piece, short plankshear section, second finishing piece, and plankshear at the quarter deck last.



Make fourteen timberheads. Mark their locations on top of the plankshear and drill a small hole. Pin the timberheads at each location as shown.

Figure 79 - Plankshear Installation

QUARTER DECK RAILING

Railing goes around the parimeter of the quarter deck and is supported by columns. Start by cutting out all of the columns. Mark their locations and drill small holes. Attach the columns pinning them in place. Make the railings and attach centering the columns underneath. Drill and pin the railing.

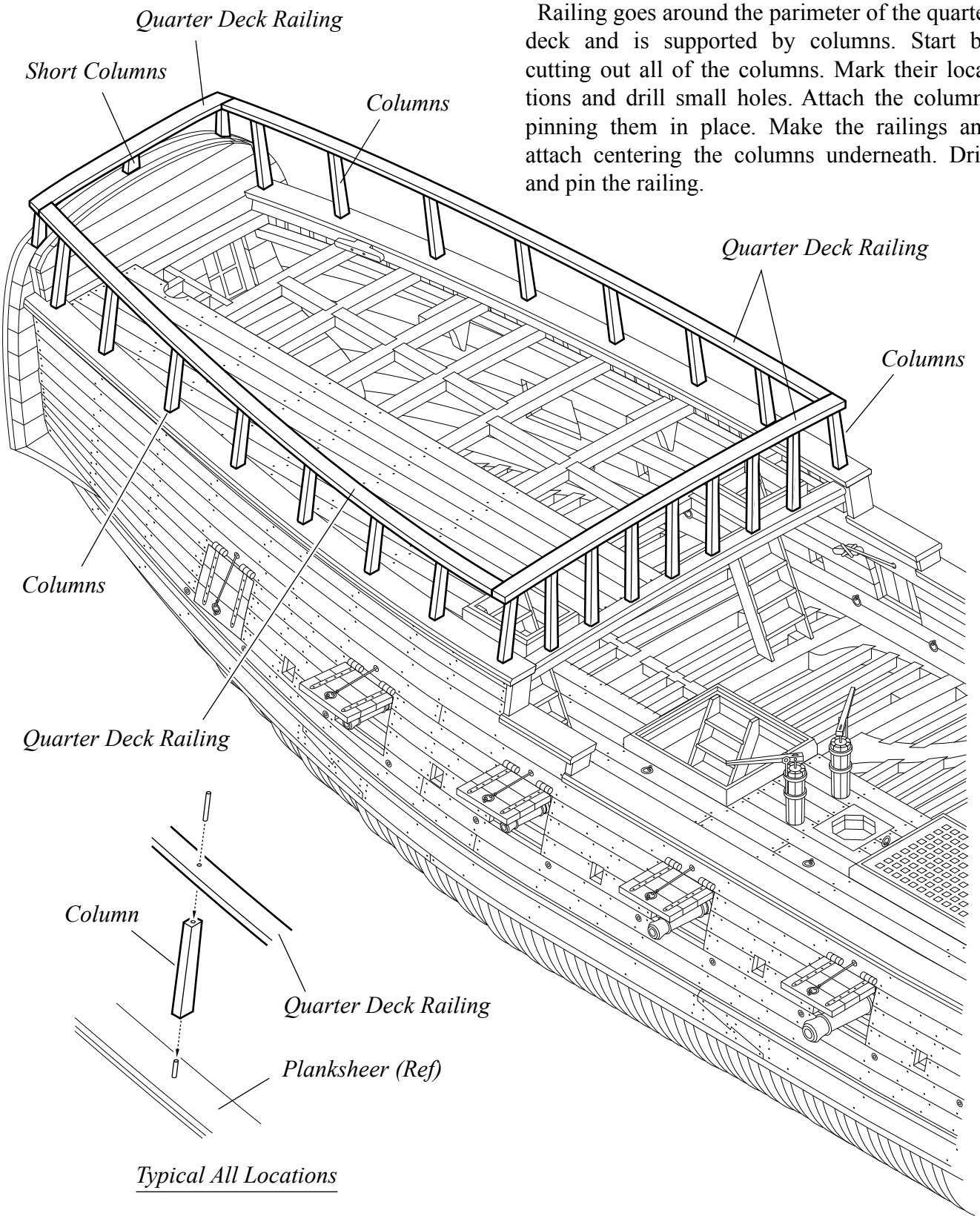
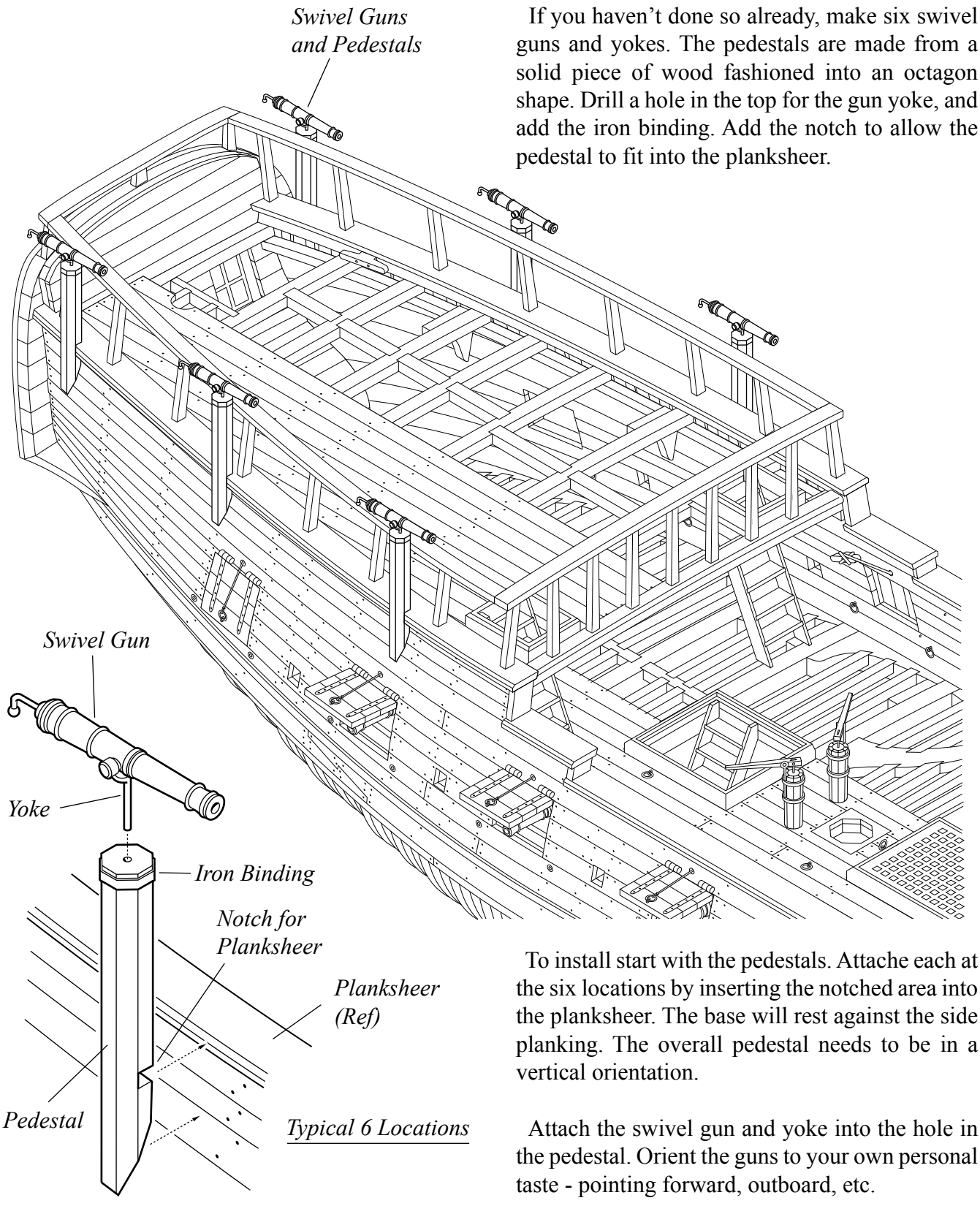


Figure 80 - Quarter Deck Railing

SWIVEL GUNS

If you haven't done so already, make six swivel guns and yokes. The pedestals are made from a solid piece of wood fashioned into an octagon shape. Drill a hole in the top for the gun yoke, and add the iron binding. Add the notch to allow the pedestal to fit into the plankshеer.



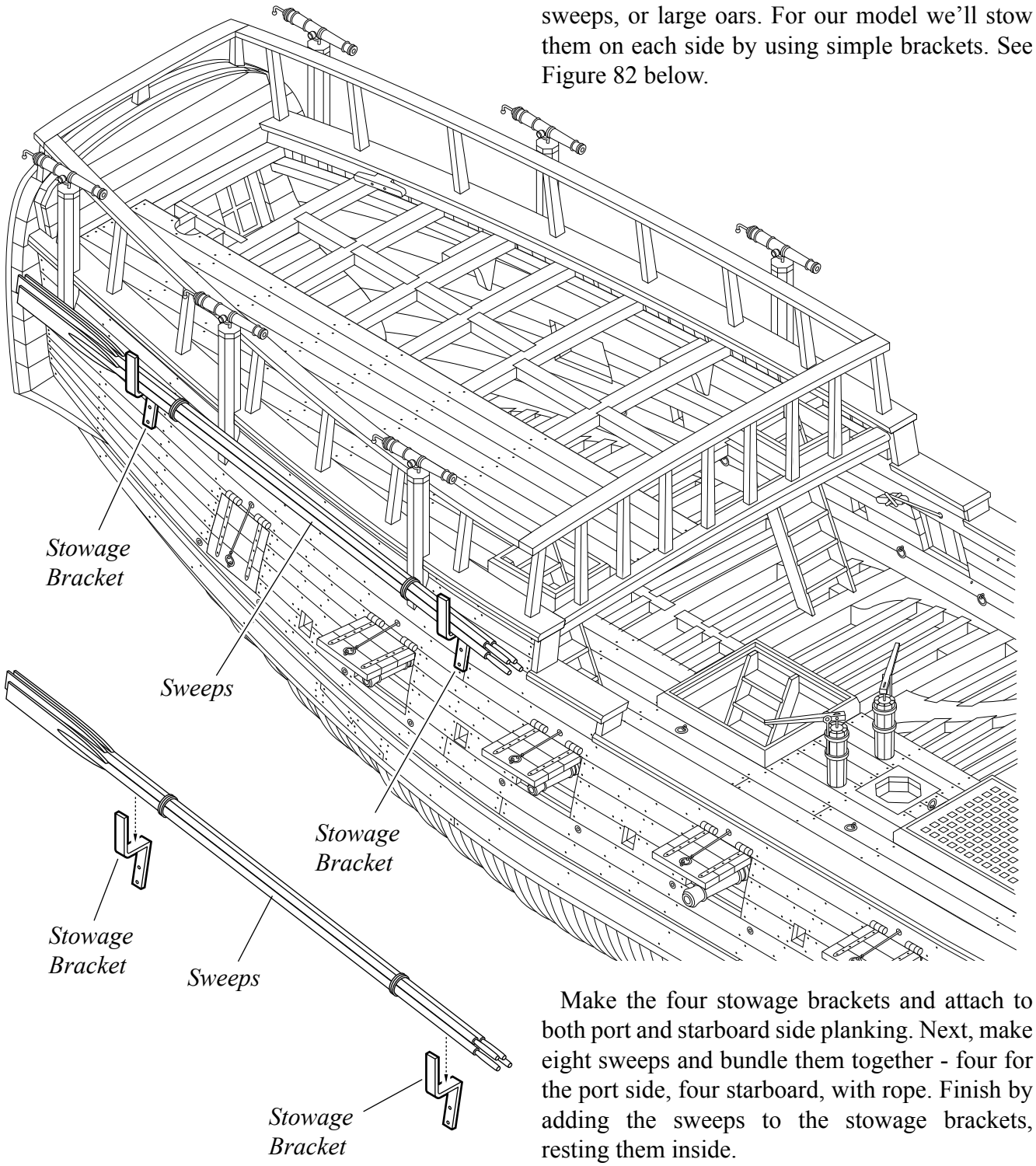
To install start with the pedestals. Attache each at the six locations by inserting the notched area into the plankshеer. The base will rest against the side planking. The overall pedestal needs to be in a vertical orientation.

Attach the swivel gun and yoke into the hole in the pedestal. Orient the guns to your own personal taste - pointing forward, outboard, etc.

Figure 81 - Swivel Gun Installation

SWEEPS AND STOWAGE BRACKETS

Along with sail power Washington would have had the ability to have propulsion by using sweeps, or large oars. For our model we'll stow them on each side by using simple brackets. See Figure 82 below.



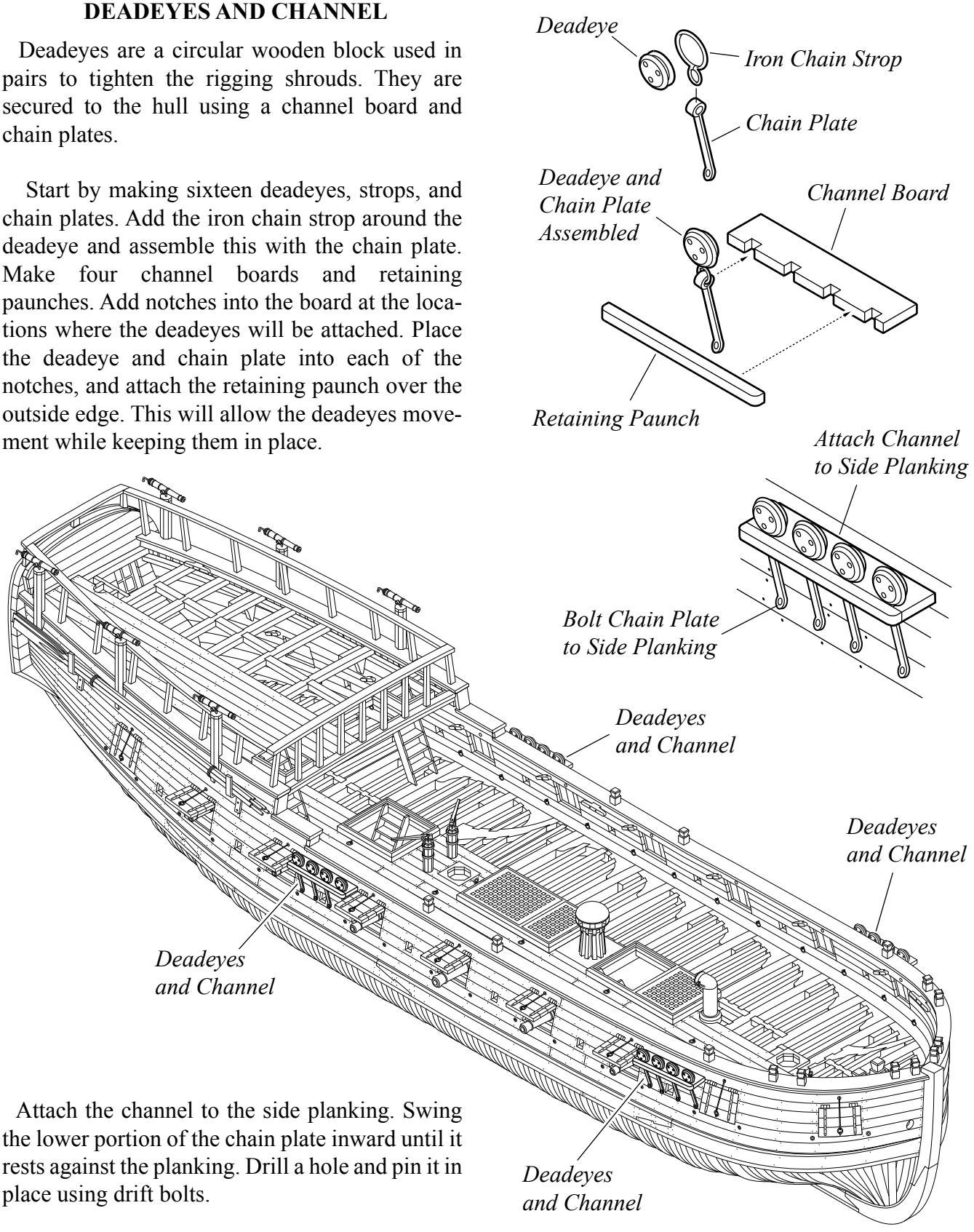
Make the four stowage brackets and attach to both port and starboard side planking. Next, make eight sweeps and bundle them together - four for the port side, four starboard, with rope. Finish by adding the sweeps to the stowage brackets, resting them inside.

Figure 82 - Sweep and Stowage Installation

DEADEYES AND CHANNEL

Deadeyes are a circular wooden block used in pairs to tighten the rigging shrouds. They are secured to the hull using a channel board and chain plates.

Start by making sixteen deadeyes, strops, and chain plates. Add the iron chain strop around the deadeye and assemble this with the chain plate. Make four channel boards and retaining paunches. Add notches into the board at the locations where the deadeyes will be attached. Place the deadeye and chain plate into each of the notches, and attach the retaining paunch over the outside edge. This will allow the deadeyes movement while keeping them in place.



Attach the channel to the side planking. Swing the lower portion of the chain plate inward until it rests against the planking. Drill a hole and pin it in place using drift bolts.

Figure 83 - Deadeyes and Channel Installation

CATHEADS

The cathead is a curved beam extending from each side of the bow, used for raising and carrying the anchors.

Cut out the two catheads and check to make sure that they rest against the inside lining and extend over the planksheer. During the rigging process we'll add block and tackle along with an anchor to the starboard side cathead. Prepare by drilling four thru holes in the end extending over the ships side. To simulate the look of the sheaves (pulleys) cut a recessed slot between the holes.

Following the plans, and Figure 84 below, install the catheads with the base resting on top of the gun deck and the upright portion against the inside lining surface.

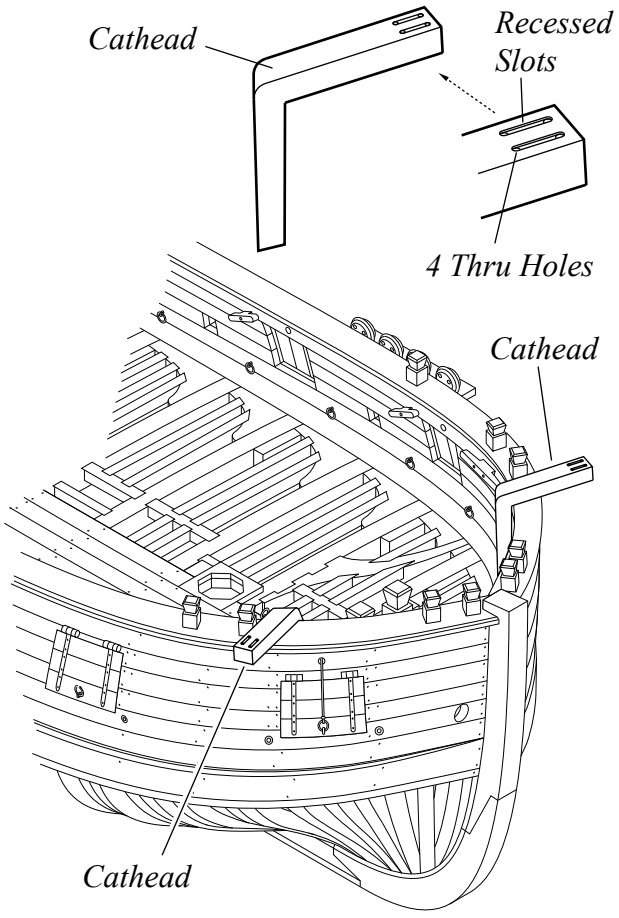


Figure 84 - Catheads

RUDDER AND TILLER

A rudder and tiller steer the ship. Build the rudder by cutting the head and back pieces. You may make it out of one piece only if desired. Cut the mortice for the tiller. Add the iron hoops and sole piece. Make the tiller. See Figure 85 below.

Make the three sets of gudgeons and pintles attaching the pintle to the rudder first. Install the rudder head through the opening at the helm port and quarter deck. Align the sole piece with the bottom of the keel. Attach the lower portion to the stern post and lower transom with the gudgeons. To finish add the tiller to the mortice in the top. See Figure 86 on the following page.

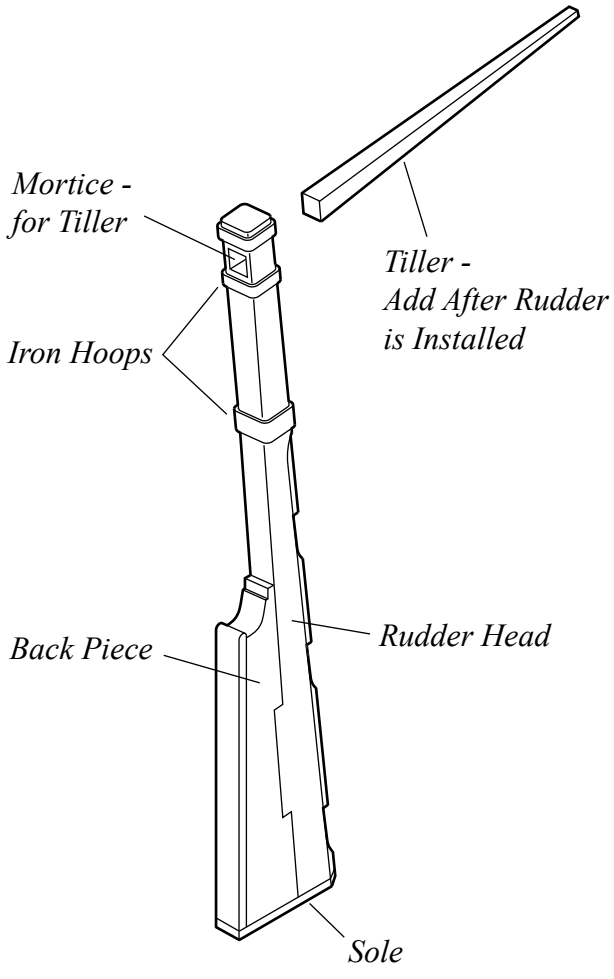


Figure 85 - Rudder and Tiller

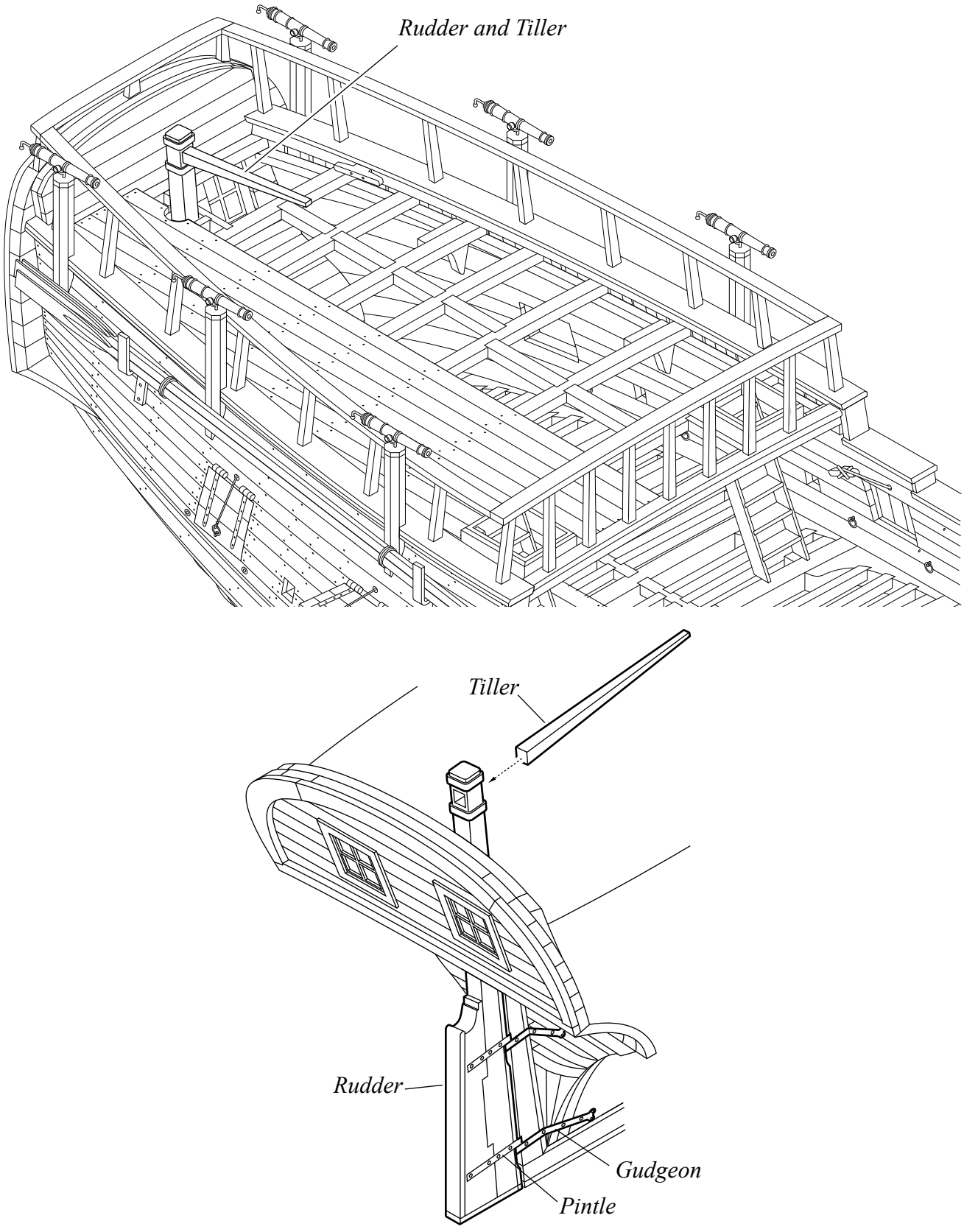


Figure 86 - Rudder and Tiller Installation

Congratulations. You've successfully built a plank-on-frame model of the Washingtons hull. At this point there are three options to consider before we proceed:

1. The model is completed at this stage. Some may prefer to leave the masts, yards, and rigging off. Many beautiful contemporary models have been built and displayed this way and is an accepted form of presentation. If you prefer this approach jump ahead to the last section where we'll cover displaying the model.

2. Add mast stubs only. A portion of the masts will be added to the model and cut off above the deck line. This approach gives the general appearance and location of them in realtionship to the rest of the vessel. We'll cover this in the following section.

3. Add the masts, yards, and rigging including an anchor. This is the most complete option showing the basic lateen style standing rigging of which she was equipped. Continue to the next section where we'll begin with the masts.

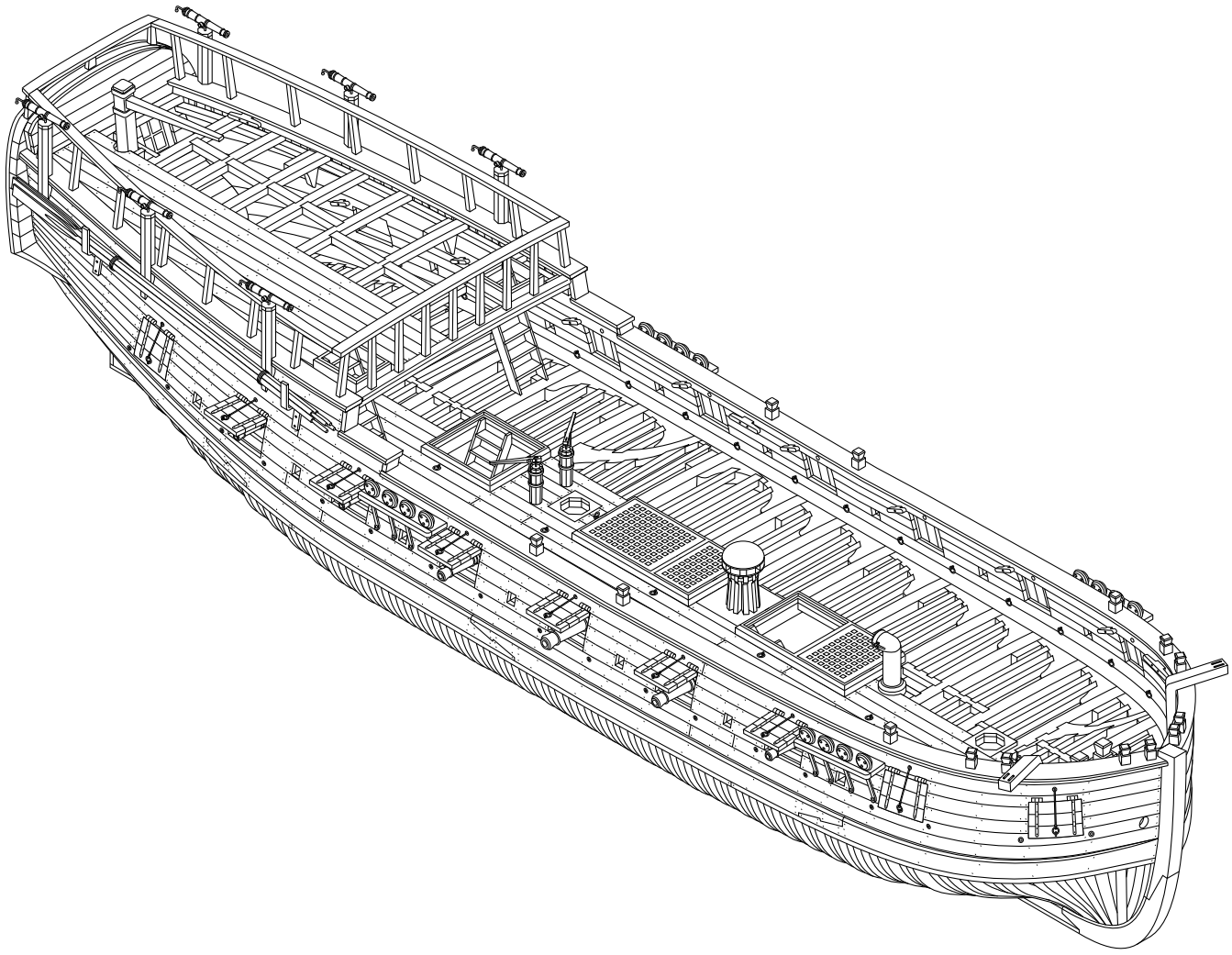


Figure 87 - Model Completed and Ready for Rigging

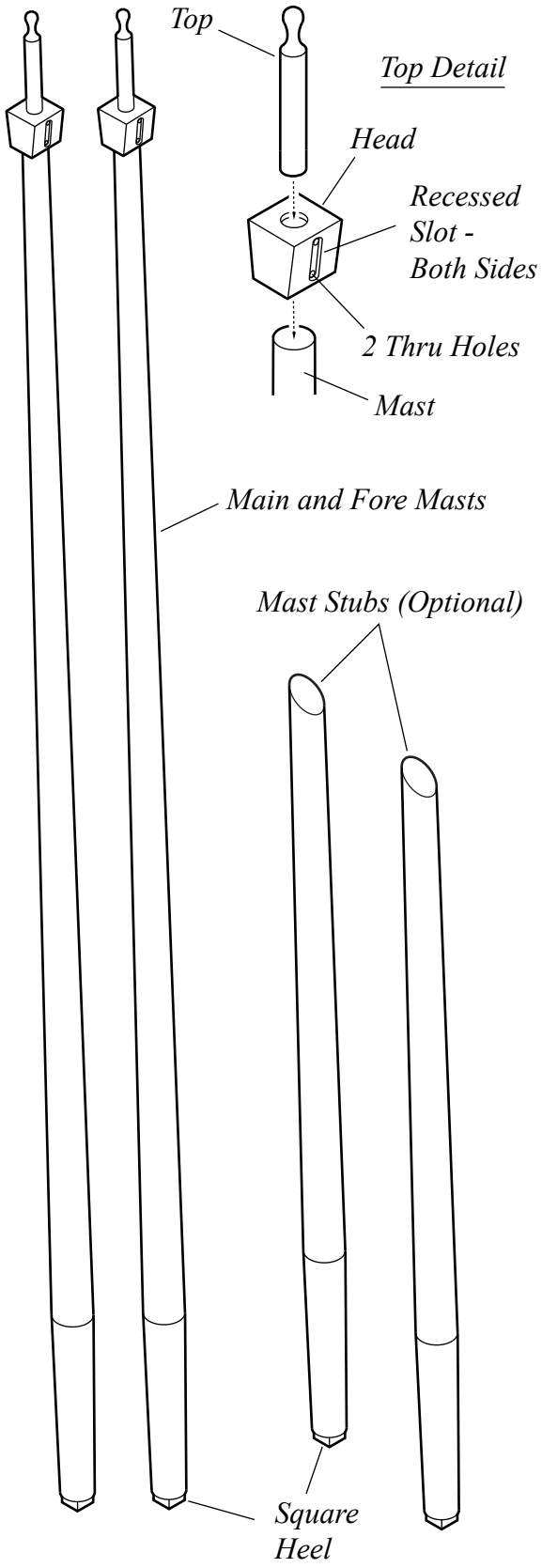


Figure 88 - Masts

MASTS

For the main and fore masts start with a square length of wood, or a dowel. Shape and taper the piece to it's final diameter using plan sheet 10 as a guide. Add the square heel detail at the base. If you've decided to use stubs cut the masts to a length that looks aesthetically pleasing to you.

Make the head piece. Drill two thru holes and add recesses to simulate the sheave area. Shape the top piece from a length of dowel then assemble the head and top to each mast. See Figure 88.

To install, or step the masts, start by inserting them through the opening at the partners on the main deck. Rest the heel into the recess on the mast step. Check to insure you have the correct rake angle as set in an earlier procedure. For our model we'll use a simplified two piece wedge to secure the mast at the deck level. See Figure 89 below.

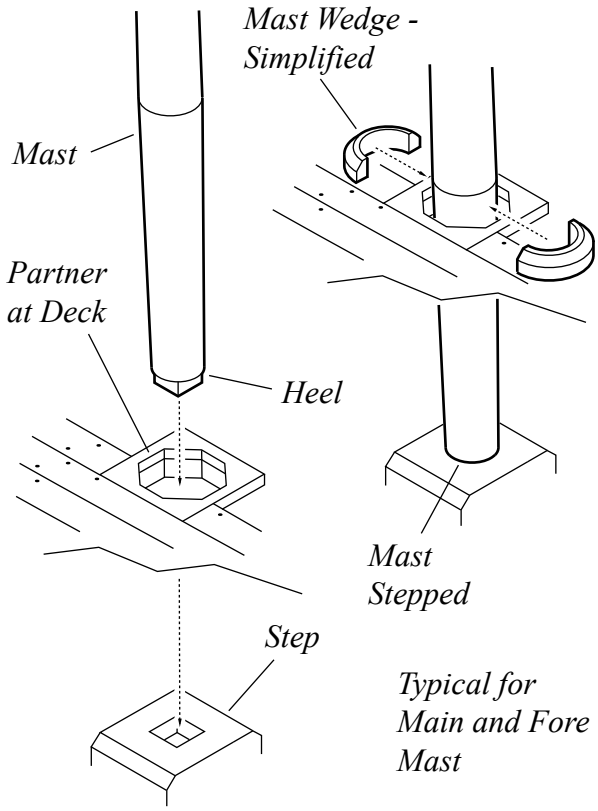


Figure 89 - Mast Installation

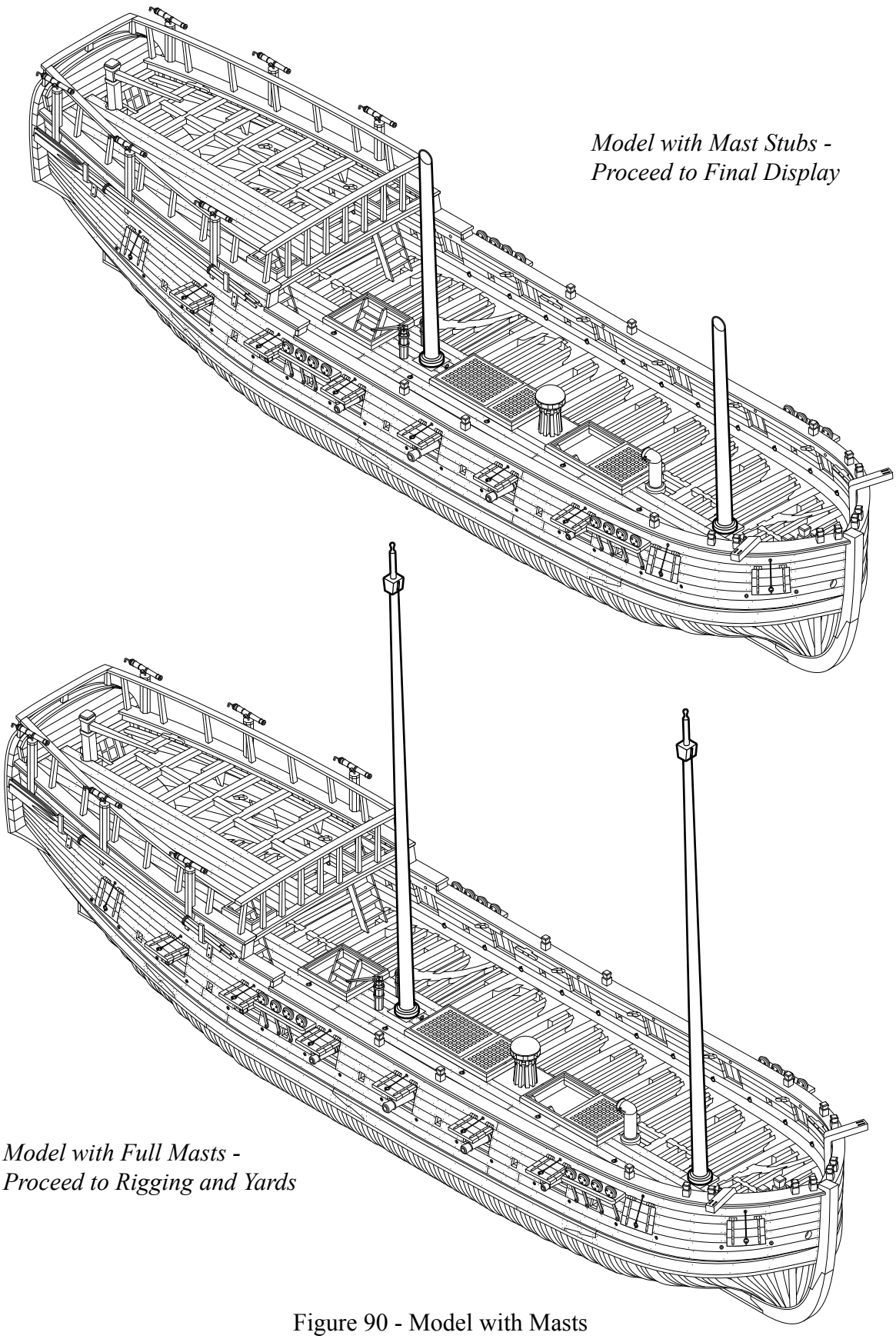


Figure 90 - Model with Masts

SHROUDS AND STAYS

The Washington was rigged with lateen style yards and sails. The model will have a simplified lateen standing rig arrangement. Rigging a ship is an art form in itself and the subject of many books and dissertation. If this is your first attempt at rigging you will find it a relatively easy task to accomplish.

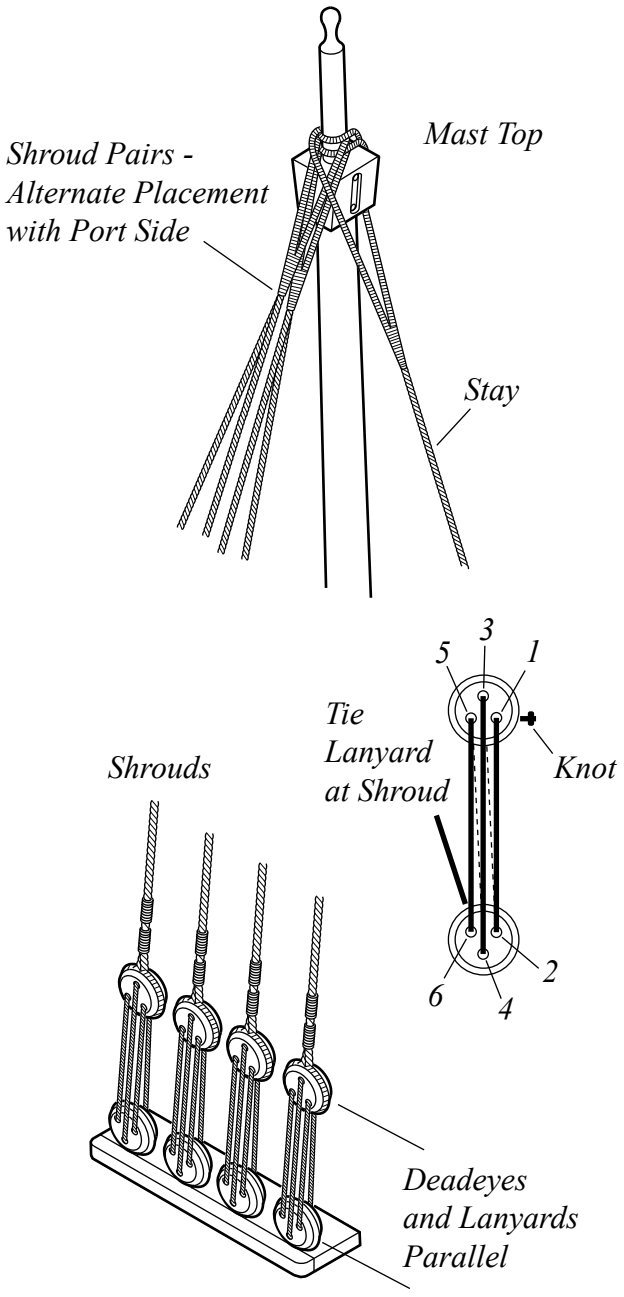


Figure 91 - Shrouds and Stay

Shrouds and stays are used to support the masts. Starting with the shrouds, make sixteen deadeyes like those previously. Cut rope in lengths long enough to loop around the mast head with the loose end terminated at the deadeyes. Alternate shrouds between sides - starboard, port, starboard, port. Tie off the loose ends to the deadeyes keeping them parallel with the set at the channel board. Complete by reeving the lanyard between the deadeye pairs and pulling the shroud taunt. Repeat this procedure for both the main and fore mast. See Figure 91.

Because of the lateen style no ratlines will be added to the shrouds. Cut a length of rope for the stay. Make two single blocks and a small cleat. Strop one block with a hook. This will attach to the ringbolt at the deck centerline. Strop the other block with a length of rope. Loop and fix the stay around the mast head and tie off at the top block. Attach the lower block to the deck. Reeve the block and tackle as shown in Figure 92, pulling the stay taunt. Secure the loose end of the rope to the cleat. Repeat this process at both masts.

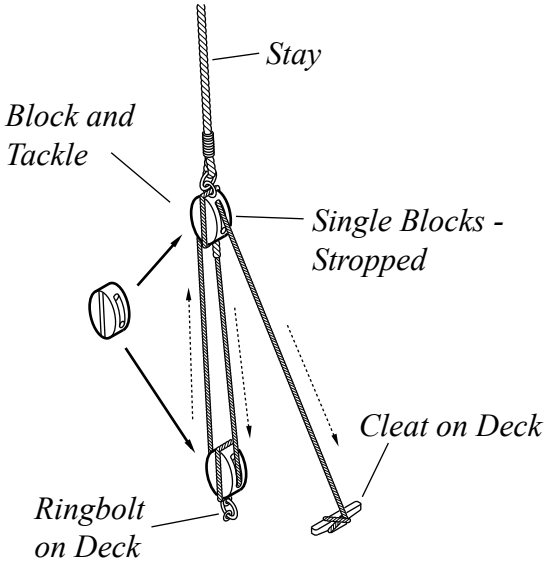
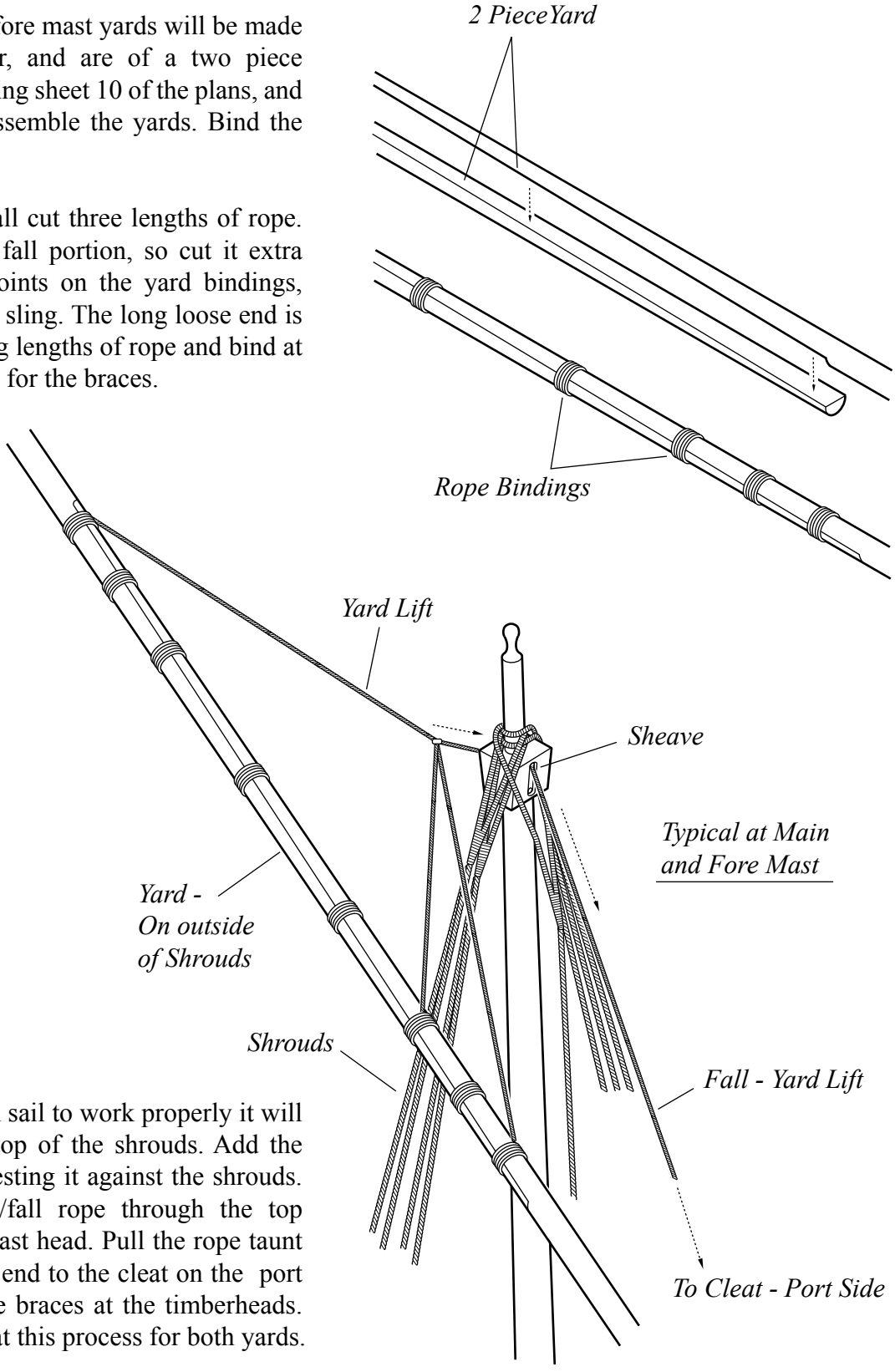


Figure 92 - Block and Tackle Assembly

YARDS

Both the main and fore mast yards will be made in the same manner, and are of a two piece construction. Following sheet 10 of the plans, and Figure 93 cut and assemble the yards. Bind the joint with ropes.

For the yard lift/fall cut three lengths of rope. One will act as the fall portion, so cut it extra long. Tie at three points on the yard bindings, creating a tripod like sling. The long loose end is the fall. Now cut long lengths of rope and bind at both ends of the yard for the braces.



In order for a lateen sail to work properly it will be installed on the top of the shrouds. Add the yard to the model, resting it against the shrouds. Reeve the yard lift/fall rope through the top sheave hole in the mast head. Pull the rope taunt and secure the loose end to the cleat on the port side. Now secure the braces at the timberheads. See Figure 94. Repeat this process for both yards.

Figure 93 - Yard Assembly and Installation

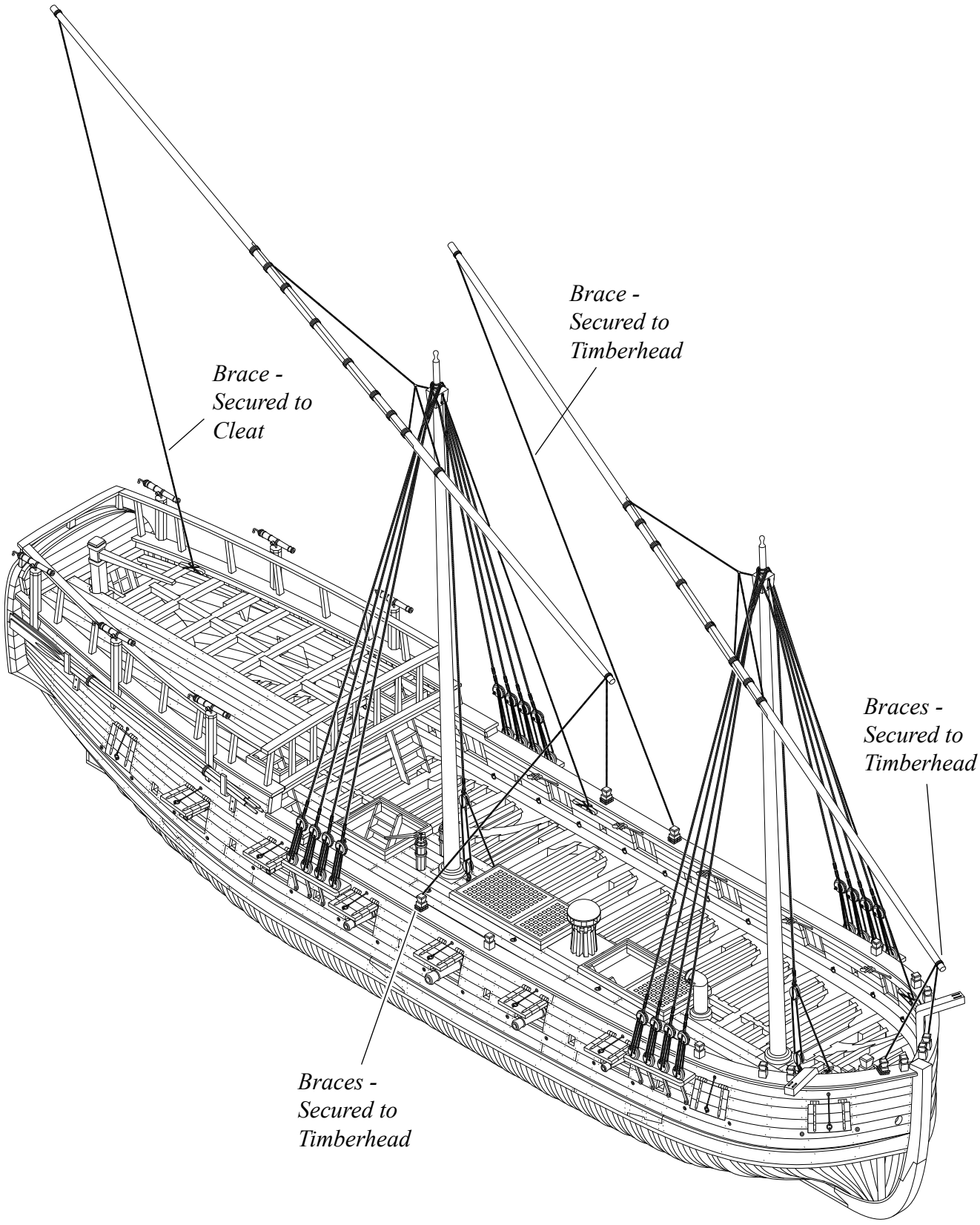


Figure 94 - Yard Braces and Overall Rigging

ANCHOR

For our model we'll install one anchor on the starboard side only. Start by cutting out all of the individual parts. See Figure 95. Except for the stock, which is wood, all of the parts would have been iron. If you choose to make these out of wood make sure you paint them flat black. Insert the shank, arm, and palm assembly thru the hole in the wooden stock and attach the ring.

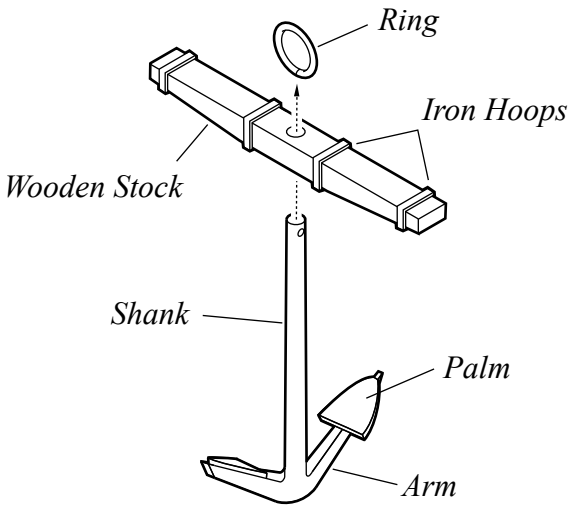


Figure 95 - Anchor Assembly

Make one double block and strop it with a hook. Now cut a long length of rope. Tie one end to the eyebolt on the cathead. Reeve the rope through the cathead, and secured to the timberhead as shown in Figure 96. Hang the anchor from the block hook. For the anchor cable use a heavy piece of rope. This would have been one of the thickest used on the actual ship. Cut a long piece, and tie one end to the anchor ring. Thread the other through the hawse hole and across the deck surface. Since we aren't showing the cable and capstan in an operational state terminate the end of the rope into the hold at the forward open hatchway.

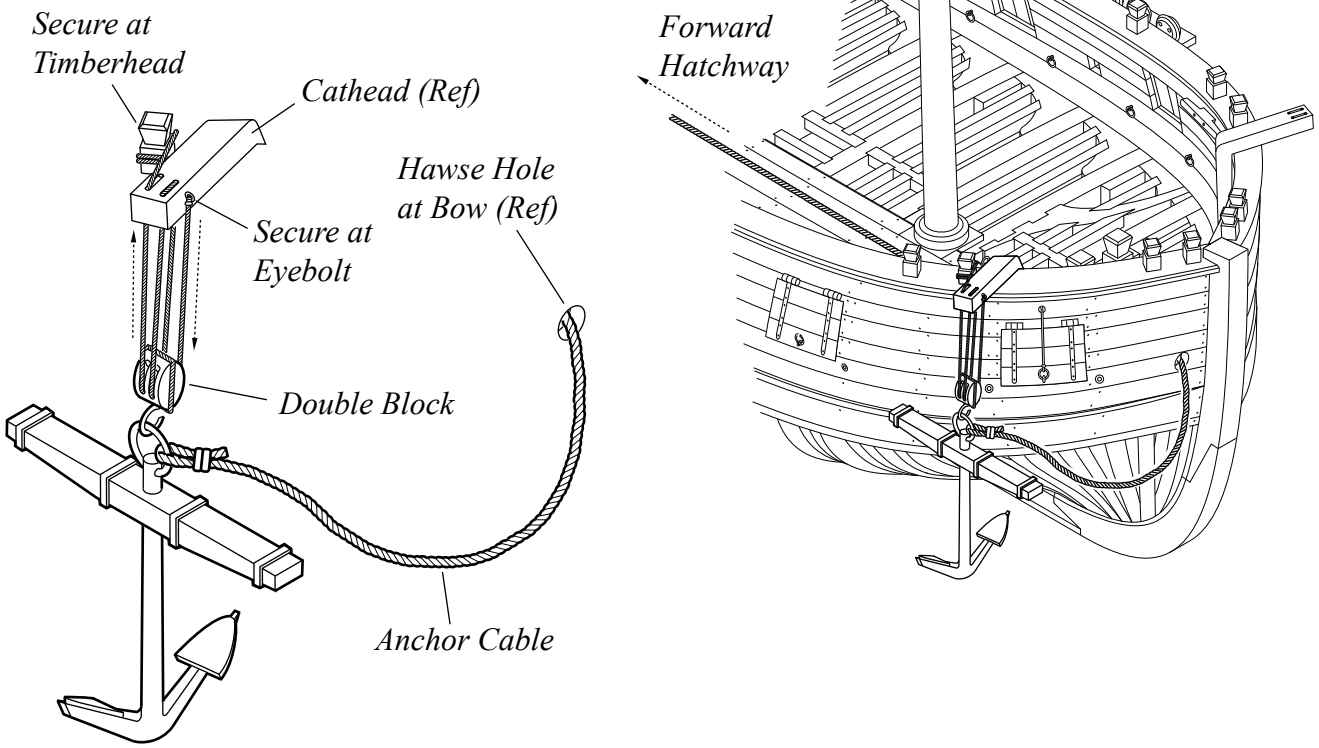
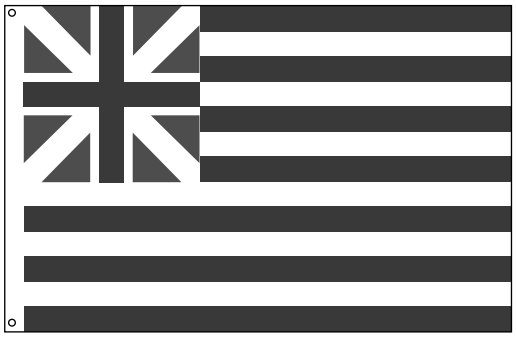


Figure 96 - Anchor Installation

FLAG

The first flag of the colonists was the Grand Union Flag. It was also referred to as the Congress Colors, the First Navy Ensign, and also known as the Cambridge Flag. Included with the plans is a color sheet of the flag. You can use this, or create you own. Cut out and fold the flag, gluing the halves together. Make a flagstaff and install at the stern. Attach the flag with lanyards. See Figure 97 below.



Grand Union Flag

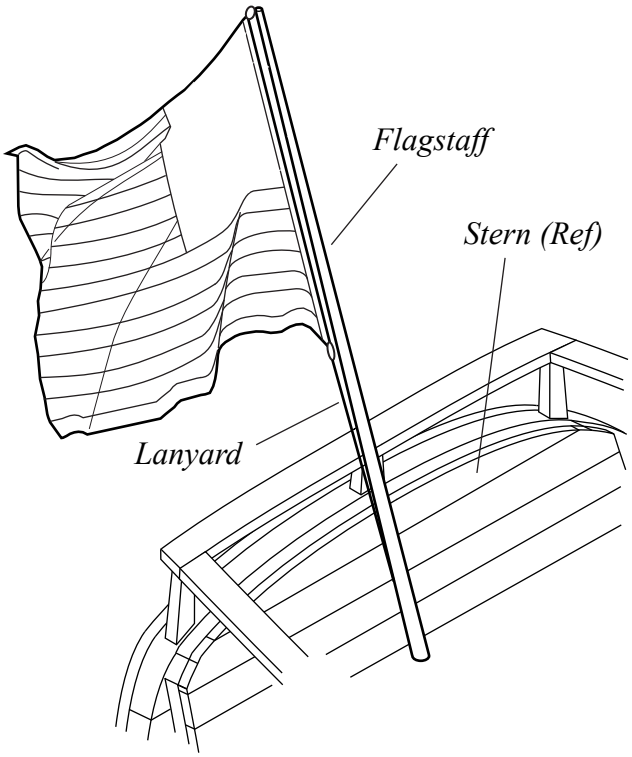


Figure 97 - Flag Installation

FINAL DISPLAY

To display the model we'll make a stand and mounting pieces. This can be as simple as a rectangular base and pedstals, or more elaborate using cradles or ornate pieces. This is entirely up to you as the builder.

Make the base. Mark and attach two pedestals/mounting pieces at 8-3/4" on center. These will align with the holes on the underside of the keel which were used to mount it to the building board previously. See Figure 98 below. To make sure that the model is displayed at it's proper true waterline make sure that the mounting piece at the bow is 1/4" taller. Align the model with the stand and attach with small dowels, rods, etc.

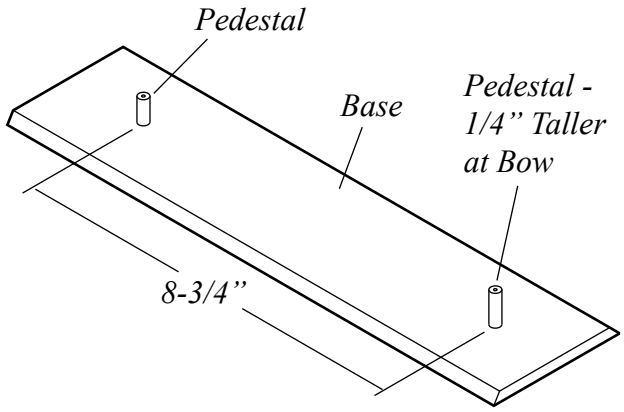


Figure 98 - Display Stand

Congratulations! Your model is now completed, and you've created a fine representation of a plank-on-frame style ship. Now proudly display your model.

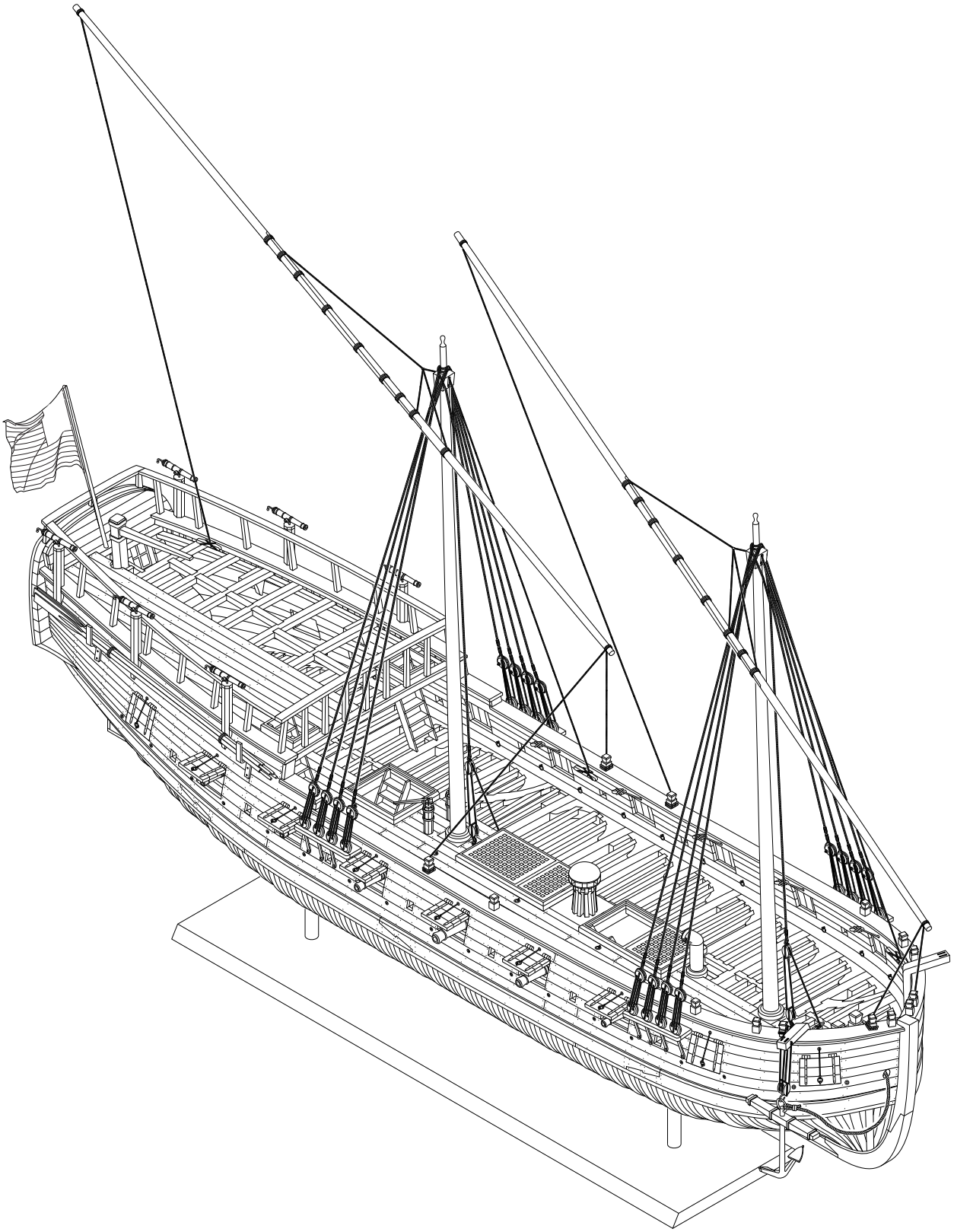


Figure 99 - Continental Galley Washington - 1776

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