BUILD LORD NELSON'S HMS VICTORY

Pack 10

Stages 91-100

DeAGOSTINI MODEL SPACE™

BUILD LORD NELSON'S HMS VICTORY

Pack 10

Stages 91-100

Contents

Editorial and design by Continuo Creative, 39-41 North Road, London N7 9DP.

DeAGOSTINI MODEL SPACE™

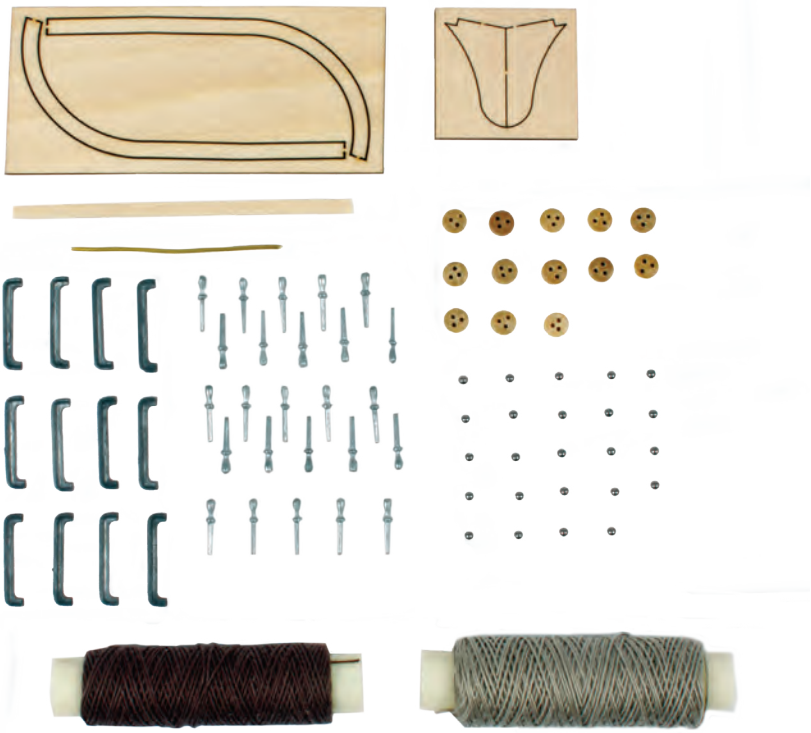
Visit our website www.model-space.com

Published in the UK by De Agostini UK Ltd, Battersea Studios 2, 82 Silverthorne Road, London SW8 3HE.
Published in the USA by De Agostini Publishing USA, Inc., 915 Broadway, Suite 609, New York, NY 10010.

Photo credits Build Lord Nelson's HMS *Victory* Pack 10: All photographs copyright © Continuo Creative with special thanks to the Royal Navy and the crew of HMS Victory

Stage 91: Fitting the stern davits

This stage includes parts for fitting out *Victory*'s deck and hull, plus beakhead detailing and rigging.



Wooden strips

1 wooden strip 2 x 3mm, 70 mm long

Fittings

1-mm brass wire x 40 mm
0.25-mm brown thread
0.25-mm natural thread
16 diecast wriggles
25 diecast belaying pins
24 cannonballs

Shaped wooden parts

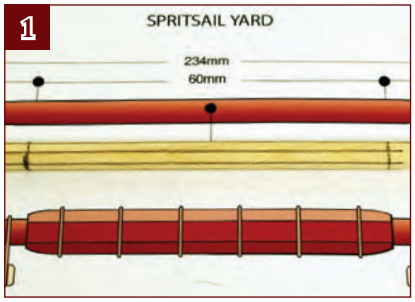
deadeyes 5 mm x 13
2 ekeing rails
2 cathead support brackets

Where the parts fit

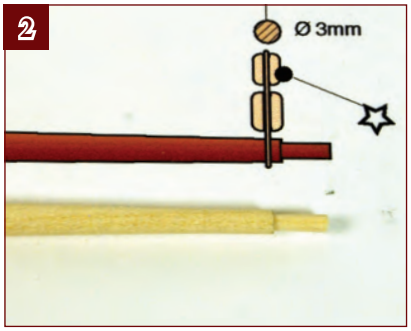
This stage, complete the bowsprit components by making a set of spars using components supplied earlier. Continue the hull fittings by adding the two catheads that support the anchors. Brackets and ekeing rails for these are supplied this time, and other parts were supplied with Stage 60. You also have a choice of whether or not to fit stern davits to your model. As explained in Stage 86, there is some doubt about when these fittings, present at launch, were removed. Keep the other fittings supplied this time, as they will be used to continue fitting out the deck and hull in later stages.

Making the bowsprit spars

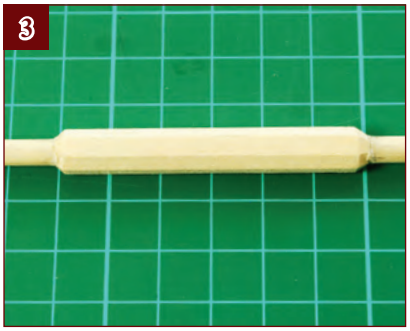
The dowels and other parts used to make the spritsail yard, spritsail topsail yard and two boomkins were supplied in Stage 89.



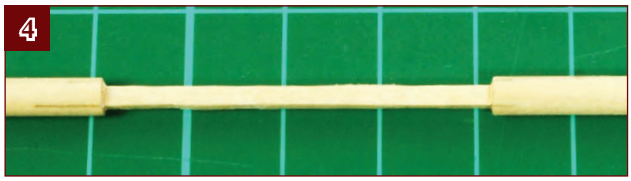
1. Take the 5-mm dowel and mark the centre octagonal section of the spritsail yard by using the bowsprit plan and centre finder.



2. Taper the ends of the yards to 3 mm and carve the narrow spigot on each end.

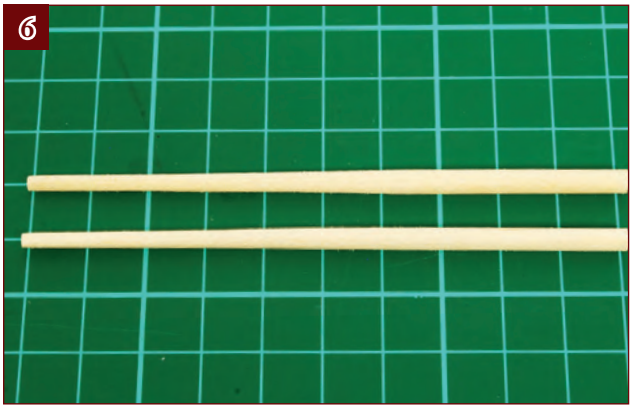


3. Carve the centre to a 4-mm octagon and add the 2 x 4-mm strips using the technique described in Stage 65.



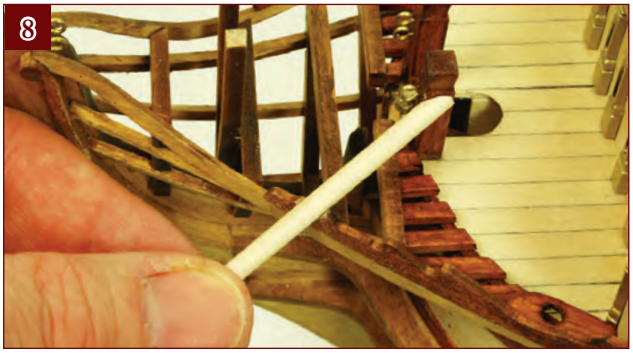
4. Repeat Steps 1 and 2 with one of the 4-mm dowels and the spritsail topyard plan, then carve the centre to a 2-mm square.

5. Use strips of the 2 x 2-mm wood to construct the octagonal centre of the spritsail topsail yard as described in Stage 73.

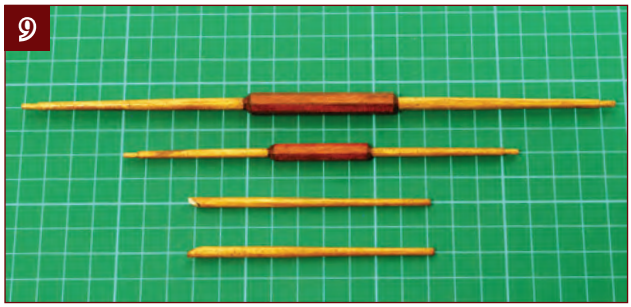


6. Cut the second 4-mm dowel in half and taper each piece to a 3-mm diameter to form the two boomkins.

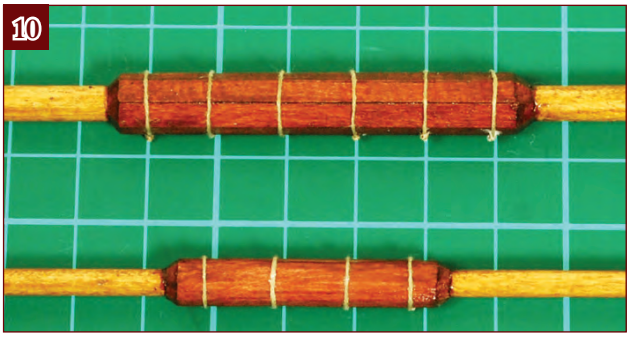
7. Wrap a piece of sandpaper around the dowel and sand the cut-out in the boomkin supports to match the size and angle of the boomkins, which are positioned as in the following step.



8. Cut the 4-mm ends of the boomkins at an angle so that they sit flat against the sides of the knightheads. Then trim the boomkins back to 95 mm long.

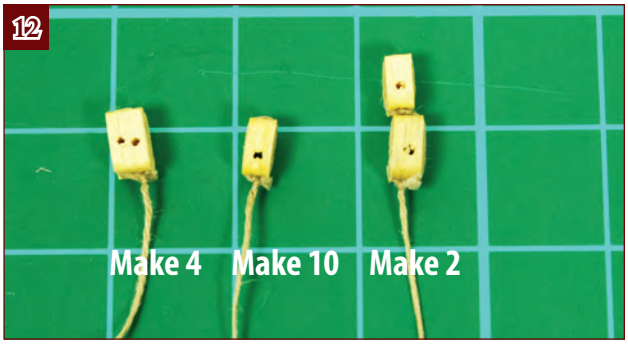


9. Stain both yards and the two boomkins to match the finish on the other yards. If you are painting your model, do not do paint the spars until Step 11.



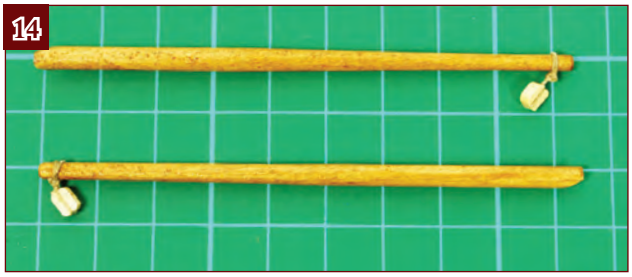
10. Use lengths of the 0.25-mm natural thread to tie the rope bands around the two spars as shown in the plans.

11. Construct four footrope supports using the instructions that appear in Stage 65, and fit them in the positions indicated on the bowsprit plans. If you are painting your model, paint the spars and boomkins black.



12. Prepare four double blocks, using 0.25-mm natural thread, leaving tails of about 60 mm. Prepare 10 4-mm single blocks with tails of about 80 mm and two sets of 4-mm single blocks paired with 5-mm single blocks, also with tails about 80 mm.

13. Tie the blocks to the spars using the plan as a guide.



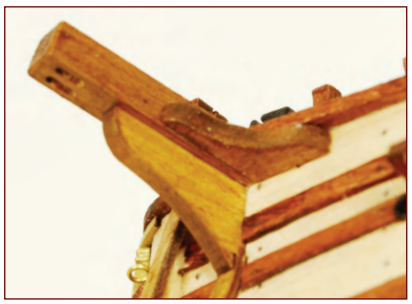
14. Tie 4-mm single blocks to the 3-mm ends of the boomkins, turned so they hang down when the boomkins are in place.

15. Tie the remaining double blocks to the eyes on the knightheads. Leave 1-2 mm of thread between the eye and the block as this will make it easier to thread the blocks.

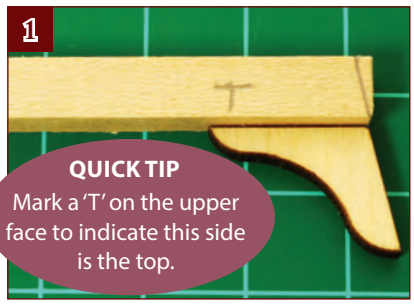
Completed bowsprit spars for the painted version of the model.

Fitting the catheads and ekeing rails

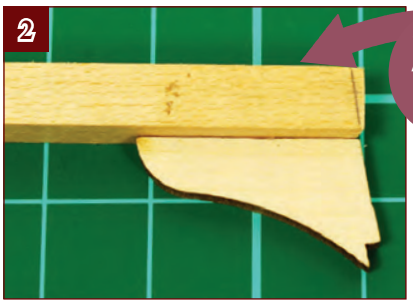
The catheads that support the anchors are made from parts supplied in this stage, plus laser-cut brackets and 6 x 6-mm wooden strip from Stage 60. The steps show the port cathead – repeat for the starboard side.



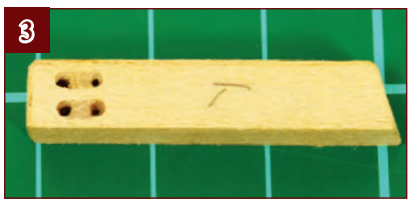
The cathead has a bracket under it and one behind. Its end has to be cut at an angle in both the forward and upward directions, to match the brackets.



1. Take the 6 x 6-mm strip, and use the smaller bracket (which fits behind the cathead) to mark the forward angle on one end. Cut this line with a razor saw.



2. Turn the cathead over and mark the angle of the larger bracket on the side of the cathead. Saw along this line to create the upward angle.

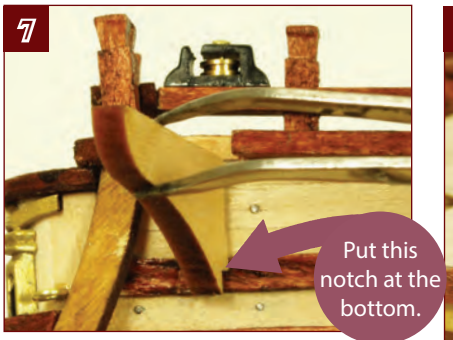


3. Cut 32 mm off the strip. Drill two 1-mm holes in the top, 2 mm from the end, and two more 6 mm from the end. Carve away the wood between them to form two slots that do not go all the way through the wood.

4. Hold the bracket and cathead in place against the hull, and mark lines where the bulwark cap needs to be cut away.

5. Carefully cut a slot in the bulwark cap, using a razor saw and knife. The slot must stop at the hull planking.

6. Try the cathead in place to ensure that it fits neatly.

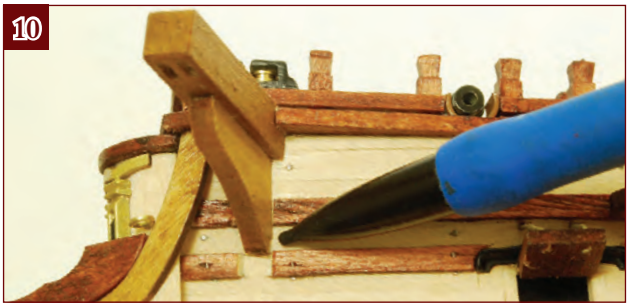


7. Hold the larger bracket centrally under the slot you have just cut. Chamfer the end of the bracket so that it will sit flat against the hull, then mark where it touches the moulding.

8. Cut away the upper moulding to clear the bracket where you made the marks. Then cut away the lower moulding directly below this point.

EXPERT TIP
Dry-fit the assembly in place before the glue sets to make sure the bracket fits properly.

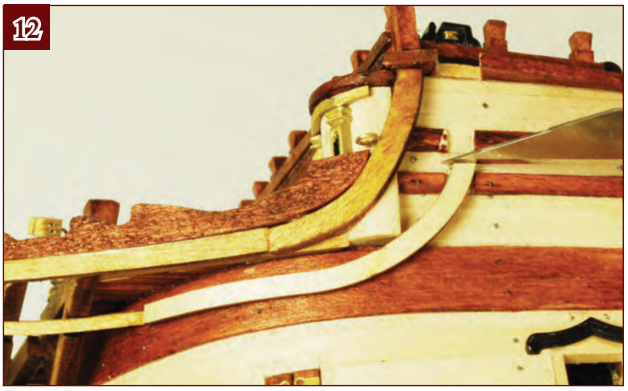
9. Glue the larger bracket centrally to the underside of the cathead. Then stain these parts dark oak, or paint them yellow ochre.



10. Hold the cathead in position and mark a pencil line on the hull at the top of the small notch at the bottom of the bracket.

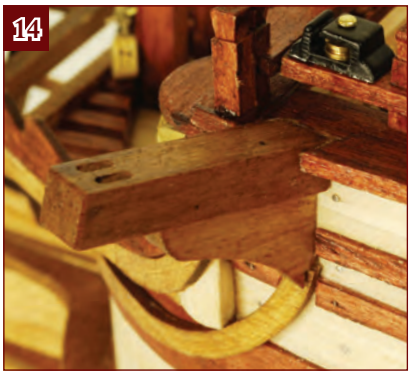
EXPERT TIP
You may have to trim the cut-out in the lower moulding to get a good fit.

11. Take one of the laser-cut ekeing rails (they are identical) and bend it to match the inward curve of the bow. Fit the upper curved end in the cut-out in the moulding and trim the straight end to fit against the middle beakhead rail.



12. Cut the upper, curved end of the ekeing rail in line with the pencil mark you made on the hull in Step 10.

13. Stain the ekeing rail dark oak, or paint it yellow ochre. Then glue it in position.



14. Glue the cathead in position. Hold the smaller bracket behind it to make sure it is at the right angle.

15. Stain the smaller bracket dark oak or paint it black and glue it in place. The thicker side of the bracket goes against the hull and you will need to chamfer both straight edges so they sit flat against the hull and cathead.

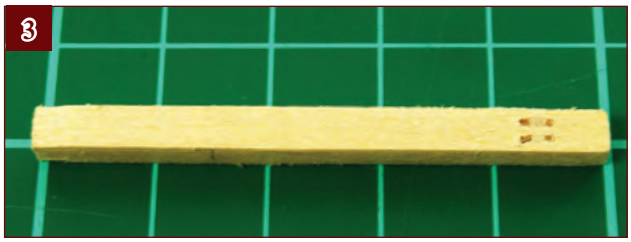
Fitting the stern davits

There is some debate about whether *Victory*'s stern davits were removed prior to the Battle of Trafalgar, so the following steps are optional. Parts are supplied in this stage for those who want to add davits.

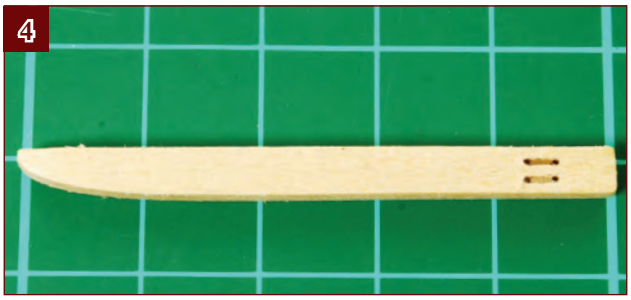
1. Using a 1-mm drill, make holes about 2 mm away from the corners where the roof of the gallery meets the hull. Drill all the way through the gallery stern wall.

EXPERT TIP
The lower inside corner of the square should be in line with the corner between the gallery roof and the ship's side.

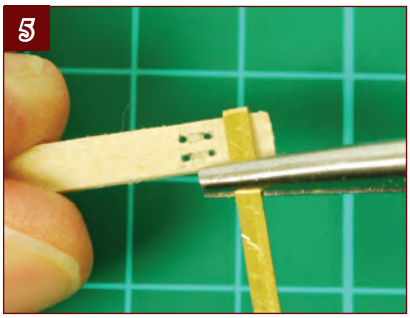
2. Working from the rear, enlarge the holes to 3 mm, starting by using a 2-mm drill, then a 3-mm drill. Finally, enlarge the holes to a 4 x 4-mm square with a sharp knife.



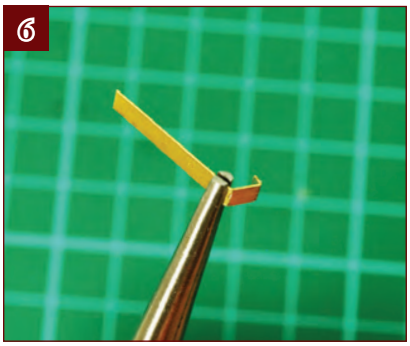
3. Cut two 50-mm lengths of 4 x 4-mm wood. Drill two 0.7-mm holes 5 mm from one end and two more 8 mm from the end. Cut away the wood between them to form two slots that do not go all the way through the wood.



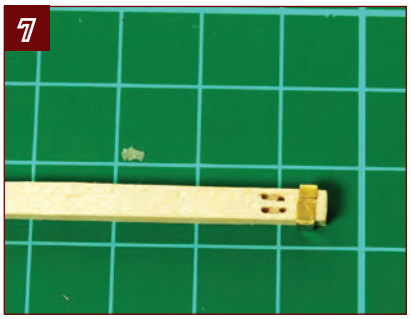
4. Sand a large radius on one side of each davit, starting about 15 mm from the end.



5. Fold the brass strip into a square. Start by folding 2 mm at right angles. Then place the strip on the davit and hold it with a pair of pliers.



6. Remove the wood. Then, without moving the pliers, fold the strip at 90 degrees.



7. Repeat Steps 5 and 6 until you have made a complete square, then cut the excess off so the strip fits neatly around the davit. Repeat for the other davit.

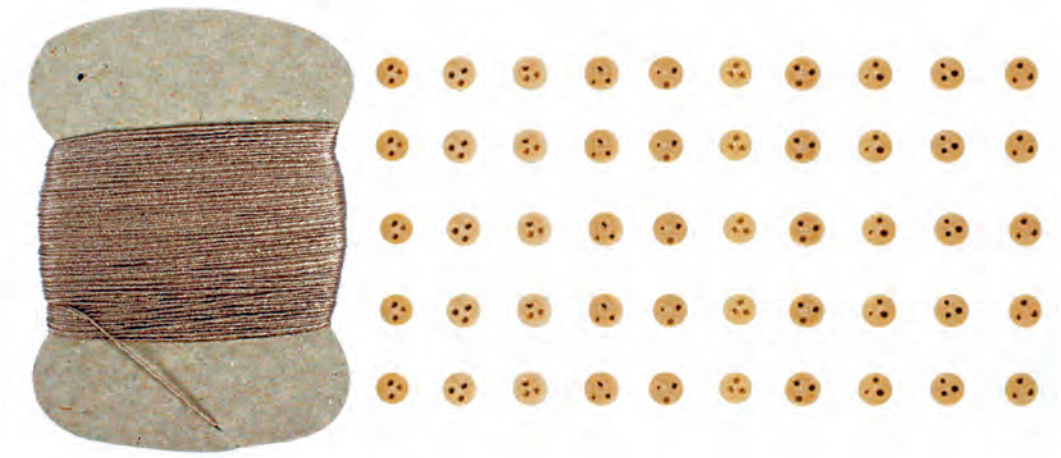
8. Stain the davits dark oak, or paint them black. Then glue the brass squares around the ends.

9. Glue the davits in place, leaving 28 mm of each shaft protruding beyond the gallery wall.

The painted version of *Victory*, showing the appearance of the stern gallery without davits in place.

Stage 92: More deck detailing

This stage includes parts for making a start on rigging *Victory*'s masts, but first there are a few more deck fittings to add.



Fittings

natural thread 0.25 mm x 30 m

Shaped wooden parts

deadeyes 5 mm x 50

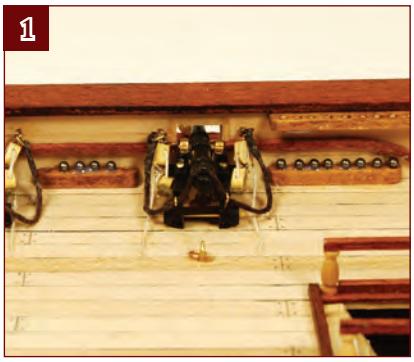
Where the parts fit

This stage, start by finishing off some more deck details using parts already supplied. If you are painting your model, you can also add some detail to the beakhead by painting the fine stripes that decorate some of the framing rails, but this isn't necessary for a natural wood version of the model. It's then time to start rigging the masts with parts supplied with Stages 90 and 91. You can use these to add the shrouds that support the masts on each side. The masts themselves aren't being fitted just yet, so leave the shrouds taped to avoid getting them tangled. When you do install the masts, the shrouds will be tensioned with the deadeyes that you have already fitted to the chainwales.

Fitting out the quarterdeck bulwarks

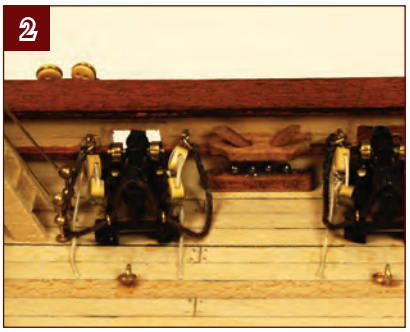
Finish off the quarterdeck by adding cannonballs to the shot garlands, installing the staghorns and adding belaying pins to the racks. The steps show only one side, but you should do both the same.

1



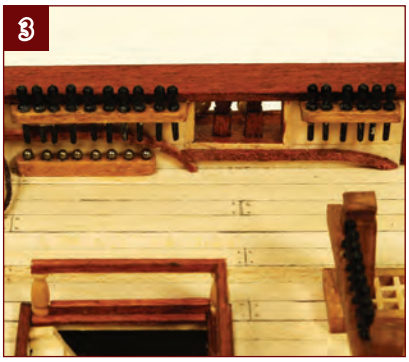
1. Glue cannonballs to the holes in the shot garlands as shown, using clear glue.

2



2. Take the staghorns constructed in Stage 90 and glue them to the inside of the bulwarks, just above the moulding.

3



3. Paint the belaying pins black and glue rows of them into the pin rails.

Painting the beakhead rails

The paint stripes shown apply only to the painted version. For the natural finish version, you may prefer to pick out some or all of the beakhead rails with gold paint.

1

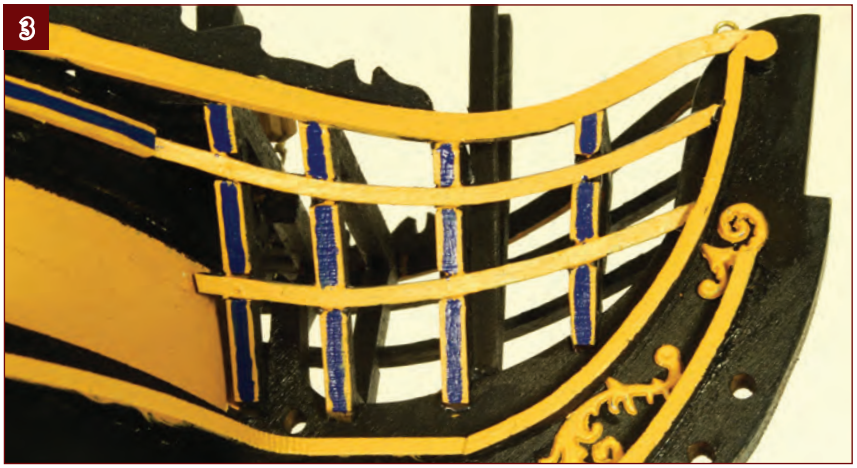
1. Use a fine brush to paint the outer edges of the beakhead rails and dolphins yellow ochre. Good quality brushes will make this task easier.

2

QUICK TIP
This needs a steady hand. You may prefer to omit the yellow and just paint the rails blue.

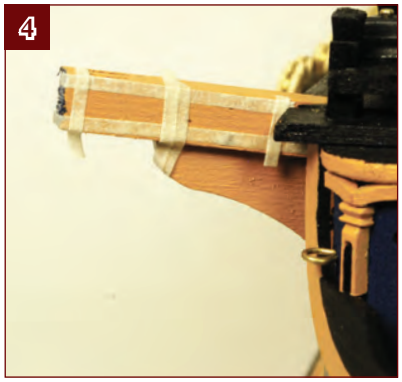
2. Use a very fine brush (000 size) to paint the end of the cathead French Blue. Then paint a thin stripe down the centre of the ekeing rail, leaving thin yellow borders.

3



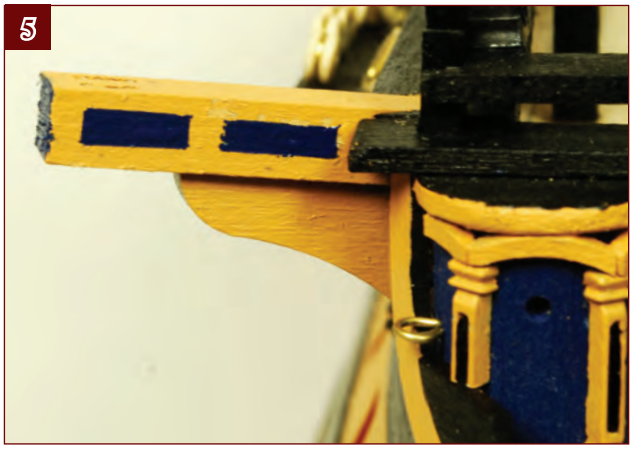
3. Add similar blue stripes to the vertical beakhead rails.

4



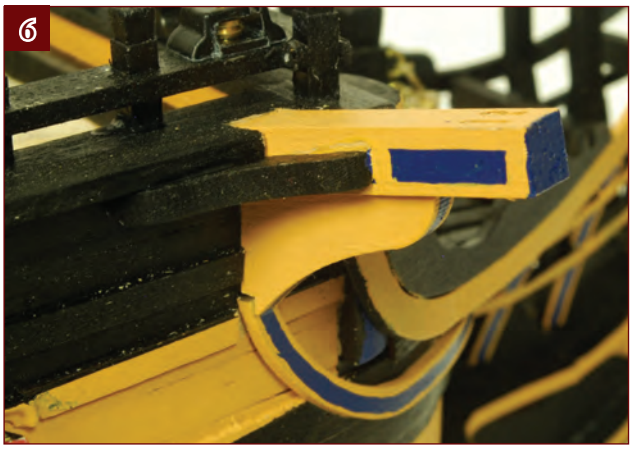
4. Use 1.5-mm masking tape to mask the cathead. As shown in Step 6, the bracket behind the cathead means you can only mask the outer part of the rear face.

5



5. Paint the long rectangles blue and remove the masking tape when the paint is dry.

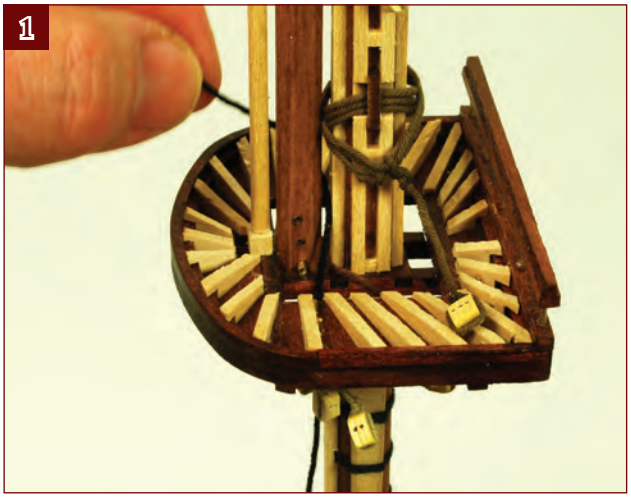
6



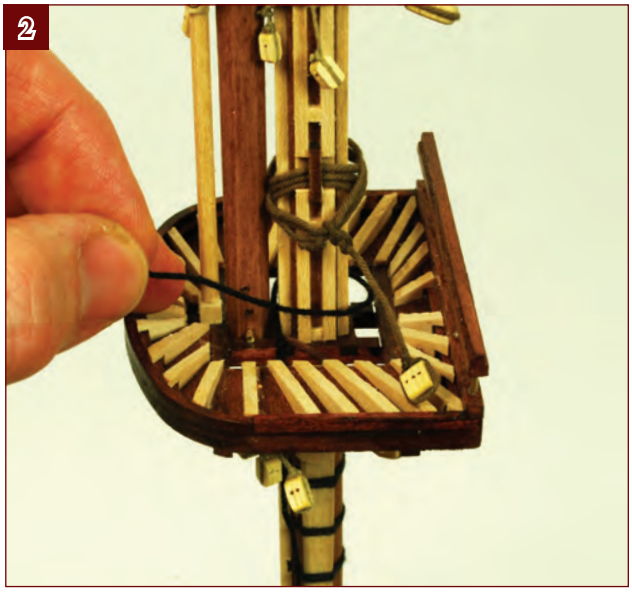
6. Mask the back of the cathead beyond the supporting bracket so that it looks like this after you have painted it blue.

Adding the pendants

A pair of short ropes called pendants hang down in front of each mast. They have eyes at the end to provide attachment points for heavy lifting, and need to be tied in place before adding the shrouds.

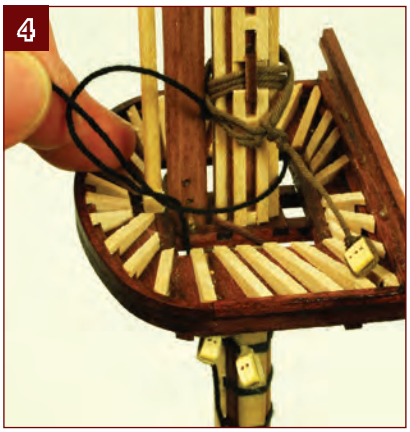


1. Start with the fore mast. Take about 200 mm of the 0.8-mm black thread and pass it up alongside the front of the lower mast, through the left-hand hole in the foretop, and through the gap between the lower mast and topmast.



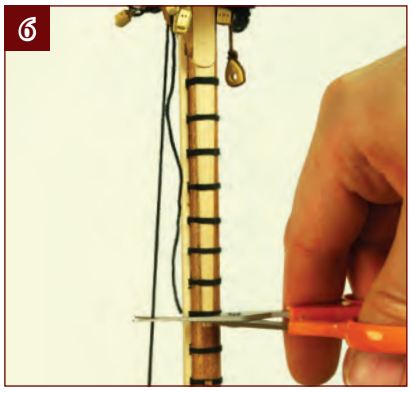
2. Feed the free end around the back of the lower mast.

3. Make sure that the lower end will hang at least 80 mm below the top so that it can be trimmed in Step 6.



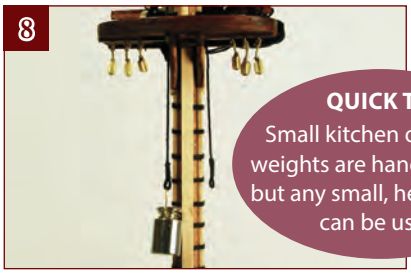
4. Now use the free end to tie a half-hitch around the lower mast.

5. Feed the free end through the gap between the lower mast and the top mast, and pull the half-hitch tight. Then feed the free end down through the hole on the right of the foretop.



6. Cut both ends off so that around 80 mm hangs down below the top. The pendants are trimmed to length in the next step.

7. On the fore mast, fold back the ends you cut, so as to leave 58 mm hanging down. Leaving the end of the fold as an open eye, bind about 8 mm of the thread using 0.15-mm black thread. Seal the knot with diluted PVA adhesive and trim off the surplus ends when it is dry.

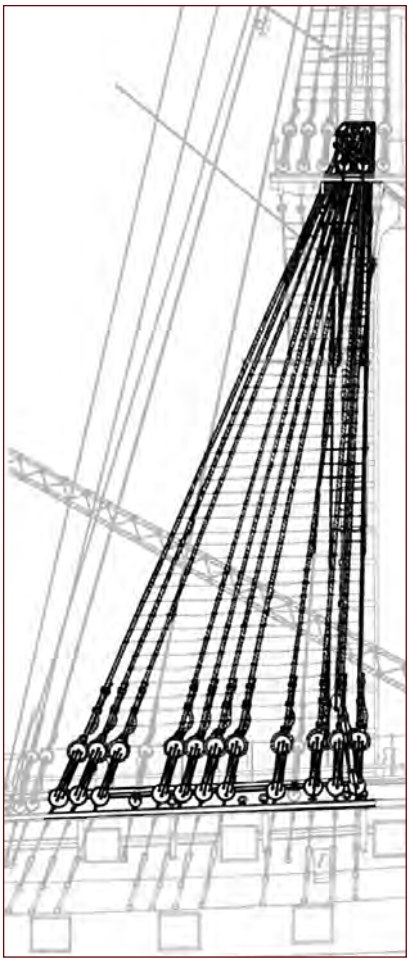


QUICK TIP
Small kitchen or fishing weights are handy for this, but any small, heavy items can be used.

8. Hang a small weight (20-30g) from each pendant, and then paint the pendants with diluted PVA. Allow the glue to dry before removing the weights, so they will hang down straight. Then repeat Steps 1 to 8 on the other two masts, making the pendants on the main mast 61 mm long and those on the mizzen 50 mm long.

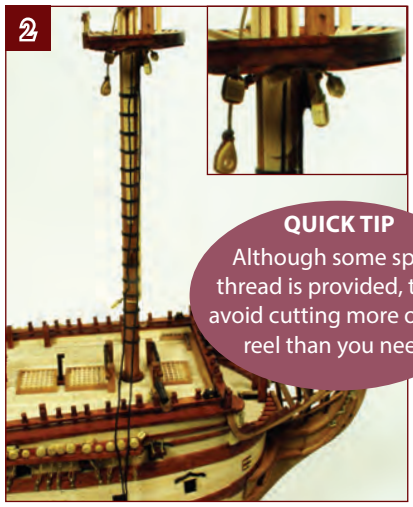
Adding the shrouds

Tie the shrouds to the masts above the tops. They will not be secured to the chainwales yet, as there is still some more work to do before the masts are permanently fixed in place.



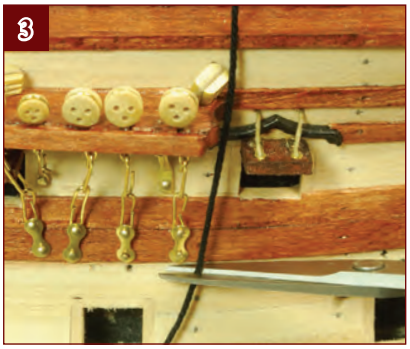
This drawing shows the general arrangement of the shrouds – in this case on the foremast. This has 11 shrouds on each side, which get longer as they angle back towards the stern.

1. Start by temporarily standing the fore mast in place. Use 0.8-mm black thread to tie the shrouds in pairs, alternately placing a pair to the right, then a pair to the left. Feed a thread around the mast above the pendants you tied earlier, leaving enough length so the ends can reach just below the chainwale. Tie a reef knot and pull it tight.



QUICK TIP
Although some spare thread is provided, try to avoid cutting more off the reel than you need.

2. Feed both ends of the thread down the hole in the foretop. They will become the two foremost shrouds on the right-hand side. Move the reef knot round towards the front of the mast (see Steps 5 and 6 for the knot positions).



3. Cut both ends off about 25 mm below the chainwale.

4. Repeat Steps 1-3 to tie the first two shrouds on the left side of the mast.

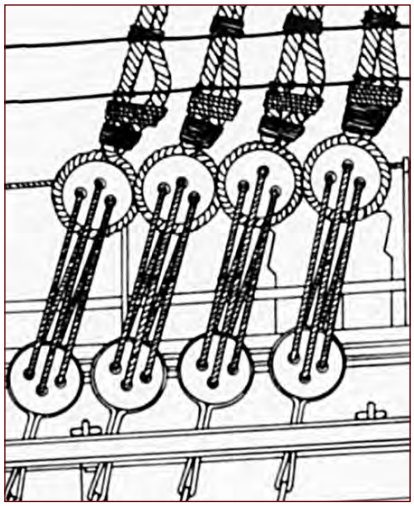
5. Moving back to the right side, repeat the process to make another pair of shrouds. Tie the second reef knot slightly aft of the first knot.

6. Continue in the same way until you have tied 10 shrouds on each side, remembering that they get longer towards the stern. Note that the knots are tied slightly further back each time.

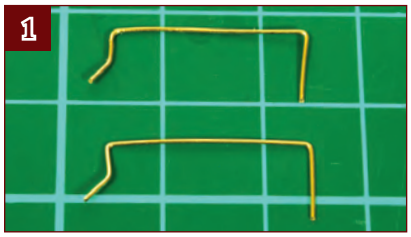
7. To make the 11th shroud, tie a reef knot behind the lower mast. Then feed the two ends down to make one shroud on the right, and one on the left.

Fitting deadeyes to the shrouds

Trim each of the shrouds to the right length relative to the chainwales, and bind a deadeye to the end, ready to lash the shrouds in place. The deadeyes you need were supplied in Stages 90 and 91.



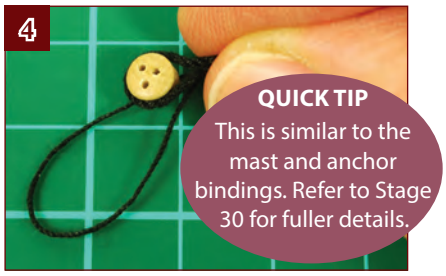
This drawing shows how the shrouds are tensioned by lanyards lashed between pairs of deadeyes above the chainwales. To get the deadeyes at the same level, you need to pull each shroud down to the right point and use a simple jig to position the deadeye.



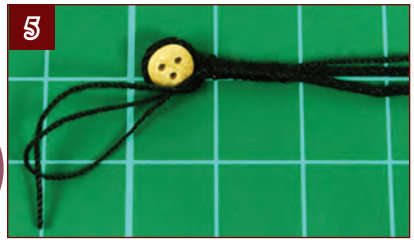
1. Make a jig from 0.5-mm brass wire to help you get the shrouds the right length and all the deadeyes in the right place. Cut two pieces 35 mm long. Make two bends 20 mm apart to form a goalpost shape with legs about 7 or 8 mm. Make a slight bend in one leg to stop the upper deadeye slipping off.

2. Use a strip of masking tape to hold the two pieces of wire together. Fit a 5-mm deadeye on the top legs (with the extra bend) and insert the other legs into the first deadeye on the chainwale.

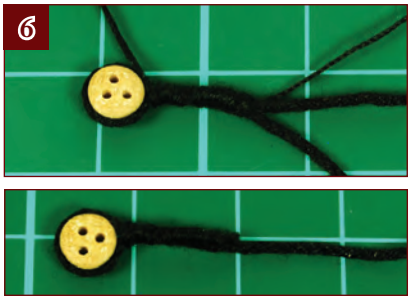
3. Loop the first shroud around the deadeye, putting a gentle tension on the thread. Carefully remove the wires from the deadeye **without letting go of the thread or moving the deadeye**, and bind the deadeye as shown in Steps 4-6.



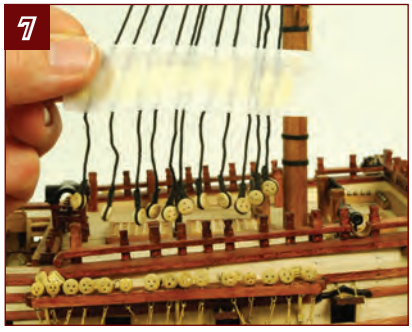
4. Steps 4 to 6 are shown off the model for clarity. Use 0.15-mm black thread to bind the thread around the deadeye. Make a loop at one end of the binding thread and hold it in place alongside the thicker thread around the deadeye.



5. Bind the thin thread tightly around the thick thread and the loop you just made, starting about 12 mm away from the deadeye and working towards it. When you have wound the thread as close to the deadeye as you can, feed the free end through the loop.

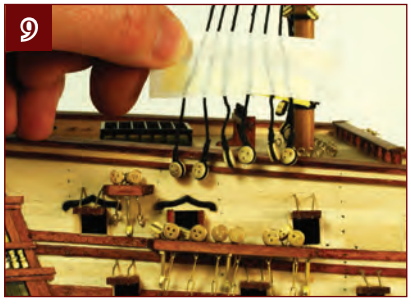


6. Hold the free end from Step 5 and pull the other end to drag the loop back under the binding and pull the binding tight. Paint with diluted PVA adhesive and trim the loose ends once it dries.



7. Repeat this for all the shrouds. We have used masking tape to space out the finished shrouds and show them clearly. This is not essential, but does help to stop them becoming tangled.

8. Repeat all the steps on the previous three pages to prepare the 11 shrouds fitted to the main mast.



9. Now repeat all the same steps for the mizzen mast. This only has six shrouds each side, so you only need three pairs of threads each side, and the last shroud mentioned in Step 7 the previous page is omitted.

Stage 93: Fitting the hammock nets

The parts provided are used to make one of *Victory*'s stern lanterns, and provide more deadeyes for the rigging.

Fittings

brass wire
yellow acetate
brass lantern castings x 2
photo-etched lantern frame

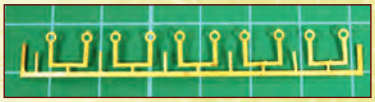
Shaped wooden parts

deadeyes 4 mm x 17

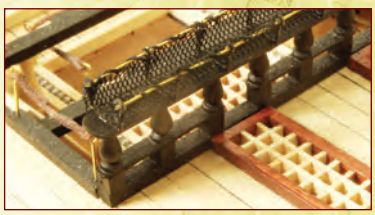
Where the parts fit

Keep the parts supplied with this stage, as we are not ready to fit them just yet. First, you need to add the hammock nets to the railings around the upper decks, after which you can instal the bowsprit. The hammock nets are made from black netting, fitted to frames made from brass wire and 'U'-shaped brass hammock cranes. The parts for these were supplied in previous stages. Note that the hammock cranes are of different lengths, as follows:
Stage 66, 8-14-mm cranes
Stage 73, 9-mm cranes
Stage 78, 7-mm cranes
Stage 87, 14-mm cranes
Stage 90, 12-mm cranes
The steps tell you which cranes are used where, so be careful not to mix them up.

Painted version

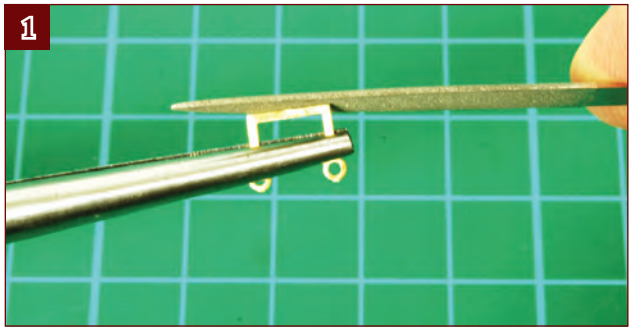


On a painted model, paint the brass hammock cranes black. Cut the fret as above, and file the end rings smooth. Leave the cranes on the fret for painting. When they are dry, cut them free and follow the main steps, leaving the brass wire unpainted.



Fitting the first hammock nets

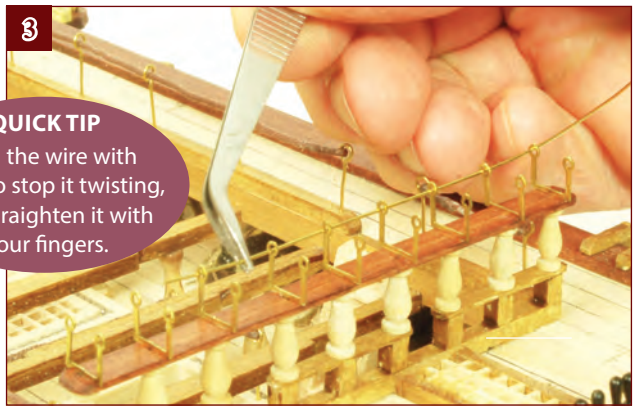
The first hammock nets to fit are the ones that go on top of the rail forward of the main mast. The parts were supplied in Stage 78, and the cranes are 7 mm tall.



1. Cut the cranes from the brass fret and file off all the rough edges. It is important to ensure that the bottoms of the cranes are perfectly flat as it will make it easier to glue them in place.

QUICK TIP
Mark the positions of the cranes on the rail in pencil.

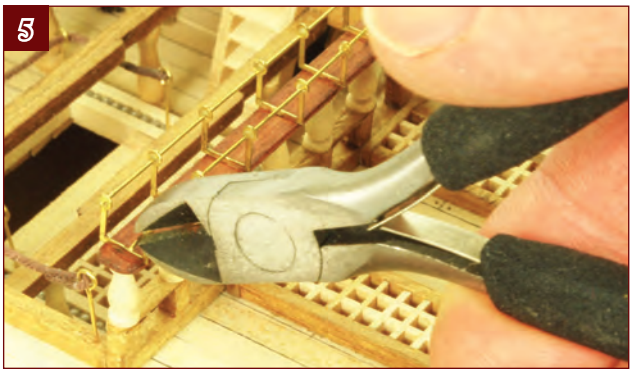
2. Nine hammock cranes are fitted along the rail. Glue each one in place directly above a pillar using super glue.



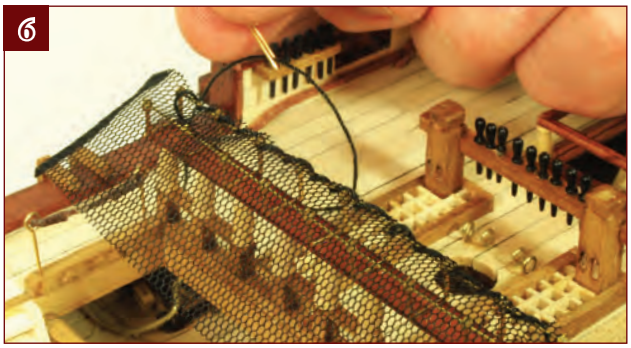
QUICK TIP
Hold the wire with pliers to stop it twisting, and straighten it with your fingers.

3. Cut a length of the brass wire, about 30 mm longer than necessary. Straighten it out and feed it through the holes.

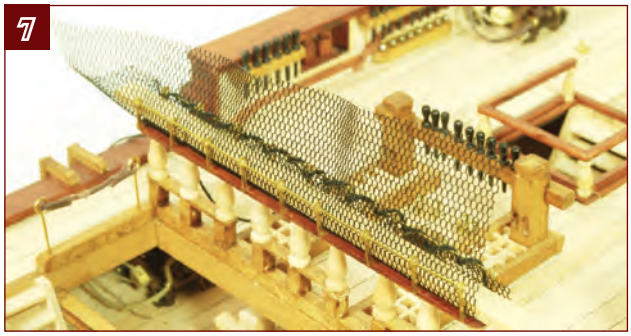
4. Secure the wire to each crane with a drop of superglue.



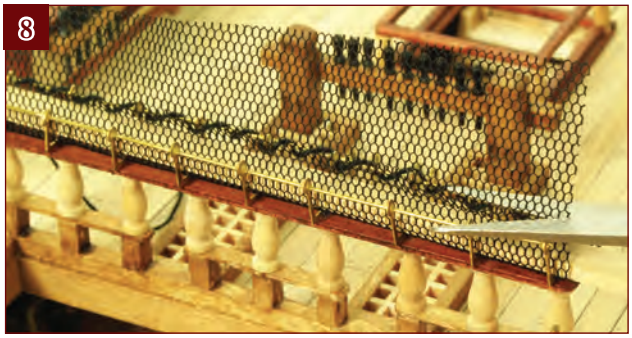
5. Repeat Steps 3 and 4 to add a second wire, then cut the ends off close to the end hammock cranes.



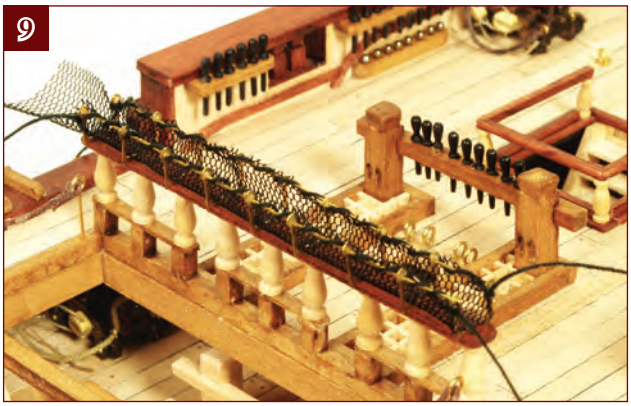
6. Carefully sew one edge of the netting to one of the brass wires. Use a large cross-stitch needle, as this will have a suitably large eye and a blunt point.



7. Take a spare 5-mm-wide plank and use this to hold the netting in the bottom of the cranes.



8. Trim the netting just above the top of the hammock cranes, making sure the plank is holding it right down at the bottom.



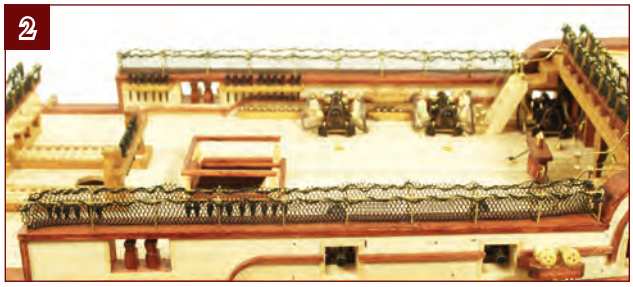
9. Sew the second side to the brass wire and tie off all the ends of the threads around the end hammock cranes.

10. Seal all the knots with diluted PVA adhesive and trim them. Trim the netting flush with the end hammock cranes.

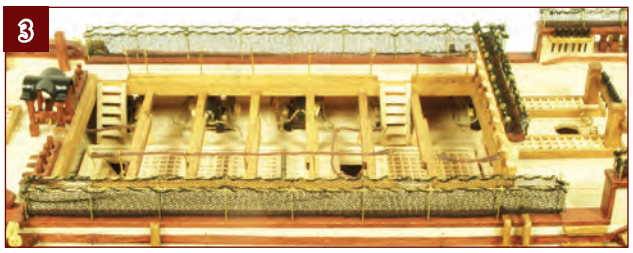
Completing the hammock nets

The other hammock nets are similar to the first. The parts were supplied with Stages 66, 73, 87 and 90.

1. Use the parts with Stage 73 for the nets along the forward poop deck rail and quarterdeck. Glue nine 9-mm cranes on the forward poop deck rail, each directly above a post. Add the brass wire and netting in the same way as before.



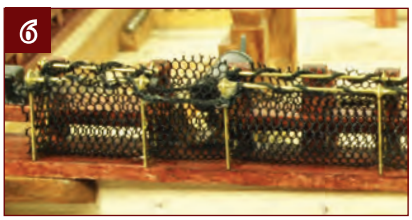
2. The nets fitted to each side of the quarterdeck both have 10 9-mm cranes evenly spaced along the top of the bulwark.



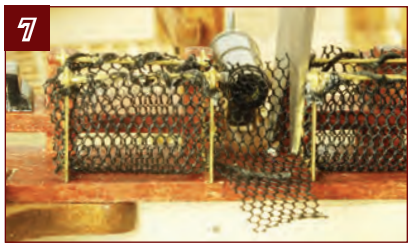
3. Parts for the nets alongside the cockpit were supplied in Stage 87. Each has nine 14-mm cranes. The aft one is just ahead of the boarding ladder, and the forward one is placed close to the end of the forward bulkhead. The rest are evenly spaced.

4. Parts for the forward nets were supplied with Stage 90. Each has eight 12-mm cranes: the front three are in line with the front three timberheads; the aft crane is in line with the large bitt; the other four are evenly spaced. Fit two wires as before.

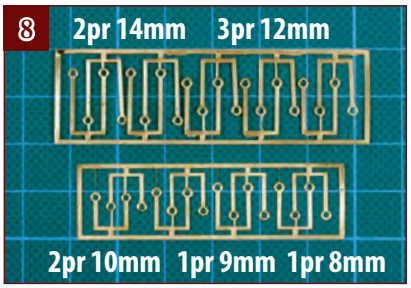
5. Cut the wires flush with the cranes to clear the area in front of the carronade.



6. Fit the nets as before, but tie the thread securely to the cranes on either side of the carronade.

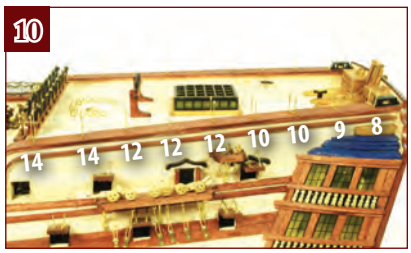


7. Carefully cut away the thread and netting in front of the carronade.



8. The aft nets are tapered, so the cranes supplied with the rest of the parts in Stage 66 are in pairs of varying lengths.

9. Fit the forward crane in line with the aft side of the poop deck forward rail.



10. Fit the aft crane just forward of the snatch block and space the rest evenly, noting their varying lengths (in mm).

11. Add the brass wire as before.

12. Bend the wire for the outer ladder handrail as shown. Cut it to length and glue it to the hammock crane.

13. Fit the netting using the same technique as before.

Fitting the bowsprit

Fit the bowsprit into its socket, where it is held in place with two bindings called gammoning.

1. Lay the grating in place, making sure you don't trap any of the blocks attached to the knightheads.

2. Insert the bowsprit, ensuring it is straight, upright and fully seated. Then remove the bowsprit and grating, apply a little glue to the base of the grating and bowsprit, and reassemble. Ensure everything is still straight, and allow the glue to dry.

3. Cut a length of 0.8-mm black thread about 1 m long, and run PVA adhesive along it to stiffen about 80 mm of each end. Feed the ends down through the elongated slots in the grating.

4. Now feed both ends through the slot below the upper dolphin so they cross over inside the slot. Leave one end with a tail of about 100 mm on the left side of the model.

5. Using the long end, make about five turns of thread around the bowsprit and through the slot. Make sure the thread lies flat and fills the groove in the bowsprit (inset).

6. Tie half of a reef knot, then thread the long end through the slot and pull the half knot tight.

7. Feed the long end back through the slot and tie the second half of the reef knot. Feed the short end through the slot and pull it tight. This should form a reef knot inside the slot where it is inconspicuous.

8. Repeat the process to make the second gammon. Seal the knots with diluted PVA and trim the ends.

Stage 94: Adding shrouds and deadeyes to the mast tops

The parts provided are used to make another of *Victory*'s anchors, plus dummy gun barrels to fit to her open gun ports, and add rigging lines.

Fittings

diecast anchor
1.5-mm brown thread x 1 m
0.5-mm black thread x 20 m
0.15-mm brown thread x 500 mm
8 x diecast dummy gun barrels
6-mm brass ring

Shaped wooden parts

2 x anchor stock halves

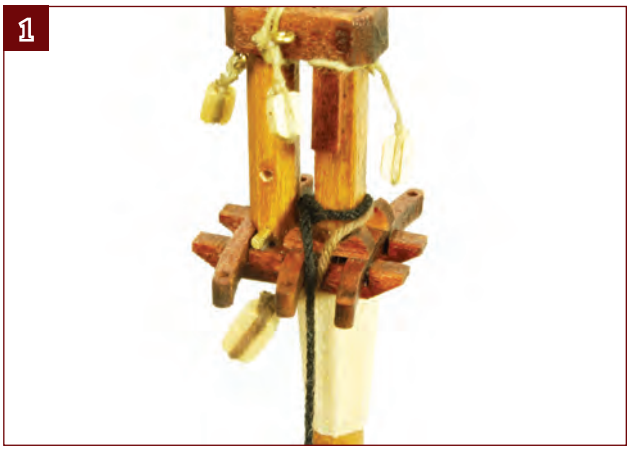
Where the parts fit

Most of the parts provided this time are to be fitted at a later stage. For now, start by continuing to prepare the masts with their standing rigging. The three topmasts all have shrouds rigged between the crosstrees and the tops, so attach the deadeyes and rigging lines for these. They will be tensioned and completed after you set the masts in their sockets and tension the lower shrouds, as the upper shrouds are attached to the lower ones. The process is quite similar to that shown in Stage 92, so you will find it helpful to refer to the steps given there. Following that, assemble the stern and mast lanterns supplied in Stages 51, 80, 83 and 93.

Adding the topmast pendants

The fore and main topmasts are rigged with two pendants similar to those shown in Stage 92, using the thread supplied this stage. Note that the mizzen topmast does not have upper pendants.

1



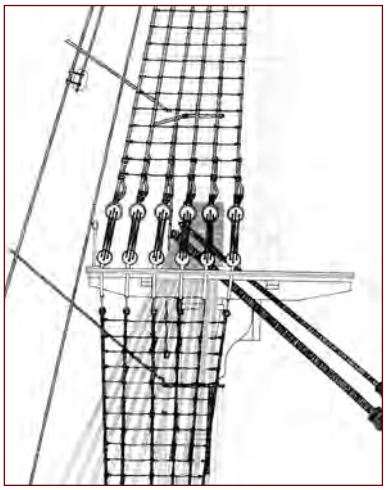
1. Cut a 200-mm length of 0.5-mm black thread. Thread it between the topmast and topgallant, then tie it around the top of the fore topmast using a reef knot so that the ends of thread hang down evenly between the rear crosstrees.

2

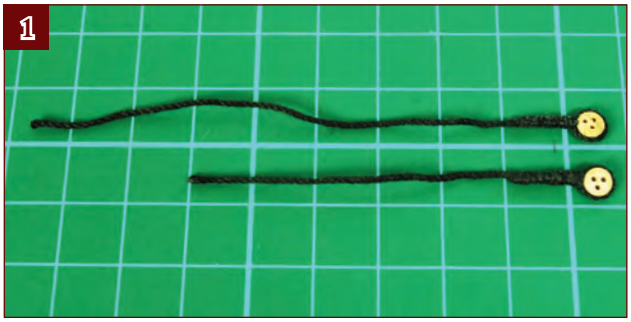
2. Bind eyes in the ends of the pendants 50 mm below the crosstrees, and finish the pendants using the method shown in Stage 92. The main topmast pendants are made in the same manner, but are 53 mm long.

Adding deadeyes to the tops

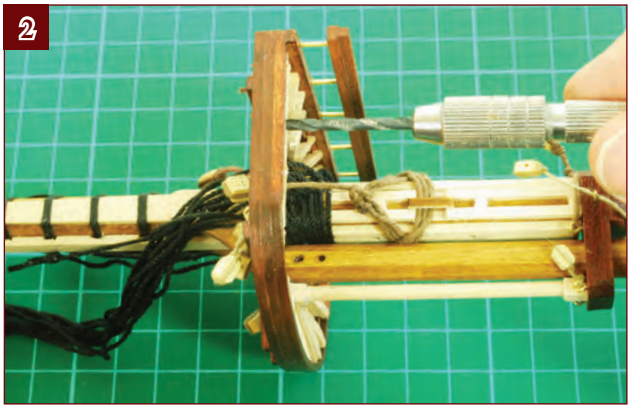
The upper shrouds are attached to deadeyes on the tops. The steps show the foremast, but all three are similar. Use the 4-mm deadeyes supplied with Stages 92 and 93 and this stage's 0.5-mm black thread.



This drawing shows the general arrangement of the upper shrouds – in this case on the foremast. This has six shrouds on each side, which get longer as they angle back towards the stern. The lower deadeyes fit through the fore top and are tied to rigging lines ('futtock shrouds') that are secured to the lower shrouds.



1. Cut 24 lengths of 0.5-mm thread, each 140 mm long, and eight lengths 100 mm long. Bind 4-mm deadeyes on the ends using the same technique as described in Stage 92. Make sure that the holes are aligned correctly, with one hole next to the binding.



2. Drill out the holes in the foremast top so that the bindings will fit through. This shows a 2-mm drill bit, but yours may vary a little depending on how tight the bindings are.

3. Temporarily put the mast in its socket. Thread the tail of a deadeye through a hole in the top. Apply a little PVA adhesive just below the deadeye.

4. Pull the deadeye down into position so that the binding is drawn down into the glued hole. Leave the tail its full length – it will be tied off to the lower shrouds later on, after these shrouds have been secured and tensioned.

5. Repeat this for all 12 deadeyes (six each side), making sure they are all straight and in line. Repeat the process on the main mast, and on the mizzen mast – but please note that there are only eight deadeyes on the mizzen mast.

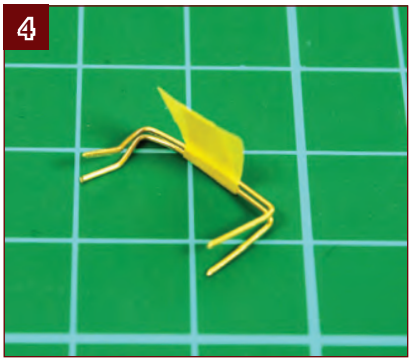
Adding the shrouds

Rig the shrouds above the crosstrees and fit deadeyes to the ends, but leave them hanging for now, as they will be tensioned after fitting the masts. Once again, the first steps show the fore topmast.

1. Thread the 0.5-mm black thread around the top of the fore topmast, above the one you added earlier. Pull it down until it is about 20 mm below the fore top.

2. Tie a reef knot around the topmast so that the knot falls on the right of the mast, then cut the other end of the thread to the same length.

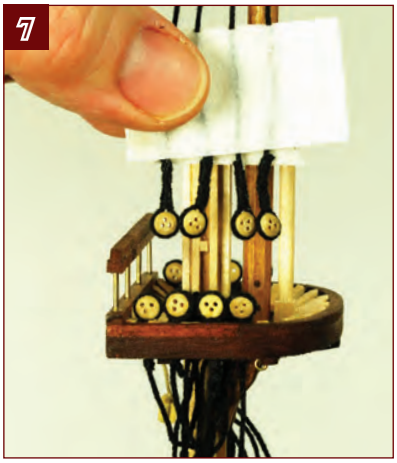
3. Repeat Steps 1 and 2 alternately on left and right sides of the mast, until you have six threads on each side. As with the main shrouds, place the first at the front of the mast, and move each subsequent knot slightly aft.



4. As shown in Stage 92, make a jig from 0.5-mm brass wire to help you get the upper shrouds the right length. This jig needs to be slightly smaller. Cut two pieces 30 mm long, and make two bends in them 15 mm apart to form a 'goalpost' shape with legs about 7 or 8 mm long. Make a slight bend in one leg to stop the upper deadeye slipping off. Join the two parts with masking tape.

5. Fit 4-mm deadeyes to the ends of the upper shrouds using the same method described in Stage 92.

6. Repeat all the previous steps to rig the shrouds for the main mast. This has a similar arrangement of six shrouds per side of the topmast.

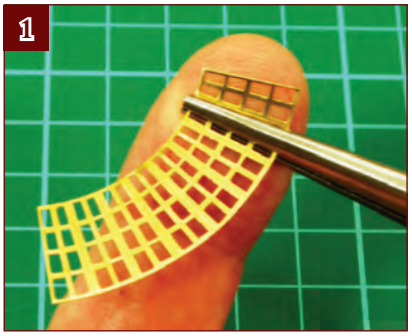


7. Repeat the process in a similar way to rig the upper shrouds on the mizzen mast. However, note that this only has four shrouds each side.

Making the stern and main mast lanterns

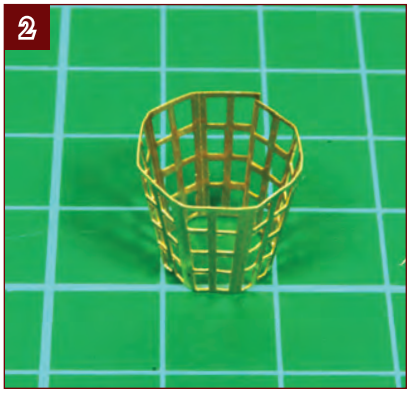
This shows the construction of the larger lantern supplied with Stage 80, but the technique is exactly the same for the smaller ones that came with Stages 51, 83 and 93.

1



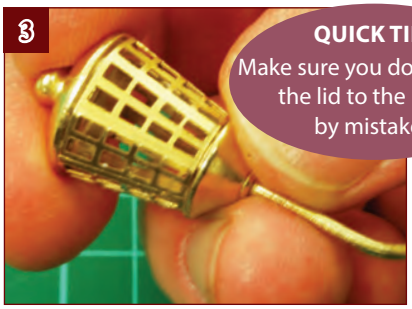
1. Take the brass lantern body and bend it at each marked line. Hold it with pliers and fold it against your finger or your building board.

2



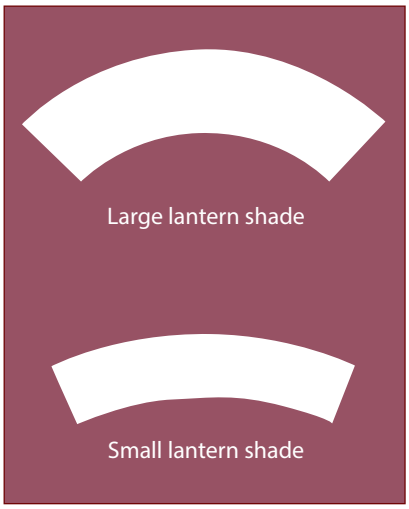
2. Continue bending the sides until you form a complete octagon.

3



QUICK TIP
Make sure you do not glue the lid to the body by mistake.

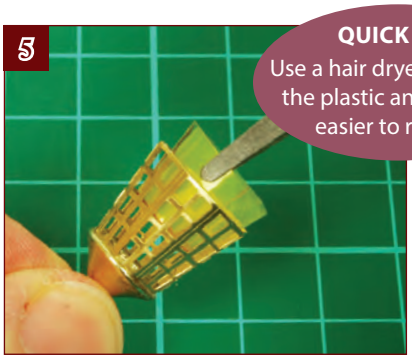
3. Apply superglue to the joint between the ends of the lantern body, and to the base. Then put them together, holding the top in place, as this makes it easier to align the body and base.



4

4. Trace the pattern for the large lantern shade onto the yellow acetate sheet using a fine felt tip pen. Then cut it out.

5



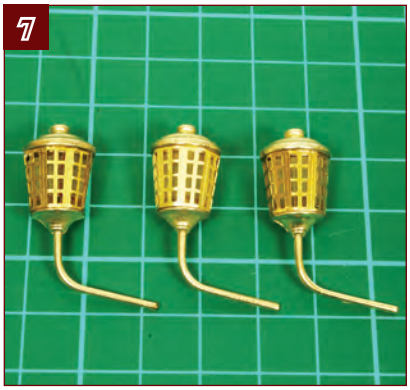
QUICK TIP
Use a hair dryer to soften the plastic and make it easier to roll up.

5. Roll the acetate into a tube, and insert it in the lantern. Make sure it sits on the bottom of the lantern and check that the lid fits properly. You may need to trim the top of the shade a little.

6

6. Glue the top of the lantern in place. If you use superglue, be careful not to fog the shade. Alternatively, you can use the same clear glue used to fix the yellow acetate in earlier stages, although the joint will not be quite so strong.

7



7. Repeat the above steps to make the two smaller lanterns. Store all three carefully – they will be fitted to the model later – to avoid the risk of them getting knocked and broken.

Painted version

If you are painting your model, paint the parts before inserting the yellow shade. Spray the parts with an automotive primer before painting the lamp yellow ochre and painting the wire support black.

Stage 95: Fitting the second carronade

The parts supplied include the second of the carronades, plus fittings for the rigging.

Carronade kit

See Stage 3 for more details of these components, plus assembly details.

Shaped wooden parts

2 x deadeyes 7 mm

Fittings

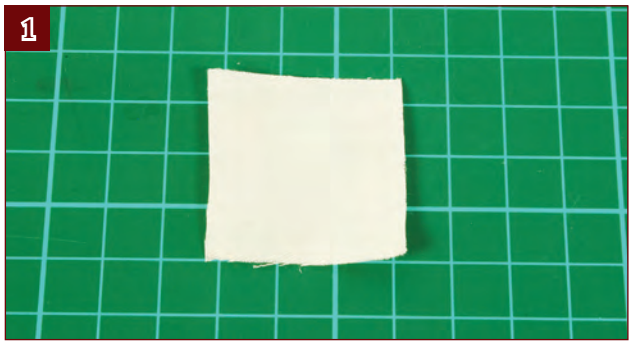
5 x photo-etched brass strips on fret
10 x brass pins

Where the parts fit

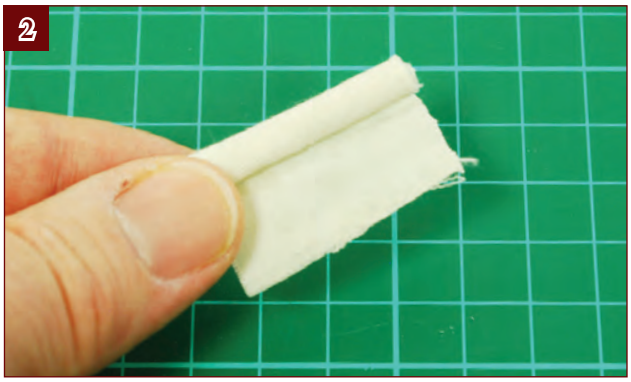
This stage brings you the second carronade carried by *Victory*, together with rigging materials. You will make the carronade now, but keep the rest of the parts safe: they will be fitted later. Start by adding the remaining deck fittings that will be hard to put in place once you begin the rigging – the hammocks and the second carronade. You also need to decide whether you want to add boarding pikes before installing the masts. (These are a small detail and are an optional fitting, as these weapons designed for hand-to-hand fighting were only rigged shortly before going into battle. Instructions for their construction are given in this stage, and they are only fitted to the foremast and main mast.) With the deck fittings completed, you can fit the masts and tension the shrouds.

Adding the hammocks

During the day, the men's tightly rolled hammocks were stowed in the hammock nets, and during battle, helped to protect the crew from musket fire. Model them using rolls of the cloth supplied in Stage 87.



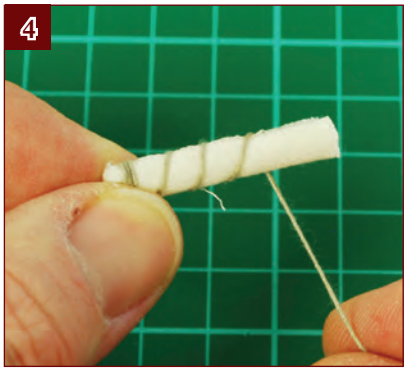
1. Take the cotton cloth supplied in Stage 87 and cut it into 30-mm squares. You will need to make about 100 hammocks, plus four shorter ones to fit the nets at the bow.



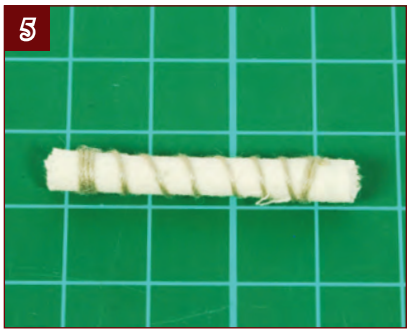
2. Roll each square of fabric into a sausage measuring about 5-6 mm thick.

QUICK TIP
Don't tie the knot too close to the end, so you can trim the hammocks to make them fit the nets neatly.

3. Take some 0.25-mm natural thread, supplied in Stage 89, and tie one end of the hammock.



4. Wrap the thread loosely around the hammock.

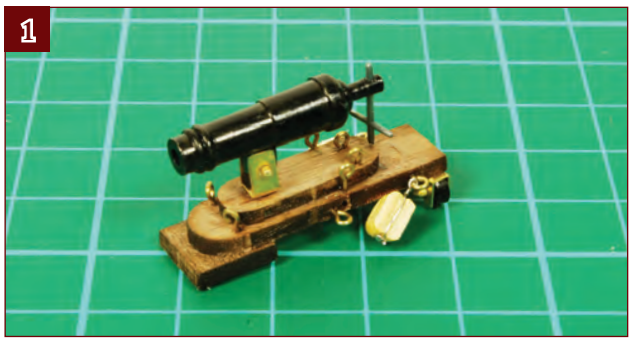


5. Tie the knot at the other end of the hammock, then seal the knots with diluted PVA glue and trim the tails.

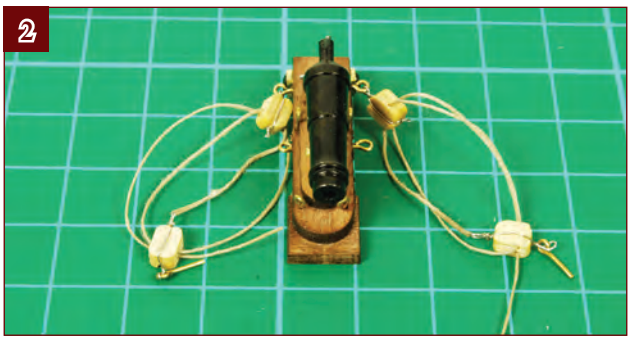
6. Push the hammocks into all the nets, using two or three layers, depending on the height of the nets. You may need to shorten the hammocks a little to get them to fit neatly.

Fitting the second carronade

Assemble and fit the second carronade using the same procedure as the first carronade, which is put together in Stages 3 and 4 and installed in Stage 89.

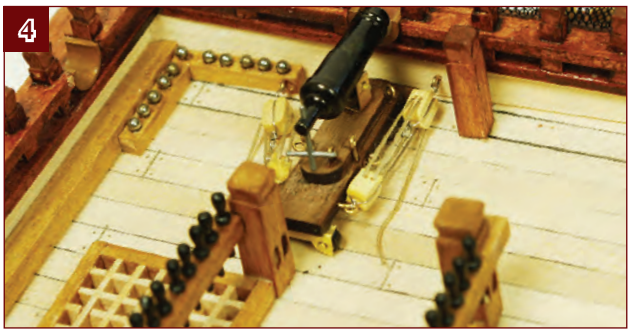


1. Construct the carronade according to the instructions given in Stages 3 and 4.



2. Take the rigging that you prepared in Stage 89 and loosely rig it on the carronade.

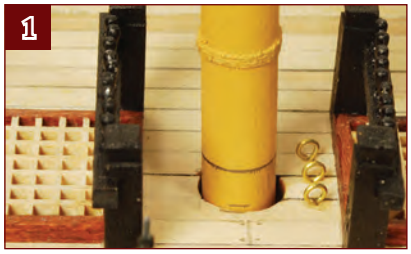
3. Place the carronade in position, without gluing it. Then glue the two eyebolts in place, one into the corner of the shot garland and one in the bulkhead.



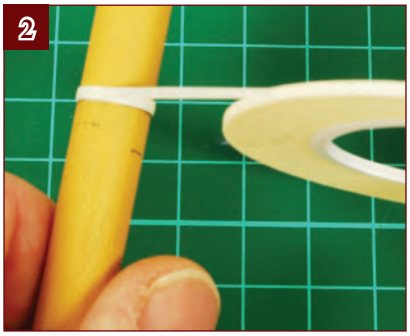
4. Glue the carronade in position on the deck. Then tighten and trim the rigging.

Adding boarding pikes

Boarding pikes are an optional fitting, as they were only rigged shortly before going into battle. They can be constructed from commonly available materials: 1.5-mm masking tape and some standard 30-mm dress-making pins. They were rigged on the main and fore masts, and are the same for both.



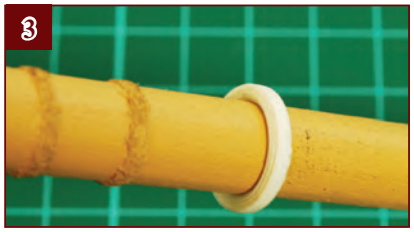
1. Insert the mast into its socket and mark the height of the deck. Then remove the mast and draw a circle around it, 6 mm above the deck. (The photo is of the mast re-inserted to show the circle in relation to the deck.)



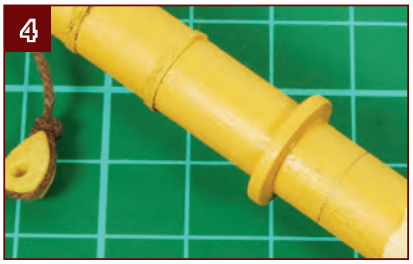
2. Start winding 1.5-mm modeller's masking tape around the mast, just above the circle you have drawn.

A set of boarding pikes rigged on* Victory *at Portsmouth. The wooden poles end in a thin metal spike rather than a spear point, and are held in racks called beckets that look like thin bands around the mast.

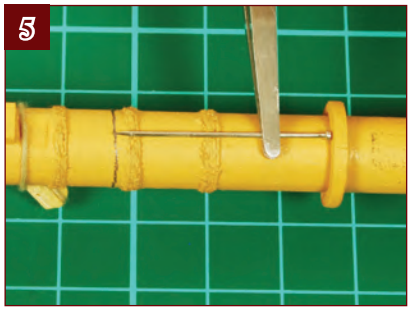
QUICK TIP
We have made pikes for the painted model. You could paint the bands brown if you are making the natural wood version.



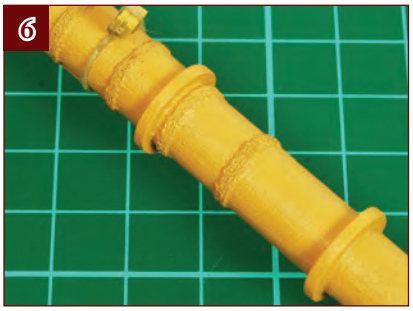
3. Continue winding until you have a neat band of masking tape 2 mm thick. Paint the top and bottom of the tape with super glue to seal and fix it.



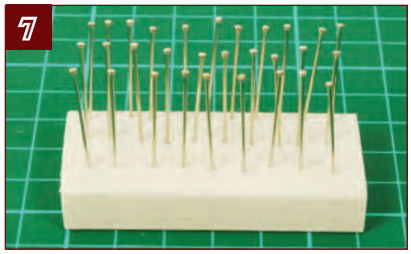
4. Leave the mast for a couple of hours for the glue to completely cure. Then paint the band yellow ochre.



5. Place a pin on the band and mark a second line around the mast at the top of the pin.

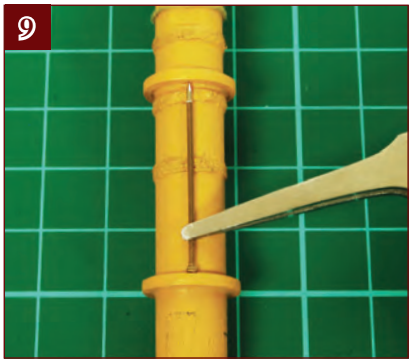


6. Add another band of masking tape at this top mark. Seal it with glue then paint it ochre, the same way as before.



7. Push around 45 dress-making pins about 2-3 mm into a pencil rubber. Try to get them all the same depth, as the unpainted tips will represent the steel heads of the pikes.

8. Spray the pins with automotive primer, then brown paint. (Spraying gives the best results but you can paint them by hand if you prefer.) The pins will look like this when removed.



9. Glue the first pike upright between the bands using a little super glue.

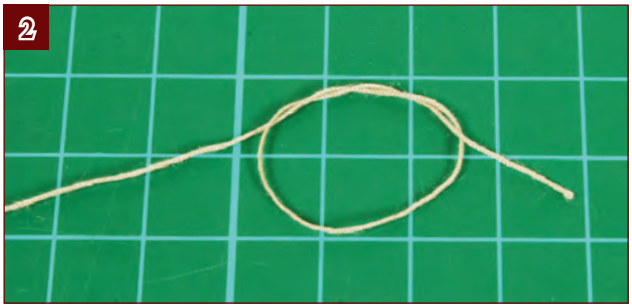
10. Add pins all the way round – the heads will help you space them evenly. Finally, carefully paint the heads yellow so they appear to be part of the becket.

Securing the shrouds

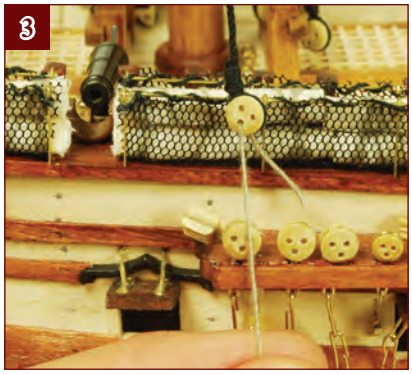
Now it's time to fit the masts and secure the shrouds. Note that the masts are not glued in place, as the lanyards can be tensioned to pull them upright and in line.

QUICK TIP
Run a 0.7-mm drill through the holes in the blocks behind the deadeyes before the shrouds are rigged, to ensure they are clear.

1. Place the foremast the right way round in its socket, with the mast collar in place. There is no need to apply glue to the mast or collar, but make sure that the mast is properly seated.



2. Cut 30-cm lengths of the 0.25-mm natural thread, and tie a knot close to one end. Pass the end through the loop twice, as shown. Then pull it tight forming a knot that is big enough not to pull through the holes in the deadeyes. Rub a little PVA wood glue into the other end to stiffen it. You will need a total of 56 lengths to complete the lower shrouds.

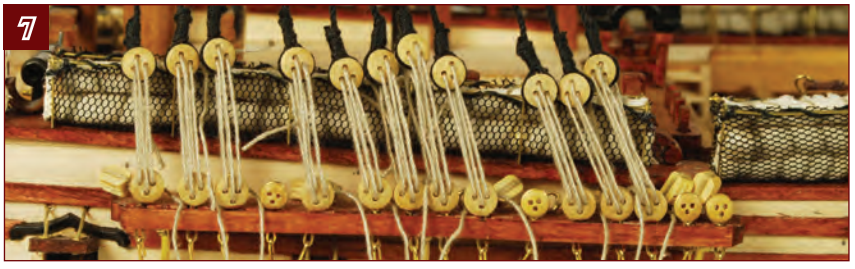


3. Single out the foremost shroud, and release it from the masking tape. Insert the thread from the back of the deadeye, through the left hand hole. Pull the end until the knot stops against the back of the deadeye.

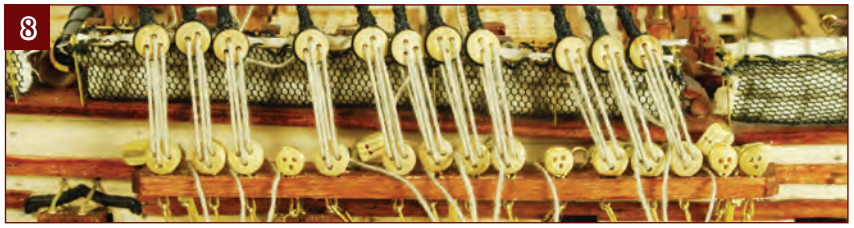
4. Feed the thread through the left-hand hole in the front deadeye fixed to the chainwale, going in from the front. You only want a gentle tension on the shroud at this stage.

5. Now feed the thread through the top central hole of the upper deadeye, going in from the back.

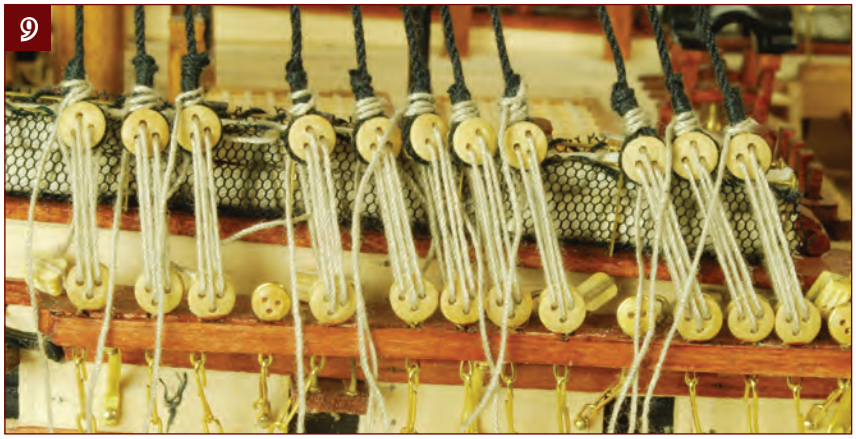
6. Continue to lace the thread through the holes, until it exits from the right-hand hole at the back of the lower deadeye. Leave the end dangling for the moment, as you will tension all the shrouds later on.



7. Repeat this with all the foremast shrouds, lacing them to all the large deadeyes.



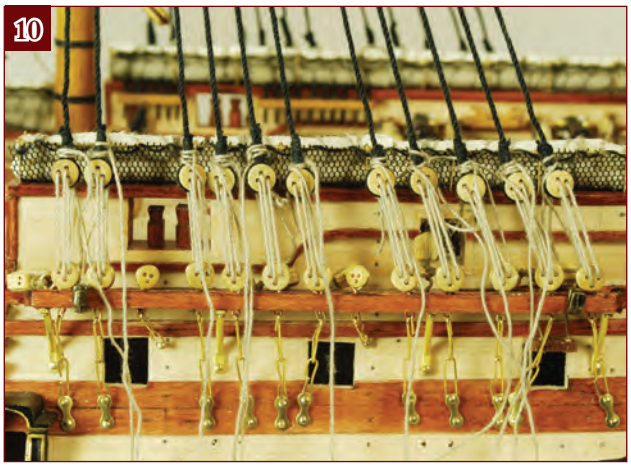
8. Tighten the lanyards so that the deadeyes form a straight line, and the shrouds are under a medium tension. They should not be pulled too tight.



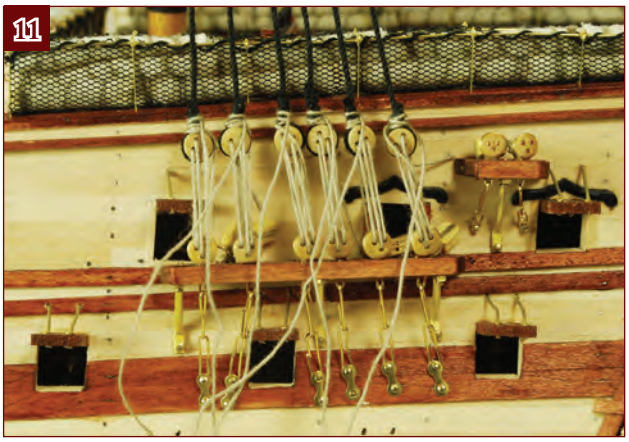
9. Wrap the loose ends around the shroud a few times, and secure with a single half hitch. Do not seal the knot or cut the end to length just yet, as you may want to loosen individual shrouds to make it easier to rig the blocks behind them.

QUICK TIP

Before rigging the main mast, check that the four heart blocks tied to it are no more than 10 to 12 mm from the mast. Extra 0.8-mm brown thread is supplied in Stage 89 if you need to re-tie them.



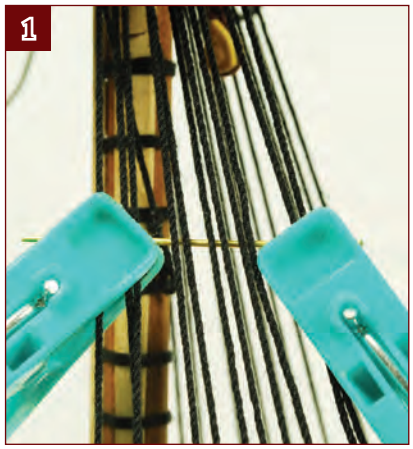
10. Repeat the process to complete the main mast shrouds.



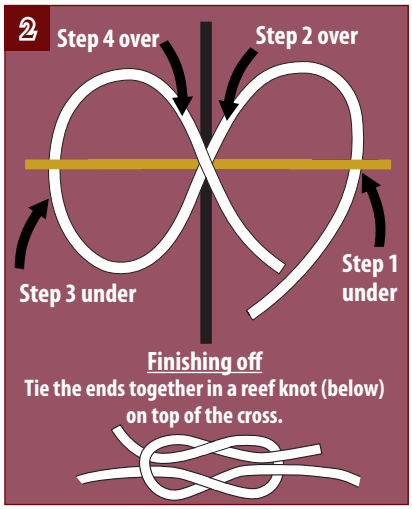
11. The shrouds for the mizzen mast are attached in the same way, but there are only six shrouds on each side.

Adding the catharpins

The shrouds are linked together behind the mast with transverse rigging lines called catharpins, tied off to the futtock staves that secure the base of the futtock shrouds.



1. Cut a 40-mm length of 1-mm brass wire (from Stage 90) and straighten it. Clip it behind the foremast shrouds using clothes pegs. It should be placed 50 mm below the foremast top at a level between the 3rd and 4th mast bindings.

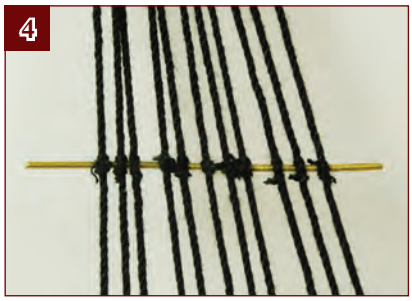


2. The wire will form the futtock stave. Tie it to the shrouds at two places with 0.5-mm black thread. Then remove the pegs, and adjust the position of the wire if necessary.

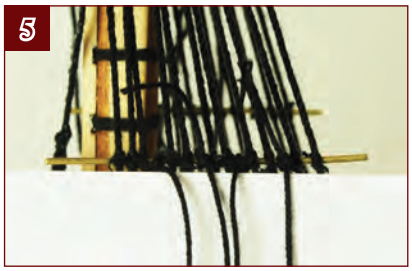
QUICK TIP

Place a sheet of white paper behind the shrouds to make it easier to see the threads.

3. Now tie all the shrouds to the brass wire. When you are finished, even out the shrouds so they are all straight pulls, and the spacing mimics the spacing of the deadeyes on the chain wales.



4. Seal the knots with diluted PVA glue and trim the loose ends. Repeat this on the other side of the foremast.



5. Cut four 180-mm lengths of 0.5-mm black thread. Tie one end of each thread to the brass wire, adjacent to shrouds 3, 5, 7 and 8, counting from the front.

6. Feed the threads to the opposite shrouds and tie them off at the same position on the brass wire. They should be just tight enough to stay straight, but not pull the shrouds out of line.

QUICK TIP
The mizzen mast shrouds may twist while the forward futtock shrouds are fitted, but will come back in line when all the futtock shrouds are in place.

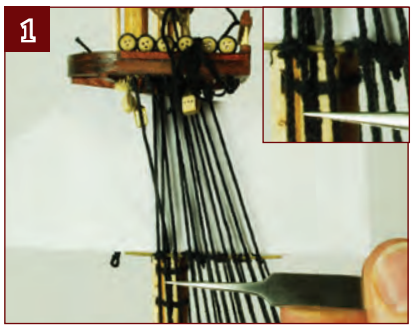
QUICK TIP
The excess brass wire will be cut off after the ratlines have been fitted.

7. Seal the knots and trim the ends. Then repeat Steps 1-7 on the main mast exactly the same, except that the wire is 60 mm below the top and the threads go next to shrouds 3, 4, 8 and 9.

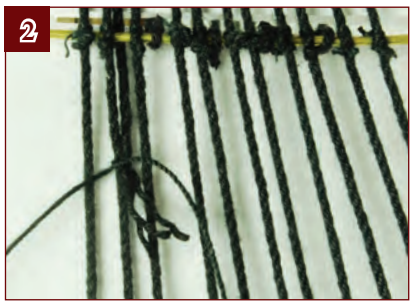
8. On the mizzen mast, tie the catharpins 40 mm below the mizzen top. There are only two threads running across this mast, fitted adjacent to shrouds 3 and 5.

Attaching the futtock shrouds

The futtock shrouds hanging down from each top can now be secured to the shrouds, below the futtock staves. Attach them alternately on the left and right to avoid pulling the shrouds out of true.

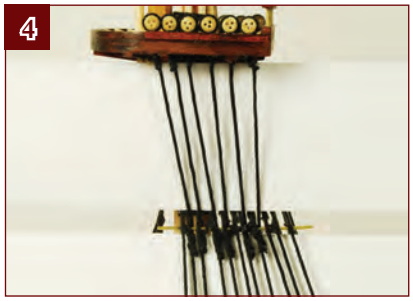


1. Start with the foremast. Take the front futtock shroud and thread it behind the futtock stave, next to shroud No. 2.

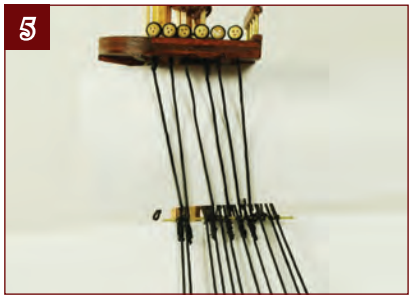


2. Tie the bottom of the futtock shroud to shroud No. 2 with a scrap of thread and pull the futtock shroud down until it runs straight from the top to the stave.

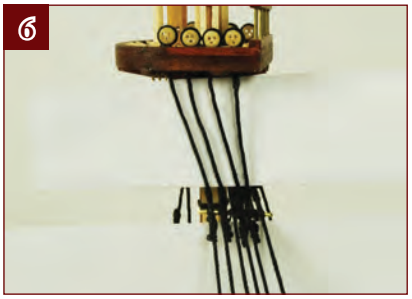
3. Bind the shrouds together below the stave. It is hard to do the usual blind binding, so make a series of half hitches, going down about 8 mm. Seal and trim the binding as usual, then remove the temporary tie from Step 2, and the surplus end of the futtock shroud.



4. Attach the fore mast futtock shrouds to shrouds 2, 3, 4, 5, 7 and 8.



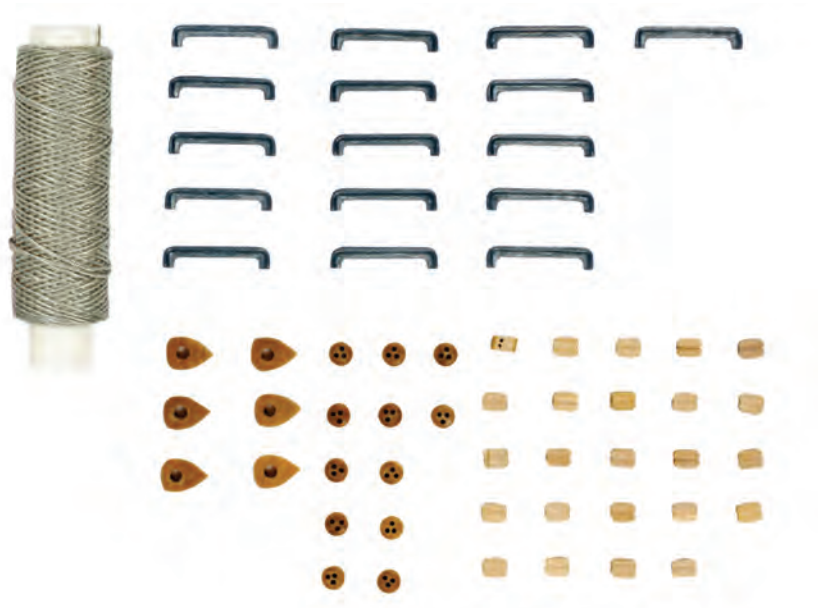
5. Secure the main mast futtock shrouds to shrouds 1, 2, 4, 6, 7 and 8.



6. Secure the four mizzen mast futtock shrouds to shrouds 1, 2, 4 and 5.

Stage 96: Fitting the boomkins, gangboard and mainstay attachments

More parts for *Victory*'s standing rigging, plus metal castings to trim her gun ports.



Fittings

natural thread 0.25 mm x 30 m
16 die-cast gun port wriggles

Shaped wooden parts

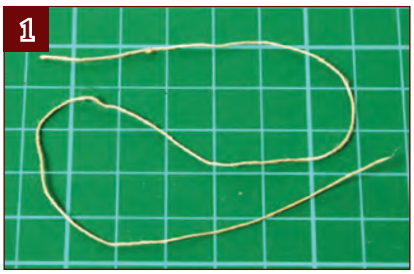
heart deadeyes 7 mm x 6
deadeyes 4 mm x 12
double blocks 4 mm x 24

Where the parts fit

This stage, start by tensioning the topmast shrouds in a similar way to the main shrouds you have already completed. You can then turn your attention to continuing the rigging around the bowsprit. Start by adding the boomkins, then tie on the attachments for the main stay and its preventer. Before completing this, you also need to assemble the gangboard that runs out to the bowsprit, as the rigging lines need to run through its grating before being attached to two of the heart deadeyes supplied. Finally, fit the remaining wriggles over the gun ports. As well as the 16 castings supplied this time, wriggles were also supplied with Stages 42 and 91.

Lashing the topmast shrouds

This is very similar to tensioning the lower shrouds – except that as there will be no need to adjust the topmast shrouds, you can lash the lanyards to them permanently.



1. Cut 32 lengths of 0.25-mm natural thread, each 25 cm long. Tie a knot in one end, using the knot described in Stage 95. Rub some PVA glue into the other end to stiffen it.

2. Start with the fore mast. Thread the deadeyes using the technique also described in Stage 95.

3. Tighten the lanyards so the deadeyes form a straight line. Seal the knot tied in Step 1, then trim the excess thread, but don't trim the long tail yet!

4

QUICK TIP
It may help to start with a half-hitch to secure the thread, then add another two turns before finishing with the final half-hitch.

4. Take the thread from the bottom, and wind it around the shroud three times. Then secure it with a half-hitch. Finally, seal the thread and trim the excess.

5

5. Repeat this for the main and mizzen masts. The main mast is identical to the foremast. Use the same technique on the four shrouds on each side of the the mizzen mast, above.

Fitting the boomkins

You made the two boomkins in Stage 91. Now it's time to fit them, projecting forward and down from both sides of the beakhead.

1

1. If necessary, sand the edges of the beakhead gratings so that the boomkins can sit in their recesses properly.

QUICK TIP
Loop thread through the blocks attached to the knightheads. This makes it easier to retrieve the blocks after the gangboard is fitted.

2

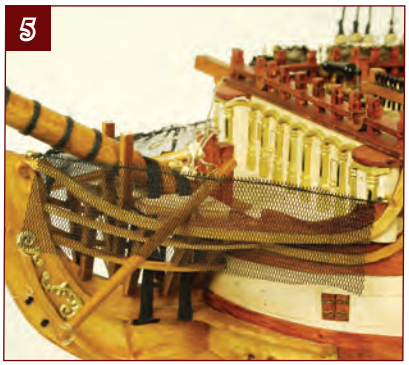
2. Glue the boomkins in place using super glue. Align the end of each boomkin just below the shaped top of the knighthead. Also note that the block faces down.

3

3. Take the netting from Stage 89. Cut a piece 20 mm wide, and just long enough to fit between the two brass eyebolts.

4

4. Thread the long edge of the netting onto a length of 0.15-mm black thread.



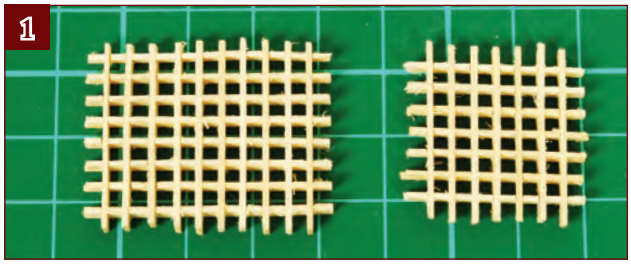
5. Tie the ends of the thread to the two eyes to stretch the netting between them. Seal the knots and trim the ends.

6. Trim the bottom of the netting so that it will hang behind the beakhead rails, and fit neatly over the boomkin.

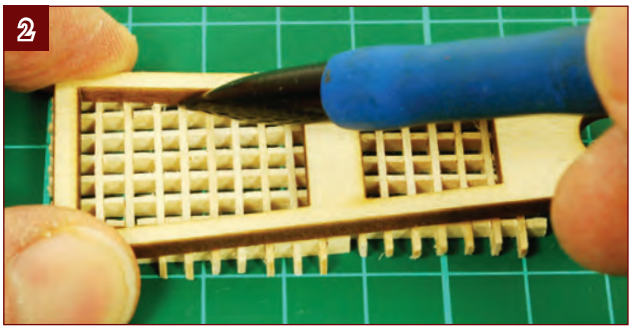
7. Tuck the netting behind the beakhead rails, and secure it with some diluted PVA glue, as used for sealing knots.

Constructing the gangboard

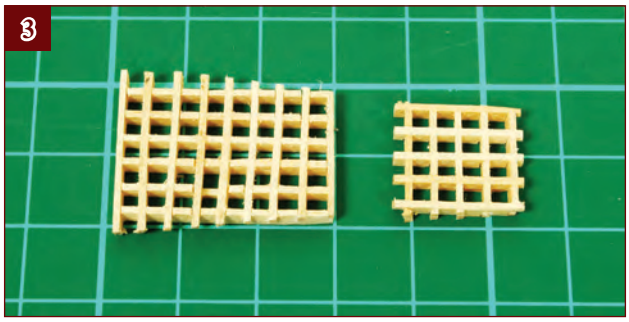
The tapering gangboard, with its wooden gratings, projects from the beakhead bulkhead over the top of the bowsprit.



1. Using the grating strips supplied in Stage 89, construct two gratings. One should be 8 strips wide by 10 strips long, and the second should be 7 strips square. Paint them with diluted PVA glue to secure the joints after they are assembled.

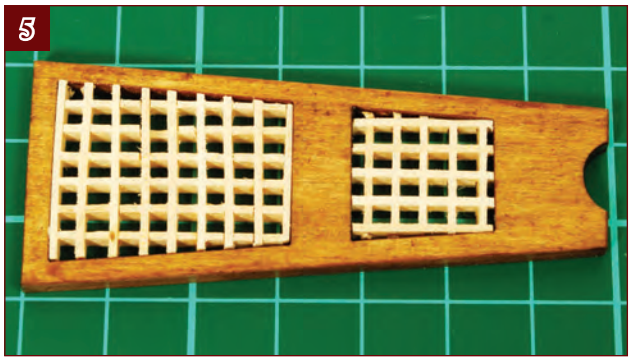


2. Hold the frame (supplied in Stage 90) over the gratings and draw round the inside edge with a sharp pencil.

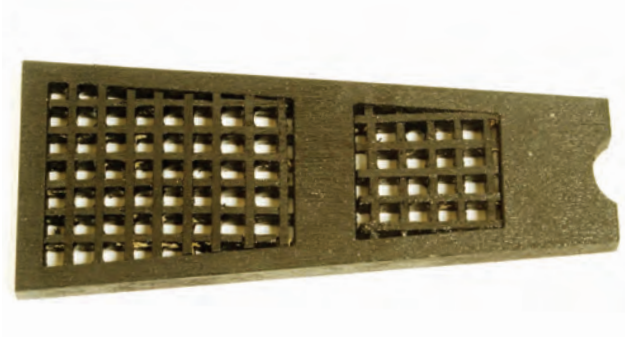


3. Cut the gratings to size with a craft knife. Use a fresh blade to reduce the risk of crushing or breaking the strips.

4. Try the frame in place. You may need to shorten the front of the frame a little so that it ends flush with the support.



5. Stain the frame dark oak, then glue the gratings in position.



For a model with a painted finish, paint the entire gangboard black.

Fitting the main stay attachments

The main stay and its preventer will be tensioned by two heart blocks, which are secured under the bowsprit and fed up through the gangboard.

1. Cut two lengths of 0.8-mm black thread, each 500 mm long. Stiffen one end of each piece with PVA adhesive. Thread the first piece down the grating alongside the rear piece of gammoning.

2. Feed the thread through the hole in the stem just behind the gammoning.

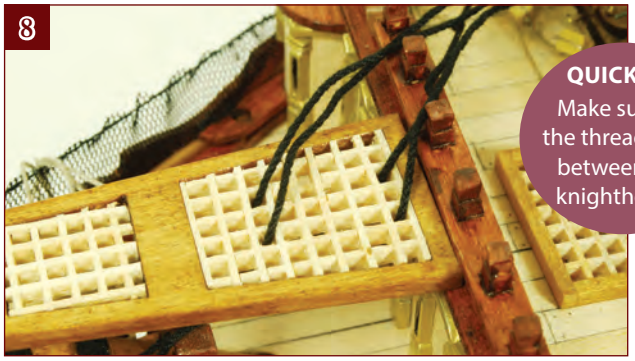
3. Feed the thread back up the other side of the gammoning. The easy way to do this is to drop a loop of cotton down the hole in the grating using a needle. Put the end of the black thread through the loop, and then pull the cotton back up, which will bring the thread with it.

4. Pull the two ends of the thread level with each other and lead them between the knightheads and over the top of the beakhead bulkhead.

5. Feed the second length of thread down through the hole between the two gammonings.

6. The main stay preventer is secured under the bowsprit rather than through the stem. Feed the end between the beakhead rails so that it is free to pull up against the bottom of the bowsprit.

7. Lead the thread up through the corresponding hole in the grating on the other side of the model.



8. Fit the gangboard in place, feeding the threads up through the holes in the rear grating as shown. Then glue the grating in place with super glue, ensuring it is square and central.

QUICK TIP
Make sure all the threads stay between the knightheads.

QUICK TIP
To stop the heart block falling out, seal the knots and let them dry before continuing.

9. Tie a 7-mm heart block to one end of the thread with two half-hitches, leaving a tail of about 20 mm.

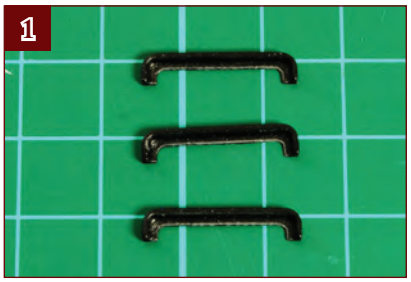
10. Line up these three pieces of thread: the threads on each side of the knot, plus the end that comes up the other hole in the grating. They need to be joined with a blind binding.

11. The binding needs to end very close to the grating. This is tricky to do, so you can make the binding a little further away from the grating, then hold the longest tail and slide the binding down the thread until the bottom of the block is about 20 mm from the grating. After adjusting the position of the binding, seal it well with diluted PVA, and trim the ends.

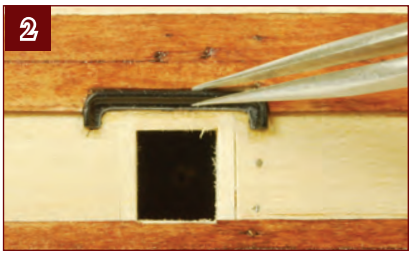
12. Repeat the process to add a 7-mm heart block and binding to the second thread.

Fitting the wriggles

Before continuing the rigging, you can fit the remaining metal canopies or 'wriggles' over the gun ports.



1. Take the wriggles supplied in this stage, and those supplied previously, and paint them black.



2. The positions of the wriggles are shown on the diagram in Stage 42. Glue the first wriggles in place in the recesses already cut in the wale.

3. Where the wale curves away from the gun ports, set the bases of the wriggles level with the top of the gun port frame.

Painted finish

1. Paint the wriggles black and glue them in place. Then use a small brush to paint the tips of the wriggles yellow ochre to match the pattern of the yellow strip.

2. The last few wriggles should be painted all yellow ochre rather than black, although the number of them may vary depending on the position of the strips.

Stage 97: Rigging the main and fore stays

More parts for *Victory*'s standing rigging, plus wood and brass hinges to make her gun port lids.

Wooden strips

3 wooden strips 2 x 10 mm, 300 mm long

Fittings

128 etched brass gun port hinges
black thread 0.5 mm x 15 m
black thread 0.25 mm x 25 m
black thread 0.15 mm x 10 m
black sewing thread 4 m

Shaped wooden part

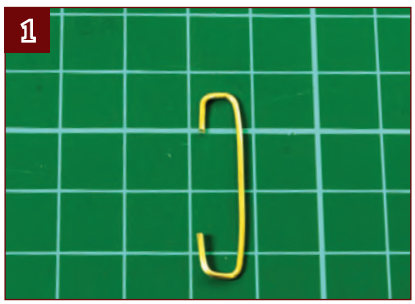
heart deadeye 7mm x 1

Where the parts fit

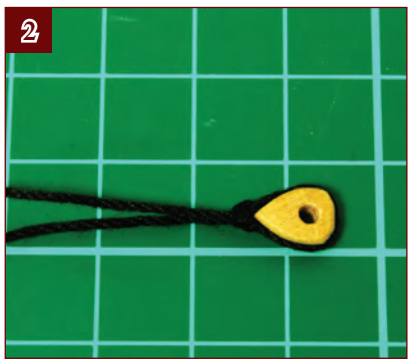
Start by using the threads provided to make the stays and preventers that run forward from *Victory*'s three masts. Read through the steps so that you understand where these lines run, and what you have to do, before you begin. You will find the following tools very useful for this job, and in the rigging jobs to come: a pair of needle-pointed tweezers, a pair of fine-pointed needlework scissors and a large cross-stitch (blunt) needle. Then you can use the wood and brass parts to make lids for the remaining gun ports. These have been left to this stage because the open lids would have prevented you from laying the hull over on its side to work on it. From now on, keep the model upright on its building stand.

Rigging the main stay and preventer

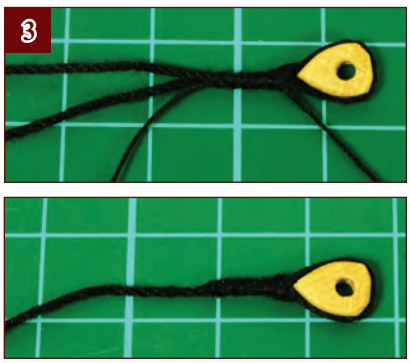
The main stay is the most important stay on the ship, running from the base of the bowsprit around the main mast, through the main top. The preventer was a backup in case the main stay was damaged.



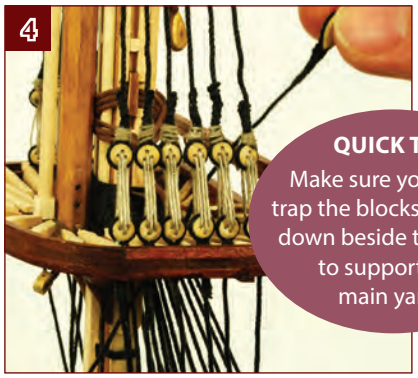
1. Make a fitting gauge approximately 30 mm long from spare 1-mm or 0.7-mm brass wire, or a straightened paper clip. Do not use the brass wire supplied with Stage 93, as that will be needed later.



2. Take the reel of 0.8-mm thread and tie a heart block to the end with two half hitches.



3. Now bind the thread together for a length of about 10 mm. Seal the knot and trim the ends.



QUICK TIP
Make sure you don't trap the blocks hanging down beside the mast to support the main yard.

4. Feed the block up through the hole in the main top, on the left of the mast.

5. Feed the thread around the back of the mast, on top of the shrouds. Then take the block back down the hole in the main top, on the right of the mast.

QUICK TIP
Take the thread to the right of the fore mast.

6. Pull the block down and hook it to the rear block fitted through the gangboard, using the gauge you made in Step 1.

7. Pull the free end so that the stay is under a gentle tension, and tie it in a loose loop below the main top. Use three half hitches (an extra one for safety as it's an awkward place to work), seal the knot and trim the end.

8. Unhook the heart block on the end of the stay from the wire gauge. Tie a 40-cm length of natural 0.25-mm thread to it, and seal the knot.

9. Lash the two blocks back together with four or five turns, giving the stay a moderate tension. Tie the free end to one side of the lashing using two half hitches. Seal and trim the ends.

10. Repeat Steps 2 to 9 to add the preventer. It runs around the mast just above the main stay, down to the forward heart block.

Rigging the fore stay and preventer

The fore stay and preventer are fitted in a similar way to the main stay and preventer, using the same gauge you made earlier.

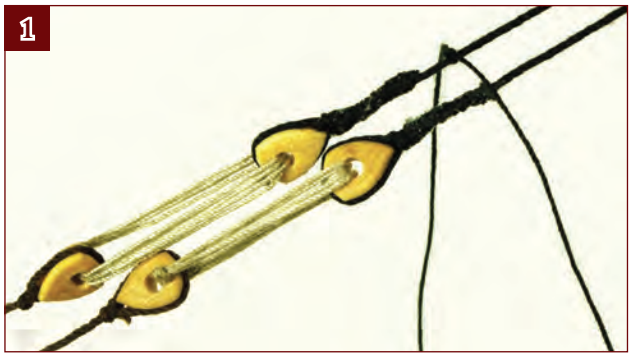
1. Both threads are looped up through the fore top, around the back of the mast and tied off below the fore top.

2. The lower ends of the threads are secured to the heart blocks that are already fitted to the bowsprit.

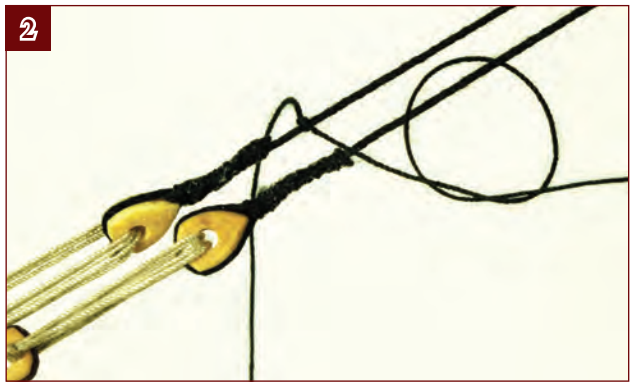
3. The threads should be under a moderate tension, but not so tight that they pull the fore mast or bowsprit out of position.

Adding snaking to the stays

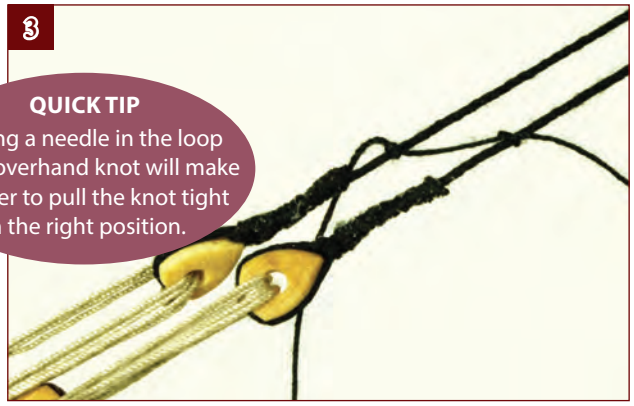
The zigzag snaking links both the fore stay and main stay to their preventers. Tension the thread carefully so as not to pull the stays out of alignment.



1. Use the thin sewing thread supplied. Cut off a 1 m length and tie one end around the fore stay preventer just above the bottom binding, using a reef knot.

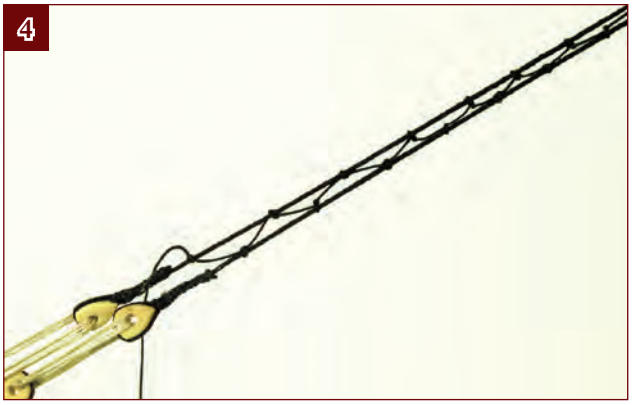


2. Take the thread over to the fore stay, roughly level with the deck, and tie an overhand knot round the fore stay.



QUICK TIP
Placing a needle in the loop of the overhand knot will make it easier to pull the knot tight in the right position.

3. Pull this tight, making sure that the snaking does not pull the two stays together.



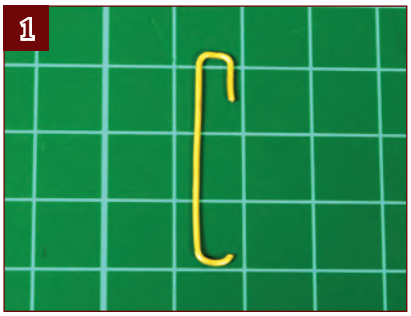
4. Tie overhand knots on the stay and preventer alternately until you reach the top. Secure the last knot with a half hitch.

5. Seal the knots and trim the ends.

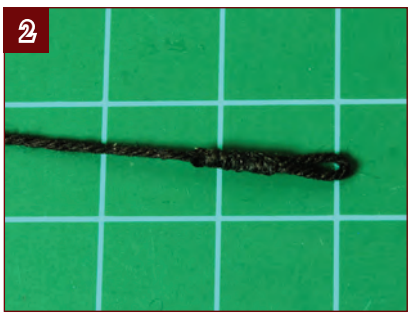
6. Add snaking on the main stay in exactly the same way, but start with a thread about 2 m long.

Rigging the mizzen stay and preventer

The mizzen stay also has a preventer but there is no snaking between the two.



1. Cut most of the hooked end off one side of your wire jig to make it easier to hook it into the eyes in Steps 6 and 8.

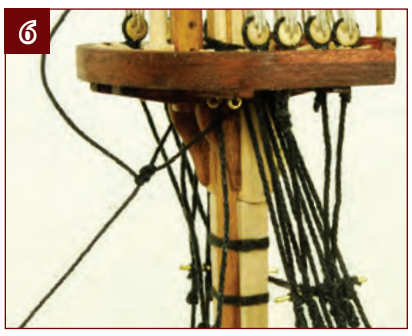


2. Bind the end of the 0.5-mm black thread to make an eye. Seal and trim the loose ends.

3. Thread the eye up through the mizzen top, around the back of the mast, and down through the hole on the other side.

4. Feed the eye down through the lowest heart block on the main mast.

5. Hook the jig through the eye in the thread, and hook it to the centre left eye in the deck at the base of the mast.



6. Lightly tension the stay and tie off the end in a loop around the mizzen top, in the same way as the main and fore stays.

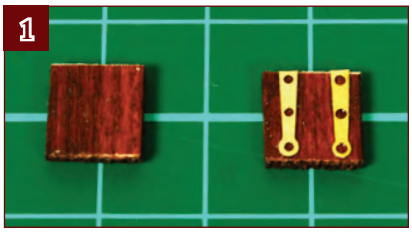
7. Tie a 25-cm length of 0.25-mm natural thread to the eye. Seal the knot and trim the end when the glue is dry.

8. Loop the thread through the deck eye and then through the eye in the thread three or four times. Tie it off in the same way as the lashings for the main stays, ensuring that the stay is under a medium tension.

9. Fit the mizzen preventer in exactly the same way, but take it through the next heart block up the main mast, and make off the end to the centre right eye in the deck.

Fitting the gun port lids

This is the same basic process demonstrated in Stage 82, where you will find extra details.



1. Cut 60 gun port lids from the 2 x 10-mm strips provided, to match the size of your gun ports. Stain them walnut, glue the hinges to them and drill holes for the thread.

2. Glue the lids to all the ports on the lower and middle decks, except those nearest the bows. Fit them at 90 degrees, or angled up slightly, to match the angle of the lids already fitted.

3. Use 0.25-mm natural thread to rig the ropes on all the gun port lids.

Painted finish

Paint the insides and the sides of the lids red ochre, and paint the outsides and hinges black.

4. The forward lower port lid is fitted in the closed position and will need one edge chamfered to fit the port.

5. The forward middle gun port doors are also fitted in the closed position. File a line down the middle to represent the join between the two sides of the cover. Note how the two short hinges are fitted to both sides.

Stage 98: Hanging the main staysail

The first of *Victory*'s sails, plus more parts for her rigging and some dummy guns to fit later to the open gun ports.

Fittings

main staysail (fitted centre bottom)
main topmast staysail (fitted centre middle)
natural thread 0.5 mm x 10 m
4 x dummy 32-pounder gun barrels
20 brass rings

Shaped wooden parts

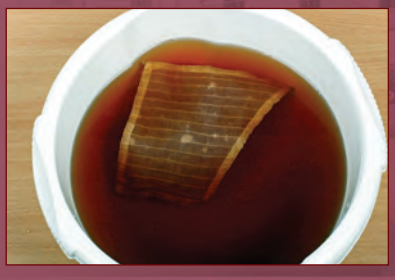
single block 4 mm x 2
single block 5 mm x 2
heart block 7 mm x 1

Where the parts fit

This stage includes the first of *Victory*'s sails, the lower two staysails between the main mast and fore mast. One of these is fitted this time and the other is covered in the next stage. However, if you aren't fitting the sails immediately, you should take the time to label them as you receive them. There are many more sails over the next few stages and as several of them look quite similar, it may be hard to tell them apart once they have been mixed up. If you are following the 'bare spars' option, omit all the steps on the last two pages of this stage, as none of the staysail rigging applies to this option. (This isn't true of all the sails as, in some cases, the same rigging lines are used to attach the spars, whether or not sails are being fitted.) The sail rigging is considerably more challenging than the standing rigging, so those less confident may prefer the bare spars option.

EXPERT TIP: The sails are made from plain white cotton and you may wish to make them look more like aged canvas, which can be done by soaking them in weak black tea and leaving the fabric to dry out without being ironed. If you decide to do this, you may prefer to wait until you have all the sails and treat them all at the same time so you get a consistent colour. However, as sailing warships carried numerous sails that were changed around at different times, they would in reality not have matched perfectly.

Label these sails (and all those you will receive in future stages) until you are ready to fit them to your model. This will save problems identifying them in the future.



To give the sails an aged look, soak them in weak black tea. Do not make the colour too strong, you can always darken it with another treatment, but it is not so easy to lighten the canvas.

Lay the sails out flat and allow them to dry naturally. Do not iron them, as this will give an unnaturally smooth appearance. In reality, sails were made of heavy, rough canvas.

Main top mast stay and preventer

These lines, labelled A and B in the photo bottom-right, are fitted in a similar way to the mizzen stay and preventer.

1. Using 0.5-mm black thread, make an eye (as on the mizzen stay). Feed the eye down through the heart block under the fore top. Take it between the catharpins and use the jig to hook it to the centre left eyebolt on the deck at the base of the mast (where it will be tied in Step 4). Make sure the line doesn't pull against the catharpins (the best position may vary to suit your model). Loosely tie the other end of the line around the main mast crosstrees.

2. Fit the preventer stay in the same way, but take it through the top heart block and down to the centre right eyebolt. Loosely tie the other end of the line around the main mast crosstrees.

3. Tie the thread around the cross trees. The thread passes between the middle and aft cross tree arms.

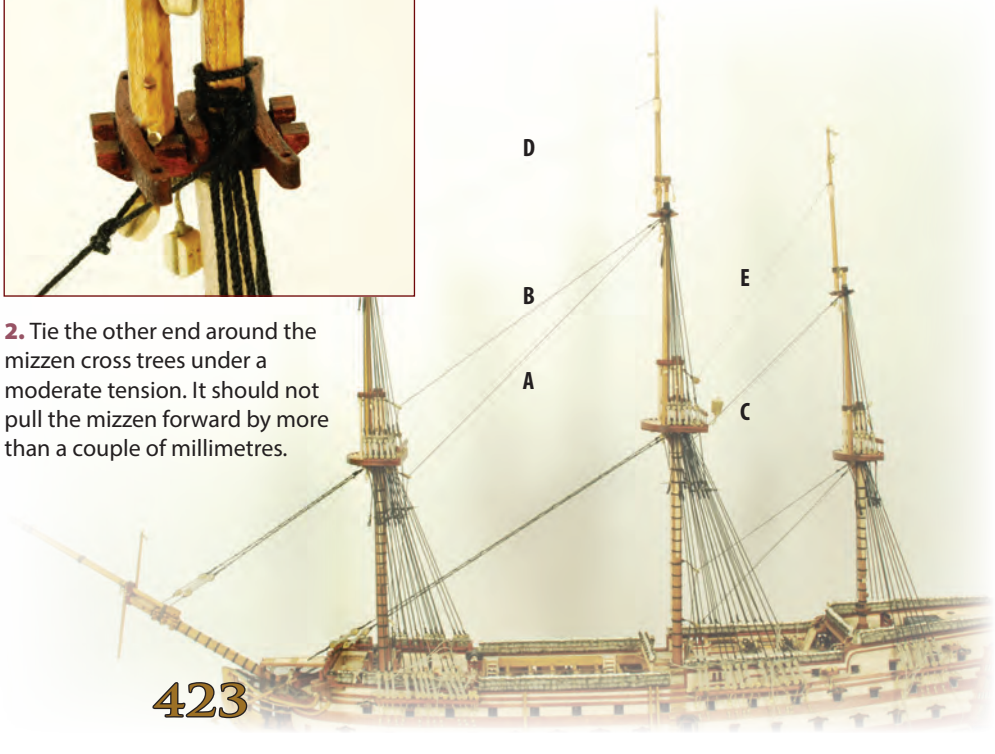
4. Use 25-cm lengths of 0.25-mm natural thread to secure both stays to the eyebolts, using the technique described in Stage 97 for the mizzen stays.

Mizzen topmast stay

This line is labelled C in the photo.

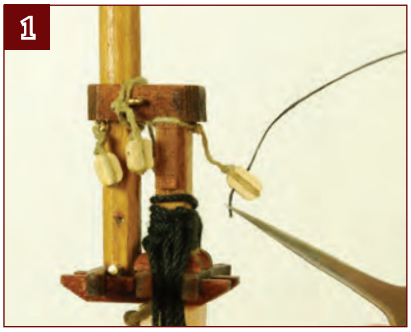
1. Using 0.5-mm thread, tie one end around the main mast just below the hounds, using three half-hitches.

2. Tie the other end around the mizzen cross trees under a moderate tension. It should not pull the mizzen forward by more than a couple of millimetres.



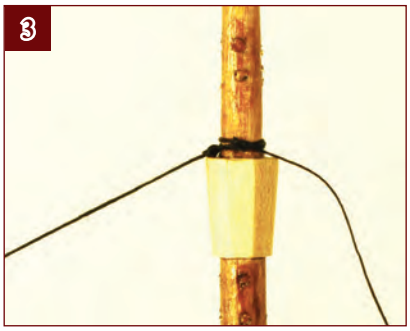
Main topgallant stay

This line is labelled D in the photo on the previous page.



1. Using 0.25-mm black thread, stiffen the end with PVA adhesive and then feed it through the block at the back of the fore mast cap.

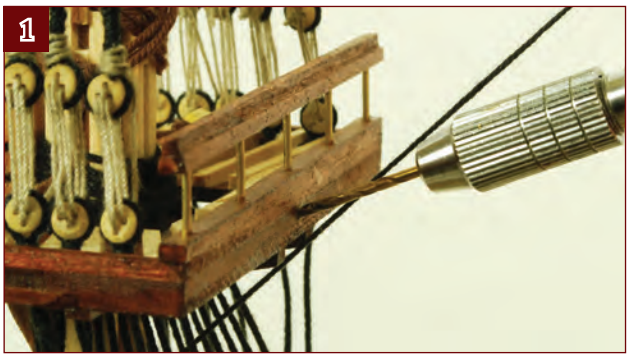
2. Although you are using the black thread, we have shown the run in cream thread here for clarity. Tie the end around both fore top trestle trees.



3. Tie the stay around the mast just above the octagonal collar, but **do not trim the end or seal the knot yet** as you may need to adjust the tension later on.

Admiral's lantern

Once the topgallant stay is fitted, you can fit this lantern (assembled in Stage 94) behind the main top.



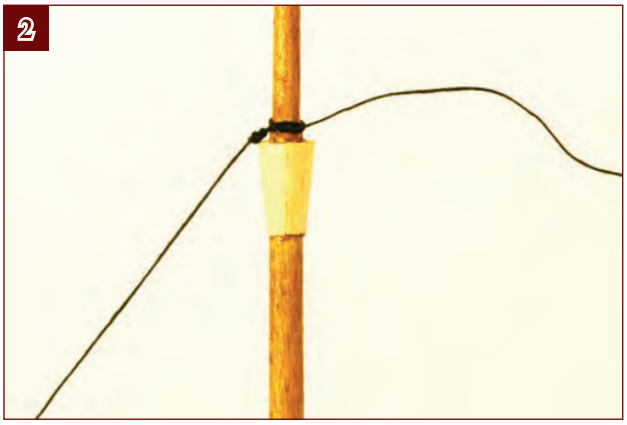
1. Drill a 1.5-mm hole in the back of the main top, just to one side of the stay. Note that the hole is drilled at a slight angle.

2. Fix the lantern in the hole with super glue. Angle the lantern backwards slightly, and leave a gap of 10 mm between the lantern and the handrail.

Mizzen topgallant stay

This line is labelled E in the photo on the previous page.

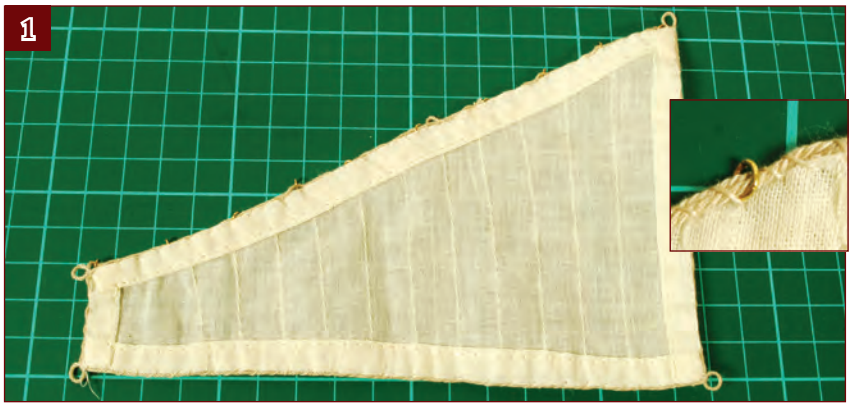
1. Using 0.25-mm black thread, feed the end through the hole in the heart block on the top of the main mast cap. Then tie it around the trestle trees in the same way as you did the main topgallant stay.



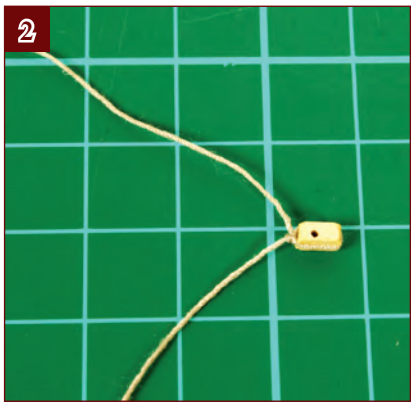
2. Tie the stay around the mast just above the octagonal collar, but **do not trim the end or seal the knot yet** as you may need to adjust the tension later on.

Hanging the main staysail

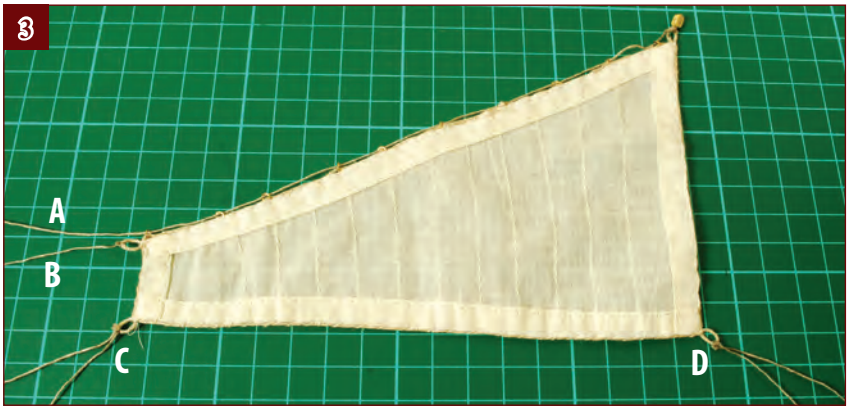
Attach the first sail provided with this stage, using 0.25-mm natural thread throughout the steps.



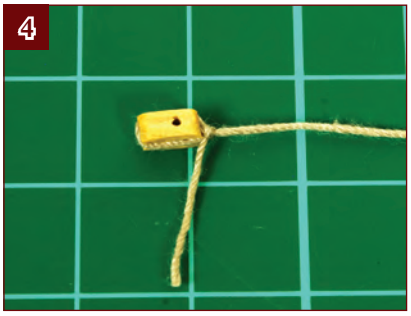
1. Take the smaller sail and 10 of the small rings. Open the rings by twisting them. Insert them into the top rope of the sail and twist them closed again (inset). They should be spaced evenly along the top of the sail, about every 2 cm.



2. Tie a block with some 0.25-mm natural thread, leaving tails long enough to tie the block to the sail.



3. Tie the block to the top corner (peak) of the sail. Then prepare the sheets and tacks as follows:
A. Thread a line 500 mm long through all the eyes and tie it to the top corner (peak) of the sail.
B. Tie a line 250 mm long to the upper front corner (nock) of the sail.
C. Tie a line to the lower front corner (tack) of the sail, leaving two 200-mm-long tails.
D. Tie a line to the lower rear corner (clew) of the sail, leaving two 300-mm-long tails.



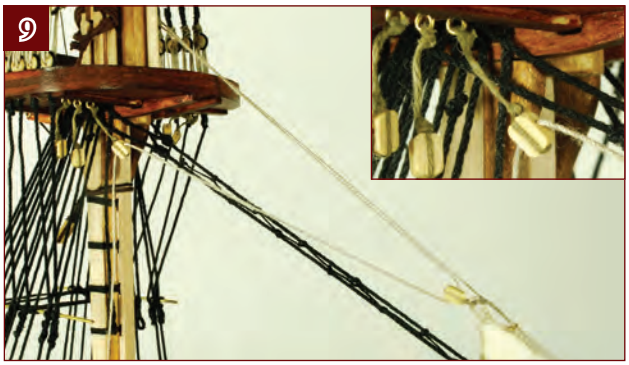
4. Tie a 5-mm single block to one end of the 0.25-mm reel of thread.

5. Tie the block around the fore mast just below the rubbing paunch. Knot it so that the block is close to the mast, and finish off with two half hitches.

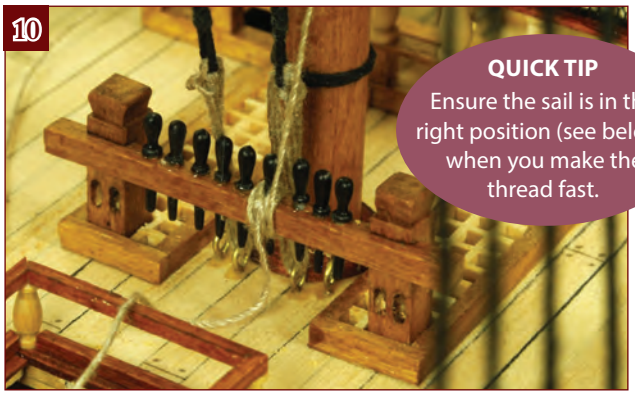
6. Pull the thread up towards the main top and cut it, leaving enough spare length to tie the thread to the main mast as in Step 8.

7. Feed the end of the thread up through the brass rings. Using a needle will make this easier.

8. Tie the upper end of the stay around the top of the main lower mast above the cleats. Pull the thread tight enough so that the sail doesn't cause it to sag.



9. Cut a 70-cm length of thread and tie it to the main mast at the same point as the stay (see Step 8). Then feed it through the block on the peak of the sail, and back up through the first block to the right of the mast under the main top (inset).



QUICK TIP
Ensure the sail is in the right position (see below) when you make the thread fast.

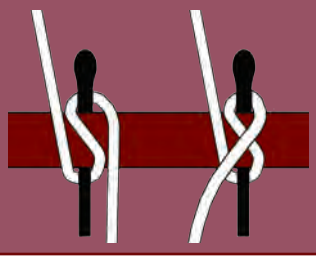
10. Lead the free end of the thread down the mast, and make it fast against the fourth belaying pin from the right in the pin rail next to the main mast (see Expert Tip).

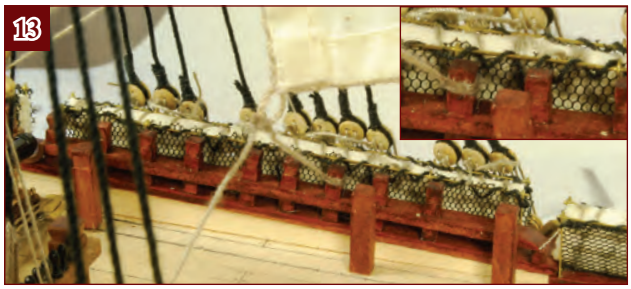
11. Take the end of line A from Step 3 and feed it through one of the blocks at the end of the stay on the fore mast. Then secure the thread to the centre belaying pin. Only put a couple of turns of thread on this pin, as there is another line to be secured on top of it.

12. Take line B, feed it through the other block and tie it to the adjacent belaying pin. Only put a couple of turns of thread on this pin, too.

EXPERT TIP

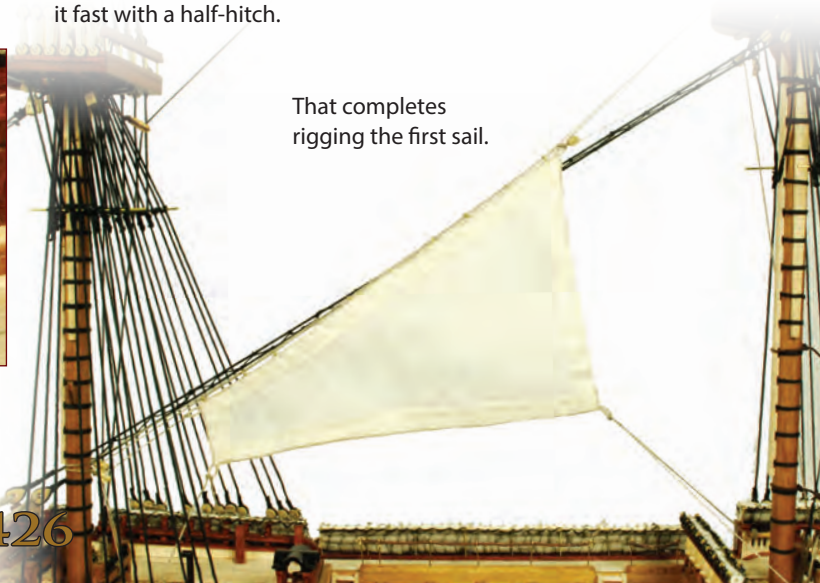
To secure a line with a belaying pin, lead it around the bottom of the pin and then the top, to form a complete turn. Then apply three cross-shaped turns by looping the line around alternate sides of the top and bottom. As this is very fiddly, use needle-pointed tweezers to manoeuvre the thread into place. Secure it by finishing with a half-hitch.





13. Tie the two ends of line C off against the third timberheads from the rear on both sides of the model. Simply wrap the thread around the timberhead three or four times, then make it fast with a half-hitch.

14. Secure the ends of line D off against the first belaying pin on the bulwarks on both sides of the model.



That completes rigging the first sail.

Stage 99: Hanging the main topmast staysail

More of *Victory*'s sails, plus more parts for her rigging and some more dummy guns to fit to the open gun ports.

Fittings

main topgallant staysail (fitted centre top)
mizzen topgallant staysail (fitted rear bottom)
4 x dummy 32-pounder gun barrels
18 brass rings

Shaped wooden parts

single block 4 mm x 2
single block 5 mm x 17
heart block 7 mm x 1

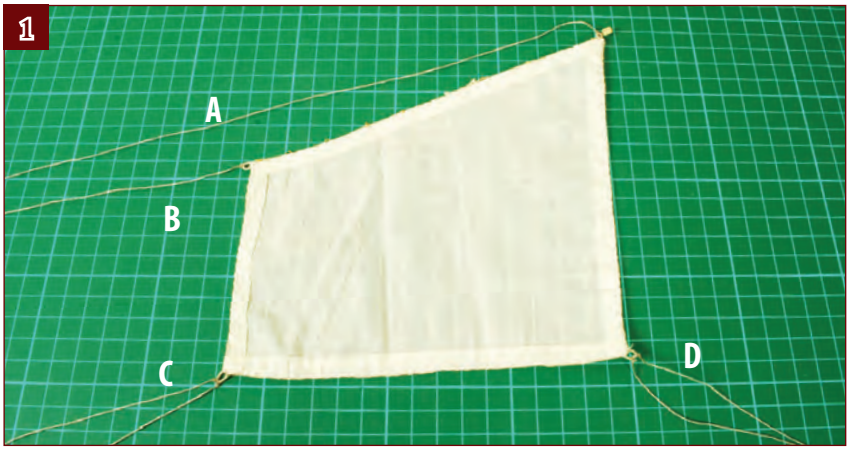
Where the parts fit

This stage includes the next two of *Victory*'s staysails, the upper ones fitted between the main mast and fore mast and the main mast and mizzen. Both of these will be fitted later on. First, it's time to fit the second sail provided in Stage 98, which hangs above the first. Then continue rigging the stays.

If you are following the 'bare spars' option, omit all the steps relating to the staysail rigging, and instead go straight to the 'Fitting the fore topmast stay and preventer' and 'Fitting the fore topgallant and flagstaff stays' sections at the end of this stage, which show you how to rig the upper stays that run between the fore mast and bowsprit.

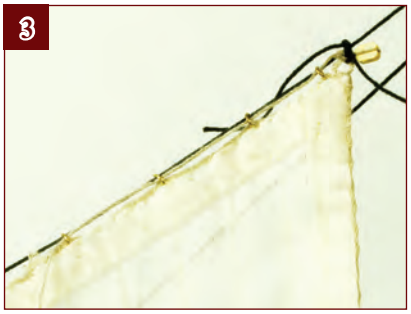
Hanging the main topmast staysail

Attach the second sail provided with Stage 98, using 0.25-mm natural thread throughout the steps.



1. Take the second staysail (the main topmast staysail), rings and 4-mm block from Stage 98. Prepare the sail similarly to the first staysail. Fit 10 rings evenly along the top, but **do not close them yet**. Add the 4-mm block to the top corner and attach threads as follows:
A. 650-mm long, tied to the top corner (peak) of the sail.
B. 450-mm long, tied to the upper front corner (nock) of the sail.
C. Tied to the lower front corner (tack) of the sail, leaving two 350-mm-long tails.
D. Tied to the lower rear corner (clew) of the sail, leaving two 500-mm-long tails.

2. Use some short lengths of thread to tie the sail temporarily to the stay.



3. Fit the stay and thread A inside the rings and close them up. Start at the top and work down. Then remove the temporary threads you tied in Step 2.

4. Turn the model round so you are working from the starboard side. Take a 1 m length of thread and tie it to the topmast just above the shrouds.

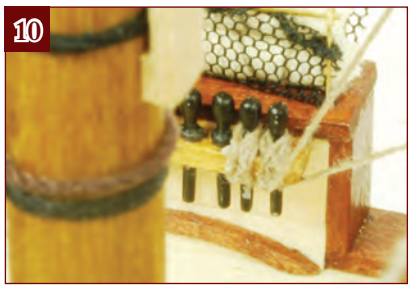
5. Feed the thread through the block in the top of the sail, then back through the top hole in the bracket (see insert), and finally down through the main top to the bottom of the main mast.

6. Ensure the sail is in the correct position, then make the thread fast to the centre belaying pin.

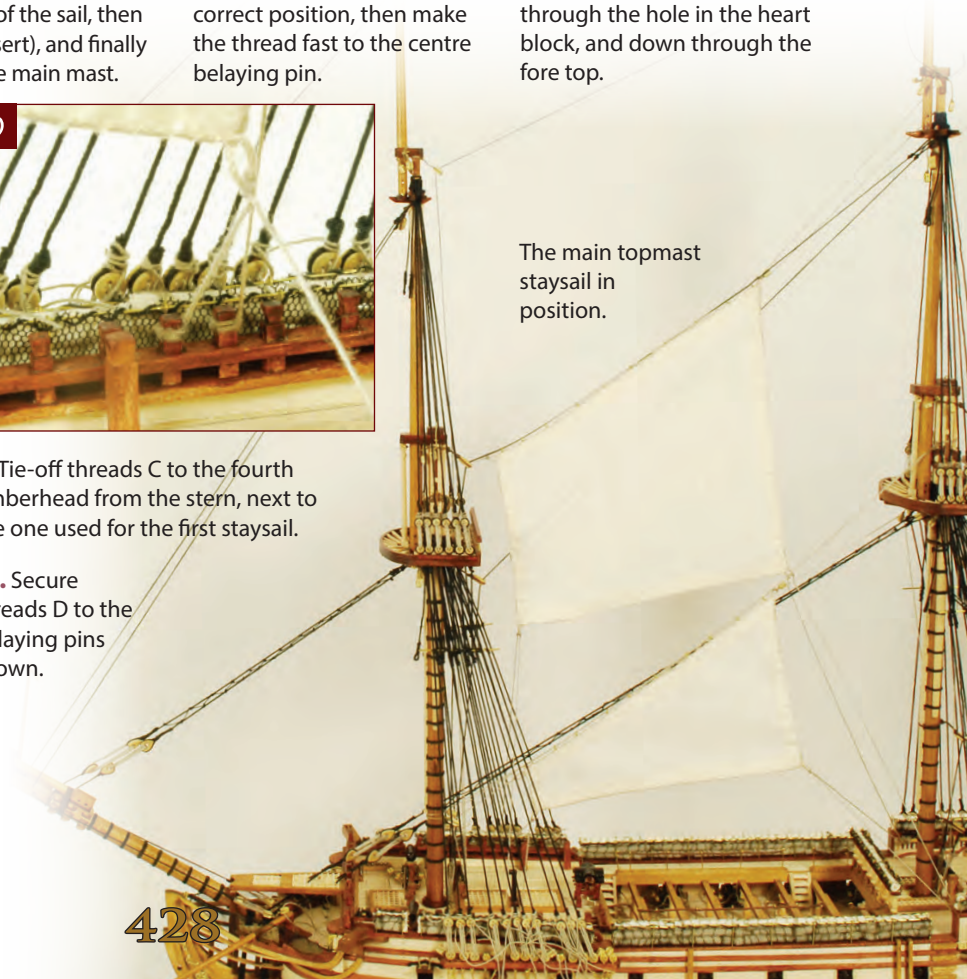
7. Feed threads A and B through the hole in the heart block, and down through the fore top.

8. Make thread A fast to the centre belaying pin, on top of the previous thread. Secure thread B to the adjacent pin to the left, over the previous thread.

9. Tie-off threads C to the fourth timberhead from the stern, next to the one used for the first staysail.



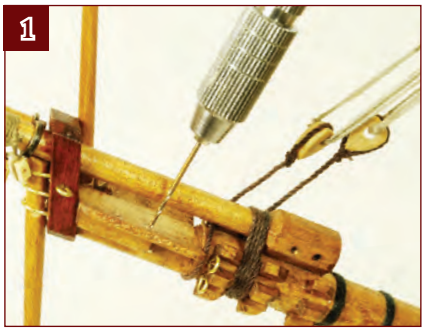
10. Secure threads D to the belaying pins shown.



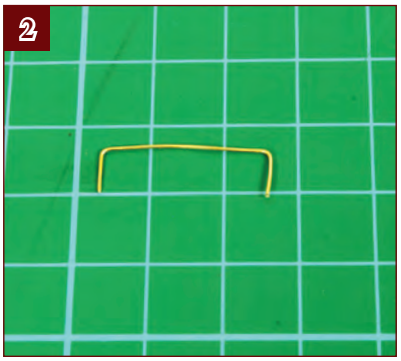
The main topmast staysail in position.

Fitting the fore topmast stay and preventer

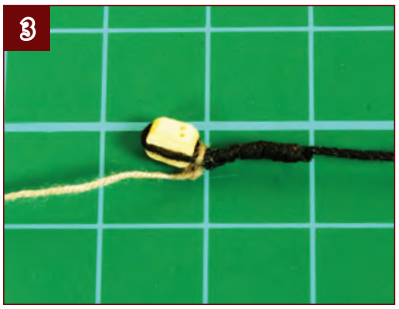
These lines, A and B in the main photo, run down through the bowsprit and fasten at the knightheads.



1. Drill an additional 1.5-mm hole on the port side bee, about halfway down, making sure it goes through the 3 x 3-mm block of wood under the bees.

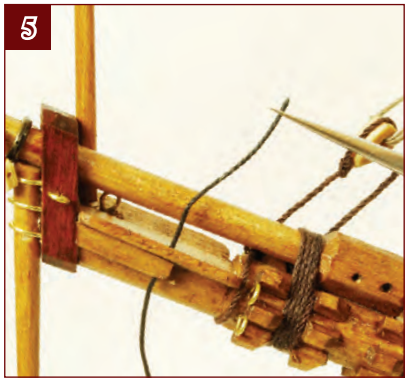


2. Make another rigging jig from spare 0.5-mm wire bent to the shape of a goalpost, about 25 mm between the legs.



3. Cut two lengths of 0.5-mm black thread, both 70 cm long. Bind a double block (supplied in Stage 97) on the end of each. Then tie 30 cm of 0.25-mm natural thread to the end as shown.

4. Use the jig to link the block to the lower block on the port knighthead.



5. Feed the thread up through the hole you drilled in Step 1.

6. Tie the stay to the fore mast crosstrees, on top of the shrouds.

7. Remove the rigging jig and secure the thread through the double blocks. Start by feeding the thread through the first hole in the double blocks.

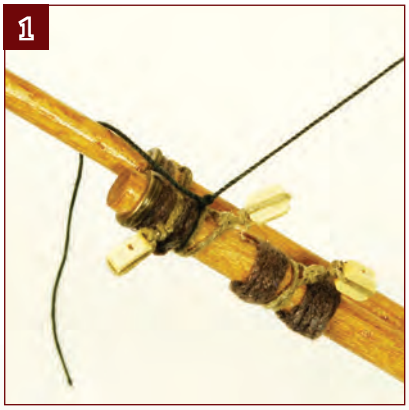
8. Cut the loop of thread used to help handle the block.

9. Complete the rigging of the double blocks, and then tie the thread behind the double block with a couple of half-hitches.

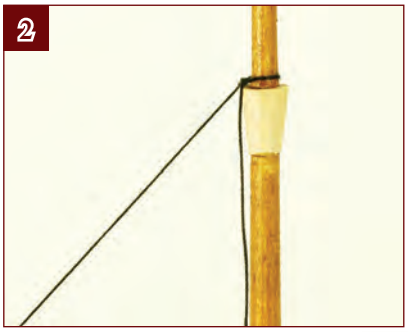
10. Repeat Steps 4-9 to rig the preventer. Feed it through the hole in the starboard side of the bees, and lash it to the lower block on the starboard knighthead. Seal and trim the knots.

Fitting the fore topgallant and flagstaff stays

These lines are labelled C and D in the main photo.



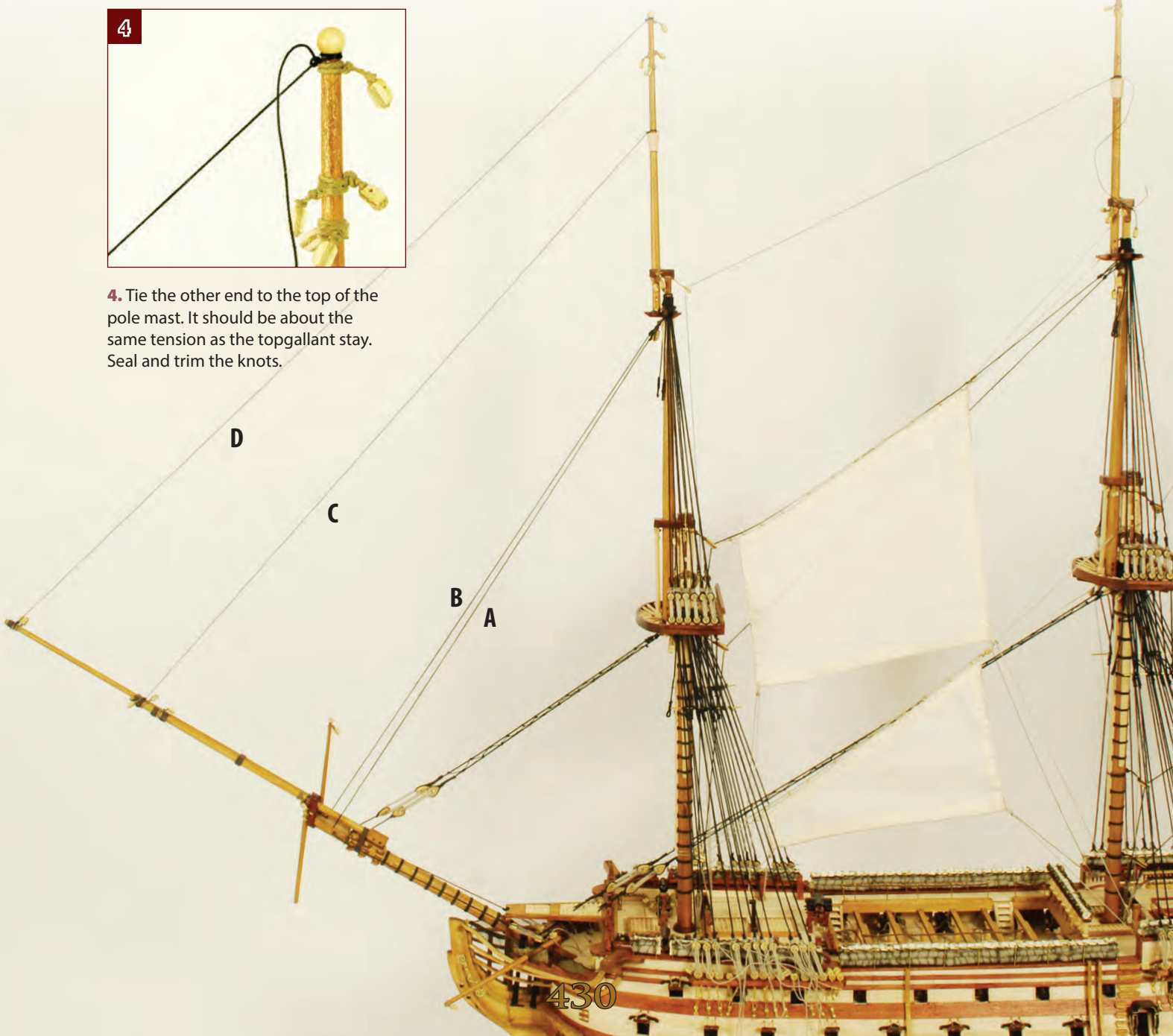
1. Cut a 65-cm length of 0.25-mm black thread. Tie it to the end of the jibboom.



2. Tie the other end to the fore topgallant mast above the octagon. The thread should be taut, but must not pull the foremast or bowsprit out of position. Seal and trim the knots.

3. Cut a 75-cm length of 0.25-mm black thread. Tie one end to the tip of the flying jibboom.

4. Tie the other end to the top of the pole mast. It should be about the same tension as the topgallant stay. Seal and trim the knots.

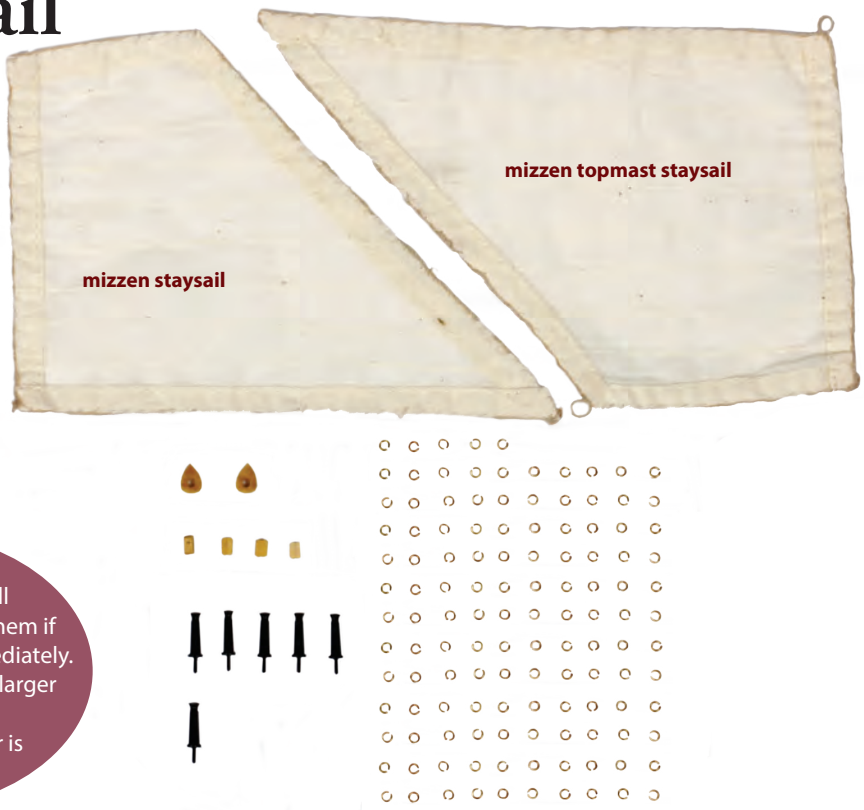


Stage 100: Hanging the mizzen staysail

Parts for continuing *Victory*'s rigging and adding guns to the open ports.

Fittings

mizzen staysail (fitted rear bottom)
mizzen topmast staysail (fitted rear centre)
6 x dummy 12-pounder guns
heart block 7 mm x 2
single block 5 mm x 2
single block 4 mm x 2
125 x brass rings



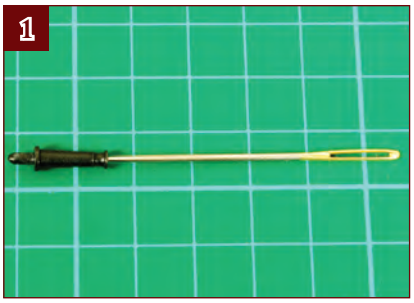
QUICK TIP
It can be difficult to tell these sails apart, so label them if you aren't fitting them immediately. The topmast sail is slightly larger – about 170 mm high, whereas the other is about 155 mm.

Where the parts fit

This stage, start by adding the dummy guns supplied, as it is easier to do this before beginning the ratlines, which you do next stage. Then continue hanging the staysails to the mizzen stays. Once you have done this, you can add the top-ropes and mast ropes. These run up roughly parallel to the masts and were used to raise or strike the topmasts and topgallants. Once again, you will find it much easier to rig these lines before adding the ratlines to the shrouds, as the ratlines will restrict you from working close in around the masts.

Fitting the small dummy guns

Fit the dummy barrels to the ports behind the mizzen shrouds now, before the access becomes too cluttered with rigging. The larger dummy guns will be fitted later on, once you have received them all.



1. The easiest way to handle and insert the dummy gun barrels is to insert a large cross-stitch needle (which has a blunt point) down the barrel.

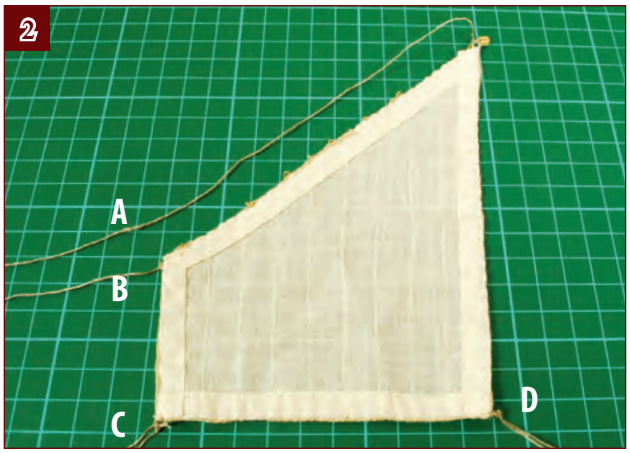
QUICK TIP
Be careful not to get superglue on the shrouds.

2. Place a drop of superglue on the spigot and insert the barrel into one of the holes you have already drilled. Repeat this for all six guns, three on each side.

Hanging the mizzen staysail

Fit the lowest staysail running between the mizzen and main mast first. The method is very similar to the one you have used before to fit the staysails, in Stages 98 and 99.

1. Before fitting the sail, ensure that the third heart block on the main mast is as close below the stay as possible. If you need to slide it up the mast, it can be 'walked' up and over the bands by pushing up one side, then the other, and repeating this until the block is in its correct position.

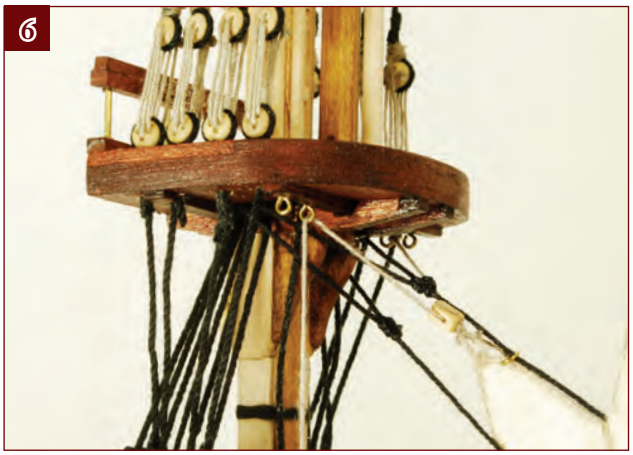


2. Prepare the mizzen staysail in the same way as the sails in Stage 99. Space nine brass rings evenly across the top of the sail, leaving them open. Fit a 4-mm single block to the top corner and tie on lengths of 0.25-mm natural thread as follows:
A. 450 mm long, tied to the top corner (peak) of the sail.
B. 300 mm long, tied to the upper front corner.
C. Tied to the lower front corner, leaving two 200-mm tails.
D. Tied to the lower rear corner, leaving two 300-mm-long tails.

3. Tie the sail to the stay with some scraps of thick thread.

4. Close the rings, trapping the stay and thread A inside. Remove the temporary ties, then feed threads A and B through the closest heart block on the main mast.

5. Cut off 40 cm of 0.25-mm natural thread, and stiffen one end. Tie the other to the port inboard eye under the mizzen top.



6. Feed the thread through the block in the sail, and then through the inboard eye on the right side of the mizzen top.

QUICK TIP
Make sure the sail is in the right position.

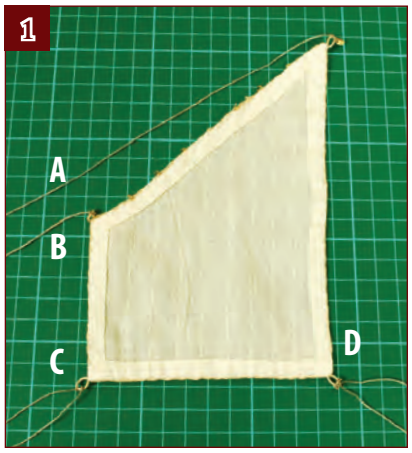
7. Bring the thread down the mast and tie it to the outer right eye in front of the mizzen mast.

8. Working back on the left side of the model, tie threads A and B to the sixth and seventh belaying pins from the left. Tie it over the top of the existing threads already secured to these pins.

9. Tie threads C to the rearmost pin on the forward pin rack. The clew lines (threads D) will be tied later.

Hanging the mizzen topmast staysail

Now add the next sail above the one you just fitted.



1. Prepare the mizzen topmast staysail in the same way as Step 2 on the previous page. Leave the thread lengths as follows:
A. 600 mm
B. 400 mm
C. 350 mm x 2
D. 350 mm x 2

2. Secure the sail to the stay with temporary ties, close the rings and then remove the temporary ties, as in Steps 3 and 4 on the previous page. Feed threads A and B down through the hole in the nearest heart block.

3. Work from the right of the model. Take a 70-cm length of 0.25-mm natural thread and stiffen one end. Tie one end to the mizzen mast. Then feed the thread through the block on the sail, through the single block on the mizzen mast, and down through the hole in the front of the mizzen top.

QUICK TIP
Ensure the sail is in the right position.

4. Secure this thread to the inner right eye in front of the mizzen mast.

5. Secure threads A and B to the third and fourth belaying pins behind the main mast.

6. Secure threads C to the fifth belaying pins on both sides of the model. Threads D will be secured later.

Foremast top-ropes

There are three ropes on each mast. The two top-ropes were used to haul the topmast up through the mast cap. The remaining single mast rope was used to pull the topgallant up through the topmast cap.

1

1. Cut two lengths of 0.25-mm thread, each 55 cm long, and stiffen one end of each. Tie one of the threads to the forward eye on the left side of the foremast cap. Then feed the thread through the lower hole on the fore topmast.

2

2. Take the thread up the other side of the mast and through the single block. Then feed the end down through the fore top to the bottom of the fore mast.

3

3. Feed the thread through the inner starboard slot in the aft pinrail post and secure it to the top of the pinrail post with two half-hitches.

4

4. Fit the second top-rope in a similar way. Tie it to the opposite eye on the fore mast cap, then through the same hole as the first rope, and through the block on the opposite side of the foremast cap.

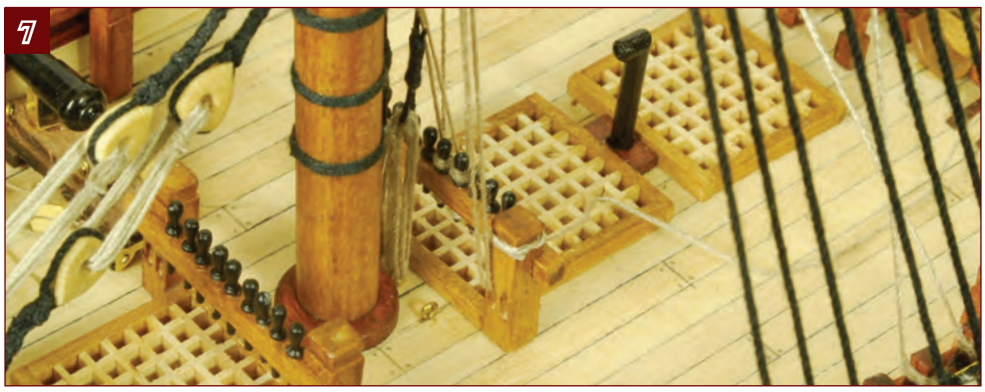
5

5. Tie it off in the same way, this time going through the port pinrail post.

6

6. Add the topgallant mast rope in a similar way. Tie a 70-cm length of thread to the right eye on the fore topmast cap. Take it through the hole in the bottom of the topgallant, and through the block on the left side.

7

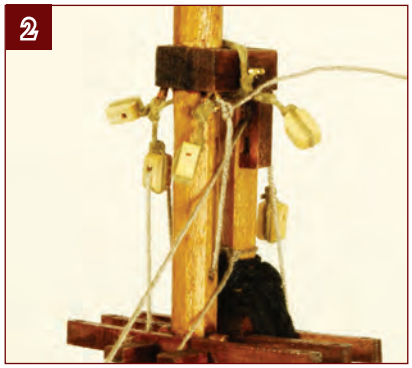


7. Pass the rope through the inner slot in the port pinrail post and tie off with two half-hitches on top of the rope in Step 5.

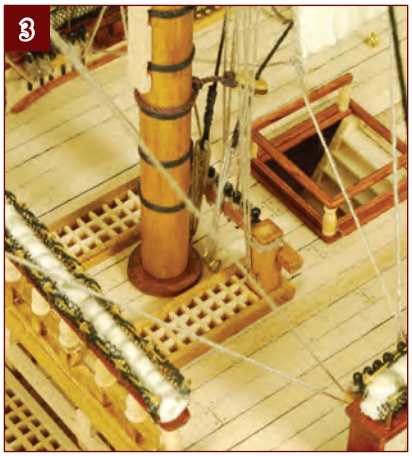
Main mast top-ropes

Fit the three main mast ropes in the same way as the fore mast.

1. Using two 65-cm lengths of thread, run the top-ropes between the mast cap and the base of the topmast, then down to the pinrail posts in the same way as on the previous page.



2. Fit the main topgallant mast rope in the same way as the fore topgallant rope. The thread for this is 80 cm long. Note that it is tied to the eye on the main topmast cap, which already has another block fitted to it.

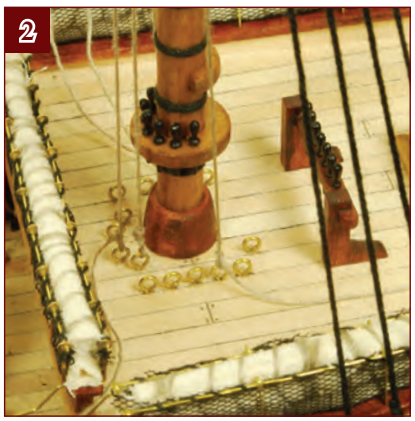


3. Tie off all three main mast ropes to the pinrail posts in the same way as the foremast ropes were tied.

Mizzen mast top-ropes

Fit the mizzen mast ropes in a similar way.

1. Use two 50-cm lengths of thread. The rigging is similar, but note that the eyes are both on the front of the cap, and the two blocks are in the middle of the cap.



2. Tie off the rope to the aft-but-one eye. Then do the same on the other side.

3. Rig the mizzen topgallant mast rope in the same way as the fore mast. The thread is 60 cm long.

4. Secure the topgallant mast rope to the centre one of the five eyes on the port side of the model.

BUILD LORD NELSON'S HMS VICTORY

Coming in Pack 11

Stages 101-110 continue rigging the ship, assemble the 18-foot cutter and add the figurehead.