BUILD LORD NELSON'S HMS VICTORY

Pack 7

Stages 61-70

DeAGOSTINI MODEL SPACE™

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Contents

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DeAGOSTINI MODEL SPACE™

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Stage 61: Beginning the mast tops

The parts supplied are components to make the main mast top and hand rail.

Wooden strips

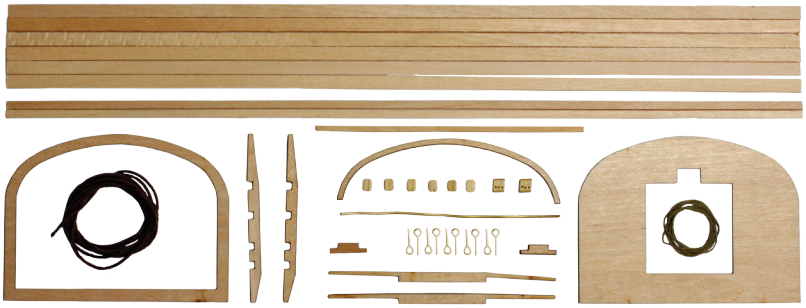
6 wooden strips 2 x 5 mm, 300 mm long
2 wooden strips 2 x 3 mm, 300 mm long
1 wooden strip 2 x 2 mm, 100 mm long

Fittings

10 x 10-mm eyebolts, 6 x 4-mm single blocks, 2 x 5-mm three-hole blocks
1-mm brass wire, 80 mm long
0.8-mm thread, 1 m long
0.25-mm thread, 500 mm long

Shaped wooden parts

1 laser-cut base
2 laser-cut surrounds
6 laser-cut cross-tree parts

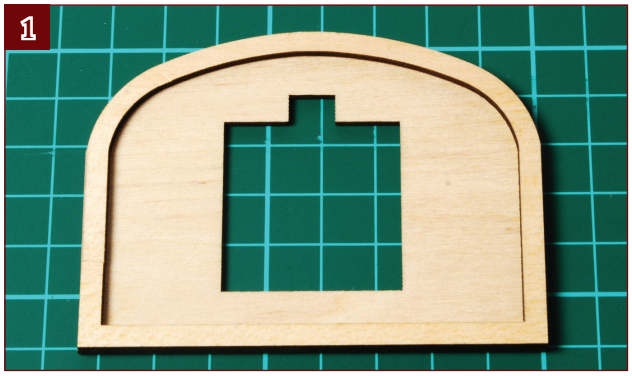


Where the parts fit

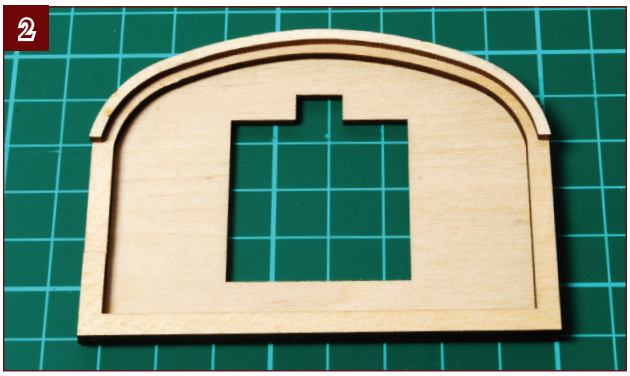
The main mast fighting top (sometimes inaccurately called the "crow's nest") is the platform fitted at the point where the lower mast joins the top mast. Its main purpose was to anchor the shrouds of the top mast above it, but it could also be used as a lookout point or a station for sharpshooters. The top forms a completely separate assembly, but it will be needed when putting together the main mast, which starts next stage, and it is shown on the mast plans provided then.

Assembling the base of the main mast top

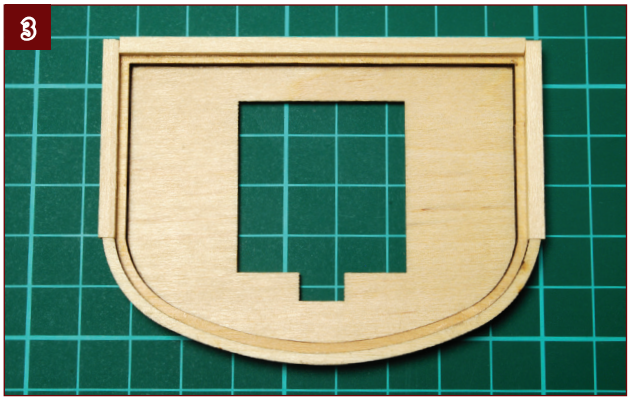
Using the parts you received with this stage, fit the surrounding lip to the base of the top, then add the cross trees that support it against the mast.



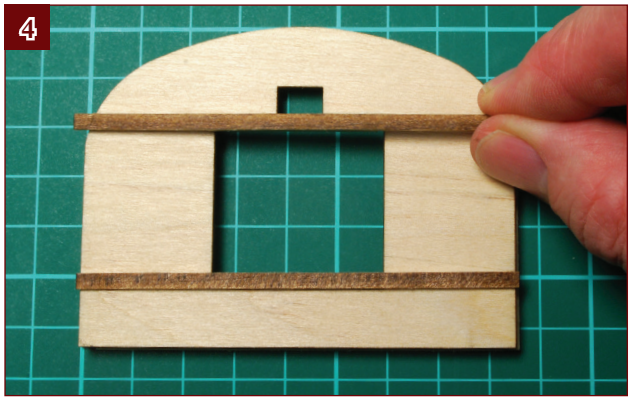
1. Glue the pre-cut surround to the shaped base of the mast top. Make sure the two parts are exactly aligned.



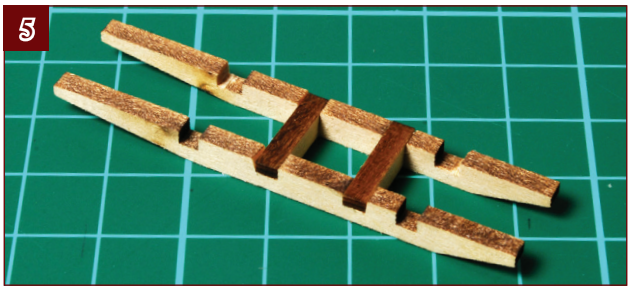
2. Glue the front upper surround on top of the assembly, aligning it with the outer edge.



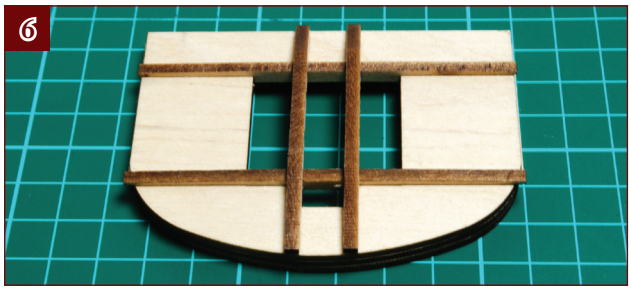
3. Cut strips of 3 x 2-mm wood to complete the surround. Align the **inside** edge with the laser-cut surround fitted in Step 2, and leave the outside edge overhanging, to be sanded later.



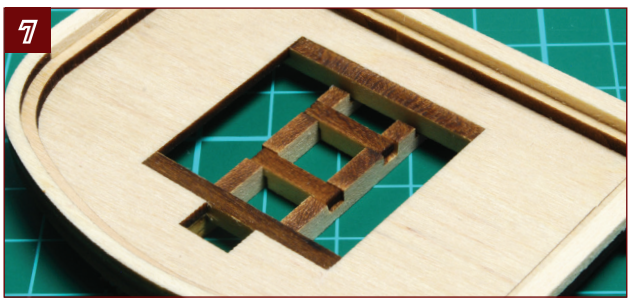
4. There are six shaped parts for the cross trees. Turn the top over and glue the two longest ones in place, fitting the middle of the cross trees against the edges of the rectangular hole.



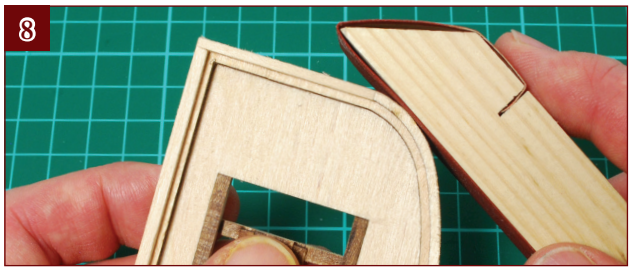
5. Take the two remaining cross trees and shorter spacers, and dry-fit them as shown. The gap between the cross trees needs to be from 8 to 8.5 mm. You may need to file the slots in the cross trees and the ends of the spacers a little to get this right.



6. Fit the slots in the assembly over the two long cross trees so that the forward arms run on either side of the small rectangular cut-out in the top. You may need to adjust the slots in the cross trees to get a good fit.



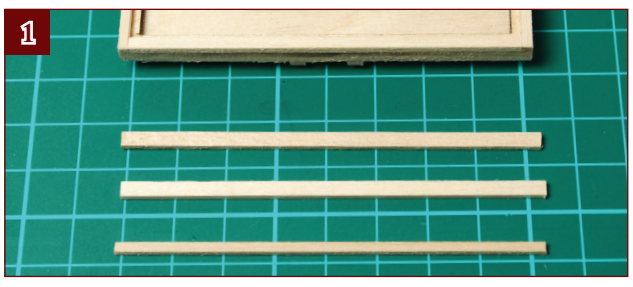
7. Glue the two spacers in position.



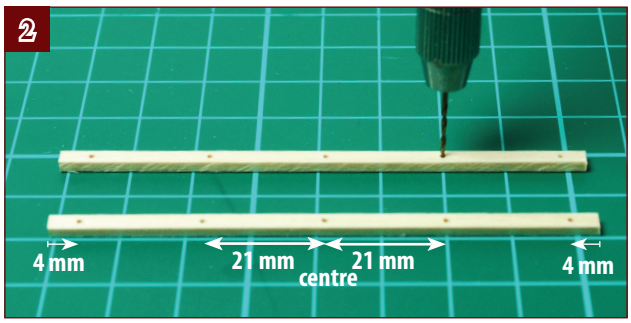
8. Sand the edges of the fighting top smooth, making the overhanging edges from Step 3 flush with the edge of the top.

Adding the hand rail

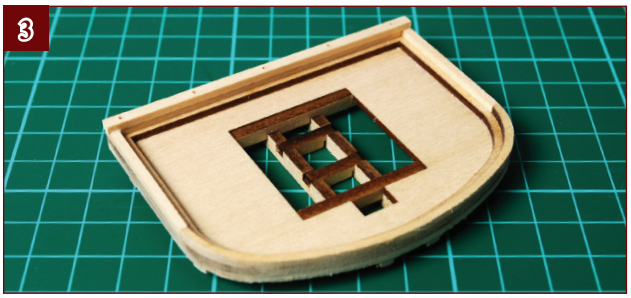
Using the strips of wood supplied, make and fit the hand rail that runs along the rear of the top. It will later be supported on brass posts, inserted into the five holes you drill at this stage.



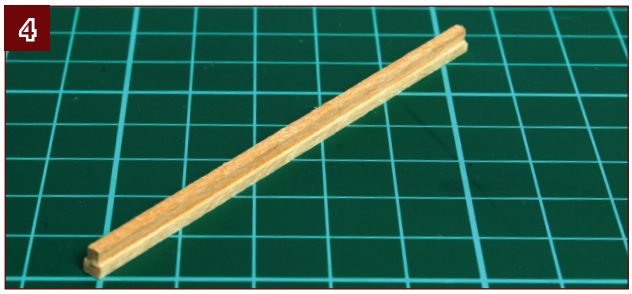
1. Cut two pieces of 2 x 3-mm wood and one piece of 2 x 2-mm wood, making them the same length as the width of the fighting top.



2. Drill five holes in the 2 x 3-mm strips only. Make them all 1 mm in diameter, in the positions indicated above.



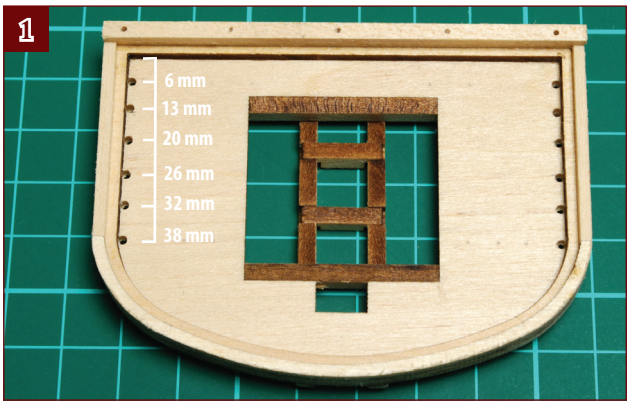
3. Glue one of the 2 x 3-mm strips to the back of the fighting top, flush with the rear edge.



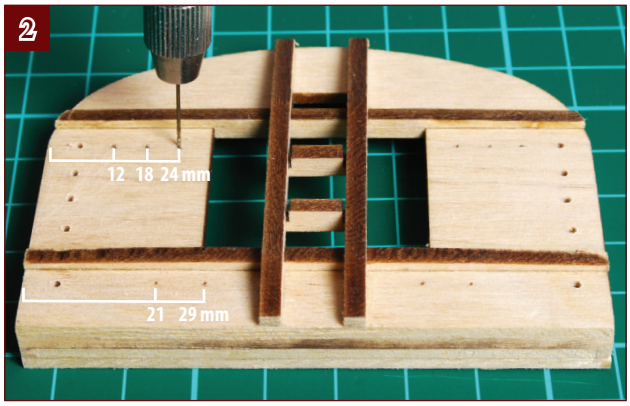
4. Glue the 2 x 2-mm strip along the centre of the 2 x 3-mm strip to form the hand rail.

Continuing the base of the main mast top

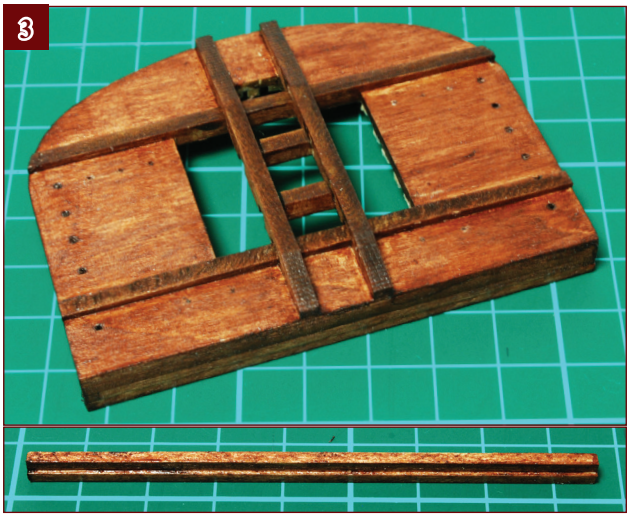
Using the parts you received with this stage, continue to fit the surrounding lip to the top, then add more cross trees that support it against the mast.



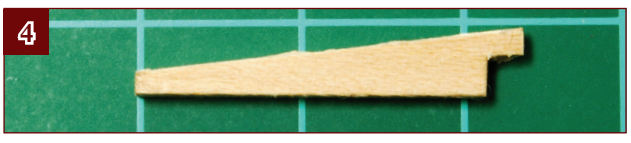
1. Drill two rows of six 1.5-mm diameter holes in the fighting top, using the photo above as a guide to the positions.



2. Turn the assembly over and drill another 10 holes, 0.7 mm in diameter, positioned as shown.

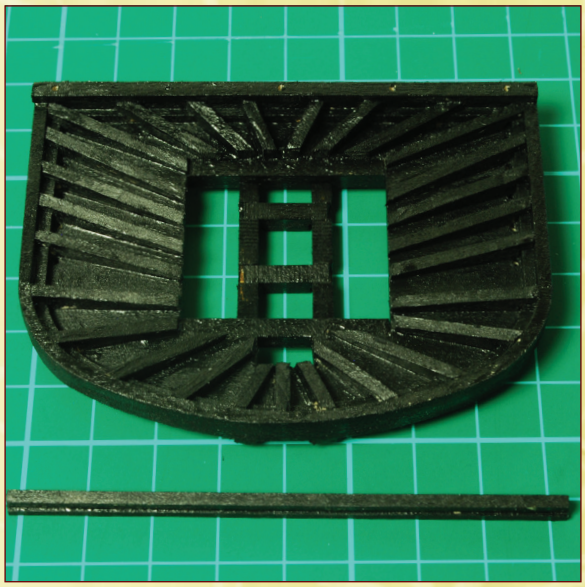


3. If you have chosen a natural wood finish, stain the entire assembly (this is walnut). Stain the hand rail the same colour.

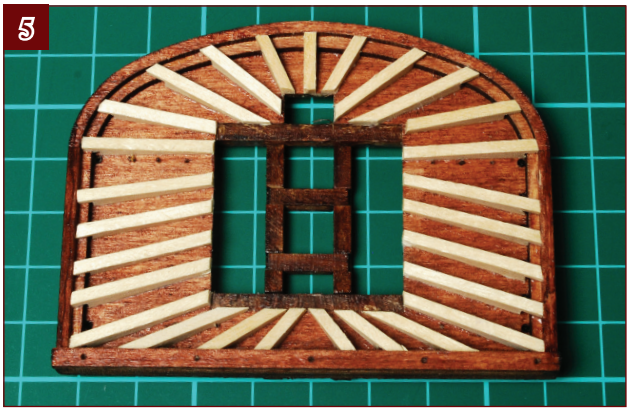


4. Next you need to cut 27 ribs from 1 x 5-mm wood to fit in the base of the fighting top. This is the general shape, but each one is different and needs fitting individually, as in Step 5.

Colour finish

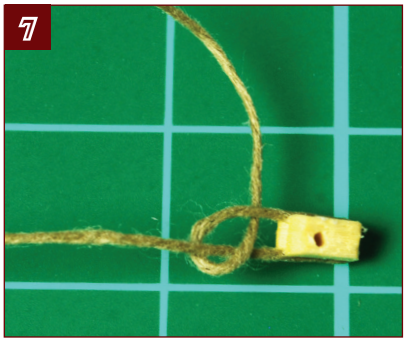


If you have chosen to build your model *Victory* with the optional painted finish, paint the entire fighting top and handrail black after fixing the ribs in the base as shown in Steps 4 and 5.

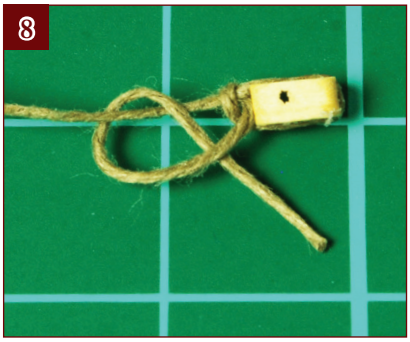


5. Use this photograph as a guide for the correct positions of the strips (they are also shown on the mast plan provided with the next stage). The strips must not block the 1.5-mm holes, but it doesn't matter if they cover the 0.7-mm holes.

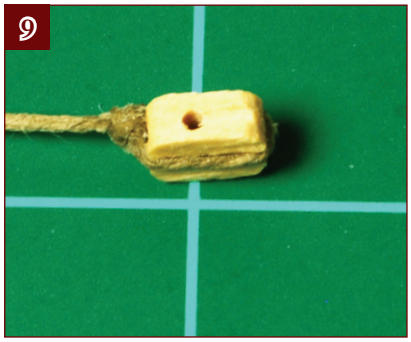
6. Take the brass eyes and cut the shanks to 2 mm long. Glue them in the 0.7-mm holes with superglue, aligned as shown.



7. Take a small block and tie a single hitch around it using the thinner cord supplied with this stage. The hole in the block should be nearer the knot end.

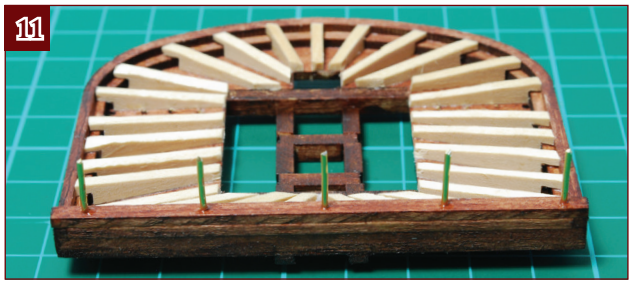


8. Pull the first hitch tight, and then tie a second hitch to secure the knot.

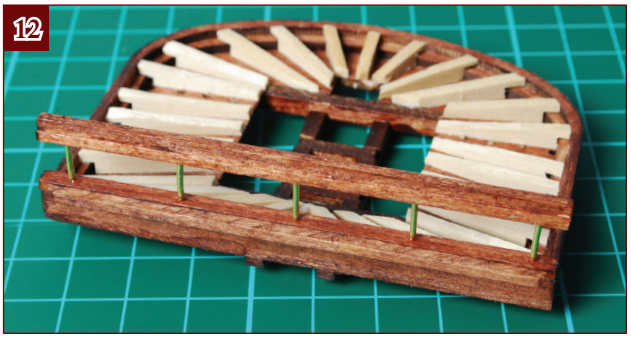


9. Paint the knot with diluted glue to seal it, and allow to dry. Then cut the end closest to the knot. Prepare six blocks using the same method.

10. Tie the six blocks to the six eyes on the top, using the method described in Steps 7 to 9. They should hang about 10 to 12 mm below the eye.



11. Cut five 12-mm lengths of brass wire and glue them into the holes in the back of the top to form posts for the hand rail.



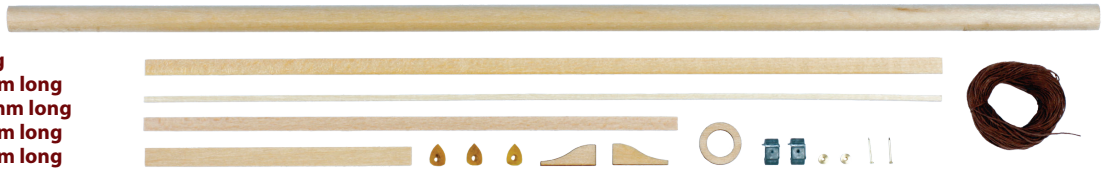
12. Glue the rail to the brass posts to complete the assembly.

Stage 62: Beginning the masts

This stage provides the parts to start constructing *Victory*'s main mast using the actual-sized plans included with this stage.

Wooden strips

1 x 100-mm dowel, 410 mm long
1 wooden strip 2 x 6 mm, 300 mm long
2 wooden strips 2 x 2 mm, 300 mm long
1 wooden strip 2 x 5 mm, 200 mm long
1 wooden strip 3 x 7 mm, 100 mm long

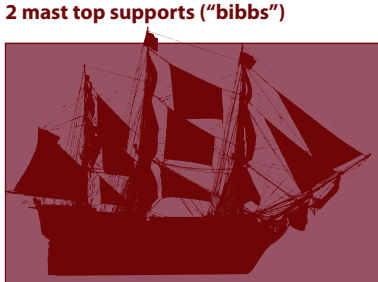


Shaped wooden parts

3 x 7-mm heart blocks
1 mast collar
2 mast top supports ("bibbs")

Fittings

2 pins, 2 x 4-mm brass wheels
black thread, 2 diecast pulley blocks



Where the parts fit

This stage sees the start of the main mast assembly – the lower mast. Like all three of *Victory*'s masts and her bowsprit, the main mast was built up in sections, each of which comprised several parts. Some of these were designed to strengthen the masts, while others provided attachment points for the rigging and the yards that carried the sails. To help you to shape and join the masts and yard accurately, this stage provides a set of plans showing each of the elements. The plans also show how the various parts fit together, and where to attach the pulley blocks used for standing rigging (which supported the masts) or running rigging (used to raise, lower and trim the sails).

Using the plans

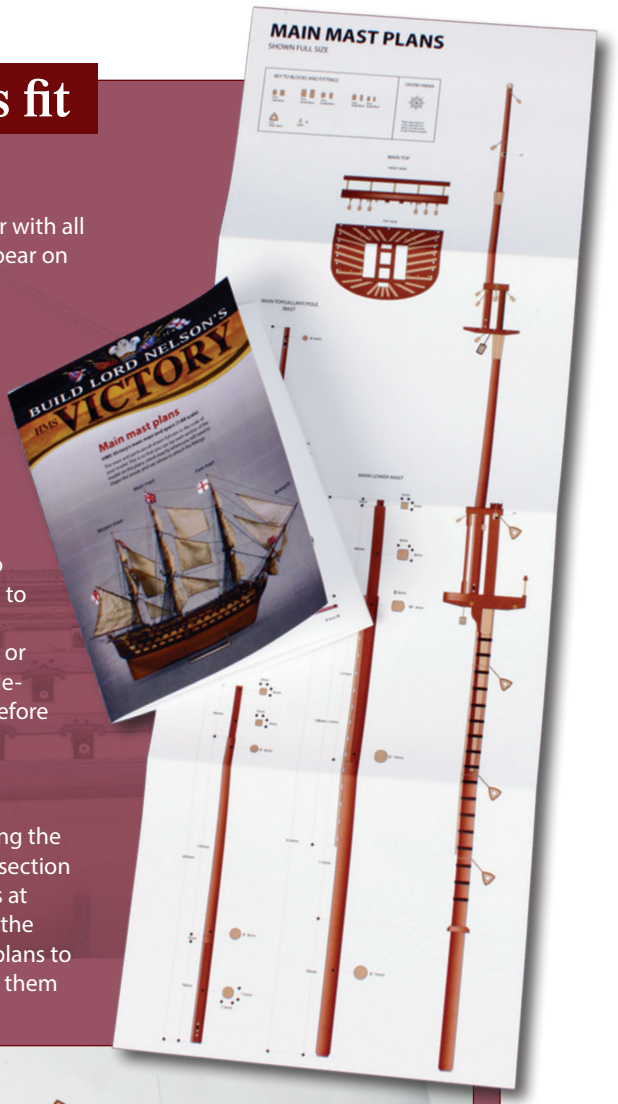
Smooth out the plans carefully, pressing out the creases. Take good care of them, as they will be used over the next few stages as you cut and shape each of the sections of the masts – together with all the yards (or "spars"), which appear on the reverse side of the plans.

Scale measurements

The plans are drawn to the finished size of the components, so you can measure off them directly. Several parts are carved to shape, or tapered or drilled at various points, so the plans also carry dimensions to enable you to check that you have positioned these accurately before you cut or drill the wood. As always, double-check all your measurements before starting to cut the wood.

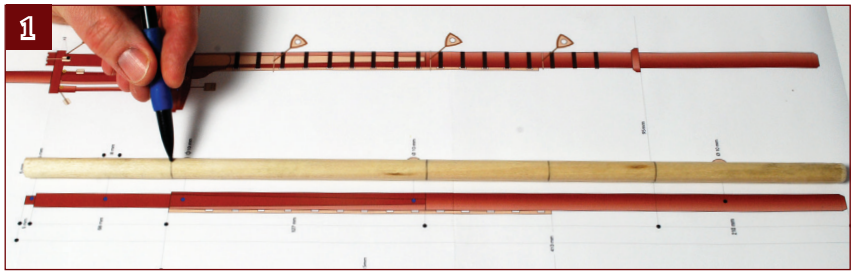
Shaping the parts

Take particular care when carving the lower mast to shape. The cross-section of this part of the mast changes at several points, so read through the instructions together with the plans to make sure that you understand them fully before you start.

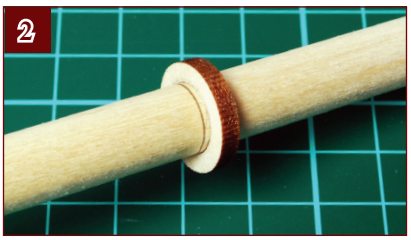


Shaping the upper end of the lower mast

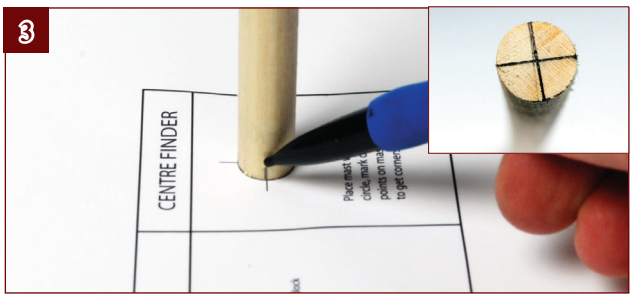
The lower mast has two square sections at the top that fit the fighting top and mast cap. Start by marking all the points where the mast changes shape, then carve the squares on the upper end.



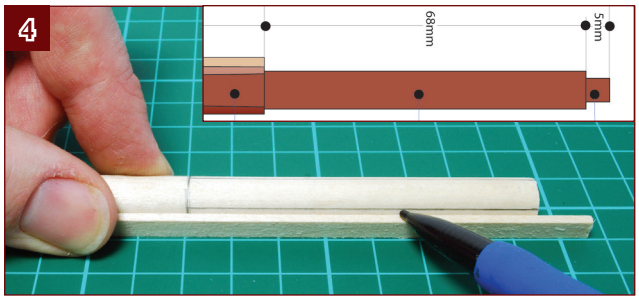
1. Take the 10-mm dowel and lay it on the Main Lower Mast plan. Make a pencil mark at the four key points indicated, in line with the ● marks printed next to the mast.



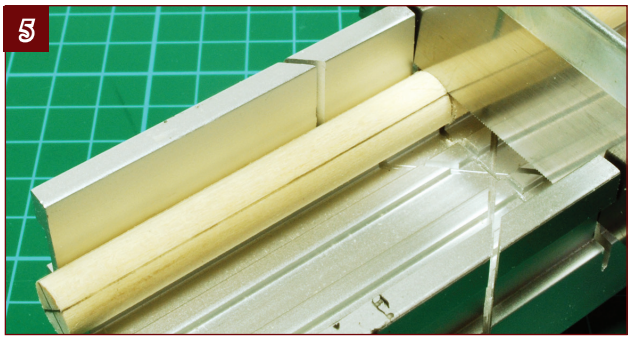
2. Slide the collar onto the dowel and use it to draw a neat line around the mast at each of the marked points.



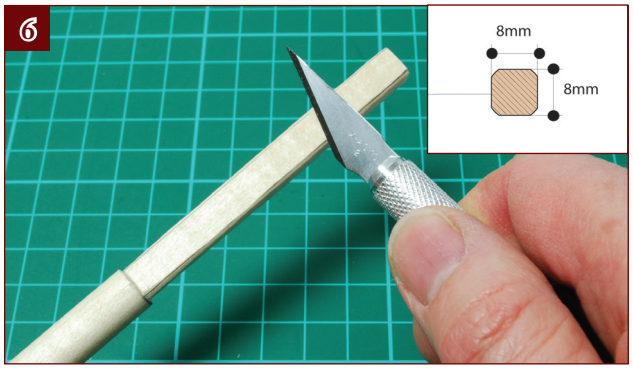
3. Place the upper end of the dowel on the Centre Finder on the plans, and mark the four corners of the square section. Join the points to make a cross on the end of the dowel.



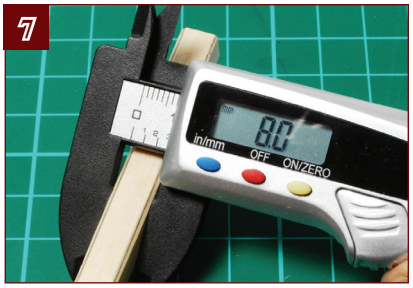
4. Lay the dowel on a flat surface and place an offcut of plank against it. Extend the corner lines along the length of the square section (which runs to the mark 73 mm from the end).



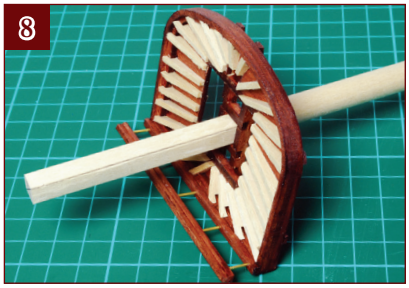
5. Hold the dowel so the cross on the end forms an X, with the lines running at 45 degrees. Carefully make very shallow saw cuts across the dowel where the circle marks the end of the square section. Stop sawing before the blade reaches the corner lines, when the cut is only about a millimetre deep.



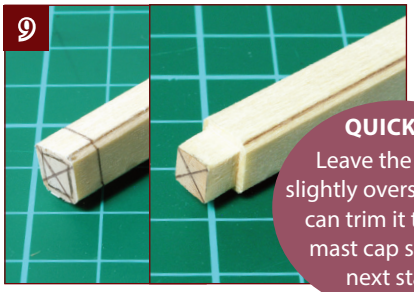
6. Carve away the curved sections between the lines, using a sharp knife. Do not carve all the way down to the lines. The corners need to stay rounded, as in the cross-section indicated on the plans and shown in the inset.



7. Check the size of the square section frequently to make sure you do not cut away too much. Use a ruler or a digital caliper to check the width.



8. Also check that the main mast top fits over the square section.



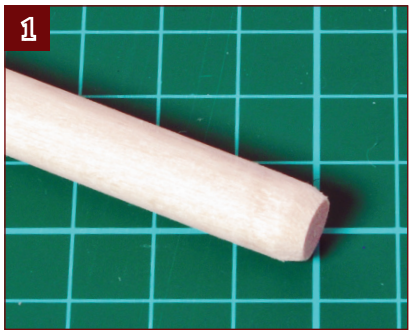
9. Mark a 5 x 5-mm square on the last 5 mm of the square section. Using a similar method to Steps 5 and 6, carve the square section to size.

QUICK TIP

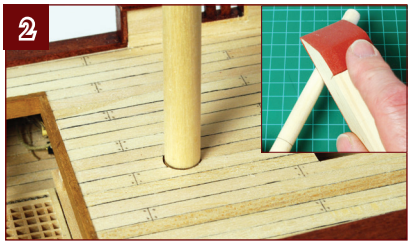
Leave the square slightly oversize so you can trim it to fit the mast cap supplied next stage.

Shaping the base of the lower mast

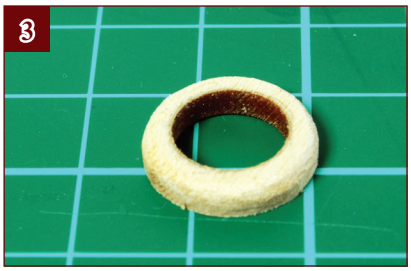
Ensure that the bottom of the lower main mast slips through the hole in the quarterdeck and locates in the slot cut in the false keel. Then taper the area below the square sections you just carved.



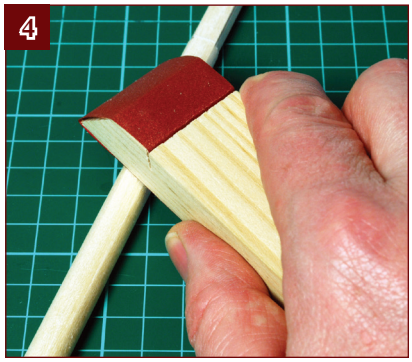
1. Sand a small bevel on the bottom of the mast.

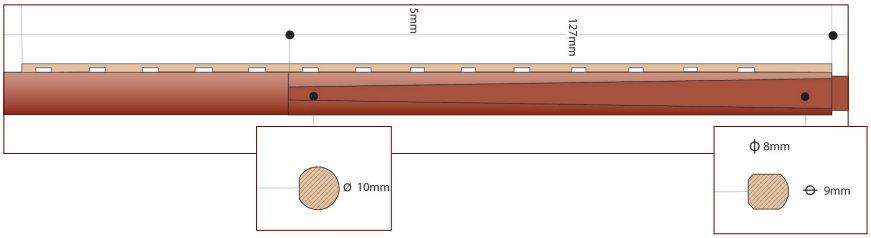


2. Check that the mast slides easily down to the 95-mm line you marked from the plans. If necessary, taper the end a little. Turn the mast slowly against a sanding block to give a round, even taper.



3. Sand a bevel on the top edge of the collar. It will be used to trim the joint between the mast and the deck, so keep it safe for later.

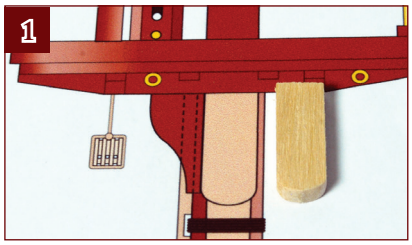




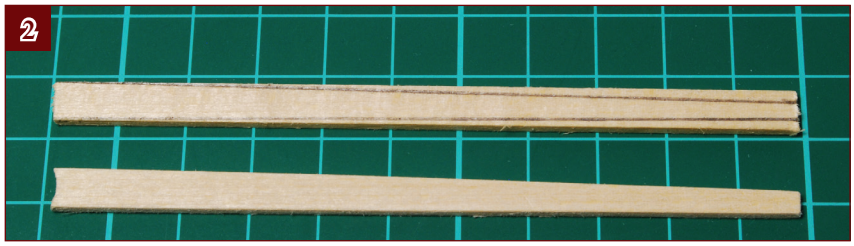
4. Sand three flats on the mast as shown on the plan. At the front of the mast, sand a 5-mm-wide flat measuring 188 mm long to fit the strip of wood indicated. Then sand flats on both sides. These need to taper from 8 mm wide below the square area, reducing to 3 mm wide in line with the mark you made 127 mm further along.

Adding the top supports

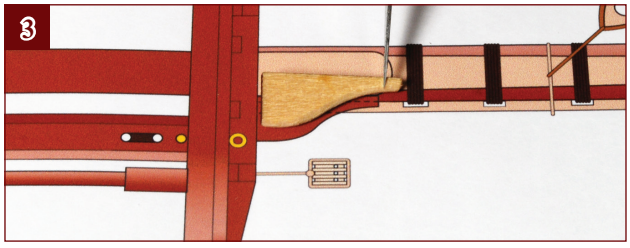
The lower main mast is fitted with strips of wood known as "hounds," "cheeks" and "bibbs," designed to support the top. Shape and glue these in place, reinforcing them with lashings made of thread.



1. To make the "hounds," take the strip of 3 x 7-mm wood. Cut two pieces 21 mm long and round one end of each to the profile on the plan.

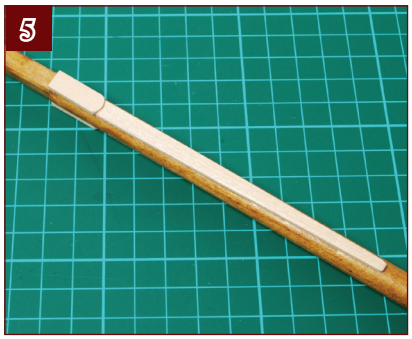


2. Cut two pieces of 2 x 6-mm wood, each 106 mm long. Draw pencil lines starting the full width of the plank at one end and ending 3 mm apart at the other. Sand both pieces to a smooth taper from 6 mm to 3 mm. Then sand an arc in the wider end to match the radius of the hounds made in the previous step.



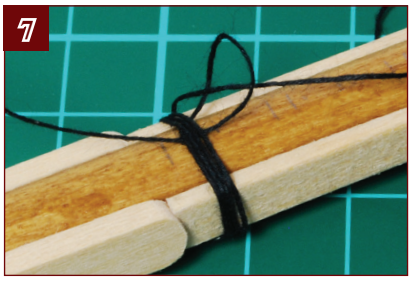
3. Place the two mast top supports ("bibbs") against the plan, and trim them to size as necessary. Sand off the corners of the curved edge. (Leave the corners intact on the straight edges.)

4. If you have chosen a natural wood finish, stain the main mast and bibbs dark oak (or a colour of your choice).

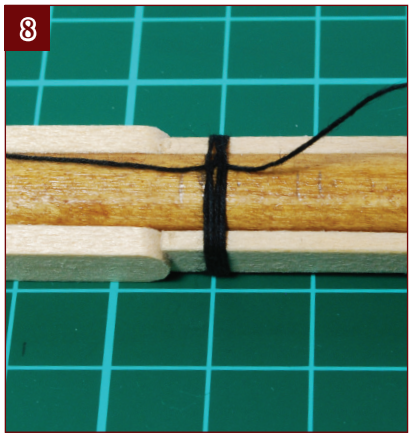


5. Glue the cheeks and hounds to the mast, using the plan as a guide.

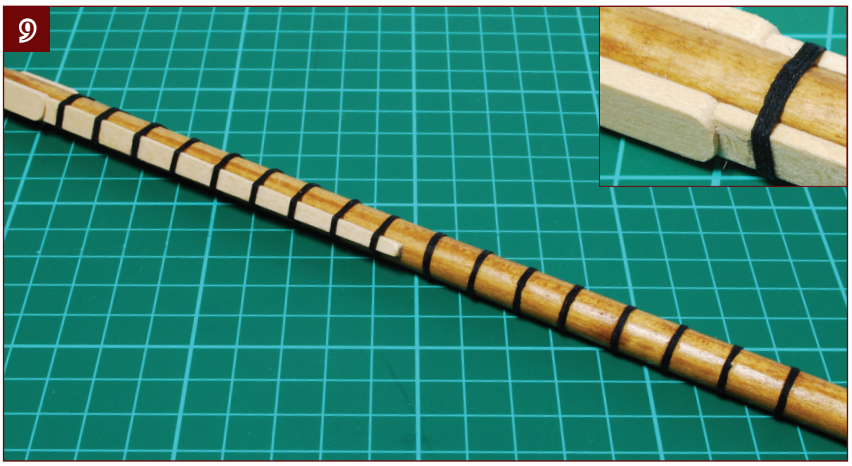
6. Copy the positions of the bindings from the plan. Press lightly so that no marks will show on the finished mast.



7. Using a length of black thread, make a loop around the mast and then add four turns on top of the loop. More detail on the binding technique can be seen in Stage 30.



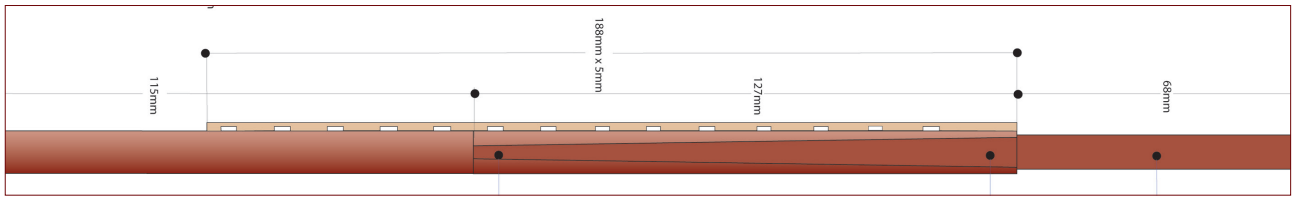
8. Feed the end through the loop and pull both ends tight. Paint the binding with diluted glue to hold it.

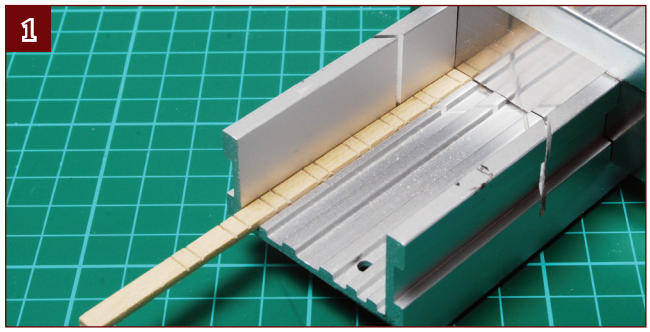


9. When the glue is dry, trim the loose ends of thread. Repeat this process until you have completed all 17 bindings shown on the plans.

Finishing the lower mast

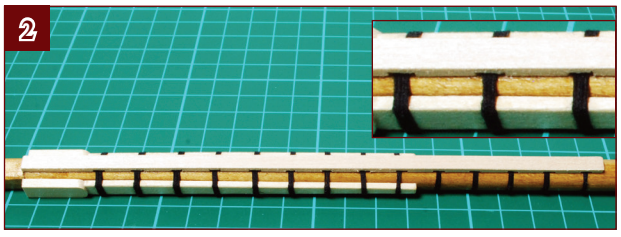
The final steps include adding the rubbing paunch and battens that protect the lower mast, and fixing the top to the supports that you added in the previous steps.



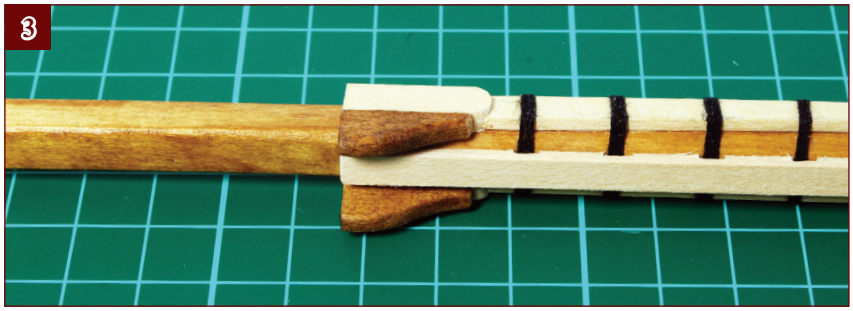


1. After cutting a 188-mm length from the 2 x 5-mm strip, mark the position of the notches according to the plan and check that they align with the thread bindings. Make 1-mm cuts with a razor saw, and use a knife to carve out the wood between them.

The rubbing paunch is a 188-mm strip of 2 x 5-mm wood, shown above in a lighter colour. Note that it has 14 shallow notches designed to fit over the bindings around the mast. You need to cut these notches before fixing the strip.



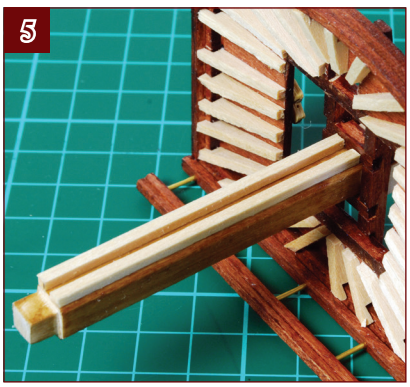
2. Glue the rubbing paunch in place on the flat area you sanded on the front of the mast earlier on. Make sure that the recesses are aligned over the thread bindings.



3. Glue the two bibbs (top supports) in place, noting that they are positioned on the front of the mast. Allow the glue to dry completely before fixing the top.

4. Check that the mast top sits straight and square on the supports. Trim them with a knife if necessary. When you are satisfied with the fit, glue the top in place.

QUICK TIP
Cut the squares with a razor saw, as they tend to break up if you cut them with a knife.

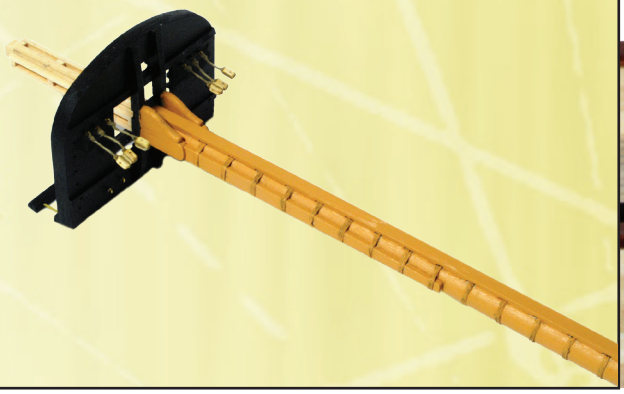


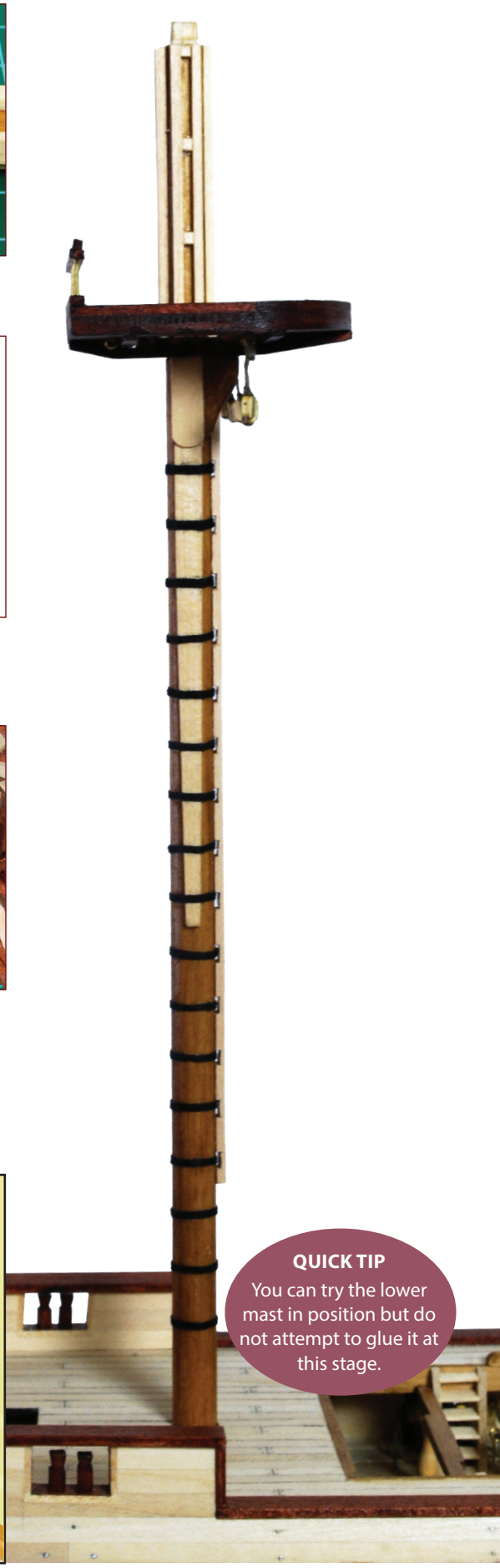
5. Cut two battens from 2 x 2-mm wood, to fit from the top of the cross trees to the end of the first square section. Glue in place with a 2-mm gap between them.

6. Add four short squares of 2 x 2-mm wood, evenly spaced between the battens as shown. Then repeat Steps 5 and 6 on the other three sides of the square section to complete the lower section of the main mast.

Painted finish

If you have chosen the optional paint finish, complete the assembly first. Then paint the entire base of the mast yellow ochre, including the bindings. The section above the fighting top will be painted black.





QUICK TIP
You can try the lower mast in position but do not attempt to glue it at this stage.

Stage 63: Preparing the main mast

This stage provides the parts to construct and attach *Victory*'s main topmast, using the actual-sized plans included with Stage 62.

Wooden strips

1 wooden dowel 3 mm, 60 mm long
1 wooden dowel 8 mm, 300 mm long
1 wooden dowel 6 mm, 230 mm long
2 wooden strips 2 x 3 mm, 200 mm long
1 wooden strip 4 x 4 mm, 100 mm long

Fittings

1.5-mm brass wire, 20 mm long
black thread, 500 mm long
brown thread, 2.5 m long
11 eyebolts

Shaped wooden parts

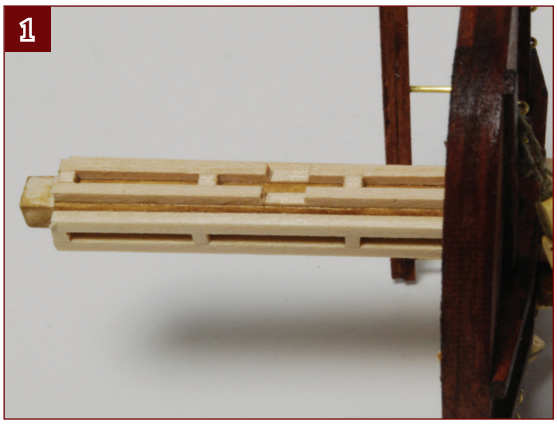
5 parts for cross trees
12 single blocks 4 mm
6 single blocks 5 mm
9 guides and cradles
2 mast caps
1 double block 7 mm
1 heart block 7 mm
1 wooden bead 5 mm

Where the parts fit

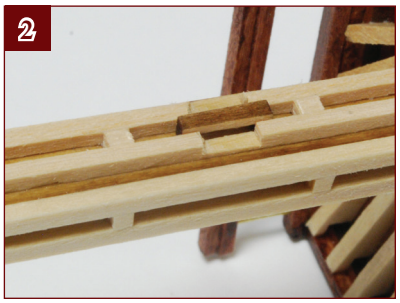
This stage covers the second stage of the main mast assembly: the topmast. This is joined to the lower mast at the cross trees, and the two sections are also linked together by the larger of the two mast caps supplied this stage. The parts also include the cross trees and a smaller mast cap, plus the third mast section, the topgallant. Instructions to complete the assembly of these are provided in the next stage. The smaller parts include guides, cradles and blocks used for rigging the mast. You will also need the plans provided with Stage 62, which show how the various parts fit together, and where to attach the pulley blocks used for standing rigging (which supports the masts) or running rigging (used to raise, lower and trim the sails). As before, treat the plans carefully. They will continue to be used over the next few stages as you cut and shape the remaining section of the mast, followed by all the yards (or "spars"), which appear on the reverse side of the plans.

Preparing the lower main mast

Start by attaching blocks to the top of the lower mast, above the mast top. These will be used later on to attach rigging lines that support the mast.



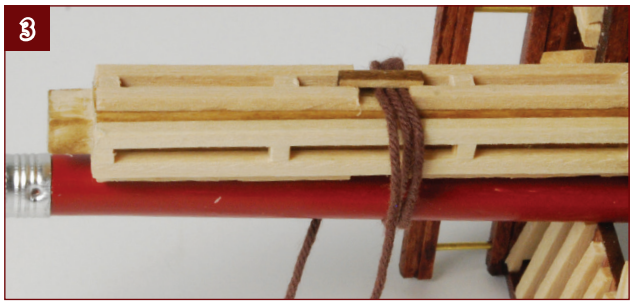
1. Carve away the centre part of the two mast battens fitted to one side of the mast to create notches 5 mm long and 1.5 mm deep, as shown.



2. Take one of the two shallow U-shaped guides and fit it into the slot between the battens as shown (you may need to sand the guide to reduce the thickness a little). Glue it in place, then repeat Steps 1 and 2 to fit the second guide on the other side.

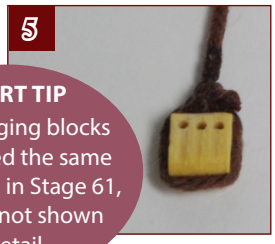
Painted finish

If you are painting your model, paint the battens, guides and the rest of the mast above the mast top black. Do not paint the small upper square section just yet, as you will be gluing the mast top on to it (see the first step of Fitting the Main Topmast later in this stage).



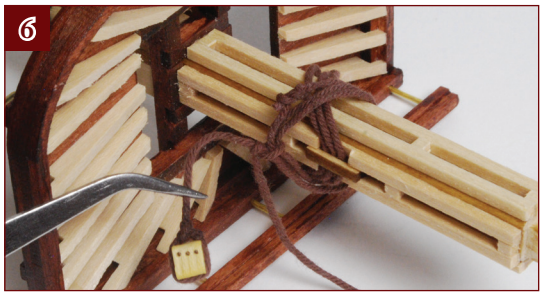
3. Take the 0.8-mm brown thread, supplied in Stage 61. Place a pencil against the opposite side of the mast top to act as a spacer, then thread three loose loops of thread through the guide, going around the top of the mast and the pencil spacer.

4. Turn the mast over, and tie the cord with a reef knot. Pull the knot tight, seal it with diluted glue, and trim the ends when the glue is dry. Then repeat on the other side.



EXPERT TIP
All the rigging blocks are secured the same way shown in Stage 61, so this is not shown in detail.

5. Take the 7-mm triple blocks supplied in Stage 61. Tie a loop of 0.8-mm brown thread around them, seal the knot and trim the end.

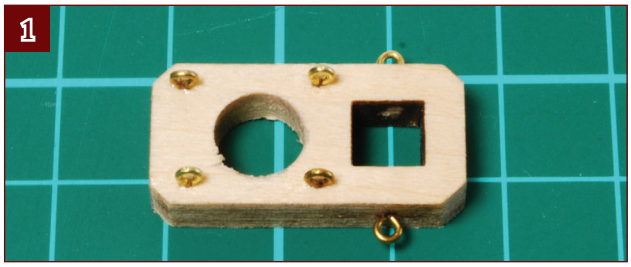


6. Tie the tail of the block that you attached in Step 5 to the middle of the loops created in Steps 3 and 4, leaving about 30 mm free. Secure it with two hitches. Then repeat this on the other side of the mast.

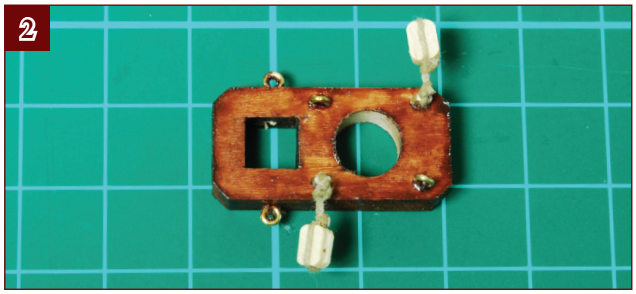
7. Make sure that both blocks hang down just below the main top, and that they are both at the same height before tightening the knots.

Preparing the mast cap and cross trees

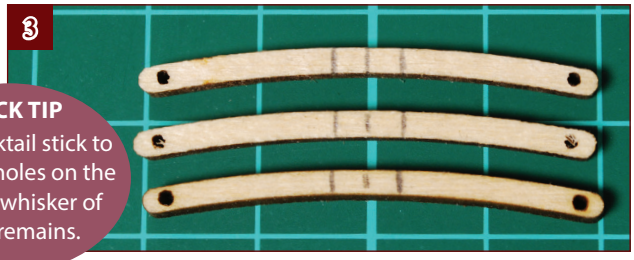
Prepare the larger of the two mast caps supplied with this stage, plus the cross trees that will be used to join the two sections of the mast.



1. Take the mast cap and drill six 0.7-mm holes to fit six brass eyes as shown. Cut the shanks of the eyes so they do not project from the wood and glue them in place with superglue.

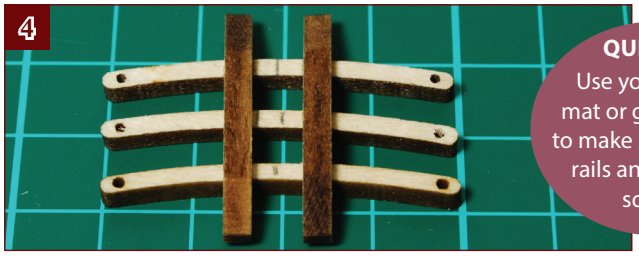


2. Stain the mast cap walnut or paint it black, depending on your finish. Then fit two small blocks using the usual method.



QUICK TIP
Use a cocktail stick to clear the holes on the ends if a whisker of wood remains.

3. Make a mark in the centre of the cross tree arms, then make two marks 2.5 mm on either side of it. This leaves a 5-mm gap to fit the mast into.

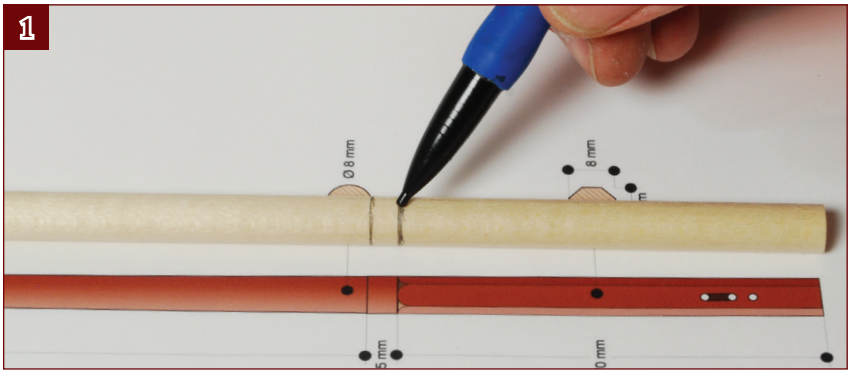


QUICK TIP
Use your cutting mat or graph paper to make sure that the rails and arms are square.

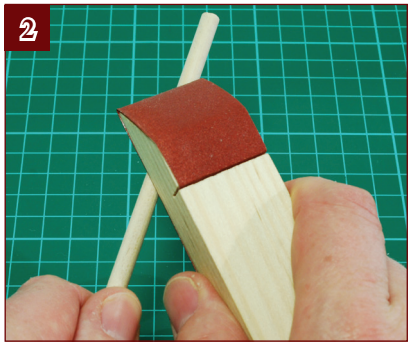
4. Glue the fore-and-aft rails of the cross tree to the arms, making sure the gap between them is 5 mm. Paint or stain the cross trees according to your choice of finish.

Preparing the main topmast

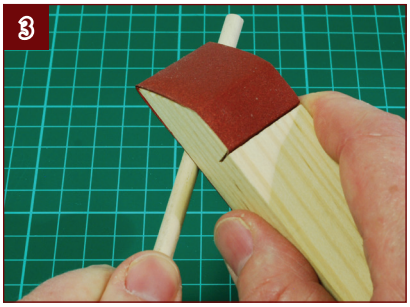
The topmast tapers from one end to the other, reducing the 8-mm dowel to 6 mm. Cut the mast to length after doing the tapering, as it is otherwise difficult to create an even taper right at the end of the mast.



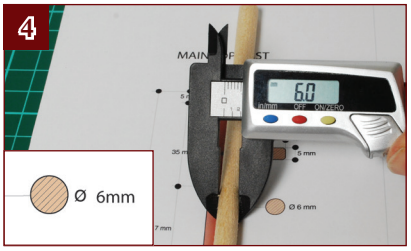
1. Lay the mast on the plan and mark the two lower marks. There is no need to mark the upper points of the mast yet as they would be removed during tapering.



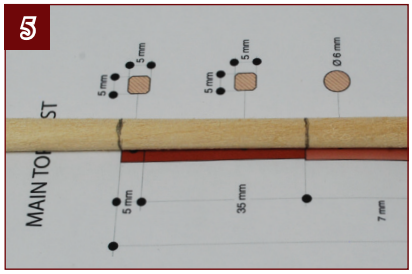
2. Taper the mast using a sanding block. Start from the upper of the two marks and work toward the top end.



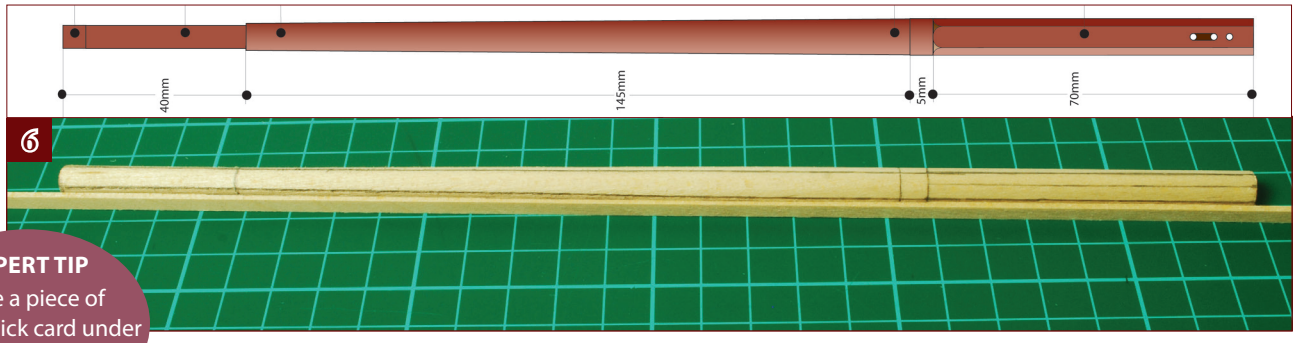
3. Turn the mast slowly as you sand it evenly along the length (the same method used in Stage 62 to taper the bottom of the main mast lower section).



4. Check the taper at several points to ensure it is even. It should be 6 mm at the top, 7 mm at the mid point and 8 mm at the base. You can do a visual check against the plan, but a digital caliper is easier and more accurate.

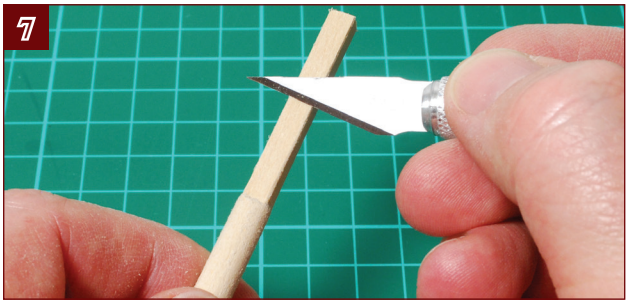


5. When the mast has an even taper with the correct diameters all the way along it, mark the square section at the top of the mast, and cut the mast to the correct length.

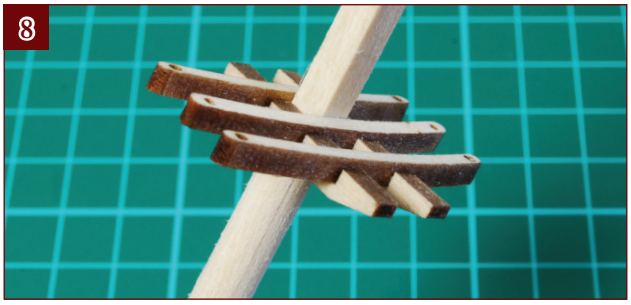


EXPERT TIP
Place a piece of 1-mm-thick card under the thin end to keep the mast flat.

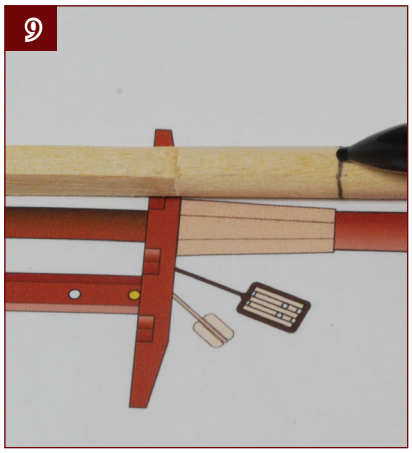
6. The 70 mm at the base of the mast needs to be an octagonal shape and the 40 mm at the top needs to be a square. Mark the eight corners of the octagon using the centre finder on the plan. Then use a straight plank to extend lines to the top of the mast, making sure that the faces of the square are parallel to faces of the octagonal bottom.



7. Using a sharp craft knife, carve the top of the mast square.

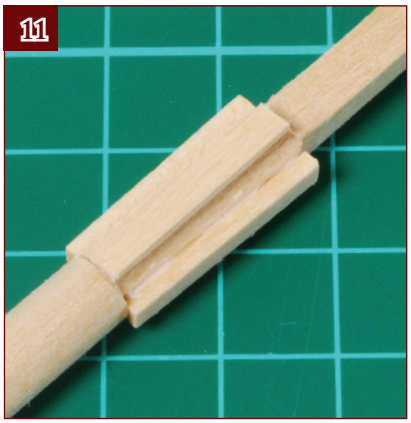


8. Check that the cross trees slide over the square section.

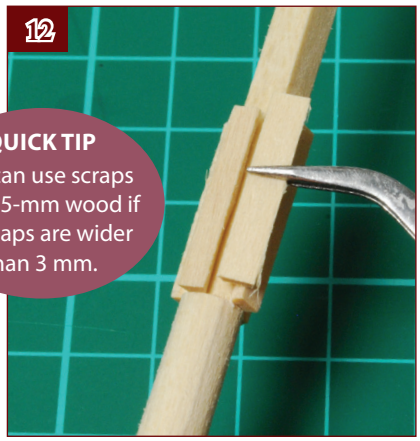


9. Place the mast on the plan and mark the bottom of the cross tree support.

10. Carve an octagonal base for the cross tree support.



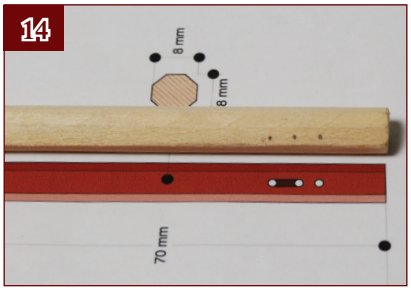
11. Cut four pieces of 2 x 3-mm wood to fit the octagon. Chamfer the edges, glue them in place and allow to dry.



QUICK TIP
You can use scraps of 2 x 5-mm wood if the gaps are wider than 3 mm.

12. Cut and chamfer four more lengths of 2 x 3-mm wood to fit in the gaps. Glue them in place and allow to dry.

13. Use an emery board (nail file) to taper the mast support. Use the plan as a guide to get the correct shape.



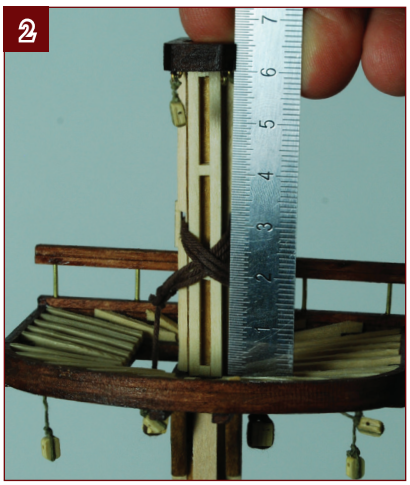
14. Carve the octagon at the base of the mast, then use the plan to mark the three holes near the bottom. **The hole must be in a face that is parallel to the top square section.** Drill the holes square to the mast with a 1.5 mm bit. Then stain or paint the mast using the pictures on the next page as a guide.

Fitting the main topmast

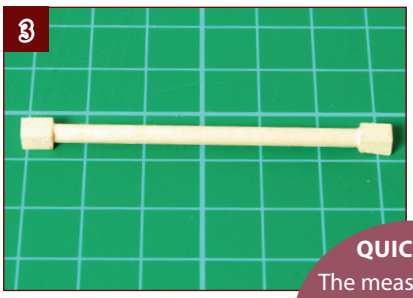
The topmast is secured to the main mast by the mast cap and the cross trees below the fighting top. See the photo on the next page for the assembly details, and ensure that all the rigging is positioned correctly.

QUICK TIP
Try the main topmast in the round hole to make sure it fits before gluing the mast top in position.

1. Glue the mast cap in position. Make sure it is straight and square. Also make sure that the round hole is directly above the square hole in the main top.



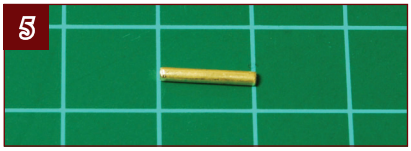
2. Measure the distance from the main top cross tree (which is glued to the mast) to the underside of the mast cap.



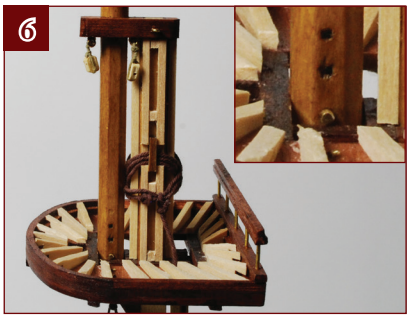
QUICK TIP
The measurements make the hand mast 2 mm over-length so you can trim it to fit perfectly.

3. Now make the hand mast – a short pole that fits into this space. Cut the 3-mm dowel 10 mm shorter than the measurement in Step 2. Then cut two pieces of 4 x 4-mm wood, each 6 mm long. Glue the parts together, ensuring that they are straight, and allow to dry.

4. Make sure the hand mast fits, trimming the ends to length as necessary. Do not glue it in place yet.



5. Cut a piece of brass wire 10 to 11 mm long and file the ends square.



6. Slide the topmast through the mast cap. Insert the brass wire into the lowest hole in the topmast, then push the mast down until the brass wire sits on the cross trees. Glue in place, ensuring that the two sections of the mast are in line and that the square top section is parallel to the square on the lower mast.

7. Glue the hand mast in place, making sure that the upper square end is in the centre of the projecting part of the mast cap, and that the hand mast is parallel to the mast.

Painted finish

If you are painting your model, all the topmast parts and fittings need to be painted black. Do not paint the upper square section yet, as parts will be added here.

QUICK TIP

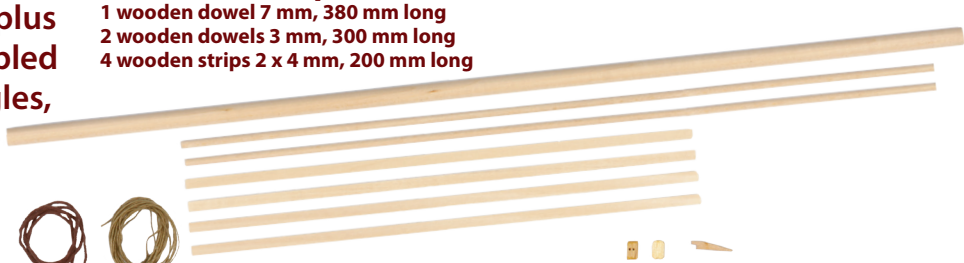
For the natural wood version, stain the main shaft of the topmast but leave the cross tree support and upper square plain.

Stage 64: Completing the main mast

This stage includes more parts for the main mast and its rigging, plus parts for the main yard, assembled next stage, and gun port wriggles, fitted later in the series.

Wooden strips

1 wooden dowel 7 mm, 380 mm long
2 wooden dowels 3 mm, 300 mm long
4 wooden strips 2 x 4 mm, 200 mm long



Fittings

0.5-mm brass wire, 700 mm long
brown thread, 300 mm long
natural thread, 1.5 m long
2 diecast quarter irons
2 diecast studdingsail boom irons
9 diecast gun port wriggles

Shaped wooden parts

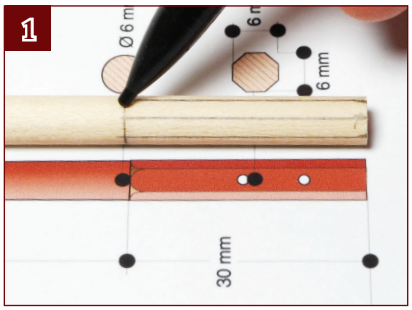
15 single blocks 4 mm
2 single blocks 5 mm
2 double blocks 7 mm
2 slings for main yards

Where the parts fit

This stage covers the third and final stage of the main mast assembly, the topgallant and pole mast. This section is joined to the topmast at the cross trees, and the two sections are also linked together by the smaller of the two mast caps supplied with Stage 63. The wooden strips also include components for making the first of the yards (or "spars"). Instructions to start the assembly of these are provided in the next stage. The smaller parts include blocks used for rigging the mast. This is the final stage of the assembly covered in the following pages. As in the two previous stages, you will also need the plans provided with Stage 62, which show how the various parts fit together, and where to attach the pulley blocks used for standing rigging (which supports the masts) or running rigging (used to raise, lower and trim the sails). As before, treat the plans carefully. They will continue to be used over the following stages as you cut and shape the yards; the plans appear on the reverse side of the sheet.

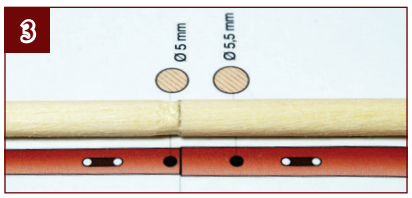
Making the main topgallant mast

Now you are ready to build the main topgallant/pole mast, the final section of the main mast. Use the plans provided in Stage 62, and take great care with your measurements.



1. Mark the bottom section of the mast where the octagonal section ends and the taper starts. Mark the eight corners of the octagon using the centre finder on the mast plans and extend the lines as shown in Stage 63.

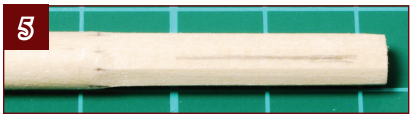
2. Taper the mast (using the method shown in Stage 62) until you get a smooth taper, with the mast measuring 5.5 mm diameter at the position indicated on the plan.



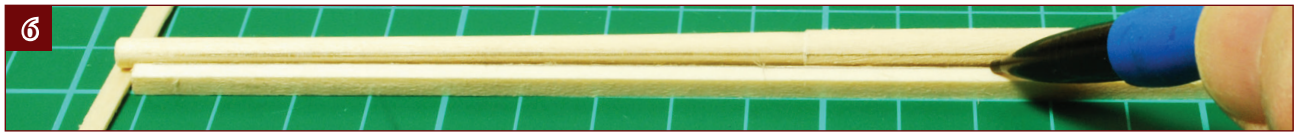
3. There is a step in the thickness of the mast here, dividing the topgallant and pole mast. Make a shallow cut around the dowel. Using a fresh blade, shave the upper section down to 5 mm diameter. **This is quite tricky, so you may prefer to make a smooth taper from 6 mm to 4 mm over the full length of the mast.** This will make construction easier and the missing step is not very obvious.

4. Taper the top section of the mast so that the bottom measures 5 mm and the top measures 4 mm.

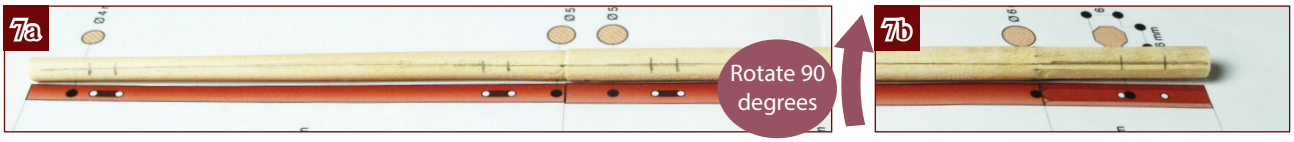
QUICK TIP
Wrap masking tape around the step to protect it while you are tapering the top of the mast.



5. Carve an octagonal base, and draw a line down the centre of one face. This is a guide for the **lower two** holes in the mast. Then turn the mast 90 degrees and mark a second line down the centre of the face. This is a guide for the **upper six** holes in the mast.

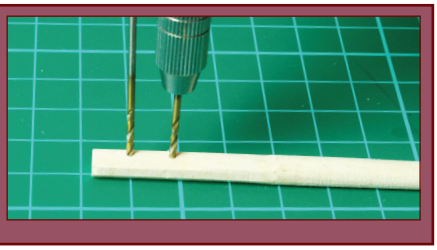


6. Place a 1-mm strip of wood or card under the top end of the mast to hold it level. Then use a 3-mm strip of wood as a straight edge to extend the **second line** along the whole length of the mast.

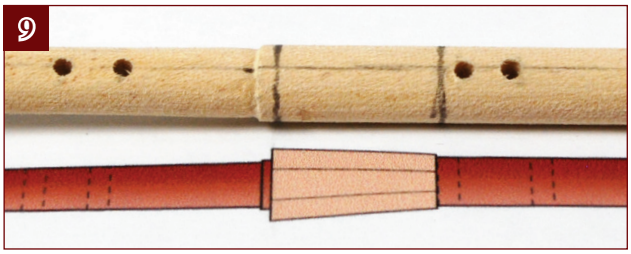


7a. Mark the position of the **upper six** holes on the **second line** drawn in Steps 5 and 6. **7b.** Turn the mast 90 degrees and mark the **lower two** holes on the **first line** from Step 5. Drill all eight holes with a 1.5-mm drill, ensuring you keep the drill upright.

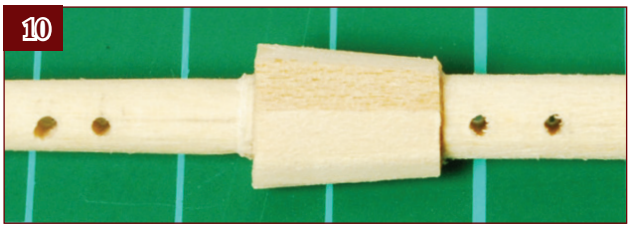
EXPERT TIP
To ensure that the holes are in line, insert a spare drill bit or piece of wire into the hole. This will make it obvious if the mast is still in the correct position, and hasn't rotated on the work surface.



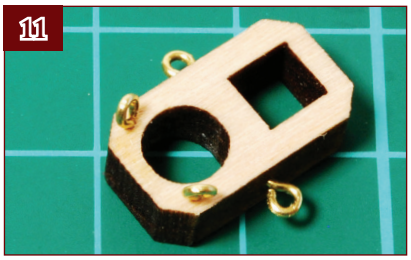
8. Cut a 10- to 11-mm length of 1.5-mm brass wire to make the mast stop that fits through the lowest hole.



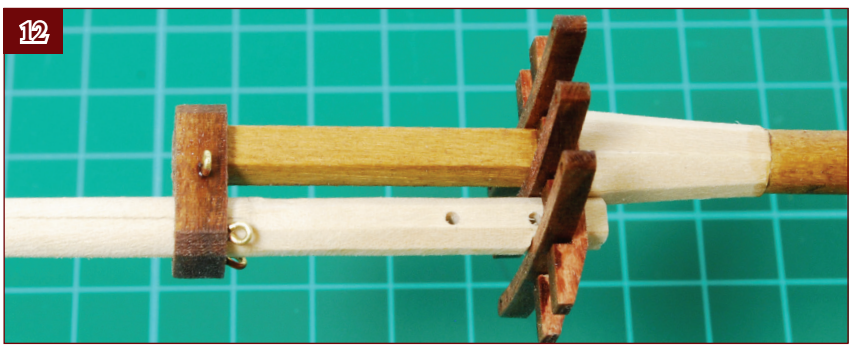
9. Place the mast against the plan again and mark the position of the octagonal "hounds" just below the step.



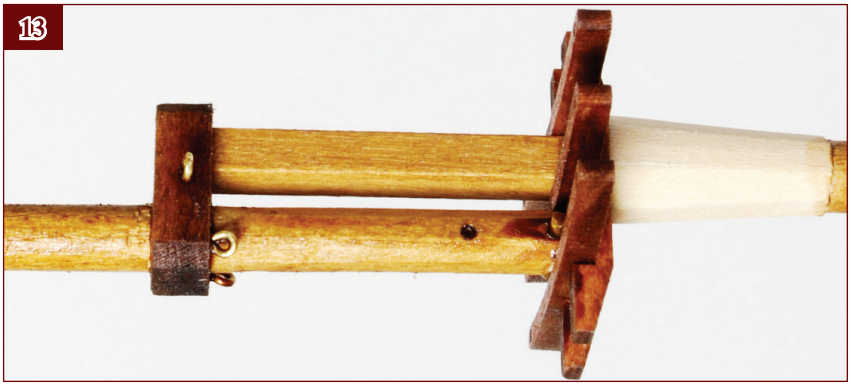
10. Using the same technique described in Stage 63, carve an octagonal section in the mast, then add strips of wood for the hounds and file them to a taper.



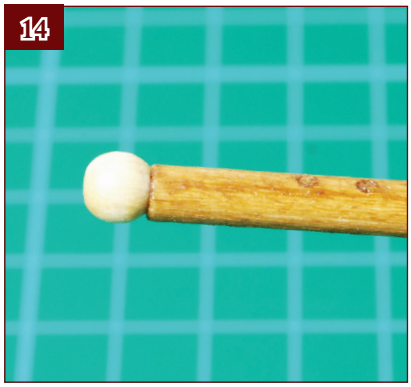
11. Take the smaller mast cap supplied with Stage 63 and ensure that the topgallant and top mast fit the round and square holes. Then drill holes to add four brass eyes as shown, noting that the two eyes beside the round hole are angled outward slightly. Shorten the shanks and superglue them in place.



12. Take the mast cap and the cross trees you assembled in Stage 63 and stain them walnut or paint them black (see Painted Finish box, also Stage 63). Place the cross trees on the top mast and try the topgallant and mast cap in place. Trim the base of the topgallant to fit the hole in the cross trees. You may also need to trim it flush with the bottom of the cross trees. Ensure that the mast sections are straight and in line.



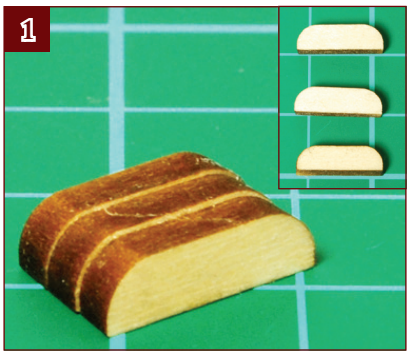
13. Stain the topgallant to match the other mast sections. Then glue the cross trees, topgallant, mast cap and brass wire stop in position. Make sure the masts remain straight and in line while the glue dries.



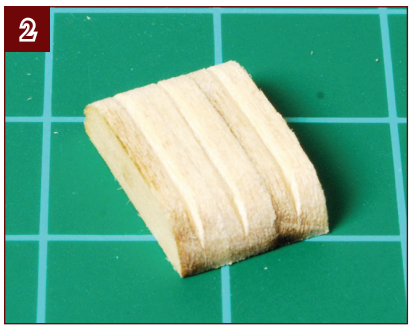
14. Take the wooden bead supplied with Stage 63 and sand/cut a flat on it. Glue the flat to the top of the pole mast.

Adding the rigging blocks

The plans provided with Stage 62 show you where to attach the rigging blocks and threads provided with Stages 62-64. All the knots used to secure the blocks are half-hitches.

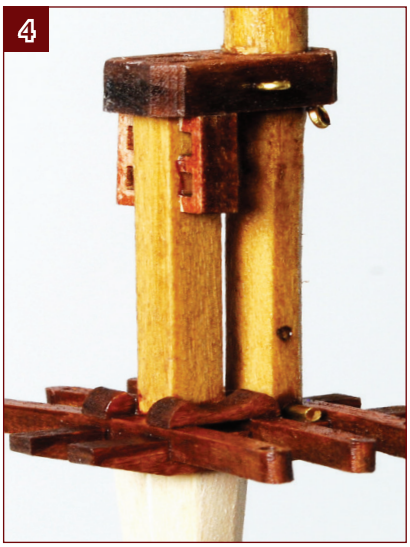


1. Glue together the three parts of the rope guide provided in Stage 62.

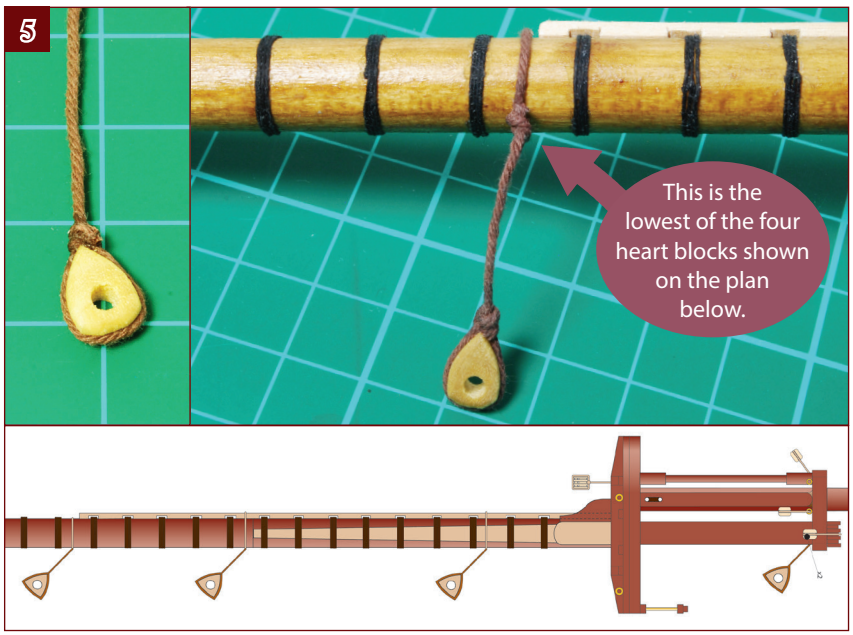


2. Sand the assembly smooth and file three shallow, parallel grooves across the length of the top face.

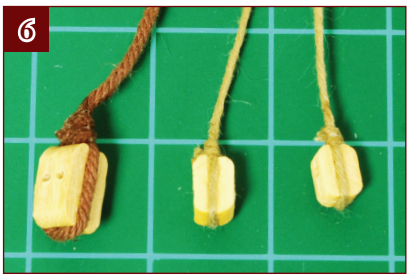
3. Stain the guide walnut, or paint it black, and glue it to the lower mast cap.



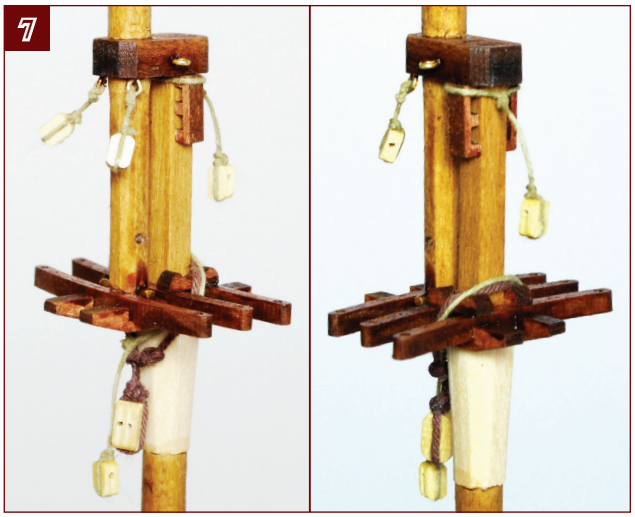
4. Stain or paint the two W-shaped laser-cut brackets and curved cradles provided with Stage 63. Glue them to the sides of the top mast: the brackets go just under the upper mast cap and the cradles fit on top of the cross trees.



5. Take the four heart blocks supplied with Stages 62 and 63 and tie lengths of the thick brown thread around them. Then tie them to the lower mast at the four points marked on the plans, using two half-hitches sealed with glue at each end, as usual.



6. Prepare the rest of the blocks supplied as follows:
- Take a 7-mm double block and tie it to the remaining length of thick brown thread.
- Take four of the 5-mm blocks and tie them to the natural coloured thread. Leave tails about 150 mm long.
- Take seven of the 4-mm blocks and tie them to the natural-coloured thread. Leave two with tails about 140 mm long, and five with tails 100 mm long.



7. Referring to the plans, tie the 7-mm double block and a 5-mm block around the mast and cross trees. Tie two 4-mm blocks to the two eyes on the mast cap. Tie a 5-mm block around the mast just underneath the mast cap.

8. Tie a 4-mm block to the top of the mast, facing aft. Tie two more 4-mm blocks 45 mm down from the mast top, facing port and starboard, plus another 5-mm block facing forward.

9. Take the two 4-mm blocks with the 140-mm tails, and tie them around the upper mast cap. One faces to port, the other to starboard.

10. Take the final 5-mm block prepared in Step 6 and thread it through the two eyes on the lower mast cap, over the rope guide you fitted in Step 3.

11. Tie a 5-mm block to the other end of the thread so that each block will hang down about 15 mm from the brass eyes.

Painted finish

If you are painting your model, finish all parts above the fighting top in black before adding the rigging.

QUICK TIP
For the natural wood version, stain the main shaft of the topgallant but leave the octagonal hounds plain.

Stage 65: Beginning the yards

This stage's parts are used to build the main yard and topmast yard fitted to the main mast.

Wooden strips

1 wooden dowel 3 mm, 300 mm long
5 wooden strips 2 x 2 mm, 300 mm long
1 wooden dowel 5 mm, 270 mm long
1 wooden dowel 4 mm, 200 mm long

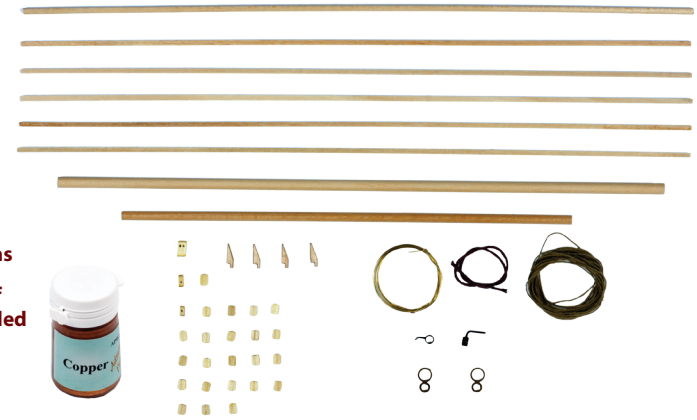
Shaped wooden parts

23 single blocks 4 mm
2 single blocks 5 mm
1 double block 7 mm
4 slings for foremast yards

Fittings

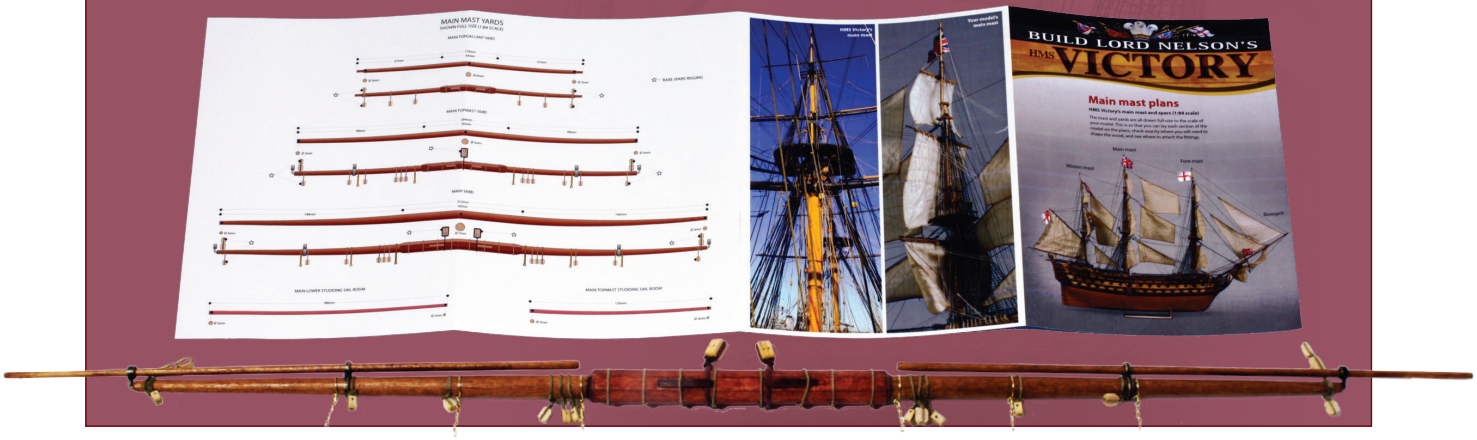
brass wire 0.5 mm, 500 mm long
brown thread, 150 mm long
natural thread, 1 m long
2 diecast quarter irons
2 diecast studdingsail boom irons

Stage 65 includes a bonus pot of copper paint – one of two provided for modellers who wish to finish the bottom of the hull this way. Keep this paint until Stage 66.



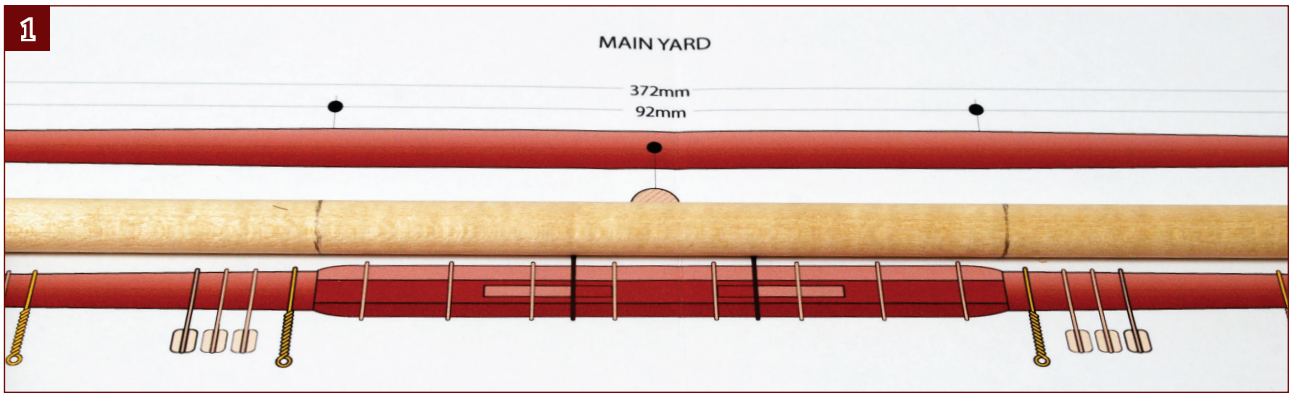
Where the parts fit

This stage shows how to construct the main yard. You will need the main mast plans that were provided with Stage 62. The yards are shown on the back, together with the studdingsail booms, two of which you will be making this time. Some of the parts you will need were provided with Stage 64. The parts provided with this stage include some of the wood and fittings for the other main mast yards, which you will be constructing later on in the series.

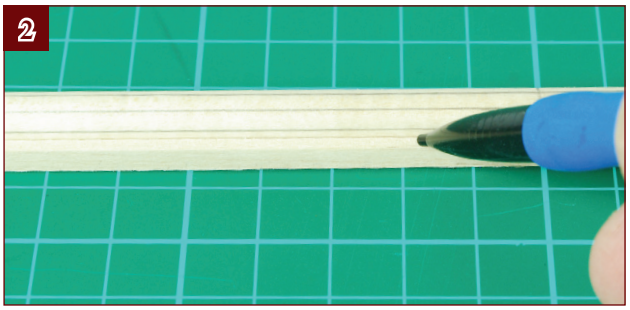


Constructing the main yard

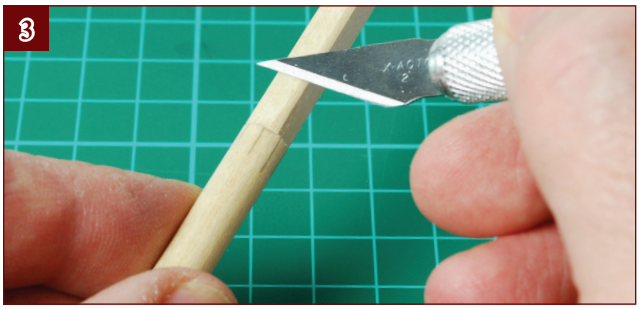
The main yard is the largest and lowest of the three yards carried on the main mast. It carries the longer (180-mm) studdingsail booms, which are also shown on the plans, at bottom left.



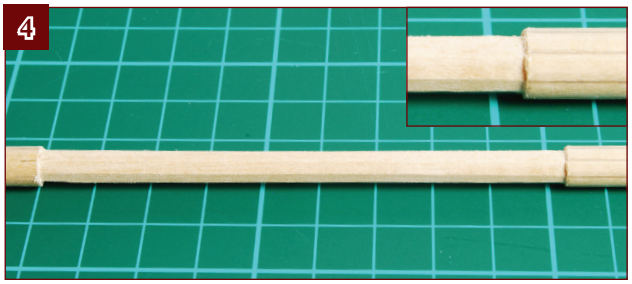
1. Take the 7-mm diameter dowel and mark the position of the thick octagonal reinforcement in the centre section of the yard. The dowel is supplied overlength: leave an equal overhang on each end and only cut it to length after tapering the spar.



2. Use the centre finder to mark eight corners for the octagonal section on one end of the dowel. Then use a 3- or 4-mm strip to extend the corners to the centre section.

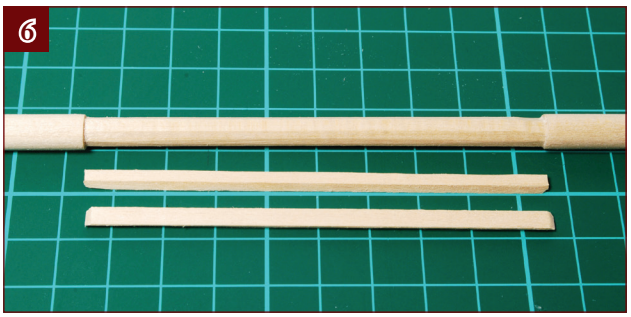


3. Working between the lines marked in Step 1, start by carving the dowel to a square section that is 6 mm wide, using four of the marked corners as a guide.

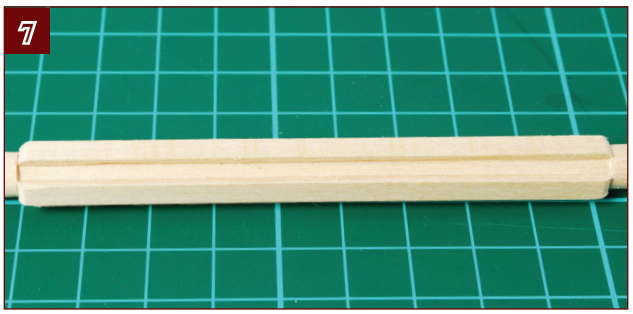


4. To complete the octagon, carefully pare off each of the corners of the square.

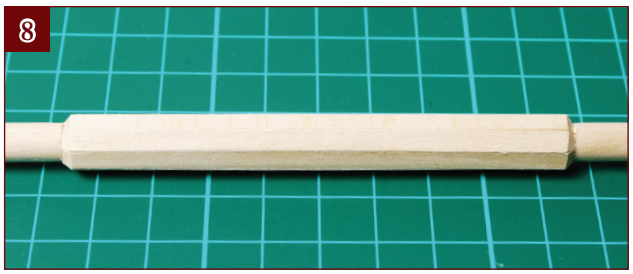
5. Taper the ends of the spar until the metal fitting slides on to the correct point. The end should be 3 mm in diameter. When the taper is correct, sand the spar smooth with fine sandpaper.



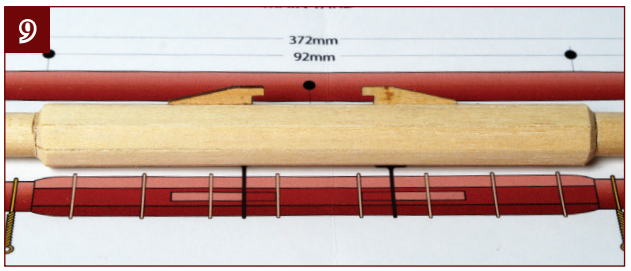
6. Cut eight lengths of 2 x 4-mm wood to fit the centre section. Taper the edges so that they will fit the octagonal section. Using the plan as a guide, sand the corners of the ends.



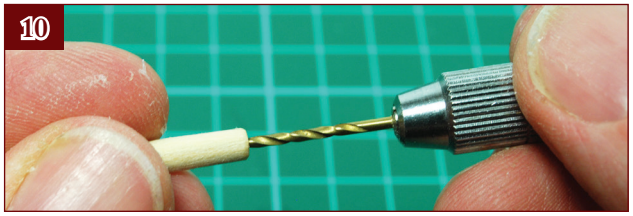
7. Fit four of these strips to the octagonal centre section on alternate flats. Allow the glue to dry completely before continuing.



8. Add the four remaining strips in the gaps to complete the octagonal section. Allow the glue to dry thoroughly and then sand the centre section with fine sandpaper.



9. Glue the two laser-cut yard slings to the centre section, using the plan as a guide to the correct location.



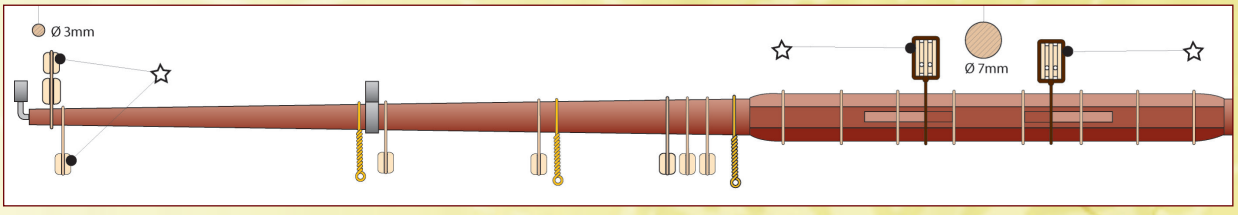
10. Carefully drill a 1-mm hole in each end of the spar to take the studdingsail boom irons.

11. To make the studdingsail booms, taper two of the 3-mm dowel booms to 2 mm, as shown on the plans. As the dowels are so thin, use a different tapering technique to avoid breaking them: sand with long, even strokes, slowly rotating the dowel, to create an even taper.

Optional trims

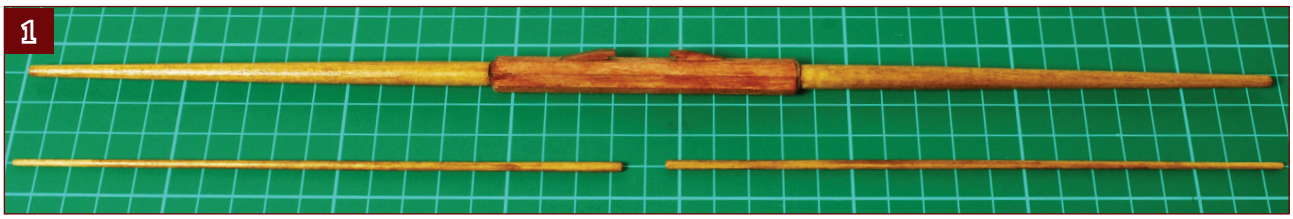
At this point, you have another choice to make. Your model comes complete with sails, but some people prefer to leave these off, to display the details of the rigging – much like *Victory* appears today (right). This "bare-spars" option also makes it easier to keep the model clean, particularly if it will not be displayed in a case. The reason you need to consider this now is that some of the blocks used for the running rigging are only required if you are attaching sails to the yards. If you decide to build a "bare-spars" version, you can omit most of the blocks. **The blocks that *must* be fitted to a bare-spars model are indicated by a ☆ on the plans.**

As usual, you have a choice of natural finish or paint. For the natural wood version, stain the centre of the yard walnut, and the ends dark oak. On the painted version, paint everything black except the blocks and their ties.



Dressing the yard

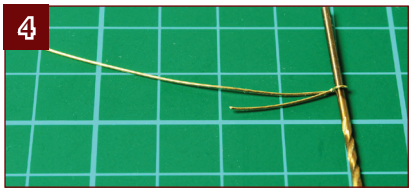
Before adding the rigging blocks, paint the yard, then add the iron hoops for the studdingsail booms, the central rope bindings, and supports for the footropes used by the crew when handling the sails.



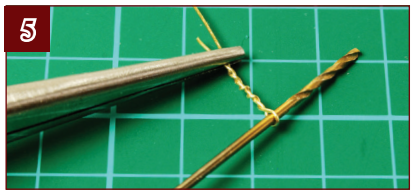
1. Stain or paint the yard and studdingsail booms according to your chosen finish option.

2. Fit the studdingsail boom irons and quarter irons at each end of the yard, in the positions indicated on the plan. Note that they have to be angled slightly upward, at 30 degrees relative to the slings (inset). Glue the irons to the yard using superglue.

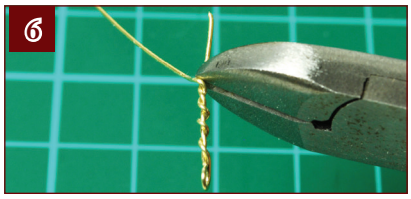
3. Tie eight single bands of the thinner thread around the centre section of the spar as shown on the plan. Tie the ends using reef knots to tie the bands, and make sure the knots are underneath the yard where they will be inconspicuous.



4. To make a footrope support, cut an 80-mm length of brass wire. Fold it around a 1.5-mm drill bit, 20 mm from the end of the wire.



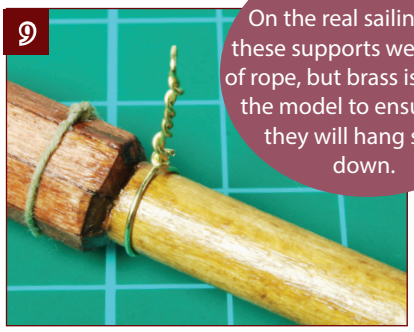
5. Hold the ends of the wire in a pair of pliers and turn the drill bit so you form a neat twist. Continue turning until the twist is 10 mm long.



6. Bend the long end of wire outward, and cut the short end off close with a pair of wire cutters.

7. Position the support as on the plan. Wrap the free end of the wire around the yard and hook it back around itself.

8. Use a pair of pliers to twist the wire around to secure it.

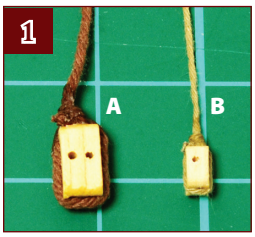


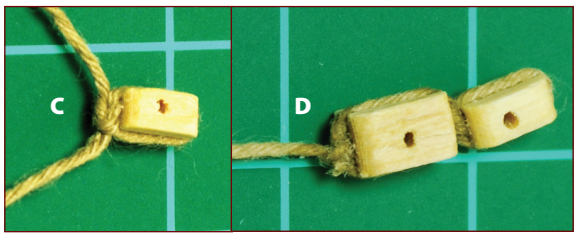
9. Cut the excess wire off with a pair of wire cutters. Repeat Steps 4 to 9 for all six supports.

QUICK TIP
On the real sailing ship, these supports were made of rope, but brass is used on the model to ensure that they will hang stiffly down.

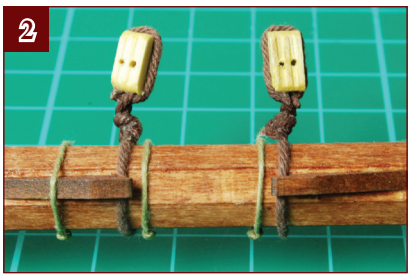
Adding the rigging blocks

The yard is rigged with blocks that are used to attach it to the mast and control the sails. If you are building a "bare-spars" model (see box on the previous page), you can omit those not marked with a star.

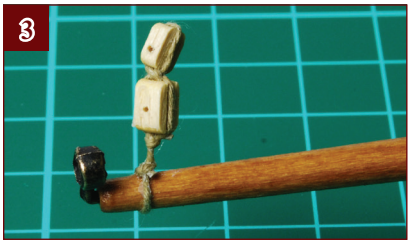




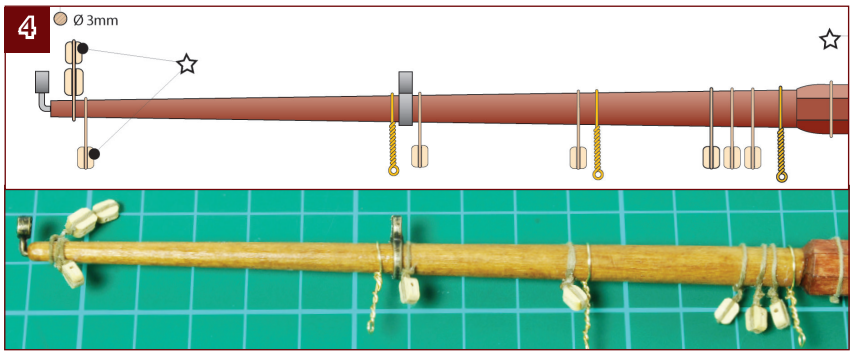
1. Prepare the blocks as follows:
A Tie thick brown thread to two 7-mm double blocks, leaving at least 100-mm tails.
B Tie thin natural thread to twelve 4-mm blocks, leaving 100-mm tails.
C Take two more 4-mm blocks and tie natural thread round each one with a reef knot, leaving tails about 40 and 100 mm long.
D Tie the tails around a 5-mm block with two half-hitches to form a double block.



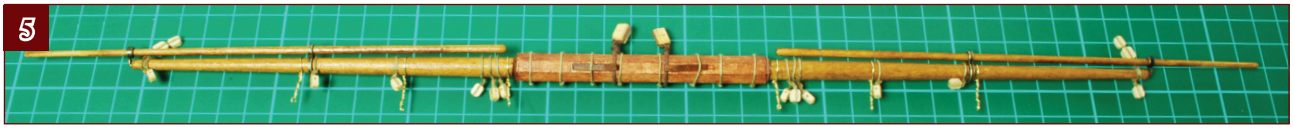
2. Tie the 7-mm blocks to the centre of the yard, as close to the spar as possible, with the thread sitting under the slings.



3. Tie the twin block assemblies to the tips of the yardarms.



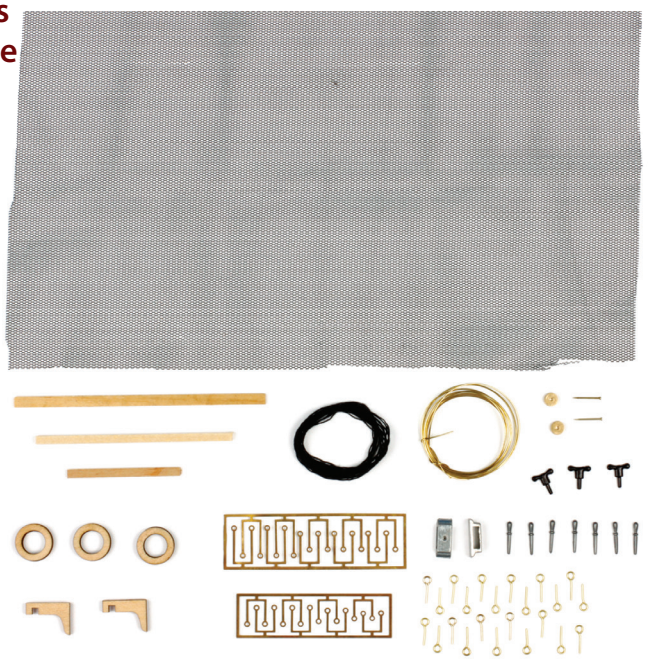
4. Tie the twelve 4-mm blocks to the yard in the positions shown on the plan.



5. Insert the booms and secure with a drop of superglue. Store the completed yard carefully: it will be fitted to the model later.

Stage 66: Decorating the hull

This stage's components include the hammock nets and various small deck fittings – but don't add these until you have finished the underside of the hull.



Wooden strips

1 wooden strip 1 x 4 mm, 90 mm long
1 wooden strip 3 x 3 mm, 70 mm long
1 wooden strip 3 x 2 mm, 40 mm long

Shaped wooden parts

3 mast rings ("coats")
2 pin rail bitts

Fittings

brass wire 0.5 mm, 800 mm long
black thread 1,500 mm
black netting 220 mm x 120 mm
4 etched brass stanchions 14 mm
6 etched brass stanchions 12 mm
4 etched brass stanchions 10 mm
2 etched brass stanchions, 9 mm
2 etched brass stanchions, 8 mm
21 eyebolts
8 dowels
3 cleats
2 brass rings
2 pins
2 diecast pulley blocks

This stage includes your second bonus pot of copper paint – provided for modellers who wish to finish the bottom of the hull this way. The first was provided with Stage 65.

Where the parts fit

The majority of the parts provided with this stage are used to make the first set of hammock nets that run along the upper bulwarks, as shown here. There are also parts to be fitted elsewhere along the upper decks. You need to keep all these parts safe for now, as they should not be fitted until you have completed all the work on the lower hull. The hammock nets, in particular, are quite delicate, and once fitted, will prevent the model from being turned upside down. You will receive instructions for fitting them later on.

This stage, start finishing off the lower hull. As explained in Stage 15, there are various options for this, depending on your chosen finish, and the main variations are covered here:

Natural finish

If you have chosen a natural wood finish, apply wood stain to produce a pleasing contrast on the lower hull. This technique is shown on the next page.

Painted copper finish

If you have chosen a painted "Trafalgar" finish, suitable copper paint has been provided with Stage 65 and this stage. Instructions on its application are found in this stage.

Other options

If you prefer a weathered look, you can paint the lower hull using a dark green "verdigris" colour to simulate the look of old copper. Use the same technique as for bright copper.

Alternatively, apply real copper in the form of strips or tiles. Details of a special offer for suitable materials are given in this stage. Do not paint or stain the lower hull if you choose this option.

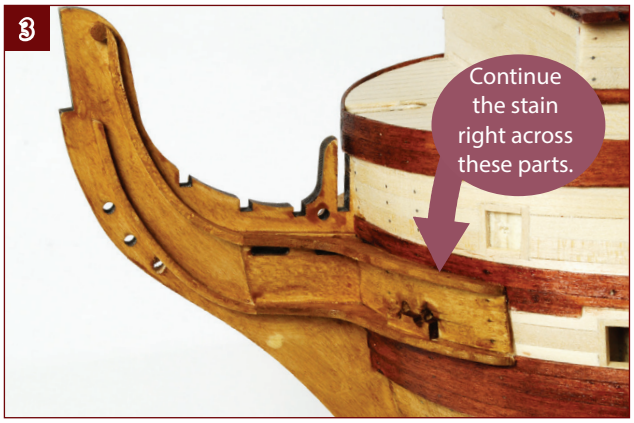
This view of the finished hammock nets shows how they run along the tops of the bulwarks. These parts are quite delicate, so they should not be fitted until all the work on the lower part of the hull has been completed.

Staining the hull

If you chose the natural wood option, finish the lower hull with wood stain. Apply this up to the lowest wale, but if you are coppering the bottom (see next page), this should stop at the waterline.

1. Go over the hull carefully and fill any dents or cracks with fine filler. Lightly sand the surface smooth using very fine sandpaper, always working with the grain to get a good finish and ensure that there are no scratches in the wood, as the stain will collect in them, making them stand out. Also sand off the dark brown laser-cut edge of the keel.

2. Paint the lower hull with a dark oak wood stain, following the manufacturer's instructions. Paint on an even coating using a fine-bristled brush, working along the planking. Apply the stain carefully, working up to the edge of the lower wale and going right over the keel.



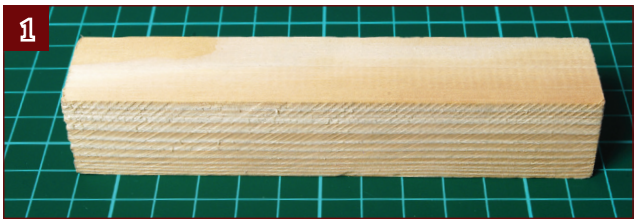
3. When you reach the bow, continue the stain right over the stem (the section of keel that juts out at the bow), and also over the "dolphins" and bow reinforcements.

4. When you reach the stern, stop at the edge of the thin moulding under the gallery support and avoid getting any stain on the planking above it. Stain the whole of the rudder.

Do not attempt to turn your model over or place it on the stand until the stain is completely dry. The finished stained hull should look like this.

Painting the hull

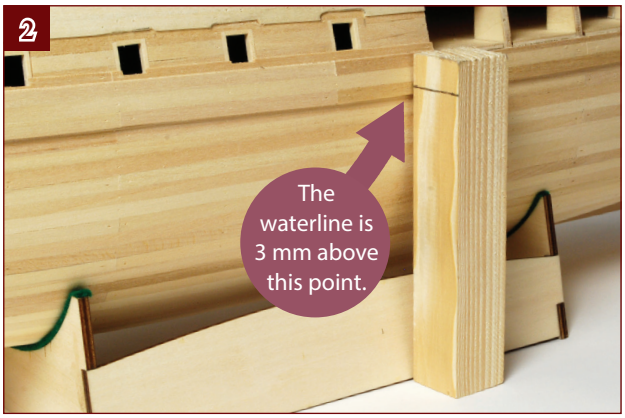
Coppering the hull is a little more involved than staining it, because the copper follows the waterline, which does not run parallel to the planks or the wales. The first stage is to mark where it falls.



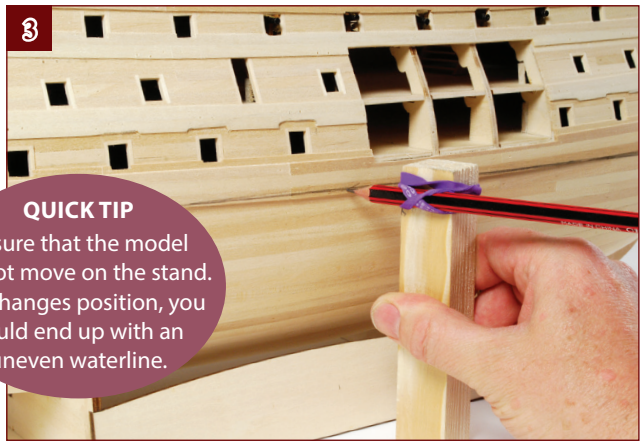
1. First, you need to make a waterline gauge. Start with a block of wood. Its size is not too critical, but it must be big enough to stand firmly on end on your work surface. About 40 mm square is ideal. Cut a piece 125 mm long, ensuring that the bottom end is flat, and at right angles to the long edge.

EXPERT TIP

Victory's waterline runs across the edge of the wale, but marking, masking and painting this area can be tricky. You may prefer to drop the waterline just below the wale – which is much easier – as this minor inaccuracy will not be obvious.



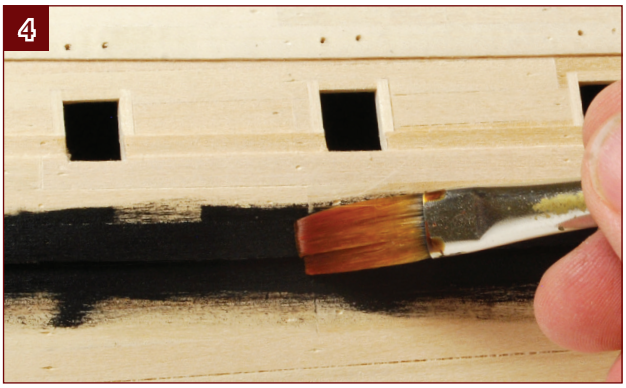
2. The waterline runs about 3 mm above the bottom of the lower wale at the mid-point of the hull (see Expert Tip, left). Place the model on its stand and ensure that the keel is level and that the model is level from side to side. Then stand the block vertically against the hull and mark the correct height.



QUICK TIP

Ensure that the model cannot move on the stand. If it changes position, you could end up with an uneven waterline.

3. File a groove in the block at the pencil line. Place a pencil in the groove and fix it firmly in place with a rubber band. Then carefully run the pencil all the way around the hull to mark the waterline, keeping the bottom of the gauge flat on your work surface.

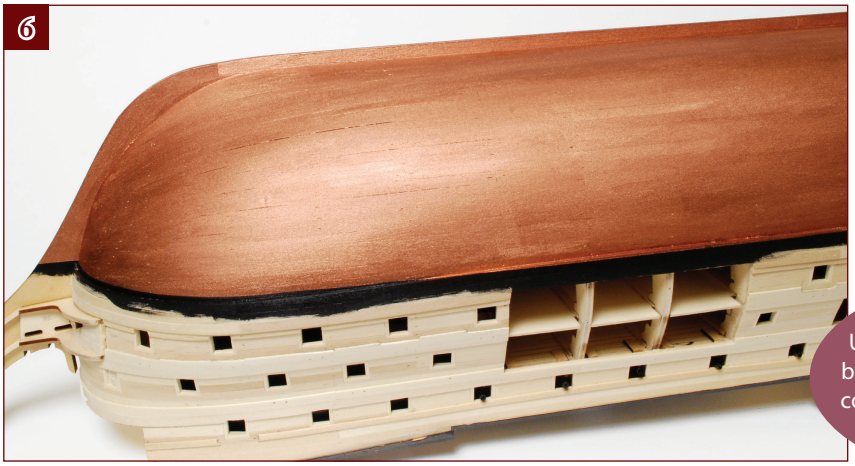


4. It would be difficult to mask the copper to paint the upper hull later on, so start by painting a band of black paint, which is the colour that will appear above the copper. Go about 10 to 15 mm on either side of the waterline and over the top of the rudder. It's better to leave rough feathered edges, rather than a neat line that may show through the next layer of paint.

5. Allow the paint to dry thoroughly before continuing, then re-mark the waterline using the same waterline gauge. Now apply masking tape above the waterline, including the top of the rudder (as shown on the right). Rub the lower edge down firmly to reduce the chance of paint bleeding underneath.

QUICK TIP

Use a narrow modelling masking tape, sold in model shops. It is a lot easier to apply than masking tape, will go around a tighter radius, and paint is less likely to bleed under it.

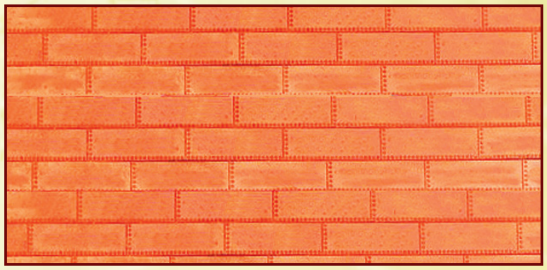


6. Paint the lower hull with copper paint. Use a good quality brush, and paint in line with the planking, making sure your strokes are smooth and even to avoid leaving brush marks. Allow the first coat to dry thoroughly, then sand very lightly with fine-grade paper. Then apply a second coat. Once the second coat is dry, remove the masking tape.

QUICK TIP
Use a small brush and some black paint to touch over any copper paint that has seeped under the masking tape.

Copper tiling

For modellers who wish to finish their *Victory*'s hull with real copper, a special set of tiles made to the correct scale size is available from the official website shop: **www.model-space.com**. The kit contains enough tiles to complete the job, and there is a set of all the instructions you will need. If you wish to follow this option, do not paint or stain the lower hull. You only need to carry out Steps 1-4 on the previous page, then re-mark the waterline.

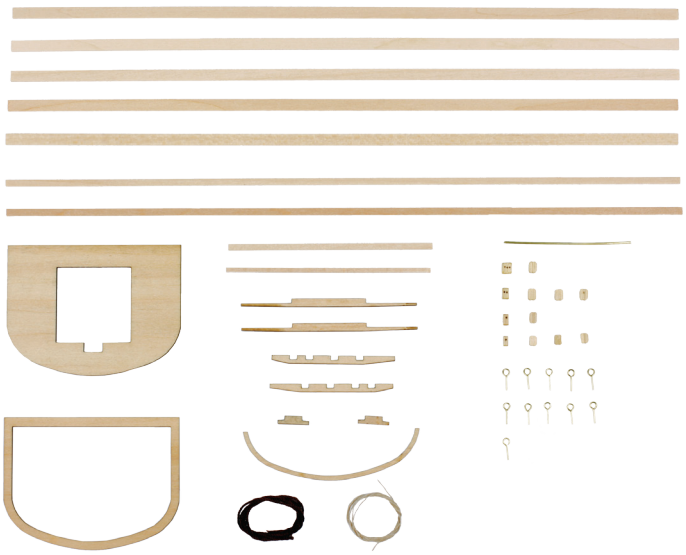


7. Using black paint and a small brush, touch-in the metal hinge straps of the rudder gudgeons and pintels.

Your painted model of *Victory* will now look like this. Don't worry about the uneven upper edge of the black paint, as this will be finished off neatly at a later stage. From now onward, when handling the model or resting it in its cradle, you need to be careful not to chip or scratch the copper-painted hull.

Stage 67: Assembling the fore mast top

This stage includes parts for the fore mast top, and a set of plans for the fore mast itself.



Wooden strips

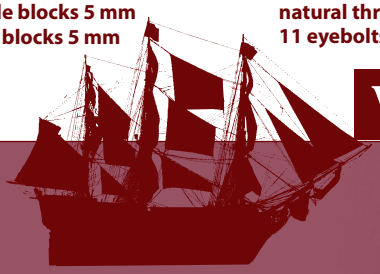
5 wooden strips 2 x 5 mm, 300 mm long
1 wooden strip 2 x 3 mm, 90 mm long
1 wooden strip 2 x 2 mm, 90 mm long
2 wooden strips 2 x 3 mm, 300 mm long

Shaped wooden parts

1 base of fore mast top
1 edge of fore mast top
1 upper front edge of fore mast top
2 longitudinal trestle trees
2 transverse cross trees
2 spacers
4 blocks 4 mm
2 blocks 5 mm
4 double blocks 5 mm
2 triple blocks 5 mm

Fittings

1-mm brass wire, 50 mm long
brown thread, 500 mm long
natural thread, 500 mm long
11 eyebolts



Where the parts fit

This stage sees the start of the fore mast assembly. Like all three of *Victory*'s masts and her bowsprit, the fore mast was built up in sections, joined by cross trees and mast caps. To help you to shape and join the masts and yards accurately, this stage provides a set of plans showing each of the elements. The plans show how the parts fit together, and where to attach the pulley blocks.

Using the plans

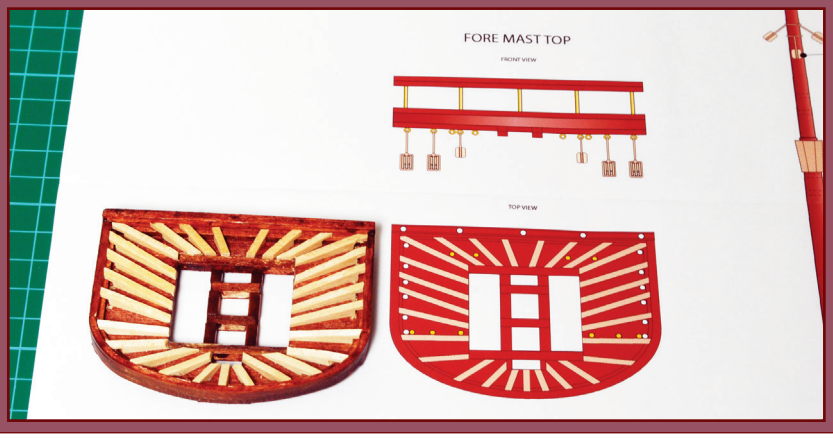
Smooth out the fore mast plan carefully, pressing out the creases. Take good care of it, as it will be used over the next few stages as you cut and shape each of the sections of the mast – together with all the yards (or "spars"), which appear on the reverse side of the plan.

Scale measurements

The plan is drawn to the finished size of the components, so you can measure off it directly. Several parts are carved to shape, or tapered or drilled at various points, so the plans also carry dimensions to enable you to check that you have positioned these accurately before you cut or drill the wood.

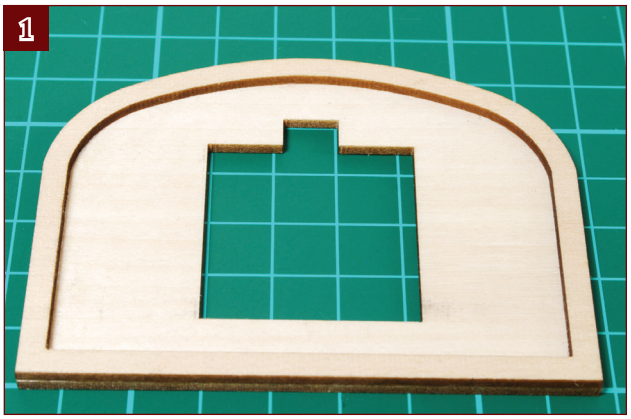
Assembling the mast top

Unlike the mast sections, the parts for the fore mast top need minimal shaping and can be assembled as shown in the steps that follow. However, while it is not necessary to refer to the plans in detail, you will need them to see where the ribs fit and where to drill the holes.

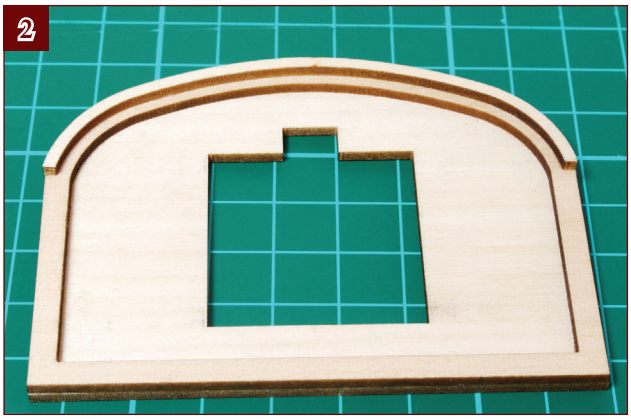


Assembling the fore mast top

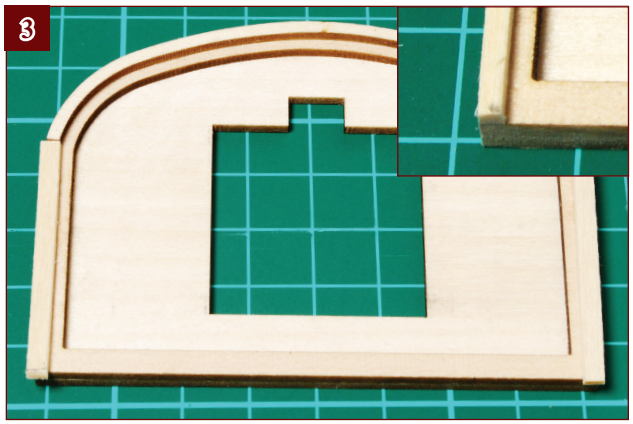
The construction of the fore mast top is very similar to that of the main mast top, which was shown in Stage 61. Retain the triple blocks and threads for later use.



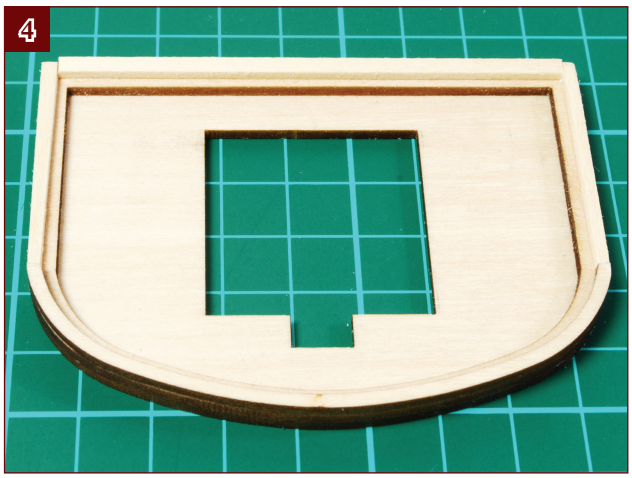
1. Glue the shaped surround to the base of the fore mast top, making sure that the edges are aligned all around.



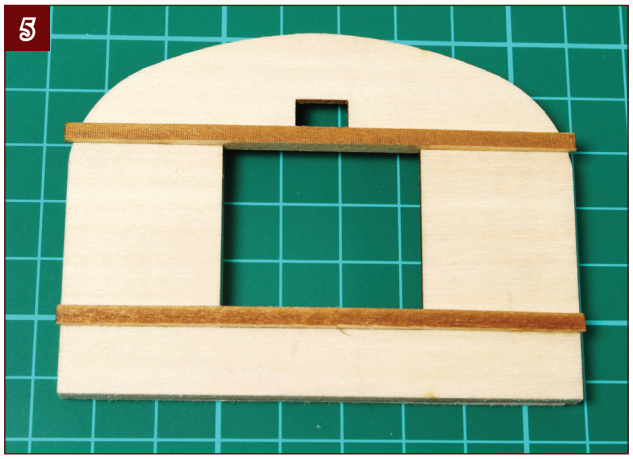
2. Add the upper surround to the assembly, making sure that this is also perfectly aligned.



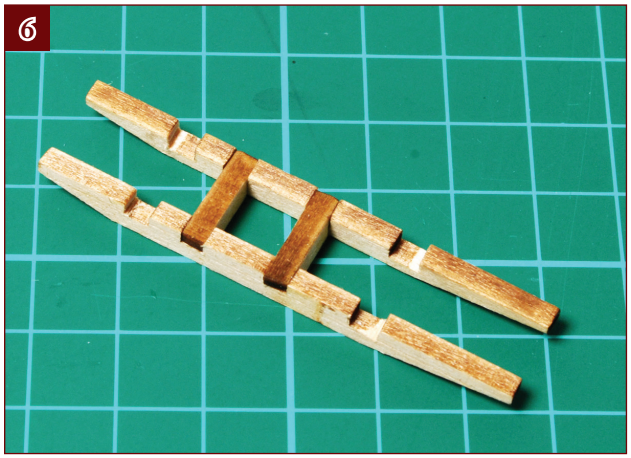
3. Cut two strips of 2 x 3-mm wood to fit the sides as shown. Glue them in place, aligning the inside edges with the inside of the upper surround. The outside edges will overhang a little. Then sand the edges off flush with the curved surround.



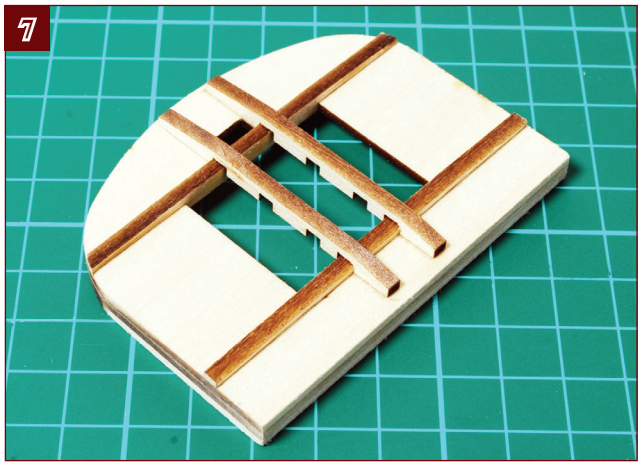
4. Cut another strip of 2 x 3-mm wood to fit along the back of the fore top, and glue it in position.



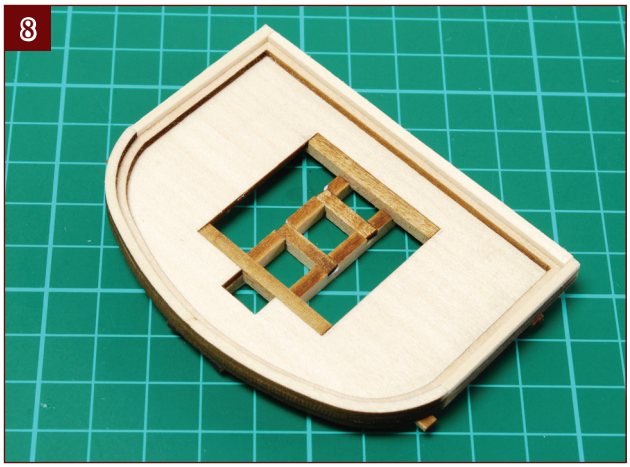
5. Turn the assembly over and glue the two long cross trees in position. The thicker central portions slot into the hole in the middle of the mast top, butting up against the edges.



6. Dry assemble the shorter trestle trees and spacers to check that the slots in the cross trees are wide enough to accept the spacers. If they are not, enlarge the slots slightly with a knife.



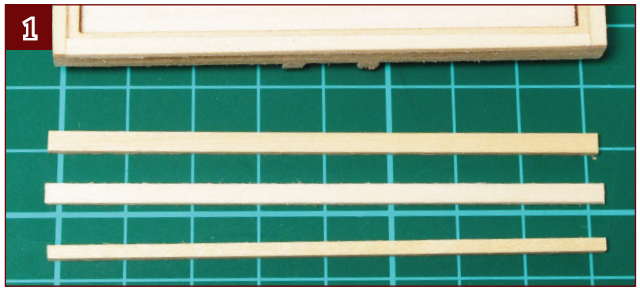
7. Glue the two trestle trees to the base of the fore top. The gap between them should be 8 mm. When the glue is dry, sand any protruding ends flush with the edge of the fore top.



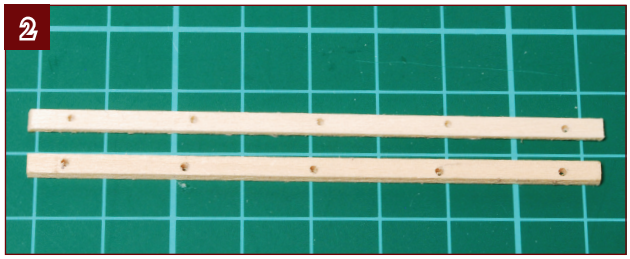
8. Glue the two spacers in position between the trestle trees.

Adding the hand rail and blocks

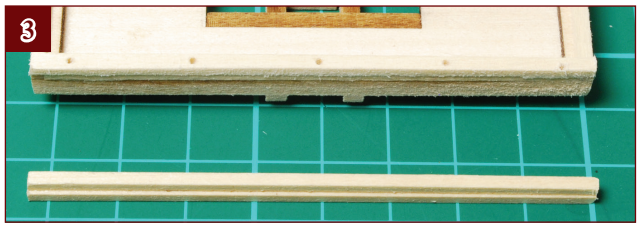
Using the strips of wood, blocks, thread and brass wire supplied, add the blocks under the top and the hand rail that runs along the rear edge.



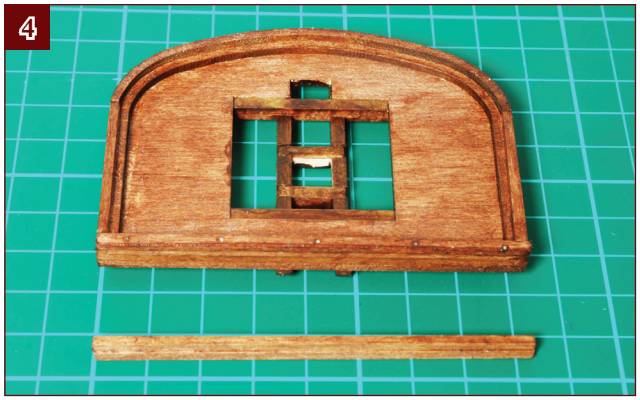
1. Cut two lengths of 2 x 3-mm wood and one length of 2 x 2-mm wood the same length as the width of the fore mast top.



2. Mark and drill five holes in the 2 x 3-mm strips for the hand rail, using the picture above and the plans included with this stage as a guide to their positions.

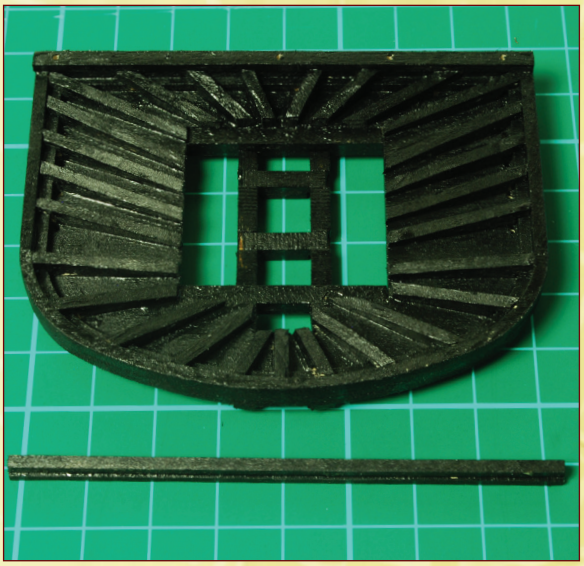


3. Glue one of the drilled strips to the back of the top. Glue the 2 x 2-mm strip to the other drilled strip to form the hand rail.



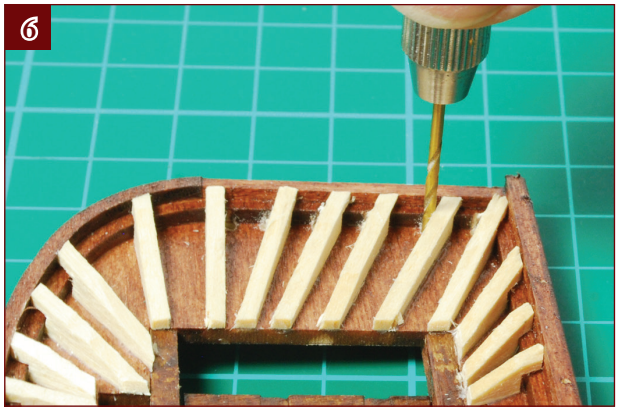
4. For the wooden-finish model, stain these parts in the same way as the main top you built in Stage 61.

Colour finish

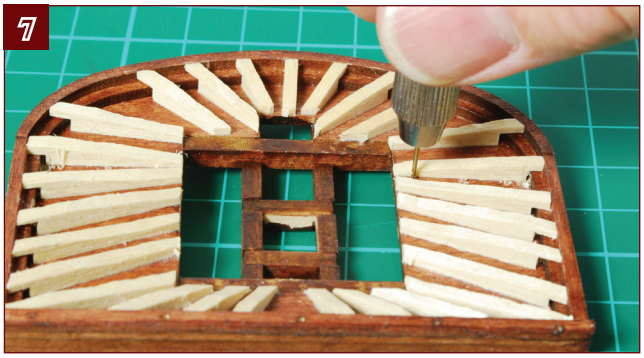


If you are building a painted model *Victory*, paint the entire fighting top and hand rail black after fixing the ribs in the base as shown in Step 5.

5. Using 2 x 5-mm wood, cut and glue the 27 ribs in place, referring to the plan as a guide to their positions. (Paint the entire top black now if you have chosen the painted finish.)

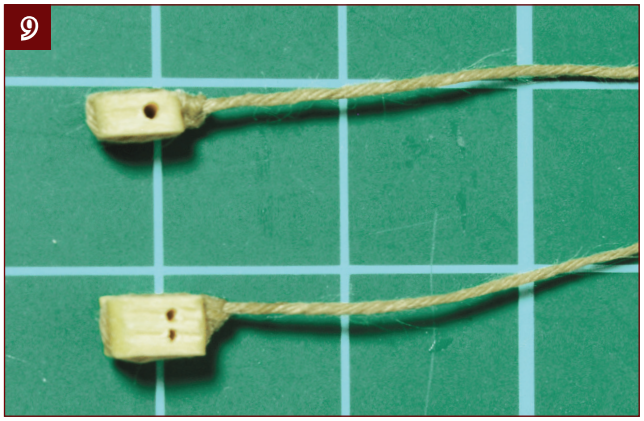


6. Drill the 12 holes along the sides of the top using a 1.5-mm drill. Again, refer to the plan as a position guide.



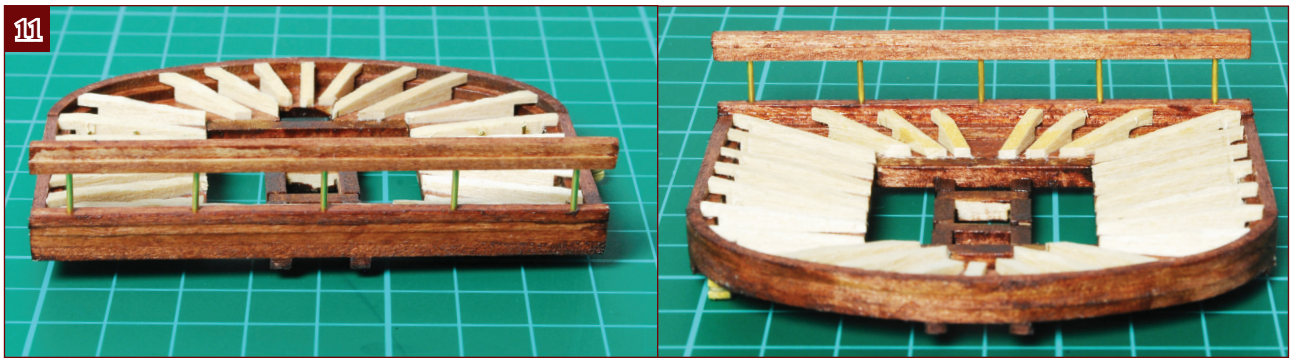
7. Drill 10 holes for the brass eyebolts using a 0.7-mm drill at the positions marked on the plan.

8. Fit the 10 brass eyebolts with superglue after cutting the shanks so they do not protrude through the upper side.



9. Prepare two 4-mm blocks and four 5-mm double blocks, using the natural-coloured thread. Leave tails of about 75 mm.

10. Tie the blocks in place, making sure they hang down by equal amounts – about 10-12 mm.



11. Finally, cut the brass wire into five lengths, each 10 mm long. Glue them into the holes in the 2 x 3-mm section of the hand rail, and attach it to the fore top.

Stage 68: Assembling the fore lower mast

This stage includes wooden parts and fittings to make the fore lower mast.

Shaped wooden parts

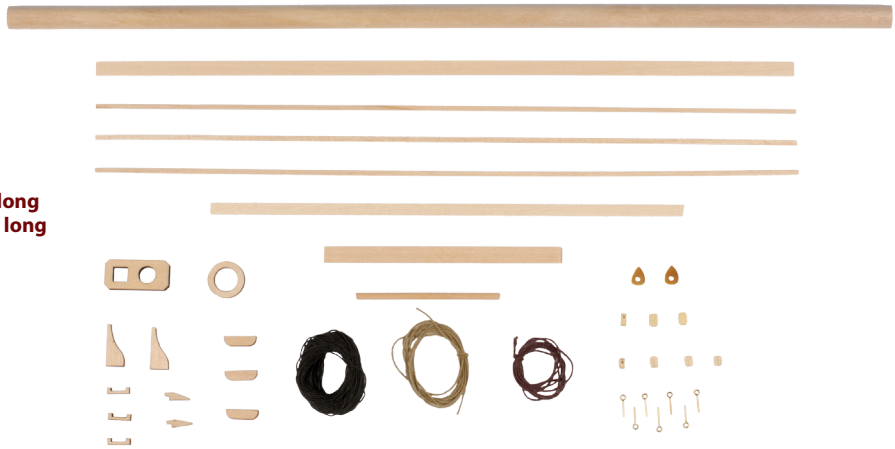
1 wooden dowel 10 mm, 380 mm long
1 wooden dowel 3 mm, 60 mm long
2 fore mast cheeks
3 side guides
3 upper guides
1 fore mast cap
2 fore mast cleats
1 mast collar ("coat")
2 deadeyes
4 blocks 4 mm
3 blocks 5 mm

Fittings

brown thread 500 mm long
natural thread 500 mm long
black thread 7 m long
7 eyebolts

Wooden strips

1 wooden strip 2 x 6 mm, 300 mm long
1 wooden strip 3 x 7 mm, 100 mm long
1 wooden strip 2 x 5 mm, 200 mm long
3 wooden strips 2 x 2 mm, 300 mm long
1 wooden strip 4 x 4 mm, 100 mm long

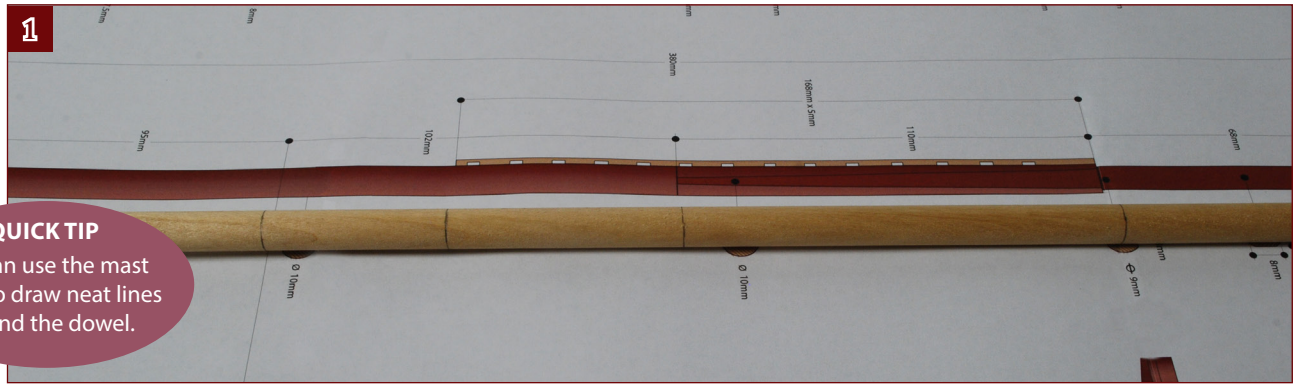


Where the parts fit

This stage, you will be shaping and assembling the lower section of the fore mast, to which you can then attach the fighting top you built last stage. This job uses the parts supplied (although some are used later on in the assembly) and is very similar to the construction of the lower section of the main mast in Stage 62. As you did then, you will need to refer to the mast plans to shape and drill the wooden parts for the fore mast, but in this case, you need to use the fore mast plans that were supplied with Stage 67. Once again, remember to check your measurements carefully before you cut, drill or shape the parts, and check regularly while you are working on them to make sure you don't remove too much wood. When you have finished, you can try the fore mast in position in your model's hull, but do not glue it in place at this stage.

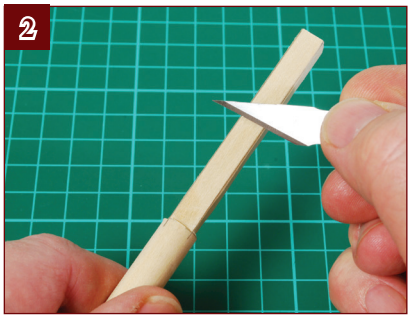
Shaping the fore lower mast

This job is very similar to making the lower section of the main mast, which was shown in detail in Stage 62. You may want to refer back to that stage for a fuller description of the shaping techniques.

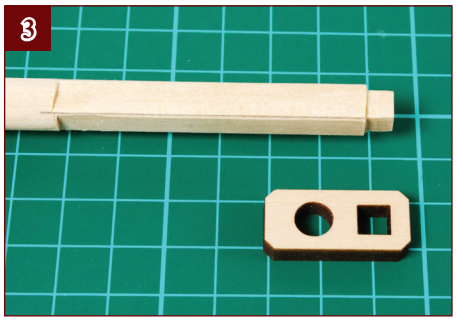


QUICK TIP
You can use the mast collar to draw neat lines around the dowel.

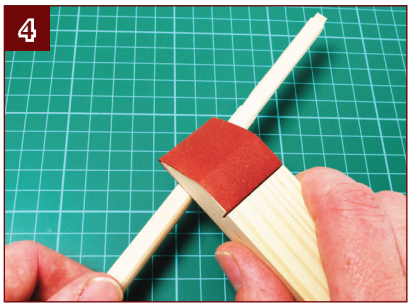
1. Mark the four points on the fore lower mast indicated on the plans: the deck level when the mast is fully seated; the bottom of the rubbing paunch; the bottom of the cheeks; and the bottom of the 8-mm square section.



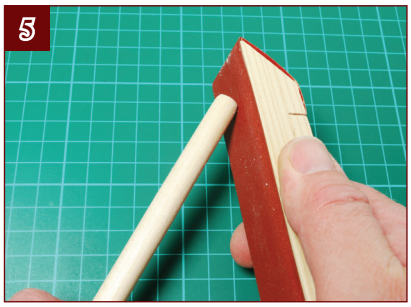
2. Carve the top 73 mm of the mast to an 8-mm square, leaving the corners the original rounded shape of the dowel.



3. Carve the top 5 mm of the mast to a 5-mm square. Ensure that this section fits inside the square hole in the mast cap.



4. Sand tapered flats on either side of the mast to accept the cheeks, and sand a flat on the front of the mast to accept the rubbing paunch.



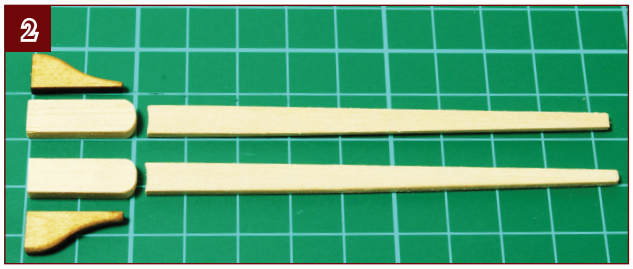
5. Sand a bevel on the bottom of the mast so that it is easier to insert into the fore mast socket in the deck.

6. Check that the mast slides into the fore mast socket fully by making sure that the mark 95 mm from the bottom is level with the deck. Taper the bottom 95 mm of the mast if necessary until it slides easily into place.

Assembling the fore lower mast

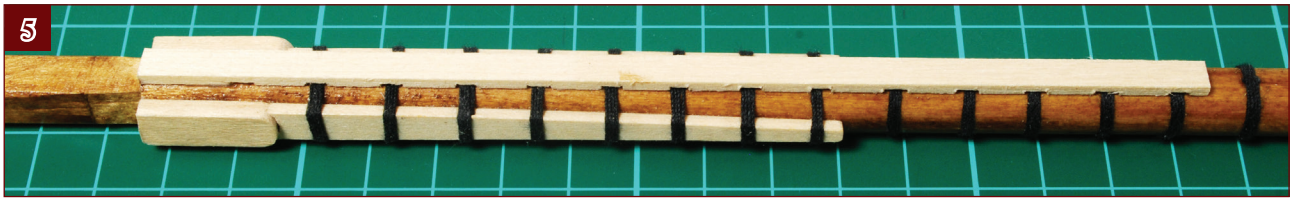
As before, you may want to refer back to Stage 62 for a fuller description of some areas of this assembly, but be sure to keep referring to the fore mast plans for all the dimensions.

1. Stain or paint the fore lower mast to match the finish of the main lower mast.



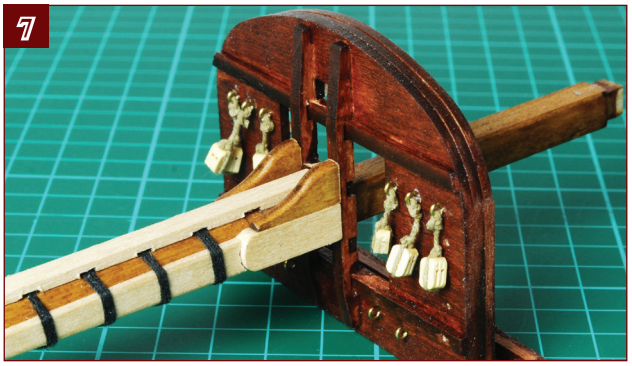
2. Shape the hounds and cheeks to match the plan. Ensure that the bibbs match the plan (trim if necessary), and sand a radius on the curved edges. Stain the bibbs to match the mast.
3. Glue the hounds and cheeks to the mast as on the plan.

4. Using the plan as a guide, add 17 bindings of the black thread. Use four turns of thread for each binding.

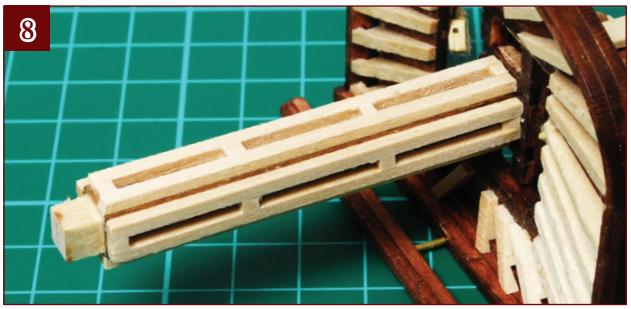


5. Cut the rubbing paunch as shown on the plan, making slots to match the position of the bindings, then glue it to the mast.

6. Glue the two cleats to the mast, two bands below the bottom of the cheeks. Stain them dark oak to match the mast.



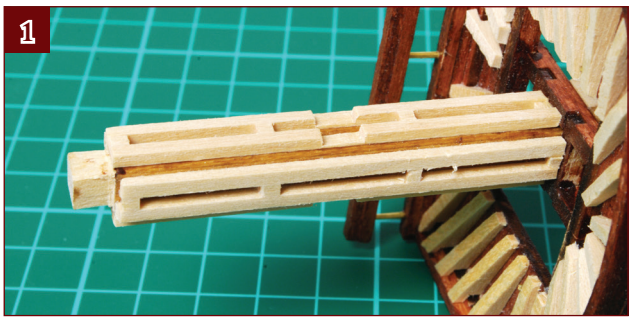
7. Glue the fore top to the mast, ensuring it is straight and square, and sits flush on top of the hounds. Then add the bibbs, which also fit flush underneath the top.



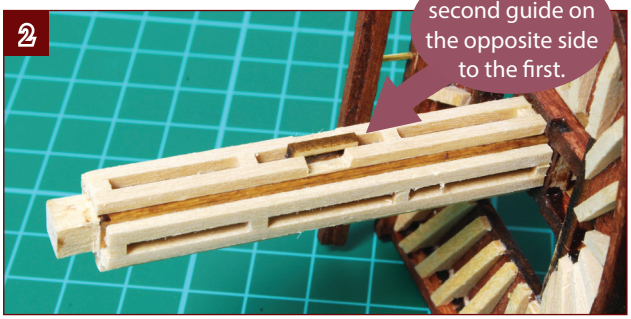
8. Cut two battens from 2 x 2-mm wood, to fit from the top of the cross trees to the end of the 8-mm-square section. Glue in place with a 2-mm gap between them. Add four short pieces of 2 x 2-mm wood, evenly spaced between the battens as shown. Repeat on the other three sides of the square section.

Rigging the fore lower mast

Once again, this job is similar to rigging the main mast – featured in Stage 63 – although you should also refer to the fore mast plan for guidance.

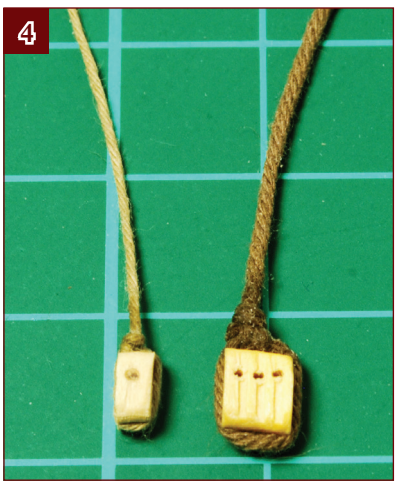


1. Cut 5-mm slots in the centre of both mast battens on the port and starboard side. The slots should be deep enough so that the thread can pass under the U-shaped guides (see Step 2).

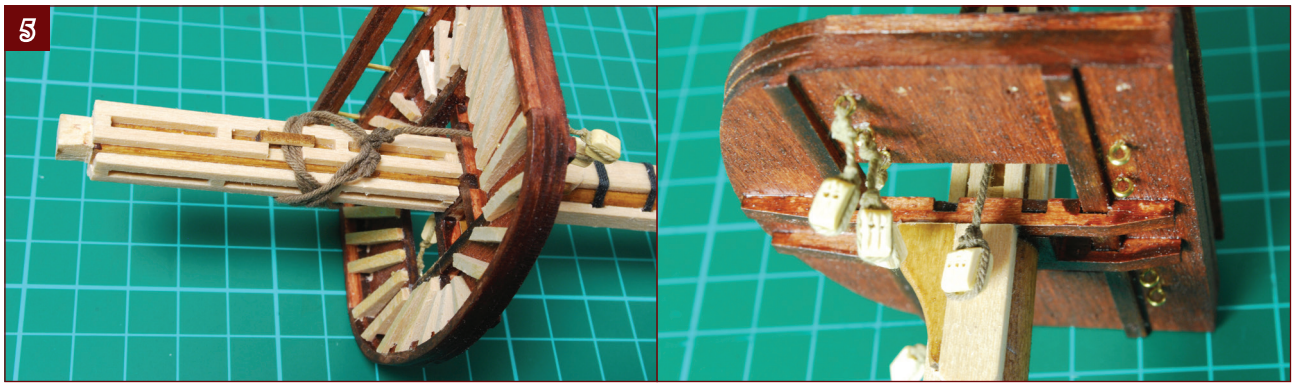


2. Glue the two shallow U-shaped guides in line with the slots you cut. You may have to sand down the thickness of these guides until they fit between the battens.

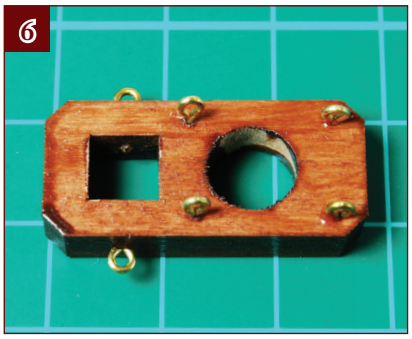
3. Using a pencil as a spacer, make three loops of the thicker dark brown thread around the mast. Tie the ends with a reef knot. Repeat this on the other side of the mast, so there are a total of six loops of thread around the mast.



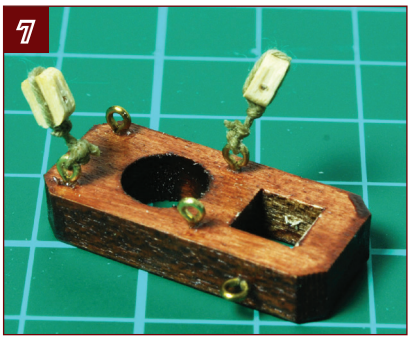
4. Tie two 4-mm blocks to some thin thread, and tie the two 5-mm triple blocks (supplied in Stage 67) to the thicker brown thread. Leave tails of about 80 mm.



5. Tie the tails of the triple blocks to the loops of thread made in Step 3, ensuring that they hang down just below the fore top, roughly level with the blocks already attached to the top.



6. Stain the mast cap dark oak (or paint it black if you are building the painted version) and fit six brass eyebolts in the positions shown.



7. Tie the two 4-mm blocks to the mast cap as shown. Do not glue the mast cap in position just yet.

8. Chamfer the mast collar and stain it to match the collar of the main mast. This may be tried in position, but should not be glued yet.

Painted finish

If you are building the painted version of *Victory*, paint the section of fore mast above the fore top black. Also paint the mast cap black before attaching the brass eyebolts in Step 6.

If you now try the fore mast, mast cap and collar in position, your model should look like this. Do not glue the mast or collar in place at this stage.

Stage 69: Fitting the fore topmast

This stage includes parts and fittings to build the fore topmast, and another of *Victory*'s 12-pounder guns.

Wooden strips

1 wooden dowel 8 mm, 265 mm long
1 wooden dowel 6 mm, 220 mm long
2 wooden strips 2 x 3 mm, 200 mm long

Shaped wooden parts

1 double block 7 mm
2 blocks 5 mm
12 blocks 4 mm
1 wooden bead 5 mm
1 foretop cap
9 guides and cradles

Fittings

brass wire 1.5 mm, 20 mm long
brown thread 200 mm long
light brown thread 1,500 mm
10 eyebolts

Gun and rigging parts

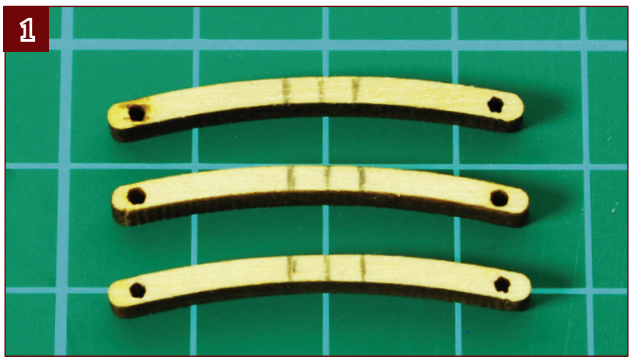
See Stage 48 for details of these components

Where the parts fit

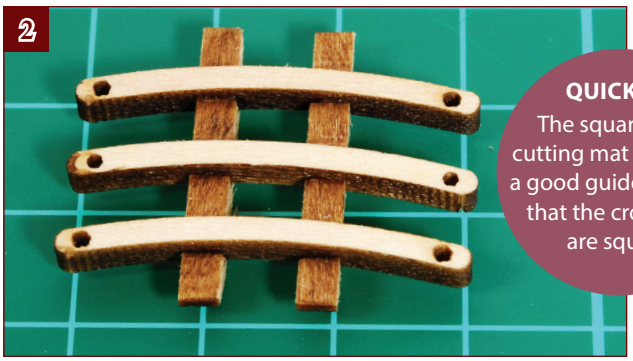
This stage covers the second stage of the fore mast assembly, which involves making the topmast and fitting it above the fore top. You will need the fore mast plans that you received with Stage 67 to mark off measurements on the wooden parts. As before, ensure that you understand exactly what shape you are trying to achieve before you start cutting or sanding any parts. The assembly steps in this stage are very similar to those in Stages 63 and 64, which include detailed instructions for the shaping techniques required in this building stage. If you wish, you can also assemble the kit for the 12-pounder gun, but keep this and its rigging for use in a later stage.

Making the fore topmast

The construction of the fore topmast is similar to the main topmast you made earlier. Once again, it tapers slightly and has a square section at the top to take the cross trees that support the topgallant.

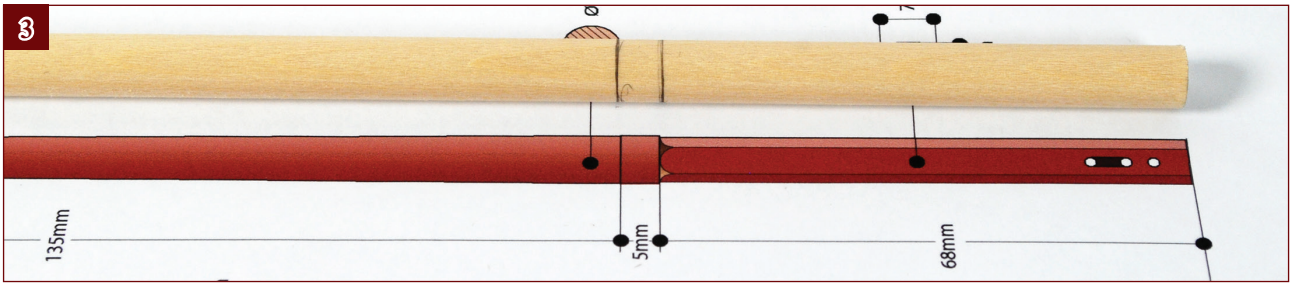


1. Take the three cross tree arms and mark the centres. Then mark 2.5 mm either side of the centre to leave a 5-mm gap between the marks.

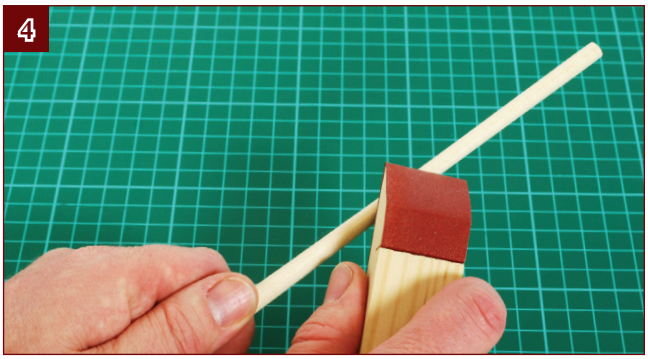


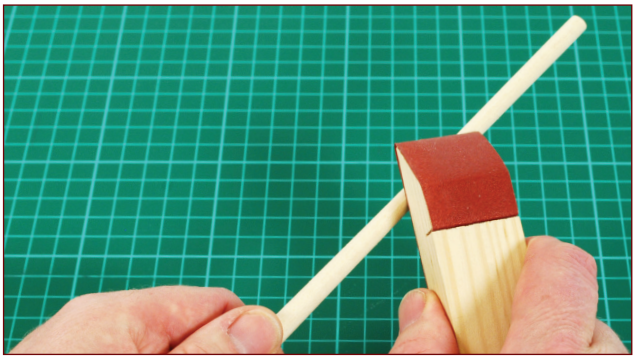
2. Glue the cross tree arms to the fore-and-aft rails, making sure that they are at right angles to each other (allowing for the curvature of the arms).

QUICK TIP
The squares on a cutting mat can make a good guide to check that the cross trees are square.

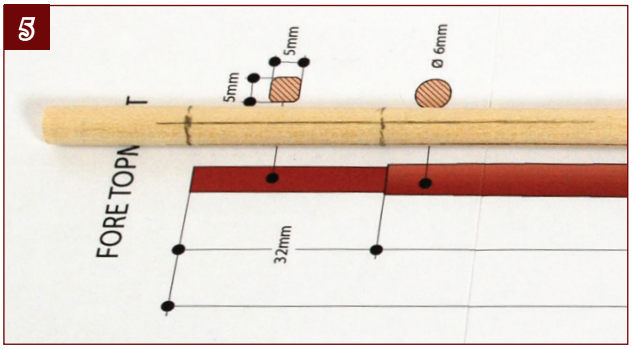


3. The bottom of the topmast is octagonal. Before tapering the 8-mm dowel, mark the end of the octagonal section and the 5-mm section above it on the dowel using the fore mast plan as a guide.

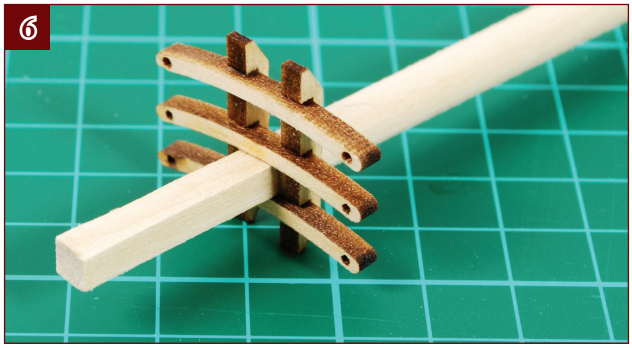




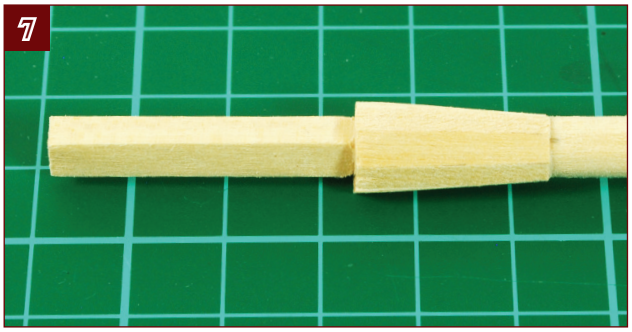
4. Taper the mast to a 6-mm diameter, again using the plan as a guide.



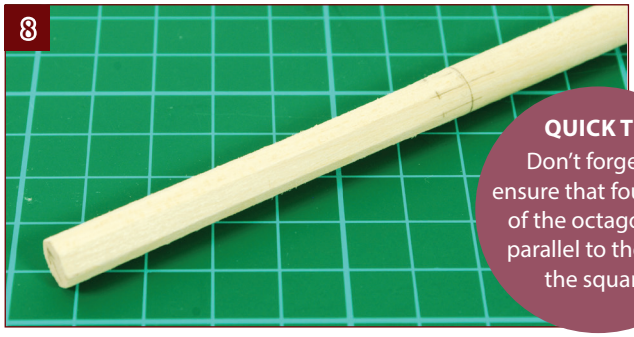
5. Use the plan to mark the length of the square section, and cut the mast to length.



6. Carve and sand the 5-mm-square section. Ensure that the cross trees will fit over the square.



7. Use the techniques described in Stage 63 to fit the octagonal cross tree support.

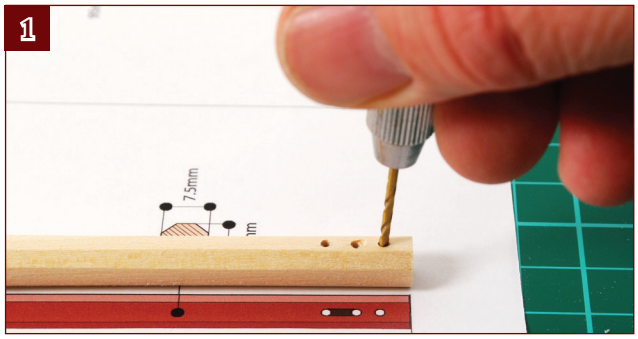


8. Mark and carve the octagonal base section, remembering that it stops at the lower of the marks you made in Step 3.

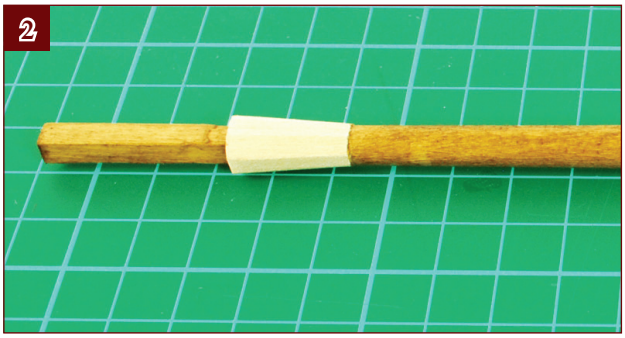
QUICK TIP
Don't forget to ensure that four faces of the octagon are parallel to those of the square.

Fitting the fore topmast

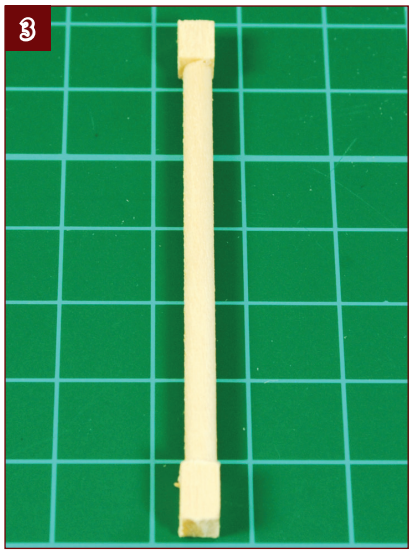
The fore topmast is attached to the lower mast by the mast cap and the cross trees. You will need to stain or paint it according to your chosen finish.



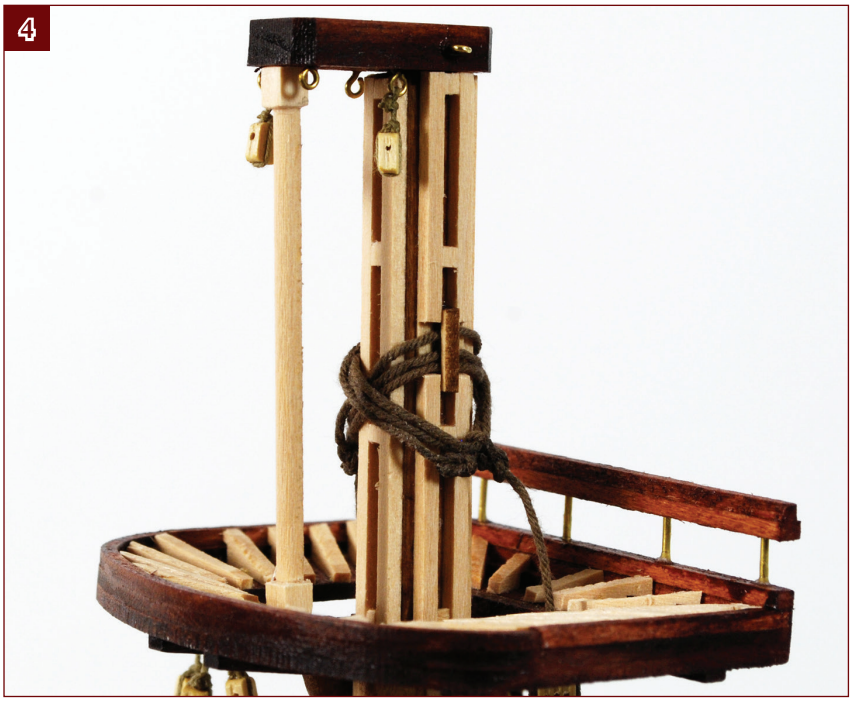
1. Use the plan to mark and drill three 1.5-mm holes in the base of the mast. Make sure that these holes are in a face that is parallel to a square face at the top of the mast.



2. Stain the topmast to match the main mast, remembering that the cross tree support should be plain wood. (See opposite if you have chosen the painted finish.)

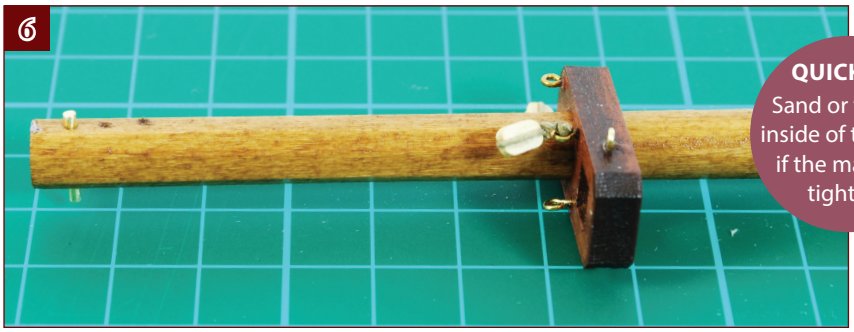


3. Cut a length of 3-mm dowel for the hand mast, 10 mm shorter than the gap between the foremast cap and the mast top (see Step 4). Make the ends from two 6-mm lengths of 4 x 4-mm wood. This will leave about 2 mm to be trimmed.



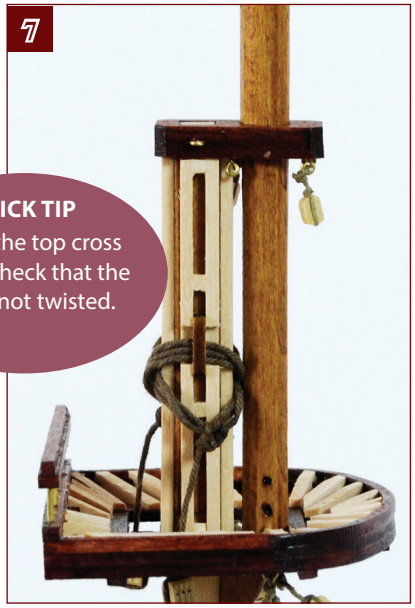
4. Dry-fit the mast cap, and trim the hand mast to fit. Do not glue it in place just yet.

5. Cut an 11-mm length of brass wire, and file the ends flat.



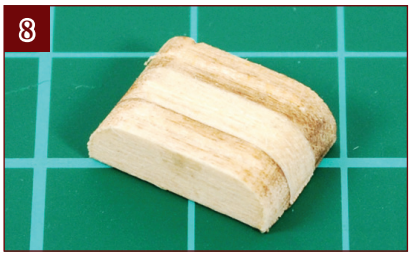
6. Insert the mast through the mast cap, then insert the brass wire through the lowest hole.

QUICK TIP
Sand or file the inside of the hole if the mast is a tight fit.



QUICK TIP
Test-fit the top cross trees to check that the mast is not twisted.

7. Dry-fit the mast cap to the lower mast to check that the brass wire rests on the cross trees. When it fits properly, remove the topmast and glue it back together, ensuring the mast is perfectly straight. Allow to dry fully before continuing.



8. Glue the three parts of the rope guide together and make three grooves in the top (Stage 64 shows more details).

9. Stain the rope guide and glue it in place – its centre groove should align with the eyes in the mast cap. Also glue the hand mast back in place.

Painted finish

If you are painting your model, all the topmast parts and fittings need to be painted black. Do not paint the upper square section yet, as parts will be added here.

When you have completed the lower fore mast, it should look like this. You can dry-fit the fore mast in place on your model, but do not glue it in position yet.

Stage 70: Constructing the fore topgallant mast

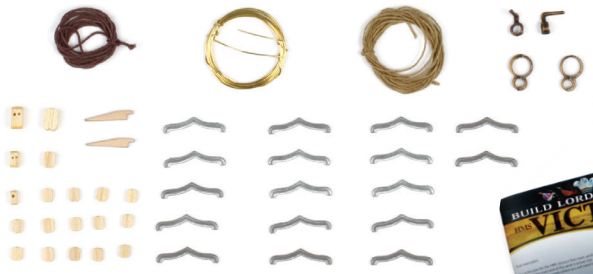
This stage includes parts to build the fore yard for *Victory*'s fore mast, plus various other fittings.

Wooden strips

1 wooden dowel 7 mm, 350 mm long
1 wooden dowel 3 mm, 350 mm long
3 wooden strips 2 x 4 mm, 300 mm long

Shaped wooden parts

15 blocks 4 mm
2 single blocks 5 mm
2 double blocks 7 mm
2 slings for main yards



Fittings

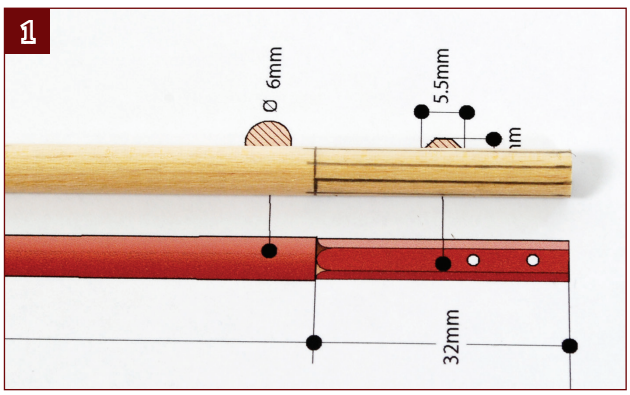
brass wire 0.5 mm, 700 mm long
brown thread 500 mm long
natural thread 1,500 mm long
2 diecast quarter irons
2 diecast studdingsail boom irons
17 diecast gun port wriggles

Where the parts fit

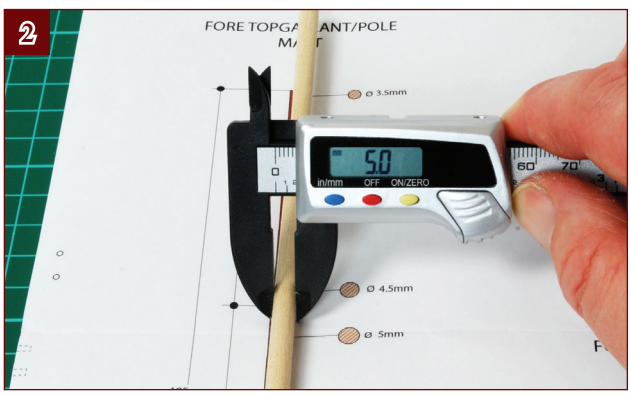
This stage covers the third stage of the fore mast assembly – building the topgallant and pole mast – and adding the rigging blocks. You will need the fore mast plans from Stage 67, as well as some of the parts provided with Stages 68 and 69 including the brackets and cradles. When you have finished assembling the topgallant and pole mast, you can dry-fit the fore mast in place, but do not glue it in position yet. Some parts supplied this time are used in Stage 71, while the wriggles are used later.

Constructing the fore topgallant mast

This job is very similar to the main topgallant assembly in Stage 64, and some of the shaping techniques were covered in Stage 63.

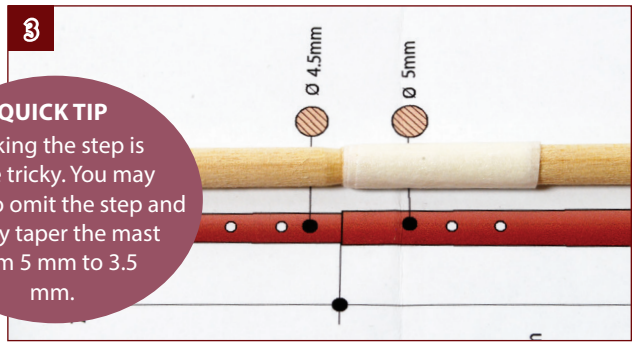


1. Take the 6-mm dowel supplied with Stage 69 and, using the plans, mark the octagonal section at the bottom.



2. Taper the dowel until it measures 5 mm just below the step in diameter marked on the plans.

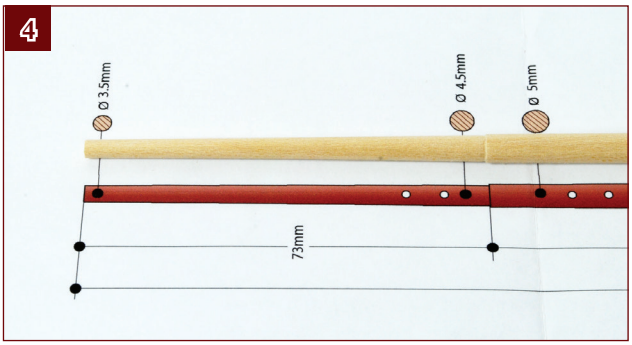
3



QUICK TIP
Making the step is quite tricky. You may prefer to omit the step and simply taper the mast from 5 mm to 3.5 mm.

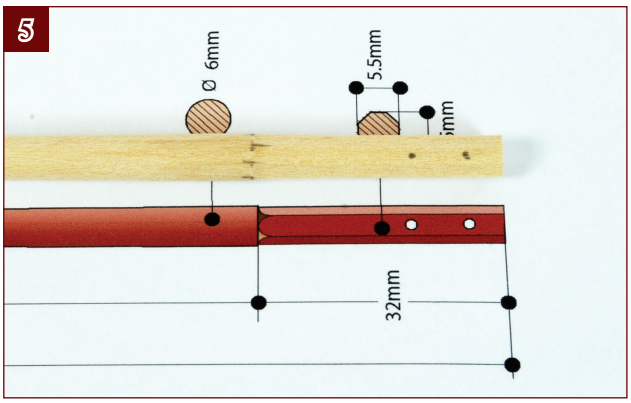
3. Mark the position of the step using the plan. Use a sharp modeling knife to carve the step, then protect it with several layers of masking tape to prevent it from getting damaged while you are tapering the top section.

4



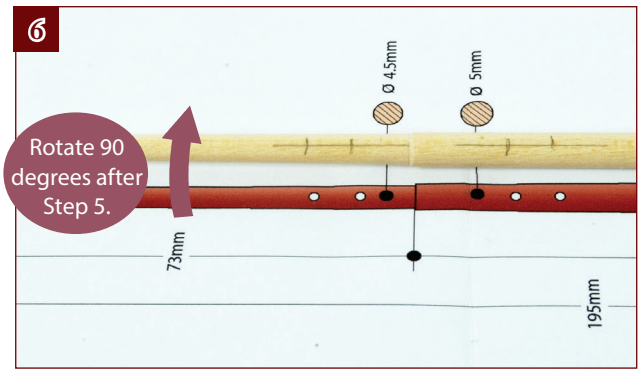
4. Taper the top section to 3.5 mm at the tip (as marked on the plan), and then cut it to length.

5



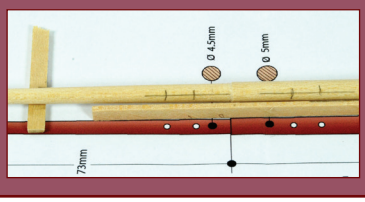
5. Carve and sand the octagonal base section, then mark the two holes that appear near the bottom.

6

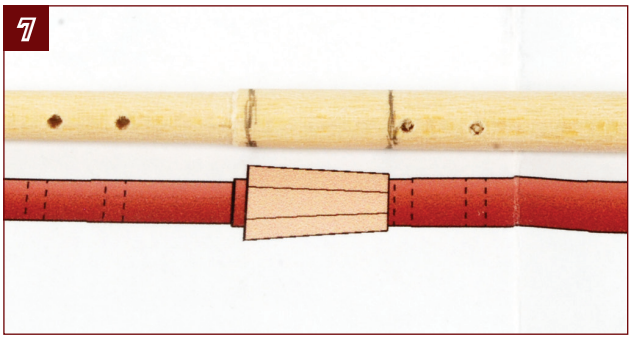


6. Rotate the mast 90 degrees, and then mark the four holes either side of the step. Then drill all six holes using a 1.5-mm drill.

QUICK TIP
While marking the holes, support the end of the mast with a scrap of wood to keep it level.

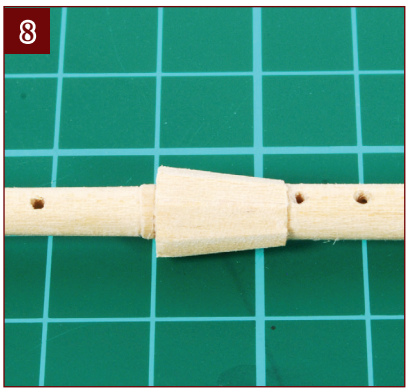


7



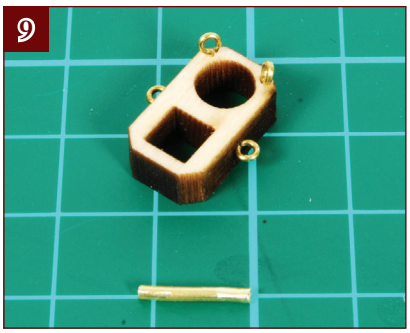
7. Mark the position of the octagonal "hounds" using the plan as a guide.

8



8. Construct the octagonal section using the technique described in Stage 63. Then stain or paint the mast to match the main topgallant mast.

9

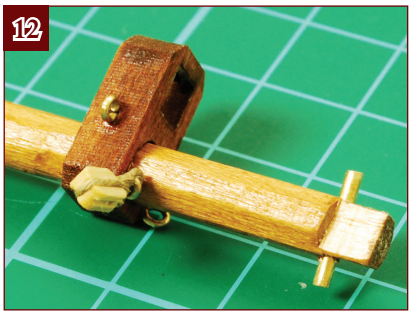


9. Prepare the fore mast cap by drilling four 0.7-mm holes and inserting brass eyes as shown. Note that the foremost eyes are bent out slightly. You should also cut a 10-mm length of brass wire and file the ends smooth.

10

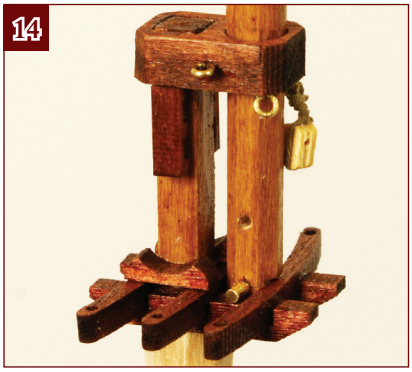
10. Stain or paint the mast cap and add a 4-mm block in the position shown. You can stain the cross trees at the same time if you haven't already done so.

11. Glue the cross trees to the fore topmast, ensuring that the assembly is straight and square, and in line with the fore mast fighting top.



12. Loosely fit the mast cap to the topgallant mast, and insert the brass wire through the lowest hole. Dry-assemble as shown in Step 13, trimming the base of the topgallant mast to fit inside the square of the cross trees with the topmast and topgallant masts parallel.

13. Glue the parts together, ensuring that the whole mast assembly is straight and true.



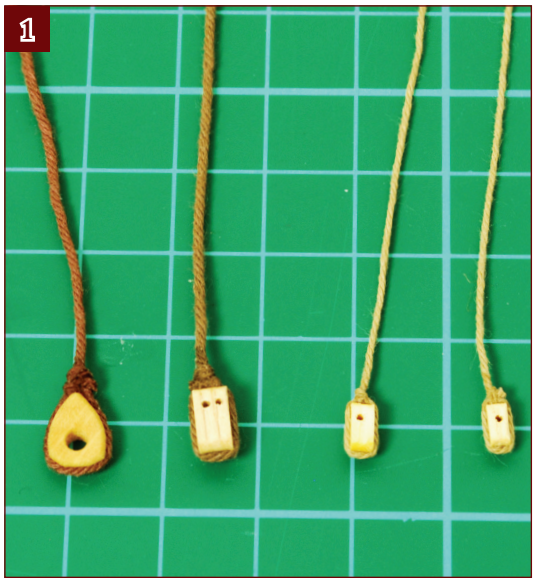
14. Stain or paint the brackets and cradles from Stage 69, and glue in place. The brackets go under the upper mast; the cradles go on top of the cross trees.

15. Glue the small ball onto the top of the mast.

QUICK TIP
Sand a flat on the bottom of the ball before gluing it to the topgallant mast.

Adding the rigging

Use the fore mast plans you received with Stage 67 to position the blocks on the fore mast. All the knots used in this assembly are half-hitches.



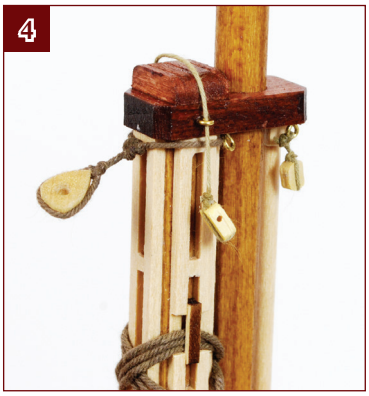
1. Prepare blocks as follows:
- **Two heart blocks**. Tie on thick brown thread leaving tails about 100 mm long.
- **One 7-mm double block**. Use thick brown thread and leave a tail about 100 mm long.
- **Four 5-mm single blocks**. Use thin natural thread. Tie tails about 80 mm long on three of them but leave one with a tail of about 110 mm.
- **Six 4-mm single blocks**. Use thin natural thread and leave tails of about 75 mm on four and slightly longer tails, about 100 mm, on two.

2. Tie a 5-mm block to the mast just below the rubbing paunch, so that it faces aft.

3

3. Take one of the two heart blocks and loop its thread up through the fighting top, around the square section of the lower mast. Tie it off so it hangs below the fore top as shown.

4



4. Tie the other heart block to the top of the lower mast. Thread the 5-mm block with the 110-mm tail through the eyes on the mast cap, and tie another 5-mm block to the end.

5

5. Fit blocks to the fore mast cap as follows:

- Tie the 7-mm block facing forward. Note how the thread passes between the cross trees.
- Add a 5-mm block below the top mast cap, facing aft.
- Tie two 4-mm blocks around the top mast cap. Use the blocks with the longer tails for this.

6

6. Fit blocks at the top of the mast as follows (from top to bottom in the positions shown in the plans):

- A 4-mm block facing aft.
- A 5-mm block facing aft and a 4-mm block facing forward.
- Two 4-mm blocks, facing port and starboard.

Painted finish

If you are building the painted version of *Victory*, the entire mast should be painted black after assembly, but before tying on the rigging blocks.

The fore mast should now look like this.

BUILD LORD NELSON'S HMS VICTORY

Coming in Pack 8

Stages 71-80 begin assembling the mizzenmast, as well as preparing the chainwales and fitting the entry port canopies.