BUILD LORD NELSON'S HMS VICTORY

Pack 8

Stages 71-80

DeAGOSTINI MODEL SPACE™

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Contents

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DeAGOSTINI MODEL SPACE™

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Stage 71: Constructing the fore yard

This stage includes parts for the upper yards of the fore mast, plus the irons needed to make the fore yard, the largest of the three fore mast yards.

Wooden strips

3 wooden strips 2 x 2 mm, 250 mm long
4 wooden strips 2 x 3 mm, 200 mm long
1 wooden dowel 5 mm, 265 mm long
1 wooden dowel 4 mm, 185 mm long
1 wooden dowel 3 mm, 290 mm long

Shaped wooden parts

1 double block 7 mm
2 single blocks 5 mm
24 single blocks 4 mm

Fittings

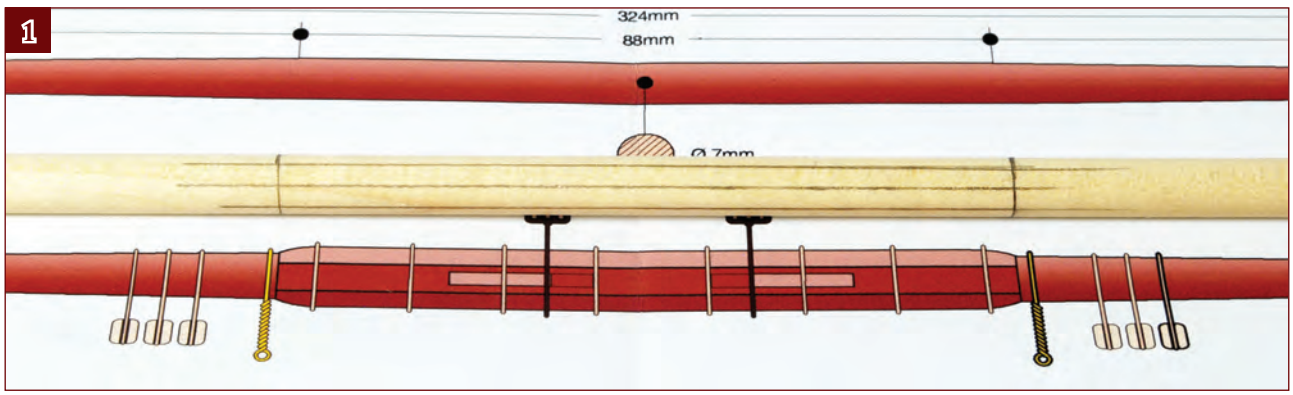
2 diecast quarter irons
2 diecast studdingsail boom irons
0.5-mm brass wire, 500 mm long
brown thread, 200 mm long
natural thread, 1,500 mm long

Where the parts fit

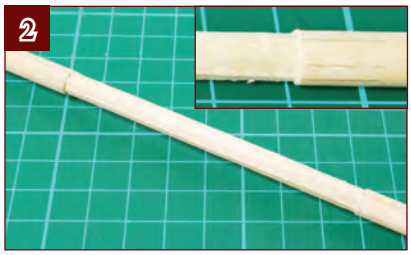
This stage shows how to construct the fore yard, so you will need the fore mast plans provided with Stage 67. The three fore mast yards appear on the back – one of which you will be making this stage – together with the studdingsail booms. The parts you will need were provided with Stage 70, apart from the irons, which came with Stage 65.

Constructing the fore yard

The construction of this yard is very similar to the main yard of the main mast, which was covered in Stage 65. You may find it helpful to refer back for more details.



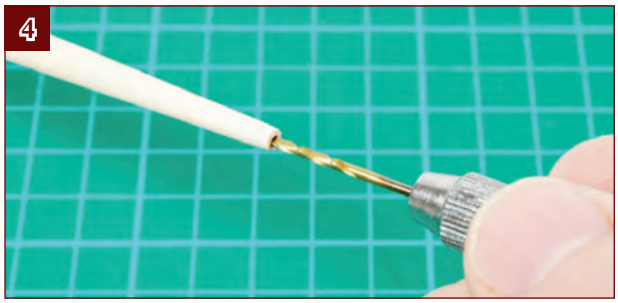
1. Take the 7-mm dowel provided with Stage 70 and use the plan to mark the 88-mm length of the octagonal centre section. Then use the centre finder and a strip of 3-mm or 4-mm wood to rule along the eight corners of the octagon.



2. Carve the centre octagon to a 6-mm cross-section. It is easiest to start by carving the yard to a 6-mm square, and then trim off the corners to complete the octagon.

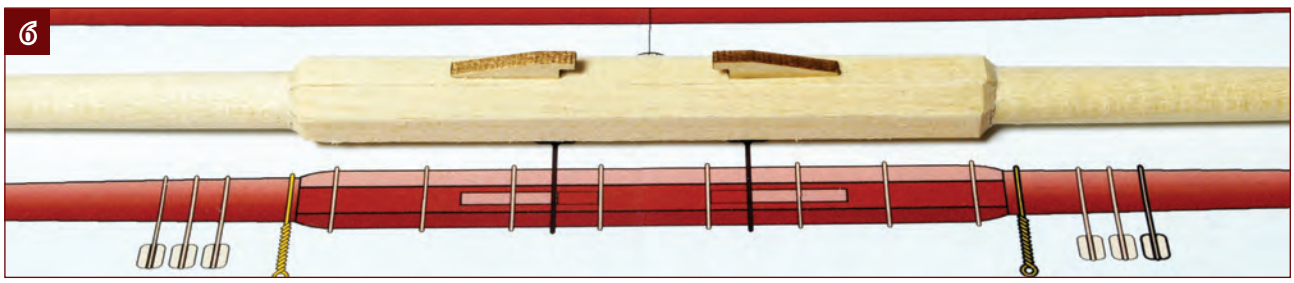
3. Gradually taper the ends of the yard and keep trying the quarter irons supplied with this stage in place until they slide along to the position shown on the plan.

QUICK TIP
The quarter irons are shaped like a figure 8. One hole is 3 mm diameter and the other is 5 mm. It is the larger one that fits the yard.

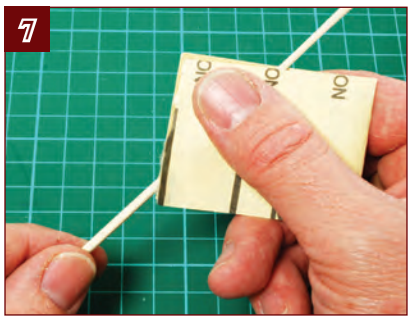


4. Drill a 1-mm hole in both ends of the yard to take the studdingsail boom irons.

5. Use the 2 x 4-mm wood provided with Stage 70 to complete the octagonal centre section. As in Stage 65, complete four sides of a square and then fit the remaining four strips between the gaps left.

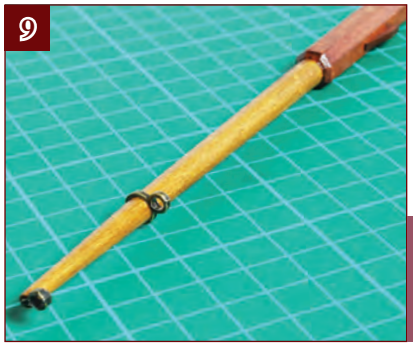


6. Glue the two yard slings (also provided with Stage 70) to the centre section.

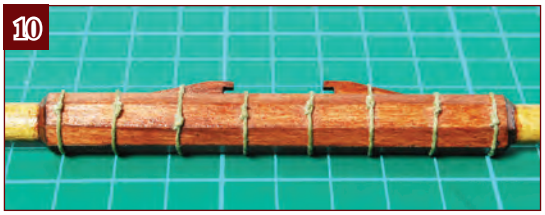


7. Cut the 350-mm-long 3-mm dowel supplied with Stage 70 in half and taper the two pieces to make the studdingsail booms. Check both will fit through the studdingsail boom irons, then trim to length (155 mm, as shown bottom left of the plans).

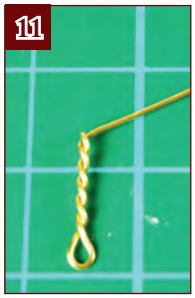
8. For a natural finish, stain the yard and booms to match the main yard.



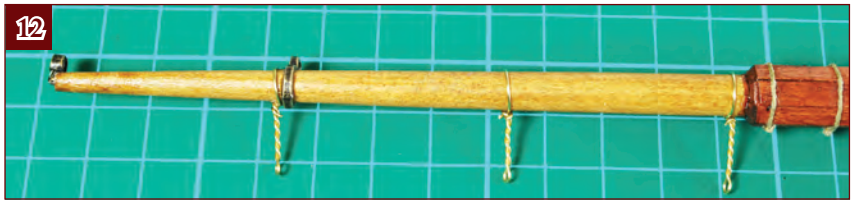
9. Glue the studdingsail boom irons in place using superglue. Note that they are angled upward from the slings (shown below) by 30 degrees.



10. Use the 0.25-mm natural thread to tie eight bands around the centre section. Tie the bands with reef knots located underneath the yard where the knots will be inconspicuous.



11. Make six footrope supports using the same method described in Stage 65. The twisted section of the support should be 10 mm long.

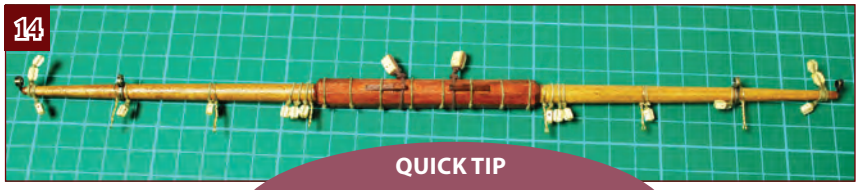


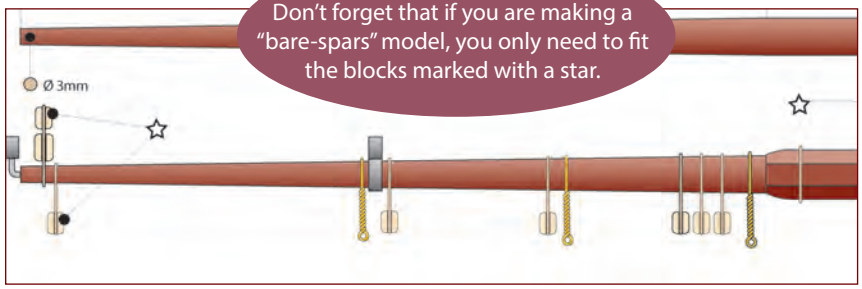
12. Wrap the tail around the yard and twist it to tighten the loop. Use the plan as a guide to find the correct position. You can secure each support with a drop of superglue if necessary. Paint the yard black now if you have chosen a painted finish.

Painted finish

If you have opted for the painted finish, paint the entire main yard assembly black, including the studdingsail booms, the bands around the centre section and the footrope supports, before attaching the rigging. When the paint is dry, you can attach the blocks.

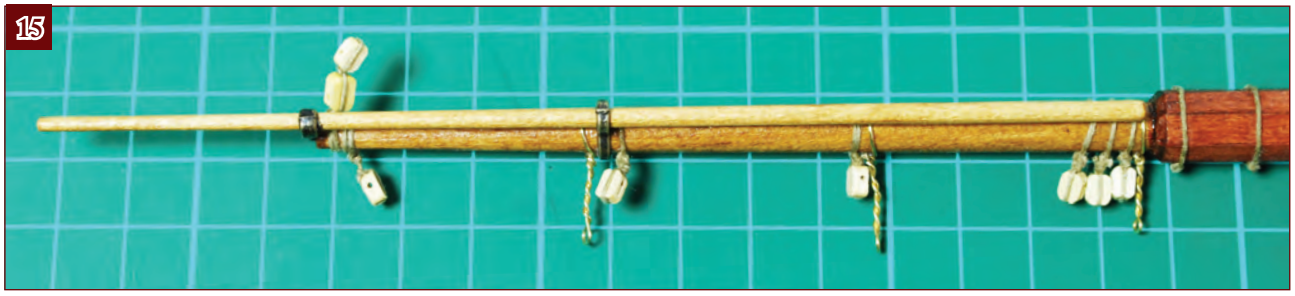
13. Prepare two 7-mm double blocks, two sets of 4-mm and 5-mm blocks, and twelve 4-mm single blocks.





QUICK TIP
Don't forget that if you are making a "bare-spars" model, you only need to fit the blocks marked with a star.

14. Fit these blocks to the yard using the plan to find the correct positions. You can wrap the thread around the yard twice at the ends as this will make it easier to tie the knots where the diameter of the yard is small.



15. Slide the studdingsail booms through the irons and secure with a couple of drops of superglue.

The fore yard should look like this when you have finished. Do not attach it to the mast at this stage.

Stage 72: Making the main and topmast yards

The parts supplied with this stage are for the chainwales ("channels"), which you will be fitting later in the series, before you start rigging the masts.

Wooden strips

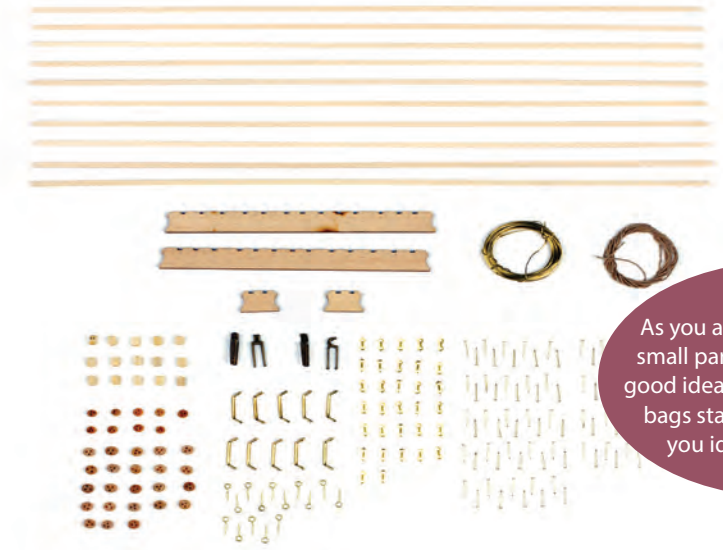
10 wooden strips 1 x 3 mm, 300 mm long

Shaped wooden parts

2 main chainwales, 118 mm long
2 backstay chainwales, 17 mm long
15 double blocks 5 mm
9 deadeyes 4 mm
23 deadeyes 5 mm

Fittings

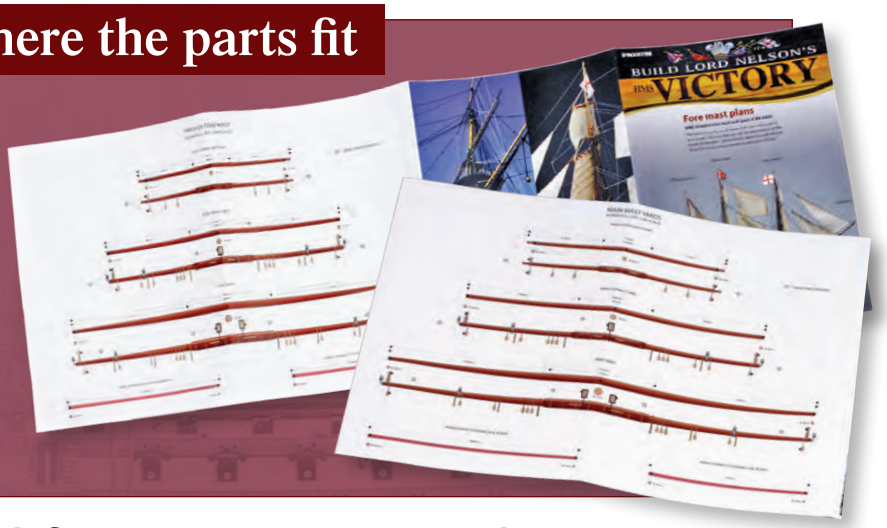
natural thread 1 m
brass wire 3.5 m
4 main lower studdingsail boom irons
10 brass chainwale support brackets
15 eyebolts
32 shroud chain links
90 brass pins



QUICK TIP
As you are collecting various small parts for later use, it is a good idea to store them in their bags stage by stage, to help you identify them later.

Where the parts fit

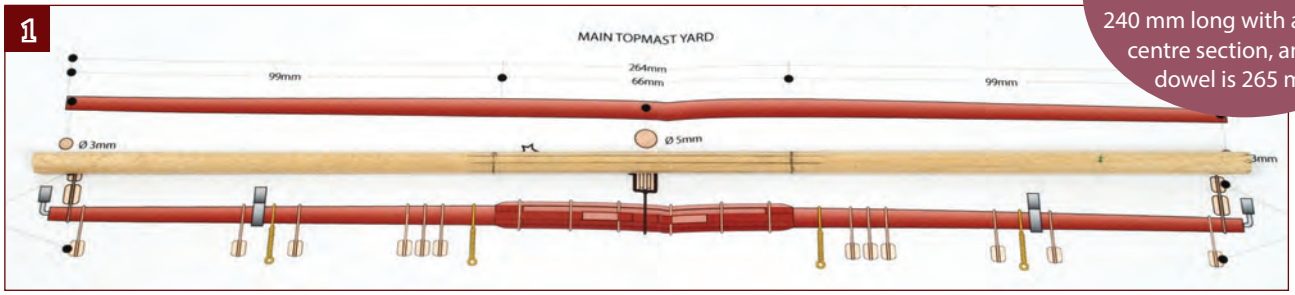
In this stage, you put together the smaller topmast yards for the main and fore masts, so you will need the plans for both masts. The majority of the parts for the main topmast yard were supplied with Stage 65, but you also need the boom irons supplied with Stage 70. The parts for the fore topmast yard came with Stage 71.



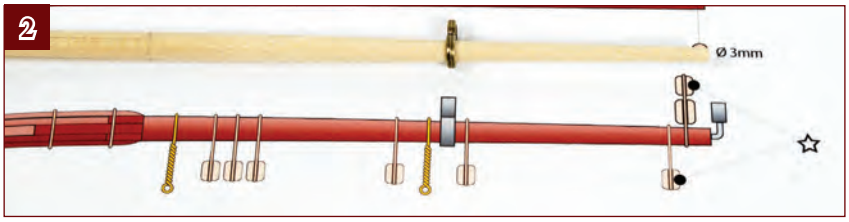
The main and fore topmast yards

The assembly of both yards is identical, but note that their sizes are slightly different. Make sure you use the right plan for each yard.

QUICK TIP
Double check you are using the right plans and dowel. The fore mast yard is 240 mm long with a 64-mm centre section, and the dowel is 265 mm.



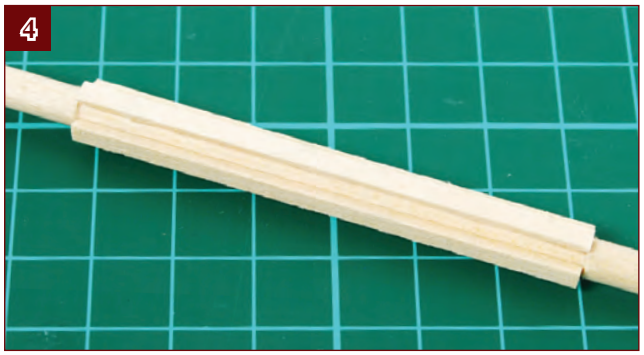
1. Start with the main topmast yard. Mark the centre section on the 270-mm length of 5-mm dowel, making sure the excess length provided for trimming overhangs each end evenly. Then use the centre finder to mark lines on the octagonal centre section.



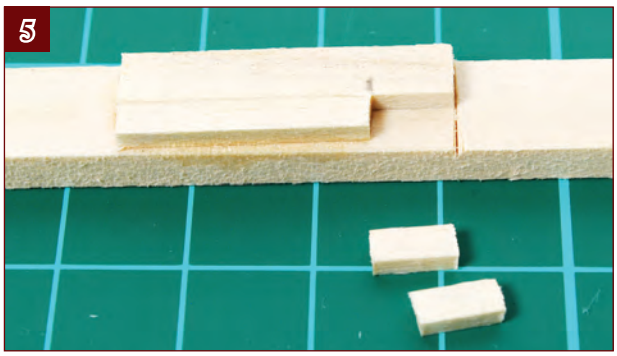
2. Taper the yard until the quarter irons slide onto it up to the correct position. Then continue to taper the end to a diameter of 3 mm.

QUICK TIP
The quarter irons are shaped like a figure 8. One hole is 3 mm diameter and the other is 4 mm. It is the larger one that fits the yard.

3. Carve the centre section to an octagonal shape with its faces 3 mm wide. Start by carving a square that is 4 mm wide, and then carve/sand the corners to complete the octagon.

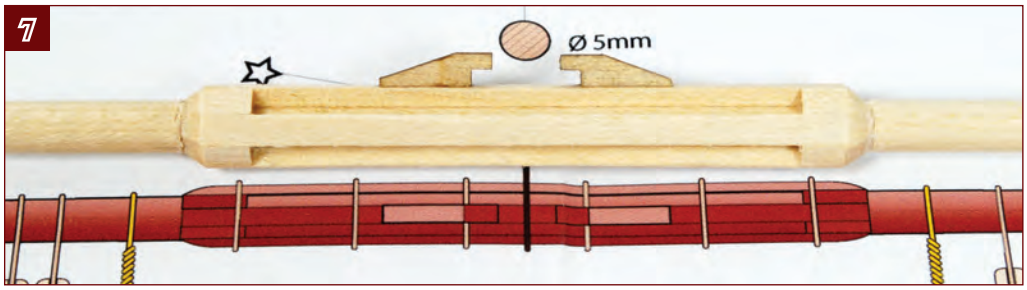


4. Cut four lengths of 2 x 3-mm wood to fit the centre section (66 mm long). Chamfer the edges as you have done previously. Then glue all four lengths to the centre section.



5. Now cut eight 7-mm lengths of 2 x 3-mm wood. A simple cutting guide will make it easy to get each piece exactly the same length. Take two offcuts of wood and cut one piece 7 mm shorter than the other. Glue them to a larger scrap of wood to make a step 7 mm long. The same cutting guide can be used for both fore and main mast yards.

6. Chamfer each piece of wood so that it fits between the gaps left between the longer lengths. Then wrap a few turns of masking tape around the yard to protect it, and chamfer the ends. Repeat this at both ends of the yard centre section.

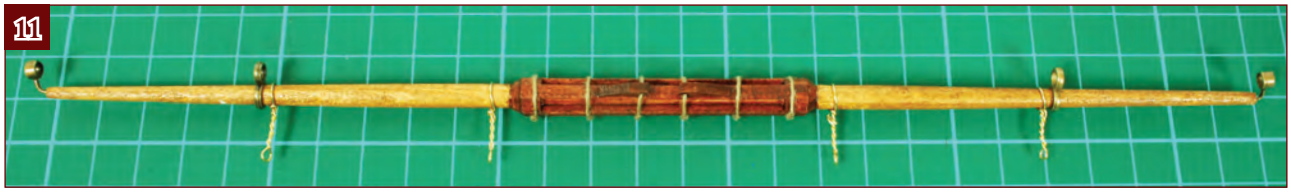


7. Fit the yard slings at the positions indicated on the plan.

8. Stain the mast to match the other yards if you have chosen a stained finish.

9. Tie six bands around the yard using the 0.25-mm natural thread. Secure the bands with reef knots at a point 90° from the yard slings.

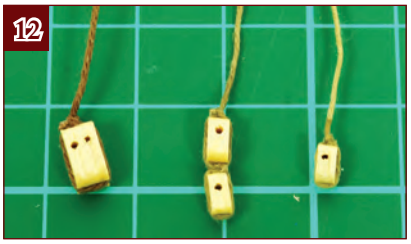
10. Drill 1-mm holes in the ends of the yard, and fit the boom irons. Mount them with the rings angled 30° up on the side opposite to the knots you just tied.



11. Using the method shown in Stage 65, make and fit the four footrope supports at the positions indicated on the plan. Now paint the yard black if you have chosen this option.

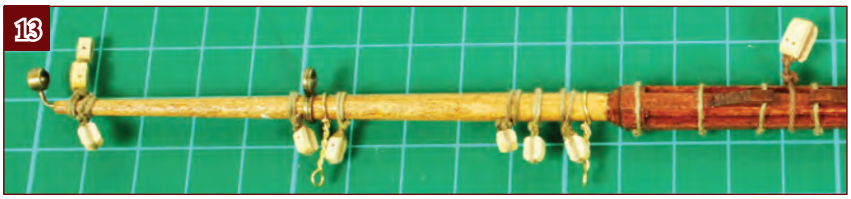
Painted finish

If you have opted for the painted finish, paint the entire yard assembly black at this stage (for both the main mast and fore mast) – including the studdingsail booms, the bands around the centre section and the footrope supports – before attaching the rigging. When the paint is dry, you can attach the blocks as shown in the following steps.

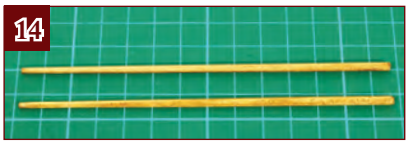


12. Prepare rigging blocks as follows. (Note that you need to fit the blocks marked with a star only if you have chosen to build the "bare spars" option.)

- **One 7-mm double block**. Use thick brown thread and leave a tail about 100 mm long.
- **Two sets of 4-mm and 5-mm single blocks**. Use thin natural thread and leave tails of around 75 mm.
- **Twelve 4-mm single blocks**. Use thin natural thread and leave tails of about 75 mm long.



13. Tie the blocks to the yard using the plan as a guide to the correct positions.



14. Taper two studdingsail booms and cut them to length as shown bottom right on the yard plans. Finish by staining or painting as appropriate.

15. Fit the booms to the yard with tiny spots of superglue.

16. Now repeat Steps 1 to 15 to make the fore topmast yard. The yards should look like this when you have finished.

Stage 73: Constructing the topgallant yards

This stage includes parts for more hammock nets and another 12-pounder gun, plus its rigging. Keep all these parts safe, as they will be required in forthcoming stages.

Fittings

black thread, 1 m long
0.5-mm brass wire, 800 mm long
netting 180 x 90 mm
32 brass stanchions
12-pounder gun and rigging kit

QUICK TIP

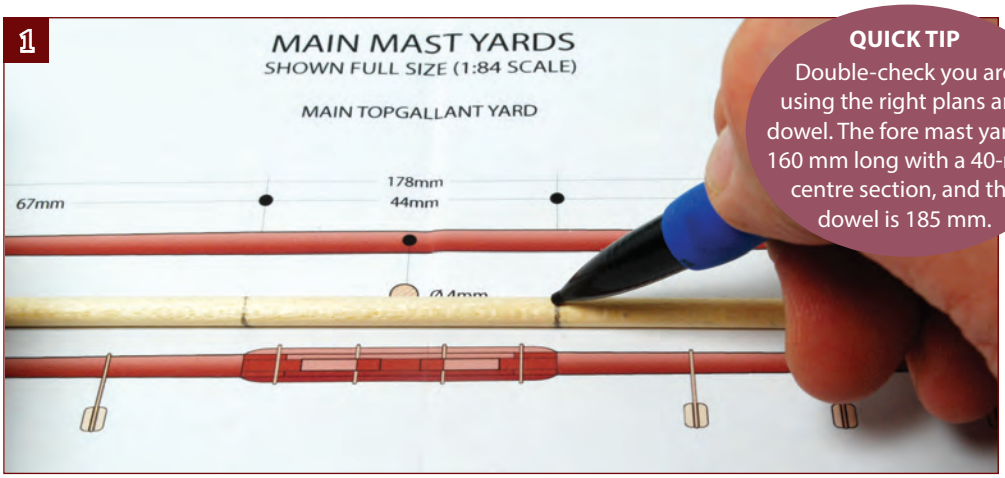
If you assemble the gun at this stage, store it along with its rigging. You will want to have all the parts in order when you fit the guns later in the build.

Where the parts fit

This stage you will construct the topgallant yards for the fore and main masts, so you need the main mast plans provided with Stage 62 and the fore mast plans provided with Stage 67. The parts you will need were provided with Stages 64 and 71. To put together the 12-pounder gun, follow the steps in the Assembly Guide of Stage 18.

Constructing the topgallant yards

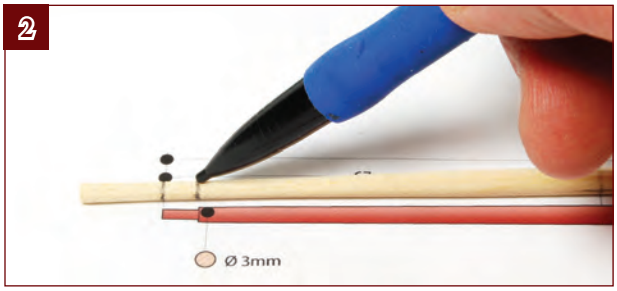
The construction of the main and fore topgallant yards is virtually the same. However, the yards are slightly different sizes, so make sure that you use the correct parts and plan for each yard.



QUICK TIP

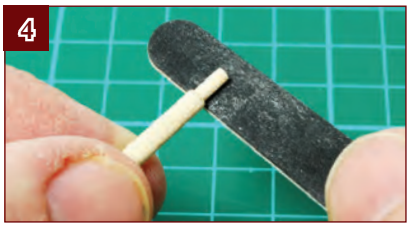
Double-check you are using the right plans and dowel. The fore mast yard is 160 mm long with a 40-mm centre section, and the dowel is 185 mm.

1. Start the construction with the main topgallant yard. Place the 200-mm length of 4-mm dowel that you received with Stage 65 on the main topgallant yard plan, making sure that the excess length overhangs both ends of the yard equally. Mark the 44-mm centre section, then use the centre finder to mark the four corners of a square, and extend lines across the marked area.

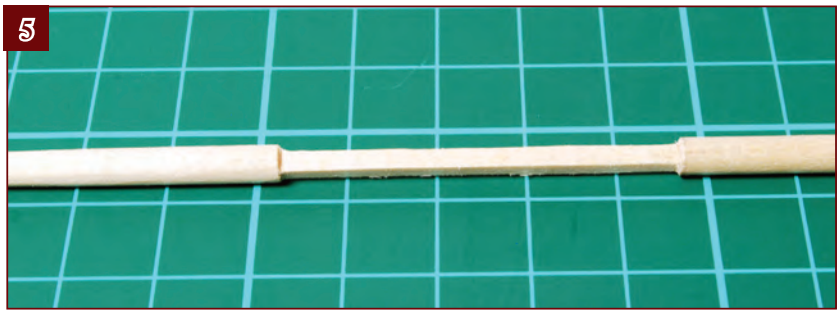


2. Taper both ends of the spar until the diameter at the ends is 3 mm. Mark the short stepped sections at both ends as shown, then **cut the spar to length at the outer marks**.

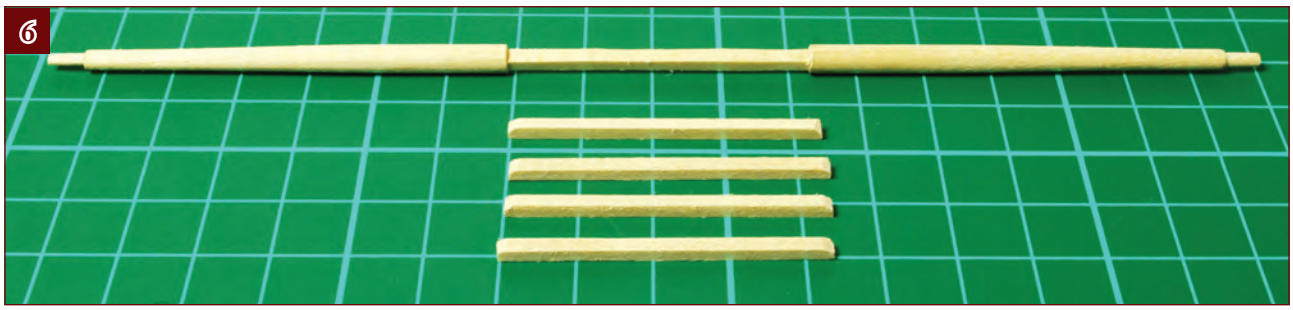
3. Now make a **shallow score** around the circumference of the spar on the inner mark at each end.



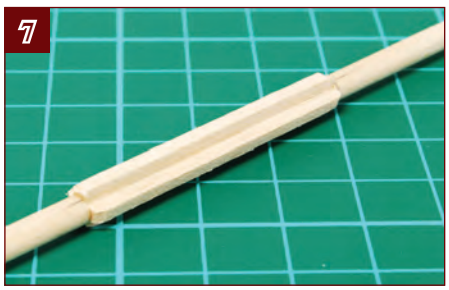
4. Carve away a little of the wood to start the step, then sand it to a smooth round section using an emery board (nail file).



5. Carve the centre area you marked into a square section, measuring 2 mm square.



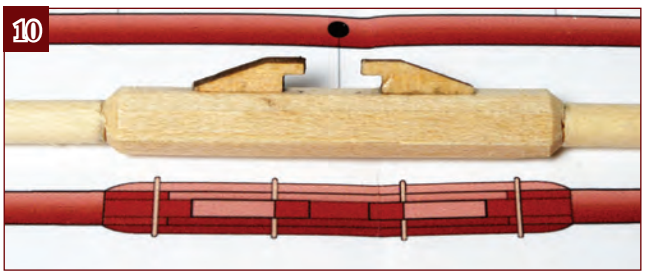
6. Cut four lengths of 2 x 2-mm wood the same length as the centre section, and chamfer the ends as shown.



7. Glue one of these lengths to each side of the square, to form a cross when viewed from one end.

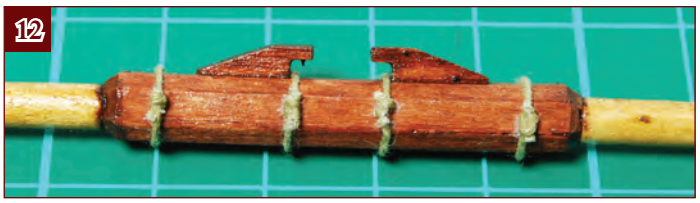
8. When the glue is dry, add another four lengths to the corners to form a square section.

9. Carve and/or sand the corners of the four lengths you just added to form the octagon. You should also chamfer the ends to match the chamfer on the strips fitted in Step 6.

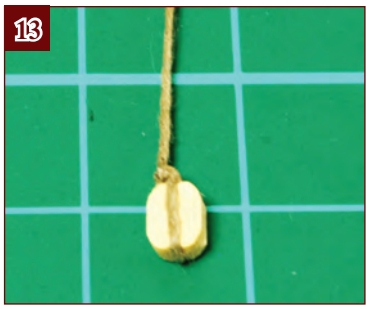


10. Add the two yard slings using the plan to find the correct location. Note that the **slings are only fitted to the main topgallant yard**, not the fore topgallant yard.

11. Stain the spar to match the other yards that you have already constructed, unless you have chosen a painted finish.



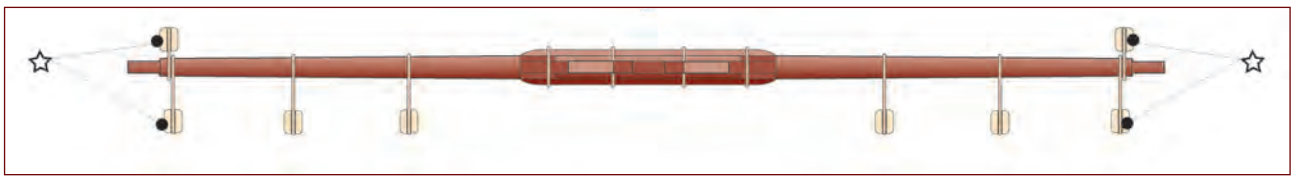
12. Add four rope bands, tying off with reef knots located underneath the spar. You should now paint the spar black if you have chosen a painted finish.

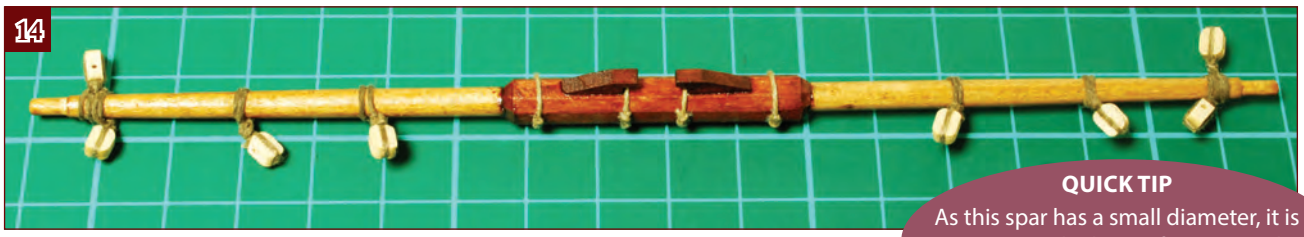


13. Prepare eight 4-mm blocks, leaving tails about 80 mm long.

Painted finish

If you are building the painted version of *Victory*, paint the entire topgallant yard black, including the the yard slings and the rope bands. When the paint is thoroughly dry, you are ready to add the blocks as shown below.





14. Tie the blocks to the yard, using the plan to find the correct positions. As before, you can leave off the unused blocks if you have chosen the bare-spars option.

QUICK TIP
As this spar has a small diameter, it is easier to tie the knots if you wrap the thread around the spar twice.

That completes the main topgallant yard. Repeat the process to construct the fore topgallant yard, using the plans provided with Stage 67, and parts from Stage 71.

Stage 74: The cutaway and channel moulding

The parts supplied in this stage are for finishing the sides of the hull, including side ladders, fenders and entry port canopies.

Wooden strips

6 wooden strips 2 x 2 mm, 300 mm long
2 wooden strips 1.5 x 3 mm, 300 mm long
1 wooden strip 2 x 3 mm, 300 mm long

Fittings

4 entry port canopy supports
2 entry port canopies

Where the parts fit

With most of the heavy work on the hull completed, you can start to add smaller details. These include a top row of moulding on the sides of the hull, decorative canopies over the entry ports, and the fenders originally fitted to protect the ship's side during loading operations. The instructions given here show only one side of the ship, so repeat them on the opposite side, which is a mirror image of the one shown.

The channel moulding, entry port canopy, side ladders and fenders (shown together with the optional cutaway, on the version of the hull prepared for painting).

Opening the cutaway

If you decided to make the optional cutaway, you need to remove the redundant sections of the rib frames before you start adding delicate details to the sides of the hull.

1

QUICK TIP
Place the model on a pillow to steady and protect it while working on the sides.

1. Use a razor saw to cut the ribs as close as possible to the planks above and below the opening. Don't worry if the saw scratches the lower deck, as this surface will be covered later.

2

2. Sand any remnants of the ribs flush with the lower deck and the upper deck supports. Use a small pair of pliers to pull out any pin heads that protrude into the opening.

Adding the channel moulding

A thin moulding runs down each side of the hull above the upper moulding you fitted in Stage 43. To make it, you will need the 1 x 3-mm strips of wood supplied with Stage 72.

1. If you are staining your model, take five of the 1 x 3-mm strips and stain the edges the same colour that you used for the wales. Leave the wood bare if you are painting your model.

QUICK TIP
Use an offcut of 1 x 3-mm wood to help gauge the distance easily.

2. Glue and pin a row of strips 3 mm above the highest wale already fitted. The gap can be reduced to 2 mm if your wales are fitted higher than in the photos below.

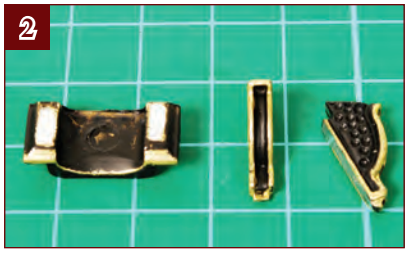
3. The moulding should fall in the middle of the gap between the upper wale and the bulwark cap.

4. Make sure that the strip does not overhang the edge of the second-to-last gun port at the stern – however, it can overlap the last port. You may need to reduce the gap between the channel moulding and the upper strake to achieve this. Either pull out or cut off the pins when the glue is completely dry.

Fitting the entry port canopies

Two sets of three metal castings are supplied with this stage. After gluing them to both sides of the hull, you will need to be careful not to apply pressure to the canopies by laying the model on its side.

1. Hold the cast side supports and roof of the canopy in place to check the fit. You may need to file the tops of the supports to match the angle of the roof.



2. Whether you are making the natural or painted version of the model, paint the parts black and add fine gold lines to represent the decorative trim of the real *Victory*. File the finish off the areas that will be glued together.

3. Attach the supports to the hull planking using superglue. They need to be 12 mm apart, so align the inner edges with the outside of the strips of wood lining the entry ports.

4. Glue the canopy roof on top.

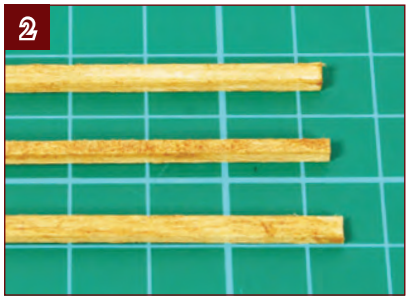
EXPERT TIP
Spray the metal castings with car primer to improve adhesion before painting them black. The real *Victory*'s port canopies are roofed with lead, a detail point that can be added with matt grey paint, or even with small pieces of real lead foil, obtained from hobby shops or salvaged from the caps of some wine bottles.

Fitting the side ladders

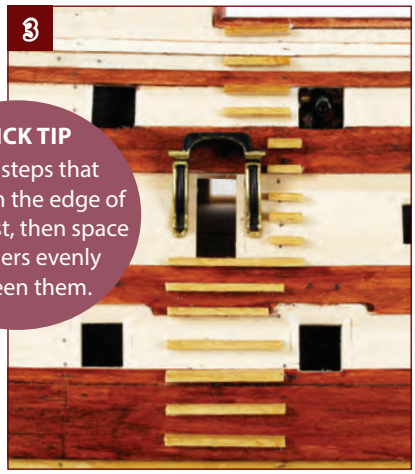
Both sides of the hull are fitted with rows of projecting steps that run from the waterline up to the entry ports, and on up to the quarterdeck.

1. Mark the edges of the steps using masking tape, using the picture and these notes as a guide:
- Align the top left-hand side with the end of the bulwark.
- Align the lower left-hand side with the side of the entry port canopy.
- Put the top right-hand side 1.5 mm in from the edge of the upper gun port.
- Put the lower right-hand side 1.5 mm in from the edge of the lower gun port.
- Put the middle right-hand section 3 mm to the right of the top section.

Take the tape down a short way beyond the lower wale. Repeat as a mirror image on the other side of the hull.



2. Take the two 1.5 x 3-mm strips, four of the 2 x 2-mm strips, and the 2 x 3-mm strip, and stain three of the four sides dark oak. (Omit this step if you are painting your model.)



QUICK TIP
Fit the steps that align with the edge of a wale first, then space the others evenly between them.

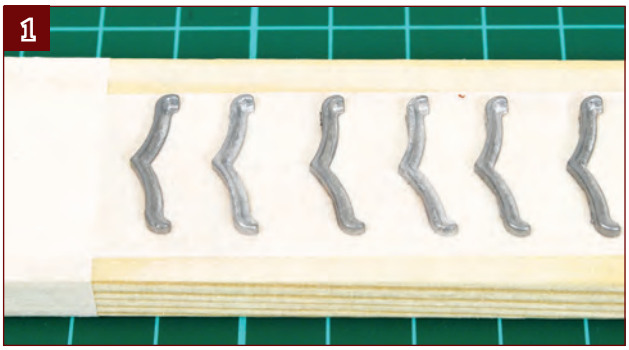
3. Using 1.5 x 3-mm wood, cut and fit steps as shown. Note that the step above the lower gun port is shorter to avoid the cut-out in the wale. Chamfer the edges that touch the hull to keep all the steps level. It is best to use superglue to attach the steps, spacing them approximately 5 mm apart.

4. Cut pieces of 2 x 2-mm wood the same length as the steps already fitted, and angle the ends as shown inset. Glue the strips under the steps, after chamfering the inside edge to match the angle of the hull. Some of the supports will need to be trimmed to fit between the steps and the wales or mouldings.

QUICK TIP
The support for the step below the entry port needs to be thinned to about 1 mm so that it does not protrude past the step.

Fitting the wriggles

Some of the upper two rows of gun ports are fitted with curved metal canopies called wriggles (provided in Stages 64 and 70). The photo on the next page and the guide in Stage 42 show where they go.

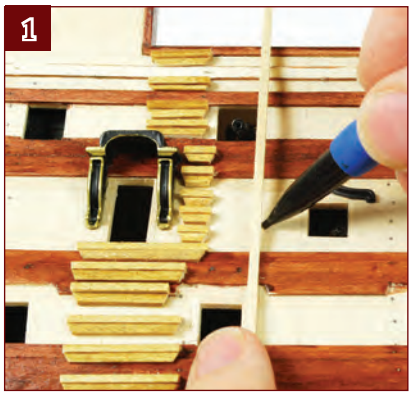


1. Tape a strip of masking tape to a board, sticky side up, as a handy way to hold the wriggles while applying light coats of paint. Prime them with a car primer, then paint them black.

2. Lightly sand the back of the wriggles to help them to stick. Then glue them in place with superglue.

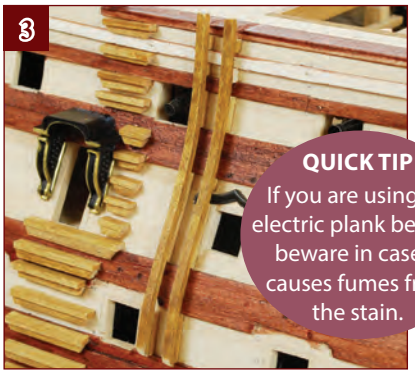
Fitting the fenders

There are two pairs of curved wooden fenders that run up alongside the ladders to protect the planking of the hull, and another single fender, around halfway to the bows.



1. Use a strip of wood to mark two vertical lines for the fenders near the ladders. Put them 9 mm apart, centrally between the top and middle gun ports.

2. Cut 2 x 2-mm strips to fit between the wales and mouldings. Stain the sides (unless you are painting the hull) and glue them inside the lines, making sure that they are straight and in line. Leave a gap for the lower gun port wriggle (supplied later on) by using the wriggle supplied with Stage 42 as a pattern.



QUICK TIP
If you are using an electric plank bender, beware in case it causes fumes from the stain.

3. Bend two more lengths of 2 x 2-mm wood to match the curve of the hull and extend about 2.5 mm above the bulwark. Sand a radius on the bottom ends, then glue these strips in place.

4. Fit two short strips of 2 x 2-mm wood on top of the bulwark, butting up to the strips you just fitted, and sand a radius on the inboard end. When the glue is dry, sand the tops of the vertical strips flush and sand a radius on the end.

5. Check the position of the shorter fender in the picture below. It runs between the upper and middle gun ports, ending halfway down the middle port. Glue pieces of 1 x 3-mm wood between the wales and mouldings.

6. Complete the fender with a strip of 2 x 3-mm wood bent to the curve of the hull. You may need to cut a recess over the wriggle. Stain if required, and sand a radius on both ends.

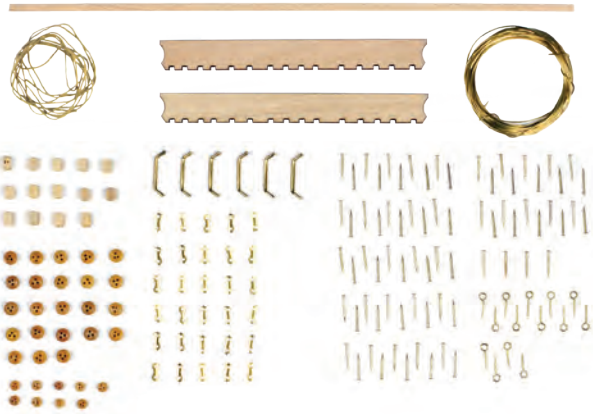
QUICK TIP
Note that this view shows two more wriggles (*) than were on the plans in Stage 42, as the top row of gun ports had not been cut at that stage.

7. Touch in all the cut ends with wood stain, using a fine brush.

QUICK TIP
If you are painting your model, ignore steps that involve staining the wood. Painting the hull is covered in Stage 75.

Stage 75: Painting the hull

This stage includes parts to make the fore chainwales, which you can start to assemble ready for fitting later.



Wooden strips

1 wooden strip 1 x 3 mm, 220 mm long

Shaped wooden parts

14 double blocks 5 mm
23 deadeyes 5 mm
9 deadeyes 4 mm
2 fore chainwales, 104 mm long

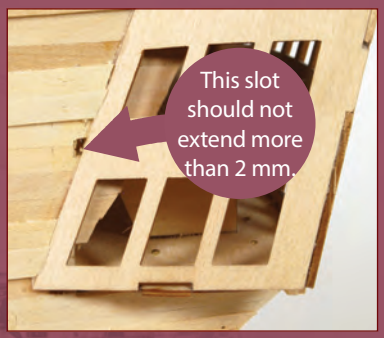
Fittings

14 eyebolts
6 fore chainwale supports
74 pins
30 chain links
cream thread, 1 m long
0.5-mm brass wire, 3.5 m

Where the parts fit

The chainwales ("channels") supplied for this stage carry the shrouds that support the fore mast. The main mast chainwales were supplied with Stage 72, and the mizzen mast chainwales will be supplied with a future stage. The chainwales need to be shaped to fit the curvature of the hull and they can also be rigged in advance, although they are not fitted to the hull until later.

If you are painting your model, you need to finish off the lower part of the hull before you attach the chainwales, so now is a good time to do it. (The very top of the hull is not painted yet, as you will need to glue the chainwales to it.) Prepare the planking by checking to make sure that there are no blemishes, defects or scratches. Any that you do find can be filled and sanded smooth as necessary. Make sure the model is clean and dust-free before starting to paint. You can use a broad brush for the large areas, but you will need a fine brush to paint around the ports and mouldings, as well as to touch up any accidental over-painting.



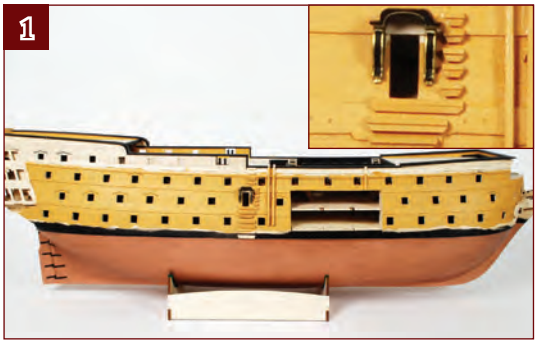
For both natural and painted models, check that the slot cut for the false deck of the gallery does not extend by more than 2 mm. If it does, fill and sand it smooth. A small gap will be covered by gallery panelling later on.

Painting the hull

If you have chosen the optional painted finish, it's time to paint the side of the hull up to the level where the chainwales will be attached, as this area will soon become inaccessible.

VICTORY'S COLOUR SCHEME

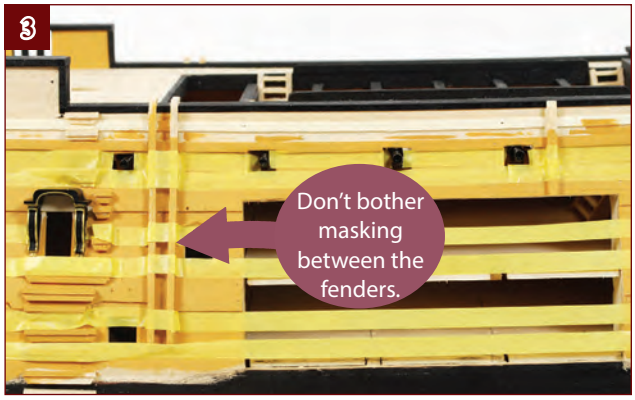
Use this guide (continued on next page) to position the black bands. Note they are not exactly parallel and do not follow the lines of either the gun ports or wales (although they do follow the wales in places).



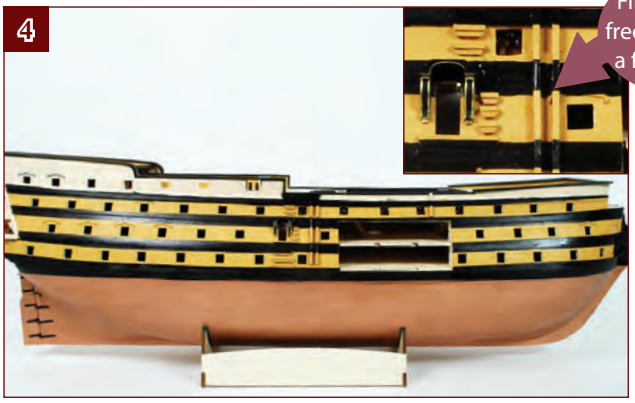
1. Paint the whole side of the hull yellow ochre, starting just above the black strip you painted, up to the lower of the two mouldings below the bulwarks. Use a fine brush to paint the steps by the entry port.

QUICK TIP
Use cut-off drinking straws to protect the gun barrels from paint.

2. Continue the yellow paint up to the edge of the bow reinforcements.



3. Following the diagram below, use masking tape to outline the top and bottom edges of the yellow bands. You will need to use narrow tape, ideally the 6-mm or 10-mm type available from modelling suppliers. However, you can cut down regular masking tape if preferred.

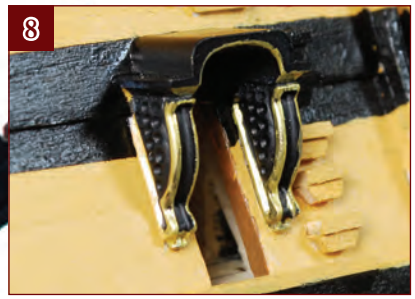


4. When you are satisfied with the position of the masking tape, rub the edges down firmly, then paint the black bands. Use a small brush to paint the side ladders up to the quarter deck and the fenders at the same time. Peel the tape off carefully when the paint is dry.

5. Paint the whole bow and the beakhead black.

6. If any black paint has bled under the masking tape, use a fine brush to touch over it with yellow ochre paint.

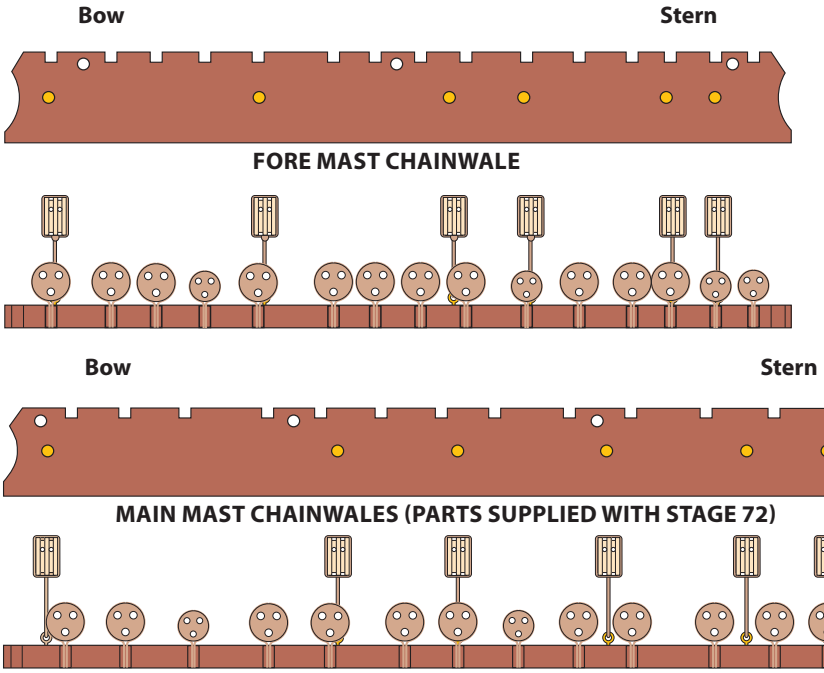
7. Paint the inside edges of the gun ports using red ochre paint. You can also paint the inside edges of the cut-away with red ochre.



8. Paint the inside edges of the entry ports brown to represent the dark wood lining these areas.

Preparing the chainwales

Prepare the chainwales now, although they are not fitted until later. The steps shown are based on the first of the fore mast chainwales, but the technique is identical for all the chainwales in the plans below.



EXPERT TIP

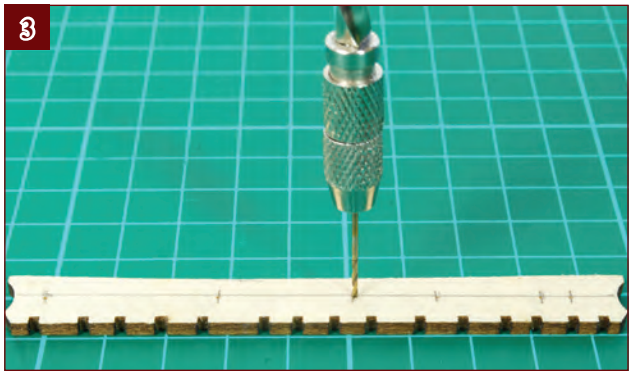
Use these plans to position blocks and deadeyes on the chainwales. The **pattern of notches is not symmetrical**, so check which end is which, and don't mix up the two sides. The plans show the **starboard chainwales**. Mark up the port side as a mirror image, after placing the parts back-to-back as shown.

QUICK TIP

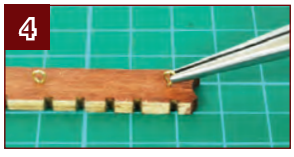
For clarity, the steps are shown on the natural wood model, but the painted version is identical.

1. Mark the position of the chainwales on the moulding strip.
- The fore mast chainwale starts 55 mm aft of the bulkhead.
- The main mast chainwale is fitted 5 mm back from the front edge of the bulwark closest to the main mast.
- The small chainwale is fitted 135 mm back from the front edge of the bulwark.

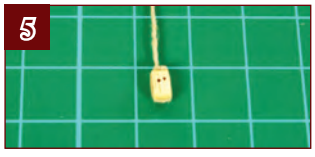
2. Sand the long, flat edges of the chainwales to a shallow curve that will match the shape of the hull at these points. Pair up the chainwales and ensure that you place them on the correct sides of the hull, facing in the correct direction. Pay particular attention to the main mast chainwales, as they are almost, but not quite, symmetrical.



3. Mark the positions of the holes using the plans. Yellow circles indicate holes for the eyes, and white circles indicate the holes for the supports. Drill them using a 0.7-mm drill, then stain to match the wales on the hull or paint them black.



4. Cut the shanks of the eyebolts down to 2.5 mm long and glue them in place with superglue.

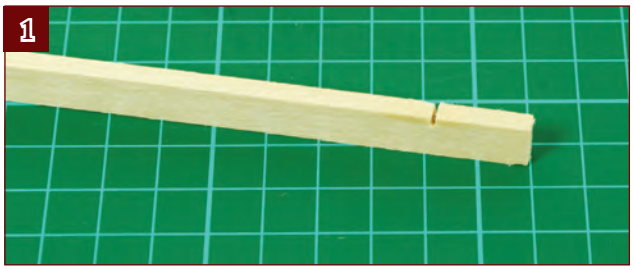


5. Prepare 12 double blocks for the foremast, and 14 for the main mast, leaving tails of about 50 mm.

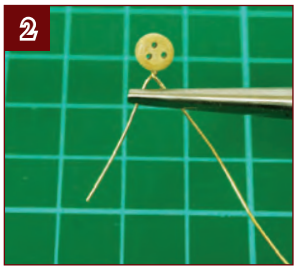
6. Tie six double blocks to the eyes on each chainwale.

Fitting the deadeyes

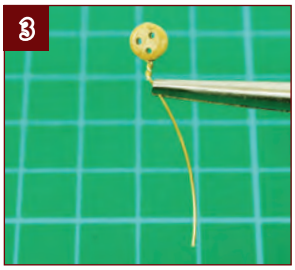
Each pair of chainwales is rigged with 8 small and 22 large deadeyes (blocks used to tension the shrouds). The deadeyes are attached using short pieces of wire.



1. Make a simple jig to help you to rig the deadeyes consistently (the method is exactly the same for both sizes). Take a left-over strip of 5-mm-thick wood and cut a slot in it. The slot needs to be about 1 mm wide and 3 mm deep.

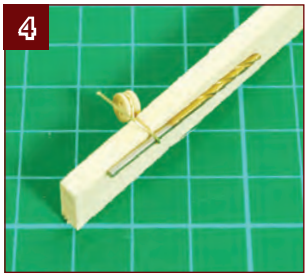


2. Take the brass wire and wrap it around a deadeye, leaving a tail of about 30 mm. Make one twist to secure it.

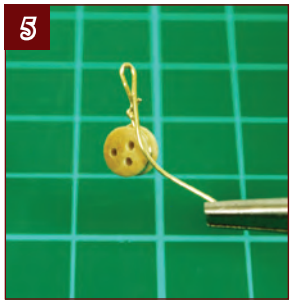


3. Cut the wire close to the twist.

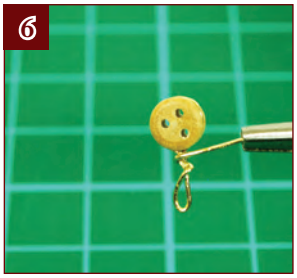
QUICK TIP
Rotate all the deadeyes so there are two holes at the top and one at the bottom.



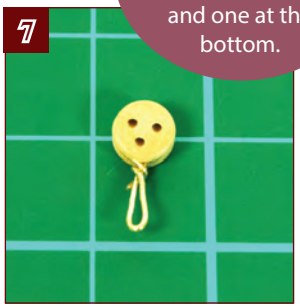
4. Place the wire in the slot. Fit a 1-mm drill against the wire, and fold the wire over the drill.



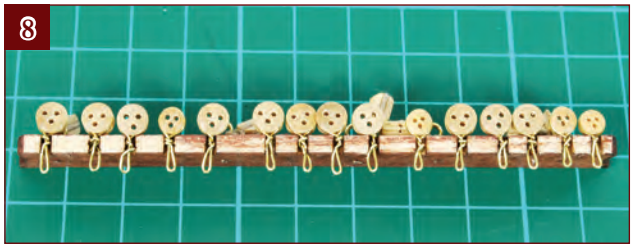
5. Squash the loop with a pair of pliers.



6. Hold the loop in the pliers and wrap the tail round to secure it.



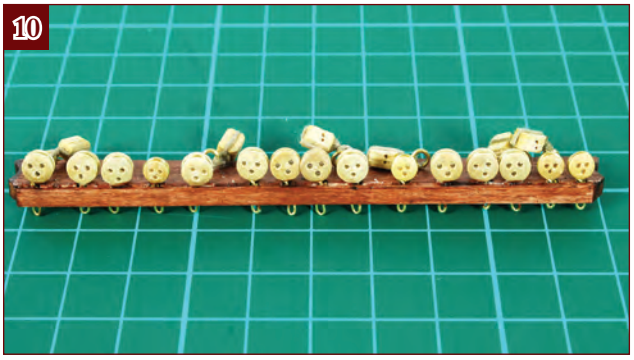
7. Finally cut the tail off and straighten up the loop.



8. Place the deadeyes in the slots of the chainwales and fix them in place with superglue. You may need to enlarge some slots to accept the brass wire. Take care to fit smaller blocks in the positions shown on the plans.

EXPERT TIP
Cut this over-length and sand the ends flush after the glue has dried.

9. Glue a strip of 1 x 3-mm wood over the front of the chainwale so that it covers all the slots.

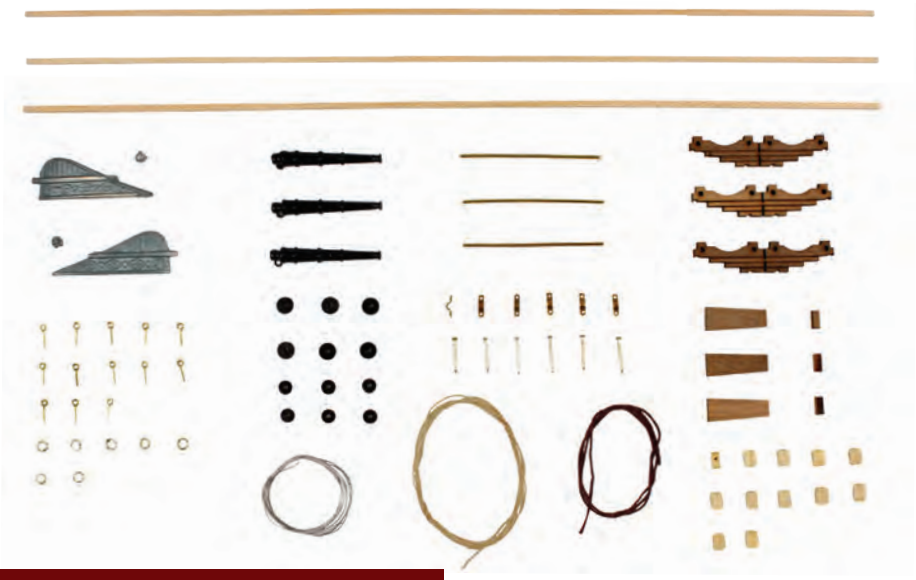


10. Use a fine brush to stain the front of the chainwale or paint it black, depending on your choice of finish.

Repeat the whole process to make the main mast chainwales, and all the port chainwales. This is a painted set of the chainwales.

Stage 76: Finishing the gallery support

This stage includes materials to finish the gallery supports and bulwark moulding, plus three more 12-pounder guns.



Wooden strips

3 wooden strips 1.5 x 1.5 mm, 250 mm long

Fittings

2 x die-cast gallery support trims
2 x die-cast decorative finials
3 x 12-pounder guns and rigging kits

Where the parts fit

In this stage you will finish off the gallery supports and bulwarks. In addition to the parts provided, you need the shaped wooden parts that came with Stage 41. If you want to put together the 12-pounder guns at this stage, follow the steps of Stage 18, then store the guns along with the rigging. You will need these parts when you fit the guns later in the build.

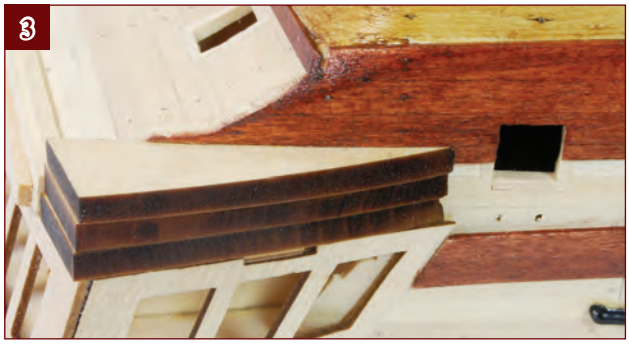
Completing the gallery support

You will need the six laser-cut wooden parts numbered 70 that were supplied with Stage 41, as well as the metal castings and 1.5-mm-square wooden strips supplied in this stage.

1. Make sure the ends of the gallery support filler strips are flush with the side planking. Trim or sand them if necessary.

QUICK TIP
Make sure the parts sit flat under the gallery's lower false deck. Sand the false deck smooth if necessary.

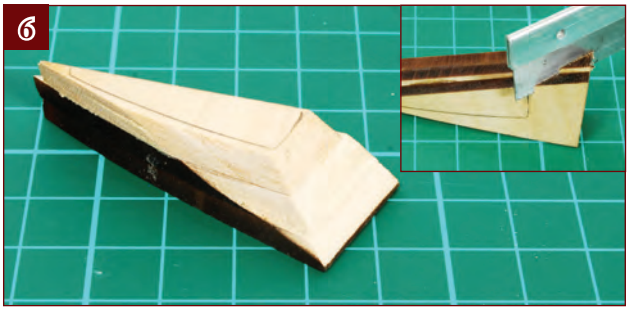
2. Place two of the parts 70 in position and make sure that they slip under the wale as they sit against the hull. If necessary, you can trim away the top of the wale. When you are satisfied with the fit, glue the two parts 70 together, but **do not glue them to the model, as you need to remove them later**.



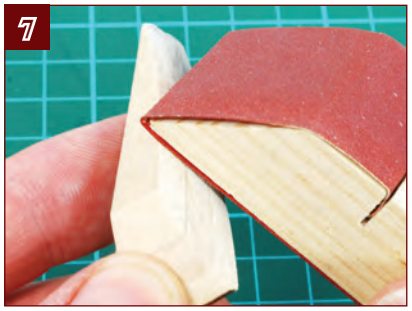
3. Take the third part 70 and make sure this also slips underneath the thicker wale. Glue this part to the other two.

4. Take the metal casting, and try in it place. The rear end should follow the line of the gallery support, while the front should stop short of the third part 70.

5. When you are satisfied with the fit of the casting, mark around it with a pencil.



6. Remove the stack of part 70s from the model and allow the glue to dry thoroughly, preferably overnight. Then remove the bulk of the excess wood with a razor saw. Make sure you stay well outside the pencil lines drawn in Step 5.



7. Using coarse sandpaper, sand the part until it is just oversized, trying it in position frequently to check the fit. Finish off with fine sandpaper.

8. You may find that there is a step between the gallery support and the block you have just sanded. Adjust the position of the block and/or casting so that the step is less than 1 mm.

9. Now glue the block in place (but do not glue the metal casting yet). Repeat Steps 1-8 on the other side of the model and let the glue dry overnight. Sand the back and both sides of the gallery support flush with the gallery walls.

QUICK TIP
Fill any gaps with wood filler.

10. Sand the rear of the gallery support to form a smooth curve that blends the rear gallery wall up to the point where the gallery support changes angle.

11. Glue the metal castings in place temporarily. It will form only a weak bond so the casting can easily be removed again.

QUICK TIP
Use regular glue for this. Superglue is likely to glue the casting in place.

12. Glue a strip of 1.5 x 1.5-mm wood under the gallery support extending across the ends of the castings.

13. Add another strip along the edge of the casting. You will need to bend the wood with a plank bender before fitting it. Repeat this both sides.

14. Add final strips along the inner edges of the castings. Again, they will need bending with a plank bender to fit the curve of the gallery support.

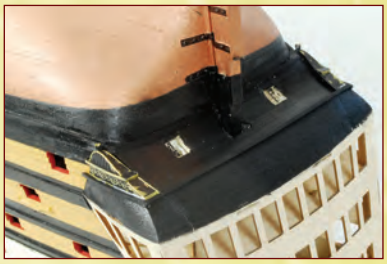
15. Insert a knife blade and gently twist it to remove the castings. (Protect your eyes against the unlikely event of the knife blade snapping.)

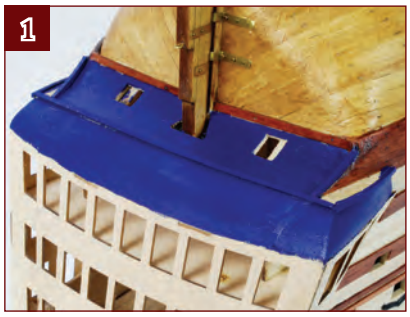
Finishing the gallery support

Complete the gallery support by painting it according to your choice of finish. Do not worry about the walls of the gallery at this stage, as they will be completed with glazing and panel mouldings.

Finishing options

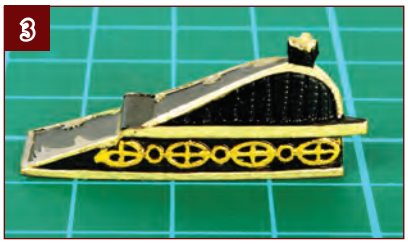
For the "Trafalgar finish" painted model, paint the gallery support black (right). There are several options for the natural wood model. You can stain it to match the hull, but painting may give a better finish if you have used filler in any gaps. You can choose to paint it black, but this may look a little harsh. In the main steps, it is painted French blue.





1. Paint the gallery support with your choice of finish.

2. Glue the small decorative finials to the main castings using superglue.

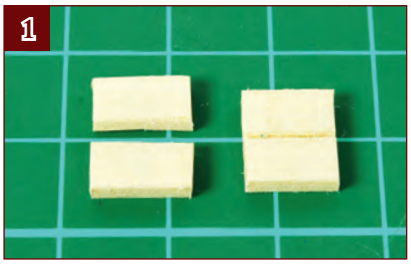


3. Prime the castings with automotive primer, then paint them black. Add the gold details using a fine brush.

4. Roughen the contact faces of the castings with sandpaper and glue them in place with superglue or epoxy resin.

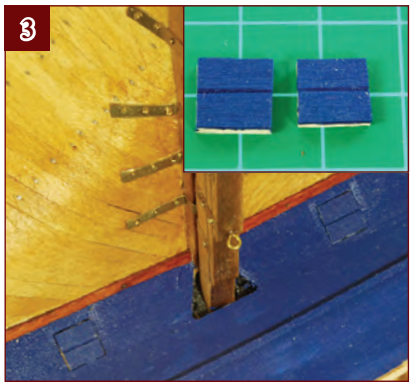
Fitting the stern gun port covers

Fit the covers to the two gun ports under the gallery while you can still turn the model upside down. The hinges are supplied with a later stage and will be easy to add at the time.



1. Cut four 10-mm lengths from some left-over 2 x 5-mm wood. After lightly chamfering the two meeting edges to emphasise the join line, glue the pieces together in pairs to form two complete gun port covers.

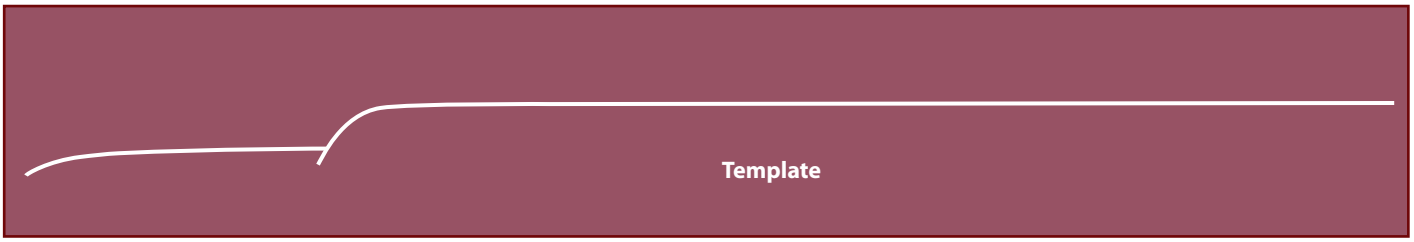
2. Test-fit and trim the port covers to fit the stern gun ports.

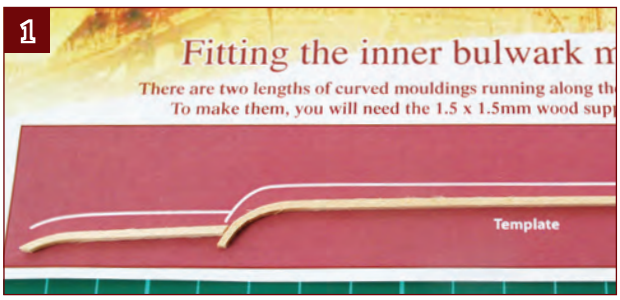


3. Paint the covers to match the gallery support, then glue them in place.

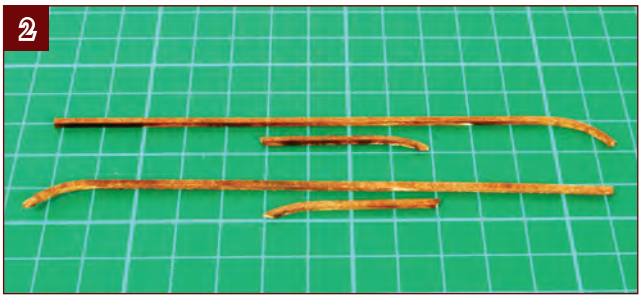
Fitting the inner bulwark mouldings

There are two lengths of curved mouldings running along the inside of the bulwarks. To make them, you will need the 1.5 x 1.5-mm wood supplied with this stage.





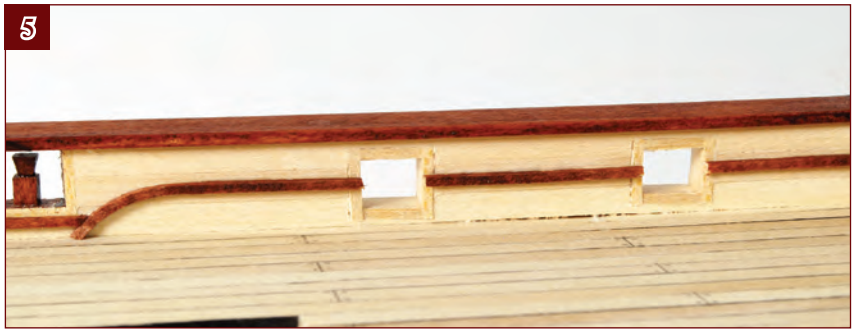
1. Using the template as a guide, bend strips of 1.5 x 1.5-mm wood. Leave them slightly over-length so you can cut to fit.



2. Stain the mouldings walnut for the natural wood model, or paint them black for the painted version.

3. Glue the longer piece in position as shown, trimming the ends to fit neatly. Hold the strip in place with modelling clamps or large clothes pegs. Place a piece of scrap wood between the moulding and the clamp to prevent damage.

4. Add the shorter moulding, trimming its ends carefully so they match the angles of the deck and the first piece of moulding. Then repeat Steps 3 and 4 on the other bulwark.



5. Use a sharp knife to cut out the short sections of moulding that run across the gun ports.

EXPERT TIP

Use the knife as shown in the photo, taking several light cuts and pressing toward the bulwark to reduce the chance of the moulding becoming detached.

Stage 77: The mizzen top

The parts are for the third fighting top, fitted to the mizzen mast – for which a set of plans is included – and for a boom, which will be assembled later.

Wooden strips

4 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
1 wooden dowel 5 mm, 285 mm long

Shaped wooden parts

1 base of mizzen top
1 edge of mizzen top
1 upper front edge of mizzen top
2 cross trees of mizzen top
2 trestle trees of mizzen top
2 interior parts of mizzen top
1 side guide
2 boom jaws
double block 5 mm x 2
single block 4 mm x 2

Fittings

natural thread 20 cm
brown thread 50 cm
brown thread 4 m
brass wire 10 cm
9 eyebolts

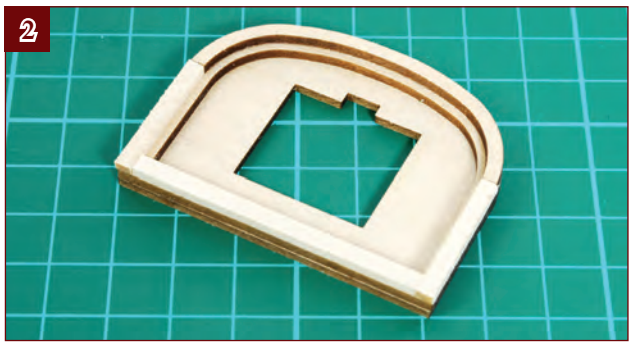
Where the parts fit

This stage, start by assembling the mizzen top using the parts supplied. Then, start adding the deck fittings that need to be finished off before installing the masts. You will begin with the skylight and the first of the wooden knees fitted to the poop deck at the stern of HMS *Victory*. To make the skylight, you need the metal frames supplied with Stage 58, and the acetate glazing that came with Stage 60. To assemble the knees, you will need the shaped wooden parts and wire that came with Stage 58.

Assembling the mizzen top

This is very similar to the assembly of the main top, which was covered in Stage 61. You may find it helpful to look at the instructions in that stage, which go into the job in slightly more detail.

1. Take the three main parts of the top and assemble them.

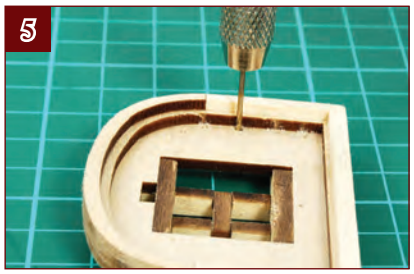


2. Complete the top border using 2 x 3-mm strip. Make sure the inside edge of the strip lines up with the inside edge of the curved, laser-cut border. It does not matter if the outside edge overhangs slightly.

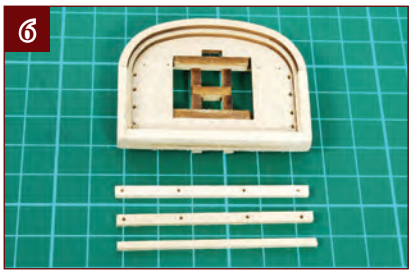
3. Turn the top over and add the two transverse cross trees.

QUICK TIP
You may need to file out the slots in the trestle trees to get the parts to fit leaving the correct gap.

4. Add the two longitudinal trestle trees, making sure you have a gap of about 6.5 mm between them. When the glue is dry, turn the top back over and add the central spacer.



5. Use the plan provided as a guide to mark the position of the holes. Drill the eight holes for the shrouds with a 1.5-mm drill. Drill the five holes for the eyebolts with a 0.7-mm drill.



6. Cut two lengths of 2 x 3-mm wood, and one length of 2 x 2-mm wood to match the width of the top. Drill four 1.5-mm holes for the handrail stanchions in each of the 2 x 3-mm strips.

7. Glue one 2 x 3-mm strip to the rear of the top, and glue the other to the 2 x 2-mm strip to form the handrail. If you are staining the model, stain the assembly to match the other tops.

8. Add the 21 ribs, making sure you do not cover any of the holes for the shrouds. It does not matter if you cover the holes for the eyes.

9. Turn the top over and glue five brass eyebolts as shown, after shortening their shanks to 3-4 mm.

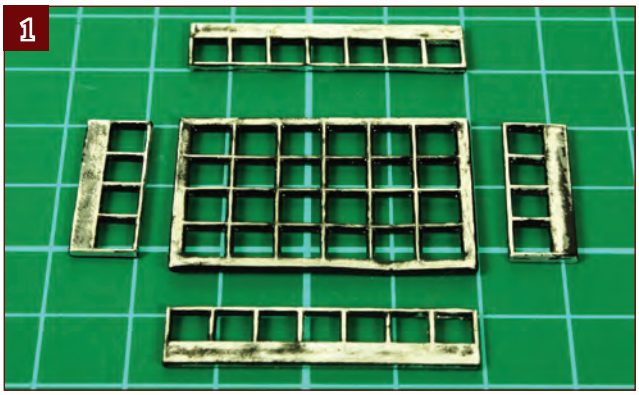
10. Use a short length of thread to add a 5-mm double block to the rear eye.

11. Cut four lengths of brass wire, about 12 mm long, to fix the handrail.

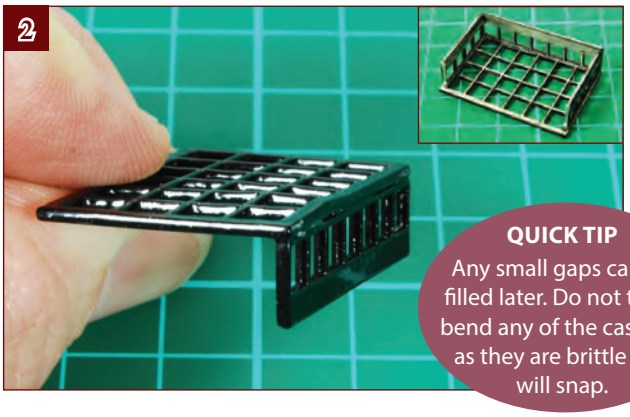
If you're painting your model, paint all the wooden parts black after finishing Step 8.

Assembling the skylight

To put together the skylight mounted on the poop deck, you will need the die-cast metal parts supplied with Stage 58 and the yellow acetate film that came with Stage 60.



1. Take the five metal castings and sand the inside to remove the paint. You also need to remove the paint from the tops and bottoms of the longer sides. The shorter sides need the paint removing from the tops, bottoms and ends.



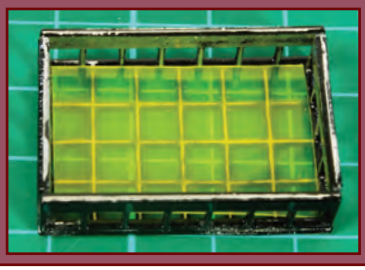
QUICK TIP
Any small gaps can be filled later. Do not try to bend any of the castings as they are brittle and will snap.

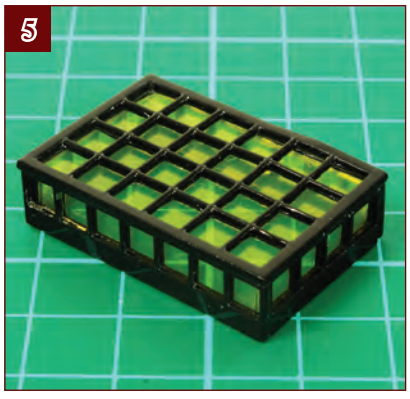
2. Take one long side and glue it to the roof using superglue. Make sure you get the two parts at right angles with the ends lining up. Then add the sides, again making sure everything is square.

3. Add the remaining long side. Fill any gaps with superglue, then touch up with black paint to cover any scratches.

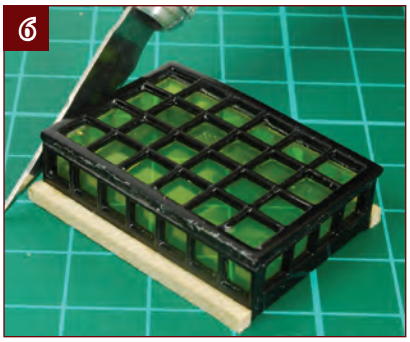
4. Allow the parts to dry thoroughly before continuing. Then cut a rectangle of acetate to fit inside the skylight.

EXPERT TIP
The best way to fix the acetate is with the special clear glue sold by model suppliers for fixing the aircraft canopies of plastic model kits. Failing that, use a regular glue. Do not use superglue as it is likely to cause cloudy marks.



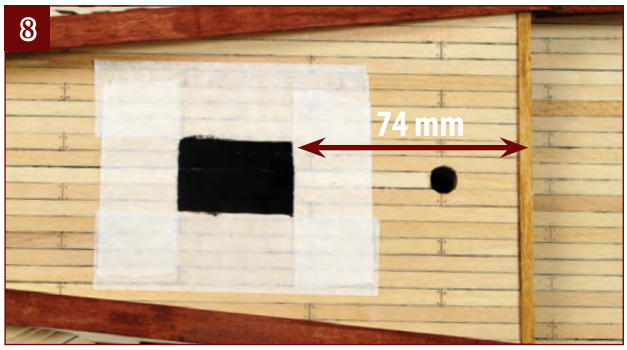


5. Cut four smaller pieces of film to glaze the sides of the skylight, and glue them in place.



6. Cut a length of 2 x 2-mm wood slightly longer than the skylight and glue it in position with superglue. When the glue is dry, trim the ends to length. Repeat on the other side.

7. Repeat the process to complete the frame. Stain it dark oak, or paint it black, depending on your choice of finish.



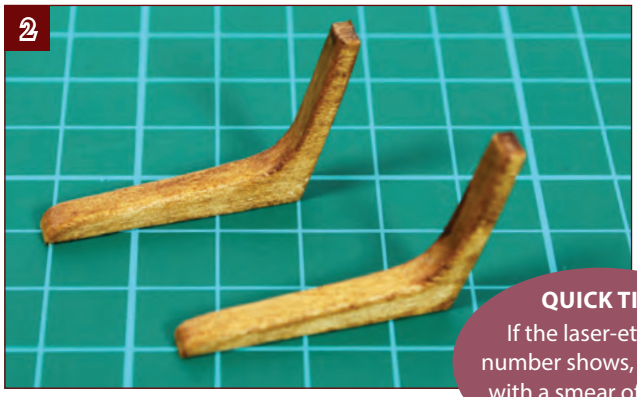
8. Mask a rectangle 25 x 36 mm, located on the centre line, 74 mm back from the front of the poop deck. Paint this area black to hide the planking under the skylight.

9. Remove the masking tape and then glue the skylight in place over the black rectangle, so that it starts 72 mm from the front of the poop deck.

Fitting the first knees

Trim all four of the knees to fit the poop deck, but only fit the centre pair; the outer two are not fitted until later, when you complete the flag lockers. You will need parts that were supplied with Stage 58.

1. Take the four L-shaped knees and check that the angle matches the angle of the stern bulwark, sanding if necessary. Place the inner knees on either side of the centre plank, 5 mm apart. The outer knees fit centrally in the remaining gaps.

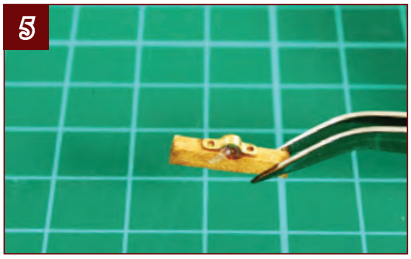


2. Take the inner two knees and sand a radius on the inner edges, except for the top face where you will fit a cross bar (see Steps 4-6). Then stain the knees dark oak or paint them black.

QUICK TIP
If the laser-etched number shows, cover it with a smear of cream wood filler.

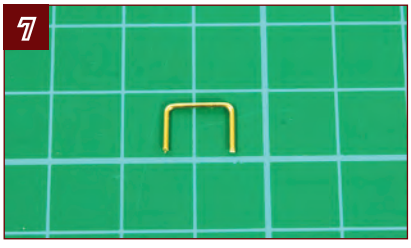
3. Glue them in position, making sure they are straight and upright.

4. Cut a strip of 2 x 3-mm wood to span the tops of the two knees. File a groove about 1.5 mm deep in the centre.



5. Glue the brass fitting over the groove, then stain or paint this piece to match the knees.

6. Glue this piece in place.



7. Bend the 0.8-mm brass wire to a square U shape 9-10 mm across.

8. Drill two 1-mm holes in the knees and glue the brass wire in position.

Stage 78: The mizzen mast and flag lockers

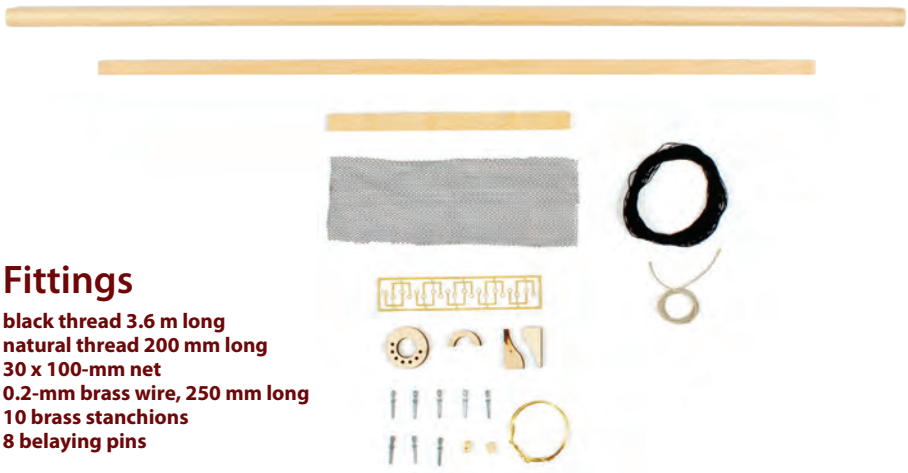
This stage includes parts for the mizzen lower mast, and more hammock nets to fit around the bulwarks at a later stage.

Wooden strips

1 wooden strip 2 x 6 mm, 300 mm long
1 wooden strip 3 x 7 mm, 100 mm long
1 wooden dowel 8 mm, 375 mm long

Shaped wooden parts

2 mizzen bibbs
1 pinrail
1 driver boom saddle
2 single blocks 4 mm



Fittings

black thread 3.6 m long
natural thread 200 mm long
30 x 100-mm net
0.2-mm brass wire, 250 mm long
10 brass stanchions
8 belaying pins

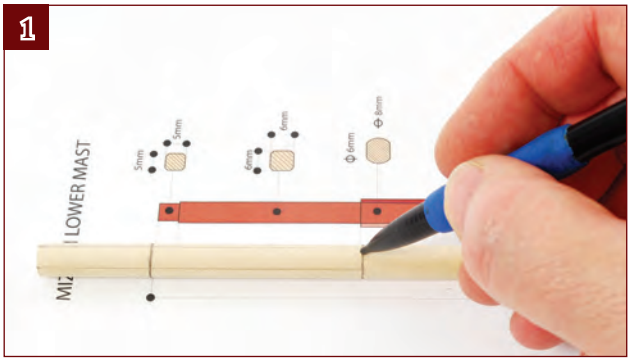
Where the parts fit

The wooden dowel, wooden strips, bibbs and black thread supplied with this stage are used to make the mizzen lower mast, which is assembled in a similar way to the main and fore lower masts. This time, you have two extra fittings – a circular pinrail (with a set of belaying pins) and a C-shaped saddle that supports the driver boom, which projects at the stern to carry the driver sail. The other fittings supplied are used to make more hammock nets, which are fitted around the tops of the bulwarks at a later stage in the assembly – so keep the unused parts for future use. This stage, you also complete the assembly of the flag lockers and knees at the rear of the poop deck, which you started in Stage 77. Once again, you will need the parts supplied with Stage 58.

Assembling the mizzen lower mast

This is similar to the previous masts, so you may refer back to earlier stages for more detail on the construction techniques.

1

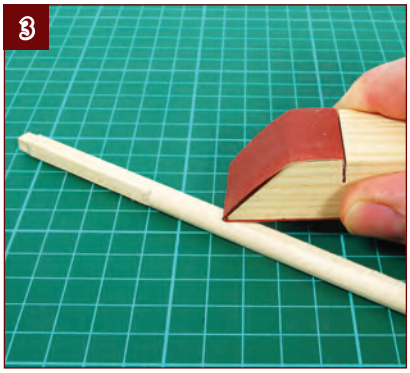


1. Use the plan supplied to mark the key locations on the mast – the poop deck level, the bottom of the cheeks, the bottom of the 6-mm-square section and the top of the mast.

2

2. Cut the mast to length, then carve the 6-mm-square section. Finally, carve a 5-mm-square section at the top.

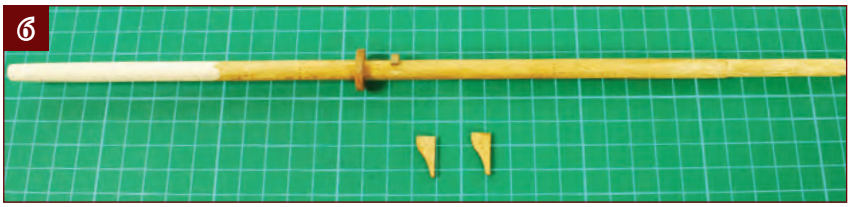
QUICK TIP
Leave the 5-mm-square section oversized, and make final adjustments after you have the mast cap, supplied in the next stage.



3. Sand flats on either side of the mast to accept the cheeks and hounds.

4. Sand a chamfer on the bottom of the mast to make it easier to insert. Taper it slightly until it slides easily all the way to the bottom of the mast socket. Make sure that the deck level mark is close to the poop deck planking.

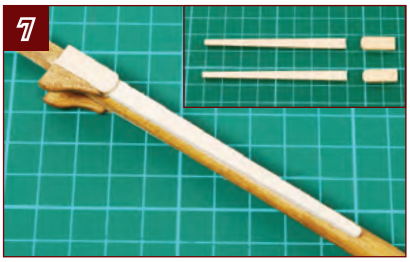
5. Add the pinrail and the driver boom saddle to the mast, using the plan to gauge the correct positions. Note that the driver boom saddle faces **aft**, as the boom will rest on this, while the holes in the pinrail face **forward**.



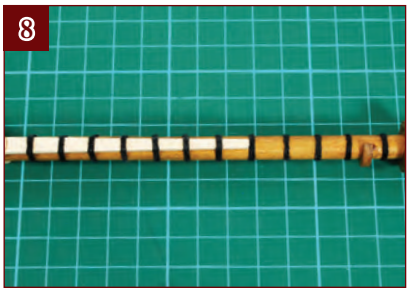
6. Stain or paint the mast and the bibbs to match the other masts. Note that you should stain at least 30 mm below the poop deck level, as that section of mast is visible behind the ship's wheel.

Painted finish

If you are painting your model, finish the mast with yellow ochre paint up to the mizzen top, going right over the hounds, cheeks, bibbs and mast bands. Paint the bottom section, below the poop deck level mark, black for at least 30 mm as this will be visible in the space behind the ship's wheel.



7. Carve the hounds and cheeks using the plan as a guide. The cheeks should taper down from 5.5 mm at the top to 3 mm at the bottom. Glue the cheeks, hounds and bibbs in place.

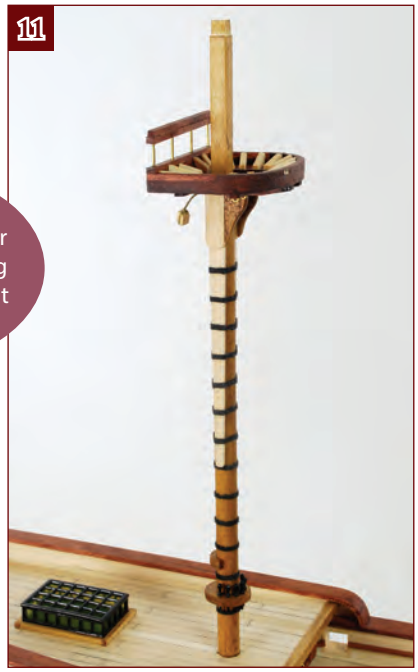


8. Use the black thread to make the mast bands. Use the same binding technique as before, taking four turns of thread to make each band.

9. Glue the mizzen top to the mast. Make sure the top is square and straight while the glue dries.

QUICK TIP
Spray the pins with car primer before painting them, to help the paint adhere better.

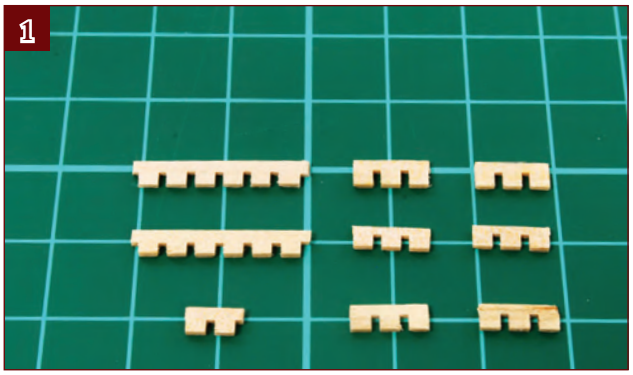
10. Paint the belaying pins black and insert them in the holes in the pinrail.



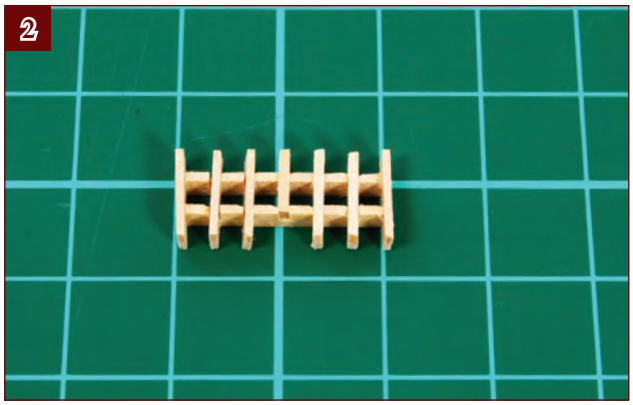
11. You can test-fit the completed mizzen lower mast in place, but do not glue it at this stage.

Completing the flag lockers

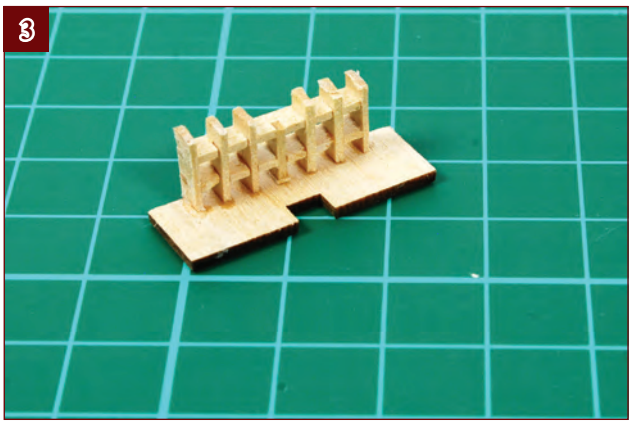
The parts for the flag lockers were supplied in Stage 58. They are assembled so that they fit around the knees on the poop deck, which you started installing previously.



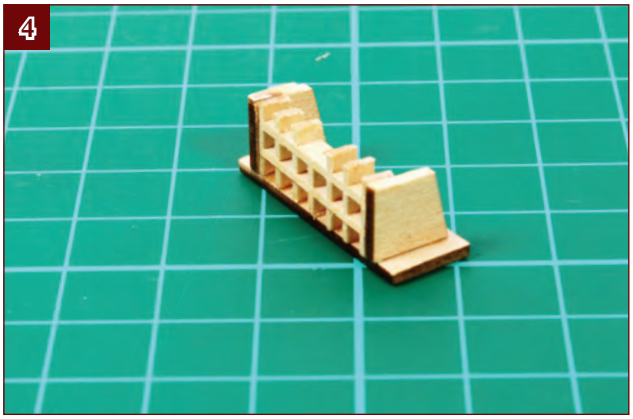
1. Cut nine sections of grating strip to the lengths shown, noting that the three on the left have the ends of the notches projecting, while the six on the right are trimmed flush.



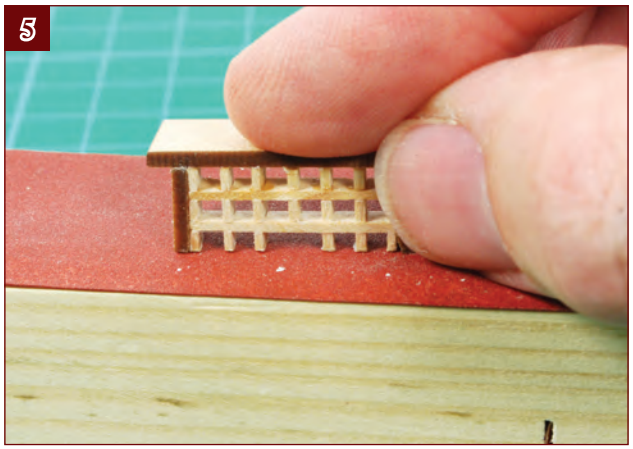
2. Glue the strips together to form a grid. Note that the shorter piece goes in the centre, leaving a gap.



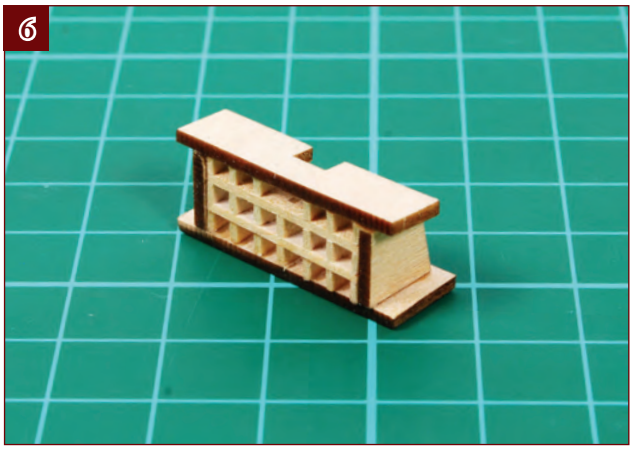
3. Glue the grid to the top of the flag locker, which is the wider of the two strips with a large slot in the middle. Align the grid flush against the face without the slot. Make sure the gap in the grid is on top and that it lines up with the slot.



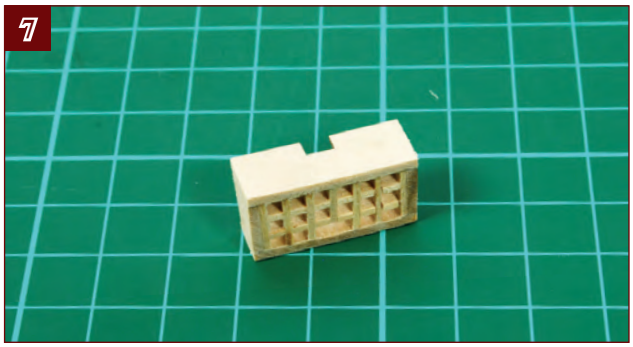
4. Glue the two sides of the flag locker against the ends of the grid, ensuring that the straight edge aligns with the face of the grid and that the angled edge slopes in the direction shown.



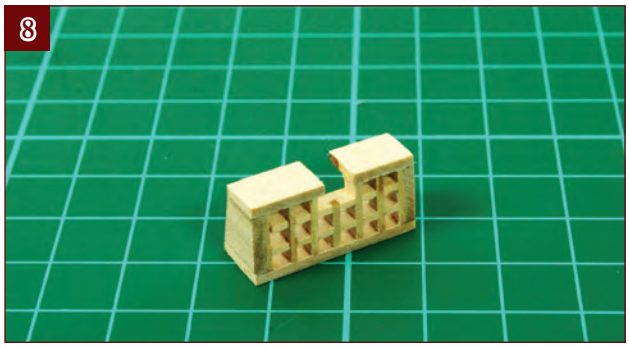
5. Carefully sand the grid flush with the sides. Be careful to keep the face straight.



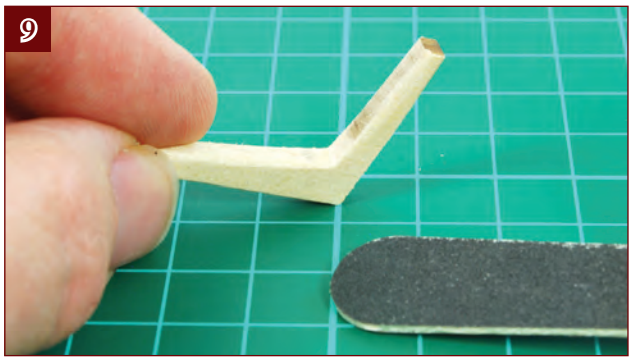
6. Glue the bottom to the flag locker, making sure that its slot lines up with the slot in the top of the locker.



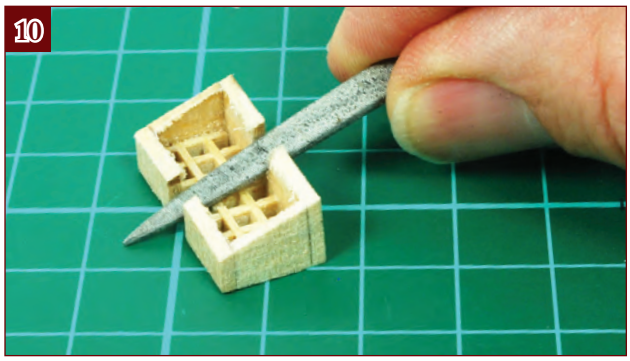
7. Remove the overhanging ends from the top and bottom of the locker. Sand the front, top, bottom and sides smooth with fine sandpaper.



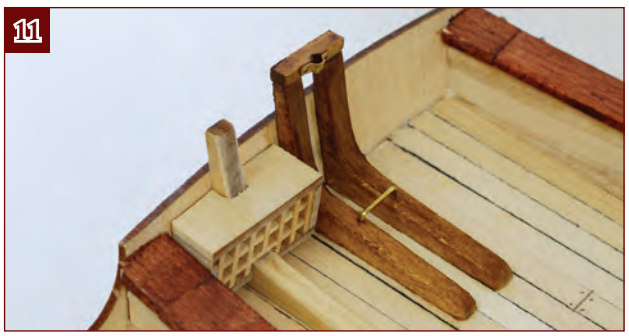
8. Extend the slot in the bottom (narrower face) of the flag locker right across to open up the gap in the grid.



9. Take one of the knees and sand the inside curve to form a sharp corner. An emery board (nail file) is ideal for this. Round the edges at the same time (see Stage 77).



10. File the inside edge of the slot to match the slope of the knee. Keep testing the knee and locker in place as shown in the next step, being careful not to sand off too much.

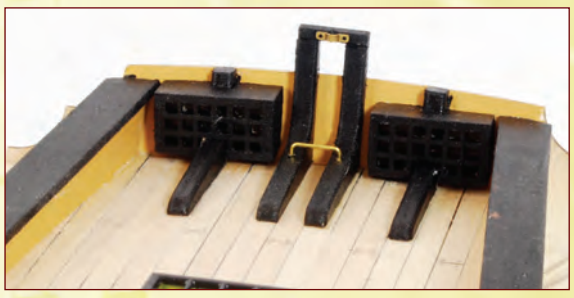


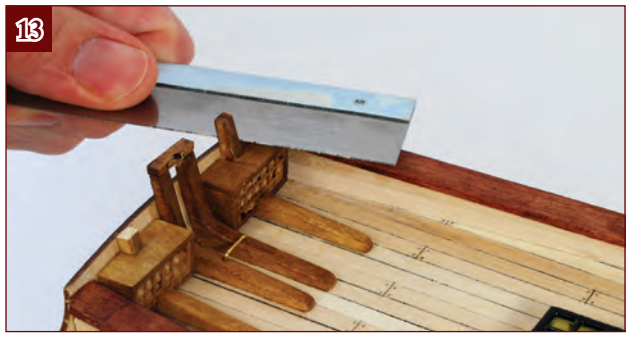
11. You need to sand the back edge of the locker to fit the slope and curve of the aft bulwark of the poop deck. Keep sanding a little at a time until the locker fits neatly in place.

12. Repeat Steps 1-11 to make a second locker for the other side of the deck. Stain the lockers and knees dark oak or paint them as below left, then glue them in position.

Painted finish

If you have opted for a painted finish, paint the lockers and knees black.

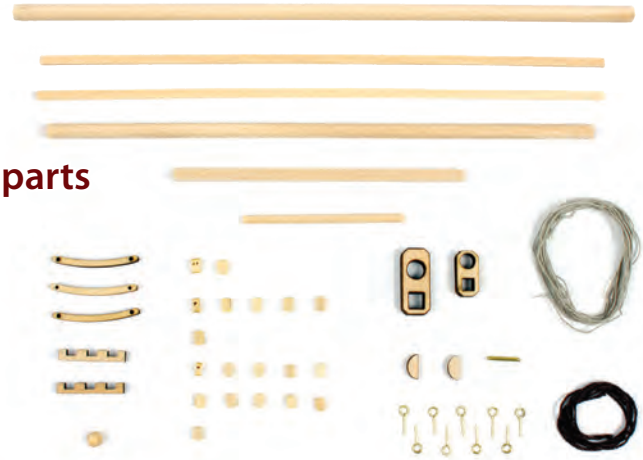




13. Carefully trim the top of the outboard knees flush with the top of the bulwark; a razor saw is ideal for this. Touch up the cut end with stain or paint.

Stage 79: Making the deck rails

The parts provided are for the upper sections of the mizzen mast. You'll also assemble some deck fittings provided with earlier stages.



Wooden strips

2 wooden strips 2 x 3 mm, 200 mm long
1 wooden strip 4 x 4 mm, 100 mm long
1 wooden dowel 6 mm, 220 mm long
1 wooden dowel 5 mm, 190 mm long
1 wooden dowel 4 mm, 55 mm long

Fittings

natural thread 2 m
brown thread 500 mm
brass wire 10 mm
9 eyebolts

Shaped wooden parts

5 parts for cross trees
1 wooden bead 5 mm
2 mast caps
2 guides
2 double blocks 5 mm
6 single blocks 5 mm
11 single blocks 4 mm

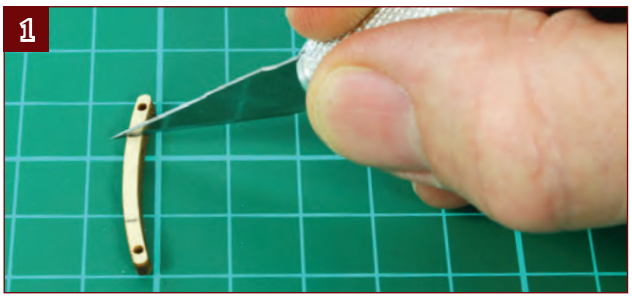
Where the parts fit

The mizzen mast consists of three sections, like the main and fore mast that you have already made. This stage, you will start using the parts supplied to make the second section, the topmast, for which you will need the plans provided with Stage 77.

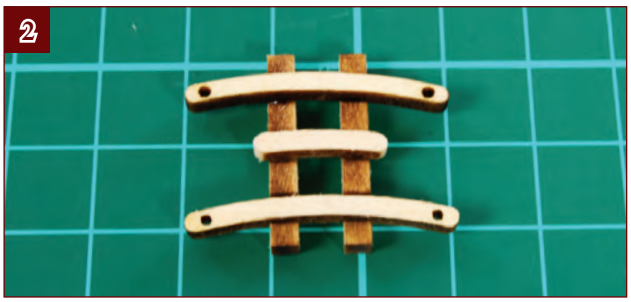
You also continue adding the deck fittings, by starting the rails around the cockpit (all the parts came with Stage 52) and making the belfry (all the parts came with Stage 50). It may be helpful to refer to those parts' checklists. You will also need a spare nail.

Preparing the mizzen topmast

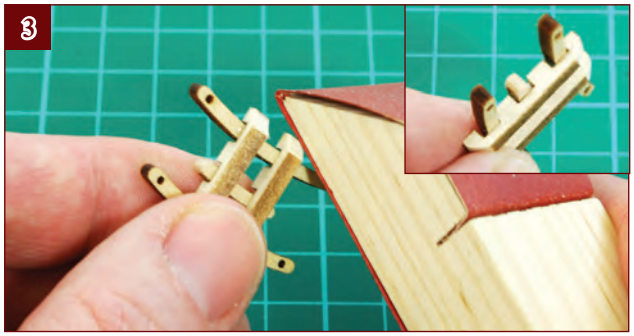
Start assembling the mizzen topmast and cross trees using the parts supplied with this stage. You may find it helpful to compare the main topmast assembly (Stage 63) and fore mast assembly (Stage 69).



1. Take one of the cross trees and cut 7.5 mm off each end.

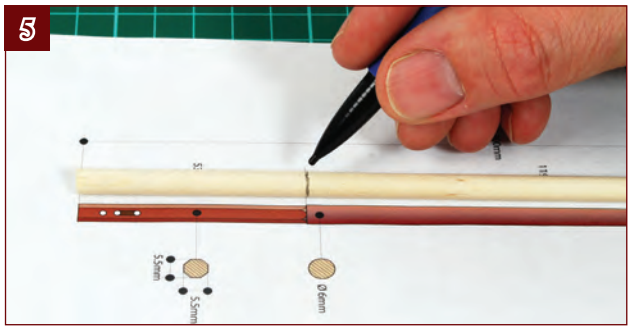


2. Glue the cross trees into the slots in the fore-and-aft rails, making sure the parts are square. The gap between the rails should be 4.5 mm - 5 mm.

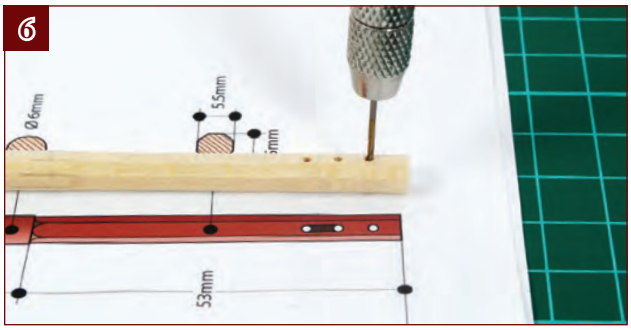


3. Sand bevels on the ends of the fore-and-aft rails.

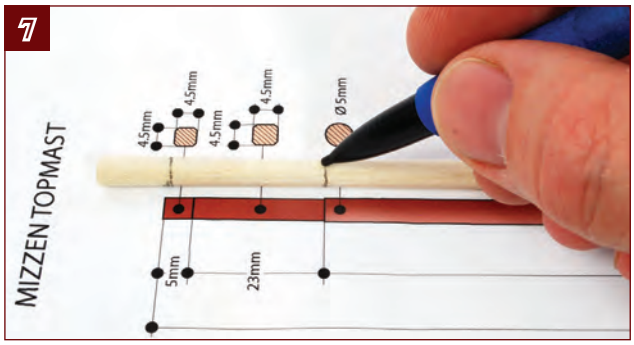
4. Stain or paint the cross trees to match the other masts.



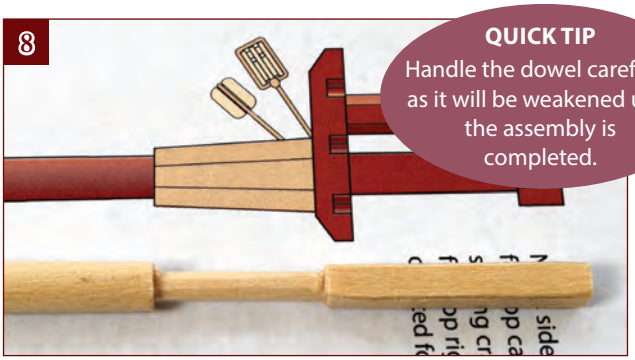
5. Take the 6-mm dowel, mark the position of the lower octagonal section, and then taper the mast to 5 mm at the top.



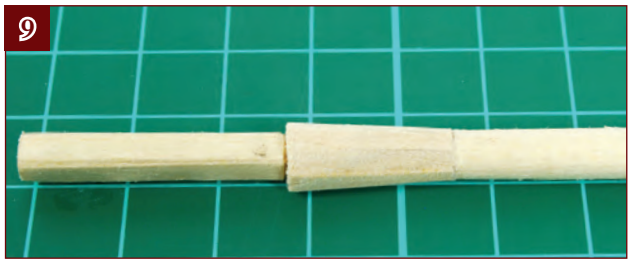
6. Carve or sand the bottom section to an octagonal shape, then drill the three holes with a 1.5-mm drill.



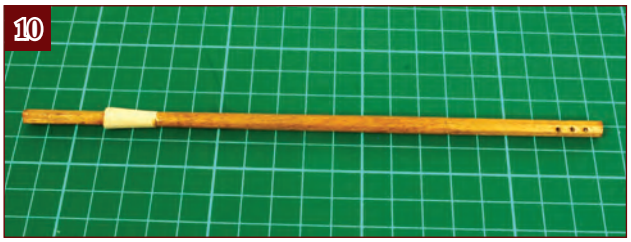
7. Mark the top square section, then cut the mast to length. Carve the top section to a 4.5-mm square, making sure that the square is parallel to the holes drilled in Step 6.



8. Mark the position of the cross tree support using the plan. Carve this to a 3-mm square, then sand off the corners to make a 3-mm octagon.



9. Use the 2 x 3-mm wood to complete the cross tree supports. The technique is described fully in Stage 63.



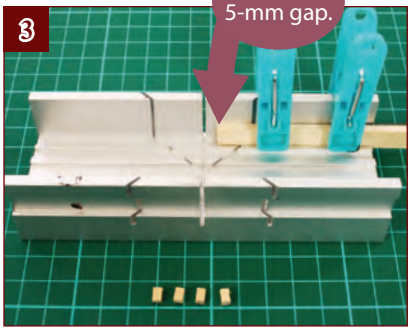
10. The mast can now be stained if you are staining the model. It can be painted after the mast is assembled if you have decided on a painted finish.

Making the deck rails

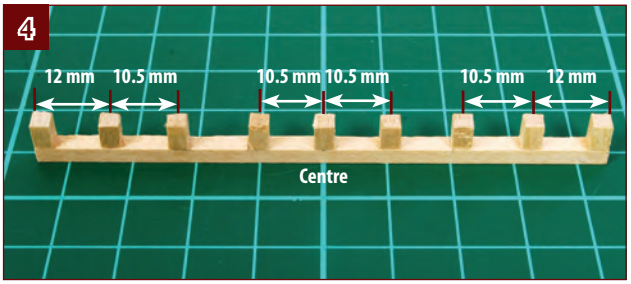
A wooden handrail and ropes separate the quarterdeck from the open cockpit. You will need the parts supplied with Stage 52 to complete these steps.

1. Cut two lengths of 3 x 3-mm wood to fit the side of the opening, running between the ladder and the end rail. Sand a radius on the ends by the ladder.

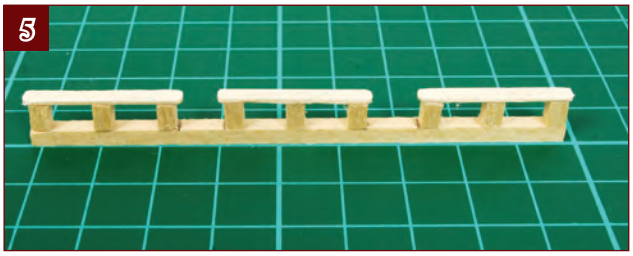
2. Cut a length of 3 x 3-mm wood to fit right across the aft end of the opening.



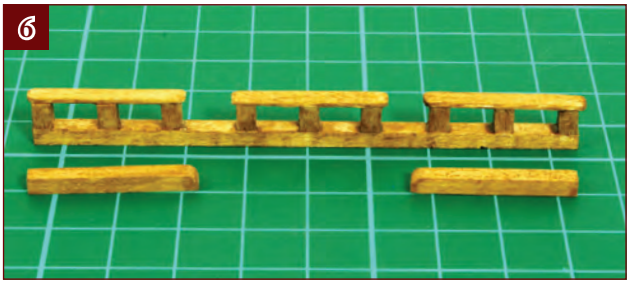
3. Cut nine pieces of 3 x 3-mm wood, each 5 mm long. You can make a jig by clamping a strip of wood in a mitre block, but make sure the wood is firmly fixed so that it doesn't move.



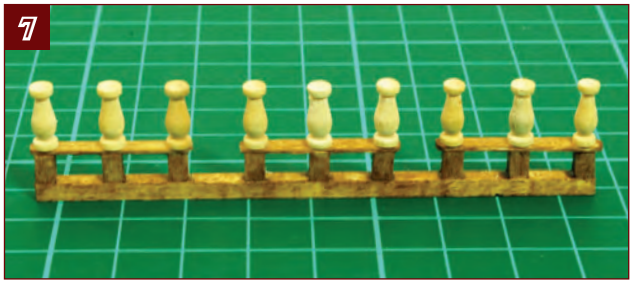
4. Mark up the long strip as shown, and glue the 5-mm uprights to it, noting their position relative to the marks.



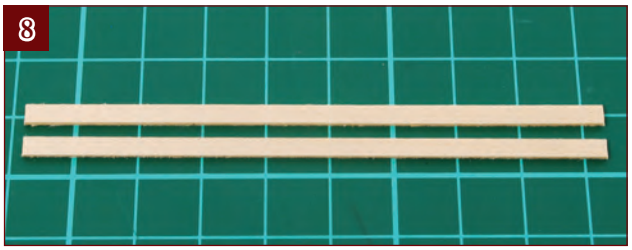
5. Cut three lengths of 1 x 3-mm wood to make rails that each overhang the uprights by about 1 mm. Round the ends and then glue them in place.



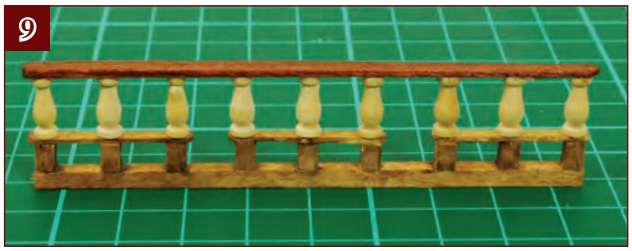
6. If you are leaving your model with a natural finish, stain the parts now. Skip this step if you are painting your model.



7. Check that the ends of the pillars are smooth, and sand them if necessary. Glue nine pillars above the uprights.



8. Join two 95-mm strips of 1 x 3-mm wood to make a rail 6 mm wide, 1 mm thick and 95 mm long.

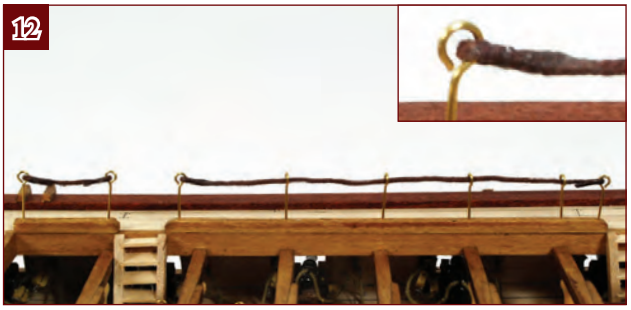


9. Trim the rail you just made to overhang the pillars by about 1 mm. Round off the corners, stain it walnut and glue in place.

10. Glue the short pieces in place next to the ladders.

11. Drill 0.7-mm holes positioned as shown, 2 mm deep. Place (but do not glue) eyebolts in them, with the holes in the eyebolts at the ends of each run facing left to right, and the holes in the centre of each run facing fore and aft.

QUICK TIP
Wrap a small piece of masking tape 2 mm from the end of the drill bit to form a depth gauge.

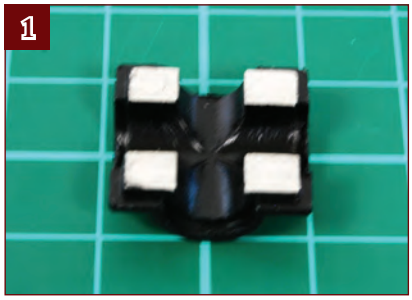


12. Run lengths of brown thread through the eyes as shown. Cut them to leave about 5 mm surplus at each end, then fold the ends back and glue them. Roll the threads between your fingers to represent a splice. When the glue is dry, fix the eyebolts in place with superglue.

13. Glue the completed rail in place.

Assemble the belfry

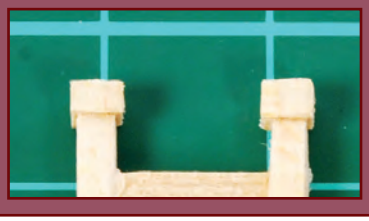
Before completing the rail at the forward end of the cockpit, you need to assemble the belfry that stands in the centre. You will need the parts supplied in Stage 50.

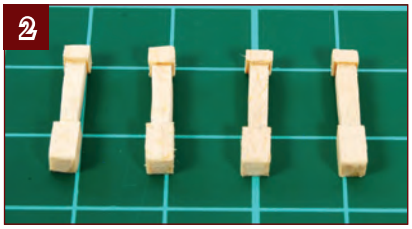


1. Take the top of the belfry and file or sand the bottom smooth. Remove any moulding marks and the paint.

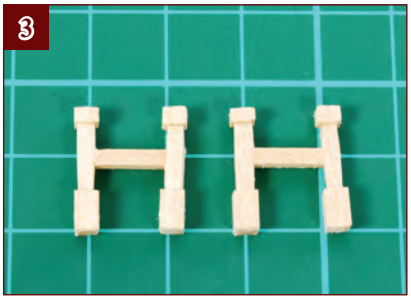
EXPERT TIP

Apply a small drop of superglue to the top of each pillar and let it dry. This will fill the end grain, and make it easier to glue the wood to the metal top.

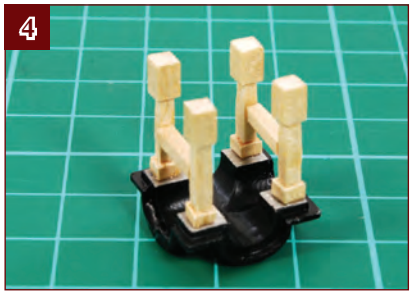




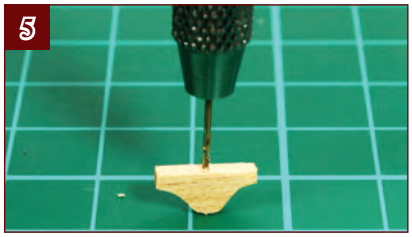
2. Cut four pillars from 3 x 3-mm wood, all 16 mm long. Use the method in Step 3 of the 'Making the deck rails' section to get them the same length. With a sharp knife, thin the centre, leaving a shoulder of 6 mm at the bottom and one of 2 mm at the top.



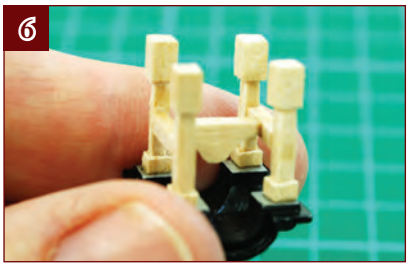
3. Cut two 9-mm lengths of 2 x 2-mm wood and use them to join the pillars as shown.



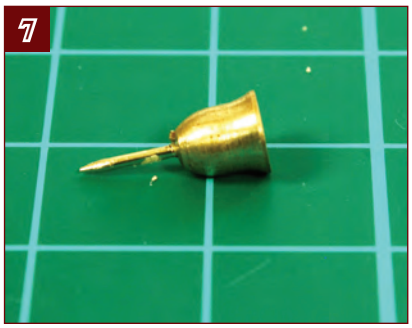
4. Use superglue to glue the two sides to the top of the belfry, making sure that the legs are square.



5. From an offcut of 5 x 2-mm plank, cut a length to fit between the two cross bars. Carve it to the shape shown and drill a 0.7-mm hole in the bottom. This hole should be about 3 mm deep.



6. Glue this between the cross bars. The wood can now be stained walnut or painted black. Touch up any bare metal around the pillars with black paint.



7. Insert a pin from the inside of the bell and fix it with superglue.

8. Cut the nail so that it is about 2 to 3 mm long, then glue it in place in the hole drilled in Step 5.

9. Glue the belfry against the frame at the forward end of the deck opening, straddling the centre line of the model.

Painted finish

If you are painting your model, the end result should look like this, with both the rail and the belfry painted all black, apart from the brass bell itself.

Stage 80: Start making the mizzen topgallant

Use the parts supplied to make a mizzen yard, but keep the parts for the stern lantern until later. You will also continue with the deck fittings.

Wooden strips

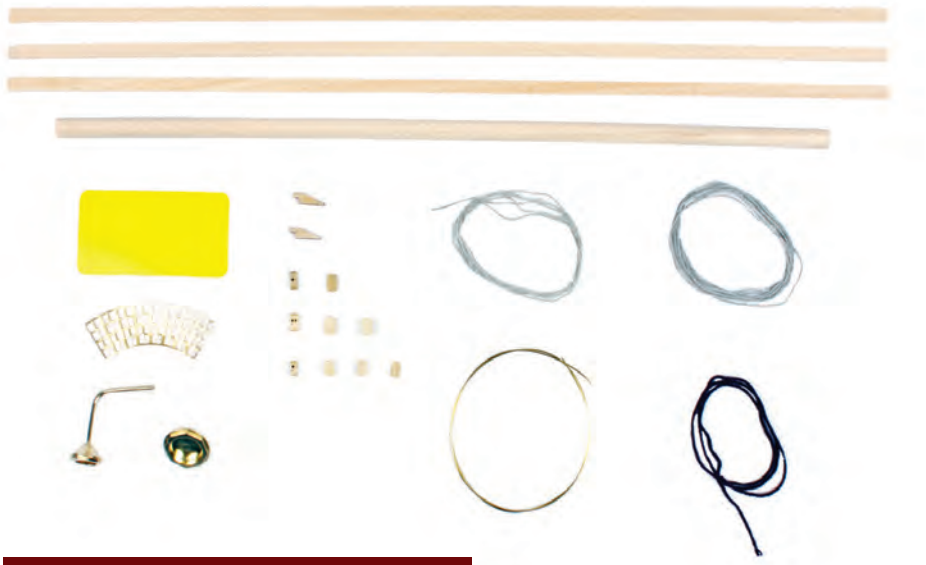
3 wooden strips 2 x 4 mm, 300 mm long
1 wooden dowel 6 mm, 260 mm long

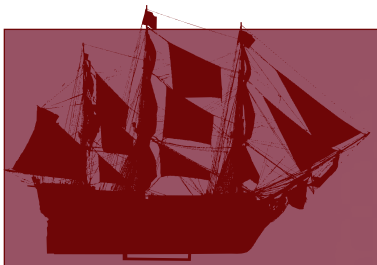
Shaped wooden parts

2 yard slings
2 x single block 5 mm
3 x double block 5 mm
4 x single block 4 mm

Fittings

brass wire 0.5 mm, 300 mm long
natural thread 0.25 mm, 1 m
brown thread 0.8 mm, 30 cm
natural thread 0.15 mm, 60 cm
1 lantern base
1 lantern body
1 lantern top
1 sheet of acetate





Where the parts fit

Start by using the dowel, wooden strips, yard slings, blocks and thread provided to make the mizzen cross jack yard. Then construct the mizzen topgallant, ready to assemble the three parts of the mizzen mast later in the series. Construction is very similar to the previous topgallant, and full details of the techniques are described in Stages 63 and 64. You will need the parts supplied with Stage 79, as well as the mizzen mast plans provided with Stage 77. Continue to add the quarterdeck fittings by completing the cockpit rails (using parts from Stages 59 and 60). Then move on to the poop deck, adding the eyebolts and rail, using parts provided with Stage 66.

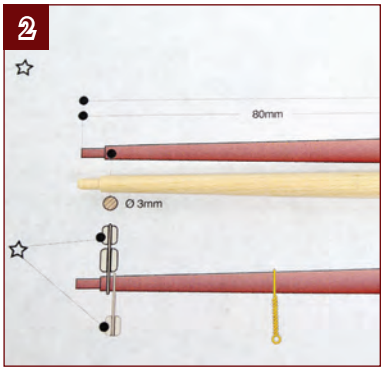
Making the cross jack yard

This is the largest of the three yards fitted to the mizzen mast, and is assembled from the parts supplied with this stage.

1

1. Mark the centre section of the yard using the mizzen mast plan, and use the centre finder to mark the octagon. Make sure that the surplus length of the dowel overhangs the ends of the yard evenly on both sides.

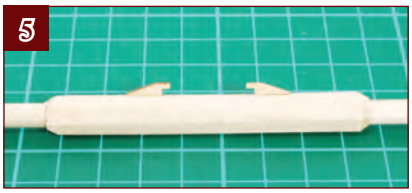
2



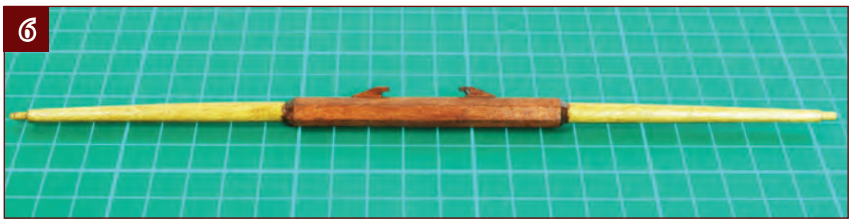
2. Taper the ends to 3 mm, then trim the yard to length and carve the narrower sections at both ends.

3. Carve the centre section to a 5-mm octagon.

4. Complete the centre section bracing using strips of 4 x 2-mm wood. The technique is fully described in Stage 65.

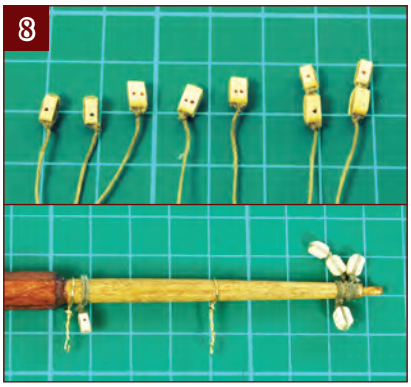


5. Add the yard slings. The ends of the slings are located 20 mm from the ends of the octagonal centre section.



6. Stain the yard to match the other yards already constructed. If you are painting the yard, leave it until after the next step.

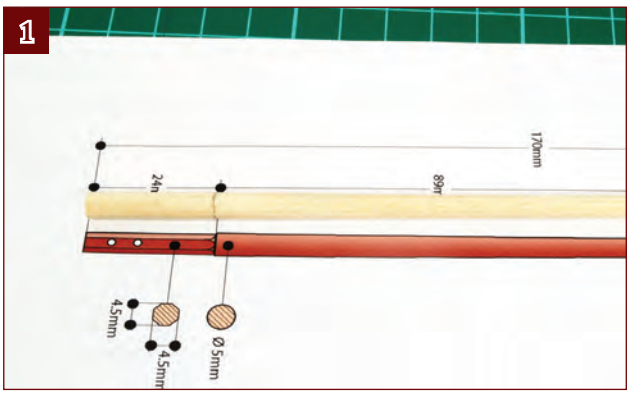
7. Add the two rope bindings using the 0.25-mm thread, and add the four footrope supports. The technique for fitting these is described in Stage 65. If you are painting the yard it should be painted black now.



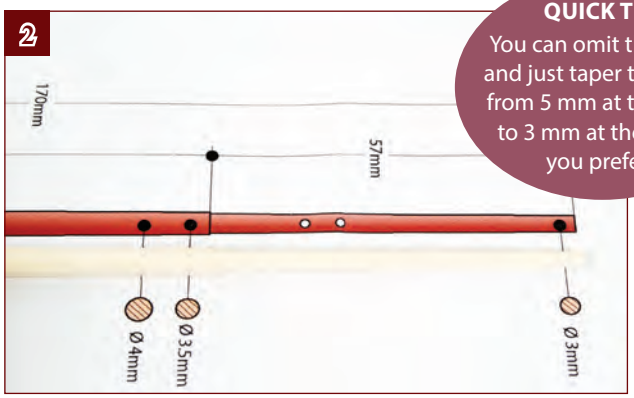
8. Prepare blocks as follows: two 4-mm blocks, three 5-mm double blocks, and two 4-mm blocks doubled-up with 5-mm single blocks. Leave tails of about 80 mm. Tie the blocks to the yard according to the plan.

Start making the mizzen topgallant

Continue making the mizzen mast by shaping the uppermost section – the topgallant. The parts you need were supplied with Stage 79.

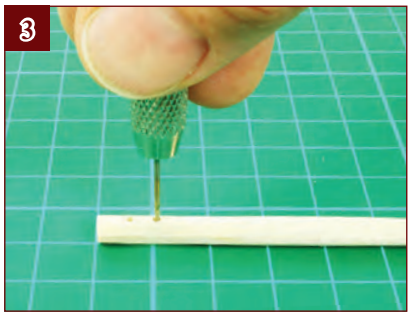


1. Mark the bottom octagonal section, then taper the mast to 4 mm at the mid point.

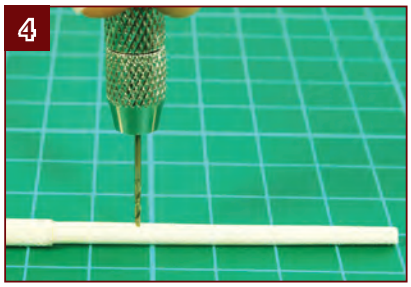


2. Carve the step in the mast, then taper the top section from 3.5 mm at the centre to 3 mm at the top.

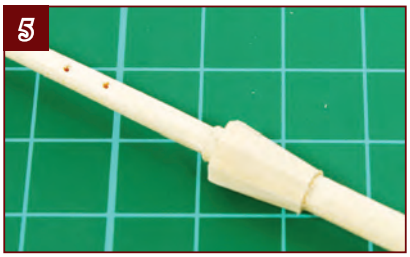
QUICK TIP
You can omit this step and just taper the mast from 5 mm at the base to 3 mm at the top if you prefer.



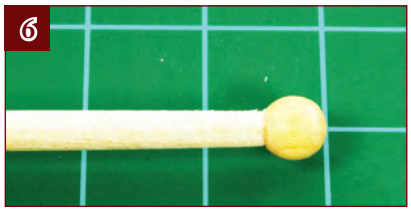
3. Carve and/or sand the base to the octagonal shape. Then mark the two holes, and drill them 1.5 mm diameter.



4. Rotate the mast 90 degrees and drill the two holes in the top section of the mast, so they are at right angles to those in Step 3.



5. Use the techniques described in Stage 63 to fit the tapered octagonal section. Start by carving the mast to a 3-mm octagonal section, then add the 2 x 3-mm strips to form the larger octagon.



6. Sand or file a flat on the bead used to make the mast truck and glue it to the top of the mast.

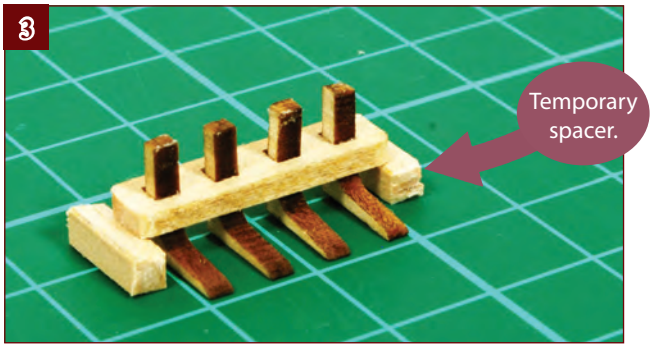
7. The topgallant can now be stained to match the other masts. If you are painting your model, you can leave the mast as bare wood, because it will be painted after the construction of the mizzen mast is completed.

Completing the cockpit rails

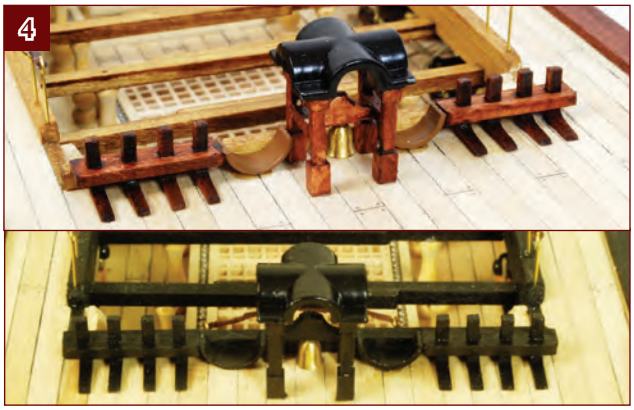
Complete the cockpit rails by adding the pin rails fitted to the forward edge of the cockpit. You will need the parts supplied with Stages 59 and 60.

1. Paint the U-shaped die-cast metal channels with an automotive primer, and then paint them brown to match the walnut stain, or paint them black if you are painting your model. Then use superglue to fix them to the deck, next to the forward frame of the cockpit and against the belfry.

2. Take the two laser-cut pin rails, and try each one in position beside the metal channels. Trim both ends equally until they fit from the end of the channel to the end of the cockpit frame. Then sand them smooth and radius the ends slightly.



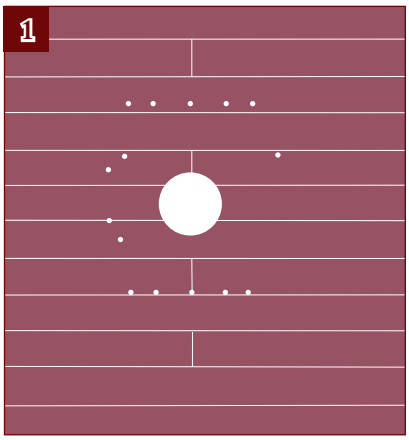
3. Glue the L-shaped pin rail supports into the holes in the pin rails. Use two offcuts of 3-mm-square wood to make sure that the pin rail is at the correct height. Make sure you don't glue the spacers to the pin rails by mistake.



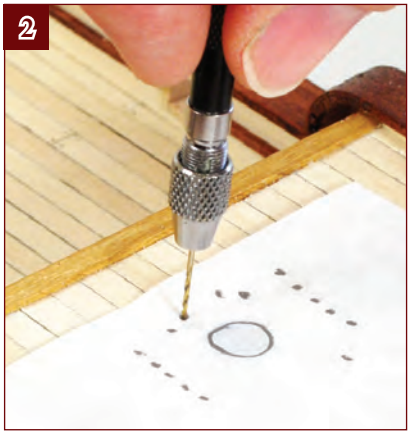
4. Stain the pin rail assemblies walnut and glue them in position. If you are painting your model, paint them black.

Adding the mizzen mast eyebolts

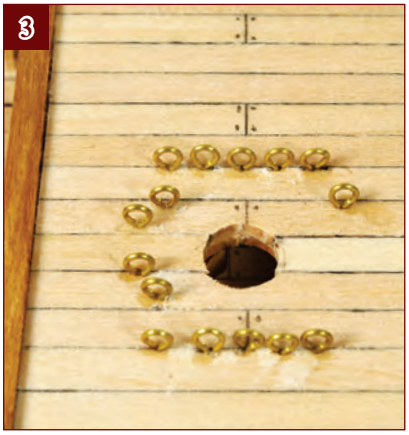
A series of eyebolts is fitted to the poop deck, around the hole for the mizzen mast. The parts you need were supplied with Stage 66.



1. Trace off the positions of the eyebolts and mast hole on a piece of tracing paper or greaseproof paper.



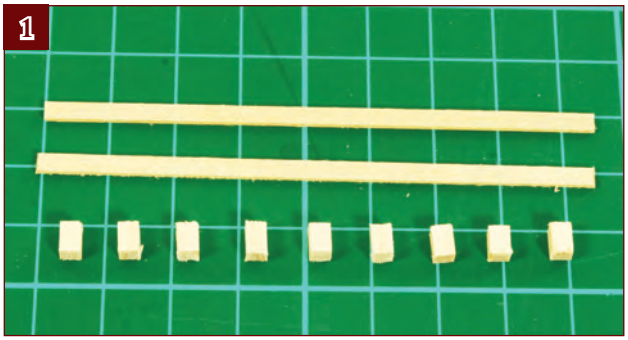
2. Place the trace on the poop deck, aligning it with the mast hole. Then drill through the marks with a 0.7-mm drill.



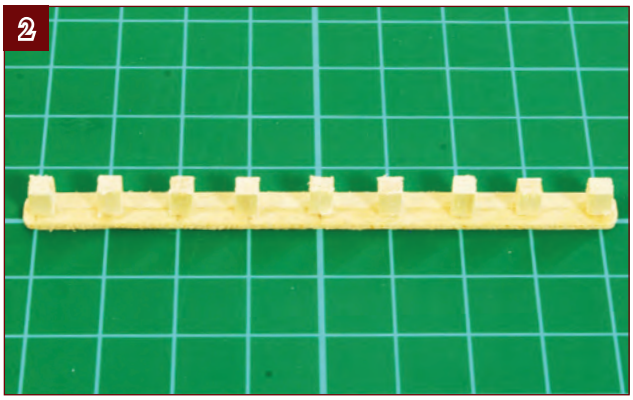
3. Cut the shanks of the eyebolts down to about 4 mm, then glue them in place with superglue, aligned fore-and-aft.

Adding the poop deck forward rail

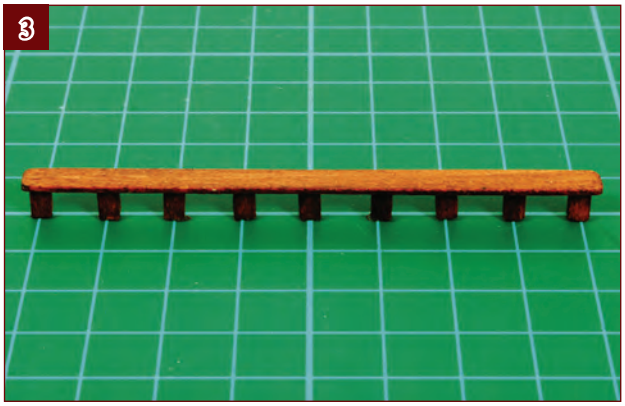
To make the rail along the edge of the poop deck, use the remainder of the 1 x 3-mm wood supplied with Stage 52, and the 3 x 3-mm wood supplied with Stage 66.



1. Cut two pieces of 1 x 3-mm strip, each 83 mm long. Glue these together to form a strip 6 mm wide. Cut nine 5-mm lengths of 3 x 3-mm wood, using the technique described in Stage 79 to get them all the same length.



2. Glue the lengths of 3 x 3-mm wood at 10-mm intervals with the first piece fitted in the centre.



3. Stain the assembled rail walnut, or paint it black as appropriate.

4. Glue the rail in place centrally on the beam running across the front of the poop deck.

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Stages 81-90 fit the gun port lids, as well as modelling the transom and assembling the bowsprit.

Modelling the transom

Fitting the gun port lids

Assembling the bowsprit