



# Resin parts

[Tips & Tricks for Model Makers]

## Store resin protected from light and free from tension.

Resin becomes brittle under UV light. This makes it easier to break during assembly. Therefore, store the unassembled parts away from light. After assembly the parts are protected by the paint.

If the storage is not even, the parts may deform, especially if it has become hot. See notes on deformation with heat next page.

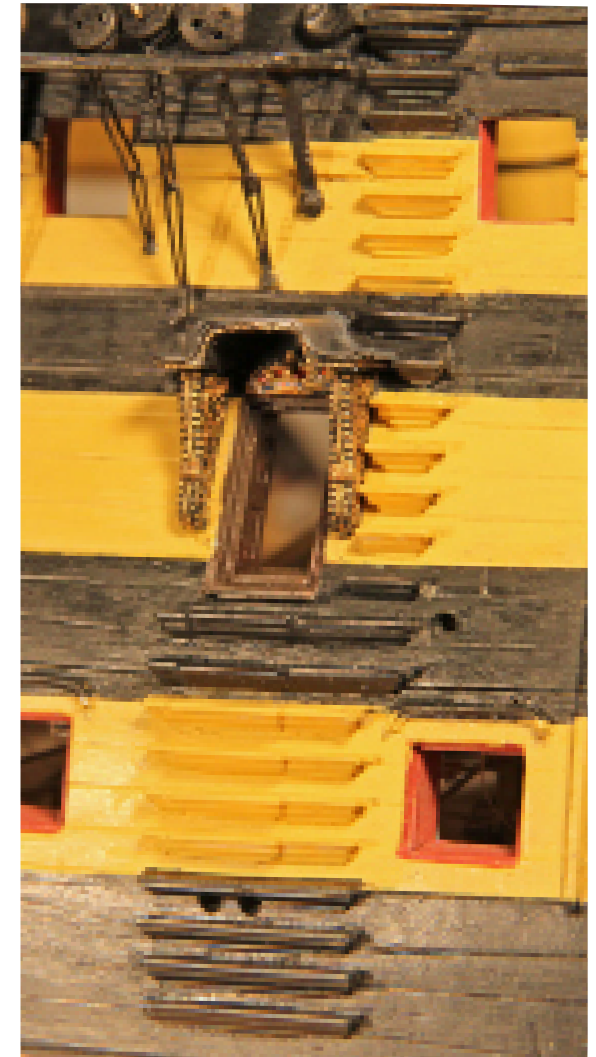
## Remove sanding dust and grease

The parts still have white sanding dust on them, this is from removing the print supports. Unless otherwise stated, I already removed the supports, as this is easier to do before curing. This also reduces the risk of breaking the parts for the model maker :-)

In the case of cast resin (white), the grease layer must also be removed, as the mould is treated with paraffin.

Tools needed:

Electronic side cutters without bevel, key files in various shapes, sanding blocks, sandpaper, super glue fast and slow.





## [Tips & Tricks for Model Makers]

# Bringing Resin parts back into shape

Is there a resin part bent out of shape?

Never try to bend it back by force when it is cold!

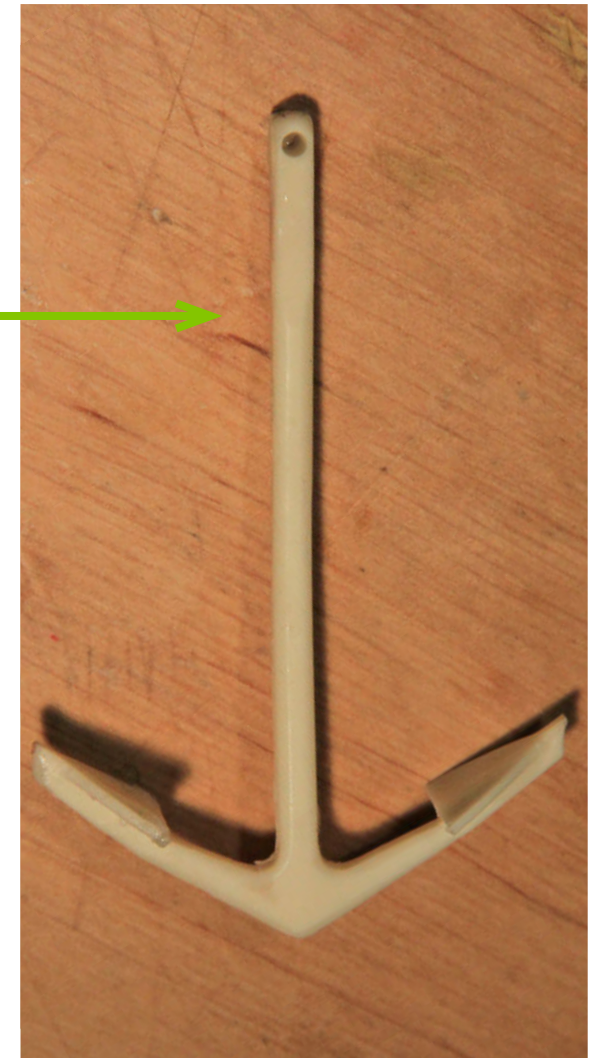
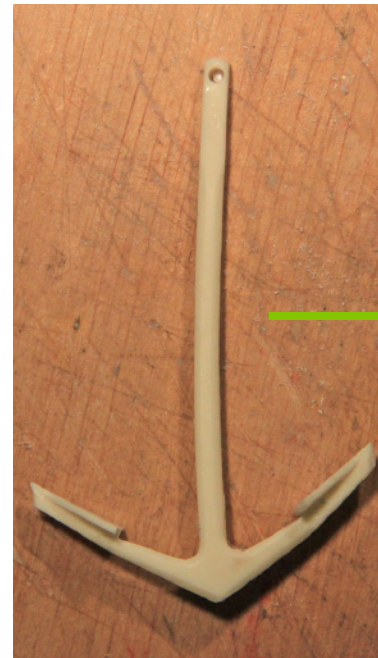
Better: Wait and drink tea, preferably Earl Grey, hot (\*)....

Put the part into the hot liquid, and when it is warm enough, reshape it as desired and fix it in the new position when it cools down.

This also applies to printed parts, here one can almost tie a knot in it.



PS (\*): Normal hot water will also do ...





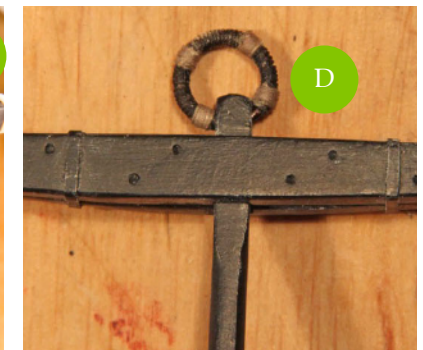
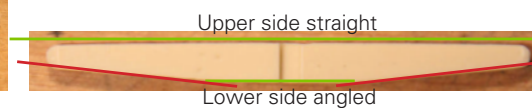
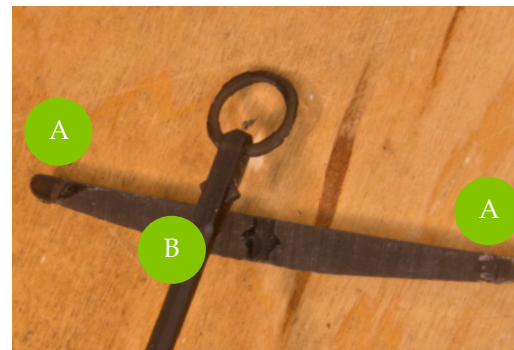
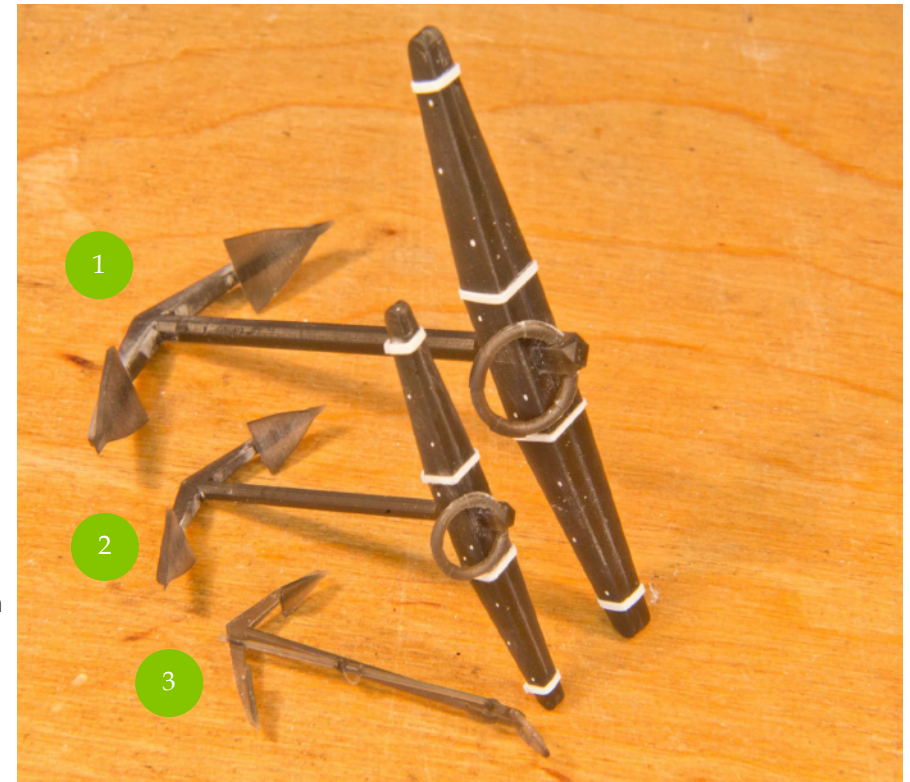


## [Tips & Tricks for Model Makers]

# Anchors

## Bowers, Stream- and Warpanchor

- 1 4 bowers: 2 on each side of the ship on the foremast channel boards.
  - 2 1 stream anchor: on the aft port bower
  - 3 1 warp anchor: on the aft starboard bower  
(alternatively starboard mizzen chanel board)
- Only glue the anchor stocks together at the tips, **A**  
a small gap remains where the stock meets the shaft!
  - The nut of the anchor shaft engages in the recess of the two halves of the stock. **B**
  - Take cardboard or thicker paper and attach 4 anchor bands of approx. 1 mm width for each stock. The recesses in the stock are not for sinking in the bands but only for positioning. **C**
  - Use printed anchor rings (spare rings are enclosed) or bend rings of the appropriate size from wire and dress and smart properly. **D**





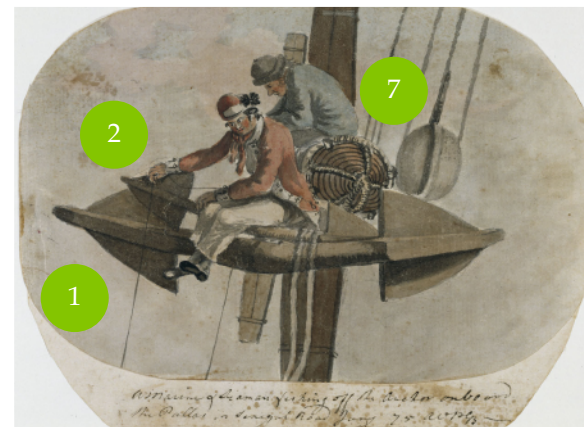
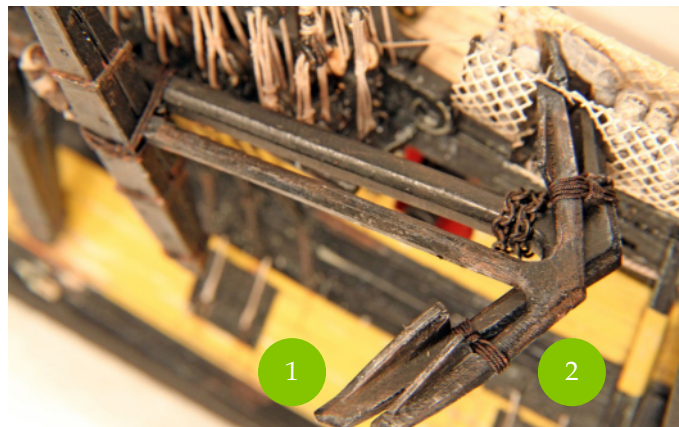
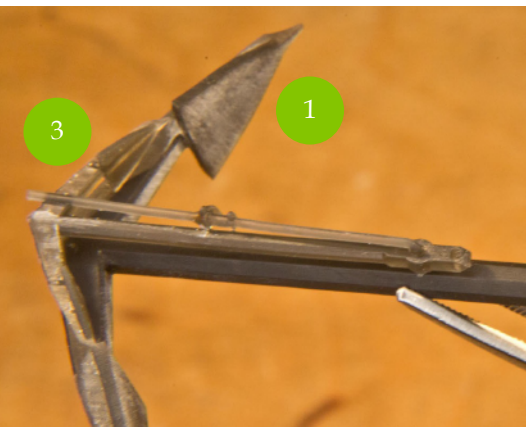
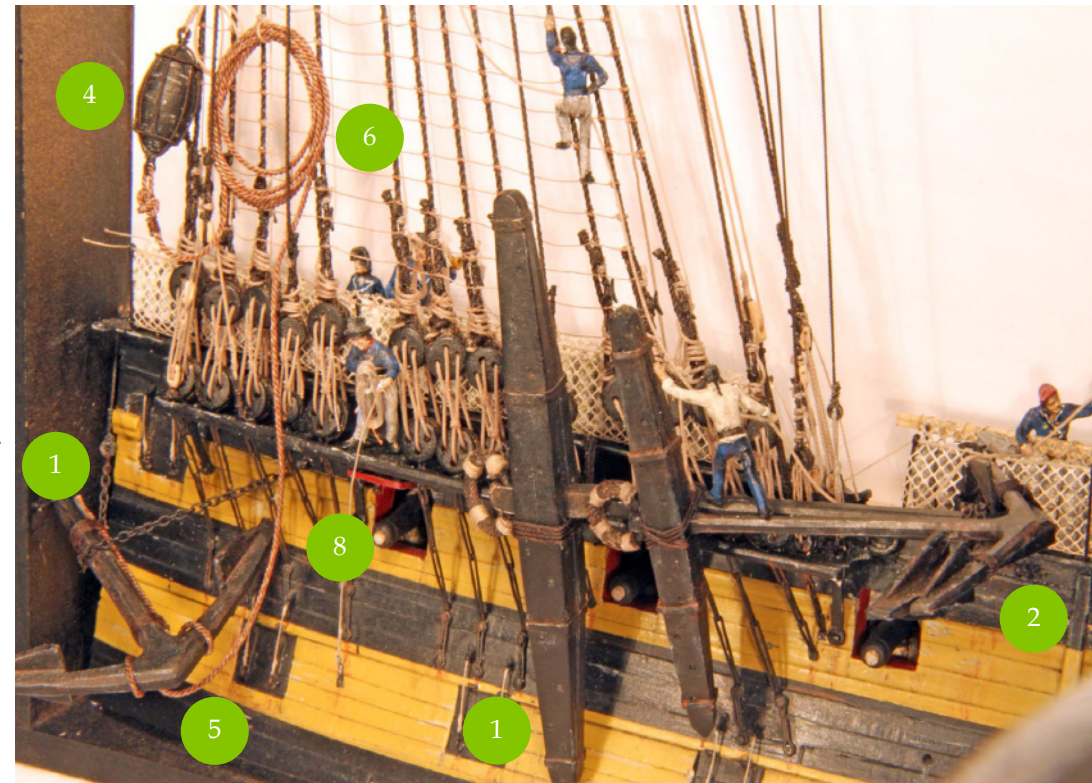


## [Tips & Tricks for Model Makers]

# Anchors

## Anchor positioning, buoys and anchor shoes

- 1 bowers: 2 on each side of the ship on the foremast channel boards.
- 2 stream anchor: on the aft port bower
- 3 warp anchor: on the aft starboard bower (alternatively starboard mizzen chanel board)
- 4 Buoys: One buoy each side hanging from the front foremast shroud.
- 5 Buoy rope goes to the shank.
- 6 Overlength hangs coiled in the foremast shrouds.
- 7 The second pair of buoys can be stowed on the aft anchors if desired. (See sketch by Gabriel Bray 1775, NMM PAJ2013). The buoys are supplied with the printed rope eyes (incl. replacements). If desired, a real rope eye can also be glued instead.
- 8 Move the anchor shoe one iron aft.





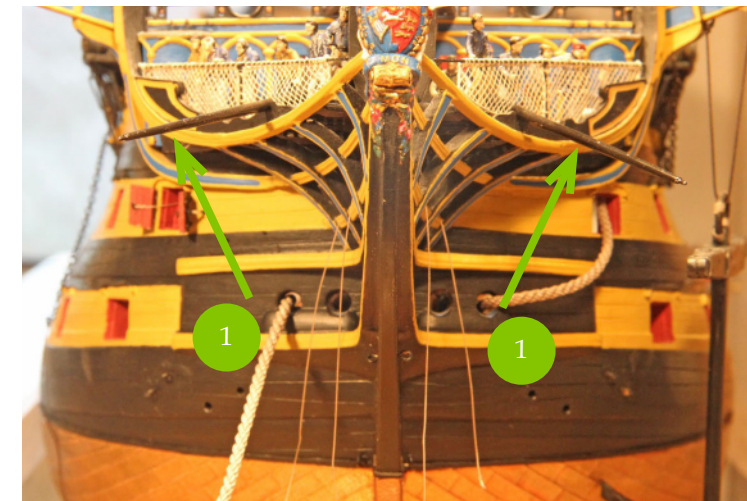
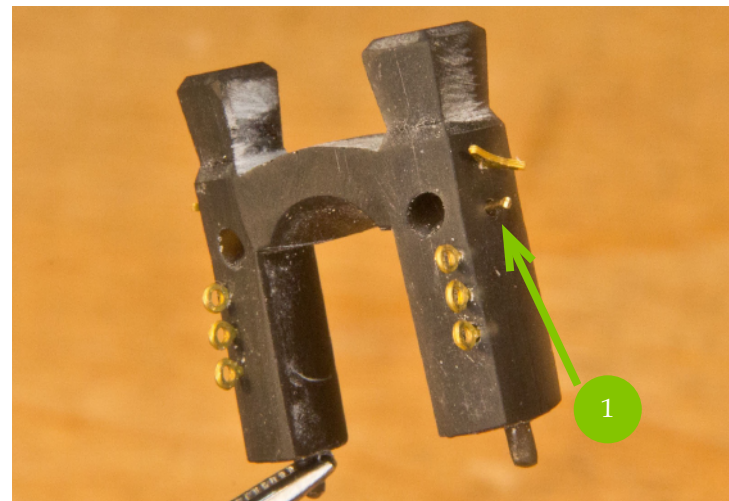
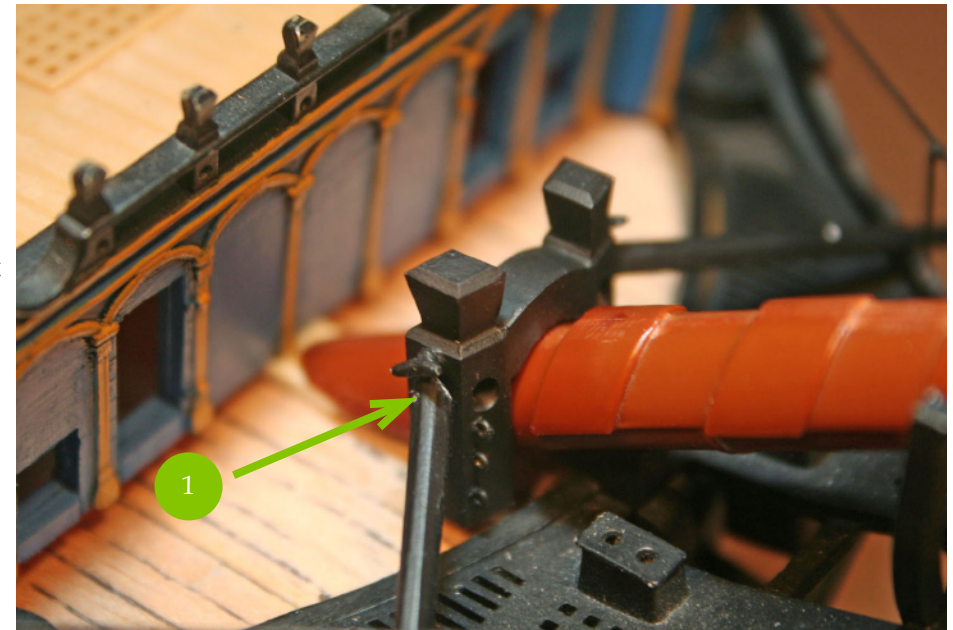
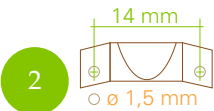


## [Tips & Tricks for Model Makers]

# Timberheads

- Check parts for print steepings and sand if necessary.
- Check the width between the timbers and the width of the bowsprit.
- Adjust the curvature of the heads' transom well to the bowsprit.
- Apply 3 ring bolts with outside approx. 1.3 mm, inside 0.5 mm on the front side of each timber
- one cleat 3 mm on each side atop.
- ① a 0.5 mm wire on each side as a fastening for the bulins. Also drill the foot of the bulins accordingly to fit.

- Determine the position of the timberheads. Drill two holes of 1.5 mm  $\varnothing$  and a distance of 14 mm. It is best to use the paper template for this. Print out in 100%. ② Measure the distance and pierce the vcentre of the hole with a needle. Check and then drill.



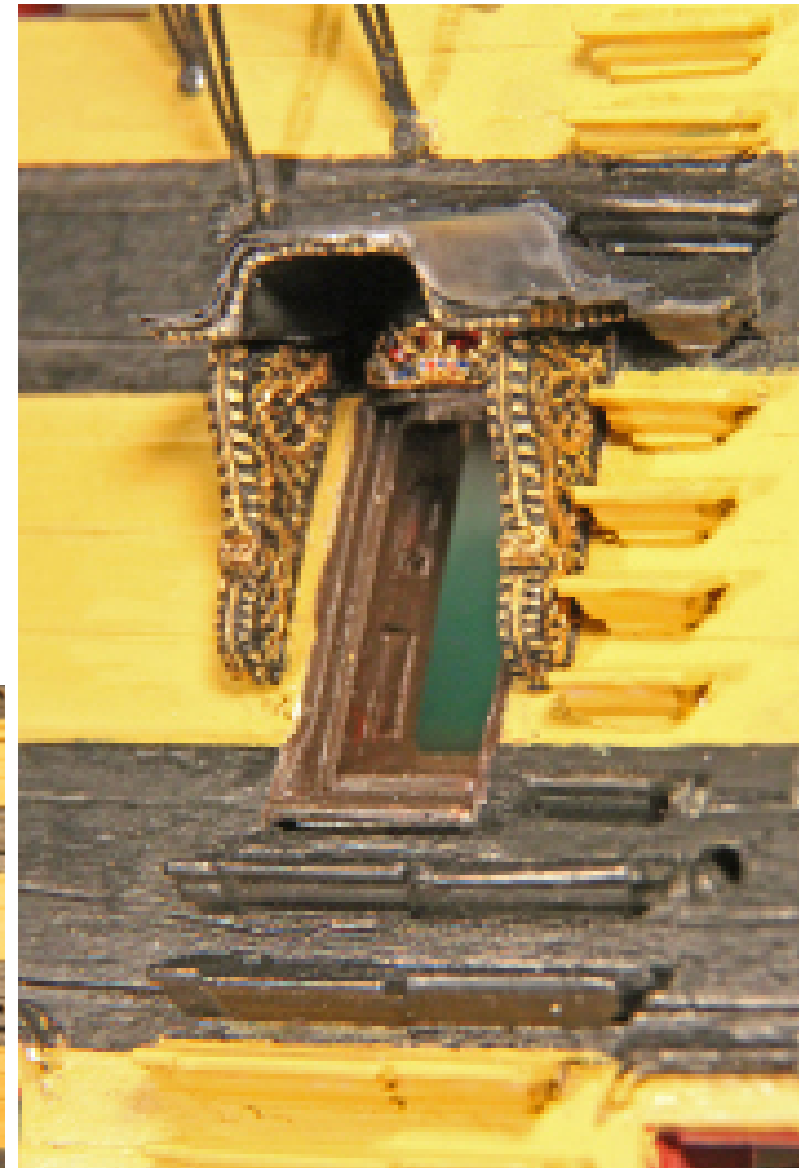
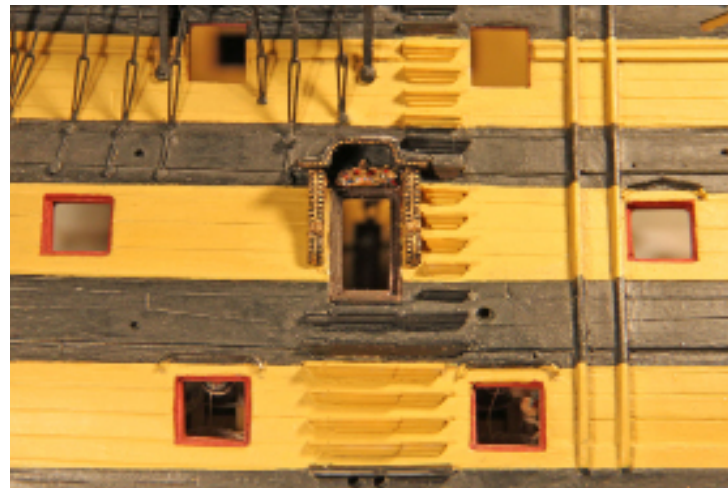
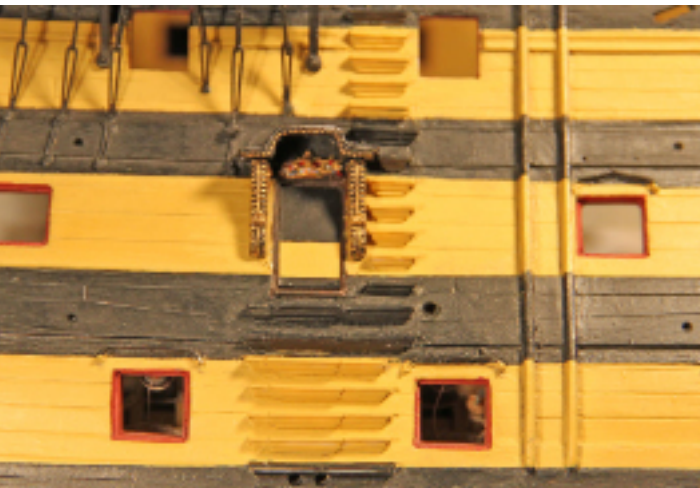


## [Tips & Tricks for Model Makers]

# Side Entry Port and Steps

Whether or not there was a side entry port at Trafalgar is a matter of debate. More recent research tend towards no port. Nevertheless, it is simply a beautiful modelling challenge, which also corresponds to the present-day appearance of the ship.

How the port was closed is also beyond our knowledge at the moment. There is no evidence of any fittings or fixed doors, so the assumption is that it was a simple bulkhead made of wood or canvas.







## [Tips & Tricks for Model Makers]

# Assembly of the Side Entry Port

The hole for port is extended downwards to approx. 2 mm below the top edge of the wale.

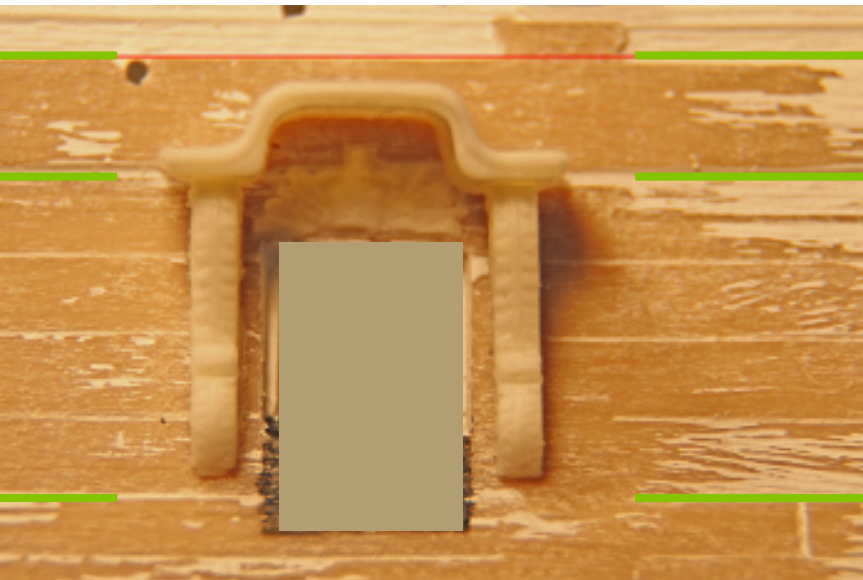
The panelling inside the frame is made of doubled 0.3 mm sheet. The doubled layer is set back a little, analogous to the gun ports, so that a step is created on the outside.

A stepping treat is then added at the bottom.

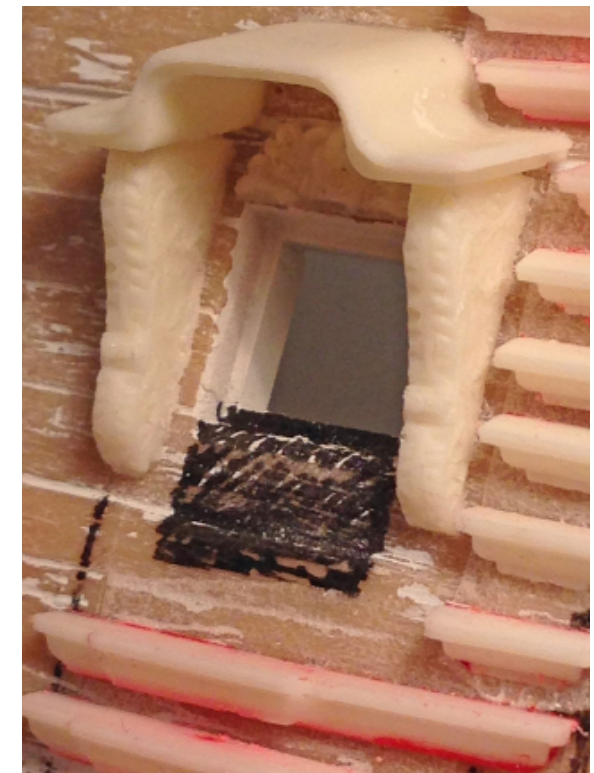
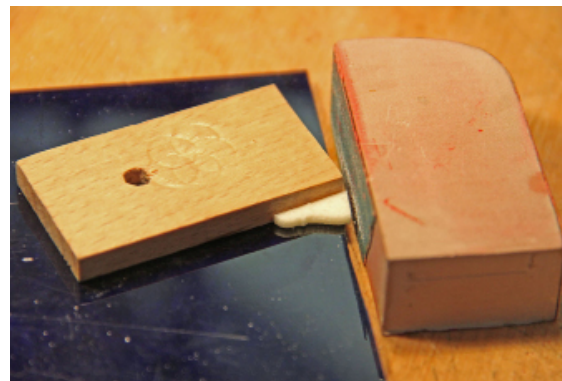
Adjustment of the side supports:

Press the support between the thumb and a wooden block, this way they are easy to hold. The block allows a cleanly alignment the angle on the support. Leave the support at the minimum required distance over the edge of the base board (plexi or wooden board) and only move the sanding block on the table surface parallel to the edge of the support.

- First position the coat of arms.
- Then check the angles of the top sides of the side supports for horizontality, correct if necessary, mark the lower edge of the canopy.
- Glue on the side supports.
- Put on the canopy, adjust the angle of the back side and glue it in place.



Green: Orientation lines of the wales





## [Tips & Tricks for Model Makers]

# Painting the side entry port

The resin parts should be degreased and primed for painting.

Side parts: First develop the 3 main tendrils slowly. 1 2 3  
Then come the side shoots and leaves 4

Since I have more control with the normal colour than with the metallic colours, I like to put a layer of ochre underneath, then Humbrol Gold and then some Warcraft Gold, which shimmers more reddish. Like this the appearance doesn't become so flat. Finally, add some ink where necessary or white highlights.







## [Tips & Tricks for Model Makers]

# Side Steps

Notes:

- Do not mix up port and starboard steps.
- Do not mix up the order:  
Detach parts with a sharp scalpel and put them immediately in the right order on a adhesive tape.
- Deburr the parts well
- Adjust the parts to the angle of hull



As delivered ...



... trial assembly with adhesive tape ...



... and done.



## [Tips & Tricks for Model Makers]

# Positioning of the side steps

- The distance of the steps corresponds to 3 mm in scale.
- To do this, mark a cardboard strip with a 3 mm grid and transfer the distances.
- Carefully prepare the steps one by one, neaten the treat and immediately place each part in the correct order on a piece of adhesive tape. That way they won't get mixed up.
- It is advisable to first attach the steps to the hull with a very thin, lightly adhesive double-sided tape to check the spacing visually.



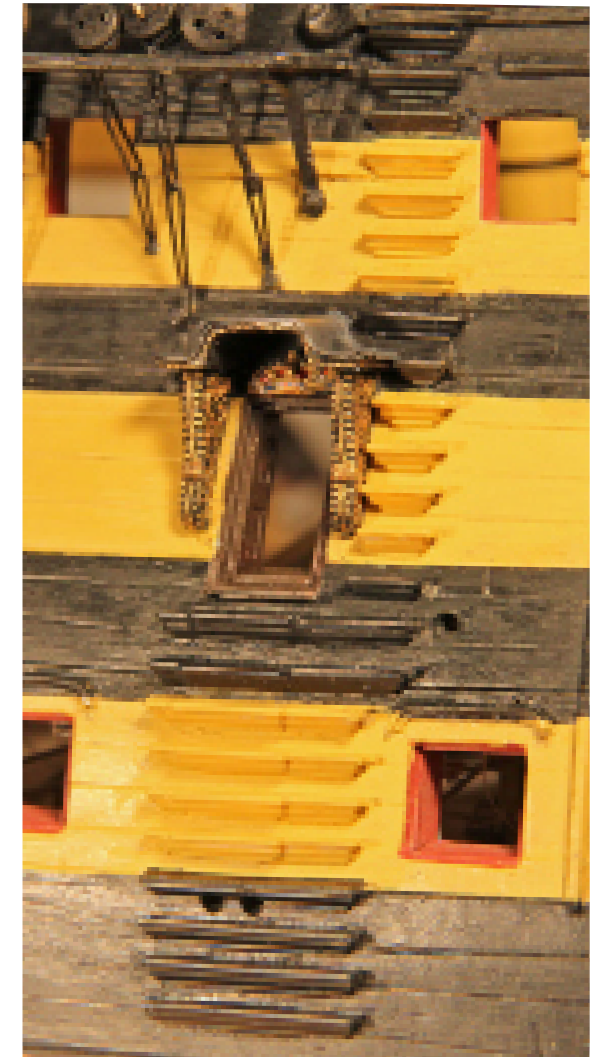
Determining the distance with a template

- The top step is available in two versions:
- One normal depth
  - Once in a shallower version if the top step lands on the profile board.

When glueing the steps in the next step, I usually put only every second step in the first go, then I can adjust the the ones that come inbetween by adding the judgement of the eye.



Positioning with thin double-sided tape







## [Tips & Tricks for Model Makers]

# Mounting of the steps

The angle of the steps has been pre-adjusted, but still needs fine-tuning. To do this, hold the step against the hull and check horizontallity of the treat and where material needs to be removed. Then colour the sanding surface, work on it with a sanding block or file and you can immediately see what you have just worked on.



Instead of the usual car putties/fillers, I have recently turned to 2-component modelling compound for touch-up work. Longer open time and above all much more targeted to place and shape.

My favourite here is Apoxie Sculpt, formed into a thin sausage, 0.3 mm thick and placed specifically on the gap ...



... and pressed into the gap with a pointet and slightly damp stick, modelled and excess material scraped off immediately.



After drying, it is smoothed with a damp stick and after hardening ...



... finely sanded. I glued some sandpaper onto an old blade to go in between :-)



# Repairing small blisters and edges

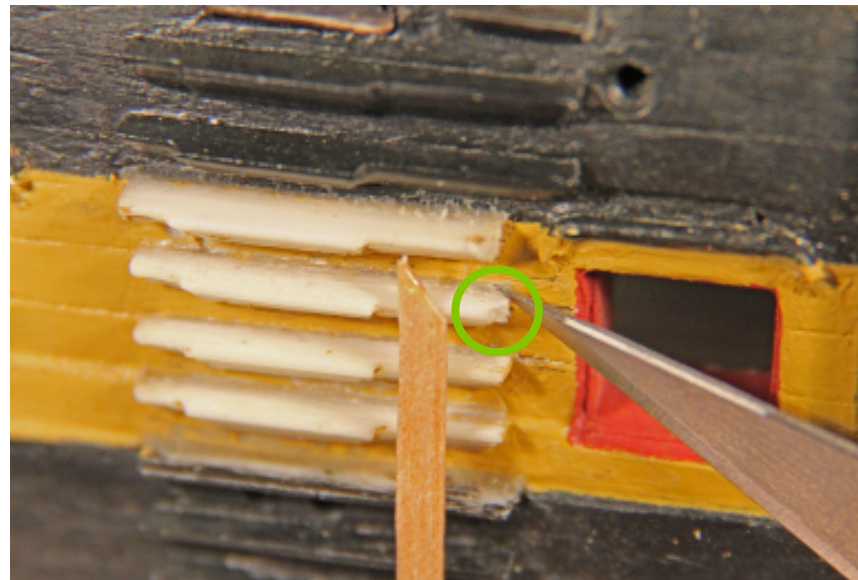
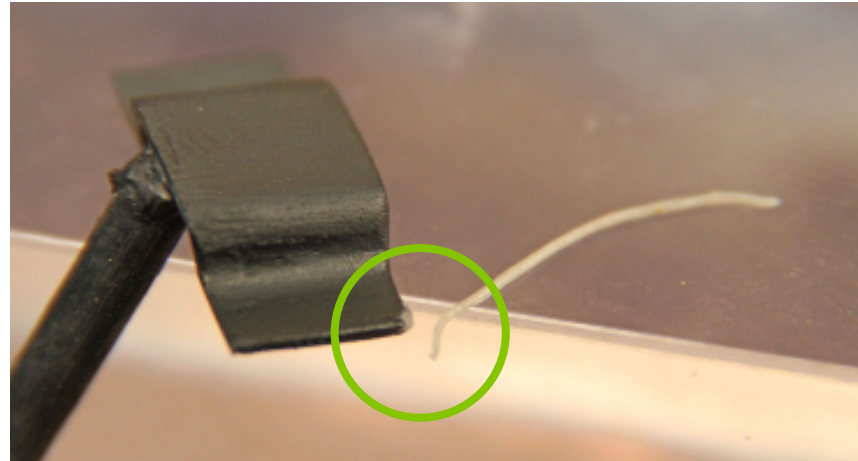
As a rule, the parts should be delivered without blisters on the surface. If, however, some blisters have slipped through our quality control, or if internal blisters are only exposed after sanding, the following simple technique has proved very effective:

A 2-component modelling compound is more suitable than car putty, as it is easier to apply and shape.

My favourite for this is Apoxie Sculpt\*, formed into a thin sausage, 0.3 mm thick and then cut off a large enough piece, place it at the corner, preform it and let it „pre“-dry.

Before the real hardening, lift slightly with a scalpel, apply a little superglue underneath with a thin wooden chip, press on again, reshape once more if necessary and allow to harden. The super glue underneath makes the whole thing wonderfully resistant for sanding.

\*or Milliput, Greenstuff, ...etc.





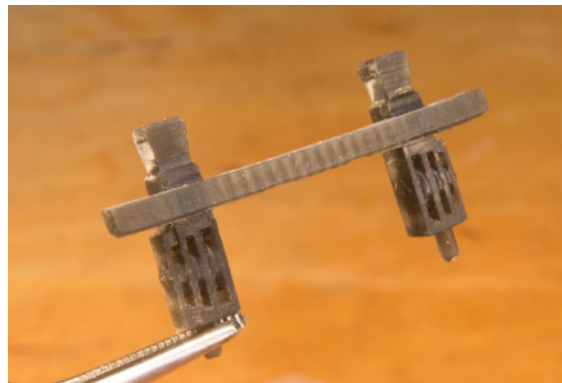


## [Tips & Tricks for Model Makers]

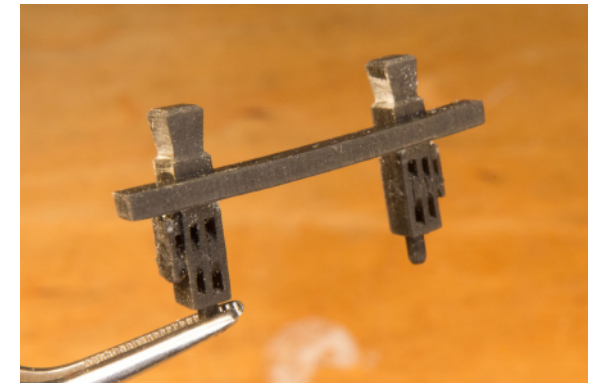
# Bitts



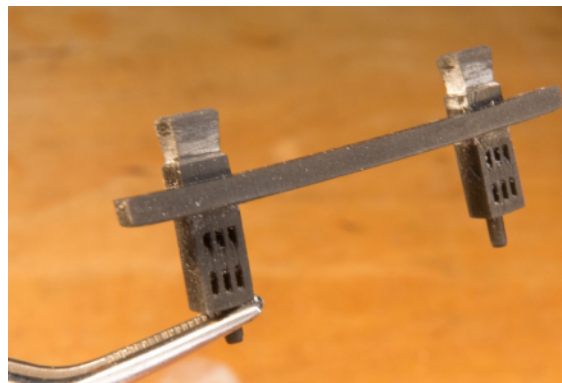
The number of belaying pins in the bitt is based on McKay's rigging plans, although in my opinion there are still many open questions, especially the tight occupation of the front foremast bitt.



Front foremast bitt with 17 pins and additional rollers attached to the sides.



Aft foremast bitt with 9 pins and additional open rollers attached to the sides.



Mainmast bitt with 12 pins

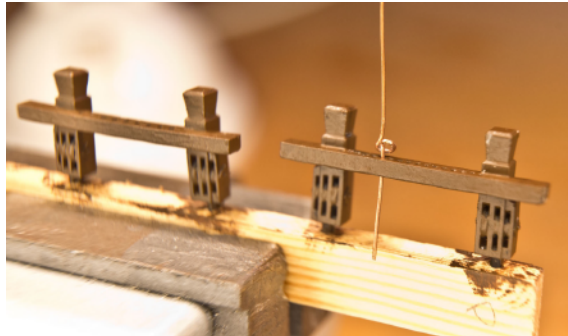


Mizzenmast bitt with 9 pins



## [Tips & Tricks for Model Makers]

# Assembling the bitts



When painting the bitts, always immediately use a wire to clear the holes from the wet paint. Do not work with pressure if the paint is already too dry, so that the crossbar does not break. It is better to drill it out with 0.5 mm.

If you want to give the parts a little more life, you can try the following:

First, let very diluted ink flow into the corners with a thin brush, this gives depth.

Then dry paint the edges with white paint to emphasise the contours.

If the whole model shows signs of use, you can use light beige to show all the scrubbing traces of the ropes on the wooden edges.



The two knees must be glued to the mizzen bitt.

Caution: The vertical supports are not at right angles to the lower edge of the knees!

Make sure that the two rope passages remain open and that no glue flows into them.







## [Tips & Tricks for Model Makers]



Preparation:  
I made a template for cutting the nails to length, with a wire feed from the left and a catch basket underneath, it works fast, all cut to 7 mm quickly and well.

Then I glued the assembly bar with through holes to a wooden stick or similar with double sided mirror tape and filled it with the wire pieces.

## Belaying Pins



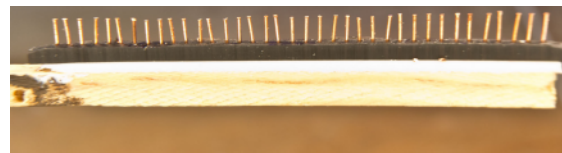
Why are the pins not printed? The resin is too brittle for rigging, with wire there is no danger of breaking away during rigging.



The double sided tape secures the wire pieces against falling out.



Then the lengths are straightened a little ...



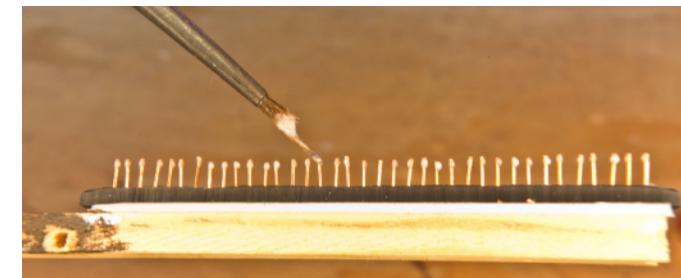
... and it looks like this:

Then prepare the nails' heads. White glue in a small bowl ②, water in the next bowl ① and the mixture in a third bowl ③. And for that the brush does not dry out when the pin's head is left to dry, it is brought to the right height with a clothes peg so that its tip is in the water. ④



Then spread the glue on both sides of the head in several layers. The thinner the glue and the more layers, the more even the result. So do not make the first layers with too thick a mixture of glue and water! And always let it dry. That's why I use the white glue express version, so that also works quickly.

By the way, it took me 6 to 8 layers. When the head is the right size, let it dry briefly and paint it :-)







## [Tips & Tricks for Model Makers]

# Stern

The stern of a ship, together with the bow, is usually the jewel of a ship. Further parts are located on window bars plate 1, stern coat of arms + letterings platze 5,  
- see separate assembly instructions.



On my models it has proved useful to cut off the lower part of the stern, similar to the side galleries. When joining the hulls halves, this part can already be glued in, filled and sanded. The upper part is installed later and the action of fitting is easier.



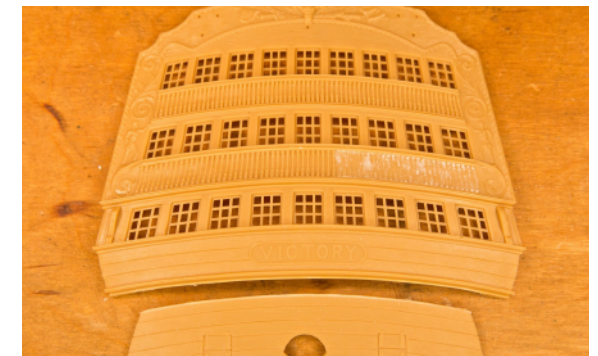
To do so, carefully make a light guiding cut underneath the profile with a sharp cutter blade, applying little pressure. Repeatedly follow this notch with little pressure.



As soon as the notch offers good guidance you can slowly increase the pressure until you see a light stress mark on the back. Then carefully apply less pressure again until the bottom part comes off easily. Then trim the edges if necessary.



The two stern chasing ports can then also be repositioned in the lower counter.







# Removing the Name's Compartment

[Tips & Tricks for Model Makers]

In 1771 the order was given to name the ships „in letters a foot high, and inclosed in a compartment“. This is the version shown on the kit.

In 1772 the order was changed to „without compartment in letters as large as the counter would admit“. This is the version that is shown in Portsmouth today.

For a short time, at least in Keppel's fleet in 1778, the names even disappeared again, to give no intelligence to the ennemy.

It is unclear whether the Victory was given lettering again afterwards, neither Turner's sketches nor Livesay's drawing show this.

The letters for the lower counter can be found on plate 5.



The best way to remove the lettering is, of course, with a fine chisel.



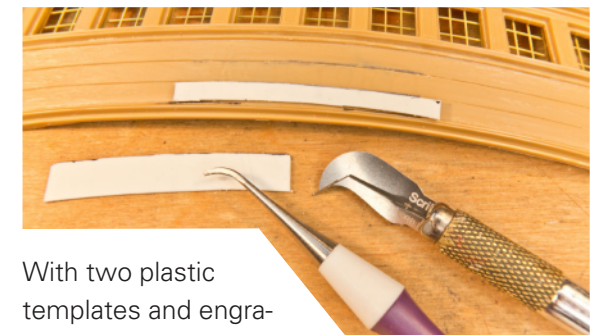
A sharp cutter blade can also be used, but extreme caution is called for here. The lettering can then be straightened with a key file.



Blocks with applied sandin paper can then make everything smooth.



The surface can also be easily smoothed by pulling a cutter blade.



With two plastic templates and engraving tools, the missing plank joints can also be re-engraved.





## [Tips & Tricks for Model Makers]

# Removing the Balusters



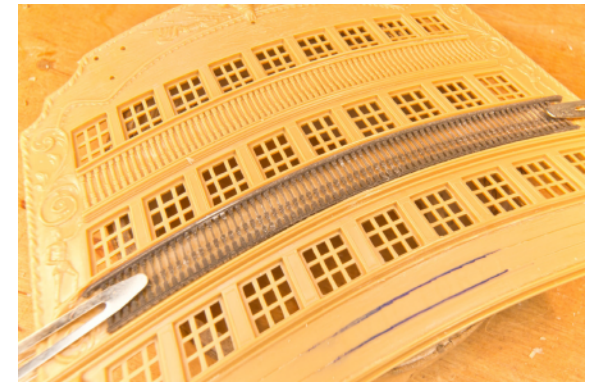
As with all works, I ask for extreme caution to avoid self-injury, but also to avoid breaking parts.

The following procedures have proved successful in my own work.

Alternatives are also given, so the modeller can find out for himself which technique works best for him.

From experience, I personally advise against using power tools such as Dremel or Proxxon, as they can melt the material during drilling and thus ruin the surface. They also allow less sensitivity and control if you don't have the best command of the technique.

As with all work steps, first lay the new parts in place and check carefully that everything fits and is well understood.



Here the balusters of the two decks are only laid on: How do they lign with the volutes? What has to be taken away? What must remain? How are they correctly centred?







## [Tips & Tricks for Model Makers]

# Removing the Balusters: Setting the Borders



Baluster of the middle row of windows:  
A light cut along the marked gaps.  
Repeat this a good dozen times with light to medium pressure until you have approximately the depth of the background surface of the baluster row.



Baluster of the upper row of windows:  
A light cut along the marked gaps.  
Repeat this a good dozen times with light to medium pressure until you have approximately the depth of the background surface of the baluster row.



Then I make reliefs cut at the top and bottom of the balusters themselves. This serves as a borderline and makes removal easier, as the chips can break off easily there and the tools cannot reach the final profile of the first blue cuts.





## [Tips & Tricks for Model Makers]

# Removing the Balusters: different Techniques

Every modeller will have his own technique to remove the old balusters from the surfaces.

For those who are still unsure, I present here some different approaches how to remove the balusters from the surfaces.

As always, please use good, sharp tools. Do not use too large or blunt blades.

Personally, I advise against using Dremel, Proxon and other electric hand tools, especially if you don't have much practice with them. The plastic quickly melts or you get too deep or you slip away.

And as with all rebuilding and tinkering a general warning:

**Watch your fingers and other body parts!**

Use sharp tools, because they make the work easier and minimise the risk of slipping.



Personally, I find a miniature carving chisel best. With it you can work well from the middle towards the red cut and regulate the depth of cut well. These tools are expensive, but very valuable for various other tasks on the model.

Scalpels with straight cross blades work similarly. But they are not as stable. Make sure that they have sturdy metal handles without plastic parts! Do not choose the blade width too wide, it makes it easier.



Alternatively, a fresh and sharp cutter blade segment can be used. In this case, be especially careful!



Dull scalpel blades can be quickly sharpened with fine sandpaper :-)

Put the sheet of sandpaper on the table and pull it off a few times at the right angle.







## [Tips & Tricks for Model Makers]

# Removing the Balusters: smoothing the areas

After removing the balusters, the surface still needs to be levelled. Baluster remnants will still be sticking up, possibly some holes have also been made.

Baluster remains can first be removed with a key file. Here, the previously mentioned border profile serves as a buffer so that the remaining parts are not damaged.

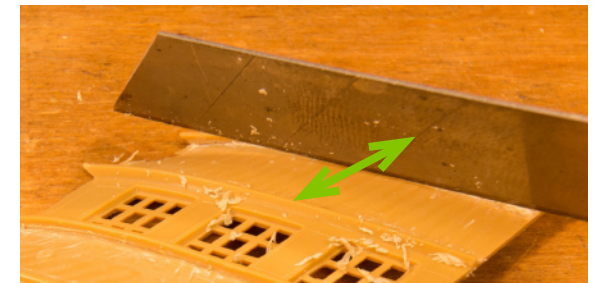


After the key file, a small sanding block of the right size has proved its worth, onto which the right sandpaper is stuck. First roughly 280 grit and then 400 grit.

The last thing to do is to remove the red border profile. To do this, run the vertical blade along the blue cuts from the beginning again and check the depth. Then run repeatedly with a horizontal blade with soft/medium pressure at the base of the border profile in the direction of the first/blue cut until the border profile can be lifted off in one piece. This way you get a clean and straight edge.



The surface can also be easily smoothed with a cutter blade. Place the cutter blade vertically and scrape across the blade to obtain a very clean surface.







## [Tips & Tricks for Model Makers]

# Removing the Balusters: Repairs

You can't make an omelette without breaking eggs, and even I always have to make repairs.

In the backlight you can clearly see where there are still problems.



Prepare a spatula of thick cardboard or polystyrol that has the width of the area to be levelled. Use it to draw the preferred filler - I use normal car fine filler - evenly through the fields.



After hardening, level the area again with sanding blocks.

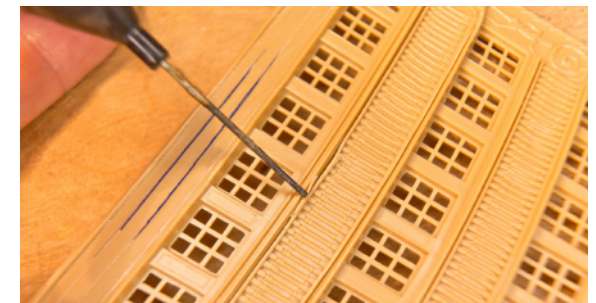
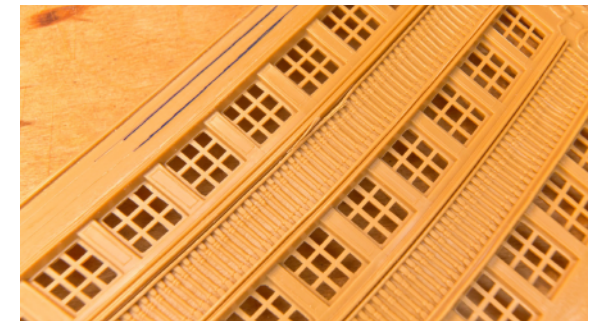
Finally, check against the light again and repeat the procedure if necessary.



If the blade ever slips or the cut is wrong, carefully close the gap by simply pushing the material back in place I with a hard point and apply very little plastic glue, preferably with a needle tip.

Allow to dry thoroughly before continuing.

If necessary, straighten the cut with some sandpaper. After that, the cut should no longer be visible. Guess how I know that.



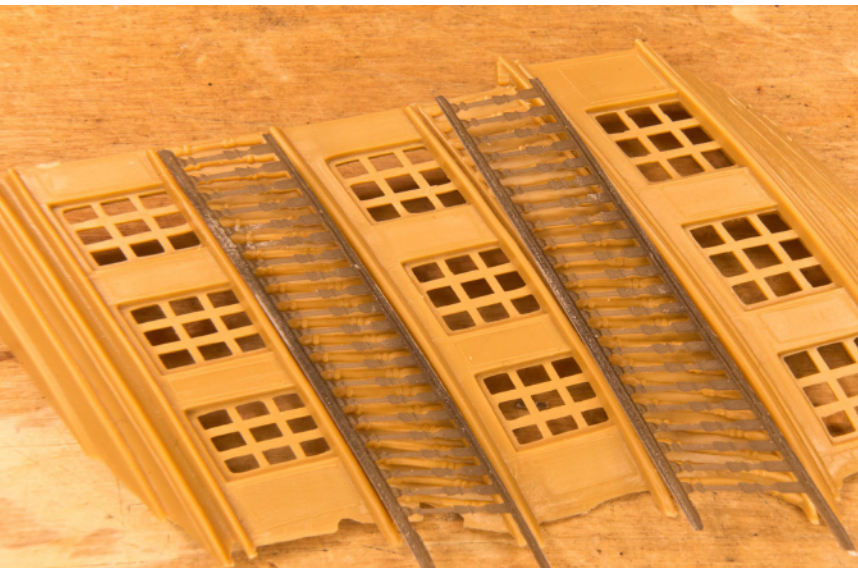




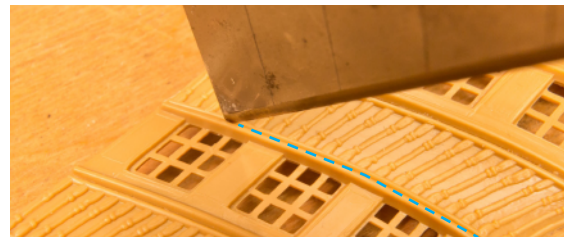
## [Tips & Tricks for Model Makers]

# Removing the Balusters: Side Galleries

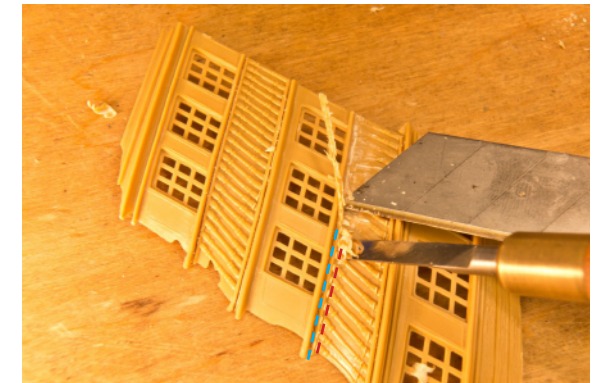
The side galleries work in the same way as the rear balusters. First identify the matching baluster and test fit them.



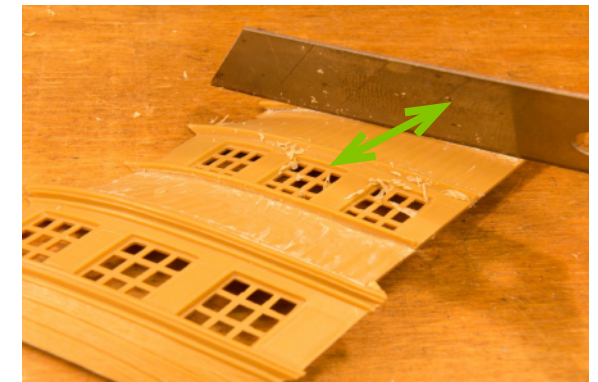
Then the four vertical cuts.



Then remove the balusters and finally the border profile. Summarised here in one picture.



And straighten the surfaces.



That's the stage when I like to remove the window bars for plate 1.





## [Tips & Tricks for Model Makers]

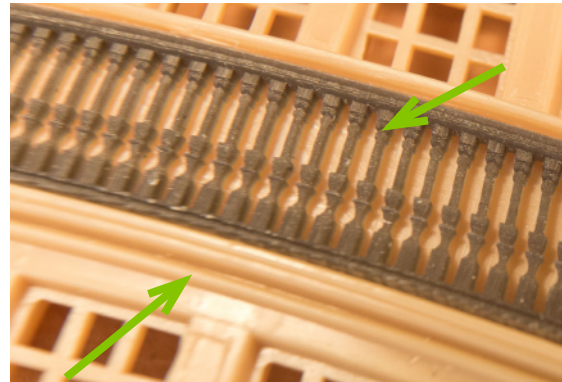
# Fitting in the new Balusters

Before painting, the exact fit of the new balusters must be checked. The balusters are produced flat and fit easily to the curvature of the stern and the side galleries.

First check: Do the new parts fit without tension on their bed and do they lie snugly?

If the parts appear too hard and only fit reluctantly because they are either over-aged or have not been stored in a UV-protected place, please soften them in warm water beforehand.

Is the joint consistent at the top and bottom?



What is the correct side alignment? Both sides must be the same distance from the outer edge. It is best to use the outer windows as a guideline.

For the side galleries, the alignment is related to the aft edge.



The short overhang at the front is intentional and will only be adjusted and sanded after gluing in the balusters and before assembling the whole lot to the hull!

The balusters are only glued in after painting!







## [Tips & Tricks for Model Makers]

# Painting the Stern: Baluster

First I paint from the front in two to three thin layers. Make sure that no fuzz or air bubbles remain.

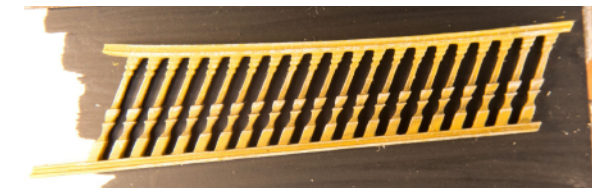
When there are no more black spots on the front, work the spaces in between coming over the back side.



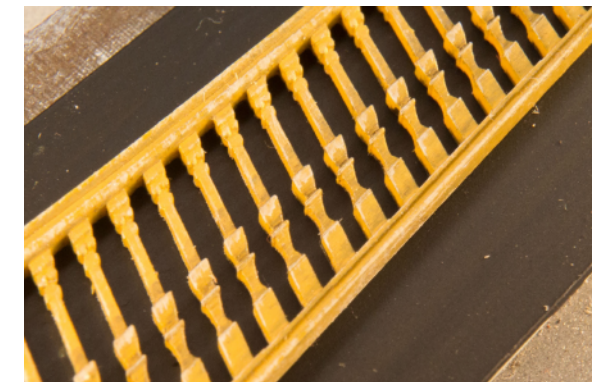
Do not paint the back itself. Sand the paint on the back off by rubbing the balusters flat on sandpaper.



Classically, only the base colour is applied in ship model making. But if you want, you can go a little further.



Dilute some ink and apply it to the inner edges. As the ink dries, the capillary effect pulls the ink particles into the edge, which profiles and gives depth. Then dry paint the edges with white using a suitable brush, this also increases the appearance. It is best to try this effect on an old model or junk box parts. This is not weathering and is only for modulation.



I keep getting in many questions about the painting techniques of the stern. Therefore, here are some tips and hints. Since I traditionally work only with brushes, here are only hints on this painting method.

When painting with a brush, it is better to apply several thin layers than one too thick one. As a rule, I thin the paint so that it only covers after two or three times. After all, the parts are so fascinating because they have such fine details and they should not be pasted to death.







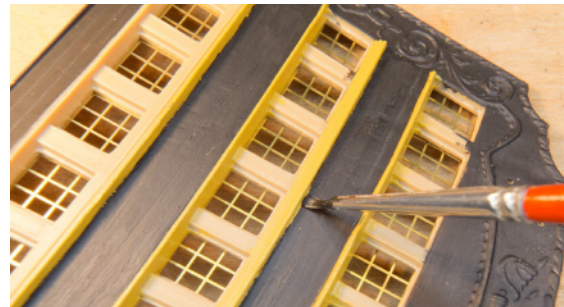
## [Tips & Tricks for Model Makers]

# Painting the Stern: Surfaces

Then it's time for the black bases. Here, too, it is better to apply two or three thinner layers than one that is too thick.

For each profile and each edge, an optimal workpiece position and brush position is chosen and then everything that can be done in this orientation is painted. Then, for the new task, part is rotated, brush position adjusted and drawn through. That's why I did the profiles above and below the balusters first.

The first pass is always messy with me. After that, I use thinner paint and thus an easier-running brush for the touch-ups. At this point I painted several times with ochre and black until the edge was right.

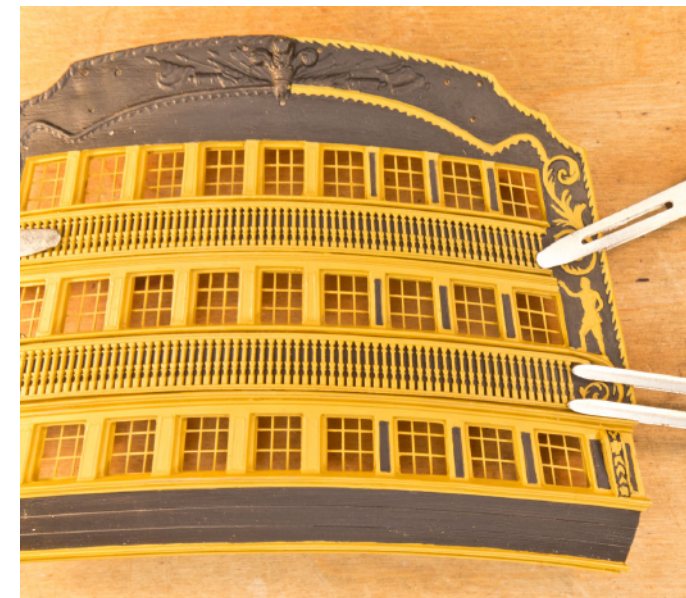


My recommendation is to first define this inner edge of the balusters really cleanly. Then the brush will run more evenly in the next step.

Apply well-diluted paint with a thin brush so that the ochre protrudes about 1 mm into the black field. This area will be covered by the top and bottom strips of the balusters and so there will be no black flashes after the assembly. Check the width of this ochre line with the help of the resin part, not that it is too wide.



And then straight back to the test fitting.







## [Tips & Tricks for Model Makers]

# Painting the Stern: Basic hints

To prevent the paint from drying on the brush, a clothes peg over the water glass has proved useful.

A piece of paper to wipe off too much paint or to reshape the tip of the brush is also very useful.



When painting, always support the ball of the hand and the workpiece to allow precise guidance and little wobbling. Never work in the air.







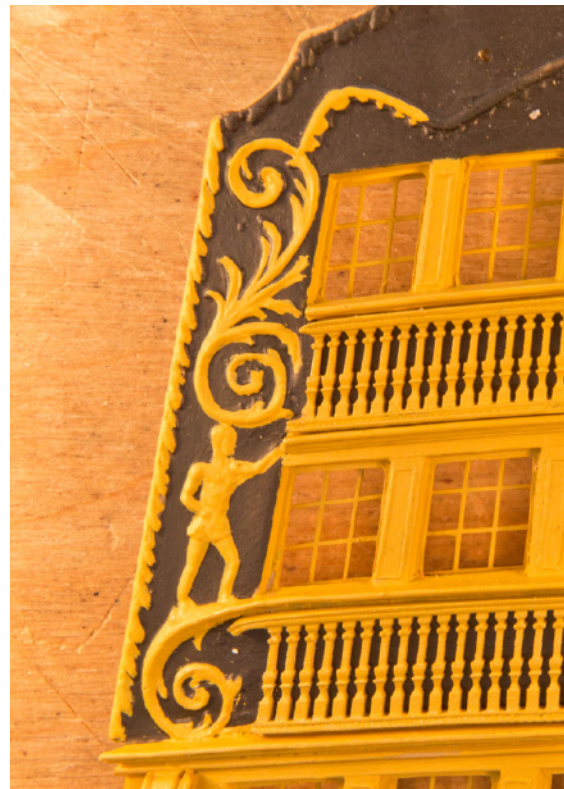
## [Tips & Tricks for Model Makers]

# Painting the Stern: Figures and Garlands

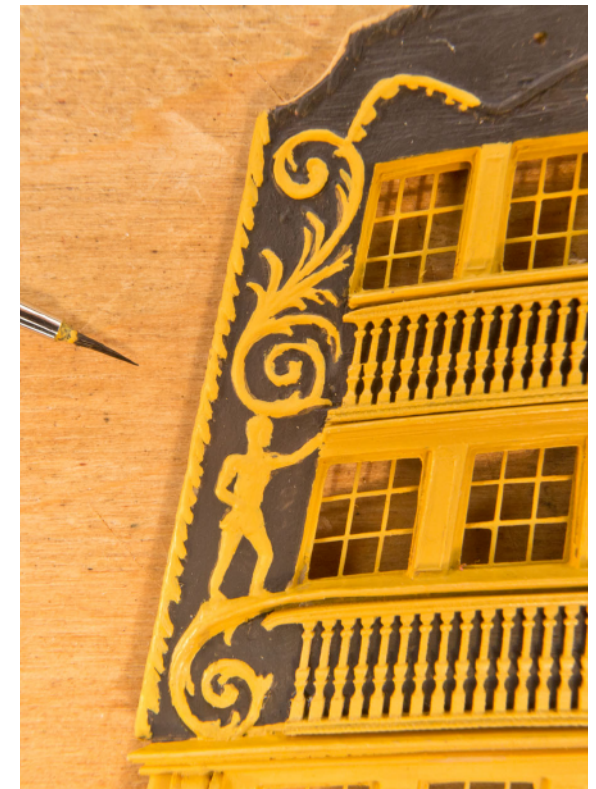
In the first pass, only the surfaces of the gingerbread men, the volutes and the garlands are painted up to just before the edge. Here, a slightly wider brush is used and the paint is also slightly thicker than in the next steps.



In the second pass, the contours are worked out with a fine brush, using much thinner paint. The direction of painting is always from the surface outwards to the contour. In this way, you can work your way forward a tenth of a millimetre at a time and give the man some volume.



Then come the touch-ups with black, which further refine the contour. Then the colour is switched as often as necessary and the contour is refined further and further until the result is pleasing. For me, this can take up to a dozen times back and forth. Therefore, always use very thin colour.







## [Tips & Tricks for Model Makers]

# Glueing in the new Balusters

Before glueing in the balusters, it is essential to check the fit again.

- Do the balusters fit well everywhere?
- Are there any dents or scratches in the black background?
- Are there flashes of colour?
- Are there lumps of paint or fluff on the balusters' backside?

Here, too, it has proved useful to look at the part in different light sources, a desk lamp is best suited for this.

Finally, check again whether there are any paint residues on the back of the baluster that could prevent a clean bond.

Take another close look at the position of how much space there should be on the left and right. I also recommend placing the balusters on the bottom profile.

If everything fits, use very little glue, apply well to both side ends and otherwise only selectively in several places, apply as previously tried and fix with clamps and let dry.

