

Basic Photo-Etch Techniques

By Kurt Van Dahm

It would be safe to say that any model ship builder who is serious about the hobby will eventually reach a point where the use of photo-etched parts is necessary. The amount of realism they can add to a piece of work is remarkable.



Kurt Van Dahm started his presentation by reviewing the basic tools required when working with these fine parts. Most of them can already be found in our inventory, but there were a few items unique to this technique. These included a glass plate for cutting parts off the fret, sheets of foam cut from egg cartons, and an Etch Mate Photo Etch Bending Tool.



Kurt couldn't emphasize enough the need for proper magnification, PLENTY of light, and adequate eye protection. (These tiny parts have a tendency to go flying when being cut from the fret!)

Although all P/E parts are thoroughly cleaned before leaving the manufacturer, it's still a good idea to remove any residual oil by dipping the frets in lacquer thinner or acetone.

From this point on, you don't want to handle them with your bare hands prior to painting.

Van Dahm recommends painting all the parts while they are still attached to the fret. Using an airbrush, a number of light coats are better than trying to do it in one application. Quality model paints such as Badger, Modelflex, or Floquil are an absolute must. After the parts are cut, burrs can be carefully removed with the help of sanding sticks, which are similar to emery boards. Once mounted on the model, minute touch ups will be required, but this will not detract from the finished job.

The two common ways of removing parts from the fret are to employ a sharp X-Acto knife in conjunction with a glass plate, or a Xuron side cutter. With either technique, it's important that the piece being removed from the fret is kept under control. This is especially true with the X-Acto where placing a spare finger on the part will keep it from flying off into that black hole of missing parts that lurks in every workshop!



Depending on the situation, the bending of parts can be accomplished in a number of ways. This is where dividers come in handy for taking the required distance off the model, so the bend can be made at the proper location. One of Kurt's favorite tools is a set of flat needle nose pliers that have smooth inner jaws. These can give you a perfect 90° bend.



The egg carton foam pad works well for bends of less than 90°. Place the part on the foam sheet, and mark the correct location. Position your blade over the mark and press straight down on the P/E part until it bends to the desired angle. Sounds too simple, doesn't it?

The third method involves a device called an Etch-Mate, which is specifically made for this process. Scored lines in the base allow you to set the piece perfectly square, prior to clamping it down with the top plate. Using a straight edged razor, the fitting is then lifted up to the required angle. The top plate has chamfered edges, which allow you to go up to approximately 120°. This device costs about \$60, but you can't beat it for accuracy.



Whoever thought of using an old egg carton to make curves in P/E parts was a genius. The difficult part of this procedure is trying to figure out where the curve should start. This is one of those cases

where practice definitely makes perfect! In any case, once the starting point for the bend is determined, the piece is laid on the foam sheet, and a drill bit of the correct diameter is positioned at that location. The bit should have a slightly smaller radius

than the finished part will have. Photo-etched pieces develop a certain amount of spring back when being rolled. It then becomes a matter of rolling the drill bit while pressing down with enough pressure to make the part conform to the bit's diameter.



Kurt recommends the use of C/A glue for assembling complex structures such as cranes, masts and radar antennas. This glue works well for filling minor gaps along the length of an assembly, but caution is required. A small applicator is highly recommended if you're going to avoid flooding the part.

When it comes to attaching the P/E parts to models, you have your choice of C/A or diluted white glue. Kurt likes to attach the part by applying minute drops of glue to several points on the part. He then goes back over its entire length, dragging glue along the joint. Again, the correct size applicator is recommended for this procedure.

Glue joints have a tendency to look shiny when dry. The final step is to apply dull coat to these areas. Once dry, the glue becomes virtually invisible.