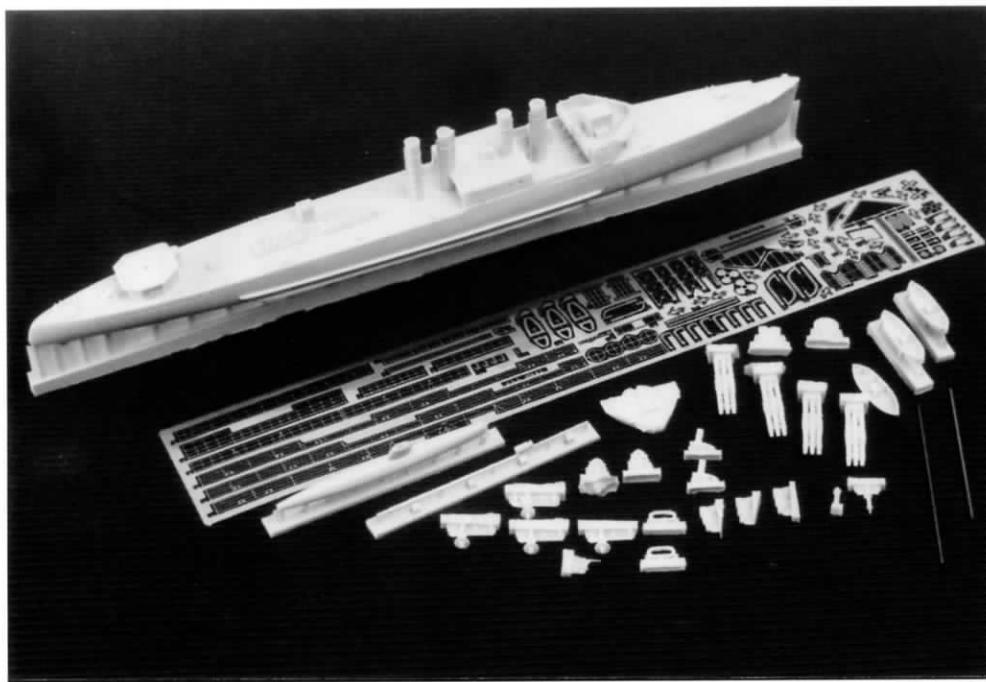


Chapter Two

Building Resin Kits



1/350 scale *USS Ward*

Over the past few years there has been an explosion in the variety and scale of resin ship kits. These kits are manufactured very differently from injection-molded kits in a process that is quite labor-intensive. The first step is to scratchbuild a set of masters from materials such as basswood, plastic, and brass. The designer of the master patterns must create the parts, engineer how they will fit together and how they will be cast, and decide whether resin or white metal will be used. Once the master patterns are complete, a set of molds are made from liquid RTV rubber. The molds are specifically engineered for the master pattern parts, and this can be a very intensive trial-and-error process. Once the molds are complete, a set of castings are made to see if any changes are needed. If adjustments to either the master patterns or the molds are necessary, new molds must be created.

Once the designer is satisfied with the master patterns and the resulting casting, photoetching is designed for the kit. A test run of the photoetching is done and individual parts are test-fitted to the castings. If adjustments are needed, the drawings are modified and then the photoetched design is certified for completion. The last step is to write a set of instructions that includes either pictures or drawings. The kits are then mass-produced, packaged, and marketed. There is no automation in the mold-making or casting process; it is all done manually, which adds a great deal to the overall price of the kit. In addition, mold-making and casting is usually done using a pressure chamber or vacuum chamber, which adds to the time, effort, and expense required to produce a kit. Finally, the RTV molds last for only 50 or fewer castings, so new molds must be redone often. Now you know why they cost so much.

Typically, when you open the box of a resin kit you will find that the hull, which is solid resin, is wrapped in bubble pack, while superstructure parts and the many small resin and white-metal castings are packaged in ziplock bags. The photoetched sheet is usually inside a protective clear sleeve located at the bottom of the box. The instructions usually list all the parts, and the first thing you should do is take an inventory of everything to ensure that you have all the parts and that they are not damaged.

Most resin kit manufacturers are good about including all the parts necessary to build the kit, but occasionally some are missing. Contact the manufacturer as soon as possible to have lost or damaged parts replaced. Review the instructions carefully and become familiar with the parts and the suggested assembly sequences. Resin kits, like their plastic counterparts, can be built

using just about any assembly sequence, and the one you choose will depend on whether you are building a full-hull display or a waterline display, as well as other factors, including color scheme and scale. The plastic bin organizers I mentioned in Chapter 1 are a must when you are building resin kits, because all the parts are bagged, and the best way to take inventory, organize, and separate them is to use the bin organizers.

Working with resin is easy as long as you follow a few simple guidelines. First, be very careful when removing resin pour plugs from parts. Resin is easy to cut and sand, so be careful not to overdo it. I recommend cutting the plugs down to as



The first step in assembling a resin ship hull is to remove the pour plug if there is one. The easiest way to do this is with a disk sander. Be careful that you don't oversand, and check your work frequently.

small an area as possible using a razor saw, then sanding smooth. Do this by running the part across a stationary piece of sandpaper in a figure-eight motion. Rotate the part so you don't sand off too much resin on one side. Take your time and check your work frequently.

Once you get the excess off, scrub the parts with a soft toothbrush and mild soap in warm water to remove mold release agents and resin dust. Wear a dust mask when sanding resin, as the dust particles should not be inhaled. One way to reduce such dust is to wet-sand. When wet-sanding, use waterproof sandpaper—the brands typically in hobby stores are Testors and K&S Engineering sandpaper. Both are waterproof. Another great source for waterproof sandpaper is automotive stores.

I usually use thumbtacks to hold the sandpaper stationary and flat, and I have a special length of pine, which is perfectly flat, that I pin the sandpaper to. I then dip the part into water and begin sanding, frequently dipping to remove the resin slug and to add more water to the process. Another benefit to wet-sanding is that it keeps the sandpaper from becoming clogged with resin, so it will last longer.

While the quality of resin castings for ship models is very good, you still get an occasional void or air bubble to be filled. Some modelers may complain about these occasional problems, but I look at it this way: injection-molded models have seams to repair, mold seam lines to scrape off, and indentations to fill, and resin parts have pour plugs and occasional voids and air bubbles. It's six of one or half a dozen of the other. Personally, I like resin superstructure parts because you only need to remove their pour plugs—no

gluing halves together, no removing of seams, and no loss of detail. The only thing you have to be careful of is ensuring that the surfaces from which you removed the plugs are flat and straight. Then, when you position them, they won't be slanted or skewed to one side.

Voids or air bubbles are easy to fill with super glue, putty, Evergreen strip stock, or resin. For voids on flat or large curved surfaces, use thick-gel super glue or resin. Testors putty also works well. For small air bubbles, use a thin super glue applied with a small-diameter wire applicator, or else use automotive crack filler. Sometimes the air bubbles are so small that the surface tension of the super glue will not allow it to seep into the tiny area. In these cases use automotive crack filler or, if you are using super glue, enlarge the hole slightly with a drill bit. I have found myself using automotive crack filler more and more these days to deal with small voids because it's easy to use, dries fast, wet-sands easily, and blends in perfectly.

Super glue accelerator will not affect resin, so you can use it to speed up the drying of super glue. You can also use Evergreen strip stock to fix small shapes and take care of problems in corners, on edges, or on the rims of circular shapes. Use a strip size that fits into the hole, dip the tip of the plastic in a puddle of super glue, and insert the tip of the strip into the hole. When the glue is dry, cut the plastic and trim and sand to shape.

Parts may also be warped or bent. You can sometimes correct them by submerging them in hot tap water and then straightening them out. You must secure the part in its new position until it cools; otherwise, it may snap back to its former shape as resin sometimes does. You can also use a hair dryer, but be careful not to melt or distort the part. If you don't feel comfortable trying to fix the problem, return the kit—most resin manufacturers will gladly replace a kit or defective part.

Once you have fixed any problems, clean the parts again to remove dirt and resin dust. Give them a final cleaning

with Polly-S paint preparation cleaner and then apply a coat of primer. The primer will act as a final check for any voids or bubbles you may have missed. They are easy to miss, especially with light-colored resin parts. Your eyes will have a tendency to become "snow blind" when looking at them because of their uniform light color. Now you are ready for final painting and assembly.

Resin sometimes shrinks. While this is usually not a problem on small parts such as superstructure shapes and smaller fittings, on large pieces like hulls it can be a real problem. Typically, resin hulls are split at the water line and you have to glue the upper and lower hulls together to get a



Some resin manufacturers like Classic Warships don't have resin pour plugs on their ship hulls, but you still have to flatten the gluing surface. The easiest way to do this on large models is with a hand sander.

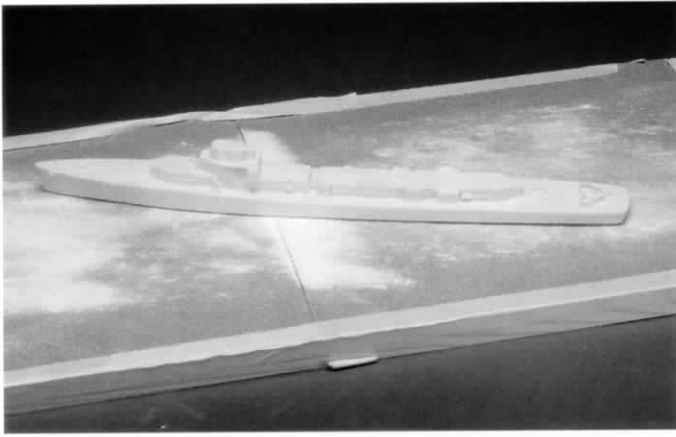
full-hull kit. The shrinkage usually occurs along its length, but only slightly. The real problem is with the width. Sometimes the shrinkage can be as much as $\frac{1}{8}$ inch. Trying to fix this after you have glued the hull halves is impossible, especially if the hull has a torpedo bulge.

Cutting up the lower hull into sections, butting up the edges, gluing them into place, and then filling the gaps with resin is by far the easiest and quickest way to fix this problem. Some manufacturers produce full-hull kits, which solves this shrinkage problem, but they are very difficult to cast. The deck detail is often marred by small surface voids.

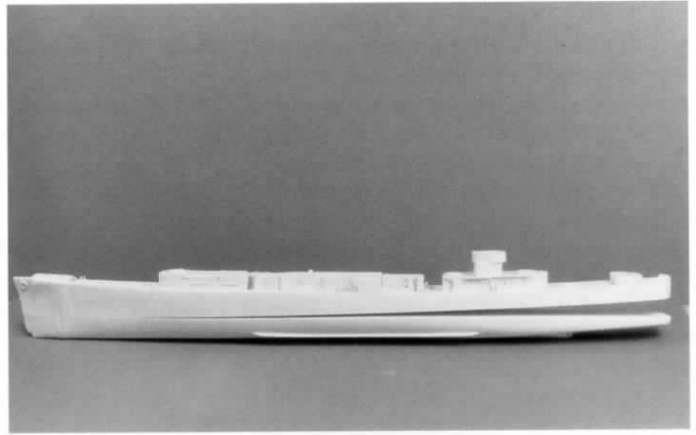
White-metal parts are easy to work with, as they can be scraped, sanded, and shaped just like plastic. White metal, like resin, can have mold release agents on it, so give it a good cleaning with an enamel-based paint thinner. Sometimes the surfaces of white metal can have minute voids, which can easily be filled with super glue.

White-metal parts typically have very small seam lines, much like injection-molded parts, although they can be difficult to see. Scrape and sand the white-metal seam lines just as if they were plastic. When you are satisfied with your work, give the parts a coat of primer. The gray color will highlight anything you may have missed. To get the primer to blend in, sand the surface with 600-grit sandpaper, coat the bare area with primer, and then give the entire part a coat. White-metal parts are flexible and as a consequence masts and gun barrels are sometimes bent when you get them. To bend them back into shape, simply roll them gently across your workbench and carefully work out kinks with flat-faced needle-nose pliers.

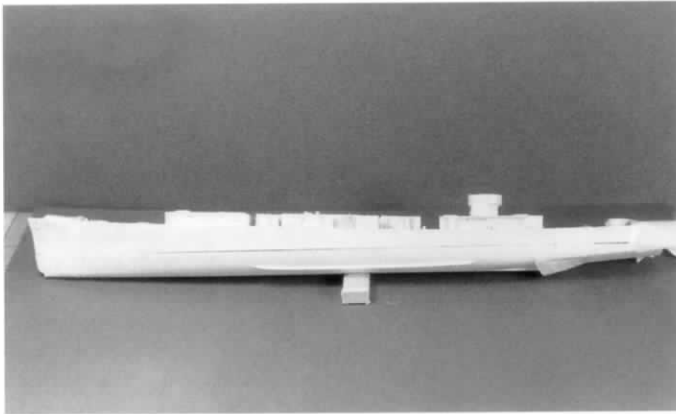
The assembly sequence for building resin ship kits is pretty much the same as plastic kits. Start with the hull, paint it, mount it on the display base, and then start on the superstructure. Once these parts are cleaned up, painted, and installed, add photoetched details and railings, the fittings and guns, and finally the rigging.



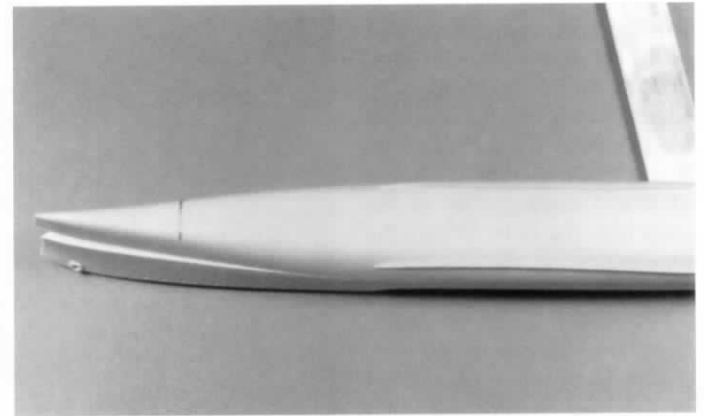
Another way to remove the plug or flatten the surface is to thumb-tack sandpaper to a flat surface and run the ship hull across it.



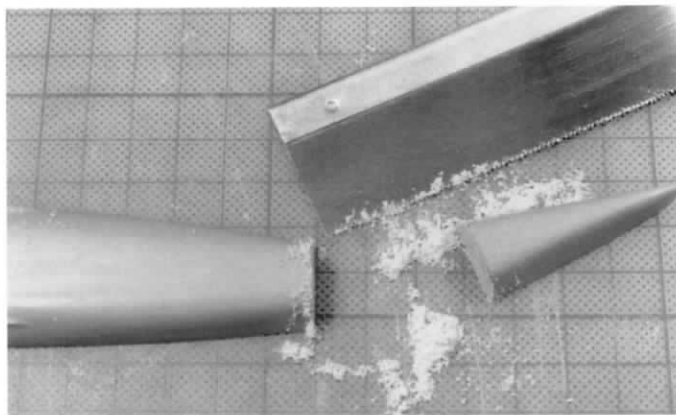
Sometimes resin hulls are warped slightly upward, but this is an easy problem to fix.



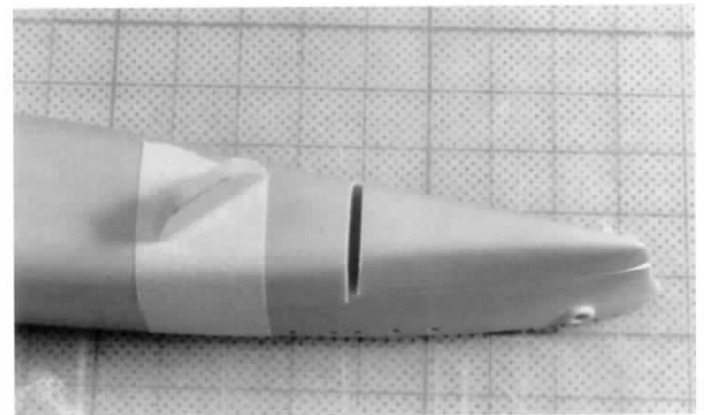
To fix these types of warps, simply tape the hull together tightly with masking tape when gluing.



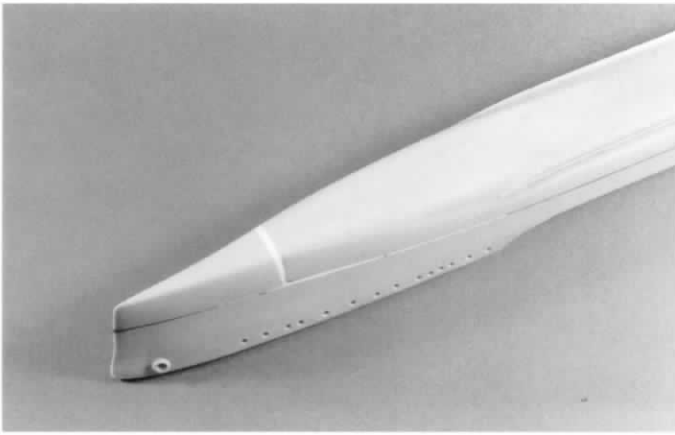
A hull warp along the center line, commonly known as a banana warp, usually occurs on the lower hull of smaller kits.



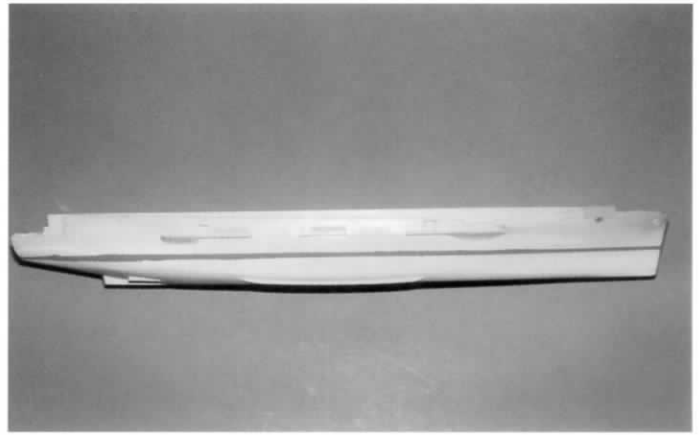
The first step in fixing this type of problem is to cut the lower hull, using a razor saw, where the warp starts.



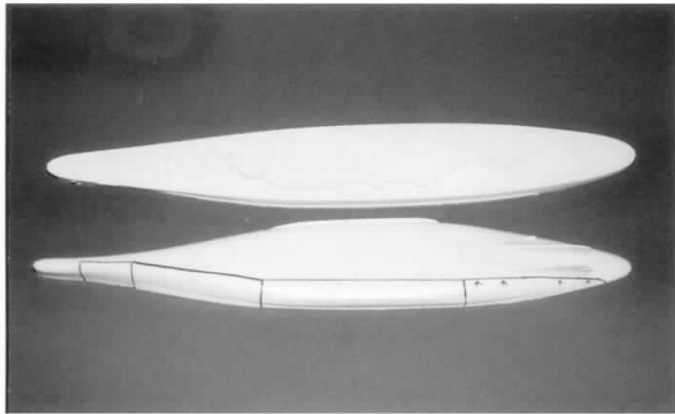
Next, glue the lower hull in place, butting the edges of the hull together. After the glue is dry, tape up the sides where the gap occurs, leaving the gap at the bottom of the hull so you can pour resin into it.



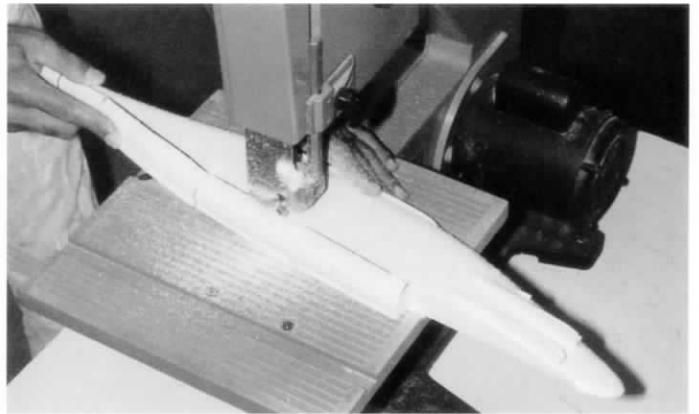
Here you can see that resin has filled the gap. It has also seeped into the small void between the upper and lower hull. Once the resin cures, sand and shape it.



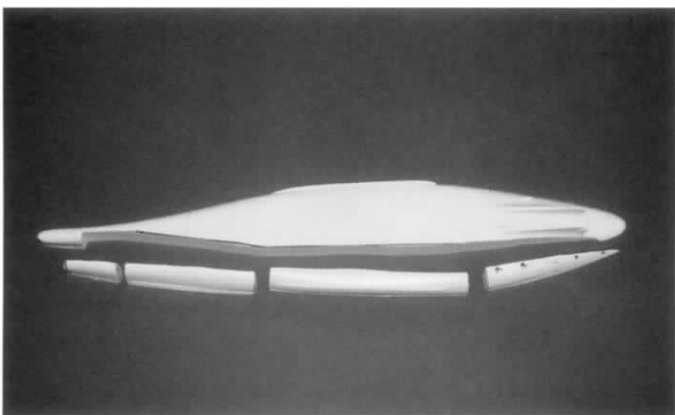
On ship hulls that fit together well, all you have to do once you remove the pour plugs is glue the hull halves together. Here, MB Models 1/350 scale *USS Gambier Bay* is getting its first coat of putty filler between the upper and lower hull. To limit the spread of putty, simply lay masking tape down on both sides of the pour line, apply the putty, then lift up the tape before the putty dries.



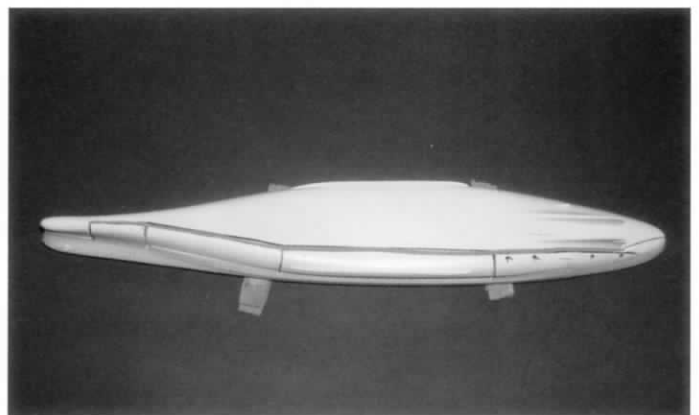
On large scale resin ship models you sometimes get shrinkage in the width of the lower hull. When this happens the only alternative is to cut the lower hull into sections. The first step in this process is to mark the cut lines.



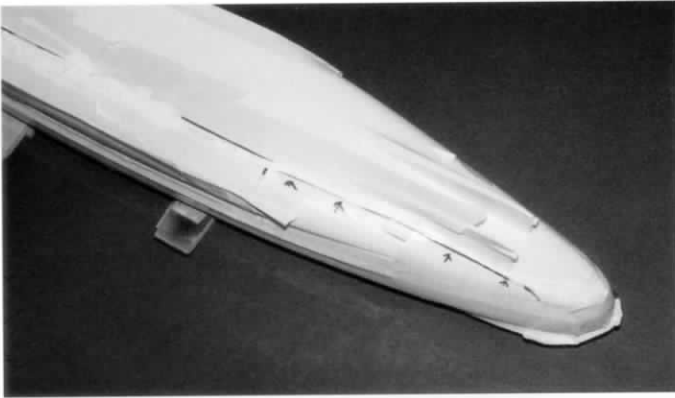
The easiest way to cut large resin pieces is on a band saw, although it is possible to do with a hacksaw.



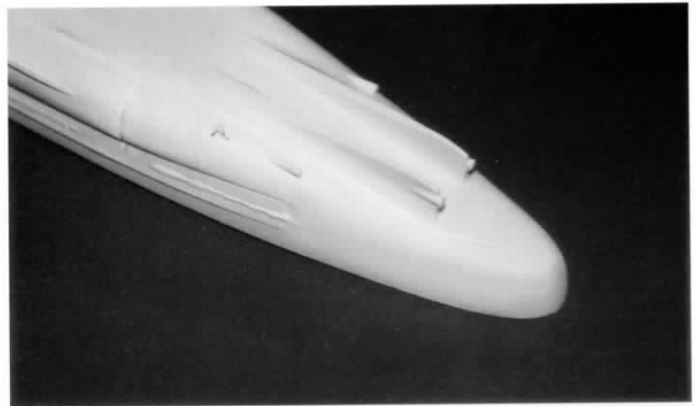
Cut up the lower hull parts; they are ready now ready to glue to the upper hull.



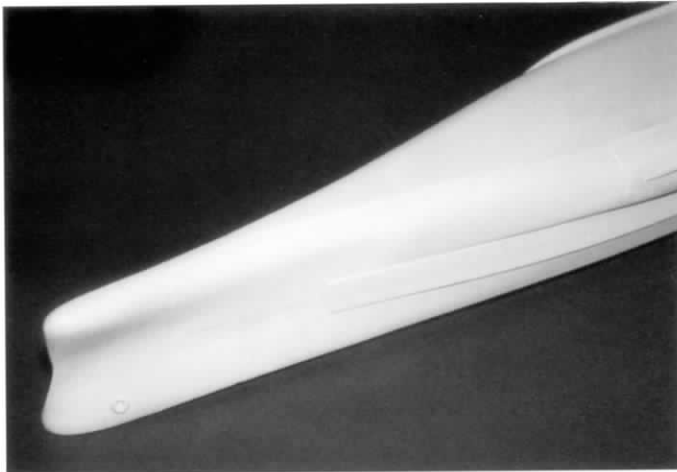
Glue the lower hull and upper hull parts together, and butt the individual parts against the outer face of the hulls. This results in large gaps that need to be filled.



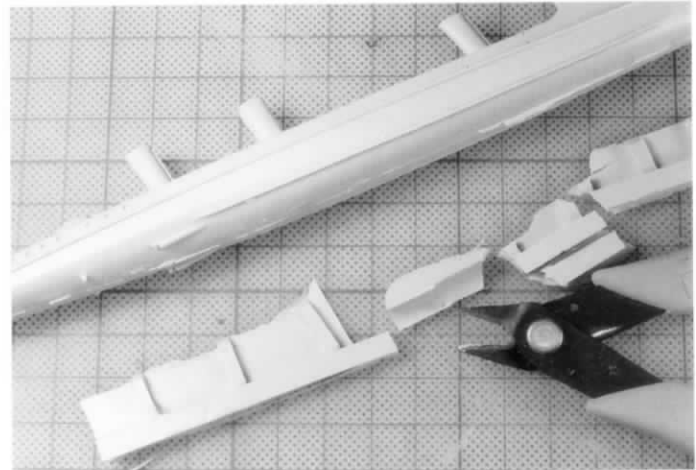
Use clear tape to seal the gaps on the sides of the hull, as well as the thin void line between the upper and lower hull. Then apply masking tape along the bottom of the hull along the gap line to prevent resin overflow from attaching itself to the hull. Then pour resin into the gaps in stages. The clear tape allows you to monitor the height of the resin as it fills the voids.



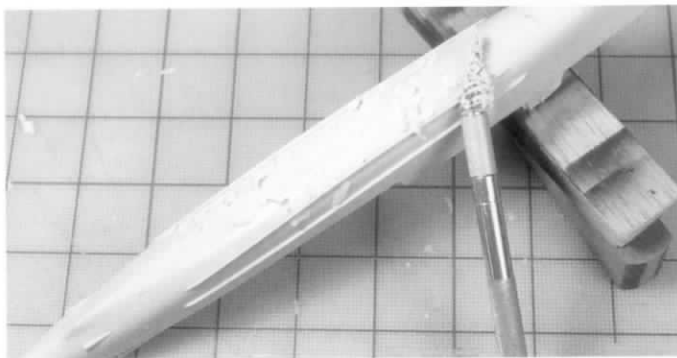
Remove the tape and then apply additional resin to the thin void lines between the upper and lower hull using a plastic syringe applicator like the ones Micro Mark sells. Initial sanding has begun to contour the resin into the hull and to reshape some areas. To reduce the amount of resin dust, simply wet-sand, or else fill your bathtub with water. Sand the hull in the tub using waterproof sandpaper.



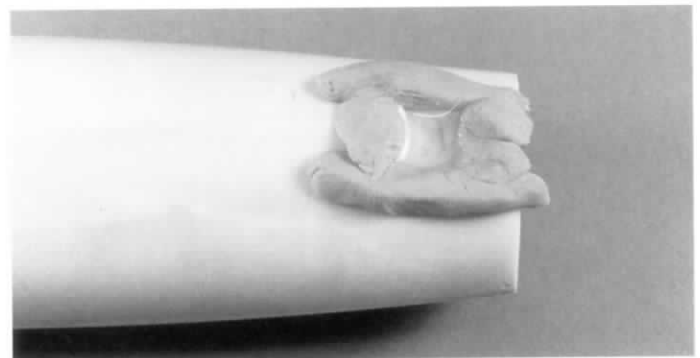
Sand the hull smooth, blending in the resin completely along the sides of the hull and filling in the voids. This approach of cutting up the hull and using resin as a filler is by far the easiest way to deal with the common problem of resin shrinkage.



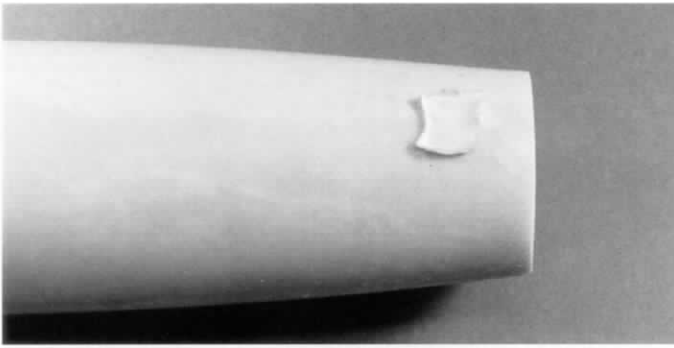
For one-piece hulls simply cut off the pour line with a set of sprue cutters.



The next step is to scrape the bottom of the resin hull flat using a number 11 X-acto blade. Once this is complete, you can wet-sand the bottom of the hull smooth.



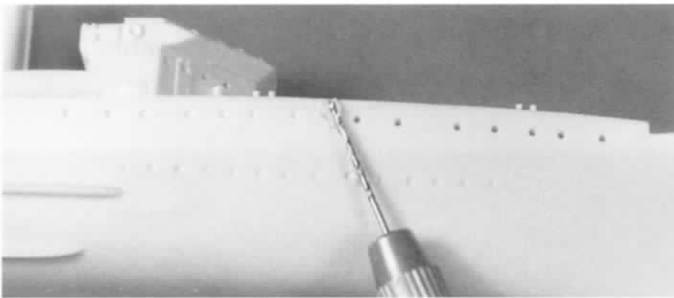
To fix small voids, you can use either putty or resin. Create a small box around a void using clay, and pour resin into the void.



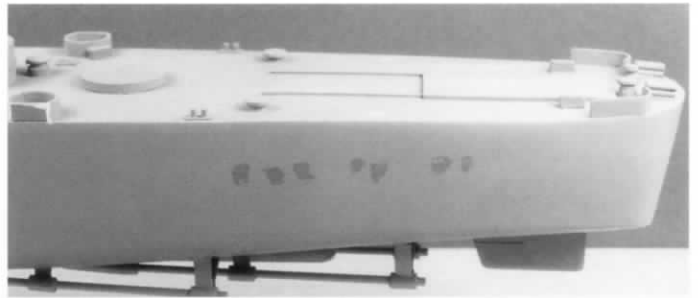
The next step is to remove the clay and then wet-sand the resin and blend it into the hull.



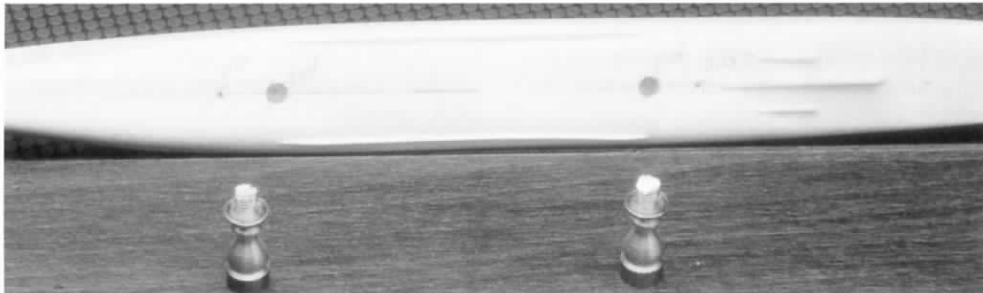
Use putty to fill small voids. Apply it to a piece of paper and use an X-acto blade to cut small amounts and apply them sparingly. Wet-sand the putty and blend it into the hull. To thin it out, mix a small amount with a drop or two of alcohol.



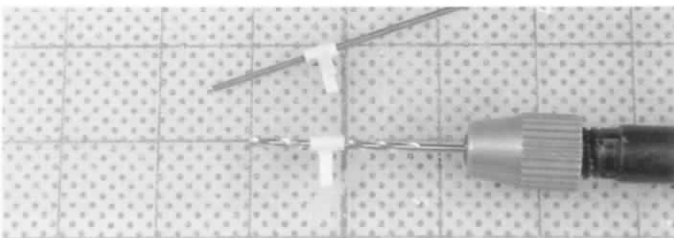
You'll have to drill out portholes on resin ship models to make them more realistic.



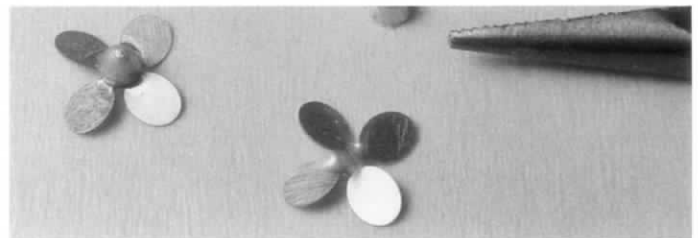
After you prime the hull it's a good idea to check it one more time for pinholes and voids that you may have missed. Simply fill these voids with automotive scratch filler, wet-sand them smooth, and then reprime.



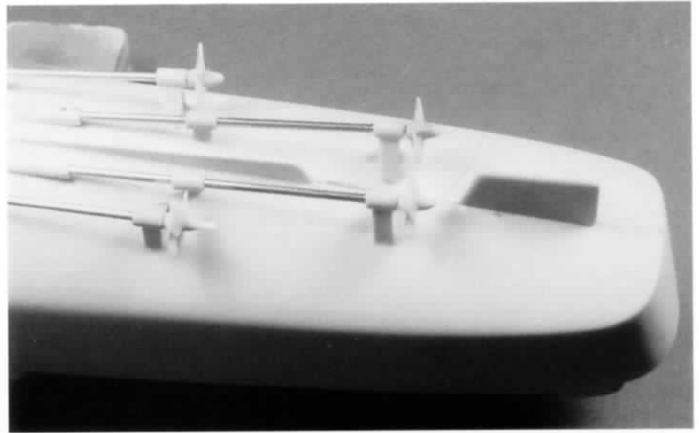
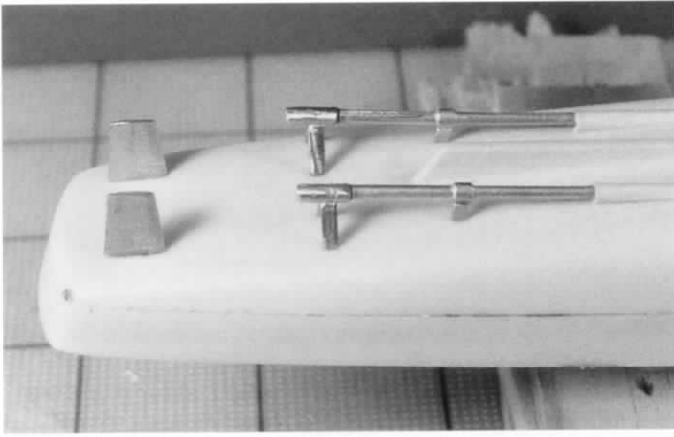
To display resin ship models on brass pedestals, strike a center line on the bottom of the hull and then drill holes in their proper locations. Thick-gel super glue or two-part epoxy works well to attach pedestals to the resin.



Drill out resin or white metal V struts in the same way as their plastic counterparts. Use several sizes of drill bits, working up to the size you need.

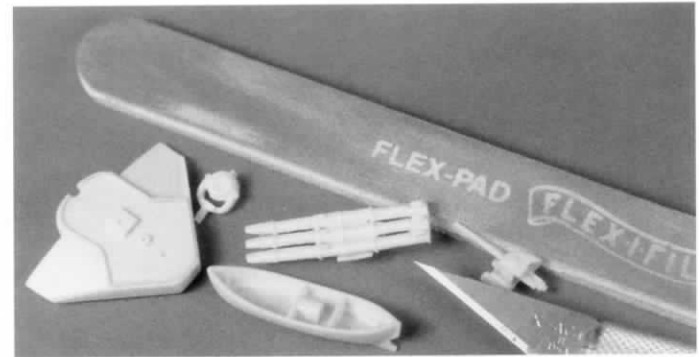
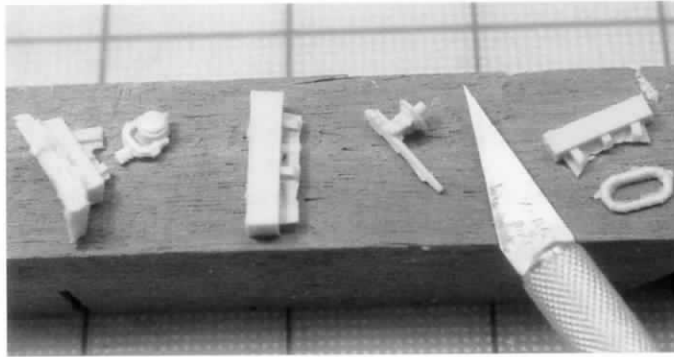


Bend photoetched propellers slightly to simulate the curve of real propellers.



Some kits have one-piece white-metal shaft and V strut castings. Be careful when bending these parts back into shape, and be sure they look alike.

The shafts, struts, rudder, and props have been installed on this 1/350 scale Classic Warships *Cleveland*-class cruiser kit. Don't glue the shafts, which are brass, or the propellers into place until after you paint the hull.



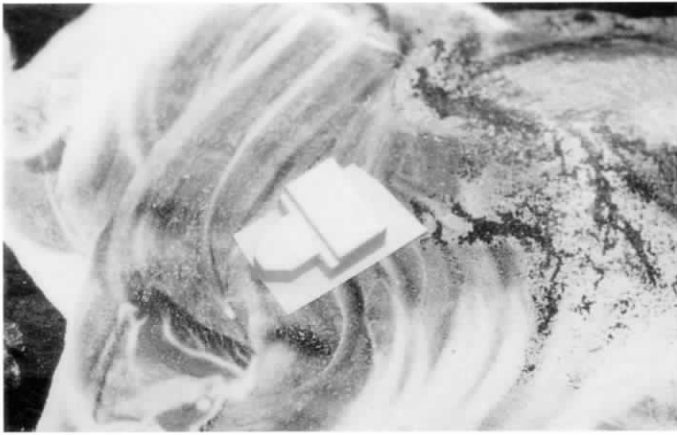
To remove the pour plugs from small resin parts, carefully cut the parts from the plugs on a hard surface using the tip of a number 11 X-acto blade.

Scrape and wet-sand the remaining resin. Be very careful when sanding resin parts. The resin comes off quickly, so check your work carefully.

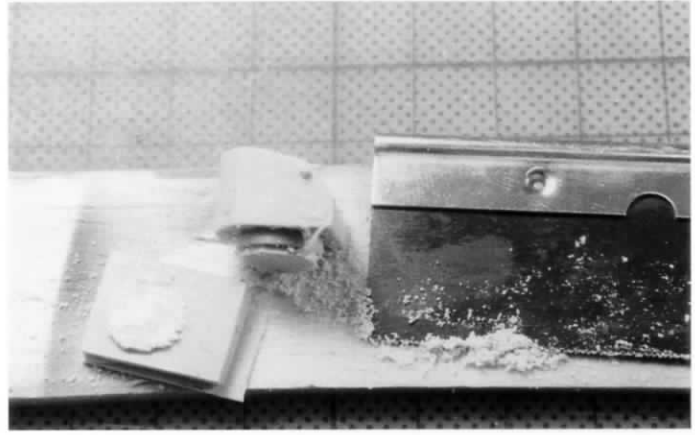


You can remove the pour plugs quickly from large resin superstructure parts by using a sanding disk. Here again, check your work frequently. I like to get most of the resin off and then finish it by running the part across a stationary piece of sandpaper.

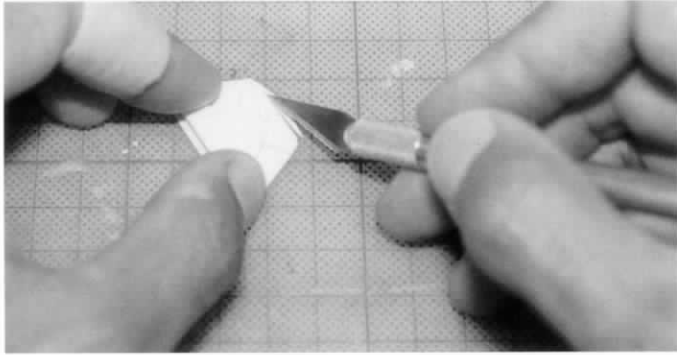
Small resin parts can have thick pour plugs, but here again be careful. Wet-sanding can remove the plug and eliminate any resin dust.



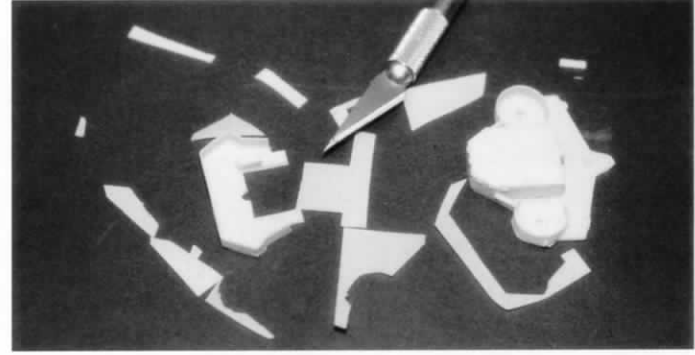
Some manufacturers like Classic Warships have thin pour plugs that overlap the part. This can be an advantage because as the resin gets thinner you can clearly see your progress. Use a figure-eight motion to sand resin and rotate the part frequently.



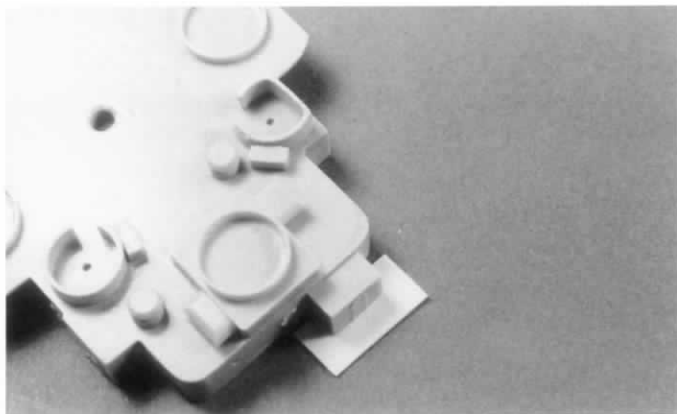
You can remove some pour plugs with a razor saw and then sand them smooth.



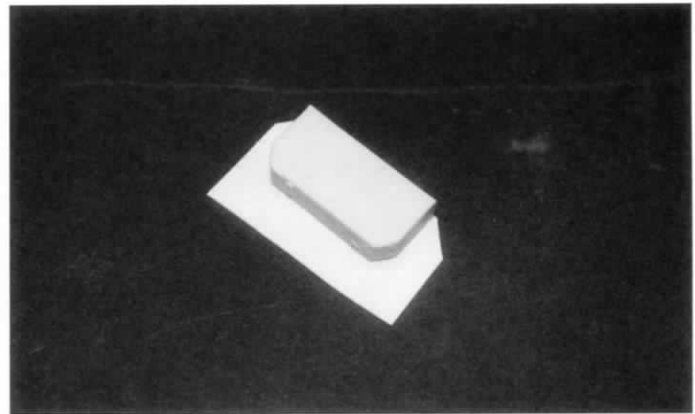
Sometimes pour plugs are very thin. Remove them with a number 11 X-acto blade. Be sure to angle the blade slightly towards the part to minimize the amount of scraping and sanding you will have to do.



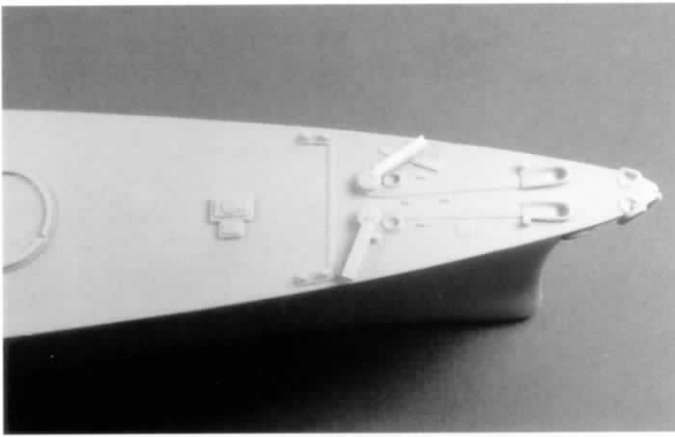
Removing the pour plugs on parts can be a messy process even if you are just cutting off the resin.



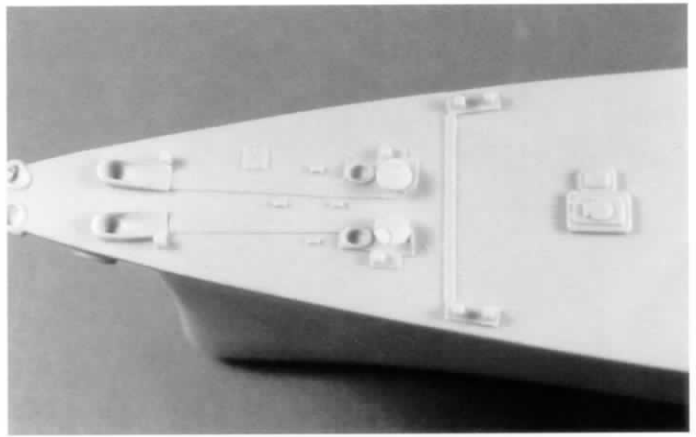
Sometimes you can oversand an outer area, but the fix is simple. Glue a small section of sheet stock to the base of the part and blend it in. Be sure that the entire surface of the sheet has a very thin coat of glue on it. When the glue is dry, trim the excess and sand around the base of the part to blend in the plastic.



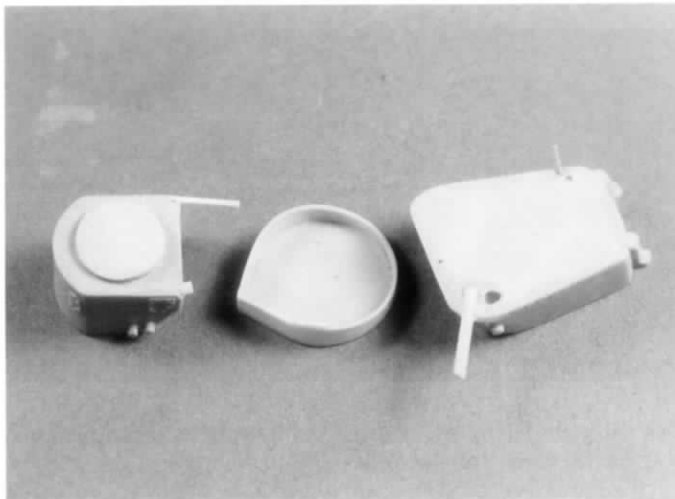
Sometimes you can oversand the entire surface of the part. In these cases, simply glue a plastic sheet to the base of the part, trim the edges, and then sand it to the correct thickness.



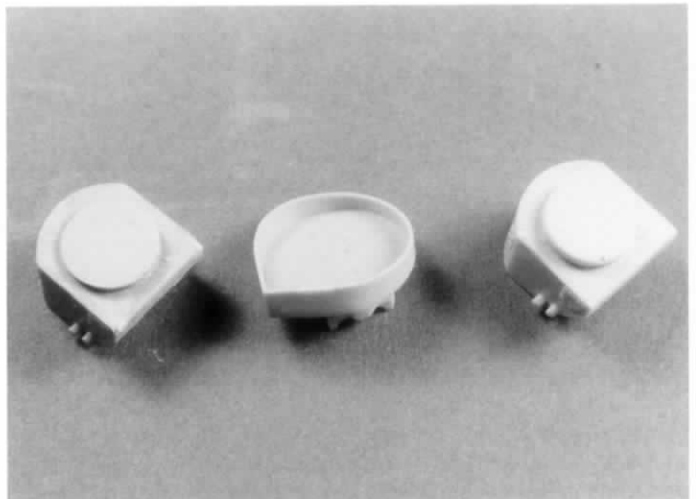
Fixing deck surface flaws can be very challenging with resin ship models, but like almost everything the solutions are usually easy. Glue small lengths of Evergreen strip stock into place. Slightly reshape the voids to accept the square ends of the stock, and apply super glue to the entire surface to provide a good coating.



Cut the lengths of plastic, and shape and contour the parts with a small length of a Flex-I-File sanding stick.



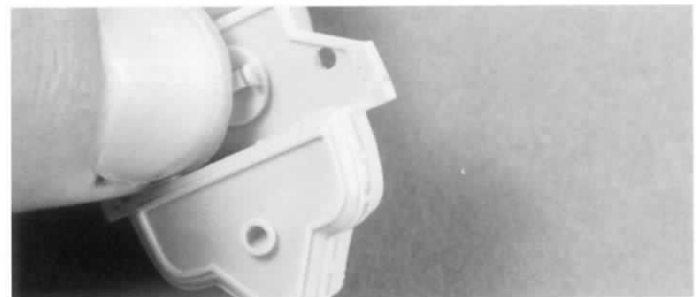
Voids can also occur along edges. Here again, glue small lengths of various thickness of Evergreen strip stock into the voids.



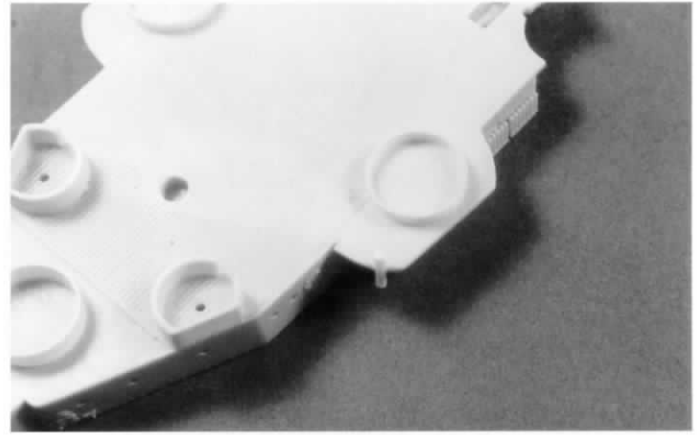
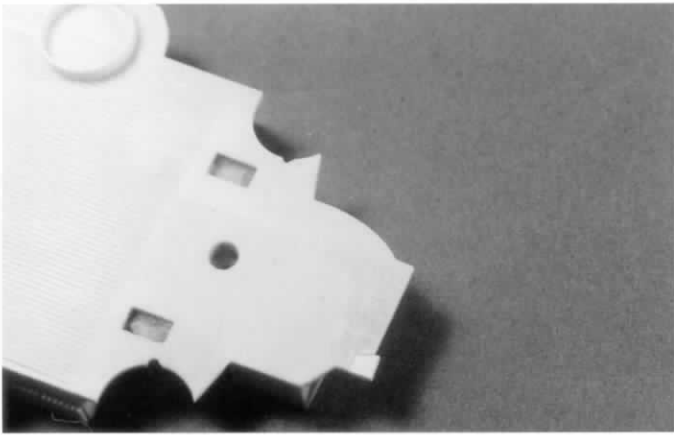
Clean up the parts and sand the strip stock into shape. After you paint the parts, you will not be able to tell where the voids were.



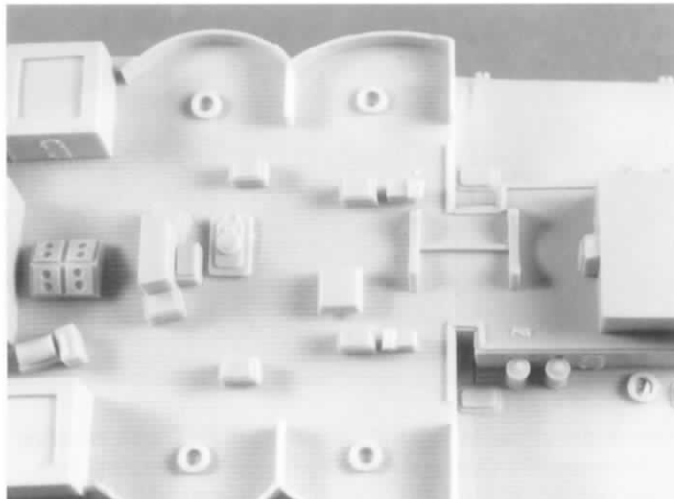
This void is of particular interest because it is located in an area where it is easy to damage surrounding detail. Glue a large oversized length of scrap resin into place after reshaping the void to accept the filler piece.



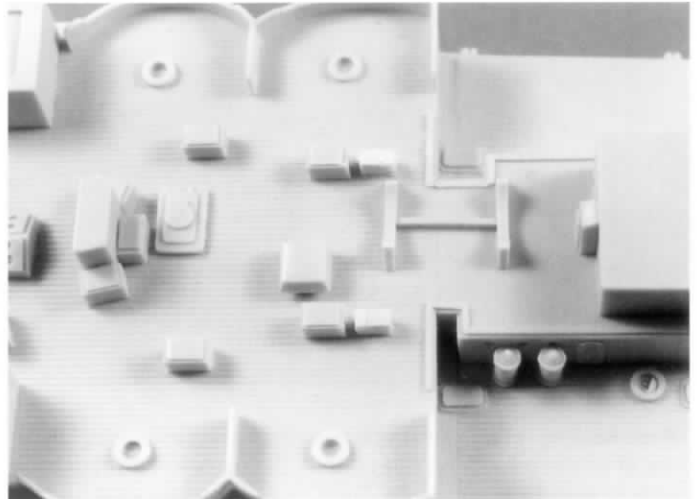
Cut the scrap resin and carefully shape it with the tip of a number 11 X-acto blade. Then sand it smooth without damaging any of the surrounding detail.



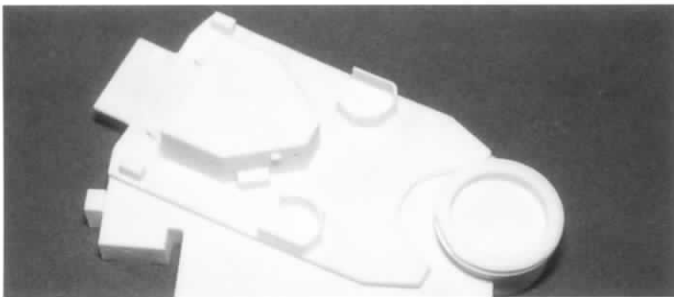
These photos show how to fix deck voids using scrap lengths of Evergreen strip stock. The concern here is that you will oversand the deck and make the problem worse. The trick is to use a thickness of plastic just slightly larger than the resin, or if it is on the edge, use a rod shape.



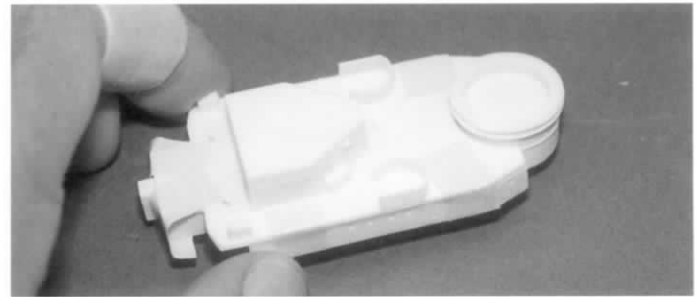
The gun boxes on this kit were not fully formed. Cut very small pieces of plastic almost to the exact shape of the gun boxes and glue them into place.



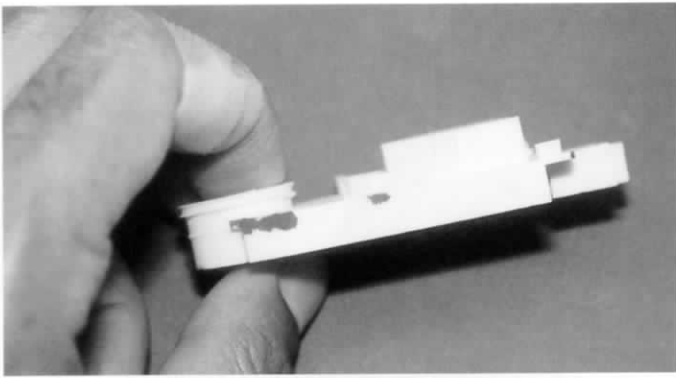
After the glue dries, scrape the sides of the plastic with the tip of a number 11 X-acto blade until they blend into the gun box shape and sand the tops carefully.



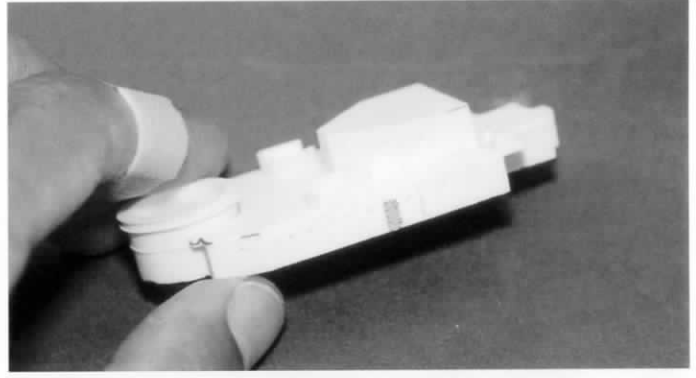
Most resin superstructure parts are one-piece castings, but occasionally some are two-piece castings. Carefully trim the upper part and check the fit.



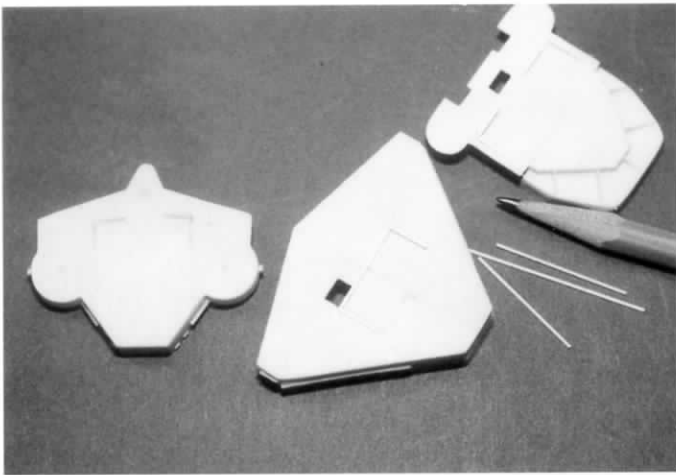
Apply thick-gel super glue or two-part epoxy to the under surface, position the part, and use strips of masking tape to secure it. The glue or epoxy will give you some time to position the part. In this case, the upper part was slightly wider than the lower, so the surface detail on the sides of the superstructure will have to be replaced.



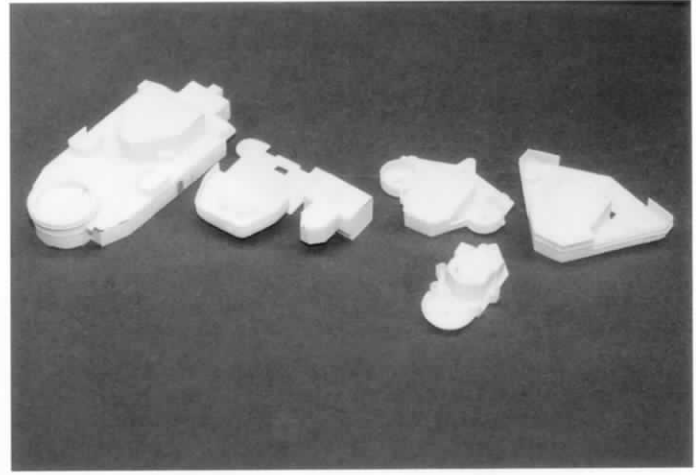
Smooth the sides by running them across a stationary piece of sandpaper. Then fill the remaining voids with automotive scratch filler.



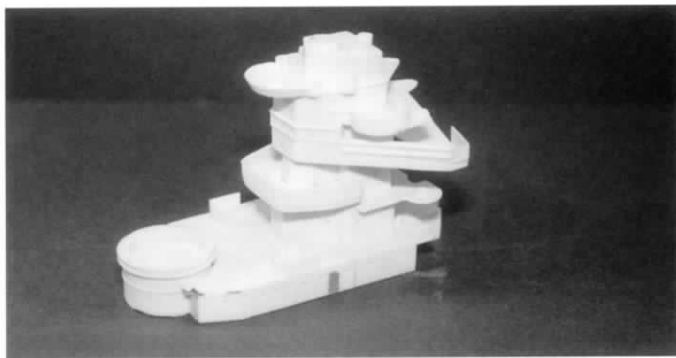
Replace the hatches with Gold Medal Models photoetched hatches, redrill the portholes, and replace the flat sides of the splinter shields with Evergreen strip stock.



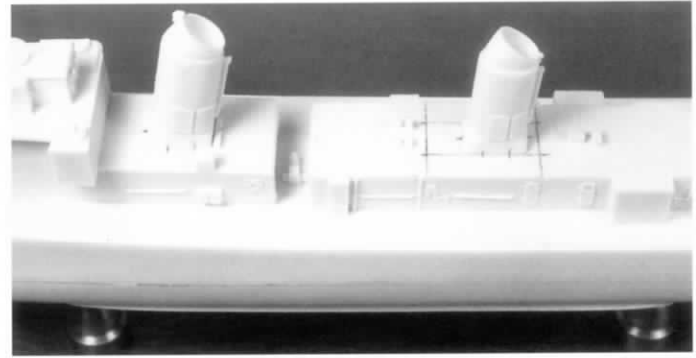
When stacking resin superstructure parts, make positioning lips or tabs of some sort to help you position the parts when you are ready to glue them into place. Carefully position one level on top of another, mark around the edges with a sharp pencil, and then glue thin strips of Evergreen strip to the underside, creating a positioning lip.



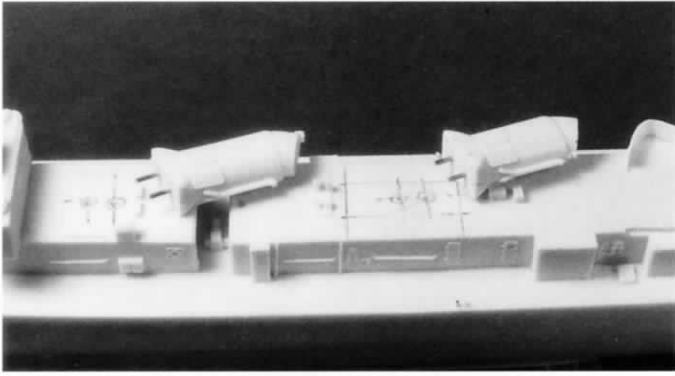
Here is the complete forward superstructure for Classic Warships 1/350 scale *USS Quincy* ready to be painted. All the parts have been cleaned up and positioning lips have been added to the undersides of the parts.



Stack the parts for a final check before priming. Be sure that the parts are not leaning to the side or skewed.



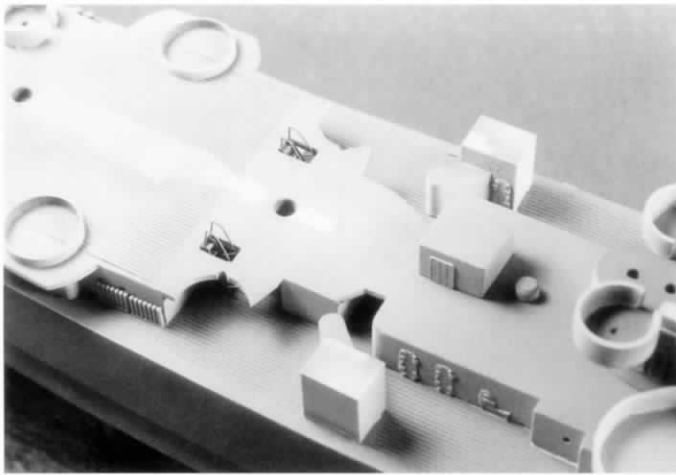
Another way to position parts is to use small lengths of brass rod. First position the part and then mark locations on the base of the part and on the deck. Then remove the part and connect the marked locations with lines. The connecting points between the lines are where to drill the holes for the brass rod.



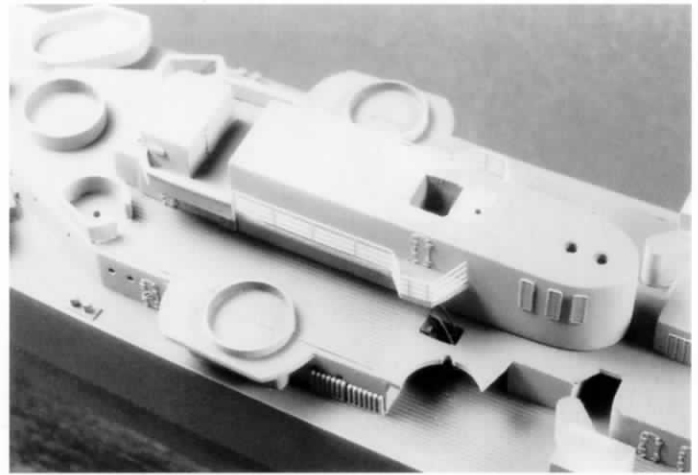
Draw the lines, drill the holes, and glue the brass rod lengths into place.



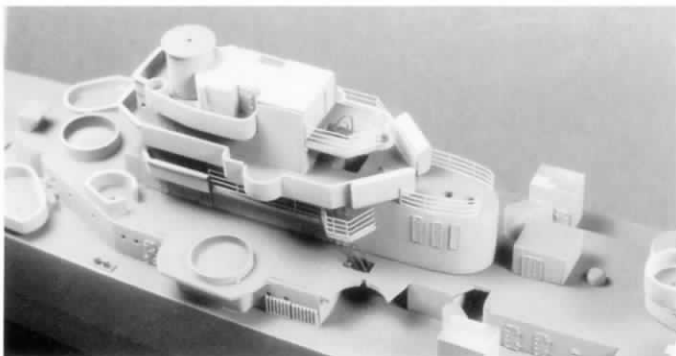
A really handy tool to have is a center locator for disks. This simple tool locates not only the center of a disk for drilling, but also the line through the center, which is great when you have to glue a turret base to the deck.



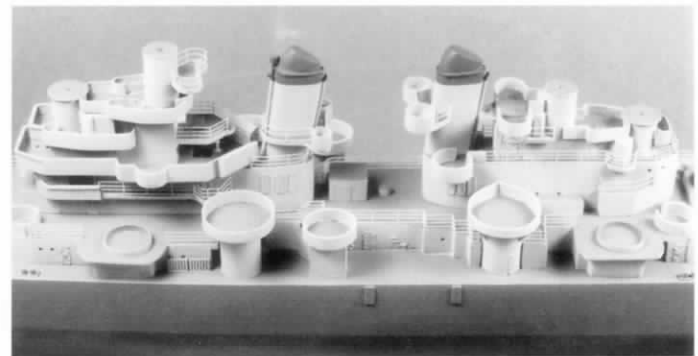
Building up resin superstructures works the same way as building plastic ones. Start at the base and work upward, adding detail as you go. Glue the base level of *Classic Warships USS Miami* in place, add the inclined ladders, and scrape the paint in preparation for gluing the next layer.



The next layer is now in place. Add the wing railings.



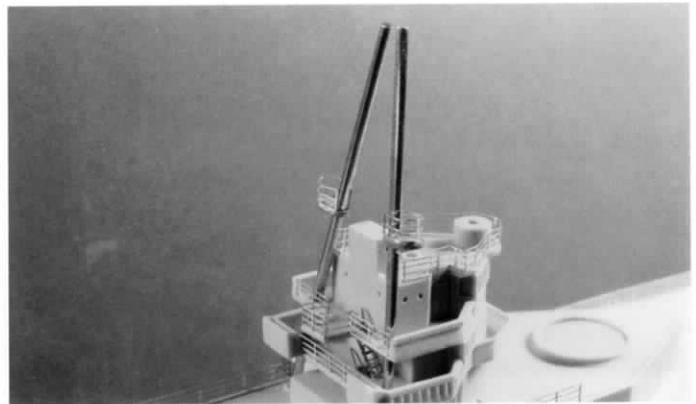
This superstructure is really taking shape. Add more levels, inclined ladders, and railings. Paint all the levels before installing them.



Add the rear superstructure and stacks, along with more railings.



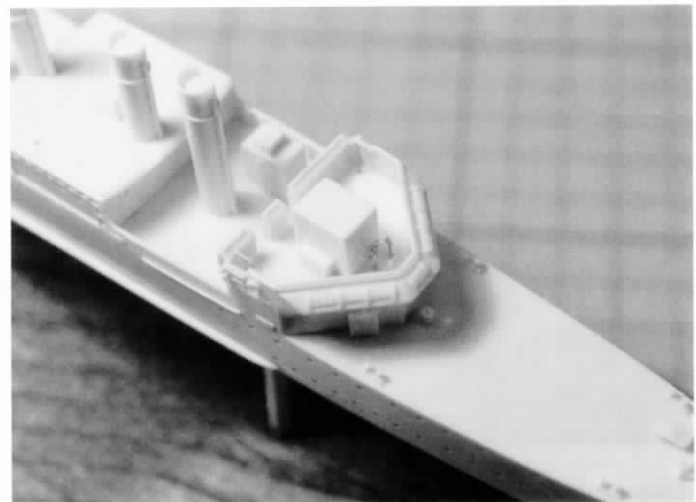
Next add the masts and rigging. Classic Warships *Cleveland*-class cruiser of the *USS Miami* is typical of a good resin kit in that the parts are well engineered and well cast. The same can be said of MB Models and White Ensign Models kits.



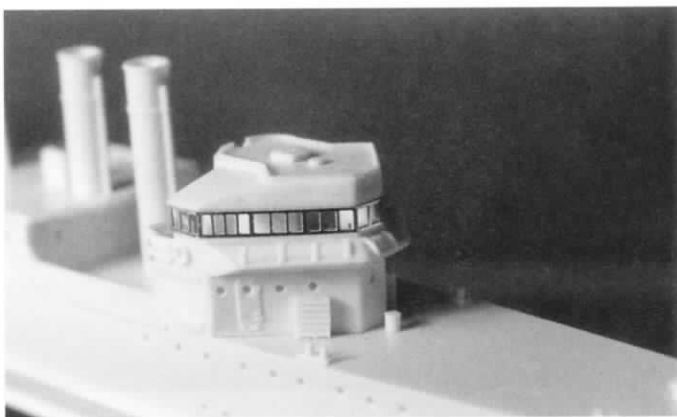
Building towers with brass rod can be a bit tricky because it can be difficult to ensure that the tower is sitting straight and level. I like to work with the legs first, get them set into place, and add detail as I work my way up.



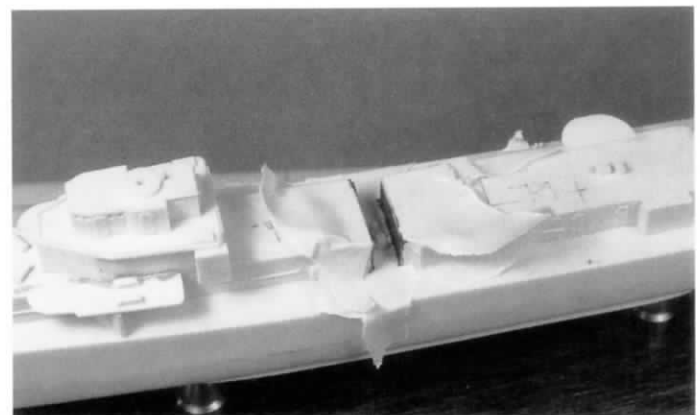
Here the forward tower on MB Models 1/350 scale *USS Houston* is complete and ready for painting.



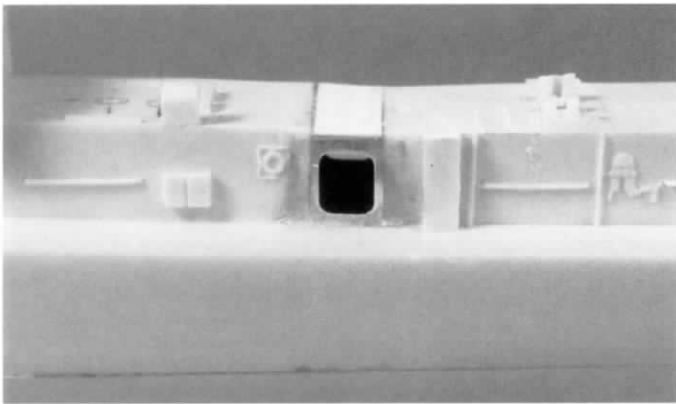
Classic Warships *USS Ward* has a hollow bridge deck with some photoetched details. You can also add some additional details if you are a real detail person. Be sure to paint the interior before you glue the bridge roof on.



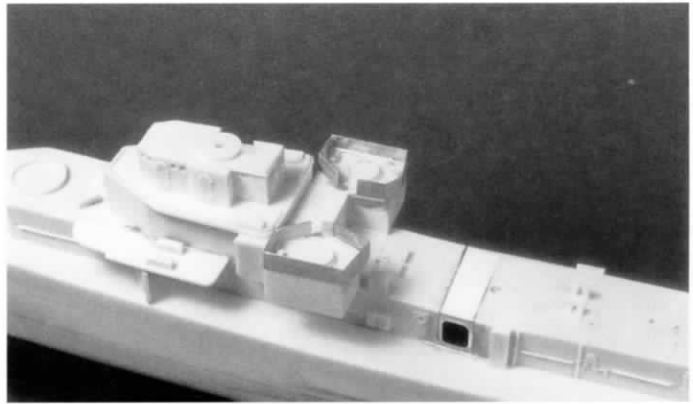
The tricky part is adding the photoetched window frame. Be very careful when bending the frame around the superstructure. To fair it into place, run a very small bead of super glue around the lower and upper connection points and carefully sand it down.



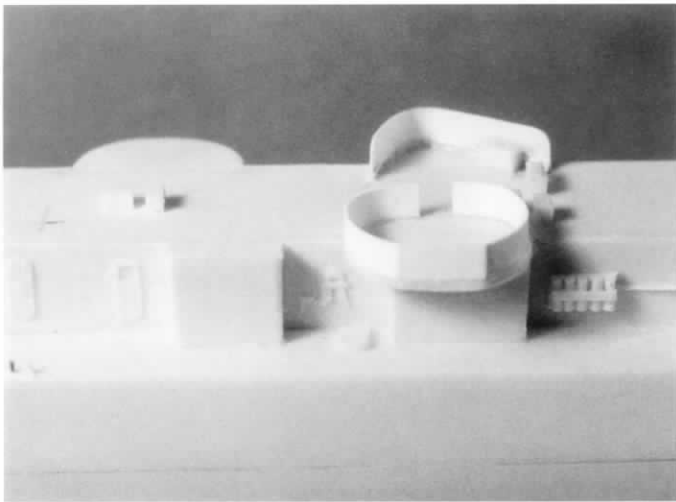
Another example of using photoetched parts is on MB Models *Gearing*-class destroyer. Here again paint the interior before you add the photoetching.



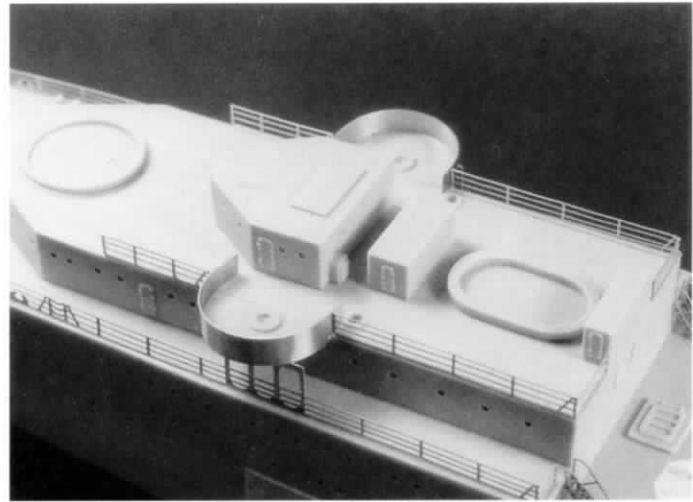
After bending the photoetching into shape and gluing it into place, blend it into the side of the superstructure.



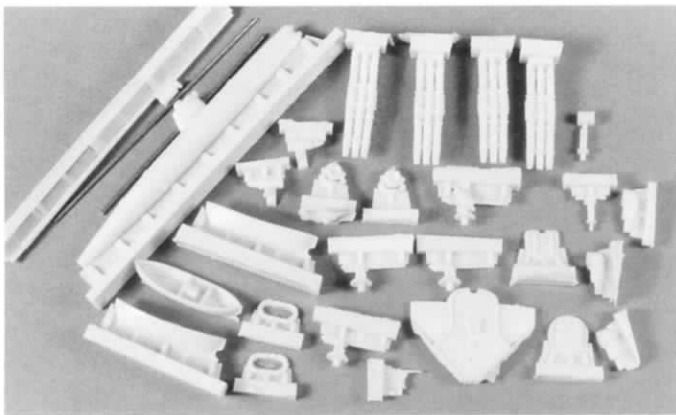
When gluing photoetched parts, especially gun shields, be sure to sand the base of the photoetching so that the glue will adhere to the metal.



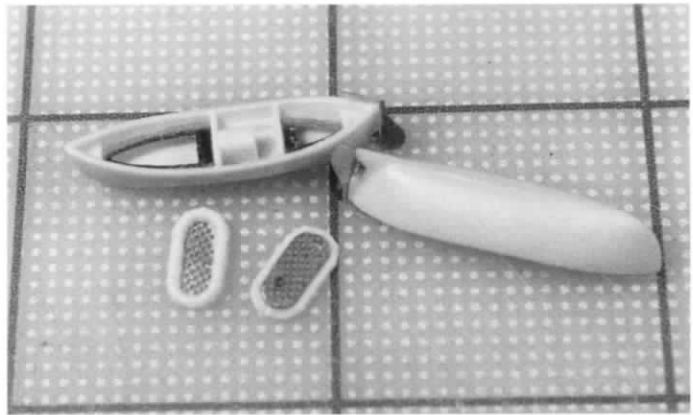
Sometimes photoetched parts do not fit correctly. In this case just use Evergreen strip stock. Start at the front and then work your way around the base, gluing as you go.



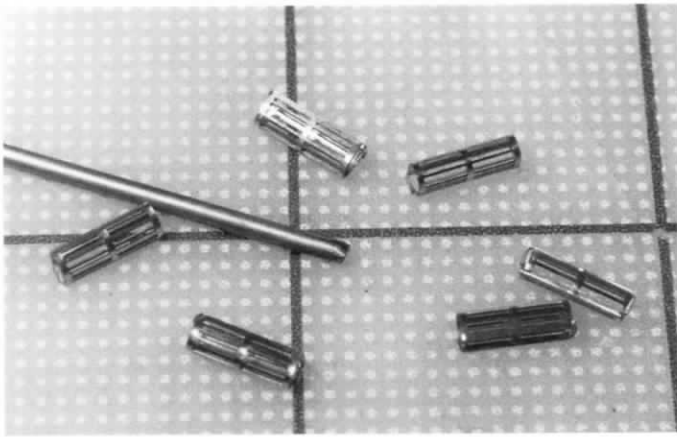
Sometimes combinations of resin parts and photoetching can make up a part. Here the forward 5/25 gun location bases of MB Models *USS Houston* are made of resin, and the shields are made from photoetching.



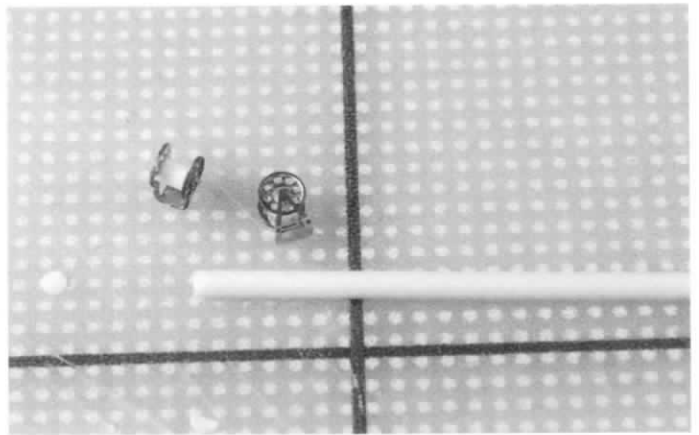
Resin ship kits can have a lot of parts, so I recommend that you purchase plastic bin organizers, which can be found in arts and crafts stores.



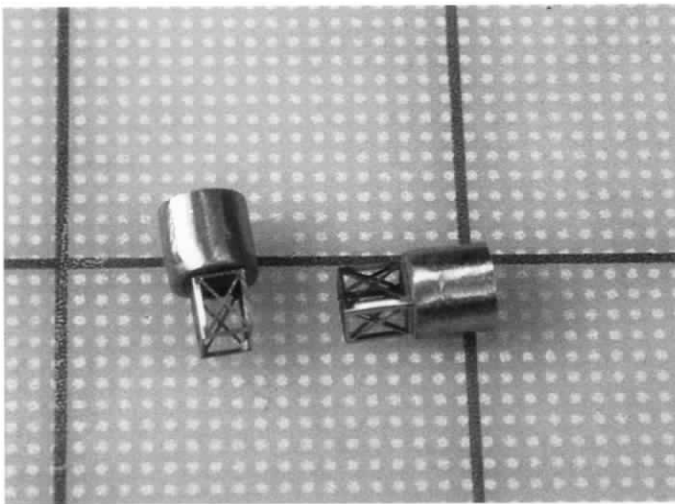
Adding small photoetched detail parts to resin casting can be very time-consuming. Just go slow, and when you get nervous, set the kit aside.



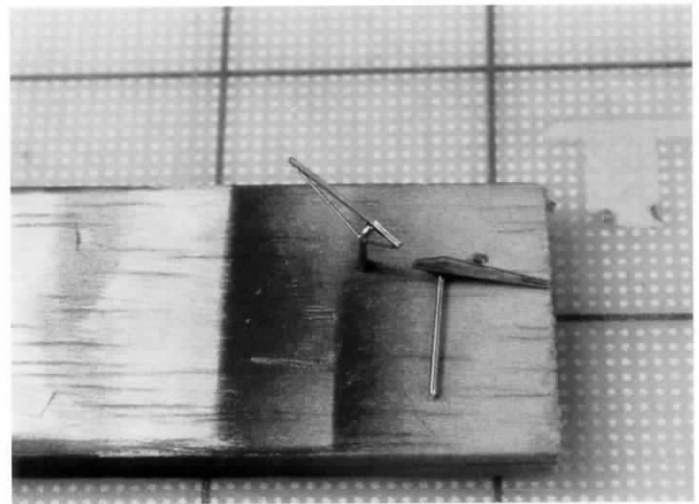
These small photoetched net holders were shaped with a Waldron punch tool, which just happened to be the right diameter.



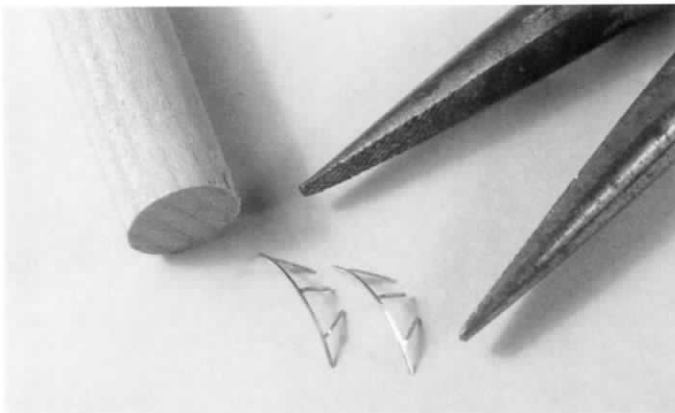
These photoetched hose reels needed center sections, made from small lengths of rod.



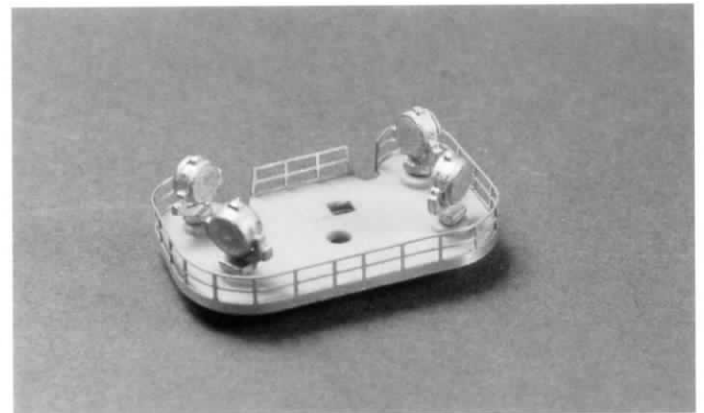
These gun director towers are a combination of white metal and photoetched parts. When folding box shapes, be careful not to distort the shape of the box.



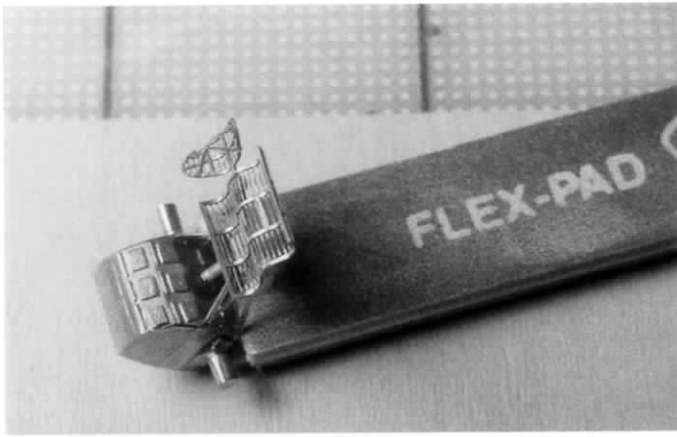
Add detail to these torpedo cranes with small lengths of brass rod, glued into place with super glue.



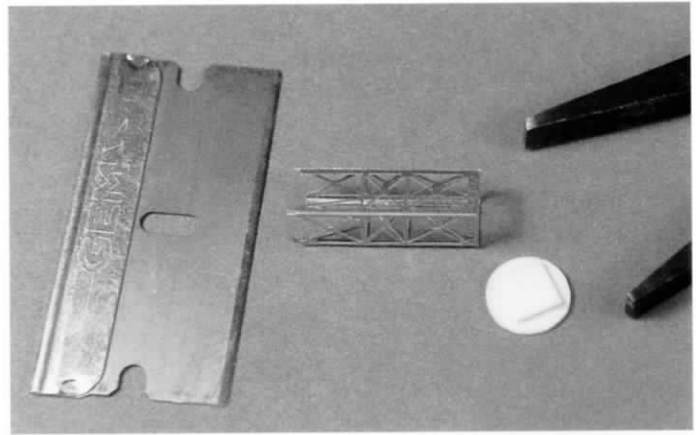
Wood dowels of all diameters are very handy when shaping photoetched parts, so be sure to have a good supply on hand.



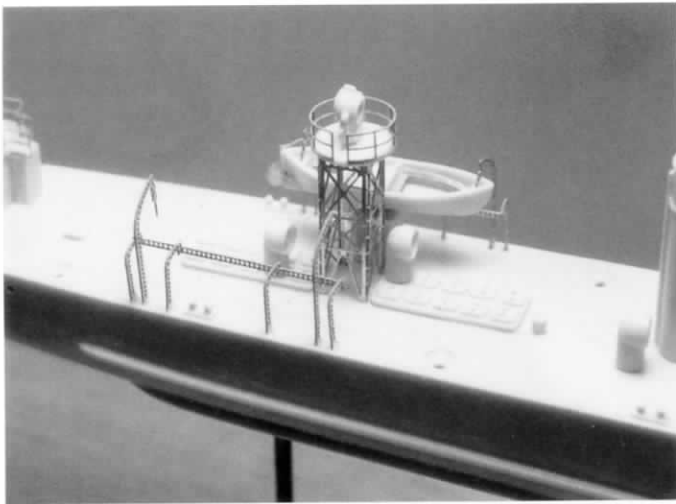
I like to check the fit of all the small parts before assembling superstructure parts. Then I don't find out after it's too late that the holes should be larger or deeper.



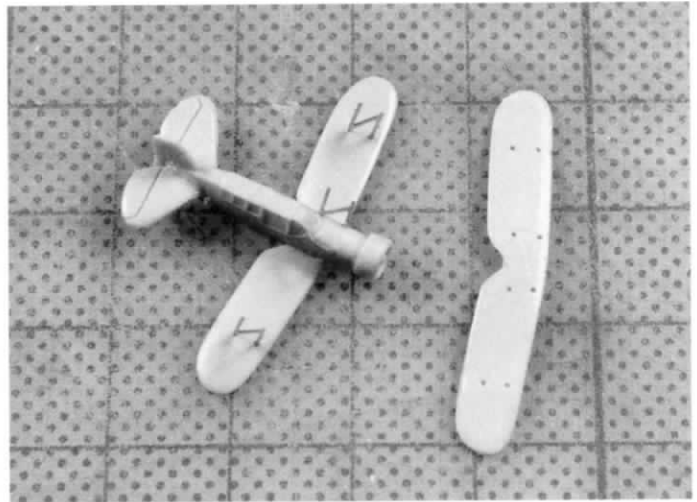
This MB Models Mk-37 radar is now ready to be painted. There is a lot of detail packed into resin kits if you just take the time to assemble them and work out the minor kinks.



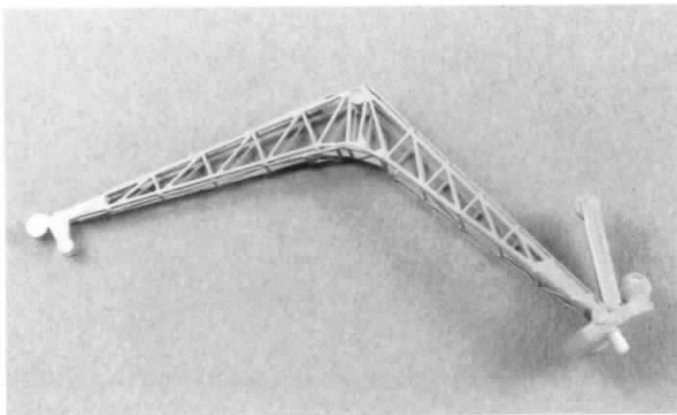
Single-edge razor blades are very handy. They can assist you when you're bending photoetched parts.



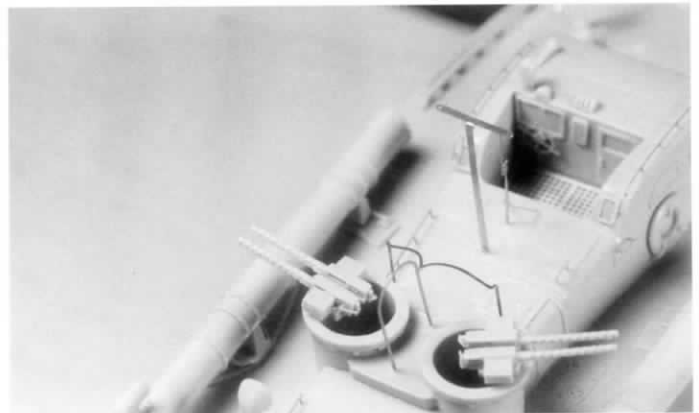
Always check the fit of photoetched towers into their deck locations. Chances are at least one of the locating holes is slightly off.



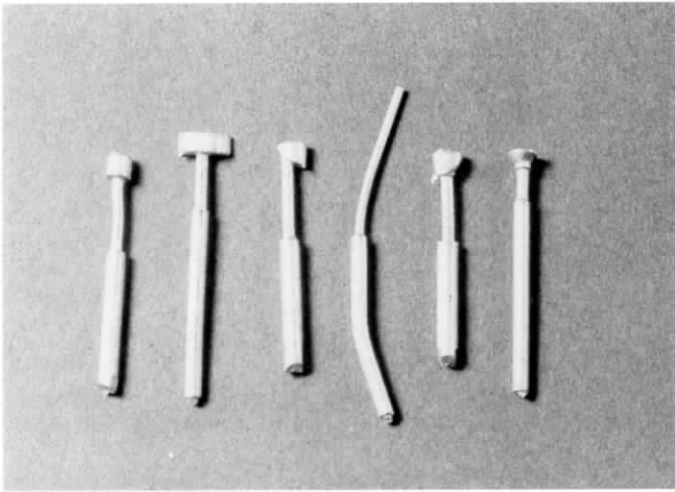
The photoetched details for biplanes are very small. I suggest that you take your time with these small parts. I like to position and glue the parts on the lower wing and fuselage, paint the aircraft, and then glue the upper wing in place.



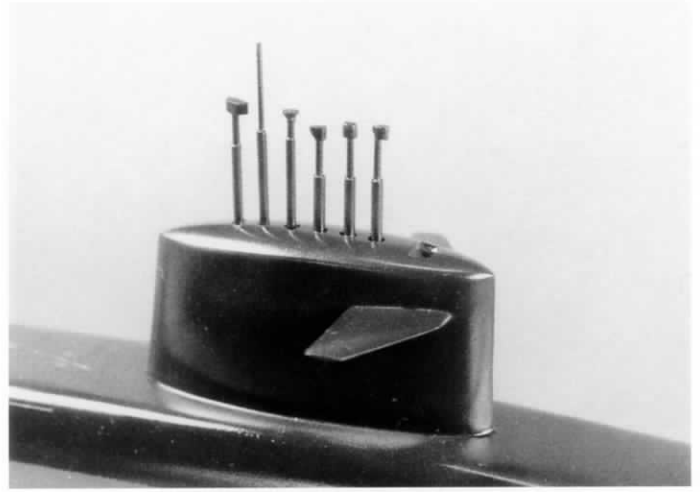
This Classic Warships photoetched crane is made up of a cast resin base and back arm and a photoetched frame. After you add the cable, this crane will be ready to install onto the deck.



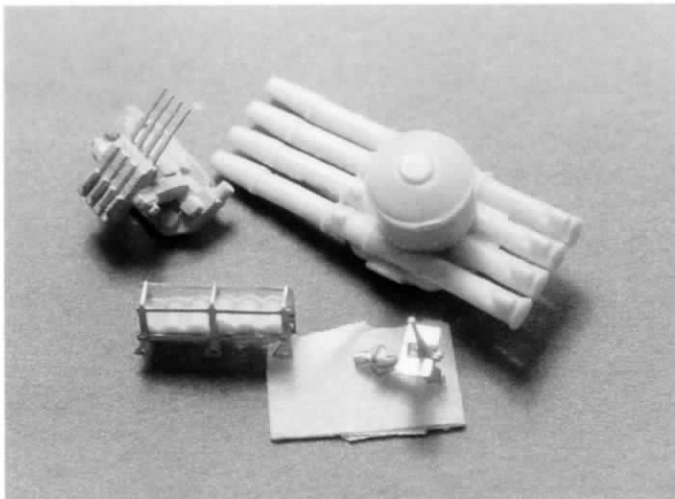
Photoetched details can be very delicate, but if you take your time they can add a high level of detail to your model. Classic Warships 77-foot Elco PT boat has several delicate photoetched parts, but they are easy to work with.



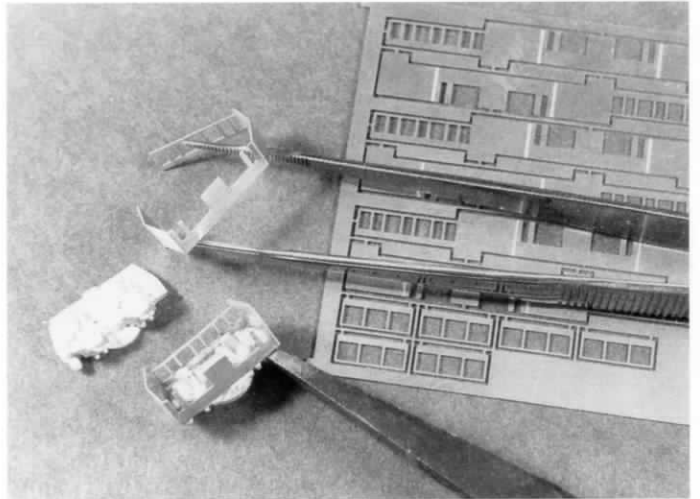
White-metal parts are sometimes bent, but they can easily be straightened out using a set of flat-nose pliers or by just rolling them on a flat surface.



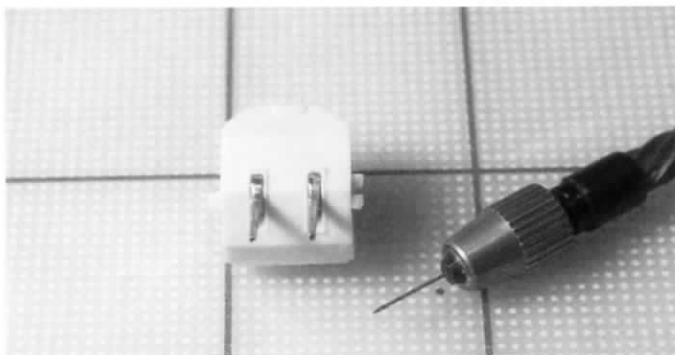
Here are the same white-metal parts installed on Toms Modelworks 1/192 scale SSBN *Ethan Allen*-class sub.



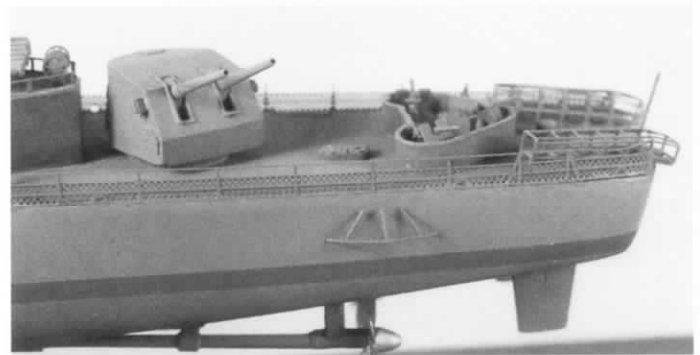
Resin kits typically use combinations of resin and white metal along with photoetching to make up torpedo, depth charge, and small caliber guns.



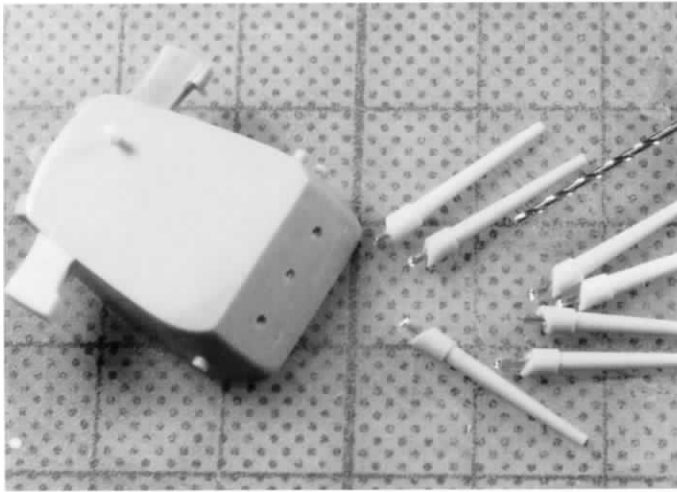
The photoetched gun shields on MB Models 40mm gun bases can be very tricky. Be sure you make them all look the same.



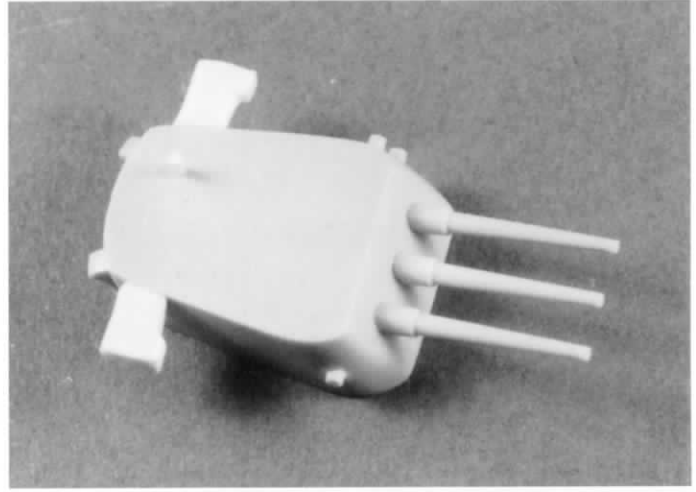
Drill out white-metal guns just like plastic.



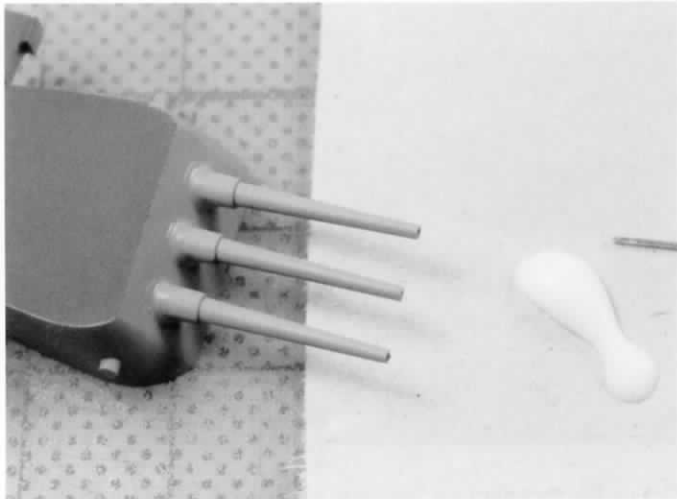
Here is the same twin 5-inch gun installed on MB Models 1/350 scale *USS Gearing*. The drilled-out guns really add a greater level of detail.



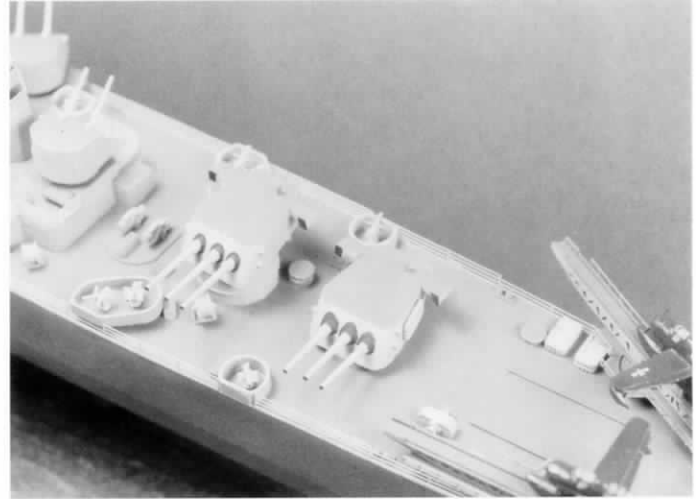
I like to use small lengths of brass rod to both position and strengthen large gun barrels.



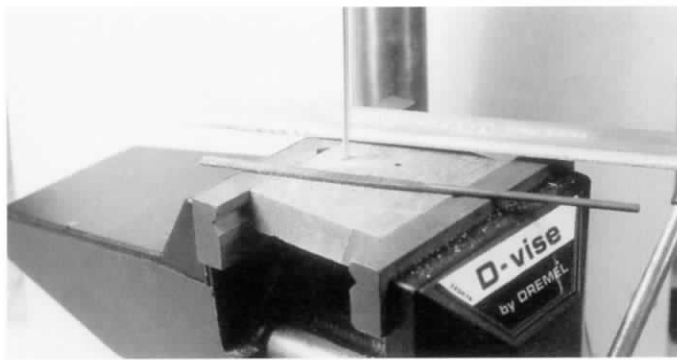
The barrels are installed and the turret is ready for its white glue application around the bases of the barrels to simulate blast bags.



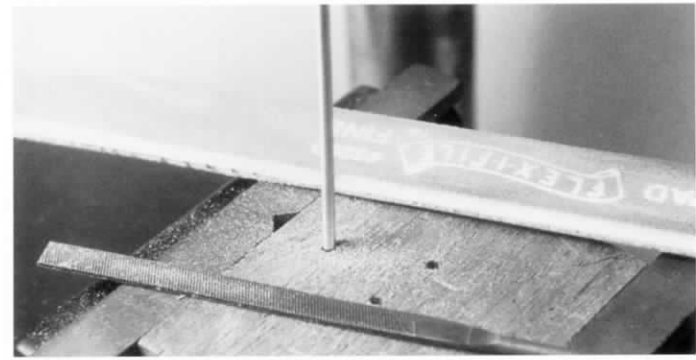
Apply the white glue carefully with a thin length of brass rod around the entire circumference of the barrel. The trick here is to get all three to look almost the same.



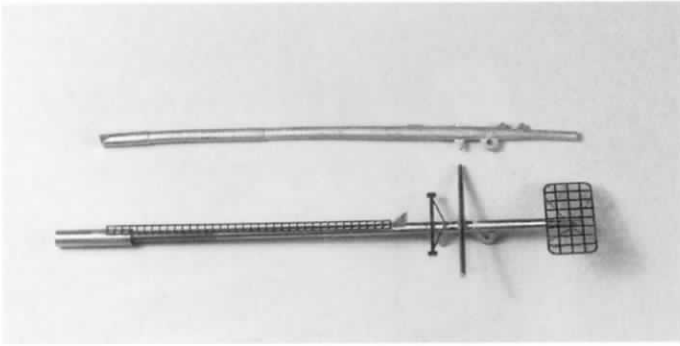
The guns and blast bags have been painted and installed on Classic Warships 1/350 scale *USS Miami*.



Almost all resin kits come with white-metal masts. If you plan to add rigging, I recommend that you replace the mast with brass rod, because white metal has a tendency to bend. You can install the brass length as is or you can slightly contour it using a Dremel drill press and vise to make a simple lathe.



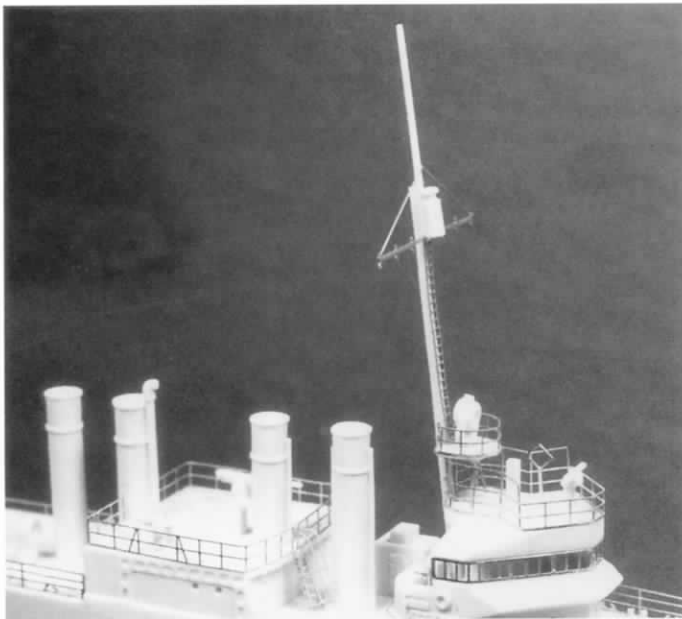
Use a file and a Flex-I-File sanding stick to grind off some of the brass and smooth it out.



Here is the white-metal mast and the new brass rod mast with kit details added.



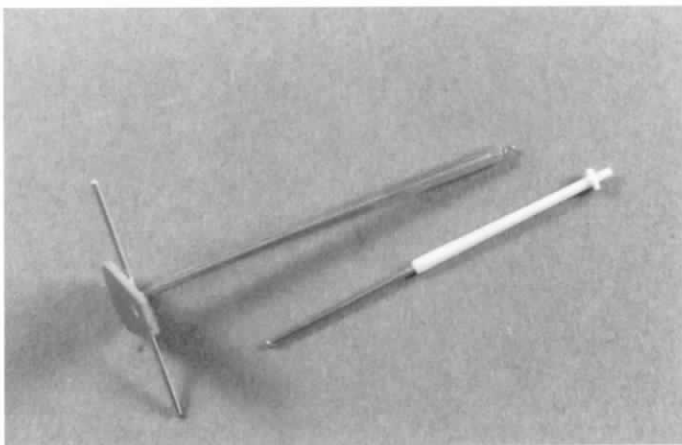
Here the same mast is being form-fitted into place on MB Models 1/350 scale *USS Gearing*.



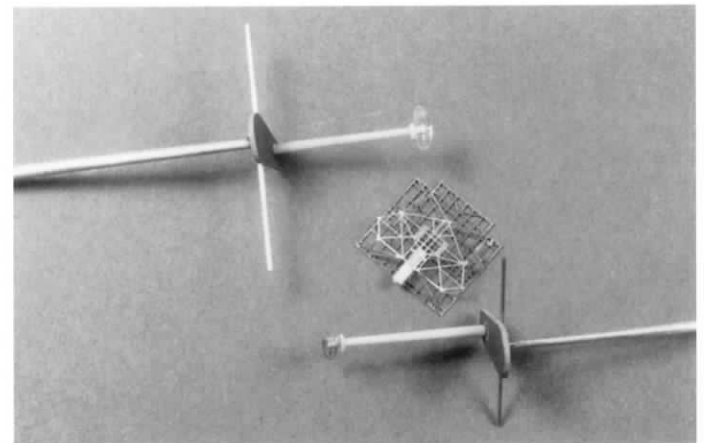
This 1/350 scale *USS Ward* kit has a resin forward mast with photoetched yardarm. Although it did not bend when I rigged the kit, I had to be very careful not to skew the entire mast.



Set up the rear mast on the same model with a thin-diameter length of brass wire and a photoetched yardarm. With small-diameter wire there is no need to contour its length.



Build up masts in stages or subassemblies. I like to add lengths of brass wire to the bases of masts to strengthen them. Cut the brass rod protruding from the base of the smaller resin mast to length, and then glue it to the mast platform.



These masts are for Classic Warships 1/350 scale *USS Miami*. The radar will be added after the masts are painted, installed, and rigged.