

Building and Detailing Tanks

Let's turn our attention to assembling the parts on the tank's lower hull. First, deal with any fit problems you've identified during the initial fit check and then move on to attaching parts to the inside of the upper hull. Many of the armor kits manufactured in the Far East have openings in the tank's bottom to accommodate the motorized versions. The easy way to close these areas is to glue a thin sheet of Evergreen sheet stock to the interior, flip the part over, level it, and insert some resin in the opening. Protect the surrounding plastic with masking tape and use a syringe to apply the resin. These plastic pointed applicators are available from Micro Mark. After the resin cures, which takes only a few minutes, sand the surface smooth and apply some super glue around the perimeter of the resin so it will bond to the plastic. If you use super glue, capillary action will pull it down between the resin and the plastic.



Interior detail. Cottage industry manufacturers have been producing multimedia kits of turret, crew, and engine compartments that really add extra detail for modelers who like to display their models with all the hatches open. These resin, white metal, and photoetched kits are highly detailed, but almost all of them require some type of alteration to the kits' interiors before they will fit correctly. Often, their instructions are not clear, so be sure to study all the parts carefully. The actual assembly sequence may vary from what the instructions suggest, so go slow and check the fit of all the major interior components prior to painting and assembly.

Kit manufacturers have also begun to produce kits with either partial or complete interiors. As you build up the interior, check the fit of the parts even if they were supplied by the manufacturer. They sometimes need tweaking. After assembling all the interior parts and completing the fit checks, you are ready to paint, weather, and attach the parts. If you are adding a resin interior, it will be a bit of a trick to add the lead weight that I mentioned in Chapter 1 to help the road wheels sit on the tracks correctly. If it is an engine compartment or the crew compartment, add the weight in the empty area; if it is a full interior, the resin will add some weight, but you'll still have to add some lead. You can hide lead pieces in the space between the bottom of the tank and the floor, under the seats, or in places you will not be able to see once the upper hull is attached. If you are building up a kit interior, glue some pieces of lead weight to the inside of the engine or the transmission before you glue these pieces together.

Painting and weathering. Tank interiors were almost always light in color to help brighten these otherwise dark, damp, smelly places. Anything from flat white to light gray will work. Remember that the lighter the color, the easier it will be for the human eye to see the interior details through the hatches and access covers. To further help pick out the detail, I suggest that you paint the interior parts different shades of the same color or use flat white on some and a flat light gray or a light sea gray on others. Aircraft modelers use the same trick to help pick out the detail when they're painting a cockpit interior of all one color.

Tank interiors are usually dirty and grimy; the transmission and drive shafts have hints of lubricant and oil leaks, and the engine and its compartment are oily and sooty. Use dilute washes of Polly-S water-base weathering paint to simulate oils and lubricants and dark gray and light black pastel pencil dust for the dirt, soot, and grime. If you want

to make the oil and lubricant stains more realistic, give these parts a coat of clear gloss first. The dilute water-base paints will then flow into the joints and connection points more easily. If you decide to add the clear gloss, be sure to topcoat it with Testors Dullcote—the pastel pencil dust will not stick well to a gloss surface. Give the complete interior a coat of Dullcote to seal the pastel dust.

One final note here: reference material and photos may suggest that a tank type had a certain interior color. Remember that as the war years dragged on, the choices of paint colors became limited, especially for the Axis powers. (Exterior colors were more consistent.) That's why I suggest flat white to light gray. The interiors might not even have been painted. In some cases, Russian factories assembled tanks and drove them unpainted directly into battle. In the early years of the war, the fighting might have been only a mile or less from the factory—or, at Stalingrad, right outside the factory doors. While the Russians were great at getting the steel to make tanks, painting them the correct interior or exterior colors—or painting them at all—was not always at the top of the priority list.

Exterior assembly and detailing. Once you have finished the interior it's time to attach the upper and lower hull halves. Position them and then add small strips of masking tape to hold them in place and pull the connection points together. Add small amounts of super glue along the seam lines. Then remove the tape and finish gluing. When scraping and sanding the seam areas, be careful not to distort the shape of a seam line that forms a curve or an edge. Sometimes you'll have to add small lengths of Evergreen strip stock to edges when the parts do not fit exactly together. Apply super glue along the entire perimeter of the strip prior to shaping and sanding so you will not have to deal with a seam line.

Once you have completed the assembly of the hull halves, add parts such as storage boxes and bins, closed engine and crew hatches and covers, hooks, grab irons, and lift points. Paint the completed assembly and then attach the sprockets, road wheels, rollers, and idlers. If you are using vinyl tracks, it may be easier to place the track onto the sprockets and idler wheels first and then attach the road wheels and rollers. Other times it is easier to attach all that stuff first and then attach the tracks. If you are attaching individual track links, position the subassemblies and then glue the sections together. I like to work from the sprocket to the idler wheel. Be sure to attach the correct track to the correct side. There may be slight differences in the positions of the drive components on either side of the

tank, so be sure the track that was fitted to the left side or the right side goes onto that side.

Next it's time to add detail parts like tow cables, tools, open engine and crew hatches, periscopes, and wood and metal supply boxes. I paint, weather, and drybrush them separately. Once they are complete, I attach them with small amounts of white glue. You can add these details now or wait until after you have completed the turret. The last thing is to attach the mufflers and muffler covers. To improve the appearance of the mufflers, bore them out with small drill bits and a pin vise. I paint the mufflers using Metalizer burnt iron followed by an overcoat of Metalizer burnt metal. I then use 0000 steel wool to bring out some of the burnt iron color. I also add dark gray pastel pencil around the area of the mufflers to simulate the metal and paint discoloration that hot mufflers cause.

Next I add the decals, if there are any. Then, using Testors silver paint, I drybrush all the edges and areas where hands and foot traffic would wear away the paint. If you have a decal like an American star that goes across raised surface detail, be sure to drybrush these surfaces too. Now it's time to spray the lower areas of the tank hull with dilute mixtures of water-base mud and dirt colors. Don't overdo this. Hints of mud and dirt are better than a mud paint coating that changes the color of the base paint. Once the water-base paint is dry, give the entire surface a coat of Testors Dullcote to seal the decals and tone down the drybrushed silver color.

Tank turret assembly is pretty straightforward—usually the parts are either left and right halves or top/sides and the bottom. Tape the turret halves together and check the fit. Also check the fit of the entire assembly in the tank's turret ring. If you have interior parts to install, check their fit and ensure that you can install the breech assembly after the turret halves are glued. This is usually not a problem, but I suggest you check it anyway. If interior parts are attached to the inside walls of the turret, position these and paint the turret inside halves the same color as the hull interior. Use pastel pencil dust applied with a soft flat brush to weather the interior. The breech assembly should get a special treatment of dark gray or black to simulate powder burns. Also drybrush the edges of the breech, especially the slide, with Testors silver. After you have completed weathering the interior, seal it with Testors Dullcote.

When you have finished the interior, position the turret halves with masking tape and run a bead of super glue along the line. Once the glue is dry, remove the masking

tape and fill the seam line areas with the super glue. It may take several applications to fill the seam. It's important to ensure that the turret's seams are filled and that the surface of the turret is not marred if it has casting detail. After filling the seam line completely with super glue, carefully and gently scrape the super glue flat using the tip of a number 11 X-acto blade or an X-acto stencil knife. Then use small strips of 400-grit sandpaper to smooth the seam line; finish with number 600 grit. Don't forget to install the gun barrel mantlet if it fits between the turret halves.

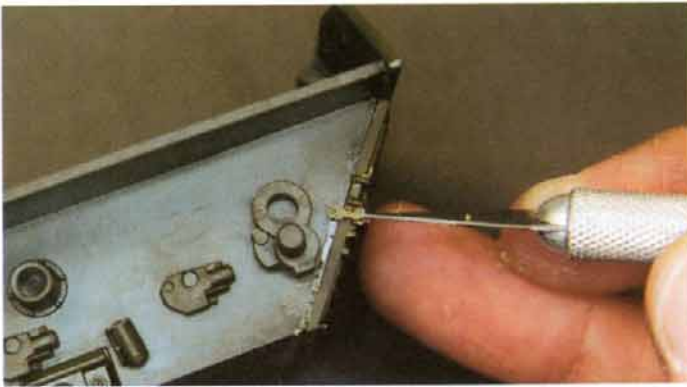
After completing the turret halves, test the turret in its location again to ensure that it fits and turns in the turret ring. Next, assemble the gun barrel. Check the fit very carefully and remove any alignment pins if necessary. The barrel halves should fit perfectly because it is a lot easier to fix a seam line along a thin, long round shape than to have to fix the seam as well as correct any distortions that may result from misaligned part halves. Use small strips of masking tape to position the parts and run a thin bead of super glue along the seams. Once the glue is dry, carefully scrape the glue bead line with the tip of a number 11 X-acto blade. To keep the light scraping from flattening the seam line, rotate the barrel a little to either side of the seam line as you scrape. Once you have finished, wrap 400-grit sandpaper around the barrel and rotate it as you sand. I like to use a twisting motion as I pull the barrel through the sandpaper. Finish off with 600-grit paper to polish the surface. When gluing a muzzle brake together, don't let the glue run along the sides or in crevices—this may mar the appearance of the brake. Be extra careful when scraping and sanding these small pieces. It is easy to distort their shape.

Attach the completed barrel to the turret mantlet. If it is a separate part from the turret assembly, install it in place. Install the breech assembly to the back side of the mantlet and be sure the barrel and the breech form a straight line.

Next it is time to attach the detail parts such as lift rings, grab handles, closed hatches, and cage storage frames to the exterior of the turret. Paint the turret and add the decals. Drybrush edges and raised detail to make them stand out. The last assembly step is to add additional details such as periscopes, grenade launchers, machine guns, and antennas. Don't forget to drybrush these parts, too. You can use the same disposable drawing pens to highlight the periscope faces that you used to highlight the rubber rims of the road wheels. To make the machine guns look more realistic, you can bore out the barrels. I make my antennas out of thin brass wire and paint them black.

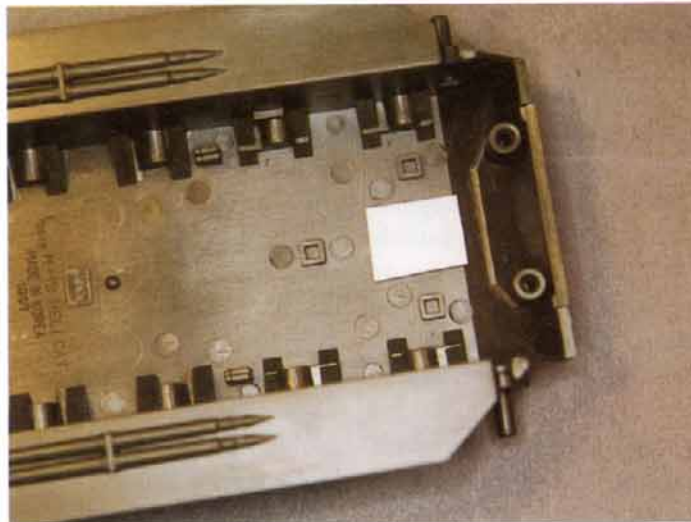


The front hull seam line on this M-18 Hellcat will need several applications of super glue and careful scraping and sanding. Be sure to sand the sharp angle that defines the upper and lower hull in such a way that you don't skew the sharp line.



The width of the back panel on this M-18 Hellcat is slightly greater where it attaches to the lower hull. You'll have to reduce it so that it is flush with the side.

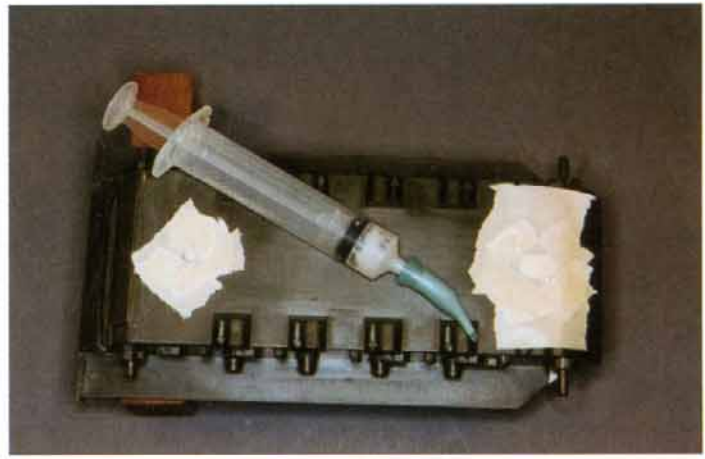
After you've finished scraping and sanding, the completed hull panel blends into the side perfectly.



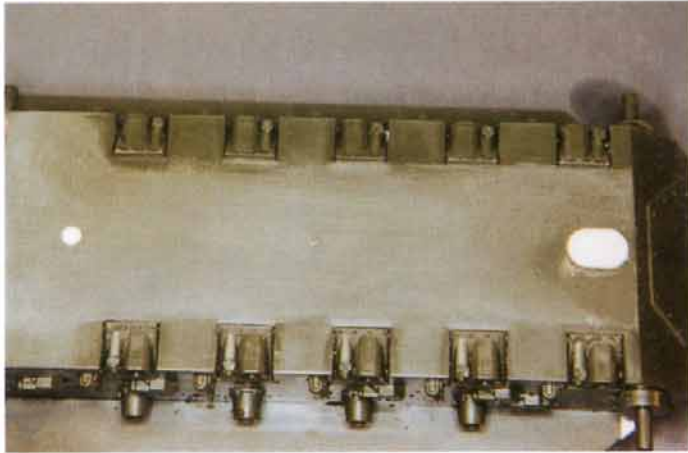
The first step in sealing the motorizing holes that you typically find on tank models is to cover the hole with a piece of Evergreen sheet stock. The next step is to flip the hull over and fill the hole on the hull bottom with resin.



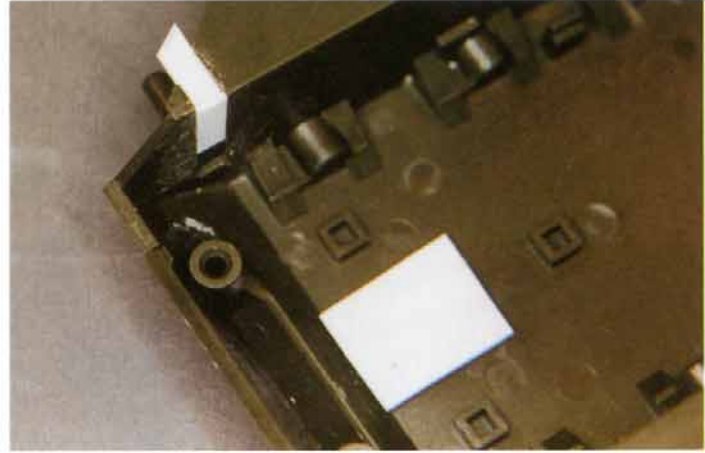
The easy way to mix resin is to use graduated mixing cups of equal volume so that you can measure the resin and hardener. Popsicle sticks are great for stirring the resin mixture. Since you'll pour the resin into a small hole, use a syringe to ensure precise application.



To protect the surface of the plastic, cover the area around the holes with masking tape. Be sure the hull is level so that the resin will completely fill the holes.



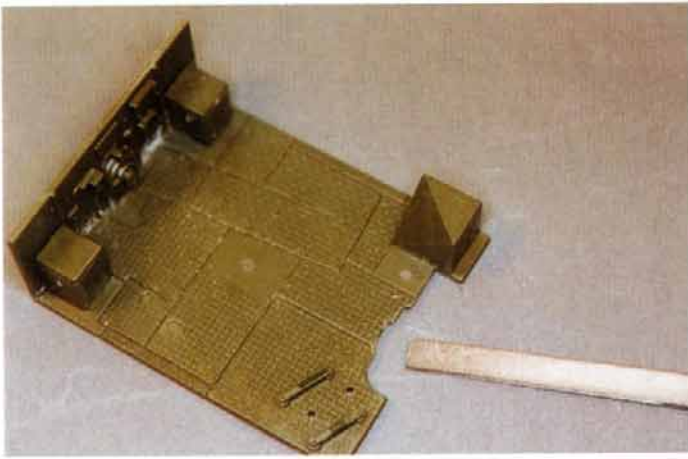
Glue the resin into place by applying a bead line with a thin wire applicator between the resin and the plastic. The capillary action of the super glue will pull the glue down into the seam between the resin and the plastic. Once the glue is dry, sand the resin flush with the hull.



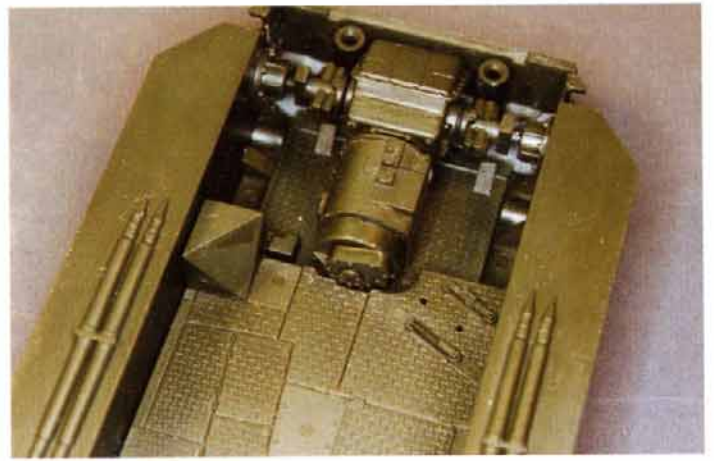
To seal motorizing openings that you sometimes find on the sides of the hull where the drive sprockets are, use strips of Evergreen strip stock. Form-fit the plastic strip into place, apply a bead of super glue along the seam line, and sand smooth.

tips

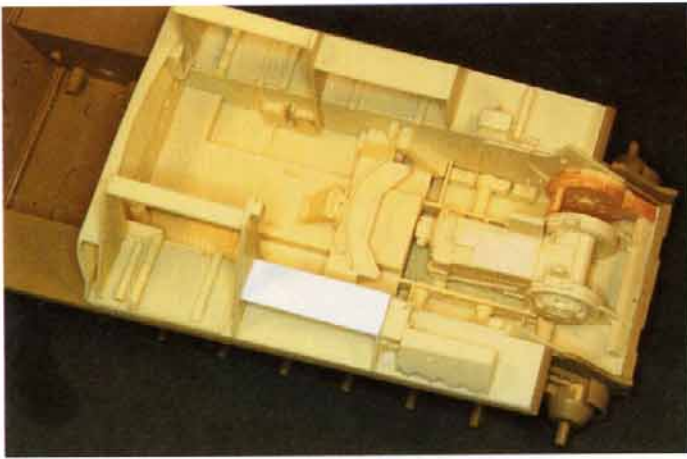
- Fill holes in the tank hull bottom with resin.
- Use Evergreen plastic form-fitted into place to fill holes on the sides of tank hulls.
- Be sure to test your resin before you use it. Moisture in the air can affect curing.



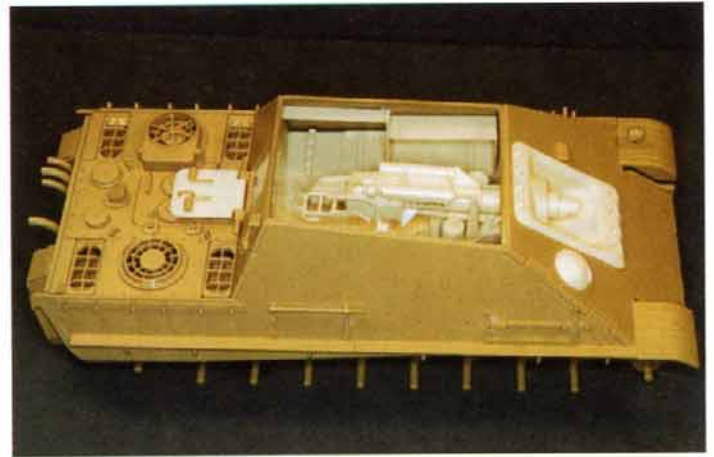
Sometimes you must modify interior parts slightly to get them to fit correctly. Use a file to form-fit interior decking in place, as in this photo.



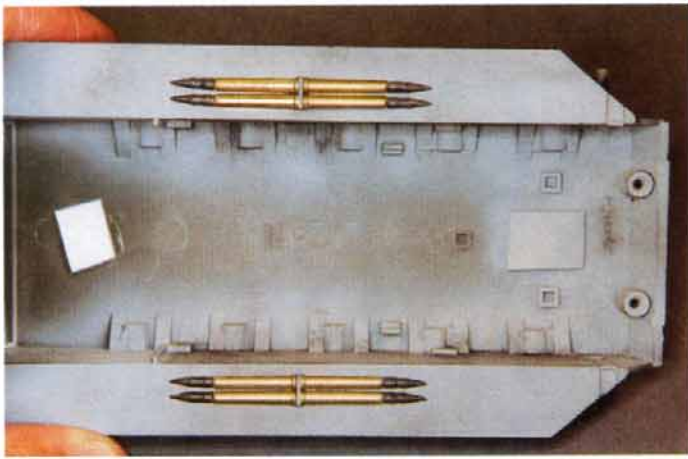
To form-fit the parts correctly, temporarily install all the main interior components. Modify the decking with a file so that the back end of the transmission plate sits snugly up against the deck.



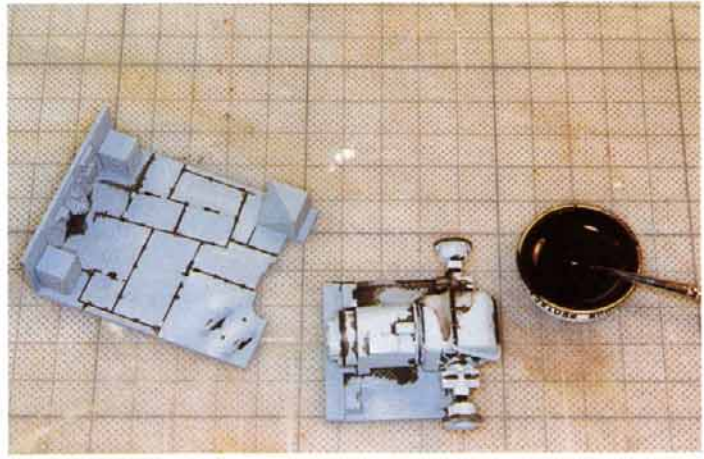
Resin interior super detail sets can add an unprecedented level of realism to any armor model. While these parts are well engineered, they do need form-fitting and tweaking to get everything to fit into place. This Jaguar Jagdpanzer interior detail set is just about complete and is ready for the main components to be painted. Model by Scott Weller



Temporarily attach the upper hull to the Jagdpanzer to ensure that none of the interior parts, including the breech assembly, interferes with its proper positioning. Model by Scott Weller



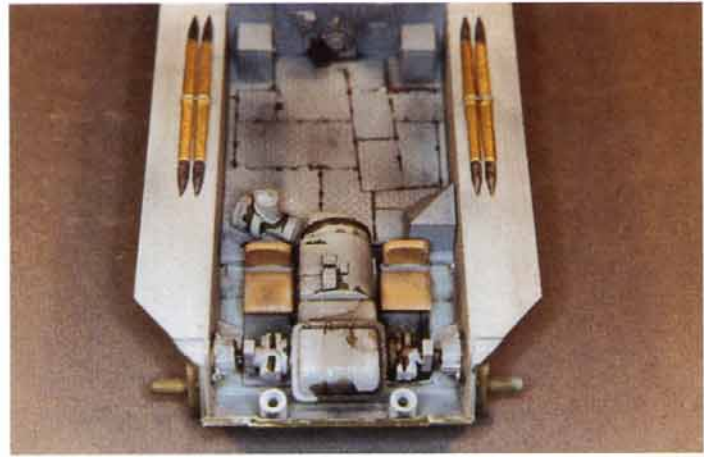
Carefully paint the molded-on projectiles with Testors Metalizer paints and a fine detail brush.



Before permanently attaching the interior parts, finish weathering the subassemblies. Apply a dilute wash of flat black to the corners and crevices of these parts.

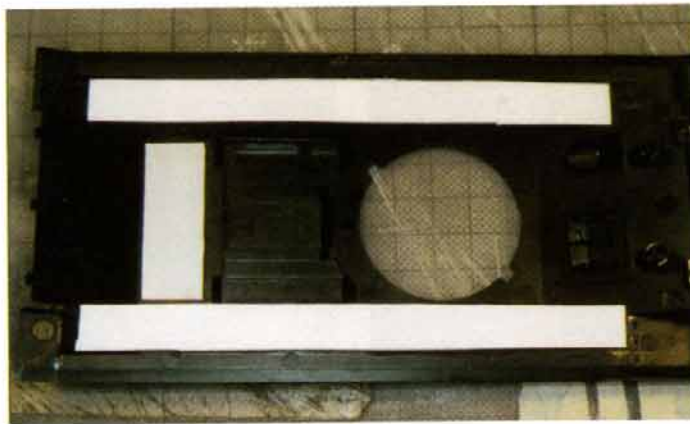


When you're weathering interiors, don't forget to paint and weather the inside upper area of the hull.

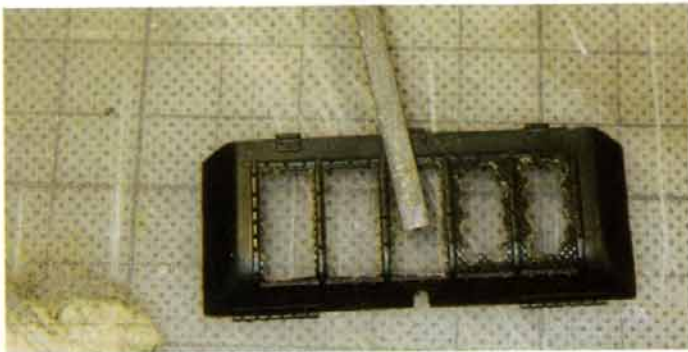


Paint and weather the interior parts of the M-18 Hellcat and glue them into place. The next step is to attach the upper hull.

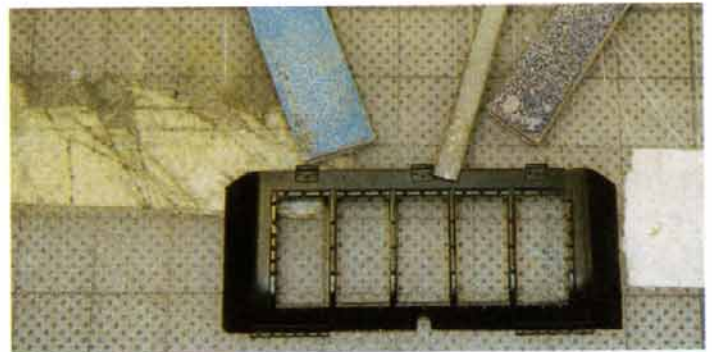
- tips
- Resin interior detail parts should be form-fitted into place, especially large interior sides, walls, and decks.
 - To add weight to plastic interior parts glue pieces of lead weights to the inside prior to gluing.
 - Be sure to weather your interior.



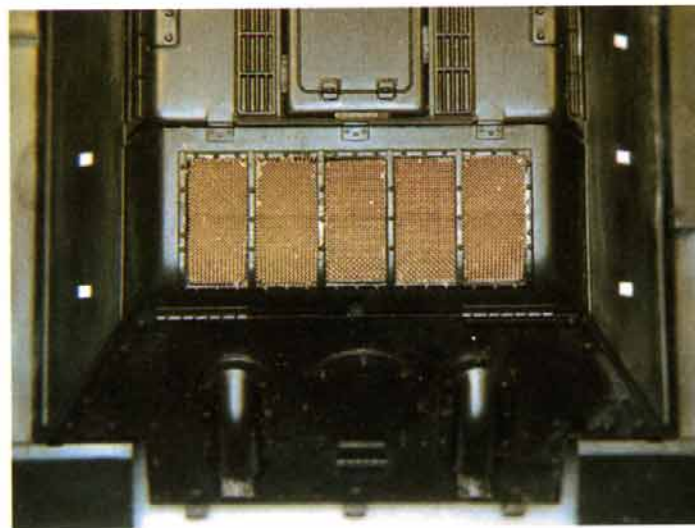
Glue strips of Evergreen sheet stock to the underside of the upper hull of the Russian T34/85 so that the voids on these inside upper areas will not be noticeable. Model by Jim Hudson



Drill out the molded screen mesh on this engine hatch cover, and then remove the excess plastic with a file.



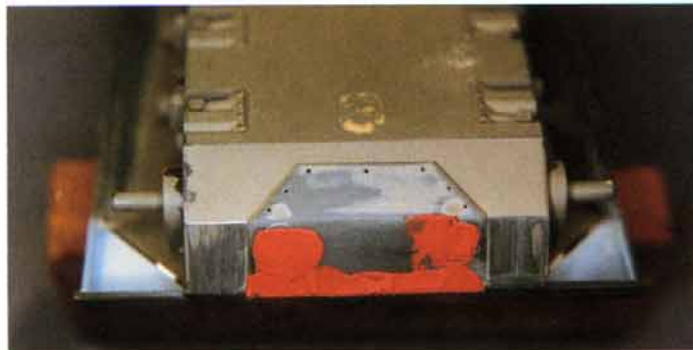
Clean and smooth the delicate framing with small sandpaper strips cut from sanding sticks.



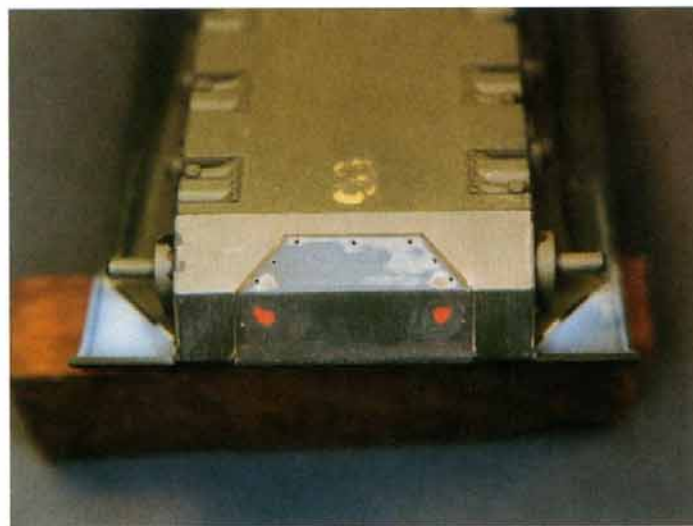
Install photoetched screening on the completed engine hatch cover of the Russian T34/85. This added detail really enhances the overall appearance of this model. Model by Jim Hudson



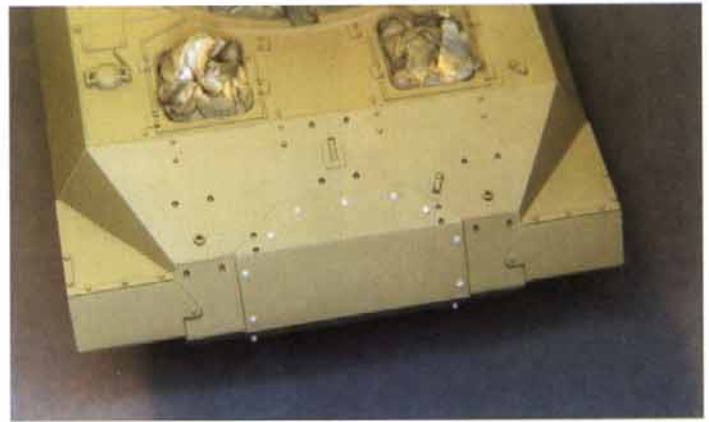
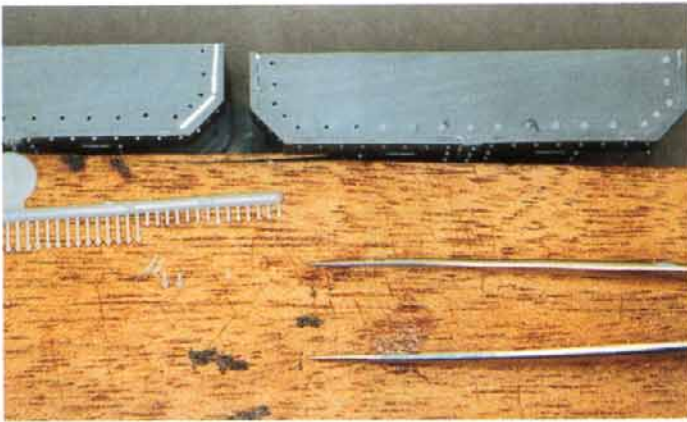
Unfortunately, no one noticed the sink marks on the lower plate of this M-18 Hellcat until after the hull was painted. If that happens to you, cut off the bolt detail on the plating and drill small holes to accept Grandt Line detail bolt heads.



To fill the dimples in the lower plate, apply automotive putty with a flat-tipped X-acto blade.

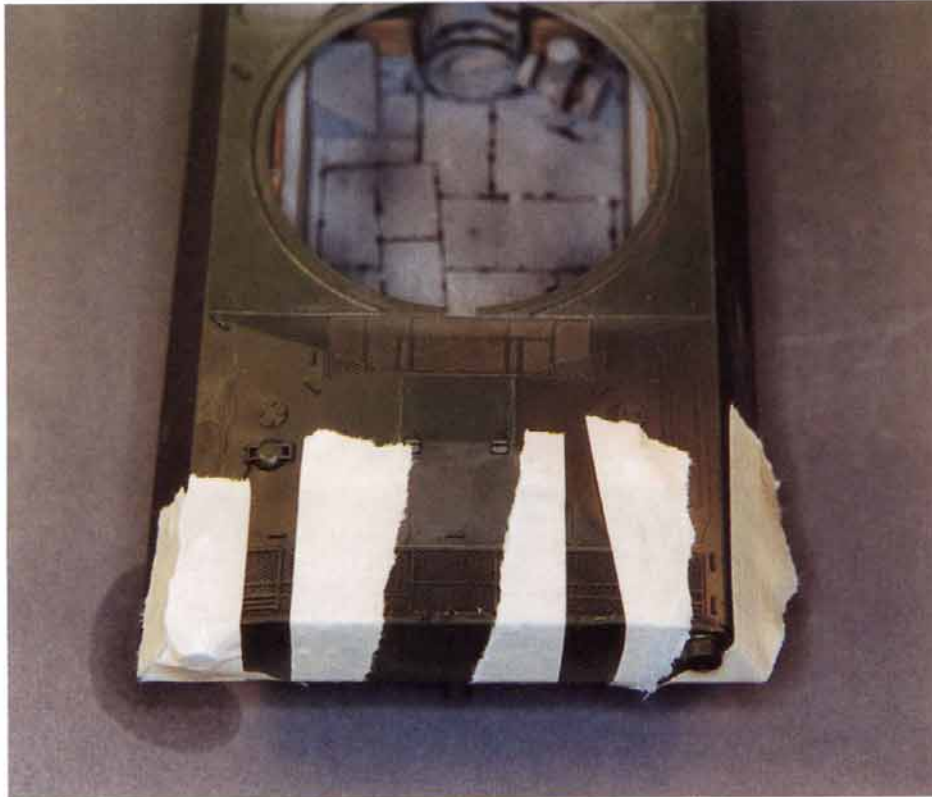


Wet-sand the auto putty carefully and then polish the surface of the plastic with 600-grit sandpaper.

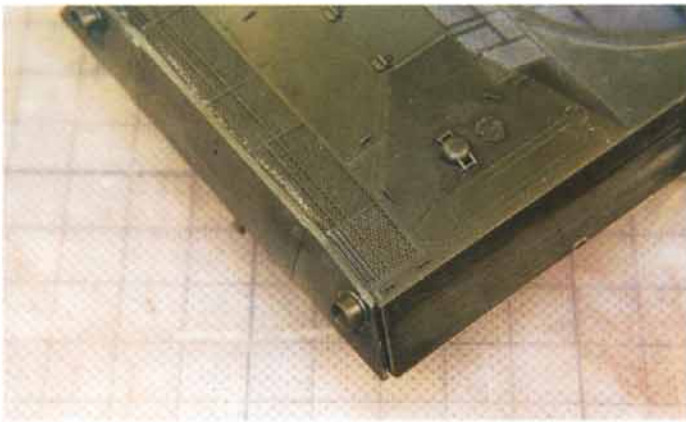


Since these British World War I female tank gun housings do not fit together very well, insert small strips of Evergreen strip stock into the voids and cover them with super glue. Then sand the surface of the plastic flat. Here again, replace the bolt head detail with Grand Line detail bolts.

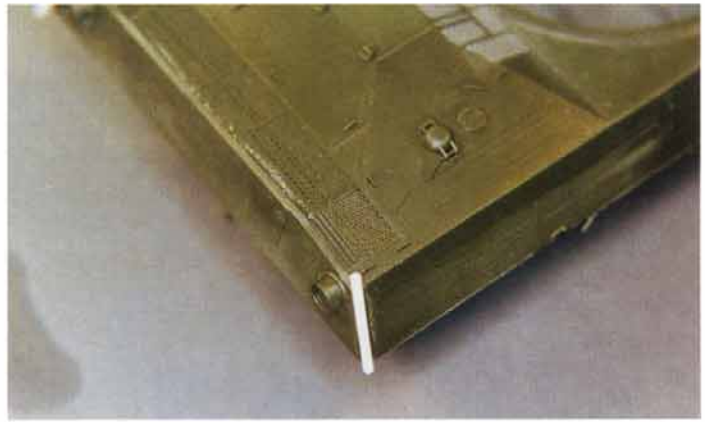
Install the bolt head detail on this M-18 Hellcat, and it is ready to be painted.



The back end of this tank did not fit together well, but liberal application of strips of masking tape helped position the parts and hold them in place while the super glue was applied along the seam lines.



It was not possible to fix the misalignment along the edge of this tank hull, but there is a simple solution.



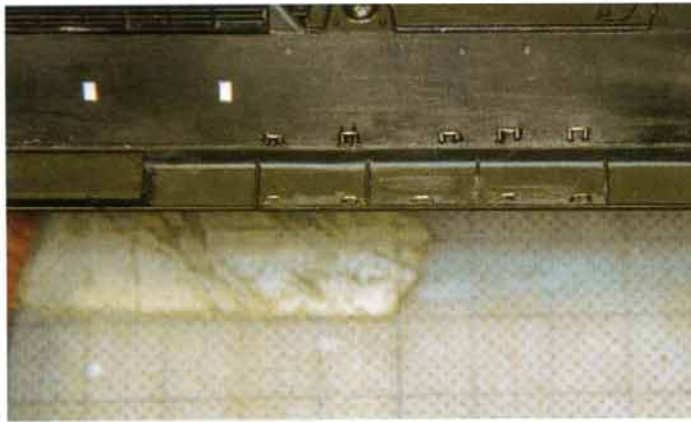
Glue a piece of Evergreen strip stock into place as the first step in correcting the misalignment. When you glue the strip into place, be sure both contact surfaces are completely covered with glue so that there is a good seal.



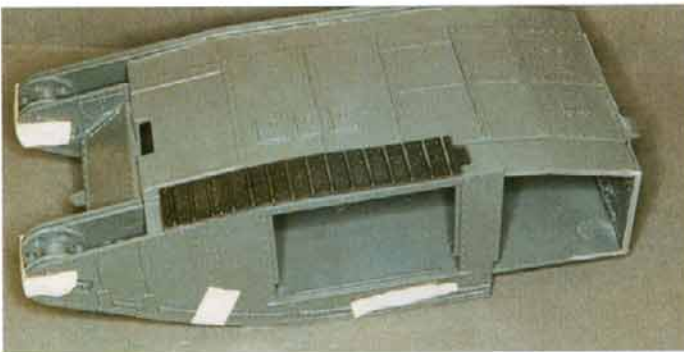
Carefully shape the strip stock with sanding sticks in various grits.



Paint the repaired area, and the misalignment is not noticeable.



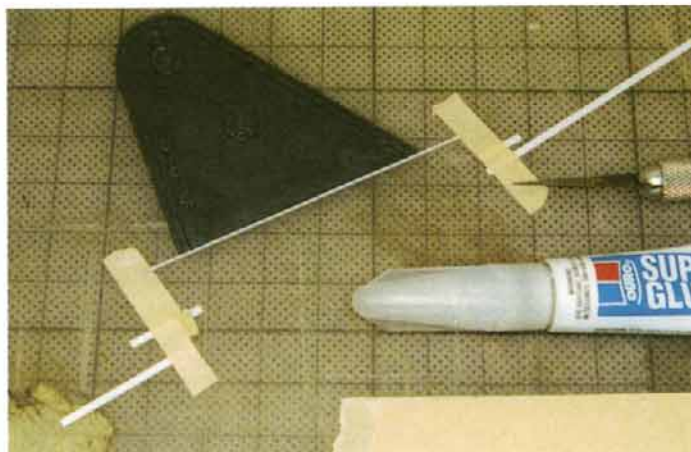
Sand off the molded details from this Russian T34/85 and replace them with wire. Note that they are not the same shape and are not equally spaced or positioned. Pictures of the real tank showed that these details were not uniform in either shape or location.



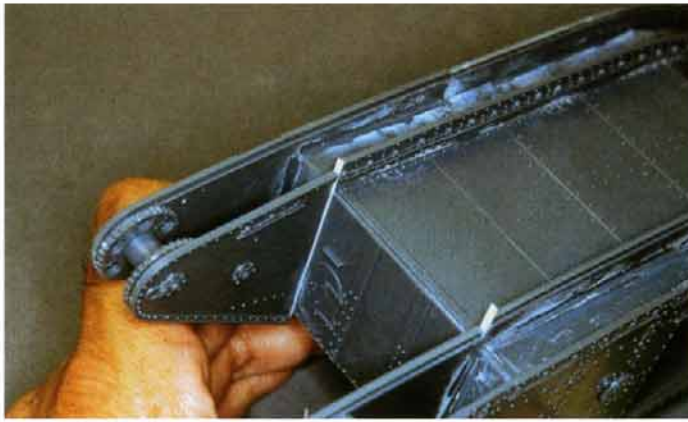
On this World War I female tank use the tracks to help position the tank's side panels correctly.



Install the exterior side panels along with the front inner panels. Note the seam between the panels. After painting the model, fill this seam with white glue.



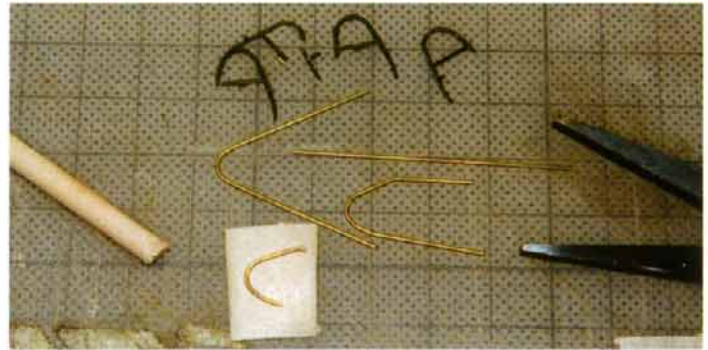
Since the rear inner panels do not line up evenly, add a piece of Evergreen strip to lengthen the part slightly. This problem became evident during test-fitting.



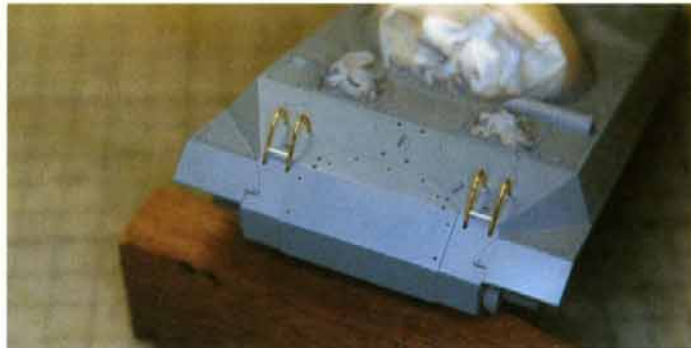
The two inner panels have been installed, but another problem became apparent that was unnoticed during the initial parts check.



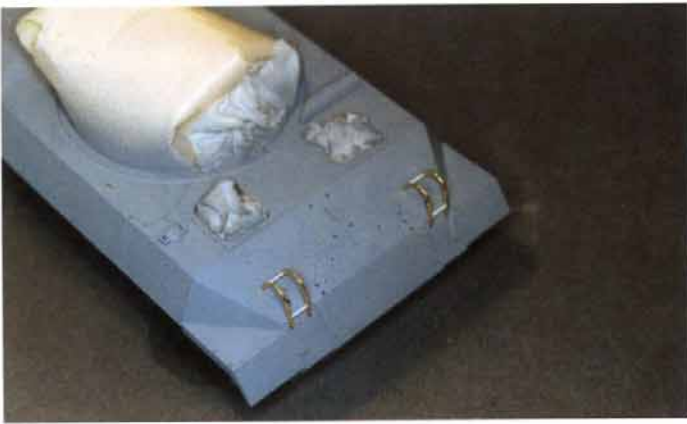
The inner panels that sit across the bottom of the tank were too high. This presented a real challenge. In the end the solution was easy but messy. I carved and sanded down the high spots on the two inner panels. I checked and rechecked the progress of my work using a section of the track as a level check. Notice that that one side has already been cut down.



Even though I carefully removed the brush guards from the tree, they broke in several locations. Trying to glue them back together was just about impossible, so I made new guards from brass wire. To set the curves I used a wooden dowel, and to set the angles I used flat-faced pliers. Before bending the brass, sand the surface with 600-grit sandpaper.



Cut the cross bars from Evergreen rod stock and then glue them into place with super glue. Super glue bonds well to brass as long as the surface is clean and slightly roughed up. That's why you have to sand it with fine-grit sandpaper.



The brush guards are nearly complete, and they will look just as good as the kit-supplied ones. The entire scratchbuilding exercise took less than an hour. Learning basic scratchbuilding skills helps you fix these types of problems. It also encourages you to do more scratchbuilding.



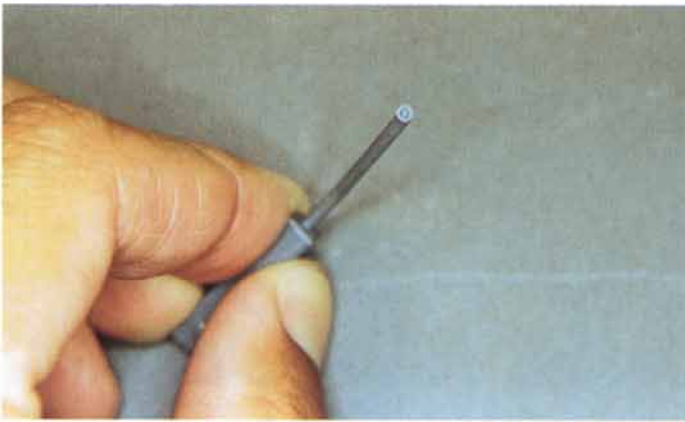
After it has been painted, this Jagdpanzer IV hull is just about ready for its road wheels, return rollers, and individual track links. Note how clean this model looks. No seam or mold lines are apparent, and the paint job is superb. Model by Bill Teehan



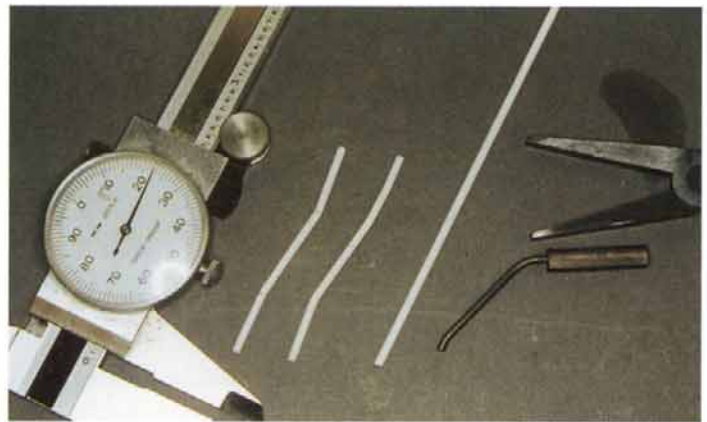
This World War I female tank has been painted and the side decals added. Note that the seam line along the side panels has disappeared. Carefully apply white glue as a filler. Use several coats. Since you add the glue after painting the surface, you don't have to paint the glue. This is the great advantage of using white glue. Since it dries clear, it will transmit the color of the surface underneath it.



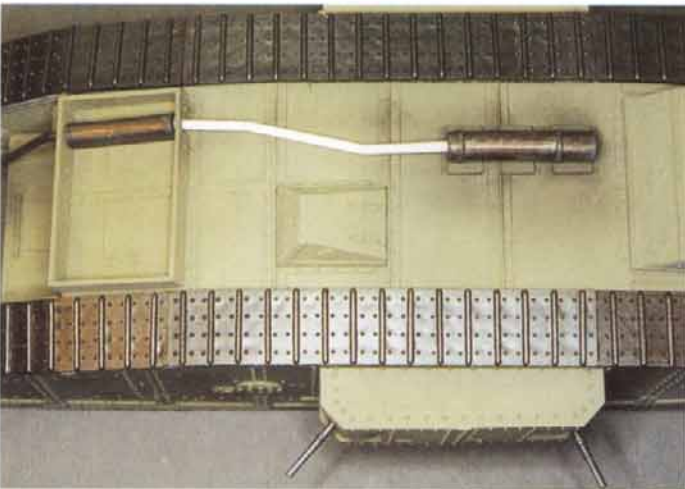
Install the hull and drive system on this M-18 Hellcat along with some of the hull fittings. Note how clean the running gear appears. Once the lower area on this model gets its dilute coats of mud and dirt, it will look more realistic.



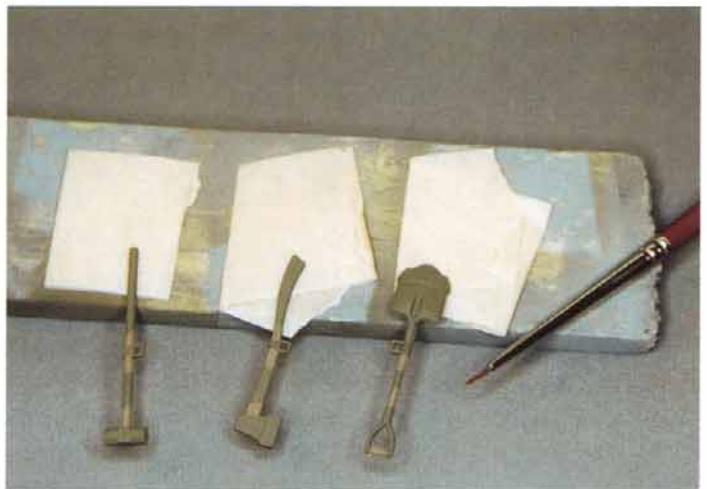
Small drill bits work well for drilling out an exhaust pipe. Paying attention to these little details can make a big difference in the overall appearance of your model.



The exhaust piping between the exhaust collector and the muffler on this World War I female tank was not the correct length, so I made a new one using Evergreen rod stock. Here again, basic scratchbuilding skills and tools made the job easy.



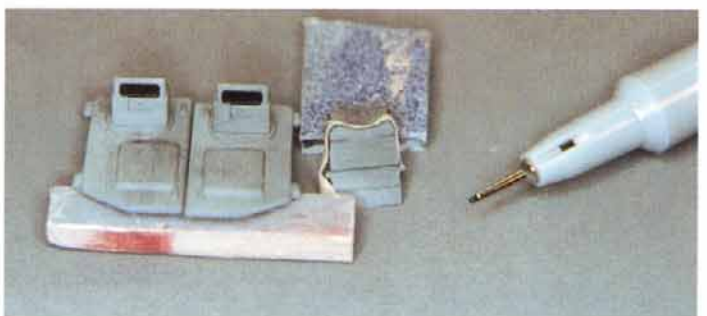
Here the tank's muffler pipe gets its final fit check.



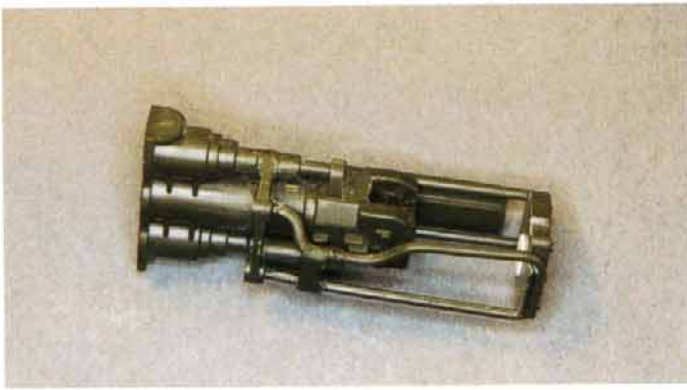
The best way to paint wood handles on tools is to outline the wood sections. Use a fine detail brush to set the demarcation lines between the wood and metal.



The next step is to paint the remaining sections of the wood handles with the same detail brush.



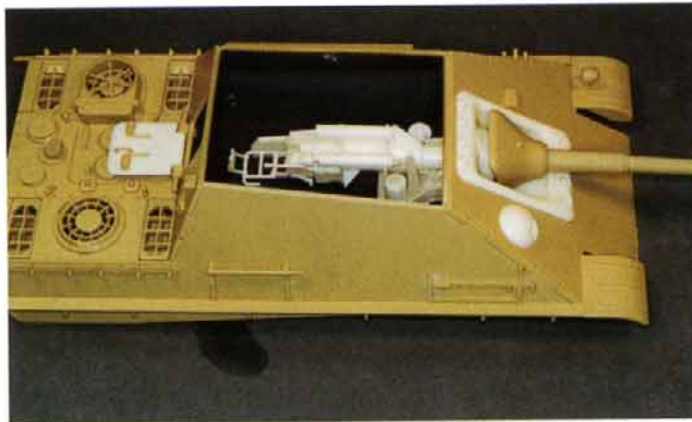
Fine-tip disposable drawing pens work well for highlighting the glass plating of these viewports.



This breech assembly is now completely assembled and is ready to be painted.



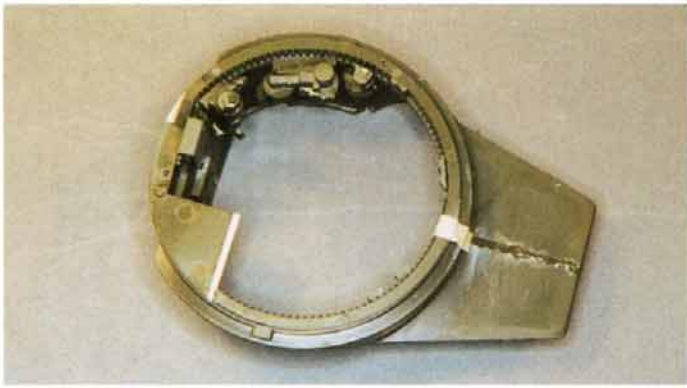
Here's another good example of a highly detailed resin kit breech assembly that is getting its final fit check on the kit-supplied mantlet and barrel. While these resin parts fit together well, they still needed some tweaking. Model by Scott Weller



The resin breech assembly gets its final fit check to ensure that all the parts fit together correctly inside the front hull opening. Model by Scott Weller



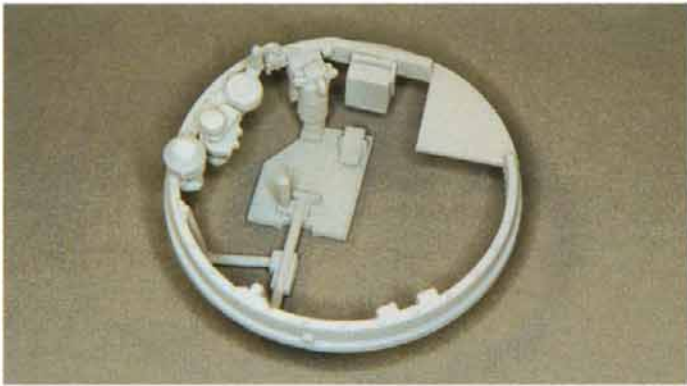
Paint and then weather the breech assembly using pencil pastel dust to simulate grime, soot, smoke, and powder stains.



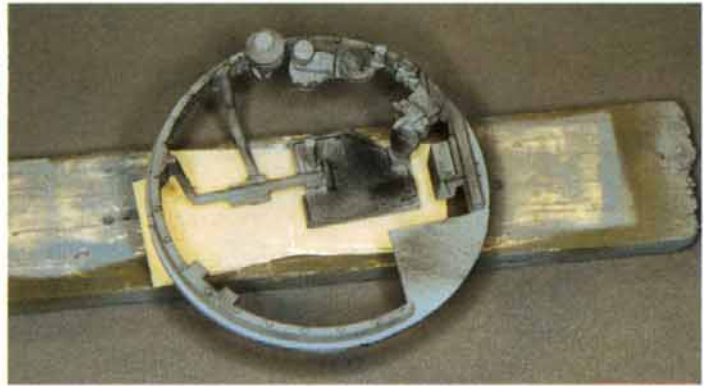
Assemble tank turrets that have inside detail parts slowly. As you glue the parts in place, check and recheck the fit to ensure that there are no clearance problems.



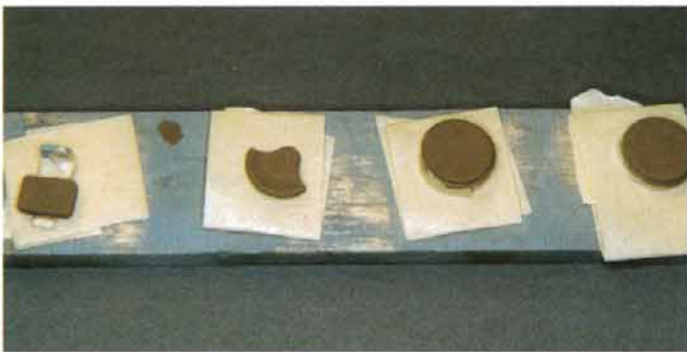
The inner turret ring and detail for this M-18 Hellcat is just about complete. Note the plastic strip, added to fix a fit problem.



Here the inner ring has received its final coat of paint. The only thing left to do is weather it and add the seats.



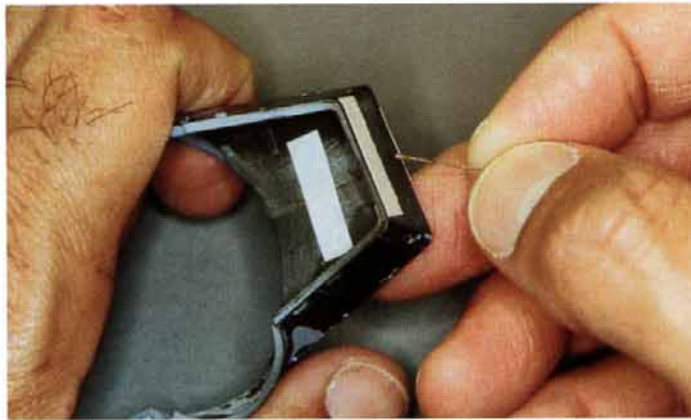
Apply pastel pencil dust to the inner turret ring assembly. Note the streaky appearance of some of the dust. You can fix this by rubbing the streaky areas with a soft tissue. Also note that the decking where the crew members would stand received an extra-heavy coat of pastel dust.



Note the masking around the seats to ensure a sharp demarcation line between the seat padding and the metal.



The complete inner turret ring assembly. Note that the color appears lighter and that the pastel pencil weathering does not appear as dark. Testors Dullcote lightens the appearance of paint and helps blend in the pastel dust. Drybrush the edges and corners and deck plating with Testors silver paint as well.



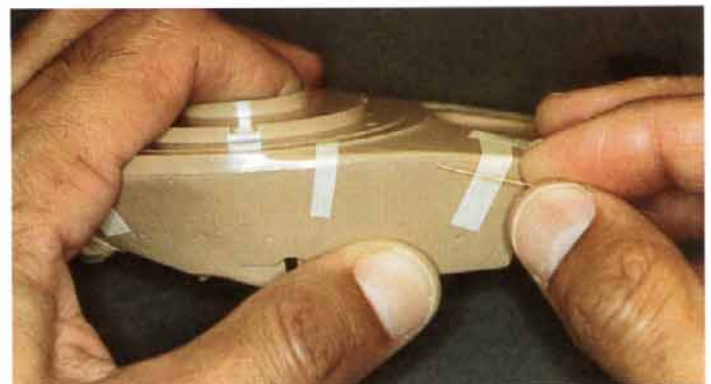
Tape together the left and right halves of the M-18 Hellcat turret and apply super glue along the seam lines.



Once the glue is dry, remove the tape and apply glue to the remaining areas.



For smoothing out super glue on flat surfaces use a sanding stick. To smooth out the plastic and remove any remaining scratches, wet-sand the surface with 600-grit sandpaper.



Glue the upper and lower halves of this M-60 turret the same way you glued the M-18 Hellcat turret. The difference here is that you must be careful when applying super glue along the seam lines of tanks that have casting detail on the turret surface.



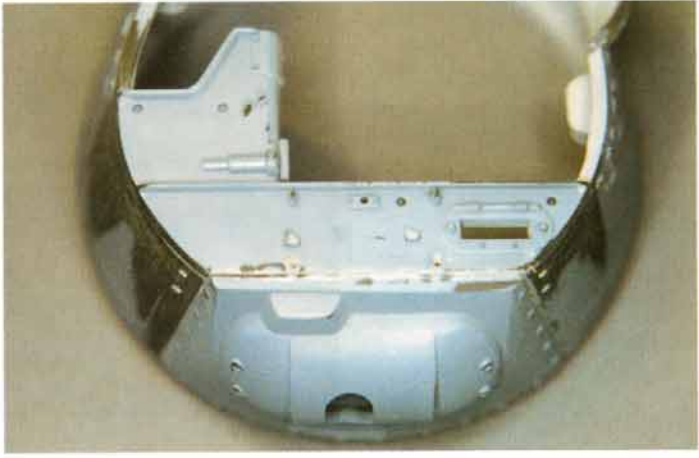
To avoid marring the cast surface detail, use the very tip of a number 11 X-acto blade to carefully scrape the super glue along the seam line.



Use small strips of fine-grit sandpaper to smooth out the seam line and blend it into the surface of the plastic. Note that the sandpaper is touching the lower edge of the turret. Any damage to the surface casting detail will be concentrated on the lower area, where it will be less noticeable.



Apply Testors silver paint along the seam line. As you can see, very little of the casting surface detail has been damaged.

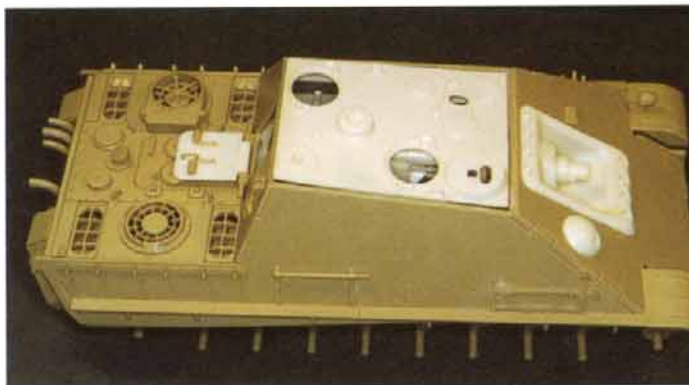


This M-18 Hellcat turret has been assembled and primed. The top of the forward plating has an uneven seam that should be fixed.

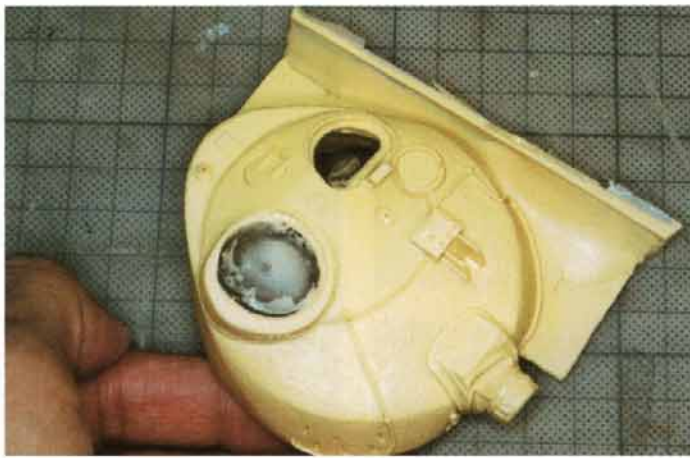
Carefully apply super glue along the seam line using a thin wire applicator. You'll also have to work on the seams along the left and right half of the top forward area of the turret.



Sanding strips cut into thinner strips did the final sanding work to blend the super glue into the plastic. The thin strips made it easy to sand around the surface detail.



This Jagdpanzer is getting its final fit check on the new resin hull roof. The resin part is slightly warped. Fix this by gluing a thick length of brass wire to the underside of the part, where it will not be visible, to stiffen the resin and straighten it. Model by Scott Weller



This Jaguar detail set turret has a rather large casting block. You'll have to remove it carefully.



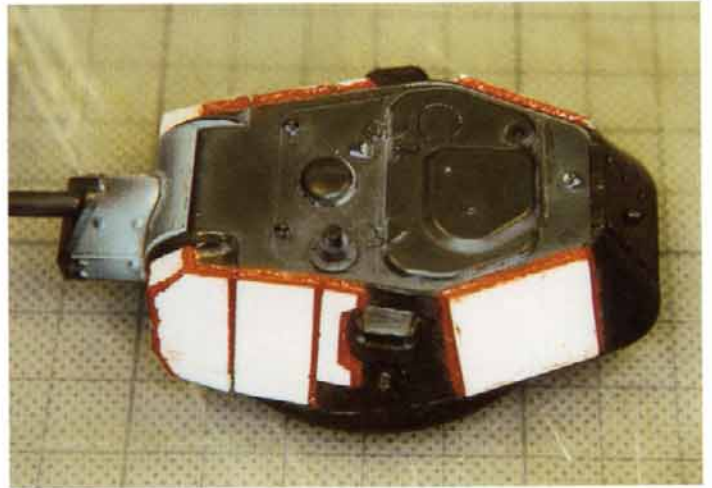
Use a razor saw to cut away the casting block.



Since the casting block is on one half of the turret ring, it will be difficult to hold the turret level while you run it across a stationary piece of sandpaper to remove remaining resin. To keep the turret level, glue scrap resin strips on the other side of the turret ring. When you run the part across the sandpaper, the remaining casting block material will be removed evenly all around the turret.



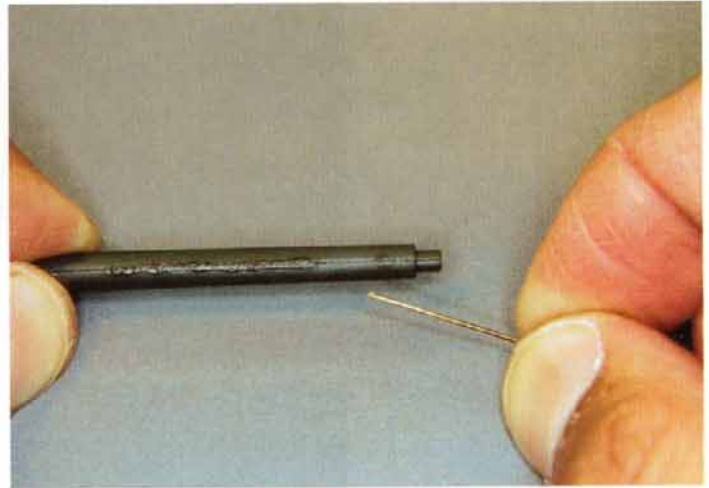
The part halves of these British female World War I tank turrets lined up correctly, but the gun port opening has a slight misalignment. To fix the problem, I carefully filed the curved parts of the opening with a round micro file until I had a smooth curve.



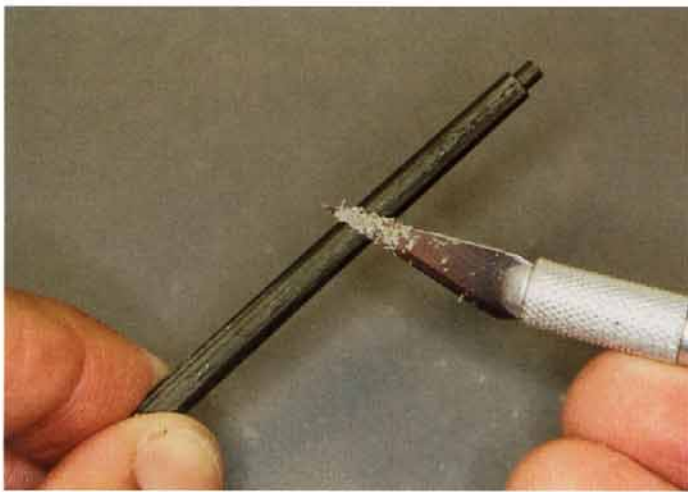
Add armor plating to this T34/85 tank turret using Evergreen sheet stock. Simulate the weld lines around the plating with automotive putty filler. Note that the plates are not all straight. Here again, reference pictures of the actual tank turrets showed that the plating was not always welded on straight. While this tank turret with its added plating may not be model-perfect, it does realistically portray what the actual tank turret looked like. Model by Jim Hudson



When gluing tank gun barrel halves together, use minimal amounts of glue. Remember to check the alignment of the barrel halves. If the alignment pins cause a problem, remove them.



Here again, use the same technique of positioning the parts, taping them together, applying super glue between the taped areas, and then removing the tape and finishing the job.



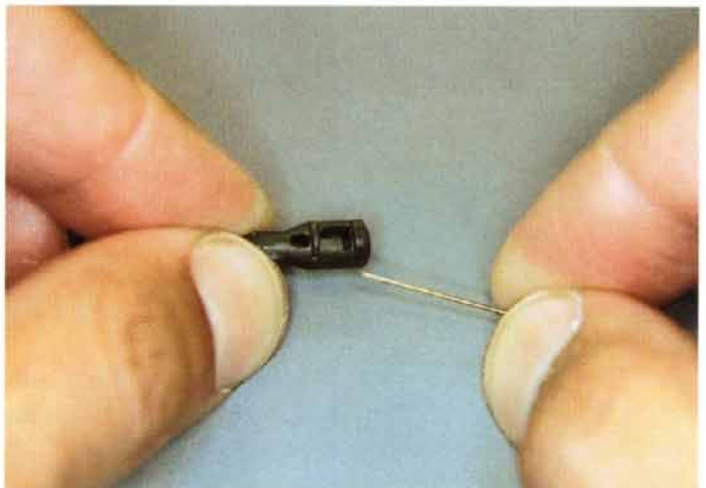
Tank barrels have small diameters, so be careful when you're scraping the super glue. You don't want to distort the shape of the barrel, which is easy to do.



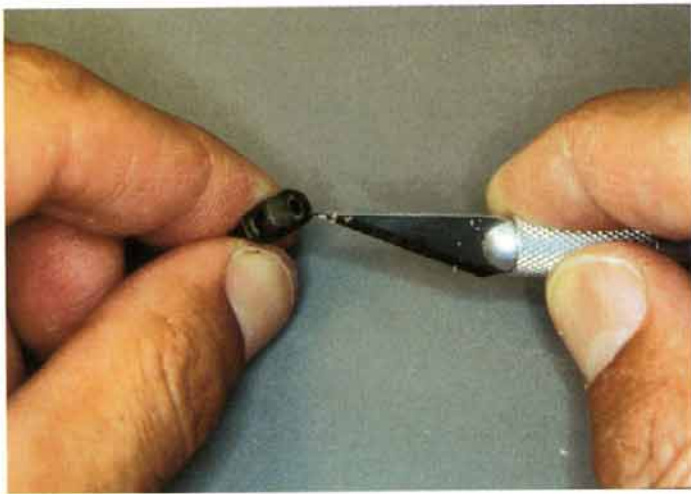
Gentle scraping with this sharp X-acto blade has carefully removed the excess glue without distorting the shape of the barrel.



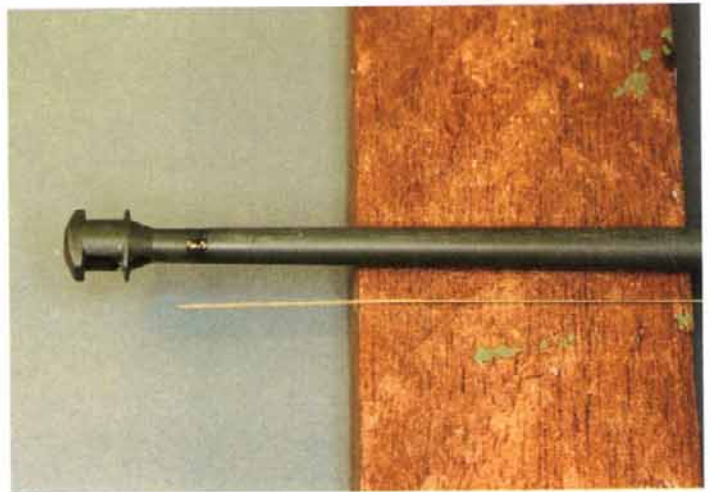
When sanding the seams on tank barrels don't sand along the seam line; you will create a flat spot along it. Instead, wrap the sandpaper around the barrel and push the barrel through the sandpaper with a twisting motion. This technique will ensure that the barrel maintains its round shape while blending the glue into the surface of the plastic. To polish the plastic use progressively finer grits of sandpaper and the same twisting motion.



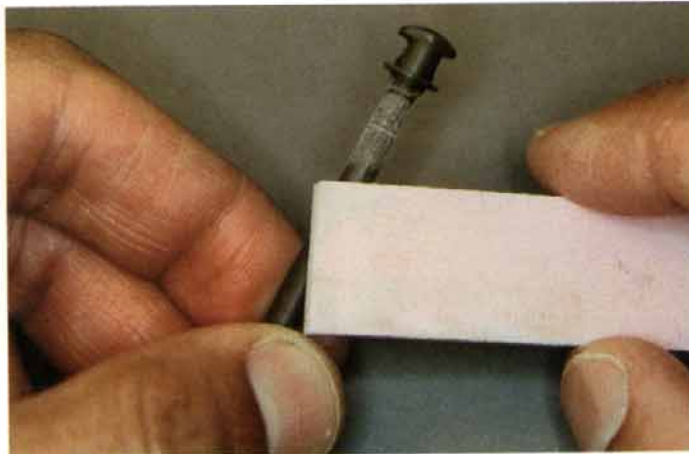
When gluing together muzzle brakes use very small amounts of super glue. It is easy to distort the shapes of the reinforcing ribs and blast deflectors on these parts with excess glue.



Here again, careful scraping to remove the surface glue ensures that you won't distort the shape of the plastic.



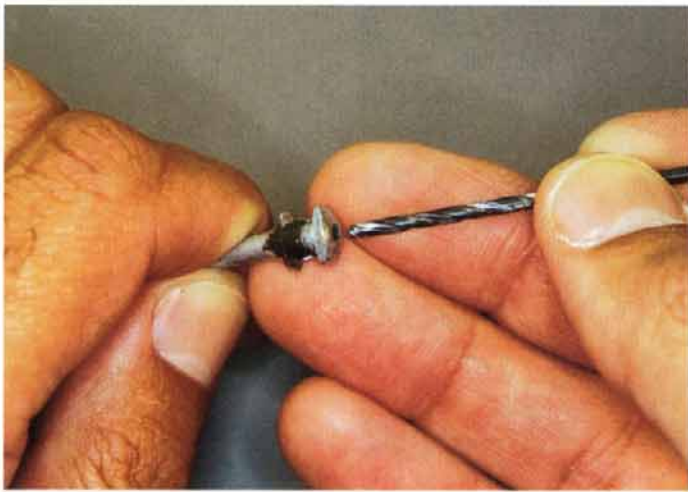
After gluing the muzzle brake in place, give the attachment point several coats of super glue. Dealing with this seam line in this location on the barrel will be a challenge.



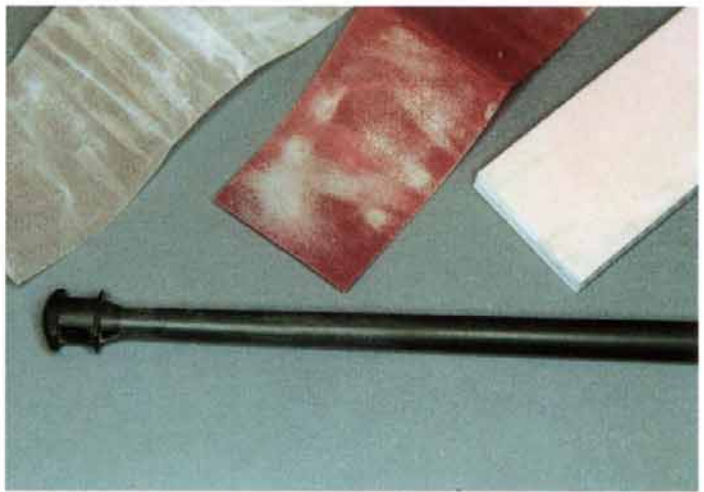
To maintain the roundness of the barrel, sand the super glue smooth and blend it into the plastic while rotating the barrel at the same time.



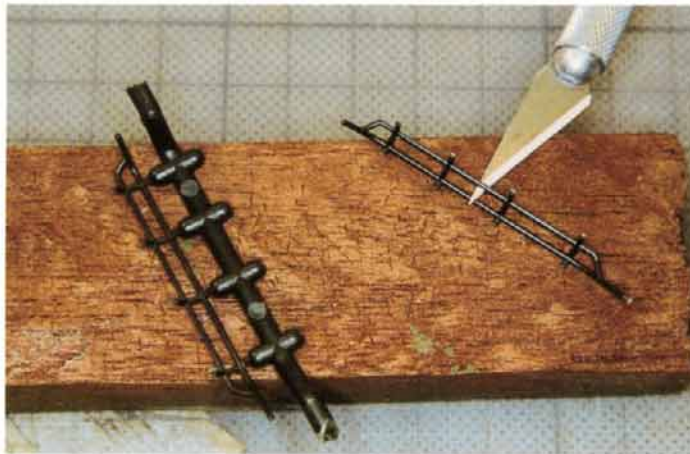
Use Testors silver paint to check the seam lines along the surface of this completed barrel, as well as to check for sanding scratches.



Use a drill bit slightly larger than the barrel opening on the muzzle brake to re-drill the opening so that it has a nice round appearance.



As a final step apply Polly-S paint and decal remover to the barrel to remove the silver paint, wash the barrel to remove any residue, and polish the plastic with fine-grit sandpaper.



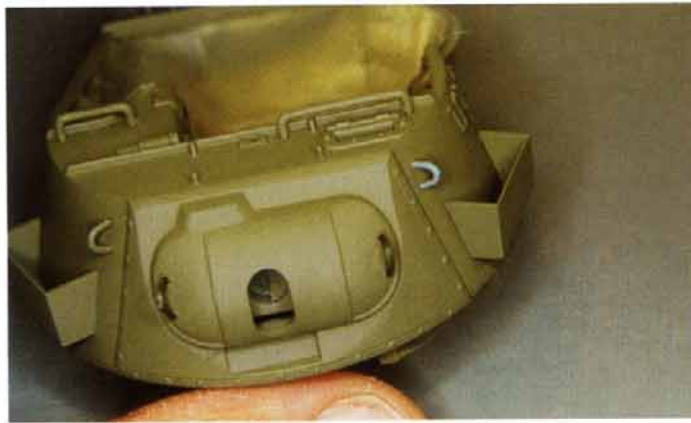
Here's another good example of how to remove delicate parts from their trees. Cut out the tree section holding the racks and then carefully cut off the parts.



The next step is to clean up the mold lines on these delicate parts. A number 11 X-acto blade in combination with fine-grit sanding sticks does the job.



White glue is great for attaching small parts.



Use white glue to attach both lift rings and grab handles to this tank turret. White glue also fills the edges of the exterior storage boxes and seam lines.



Mask the interior surface of this M-18 Hellcat turret so that there will be a fine demarcation between the interior gray and olive drab.



With the masking removed, you can readily see how a good masking job will result in a good paint job.



The interior walls of this tank also received a coat of pencil pastel dust, which was then sealed with Testors Dullcote.



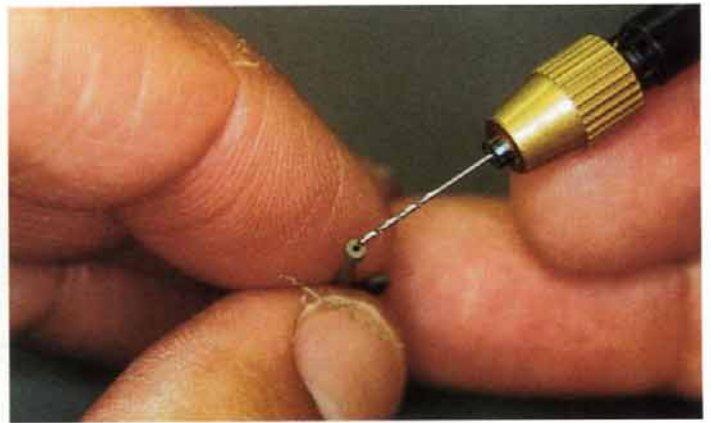
The breech for this M-18 Hellcat turret has now been installed. As you can see, it's getting crowded and busy inside this tank turret—just like the real thing!



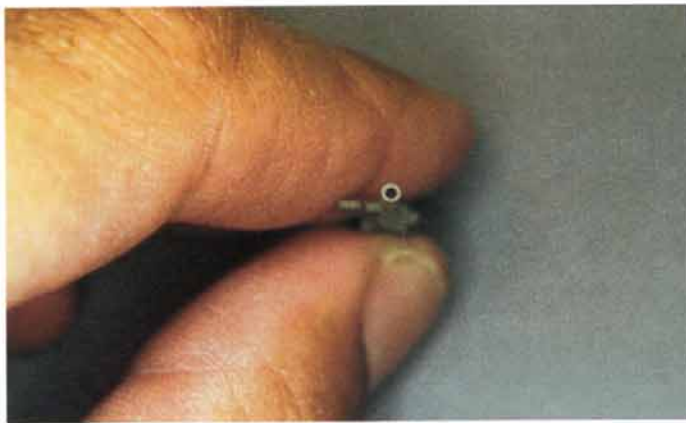
With the gun barrel installed and the turret in place, this modeling project is almost done. Add the few remaining fittings and give the lower hull area its mud and dirt washes.



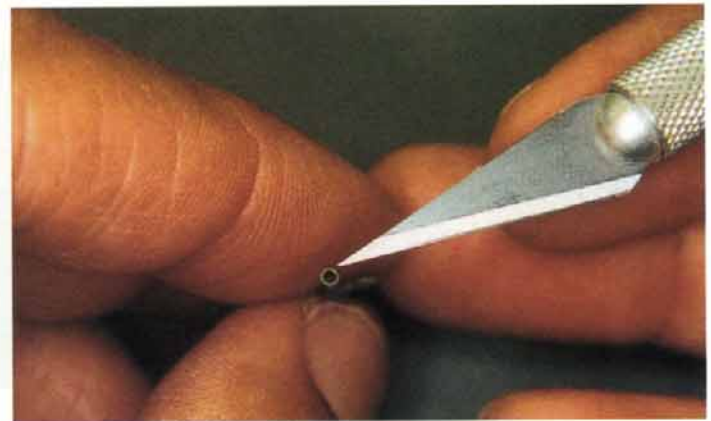
The first step in drilling out machine gun barrels is to indent the plastic surface so that the drill bit will not skip across the surface of the plastic. The indentation also allows you to check to see if it is off center. If so, just make a new indentation.



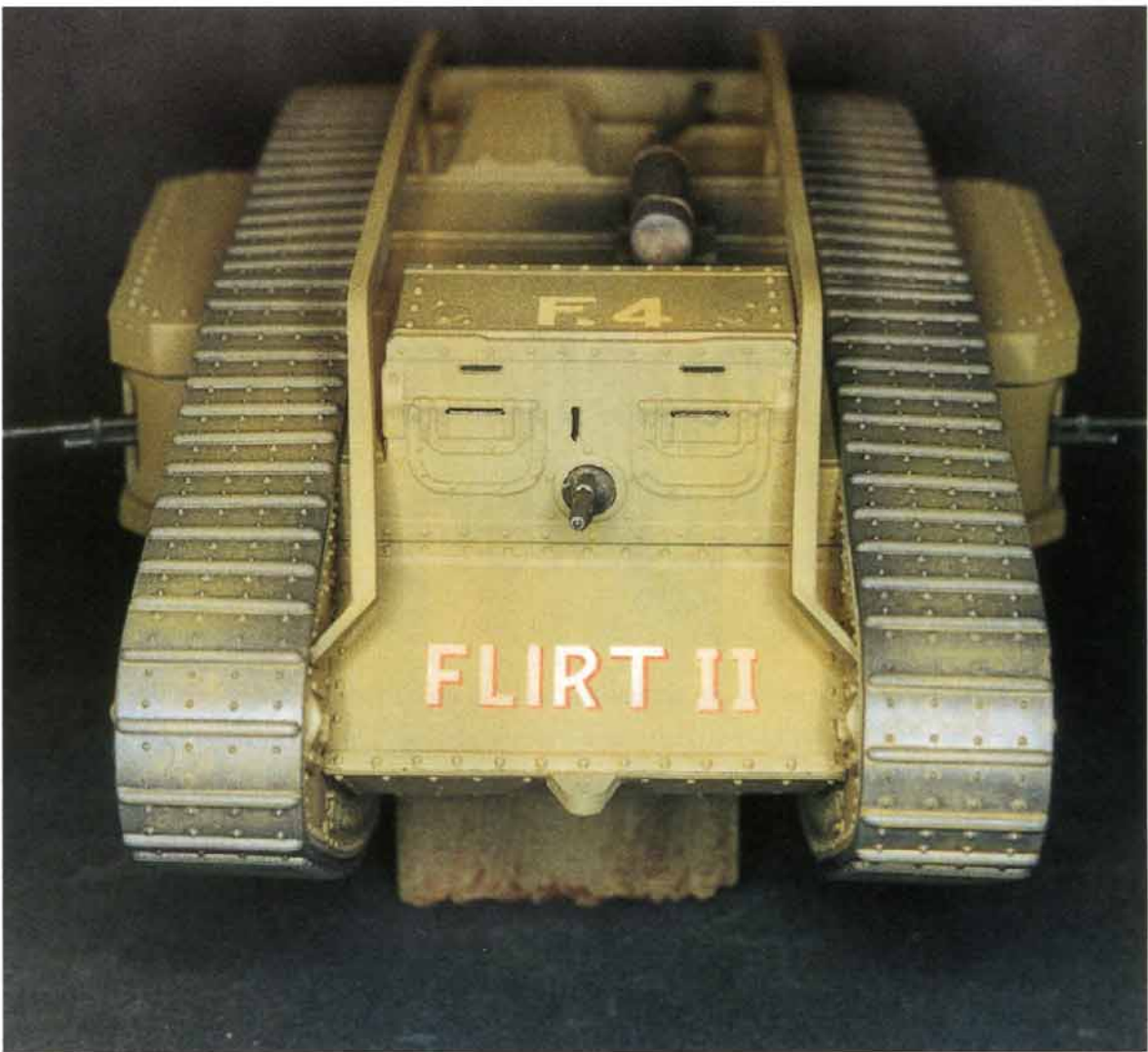
The next step is to use a small-diameter drill bit to drill a small hole into the plastic.



Next, use progressively larger bits to widen the hole.



If you don't have a drill bit large enough to give you a thin wall around the opening, you can use the tip of a number 11 X-acto blade to carefully carve out the plastic. To do this, position the blade at an angle on the inside of the drilled hole and carefully rotate the part. The blade will peel away thin layers of plastic, widening the hole.



One last picture for this chapter. This British World War I female tank has received its mud and dirt weathering on both the tank and its tracks. Note that the front decal has also been weathered.