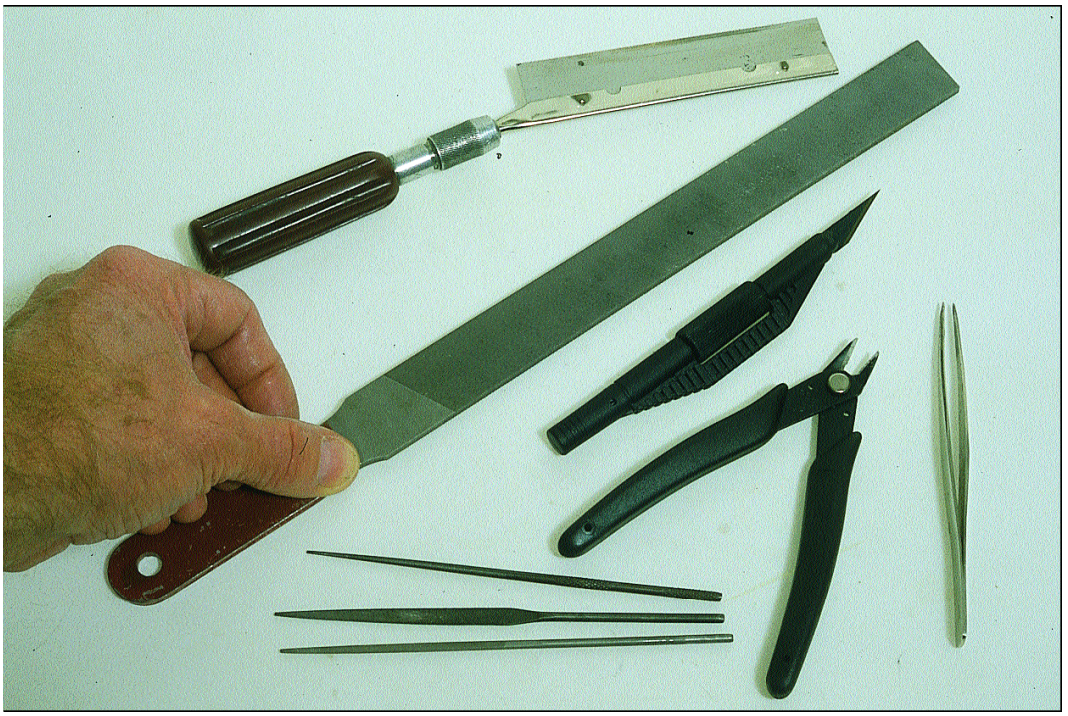


2-1 Some of the special tools that can make plastic modeling easier and more accurate.

A Few Good Tools

You can assemble most plastic kits with nothing more than a good hobby knife and some fine sandpaper. There are,however, some special tools that have been discovered and embraced by experienced modelers that can make the model building and finishing easier, quicker and more accurate. A minimum set of tools for an active modeler should include:

- Hobby knife
- Tweezers
- Sprue cutters
- Square jeweler's file
- Round or rat-tail jeweler's file
- Razor saw
- Pin vise
- Drill bits from size 61 through 80
- 1 x 2 x 2-inch cutting and alignment blocks
- Airbrush
- Air supply
- Spray booth

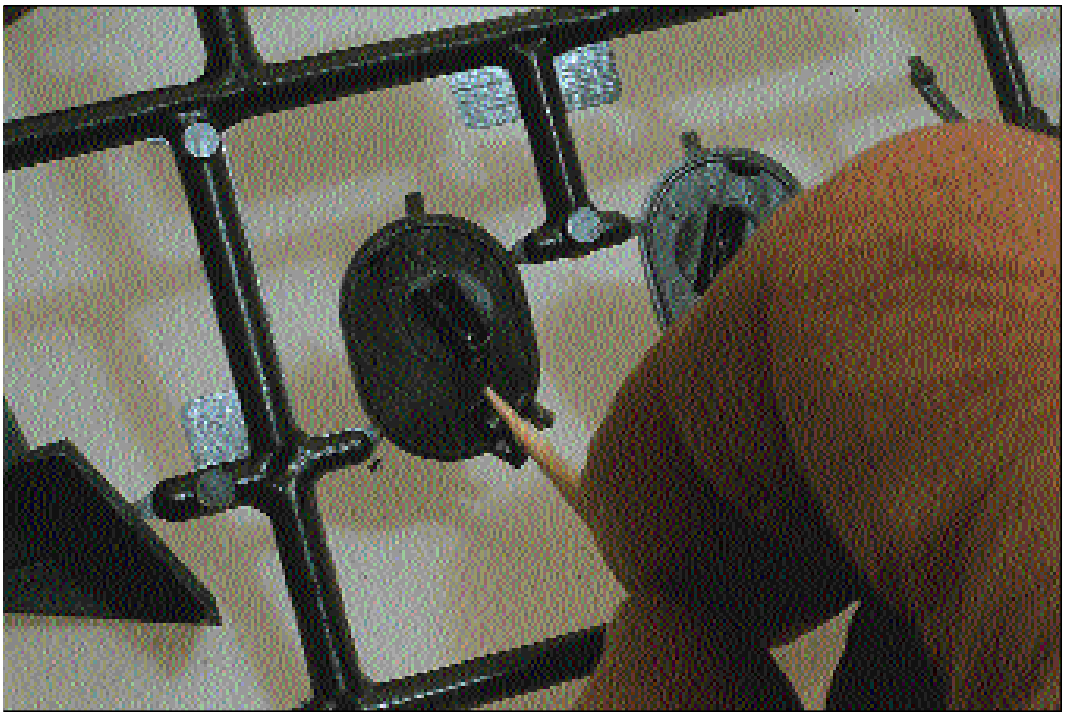
Most of these tools will be available from the better hobby shops. Those that do not actually stock this stuff can order most of it for you.Hobby shops do not, however, carry hardwood blocks. The hardwood blocks can be obtained from cabinet-making shops. The shops may have cut-offs they'll give you. What you want are three or four blocks about 1 inch thick and between 2 and 4 inches long and wide. The corners must all be perfectly square. I use these blocks as supports for models while filing or drilling holes and as alignment tools to help obtain truly vertical or horizontal surfaces during the assembly process.

PREPARE FOR ASSEMBLY

You experienced modelers won't want to read this, but you really do need to read the instructions. Use the instruction sheet and the parts sprue to do an imaginary "dry run" of assembling the kit before you remove a single part from the sprue. Some of those parts are not exactly what they might appear to be. This is the time, too, to decide if you want any open hatches,cockpit covers,or working flaps, or interior details or to model the aircraft with the landing gear up or with it down and include landing gear bay details. You may need to modify some of the kit's parts before assembling them to include those optional details. When you are ready to assemble the parts, wash each of the sprues or trees in a large container of soapy water to clean any grease or mold release from the parts. Rinse the parts thoroughly under running water. Dry them by letting them rest overnight or use an airbrush to blow them dry.

KIT ASSEMBLY

That "dry run" assembly will have made it clear which portions of every part, or parts, are aligning pegs,and which are tabs that must be removed. This is also a good time to identify where the molding or parting lines (where two separate pieces join) travel across the more complex parts. Some modelers prefer to remove those hairlines while the parts are still on the sprue. This is a good time, too, to look for any ejection pin marks and, if they are on visible surfaces,to fill them with a small puddle of *#8874 Model Master Instant Plastic Adhesive* (hobby-type cyanoacrylate cement) followed by a spray with *#8875 Adhesive Accelerator* (kicker).Use *Model Master 50628 Micro Shear Sprue Cutters* to remove each part from the sprue. Take the time, as you remove each part, to be sure all traces of its connection to the sprue are removed by gently carving away or sanding any remaining traces of the sprue.



2-2 Fill the ejection pin marks with a drop of Instant Plastic Adhesive.

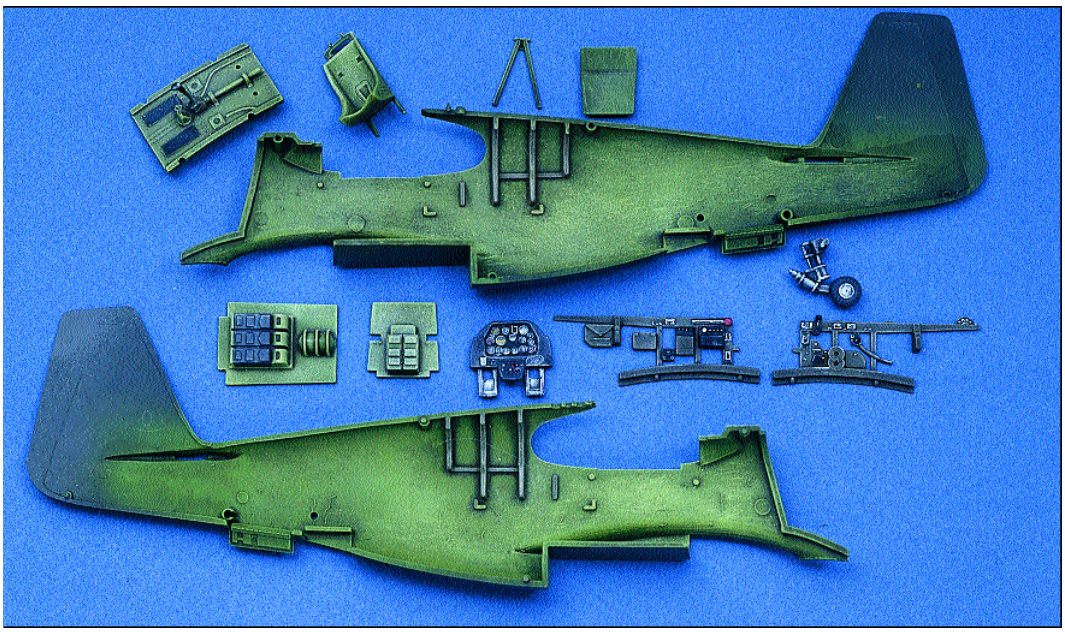
Decide,now, which parts you are going to paint as separate pieces. The landing gear, landing gear bay doors, bomb bay doors, propellers,any underwing munitions,the tracks and undercarriages of armor and any tools, ammo or other hardware that will look "loose" should be painted as separate pieces. Also decide if you want detailed interiors or landing gear bays because you may want to detail those areas and even paint them before the fuselage, body, or wings are assembled.

Test-fit all the parts and be prepared to remove any aligning pins that make it difficult to get the edges perfectly even. You have three choices of adhesives for assembling the model. The traditional *Model Master #8872 Precision Cement* (a thickened liquid cement for plastics), *Testor #3520 Liquid Plastic Cement,* or *Model Master #8874 Instant Plastic Adhesive* (hobby-type cyanoacrylate cement) followed by a spray with *#8875 Adhesive Accelerator* (kicker). Drier climates may need accelerator for every application of Model Master Instant Plastic Adhesive. Try all three or combinations of all three on different kits before you decide on a favorite.

Assembling with Traditional Plastic Cement

The *Model Master #8872 Precision Cement* for plastics is thick enough so you can apply it with the built-in needle applicator in a thin bead. If you do, run the bead along the inside edge of any seam to minimize any cement oozing from the joint. When you assemble the parts, use a lot of force to wiggle them slightly to speed up the time it takes for the cement to dissolve the plastic.Use just enough cement so a hairline of dissolved plastic and cement will appear along the full length of the seam. When this dries for about 48 hours, it can be easily trimmed flush with the surface of the model to minimize any need for filler.

Some modelers prefer to use the thinner *Testor #3520 Liquid Plastic Cement*. To use this cement, assemble the parts to be joined, hold them firmly, and apply just a drop of the liquid cement to one end of the joint with a number 2/0 paint brush. The cement will flow down the tight joint by capillary action and not onto the surface of the model. With practice, you can control the flow of the



2-3 Mark Dickenson painted the interior of this Accurate Miniatures A-36 Apache before assembling the halves of the fuselage.

2-4 Hold the parts in place while you apply a drop of Instant Plastic Adhesive with a toothpick.

liquid cement so capillary action alone carries it the full length of the joint. A single drop of this cement, applied with a needlepoint, can be enough to attach smaller parts to the model.

ASSEMBLING WITH INSTANT PLASTIC ADHESIVE

An alternative technique for assembling any plastic kit is to use the *Model Master #8874 Instant Plastic Adhesive* (hobby-type cyanoacrylate cement) followed by a spray with *#8875 Adhesive Accelerator* (kicker).

2-5 Set the joint instantly with a quick spray of Adhesive Accelerator.

With this method, you need only hold the parts together (with your fingers well away from the joint) for a few seconds because the Accelerator makes the joint firm almost instantly.

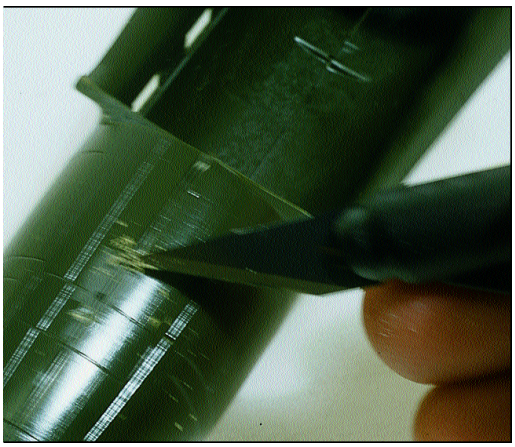
Remember that a small amount of Model Master Instant Plastic Adhesive or other cyanoacrylate cement works better than a large amount. If you are assembling small parts, use a pin to apply just a drop of the cement to the joint. Use the corner of a facial tissue to wick away any excess cement. Just touch the corner to any puddle and it will wick away the excess cement – no wiping or rubbing is necessary – when the excess cement is gone, spray on the Adhesive Accelerator for an instant bond.

2-6 Touch the cement with the corner of a facial tissue to wick away any excess cement.

If you are assembling painted parts, none of the plastic cements will form a strong bond. The plastic cements are all designed to bond by dissolving plastic, and the layer of paint prevents that from happening. Carefully scrape the paint off of the area to be cemented,to attach prepainted parts.

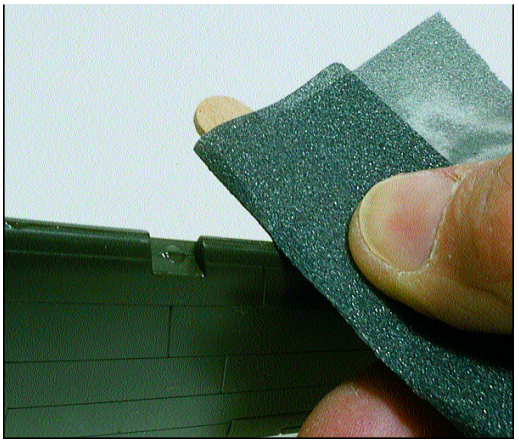
ASSEMBLING WITH COMBINATIONS OF CEMENTS

Some modelers prefer to apply both plastic cement and Instant Plastic Adhesive to important seams like the joints between



2-7 Shave the seam of dissolved plastic flush with the surface.

fuselage halves or the upper and lower halves of large wings. Apply either Testor Liquid Plastic Cement or Model Master Precision Cement first and press the parts together (remember to keep your finger tips well away from the joint). When you are satisfied with the alignment of the parts, apply the Instant Plastic Adhesive followed immediately by a spray with Adhesive Accelerator to create a hard bead at the joint.If you use this method, file the bead at the joint flush with the surface within a few minutes before the cement has a chance to become rock hard. This combination of glues provides the penetrating quick hold of Instant Adhesive, with the rock hard grip and strength of the liquid cement. Smaller parts can be assembled using either method.



2-8 Sand any joints cemented with Instant Plastic Adhesive within minutes before they become rock hard.

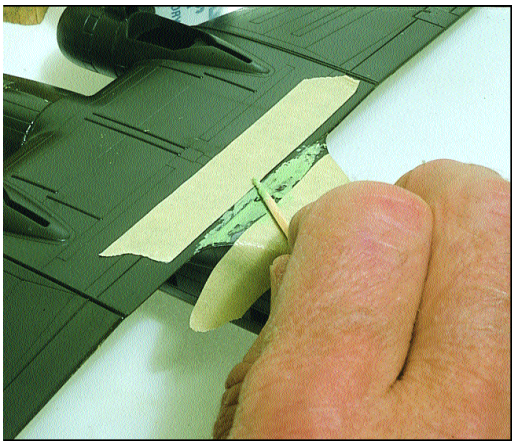
CORRECTING ASSEMBLY MISTAKES

It is possible to disassemble a joint made with Model Master Instant Plastic Adhesive, but the results are certainly not guaranteed. Common household ammonia will usually dissolve a joint made with Model Master Instant Plastic Adhesive. Find a plastic container with a lid that will seal and pour in enough ammonia to cover the joint you wish to disassemble. Let the model soak overnight and the joint should be broken. Rinse the model thoroughly and try again. Clearly mark and dedicate this container to modeling so it cannot accidentally be used for food storage.Obviously, this method (nor any other) will not work to disassemble joints made with a combination of Model Master Instant Plastic Adhesive and plastic cement, nor joints made with any plastic cement.

Fingernail polish removers (which contain acetones) can be used to remove Model Master Instant Plastic Adhesive from your fingers, but keep it away from the model because it will dissolve plastic.

Filling the Seams

The best technique for filling seams is to use just enough cement, as described earlier, so there is no seam but, rather, a bead of cement that can be sanded or filed away. Even with that precaution,however, there

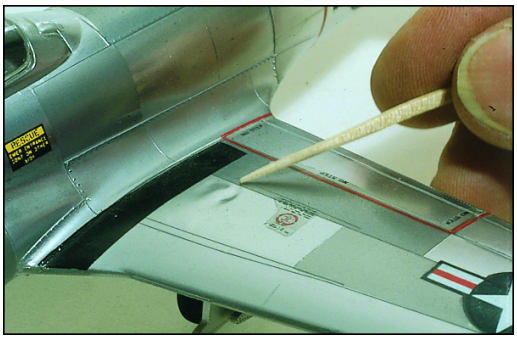


2-9 Use Masking Tape to protect the areas you do not want covered with putty.

will probably still be areas on the model where the seam is visible or areas where there are sinks caused by the molding process or by using too much cement. Smaller depressions, like ejection pin marks and small gaps in the seams,can be filled with the Model Master Instant Plastic Adhesive followed by a spray with Adhesive Accelerator. Larger areas can be filled by covering the depression or gap with baking soda or micro balloons (small glass beads, available at hobby stores that specialize in flying model aircraft) applied with a toothpick and spread only where needed, followed by an application of Instant Plastic Adhesive and Accelerator.

Any damaged panel lines can be rescribed by pulling a needle or a knife blade with the cutting edge backwards to chisel the line. Use a ruler or thin piece of plastic as a straight edge to guide the pin or knife blade.If the panel lines are raised, you may (with a lot of practice) be able to replace them with heat-stretched plastic sprue (stretched almost as thin as a human hair) as described later in this chapter. For most of us, filing in the raised panel line and replacing it with a scribed line will yield better results. Rivets can be replaced by applying a single dot of plastic cement with the point of a pin.

Some modelers prefer to use putty because it is a bit easier to control. *Model Master Red Putty #8879C* is the best choice for model work. Use masking tape to limit the area where the putty will spread. Use a toothpick or spatula-type tool to apply the putty even - ly over the seam or depression.Remove as much excess putty as possible while it is still wet. Let the putty dry overnight,then sand the joint smooth with 400 grit sandpaper



2-10 This sink on the top of this wing was formed when the landing gear bay was installed using too much cement. It should have been filled before the model was painted.

wrapped over an ice cream stick. The put-tied-in area will absorb paint more than the plastic, so be prepared to paint and sand it several times to remove any traces of the putty.

Assembling Biplane Models

When assembling biplanes or triplanes, cement the struts to one of the wings and temporarily tape the wings in position to be sure the wings are positioned correctly. Often, some adjustment must be made to the strut mounting to achieve perfect alignment. When the fit is perfect, set the parts aside and finish the model including final colors and weathering. It is far easier to paint biplane wings as separate assemblies. The final steps include assembly and the addition of the flying wire braces between the wings and at the tail.