3

RESCRIBING PANEL LINES

Some model aircraft just call out for a rescribing job. This is especially true of older kits such as Revell's 1/32 scale series. While these age-old kits are accurate in shape and outline, their surfaces are covered with rivets and raised panel lines that are just out of scale. For any kit that is 1/32 scale or smaller you may want to consider sanding off the raised rivets, as they would not really be visible in these scales. Besides, if you are dealing with fit problems and have to do a lot of filling and sanding to remove the seams, the surface detail will get damaged no matter how careful you are. So, the next best step is to just sand off the surface detail and then rescribe the lines. The technique is easy and once you get some experience under your belt you will have wild urges to do it to every kit that has raised panel lines. The tools that you will need include various grades of waterproof sandpaper, a Bare Metal Foil plastic scriber, photoetched panel scriber and shape templates, a set of sewing needles, a pin vise, Duro's white tube super glue for fixing mistakes, Scotch 3M painter's masking tape, several grade 0000 steel wool pads, and several rolls of labeling tape from a dymo labeling tape machine. You will also need some large sheets of paper for drawing the outline of the wing and fuselage halves, a ruler, and a set of dividers for measuring distances between lines. While there are several different plastic scribers available, I recommend that you invest in Bare Metal Foil's plastic scriber. It is, without question, the best scriber available.

Before you sand off the surface detail you need to record the locations of the panel lines. The easy way to do this is to lay the fuselage halves and the wing halves onto a piece of drawing paper, draw their outlines, and also mark the points on the edges of the outline where the panel lines end. Since all aircraft have identical panel lines on both sides you will only need to draw the panel lines on one drawing, but remember to locate the shapes such as squares and circles on both sides. Wings can be done the same way except that you will need one upper and one lower wing drawing. After you have drawn the outlines and marked the points along the outline's edge, remove the part and then use the points along

the edge of the drawing to connect the panel lines that run from one edge to another. Then use the part to measure and draw any other lines and shapes such as boxes and circles. Once this is completed you are ready to sand off the surface detail. I recommend that you do this before you assemble the kit and glue the halves together because this is a messy job that is going to put sanding dust everywhere. Use 280-rough grit to remove the detail and then go over the surface again with the same grit, but this time use water to wet-sand it. This will help smooth out the plastic. Now smooth the surface with higher grades of sandpaper by wet-sanding again. A small note here: if there is any surface detail that you do not want to remove or detail you want to protect, cover it with masking tape. Once the plastic is smooth wash it and let it dry.

Before you begin building the model, I recommend that you scribe any shapes into the fuselage and wing halves such as boxes, ovals, and circles using your photoetched scribing templates. It is easier to scribe these small shapes before the halves are glued together. In order to ensure that the shapes that you scribe are positioned correctly you will need to draw some reference lines on the surface of the part so that you can line up the template correctly. When using a photoetched scribing template you will need to use a sharp needle tip in a pin vise. It is also important to secure the template in place with masking tape once you have the shape you want to scribe positioned correctly. Be sure that the needle is secured in the pin vise tightly and that only a fraction of the needle's length is protruding from the pin vise. What you are trying to prevent is the needle flexing as you try to scribe the outline. If it does flex, the needle tip will not follow the outline of the shape on the template smoothly. Hold the pin vise at approximately a 45 degree angle and start with a very light pass and then add a little more pressure as you begin to etch into the plastic. If the needle is sharp, the etched plastic will be of sufficient depth after three or four passes. Practice makes perfect, so do dry runs on sheet plastic first. You'll get the feel for the shape and how the needle works.

Once you have finished with the templates, assemble the model. After you have glued the halves together and completed all the seam work you are ready to begin scribing panel lines. Let's use the fuselage as an example. Using the drawing that you made as a guide for locations, pick a line that goes all the way around the fuselage. You need to set this line carefully, because all other lines on the fuselage's surface will be measured from this line once it is drawn. Measure the first line from a known point such as the front or back of the cockpit using dividers, and mark the points all around the fuselage. Then run a double thick length of masking tape around the fuselage following the marks. Next draw the line along the edge of the masking tape, remove the tape, and then check the line. You will need to make sure the line is correct in both the vertical and horizontal planes. If it's not, erase the line, make corrections to its location, and redraw it. To set additional lines around the circumference of the fuselage, use the dividers to measure the locations of these additional lines using the first line as a reference. Another method is to cut lengths of masking tape to the spacing width that you need and then run these around the circumference of the fuselage, using the first line that you drew as your reference point. Once you have all the lines that run around the circumference of the fuselage you can add the partial lines and the horizontal lines. Always remember that picking a reference point and then working from that reference point is almost a foolproof way of drawing all the vertical and horizontal lines that you need. The wings are done the same way.

Once you have drawn all the lines you are ready to apply the labeling tape and begin scribing. To increase the flexibility of labeling tape to conform to curves, cut it into thin strips. To keep the thin strips of labeling tape from moving while you are scribing a line, place wider sections of labeling tape on top of the thinner one. Lay the straight edge of the labeling tape along the line you want to scribe and then run the scriber along the edge of the labeling tape. Hold the scriber at about a 45 degree angle and apply gentle pressure. Sometimes the scriber will move away from the edge of the labeling tape, so you will need to provide tight control without applying too much pressure. Curved surfaces take more concentration than flat surfaces and the scriber will definitely have a tendency to move away from the edge of the labeling tape along curved surfaces. If this happens, stop scribing the line. Lift the tape from the area around the mistake, apply a small drop of Duro's white tube super glue with a small wire applicator on the surface, let it dry, and sand it smooth. Then reapply the labeling tape and finish scribing. I like to fix mistakes as they occur so that I do not have to completely reapply the labeling tape along the entire edge of the line. Fuselage and wings are done pretty much the same way. For 1/32 scale kits scribe the line no more than three times, for 1/48 scale no more than two times; 1/72 scale kits would get one light pass. Scribe the lines on the wings and tail surfaces before you attach them to the fuselage. Next attach the wings and tail surfaces, fix the seams, and finish scribing any lines around these locations. You may also have to repair lines that may get damaged when you fixed the seams between the wings and fuselage. When you rescribe sections of lines to repair them, be sure that the labeling tape is set correctly along the edge of the line.

Once you have finished scribing all the lines, sand the surface using 400-grit paper or rub the surface with grade 0000 steel wool. The sanding dust will highlight the scribed lines, allowing you to check them and ensuring that you have not missed any. When you are satisfied, wet-sand the surface with 400- and then 600-grit sandpaper, and then carefully wash the surface using a soft toothbrush, liquid soap, and lukewarm water. Let the surface dry and then wipe it with Polly S plastic prep to remove any water residue.

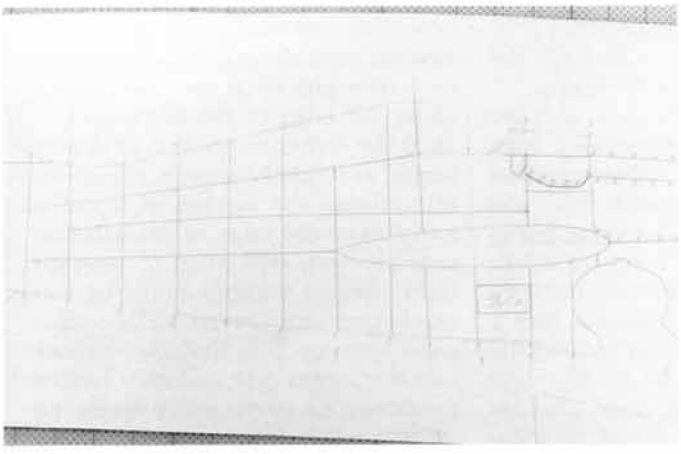

Fig. 3-1. The first step in rescribing panel lines is to draw the part so that you have a record of where the lines go. Simply lay the part on drawing paper, trace the outline, and then mark the point on the outline where panel lines end. Remove the part, connect the lines, and add additional vertical and horizontal lines and shapes.

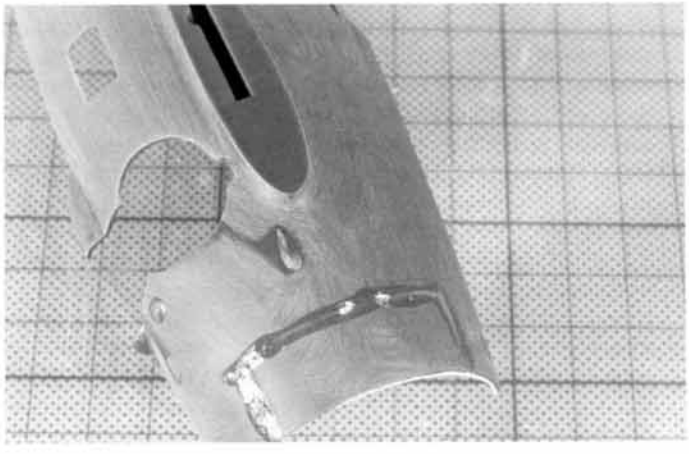

Fig. 3-2. Super glue is the best filler for surface parts that are to be attached to the fuselage. Once the glue is dry and sanded smooth you can scribe it just like plastic.

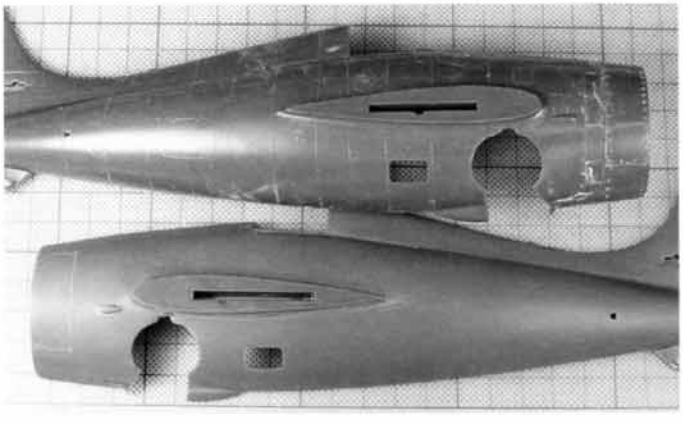

Fig. 3-3. Here is a good comparison between two fuselage halves. All the surface detail has been removed from the lower one and the plastic has been sanded smooth. The outline at the forward end of the lower fuselage is the seam where the engine inspections cover was glued in place using super glue.

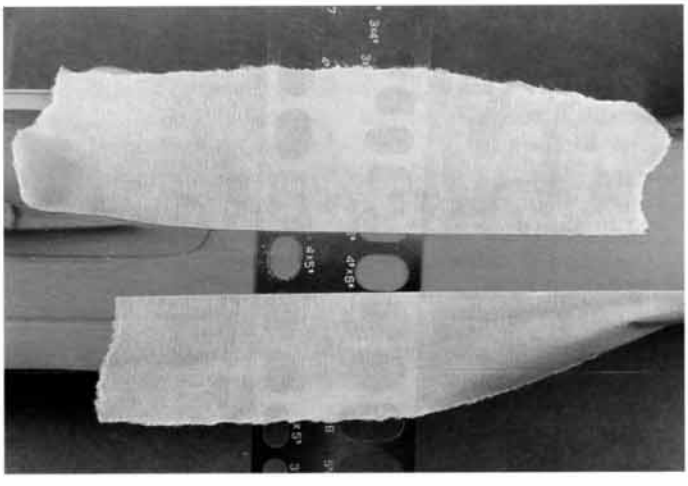

Fig. 3-4. When using a scribing template be sure it is secured in place so that it doesn't move. Masking tape works best to hold scribing templates in place.

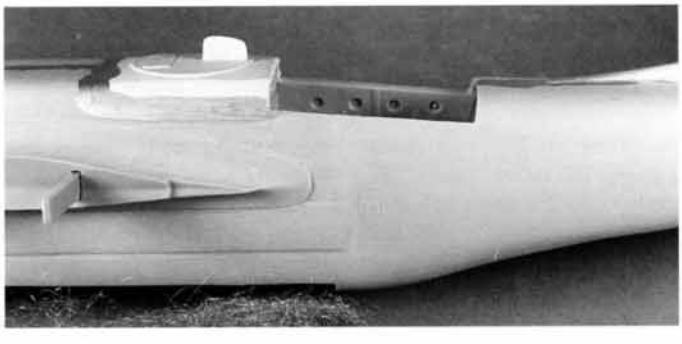

Fig. 3-5. Use 0000 grade steel wool to smooth the surface around the scribed shape. This grade of steel wool works great in combination with fine grades of sandpaper.

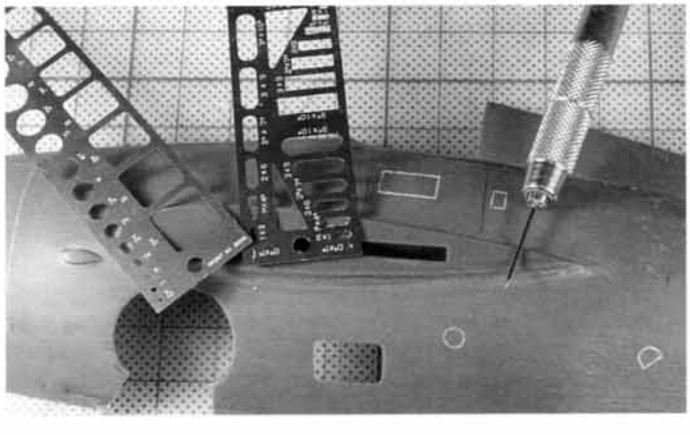

Fig. 3-6. It's easier to scribe small shapes with a scribing template by doing it prior to gluing the fuselage halves together.

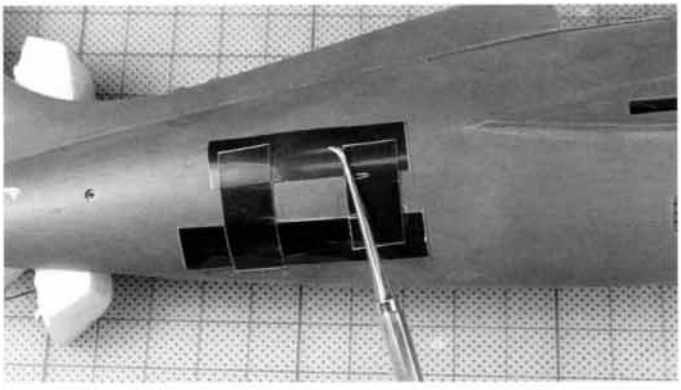

Fig. 3-7. Labeling tape can also be used when you do not have a template shape that is the right size. When using labeling tape to make shapes you can use a plastic scriber to make the panel lines. Bare Metal Foil's plastic scriber is the best product available to scribe panel lines.

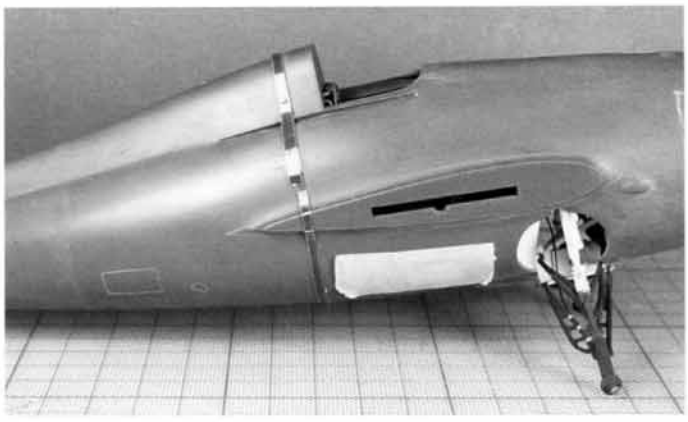

Fig. 3-8. Here the first line around the fuselage has been set. The rear wall of the cockpit was used as the location point to measure the distance from that point to the first line. Cutting labeling tape into thin lengths will allow the tape to conform to the curves of the fuselage.

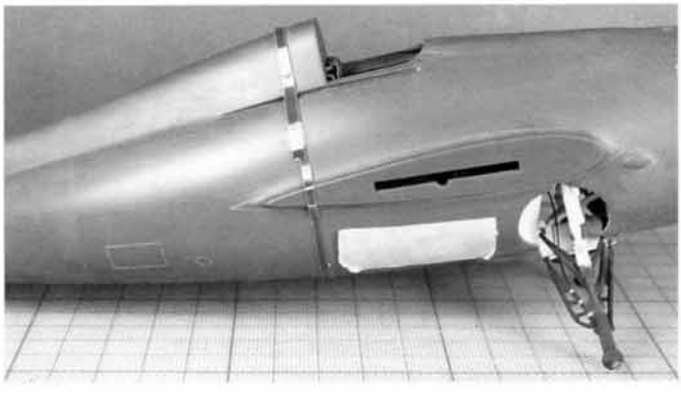

Fig. 3-9. Dividers are a good tool to use to set the distance between panel lines. Once you get the distance set all you need to do is lay the labeling tape along the pencil marks. The secret is to have pencil marks all the way around the fuselage and have them spaced close together so that it will be easy to lay the labeling tape on top of them.

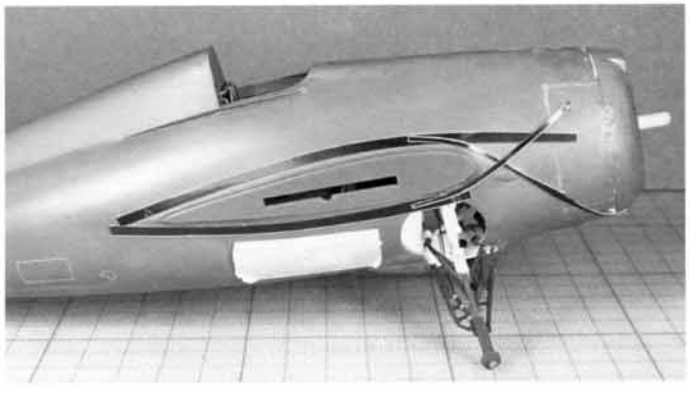

Fig. 3-10. Sometimes you just cannot cut labeling tape thin enough to get it to conform to tight curves. In these cases use sections of labeling tape positioned so that the edge the scriber will follow will be smooth and continuous.

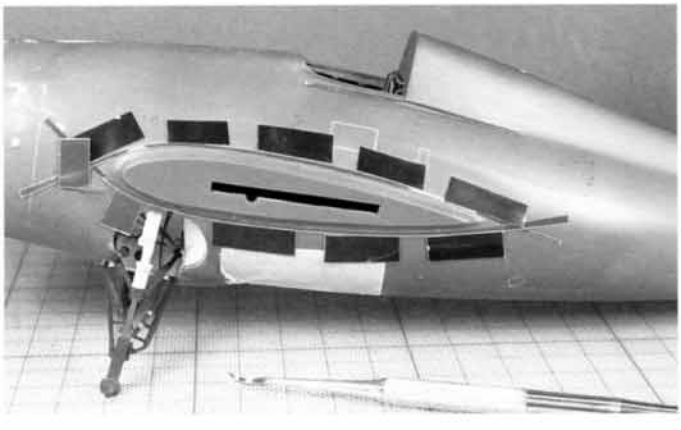

Fig. 3-11. To keep these thin lengths of labeling tape from moving when you use a scriber, back the labeling tape lengths up with thicker layers spaced close together.

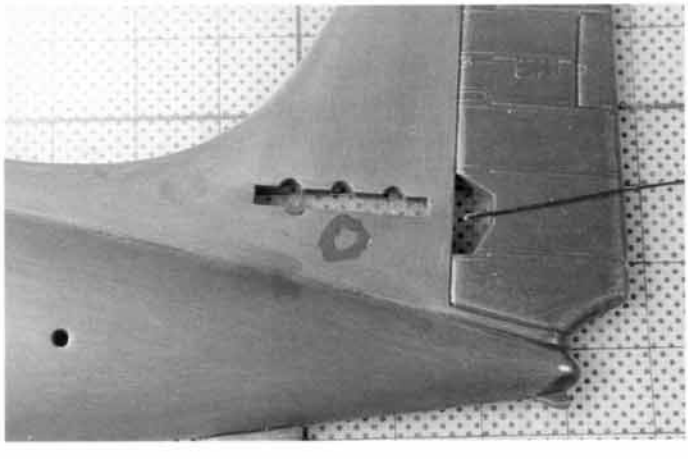

Fig. 3-12. If you make a mistake scribing lines or shapes, simply apply some Duro's white tube super glue with a thin wire applicator to the area. Let it dry, sand it smooth, and try again.

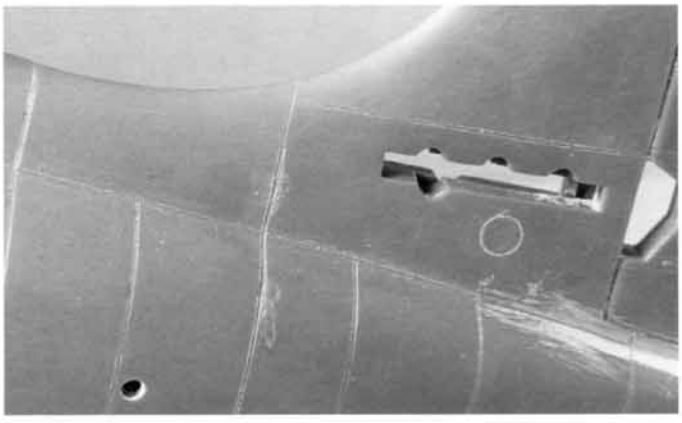

Fig. 3-13. The plastic scriber took a wrong turn along this line, but fixing it was easy with some super glue. To prevent the super glue from traveling along the scribed line when you apply it, let the glue puddle set for a few minutes before you apply some with your thin wire applicator. The glue will be slightly tacky and will not exhibit its normal capillary characteristics.

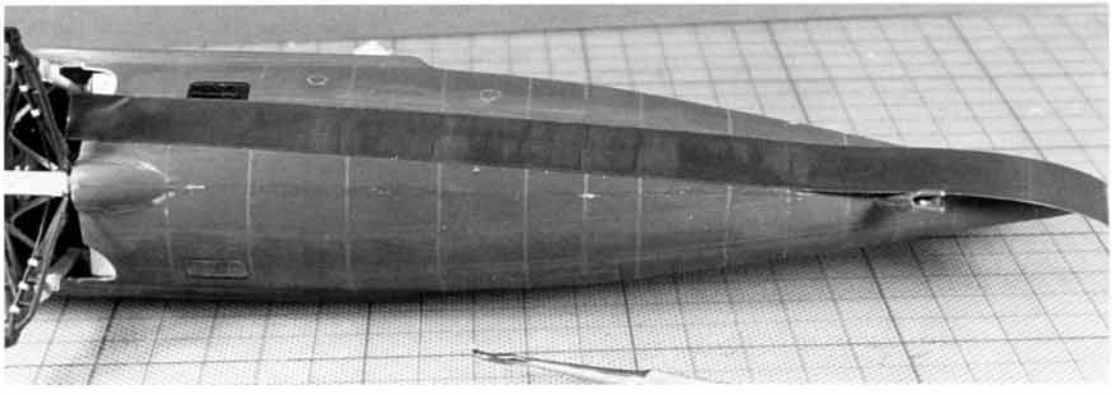

Fig. 3-14. Continuous panel lines along the length of the fuselage are easy to scribe with labeling tape. Just be careful with the scriber as you pass over an already scribed area, as the tip of the scriber will want to follow the path of the other scribed lines.

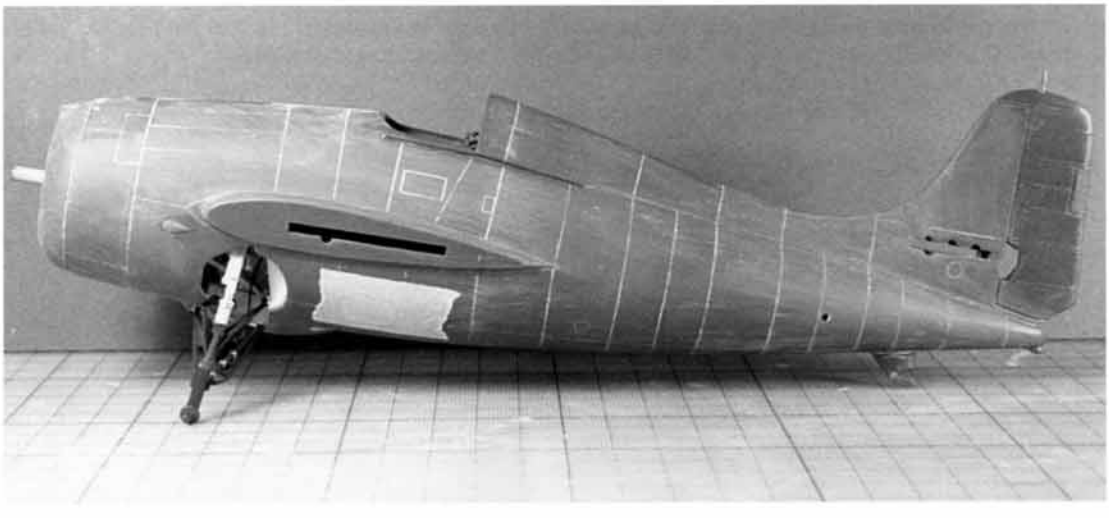

Fig. 3-15. Here the surface of the fuselage of Revell's 1/32 scale F4F Wildcat has been sanded. The sanding dust which has settled into the scribed panel lines gives you a good visual check of the location of the panel lines.

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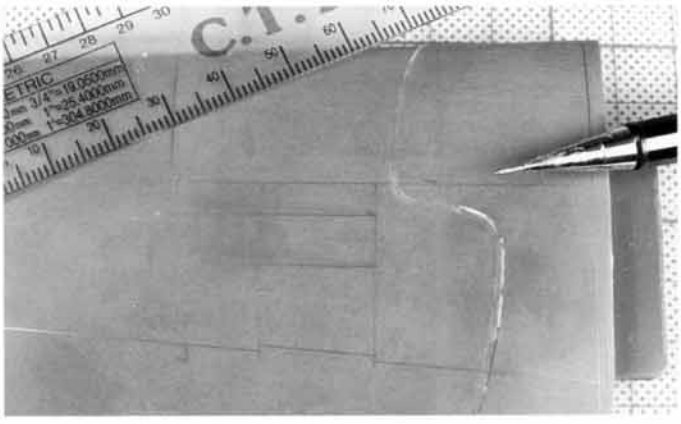

Fig. 3-16. The first step in scribing outlines for multiple box-shaped access panels is to draw the shapes on the wing.

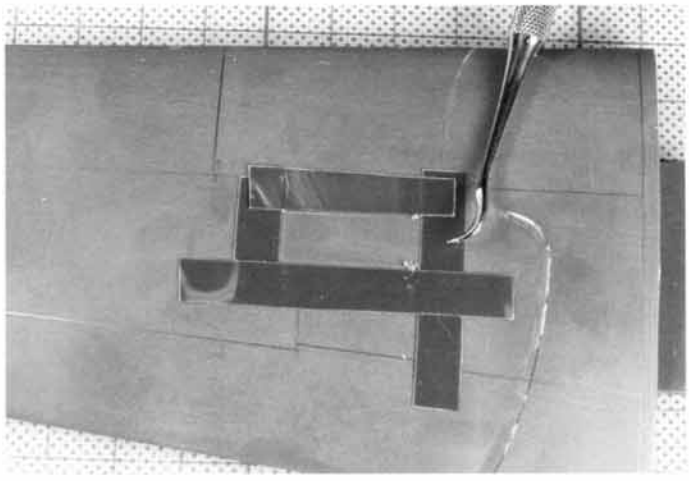

Fig. 3-17. The second step is to box in one shape with labeling tape and scribe it.

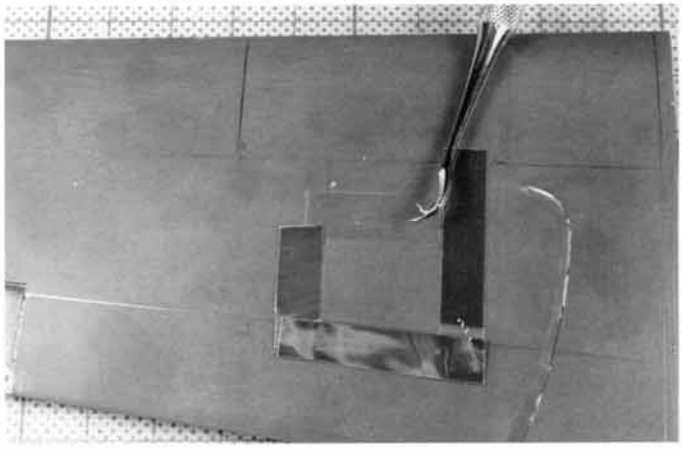

Fig. 3-18. The next step is to remove the labeling tape from the first shape, add more tape along the additional lines, and then scribe them. You need to be very careful when doing this because you do not want to run the scriber past the end points of a previously scribed line.

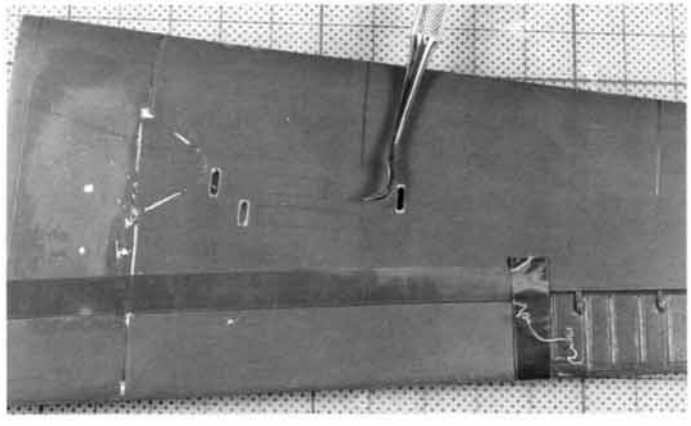

Fig. 3-19. Labeling tape also works great for replacing details such as the outlines of wing flaps. Here the outline of the flaps for this F4F will be scribed. To give a visual difference between the panel lines and the outline of the flaps, the flaps' lines will be scribed slightly deeper.

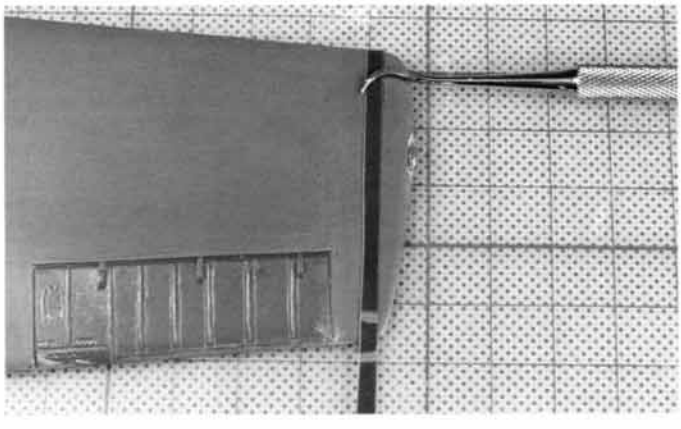

Fig. 3-20. When scribing panel lines for wings do not forget to set a scribed line at the outer edge of the wing. You need to be careful when setting the labeling tape for this line because of the compound curve areas at the tip of the wing.

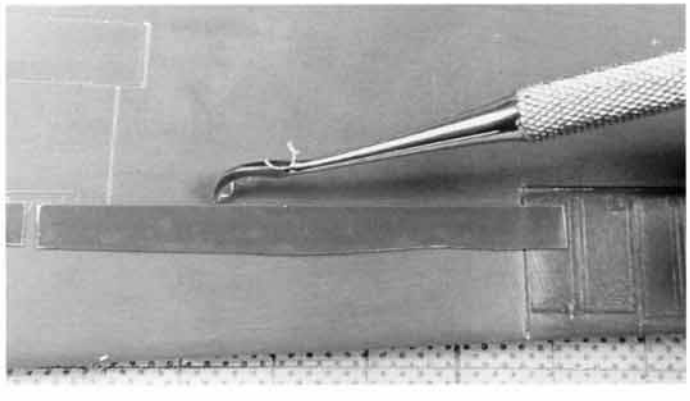

Fig. 3-21. Hold Bare Metal Foil's plastic scriber at approximately a 45 degree angle to get the best performance from this simple tool. If you hold it too high or too low it will bind with the plastic. The scriber will actually remove a sliver of plastic.

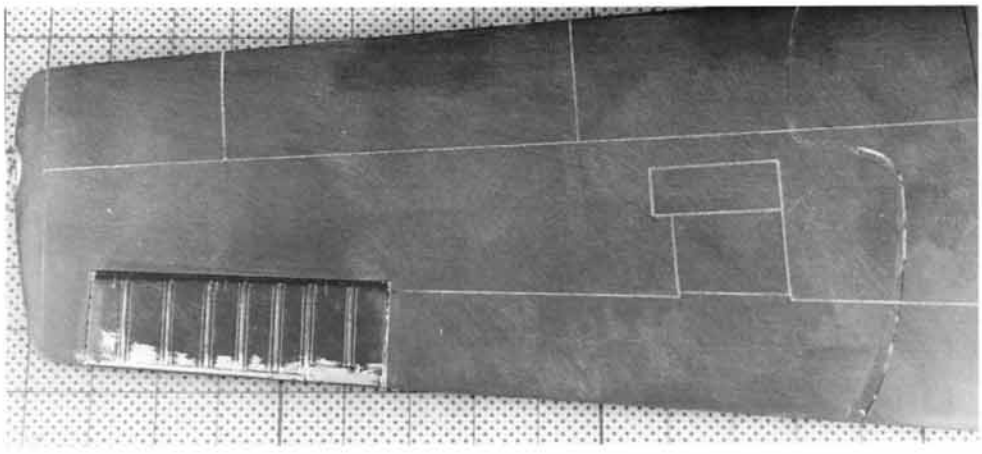

Fig. 3-22. Here the completed left wing of Revell's F4F Wildcat has been scribed, including the gun access panel. The next step will be to attach the wing to the fuselage, fix the seam and then repair any damage to the scribed panel lines that may have been caused by removing seams between the fuselage and the wing.

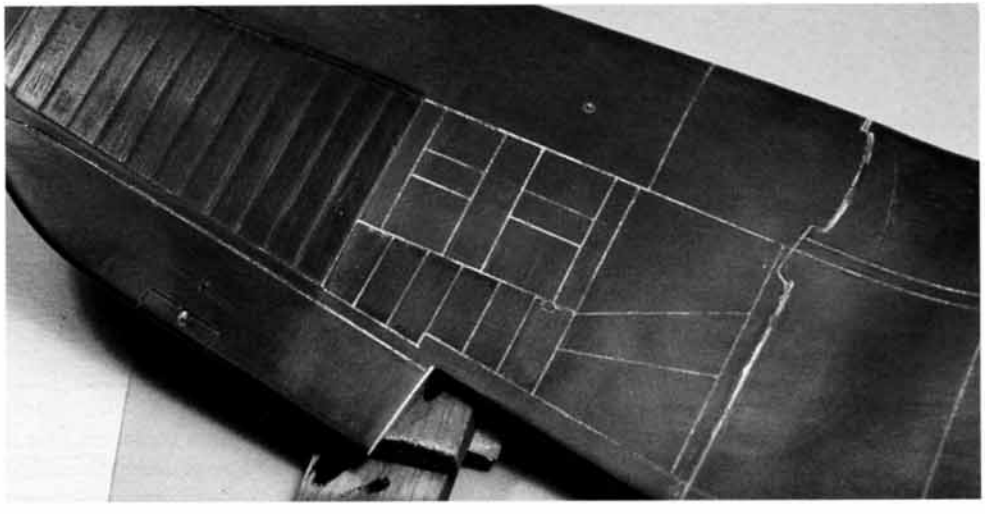

Fig. 3-23. An F4U Corsair has a much more complicated access panel area on its upper wings, but if you take your time and use labeling tape carefully, even these complex-looking shapes are easy to scribe.

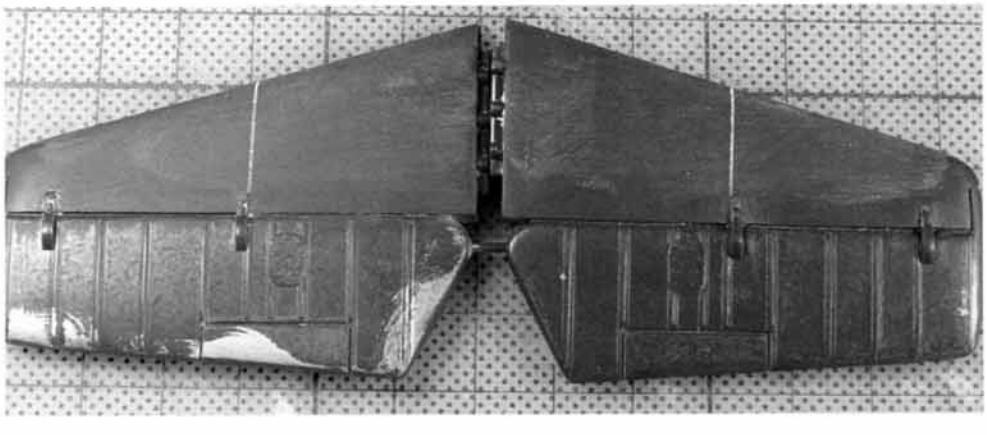

Fig. 3-24. Most elevators and rudder surfaces also had panel lines, so do not forget to add them.

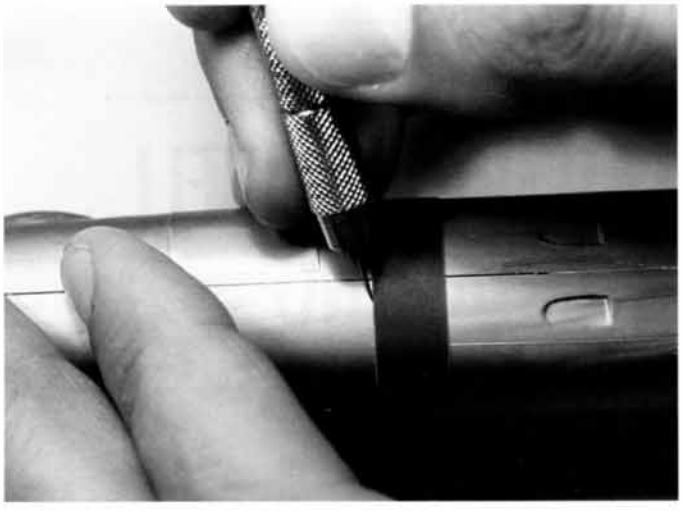

Fig. 3-25. To fix raised panel lines that have been lost because of fixing a seam, position labeling tape along the raised panel line, and lightly scribe in the line that was removed so that you connect the raised panel line to the scribed line. For these types of fixes I recommend using a needle and a pin vise.

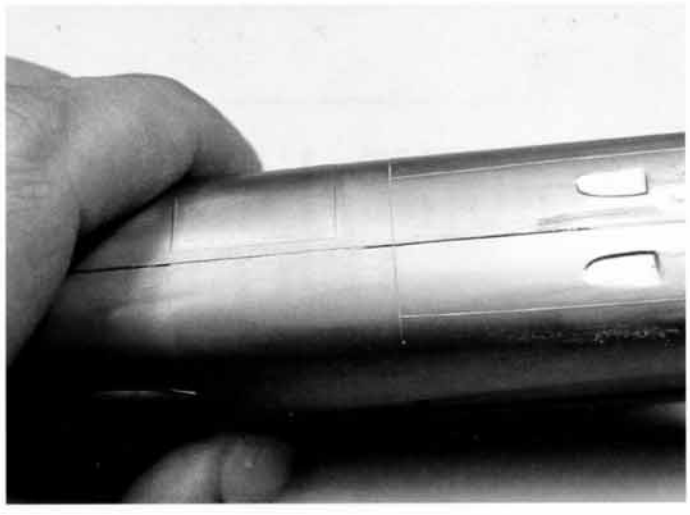

Fig. 3-26. Here the finished scribed line has been carefully sanded, and it connects very well with the raised panel lines. Once the model is painted, you will not be able to tell the difference.

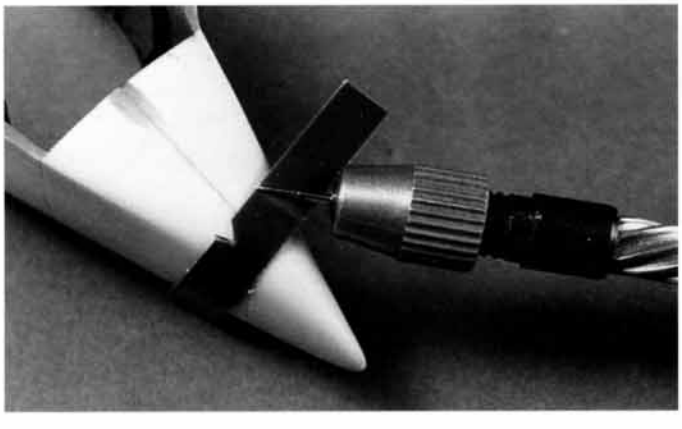

Fig. 3-27. Sometimes no matter how thin you cut labeling tape, the curves are just too sharp to bend the tape around. In this case, just repair the line up to the seam point and then repeat the process for the other side.

Fig. 3-28. The scribed panel line around the trailing edge of this part has been completely restored by scribing one-half of each side at a time and connecting the scribed lines along the seam line.

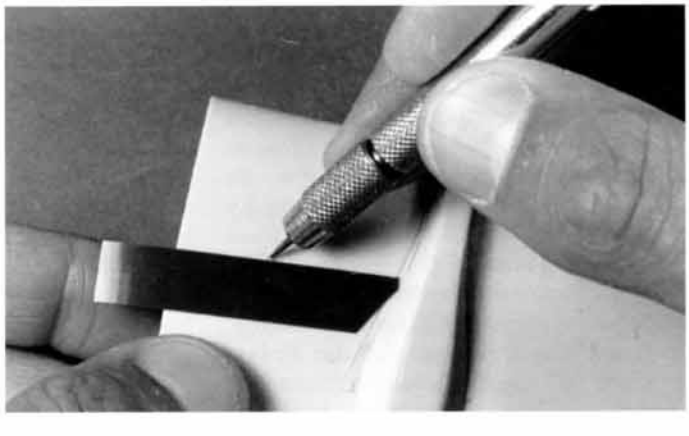

Fig. 3-29. The thickness of the needle that you use will define the angle at which you have to hold your scribing tool. This is very much a trial and error process and I recommend that you experiment on sheet plastic to determine the correct angle to hold the scriber before you scribe the line.