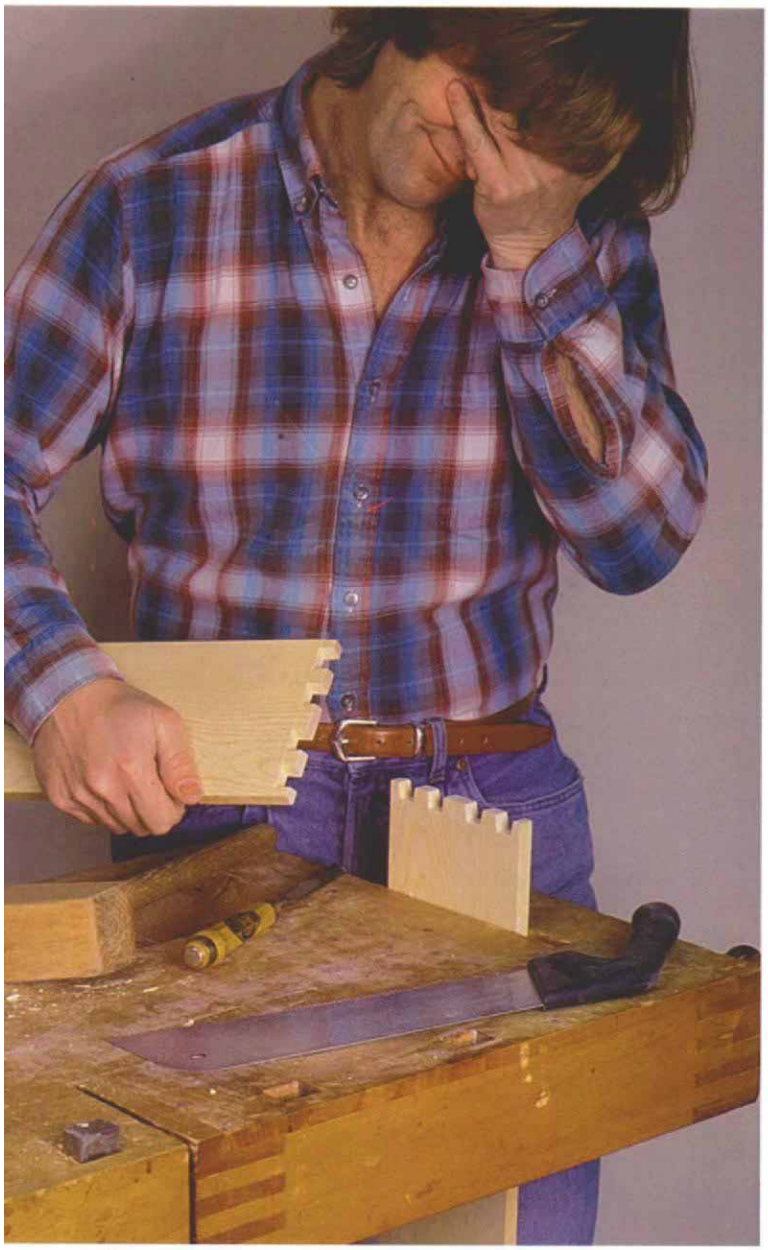
Dealing with Woodworking Mistakes

To err is human, but clever repairs are divine

by Sandor Nagyszalanczy



***Silly mistakes, like accidentally cutting away the wrong parts** of a dovetail joint, can cost you time or spoil your project (the author's mistake shown above was made only for illustration purposes). But you can sidestep frustrating setbacks by keeping your concentration and following good construction practices, such as marking the waste sections of a joint before cutting it out.*

There was scarcely a whisper in the room as we watched Japanese temple carpenter Makoto Imai demonstrate how to mark out a scarf joint that seemed to have the complexity of a Rubic's cube. The silence was broken by one Santa Cruz Woodworking Association member who had paid to see the traditionally trained craftsman perform: "Since all your layout work is in ink, how do you erase a mark if you make a mistake?" Brushing back his jet-black ponytail, Imai replied simply, *"Don't make* a *mistake."*

But all woodworkers occasionally make mistakes. We make them for various reasons: bad luck, lack of skill, not approaching the task logically enough, fatigue or distractions. Little foul-ups, like sawing a part too short, are inconvenient at best and can disrupt work flow. More serious errors, like ruining a pair of book-matched panels, can take the wind out of our sails and make woodworking tedious instead of fun. For professionals, blunders and slipups can lead to overtime and drain the profit from the job. Because the universe of possible foul-ups is limitless, it's just as important to learn to deal with mistakes as it is to learn to sharpen a chisel or adjust a tablesaw. As Japanese craftsman Toshio Odate says, "Accept human error, but be prepared for it so it doesn't inconvenience you."

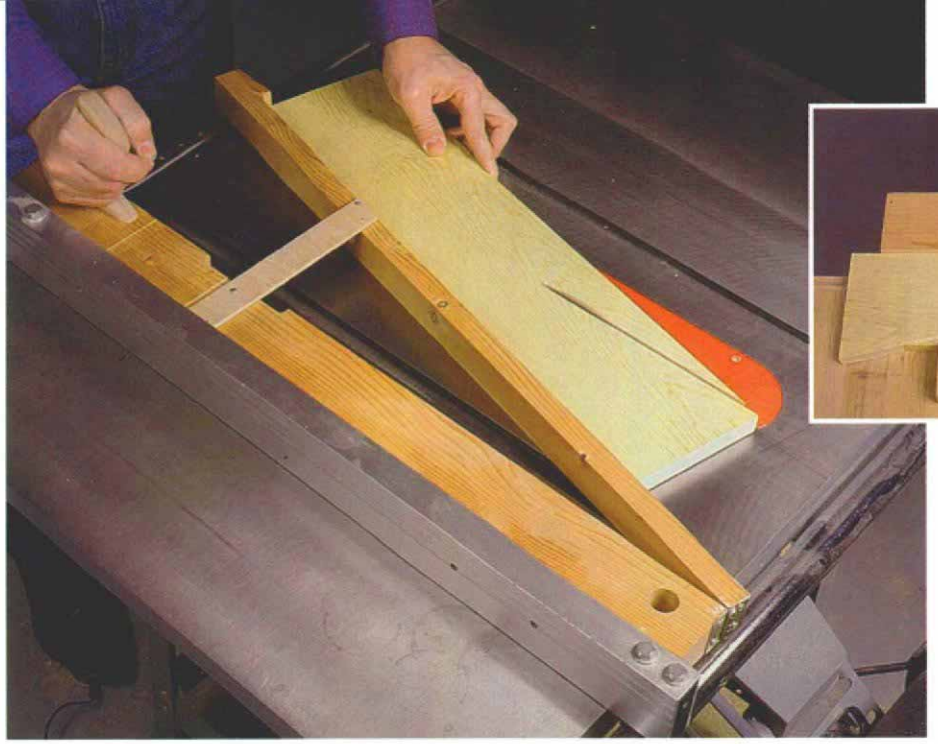
To repair or to remake

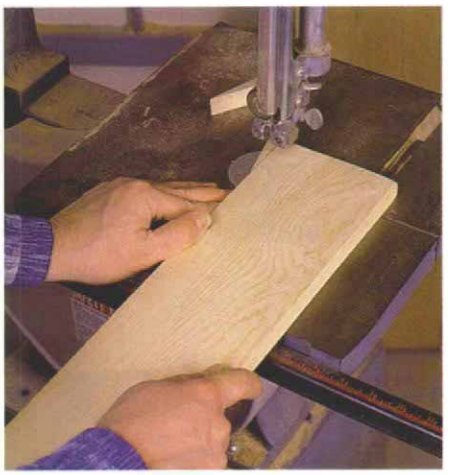
After the drained feeling that comes from having erred has passed, you must ask yourself a question that renowned cabinetmaker and teacher James Krenov told me is at the heart of what to do next: "Can I correct the mistake in a way that I feel good about and that won't interfere with my or the viewer's enjoyment of the finished piece?" A negative response might mean that you'll sleep better if you remake the part. But if you're up to the challenge, it's time to find the right remedy for the error—a task that can take as much cleverness as designing your project in the first place.

I've assembled a collection of methods for dealing with some of the most common mistakes woodworkers are likely to face. In addition to my own ideas, I've picked the brains of more than a dozen professional woodworkers. Some of these error antidotes are from the repairman's bag of tricks; others are the inventions of desperate men trying to save their assets in a pinch. You'll also find a collection of strategies designed to help you *avoid* many basic woodshop blunders in the sidebar on p. 45.

Shortcuts for short cuts

Need a board stretcher? There are many ways to add length to parts that have accidentally been cut too short. A straight part can be made longer by sawing it apart diagonally, thickness or edgewise, using a taper jig on the tablesaw, offsetting the halves and regluing them along a scarf joint (see the photos on the facing page). This works best with wood that has few grain lines (such as





Stretching the length of a board that's been cut too short *can save the day when you've miscut a piece that's irreplaceable.* FWW *contributing editor Christian Becksvoort's method starts by sawing the board in half diagonally using a taper jig on the tablesaw (left). Then he slides the halves along the diagonal to yield the desired length and glues them back together (top right). Plate-joinery biscuits keep the halves from sliding during clamping. Finally, he handsaws off the small triangles left at the comers (right). After the surface has been planed and sanded, the seam becomes practically invisible.*

maple) or straight, parallel grain (such as vertical-grain Douglas-fir) because the glueline will be less noticeable. To lengthen turned parts, you can add capitals, pommels or collars turned separately and then doweled or mortised and tenoned onto the ends. If you've forgotten to figure in length for the joints on frame members, you often can get away with it by switching joinery methods. Not enough length for tenons on face-frame rails? Switch to dowels or loose tenons that fit into mortises in both parts. Didn't add that extra ⅜ in. to make a tongue on a plywood cabinet bulkhead? Get out the plate joiner, and use biscuits to put that carcase together.

If you can't easily add length to a part, try the next best thing: Cover up the gap where parts meet with a strip of molding or trim. This could be done, say, to salvage a slew of balusters that were cut too short for a stairway railing. Moldings can also reduce the size of a jamb (no pun intended) to accommodate an undersized door.

Occasionally, miscutting parts can lead you to design innovations. Portland, Ore., woodworker Jeff Hilber once salvaged a pair of too-narrow door panels for a walnut cabinet by sawing each panel apart and laminating in strips of padauk as a design element to echo the decorative inlays in the cabinet's top. (See the photos on p. 44 for another creative remedy for parts cut too short). Woodshop teacher and author Richie Starr says that when his students make a major mistake, he encourages them to reset their sights. "If a kid accidentally cuts all the shelves for a bookcase too short, I try to talk him into making a narrower bookcase." Whatever strategy you implement, there's no turning back; be consistent with the fix, so it appears to the uninformed eye that you meant to make it that way in the first place.

Repairing and covering up defects

When an edge or corner splinters or breaks off during a machining operation, such as planing or routing, it's best to repair the damage as soon as possible before the splinters get lost or the split advances. Cyanoacrylate adhesives (super glues) are terrific for this because they dry very quickly and don't leave a visible glueline. The thin varieties are great for gluing down torn and lifted grain; the glue wicks into small fissures via capillary action.

If you accidentally drop a clamp or hand tool on a surface, the resulting dent can often be steamed out with a damp cloth and a household iron (see the top left photo on p. 45). Indonesia-based furniture designer Stewart Welch says steaming works best on open-grain hardwoods, like mahogany, butternut and walnut. It will also work on dents in veneered surfaces, but care must be taken not to destroy the glue bond between the veneer and the substrate.

Store-bought wood putty may be a good choice for filling small cracks on work that will be painted, but you won't get a good color match on wood that will be clear finished. You'll achieve much better results by mixing your own filler. For darker woods, mix fine sanding dust with epoxy or cyanoacrylate glue (see Giles Gilson's sidebar in *FWW* #94). Because glue/sawdust fillers usually dry too dark for lighter woods, *FWW* Executive Editor Jim Boesel recommends mixing epoxy with a small amount of acrylic paint or powdered pigment to accurately match the color of the wood. This is easier than the professional finisher's method of filling with shellac burn-in sticks, which is most effective but difficult to master.

Areas with more serious defects will require larger patches. San Rafael, Calif., craftsman Griffin Okie, who teaches a class in mistake repairing for the Baulinas Craft Guild, says that for seamless repairs, you should always make patches from a saved cutoff scrap with the closest color match. And inlay patches should run the full length of the part whenever possible because patch seams that run parallel to the grain are harder to detect. When full-length patches aren't possible, apply a sizing coat of shellac to the endgrain of the patch and inlay area to prevent stain or finish from taking darker there, and pre-finish the patch before gluing it in place. If you damage the edge of a part, say, a frame member, you can cover it up with a veneer edgeband. To fix deep gouges on the face of a panel or frame, *FWW* contributing editor Mark Duginske advises

Photos except where noted: Sandor Nagyszalanczy

Sometimes a mistake can lead to a design innovation. *Roger Heitzman discovered this when he was building a set of 10 curvaceous dining chairs, each with five gracefully laminated back slats. Just as he had finished gluing up all 50 slats, he discovered that they were all ½ in. too short. After some head scratching, Heitzman realized he could add a short riser at the back of each chair's seat (see the inset detail), mortised to accept the slats. He coved the ends of each riser to flow into the seat, to keep it from looking "added on." Heitzman was so happy with the look of the finished chair that he decided to include this riser on all his subsequent chairs with similar slatted backs.*

thickness planing ⅛ in. off its face and gluing on a matching ⅛-in.-thick piece. I discovered a sneaky way to patch a bad dent in a highly visible part of a koa top on a custom stereo cabinet I once built: I inlaid a knot (as shown in the bottom photo on the facing page). By replacing an artificial defect with a natural defect, you can fool the viewer's eye.

One of the most painful mistakes a woodworker can make, and one that is practically impossible to patch, is to sand through the face veneer on a plywood panel—always a hazard when beltsanding a face frame flush to a cabinet side. Santa Cruz, Calif., furnituremaker Roger Heitzman's solution is to finish the piece with lacquer and then spray tinted lacquer over just the defect to match the surrounding wood's color. To make the fix seamless, he lightly etches in grain lines with an Exacto knife after the lacquer is dry.

If you can't hide a defect, as a last-ditch effort, try accentuating it instead. If you've misdrilled holes for cabinet pulls, try inlaying a design element over them. Woodworking luminary Art Carpenter inlayed little ebony seagulls to cover up nail and bullet holes in a slab of orchard-grown walnut. To fill the natural voids often present in redwood burl, try using a contrasting-color filler like black epoxy.

Tightening up a loose fit

Not everyone's joinery has that perfect "piston" fit. To tighten up a loose-fitting joint (for example, a mortise and tenon) glue a plane shaving or a thin piece of veneer, as thick as necessary, to the tenon's cheek or edge. You can tighten through-tenons with a diagonal wedge, as shown in the top right photo on the facing page. To clean up the look of poorly cut dovetails, veteran woodworker, author and retired instructor Tage Frid recommends gluing up the joint and then carefully sawing down any ragged joint lines at an angle to make a clean kerf. Next, take a piece that's slightly thicker than will fit into the sawed gap, cut it at a 45° angle and hammer it flat; then apply glue and force it into the kerf. The glue causes the shim to swell, filling the gap perfectly. A gap at the tip of a miter that's shrunk open can be closed by rubbing the corner with a burnishing tool or the shaft of a screwdriver. Work down both sides of the corner, holding the tool at a slight angle to crush the wood fibers.

Instead of struggling for a perfect fit between difficult-to-mate parts, like compound-curved legs attached to a bent-laminated carcase, it's better to chamfer or to roundover the mating parts or to create a reveal at each juncture. Another strategy used at Roger Heitzman's shop is to initially try for only a rough fit between parts; then rout a shallow channel over the seam and glue in a line inlay.

Warped panels and parts

One of the most common methods to remove a cup from a panel or wide solid-wood part is to wet the concave side of it, and lay it in the sun, wet side down. Tage Frid recommends covering the panel, concave side up, with a clean, wet rag and going over it with a household iron set on steam and high heat. To flatten badly warped doors, John Kriegshauser, shop director at Chicago's TIT College of Architecture, lays them on a benchtop, blocks under the corners that touch and clamps the other two corners down until the frame takes a tension set and straightens.

Occasionally, you will encounter improperly dried stock, 6/4 and up, with honeycombs (internal voids) that don't show on the surface. I once built the base for a podium from 8/4 oak and didn't discover that one of the pieces was cracked and falling apart until I had finished the base. To save the project, I injected glue into the fissures and carefully reclamped the pieces; then I cleaned off the excess glue and re-topcoated it. If you are having a tough time finish-sanding woods with fuzzy grain, such as soft maple or lauan, Tage Frid recommends flooding the affected areas with a thin mixture of hide glue and then rubbing it into the

Photos this page: Roger Heitzman

surface. The glue firms up the fuzzy grain so that it will sand cleanly, and the glue won't show when the wood is stained or finished.

Assembly and finishing failures

If you're using a water-base glue—white or yellow—and you get drips on a surface that'll show, *don't* mop off the gooey adhesive with a wet rag. This is especially important on porous-grain hardwoods, like oak, where diluted glue will be absorbed into the wood's pores and cause blotches in the finish. Allow the drips to dry rubbery hard, and pop them off with a cabinet scraper or a sharp chisel.

In case you've forgotten to square up carcases or drawers during glue-up, Griffin Okie says that they can often be squared by applying bar or pipe clamps diagonally and "popping them" back, even after the glue has set. If the case weakens from the belated clamping, add glue blocks. If stool, chair or table legs are glued up unevenly, true them up by setting them on a flat surface and scribing the feet with a pencil taped to a thin block that's riding on the surface. Trim to the line with a fine saw, plane or rasp.

Unfortunately, there are few easy remedies for a bad finishing job—you usually must strip off the offending finish and start over. There are a few exceptions: If your lacquer finish has blushed (become cloudy), spray on a retarder, which is a slow-drying solvent, or a thin coat of lacquer with retarder in it to redissolve the lacquer and to allow the trapped moisture to leave, clearing the blush. If your brushed-on finish ends up with hairs in it, Minneapolis, Minn., finish chemist Chris Minick advises to pick them out immediately and to switch to a better brush. Surface tension around each hair will form a little rim that you can flatten later with very fine (400- or 600-grit) sandpaper.

Learning from your mistakes

Keep track of your hard-earned solutions to avoid repeated blunders. One way to log successful solutions is to do what Petaluma, Calif., furnituremaker Jeff Dale does—write down all the pertinent information about how a particular job is done, including what bits were used and the order of operations, directly on the jigs used to make the parts (see *FWW* #93, p. 48). Keeping a shop journal is another great way to retain a record of your work progress and mistake-mending maneuvers. Besides, you'll salt away some great stories to share with your grandkids someday. □

Sandor Nagyszalanczy is managing editor of Fine Woodworking.

Steaming out a dent in a panel *(left) isn't difficult. First, dampen the dented area with distilled water, and let it soak in for a while. Then, cover the area with a clean, damp, cotton cloth, and apply heat with a household iron or a soldering iron. Repeat this a few times to swell the crushed fibers back near their original size.*

Tighten up loose-fitting through-tenons with wedges *(right). Saw down the length of the tenon diagonally; glue and assemble the joint; then drive a thin wedge into the kerf for a perfect fit,*

Inlaying a knot is a tricky way of covering up a large defect *in a highly visible spot, such as in the middle of a tabletop (below). After locating a tight knot in a piece of scrap, mark around the knot's perimeter and rout to the line with a straight bit set to cut about 5/16 in. deep. Using the handsaw's rip fence, resaw the scrap so that the knot is about 1/4 in. thick. Using the knot as a template, mark and then rout for the inlay, and glue it in place.*