

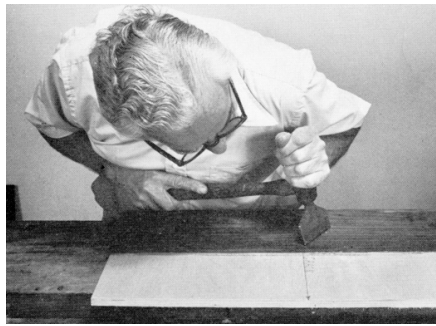
# Hide Glue

*Ancient Technology Joins Modern Woodworking —  
and Practically Everything Else*

by Zach Etheridge



Old-fashion hide glue is one of the oldest kinds of adhesives on the planet, but even in this age of snazzy high-tech super glues it remains a highly useful, sometimes indispensable addition to the woodworker's arsenal of stickums. The more you know about hide glue, the better—up to a point. As with sausage, just don't get too curious about where it comes from. In fact, it's not so far from the truth to say that what they can't make into sausage, they make into glue instead. The stuff is a protein-based glue; the protein comes from melted-down cow hides, hooves and whatnot.



The glue is workable when it's hot—140° to 145°F—and adhesive when it cools, which doesn't take very long at all. Full strength is reached when it's dry, and that can take 24 hours, but the strength of the barely cooled glue is more than enough to hold a joint together without clamps. Its full cure strength is considerably greater than that of yellow glue, and yet it can be reactivated at any time with moist heat, allowing joints to be disassembled, repaired, and put back together with no trouble at all. Hide glue sets up hard when cured, so it can be sanded or machined cleanly, and it will not extrude from stressed joints or exhibit other symptoms of thermoplasticity. Water resistance is low, so don't put your furniture in the bathtub.

By the way, we should take a moment to avoid any possible confusion concerning the kind of hide glue we're talking about. This is not liquid hide glue sold in a bottle ready to use. That adhesive does not share all of the real thing's excellent working properties, and it is not the subject of this review. Old-fashion hide glue is sold in dry beads or flakes (ours is in bead form), and must be dissolved in water and heated for use.

## Melt-Down

Using hide glue is easy, once you've figured out a way to heat it to about 145° and keep it there reliably. A hot plate, a double boiler and a meat thermometer can be coaxed into working pretty well, but if you're going to be using the glue regularly it will be worth investing in an electric pot made for the purpose. Working with Tage Frid during many of his seminars here at the store, we've used the glue pot like a hybrid double boiler: rather than dissolving the glue directly in the quart pot we put the glue in a can which we set in the pot, surrounding it up to its neck with water. The pot heats the water, the water heats the can and melts the glue, the pot stays clean and we have a ready source of hot water for thinning the glue as it slowly thickens. We cover the can with a scrap of foil to limit evaporation.

Start off by putting one or two handfuls of dry glue into the can, and add cool water until the glue is just covered. Stir well and go away. During the next hour or so the glue soaks up the water, swells considerably, and turns into a thick goo. Now turn on the heat, and eventually, with plenty of stirring, the glue melts down into a liquid that should be a little thinner than typical yellow glue but not too runny. Add hot water as needed to arrive at a good consistency.

Tage always starts the glue two days before a class. The first day, we get it melted down and establish a good consistency, then we let it cool overnight. By morning it's a solid mass, but heating it up re-liquefies it with no difficulty. We use some glue on day two, making jigs, sizing veneer and so on, generally making sure it's in good condition. Every few minutes we stir the can pretty well. If we use up a lot of glue, we might occasionally throw in some fresh beads and a little more water. Once again we turn it off overnight. Then on day three as the class begins we reheat, producing a batch of glue that Tage feels is ideally conditioned for



use during the next two days. We've seen claims, and you might have too, that hide glue should be mixed, used and thrown out all in the same day, or maybe you could use it over two days max. Tage's system departs pretty far from that formula, but it has worked just fine for the last fifty years or so anyway. The secret is using "deodorized" glue, which has been sterilized so that a few days' wet heat doesn't cause a bacteria bloom with unbearable olfactory consequences. Naturally, our Milligan & Higgins premium hide glue is the deodorized variety.

## Super Glue

Hide glue isn't perfect for every application; there are lots of glueups where it would be next to impossible to keep the glue hot while you put everything together. There are many situations, though, where there's nothing else on the market that comes close to working as easily and conveniently. One classic application is in the assembly of chairs. If your joints fit well, you can do the whole glue-up without clamps, and you'll end up with glue joints whose strength is about midway between yellow glue and plastic resin. And then one day down the road when some of those joints begin to fail, as chair joints inevitably will, you can release all of the joints by steaming them or wrapping them in a blazing hot damp towel, then clean them up and re-glue as good as new.

Hide glue can be used almost like a "super glue", allowing you to assemble joints in a matter of seconds with no more than hand pressure. Whenever you've got an assembly in progress that allows you to glue one joint at a time, you can brush hide glue onto one of the surfaces to be joined, rub the two surfaces together fairly hard to wet both thoroughly and squeeze out excess glue, then just hold the joint together firmly for a minute or less until the glue has cooled enough to hold the joint closed on its own. We've made 2x2 miter joints this way that we couldn't break by hammering on them 24 hours later. Tage Frid also specifies hide glue for bonding canvas to wood when you're making your own tambour doors. He feels that contact cement's elasticity may eventually cause operating problems for the tambour, or even bond failure; with hide glue, each tambour strip stays exactly where you put it. And if a strip should ever need repair or replacement, that will be not only possible but easy to do.

## Cover the World

Veneering may be the best of all hide glue applications. You can get veneers down on flat or contoured edges and surfaces without worrying about perfect placement as you must with contact cement. You can create perfect butt joints by cutting them after the veneers are down, you can repair bubbles easily and positively, and you can do the whole job without clamps. Veneering with hide glue may be doing yourself or your customers a favor in more ways than one. When a piece of furniture suffers damage that calls for repairing or replacing some of the veneer, the owner or repair specialist can simply iron a damp towel on the veneer, melting the glue and allowing easy removal of the entire piece.

Tage claims that with a household iron, an adequate supply of veneer, a large enough glue pot and a veneer hammer, you could veneer the entire planet. The veneer hammer looks like a cross between a hammer and a squeegee; the hammer head is used as a hand hold (and for setting veneer pins), and the smoothly blunted blade is used to press the veneer down firmly and squeeze out excess glue. Edges usually can be done hot; large surfaces may be done at your leisure, reheating the glue with an iron set between wool and cotton on the heat dial. The hammer veneering process is covered in clear detail in the book *Tage Frid Teaches Woodworking: Shaping, Veneering, Finishing*.

Hide glue is manufactured in lots of different grades which provide varying degrees of strength and setting time. We sell a light colored high grade glue (gram strength is 192) with moderately slow setting time; we've found it quite satisfactory as a general-purpose adhesive for all the jobs described above. *Fine Woodworking* magazine published a good article on the technical side of hide glue in issue #57, and you can find more information on using the glue, particularly for veneering and making tambour, in *Shaping, Veneering, Finishing*. If you've never used hide glue, let us encourage you to try it out next time you have an assembly or veneering job where it sounds appropriate. There's something special about using joinery technology that's thousands of years old, particularly when it's still the best stuff for the job.

