

October 2009

The Florida

Clinker Breaker

Florida Artist Blacksmith Association - Established May 18, 1985

Conference Update

Mark Stone

Dina Estenson's Basket class was listed in error on my part. It is listed as Friday PM in the Conference brochure. It will actually be on Sunday Morning from 9:00 AM until 12 Noon. She will not have a Friday PM class.

If you have registered for her Friday class, you will receive a phone call to reschedule your class. Sorry for the error and any inconvenience this may have caused.

Friday evening around 7:00 PM, after the Board Meeting, we will have a special guest. Our special guest will be "The Colonial Blacksmith". As an itinerate blacksmith he traveled to many of the colonies during the War for Independence. He will be telling us of little known, true stories of the Revolution. The Colonial Blacksmith is a creation of History Alive Productions. Our aim is to entertain and remind folks of our rich heritage.

What is it?

Jerry Wolfe asks (and hopefully will provide an answer for the next issue).



Kydex Sheaths or I'm Tired of Sewing

Steve Bloom

One of the realities of knife making is that customers seem to have a reluctance to slip a razor-sharp object into their pockets. They want sheaths (who would have guessed?).

The traditional solution (no - not cardboard and duct tape!) is a leather sheath. Besides the hassle of having leather slowly molding away in an unairconditioned shop in Florida, there is the need to sew and sew and sew. Even when the sheath is done, there remains the problem of corrosion. The unfinished side of the leather is next to the steel and effectively acts like a sponge to suck water out of the air and to apply it to the once nicely polished blade. The results are to be expected - rust. There are ways of moderating this problem (like soaking the leather in molten beeswax) but the best approach is to tell the buyer not to store the blade in the sheath. That's fine for the buyer but for the maker, having 30 blades banging together in the transport cases and then re-matching the sheaths to the blades is definitely a pain.

In an attempt to make an end run on these problems and to provide the customer with a sheath that can be worn on either hip, I've been playing with Kydex - a thermomoldable plastic.

Kydex comes in a rainbow of colors and a variety of surfaces. The trick is finding a supplier that isn't too proud of what they are selling and who happens to carry what you want. My source is: <http://interstateplastics.com/>. On their website, do a search for "kydex" and then go to "Calcutta Black". There is a specification form on which you pick the thickness and dimensions of the sheet you want to buy. Shipping on anything over 12" wide gets ridiculous, so I usually buy 12" x 48" sheets. Pricewise (as of September 2009) the picture looks like:

0.026 x 12" x 48" = \$9.08

0.060 x 12" x 48" = \$17.09

I use the 0.060' material and typically can get 18 sheaths from a sheet. In other words, a sheath costs me about a buck.

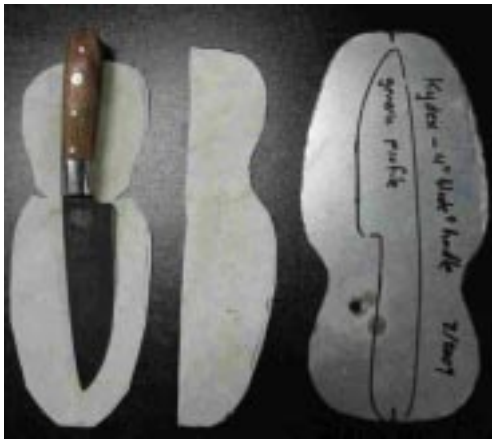
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The basic tool set is PVC cleaner (the purple stuff), ABS cement (if using black kydex) or CPVC cement if not, a heat gun, a decent set of scizzors, a scribe, some cotton swabs, and some mechanics gloves, i.e., the stuff shown here:



You will need to make a template (a little too big is a lot better than a bit too small), since you can sand off excess but it's real difficult to add some back. For the sheath shown here, the template was layed out as:



Cut the kydex with the scizzors (or saw it, then clean up any edge burrs). Wipe the glue area with the cleaner. Put on those



gloves because things are about to get hot. Fire up the heat gun and start moving the kydex through the heat zone. Try to get it as uniform as you can and don't over heat. I use a weak spring clamp as a handle when I do this. Keep waving the kydex through the heat until it becomes limp (probably about 200-250F) - or you could use a toaster oven. Once the material becomes about as stiff as thin leather, fold the edges together as shown here.



When it cools (30-60 seconds), spread the seam with some light wood wedges and smear glue in the seam. Try not to



smear glue anywhere else! I found that a couple of slabs of plywood and a machinist vise makes a decent clamping system. Once the glue has set (or when you get tired of



waiting), you can heat the handle end of the sheath, slip the knife in place and refine the shape. I found it helpful to reheat



the blade area and then clamp the soft material (blade still in place) between those plywood blocks. This nicely flattens the blade section and makes a clean demarkation between the blade and handle sections.

The final profile can be achieved with a bit of carefull grinding. I used a 60 grit belt but it isn't critical. Once you are happy with the profile, a couple of light rivets ought to be added to insure the seam won't open. I found that a #43 bit and some



left over electrical wire (#12) makes quick and easy rivets. I use a rivet at the top and bottom of the seam.

The next step is to figure out a way that the user can wear the sheath. I've used two approaches, a belt clip and a leather hanger. The belt clip consists of a thin nickel silver band that

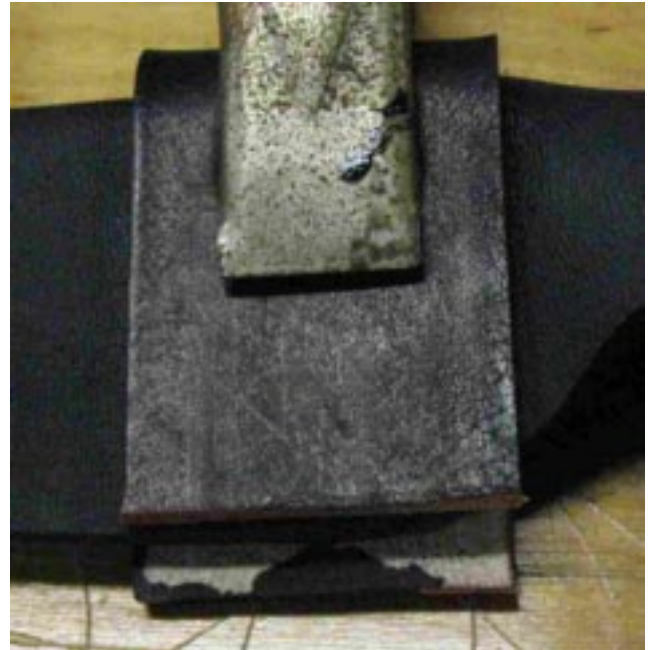


wraps around the sheath at the level of the top rivet (which hasn't been riveted yet). A stainless steel clip is shaped as shown (note the roll under on the free end and the tiny right angle bend at the strap). The clip is riveted to the strap with copper rivets before the upper bend is made. The upper bend is made and the strap is slipped over the sheath and riveted in place. This design allows the user to slip the clip between the waistband of his pants and the belt and the rolled over free end keeps the sheath in place when the knife is drawn.

The leather hanger consists of two straps of 7 oz leather (1.5" wide or so). The length of the longer piece is set by the twice the length of the handle of the knife plus twice the width of the strap (about 11" for the blade shown here). The



length of the cross strap is a bit more critical. If it is too short, the kydex won't be able to slip in. If too long, the kydex will fall on through. What I found to be the sweet spot was to



wrap the cross strap around the sheath as shown - one end flush to the back edge, mark the leather 1/8" to 3/16" out from the edge and cut it to that length. I found it way more convenient to dye all the straps at this stage of the project.

Barge cement (leather contact glue) was then smeared on the back edges of the cross strap and on the back end of the long strap as shown. You will also need a strap of wood as wide as the strap and maybe 1/4" thick. Trust me - you need this crutch. When the glue is ready, place the cross strap midway on the end of the long strap and whap the glued area lightly with a hammer to set it. Now, wrap the cross strap around to position the other end so that it butts against the first, Slip



that piece of wood into the loop and whack the overlap area to set the glue. It ought to look like the picture to the right.



Smear glue on that area and the other end of the long strap. When ready, fold the strap over and make the bond as shown. The ends of the cross strap are now hidden and the back of the hanger where it meets the kydex is three layers thick.



I don't trust the glue to be sufficient, so I drill two 1/8" diameter holes through the three layers (and the wood strip not only backs up the system, it keeps you from drilling through the front strap too).

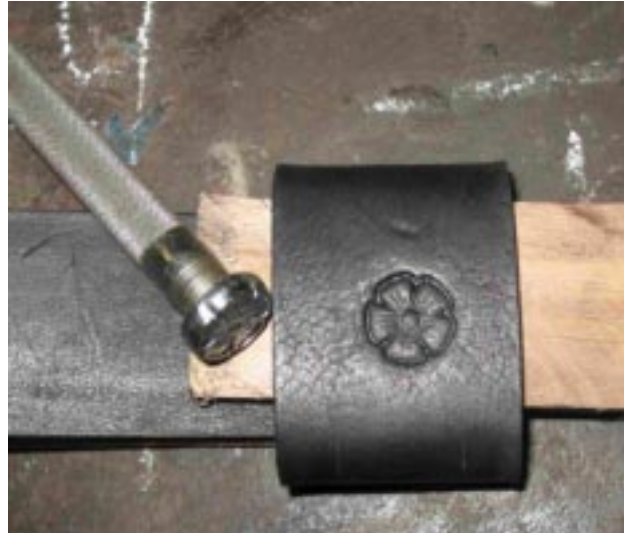


A couple of leather rivets (Tandy medium nickel silver two-piece rivets) are positioned with the back of the rivets inside the loop and the heads of the rivets on the back of the hanger as shown. A couple of light taps with a hammer (again using the wood block as an anvil - I did say it was



necessary!) sets the rivets.

As a final touch, a bit of tooling can be done on the front of the cross strap.



Now comes the moment of truth. Does the kydex sheath slip into the loop? If it is a just a bit too tight, grind a little off the edge of the kydex until it does fit. It ought to be snug enough so that it is possible to remove the sheath but will not move when the blade is drawn. One subtle advantage of this hanger-sheath combination is that the user can reverse how the sheath is inserted in the hanger so the knife can be worn on either hip. The kydex will not encourage rust, so the blade can be stored in the sheath.

The overall effect is shown in the last two figures -- not too shabby, no?

