

∞ **EUGENE 5160 CLUB ~ JANUARY 2013** ∞

The January Meeting will be Thursday ~ the 3<sup>rd</sup> ~ at 6pm at the Woodcraft store in Delta Oaks Shopping Center just off Delta Hwy and Beltline Hwy in North Eugene.



## JANUARY MEETING

Remember those blade blanks that Mike Johnston brought to the meeting a couple of months back? Thursday's the day to bring in your take on how to finish one up!

... and anything else you want to show-and-tell!



## DECEMBER MEETING

**MARTIN BRANDT** brought a trove of goodies to go over with the group. It becomes obvious pretty quickly that Martin is fond of rustic American workmanship. The first knife he showed was a partial-tang "fur trapper" blade that he put together with cutler's resin and rivets. The blade is from a sickle, and in working it into a knife, Martin found that the body/back of the blade was wrought iron – while the edge is probably something like O2 or O6.



That got a lively discussion started about cutler's resin, rendering pine pitch, and the exciting things that can happen when one leaves a container of pitch on the stove...

Martin told us that cutler's resin is made from rendered pine pitch (resin), beeswax, and a filler – Martin uses powdered brick dust. Heating the pine pitch drives off the volatiles and leave a more brittle resin. Then you mix back in some beeswax to soften the mixture (at low heat) and add your thickening agent (brick powder).

Martin noted that when he renders pitch into resin he sets the pitch at the top of a V shaped trough at a gentle angle, heats the pitch with a torch, and the liquid runs down the V into a container, leaving moss and junk from the pitch behind.

He breaks up a standard red brick, then grinds up the brick dust in a cast iron mortar and pestle until it is a fine powder.

Glorybee, out near the Eugene Airport, would be the obvious place to get beeswax if you don't know a beekeeper. And if you don't have a ready source for pine pitch you could look for "brewers' pitch" online.

In answer to a question, Martin didn't have the proportions memorized. He said you can test your mix by drizzling a thin line on something to cool. Add a little beeswax at a time until the test sample bends without breaking – then add the brick dust.

*I've just searched online and seen it as 4 or 5 parts resin to 1 part beeswax – add enough thickening agent to suit your project. As well as brick dust, people are using charcoal, wood dust, ash, metal dust, or “ground herbivore dung” for the filler. I want to try cutler's resin in my upcoming glue test – but I think I'll pass on the ground cow pies. I've been collecting various glues for my test – everything from Acraglas, G/Flex, T-88, and golf shafting glue to – well – cutler's resin. Stay tuned.*

The group discussed whether any custom knife could stand up to regular trips through the dishwasher... but then – as someone noted – even on a commercial kitchen knife like Henckels the scales will get loose after a lot of runs through the dishwasher.

In answer to a question about the strength of cutler's resin Wayne Goddard offered that in restoring old knives he's seen some where the cutler's resin simply crumbled away – and other knives where it held up as well as a good epoxy. But he and others noted that in the old knives they often used as many as 4 or 6 rivets in addition the the resin.

But sometimes not... there were tales told of partial-tang blades bedded into the handle with only resin.

To the right is a photo of Martin's show-and-tell. The ivory-handled sharpening rod near the center of the shot has a silver butt cap that has

come loose – it was made very thin and filled with resin. Martin said that in this type of handle you could burn the partial tang into the ivory just shy of the needed depth, then hammer the tang into the handle. He noted this holds really well.

Martin shared some notes and illustrations from a book on historical American knives and tools.

And then he went into his work with cast pewter and lead! He had several examples with him of bolsters and embellishments created with this method.

Rio Grande Jewelry Supply carries lead free pewter casting metal. So you don't have to worry about lead if you prefer:



<http://www.riogrande.com>

Pewter melts around 450°F – the lead free version more like 600°F according to the Rio Grande web site.

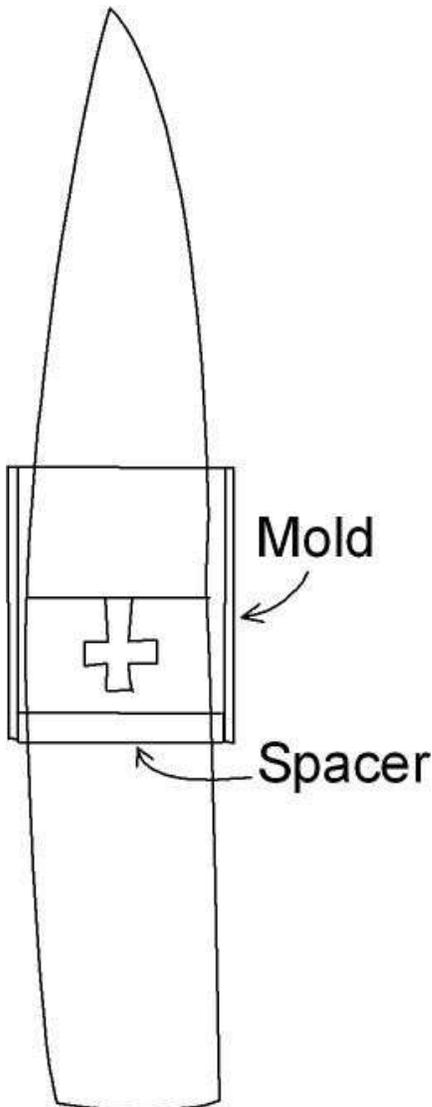
These temperatures are low enough that Martin uses stiff paper – grocery bag for instance – to fabricate a collar around the top of a knife handle in order to pour a pewter bolster.

You can use hollowed out fire brick for a crucible, or just a large metal serving spoon. It helps to have a pour spout built into your crucible!

He warned us that when pewter cools it shrinks – much like candle wax shrinks as it cools inside a mold. To counter that you should fill the mold higher than your target, then after it cools sand it back to the desired contour.

In sanding, Martin noted that there are sometimes hidden bubbles in the pewter. If you sand into a bubble, just fill it with more pewter.

Here is my interpretation of how Martin made the mold for this knife. The cross was cut into the handle before the pewter was poured. A cut-up grocery bag was used to construct the mold. The spacer ensured that pewter would adequately fill the carved area.



Going back to melting pewter, Martin uses a small stick of pine cut from a board to sweep off the dross that floats to the top of the molten pewter. If I understood right, about the time when the pine stick starts making popping sounds means that the pewter is at the right temperature to pour. He cautions not to over-heat the pewter. Apparently some of the components will vaporize when overheated – which destroys the pewter and probably isn't any good for your lungs either.

Martin noted that it is best to design any pewter embellishments so that they are thick. He warned that thin layers of pewter have a tendency to “bloom” outward with age and use.

He gave us other examples of making pewter molds for various bolster designs.

Martin noted that on a chef's knife he made from a railroad spike that he not only used pewter for the bolster, but drilled 3 holes through the handle and tang and poured pewter “pins.”

Martin talked about a project that was for a dad to present to his son who was getting his wings as a military pilot. The RR spike for the blade had been brought back from one of their camping trips. The wood for the handle was from great granddad's ax handle. Square nails for the pins had come from the family's early settlement home. What a great example of putting meaning into a knife! Martin made the presentation plaque from spalted fiddleback and used rare earth magnets imbedded in the plaque to hold the knife in place.

On a simpler tack, Martin showed us the blacksmith knife he'd forged at the last hammer-in at Jim Jordan's place. Contrary to usual practice Martin hardened part of the spine – which was also textured – making it a great flint striking area – which he demonstrated with a spray of sparks!

There were other knives and other discussions. There was a lively debate about the effect of copper “polluting” a forge so that welds won't stick. One thing that's been bugging me about that conversation is that if you look back at our August 2011 newsletter on page 6 I noted down that Gene Martin has a method to incorporate steel shim stock in his

mokume gane. It seems odd to me that he'd be able to do that if copper has such a terrible effect on forge welding – but what do I know?

Anyway, I'll leave you with one last gizmo that Martin developed from something Wayne Goddard put together years ago. This is a jig to help make rivet heads. Wayne has a couple of pieces of steel bar that he clamped together and drilled a variety of sized holes in the seam between the two bars – but wait – in order to be able to use these bars to clamp down on pin stock of the same size as the drills he puts an (expendable) business card between the steel bars before drilling the holes. Throw away the business card and you are left with two bars that have receiver slots for a variety of sizes of pin stock. Clamp in a piece of pin stock with just a little showing above the steel bars and you can upset a rivet head.

Martin took it a step further by using a single piece of angle stock, cutting a bit of the middle out of one side of the angle so that the remaining side can act as a spring-hinge, then clamping the two sides together (with a disposable business card) to drill the pin stock holes. The advantage is that you don't have any chance of miss-registration of the holes or uneven heights of the two sides.



I may not be as “retired” from computer work as I'd like to be – but I **am** getting into the shop more these days. I've got my “finish-the-blade-blank” knife ready for Thursday. And as I mentioned I'm going to be doing a glue test as well as a follow on of the tests of wood treatments that Eric Ochs and I did a couple of years ago. As I get into the testing I'll share the results over the next few months.

It's been great to see both Eric and Ben Tendick's work featured in Blade Magazine!!

Until next time ...

Your Scribe ~ ~ ~ Michael Kemp