

FEBRUARY MEETING

The 5160 Club will meet at Woodcraft of Eugene (Delta Oaks – Beltline & Delta Hwy) February 6th at 6:00 pm. There'll be show & tell & pass-arounds. I have a small kitchen knife to share. Mike Johnston said he'd bring back the blades that he clayed at the January meeting so we could see the resulting hamons. And you can bet there'll be more.



JANUARY MEETING

APRIL OKCA SHOW - I opened the meeting with the annual pass-the-hat to pay for the OKCA show table for 5160 Club. Thanks everyone! It all added up to within a few bucks of the actual cost. We also got enough folks volunteering to sit the table that it will make it easy and fun.

If you have a knife or two to sell but not enough to justify a table of your own, you can join the table crew – but you have to be at the table to sell your knives. We can't expect someone else to know your knives inside out and know how much you'll haggle for.

Fair Warning: The show is April 11, 12, 13. You have to be an OKCA member to attend on Friday. Saturday and Sunday are open to the public for a minimal entrance fee. All days are free to OKCA members.

Here's the OKCA membership link:

<http://www.oregonknifecub.org/member.html>

That said – the April show is always a great time & a highlight of my year!

MICHAEL KEMP'S "WOOD-IN-THE-KITCHEN TORTURE TEST" - I shared my results for wood-in-the-kitchen torture testing. This is a follow-up to the testing that Eric Ochs and I did back in 2011.

Here's Eric's results from back then:

http://www.ochssherworx.com/index_files/Page513.htm

I was primarily looking for wood finishes that I like (subjective) – that are appropriate for food prep (no worries about poisonous ingredients) – and that survive reasonably well through multiple hand-washing cycles.

I cut forty small blocks of cherry wood – bone dry – and treated two each with a variety of concoctions – many suggested by members of the Bladesmiths Forum. I also added some treatments that I would NOT use for a kitchen knife (such as Johnson's Floor Wax) but wanted to try out for other knives. And I did a Tru-Oil set and a Permalyn set to have a baseline to judge the others against.

I ran them through five cycles of a half-hour soak in hot soapy water/scrub/rinse/dry in front of a fan for two days and repeat.

None of us expect a custom knife to survive in a dishwasher.

Wayne Goddard relayed a story of a customer in New York who had him make a set of steak knives for his daughter – four pearl, four ivory, four wood handled. Wayne later heard from her son that she'd run them through the dishwasher. Wayne said the pearl survived, but the ivory and wood were trashed.

Larry Criteser had a good piece of advice: before you have anybody house-sit, tell them not to run your good knives through the dishwasher!

Anyway – my personal food-safe winners are: Coconut Oil, Dragon's Blood Mix, or a Bee's Wax/Carnauba Wax/Food Grade Mineral Oil Mix. For use where food-safe isn't such a concern: Tru-Oil or Permalyn.

To be honest, once a treatment has cured I really don't think there's a danger of contaminating food with any handle finish. That said – I see marketing reasons to stick to something like coconut oil – with the added benefit that you can say “if the shine ever fades – just rub in some more coconut oil.”

As with the first test in 2011, I was startled at how well simple vegetable oils held up. And my safflower oil blocks from 2011 still do not have any rancid odor – at least not to my jaded nose.

Some folks at the meeting liked how “Boiled” Linseed Oil held up – but to me the BLO produced a dull finish. Along with the gunstock treatments, Johnson's Floor Wax, Meguiar's car wax, and General Finishes Wipe On Urethane all held up really well, but I prefer the look of Tru-Oil and Permalyn.

Since I'm not fond of the plastic feel of most stabilized woods – or of superglue (aka cyanoacrylate, aka CA glue) – I did not include those in my tests – and shellack only in one mix. There's a universe of treatments that I didn't include!

One person in the group shared that – as he grew up a candle maker's son – that he treated his wood handled slip joint by dipping the handle in 350°F paraffin until the wood stopped bubbling – with great long-term results. He also treated his shotgun stock this way.

For a longer version – and photos from the test – here's my blog link: <http://elementalforge.com/blog/?p=53> For details on the mixes and my full testing notes and thoughts on how “food friendly” the treatments are: <http://elementalforge.com/blog/wp-content/uploads/WoodKitchen2013.html>

Final note: In this test and the one I did in 2011 I attached fully treated (read “oily”) wood blocks to bare sanded metal straps for easy handling. In both tests I used only glue to hold the blocks on. In 2011 I used Loctite E120-HP and only a few blocks fell off in the course of the test. This time I used West Systems G/Flex and over the course of the test 38 of the 40 the blocks fell off. Interestingly enough, when the blocks fell off the G/Flex ALWAYS stayed on the oily block and lost it's grip from the metal. My take-away: G/Flex is great for things like hidden tangs but for full tang scales I'll be sure to use E120-HP (as well as mechanically securing the scales).

Loctite Plastic Bond and Devcon Plastic Welder were mentioned as especially good adhesives.

There was general discussion about how to enhance the penetration of things like BLO or tung oil. One practice is to put the dried wood block in a vacuum chamber; draw a vacuum; add the treatment mix into the chamber without letting air in; then pressurize the chamber.

MIKE JOHNSTON'S NOTES ON DEGREASING -

Mike relayed that in talking with a machinist friend at Boeing, the machinist assured Mike that 91% denatured alcohol leaves less residue than acetone. Mike also relayed that acetone – whether absorbed through the skin or inhaled as fumes – goes straight to the liver. Mike strongly cautioned against using acetone – or at least wearing nitrile gloves and having adequate ventilation.

The CDC notes that long term exposure to acetone can cause kidney, liver, and nerve damage. In my experience, acetone cleans better than denatured alcohol and at least as well as turpentine. I'll phase over to using turpentine (when needed) followed by denatured alcohol and phase out the acetone. A big “thanks” to Mike for bringing this to our attention.

MIKE JOHNSTON'S CLAY BACK DEMO - Mike came to the front with a box full of blades and goodies to demo his style of claying a blade in order to produce a hamon.

Mike uses Rutland 2700°F furnace cement (course) from Ace Hardware – thinned down with water to a consistency like pancake batter or just a little thinner.

He had two recently forged blades – a kitchen boning knife and another larger blade. He triple normalizes his blades starting at about 1600°F then 1500°F and finally about 1450°F... letting it cool to black or all the way to ambient between heats.

He grinds the blade to 120 grit – nice and clean. Mike heats the blade with a heat gun (pay special attention to the thicker areas like the ricasso).

Once the blade is “good and warm” he puts a thin layer along the spine on both sides – just spreading it on with his finger. No more than half way down the side of the blade. He does not put any clay on the edge.



He follows that up by using a pallet knife to put long, thicker legs toward the edge – but still not *to* the edge itself. He puts some extra on the top of the spine. He clays most of the ricasso to keep it tough. He notes that the clay seems to insulate a larger area than directly under the clay – so you wind up with a smoother hamon than the actual edge of the claying.



“You have to be sure that the claying is 100% dry – otherwise it's going to bubble up, it's going to blow off, it's going to do many strange and ugly things.” He lets the clay dry for several days. If you try to heat it to dry it the clay will bubble up. When it is truly dry it becomes really hard.

Mike puts the clayed blade into the forge and brings it up to just non-magnetic (1450-1475°F). He lets it soak at temp for a few minutes and then does a tip-down into 120°F canola oil. “That edge is harder than a landlord's heart – you can't touch it!” In answer to a later question I gathered that Wayne had Rockwell tested the edge to about 60 HRC and the spine about 50 HRC.

Mike noted that with a clay back and a tip-down full quench he is getting almost zero warpage – even with his longer blades.

The clay stays stuck to the blade and has to be scraped off with a shop knife. He has then been tempering these harrow-tine blades at 395°F for three one hour sessions (cooling to ambient in between).

Mike had found that with the furnace cement you can't do the Japanese style wash over the whole blade as this keeps the entire blade from hardening.

He's had good results on old harrow tines. Any shallow hardening steel should work. Deep hardening steels like 5160 are not suited to easy creation of a hamon as the deep hardening defeats your efforts to

create a martensite edge next to a pearlite or pearlite/martensite mix toward the spine of the blade. It's that difference in the phases of the steel that creates the hamon.

To bring out the hamon he sands to 2000 grit and etches in ferric chloride for one or more 45 second intervals with 2000 grit sandings between (then neutralizes with tri sodium phosphate). He wipes down with blue rags and then polishes with Flitz Metal Polish (available from some of the knifemaker supply web sites listed at the end of the newsletter).

You can get ferric chloride from Radio Shack as "PCB Etchant Solution" - or online. Mike dilutes 1 part etchant solution with 3 parts water.

Mike noted that another way to bring out the hamon is to use warm (almost hot) white vinegar for a two or three hour soak instead of ferric chloride.

I think it was Jim Jordan who put in that using vinegar in an aluminum pan has been used to produce an enhanced hamon.

Mike passed around a hunter he made from Ford coil spring with a handle made from African Blackwood and a piece of antler from Wayne:



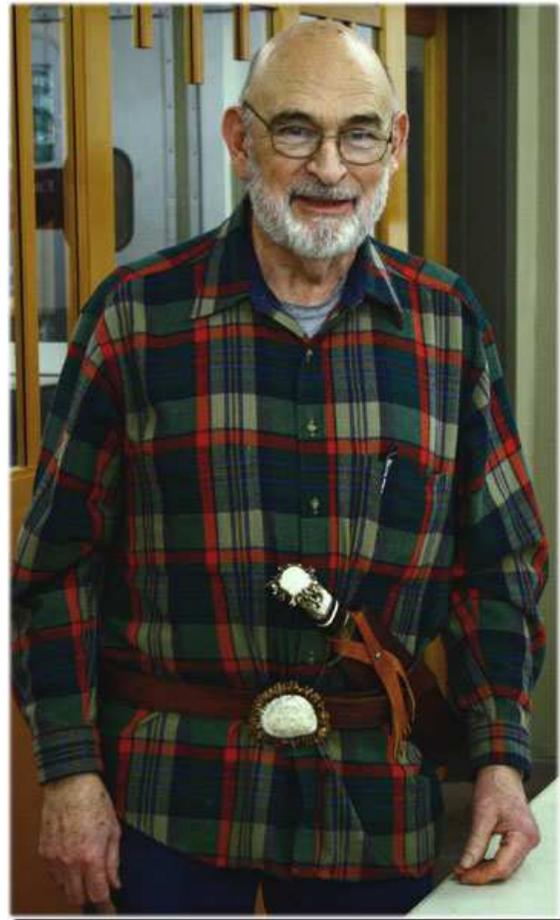
LARRY CRITESER - passed around what he called "the fanciest used electrician's knife you've ever seen" - the file work on this puppy was a lot of fun.



WAYNE GODDARD - had fun showing his fancy belt buckle and big Bowie stuck through the belt.

He passed out a bag of antler crowns for people to pick from and kept it going around the room until it was empty.

Wayne gave us a little historical background on the Bowie knife. Wayne also talked about why he has a rule against any straight lines on a knife profile.



Both Mike and I have adopted Wayne's method of attaching sandpaper to an appropriately sized board. Clamp the board in a vice. Clamp (or use removable adhesive spray) and move the blade across the sandpaper-board rather than moving sandpaper across the blade. Mike noted that this gives much better control when sanding flat grinds - and cleaning up plunge lines at the ricasso.

Larry Criteser mentioned that he picked up a perfectly flat piece of granite from a counter-top store for next to nothing since it was broken on one end. He uses a full or half sheet of paper and removable spray adhesive to secure the sandpaper.

Here's a photo of the quick polish-and-etch Mike did on the big clayed knife in last month's newsletter (sadly, I got a big reflection on it from the lights):



Here's a better look at that Bowie.



CRAIG MORGAN passed around a knife he made about nine years ago and just got back. A camp knife with a koa wood handle:

And here's Wayne's inscription on the spine:



While Wayne's "Forrest Bowie" was making the rounds Mike Johnston asked about the mustard finish, asking "... you put the mustard dollops on, you leave on until it gets rusty and nasty looking?" Wayne: "Yah – it's usually overnight or four or five hours in the summer." Mike: "And then you wash it off with..." Wayne: "...hot water and the finest steel wool you can find – 0000. And you do three treatments."



Discussion turned to handle finishes. Wayne relayed how he'd tested a Renaissance Wax against car wax a few years ago, by treating strips of saw steel with each – putting four drops of tap water on each – and within about ten hours the Renaissance Wax has started to fail. "If you've got some car wax, you've got about the best wax there is in my way of thinking." Wayne said.



Wayne also shared that he extended the full tang on this one (silver brazing a bit on) – which I hadn't noticed before.



Then the meeting broke into up informal discussions and we wandered into the night.

Your Scribe ~ ~ ~ Michael Kemp

There was also discussion about how this style of Bowie is virtually identical to kitchen or butcher knives of yesteryear. Mike Johnston noted that it's also similar in profile to a huge fillet knife that Kershaw is selling to salmon fishermen.

There were some follow-up questions to Mike about his heat treating and hamon. He stated that he likes to leave the edge about the thickness of a dime for larger knives when they go into heat treat. Thinner for small knives. He said the hamon is visible when you scrape the clay off the blade, gets more obvious around 600-800 grit, and is ready to etch at 2000 grit.

p.s. John Emmerling sent along a photo of a couple of his latest 10" Damascus chef knives – enjoy!





FREE DE-CLASSIFIEDS (IN NO PARTICULAR ORDER)

Email me a brief description of what you are selling/buying/looking for with your preferred contact (phone/email/...). Unless you let me know you want a shorter run, I'll run the note for 3 months and then send you an email to see if it's still valid.

Wanted: Looking for a good buffer, forging tools, etc.

Contact Mike Todd at mtodd@toyotaliftnw.com

For Sale: I have a TW90 grinder with all the goodies: surface grinder, 8" and 10", 70 Duro wheels, small wheel attachment with most sizes, 3 work platforms, and 10" platen. It's wired for 110 but can be 220. According to Travis Wuertz I should be asking \$5,000.00 given that there is right at \$6,000.00 invested - and it would take 90 days lead time from the time you pay for a new one plus \$300.00 for shipping. So \$5,000.00 seems fair to me. It's almost new. I have only made a few knives with it! contact Ben Davis 1-541-423-5216 – located in Central Point, OR.



WEBSITE LINKS

5160 CLUB

5160 Club Newsletters are archived at:
<http://www.elementalforge.com/5160Club/>

Hint: to Google the archive for a specific knife style or presenter name, use a search like this:
sami site:<http://www.elementalforge.com/5160Club>
or this:
ron lake site:<http://www.elementalforge.com/5160Club>

FORUMS

Knifedog Forum
<http://knifedogs.com/forum.php>

Bladesmith's Forum aka Don Fogg Forum
<http://www.bladesmithsforum.com/>

American Bladesmith Society
<http://www.americanbladesmith.com/ipboard/>

Usual Suspects Network
<http://www.usualsuspect.net/forums/forum.php>

Blade Forums
<http://www.bladeforums.com/forums/forum.php>

REFERENCES

Many of the sites linked under “Knife Maker General” have book & video sections. Our own Wayne Goddard's books are available at Amazon:
<http://www.amazon.com/Wayne-Goddard/e/B001JS9M10>
And you can email Wayne directly for his DVD at wgoddard44@comcast.net

Here's a few other useful references:

Verhoeven's Metallurgy For Bladesmiths PDF
<http://www.feine-klingen.de/PDFs/verhoeven.pdf>

Verhoeven's updated book:
<http://www.amazon.com/Steel-Metallurgy-Non-Metallurgist-J-Verhoeven/dp/0871708582>

ZKnives – Knife steel composition/comparison/etc.
<http://zknives.com/knives/steels>

Kevin Cashen's Bladesmithing Info
<http://www.cashenblades.com/info.html>

Tempil Basic Guide to Ferrous Metallurgy
http://www.tempil.com/wp-content/plugins/download-monitor/download.php?id=Basic_Guide_to_Ferrous_2010.pdf

GENERAL TOOLS & SUPPLIES

Woodcraft Eugene – special thanks to Joe & the crew! 1052 Green Acres Rd Eugene, OR 97408 (Delta Oaks Shopping Center) 541 685-0677
<http://www.woodcraft.com/stores/store.aspx?id=515>

MSC Direct
<http://www.mscdirect.com/>

Grainger
<http://www.grainger.com>

Surplus Center
<http://www.surpluscenter.com/>

Victor Machinery Exchange
<http://www.victornet.com/>

OREGON KNIFE MAKING CLASSES

Gene Martin offers personal instruction at his shop south of Grants Pass for a daily rate.
<http://www.customknife.com/>

Michael and Gabriel Bell offer a constant series of small group classes in Japanese style sword forging and fittings. Located on the southern Oregon Coast.
<http://dragonflyforge.com/>

Murray Carter offers small group classes in a variety of subjects, primarily focused on traditional Japanese cutlery. Located in Hillsboro.
<http://www.cartercutlery.com/bladesmithing-courses/>

KNIFE MAKER GENERAL

Knife kits, steel, tools, machines, supplies such as handle material, fasteners, belts, glues, finishes, etc.

Jantz Supply
<http://www.knifemaking.com>

Texas Knifemaker's Supply
<http://www.texasknife.com>

USA Knife Maker's Supply
<http://www.usaknifemaker.com/>

Knife and Gun (K&G)
<http://www.knifeandgun.com/>

Alpha Knife Supply
<http://www.alphaknifesupply.com/>

KNIFE STEEL SOURCES

New Jersey Steel Baron
<http://newjerseysteelbaron.com/>

Niagara Specialty Metals
<http://www.nsm-ny.com> (click Products/Knife Steels)

SB Specialty Metals
<http://sb-specialty-metals.com/products/knifesteels>

Bohler Uddeholm
<http://www.bucorp.com/knives.htm>

Pacific Machinery & Tool Steel – Portland, Oregon
<http://www.pmtsco.com/tool-die-steel.php>

2X72 BELT GRINDERS

Beaumont (KMG) – the industry standard
<http://www.beaumontmetalworks.com/shop/>

Travis Wuertz – premium brand
http://www.twuertz.com/Home_Page.php

Pheer – affordable, satisfied customers on the forums
<http://www.2x72beltgrinder.com>

Coote – affordable, reliable – you supply the motor
<http://www.cootebeltgrinder.com>

Grinder-In-A-Box – low cost – assembly required
http://www.polarbearforge.com/grinder_kit.html

Wayne Coe – grinders, motors, VFDs, etc.
<http://www.waynecoeartistblacksmith.com>

Contact Rubber Corp – wheels etc.
<http://contactrubber.com/contact-wheels.asp>

Sunray – drive wheels
<http://www.sunray-inc.com/drive-wheels/>

True Grit – grinder belts
<http://www.trugrit.com>

FORGE & REFRACTORY

Chile Forge

<http://www.chileforge.com/>

Mankel Forge

<http://mankelforge.com/forges.html>

High Temp Tools (scroll down the page for the category buttons)

<http://www.hightemptools.com/supplies-mainpage.html>

Omega – thermocouples & measuring equipment

<http://www.omega.com/>

Auber – more thermocouples and controllers, etc.

<http://www.auberins.com>

Hybridburners – home of the venturi T-Rex

<http://www.hybridburners.com/>

Pine Ridge Burners – for ribbon burners and all associated fittings, blowers, valves, etc.

<http://www.pineridgeburner.com>

Zoeller Forge – low cost venturi & parts: Z Burners

<http://zoellerforge.com/>

BLACKSMITH

Blacksmith Depot

<http://www.blacksmithsdepot.com>

Pieh Tool

<http://www.piehtoolco.com>

Centaur Forge

<http://www.centaurforge.com>

LOGO/ETCHING

Ernie Gropitch – Blue Lightning Stencil

<http://www.erniesknives.com/>

IMG International Marking Group

<http://img-electromark.com/>

OTHER GOODIES

Sally Martin Mosaic Pins – So. Oregon

<http://customknife.com/index.php?cPath=13>

Burl Source – handle blocks/scales – So. Oregon

<http://www.burlsales.com/>

Gilmer Wood – N.W. Portland

<https://www.gilmerwood.com/>

Oregon Leather – 810 Conger Eugene and 110 N.W. 2ND Portland

<http://www.oregonleatherco.com/>

Coyote Steel – misc., scrap, copper, brass, bronze – Garfield & Cross St. Eugene

<http://www.coyotesteel.com>

Cherry City Metals – Salem, Oregon – metal recycling and useful objects

<http://www.cherrycitymetals.com/>

Amtek – tool steel & cutting tools

<http://websales.amtektool.com>

Rio Grande – jewelry tools/supplies

<http://www.riogrande.com>

Otto Frei – jewelry tools/supplies

<http://www.ottofrei.com>