

 **EUGENE 5160 CLUB ~ AUGUST 2017** 

<https://www.facebook.com/5160Club>

newsletter archive: <http://www.elementalforge.com/5160Club/>



AUGUST MEETING

August 3rd – 6:00pm at David Thompson's shop. If you didn't get the directions in the meeting notice, email me for them: michael@elementalforge.com.

Bring your show-n-tell!

Request from the Thompsons:
“Please **drive very slowly** down our lane. The maintenance is all ours. Thanks.”



NOTES AND REMINDERS

Northwest Knife Collectors Summer Show – August 12-13 (with the Washington Arms Collector's Show) at Western Washington State Fairgrounds – Puyallup, WA. <http://www.nwkc.org/show-information.html>

Northwest Blacksmith Association – Blacksmith Week: August 17-20 Government Camp on Mount Hood. See <http://blacksmith.org/events/> for all events.

California Blacksmith Association puts on a slew of events to the south of us. Check out their list: <http://calsmith.org/CBA-Events>

Portland Vintage & Custom Knife Show – October 28 & 29 – Portland Expo Center – for info check Chris Palmer's web site: <http://christinepalmer.net/Shows/knife-show-march-4th-5th-2017-portland-expo-dealer-info-contract>

Bent River Forge aka Farrier Supplies – north of Monroe, OR has blacksmithing tools and supplies and ongoing intro to blacksmithing and other classes: <https://www.facebook.com/FarrierSuppliesOR/>

David Thompson – has coke and coal for sale (near Jerry's in Eugene, OR) – Talk to him at one of our meetings or call 541 688-2348.



JULY MEETING NOTES



BLAIR GOODMAN was first up to share a garage sale find. A piece of kitchen cutlery caught his eye. “When I picked it up it was exactly what I was anticipating... an old great-grandma's type thing...”. Lines down the length of the steel blade made him wonder if this was “shear steel”. The handle looked more like stag than elk antler “and for \$1 – what the heck.”

Shear steel was a process of homogenizing freshly created steel (from iron and charcoal) called blister steel. Blister steel bars would be cut up, forge welded together like the traditional Japanese – or European pattern welding, and drawn out. This process could be repeated several times to achieve a homogeneous steel bar. This often left visible lines down the bar like Blair had pointed out in this carving knife. Mike Johnson shared that a couple of times at



Northwest Blacksmith events folks like David Lisch, Tom Ferry and others have smelted black sand and a carbon source (charcoal?) into tamahagane and forged a wakasaki short Japanese sword.



YOURS TRULY (Michael Kemp) admitted that it's been months since I've been in the shop - so I scrounged up three past knives to bring in. One of my first – one that's been in use in the kitchen – and my design for a kitchen utility knife I completed last year.



I didn't have a belt grinder yet when I made the old ugly one at top. I'd taken a hunk of modeling clay and squeezed it in my fist as a mock-up for the contours of the handle. It was satisfying to have a knife handle that really fit my hand. I've since gone for a more stylized handle shape – but I've kept some of the contouring of that original handle design so that I'm still happy with how it feels to pick up my knives. And they look a little better IMHO.

The ugly one is 5160 with cherry handle. The little one is 1095/15N20 – several hundred layers of random Damascus that I forge welded – with curly maple handle, brass bolster, vulcanized spacers, and Sally Martin mosaic pin. Same thing for my kitchen utility at the bottom – with bubinga handle.

The little one has seen years of service (and yes, I've absentmindedly left it on the counter a few times to rust). I've used the beeswax/carnauba wax/mineral oil combo on the handle – refreshing it once or twice a year – it hasn't cracked or pulled away from the bolster. The copper outer tube of the mosaic pin has gone green with age, but the knife has held up well.

Here's a beauty shot of the kitchen utility knife where you can see the Damascus (I love the watery/wood grain look of high layer count random Damascus).



I lamented that the Damascus dark contrast I've been doing does not hold up to repeated cleanings from kitchen use. I plan to try Parkerizing &/or a slightly different post ferric chloride etch process that has been championed on the forums and by some master smiths (search <http://www.bladesmithsforum.com> or <http://www.hypefreeblades.com/forum> for "etch soda boil"). This is where you follow the etch with a boil in water saturated with baking soda – then air dry the blade – then oil it with mineral oil or WD-40. I'm leaning toward Parkerizing at the moment.



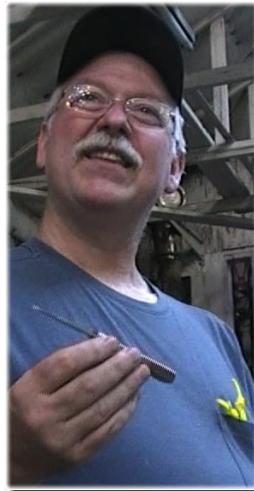
STEVE GODDARD was up next. "I also haven't been out in the shop for a couple of months. My wife decided I needed to remodel the house." Kudos and condolences were offered. "I bought a couple of dad's knives back from the estate of Fred Humphreys (*sp?*)". One knife is "from the late '70's early 80's – Green River – I call them a patch knife..." and the other is a Model 3A-22 folder.



EDWARD DAVIS joined the "haven't spent much time in the shop" chorus – because they are moving into a new house. But before being consumed by "the darkness of moving and fixing and selling..." he made a slip-joint using one of Wayne Goddard's blades that Steve had given him – with the handle made from Micarta that Dennis Ellingsen provided to the club. "It came out pretty good – I carried it for two weeks and used it as my main blade..." He plans to make more of this style, but shorter. Several of his friends liked it but would want a shorter version – saying this was too big.



"Get Bill Harsey in here – we'll show you a big knife" someone called out.



"Before the last show I came up with a new pocket knife design" noted **ERIK LAND**. After carrying it around for awhile he decided he'd created "the world's largest lint magnet."

He made another in the same style "to see if it would collect lint too" which he'd finished that afternoon. "I thought I was really smart – I love dovetails and did a dovetail on it..."

which is no problem on a straight joint – but this one has a lazy S joint between the bolster and scale "and what I didn't remember from my high school geometry was that if you move the grinder [*to follow the S curve*] it's not 30° anymore it's some other thing, so it took me a long time to do the scales."

Here Erik noted that he makes a lot of pocket knives to sell and give away – and handed me the knife!

I'm getting the distinct impression that the club folks appreciate me putting out the newsletter and MCing the meetings. Wayne Goddard asked for someone to take on the newsletter back in 2010, so I've been doing it for 7 years. Then as Wayne got sidelined by Parkinson's this somehow morphed into me being master of ceremonies at the meetings. Both roles are kind of ridiculous – the newsletter because I can't remember my own name without a cue card – and MCing the meetings because I'm a hermit who lives in the woods and while I love working in the shop and on knives, I really do very little of that compared to others in the group. Go figure.

Erik added three more folders (made to different patterns) to the pass-around. I put their photo at the top of the newsletter, but here it is again – the top two are the “lint magnet” design. Personally I have not noticed a lint problem – but I might not be as observant as Erik.



Erik uses O-1 steel. The top knife has clear vertical grain fir scales. My gift knife has Thunderstorm Kevlar. The red one is Brazilian Cherry. The white handle is Westinghouse Micarta. Erik has decided he doesn't personally like white handle materials. *I didn't catch what the bottom handle material is.*

The forced patina on the blade of “my” knife is what

Erik called “the French etch” - aka the Wayne Goddard style etch using French's mustard... but hey – which is better marketing: “mustard finish” or “French etch” – seriously?

MIKE JOHNSTON was up next. “In keeping with the theme, I have also not been out in the shop until recently.” And true to Mike's nature he had the most salt-of-the-earth reason: taking care of his sister-in-law and her ranch out in Central Oregon while she recovered from being trampled by a bull. She's recovered, and back to running the ranch, thank you very much.



Mike got into his shop for a few days before our meeting. Since the 2018 OKCA April show will feature kukri knives, Mike forged one out of a 3/8”x1-3/4”x8-3/4” bar of leaf spring.



He feels this one got a little thin in the waist – both width and thickness. He patterned his kukri after another one that he owns. “I've got an original kukri from Nepal. My dad brought it back with him.” A kukri collector identified that blade as being made in the early 1800's. It's slightly hollow ground, so Mike used a curved wooden 2x4 attachment on his platen to give this one a slight hollow grind as well.

Mike has several of these chunks of 2x4 cut to different radii that he can hang on his platen for different grinding profiles. He uses a couple of drywall screws in the top of the shaped 2x4 to hang it on the top of the steel platen.

He also reported that his kukri developed a warp post heat-treat while he was finish grinding it. The warp is in the blade belly. “I was using a half used belt – and I may have heated it up more than I should have.”

There was some speculation about what may have caused the warp – forging, grinding, or heat treat issues... but nothing that was convincing.

In talking about grinding, Mike noted that he used to use Dykem layout fluid on the blade so he could clearly see where his grinds were hitting – but it was too messy. Now he uses a quick dip in ferric chloride to darken the blade between grinds.

If he finishes this kukri he will do a traditional style handle. Dark wood or horn, with an oval cross section, slight hourglass profile, and a raised ridge in the middle of the handle.

Next he passed around a dagger blade he forged from cable. “An old piece of 3/4” choker [logging] cable.”



“You freehand grinding this?” came the question.

“Yes” Mike replied.

“That's awesome!”

Bringing out a cable knife blade, Mike mused that “this one etched like it was edge quenched” which it wasn't. “It almost looks san mai.”

“That's my first attempt at sabre grinding or scandi grinding.” *Scribe's note: I've seen scandi grind referred to as a subset of sabre grind.* This one is also from the choker cable.



Mike noted that in making cable Damascus he twists it up during the first weld; folds it up and re-twists it during successive weldings; trues it up square before forging a blade from it.

There followed a discussion about how to set up variable speed for your grinder(s). One suggestion

was to have one controller with multiple outlets that you could plug multiple grinders in and run one at a time. Variable speed controllers are spendy. Especially when you jump to 200 volt.

I noted “I run it fast when I'm using a coarse grit and slow when I'm using a fine grit. If I run it fast on a fine grit I just burn what I'm working on. Especially wood or other handle material – and if I succumb to my Scot ancestry and use a belt past it's prime.” There was general agreement from the group.

Mike noted that he's tried some newer ceramic belts from Tru-Grit... made in Germany. *Scribe's note: I suspect he's referring to VSM belts.* The folks at Tru-Grit say they're ¾ the life of a Norton Blaze belt for ½ the money. From his experience that's about right. And now they come in a ceramic that is more frangible so that it will self-sharpen as it wears down. A caveat is that if the back of the belt has a “K” on it for knifemakers – if it doesn't have the “K” then it does not work well for knifemakers – severe “belt bump” and such. Tru-Grit only sells the “K” version.

There was some discussion about using a soft rubber belt cleaning stick to remove soft material that has clogged up a belt, versus truly worn out abrasive from grinding hard steel.

1st time attendee Shannon Johnson piped up wondering why we don't buy bulk material rolls and make our own belts. “I waste enough time as it is” and “I buy belts in bulk” seemed to be the response. Shannon uses bulk material for his woodworking belts and is still working on several rolls of bulk material in various grits that he bought 5 or 6 years ago for £160 (\$210 at today's exchange rate). So I guess it comes down to money versus hassle... and while it's more expensive to buy pre-made belts I'm betting you have more options for backing and abrasive (and somebody's always got a newer type of belt – like there's always a new miracle knife steel). Mike was thinking that the belts he was talking about go for something like \$3.50 apiece if you buy in batches of at least 10 belts.

Discussion drifted to what sequence of grits folks like using. Mike goes 60-120-200-400-600. Some of us start with 36 grit to remove forge scale. Mike uses an angle grinder to strip off forge scale. A flap wheel

does not work – use a grinding wheel on the angle grinder. The other solution is to soak the knife in vinegar overnight – then the scale softens up and is easily removed.

It was noted that Wayne's mustard etch works differently whether your final 600 grit hand sanding is done linear or swirled. Mike likes swirled.

There was quite a discussion about arc welding. When I tossed in that I use a little stick welder and 6011 rod to tack weld Damascus billets and put handles on billets it was highly recommended that I change over to 7018 rod.

There were rambling discussions on repairing an old chipped/damaged anvil – and the challenges involved with making mosaic pins. You had to be there.



Have fun all – and work safe!

Your Scribe ~ Michael Kemp



FREE DE-CLASSIFIEDS

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. No charge – just email me at Michael@ElementalForge.com

No for-sale notices this month.

OKCA members: knifemaker items are often put up for sale in their classifieds – so remember to check their newsletters: <http://www.oregonknifeclub.org/>



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>

OREGON KNIFE COLLECTORS ASSOCIATION (OKCA)

The OKCA hosts monthly dinner meetings where you are guaranteed to see treasures from the wide world of “things that go cut!” OKCA also puts on a small show in December and the big knife show in April – if you haven't seen it you've been missing something special!

<http://www.oregonknifeclub.org/index.html>
Go to the “Knewsletter” link and scan a recent newsletter for a membership form and contact info.

FORUMS

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

Knifedogs Forum (USA Knifemaker)
<http://knifedogs.com/forum.php>

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

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

Blade Forums
<http://www.bladeforums.com/>

Hype-Free Blades
<http://www.hypefreeblades.com/forum>

Peter Newman of Bent River Forge/Farrier Supplies has a closed Facebook group for Oregon Blacksmiths
<https://www.facebook.com/groups/173156733117832>

Julious Griffith's knife groups on Facebook:

- Custom Knives For Sale by Maker - Available now
- Knifemaking - Works in Progress (w.i.p.'s)
- Knifemaking Equipment Buy, Sell, or Trade (used only)
- Knifemaking - Masters to paying Students connection
- Knife shop photos
- Knife Calendar - Events, shows, hammer-ins, schools, misc.

These are all closed groups – to keep them focused – so if you want to join one of the groups, click the “+ Join Group” button and also message Julious and give him some info on yourself so he knows you have real interest in the group.

REFERENCES

Our own Wayne Goddard's books are available at Amazon:

<http://www.amazon.com/Wayne-Goddard/e/B001JS9M10>
And you can email the Goddards directly for his DVD at wgoddard44@comcast.net

Most of the companies in the “Knife Maker General” links (below) have a section for how-to books and DVDs.

Verhoeven's Metallurgy For Bladesmiths PDF – this is a very deep dive, not an introduction.
<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

From the Heat Treating Society of the ASM – the Heat Treater's Guide Companion for Android devices. Look up heat treating details on hundreds of steels in the palm of your hand.

<https://play.google.com/store/apps/details?id=com.pfiks.mobile.heattreaters&hl=en>

My “Knife Info” has some knife musings and cheat sheet charts – plus Oregon and Eugene knife laws:
http://elementalforge.com/tips_notes/

CLASSES FOR KNIFE MAKING, ETC.

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

Michael and Gabriel Bell of Dragonfly Forge offer an ongoing 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, Oregon.
<http://www.cartercutlery.com/bladesmithing-courses/>

David Lisch is an ABS Master Smith who has taught classes in Washington. He recently moved his shop and has not restarted classes yet – keep an eye out on this page:
<http://www.davidlisch.com/Learn.html>

Jim Hrisoulas now offers both formal classes and mentoring sessions in 2 hour blocks at his shop in Henderson, Nevada:
<http://www.atar.com/joomla/> and click the “Bladesmithing Classes” link.

The ABS (American Bladesmith Society) offers classes in Washington, Arkansas and elsewhere – if you are up for traveling across the country to take classes, check out their “Schools” link:
<http://www.americanbladesmith.com/>

James Austin offers forging classes in Oakland, CA – axes, tongs, viking anvil, etc.:
http://forgedaxes.com/?page_id=148

Blacksmithing classes at Farrier Supplies aka Bent River Forge
26729 99W, Monroe, Oregon
Coal, coke, forges, parts, tools, classes...
<https://www.facebook.com/FarrierSuppliesOR>
(541) 847-5854

Blacksmithing and some bladesmithing workshops are hosted regularly by the Northwest Blacksmith Association: <http://blacksmith.org/>

USA Knifemaker has a lot of fun & informative videos on their YouTube channel:
<https://www.youtube.com/user/USAKnifemaker/videos>
... and hey - “free” is a hard price to beat!

Nick Wheeler also has a good YouTube channel with a lot of how-to videos:
<https://www.youtube.com/user/NickWheeler33/videos>

GENERAL TOOLS & SUPPLIES

Woodcraft of Eugene – thanks to Joe & the crew for six years of hosting 5160 Club meetings – we've had to move on, but the hospitality was appreciated.
<http://www.woodcraft.com/stores/store.aspx?id=515>

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

McMaster-Carr
<http://www.mcmaster.com>

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

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

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

Zoro
<https://www.zoro.com/>

KNIFE MAKER GENERAL

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

Jantz Supply – Davis, OK
<http://www.knifemaking.com>

Texas Knifemaker's Supply – Houston, TX
<http://www.texasknife.com>

USA Knife Maker's Supply – Mankato, MN
<http://www.usaknifemaker.com/>

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

Alpha Knife Supply – ?Everett, WA?
<http://www.alphaknifesupply.com/>

True Grit – Ontario, CA
<http://www.trugrit.com>

Especially Abrasives – lower cost 2x72 belts
<http://www.especiallyabrasives.com/>

KNIFE STEEL SOURCES

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

Kelly Cupples (High Temp Tools) – Alabama
<http://www.hightemptools.com/steel.html>

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

SB Specialty Metals – New York & Texas
<http://shop.sbsm.com/>

Bohler Uddeholm – numerous U.S. locations
<http://www.bucorp.com/knives.htm>

Sandvic – stainless steels – Texas & Pennsylvania
<http://www.smt.sandvik.com/en/products/strip-steel/strip-products/knife-steel/sandvik-knife-steels/>

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

KNIFEMAKER EQUIPMENT

Beaumont (KMG) [Ohio] – the industry-benchmark
2x72 belt grinder
<http://www.beaumontmetalworks.com/shop/>

Travis Wuertz [Arizona] – premium versatile grinder
http://www.twuertz.com/Home_Page.php

Pheer [Gresham, Oregon] – affordable grinder made
in Oregon
<http://www.2x72beltgrinder.com>

Oregon Blade Maker [Oregon] – affordable chassis
and accessories, good reputation – you supply the
motor <http://stores.ebay.com/oregonblademaker>

AMK [Ohio] – affordable grinder, quick-change
between platen & contact wheel
<http://amktactical.com/>

Northridge Tool [Ohio] – precision manufactured
belt grinders <http://www.northridgetool.com/>

Coote [Port Ludlow, Washington] – affordable,
simple grinder – you supply the motor
<http://www.cootebeltgrinder.com>

Marinus Kuyl [Hillsboro, Oregon] – another
affordable grinder made in Oregon – and parts – you
provide the motor.
<http://oregonblademaker.com>

Grinder-In-A-Box – grinder kit, assembly required
http://www.polarbearforge.com/grinder_kit_order.html

The “No Weld Grinder” plans can be purchased from
<http://usaknifemaker.com>
either as a booklet or as a download – just use the search
box to enter “no weld grinder”

Wayne Coe [Tennessee] – grinders, motors, VFDs...
<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/>

Renaissance Metal Art [Mulino, Oregon] – 80# ram
air hammer
<http://www.rmetalart.com/tools.htm>

Anyang [Texas] – air hammers from 20# to 165#
<http://www.anyangusa.net/>

Meyer Machine Tool [Ohio] – treadle hammer
<http://www.meyermachinetool.com/Blacksmith-div-.html>

Spencer/Clontz tire hammer plans/workshops
http://www.alaforge.org/Trading_Post.html

Appalachian Power Hammer plans
<http://www.appaltree.net/rusty/index.htm>

Helve Hammer and Quick-Change Dies Video – from
a BladesmithsForum.com thread.
<https://www.youtube.com/watch?v=uzruqYkKGNM>

True Grit – under “Machines & Accessories”
<http://www.trugrit.com>

FORGE & REFRACTORY

Chile Forge
San Marcos, Texas
<http://www.chileforge.com/>

Mankel Forge – Muskegon, Michigan
<http://mankelforge.com/forges.html>

Western Industrial Ceramics Inc.
All things refractory – Tualatin, Oregon
<http://www.wicinc.com/>
High Temp Tools (scroll down the page for the category buttons) Tuscaloosa, Alabama
<http://www.hightemptools.com/supplies-mainpage.html>

High Temp Inc. has also been recommended for Kaowool etc. Portland, Oregon
<http://hightempinc.net/>

Omega – thermocouples & measuring equipment Stamford, Connecticut
<http://www.omega.com/>

Auber – more thermocouples and controllers, etc. Alpharetta, Georgia
<http://www.auberins.com>

Hybridburners – home of the venturi T-Rex Smithville, Georgia
<http://www.hybridburners.com/>

Pine Ridge Burners – for ribbon burners and all associated fittings, blowers, valves, etc. Conway, Massachusetts
<http://www.pineridgeburner.com>

Zoeller Forge – low cost venturi & parts: Z Burners Lanesville, Indiana
<http://zoellerforge.com/>

Here's the original article on making a ribbon burners that John Emmerling wrote back in 2005 for the NWBA Newsletter:
<http://blacksmith.org/2005-1-hot-iron-news/>
You can download the PDF from that site. John's article starts on page 11.

BLACKSMITH

Farrier Supplies
26729 99W, Monroe, Oregon
Coal, coke, forges, parts, tools, classes...
<https://www.facebook.com/FarrierSuppliesOR>
(541) 847-5854

Blacksmith Depot
<http://www.blacksmithsdepot.com>

Pieh Tool
<http://www.piehtoolco.com>

Centaur Forge
<http://www.centaurforge.com>

Quick and Dirty Tool Co.
<http://quickanddirtytools.com/>

LOGO/ETCHING

Ernie Grospitch – Blue Lightning Stencil
<http://www.erniesknives.com/>

IMG International Marking Group
<http://img-electromark.com/>

Electro-Chem Etch
<http://www.ecemmi.com/products.html>

HEAT TREAT SERVICES

Here are some folks who provide heat treating services for blades. While all of these have been recommended by one reputable person or another I have not had experience with them. If you use one, let us know how it went!

Paul Bos Heat Treating at Buck Knives. Paul Bos has retired and handed the torch to Paul Farner. Highly reputable. Post Falls, Idaho:
<http://www.buckknives.com/about-knives/heat-treating/>

Peters Heat Treating is another highly reputable operation. Meadville, Pennsylvania:
<http://www.petersheattreat.com/cutlery.html>

Texas Knifemaker's Supply offers heat treat services. Houston, Texas:
<http://www.texasknife.com/vcom/privacy.php#services>

Tru-Grit provides heat treat services. Ontario, California: https://trugrit.com/index.php?main_page=index&cPath=34

K&G also provides heat treat services but I can't find a reference on their web site – you'll have to contact them for details. Lakeside, Arizona: <http://www.knifeandgun.com/default.asp>

Byington Blades heat treat service is in Santa Clara, California: <http://www.byingtonblades.com/>

It's my understanding that Chris Reeve Knives uses ACE Co in Boise Idaho – which is enough for me to add them to the list: <http://www.aceco.com/heattreat/index.html>

WOOD SUPPLIERS

Burl Source – handle blocks/scales – So. Oregon <http://www.burlsales.com/>

Shelton Pacific – stabilized wood – Shelton, WA <http://stores.sheltonpacific.com/>

Gilmer Wood – N.W. Portland <https://www.gilmerwood.com/>

North Woods Figured Wood – Gaston, OR <http://www.nwfiguredwoods.com/>

WOOD STABILIZING

K&G (Knife and Gun) – Lakeside, AZ
Good reputation with everybody.
<http://www.kandgstabilizing.com>

Gallery Hardwoods – Eugene, OR
I've purchased stabilized blocks from them at the April show. They tend to be heavier, presumably more durable/stable but less wood-feel than others.
<http://www.galleryhardwoods.com/stabilized.htm>

WSSI (Wood Stabilizing Specialists International, Inc.) – Ionia, IA – some folks have had issues with

them, some folks are totally happy.
<http://www.stabilizedwood.com/>

Alpha Knife Supply – ?Everett, WA?
<http://www.alphaknifesupply.com/>

Turn Tex Woodworks – San Marcos, TX
“Cactus Juice” and pressure chambers etc. for the do-it-yourself folks – your mileage may vary.
<https://www.turntex.com>

OTHER GOODIES

Sally Martin Mosaic Pins – So. Oregon
<http://customknife.com/index.php?cPath=13>

Oregon Leather – 810 Conger Eugene and 110 N.W. 2ND Portland
<http://www.oregonleatherco.com/>

Coyote Steel – wide variety of new steel, 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>

M3 Composite – space age mokume & other
<http://www.m3composite.com/>

Voodoo Resins – striking resin handle material
<http://www.voodooresins.com/>

Minarik automation & control
<http://www.minarik.com/>

The Engineering Toolbox (formula & info reference)
<http://www.engineeringtoolbox.com>

Valley Stainless (that does water-jet cutting) is one of Craig Morgan's customers. They told Craig “bring in a pattern” and they'd work with you on small batch cutting. They don't have a website yet. 29884 E Enid Rd, Eugene, Oregon 97402 (541) 686-4600.