#### THE MOSTLY MONTHLY NEWSLETTER OF THE

### ➢ EUGENE 5160 CLUB ~ OCTOBER 2017 <</p>

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

newsletter archive: <a href="http://www.elementalforge.com/5160Club/">http://www.elementalforge.com/5160Club/</a>





#### \$ \$\phi \phi\

#### **OCTOBER MEETING**

October 5<sup>th</sup> – 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 <u>drive very slowly</u> down our lane. The maintenance is all ours. Thanks."



#### **NOTES AND REMINDERS**

Northwest Blacksmith Association — Intro Blacksmithing classes (White Salmon, WA) and misc events. http://blacksmith.org/events/

\*\*\*

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

\*\*\*

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

\*\*\*

**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.



#### **SEPTEMBER MEETING NOTES**



Our host **DAVID THOMPSON** started out our gathering with an assortment of oddball tools (Here I am holding a pig snouter – seriously).

Other than the pig snouter there were a

couple of tooth setters (for big sawmill blades – not dentistry); a chain link maker; what was possibly a fireman's breaching tool; steam radiator construction tool, what might have been a fencing tool; a hand hammer for truing up big stone grinding wheels; and

what might be a button hole maker. Fun!



MIKE JOHNSTON reported that he "had a phenomenal show up in Puyallup [SE of Tacoma]." The show is put on there by the Northwest Knife Collectors – it was in conjunction with a gun show.

Not only did his "Big Sister" Bowie knife find an owner, but he also sold another five knives. Here's one that didn't sell there:



This is one of Mike's coil spring knives – with a mule deer antler handle. It's a through-tang that screws into a nut that's brazed onto the butt cap.

Mike uses coil springs from Jeep, Dodge, Chevy, Ford which he gets from a friend who runs a garage and has them as leftovers from new car suspension upgrades. In response to a question Mike said the Dodge is the thickest spring at 3/4". "I can forge out a knife that just over 2" wide from a 3/4" diameter spring without any trouble... by hand... 4 pound hammer... and it doesn't move that bad." He also said that he's heard that Ford is changing their coil spring

steel to something that is not even close to 5160 – but he hasn't noticed a difference yet. "Every time I get a spring I take a ring and make a coupon out of it and spark test it."

On a different tack – Mike came into a coal forge and a footlocker full of tongs and tools. He brought in a U.S.F.S. hewing axe. A **big** hewing axe.



... as well as other curiosities like the heavy duty rod and final (below) that could have served as part of a portcullis or maybe a rhinoceros fence?





What may have been a fireman's axe...

And this odd set of tongs inspired a discussion about cooking potatoes in boiling pitch:



Mike also gave us a follow-up on Tru-Grit's VSM sanding belts. He had talked last month about the two versions: XK760X and XK885Y – both available in 60 & 120 grit. The "885" is designed to be more frangible (individual grit chips down to more sharp peaks rather than getting worn round) – meaning it should cut aggressively for longer. Now that he's had more experience with them he doesn't like the 885 – "you hit 'em with steel and all the ceramic goes all over the place ... they dull quicker than the 760."

Mike ordered up some more of the "760" 60 grit. When he told them about his experience with the "885" they admitted that they've been getting reports from other folks having the same issue with the "885" but getting good reviews on the "760".

There was a discussion between a few folks as to whether or not Norton Blaze belts are worth the extra cost compared to the VSM 760. There were feelings on both sides. It sounds like your mileage may vary.

Erik Land noted that for softer material (think handle material like wood) that aluminum oxide works better than ceramic anyway. To which Mike noted that the VSM belts come in aluminum oxide too. *I think silicon carbide also works fine for softer materials – here's the cheat sheet I made for myself:* <a href="http://elementalforge.com/tips\_notes/?page\_id=163">http://elementalforge.com/tips\_notes/?page\_id=163</a>



LYNN MOORE sauntered up to the front to share his progress on a wee small cleaver, made for a friend from a section of circular saw provided by Dennis Ellingsen – to be used for splitting pig carcasses. He's got it heat treated and has roughed out a handle of red gum burl.

He'd left the saw teeth on the butt end of it – but when he hardened it the braising failed on

the carbide teeth. He's contemplating re-braising teeth from the rest of the saw blade onto the butt of the cleaver. At the meeting, the handle was attached to the tang with temporary pins.



Next Lynn passed around a number of knives-inprogress mostly made from the bandsaw steel Dennis provided. One has a handle made with sycamore that Frank Bobbio stabilized.





**ERIK LAND** took the floor next, passing around the last two folders he is completing using high carbon steel. One has stabilized sycamore scales – the other is in buckeye burl. They both have "French Etch" aka mustard finish on the blades.





Going forward he has parts roughed out in CPM 154 for six folders.

Eric talked for a bit about his project to convert his surface grinder to using sanding belts. He's ordered a wheel from Sunray built to his specs (see the Knifemaker Equipment section of the links at the end of this newsletter). They will build wheels to your dimensions, aluminum or steel, your choice of wheel surface. "They come off the CNC balanced at 3,000 RPM and I had mine balanced at 10,000."

There was mention of the surface grinding attachment that Travis Wuertz makes for his grinders but it doesn't come cheap.



FRANK BOBBIO came forward with a cardboard box full of goodies. First off he offered a modest slab of figured oak that he decided he did not want since he could not get Cactus Juice to penetrate this particular piece of oak. It sold quickly for his asking price of \$5!



Frank also bought a value pack of extra-long jigsaw blades for use in making hidden tang reamers. He had some for sale that also went quickly.



He noted that he'd sold out of his last batch of paring knives and wanted to use something other than 15N20 for the next batch. He got some 0.078" 52100 from Alpha Knife Supply (I'd had them under the

Knifemaker General and the Wood Stabilizing links – I've now added them to the Knife Steel Sources section too). Frank also has some 3V from them.

He noted that Alpha ships in 12" and 24" flat rate boxes so their bars are 11-1/2" and 23-1/2" long... and they only charge the actual flat rate cost. That makes it more affordable for small orders – where large orders become more affordable through N.J. Steel Baron or such.

Frank held up what sure looked like a knife but said it wasn't knife steel. He wants to make some integral kitchen knives (where the blade steel and bolster are one integral piece) – and this was a practice piece. He has ordered some 52100 3/4" round bar but in the mean time he used 3/4" sucker rod to test the concept and refine his press dies. Then he thought "it'll harden enough to be a shop knife... I might as well put a handle on it" The handle is oak. He was testing a technique for gluing a stick tang using standard JB Weld without pins. He mixed some up but it is stiffer than he wanted so he heated it in his toaster oven to maybe 150°f after about 30 minutes, stirred it – "and it just made it nice and thin and it poured right in" [to the tang hole]. Frank painted the handle with alcohol based green dye – let it dry – then coated it with thin Wipe-On Poly.



I'd say Frank took it a bit past testing his press dies!

In response to a question Frank said he used a die with a radiused edge to neck down the blade from the round bar – then power hammer to draw out the blade – refined the blade by hand – cleaned up the bolster/blade area with the radiused die – then drew out the tang.

Frank did some brainstorming with the group on how to upset an area in the middle of the round bar to create a fatter (1") bolster area from a 3/4" bar.

In response to a question, Frank talked about recommended heat treatment for 3V – which sounded

pretty demanding: 2,000°f austenitizing, plate quench followed by 1,000°f tempering. The tempering should be immediate to avoid stress fracture.



New 5160 Club participant **PAUL HAINES** got up front and shared a couple of his knives. This is the first time he's made knives and they're very very good for first knives! The blades are cable Damascus that he forged out of 1-1/4" cable with a 4 pound hammer.

He lives in Eugene – so somebody asked "they let you pound an anvil in town?" Paul responded "Well

for 35 years I made pickaroons in my garage ... it's a pretty good neighborhood."

"One of the interesting things is the anvil that I have is the one my dad used as a kid at the old blacksmith shop in Elkton. Somehow he tracked that down and I have that – so that's what I end up using."

Keep in mind that this is Paul's first time making cable Damascus, making a knife, making a sheath!





In response to prompting from David, Paul said that — while he is now retired — back in the day he and his father "had the pickaroon market all sowed for all of Oregon, southern Washington, and northern California..." and recounted how his father got started making a better pickaroon that wouldn't get stuck in a piece of scrap and wind up in the chipper.

One of Paul's questions was about how to price knives from a novice maker. I'm afraid we weren't a whole lot of help – other than recommending knife shows or knife groups on-line, Facebook, or eBay. Forget Piccadilly Market type venues. At a flea market you won't get enough to be worth it. Joining the OKCA and getting a table at their local shows – or going to other knife shows – was recommended... with the caveat that at a show you could sell a lot – or not a single thing. Focusing on a niche market was mentioned.

Mike chimed in "Didn't Wayne say: if you can make 50¢ an hour making knives you're doing good?"

MARTIN BRANDT was up next. "Here's me working on my niche – a utility or farmer's puukko ... I forged this at our last little hammer-in out here from a piece of coil spring." Martin shared how – with a brushed finish going from spine to edge – a little grit got into his temporary sheath and "all those nice little ridges [in the brushed finish] have nice little tops that are easily scratched..."





The burl is something he picked up from one of his pool customers.

**JIM JORDAN** had brought in some sections of wagon wheel (wrought iron) to give away. David warned that you want to have wrought iron at welding heat when you work it or it will want to come apart.



You can see the grain a little in these lightly etched and bent samples.



At the last OKCA show the award knives for display tables were made on a paring knife pattern. Jim was one of the custom makers who contributed a knife.

The table owner who got Jim's knife came back to him at the show and talked to Jim about making a sheath for it.

"So I made a matching sheath out of snakewood with a copper locket."



When Jim sat back down Frank asked for alternate ideas for attaching the loop to the back of his custom belt buckles. **Many** ideas were discussed.

Then Mike asked for input on how to clean and cure fresh bone. Martin talked about bandsawing them – putting the pieces in a pot of hot water to loosen the marrow so you can remove it with a wire – then simmering the bone with TSP – "then once they're clean they usually need a good long soak in white gas" to degrease the bone.

"Hang it up and let the yellow jackets clean it" or "bury it in your compost pile for a few months — that'll give it a nice aged patina" were also tossed out.

**SHANNON JOHNSON** was up next. "So I made 3 of these creatures – that look like a freakin' scalpel – and discovered that they'll sell for \$150, and if you drill one long enough you'll shatter it, and you'll wind up with one left!"



He'd made them out of files, but was unable to anneal it well enough to drill a hole in it.

Carbide drill bits were suggested – and Ace Hardware's Artu "multi-purpose" carbide drill bit that Frank runs at high speed (2,000+ rpm) to burn through hardened steel.



He went on "the wife brought me a blank from Croatia probably 8 or 10 years ago – so I did not do the blade on this – but it was my first shot at mosaic pins... She brought back a whole box full – paid a buck apiece for 'em."



Shannon gave an update on his anvil repair project that got a far-ranging discussion going...

And the formal part of the meeting was over. At least as formal as we get!



Have fun all – and work safe!

Your Scribe ~ Michael Kemp



Mike Johnston sent a note on a "forge extension" when you want to heat-treat something longer than your forge:

I rolled 18 gauge steel into a 8 1/2" diameter tube 13" long. I cut the face to seat against the forge body and added a lip at the top to hook over the top lip of the forge. This gave me a 4 1/2" X 12" heat chamber after lining with 2" kaowool equivalent. I gave the liner a light coat of thinned Rutland's 2700 degree furnace cement to seal the liner. The weight holds the extension secure and sealed to the forge.



Frank Bobbio also sent several photos and notes on his heat-treat testings – I'll save those for the next newsletter, as he may have more info at Thursday's meeting.



#### 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 <a href="Michael@ElementalForge.com">Michael@ElementalForge.com</a>

\*\*\*

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



# WEBSITE LINKS 5160 CLUB

5160 Club Newsletters are archived at: <a href="http://www.elementalforge.com/5160Club/">http://www.elementalforge.com/5160Club/</a>

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 "Knewslettter" link and scan a recent
newsletter for a membership form and contact info.

#### **FORUMS**

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

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

American Bladesmith Society <a href="http://www.americanbladesmith.com/ipboard/">http://www.americanbladesmith.com/ipboard/</a>

Usual Suspects Network <a href="http://www.usualsuspect.net/forums/forum.php">http://www.usualsuspect.net/forums/forum.php</a>

Blade Forums <a href="http://www.bladeforums.com/">http://www.bladeforums.com/</a>

Hype-Free Blades <a href="http://www.hypefreeblades.com/forum">http://www.hypefreeblades.com/forum</a>

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

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.

#### <u>REFERENCES</u>

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. <a href="http://zknives.com/knives/steels">http://zknives.com/knives/steels</a>

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

Tempil Basic Guide to Ferrous Metallurgy <a href="http://www.tempil.com/wp-content/plugins/download-monitor/download.php?">http://www.tempil.com/wp-content/plugins/download-monitor/download.php?</a> <a href="mailto:id=Basic Guide">id=Basic Guide to Ferrous 2010.pdf</a>

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: <a href="http://elementalforge.com/tips\_notes/">http://elementalforge.com/tips\_notes/</a>

#### **CLASSES FOR KNIFE MAKING, ETC.**

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

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: <a href="http://www.americanbladesmith.com/">http://www.americanbladesmith.com/</a>

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... <a href="https://www.facebook.com/FarrierSuppliesOR">https://www.facebook.com/FarrierSuppliesOR</a> (541) 847-5854

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

USA Knifemaker has a lot of fun & informative videos on their YouTube channel: <a href="https://www.youtube.com/user/USAKnifemaker/videos">https://www.youtube.com/user/USAKnifemaker/videos</a> ... 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 <a href="http://www.grainger.com">http://www.grainger.com</a>

Surplus Center <a href="http://www.surpluscenter.com/">http://www.surpluscenter.com/</a>

Victor Machinery Exchange <a href="http://www.victornet.com/">http://www.victornet.com/</a>

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 <a href="http://www.knifemaking.com">http://www.knifemaking.com</a>

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

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

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

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

True Grit – Ontario, CA <a href="http://www.trugrit.com">http://www.trugrit.com</a>

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

#### **KNIFE STEEL SOURCES**

New Jersey Steel Baron <a href="http://newjerseysteelbaron.com/">http://newjerseysteelbaron.com/</a>

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

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

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

Bohler Uddeholm – numerous U.S. locations <a href="mailto:ttp://www.bucorp.com/knives.htm">ttp://www.bucorp.com/knives.htm</a>

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

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

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

#### KNIFEMAKER EQUIPMENT

Beaumont (KMG) [Ohio] – the industry-benchmark 2x72 belt grinder

http://www.beaumontmetalworks.com/shop/

Travis Wuertz [Arizona] – premium versatile grinder <a href="http://www.twuertz.com/Home">http://www.twuertz.com/Home</a> 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 <a href="http://stores.ebay.com/oregonblademaker">http://stores.ebay.com/oregonblademaker</a>

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

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

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

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 <a href="http://www.polarbearforge.com/grinder\_kit\_order.html">http://www.polarbearforge.com/grinder\_kit\_order.html</a>

The "No Weld Grinder" plans can be purchased from <a href="http://usaknifemaker.com">http://usaknifemaker.com</a>

either as a booklet or as a download – just use the search box to enter "no weld grinder"

Wayne Coe [Tennessee] – grinders, motors, VFDs... <a href="http://www.waynecoeartistblacksmith.com">http://www.waynecoeartistblacksmith.com</a>

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

Sunray – drive wheels <a href="http://www.sunray-inc.com/drive-wheels/">http://www.sunray-inc.com/drive-wheels/</a>

Renaissance Metal Art [Mulino, Oregon] – 80# ram air hammer

http://www.rmetalart.com/tools.htm

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

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

Spencer/Clontz tire hammer plans/workshops <a href="http://www.alaforge.org/Trading\_Post.html">http://www.alaforge.org/Trading\_Post.html</a>

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

Helve Hammer and Quick-Change Dies Video – from a BladesmithsForum.com thread. https://www.youtube.com/watch?v=uzruqYkKGNM True Grit – under "Machines & Accessories" <a href="http://www.trugrit.com">http://www.trugrit.com</a>

**FORGE & REFRACTORY** 

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

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

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

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

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

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

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

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

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

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... <a href="https://www.facebook.com/FarrierSuppliesOR">https://www.facebook.com/FarrierSuppliesOR</a> (541) 847-5854

Blacksmith Depot <a href="http://www.blacksmithsdepot.com">http://www.blacksmithsdepot.com</a>

Pieh Tool <a href="http://www.piehtoolco.com">http://www.piehtoolco.com</a>

Centaur Forge <a href="http://www.centaurforge.com">http://www.centaurforge.com</a>

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

#### LOGO/ETCHING/STAMPS

Ernie Grospitch – Blue Lightening Stencil <a href="http://www.erniesknives.com/">http://www.erniesknives.com/</a>

IMG International Marking Group <a href="http://img-electromark.com/">http://img-electromark.com/</a>

Electro-Chem Etch <a href="http://www.ecemmi.com/products.html">http://www.ecemmi.com/products.html</a>

Steel Stamp, Inc. www.steelstampsinc.com

#### **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: <a href="https://trugrit.com/index.php?">https://trugrit.com/index.php?</a> <a href="main\_page=index&cPath=34">main\_page=index&cPath=34</a>

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: <a href="http://www.byingtonblades.com/">http://www.byingtonblades.com/</a>

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 <a href="http://www.burlsales.com/">http://www.burlsales.com/</a>

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

Gilmer Wood – N.W. Portland <a href="https://www.gilmerwood.com/">https://www.gilmerwood.com/</a>

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

#### **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. <a href="http://www.stabilizedwood.com/">http://www.stabilizedwood.com/</a>

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

Turn Tex Woodworks – San Marcos, TX "Cactus Juice" and pressure chambers etc. for the doit-yourself folks – your mileage may vary. <a href="https://www.turntex.com">https://www.turntex.com</a>

#### **OTHER GOODIES**

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

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 <a href="http://www.coyotesteel.com">http://www.coyotesteel.com</a>

Cherry City Metals – Salem, Oregon – metal recycling and useful objects <a href="http://www.cherrycitymetals.com/">http://www.cherrycitymetals.com/</a>

Amtek – tool steel & cutting tools <a href="http://websales.amtektool.com">http://websales.amtektool.com</a>

Rio Grande – jewelry tools/supplies <a href="http://www.riogrande.com">http://www.riogrande.com</a>

Otto Frei – jewelry tools/supplies <a href="http://www.ottofrei.com">http://www.ottofrei.com</a>

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

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

Minarik automation & control <a href="http://www.minarik.com/">http://www.minarik.com/</a>

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

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.