

EUGENE 5160 CLUB ~ APRIL 2020

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

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



MEETINGS SUSPENDED

After consulting with our meeting site hosts, 5160 Club meetings are suspended for the time being.

I have created a Facebook “Group” where we can continue to share our work and experience. I posted something to prime the pump. There is also a “5160 Club” page – but that restricts your ability to post. “5160 Club – The Group” is much easier for folks to share in. Take a look:

<https://www.facebook.com/groups/2924663264255692/>



NOTES AND REMINDERS

Oregon Knife Collectors Association – The 2020 April show will not be held this year due to the Governor's stay-home order. Watch the OKCA website for updates: <http://oregonknifeclub.com/> or like them on Facebook to get notifications of updates and enjoy postings from knifemakers and collectors: <https://www.facebook.com/groups/OregonKnife/>



MARCH MEETING

MICHAEL KEMP (your scribe) opened the meeting. “I love myths and legends... the folks that did Arctic Fire have a new set of videos... an anonymous patron commissioned them to recreate Grendel's Hoard...” from the ancient Northern European legend Beowulf... these guys are STUNNING bladesmiths from Scandinavia, the U.K., Northern and Eastern Europe, and North America. If you are interested in their ideas about the Beowulf legend check this out:



<https://www.youtube.com/watch?v=PYRIAUwxAaQ>

If you want see how Owen Bush planned the pattern for the giant's sword Undertow (or are curious about using modeling clay to test pattern welding strategies) look here:

<https://www.youtube.com/watch?v=Y5BkpzDHIh8>

For the YouTube “channel” with most of the other videos about this project:

<https://www.youtube.com/channel/UCONxF6KdMJN9ymPa2pT5S6A>

Beowulf – fantasy or grounded in history?

<https://www.youtube.com/watch?v=cqPCAccouFc>

OK OK – one final somewhat related video link: Peter Johnsson studies and recreates Northern European swords. Here is his illumination of how and why those swords were made the way they were:

<https://www.youtube.com/watch?v=nyAc5HbUuqw>



BROCK came to the front next, unfurling his knife roll. First up was a mid-sized hunter. Vanadis 4E steel - “a powder metallurgy steel that is similar to CPM4V with a little better wear properties and edge retention.” The handle is Bocote, TruStone turquoise, local deer antler.



Next was a tanto-inspired EDC knife. Corian scales. Micarta liner and pins.



This chef knife is in 1095 which is not at the top of Brock's favorites list “but it's fun to play with the hamon! I had some handle material that was *never* going to be bookmatched, ever, based on the way it had been split. So I segmented it with some TruStone white turquoise, put it together with some other handle materials that I had. It's relatively light – it came in under 7 oz.”



He's been experimenting with hamons – from the claying and drying to the quenching process. He lets the clay dry for a day – and will put it in a 300°f oven to finish drying. This one was done with a sort of interrupted quench – first edge quenching then full quench in Parks 50.

There was a discussion about heating Parks. It's generally agreed that when using vegetable oils it's best to heat them into the 110-130°f range. Someone noted that Parks is supposed to be used at room temperature. Someone else noted that their shop's “room temperature” is often in the 40's in the winter.

*Heat treating is one of those things where “your mileage may vary.” In theory it's all lined out “for steel X you do A, B, and C.” In practice different folks have different shops, skills, tools, and supplies. For a particular steel **DEFINITELY** start with the heat treat recommended by the steel's manufacturer, a trusted experienced maker, or a trusted industry source... but be open to the try/fail/improve/try again cycle that characterizes so much of knifemaking.*

STEVE GODDARD got up next, and speaking of outside-the-box heat treat his first pass-around was a chef knife in 1095 that he quenched in Superquench. This is a very aggressive home made quenchant – faster than water – that by general consensus would shatter an oil-hardening steel like 1095. Steve makes it work. Your mileage may vary. A recipe for Superquench is in the April/May 2018 newsletter:



<http://www.elementalforge.com/5160Club/201804Newsletter.pdf>

Steve said that he started the design for this knife with one of his father's patterns – but that Wayne's pattern did not provide enough height at the heel of the blade to keep you from rapping your knuckles on the cutting board if you are holding the knife the way a classically trained chef is taught to use a chef knife (Steve is a classically trained chef). So Steve put his own spin on the pattern to create this blade.

The handle has Koa at the front “from the guy up in Washington” [I suspect this is Shelton-Pacific, who always has stunning blocks and scales – see the link under “Wood and Handle Material” at the end of the newsletter], the spacer is SureTouch (a layered G-10/rubber material), and I didn’t catch what the wood at the back of the handle is.



The next knife was an Every Day Carry in 1095. It has a handle with Snakewood and Marblewood.



... and a Nesmuk style knife with the same woods in the handle. Steve indicated that these last two knives are still work-in-process.



Steve was also giving away some circular saw blades that were exceptionally thick – suitable for forging or a lot of grinding or a really heavy duty camp knife!

LYNN MOORE started with a forged scorpion that he'd made in an NWBA class recently. The instructor “Anton from Russia, spoke very little English but he was an excellent teacher. His wife was there doing as much translating as she could. I spent two days hammering on this thing!”



Lynn's next pass-around was an EDC knife from saw blade steel that Dennis Ellingsen provided to the group. Ironwood handle with copper pins. The sheath has copper pins made from roofing nails that he riveted out.



His next piece has course and fine “Micarta” made by someone here in town. He noted that it's a little heavier than he likes. He usually tapers his full tangs but didn't this time and can really tell the difference. *Great blade profile, and I love the “Micarta” textures.*





“Steve got ahold of me – there was one of his dad's knives... a miniature folder... I had to bring that and pass it around... I sure miss his dad... I think the handle material is oosic...”



RAPHI came to the front with his 2nd knife. The steel is 1060 from Steve Goddard – the handle is cherry wood also from Steve. Nails for pins plus epoxy to secure the handle. “Not quite finished...”

When asked how he heat treated it Raphi responded that he'd built a 2 brick forge and used a propane torch for the heat.



“I've been forging with a propane forge that David Thompson gave me...” and created some tableware and practiced making some leaves!



And Raphi was again selling his home-made sourdough bread to raise money for knifemaking tools! *I bought another loaf – great bread!*



JIM JORDAN passed around a small hatchet head that he found at a garage sale “all rusted up.” Which he has obviously tidied up. Will he engrave it? The smart money says “yes.”



Jim then said that the company he works for just expanded into a warehouse previously used by a saw manufacturer. “Like 9

foot tall circular saw blades!” The individual teeth were dovetailed and riveted in!



EDWARD DAVIS got up front next. “My cousin got married last May and I decided I was gonna make them a kitchen knife. It's almost done. But Emily Post says you have a whole year between when the wedding happens and when you give your gift so I'm not a bad

guy yet!” And about the same time his aunt requested a kitchen knife too – so Edward has been working on them in tandem. They are made from the 15N20 industrial bandsaw steel provided by Dennis Ellingsen.

“I heat treated it in my little one brick forge” by moving the blade back and forth through the hot spot [*they don't knock it – that's how a traditional Japanese smith heats a katana in their charcoal forges*]. Quenched in vegetable oil. The handle scales are black “Micarta”. Work in process.





MARTIN BRANDT brought in a box of wood handle blocks free for the asking. “They’re not exhibition grade, but if the rest of your knife isn’t exhibition grade I wouldn’t put \$65 Ironwood burl on it! But if you’re just getting started and you need some handle material there’s a lot of good solid stuff here.”

He dumped a bunch of better blocks on the table (not up for grabs).

Martin went on to describe for newer makers what to look for in handle wood. Cedar for instance is too soft. “If you can mark it with your thumb nail it’s too soft.” Another trick Martin uses is “the thwack test” where he holds one end of a wood block and flicks the other end hard with a fingernail. “If there’s a high pitched tink! then it’s good and hard – you could make marimba keys out of it.”

“Don’t be afraid to look in your friend’s wood pile” he said, showing a piece of fiddleback maple that he salvaged out of a chunk of “firewood” that he noticed had a nice tight wavy pattern where it was split.

As for finding the figure in maple (if it has a ripple to the grain) Martin said that you get “pillow” figure on the block face that is parallel to the bark. Fiddleback, satin, or curly figure (if it’s there) will be at 90° (e.g. going from the bark to the center of the tree).

He noted that the thwack test on this piece was not quite up to par and a thumbnail could leave a small mark... but still usable. If you are concerned you can send it off to get stabilized. *My experience with K&G stabilizing was that with a good batch of wood it comes to around \$5 per handle block.*

“When I cutting up scrounged wood I get about 98% waste.” *I can confirm this from my own experience.*

Martin said that – when he’s getting down to cutting individual handle blocks sometimes there are pieces that don’t come out as perfect rectangles – but you can still figure out how to use them by creatively orienting

your handle profile. Or use multiple segments glued up for a single handle.

Great tip: he noted that if you can see the direction of the “eyes” in a birdseye piece (look at the end grain), try to set the handle profile at a diagonal (45°) to the direction of the eyes and you could get eyes on all sides of the handle.

Martin looks for figure on at least 2 sides of a handle block. 3 sides is great. “4 sides and it goes into my special box.”

He noted that crotch wood from the white oak trees around here can have really nice figure.



Martin relayed how he had left what was intended to be a big sturdy bushcraft knife in vinegar too long. Vinegar is great for removing forge scale, but if you put a blade in it and forget about it well... by the time he ground down far enough to grind out the acid pits it was a much lighter knife. And be aware that chemical treatments – be they vinegar or cold bluing or whatever – act faster in the Summer than in the Winter if your shop gets hot in the Summer and cold in the Winter.

Next he talked about a commission he had – the customer brought him a piece of leaf spring (truck? farm equipment? wagon?) and a piece of wrought iron that both had significance to him. Very old and corroded. Martin made the guard from the wrought

iron which took several tries to keep it hot enough so that it would not come apart – and then hold together when he drifted the tang hole!

A hand-making trick he tried (that others agreed with) was to wrap the tang in Teflon tape while he fitted up the handle block. This let him:

- (1) Glue up the guard and handle (with the tang wrapped) with 5 minute epoxy
- (2) Grind the contours on the handle and guard and sand it to 400 grit
- (3) Remove the handle block (the Teflon lets it go)
- (4) Etch the guard
- (5) Re-epoxy the handle block

This way the grind lines all match and the guard got etched post-grind without ruining the wood handle.

The handle is Osage Orange.



TRISTAN had a few things to pass around next. First up was a large knife – 100 layer Damascus cladding a core of 1080/15N20/1080. I should recognize the wood but I didn't catch what it is.



And a couple of throwing axes. One is solid 5160 – the other uses extra material from the knife's billet for it's bit. Apple wood for the handles.



FRANK BOBBIO is back to knife making after an 8 month hiatus. But first he showed off a home-made horizontal disk sander. The disk itself he's had for awhile but he had it mounted directly on a fixed speed motor that was “way too fast.” So he got this 3-phase motor and speed controller. The splash shield is from a 7 or 10 gallon bucket – with the hole for the shaft drifted upwards to keep liquid from draining into the motor. He did that by heating the plastic and molding it over a glass jar.

He made the frame for it so that he could pick it up and stash it under his workbench. Sturdy plywood and some paint.

He got a deal on the motor from Zoro (see the links at the end of the newsletter). He got the variable speed controller from Amazon.

Frank took a hint from Ray Richards and put a layer of cork on the metal disk to provide just a bit of give. I believe he said 1/32” but I was unclear if he put multiple layers. And of course use a low-tack spray on the cork to attach your sandpaper disks to the cork.

Lynn Moore noted that he has rigged his variable speed controller with an A/B switch so that he can use one controller on two machines (one at a time only).

Next up Frank described how he took a carbide woodworking bit and mated it to a long shaft so that he can use it to route out tang holes for stick tang or through tang handle construction. He drilled the end of a stainless steel rod, socketed the bit, and silver soldered it together. Just be sure that your attachment of the bit to the shaft is true – and you double check how it chucks up in your drill or flex shaft before use.



Drill a pilot hole in your handle block and then go to town with these guys to shape the hole for your tang.

Frank noted that his initial pieces were done with 4% silver solder – which I believe melts around 350-400°f – and the bond was not strong enough. “So to do it right you should use the 45-55% silver brazing...” but you might protect the bit with a sacrificial wet cloth or something like Cold Shield when brazing.

Digression: “Silver Solder” means different things to different folks. It can be low percentage silver solder that can be melted with a soldering iron or around 400°f – and is not a strong bond – or – confusingly – when jewelers talk about “silver solder” they mean 40%-90% silver that is used in brazing and is much stronger. Think of soldering as being like adhesive, while brazing as more like welding. “Easy” silver solder is around 45% silver and melts around 1325°f, “Medium” silver solder is 65-75% silver and melts around 1390°f+-, and “Hard” silver solder is 75%+ silver and melts starting around 1425°f. Anything over 800°f is brazing – so calling these compounds “solder” is misleading, but that’s what they’re called.

Moving right along...

Next up Frank pulled out an integral knife that he made out of 1” stock of 1084, forging down the blade and tang. Micarta handle. The blade is Parkerized. “It looks pretty simple but to get everything dialed in...”



... and another integral from the 1084, Parkerized. White and black “Micarta” and blue G10.



There was quite a bit of discussion about the dos and don'ts of Parkerizing – what can be streamlined and what has to be done by the book. Frank being Frank these look perfect.

And lastly a 1084 core wrapped in Damascus. Frank didn't say, but I'm thinking that's an industrial Micarta bolster and some of his stabilized maple burl.



Next up was **MIKE JOHNSTON**. He started out by walking us through his process making the guard for his latest Bowie knife. The blade itself is 108 layer 1080/15N20 Damascus.



“I decided on an old-style guard with balls on each end and a ferrule...” He took 1/2” diameter mild steel – with a guillotine fuller and then forging he thinned and shaped the middle and roughed in the balls. He heated that up, placed it front-side-down on a sacrificial piece of steel, and used a cold chisel the width that the tang hold needed to be to punch the tang hole. That left a tapered hole with the narrow side to the front, making precision fitting to the

ricasso possible. He did multiple rounds with the chisel to work up to the correct fit (quenching the chisel between rounds).

“To clean up the balls I chucked one ball in my cordless drill and used my belt sander on low speed and just sat there on the slack belt and it cleaned it up just fine... you only have to play with it a little bit to get it to run true in your drill!”



“This is just a coil spring blade with some file work on the spine. Zebrawood for the handle. 540 layer Damascus for the guard.



And another EDC – 540 layer Damascus blade:

Copper bolster with peened front (not visible in the photo). This is a procedure I learned from Wayne Goddard – which gives the front of the bolster a nice texture and also tightens up the tang hole in the guard to create a positive press-fit. “Lay it on a block – I've got a block of 4140 – and just sit there with a ball- (or nicely rounded-) punch and just tap it all over the place... you've got to really drive it back onto the tang because it will close that tang hole a little.”

The spacer is a 1960's synthetic that was supposed to substitute for ivory. Ziricote wood handle.



“Who here has experience with Japanese water stones?”

BROME MCCREARY asked.

He'd been going through his father's shop and was hoping that someone in the group could tell what the grit of some of the water stones were that he found there. Some were labeled but these were not. I don't think we were much help.



He also instigated a discussion of Shop Vac cyclone separators – and described how he wants to use this to catch most of the dust when grinding wood. Grinding steel should probably go straight to the Shop Vac for fire safety reasons. There was also mention of a “chein separator” (sp?) but I can't find info on that.

Brome then talked about how, when he travels, he likes to search for locally forged knives and tools. “Mostly what they are using are these cheap imported Chinese blades...” but occasionally something more authentic. He also tasks his mother to look for locally forged pieces when she travels!

She brought him back this billhook style knife. “They were using it to open coconuts – they'd use [the main part of the blade to] husk off the coconut and then they'd use the point and just ram it right in there...” and his mom said that there were a couple of these blades discarded with the tips broken off.



The next one is a classic style in Indonesia/Polynesia – used for cutting fruit and general purpose.



Other examples of “indigenous” forging:



Brome noted that this “harpoon” style blade shape is a traditional profile in that part of the world.



... and a couple that are re-ground &/or re-hafted from some former blade...



ADAM was up next with a cleaver that he had just put a handle on that day.

Integral Damascus with Rosewood handle. It doesn't show in this photo but the handle is thinner than the



integral bolster – with a radiused transition – which Adam had to work really hard at to get it right.

Martin's constructive critique was that it's good to have a slight curve on the cutting edge – not just of a chef knife but also for a cleaver “otherwise when you chop you'll always bury the tip or the heel in the cutting board.”



CASEY said “I got my dad over here from Bend and got a piece of 1084 and forged his first knife with him. I finished up the handle today...”



“Then I made myself a giant kitchen knife...”



There were a couple of other goodies that other folks shared – like this forged cowboy work-in-process:



... and this handsome young man with his rapier:



Have fun, keep well, and work safe -

Your Scribe ~ Michael Kemp



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 “Knewslettter” 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)

<https://knifedogs.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/>

Hype-Free Blades

<http://www.hypefreeblades.com/forum>

Peter Newman of Bent River Forge/Farrier Supplies has a closed Facebook group: Blacksmiths of Oregon

<https://www.facebook.com/groups/blacksmithsoforegon>

REFERENCES

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
Sg2goddard@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. I no longer see the original free PDF – but here's the updated book on Amazon:

<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>

Knife Steel Nerds – a metallurgist's blog on the technical details of steel
<https://knifesteelnerds.com>

Tempil Basic Guide to Ferrous Metallurgy
[http://es.tempil.com/assets/5/31/Basic_guide_to_ferrous_metallurgy_\(2\).pdf](http://es.tempil.com/assets/5/31/Basic_guide_to_ferrous_metallurgy_(2).pdf)

From the Heat Treating Society of the ASM – the Heat Treater's Guide Companion for Android devices.
<https://play.google.com/store/apps/details?id=com.pfiks.mobile.heatreaters&hl=en>

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

CLASSES FOR KNIFE MAKING, ETC.

Erik Olson is teaching intro to forged knives in Eugene. I don't have a business contact but his personal Facebook page is:
<https://www.facebook.com/erik.olson.77715>

Farrier Supplies aka Bent River Forge offers intro and advanced blacksmithing classes – and supplies. 26729 99W, Monroe, Oregon
Coal, coke, forges, parts, tools, classes...
<https://www.facebook.com/FarrierSuppliesOR>
(541) 847-5854

Anvil Academy in Newberg has various classes now including a knifemaking class:
<http://anvilacademy.info/schedule/>
<http://newbergdowntown.org/whats-happening/knife-making-class/>

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

Bear Iron in Cottage Grove offers blacksmith classes through Lane Community College.
<https://www.beablacksmith.com/sign-up>

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/>

White Hart Forge offers intro to blacksmithing classes plus some advanced classes and some intro to knife making classes. Oak Grove, Oregon (just south of Portland). <https://whitehartforge.com/classes/>

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

David Lisch is an ABS Master Smith who teaches classes in Washington.
<http://www.davidlisch.com/>

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

Keep an eye out on California Blacksmith Association for workshops and events:

<http://calsmith.org/CBA-Events>

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

Zoro

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

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/>

Widget Supply - Dremel tools, needle files, craft knives, drill bits, etc – Albany, Oregon.

<https://widgetsupply.com>

And of course there are the local hardware stores like Jerry's, and chains like Harbor Freight and Woodcraft.

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 – Cedar City, UT

<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/>

Sandvic – stainless steels – Texas & Pennsylvania

<https://www.materials.sandvik/en-us/products/strip-steel/strip-products/knife-steel/sandvik-knife-steels/>

Pacific Machinery & Tool Steel – Portland, Oregon

<http://www.pmtsco.com/tool-die-steel.php>

Alpha Knife Supply – Cedar City, UT

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

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>

Origin Blade Maker – aka Oregon Blade Maker [Portland, Oregon] – affordable chassis and accessories, good reputation – with or w/out motor
<https://originblademaker.com>

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.
<https://originblademaker.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
<https://www.sunray-inc.com/products/wheels/>

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

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

True Grit – under “All Products”/“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>

Mathewson Metals – forges, burners, anvils... Tacoma Washington
<https://mathewsonmetals.com>

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. for Kaowool, castable refractory, fire brick up to 2,600°f, etc. Portland, Oregon
<http://hightempinc.net/>

Omega – thermocouples & measuring equipment
Stamford, Connecticut
<https://www.omega.com/en-us/>

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
<https://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 aka Bent River Forge
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/STAMPS

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

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

Marking Methods, Inc.
<http://www.markingmethods.com>

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

Steel Stamp, Inc.
www.steelstampsinc.com

LectroEtch – Ohio
<https://lectroetch.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/?s=cutlery>

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/>

WOOD & HANDLE MATERIAL

Burl Source – handle blocks/scales – So. Oregon
<http://burlsource.us/>
<https://www.facebook.com/BurlSource/>

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

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

Bamboo Oasis – wide variety of bamboo –
Beaverton, OR phone 503-703-1345
<https://bamboooasis.com/>

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

Atlas Billiard Supplies – Wheeling, IL – cue blanks
of Micarta and exotic woods – with some sizes
suitable for knife handles. <http://www.cuestik.com/>

For Eugene area boards, planks, etc. there's:

Crosscut Hardwoods at 2344 W 7th, Eugene
<http://www.crosscuteugene.com/>

Tree Products Hardwoods at 150 Seneca, Eugene
<http://treeproductshardwood.com/>

and it doesn't hurt to check Mike's Bargain Center on
Hwy 99 just south of Beltline, Eugene
<https://www.facebook.com/MikesBargainCenter/>

WOOD STABILIZING

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

Gallery Hardwoods – Eugene, OR
<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 – Cedar City, UT
<http://www.alphaknifesupply.com/>

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

OTHER GOODIES

Grey Leather Company – Eugene – Hannah Morgan
does custom leatherwork, including sheaths.
<https://www.facebook.com/GreyLeatherCo/>
<https://www.etsy.com/shop/GreyLeatherCo>

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>

Burcham's Metals – Albany, Oregon – recycled metal
of all sorts. Very good pricing.
<http://www.burchamsmetals.com>

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

Swift & McCormick Metal Processors Inc.

3192 NE Sedgwick

Terrebonne, Oregon

541 548 4448

Everything from big chunks of steel to railroad spikes. Very good prices. They can torch-cut big pieces down for a small fee.

Amtek – tool steel & cutting tools

<http://www.amteksteel.com/index.html>

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/>

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.