

EUGENE 5160 CLUB ~ FEBRUARY 2020

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

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



FEBRUARY MEETING

Thursday February 6th – 6:00pm at David Thompson's shop. Please do not arrive before 5:45pm. 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

Oregon Knife Collectors Association – The 2020 April show will be here in two shakes of a lamb's tail (or two head shakes at smile-knife tales): OKCA

Members only Friday the 17th – open to the public for a nominal entry fee Saturday & Sunday the 18th & 19th. Everything from the world of cut plus seminars and demos! <http://oregonknifeclub.com/shows.html>

2020 Big Sky Country Conference – July 10/11/12 in Frenchtown, Montana. 1st class knife makers, knife making demos, firearms, bowling ball cannon launch etc. Space is limited – register here: <https://www.joshsmithknives.com/history/big-sky-conference/>

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.

Check out the “Classes for Knife Making, etc.” section at the end of the newsletter for offerings around the region. Let me know if there's more that I should add to this list.



JANUARY MEETING

As we were settling in there was a discussion about sourcing hardware like bolts and clamps etc. without having to buy full boxes – and being able to browse the bins rather than make requests at a counter. We're talking about more obscure items than you'd find at Home Depot. Eugene Fastener was highly recommended for folks in the Eugene area – for “just fasteners” Northwest Fastener and Supply in Springfield was also recommended.



BROCK was first up with some give-away elk antlers and crowns.

Brock noted that he had a commission for some pocket knives in “raindrop” stainless Damascus. Having bought a big piece of the steel he used some of the extra for a couple of kiridashi knives.



He noted that in sharpening Damascus blades he works to preserve the pattern as much as possible by careful choice of edge geometry and angle.

Next up was an Every-Day-Carry model that he calls “The Row” (pronounced rou – as in a fight) after the name of the river that runs through the valley where he lives. Re-purposed Micarta handle with G10 liners... more of that raindrop stainless Damascus – with his “pocket slip” style sheath:



Brock noted that he's been busy filling orders and building up stock for the April show.

In answer to a question he said that the stainless Damascus is from Nichols Damascus (Mississippi). “It's some of the best Damascus...” for clean patterns and being clear from flaws.

There was some discussion of finishing and burnishing techniques for leather – including making shaped hardwood wheels (grooved to various radii) for edge burnishing. Mike noted “If you use warm water and wax – bee's wax especially – and run it through that it lays all the fibers down... I sand all the edges and then run it through [with warm water and wax on the burnishing wheel].”

MIKE JOHNSTON came to the front “my name's Mike and I'm still a forge-aholic...” Mike's first pass-around was the remaining part of a billet of 540 layer Damascus – 1080/15N20 – which started as 9 layers with a lot of weld-draw-cut-stack-repeat.



Mike noted that it has a little bit of ladder pattern due to the action of the forming dies he was using to draw the billet out. He also noted that he will go back to lower layer count Damascus because he likes the patterns better.

Mike made two blades from this billet. One with forged bevel and distal taper – the other using stock removal – to see what the difference in the finished pattern would be. Top blade is stock removal, bottom blade is forge-to-shape from the same billet:



ERIK LAND got up next, saying that he *almost* didn't have anything to bring this time... "I had 8 knives to do between Thanksgiving and Christmas that everybody wanted

[by Christmas]... 7 of them went out and this is the 8th one... I told him it wouldn't be done by Christmas!"

CPM 154 blade with snakewood handle. "My grinds are getting better – I'm having more fun grinding the bigger blades than my itty-bitty folders."



"I'm just a part-time maker – I do it just for the fun of it. This last year I sold 43 knives... and I give a ton of knives away that's not included in the 43..." and he's happy if he can sell enough to cover his knifemaking expenses and upgrade his equipment... at which point he mentioned some wish-list items... "there's no end to this addiction" somebody in the audience chimed in. Erik replied "you're at a show and somebody tells you 'how dare you charge \$300 for a knife?' and they don't look at the investment you've made in equipment and supplies and on top of that it takes two days of your life to build the darned knife!"

"Go buy a \$20 Buck and get out of here" someone chimed in.

"Go buy \$5,000 worth of tools and build your own!" Erik added.

MICHAEL KEMP (that would be me) had noticed some fresh new faces in the group and even though I haven't made a knife in years I felt compelled to make a couple of observations for the newbies:



(1) As soon as possible get or build a 2"x72" belt grinder. Preferably with a variable speed motor. The 2" belt is wide enough to help you avoid the rippling grinds and edge gouging that happens when you don't have the steel perfectly flat on the platen. Also there is every conceivable grit and abrasive material available in 2"x72" from 36 grit (or less) rough grind hogging belts to Scotch-Brite and polishing belts. As for a variable speed drive – it is a game changer especially when running finer grits. It gives you more control and you can slow down on fine grits to avoid over heating the steel.

(2) Yes, you will burn yourself at the forge and the grinder will eat bits of your skin, but the buffer can kill you. It will grab a blade and throw it faster than you can blink. It has hospitalized and killed experienced knifemakers.

Steve Goddard shared that he and his dad [Wayne Goddard] set up buffing wheels cantilevered out from the table on 2"x12" lumber "so it will throw the knife on the floor rather than into your belt... and dad built plywood shields around the buffer [to catch thrown blades] which also was great because you keep buffing compound right there."

Someone asked "how do you get a 2"x72" without paying full price?" "You build one" was the group's answer. Several of our more prolific makers have home-built grinders. The frame can be wood or steel depending on your skill set. The wheels can be purchased individually or made from hardwood but the bearings need to be high speed. Skateboard wheels don't hold up. You will want to be able to adjust the angle on one wheel to control the tracking of the belt (a delicate adjustment) – and you need another wheel to be able to move in or out (optionally spring tensioned) to allow quick-changing of the belts. Then a flat platen &/or contact wheel for the grinding itself. Good grinders allow quick-change of multiple sizes of contact wheels – that way you can use a large size for a gentle curve in the handle or to hollow grind a blade, and a tiny wheel for things like a finger notch in the handle.

Discarded treadmills are a common source for variable speed motors and controllers.

You can look in the "Knifemaker Equipment" section of the links at the end of this newsletter for some sources. Several folks at the meeting heartily recommended Origin Blade Maker (formerly known as Oregon Blade Maker) for affordable grinders.

We all seem to cling to worn belts, past when we should trash them. I cut them up and use the back side to mix epoxy on. Martin cuts them up and uses them for hand sanding "when they get goobered up I just toss them and don't worry about it because they've already had plenty of use." Frank takes his worn knifemaking belts and uses them for his blacksmithing projects where he gets "a lot more life

out of them." And our host David Thompson (professional metal artist) chimed in that he loves to get used 36 grit and other belts "I don't know what a new belt is!"

STEVE GODDARD brought up a box of goodies they got in California from an estate sale. Some Amboyna or Thuya burl handle blocks, some unique Rosewood, some Marblewood, Olive wood, and some RGW (real good wood).

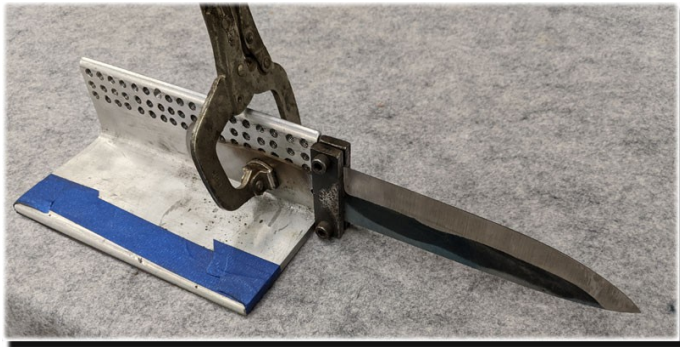


He also scored a bunch of brass at an estate sale in Springfield - "don't go buy brass guys, I have 200 lbs of it!" *Apparently Steve got a full compliment of his father's garage sale/estate sale skills!*

Steve also brought in a selection of shop knives etc. that his dad had made as needed. “At one point he sold 10 of these to Burke...”



Next Steve shared that he has made an aluminum grinding table for his Origin Blade Maker grinder and has been working on a grinding jig to use on the table for precise bevel and plunge line control:



TRISTAN came to the front with a question about how to make high contrast etching on Damascus blades (he's been doing cable Damascus). He'd done the basic Ferric Chloride (FeCl₃) etch on his blades and the contrast was pretty low.

“Instant coffee after the basic etch” was the advice. The FeCl₃

bath etches some steels faster than others. It is recommended that you do multiple etch baths in

FeCl₃, taking out the blade, rinsing it, and sanding lightly with 2000 grit paper to monitor how deep the etch is going – rinse and repeat. Mike Johnston noted “the other thing I've found with coffee is: do your etches with Ferric Chloride and with the last etch don't clean off the oxide, put it right in the coffee – and do it at the end of the day and leave it overnight... the bottoms get black and then you touch the tops. It makes a lot of difference.” For shorter coffee sessions be sure the coffee is hot. Also – after the coffee treatment you can help the oxides set by finishing with a heat gun and WD40.

P.S. You can leave the blade in coffee overnight – but if you leave the blade in etchant overnight you will have a smaller blade come morning (even when using white vinegar).

In a typical 1080/15N20 Damascus the 1080 high carbon steel etches much faster than the 15N20 Nickel steel. As a result the 1080 layers not only get blacker but etch deeper, leaving the 15N20 standing proud. It should be noted that the pattern in cable Damascus is between the core of each wire and the area where adjacent wires forge-welded together and the etch is not as dramatic as 1080/15N20.

The FeCl₃ etch leaves a black oxide residue, but it can wear off – coffee and WD40 help set the oxides. If you then take 2000 grit sandpaper with a hard backing (firm rubber, Micarta, or hardwood block) and lightly sand the blade you will remove the black residue from the high points leaving the valleys coated in black and the high points shiny.

You can find various maker's etch methods in old 5160 Club newsletters. The April/May 2018 newsletter has Frank Bobbio's etch method. The March 2014 newsletter has Daniel Hine's method – as well as Mike Johnston's etch method to bring out the temper line (hamon). The February 2014 issue has more of Mike's notes on hamon etching. And of course you can find many more methods on-line. A particular knifemaker's etching method also evolves over the years. Old newsletters are archived here: <http://www.elementalforge.com/5160Club/>

Tristan passed around a cable Damascus D-guard style knife & artistically matching sheath. I didn't catch what the handle woods were.



MARTIN BRANDT showed us a mystery. “A rawhide hammer – I got some new faces and then I tried to figure out how you change them!”



Usually there's an obvious way to disassemble the head, but not on this one. “I got in touch with the factory: they're swaged in place.” In other words, the original rawhide heads were placed in the metal barrel head, then the head was squished in a die that pinched the rawhide in place. The metal head is “malleable iron” - so Marty would have to (1) drill out the old rawhide (2) make a forming tool and drive it in to expand the head (3) insert the new rawhide (4) make forming dies and use them to squeeze the head back around the new rawhide. *How much does a new rawhide mallet cost? It is a handsome old beast, I'll give it that.*

The next two knives he tried to make as close to identical as possible except that the handle is thicker and longer on one than the other. The photo doesn't show it but these are layered Damascus... 15N20 and a high carbon steel.



Tristan also made a bow! 5160 limbs tempered in a self-cleaning oven (~700°F?) and Osage Orange handle.



BROME MCCREARY passed around a couple of knives that he picked up at shows. The first one he got at the December OKCA show. It's a style that he remembers from his youth. “I never really liked the shape of the blade – but it cuts really well.”



The second one he picked up at a local gun show. The sheath is in good condition – and the guard is more substantial than many of this style. It's marked as being made by Coast Cutlery in Portland, OR “I thought that was kind of cool!”



Next Brome talked about a new improvement to his shop dust control. He has a regular venting system for the grinder that he uses when working with steel, “but when I switch from doing steel to anything that is combustible like wood or handle material” he switches that off and connects his shop vac to a hose that pulls from under the grinder. This keeps the combustible dust out of his regular ventilation system to avoid it collecting there and becoming a fire hazard. The downside is that he also uses the shop vac in his separate finishing room. He can string extra shop vac hose around to avoid having to move it back and forth – but the hose is identical on both ends – so you can't daisy chain it.

“I went on line and you can buy fittings but I've got the PVC pipe around” so he took some schedule 20 (thin wall) pipe. If you heat PVC to ~275°f it becomes flexible – higher than that it will melt. Brome uses this trick to make a quick rectangular sheath for work or test knives – like Kydex but cheap, quick, and easy. You can use thicker schedule 40 but it's stiffer to work. He'll take a 6” section, use a wire wheel to buff off the burs.

Mike mentioned that you can use the thin PVC as a liner for a leather sheath so that you can't shove the knife through the sheath if you put it in wonky.

Back to his challenge of daisy chaining shop vac hoses: he uses a tapered attachment as his forming die, heats a 3” piece of PVC, and pushes the attachment into the end of the PVC to flare it slightly

– and repeats at the other end of the PVC to create a coupling for the hoses.



FRANK BOBBIO came up front next. “I didn't bring any knives...” but he relayed how Brome has been visiting his shop to make Damascus billets that are destined to become feather pattern.

Frank talked about the feather pattern process – one process is to take layered Damascus, turn the billet 90° on it's long axis and hammer or press it down to make “crushed Ws”, then cutting, stacking, and re-welding the Ws a couple of times, then pressing a wedge down the center-line of the billet which pulls the compressed Ws like taffy to make center of the feather. You then re-weld the wedge-cut together to make the stem or “rachis” of the feather. What Frank was contemplating was how anal to get about cleaning scale out of the wedge-cut and truing it up before welding it back together. Anything from a quick brushing, flux, weld to totally separate the two sides, grind them flat, MIG weld the edges together (no air gap), and then weld. Frank's survey of experienced feather makers covered the whole range.

Then he reached into his bag of tricks and pulled out a hot water bottle and some magic plastic beads. He put the hot water in a jar, tossed in the beads, and maybe 10 minutes later the beads had melted together to form a pliable hunk of plastic. It pulls like taffy. When it cools down below it's 140°f melt point it hardens again.

So you mold it to whatever shape you need to hold an item, then let it cool. You could mold it to hold an odd shaped item – with maybe a vertical flange to



hold in a vice, or horizontal flanges to drill holes into (after it cools) and screw it down.

Frank used a heat gun to heat up a couple of hardwood scales and melt this plastic between them – he clamped it in a vice to cool – and after it had cooled he used a pipe to bend-test it – the wood bent but they did not separate. “It's not meant as a glue but I wanted to try it...”

The stuff is called Moldable Thermoplastic and Frank suggests it could be used like Cerrobend (aka Bentalloy, aka Pewtalloy, etc.) without being exposed to the cadmium in Cerrobend.



A newbie named **WILL** got up next. *He had talked to yours truly at the Spencer Creek Growers Market where I set up a blade sharpening table on Saturdays from late May to early October. I'd given him a card for the club and here he showed up!*

He and his daughter have done a workshop with Michael and Gabriel Bell at Dragonfly Forge near Coquille on the southern Oregon coast. “My daughter kind of caught the bug so I'm here seeing if it's just old farts or if there's some young people she might enjoy engaging with...” *Luckily there were a few folks there that night under 40!*

Will passed around a very nice chef knife that he

made at the workshop with the Bells. Cable Damascus and Rosewood handle.



He's very happy with this 1st project – as he should be!! But noted that, while initially he felt he had the handle seated perfectly to the integral bolster, he wondered if he'd done too much hand sanding as the wood is now slightly lower than the steel. While that is a possibility, it was noted by the group that wood does shrink and swell depending on it's moisture content. Stabilized wood is much more, well, stable.

He wants to get a 2”x72” grinder – which brought up a repeat of the grinder discussion noted above in this newsletter.

It was also noted that virtually all of the grinder makers have a standard attachment receiver for various size contact wheels, platens, etc. so that you can have a grinder from X and use an attachment arm from Y. One person did note that while they recommend the Origin grinder, they vastly prefer the small wheel attachment from KMG.

Someone noted that the 2nd tool to buy is a good drill press (not Harbor Freight). Buy a good one so that you can drill true holes for your handle hardware etc. Check a new drill press for true 90° to the table – and true it up before you use it!

And check out the “Classes for Knife Making etc.” in the links at the end of this newsletter.

ADAM admitted that he had a bit of a mistake the last night. When he learned that forge scale can be taken off with a long vinegar soak he bought some 20% vinegar. That's herbicidal strength. Grocery vinegar is 5% or 6%. He had a billet in the vinegar and was pushing it around with a bit of



wood – but it flipped and splashed vinegar on his face. “It went straight in my eye, down my neck, in my clothes, burned instantly... I thought I was going to lose my sight... but flush/flush/flush – I’m OK... so: Safety Glasses!”

Adam also brought in a Damascus tile sample. He was shooting for crushed Ws using a method that involves a 45° squaring followed by another flip – well he flopped when he should have flipped but went ahead to see what the pattern would come out like. He took 4 tiles and welded them together into a sample of mosaic Damascus. “I actually like the pattern – and 1st mosaic – figured I’d share it.”

Mea culpa – I guess in the process of the meeting breaking up I did not get a photo of the sample.

P.S. You may remember the notes on fire strikers from the last newsletter – I received the following link with another perspective on flint-n-steel fire starting – and the nature of the sparks:
<http://www.northwestjournal.ca/IX3945.htm>



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.heattreaters&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.pmtsc.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 Lightening 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://www.burlsales.com/>

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://bambooasis.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.