THE MOSTLY MONTHLY NEWSLETTER OF THE

EUGENE 5160 CLUB ~ MARCH 2021

https://www.facebook.com/5160ClubTheGroup newsletter archive: http://www.elementalforge.com/5160Club/

5160 CLUB ZOOM MEETING

MARCH 4TH 6PM

Thanks **Edward** for hosting these meetings!

Here's the Zoom download site:
https://zoom.us/download#client_4meeting

You do not need to create a "Zoom account" to participate in the meeting.

The recurring "join meeting" link is:
https://uoregon.zoom.us/j/96183250858?pwd=blpkOTlVMXdINlV0YW4wb2NRRjBMZz09

If that link doesn't work for you, the meeting ID is:
961 8325 0858
and the passcode is:
098053

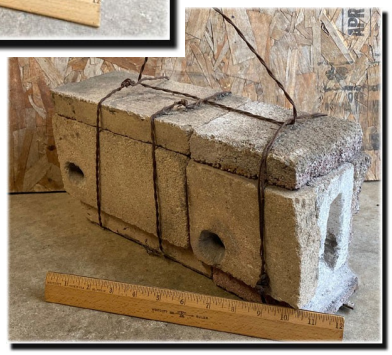
Think about what you want to share in the meeting and how to position your phone/tablet/computer/web cam to show your stuff!

And remember Facebook "5160 Club – The Group":
https://www.facebook.com/groups/5160ClubTheGroup/
is a place to share your questions, insights, or photos.

The Eugene 5160 Club newsletter is for information only. Do not try anything mentioned here without hands-on training. Neither the folks mentioned in the newsletters nor the newsletter scribe are responsible for your actions or liable for any repercussions. If you are good with that: read on!

Brome McCreary has this forge body from Joel Purkerson looking for a new home (free!). The lining needs work, but the price is right:

At the time of the February meeting he also had a firebrick forge, steel off-cuts, and a railroad anvil from Joel – all free to a good home.



Contact Brome at
bromemccreary@gmail.com
or through his website
contact page at
https://www.stoneandsteel.net/contact-brome

FEBRUARY ZOOM MEETING

Edward Davis started the meeting by asking **Frank Bobbio** about his latest Youtube video. Frank showed his testing of various glues and epoxies bonding metal to Micarta:
https://www.youtube.com/watch?v=KBo6TtWzBj0&feature=youtu.be

I recommend watching that video for anybody serious about the adhesives they use!

Brome McCreary showed off the madrona camping cup he's finished up and treated with tung oil. "I know it doesn't have anything to do with knife making, but I did use a knife to carve it!"

He noted that he uses 100% raw pure tung oil or walnut oil for eating utensils. He warned that products labeled as "tung oil finish" can contain other chemicals (like dryers). The pure tung oil takes longer to cure but probably better for you. It's hard to find, but Robnett's Hardware in Corvallis has it.

This raised questions about other food grade finishes. Tru-Oil and food grade mineral oil came under scrutiny. Brome pointed out that the Tru-Oil bottle warns "if swallowed do not induce vomiting". That's a pretty clear indication that it's not food grade. Food grade mineral oil, on the other hand, is an off-the-shelf item in drug stores – used as a laxative. However, because it is a petroleum product some folks don't want it on an item that will be used in the kitchen.

Scribe's note: FWIW I'm not put off by the amount of mineral oil involved in treating knife handles and such for kitchen use. In 2013 I tested wood finishes in a "kitchen torture test." I included a number of non food grade finishes, as I was curious how they would hold up. I treated identical wood blocks with 20 different treatments, glued them to steel straps for easier handling, then did rounds of: long soak in hot soapy water, go over with a scrub sponge, rinse & let dry. Scroll down in the posting below for a spreadsheet with my impression of how each treatment held up. But keep IMHO professionally stabilized wood will beat any of these treatments.
http://elementalforge.com/blog/?cat=5

Martin Brandt also pointed the group to the files posted in a Facebook group on woodworking (open to the public) – many of which deal with oil finishes, drying oils, and lots of woodworking tips:
https://www.facebook.com/groups/GreenWoodWork/files

Frank Bobbio noted that he has not been impressed with how Tru-Oil holds up. Polyurethane is more to his liking. And a multi-layer Super Glue finish holds up very well (so far, but he wonders if it will eventually chip). "I have one in the kitchen now with Super Glue. I've had no problems with it and it has an almost as-new finish."

Next Brome showed a knife sheath that he finished with his wax treatment (neatsfoot oil and bees wax). "I like that wax treatment because it makes it really durable." He heats the wax and the sheath, and applies three coats. It hardens the sheath. The knife

locks into the sheath nice and securely.
Next was a nice sheep's foot knife with sheath. The sheath comes up high on the handle and is wet formed so that the knife fits with a satisfying **snap**.

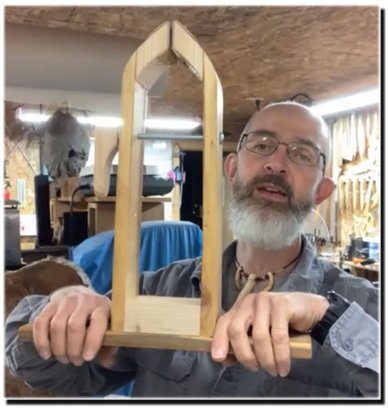
Brome talked about the trade-off of constructing a sheath with the belt loop integral to the pouch sheath but showing the rough flesh side – versus making a layered sheath with the back of the sheath having the grain side in, so that the integral belt loop presents the grain side. Wherever he does leave the flesh side out he coats it with tragacanth gum to smooth it down. He also uses that gum on exposed leather edges that he burnishes.

Edward noted that he'd purchased a simple glass burnishing tool (a “glass slicker”). About 3/8” thick with the edges radiused and sanded smooth. The long flat sides make it great for burnishing the flesh side. “It's a lot of work, but you can get it where both sides of the leather really appear the same. But the flesh side won't hold up to wear as well as the skin side.” On the other hand Edward noted that small cuts and such show up more on the grain (skin) side than on the flesh side, so for rough use the grain side can get to looking scratched up faster than the flesh side.

Brome has made a couple of burnishing wheels – hardwood disks with groves radii of 1/4”, 3/8”, 1/2” - which he chucks up on his buffing wheel and runs against the leather edges to burnish them.

He also shared that he is restoring his father's slick (large long handled chisel used for such things as tidying up architectural mortise and tenon joints). He cleaned off the rust, and reset the handle. To get the rust off old tools he soaks them in mineral oil for several days then goes over them with a bronze brush (like a steel wire wheel but less aggressive). Or if it's *really* rusty he will use a standard steel wire wheel. For *really really* rusty cast iron he goes to a twisted wire wheel. That is followed up with another mineral oil soak, then manual scrubbing with 00 or 000 steel wool. Finish it off with Ballistol.

Brome is also figuring out how to utilize a 6' planer blade. The people who originally homesteaded Brome's family farm used these as fence posts?!? and grounding rods. He wants to make a single-edged Japanese hatchet (nata) like the one pictured below. *I think he will have some material left over.* He's looking to make a longer-bladed one for lopping limbs – thinking that using the flat edge toward the tree trunk will make a clean cut.



Next up Brome showed a stitching pony he made. With this style of base he can sit in a chair with the base under his thighs and work at a comfortable height. Or clamp it to a bench. A little suede on the jaws protects the leather being sewn.

When Brome talked about how he'd made the screw-handle Martin Brandt shared that he has a bunch of 3” knobs that he salvages when he has to replace

pool filters (black plastic with a brass insert) 5/16” machine thread. He has extras if anyone is interested.

Lynn Moore shared that he and Tyler Aldrich had gotten together and turned some figured redwood into knife scales. *Unfortunately, the birdseye pattern is barely visible through Zoom.* Lynn noted that some of the scales have checks that he filled in with the sawdust and glue.

Tyler vacuum-stabilized some of it with Cactus Juice. It was noted that resin penetration is improved if you can cycle between vacuum and pressurizing. Lynn relayed that cautionary tale of a local stabilizing business that had hired someone to build a pressure chamber for them. During the initial tests the door blew off and killed the man who had built the vessel. So be warned.

I (Michael Kemp) noted that when I decided to go with stabilized wood handles, I went with K&G. I got a moisture meter and dried the blocks down to close to zero and shipped them off. For the batch of blocks that I sent out I figured that the cost was about $5/block. You would have to be doing a lot of wood stabilizing to make a home stabilizing setup cost effective.

Frank said that he'd spent $500 on his stabilizing system. He recommended getting the vacuum to above 29.5” of mercury to get good results. After letting the blocks sit in Cactus Juice at that vacuum for hours or days, then you go over to pressure. He noted that a typical pressure cooker is rated for 60 or 65psi. Frank cautioned that someone on the Cactus Juice forum reported going maybe 15psi over that and having the pressure cooker top explode off and hit the ceiling. Nobody got hurt. By contrast Frank said K&G runs 3,000psi on the pressure cycle. Frank likes to do his own stabilizing on some of his handle blocks so that he can custom control the colors, but he says “when it comes to using it on a knife handle K&G rules.”

He relays that he has taken identical pieces of wood – one K&G stabilized and one that he stabilized – and took them to a mirror polish. Exposure to hot soapy water dulled the one that he stabilized. “It's not even close to what you can get from K&G... kitchen knives I have that are over two years old with K&G stabilized maple still look 80-85% of the original finish...” He uses his K&G wood blocks for kitchen knives, and his own stabilized blocks for hunting knives.

I suspect that the blocks stabilized by Oregon's own Gallery Hardwoods would also stand up well. When the OKCA April Show restarts (in 2022?) I look forward to drooling over the gorgeous wood blocks on a number of vendor's tables (plain and stabilized).

There was some discussion of home-built grinders. Especially of recycling treadmill motor/controller combos to power your variable speed grinder.

Lynn got back in the Zoom spotlight, saying that he was working on four kitchen knives. He's got them rough ground for heat treat. The CPM 154 blanks started out at 3/16” thickness. He did a heat treat with them, but “I think something was programmed wrong with my kiln... none of them were over 50 [HRc] so I've got to start over again...” It's supposed to follow a ramp-up with holding at a medium temp, then on up to the full heat before quenching. Lynn will babysit it on the next round to be sure that the program is doing what it's supposed to do.

As CPM154 is one of those steels that can benefit from a cryo quench there was some discussion of dewars, the cost of liquid nitrogen, and how long the nitrogen will last depending on how large the dewar is and how much you use it.

The question came up “If your liquid nitrogen has gassed off so much that you can't immerse the whole blade, can you get a cryo treatment by just immersing part of the blade?” This generated quite a few thoughts about why or why not that might be a thing to do.

Brome later put this question to Larrin Thomas (the man behind Knife Steel Nerds) and reported back that he responded that “Steel is very conductive, so if you get the edge to the liquid nitrogen temperature then the handle would be as well.”

Frank noted that there are posting at Knife Steel Nerds that show Larrin's testing of post-quench in a freezer (0 to -10f) versus dry ice/ethanol (-72f) versus liquid nitrogen (-320f). Each step colder transforms more of the retained austenite and gets a little more hardness.

Frank also noted that Larrin has obtained an industrial grade edge retention testing machine and has put out detailed edge retention information on dozens of steels.
https://knifesteelnerds.com/2020/05/01/testing-the-edge-retention-of-48-knife-steels/

I prompted **Frank Bobbio** to take a turn at show-n-tell and he did not disappoint. He wanted to try a new forge welding method, so he made a mini-billet of 30 layers in his induction furnace. He wasn't intending to make a knife, just to test a new method for making a Damascus billet, but one thing led to another... Here's the handsome knife that he made from it:

The handle is his own stabilized wood with a Super Glue finish. The blade is made from layers of 0.070” thick 15N20 and 0.035” thick used blades from home sawmill bandsaws. Those blades are sold in various grades. The ones that Frank came up with were the lowest grade but tested out at 64 HRc. So using this home sawmill bandsaw steel was one part of the experiment.

“I normally clean all the metal bright and shiny... I was talking to John Emmerling...” who said that he doesn't even clean the rust off – it all comes clean with plenty of flux. So Frank tried this with his used, rusty, discarded home sawmill bandsaw blades. “I did a good three times on the flux.” The experiment was successful, but Frank thinks that for future projects he will still clean the steel before forge welding just to be on the safe side.

I couldn't catch what oil or wax Frank said he uses on his leather sheaths, but it looks good. Maybe I'll catch it next time around. I did catch that he buffs it up with a silicone rag.

Frank really likes his new convection toaster oven. He can set it to 125f, turn the fan on, and quickly dry a sheath that he's finished wet tooling.

Frank went on to talk about his forge building projects. He noted that he'd started with a used T-Rex burner that I sold him years ago. He made a couple of his own burners based on that design. He and Brome have been fiddling with simpler, cheaper designs . It sounds like Frank is going to be doing more experimenting and will make a video when he has it all dialed in. In the mean time, don"t try to make a burner on your own without some guidance from someone with experience.

Rashelle Hams noted that there had been a question about handling the layer thickness for a san mai billet. She explained that she takes a 1/8" thick mild steel and folds it lengthwise with a 3/16" carbon steel bar sandwiched in the middle. She showed us a raw billet and a couple of rough ground blades. Unfortunately the Zoom snapshot doesn't do a very good job showing the layers.

You can gather the rough forged spine thickness from this shot. One of these has cable Damascus outer layers. Rashelle is learning how to forge left-handed and use grinding jigs – allowing her right shoulder time to regain strength after the operation.

And here is a photo of a rough ground blade from the billet with the line between steels revealed.

And here's the jig that she's been using for grinding bevels. Made by: https://www.switchblademfg.com/ You set the angle you want by sliding the handle side up and down against the magnet (grinding) side – tighten the bolts – and then snap the knife blade on

the magnets. It's working really well for her: Rashelle also recommended this video about making a PVC knife sheath. Actually it starts with making a Kydex press and goes from there. It's essentially Kydex sheath making but with PVC, so it's fancier and has more steps than Brome's quick-n-easy schedule 20 PVC sheath: https://www.youtube.com/watch?v=GbYRPp3W554

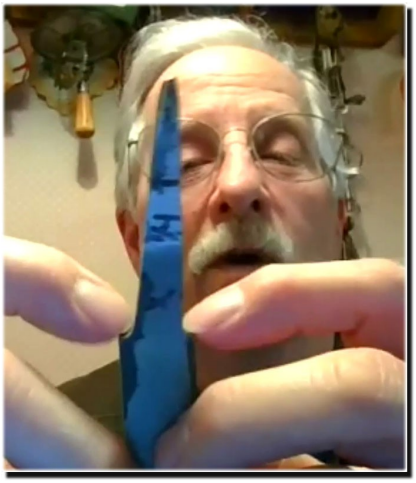
Brome reinforced the utility of using jigs. "I do a lot of woodworking and a central part of woodworking is using jigs..." He noted that he likes to do a full flat grind, and is comfortable doing that freehand with EDC type knives. "But where I struggle is when I'm grinding these really narrow bevels" as on this brush knife. "I did a lot of draw filing for years..." but then he made himself this grinding jig. He noted that some Japanese knives have a similar narrow bevel. The narrow bevel is especially difficult to do cleanly. The jig takes a lot of the chances for error out of the grinding.

It's a big chunk of angle iron with two identical holes drilled in the face – one for a resting peg and the other for a clamp to hold the tang down and secure the knife. These can be reversed so that you can flip the knife around for grinding the far side. Before flipping the blade over Brome marks where the blade registers against the jig so that he can set it at the same depth/angle when it's flipped over.

At the outer edge of the other flange of the angle iron are two threaded holes for bolts that can be raised or lowered to control the angle of the bevel. The ends of these bolts are rounded and sanded so that they slide smoothly on his grinder's rest table.

Frank wondered how these jigs would perform when doing a knife with a highly curved edge. Edward took it to the extreme by wondering how these jigs would work for an ulu or a leather head knife.

Both Rashelle and Brome said that they handle that issue by rotating the jig on the rest table to compensate for downward curves. *On the other hand, I have my doubts whether you could use these jigs for a recurve blade. I think that's still freehand on a contact wheel.*



Martin Brandt chimed in with some praise for his shoulder filing jig. The carbide surface stands up to both file and belt grinder work.

Marty also talked a little about san mai. The billet shown below has nickel foil between the core and the 1008 cladding. He wound up with 300lb of this mild 1008 steel – so if anybody wants some he has plenty!

Martin is working on a puukko that has a 3-1/2" blade and just is just over 1/8" thick at the spine. He is concerned with the thickness of the core – thinking that when he grinds in the bevels he will lose a lot of the cladding and the transition line will be higher up the blade than he'd like. And he noted that with this style of puukko the cross section is rhomboid with a little bit of bevel toward the spine. He doesn't want that upper grind to get into the core.

"I started out with 1/8" on all three pieces... the foil is hardly worth mentioning." So he's thinking next time he will do a thinner core layer. "I'm thinking a rolling mill would be a nice thing to have..."

Next he showed another blade in process. "This one was an interesting little bit of fun today." The blank had been in his unfinished blade drawer for 10 years or more. It is titanium "explosion" sides welded to a very thin shim of O1.

Martin described the explosive welding process. The layers are very clean when layered up. They put an explosive on the stack and when they set it off the force of the explosion drives out the oxygen between the layers and the heat and pressure fuses the layers.

"The finishing process on the titanium is difficult. It seems to work harden real fast if you go too fast, and I was having trouble getting the belt to cut. The other

problem is that the sparks coming off it are like looking into a movie camera light. I mean it's so bright white that you can't really see where you're grinding any more from the dazzling light of the sparks going off it!"

"I found that if I turned my belt speed way down low it cut faster than at high speed and I got a lot less sparks." He also mentioned that it puts out fumes that might not be so good to breathe. Good ventilation in the shop is highly recommended, as always.

Talking about the main bevels on this blade, and the challenge of keeping the core steel centered, he said "Gosh it'll be interesting 'cause I'm trying to hit a 0.010 – 0.015" strip in the center." *We wish you well, Martin! We'll look forward to seeing how these projects turn out.*

And by this time the Zoom meeting had run rather late – so we wished each other well and signed off.

Keep well, work safe, and see you in cyberspace!

Your Scribe ~ Michael Kemp

Website Links

5160 Club

Check out Facebook "5160 Club – The Group": https://www.facebook.com/groups/5160ClubTheGroup/ as a place to share your questions, insights, and photos.

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

Oregon Knife Collectors Association (OKCA)

The OKCA is putting out their newsletter, but the monthly dinner meetings and the knife shows are COVID canceled for the time being. We are all hoping that their big knife show in April might happen in 2022 – sign up for their newsletter to stay in the loop:
http://www.oregonknifeclub.org/index.html
Go to the "Knewslettter" link and scan a recent newsletter for a membership form and contact info.

Forums

Lambowie – Check out this new on-line marketplace. It's billed as a low-overhead alternative to eBay for forged knives, swords, etc. as well as bladesmithing equipment and materials. If you have feedback on this site – let me know!
https://lambowie.com

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

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

Lambowie – a low-overhead eBay alternative for custom knives and knifemaking equipment.
https://lambowie.com

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/

Steel Sources

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

Coyote Steel – wide variety of new steel, scrap, copper, brass, bronze – Garfield & Cross St. Eugene
http://www.coyotesteel.com

Martin Brandt – 5160 Club member in Springfield who always has some knife steel and supplies on hand. 541 954-2168

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/

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

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

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/

Broadbeck Ironworks LLC – [Maryland I think] – Grinders, attachments, belts, leather sewing machines
https://www.brodbeckironworks.com/attachments

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

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://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/

Northwest Timber has larger pieces of figured wood. In Jefferson Oregon between Albany and Salem.
https://nwtimber.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/

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.