THE MOSTLY MONTHLY NEWSLETTER OF THE

EUGENE 5160 CLUB ~ JULY 2017

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

JULY MEETING

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

Bring your show-n-tell!

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

NOTES AND REMINDERS

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The Great Oregon Steam-Up – July 29-30 and August 5-6. This is a steam power enthusiast's dream event, with a swap meet where anvils and other tools of interest to knifemakers are available. Powerland Heritage Park – a few miles North of Salem, OR. http://www.antiquepowerland.com/html/steam-up.html

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

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

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

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

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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.

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MAY MEETING NOTES

The meeting started out informally – sitting in a rough circle chatting as folks drifted in. A new guy passed around a blade he'd finished. Great job – especially for a first knife. "The amount of time to make it was ridiculous!" There was some discussion of the Forged In Fire TV show and how the heat treat shown there – and knifemaking in general – are pretty slap-dash and don't show the time and care needed to make a good custom knife.

The construction of this knifesparked some discussion about doing a hidden tang without a pin

(securing the tang with glue). Puukko knives were noted as a traditional style that uses this technique and have stood the test of time.

Frank Bobbio talked about a test he did: making a test knife out of 16" of unhardened steel and securing the 3" hidden tang into an oak handle with 5 minute epoxy. He took it to the wood pile and beat on it. Then a year later beat on it again. It held up.
For a hidden tang you can either split the handle material and chisel or route out one side for the tang, then glue the two handle halves together with the tang in place – or ream out a solid block of handle material for the hidden tang by drilling a hole, then squaring it up with generally homemade tools. For instance taking a Bosch Sawzall blade and grinding the back down to make it low profile enough to get into the hole (you have to cobble up a handle for it – this is a by-hand operation).

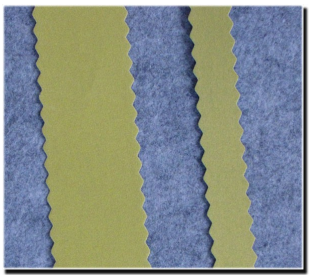
In a discussion about anvils, the Oregon Steam-Up was mentioned as a place where these scarce beasts can be found – if you are quick enough (see "Notes and Reminders" at the beginning of this newsletter).

Another new guy asked about grinders – and while folks chimed in in favor of various manufacturers (see the "Knifemaker Equipment" section in the links at the end of this newsletter) – or building one from scratch – the consensus was to go with the 2"x72" belt format. The variety of grits, materials, and styles in this size are unmatched for knifemaking.

Scribe's note: The simplest grinder setup has a flat platen to grind against and maybe a slack belt area – and a fixed speed motor. A variable speed motor is spendy but gives you more control to avoid overheating the blade or burning handle material – especially with finer grits. A grinder with a large contact wheel lets you do recurved profiles or hollow grinds (some of this can also be accomplished with a convex platen attachment). A very small diameter contact wheel lets you do things like finger grooves. An old treadmill motor is good for a homemade variable speed grinder.

There was a lot of discussion about buying or cobbling together a forging press from a Harbor Freight hydraulic press or a wood splitter.

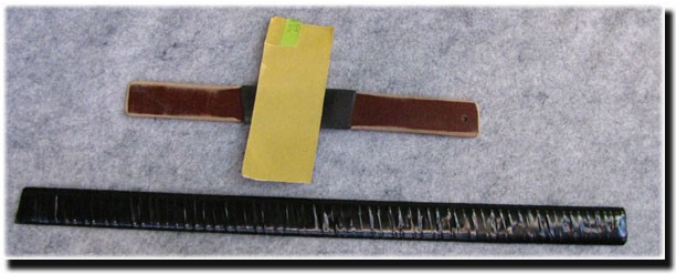
LYNN MOORE kicked off the more formal stand-up-and-speak part of the meeting. "Frank and I went up to the Blacksmith Conference and Dave Lisch was showing some techniques he's come up with..." Lisch demonstrated scallop-edged belts – which reduce the danger of grinding a groove by inadvertently catching the steel on the edge of the grinding belt.



Lynn also noted that after Lisch does a plunge cut (this is a transition area between the blade bevel and the rectangular cross section ricasso used in some styles of bladesmithing) he goes to a disk grinder for final clean up. He uses a rubber disk over the metal disk grinder, as well as having the metal disk grinder face very slightly cone shaped – just one degree bevel – to help keep the grinding disk from catching and pulling the blade. He also beveled the outer edge of the disk grinder plate so that the face stands a little proud – making it easier to grind in close. He uses a "file guide" to protect the ricasso both at the belt grinder and at the disk grinder.

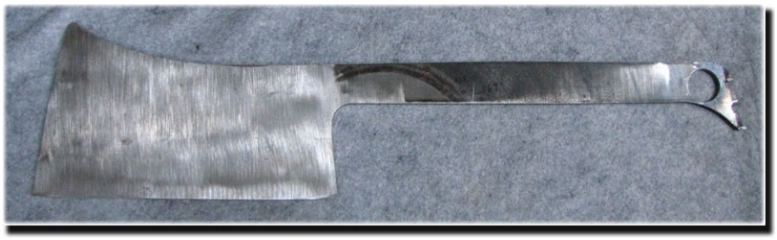
Lynn's impression was that for grinding Lisch was going from 36 grit to 80 on the belt then to 220 on the disk. That's larger jumps between grit than usual.

For hand sanding Lisch demonstrated using a tacky adhesive to stick the knife to a good sized steel bar (clamped in a vice) – then using a smaller bar in your hands with adhesive backed sandpaper (like is used in a body shop or board sport shop) to draw-sand the blade. Tear of a section off a chunk of sandpaper and paste it to your draw bar – move it along your draw



bar until it's used up. Note that Lynn wrapped the bar that the blade gets stuck to with electrician's tape to protect the blade from damage. He's using a piece of Micarta with eased edges and a rubber pad in the middle for his draw bar.

Next up Lynn passed around a work-in-process "two handed cleaver" he made for a friend out of a chunk of circular saw. The intended use is butchering pigs.



Then Lynn passed around the kukri knife he's working on. This is to be one of the "award knives" at the 2018 OKCA show (given as awards to the best of the display tables that line the walls at the show). Gene Martin had profiled the blanks and Lynn has started the grinding process on his.

Lynn showed his new favorite face mask. "I've always had problems with it wanting to fog up my glasses, but this one has a little air hole below your chin..." which directs the out breath away from your glasses. I believe it was a Honeywell mask.

His final pass-around was three knives in process. Two from the heavier bandsaw blade material and one from the circular saw material.

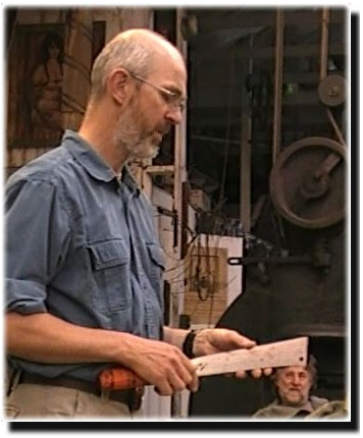
There was follow-up discussion about using the right air filter on your face mask. Some are intended for dust – some for fumes. The ones for organic volatiles (paint) or acid gas may not do as well for filtering out fine dust from the grinder.

The question was asked where to get knife steels locally. Coyote steel sometimes has appropriate steel in usable sizes. Our own Martin Brandt always has some knife steel for sale. Beyond that you are shipping it in from the list of suppliers at the end of this newsletter in the "Knife Steel Sources" section.

There was quite a bit of informal discussion on the eternal mystery of heat treatment and quenchants.

FRANK BOBBIO came to the front to show some wood blocks he picked up at Gilmer Wood in Portland. He noted that while they have a lot of expensive pieces, they also have 2nds bins full of very low priced pieces – may of which are quite suitable for knife handle material... such as bins of $1 blocks. He passed around some blocks with sapwood or other flaws. And this piece of African Blackwood – another 2nd for $6:

Frank also brought in a Bowie in 5160 he made 20 years ago. The finish on the handle is polyacrylic.



The next man up stated "I have a fascination with primitive tools... I spend a lot of time living in the bush for my profession..." He noted that whenever anyone he knows travels abroad he prompts them to buy him tools and knives from local markets. Not tourist stuff, but "primitive, beat-up, whatever that they make there – that they **use** – get me one of those... because I find it inspiring to see what people use as a tool."

He passed around a couple of brush knives that his mom picked up in Indonesia a year or two ago. When he got these he tested them out on some 6"-8" alder "and they cut really well – they're your standard primitively made tool – probably truck springs or whatever... you can see the inclusions – they're just hammered to shape, ground down, and sharpened."

He added "One interesting thing about them is that the handles are not very useful." What he thinks is that these rough fat handles may be put on just to have something to haft the blade – and then the guy who buys it whittles it down to suit himself.

There was some talk about where to find handle wood – from Gilmer Wood up in Portland:
https://www.gilmerwood.com/

… to places in the Eugene are such as Gallery Hardwoods:
http://www.galleryhardwoods.com/knife.htm

Woodcraft of Eugene:
https://www.woodcraft.com/stores/eugene

Crosscut Hardwoods:
http://www.crosscuteugene.com/

Tree Products Hardwood (new address: 150 Seneca Rd, Eugene):
http://treeproductshardwood.com/

and Northwest Hardwoods:
http://northwesthardwoods.com/

Note that Gilmer Wood, Woodcraft, and Gallery Hardwoods have sections of inventory specifically for knife makers or small wood projects. The others may have hardwood planks that can be diced up for handsome handles – but tight figuring that makes a knife handle pop might be hard to find. See also the "Wood Suppliers" section in the links at the end of this newsletter.

JIM JORDAN shared a small engraving project – *I'm kicking myself because my photo is out of focus?!?*

Back at the beginning of the meeting – before I (Michael Kemp) turned the video camera on – I'd passed around a paring knife that I made from a blade that Frank Bobbio gave me. I used his blade and bolster but used some myrtle wood that Lynn Moore was getting rid of when he moved.

Frank noted that African Blackwood is so oily that you don't need to treat the wood for kitchen use. There was some discussion about wood treatments for kitchen use. My paring knife handle (above) was treated with a combination of equal weights of beeswax and carnauba wax thinned out with a little food grade mineral oil so that it melts under a heat gun. Wipe a little on once a year and you're good. I'll repeat myself by referring the curious to my wood-in-the-kitchen torture test:
http://elementalforge.com/blog/?m=201311

I shared that when I was finishing the paring knife I put on two layers of that wax/oil treatment, then sharpened the edge. I use Simple Green when sharpening – and lo and behold, getting the wood wet raised the grain. So I sanded it down and did another layer of the wax/oil mixture.

That process reminded me of what I'd read in a gunsmithing book about gun stock treatment, where you were advised to raise the grain repeatedly with a damp cloth and re-sand it until the grain no longer raised up when it was wet down. On the other hand, as knifemakers, we are going to great lengths to get wood handle material as dry as possible before final fit and finish so that it doesn't shrink if it winds up in a dry climate. I'm not sure how you reconcile these things, because you can't do the grain raising until the final sanding and you can't do the final sanding until the handle in on and shaped to fit.

Along the same lines Frank mentioned that even stabilized wood still acts more like wood than like resin/plastic. There was extended discussion about just how stable and water resistant stabilized wood really is. The consensus seemed to be "it depends".

"Craftsmen and cabinet makers have been making furniture and cabinets for generations. It's not stabilized and it's still holding up beautifully."

"For a long time people were making knives with unstabilized wood handles and all the armies in the world have managed to go off to war and come back with their handles still on their swords and knives."

Somehow that flowed into a discussion of forge construction – especially the inside coatings. Some folks have had great results with 2700°f furnace cement – for others it cracks and flakes out. Satanite, Mizzou, Kast-O-Lite 30 were debated. It was also discussed whether there are severe health issues for running a forge with uncoated Kaowool or similar ceramic insulation that tends to disintegrate and produce airborne ceramic dust. Coat your Kaowool.

And at that point we broke up into multiple discussions and called it a night.

Have fun all – and work safe!

~ ~ ~ Michael Kemp

Free De-Classifieds

Email me a brief description of what you are selling/buying/looking for with your preferred contact (phone/email/...). Unless you let me know you want a shorter run, I'll run the note for 3 months and then send you an email to see if it's still valid. No charge – just email me at Michael@ElementalForge.com

No for-sale notices this month.

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

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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 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)
http://knifedogs.com/forum.php

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

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

Blade Forums
http://www.bladeforums.com/forums/forum.php

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

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

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

References

Our own Wayne Goddard's books are available at Amazon:
http://www.amazon.com/Wayne-Goddard/e/B001JS9M10
And you can email the Goddards directly for his DVD at wgoddard44@comcast.net

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

Verhoeven's Metallurgy For Bladesmiths PDF – this is a very deep dive, not an introduction.
http://www.feine-klingen.de/PDFs/verhoeven.pdf

Verhoeven's updated book:
http://www.amazon.com/Steel-Metallurgy-Non-Metallurgist-J-Verhoeven/dp/0871708582

ZKnives – Knife steel composition/comparison/etc.
http://zknives.com/knives/steels

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

Tempil Basic Guide to Ferrous Metallurgy
http://www.tempil.com/wp-content/plugins/download-monitor/download.php?id=Basic_Guide_to_Ferrous_2010.pdf

From the Heat Treating Society of the ASM – the Heat Treater's Guide Companion for Android devices. Look up heat treating details on hundreds of steels in the palm of your hand.
https://play.google.com/store/apps/details?id=com.pfiks.mobile.heattreaters&hl=en

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

Classes for Knife Making, Etc.

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

Michael and Gabriel Bell of Dragonfly Forge offer an ongoing series of small group classes in Japanese style sword forging and fittings. Located on the southern Oregon Coast.
http://dragonflyforge.com/

Murray Carter offers small group classes in a variety of subjects, primarily focused on traditional Japanese cutlery. Located in Hillsboro, Oregon.
http://www.cartercutlery.com/bladesmithing-courses/

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

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

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

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

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

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

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

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

General Tools & Supplies

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

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

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

Grainger
http://www.grainger.com

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

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

Zoro
https://www.zoro.com/

Knife Maker General

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

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

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

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

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

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

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

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

Knife Steel Sources

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

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

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

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

Bohler Uddeholm – numerous U.S. locations
ttp://www.bucorp.com/knives.htm

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

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

Knifemaker Equipment

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

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

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

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

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

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

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

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

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

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

Wayne Coe [Tennessee] – grinders, motors, VFDs...
http://www.waynecoeartistblacksmith.com

Contact Rubber Corp – wheels etc.
http://contactrubber.com/contact-wheels.asp

Sunray – drive wheels
http://www.sunray-inc.com/drive-wheels/

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

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

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

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

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

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

True Grit – under "Machines & Accessories"
http://www.trugrit.com

Forge & Refractory

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

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

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

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

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

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

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

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

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

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

Blacksmith

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

Blacksmith Depot
http://www.blacksmithsdepot.com

Pieh Tool
http://www.piehtoolco.com

Centaur Forge
http://www.centaurforge.com

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

Logo/Etching

Ernie Grospitch – Blue Lightening Stencil
http://www.erniesknives.com/

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

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

Heat Treat Services

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

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

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

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

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

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

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

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

Wood Suppliers

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

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

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

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

Wood Stabilizing

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

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

WSSI (Wood Stabilizing Specialists International, Inc.) – Ionia, IA – some folks have had issues with them, some folks are totally happy.
http://www.stabilizedwood.com/

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

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

OTHER GOODIES

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

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

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

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

Amtek – tool steel & cutting tools
http://websales.amtektool.com

Rio Grande – jewelry tools/supplies
http://www.riogrande.com

Otto Frei – jewelry tools/supplies
http://www.ottofrei.com

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

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

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

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

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