

EUGENE 5160 CLUB ~ DECEMBER 2018

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

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



IN MEMORY OF WAYNE GODDARD

Of course Wayne was a multi-talented knifemaker of international renown. Of course he was the person who made our little club happen. Of course he inspired legion knife enthusiasts and knifemakers with his writings. Of course he was incorrigibly curious and inventive.

He was also friend and mentor to an uncounted number of us. He passed recently after many years of battling Parkinson's. His generosity and the sparkle in his eye will not be forgotten. He has joined his beloved Phyllis. Our love is with them.

I gathered all the photos I could find of Wayne, his knives, and his tools from the 5160 newsletters I've done – and posted them as an album on our Facebook page. If you would like to browse them I believe this link should get you to the album:

[Ridiculously Long Link to Facebook Album](#)



DECEMBER MEETING

Thursday December 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

OKCA December Show – December 8th – 7:00AM setup for table-holders – Free to the public 8:00AM-4:00PM. \$40 per table. See the OKCA newsletters for details and developments:

<http://oregonknifeclub.com/knewsletters.html>

OKCA April Show – this is the big one: April 12th is OKCA members only. April 13th & 14th are open to the public – admission is \$6/day – members free. \$120/table + OKCA membership. 360 tables at the Lane Events Center. Everything from the world of cut! <http://oregonknifeclub.com/okcashow.html>

Check out the “Classes for Knifemaking, 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.

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.



NOVEMBER MEETING

At the beginning of the meeting there was some sort of tool or material swapping going on in the parking area – I forget what exactly, but eventually I



(**MICHAEL KEMP**) got the meeting started by saying “Just to prove that I sometimes **think** about knifemaking: this is for making a ribbon burner...” as I showed the wood-and-crayons form I'd made for the burner casting.

There was some discussion on construction of ribbon burners. You can see John Emmerling's original article on how to build a ribbon burner from the link at the end of the “Forge & Refractory” section at the end of the newsletter... as well as a link in that section to ribbon burners for sale at Pine Ridge Burners. If you plan on building your own you should scan the forums for latest suggestions (such as using twisty birthday

candles for the burner holes – or introducing a static mixer in the supply tube).

The other thing I mentioned was that I've renewed my OKCA membership and paid for 5160 Club tables at the December and April shows. I'm accepting any donations that folks want to give to defer the cost of the 5160 Club tables.

BROCK came to the front with an impressive knife roll full of goodies. The thanked Frank Bobbio for letting him spend time working in Frank's shop.



“I've been geeking out making kitchen knives for a friend of mine who's a chef up in Portland...” The first one he passed around was a chef knife in 15N20 with Amboyna burl with black Micarta pins, G-10 liners.



Brock noted that he'd purchased the low-layer 1080/15N20 Damascus for the skinner that he passed around next. He feels his leather work gets a little better each time but has room for improvement.



His next piece was made from Vanadis 4 Extra – he made a couple of kiridashi from the scrap he bought. The Vanadis “is a ginormous pain to sharpen, but once it's done it stays for a long time.”



Brock then pulled his EDC off his belt – noting that it's been his “test mule” for CPM 4V. “Chopping pennies... I've reground it – making it thinner and thinner as I get more comfortable with how thin I can go with the CPM 4V. It's been pretty impressive.”



In answer to a question on the maker's mark he noted that he'd bought an electro-etch box from a company in Canada and the stencil from a company called LectroEtch in Ohio: <https://lectroetch.com/> which is also where he purchased his etching chemicals. Brock really recommends LectroEtch.



Next up was **CRAIG MORGAN** with a knife “made by an old guy named Corbet Sigman” which Craig got from Bob Lum. It's something of an unintended collaboration as Lum reground the blade thinner, Craig reshaped the handle to his preferences, and Craig's

daughter Hanna did the ambidextrous sheath through her leather-work business: Grey Leather Company <https://www.facebook.com/GreyLeatherCo/>

I'm kicking myself because it looks like I didn't snag that knife and sheath for a photo!?!

STEVE GODDARD came to the front with several knife cases. As he unzipped the first he said “when you spend too much time on the internet sometimes you can find something really fun. I found a couple of my father's knives that he did in '86.”



Here is Wayne's table setting knife-and-fork of cable Damascus with mother of pearl and abalone handles.



And also from '86 – a penknife in Damascus with mother of pearl handle.



Steve relayed that Blade Show West had top quality makers. “You should've gone. Some of the stuff that guys are doing in the knife world is absolutely amazing.”

In general discussion about the show, several others in our group either had tables or attended the show. The consensus seemed to be that while the makers and knives were outstanding, the attendance was disappointing and there were some frustrations with the hosting facility.

The next Wayne Goddard knife Steve passed around is in a Wayne classic style. "I'm guessing late 1960's – probably one of the first 200 knives dad made. Looks like osage orange or mountain mahogany."



Steve then noted that he's been experimenting using hospital disposable sponge tooth brushes for dabbing on mustard finish: he dabs it in the mustard, takes a little off, then applies the sponge to the blade. "You get way more of a tighter, darker pattern."

Here's one of Steve's "San Francisco" knives. This is one of his smaller SF knife versions. "The bigger you make 'em the faster they sell."



And here's Steve's take on a Green River knife. 5160 blade, mustard finish, Iron Wood handle.



LYNN MOORE came forward next. He pulled a knife out of his pocket, noting that it was "one of 13 that got stolen a couple of years back out of my truck after a knife show. They beat it up pretty bad so I've been cleaning it up – trying to get some of the scratches out of it..."



A friend spotted it at Piccadilly market, recognized Lynn's logo, and picked it up for him. "It's the only one I've gotten back." CPM 154 with sycamore handle. *Compare this photo to the October newsletter photo of this knife in as-found battered condition!*



Lynn then gave away some sharpening stones that he did not need – a couple of manufactured stones and an Arkansas stone – all good sized.

Next he showed the knife vise that he likes. "Really nice for sanding out your blades." This type of vise is a tube w/in a tube, which lets you rotate the blade to any angle. The inner tube has upper & lower blocks that are clamped down on the knife itself. Lynn noted that he sometimes replaces the lower block with a long piece that extends out and supports the blade & reduces the chance of an accidental cut.



The inner tube pictured above is set up with leather insert so that you can clamp a blade with a finished handle without marking it up.

Lynn recommends that when you are finish sanding that you change direction with each grit of sandpaper so that the scratches are in a new direction and any scratches left by the previous (courser) sandpaper stand out. "Sometimes I go to 400 grit and then to Scotch-Brite and leave it a little bit rough."

Lynn likes using a bar of Micarta for a sanding tool, using each end as a handle with sandpaper in the middle. He's using 3M sandpaper with sticky back that he gets in rolls. *I believe this is the 3M Stikit sandpaper rolls.* He noted that he has several shapes of Micarta sanding tools for use at different angles or getting into different parts of the blade.

There was discussion of using WD-40 on wet-n-dry paper – which extends the life of the sandpaper – and which some folks testified works better than water or Simple Green.



MICA was up next. “Way back at the hammer-in in August Lynn helped me make this ... I went to his shop and he helped me put an edge and a handle on it. I had a lot of fun finishing it.” Fiddle-back maple handle.



FRANK BOBBIO came to the front next. First out of his bag was an LED flex lamp. Lots of folks mount a lamp on their grinder to get light right onto the work... but a traditional bulb is big enough to get in the way. This loooong flex lamp with a tiny head is just the ticket for getting light where you want it without blocking your work. Frank got this 24” lamp at IKEA for \$12.



Frank also shared that Benchmark Abrasives is running a promo deal where they will send you a 10 pack of flap disks (for angle grinder) for just the \$10 shipping. 40 to 120 grit. *As of this writing the web page says “sold out” but you might check later.*

Frank noted that for minimal expense and a trip to Harbor Freight you could get an angle grinder, some grinding disks, some flap disks, a drill, and be able to make a stock removal knife!

“I was thinking I hadn't made any knives this month – but 'Oh yah' I made a few little ones...”

Here's a sweet bird-n-trout knife – African blackwood handle:



The next one was a knife that a relative put together 25 years ago in Frank's shop. When they died their wife gave it to Frank. It was all rusted – so Frank re-ground it, sandblasted it, and Parkerized it.



Next was a small knife made from the end of a billet of non-contrast Damascus. Frank just Parkerized it since you couldn't tell it was Damascus anyway!





CRAIG MORGAN got back up with a theater knife that a friend had as part of his collection. “It had a really short handle on it... I had this antler crown so I hand cut a tenon on it...” and set it into the handle with a Micarta spacer. Again, the sheath was made by his daughter at Grey Leather Co.



PAUL HAINES was up next with a cable Damascus blade-in-process. After forge welding the cable, Paul had drawn it out, cut, stacked, and re-welded the billet.



He had issues with etching to bring out the pattern after grinding. The flat of the tang came out fine, but not the blade itself – which came out patchy.



He'd etched with Ferric Chloride and there was discussion about $FeCl_3$ wearing out over time and needing to be replaced. Also the possibility of having gotten oils on the blade before putting it into the etch.

Another suggestion was to keep the $FeCl_3$ warm if the shop is cold.

There was an extended discussion about etching techniques. *For instance, reference Frank's description of his process in the 2018 April/May newsletter, page 6.*

EDWARD DAVIS got us back into show-n-tell mode with a knife he'd recently finished. The blade was from Frank. Frank had started it as a traditional French chef, but didn't like how the shape was forging out and decided not to finish it. Edward took it on and went in a santoku direction with it.



Here it is – mostly done – with curly maple scales:



The liner under the scales is some bowling-ball type plastic, but I can't verify the name of the material.

JIM came to the front – noting that it's been awhile since he made it to a meeting – between working with youth in the community and having worked night shift for awhile.



This is a forged 1075 blade with bloodwood bolster and mahogany handle. “It's a little rough but it's meant to look that way. I ground it to 320 and then heat treated it. After heat treat I took a wire brush and just wire-brushed the #r@p out of it and got that nice finish – then I went and nicked it with the belt sander when I was sharpening it.”



Along another line Frank Bobbio noted that Burcham's Metals in Albany has 2 pallets of random sized chunks of 4140 (usually \$4-5/lb) from 2"x9"x9" to 4"x10"x15" for \$0.40/lb – and Frank got some for a discount below that. 4140 is generally used for hammer heads and dies and such. Somebody suggested you could cobble together an anvil from it.



Next up, **AARON** was back with more miniature tools. The first pass-around was an axe that he hafted in rosewood.

I guess it's dereliction of duty on my part that I didn't put a quarter in the photo to give it the proper scale.



He also forged out a miniature spatula... so he's all set to fix a breakfast of quail eggs and silver dollar pancakes!



MIKE JOHNSTON started out talking about whether you need to anneal your knives before grinding – or if just normalizing the steel is all that's needed. “I haven't found any reason to anneal anymore – I was making room in my shop



and one thing that went away was my bucket of pearlite.” So he had his bag of pearlite for anybody who wanted it.

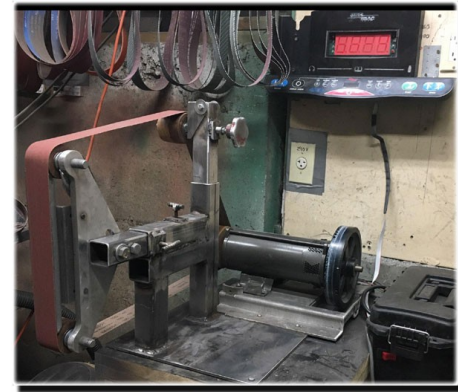
Mike also had a rivet forge with blower “that's surplus to my needs. The blower needs some love – it growls. If somebody wants to give me a \$20 bill for it – it works.” *And somebody jumped right on it.*

“Since Blade Show West last month I haven't been doing a lot of work other than making tools...”

He's built himself a 4 wheel grinder with a 2-1/2 horsepower treadmill motor 110v DC. He just used all the electronics from the treadmill. Some of the treadmill electronics work and some don't – but the speed controller works – so there you go! The speed settings go from “0.5” to “10” and he's used it up to “6.5” so he's happy with the speed range... and variable speed is definitely the way to go!

Here's some photos and notes about the grinder that Mike texted me:

The wheels are turned out of “ipa” [*ipe?*] deck material – which he noted does put out a little oil in use. The body receivers are 2"x2"x.120" wall – the inside welds have to be filed down to accept 1-3/4"x1-3/4"x.120" inserts. The outside of the 1-3/4" has to be draw filed or belt sanded enough to slide inside the 2" receivers. Mike



noted that he had to true up the inside of the 2" tubes with a file after welding everything. The bottom of the tracking tube is welded shut and a valve spring dropped in for tension. The mount for rollers and platen is 1/2" aluminum plate. The base is 1/4" plate.

Next up will be finishing his home built power hammer project.

“Since I had the new grinder I had to try it...” so he ground a knife out of some circular saw blade material – with a saber (scandi) grind:



STEVE GODDARD had one more pass-around – a Goddard-and-Son knife from the late 1970's – Steve said it had “ugly tan Micarta on it. Well Monday I bandsawed it off and put some ironwood on it – completely different knife. 440C.”



SÉAMUS (*sp?*) came to the front: “I’m not a bladesmith but I’d like to be... I’ve been stalking your newsletter for about a year-and-a-half now and I finally made it out here.”

He noted that he lives in an apartment and is looking for suggestions for how to start into knifemaking. Wayne Goddard's books were recommended.

Edward noted that the UofO has a craft center – but they have a rule against making weapons including all knives, even kitchen knives. They do have a forge – and you can do blacksmithing classes through the

craftsmen on campus [*when I checked online I saw jewelry but not blacksmithing classes*].

Someone else noted that the Oregon Country Fair holds regular forging get-togethers – if you have a contact in their circle.

Also there are a couple of fairly local folks giving blacksmithing classes that are noted in the “Classes for Knifemaking, etc.” section at the end of the newsletter... and knifemaking classes further afield.

BROME MCCREARY brought up a specialty item: a hay knife. This version is called a “lightening hay knife”. When hay is stacked or bailed it becomes compressed and the easy way to get a chunk free is to use a knife like this to cut out a piece.



Brome noted that you sharpen the little notches that are about 60° to the length of the blade to cut on the push stroke.



Another such tool that Brome brought in was a roof shingle stripper that his father had a blacksmith make decades ago. The design is for popping off shingles (& shakes) and extracting the nails.



Brome told us a story of how he had spent some time in Nicaragua last August working with other scientists on a survey project in the jungle. They drove north of the last main town a couple of hours into an estuary. “We were staying at a remote research station there and we’d work up to 24 hours a day – a lot of sleep deprivation. Working with turtles up to about 150 lbs – on the beach and tracking them. So

we were working in the jungle, but it's a dry jungle... so we're getting ready to cut trail into the jungle and they get their machetes out and they're dull as #r@p... they just whale away at stuff – you can see some of the trees they cut and they're just all hacked to #r@p... they get it done...”

Brome explained how the hardware stores there sell just basics – like hatchet heads that they expect you to haft with whatever wood from the jungle. His group had hatchets and wood planes and lots of machetes – all dull. But they did have 2 sided carborundum stones... but didn't bother using them – thinking their tools were “sharp enough.”

So Brome spent some time sharpening all their tools. He enjoyed just using the carborundum stone as opposed to working in his shop at home where he has power equipment etc. And the locals enjoyed having sharp tools for a change.

Brome also brought back some huge brush blades made by Imacasa – aka Condor. Here's what I think of as a billhook knife. Brome said they call it a hawk's bill.



“I used this in the Coast Range for a day cutting trail – and it does really well because once you get it moving it cuts through stuff... but it's tiresome!” So he's planning on grinding it a bit thinner. You get them for about \$10 but they come completely dull.

He also talked about a “barracuda blade” style that he really liked, but didn't bring an example of.

... and that wrapped up the show-n-tell portion of the meeting. Folks broke up into small groups.

At one point in the evening there had been more discussion about Blade Show West. Apparently attendance was so low that quite a number of table-holders did not come back Sunday. No special hotel rates had been negotiated. It seemed like little (if any) advertising had been done in the Portland area.

And someone chimed in: “Having the address of where the show was on their web site would have helped.” It sounded like Blade will have to really exert themselves to win back some of the top shelf exhibitors if they want to give it another go next year.

Be that as it may...

Have fun 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)
<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/>

Hype-Free Blades
<http://www.hypefreeblades.com/forum>

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

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.

<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>

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

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.

<https://play.google.com/store/apps/details?id=com.pfiks.mobile.heattreaters&hl=en>

My own “Knife Info” has some of my knife musings and cheat sheet charts – plus Oregon and Eugene knife laws:

http://elementalforge.com/tips_notes/

CLASSES FOR KNIFE MAKING, ETC.

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

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 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

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/>

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/>

Bohler Uddeholm – numerous U.S. locations
<http://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>

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>

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.appaltnet.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 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/>

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/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/>

For 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
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 – 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 – 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.