

# EUGENE 5160 CLUB ~ OCTOBER 2015

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

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## OCTOBER MEETING

October 1<sup>st</sup> – 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](mailto:michael@elementalforge.com).

Note from the Thompsons: Please **drive very slowly** down our lane. The maintenance is all ours and be especially slow over the boards with the orange cones beside them. Thanks.



## SEPTEMBER MEETING NOTES

I'm beholden to **JOVE LACHMAN-CURL** and to **MIKE JOHNSTON** for taking photos and notes at the September meeting. I'll mark **Jove's notes and photos in blue** and **Mike's notes and photos in green with a few comments by yours truly**. So yes – there is duplication in this newsletter.

**MIKE JOHNSTON:** Discussed bolsters integral, Prussian blue, discussion of sanding into a bolster, Michael uses mild steel push stick with different radius and leather on one side. and various hard surface sanding block. He commented on the discussion of spray adhesive on stationary sanding blocks the previous month, and says he just uses spring clamps on a sanding block with the ends cut down, I think this is in Wayne's book also, Allows quick change of paper.



Discussion of blade twist in heat treat. Even on 5160 he is clay backing to eliminate warpage. He doesn't clay tang. Micheal bought new forge liner blanket. Maybe better than we're used to. He got a good deal from a ceramics store near him, much cheaper than I've seen. Micheal says his wife doesn't come in shop because of a sewing machine accident where she put his straight needle machine through her thumb nail.

Shop safety: exotic woods were covered. A general reminder of something we've discussed before. Someone mentioned a patient with massive heart attack from Purple Heart. Exotic wood health effects can be looked up on line but any wood fiber in the lungs is a bad idea. The exotics can be nasty on the skin too. Forged in Fire is taking applicants (History Channel TV show), some of the guys have applied.

*Jove also included photos of these pass-arounds from Mike Johnston (yes, Mike really is this prolific):*





Curly maple and black walnut make up the handle with one functional mosaic pin through the tang. In the original photo with all three knives, the blade is hand sanded to 2000 grit. After the hunt, I was not happy with the look (A.D.D. kicking in?) so I used 600 grit paper in a random pattern and applied a mustard finish in a swirled "pattern". To "set" the mustard finish I heated the blade with my hot air gun and applied WD40 a couple times. This leaves a nice durable finish.



A small knife forged from the stub end of a tang that looked large enough for a small knife. The original material was a coil spring.



The blade is 2" from tip to guard. The copper guard is pressure fit on the hidden tang. I silver brazed a threaded extension on the end of the tang. The copper pommel has a nut silver brazed to the back side. A small piece of African Blackwood and the tip of an elk tine were used as the body of the handle. With the handle hollowed out, everything was filled with epoxy and the pommel was screwed down tight. After the fact, I decided to make a peined textured finish on the guard and pommel. The pommel was easy with my smallest ball peen hammer. The guard was another story. I had to make a very small half moon shaped punch with all the edges radius and VERY smooth so I could texture next to the ricasso. It worked, but not the very best way to do this. Think ahead.



I [**MIKE JOHNSTON**] decided to start the festivities since everyone appeared to arrive.

I started with a show and tell on several knives I have been working on since returning from my Alaska trip. ( I probably don't have these in the same order they were presented in the meeting)

This is one of the three knives I took to Alaska for a caribou hunt with my son-in-law and his close friend. They had their pick and this is the one that was left. The blade is 3 1/2" long from a Ford coil spring. The bronze guard is pressure/drive fit to the hidden tang.



I wasn't sure how I was going to finish this blade when I forged it, but it seemed to lend itself to a Scandinavian design. The blade is 5 1/2" long and very thin and flexible. A copper friction fit guard is driven on the hidden tang. The tang has a threaded extension silver brazed on the end so I could thread on the pommel. The handle is a solid piece of African Blackwood (probably not too traditional on a Scandinavian knife) with three functional copper pins through the tang. The pommel was fun. The turned riser/spacer began as a piece of 1/4" copper forged to a basic shape, center drilled, a small bolt run through, chucked in the drill press and turned to the final shape. The thong ring was also forged from the same copper, drilled and hand sanded to shape. A little hand fitting and the thong ring fit through the spacer and through a matching hole in the pommel piece. The back of the pommel hole was counter sunk and the shaft of the thong ring shaft was peined flat and filed smoothed. The nut was silver soldered on the back of the pommel, covering the peined area. Everything was epoxied, pins installed and the pommel threaded on. everything was still in the "square" then shaped. I was informed that it's not a Seax as it has a ricasso.



I finished the Seax style sheath since the meeting for the Kelso show.



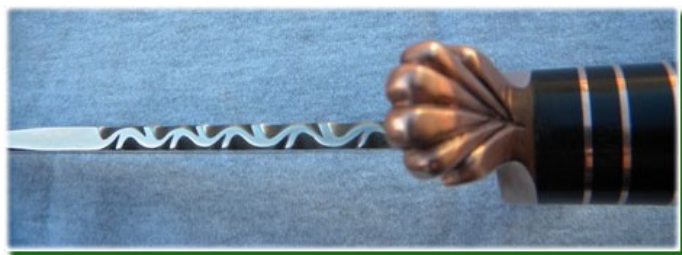
I made one of these integral bolster knives for the April OKCA show and received numerous compliments. The blade and full tapered tang is forged from a Jeep coil spring, leaving the bolster full diameter. The radius on the blade and tang were made with small drum sanders chucked in the drill press. When the radius is matched by hand, the finished grind is made by superglueing finer and finer grit paper onto the sanding drum down to 1000 grit. The scales are hand fit by rough sanding the radius on the wood on the belt sander. To finish the fit, I used a pencil on the metal and rubbed the wood on it to show the high spots on the wood. hand sand, hold up to the light, pencil, repeat...Make sure to start with scales about 1/2" longer than necessary because it will take some trial and error to get a tight fit. After fitting the scales to the tang, I drilled the scales, installed 3 mosaic pins and epoxied the scales in place. A little sanding and polishing later...



I finally got "Big Sister" back out and started working on her again. She has a 15" blade forged from a spring tooth harrow spring (1080 by spark test). I heat treated the blade using the clay back method using Rutland furnace cement. I hand sanded the blade to 2000 grit and etched it in ferric chloride/water mixture several times, working the oxide off with OOOO steel wool between etches. The last couple etches were done with hot vinegar which seems to bring out the details of the hamon a little better. The final etch is rubbed out with Flitz. The guard and pommel are copper with three copper spacers in the African Blackwood handle. I riveted and silver brazed a copper extension on the hidden tang, drilled the pommel and peined the extension.

We had a discussion about why a ring still showed on the pommel even after sanding and buffing. I had used a counter sink on the pommel and peined the extension flat. The consensus was that I should have used a long tapered mill or grinder bit to taper the hole in the pommel rather than a counter sink, which leaves the edge too flat and thin when peined. Now I will have to make the ring a feature on the pommel.

Since I had nothing better to do, I decided to add a little filework on the spine and on the ends of the guard.



*Here's Mike's Big Sister & others at the Kelso show:*



Last I brought out a full tapered tang blade that I had already drilled for pins through the guard. I asked the best way to install a guard. I was told the easiest would have been to leave a steel guard and pin bolsters on each side of the handle. Since I didn't do that, "U" shaped piece would be the only way. I asked about back cutting the guard so there isn't as much to file fit like on a hidden tang. I was told that would be the best way, but it would be hard to match up the pre-drilled holes in the tang with holes in the guard material.

After returning home, I started to work. I ground out a wide channel on both sides of the tapered tang to leave space for epoxy to build up under the scales. I cut a block of brass for the guard. I drilled the pin holes through the side of the guard material and oversize drilled the back of the guard, leaving plenty of material on the top of the guard to keep the guard and spine tight. I cut an undersized slot from the top, a little extra deep leaving the top edges of the guard slightly above the top of the spine. A small notch was ground in the bottom of the tang. A lot of file and fit finally gave me a nice tight fit between the guard and blade. I used a fine tapered diamond rotor grinder bit to taper the pin holes before peining the pins into place. A little silver solder and heat finalized the guard fitting (not enough gap to get solder through to the ricasso).

Six brass pins fit through the tapered tang and local maple burl scales. A little fitting on the scales as the back of the guard and the tang are not 90 degrees. Epoxied scales and pins and peined the pins. I shaped the bottom of the guard with a small sanding drum in the drill press.

Belt sanding and hand sanding finished the job.



Well, almost last.



I bought the makings for a new welding forge from, Western Industrial Ceramics Inc.  
 10725 SW Tualatin-Sherwood Rd  
 Tualatin, Oregon 97062  
 503 692-3770 Ask for Chuck

These guys have just about anything you can ever use for ceramics that get hot. GREAT people to work with, just tell them what you want to do and they will get you what you want. It's less than 20 miles from my house, so I can pick it up on my way to a 5160 Club meeting.

One box of Durablanket, their version of Kaowool, 24sq Ft X2" thick \$53.75  
 One gallon of Silplate Mass 1500, 2732 degrees F claims high flux resistance \$77.55  
 One box (12) 2600 degree soft bricks \$41.40

Enough from me.

**CRAIG MORGAN** passed around a Wayne Goddard folder that he'd refinished.



**CRAIG MORGAN** brought in a Wayne Goddard folder that needed the blade refinished. Wayne had bought the knife back from a customer. Wayne told Craig to use Q-Tips for cleaning. Craig pointed out all the detail work Wayne put in the inside of the knife.



**JOVE LACHMAN-CURL** showed a 7' chef knife, the first knife he will sell. It is going to a friend's friend's wedding in Portland. His mark and bride and groom names & date were hand engraved. It is 1095 edge quenched, with hickory handle and stainless pins.



He showed a hunting knife (1095) he'd clay quenched in brine, and the 5 cracks it made in the blade. Brine is too aggressive for most blades, and unnecessary. Someone suggested it's best to quench in oil, then fast oil, then warm water, then cold water, then brine, only proceeding if it doesn't harden.





Jove showed another tinny hammer he'd made. Good for detail work, and just fun to make.

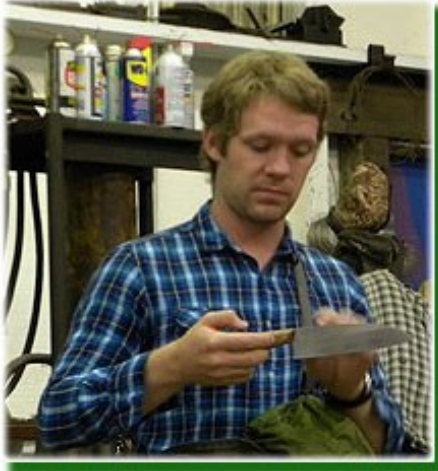
**JOVE LACHMAN-CURL** brought in a couple "soft bricks" he bought from Oregon Industrial Supply, but they did not know what the heat rating was on the bricks.

4.5"X9"X2.5 \$1.09ea

12"X24"X2" \$6.70 ea

Jove later put a torch to one and it started glazing quickly. I took one and put it in my forge and it glazed at about 1900 degrees F. So not good for liners in forge.

Jove showed off a chefs knife he made from 1095 he bought from Jantz. It was edge quenched in 120-130 degree canola oil and has stainless steel pins.



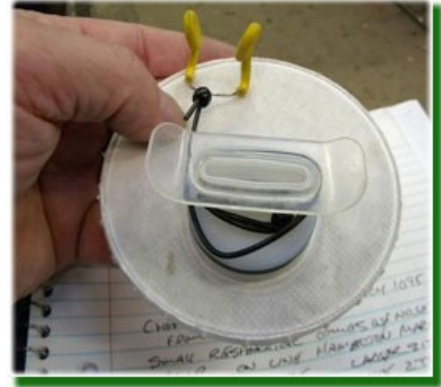
He tried another 1095 chefs knife with clay back quenched in water. LOTS of cracks along the edge.



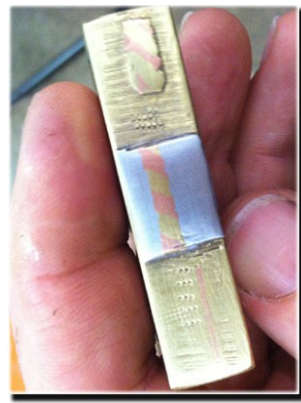
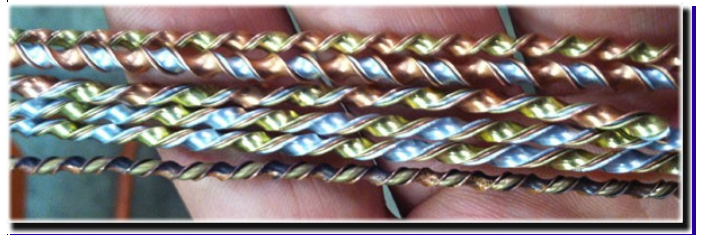
Jove has found tiny hammers to be quite usefull and showed off one of his latest ones.



Jove has been trying a small respirator that he got at on line at Hamilton Marine. He showed off the Junior size that comes with a nose clip and is \$15-\$18. The larger size comes with two filters behind the neck and two tubes around the neck to the mouthpiece.



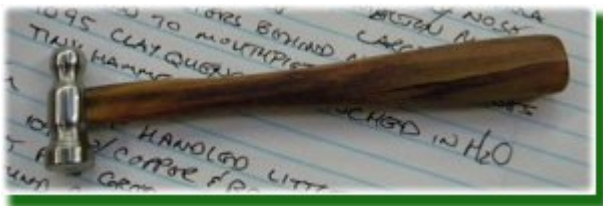
**JIIM JORDAN** showed a tiny hammer O1 head and tulip wood handle. Jim showed some pieces he's be practicing on for inlaying. He engraves a dove tail cut, and hammers a softer metal, brass, copper, silver into the groove. for wider areas he cuts little spikes all over the recessed area, then hammers the soft inlay to bed it in. Knurled face hammer makes it stick better.



The top hammer is Jove's – the bottom hammer is Jim's:



**JIM JORDAN** also brought in a tiny hammer with a tulip wood handle. Two little hammers in one night brought a few laughs.



Jim showed some examples of his metal in metal inlays and explained the processes. For a single line inlay he cuts two grooves in the base metal with a sharp chisel to form a “W” with the outside edges are raised. Round wire is pounded into the groove which also pushes the edges down, holding in the wire.

When inlaying a large area, use the chisel to make small sharp teeth in the middle area and raised edges to grasp the edges of the inlay piece. Jim said to make sure to really whack the inlay piece hard several times with a knurled face hammer or the inlay bounces out.

Another decorative item Jim has been working with is twisting wire. He starts with round copper and wire and runs them through his roller mill to give them an even thickness. He says he holds them together and keeps constant tension on them while twisting to make the nice twist pieces.

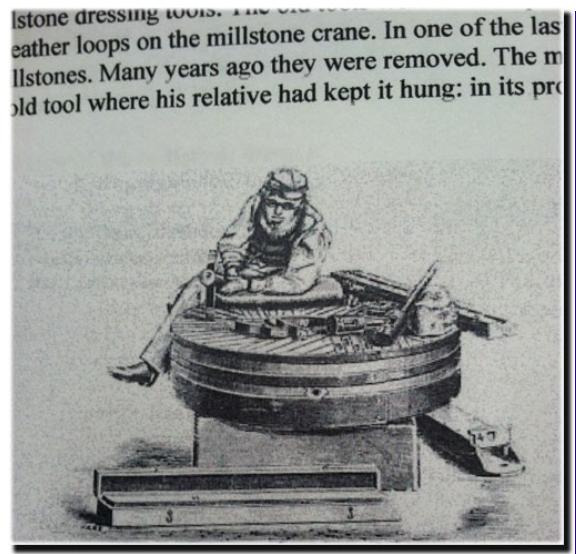


**ERIC LAND** has started making flippers, There was a discussion on bearings and other details. He says the flipper tactical market is huge. No thumb stud needed.

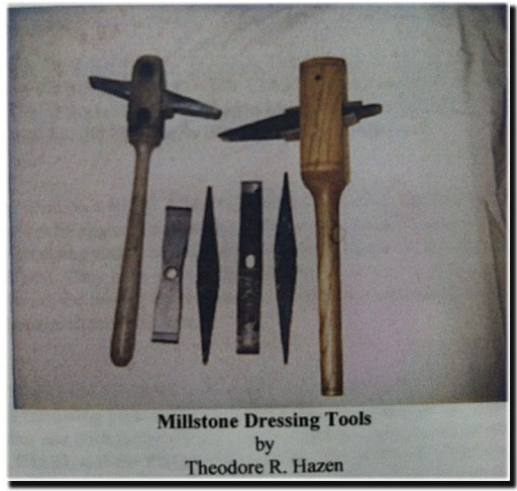
There was a discussion of Ron Lake folders and Bob Terzuola tactical folding knife.

**ERIC LAND** shared numerous cad drawings (copyrighted) of his folding knives that he has been working on in the Flipper type that are based on a gentleman’s slip joint. They were very interesting and I photoed them, but said I would not send them for the publication as they are copyrighted. Eric had not seen the CAD drawings that Ron Lake brought to the 5160 Club meeting several years ago. I recall that Mr. Lake said the drawings were of one of his most purchased folding knives and that we should feel free to make knives from the drawings if we wished to. I will bring some copies to the October meeting.

**MARTIN BRANDT** showed some mill stone picks, and the history of “let me see your mettle” where a truly experienced millstone cutter would have little scars all over the arms from small chips of stone. They used a sand bag to pivot the hammer on and with proof staff of wood. Iron oxide red used on wood paint stick for showing leveling. Many mills flooded every winter. They used apple teeth on the gears. Elm beams. Elm is also a favorite wood for rockers on chairs because it stays straight while rocking.







tang for the pewter to lock in, you must get handle material bone dry. 450 degree is a good temperature for the pewter. Lead free pewter doesn't patina much stays bright, 95-5 solder can be used too.

*Here's a photo of a cast bolster that Martin supplied – and another blade that Martin will add a cast bolster to:*



Marty explained Pine Pitch for old style cutlets cement recipe. Bernard Levine's recipe uses pine Resin, red brick dust. Bee's wax. in equal parts.

Marty showed us all how to do as spark test. Use a coarse stone and dim light, no guard in the way of the spark.

Wrought iron, no bursts and forge at welding heat. Ats34, short red spark. D2 lots of branching. O1 long and spark. 1084 long and branched. 5160, fine bursts not as big as higher carbon. File, very fine many sparks. Mild steel a little branching but not much. Steel in a hard condition like file will give more smaller sparks. Marty explained some techniques of jungle smiths, hot cutting with old leaf spring. Blower made from feather duster type plungers in 2 vertical pipe blower. They use a touch-and-go interrupted water quench.



Marty has been forging blades from old buggy springs. He showed a Parang he'd forged. He was happy to have found some shear steel. A tip was given to look up Geoff Keyes, burners & forges. *Geoff is a knifemaker in Washington. Good guy. He put instructions on-line a few years back for making a burner from hardware store parts (mostly) – Geoff based his burner design on Don Fogg's burner – here's Geoff's notes:* <http://www.bladesmithsforum.com/index.php?showtopic=25573>

Wayne Goddard has often extolled Black Diamond files as 1.3% carbon. TIP Simonds files are common and are 1.2% carbon. Draw at 425°F to 450°F brought the files to 60 HRC. Bronze to purple in color. Nickleson files are now being made in Mexico, some are now case hardened. You can sharpen a file: wash in acetone with wire brush, then acid to sharpen. Muriatic acid. Old blacksmithing book says leave them outside to rust sharpen for a couple weeks.

Marty explained cast in-place pewter bolsters. Correct temperature is when a pine stick make tick sound when dipped. Marty made a mold for the front of the bolster out of cardboard glued up in layers. He puts a hole in the



**MARTIN BRANDT** had an item that he could not identify, but was identified by Jack Burkey as a mill stone pick. This was used to dress the mill stones, cutting grooves in the face of the stones for grinding grain.





Marty said the term “Let me see your metal” came from a grain mill manager interviewing a new stone dresser for a job. The manager would ask to see the stone dresser’s arms to see if they had metal and stone fragments embedded in their arms. If the stone dresser did not have these fragments embedded in their arms, they did not have enough experience and would not get the job.

The mill stone pick was used either with or without a handle with the stone dresser resting his elbow on a sack of grain on the mill stone and bringing the pick down onto the stone.

There was a general discussion about the different types of wood that were used in mills and other industries. The “old technology” of the different woods for different applications in industry was quite intriguing.

A discussion about the carbon content in files was made. Nicholson Black Diamond files were 1.3 % carbon while Simmons files are 1.2%. Marty said he had played with the tempering on these files and found a 425-450 degree temper gave a bronze color and a 60 RcH.

Marty talked about the “Hot Glue” of the past, Cutler’s Resin. He said he uses pitch that is heated to liquid so it can be cleaned, then mixes bees wax and red brick dust to make his cuttler’s resin.

Casting pewter bolsters was Marty’s next demonstration. He showed how he builds up a mold around the blade out of cereal boxes and superglue. Marty said he puts a hole through the blade in the bolster area and a “ring” around the top of the handle to give the pewter to lock into.

Marty cautioned to keep everything very dry so as not to create gas pockets during casting. He said some of these casting imperfections can be corrected with soft solder and flux. If you can’t find a supply of pewter, lead free solder can be substituted.

Marty’s knife for the night was a Parang made of HCOFS (high carbon old farm steel) that he forged and edge quenched.



Marty gave us a demonstration of spark testing steels. He brought samples of known steels and ran them on a coarse grinding wheel. Basically, the higher the carbon content in the steel, the shorter the sparks and the more sparkling blooms or feathers on the ends of the sparks. Since I didn’t get the type of steels for each photo to compare, I just posted one good high carbon steel photo.



Thanks for everyone who attended and those that did not, you were sorely missed.

*And thanks to Jove & Mike for the photos & notes!*



I suppose I should note to any attentive readers (anyone reading this note) that I had a heart attack in early September. I got a couple of stents in a midnight surgery. There is some damage to a heart valve that this old bod may or may not decide to self-repair. So I'm moving a little slow these days and will take a few months to get back up to speed – not that I ever was all that speedy.

Keep Well! (the alternative sucks)

~ ~ ~ Michael Kemp



## FREE DE-CLASSIFIEDS (IN NO PARTICULAR ORDER)

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. It's free – email me at [Michael@ElementalForge.com](mailto:Michael@ElementalForge.com)

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I have some equipment I'm planning to sell - priced to move! Here's the list:

Hay budden 122 lb anvil (\$150)

Chicago 6 x 36 belt/disc sander (\$40)

blast cabinet (\$50)

old coal forge (\$50)

old pedal grinder (\$30)

lots of black walnut burl

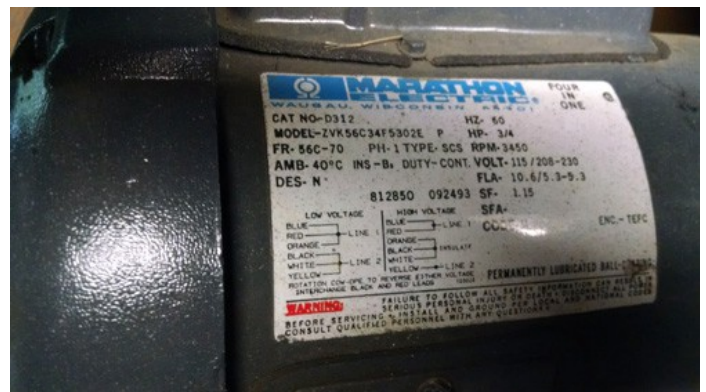
Any interest, call Eric at 541-912-4906.

Eric O. Bergland

*I believe Eric is located near Blue River*

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I am selling my home made forge, knife grinder and chop saw - all work very well it's just time to upgrade. I am asking \$ 400.00 for all three items . It would be a great deal for someone just starting out in the knife making world. The forge has a blower motor and a foot switch for forced air from the bottom. See photos...



Mike Todd  
Cell: 541-968-1971  
In Eugene





## NOTES AND REMINDERS

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The OKCA is taking table applications for the December show – and membership renewals & April show reservations. Details in the September newsletter:

<http://www.oregonknifeclub.org/Newsletter%201509a.pdf>

Mini Show: December 5<sup>th</sup>

The Big Show: April 8<sup>th</sup> (members) 9<sup>th</sup>-10<sup>th</sup> (public)

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*From the forums:* Peter Johnsson is a phenomenal swordsmith. Check out this posting re: his sword “Light From Within” made for the exhibit Deutsches Klingensmuseum: The Sword - Form and Tought: <http://www.bladesmithsforum.com/index.php?showtopic=32228>

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I finally ran down 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.

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There's a new set of epoxies made specifically for bladesmiths, created by a man with a decade of experience in making fishing rod adhesives.

<http://www.bladebond.com/Products.html>

If you try some of this stuff, I'd love to know which product you tried and how you liked it!

Also, the “Technical Data” page on the BladeBond site has informative notes on surface prep for various materials and other epoxy issues.

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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



## 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

Knifedogs Forum

<http://knifedogs.com/forum.php>

Bladesmith's Forum aka Don Fogg Forum

<http://www.bladesmithsforum.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/forums/forum.php>

Julious Griffith – one of our regulars – has a number of Facebook groups designed to help knifemakers and collectors – search Facebook for:

- 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**

Many of the sites linked under “Knife Maker General” have book & video sections.

Our own Wayne Goddard's books are available at Amazon:

<http://www.amazon.com/Wayne-Goddard/e/B001JS9M10>

And you can email Wayne directly for his DVD at [wgoddard44@comcast.net](mailto:wgoddard44@comcast.net)

Verhoeven's Metallurgy For Bladesmiths PDF

<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](http://www.tempil.com/wp-content/plugins/download-monitor/download.php?id=Basic_Guide_to_Ferrous_2010.pdf)

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

[http://elementalforge.com/tips\\_notes/](http://elementalforge.com/tips_notes/)

## **PACIFIC NORTHWEST KNIFE MAKING CLASSES**

Gene Martin offers personal instruction at his shop south of Grants Pass for a daily rate.

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

Michael and Gabriel Bell offer a constant 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.

<http://www.cartercutlery.com/bladesmithing-courses/>

David Lisch is a ABS Master Smith who teaches classes in Seattle. I've heard rave reviews from his students. Lisch is very skilled at blacksmithing in general and bladesmithing in particular.

<http://www.davidlisch.com/Learn.html>

And speaking of the ABS (American Bladesmith Society) – if you are up for traveling a good distance to take classes, check out their “Schools” link:

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

## **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/>

## **KNIFE MAKER GENERAL**

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

Jantz Supply  
<http://www.knifemaking.com>

Texas Knifemaker's Supply  
<http://www.texasknife.com>

USA Knife Maker's Supply  
<http://www.usaknifemaker.com/>

Knife and Gun (K&G)  
<http://www.knifeandgun.com/>

Alpha Knife Supply  
<http://www.alphaknifesupply.com/>

True Grit  
<http://www.trugrit.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://sb-specialty-metals.com/products/knifesteels>

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>

## **EQUIPMENT**

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

Travis Wuertz [Arizona] – premium versatile grinder  
[http://www.twuertz.com/Home\\_Page.php](http://www.twuertz.com/Home_Page.php)

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

AMK [Ohio] – affordable grinder, quick-change between platen & contact wheel  
<http://amktactical.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.html](http://www.polarbearforge.com/grinder_kit.html)

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/>

Quick and Dirty Tool Co. [Auburn, Washington] -  
will build Spencer/Clontz style tire hammers  
<https://www.facebook.com/QDTool>

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](http://www.alaforge.org/Trading_Post.html)

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

## **FORGE & REFRACTORY**

Chile Forge  
<http://www.chileforge.com/>

Mankel Forge  
<http://mankelforge.com/forges.html>

High Temp Tools (scroll down the page for the  
category buttons)  
<http://www.hightemptools.com/supplies-mainpage.html>

Omega – thermocouples & measuring equipment  
<http://www.omega.com/>

Auber – more thermocouples and controllers, etc.  
<http://www.auberins.com>

Hybridburners – home of the venturi T-Rex  
<http://www.hybridburners.com/>

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

Zoeller Forge – low cost venturi & parts: Z Burners  
<http://zoellerforge.com/>

## **BLACKSMITH**

Blacksmith Depot  
<http://www.blacksmithsdepot.com>

Pieh Tool  
<http://www.piehtoolco.com>

Centaur Forge  
<http://www.centaurforge.com>

Quick and Dirty Tool Co.  
<https://www.facebook.com/QDTool>

## **LOGO/ETCHING**

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

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

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

## **OTHER GOODIES**

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

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/>

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

Coyote Steel – misc., 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/>