

Thank you Wayne! Here he is in his home office with a couple of his favorite creations.



## AUGUST MEETING

The 5160 Club will meet the 1<sup>st</sup> of August at 6pm – at Woodcraft of Eugene in the Delta Oaks Shopping Center just off Delta Hwy and Beltline Hwy in North Eugene.

That's right – the very first day of August – so don't let it slide by.

Come to the meeting and share your latest work, ideas, and experience.

We skipped July as the meeting would have been on the 4<sup>th</sup>. Hope you had a great 4th, are enjoying the Summer, and are keeping safe with fire. It looks like it's going to just get drier and drier this year.



## WAYNE'S BEEN AT IT 50 YEARS!

50 years of making knives, encouraging, teaching, writing, and contributing to the knife making community. Here he is – with his **BLADE MAGAZINE CUTLERY HALL OF FAME AWARD**.

Wayne often says these newsletters are what keep 5160 Club going – and I appreciate the recognition. But I say Wayne is the reason the club is a success.

We had a fun hammer-in at Jim Jordan's place in July. There were half a dozen forges, a great lunch, and lots of hammers ringing! Photos and notes follow the June meeting notes.



## JUNE MEETING

The meeting started with general discussion of the upcoming and past hammer-ins at Jim Jordans place.

Wayne announced his induction into the Blade Magazine Cutlery Hall Of Fame to general cheers and applause.

Wayne showed his new Spyderco clipit. Wayne says that he attributes his success with long hours and hard work. "I suggest that all of you just make knives for fun – because it's a hard way to make a living... I *will* brag about one thing: I've made more variety than I think any five knifemakers have made all together... I've made almost 700 folding knives and about 5,000 knives all together. You don't get that by working from 8:00 in the morning and working five days a week. As far as workmanship goes, the more you make the better you get. There's nothing wrong with a working grade knife – they don't all have to be show pieces... I attribute it [recognition and award] to how hard I worked..." Wayne had us state our names and say a little about ourselves. In response to a remark on slip joint knives he added "it's part of the process to make three that don't work to make one that does work..." it's how you learn.

Wayne then introduced the speaker he'd arranged for the meeting: Jerry Davis – to demonstrate electro-chemical etching of the maker's mark on his knives.

Jerry said his background in knives started some years ago when he was a saw filer by trade and



made a few knives from planer blades (probably D2). In February this year he got a wild hair and bought a grinder to get back into it and make a few knives to give to his buddies. And guess what – he "absolutely fell in love with it."

He met Wayne at the OKCA show. Wayne invited him to his shop. Jerry had a great time. That's when Wayne saw Jerry's etched logo on his knives.

Jerry's online research showed that the trend is for makers to etch their mark using a stencil and an electro-etch machine. He found plans and "built a \$150 machine for \$30."

*Jerry later emailed me a link to the plans he used:*  
<http://www.bladeforums.com/forums/showthread.php/805772-DIY-Electro-etcher-under-20>

He did "invest" in having a graphic artist work up the design for his stencil – again based on forum posting recommendations. Jerry & his wife spent several hours on their computer one night coming up with a logo they liked and then sent that to IMG:

<http://img-electromark.com/>  
And emailed back and forth with Patricia until she nailed the design for them. The design and initial run of stencils ran \$56. She keeps the design on file and additional runs will be \$10 for a additional batch of 8. Jerry gets 10 to 14 knives out of each stencil.



Jerry was very happy with the work and feels that Patricia and IMG really know what knifemakers need. She helped Jerry figure out the minimum font size and which font styles would work with this process. Over 3 or 4 days they got the design done.

Jerry asked who among us had used this method. Lynn uses stencils and electro-chemical etch. Wayne uses a similar method but not with a stencil – he uses a combination of bee's wax and casting wax and scratches in his name using a metal scribe with a small ball on the end.

Jerry has two 12 volt transformers: DC to etch the

metal out, then AC to blacken the bottom of the etched metal. The process is fast. Once you are set up you can do an etch in 30 seconds.

Another thing he bought from IMG was the “carbon etching head” itself – it has a reservoir for salt water and you fit a cotton pad on the end held on with an O ring. IMG will sell etchant and cleaner but Jerry just uses salt water to etch and plain water to clean. He takes a couple ounces of water and a dash or two of salt from a table salt shaker.

Wayne noted that the “cleanness” of the transformer current affects the quality of the etch. Transformers from computers or home electronics work great. *I bet you can pick some up from NextStep in west Eugene.*

Jerry said that you really have to have the steel clean. Fingerprints or anything will mess up the mark. Mineral spirits and acetone can be used to remove any oils etc. from the blade before etching.

He also noted that you have to be very careful not to let the salt water get off the stencil or it will etch where you don't want it! Tape off around the stencil to hold the stencil down and keep the salt water from going where you don't want it. The salt water goes through the clear parts of the stencil. Use a little fine sand paper and buffer for cleanup and you've got a sharp maker's mark.

Jerry likes to practice on plain steel before working on a knife:



Here some on the real thing:



And a close up:



So Jerry demonstrated the process a few times with all of us hovering over his shoulders (no pressure):



Then he prompted others give it a try with his setup. He also passed around some cookies his wife insisted he bring in to the group!

After some general discussion and cookie munching Jim Jordan came to the fore and showed what he's been doing with wood carvings.



He's worked out a transfer process where you print out the pattern you want to transfer to a laserjet printer (ink jet won't work). Then you tape it face down on wood, metal, whatever you want to transfer the design to.

The darker the print, the better the transfer. Since it's face down you will want to have the design be a mirror image of what you want.

Put a little lacquer thinner or acetone on a cloth. "You want it almost dry." If the cloth is too damp then the pattern will bleed out. And now rub the cloth on the paper. The solvent seeps through the paper and moves the laserjet ink onto your material. Jim noted that for steel, a sandblasted surface works a little better than a smooth surface for transferring the ink.



And here you see the result: An excellent template to use for carving your pattern:



I didn't get a decent shot of the carvings Jim has been working on – so just trust me – they are impressive!

So with this method – any high contrast pattern you create or scan into a computer and print on a laserjet printer can become a template.



You could use this for an engraving or inlay pattern.

Jim intends to try this process wrapping the pattern around a knife handle.

Next up was Lynn Moore, sharing the knife he finished at the hammer-in at his place back in February.

*I was not there when Lynn demoed his method of installing dovetailed scales on a knife handle, so I'll do my best to relay his description of the process.*

Lynn said it's important to have everything perfectly flat before starting the dovetail assembly. If you have to do any more sanding of surfaces you will create gaps between the pieces.



Lynn gets the forward bolsters set up with matching bevels and with the pin holes drilled through. The other holes are drilled in the tang itself but not in the tail bolsters or scales.

For this knife he used blind pins for the scales.

The next step is to fit up the scales. The scales are thicker and wider than needed at this point. Once the scales are fitted to the front bolster he drills the blind pin holes 3/4 of the way through the scales to get them set in so they won't move.

Then he shapes up the profile for the back end of the knife. Lynn warned not to get the scales flipped backwards at this point (from personal experience)!

Now is the time to fit up the tail bolsters nice and

tight. Once you are happy with the fit, then you drill the pin holes.

In this knife he has a red liner between the metal and the mammoth ivory, so you have to fit in the liner as you go along.

Lynn likes to make the pins from the same material as the bolsters, so he saved some of the bolster steel and made pins from that. He cut up a 1/4"x1/4" square rod then rounded it down on the belt grinder. The pins need to be just barely small enough to go through the holes – but you have some leeway since you will be peening the ends. This process makes the pin's edge disappear in the bolster.

To grind both the bolster and the scale to the same angle he makes sure the table on his grinder is at 90°. Then he has a block cut to 30° that he clamps onto the table and uses as a guide for grinding the bolsters. You can use a trial pin to join the bolsters together (without the tang) and that gives you a really good sense of whether you are getting your angles right.

Then you grind the matching bevel on the scales by using the same jig and grinding from the back. Since you have not drilled any holes in the scale you have some leeway in length when you are getting the angle to correctly match the bolster.

*If I understood right:* next you grind the tail angle on the scales and make sure they are matched. And then grind the tail bolsters and fit to match the scale, and finally drill the tail bolsters.

Lynn and Wayne both commented that 45° is too sharp an angle and is prone to chipping any delicate scale materials.

I was next in the front with a dagger I've been working on (off and on) for over a year. It was *supposed* to get done for last year's Bamboo Handle Knife Contest.

I noted that I'd put my mark in the blade using a method that I demoed years ago: Use a product called Blue Press-N-Peel which is a resin coated plastic that you feed through a laserjet printer. Print your design on the resin side in mirror image.



Anything that prints black can be transferred to the blade if you heat and burnish it *just right*. It's a finicky process getting a good transfer. Then I paint a safety zone around the resin with nail polish... build a modeling clay dam around that... and fill the dam with a solution of ferric chloride. It's a pickier process than the commercially made stencils

but it gives me more design freedom.

Here's a photo of the dagger:



Marin Brandt had some spare sample bottles he winds up with from work, which he passed around to anyone who wanted one or two.

Mike Johnston relayed his experience at this year's Blade Show in Atlanta. "For any of you who haven't – you should." That's Mike's advice about going to the show. He visited family in the area while attending the show. "I truly don't believe they have as many individual knife makers in their show as in the OKCA show" but because of all the commercial booths and knife world characters and being a big big show: it was well worth it. Legends like Vallotton (who talked to our club September 2011), Fowler, Harsey (5160 Club September 2010) are regulars – as are the international buyers that the legends draw in. I gathered that the ABS show is organized into areas for ABS, particular clubs, so forth.



When Mike was talking to Ed Fowler the subject of Bowie knives came up. Apparently Ed Fowler and Wayne Goddard have a running “conversation” about what a “real” Bowie knife is.

*Is it the knife Bowie had at the Alamo – and what was that knife shaped like? Was it the knife he had at the Sandbar Fight – and what was that knife shaped like? Now I'm rather fond of Wayne but I think I'd be on his side of the argument regardless of that fact. It was the Sandbar*

*Fight that kicked off the reputations of Bowie and his knife. And from what I've read that knife was essentially a contemporary guard-less butcher knife.*

Wayne got up and displayed an array of his interpretations of various Bowie Knife styles. *What I would call a Sheffield, a Western, and a Sandbar aka Forrest.*



Wayne is shown here at the meeting, holding his version of a Forrest style Bowie knife. “This” said Wayne “is what James Bowie raised hell with.” Wayne noted the similarity of this shape to a Japanese Tanto (one of the ones w/out a tsuba guard)... and to a frontier trader's scalping knife.

Wayne walked us through the design of his various Bowies – and passed one around while discussing the process that Devin Thomas used to made the Mokume Gane pommel cap. Wayne also described how he silver brazed a nut on it and fixed it to a jointed tang.

We requested another look at Wayne's Hall of Fame Award - there were cheers and applause!

And with that the meeting broke up and we wandered into the night.



## JULY HAMMER-IN

It's safe to say that everyone who attended had fun at the hammer-in! Jim Jordan and his family were (once again) wonderful hosts for the event. There were two awnings set up in the field for shade and the rest of us set up our forges around the edges under the shade of the overhanging trees. There were about a half dozen forges – two of which were coal. I saw everything in progress from a RR spike knife to hunters to a Kukri inspired blade to a work in process of forge welded steels side-by-side like a Japanese Kasumi knife. The Jordans provided a wonderful spread for lunch – bean salad, potato salad, chips, soda, and hamburgers straight off the grill! We went on until late afternoon when the forges were shut down to cool while folks visited and packed up. A great day!

When I got there Blair was set up and going – here he's watching his son's friend shaping a knife point.



Lots of folks liked watching John Emmerling

and Dean Crumpacker with their coal forge setup – Dean did a simple forge welding of two steels side-by-side. Here's a couple of John working at the forge:





Here's Keith Johnson working at my new forge – getting something beaten into shape.



Here I am putting a point on it.



Did I mention we had a great lunch?



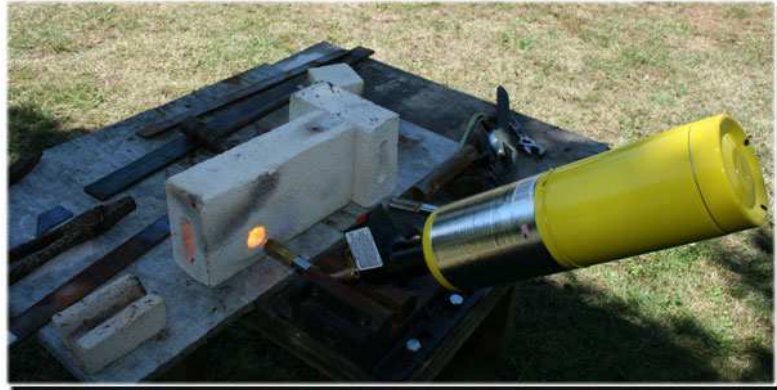
When I checked back in at Blair's tent – that young whippersnapper had forged a NICE little Kukri.

It doesn't show up in the photo, but it is truly forged-to-shape.



This was his first forged blade. He brought along some stock removal blades to show. I do believe we have a youngster who's been bitten by the bug!

It was fun to compare the various forges – all different and all functional. Here's a one-brick forge with another brick that can be a 1/2 brick extension.



Here's Dean starting to shape that side-by-side Kasumi style forge welded piece:



And our host's coil-o-Kaowool forge (around a ceramic pipe, I think).



And here's Walter Hardcastle with his forge. Note the homemade venturi he and Dave Rider put together.

...which was quite adequate for the job!





Hopefully any guests who wanted to bang on metal got a shot with coal or propane forge.



And that's my set of Hammer-In photos. Somehow I missed getting a shot of Marty's forge?!?



## MICHAEL'S NOTES

A couple of folks at the hammer-in asked about the pyrometer and display I put on my new forge. The display runs on a 9v battery (fits with my goal for a portable forge that doesn't require electricity). I got them from Auber Instruments: <http://www.auberins.com> Search for "THS-192" - I got the K type thermocouple, ceramic probe and sheath - which tops out around 2370°F - and that runs about \$95 when you add in shipping. Some folks forge weld above that temperature, so take that into consideration.

I ordered my insulation from High Temp Tools: <http://www.hightemptools.com/supplies-mainpage.html>

Here's my Forge WIP posting on the Fogg forum: <http://forums.dfoggnives.com/index.php?showtopic=26729>

On another tack:

I noted in the last newsletter that simple carbon steel goes non-magnetic at 1414°F regardless of the carbon content. What I've learned since is that this is not necessarily the temperature where it returns to magnetic. And you can use the transition back to magnetic to gauge when austenite has transformed into another phase (pearlite, bainite, or martensite). When Kevin Cashen told me that on one of the forums I had to do some testing.

Having an accurate temperature reading inside my new forge let me do some real testing of these "Curie Points." It also helps that my new vertical forge has much more even heating than my old forge.

I heated a chunk of steel up and - presto - between 1400°F and 1420°F it went non-magnetic. At this temperature it would not transform into austenite. I cooled it back to 1400°F - presto again - it was magnetic. Back up to 1420°F - non-magnetic. I had the feeling I could do this all day.

But then I heated it up to 1600°F (a little high for austenizing, but it was mystery steel & I wanted to be sure) and soaked it there for 5 minutes. Then I let it cool inside the forge in a controlled manner:

1400°F - still non-magnetic?!

1000°F - non-magnetic - losing the red glow.

900°F - non-magnetic - looks black to me.

800°F - non-magnetic (by this time I had slowed the cooling down to 2 or 3 seconds per 1°F).

775°F - a hint of magnetism.

750°F - magnetic.

... so my take-away is that on heating you can use a magnet to see when you are approaching austenizing temperature - and on cooling a magnet lets you know when the steel actually changes phase. That's useful when doing thermal cycling such as normalizing.



## WEBSITE LINKS

Here's something new for the newsletter: links to useful websites! Send me a note if you have a favorite site to add or have comments about a site I've posted.

### 5160 CLUB

5160 Club members and presenters, past and present: Send me a note if you have a web site you'd like listed in future newsletters. If you want to be listed w/out a web site I can post your email &/or phone number. A sentence or two on your specialty or what you offer would be good as well.

### FORUMS

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

Don Fogg  
<http://forums.dfogknives.com/>

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

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

Blade  
<http://www.bladeforums.com/forums/forum.php>

### GENERAL TOOLS & SUPPLIES

Woodcraft Eugene – special thanks to Joe & the crew! 1052 Green Acres Rd Eugene, OR 97408 (Delta Oaks Shopping Center) 541 685-0677  
<http://www.woodcraft.com/stores/store.aspx?id=515>

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

Grainger  
<http://www.grainger.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/>

### KNIFE STEEL SOURCES

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

Niagara Specialty Metals  
<http://www.nsm-ny.com> (click Products/Knife Steels)

SB Specialty Metals  
<http://sb-specialty-metals.com/products/knifesteels>

Bohler Uddeholm  
<http://www.bucorp.com/knives.htm>

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

### 2X72 BELT GRINDERS

Beaumont (KMG) – the industry standard  
<http://www.beaumontmetalworks.com/shop/>

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

Coote – affordable, reliable – you supply the motor  
<http://www.cootebeltgrinder.com/>

Grinder-In-A-Box – low cost – assembly required  
[http://www.polarbearforge.com/grinder\\_kit.html](http://www.polarbearforge.com/grinder_kit.html)

Wayne Coe – grinders, motors, VFDs, etc.  
<http://www.waynecoeartistblacksmith.com>

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

True Grit – grinder belts  
<http://www.trugrit.com>

## **FORGE & REFRACTORY**

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

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

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

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

## **BLACKSMITH**

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

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

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

## **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/>

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>



Keep Well & bring your show-and-tell to the meeting!

Your Scribe ~ ~ ~ Michael Kemp