

# THE HOT IRON SPARKLE

\* Newsletter of the North Carolina ABANA Affiliate \*

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First Quarter 2012



Andy and Jennifer Phillips at the 2011 Dixie Classic Fair in Winston-Salem, NC

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## A Message from Our President



*Cindy Alexander*

It's hard to believe that another year has passed, 2011 was busy one for our chapter. Thanks to all for their contributions to the chapter during the year.

The chapter held our 4th quarter meeting at Rodger Barbour's shop. Jeff Salter was our demonstrator holding the attention of the crowd with his skills. Lunch was cooked by Jim Kennady and me, with no one leaving hungry. Thanks to the Rodger for hosting us.

We held our elections for Vice President with ballots being sent to the members. When the ballots were counted at the meeting Garret Dunn was elected to remain the chapter's vice president. Congratulations Garret!

Jim Kennady and I continue to look at insurance for the chapter. We will update the Board and membership as new insurance is chosen.

Our 1st quarter meeting will be the 9th (WOW) annual meeting at Dean Curfman's shop in Morganton on March 17 at 9:00 am. Dean usually has vendors there and we'll have lunch catered by Firehouse Caterers. Hope to see you there it's always a great time!

Forge safely,  
Cindy

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## Secretary's Report

### 4<sup>th</sup> Quarter 2011

The meeting of the NC ABANA chapter was held at the chapter meeting at Rodger Barbour's shop in Clayton, NC on December 3rd, 2011. The meeting was led by President, Cindy Alexander.

Garret Dunn was announced as Vice President. He will serve another two year term.

The North Carolina State Fair and the Dixie Classic Fair were successful this year. The State Fair raised around \$2,000 for the chapter.

The Southern Blacksmithing Association Conference, which took place in Madison, GA, also raised around \$1,000 for the chapter.

An announcement was made regarding Jennifer Phillips as the new chapter secretary. Please direct all correspondence as it relates to chapter membership to Jennifer Phillips, 97 Trinity Ridge Lane, Banner Elk, NC 28604. Email is still northcarolina.abana@gmail.com.

Randy Stoltz is the new "Hot Iron Sparkle" editor. Please send photos and articles to Randy Stoltz, 122 W. Skyhawk Drive, Cary, NC 27513-2812. Email is rhstoltz@gmail.com.

As a reminder, safety glasses should be worn at all local meetings and especially during photo opportunities.

Cindy, along with other board members, is looking into insurance for the chapter. The current policy will expire in April 2012.



NC ABANA would like to thank Marty Lyon for six years of outstanding service as secretary and newsletter editor. Marty was recognized with a plaque and will still continue to be a part of NC ABANA (Photo, left, of Marty receiving plaque from Cindy Alexander by Brian Nalley).

### 1<sup>st</sup> Quarter 2012

**Date:** March 17<sup>th</sup>, 2012

**Location:** Oak Hill Iron, Morganton, NC

#### Attendees:

Cindy Alexander, President  
 Garret Dunn, Vice President  
 Jennifer Phillips, Secretary  
 Randy Stoltz, - Triangle Blacksmith Guild  
 Marshall Swaringen, - Triad Area Blacksmiths  
 Steve Barringer, - Southern Foothills Blacksmiths  
 Paul Garret, - Brasstown Blacksmiths  
 Lyle Wheeler, - Wilkes Teaching Forge

**Randy Stoltz called the meeting to order. Motion seconded by Lyle Wheeler.**

**Insurance for NC ABANA** - Cindy Alexander and Jim Kennady are working on getting quotes for a new insurance provider for NC ABANA. Amos Tucker is also getting a quote from his agent for NC ABANA. A decision on a new provider is needed by May (due to the expiration of our current policy). A meeting will be held on the NC ABANA Board Google Group to determine selection.

Insurance policies that are currently being considered include liability for the chapter and for board members. The policy will also cover local chapter meetings but not demonstrators going out to non-NCABANA events to demonstrate.

**Student Blacksmith Chapter** - John Matthews, a new member to NC ABANA, would like to run a student blacksmith chapter near Blue Ridge Community College where he is attending. Cindy Alexander and Garret Dunn will put together details for a student chapter (which have now already posted to NC ABANA Board Google Group).

Suggestions for student chapter rules and regulations include at least one student needs to be a member of NC ABANA and no membership or a small membership fee will be required.

Marshall Swaringen also stated that there are four or five other schools in North Carolina that would like to install blacksmithing programs.

Marshall Swaringen motioned to develop a student chapter program with any fees that might apply. Randy Stoltz seconded. The motion passed with a board vote.

**Asheville Chapter** - Garret Dunn is working with David Cain to start a local chapter in the Asheville area.

**Email** - Cindy Alexander suggested that email be the main communication for board topics between chapter meetings and that the NC ABANA Board Google Group can be used for voting on issues.

**Elections for 2012** - Elections will be held in 2012 for president and treasurer for the 2013-2014 terms. Nominations will take place at the second and third quarter meetings. Ballots will be mailed after the third quarter meeting and counted. An announcement will take place at the fourth quarter meeting with the results.

Cindy Alexander will not be running for president this next term.

**Chapter By-Law Changes** - Lyle Wheeler suggests that the by-laws be revisited for corrections and improvements. An ad hoc committee was created to handle these revisions; members include Lyle Wheeler, Randy Stoltz, and Garret Dunn. Communication is to be handled as much online via email and the NC ABANA Board Google Group as possible.

**State Fair Concerns** - Lyle Wheeler brought up concerns mentioned to him about the State Fair in Raleigh regarding the management at the blacksmithing section. Lyle recommends a boot camp for demonstrators to attain a certificate. Motion did not come up for vote.

Lyle Wheeler also suggested that the prices on displayed items needed to be representative of the blacksmith's skill level. Motion was generally agreed upon but not voted on.

**Marshall Swaringen moved for the meeting to adjourn.** Seconded by Garret Dunn. Motion passed.

## Treasurer's Report

	<b>Deposits</b>	<b>Expenses</b>	<b>Balance</b>
Checking	\$3,034.00	\$2,140.35	\$7,395.78
Savings	\$1,022.00	\$0.00	\$4,414.51



## Vice-President's Report

To all my blacksmithing buddies and all you future buddies that I just don't know very well yet, I (your absentee VP) send greetings. I have trotted off to Africa on a volunteer assignment for 6 months and have just completed the first month of it. Naturally my top priority is to check out the Blacksmithing scene here in Nairobi and I have just made a beginning of that. If you are interested on the report check out my online Blog at

<http://garretinkenya.blogspot.com/>.

Kind Regards and Hit it Hard  
Garret

## Regional Group Reports

### **BOLTS May Meeting at John Sykes Shop**

For those of you who were not there, you missed a great meet. John gave a great demonstration on making his signature wizards as well as how to easily lay out a set of hand rails for steps. He also showed us how to twist a 1/2 square bar for pickets on his picket machine, how to make scrolls on his scrolling machine, and he even gave lessons in mig welding. Taking advantage of all these neat tools, we made a quick plant stand and put it in the drawing which Amy Hinson won. After that we all went up to John and Faye's house for our first "quilt turning". This is where quilts you have made are laid out across a bed and one by one you turn them back to reveal the next quilt. Each quilt is explained as you do this. We were all very impressed with Faye's designs and with John's knowledge of how each quilt was made. After the quilt turning were we treated by John and Faye to the best meal we have had yet at a BOLTS meet. Barbequed chicken drumets, bow-tie pasta salad, good Ole butter beans, yeast rolls, and for desert turtle cake. Well it just knocked me right off my no carb diet. With a meal like this, John and Faye have set the bar very high for all our future meetings.

Another treat was the demonstration given by Faye on her quilting machine. This is a very large industrial yet elegant sewing machine that allows you to connect the sandwiched layers of the top, bottom, and cotton like material in between. What usually would take a room full of women hours to do, this machine will knock out in minutes. Very fancy designs can be made by simply moving the head of the machine around the quilt which is suspended between rollers. The head actually glides over the material with no force at all. It was not hard to use at all. That being said, we still manage to break it. But John being the mechanical genius that he is was able to fix it.

After the feast, we went back down to John's shop and had a drawing for the plant stand we made as well as a railroad plate and railroad spikes donated by Sam Tutt, and some 1/2 bar stock and coil spring pieces donated by John. We then made a 3 legged trivet which included a forge weld, use of a cone mandrel, and hand forged rivets through hand punched holes.

Pictures of the trivet and plant stand are on the gallery page of our website. The link is:

[http://www.theblacksmithsanvil.com/gView/gViewer/gallery.php?lib=lib\\_006](http://www.theblacksmithsanvil.com/gView/gViewer/gallery.php?lib=lib_006)

Steps on how to make John's wizard are posted as well under the clinkers and Ash page of our website [www.theblacksmithsanvil.com](http://www.theblacksmithsanvil.com).

We also decided that next May's BOLTS meet will be at the Gathering of Smiths event in Virginia hosted by the Tide Water Blacksmiths Guild. Kent Flowers attended this year's event and gave us a description of how great it was.

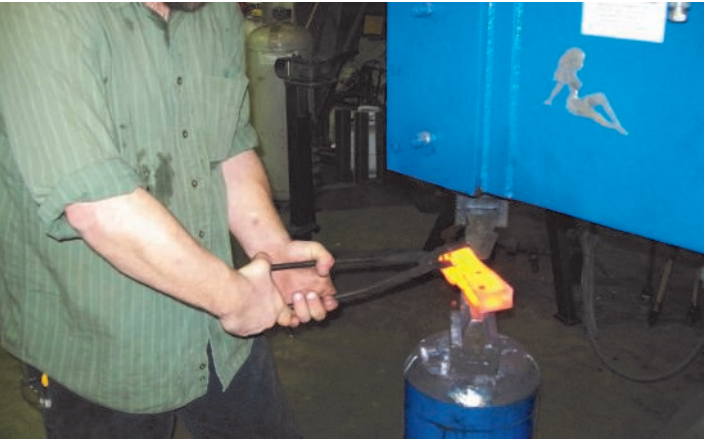
July's BOLTS meet will be cancelled due to heat.

It was also discussed that a meeting might take place at Bentonville, where Larry Laboda's town is set up, and correlate this with one of Bentonville's living history weekends. I will contact Larry about this.

### **Southern Foothills Blacksmiths**

By Ray Clontz

We had a good turnout for the January meeting. Everyone seemed to have a project to work on. Avery Pierce brought 2 visitors that helped him slit and drift a large piece of high carbon steel that he later drew out on one of the BIGBLU air hammers to make an axe. He has brought some of the axes he makes to the meeting. He makes a really good looking axe. He even makes the handles. Gene Pease got in Steve's scrap pile and found enough scrap to make a portable post vise stand. David Stitt forged some nice bottle openers. David Trompower used the Beverly shear to cut out a disc that he forged into dish shape on one of Steve's swage blocks for a dipper he was making. As usual, there was a lot of discussions going on about projects we were working on in our home shops- always exchanging ideas and tips on jigs and fixtures.



### **Triangle Blacksmiths Guild**

By Randy H. Stoltz

The December meeting of the Triangle area blacksmiths coincided with the 4th Quarter statewide meeting at Roger Barbour's shop in Clayton, NC. There is a report and photos on the state meeting in this newsletter.

The February meeting of the Triangle blacksmiths was held at Allan Green's shop in Hillsborough, NC. About 24 people came out to this meeting where I demonstrated using Allan's new tire hammer. Allan had hosted a tire hammer build with Clay Spencer at his shop in December. There is an article in this newsletter with details and photos of the workshop where they built 19 hammers. Since Allan had this new hammer and a lot of members had never used a power hammer, the agenda for this meeting was obvious. So we fired up the forge and I gave a brief demonstration on how to draw using the flat dies and how not to hurt yourself. Then I turned the forge over to the members to get some hands on experience. You can watch someone do something many times but to learn it you need to do it yourself. As usual, Allan and his wife fed us a great lunch. Following lunch we had open forging session with multiple forges going so the newer and beginning members could get some forge time with guidance from more experienced smiths.

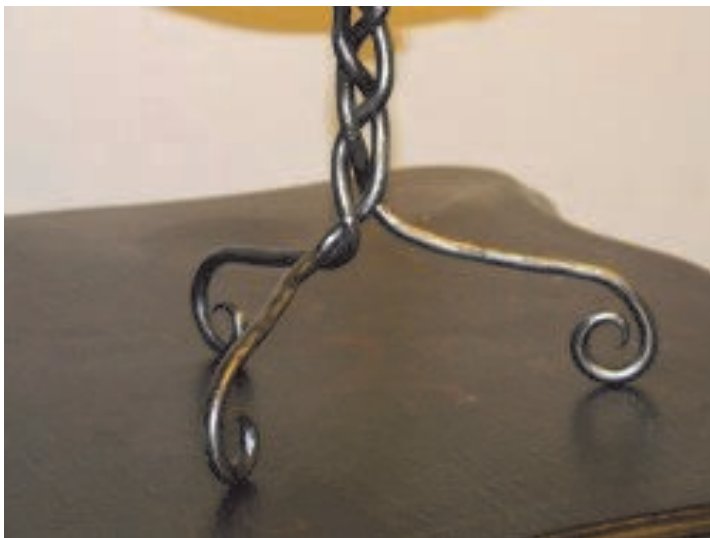
The April meeting of the Triangle blacksmiths was held at Parks low's shop in Apex, NC. Approximately 15 people attended and watched as Parks demonstrated forging techniques and tips for making things with railroad spikes.

The June meeting of the Triangle blacksmiths was held at Eric Campbell's shop south of Raleigh, NC. Eric demonstrated making some tools and punches. Following a cookout / pot luck lunch we fired up multiple forges for open forging. We have had a number of new members just getting started join recently and the open forging session is a good way for them to get some hands on experience.

# Jewelry Tree

By Joshua Snead

"I really enjoyed demonstrating at the 2011 NC State Fair. I even sold my first few pieces there. One day I decided to experiment with braiding metal with 3 pieces of 1/4" round stock. It turned out pretty neat and, at the suggestion of a much better smith than myself, I decided to make it into a jewelry tree. The final product came out well, but it did not sell. Later I realized at least one reason why: at 12" it was too short to hang long necklaces. To fix this problem I added two pieces, a 6" base and a plate to hold rings and connect the base to the top. I used the same braiding technique for the base so it would match. The plate was triangular and slightly dished with 4 holes drilled for joinery, one hole for the three legs of the top piece and one in the center for the base. I attached the top with rivets and the base with a tenon, with some difficulty, and finally filled any loose areas with epoxy (I did not have access to a welder at the time). For the finish I used a wire brush attachment on my angle grinder to give it a bare metal look and sprayed on a few coats of clear paint. I also added 3 s-hooks in different sizes so it could hold a little more jewelry. My only complaint is that the base came out slightly crooked. The tree has found a good home with a friend of mine where I know it will be appreciated and well used."



## 4 Days, 20 Blacksmiths, 19 hammers Built

Or... My first tire hammer build with Clay Spencer

By Dave Tosi  
AKA Harmless Dave  
Green Bear Forge

NC ABANA email system was responsible for my spending December 8-11 at Woodcrest Farm in Hillsborough fabricating and assembling tire hammers with Clay Spencer and 19 other blacksmiths. Allan Green was a wonderful host for the gathering at his farm.

This all started back at the end of the summer. Some smiths started talking about making a tire hammer and



pretty soon Walt Beckwith and Allan Green had organized the first NC tire hammer build (*Editor's note: NC ABANA had a previous Tire Hammer workshop with Clay Spencer January 2007 at Roger Barbour's shop in Clayton, NC*). We started with many interested, but 19 smiths actually committed to put in a deposit for the materials for the build. Now we were all committed (maybe we should have been committed) to actually building. During the fall, Walt Beckwith organized material acquisition, finances, location, and many other details that most of us never even knew about. Thanks, Walt.

We had people from NC, FL, SC, KY, and AL attending. It was great to meet all the other smiths.

There were 3 Saturdays of fabricating many small parts that would be assembled over the build weekend.



Some of the smiths also obtained materials and made some of the parts at their home shop. A big thanks goes to Dave (?) from KY who found – AND delivered the 6.5-7.5 inch dia. Steel rounds used for the anvil base. All of these parts were accumulated at Woodcrest Farm and readied for the build. We did use a lot of Allan's barn to store parts. He is probably glad to have us take our hammers home.



Thursday, December 8th, I hopped in my truck and drove to Hillsborough. Upon arrival, I found many smiths already there and working hard. It was clear and sunny, but a cool wind blew, especially near the barn door in the shade. I was immediately put to work drilling holes in the corners of the 24" x 24" x 3/4" thick base plates. Kent and I developed a good system and ripped right through all 19 plates in about 3 hours. The last plate was some kind of armor plate and was extremely tough to drill. During the afternoon, I was involved in many other aspects of the hammer. I broke down tires, adjusted wheels bearing and assembled toggle arms. Most of us worked to about 6:00 and then headed to our rooms for the night.



Friday was again sunny and cool. I started and was involved in and hearing to the sound of welding and grinding. Kent and I also started to make noise drilling oil holes in along the moving arms. After developing a jig to hold the arm at the correct angle, things went smoothly. After that, we assembled the arms to the pivot blocks. Then the 7/8" nuts had to be thread chased to remove the weld spatter. Some were tougher than other. I was helping Garrett melt and pour lead for the hammer heads. Each had needed about 25-30 pounds of lead and 20-25 pounds of scrap steel. Each head was weighed as poured to measure at 50 pounds. We had some excitement when a piece of lead that was thought to be dry was put in the metal pot and exploded. It was like a small volcano. Apparently the lead chunk had a crack in it and there was some water in there. It made a mess, but everyone around had n safety equipment and no one was hurt. Be careful with hot lead! By about 7:00, I was very tired and headed back to my room. Skipping dinner, I crashed and was asleep very quickly.

Saturday dawned and was a little warmer and

less windy. Lat and I spent a good portion of the day braking down tires so the pivot plate could be welded to the rim without melt the tire. After the plate was welded, we had to smear tire sealer around the beads and then blow them up and set to 60psi. It was quite a work out as the tire bead breaker was loose and wobbly, but worked well was held stable. We had only 2 defective tires. One was able to be fixed and the other had to be replaced on Sunday morning. We had many welders going continuously. Someone mentioned that one of the welders laid about 80 yards of bead. Wow! The welds all had the stack of nickels look. Great job guys and thanks for the donation of those great machines.

About mid-day Saturday, some of us were concerned about actually finishing the 19 hammers. When Clay was asked if we were on schedule, he replied. "Yes, we are on a schedule, but I don't know whose!" It was one of the most common questions he gets. However, it all started to come together that afternoon and by evening, we were already to have the hammers tested and blessed by Clay. All of us felt satisfied as we left Saturday evening.



Sunday morning, we replace the one defective tire and started checking all the units for safety and completeness. Clay checked our checking and each unit was tried for function. They all worked the first time – Bam, Bam, Bam, Bam!! We started to clean the area and load the hammers. Using Allan's JD tractor, loading went quite well. It took us about 15-20 minutes per unit. Some loaded them in horizontally and other vertically. Mine was a vertical loaded and was a little more difficult but OK. Everybody helped load even after their own was loaded.

Overall, this was a fantastic event. If the build chance is offered and you want a tire forging hammer, go for it. The fellowship and the knowledge acquired were terrific. Thanks go to all as everyone contributed. Thanks all you guys. I would be remiss if I didn't mention Allan's wife Chrissie who made the most wonderful lunches for us each day. The food was great around her table. Thanks.

For more pictures of the event, go to the Woodcrest Farm website. Allan has posted our pictures there. <http://www.woodcrestfarmnc.com> . Photos for this article were by Terrell Nixon.

In addition to this newsletter, NC ABANA has a website - [www.ncabana.org](http://www.ncabana.org) and a Google Email Group (open to NC ABANA members only). On the website you will find the current meeting schedule and other calendar information. The Google Group is a forum where members ask questions, list tools and supplies for sale, publicize upcoming events, and discuss various blacksmithing topics. We also post request for people who are looking for a blacksmith to demonstrate or make a piece on commission. If you are not a member of the NC ABANA Google group send an and email to Jennifer Phillips at [northcarolina.abana@gmail.com](mailto:northcarolina.abana@gmail.com).

## 2011 Dixie Classic Fair

By Marshall Swaringen

Where do we start! The weather was great every day. Lots of people were visiting the Yesterday Village and ring of the anvil always brings them to our little corner of the fair. We had more than 30 different demonstrators from eleven years old to --- well much older entertaining the crowds. Bob Ray was in town between jobs and was able to join us for the Friday night chicken stew.

The demonstrations covered many items. Just to name a few: leaves, hooks of all kinds, snakes, letter openers, poker and shovels, candle holders, turtles and many more items.

Hooks of all kinds leads to the making of fish hooks from quarter inch stock and about twelve to fifteen inch long. These hooks were the lead in for a round of storytelling by Keith Roberts. It is a known fact that fishermen cannot estimate the size of a fish. But now it is also known that a huge fish hooks makes a blacksmith think he is a fisherman. If you want to hear the story, you will have to attend the 2012 Dixie Classic Fair. Or maybe Keith can be talked into telling the story at the second quarter state meeting.

Andy and Jennifer Phillips stopped by with some Big Blue hammers and did a little forging with Jennifer doing the striking with a big hammer. Easy to tell the man that works in a shop full of Big Blue hammers, he always seems to be working with big stock. After watching Jennifer swing that big hammer, I hope Andy can duck fast!

The time at the fair is a chance to learn some new tricks and see different ways to do the same item. But the best part about our time at the fair is the fellowship with other blacksmiths, their families, and our friends that come back to see us year after year. Some come by to chat, do a little hammering, or to have a bite to eat.

The eating part is very important at our shop. Some of the meals that we cooked over the campfire were:

- Vegetable beef soup
- Pork BBQ, rolls, and slaw
- Venison roast, marinated in home muscadine wine, and served with potatoes, carrots, and onions
- Fried crappie, slaw, and cornbread
- Pork loin, potatoes, carrots and onions
- Chicken stew
- BBQ a second time.

Billy Phelps can make a Dutch oven full of biscuits that you will not find any better anywhere in the world. Also, there were plates of cookies, cakes, cobblers, stuffed peppers every day. The shop is always stocked with water and drinks. If you are watching your figure, this may not be the place to stop.

So if you have time the first week of October and like to join us for so fun and fellowship, contact me and I will relay the information needed to join us.



# 2011 NC State Fair Report

By Parks Low

This year's fair ran for ten and one half days. We had good weather for the entire fair. I believe it rained one evening but was gone before we opened the next morning. Gross sales for this year were \$13,246.29. The chapter share with what was sold for the chapter was \$1947.80.



Workers and demonstrators this year were: Laura Abt, Cindy Alexander, Andy Anderson, Casey Anderson, Roger Barbour, Walt Beckwith, Randy Betchel, Eric Campbell, David Clement, Chris Dietz, Don Dillon, Garrett Dunn, Elton Etheridge, John Fluke, Allen Green, Amy Hinsett, Kirk Jarrett, Don Jones, Jim Kennady, Jim Kroeger, Parks Low, Camilla Low, Dan Ritchie, Tim Rowland, Jeff Salter, Barbara Salter, Joshua Snead, Dick Snow, Randy Stoltz, Robert Timberlake, Paul Tooley, Amos Tucker, Tom Watkins, Lyle Wheeler, and Andy Wilkins. There were fifteen individuals that brought items for sale.

Gross sales since the year 2000 have been: 2000 - \$14,557.00, 2001 - \$12,456.50, 2002 - \$15,410.20, 2003 - \$20,573.00, 2004 - \$17,356.00, 2005 - \$17,164.50, 2006 - \$15,276.50, 2007 - \$20,744.00, 2008 - \$19,990.50, 2009 - \$16,419.00, 2010 - \$15,785.90, and 2011 - \$13,246.30. As you can see our sales have been on a downward slide. There are several contributing factors. First is the economy. Second is the participation of the members. Each year in the last four years we have seen fewer items brought to the shop for sale. The chapter members should remember that you do not have to demonstrate in order to sell what you make at Heritage Forge during the state fair. We really do need more items and a high volume of the items for sale in order to keep; our sales up. The rules for items to be sold is that they must be made by the individual in the seller's shop, there will be no items for resale, and items for sale shall be at the shop for immediate sale. No advertising for sale at a later date. This cheats the chapter out of its share of the sale. The only exception is a custom made item where the order is taken at the fair.



fair requires the liability insurance to operate the shop. This insurance also covers the chapter at all of our meetings. Coal is needed for the operation of the shop. If anyone can help with this please let me know. We cannot wait until September to have this lined up and hopefully on hand.

# Signal Gun Mount

By Robert Timberlake

My Shotgun is Bigger than Your Shotgun.

Some months ago a friend asked me to produce the iron work for a commission he was working on. Having known Jim for several decades my guess this was not to be your everyday artifact. In this case it was a full size replica of a swivel gun the fledgling US Navy contracted for use on the USS Constitution in 1798, the likely contract recipient being Paul Revere. The barrel is 17 3/4" long with a 3" bore and weighs about forty pounds. Typically they were mounted in the "fighting tops" or the platform commonly called the crows nest on the ships masts and were likely removed and stowed below decks until action was anticipated. These guns look to be murderous weapons especially when you see the sack of shot it threw. Jim Bircher, owner of Beaufort Naval Armory in Morehead city, manufactured the barrel from some drawings and pictures he was able to obtain. Being a pyro of long standing of course I wanted this job.

Jim and I looked the pictures over thoroughly and came up with a plan as to how the iron needed to be constructed. The example in the pictures he has is a reproduction representative of the type used in that period, the original iron having not survived. To me they looked too flimsy when compared to the bore on this beast. We both agreed this thing would kick like a mule and needed things beefed up a bit.

The commissioner stated the iron work was to look hand forged. The best way I could figure to make it look hand forged was to hand forge it. Since Revere was indented 2000 lbs of copper by the Navy for this commission he more than likely made multiple copies. My guess the forge that made the original iron spent some time to make some forging dies to insure commonality between the individual pieces. So I made some dies for the trunnion eyes. Since this was to be a one only reproduction the dies were made from mild steel in a two piece spring die configuration. Note from the accompanying picture conical projection were left in the center of both dies to form a heavy center punch mark for accurate drilling later.



This is when I came to the conclusion that for a job such as this size does matter. My 25 lb Little Giant lived up to the little part of its name. So did me swinging a 15 lb sledge. (Note to self: any future jobs such as this invest in a forging press.)

The yoke is in two halves since there are no caps on the trunnion eyes. This required some fairly accurate forging to achieve the desired fit for proper function. (This is a functioning replica) The trunnions themselves are not a “standard “ size such as 1 1/2” so some lathe and mill work were required to achieve a more precise fit. Machine work was probably not used in the original construction but since this is meant to be a show piece I put in the extra effort. Both halves of the yoke were tack welded together and a jig improvised for the lathe work. Then this assembly went to the mill to drill and bore the trunnion eyes. The eye holes needed to be parallel to each other so were bored in line to assure this.

The tail piece handle is made from steel tube and flat bar with square head bolts and nuts being manufactured to clamp it in place. Here again some dies were made to accurately form the two halves that clamp it to the breach. An expedition in the woods was mounted to find a suitable piece of wood for the hand piece in this case a piece of figured oak. The finished assembly is mounted on a chunk of black walnut, a simulated ships railing that came out of my wood collection. The yoke sits in a well forged from a piece of steel tube and forged iron feet support the whole thing.

This is a working reproduction so a “proof “was in order.

Yes, it does work as intended, this being a blank charge but satisfyingly loud. A satisfying project in all, the best part being that it was sold to a collector before it was finished.

For more information on Beaufort Naval Armory go to [www.bircherinc.com](http://www.bircherinc.com) and click on the signal gun link.



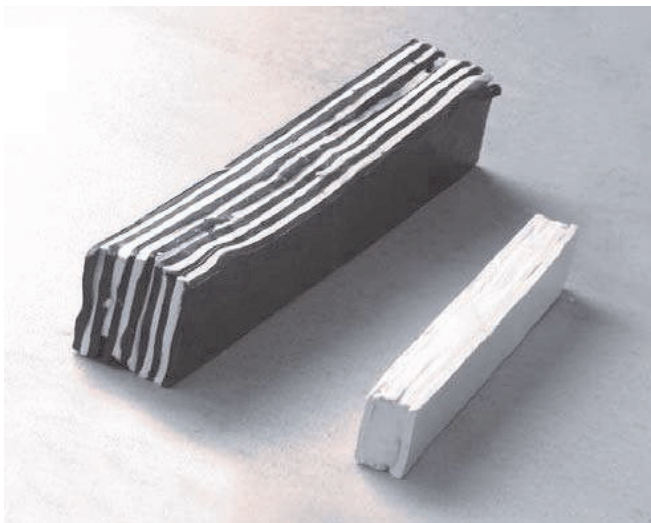
This article originally was published in the *California Blacksmith* No. 12-01, January/February 2012, newsletter of the California Blacksmith Association ( [www.calsmith.org](http://www.calsmith.org) ).

## Using Clay to Create Damascus Patterns

By Tom Ferry, Auburn, Washington

Many of us have heard of using modeling clay as a medium to work out a forging sequence when making animal heads.

At Oktoberfest, noted knife maker and American Bladesmithing Master Tom Ferry demonstrated development of Damascus patterns in clay – a quick and easy way to visualize and understand the development of patterns in Damascus or pattern-welded steel. In his demonstration, Tom used Sculpey oven-bake clay ([www.sculpey.com](http://www.sculpey.com)). Sculpey is one of several polymer clay products which can be hardened by baking in a home oven at 275o. Here, he didn't fire the clay. Rather, he had dark brown and white clay samples, which he rolled out in a device much like a lasagna noodle rolling machine. Each color of clay was there to simulate layers of different types of materials that would be used to make up a Damascus billet.



This simulated the basic Damascus billet.

First, Tom rolled out pieces of clay to about " to " thick and about 1" wide. He cut these pieces to be

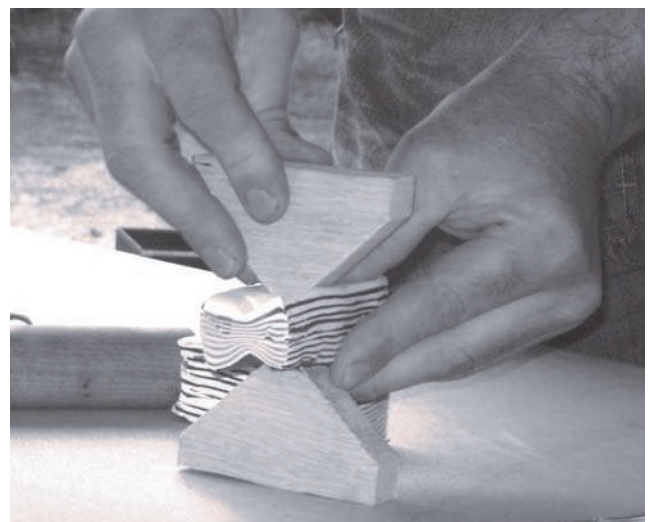


about 6" long and then stacked them, alternating brown and white. Forging this stack would result in the random Damascus pattern.

Next, Tom set out to demonstrate mosaic Damascus patterns. He rolled a basic stack out a bit, using a rubber roller to simulate forging the billet.

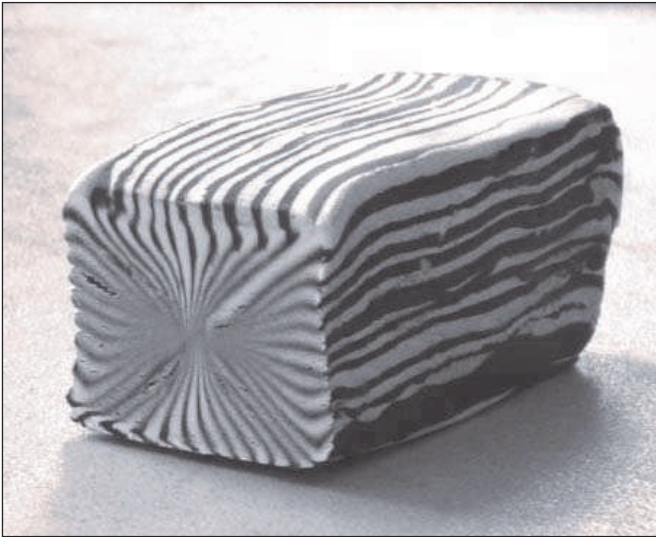
### Radial Pattern

To create the basic radial pattern, he took two stacks, which he wedged in two using a pair of wooden wedges. These simulated this process on a billet with steel jaws in the hydraulic press.



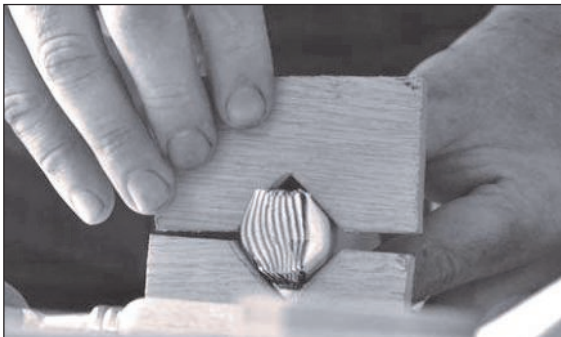
## Damascus Design in Clay

Four of the resulting triangular pieces were then reassembled, squared up – ready to forge if you were working in steel rather than clay. In this photo of the billet, the mating of the four pieces can easily be seen.



## Radial-Squared Pattern

This pattern started with the same basic stack. Two stacks were split into four pieces. Then each piece was squared up using diamond-shape dies.



Once this was done, each of the smaller sections had a diamond cross-section. These were then reassembled into a billet, resulting in the radial-squared pattern.



Tom demonstrated several other patterns in the Sculpey clay. To get the full details of how to create these patterns, take one of Tom's workshops.

### Tom and the clay process

*This article illustrates the idea of using clay as a way to visualize and understand blacksmithing processes. Tom used the clay process to show the pattern development, without having to take time out to forge, grind and polish steel pieces. After Oktoberfest, your editor took the sample pieces home to bake in his oven. They were then polished with a belt sander to bring out the patterns. For more information about Tom, visit his website, [www.tomferryknives.com](http://www.tomferryknives.com).*



Photos by Alan Gering, John Graham & Mike Mumford



# Grand Blacksmithing Bellows

## “Measurements”

**Estimated date of construction is between 1830's & 1850's (nail study)**

**Owner and researcher is Bobby Floyd (December 2011)**

**Member of the Old Dominion Blacksmith Association (ODBSA).**

**[va18@hotmail.com](mailto:va18@hotmail.com)**

The purpose of the following photos and measurements are provided to anyone interesting in knowing how this historic large blacksmithing bellows was built and especially, for the ones of you that would like to reproduce it.

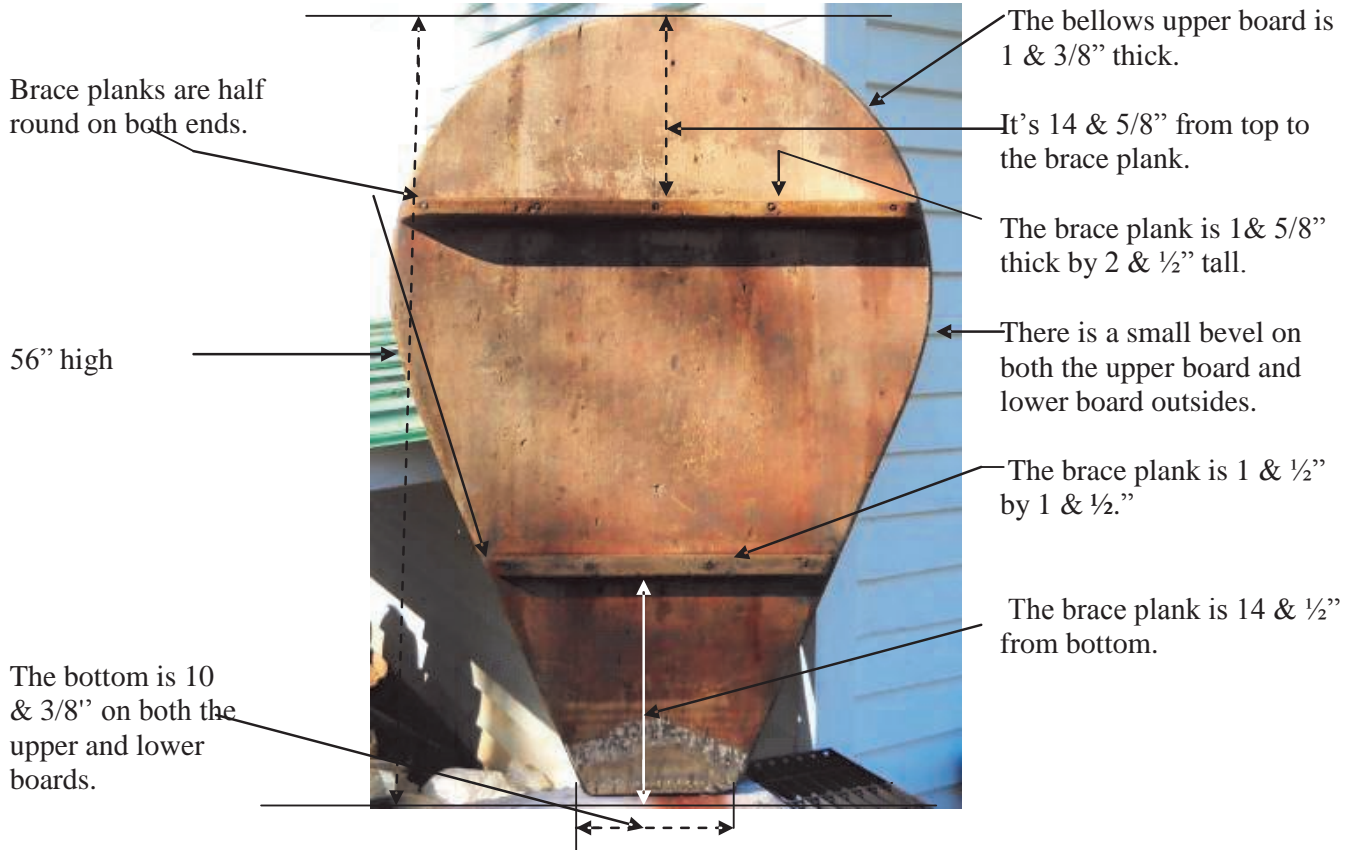
1. Purchased from a lady in Amelia, VA for \$100 on November 10, 2011.
2. The weight is 160 lbs.
3. The length is 7'6" from end of pipe to end of the rear hanger.
4. Width is 48" from end of each side hanger.
5. It is said to have come from a plantation near Richmond, VA (Schutte Plantation)

### Before Photo

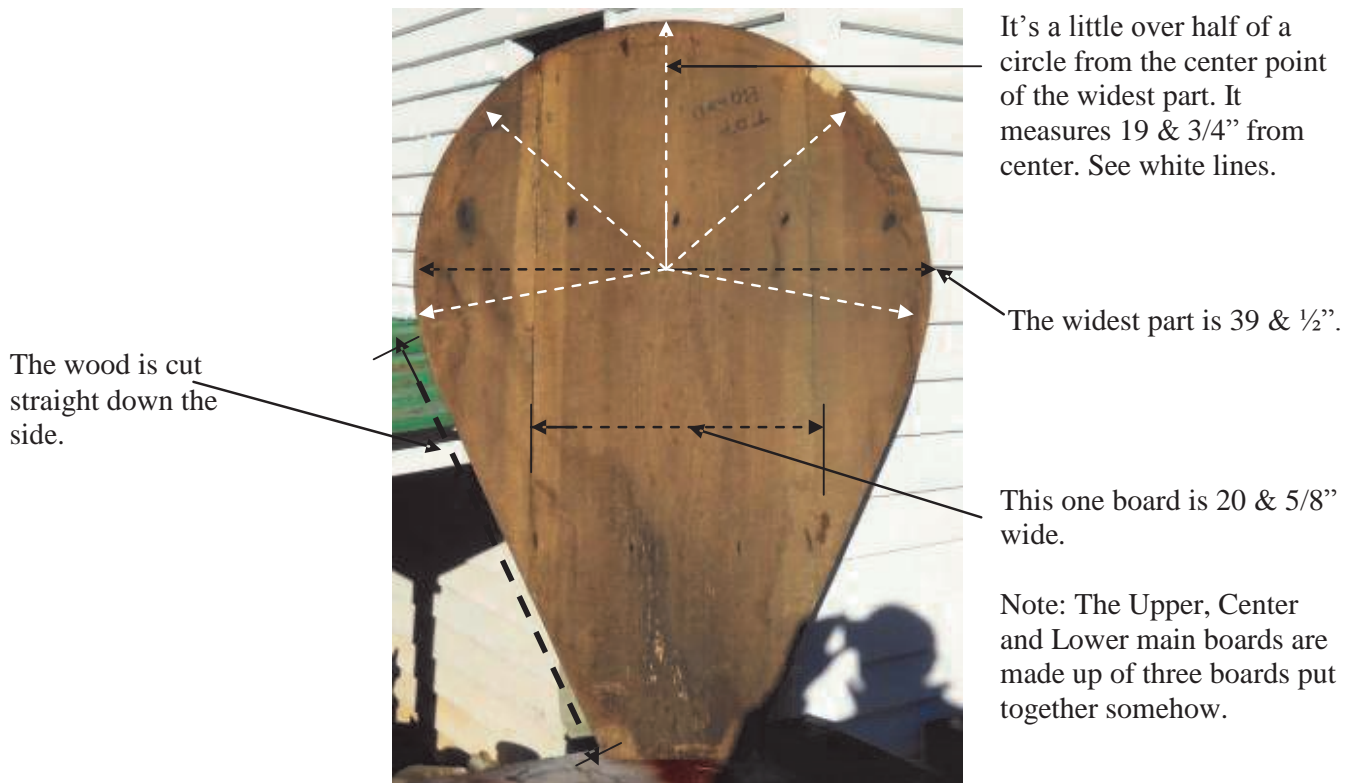


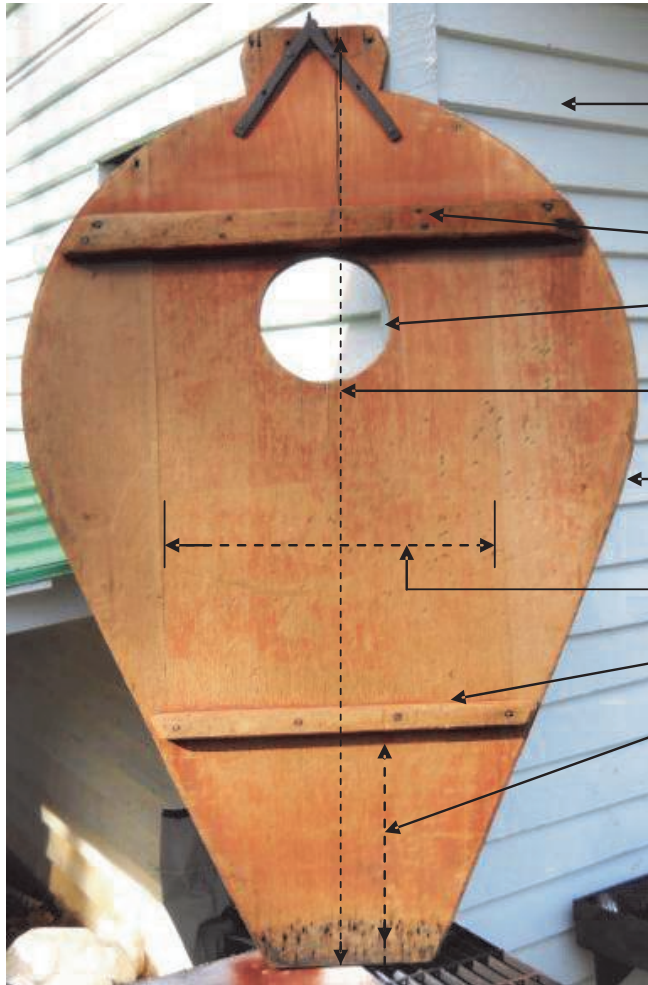
**After the leather was removed.**

### Upper Board (Outside)



### Upper Board (Inside)





### Lower Board (Outside)

The plank is 2 & 1/2" wide by 1 & 3/4" thick.

The circular holes are 8 & 1/2".

It's 60" tall.

This board is 1 & 3/8" thick.

This board is 21 & 3/4".

This plank is 1 & 1/4" wide by 1 & 1/2" thick.

Bottom to the first plank is 14 & 1/2".

### Lower Board (Inside)



The leather hinge for this flap board is attached here.



It's 10" from this wood point over to the other wood point.



#### Face up flap

Beveled sides. 9 & 1/2" by 9 & 1/2" by 1/2" thick. Both flaps boards are the same size.



#### Face down flap

Leather covered only the face down flap board on the Center Board and not the Lower Board flap board. "See all the tack/nail holes".

### Center Board (Bottom)

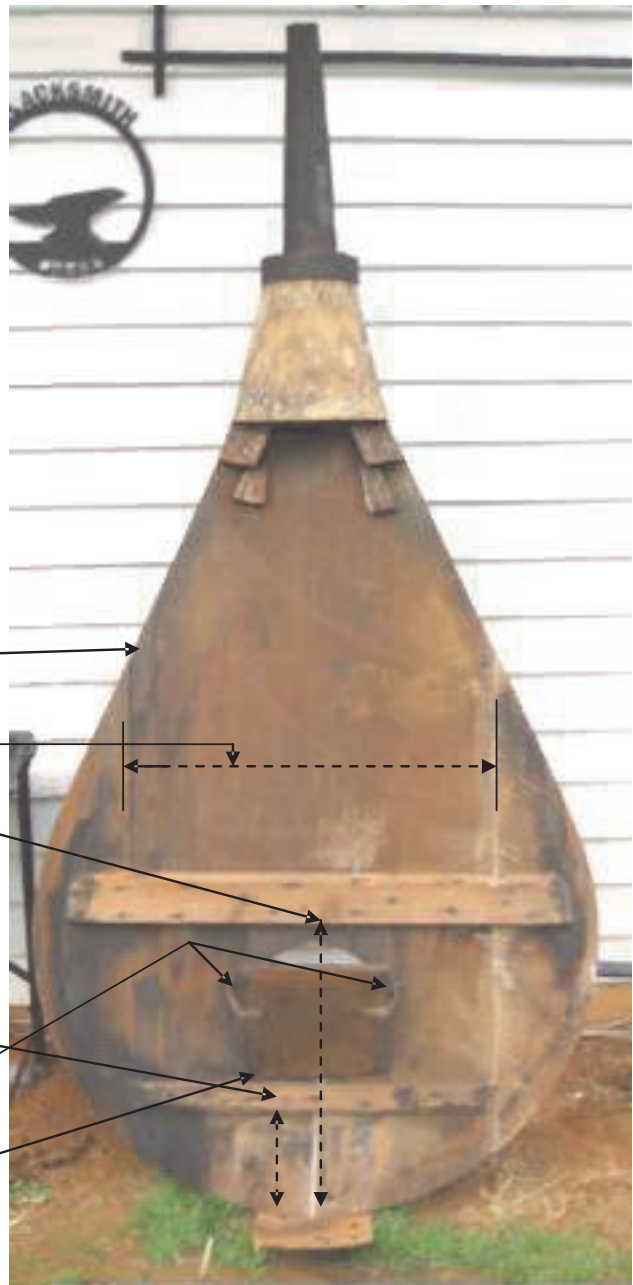


It's 11 & 1/8" from top on the Center Board to the top of the hole. The Lower Board hole is directly under this hole.

Both sides of the brace planks are rough cut at an angle or beveled a lot at both ends and it's the same for the brace planks on the Center Board (Top) that are directly under these two brace planks.

It's 67" from top to the bottom at the down side of the circular iron rim and one continuous piece of board.

### Center Board (Top)



The Center Board thickness is 1 & 1/2". It's 1/8" thicker than the Upper or Lower Boards.

This is the widest board yet at 25 & 1/2".

This plank is 1" thick, 3 & 1/2" wide and on the opposite side (center board bottom) it's the same size plank as well as the same distance from the end that is 21 & 1/2".

This plank is 1" thick & 2" wide and on the opposite side (center board bottom) it's the same size plank as well as the same distance from the end that is 7 & 3/4".

6" leather straps on both sides of flap door are there to keep the door from opening too much.

The flap door leather hinge is on the bottom, the other flap door hinge on bottom board is toward the top.

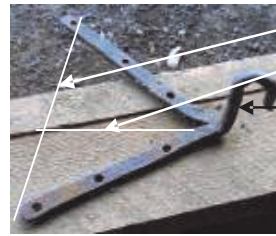
### Iron Hangers



On each side of the Center Boards is a hole about 5/8" that hold the iron hanger.

The hangers are 11" long with 6 & 3/4" round iron that goes into the hole. The other thicker part is 1 & 1/8" thick, octagon shaped and has been wrapped around the round metal and forge welded to it. It's about 4 & 1/4" long.

### Iron Lifting Bracket



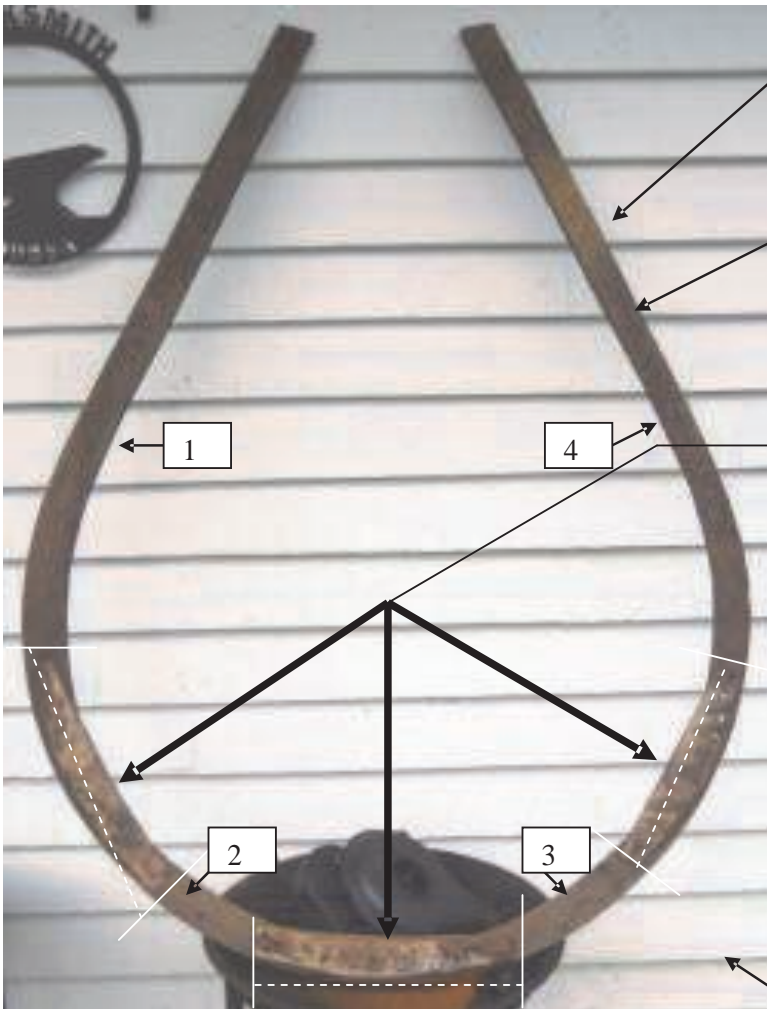
11" across  
8"

Height is 3" before it starts to curve to make the hook.



I believe this was a replacement bracket because the holes in the front where the nails are located are showing the holes. There was originally a flat piece of metal with a hook instead of a Y shape with hook.

### Floating Arms



There are two floating arms and they are exactly the same except that one (lower chamber) is one inch longer.

They have exactly the same curvature as all the main boards (upper, center & lower).

The wood is 2" wide by 3/8" thick.

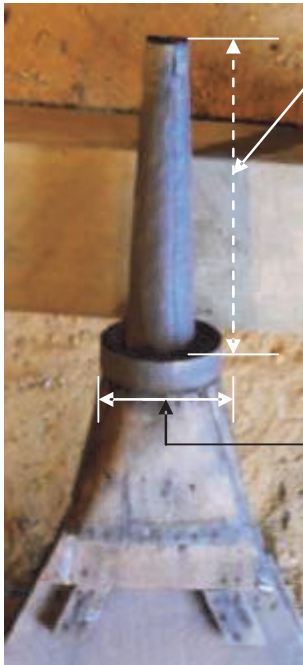
There are four holding planks (numbered) in the floating arm and the ends are **here** and are held in place with three smaller holding planks nailed to them (11" by 2" by 3/8" at the thickest part).



Note the angle of the bevels on the holding planks.

Holding planks are between the white lines.

## The Nose (Nozzle) of the Bellows



The cone shaped pipe is about 1/16" thick with a 2" hole at the top end and 16" long to the top of the rim and 17 & 3/4" for total length because the pipe extends another 1 & 3/4" under the rim. The largest part of the pipe is about 4" across at the end that's under the rim.

The rim is about 7 & 3/4" across, outside circumference is 21 & 1/2", 1 & 3/4" wide and the forge welded metal rim is about 1/8" thick.



From the edge of the rim to the pipe is mostly 1 & 1/2" of ends of boards and shims.

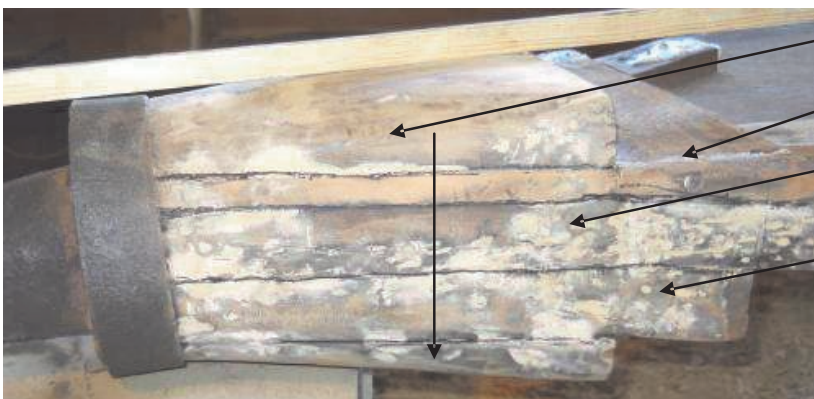
The pipe is held in place and is tight fitting because of the use of wood shims in the extended boards that are encompassed by the metal rim.



**A.** View from above looking at the inside top chamber:

I did not take any of this apart due to fear of breaking some or all the boards that are nailed together.

All the following board measurements are given in the total widths, lengths and thickness that you must have to begin to replicate this part of the bellows. They all will need to be cut and/or planed to get the angles and/or curves and to make them fit all the way under the end of the round iron rim.



**B.** Side view looking down from bottom chamber:

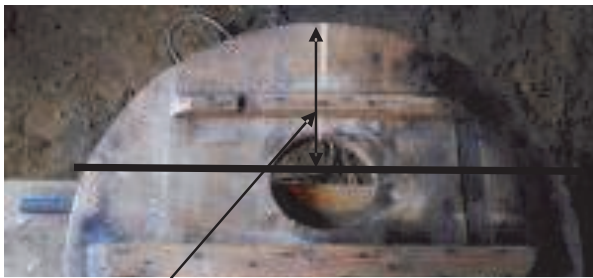
1. Qty two--11 & 1/4" long by 10 & 1/2" wide by 1 & 1/2" thick.
2. Qty one---14" wide by 15" long by 1/2" thick (bottom chamber)
3. Qty one--- This is the Center Board that you have already cut to size.
4. Qty two (each side)—14" long by 3 & 3/4" wide by 1 & 3/4" thick (top chamber)

Parts of all the six boards are all the way under the rim. Shims are then put in the boards ends to hold the pipe tight.

# Air Hole (Top chamber only)



Small 1/2" thick pieces of wood that help hold the floating arms in place with the aid of a strip of leather that is tacked to them and the floating arms.



The center of the 5/8" holes for the two iron hangers on each side of the Center Board are on a line 17 & 1/2" from the center high point of the top curve.



Note: My next article with photos will be about how I to put the leather on, but first----- I've got to learn how to do it.



Inside view looking up:  
Note the three boards that are cut a little at 90 degrees 1 & 3/4" from the end. This is stop/hold the end of the cone pipe.



Inside view looking down:  
The Center Board (# 3) is chiseled down and rounded into a semi-circle until it reaches the next board (# 2) under it. The #2 board is not chiseled down any and is straight. Part of it is a stop and holds the pipe in place with shims. Also the #3 (Center Board), after it has been chiseled down on the sides into a semi-circle, is then cut straight back. The end stops the cone pipe at 1 & 3/4" before the end and the remainder of the board helps holds it in place with shims.

This is a photo of another piece of a very old smaller rotten bellows that I have. Note the wood shims and how the other pieces are made.

Note: There was a 1/4" thickness of horsehair that was under all the leather that enclosed this end.

Horsehair



## Forging a Square Punch and Drift

Text by Tal Harris Drawings by Doug Wilson

### Lesson #21. Unit: Forging a Square Punch and Drift

**Intent:** The student will learn to forge a square punch and square drift. Heat treating the punch will be covered in a future lesson. These tools will be used in a to produce a 3/8" square hole in a piece of 3/8" x 1" flat stock.

**Tools:** Basic tools, including tongs to hold the piece being forged.

**Materials:** For the punch- 3/4" square W-1 Tool Steel, six inches long. W-1 is a water hardening tool steel that is suitable for tools that come in contact with hot metal such as the subject application. W-1 is readily available in small quantities shippable by UPS. A tool properly made from this steel will last for many years

For the drift- 3/8" square hot-rolled mild steel stock 2-3/4 inches long.

### Forging a Punch Step 1

Forging the end of the punch that will be used to produce a hole.

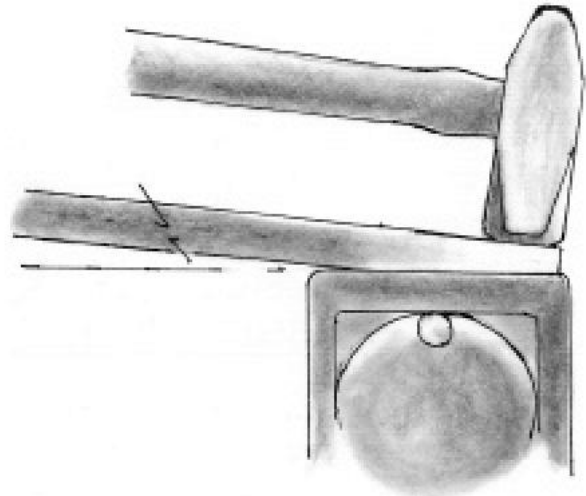
To forge the end of the tool that will be used to punch a hole (hereafter called the "working end" of the tool), heat the end of the punch material to an orange-yellow heat and forge a taper three inches long.

**Note:** Tool steels typically are not forged as hot as mild steel. The alloying elements found in tool steels lower the melting point, thus the forging range. Overheated tool steel will generally fracture when forged, sometimes falling apart like cornbread. Ideally, tools should be forged in as few heats as possible to minimize decarburization or "decarb" for short. Decarb is the loss of carbon at the surface of the material due to carbon migrating from the high-carbon tool to the lesser-carbon atmosphere. Carbon is the key alloying element in W-1 that allows it to be hardened. Loss of carbon lessens the degree or surface hardness the material can attain. A coal fire minimizes this affect as the coal provides a carbon-rich atmosphere.

To forge the three-inch taper start at the tip and forge back up the bar. Start forging the taper at the end of the bar, holding the end of the material being forged near the far edge of the anvil. This will allow the taper to be forged without hitting the face of the anvil with the hammer. To forge a taper that is centered, the material should be held at a 4-degree angle to the face of the anvil as represented in the drawing, with hammer blows being struck with the hammer face at an angle of 8

degrees to the hammer face. Forge to a square cross-section, rotating the bar 90 degrees back and forth between hammer blows. If the proper holding and hammer angle has been maintained, the taper should be centered. Once the end of the bar has been reduced to 5/16" square, continue to forge up the bar three inches to complete the transition to the parent material. If more than one heat is required, be careful not to burn the material as the reduced section will heat quickly (you can tell you are burning the material because it will spark while in the fire). The taper should make a smooth transition from the parent material to the end of the piece without any twist. W-1 is a tough material. With experience this taper should be able to be forged in three to four heats.

### Step 2



1. Holding the material at an angle to produce the desired taper

To forge the striking end of the punch, follow the same directions for the working end, but the taper should be short, 1 inch long, tapering from the parent material to 5/8" square. The angle of the taper will be almost identical to the working end of the tool. As this taper is short, it can be forged entirely over the face of the anvil and should be able to be forged in one or two heats. Occasional hammer blows directed at the end of the punch, as if striking it during actual use, will keep the end flat so no filing is necessary to achieve the properly shaped tool.

The purpose of this short taper is to delay the tendency of the striking end to "mushroom." It also helps to center the force of the blow during the hole-punching process.



### Step 3

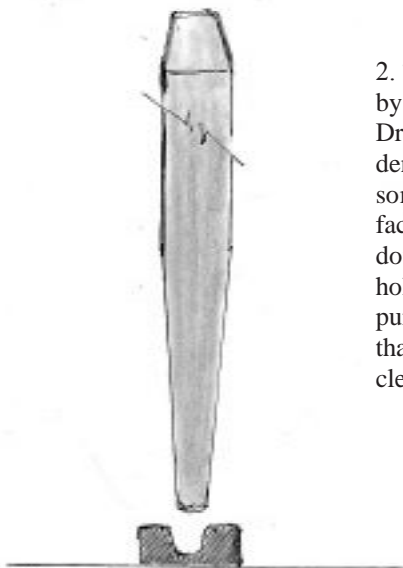
Once forged, it is best to anneal the tool to relieve forging stresses and soften it for any cold working operations such as filing. During forging, tool steels tend to get "uptight." Just as a person who gets uptight needs to relax before they "snap," the same is true for tool steel. One definition of annealing is "The heating of metal and then cooling it at a slow, consistent rate, thus reducing internal stress in the work piece and making it softer and easier to perform cold operations including filing.

In this example, to anneal the tool it should be heated uniformly to an orange heat and then buried in lime or wood ashes to allow it to cool slowly. For a tool of this size, the quantity of lime or ashes required is about a gallon. The intent is to surround the tool completely so it is thoroughly insulated. It will take several hours to cool, so don't be impatient and search for the tool with your hand as a severe burn could be experienced. If properly annealed, the tool should cut easily with a sharp file. If not, repeating the annealing process may be necessary.

Note: Forge scale can greatly reduce the life of a file. An easy way to remove this scale is to soak the piece overnight in vinegar. Vinegar contains acetic acid and will dissolve the scale.

### Step 4

Once cooled (and only if necessary) file the ends of the tool to remove any unevenness from the forging. The working end of the tool should be square with sharp corners so it cuts its way through the material being punched. Important! Remember to file from the body of

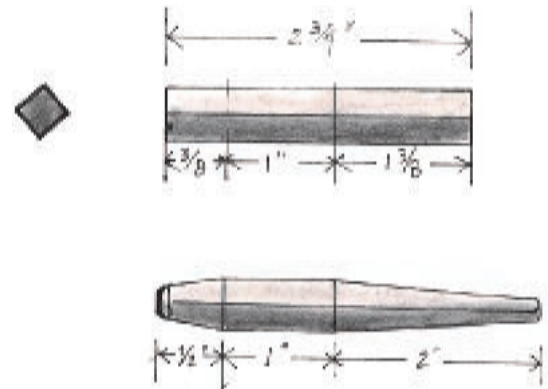


2. "Drag" caused by a dull tool. Drag is the tendency to pull some of the surface of the steel down into the hole to be punched, rather than cutting cleanly.

the tool towards the end to avoid getting cut on sharp edges of the tool. A tool that is not sharp will result in a hole that has a reduced thickness around it due to the "drag" of the tool.

As W-1 is a tough steel, and mild steel heated properly to punch and drift a hole is very soft, this tool may be used successfully in the as-forged condition, i.e., not fully heat treated.

Note: The square section of the punch has several advantages. Since the tool was forged without twist, the end of the tool that produces the hole is aligned with the body of the tool. This makes placing the tool to produce a hole of desired orientation much easier, whether the tool is hand-held or held with tongs.



3. Starting stock size and finished dimensions of the punch.

Also a tool forged from square stock will not roll off the anvil.

The tool described is intended to be used as a hand-held tool. As always, extreme caution should be exercised when using any hand-held tool. Remember that a misplaced blow places your hand between a hammer and a hot place. Often the material being punched will automatically lead us to whether a tool can be hand-held or should be held by some other means, such as tongs. Small-sized stock does not radiate as much heat as a larger piece and a punch can be held with a wet or Kevlar-gloved hand. For hole punching heavier sections the use of a handled tool is required. One will also find that the force required to punch a hole in larger sections will tend to bend the punch if it is too long. A shorter punch directs more force to the working end of the tool, making the work more efficient. The short tool uses less of an expensive material and eliminates the problem of bending when using a heavy blow. Complete and proper use of the punch and drift will be covered in a future lesson.

**Targets:**

- The tapered sections of the punch should be straight, centered and without twist.
- The faces of the taper should have no concavity or convexity.
- The long taper of the punch should have sharp corners as should the end of the punch that will produce a hole. This will allow the material to be sheared out cleanly when producing a hole.
- The taper on the striking end of the drift should be easily made in two heats. The opposite end should be able to be finished in three to four heats, the final heat being used to smooth and accurately center the taper.
- The length of the taper on the striking end of the punch is 1". -The length of the taper of the working end is 3".
- The final length of the entire punch should be 7-3/8" and the working end of the tool 5/16" square.

**Forging a Drift:****Step 1 - Forging the Working End of the Drift:**

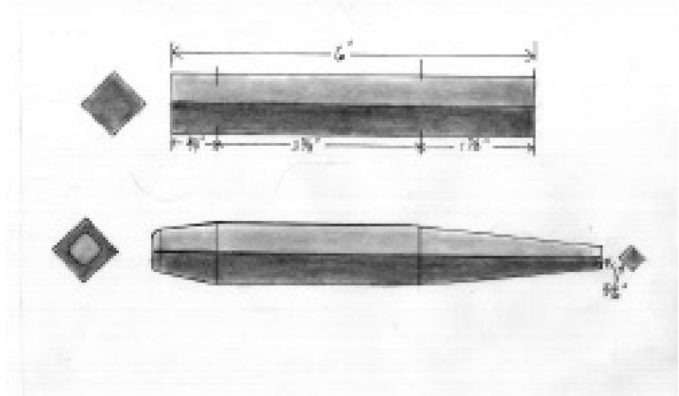
Following the same steps as when forging the punch, heat the end of the drift material to a yellow heat and forge a two-inch long taper using the face of the anvil, tapering from the parent stock size to 1/4" square, with the taper centered on the bar.

1-3/8 inches of 3/8" square material will be needed for this taper. Note: The small end of the drift will need to be able to be placed in the hole produced by the punch. As before, if more than one heat is required, be careful not to burn the material as the reduced section will heat quickly. The taper should be even, centered and without twist. The long taper on this end of the drift, allows it to be easily driven into the hole being drifted. In actual use the end result will be a hole that has a nice bulge without the stock being reduced in thickness near the hole. Reduction in thickness near a punched hole is commonly referred to as "drag" and is affected by the taper of the end of the tool producing the effect. The shorter or more blunt the taper, the greater the drag. Alternatively, a longer and more gradual taper minimizes this effect.

**Step 2 - Forging the Striking End of the Drift:**

Follow the same directions for the working end. Important! The taper on the striking end must be longer than 3/8", the thickness of the material being drifted. Otherwise the drift cannot be driven through from one direction as it will get stuck in the hole being produced. A taper 1/2" long produced from 3/8" long of the starting stock will be correct for this tool.

As the drift is intended to be used only on hot material, it is not necessary that it be made from anything other than mild steel. If forged carefully, little or no filing will be necessary. Quenching mild steel from an orange



3. Starting stock size and finished dimensions of the drift.

heat will stiffen the drift and provide better service.

Note: The drift forged in this example will result in a hole that is slightly less than 3/8" square when the work piece cooled. This is due to shrinkage that occurs between the time the hole is drifted and the piece cools. If a 3/8" square bar is to pass through the hole, then the drift material would need to be upset slightly prior to Step 1. To accomplish this, take a yellow heat on the starting material, stand it on end (vertically) on the anvil, holding it from the side with a pair of tongs. Strike a few light blows on the end of the material to increase its cross-section. Usually when the material has moved sufficiently to cause the scale to fall off, it is upset enough to allow a bar to pass through the hole.

**Targets:**

- The tapered sections of the drift should be straight, centered and without twist.
- The faces of the taper should have no concavity or convexity.
- The long taper of the drift should have sharp corners but the end geometry is not critical as long as it extends through the 3/8" thick bar when inserted into the hole. The aim dimension for this end of the drift is 1/4" square.
- The taper on the striking end of the drift should be easily made in one heat. The opposite end should be able to be finished in two heats, the second heat being used to smooth and accurately center the taper.
- The final length of the drift should be 2-1/2 inches.

# Pizza Oven Tools

By Randy H. Stoltz

It started out as a request to make a fire rake for a wood fired pizza oven but I ended up making a complete set of long handled tools. The large outdoor wood fired oven was igloo shaped, had a 42 inch diameter chamber, a 19 inch wide door opening, and had a storage bin for tools. So the tools had to be long enough to reach inside the oven but less than 60 inches long and less than 6 inches in overall height to fit in the storage bin. Also all the tools had to fit through the door of the oven.

In a wood fired oven the fire is built inside the cooking chamber to heat the brick or clay. A fire rake is used to push and pull the wood and coals inside the chamber. When the chamber is hot, the rake is used with an ash pan to remove the ashes and remaining coals so you can start cooking. So the ash pan has to fit through the door of the oven and the head of the fire rake needs to fit inside the ash pan. Another major consideration with long handled tools is the weight of the head. You have to make it strong enough to handle the task and minimize the weight so they are not unwieldy to use.

The handles were made using 1/2 inch round steel and featured a simple folded loop grip with lambs tongue and a twist on the shaft just below the grip. The rest of the shaft was left plain and long enough to make the tools overall length 55 inches. The grip, shaft, and twist were forged to have no sharp edges or points since they will be stored outside with the oven. Sharp edges are more prone to rusting. The handles were all painted with a high temperature (2000 F) ceramic based paint to withstand the heat and not produce smelly fumes like regular paint would.

The head of the fire rake was made from 1" x 1" x 1/8" angle and 2" x 3/16" flat bar. The angle and flat bar were forged into an arc to fit the back of the 42 inch diameter oven and riveted together. The ash pan was constructed using 16 gauge steel sheet metal with a piece of 2" x 3/16 flat bar on the back. The pizza paddle was made from 16 gauge stainless steel sheet metal.



The completed pizza paddle, fire rake, and ash pan.

Prior to making the fire rack, I had visited the Winkler Bakery in the Old Salem historical village in Winston-Salem, NC and examined the rake they used in their large wood fire oven. Their rake, with a 9 foot handle, was attached at a single point and had broken several time. So I decide to add side bracing to make the tools stronger and more durable. Instead of using two pieces of 1/2 inch round to make side braces, I used 1/2" x 3/16" flat bar to make a U shaped brace that gave the pizza oven tools a trident look. The added a lot of strength and rigidity to the tools but added very little weight. The U shaped brace on the pizza paddle was forged from 3/4" x 3/8" stainless steel and extended down the sides of the paddle to add support. Stainless steel rivets were made to attach the brace to the paddle.



To make this twist in round stock, flatten a section of the stock. Do not square up the flattened section, leave the sides round. You just want to flatten two sides enough to fuller a groove down the two flats. Using a chisel shaped flat punch with a rounded face, fuller a groove about 1/8 inch wide and 1/8 inch deep in the middle of the flat spot. Do this on both sides of the piece. Heat the flattened section, clamp one end in the vise, and evenly twist the piece. Smooth jaw wrenches will not grip round stock. so I cool a section of the round bar below the flattened area and use a small pipe wrench.. Cooling helps prevent marring the piece with the wrench teeth.

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**\$35** (outside USA). Make check or  
money order payable to **NC  
ABANA**. and send it to:

**NC ABANA c/o J. Phillips**  
97 Trinity Ridge Lane  
Banner Elk, NC 28604

For more information email:  
[northcarolina.abana@gmail.com](mailto:northcarolina.abana@gmail.com)

or visit the NC ABANA website:

[www.ncabana.org](http://www.ncabana.org)

# Fourth Quarter 2011 Statewide Meeting

By Randy H. Stoltz

The fourth quarter meeting was held December 3, 2011 at Roger Barbour's shop in Clayton, NC with about 60 members and guest present. Jeff Salter demonstrated. Jeff is an active duty member of the U.S Army Special Forces stationed permanently in Ft. Bragg, NC and is also a certified farrier. Jeff made several items, including a double basket weave, hoof pick made from a horseshoe, coat hook with a rams head, and a hardy tool. Following the excellent demonstration by Jeff, we had a great lunch with BBQ smoked by Jim Kennady., Iron in the Hat, a Board meeting, and a plaque was presented to Marty Lyon for being an outstanding editor of this newsletter for six years.. See the secretary's report for details on the Board meeting.



Photos by Brian Nalley.

## Local Groups

### **Triad Area Blacksmiths** (Winston-Salem, NC)

Marshall Swaringen  
marshall@swaringen.com (336) 998-7827

#### Meetings

1<sup>st</sup> Tuesday 6:30PM for demos  
3<sup>rd</sup> Saturday, 9AM for business and all day forging  
at the Dixie Fairgrounds, Winston Salem, NC

### **Southern Foothills Blacksmiths** (Mooresville, NC)

Steve Barringer  
steve@powerhammerschool.com (704) 660-1560

#### Meetings

2<sup>nd</sup> Sunday, each month

### **Triangle Blacksmith Guild** (Raleigh - Durham NC)

Randy Stoltz  
rhstoltz@gmail.com (919) 481-9263

#### Meetings

1<sup>st</sup> Saturday, even # months  
at various locations

### **Brasstown Blacksmiths** (Brasstown, NC)

Paul Garrett  
pdg86@hotmail.com (828) 835-8441

#### Meetings

3<sup>rd</sup> Saturday, even # months Noon to 4PM

### **B.O.L.T.S. Blacksmith Guild** (Kenly, NC)

Amos Tucker  
amostucker@earthlink.net (252) - 289-7317

1st Sat or Sun. Even # months

### **Wilkes Teaching Forge (WTF)** (Millers Creek, NC)

Lyle Wheeler  
chairmakr@yahoo.com (336) 838-2284

#### Meetings

2nd Tuesday, each month 7:00 PM

NC ABANA members are welcome at attend any of the Regional meetings. Contact the host to confirm date, time and location.

## 2012 Meeting Schedule

### **1st Quarter - March 17 at 9:00 A.M.**

Dean Curfman's Oak Hill Iron  
Morganton, NC

### **2nd Quarter - June 23 at 9:00 A.M.**

Blacksmiths Shop in Yesterday Village  
Dixie Classic Fairgrounds  
Gate 9, 27th Street  
Winston-Salem, NC

### **3rd Quarter - Date TBA**

Bill Brown's shop in Linville Falls, NC

### **Bonus Meeting - November 3 at 9:30 A.M.**

J. C. Campbell Folk School  
Brasstown, NC 28902

### **4th Quarter 2012 - December 1 at 9:00 A.M.**

Phillip Gaddy's Shop in Statesville, NC

## Other Events

### **Mark Aspery Demonstration**

#### **Saturday, August 11th 2012**

Blue Ridge Community College  
Flat Rock, NC 28731

(\$75. go to [www.ncabana.org](http://www.ncabana.org) for details)

### **Dixie Classic Fair**

Winston-Salem, NC

September 28 - October 7, 2012

[www.dcfair.com](http://www.dcfair.com)

### **North Carolina State Fair**

Raleigh, NC

October 11-21, 2012

[www.ncstatefair.org](http://www.ncstatefair.org)

For updated calendar and event organization go to the NC ABANA website.

**[www.ncabana.org](http://www.ncabana.org)**

**North Carolina Affiliate - Artist Blacksmith Association of North America**



**THE HOT IRON SPARKLE**

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