

# THE HOT IRON SPARKLE

\* Newsletter of the North Carolina ABANA Affiliate \*

www.ncabana.org  
Volume 29 Number 3



Third Quarter 2011 — Jul/Aug/Sept



## 2011 SBA Conference Family Flower

Inside This Issue					
President's Message	P 2	Blacksmith Guild of Virginia News	P11	Tal Harris's Trip to France and Belgium Part 1	P30
Editor's Notes	P 3	2011 SBA Conference	P12	Controlled Hand Forging - Forging a Fishtail	P35
Secretary's Report	P 3	Scholarship Report - Randy Outland	P17	Upcoming Events	P38
Treasurer's Report	P3	Railroad Spike Knife - Doug Merkel	P19	Francis Whitaker Blacksmith Scholarship	P39
Local Group Meetings	P4	Servicing the Champion 400 Hand Cranked Blower	P21	Blacksmith's Exchange	P 40
Second Quarter 2011 Chapter Meeting	P8	Quick Change Table For Metal Cutting Bandsaw	P26	Forms	P 42
Upcoming Chapter Meetings	P10	Introduction to Foldforming Technique	P27	2011 Chapter Calendar	P 43
New NC ABANA Local Group	P10	Barley Twist - Keith Roberts	P28	New Members	P 44
GlaxoSmithKline Donation to NC ABANA	P11			Chapter Officers	P 44

## A Message from Our President



*Cindy Alexander*

### PRESIDENT'S LETTER

The chapter held our 2nd quarter meeting at the Dixie Classic Fairgrounds in Winston Salem. The triad group showed us a great time with Marshall providing barbeque for lunch. Russ Wrye and his son Sam entertained the crowd showing us their skills; Russ was the recipient of a scholarship to the JC Campbell Folk School. It was great to see his son at the forge! The chapter has and will continue to hold our second quarterly meeting at the Dixie Classic fairgrounds. Thanks to Marshall and the triad group for their generous hospitality.

We held nominations for vice president and secretary with Garrett Dunn and Marty Lyon being nominated for their respective jobs, both accepted the nomination. We will hold nominations again at our 3<sup>rd</sup> quarterly meeting.

It is with great sadness that I must tell you that Marty called and is not going to run for secretary or be the newsletter editor after this year. That means that the office of secretary will be open along with the newsletter editor. These two jobs do not have to be held by one person so if anyone is interested please let me know.

The conference in Madison was awesome! There were a few chapter members in attendance. Please look for write ups in the newsletter.

I still want us to host a conference next year in Winston Salem at the Dixie Classic fairgrounds. I'll work with Marshall and start planning one. There is a lot of work involved so we'll have to all work as a team to put on a good conference. I'll be asking for volunteers to help with this. This conference has the potential to make the chapter some money.

As I'm sure most of you have heard there was a horrible accident at an anvil shooting competition in Missouri. Unfortunately our own member and good friend Tim Ryan was injured. He ended up blowing his thumb and half his pinky off; Tim is home in Brasstown recovering.

I hear that Tim has no health insurance and a huge hospital bill. If anyone would like to contribute to a fund to send Tim some help please give me a call or email.

Our 3<sup>rd</sup> quarter meeting will be on September 10 in Goldsboro, hosted by Andy Anderson. Hope to see everyone there.

Forge Safely,

Cindy

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Submissions to the HOT IRON SPARKLE can be made to:

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**6 Carolina Meadows, Apt 203**

**Chapel Hill, NC 27517**

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## Editor's Notes

It is with profound regret that I announce to you that this is the next to the last newsletter I will be editing for NC ABANA. Coincident with that decision is my decision not to run for another term as Secretary. I have been Secretary and newsletter editor since 2006, and will have edited 23 newsletters by the time my tenure ends. As we get older, our lives move in other directions and that is my situation. I hope I have fulfilled whatever expectations you have had in the newsletter and that it has been useful to you in your blacksmithing endeavors. The challenge of trying to come up with interesting items and to innovative has become a bit wearing. For the sake of the future of the newsletter, it is time for someone to step in with a fresh ideas.

## Secretary's Report

A meeting of the chapter was held at the Second Quarter Chapter Meeting at the Dixie Fairgrounds on June 25:

President Cindy Alexander, after thanking Marshall Swaringen for hosting the meeting talked about the SBA conference in Madison, Georgia. The conference was quite successful with 480 people in attendance. She personally thanked Jim Kennady and Robert Timberlake for their assistance. Garret Dunn was recognized for assisting demonstrator George Dixon. Robert Timberlake was given a plaque at the conference as the recipient of the Floyd Daniels Award. She thanked everyone involved in making the NC ABANA petal for the conference project - the SBA Family Flower and for assembling the seven petals into the flower itself. Garret Dunn was thanked for being the "human clamp" to keep the flower together during fabrication. The next SBA conference will be hosted by the Appalachian Area Chapter of Blacksmiths in May, 2013.

Chapter nominations were held for the following two offices:

Vice President: Garret Dunn was nominated

Secretary: Marty Lyon was nominated - later rescinded by Marty (see above)

Next round of nominations will be held at the Third Quarter Chapter Meeting on September 10, in Goldsboro.

Cindy gave an update on Tim Ryan's condition after his accident at the Anvil Shoot competition in Farmington Missouri. She said that he is home in Brasstown. She thought that the fact that he was home so soon indicated that he may not have been as seriously injured as first thought.

Respectfully Submitted, Marty Lyon, Secretary

## Treasurer's Report

### Checking:

**Beginning Balance: \$6715**

	Expenses	Income
Dues		\$3490
Newsletter	\$2910	
T-Shirts	1760	850
Madison Conference	1090	
Lunch for 1 Qtr Meeting	720	530
NC State Fair Rental	700	
Insurance	425	
Other	330	500
Year to date	7935	5370

**Ending Balance: \$4150**

### Savings:

**Beginning Balance: \$2576**

Income: \$790, Expenses: \$508

**Ending Balance: \$2858**

**Comments:** The finances for this year seem to be in line with previous years. We should see a check from the Madison Conference around \$1000 or so. I also expect to sell the remaining t-shirt inventory by the end of 2011, which should generate a few hundred dollars of net profit.

**Jim Kennady, Treasurer**

# Local Group Meetings

## Southern Foothills Blacksmiths — Ray Clontz

### June Meeting

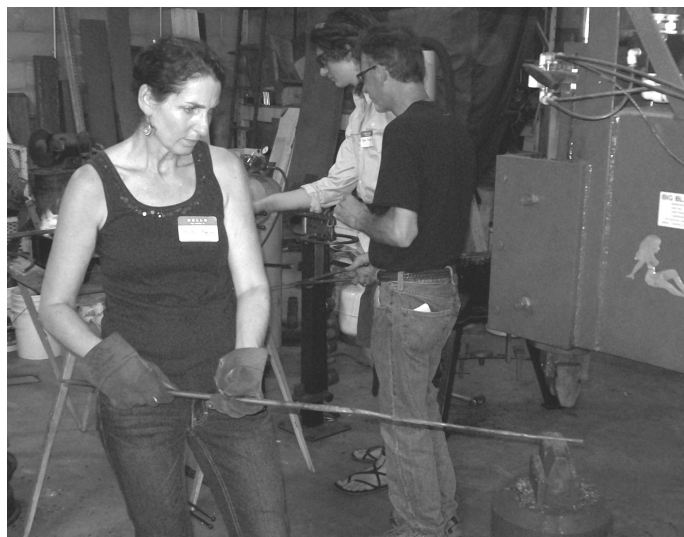
As I have mentioned before, our meeting are not structured and consists of letting the new members learn by doing with help from longtime members. At our meetings, we have many thing going on at the same time. We have members hand forging on the 3 anvils and 2 BIGBLU power hammers and a treadle hammer using up to 3 gas forges as well as having the coal forge going. This gives members experience in using more equipment than is found in most shops with the help of seasoned blacksmiths to instruct them in the proper use of all the equipment. Steve also has mig and tig welding as well a plasma cutter that members can be instructed on. Usually a member will come with a project in mind and bring some material to work with. They usually leave with their project, but we are in the process of implementing an "iron in the hat" program to be done a few times a year so we can exchange finished items as well as materials and tools



*Steve Barringer With New Members*



*David Stitt Grinding His Blade*



*Kate Forging On BigBlue*



*Shawn Emmons Forging*

July Meeting

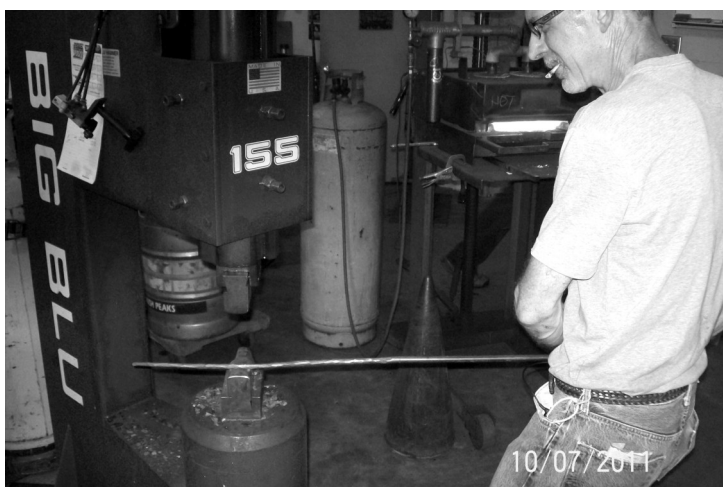
The July meeting had some members missing but since it was vacation time for a lot of people, it was understandable. We did have a couple of visitors that will probably join our group. We had 2 members, Butch Silver and Brian Swink demonstrate to the group the process required to make a billet of both cable damascus and a billet made up of strips of steel strapping and used bandsaw blades. Both billets were forged using the coal forge as the borax flux tends to ruin the lining in a gas forge if it does not have a solid refractory bottom. Both billets welded up solid, we were surprised that the welding went so well. The strapping billet was folded one time and drawn out to about 3/16 thick. The cable billet was not folded, but was also drawn out to the 3/16 thickness. Brian Swink, an experienced knifemaker, took both billets home and promised to bring completed knives from both billets to the next meeting. Since the damascus forging went so well, we will probably see more members wanting to try their hand at making some at future meetings.



*Brian Swink Forging Damascas Billet*



*Members Discussing A Forging Project*



*Ben Andrews*



*Butch Silver Forging a Damaxus Billot*

## Triangle Blacksmith Group — Randy Stoltz

The Triangle area members of NCABANA met at Eric Campbell's shop in South Raleigh on June 4, 2011. Tom Como had volunteered to demonstrate at this meeting. In addition to the demonstration we had several forging stations set up under a canopy for open forging sessions. It was a hot day but 25 to 20 members and guests came to the meeting. Among the attendees were several people who were interested in getting started in blacksmithing and some teenagers also wanting to learn blacksmithing.



The meeting started with Tom's demonstration where he made a colonial era a cooking trivet and a colonial campfire roasting fork



Given the number of attendees just getting started in blacksmithing, we only had Tom's demo scheduled so when he finished we could open up the forges for everyone to give it a try. In addition to the forge and anvil used for the demo we had two forging stations set up under Eric's canopy. While some worked on forging roasting fork like Tom made, other members worked on showing the new members the basics. At noon we had lunch featuring dogs grilled up by Eric and a host of sides and desserts brought by various members.

Following lunch the open forging training sessions continued until late in the afternoon despite the heat. The shade of the canopy and the big cooler full of water were very much appreciated. The guest attendees must have liked the meeting as most of them joined NC ABANA and plan on coming back

## Triad Area blacksmiths — Marshall Swaringen

The second quarter of 2011 is complete. Time seems to be flying by. We held 6 local meetings and the State Second Quarter Meeting. Attendance was holding around 15 members and guests at each local meeting.

Not sure how many members and guest attended the State meeting. We had 55 paying eaters for the BBQ lunch. This was 20 more than last year. Hopefully next year will be 20 more than this year. We need to have a sign in list and name tags next year. Since I brought all the BBQ that I cooked to the meeting and sold all of it, someone at home let me know she was planning on eating BBQ Saturday night. I guess it is a good thing that my wife treats her dogs like kings and queens.

Special thanks to Samuel Wyre for his demonstration to start the meeting. I love to see young people do stuff they enjoy.

The Dixie Classic Fair is only a couple of months away. If you would like to work during the fair, email me your name and phone number, and I will add you to our list and return parking and entrance instruction to you.

### **The Triad Area Blacksmiths lost a long time member. George Manuel passed away June 1, 2011. Here is his obituary from the Winston-Salem Journal:**

*MANUEL TOBACCOVILLE ~ George Washington Manuel March 27, 1940 ~ June 1, 2011*

*George Washington Manuel passed away Wednesday, June 1, 2011 at Wake Forest Baptist Medical Center. He was born March 27, 1940 in Wythe County, VA to the late Frank Manuel and Hazel Virginia Lephew Manuel.*

*George proudly served in the United States Navy from 1958 to 1961 stationed aboard the U.S.S. Independence and later retired from Piedmont Airlines / USAir with 33 years of service as an aircraft mechanic.*

*He was of the Protestant faith and was a member of King Masonic Lodge #722. George was President of the Tar Heel Cutlery Club in Winston-Salem and was well known as an expert on Case Knives. He was an avid gardener and student of genealogy. George previously served as Mayor Pro Tempore of Tobaccoville, where he was on the Village Council and Park Committee. He was a member of the North Carolina Artist Blacksmith Association of North America, where he served as Treasurer. His proudest accomplishment was helping get the Veteran's Memorial built at the Village Park in Tobaccoville.*

*In addition to his parents, George was preceded in death by his brother, David Manuel; and one sister, Virginia Ruth "Tiny" Manuel Pike. Surviving are his loving wife of 52 years, Barbara Surratt Manuel; three daughters, Judi Manuel Rossabi, Lisa Manuel Hamrick and husband, David, and Karen Lynn Manuel; three grandchildren, Rachel Caroline Rossabi, Joseph Amiel Rossabi and Preston Joseph Hamrick; one sister, Betty Atkinson and husband, Hampton; two beloved dogs, Winn-Dixie and Blackie; and also, five nieces and one nephew.*

*A Funeral Service will be conducted at 3 p.m. Sunday, June 5 at Hayworth-Miller Rural Hall Chapel with the Rev. Ellen S. Yarborough officiating. Burial will follow at Rural Hall Memorial Park with military rites provided by the VFW Memorial Honor Guard and Masonic rites by King Masonic Lodge #722. The family will receive friends from 1:30 to 2:45 prior to the service at the funeral home."*



# Second Quarter Chapter Meeting

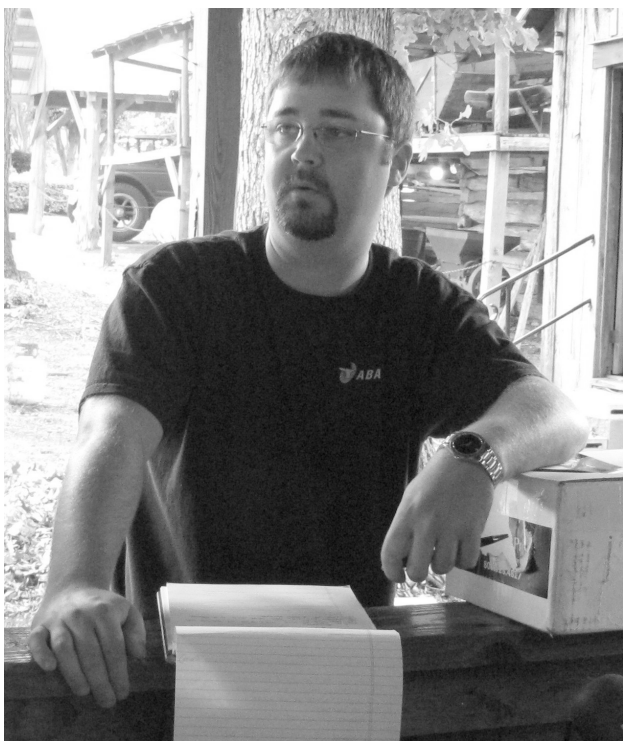
## Dixie Fairgrounds, Winston Salem, NC — June 25, 2011

Once again, the chapter met bright and early on a Saturday morning in Winston Salem. Peyton Anderson, the new President of ABANA spoke to the crowd about the offerings ABANA has for blacksmiths and changes the organization has undergone recently. Peyton answered a lot of questions from members and stayed around throughout the day to meet our members and to address their concerns.

Following Peyton's address, Russell Wyre and his son Samuel (11 years old) stepped up to do a little father and son demonstration. Samuel, with father assisting turned out a scroll with a nice twist, demonstrating both confidence and ability.

Father, Russell, took over the anvil and forge to demonstrate what he learned at a recent course in making woodworking and blacksmithing tools, taught by Dave Smucker, at the John C. Campbell Folk School. Russell attended the course with the financial assistance of a scholarship from the NC ABANA's W. Dean Taylor Memorial Scholarship Fund. He demonstrated and discussed the making of a chisel from the forging process, through grinding, heat treatment, and handle making. He covered all aspects and there was lively discussion between Russell and the very interested audience.

A marvelous lunch of BBQ was served up by Marshall Swaringen with all the fixings and great deserts. I could go to these meetings just for the food. Lunch was followed by a chapter meeting and Iron-In-The-Hat. The afternoon saw green coal action and just a lot of getting together to talk shop and to socialize.

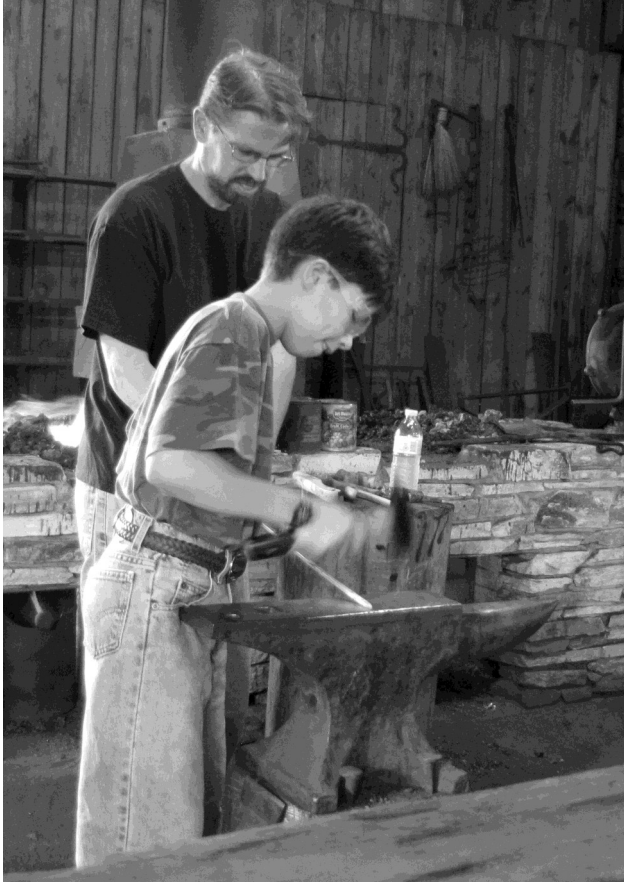


*Peyton Anderson—ABANA President*

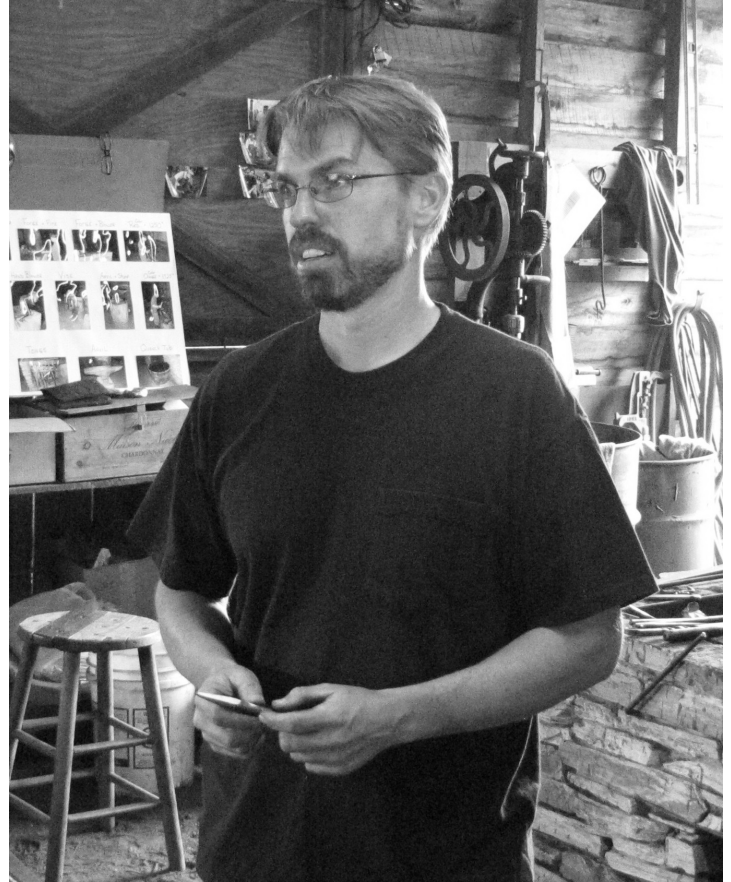


*Russell and Samuel Wyre*





*A Little Assistance From Dad*



*Russell Discussing Chisel Making*

*Below: Sample Pieces Showing  
the Results of Temperature of Heat  
Treatment and Resulting Grain  
Structure*



*Russell's Chisel and Samuel's Scroll*

## Upcoming Chapter Meetings

### **Third Quarter Chapter Meeting at the Waynesborough Historical Village, Goldsboro NC (919) 731-1653 Saturday, September 10, 2011, 9:30 AM**

The historical village is in the Waynesborough State Park, 801 S. US 117 By-pass, Goldsboro, NC 27530

Meeting will be hosted by Andy Anderson, Blacksmith at the village.

Lunch will be served at \$5.00 per person.

### **November Chapter Meeting and Blacksmith Auction at the John C. Campbell Folk School, Brasstown, NC Saturday, November 5, 2011**

The annual meeting and Blacksmiths Auction will take place again on the customary first Saturday of November, which is the 5<sup>th</sup> of the month in 2011.

The schedule will be much the same as in years past, with early coffee and a greetings, and tailgate sales setup. The Whitaker/Spencer Blacksmith Shops will be open no later than 7:00 AM, and the demonstrator (yet to be confirmed) will begin at around 9:30. There will be Iron-in-the-Hat, and a tour of the complete facility, including the newly re-fitted Whitaker Shop. The event also includes a chapter meeting for the Appalachian Area Blacksmiths group.

Lunch will be server at noon for a cost in the dining hall, and then on to the Blacksmith's Auction in the historic Keith House community room until 5:00 PM.

Don't miss it, it promises to be better than ever.

Paul Garrett, Resident Blacksmith, John C. Campbell Folk School

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## Announcing a New NC ABANA Local Group

Introducing the **Wilkes Teaching Forge (WTF)** which began informally meeting in April of this year with just a few devotees and some hanger-on. We are dedicated to preserving the trade of the blacksmith and teaching those worthy and able. Our monthly meetings consist of a demonstration and some hands on green coal time, with show and tell and camaraderie. We hope to serve the Wilkes, Watauga, Ashe, Allegheny, Surrey, Yadkin, Alexander, and Caldwell counties as well as the remainder of northwest North Carolina.

Meetings to be held on the second Tuesday of each month at 7:00 PM

Meetings to be held the Wilbar Forge, (see address below) with other locations to be determined.

Contact:

Lyle Wheeler  
5651 Boone Trail  
Millers Creek, NC 28651  
336 / 838-2284

## GlaxoSmithKline Donation To NC ABANA

Many corporations offer matching gifts programs. Employees that make donations to their favorite 501(c)(3) non-profit organization will have a matching donations from the corporation. As an employee at GlaxoSmithKline (GSK) I am eligible for this type of program. NCABANA is a 501(c)(3) tax exempt non-profit organization and is eligible to receive tax-deductible contributions. In addition, GSK offers a program that encourages employees to donate their time. GIVE is GlaxoSmithKline's Investment in Volunteer Excellence, a program designed to enhance the support that GSK employees give to their favorite nonprofit organizations. This program recognizes and rewards our employees' most valuable gift, their time, by providing funding to help support the important work of community organization across the country. GlaxoSmithKline believes that as the seeds of volunteerism take root in our communities, they will prosper and grow. I am happy to report that NCABANA has received a check for \$500 from this program as a result of me donating my time to NCABANA. This generous donation will help fund NCABANA's programs throughout the year. This money is especially appreciated after I reviewed the income and expenses for 2010 and current year to date.

As Treasurer, I would encourage members to consider matching and other gift programs that are available. Donation and tax deduction information is available from the IRS. ([www.irs.gov](http://www.irs.gov), Publication 526, Charitable Contributions and Publication 1771). If you have any questions about donations please feel free to contact me. I am happy to provide a receipt for any donations you make. But, in these tough economic times I am not asking you to make a donation. (Although your generosity would be truly appreciated.) I know that many have and continue to experience the financial impact of the current economy. Plus there are many that have been affected by recent natural disasters.

I would encourage you to continue to support NCABANA with your annual membership. (If you have lost your job, please to reach out to an NCABANA board member as we have a program to cover your dues.)

Jim Kennady, Treasurer NC ABANA

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## From the Blacksmith Guild of Virginia

For the past 6 years The Blacksmith Guild of Virginia has been labeled as one of the top groups in the country for what we have done with our website, demonstrator lists, and overall family-like atmosphere of the meetings. The goal we set out to accomplish was to create exactly this type of thing and at the end of 6 years it is time to put down the hammer.

The Blacksmith Guild of Virginia has brought in the best demonstrators in the country and put on some of the best events in the area. We want to go out on top and keep from having to change the dynamics of the guild to keep things going as they have been. These changes would be fewer meetings, or paying dues, or both. We do not want any of this for the membership. The best option will be to end the guild with smiles on our faces and great memories in our hearts.

Mike, Linda, Sarah, and I have enjoyed the friendship and fellowship each and every month. We have all made each other better smiths in our Iron in the Hat items, questions and demonstrations, and tailgating items. I want to thank all of you on behalf of our family for the support!

Yesteryear Forge still may put on an event or two a year. I will keep all of your contact information and keep you all posted on any events Mike decides to put on in the future. I encourage all of you to consider joining one the other several guilds in the state :Old Dominion Blacksmith Association Central Virginia Blacksmith Guild Tidewater Blacksmith Guild Artist Blacksmith Group of the Tidewater Blacksmith Guild of the Potomac Shenandoah Valley Blacksmith Guild and of course ABANA!

Warmest regards, Mike, Linda, Sarah, and Peyton

## 2011 SBA Conference at Madison

These are some reflections on the 2011 conference that was held in May

By Cindy Alexander:

*The SBA conference as seen through the presidents eyes*

The SBA consists of 7 chapters who take turns chairing the biennial conference in Madison GA. It was our turn so Jimmy and I were elected to be president and chair the 2011 conference. Needless to say I was chair-woman of the conference that had around 480 people in attendance.



There is a lot of planning and work to get this conference together, it all started as soon as the conference was over the previous year, 2009. Each chapter had their assignments and we held conference call meetings for 2 years. We went to GA to walk the fairgrounds and check things out before conference time. Then a couple of months later it's time to go to conference!

Robert Timberlake and I drove to GA on Tuesday before the conference. On Wednesday afternoon we started letting vendors in and

setting the conference up. The building is turned from an empty space into many areas, registration, souvenirs, the gallery and of course areas for family programs. The fairgrounds was marked so vendors, tailgaters and campers know where their space is.

Thursday morning conference starts with vendor day. We continued to get the forging stations ready with 3 forging stations created, each station was personalized for the demonstrators. The Jimmy Alexander/Bert Smith Memorial station (3<sup>rd</sup> station) was used for the team to put the SBA family flower together, they worked hard all day on it. When the flower was finished it was more than I ever imagined and we all shed a few tears. Needless to say it I bought it at the auction!

I dedicated the conference to Jimmy and coming into the building for registration I had a wall of pictures and articles about him. It was very nice!

Friday morning things got busy as the majority of registration takes place and the fairgrounds started filling up





with people. Demonstrations started along with family classes. Let the conference begin!!!!

During the day I was walking around making sure everything was going as planned. We all had walkie talkies on so communication was great. Green coal was busy with forges going and beginners learning, thanks to the NC guys that helped out. Allen Kress from AFC had Iron-n-Hat tables lined up with lots of donations! The fairground was packed with vendors, tailgaters and conference goers. What a fun time!

Friday evening was the meet and greet followed by the auction. Before the auction I received the pink anvil that is passed along to the SBA president. I also had the pleasure of awarding the Floyd Daniels Award which I awarded to Robert. Then it was auction time, Colonel Tim Ryan was our auctioneer and as always put on a fantastic show. Following the auction was the blacksmith competition with a great crowd staying to watch, more people than I've ever seen in previous years. We didn't get back to the hotel until midnight...what a long day!

Saturday was a half day and things started to slow down for me. All was going well. After demonstrations were finished we held a quick auction of demo pieces and chapter posters that had been signed by their respective members. Then it was time to close the conference.

As the blacksmith tradition goes Col. Tim Ryan closed the conference with an anvil shoot. This is done as a memorial to members that have been lost since the last conference, unfortunately instead of assisting Tim with the set up Jimmy's name was on the list.

Everyone starts pulling out and it's clean up time. All that we did to set up for the conference has to be undone. What a chore it can be but thanks to the many hands we were done in no time. Thanks to John Fluke and Dick Snow for their muscles, all the tables and chairs that were rented had to be moved to a location outside.

At the conference in 2009 it was decided (by Jimmy and Alfred McClure) that I should wear an utility kilt and work boots, sort of be a mini Alfred. Well this conference I was wearing exactly that and to be honest it was very comfortable, there are a lot of guys wearing them!

I will remain president of the SBA until December of this year, then the charge will go to the AABA chapter for the next conference in 2013.

I had a great team and together we put on a fantastic conference. As Clay Spencer said to me it was one of the best ever (what a compliment!) and Jimmy would be proud.



## By Jim Kennady

This year NCABANA was in charge of organizing the conference. Cindy Alexander, representing NCABANA, was the conference's chairwoman. When I arrived in Madison late Wednesday afternoon I found Cindy was working hard with all the other organizers to arrange the demo areas, coordinate registration, help the vendor setup and take care of the last minute details. After registering, I set off to unpack a full truck load of 'stuff'. I am not sure why I needed to bring a entire truck load of stuff, but I did. On Thursday morning we began assembling the special flower project. Thanks to Robert Timberlake, NCABANA had the best looking flower pedal. The frame and pedals were carefully laid out and riveted in place. As with many projects there were some design modifications as assembly progressed throughout the day. In the end the flower turned out fabulously. On Friday morning the demonstrations began, George Dixon and Chuck Patrick were the featured demonstrators. At the third forging station, Jimmy Alexander/Bert Smith Memorial Forging Station, Robert Timberlake demonstrated a socket handle chisel. Later that morning I demonstrated a tea rose, Fredrick cross and a folded form bracelet. Friday afternoon, Andy and Andy from Big Blu forged a large sign bracket. On Saturday, George and Chuck continued their demos. Elmer Roush and then Andy Phillips demonstrated at the third station. In addition to some great demos, there was plenty of vendors, tailgate sales and programs for the family. I would like to thank Garret Dunn for his help. Also a special thanks to Dick Snow and John Fluke who work hard to sell NCABANA t-shirts.

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## By Randy Stoltz

As a first time attendee of the Southern Blacksmith Association (SBA) Conference, I thought that I would provide my impressions of the conference. The SBA Conference was held Thursday May 19th through Saturday, May 21st, 2011 at the Lions Club Fairgrounds in Madison, GA. Madison is about a 6 to 6 1/2 hour drive from of Raleigh. At the conference they have they have...

### Demonstrations



## Tailgating and Vendors



## An Auction



## And More

In addition to the above activities there is Iron in the Hat, displays, green coal classes (one on one forging training), family activities (classes in broom-tying, basket weaving, chainmail jewelry, leather work, painting, and beading), and finally an anvil shoot. For those not familiar with anvil shoots, an anvil is carefully placed on the ground, a second anvil is placed on top of the first anvil with a small amount of black powder with fuse in-between the two anvils. When the fuse is lit the black powder detonates and launches the anvil into the air. Note that this is NOT the brightest thing in the world to do and may result in serious injuries. I also believe that claims of lofty altitudes achieved by the anvil are often exaggerated. That said watching things explode can be entertaining (as long as you are not the target).

## At the Conference

I spent more time talking and meeting with blacksmiths and other interesting people than I did attending formal demonstrations. There is a whole lot to be learned from listening to other people at these events. I also spent time wandering around the tailgaters and vendors. Even though that the number of vendors was down some this year it is still a great place to find tools and materials for blacksmithing. On Saturday I volunteered to help out with the green coal classes in the morning and attended the very large Iron in the Hat raffle. Even

though it was hot during the conference, the humidity was low and it was not too uncomfortable to me (your mileage may vary). Wear a broad brim hat, use sunscreen, and drink lots of water. The best times for shopping the tailgate and vendor areas is Thursday and Friday as some of the vendors left Friday evening. The demonstrations, green coal sessions, and classes are all day Friday and Saturday morning. Saturday afternoon they have the Iron in the Hat, Tool box raffle, and anvil shoot. All in all I had a very good time at the 2011 SBA conference.

### **Facilities and Finances**

The fairgrounds where the SBA Conference is held, is like many small county fairgrounds with a grassy field, several livestock barns, a meeting hall, and limited facilities. There is space for primitive camping (no hookups), porta-johns, some faucets for water, and some trees around the fence that offer some shade. In other words, it is a pretty good place to hold a blacksmithing conference. Remember to bring a chair, some shade, and plenty of water to drink. Located just off the highway, there are a number of inexpensive places to eat and several shopping centers in case you forget something. You can attend this conference without spending a lot of money if you carpool and camp. I drove down with Randy Marshburn and we split the cost of transportation. We left Cary on Thursday morning at 6:00 AM and got there about 12:30 PM. There is no charge for camping and I have a large cabin tent along with plenty of camping gear, so we camped at the site. The conference family registration fees were \$50 and the classes \$10 each and included a very good meal prior to the auction. The one thing that may deter some people from attending is that the Conference is Thursday through Saturday which may require you to take two days off from work. For more details on the 2011 SBA Conference demonstrations and classes visit their website at [www.sbaconference.org](http://www.sbaconference.org)

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### **By Tal Harris**

The 2011 SERBC was awesome. For various reasons I had not attended this conference since 1997. It was impressive to see how much the gathering has improved over the years. Tailgaters, commercial vendors, demonstrators, books, fellow smiths with whom ideas could be shared all came together for a wonderful weekend. Cindy Alexander and the team really pulled out all the stops. I can honestly say I did not hear one negative comment during the entire event. It isn't often one can say that. And I'm sure there were many behind the scenes putting out fires to keep it that way. And with that said, "Thank You" to everyone who planned and attended the Conference. It takes everyone's contribution to pull off such an event and it all came together this time in a big way.

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## **Hot Weather Tip From Ray Clontz**

A quickie sweat band - A clean cotton sock- 2 large safety pins- A rubber band- works great, highly absorbent- looks kind of funny-but I forge alone.



# Scholarship Report — Randy Outland

## Making Woodworking Tools at John C. Campbell Folk School

This past week I had the pleasure and challenge of participating as a student in a course in making woodworking tools taught by Chuck Patrick and John Kraus at John C. Campbell Folk School in Brasstown, NC. Most of you are familiar with this venue and its wonderful surroundings with excellent courses of study in many diverse crafts and activities. The blacksmith courses are taught in the new Clay Spencer Blacksmith Shop adjoining the old Francis Whittaker Blacksmith Shop. I am very appreciative of the W. Dean Taylor Memorial Scholarship awarded me by NCABANA to help with the expenses of this course.

We were a small class of four with varying levels of expertise, but with a will to learn and a commitment to spending the maximum amount of time to do so. We were heating, hammering and hollering most evenings until 10:00PM or later.

Chuck prepared us for the week by sharing with us the science behind the process of heat-treating steel for the different tools and their uses. His lecture and demonstration covered the various transformations of the steel as it is heated and then cooled, each step changing the structural properties of the steel in various ways.

John started out with an assignment to familiarize us with the forging and heat-treating of W-1 tool steel. We had to execute the necessary steps to end up with a mortising chisel of  $\frac{1}{4}$  inch square steel, including turning the handle on a wood lathe! After all, it was a woodworking tool-making course. First was the cutting of the working end at an approximate  $45^\circ$  angle by hand with a hacksaw. Next came the drawing out and tapering of the tang of the chisel. Then we heat-treated and tempered the cutting end of the chisel to make an effective tool. Lastly, we designed and turned a handle for the tool on a wood lathe.

Chuck's second demonstration was the forging of a froe to show how to form a tapered eye and to introduce us to forge welding. This tool was made from mild steel and gave us the challenges of uniformly thinning a blade, forming an eye for a handle and learning the nuances of forge welding – not nearly as easy as Chuck made it look!

After this, we were allowed to come up with our own projects to complete for the week. I have a carpenter friend who makes bowls, so I decided on a hollowing adze as a gift to him - a project I later realized was quite ambitious. Nevertheless, with several mistakes and a bit of frustration behind me, and a lot of help and encouragement from Chuck and John, I was able to complete that project with a respectable tool that actually functions, I think!

Perhaps this would be a good place to illuminate the excellent observations and teaching of Chuck Patrick, which is anchored in his many years of experience and experimentation as a blacksmith. As we began to attempt more and more work at the forges, every so often we would hear "Metal's too cold, Randy!", or "Can't forge it if it's not hot, Brian!" or "You'll never get a welding heat with that fire!" These were just a few of the friendly admonitions that would in the course of the week help us to learn a great deal about good blacksmithing practices.

Both Chuck and John were excellent teachers and mentors and were always willing to share their knowledge of the craft, as well as a humorous story or two. John Kraus is very unassuming and makes no effort to impress



*Instructor Chuck Patrick*

you with his knowledge. If you ask a question of him, he will take the time to help you figure out the answer you are looking for by involving you in the problem solving. As he speaks, you realize that this is a guy who knows a lot about a lot of things, and thinking out of the box is his specialty.

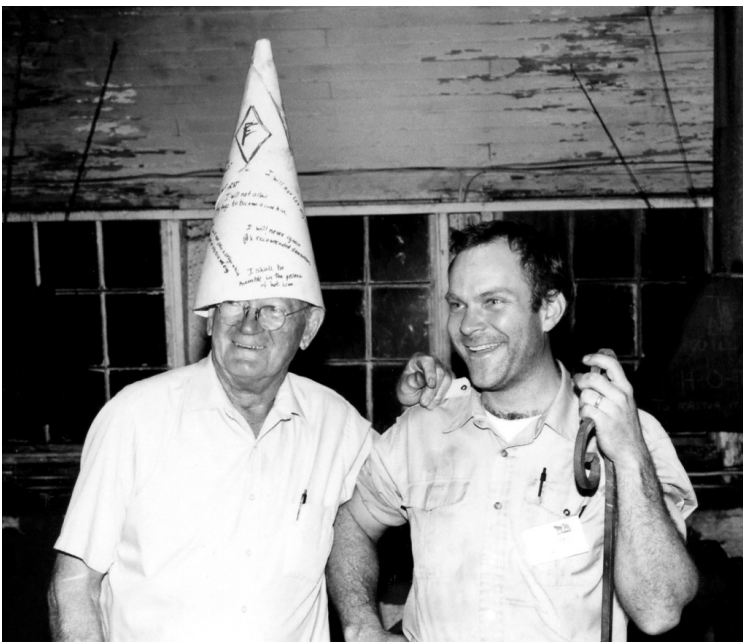
All in all, this week of learning a little about making tools and a lot about good blacksmithing practices has fueled my fire to continue to learn all I can about moving metal when it's hot. I made new friends and enjoyed the food, the fun and the frivolity that abounds at John C. Campbell Folk School. My wife was taking a course as well, so it was a great getaway. I will plan to go back soon to further expand my knowledge in this wonderful art and craft of the blacksmith.



*My very rustic froe – handle cut and shaved from a maple branch*



My bowl-hollowing adze—mild steel w/ tool steel cutting edge



### From Tal Harris

When I read Clay Spencer's remarks about Francis two issues ago, it reminded me that I had this picture. It was taken during my first two week class with him in 1992 at the Folk School. I was 31 and Francis was 85 and had driven from Colorado for the class.

## Don't Forget October is Fair Month

**Dixie Classic Fair**  
**September 30 - October 9, 2011**  
 Winston-Salem, NC  
[www.dcfair.com](http://www.dcfair.com)

**North Carolina State Fair**  
**October 13-23, 2011**  
 Raleigh, NC  
[www.ncstatefair.com](http://www.ncstatefair.com)

## Railroad Spike Knife by Doug Merkel



**Spike 1.** Here is another use for your hoard of RR Spikes other than holding down your railroad tracks. These knives are made from high carbon spikes. They have an HC in raised letters on the head of the spike. High is a relative term as they run 25 to 35 points of carbon depending on what was thrown into the melting mix. The HC spikes are higher in carbon than just the regular spikes. I was told that they upped the carbon content so the the workers could use hydrolic pistons to push in the spikes rather than by swinging a sledge.

**Spike 2.** Hot cut a line about half way to the tip on all four sides. 1/16 to 1/8 inch deep is fine. No need to go all the way thru the spike. Great use for the treadle hammer for this part of the forging.

**Spike 3.** Twist the spike one and one-quarter turns (either direction) and then back-up one-quarter turn. The twist provides a nice grip for looks and for holding. The backing of one-quarter turn reopens the cut lines which closed up when you did the initial twist. Before it cools or reheat the spike and take all the bends out of the RR Spike blank by using the post vise jaws. You remember how, just clamp the blank hard between opposite corners (kitty-corner) when the iron is red to orange hot.



**Spike 4.** Draw out the blade part of the knife with the hand hammer or use your power hammer. The blank is now about 1/4 to 5/16 thick at this time. Start to define the tip with the hand hammer.

**Spike5.** Draw down the blade using the cross pisen hammer of the drawing dies on you power hammer. Place the edge of the blade on the far side of the anvil and drive it down to define the grip area. Thin down the blade with the hand hammer, finalize the shape and make sure things are all straight before you let the blade normalize. This is the same process in forging any knife blade from scratch, no magic here. This is the last step of actual heavy forge work so take the time go get thinks straight now.

**Spike 6.** Once the blade is cold move over to your belt grinder and shape the blade profile first. Make it look like a knife from a side view, that is, grind away anything that does not look like a knife.



**Spike 7.** Thin down the sides of the blade to your desire. Clamp the blade vertically in the post vise and use your Oxy/Acety torch with a small cross pien hammer to forge in a finger stop.

**Spike 8.** Final heavy grind work is finished and any file work is completed. This knife has a small notch where the finger stop meets the blade edge and some thumb stop grooves on top of the blade. Don't get carried away with the files as less is more on this style of knife.

**Spike 9.** Apply your touch mark, finish grind and lightly polish out marks with a scotch bright belt. Stamp in any lettering that you may want.

**Spike 10.** Heat Treatment. Bring the blade to critical temp (non-magnetic) and quench in Gunther Super Quench or salt water. Neither plain water nor oil cool fast enough to harden the metal. Polish up the blade and temper in your flea-market toaster oven to a very light straw. Buff up the polish, apply a final cutting edge and away you go. You can find the formula to make some Super Quench on the internet.




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## From David Oliver

David, a long time member of NC ABANA lost his mother in May. The chapter extends its condolences to David and his family.

Unfortunately, David also reported that he has radial nerve damage in his blacksmithing right hand.

# Servicing the Champion 400 Hand Cranked Blower

## By Randy H. Stoltz

### Introduction

The Champion 400 hand cranked forge blower is one that is commonly encountered in blacksmiths shops all over. It is also one that you can find for sale at flea markets, auctions, and tailgate sales. The condition of the blowers can vary greatly. At best it may work and just require cleaning up and servicing. On the other hand it might be missing parts or locked up and not operate. The key is to check it out before buying it and pay accordingly. If it's missing parts, note that few replacement parts are available though some can be relatively easy to make. This article will show how to service the Champion 400 series blower and fix some of the more common problems. The blowers come in several sizes but are very similar in construction.



### Getting Started

Most of these hand cranked blowers have seen decades of use in a dirty shop and have grease much older than you caked on most every surface. So the first thing to do is to use a good degreaser and brush to clean off as much gunk as possible. Then use a penetrating oil on all the threaded parts to help break them free. Then you can start removing parts to check and service the blower. I had to soak all the parts, including the whole gearbox, in a degreaser solution and then scrub them with a brush to clean them up.



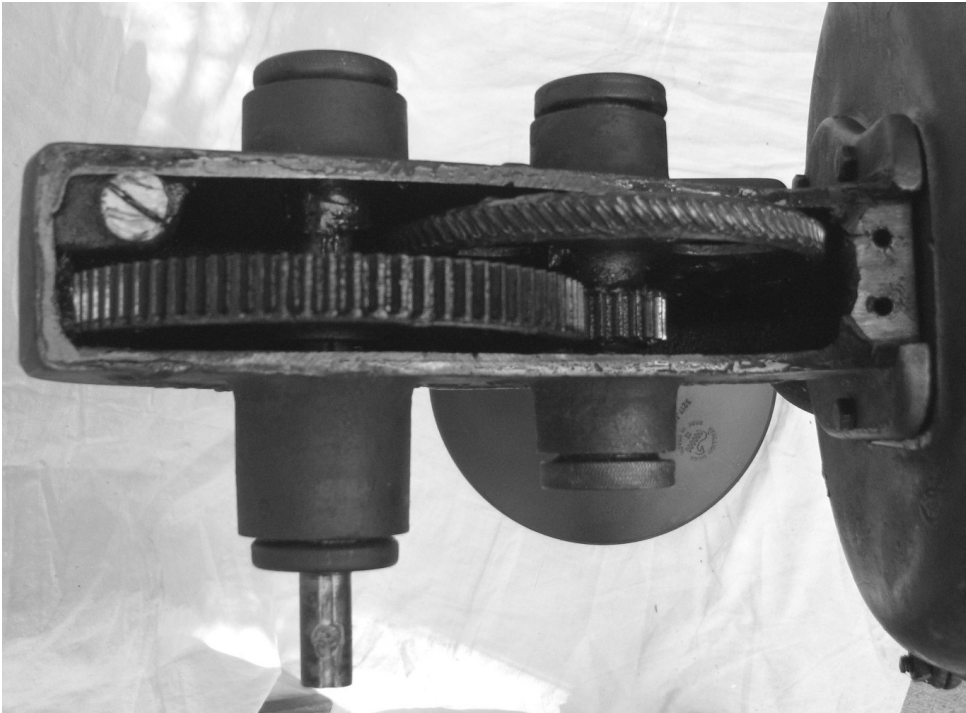
*Top view of the Champion 400 forge blower.*



*Gearbox with cover removed.*

In the photo above on the left, note the two shiny screws at the front of the gearbox cover and behind the fan shroud. These are slotted flat head 1/4 inch 20 (threads per inch) machine screws that hold the cover on. Note there is a third screw inside the gearbox that slides into a slot in the rear of the cover. To take the gearbox cover off, remove the two screws, slide the cover to the rear, and lift up. Also in the photo above, left, you can see the 1/4 inch NPT brass nipple and cap screwed into the oil fill hole, the shaft of the replacement handle, and the unfinished mount for the handle. In the photo above, on the right, note the screw inside the gearbox (upper left corner of the gearbox) and the mating slot in the gearbox cover (lower left corner of the gearbox cover).

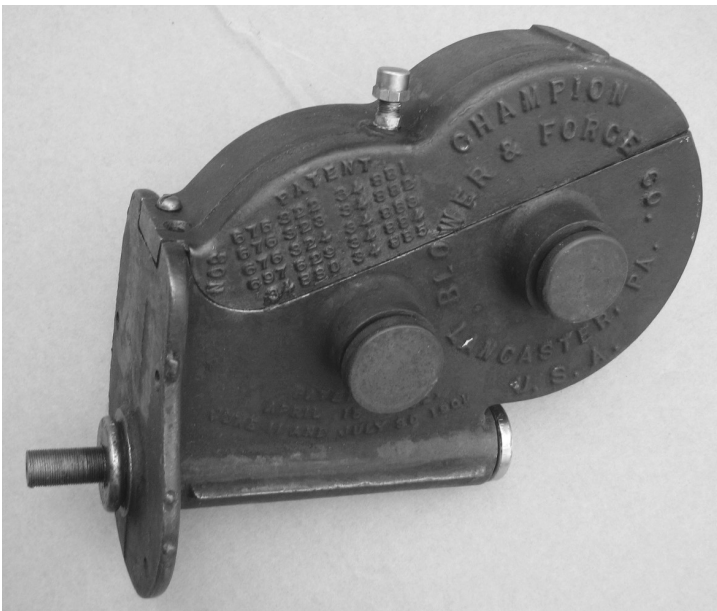
## Packing the Bearings with Grease



*Top view of the gearbox.*

In the photo to the left you can see how the gears are mounted on a shaft that runs through the gearbox. The large straight tooth gear, turned by the handle, rotates the smaller straight tooth gear which is on the same shaft with the large angled tooth gear. The angled tooth gear drives a worm gear (not visible) on the output (fan blade) shaft. For each turn of the handle, the output shaft and fan rotate approximately 50 times. Bearings are located on each end of the gear shafts and are covered with a threaded bearing cap that is also a grease cup. In the photo you can see 4 of the 6 bearing caps. The output shaft (on the bottom of the gearbox) has bearings and bearing caps on both ends. To grease the bearings,

remove the cap, fill the cup with grease, and replace the bearing cap. As you screw it in it will force grease into the bearings.



*Side view of the gearbox showing the bearing caps on the front and rear of the output shaft (bottom of the gearbox)*



*Bearing cap on the front of the output / fan shaft..*



*Bearing cap on the handle shaft.*



*Side bearing cap.*

## Removing the Fan Housing and Blade

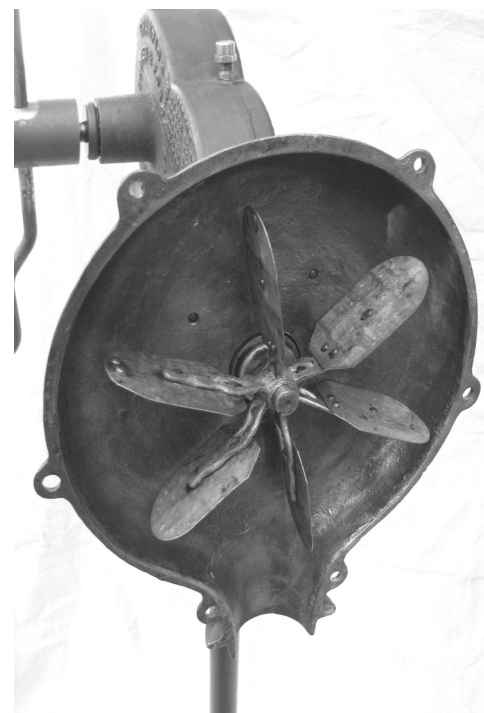
To grease the front output shaft bearing you have to remove the front fan housing and fan blade. To take off the front fan housing, remove the 6 machine screws that are on the flange of the housing. Note the two halves of the fan housing may have a bondo like putty between them so you may have to pry them apart. Don't drop the housing as it is cast iron and will break. The fan blade is threaded onto the output shaft with a locking nut to hold it in place. Made a brass hub and steel blades you do not want to use a lot of force trying to remove it. Use lots of penetrating oil to free up the fan blade. Note that when you reassemble the fan housing, you may have to use some gasket material between the two halves of the housing so they mate properly and to give the fan blades enough clearance to spin freely. I used an RTV silicon gasket material. These casting were not perfect and that is why the original putty was there.

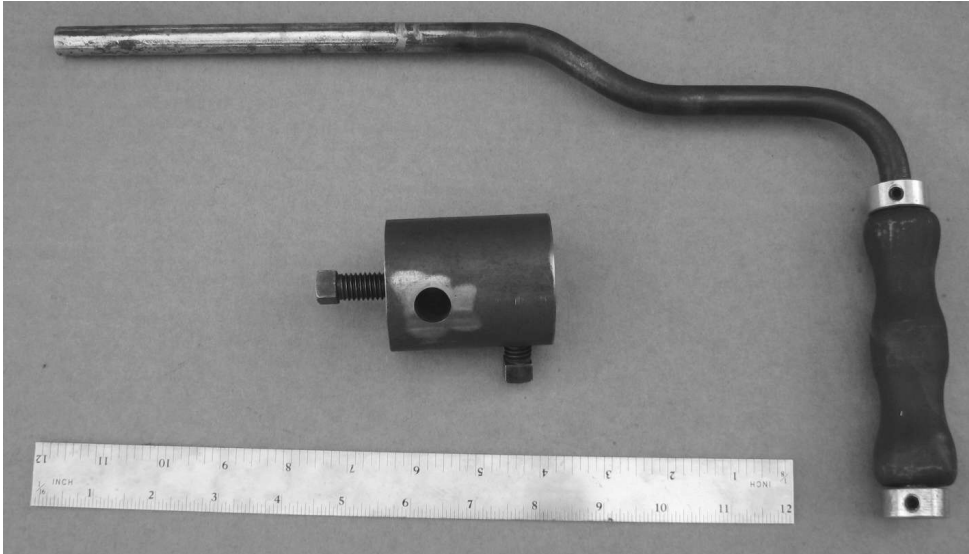
## Making a handle

The forge blower in these photos was missing the handle and the coupler to mount it to the input shaft so I had to fabricate both. For the handle itself, I used an 1/2 inch round piece of stock and used a torch to make the offset bend in the shaft and the 90 degree bend for the wooden handle (which is held in place with 2 1/2 inch collars with set screws).

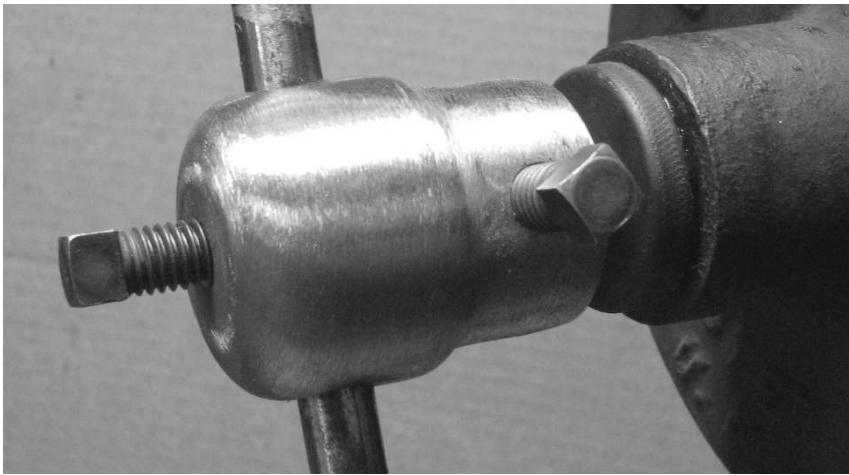
To make the mounting coupler for the blower and handle, I used a 3 inch length of round stock (1 7/8 inch diameter) and drilled the holes for the handle (1/2 inch) and the blower input shaft (5/8 inch). I then drilled and tapped the holes for both square headed locking screws (3/8 inch). To shape the mounting coupler I put it on a shaft and ground it on a belt grinder using the friction of the sanding belt to rotate the piece while loosely holding the shaft. Using this method I radiused (rounded) the end and reduced the size of the neck.

You could make this part on a lathe but it is also possible to grind it by hand. As a final step, all the shine parts were given a finish to match the blower. The coupler was colored using a ferric chloride / iron oxide





mixture, and then put in the gas forge under a piece of scrap to darken. The nuts, bolts, and screws were de-plated using muriatic acid and then too put in the forge to darken them.



*The mounting coupler after grinding*

## Making a Pedestal Stand

The tripod base that comes with the Champion 400 series blower is very heavy and the detachable legs can be an obstruction to trip over so I made a lightweight portable pedestal stand to use instead. Using a 22 inch cupped plow disk as the base, I welded a 1 inch pipe flange to the disk and threaded a 1 inch Schedule 40 pipe into it to form the post. To make the pintle socket, I welded two successively larger pieces of schedule 40 pipe to the top of the 1 inch pipe.

*Assembled blower with replacement handle on pedestal mount*





## Common Problems

Problem Part	Solution or Source
Legs for the stand missing or rusted away.	You can use 1 1/4 inch electrical conduit (EMT) and a pipe bender to make replacement legs. The thin wall tubing is very similar in size to the original legs. Or you can do like I did and make a single post pedestal mount. An example is shown in this document.
Handle missing or broken.	A new handle and the union/mounting can be easily fabricated as shown in this document.
Gearbox leaks oil out the front and the fan splatters it all over everything.	Pack the front bearing on the output (fan) shaft with grease. There are no seals on the output shaft. The grease functions as a seal and lubricates the bearings. How to do this is shown later.
Top cover of the gearbox missing or broken.	If the cover is missing it will be tough to replace. You will have to salvage one from another blower.
Broken front or rear cast iron fan shroud.	If it is cracked you can braze or weld it. If missing or unrepairable this part will have to salvage from another blower. Though you could fabricate one from thick sheet metal (think shot bag and auto body hammers to shape the metal).
Missing oil fill fitting. The oil fill hole on the top of the gearbox cover is supposed to have a fill spout with a spring loaded cover (like on older electric motors).	You might be able to find one on an old piece of equipment or electric motor that fits. Or you can do like I did and screw in a 1/4 inch NPT brass nipple with a brass cap (shown in photos in this document).
Missing threaded bearing caps / grease cups.	If you know someone with a lathe you can turn and thread replacement caps from steel or brass.
Bearings badly rusted, seized, or worn out.	The bearings can be replaced but it can be difficult. First try soaking them in a penetrating oil to free them up and clean them. If they have to be replaced note the ball bearings are loose and held in place by a threaded race. Soak the assembly several days with a penetrating oil / solvent to free up the bearing race. You might have to use a torch to loosen it up (but clean off the flammable penetrating oil first). Once the threaded race is off you can remove and replace the ball bearings.
Gears Broken or missing teeth.	The gears are made of brass or bronze so if you pry on them much they will break. Also it is possible to chip or break gear teeth through misuse. It should be possible to repair broken gears by mig welding with silicon bronze wire or by using a torch and brazing rod. For individual teeth build up the tooth area with filler material and file to shape.

# Quick Change Table for Metal Cutting Band Saws

By Randy H. Stoltz

The horizontal / vertical metal cutting band saws are a very useful tool. With a cobalt bi-metal blade you can cut many items. However switching between the horizontal and vertical modes can be a nuisance. Additionally the small sheet metal table that comes with the band saw for vertical does not work well. Since I use the saw in both orientations I made a larger table that can be quickly installed and removed. The table simply drops into position and uses the vice built into the saw to hold it in place.

The Table is made from 3/16 steel plate and the support is a piece of 1 1/2 x 1/4 inch stock. The side plate on the table was welded on to keep the table from flexing or warping. Only one side plate was added to the front side of the table. The far side of the table was left open so a guide or fence could be easily clamped onto the table without a lip in the way. To install the table, position the blade into the slot on the table, place the support



into the vice, and tighten the vice. The vice on the saw holds the cutting table in place so no screws are needed. Note the screw holes in the table which were transferred from the original saw table. After using the table a few times I realized the vice on the saw clamped the table securely enough that the screws were not needed. Thus you can install or remove the table in seconds when you need to change between horizontal to vertical modes.

# Introduction to Foldforming Technique

By Jim Kennady

Fold-forming is a metalworking technique where metal is folded, repeatedly forged, annealed and then finally unfolded. This process creates a dramatic new three-dimensional form. It can best be described as a combination of origami and traditional metalworking. The folded form process is an efficient way to create countless numbers of unique three-dimensional forms. Foldforming is an innovative and simple hand forging technique that can augment traditional procedures. This example of the technique will craft a bracelet from flat bar stock.

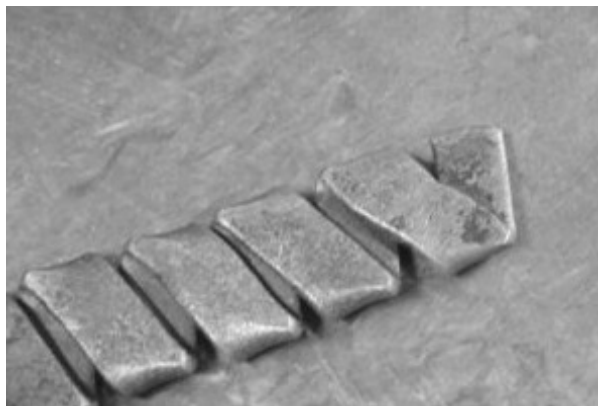
Material: 1/2" x 1/8" rectangular bar ~24" long (or longer)



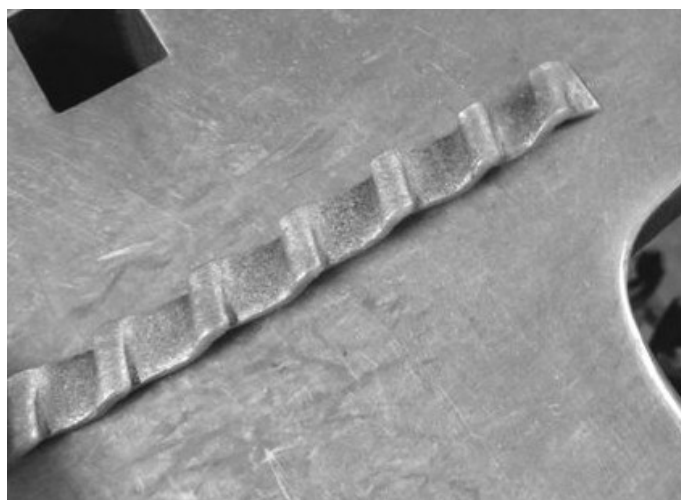
Begin rolling the bar over the anvil's horn.



Continue rolling the bar until the desired amount of material is coiled.



Flatten the coiled bar at or above a red heat



Unwrap the flattened coil and carefully straighten with a wooden mallet

Charles Lewton-Brain is credited for 'inventing' the technique in the late 1980s. He has published a book, primarily for non-ferrous sheet metal, *Fold-forming*, Charles Lewton-Brain, Brynmorgen Press, 2008, ISBN 978-1-929565-26-9. His website contains additional information on foldforming techniques, [www.brainpress.com](http://www.brainpress.com)

## Barley Twist - by Keith Roberts

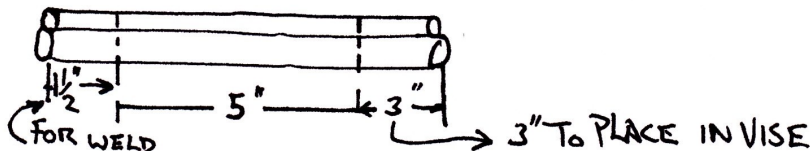


The 4<sup>th</sup> quarter 2010 issue of The Hot Iron Sparkle had an article from Paul Garrett showing a beautiful twist - called the Barley Twist. The twist intrigued me but the article did not go into detail how to do it. So I did some research and found a short explanation on how to do it in the Blacksmith Cookbook (about 2-3 sentences). As ALL the Blacksmiths in the Triad Area will tell you - I need more than that. By the way THANKS to ALL the Triad Area Blacksmiths who have helped me and given me guidance over the past few years.

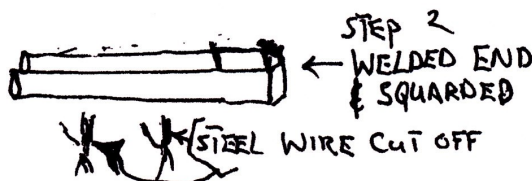
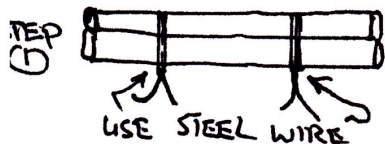
So the following is the way I do a Barley Twist

# BARLEY TWIST

I USE  $\frac{3}{8}$  ROUND STOCK AND  $\frac{3}{16}$  CUT LONGER THAN YOU NEED THE WELDED END WILL BE CUT OFF IN LAST STEP.



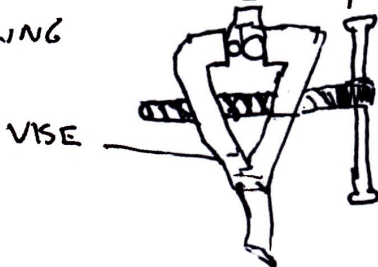
① WIRE  $\frac{3}{16}$  ROUND STOCK TO  $\frac{3}{8}$  ROUND STOCK FOR WELDING. DO MOST OF THE HEATING WITH  $\frac{3}{8}$  ON BOTTOM TO KEEP  $\frac{3}{16}$  STOCK FROM OVER HEATING. FLUX RETURN TO FORGE AND BRING UP TO WELDING HEAT; JUST BEFORE BRINGING OUT OF FORGE TO WELD ROTATE  $\frac{3}{16}$  STOCK TO BOTTOM TO BRING UP TO WELDING HEAT. ONLY WELD ONE END.



② AFTER WELDING SQUARE END THIS WILL MAKE IT EASY TO USE A TWISTING WRENCH ON; ALSO CUT STEEL WIRE OFF USED TO HOLD  $\frac{3}{16}$  &  $\frac{3}{8}$  STOCK TOGETHER IN STEP 1

③ RETURN TO FORGE KEEPING  $\frac{3}{16}$  STOCK ON TOP; BRING  $\frac{3}{8}$  STOCK UP TO ORANGE HEAT, THE ROTATE BRING  $\frac{3}{16}$  STOCK UP TO A GOOD ORANGE TRY TO KEEP STOCK TO BE TWISTED TO AN EVEN HEAT

④ BRING OUT OF FORGE COOL THE END NOT WELDED CLAMP IN VISE WITH  $\frac{3}{16}$  AND  $\frac{3}{8}$  ROD SIDE BY SIDE; VISE SHOULD BE GORLLIA TIGHT PUT TWISTING WRENCH ON SQUARED WELD SQUARED END MAY ALSO NEED COOLING



\* A COUPLE OF HEATS AND COOLING ALREADY TWISTED AREAS MAY BE NEEDED TO GET TWIST EVEN

⑤ ONCE TWISTED REMOVE  $\frac{3}{16}$  STOCK BY HEATING TWIST AND UNTWISTING  $\frac{3}{16}$  STOCK OR LEAVE IT FOR A DOUBLE TWIST

⑥ CUT WELD END OFF AFTER  $\frac{3}{16}$  STOCK IS REMOVED FROM TWIST

# Tal Harris's Trip to France and Belgium- Part 1

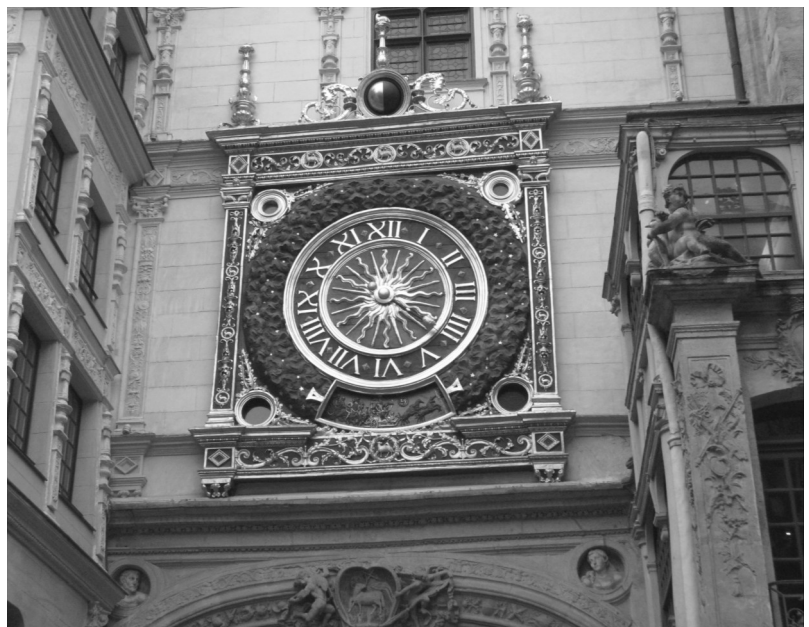
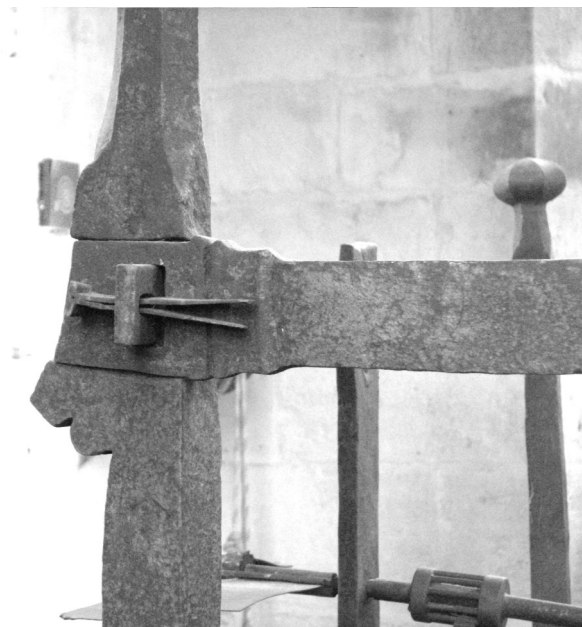
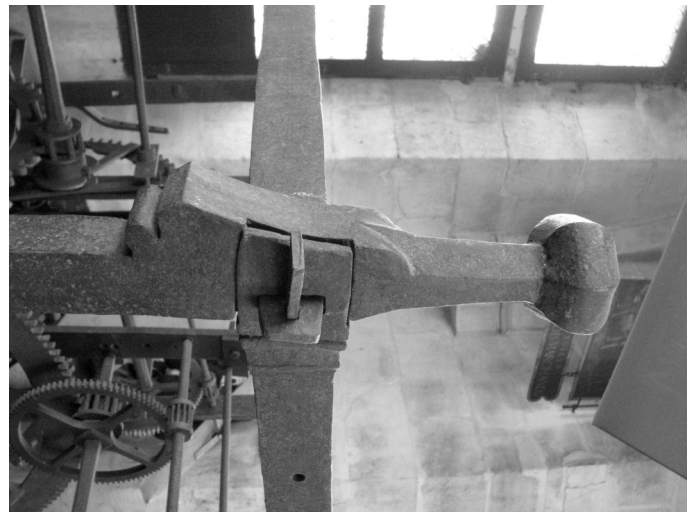
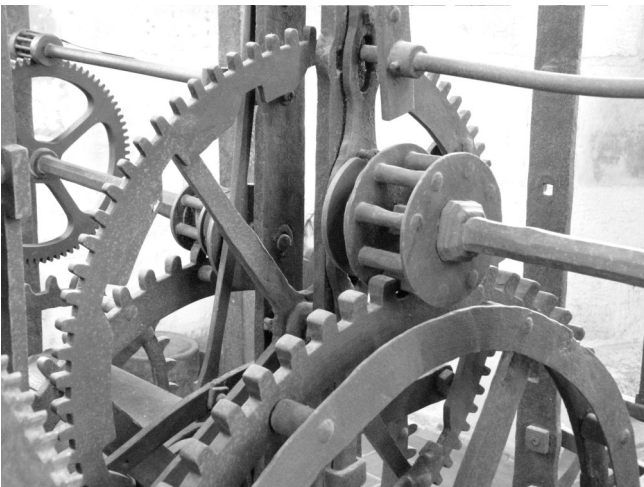
## Rouen, France

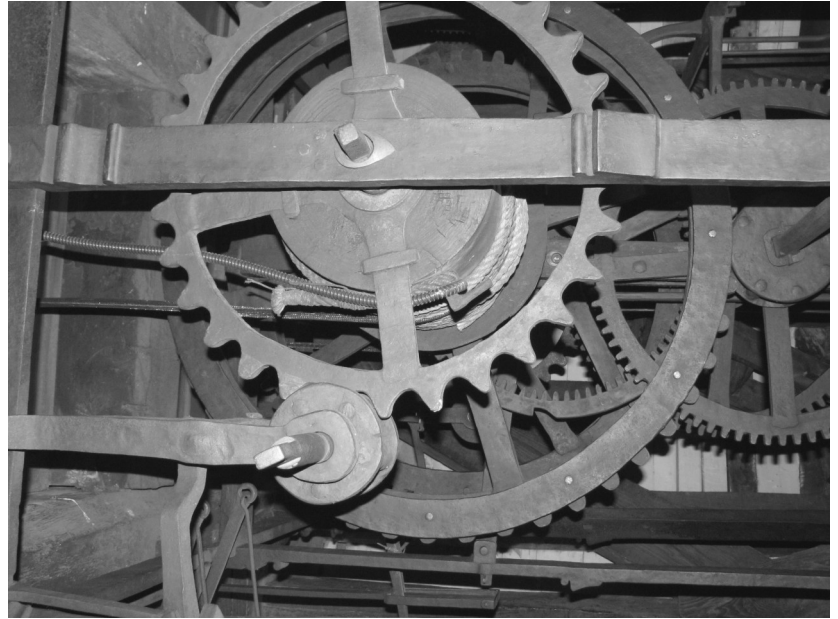
Rouen is the town in France where Joan of Arc was imprisoned and burned at the stake. The city retains several streets of timberframe structures that today serve as housing, hotels and various businesses.

Most of these pictures show joinery and mechanism of some early clocks on display in a clock tower in Rouen. Lot's of interesting connections and movement. The clock tower was several stories tall and the gilt clock dial sits above an arch that spans a street in the city.

The church shown in one picture is Rouen Cathedral. It has a cast iron spire which is interesting to read about if you have time to do an internet search for more information. The cathedral contains the tomb of Richard the Lionheart's heart. As Richard was King of England and Duke of Normandy, his body is entombed in England but his heart lies in Rouen.

Rouen was also damaged in the days leading up to June 6, 1944 with several buildings still wearing the scars of the time.





## Ironwork Museum, Rouen, France

This ironwork collection continues to be my most favorite ever visited. The book "Decorative Antique Ironwork" (I think the most recent reprint was by Blue Moon Press), is a catalog of the collection that was originally published in the 1920's. Imagine thousands of items ranging from lock and keys to prosthetic limbs, all on display for study.

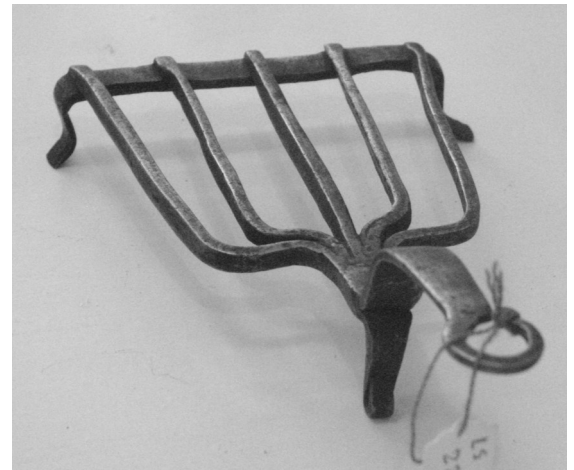
The pictures show a variety of ironwork including repousse', branching scrolls, grille work, carved griffins,

and the representation of a partially eaten candy bar made of iron. One piece of historical interest is the letter "F" with the crown cresting above it. This is a latch that would be used on a cabinet or other small door application. It dates from the reign of Francis the 1st who was king of France from 1515 - 1547. The surface of the piece is still bright after almost 500 years, which is amazing even if you consider that it's been in the museum for more than 100 years as has most of the collection. This "F" appears on latches, hinges, and numerous other items. Francis I is known for the extensive construction he initiated during his reign.

The next king was Henri II (son of Francis I) who removed the F's from his father's administration replacing them with his own insignia.

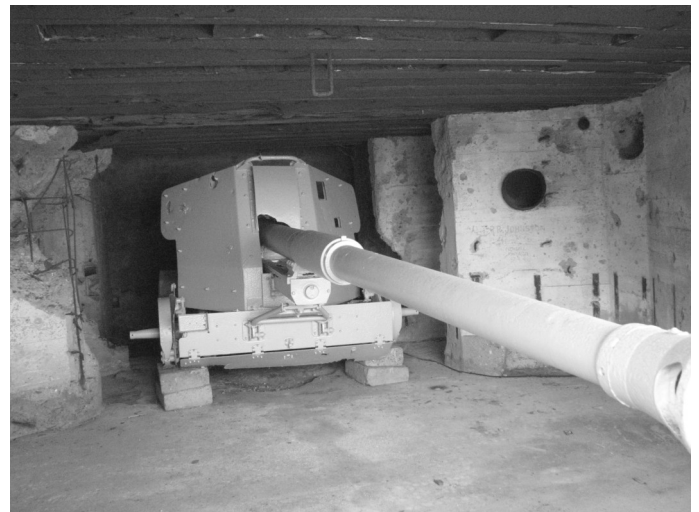






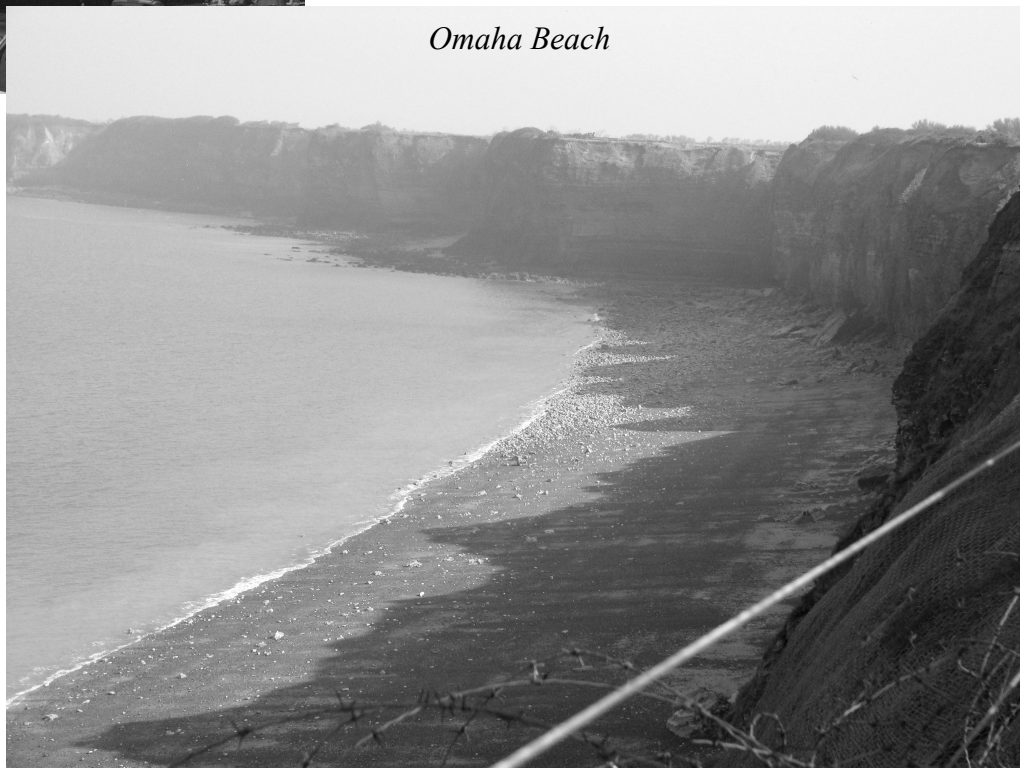
## Omaha and Utah Beaches, Normandy, France

EDITOR: OMAHA BEACH IS ABOUT 100 MILES FROM ROUEN AS THE CROW FLIES. The pictures of the gun emplacements are at Point-Du-Hoc, the place where Colonel Rudder and his men scaled 100 meter high cliffs to knock out German 155mm guns during the D-Day Invasion. The walls of the gun emplacements were pocked with shrapnel damage and the ceilings of one bunker was solid charcoal, a remnant of flamethrower use during the invasion. The dark colored stone monument is located in one of the allied cemeteries in the areas.



The cliffs visible through the barbed wire are at Omaha Beach, site of very heavy casualties on June 6, 1944. The French people living in this area continue to be grateful to the Allied soldiers who helped liberate France and the rest of Europe. A returning veteran will not be charged for lodging, meals or tours. Soldiers who were there in 1944 say the first 20 minutes of Saving Private Ryan is a pretty good depiction of how it was. Needless to say visiting this area is a very solemn experience.

The round stone tower is where Joan of Arc was held for a time prior to her execution.



**To be continued - next issue.**

**EDITOR'S NOTE:** This article was originally printed in the Summer 2007 issue of "Hammer's Blow". It is from a series of educational articles, directed towards beginning blacksmiths, made available by ABANA

## CONTROLLED HAND FORGING

# Forging a Fishtail

Text and photos by Dan Nauman

Drawings by Tom Latané

Lesson #20. Unit: Forging a Fishtail

*Definition:* Drawing down is the reduction of the cross-sectional area of a bar.

*Intent:* To continue learning aspects of using the cross peen accurately for controlled tapering and even spreading.

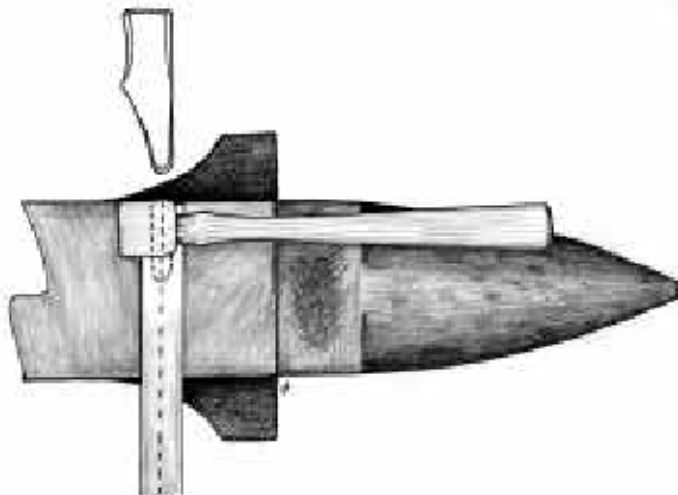
*Tools:* Basic forging tools.

*Material:* 1/4" x 1" x 18".

*Note:* You may wish to review Lesson #19 which explains how the cross peen should be dressed, basic cross-peen forging, and cross-peen forging dynamics.

### Step One

Heat 3" of the end of the bar to a full yellow heat, then lay the bar flat on the anvil with the end of the bar 1/8" in from the far edge of the anvil. You should be standing with your hammer arm's shoulder next to the anvil, and your body perpendicular to the anvil.



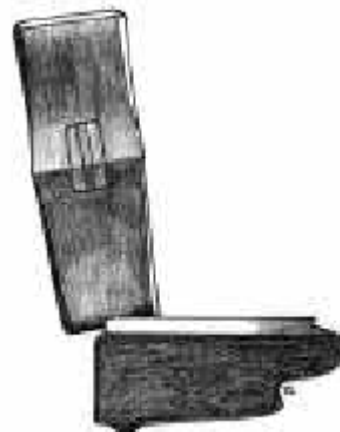
1. With the bar held perpendicular to the anvil and its end even with the far edge of the face, the first blows of the peen land in the center of the bar.

With the peen pitched down about ten degrees towards the end of the bar, and with the peen parallel to the length of the bar, begin striking the middle of the bar. (See image #1.)

The reason the peen is pitched is to begin forming the taper. The bar is near the edge of the anvil to reduce the chance of an errant blow damaging the face of the anvil. (See image #2.)



2a. The hammer head is tilted so the peen strikes the bar at the angle of the desired taper.



2b. Because the bar is held even with the far edge of the anvil, the corner of the hammer peen should never come in contact with the face of the anvil even if the blow lands a little wide of the mark. Working at a slightly rounded edge will prevent damage to the squarest edge of the anvil, should the bar slip back from the edge.

## CONTROLLED HAND FORGING

When the middle of the end of the bar has been reduced to 1/16" in thickness, slowly begin working the peen back into the bar, taking overlapping blows and creating a trough down the middle of the bar. Continue to work back into the bar with the peen pitched. As you work back, begin to lighten your blows so that



3. Centered trough formed by cross peen, 2 1/2" long.

the trough feathers out to the full thickness of the bar. The trough should end about 2 1/2" from the end of the bar. (See image #3.)

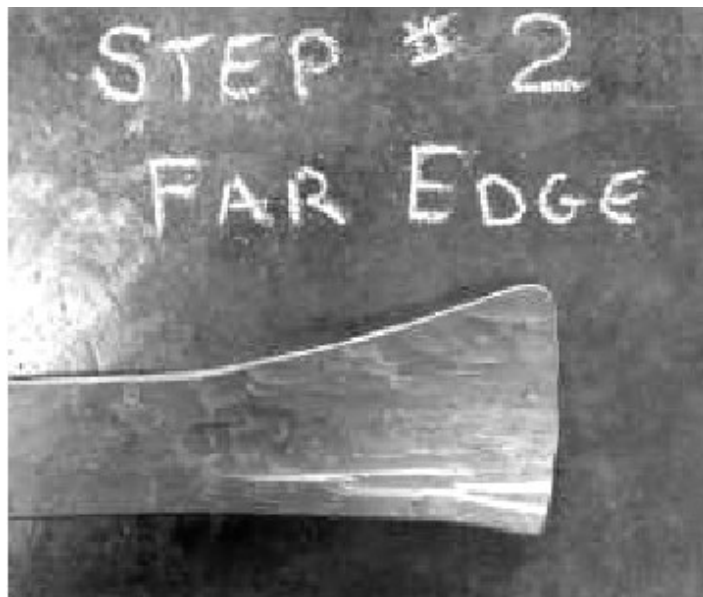
### Step Two

Heat 4" of the bar to a full yellow heat, being careful not to burn the thinned middle section of the bar. You can tilt the bar on edge to keep the thin middle section out of the direct blast of the fire. Place the bar on the anvil as in Step 1. Continue peening the bar, starting from the middle of the bar, then gradually moving out to the far edge. As the middle is already thinner from step 1, be careful not to get the middle of the bar any thinner than 1/16". Always maintain the peen parallel to the length of the bar. Move the peen in small increments, overlapping the track of each previous blow. Continue until you reach the corner.

It is interesting to note that the length of the bar doesn't change dramatically in this process, because the shape of the peen is primarily forcing the metal to change the bar's width. Correctly executed, you will develop a corner as seen in image #4.

### Step 3

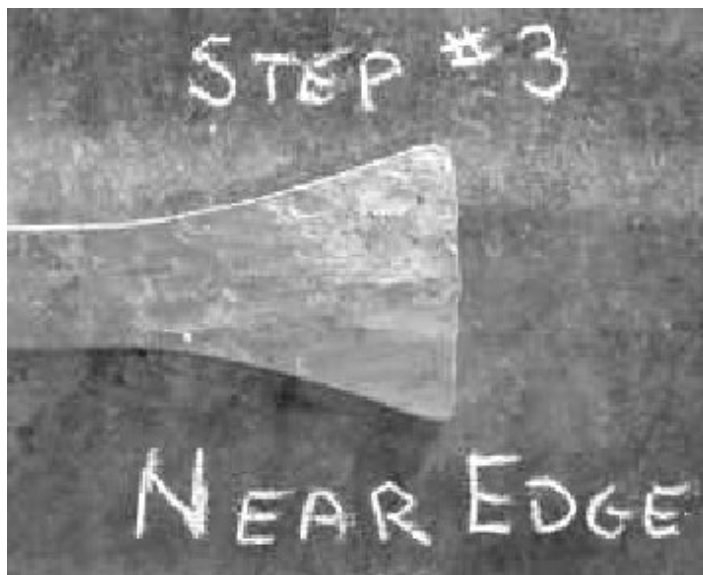
Heat 4" of the bar to a full yellow heat (remember to tilt the thin side away from the fire blast), placing the bar on the anvil as you did in prior steps. This time begin striking the bar again in the middle, but now gradually work the peen towards the near edge of the bar, maintaining the peen parallel to the length of the bar. Again, move the peen in small increments, overlapping



4. After Step 2, the far corner should look like this.

the track of the previous blow. Continue until you reach the corner.

Do not get frustrated if the shape in this step starts out somewhat lopsided, as this is actually how the shape should look at this point, and through controlled blows, will begin to blossom into a fine and symmetric fishtail shape. (See image 5.) Note that the end of the bar remains fairly straight and perpendicular to the sides of the bar when properly executed. Though you should strive for this feature, do not get overly concerned if the



5. Both corners have been peened out in this photo. This is what the fishtail should look like before refining with the face of the hammer.

## CONTROLLED HAND FORGING

end is not perfectly straight and perpendicular, as refining it will come later in Step 5.

As you get more experienced, you may choose to perform this step in the same heat along with Step 2.

If you encounter shapes as seen in images 6 and 7, you can work the area lightly with the cross peen to fill in the gaps in image 6, or to straighten the edges of image 7.

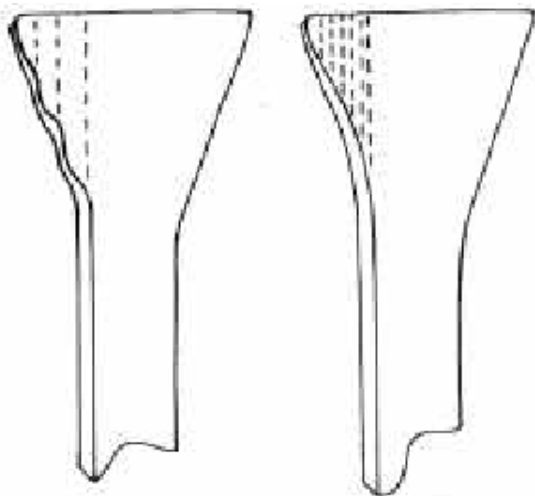
### Step 4

Heat the entire fishtail to a full yellow heat. With the face of the hammer, smooth out the cross-peen marks, maintaining an even lengthwise taper.

### Step 5

In this step we are going to refine the fishtail, by making the rounded corners of the fishtail more crisp and sharp, and refining the end and sides to straight lines. We will use the hammer's face to do the work.

Take a medium orange heat on the entire fishtail. Lay the bar across the anvil with the fishtail extending two inches beyond

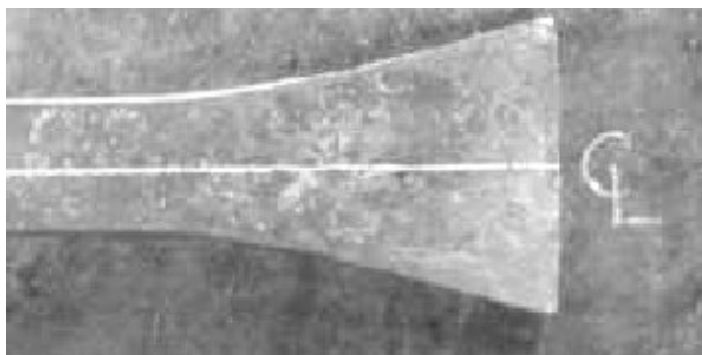


6. A wavy-edged flair results when the blows of the peen are too far apart. Narrow portions of the edge are thick portions of the taper. Direct blows at these spots.

the far edge. Holding the cool end of the bar tightly against your thigh to help absorb shock, direct rapid light blows upon the end of the fishtail, driving the material toward yourself. If the fishtail buckles during this upsetting process, move the fishtail to the anvil surface to flatten. There may need to be several alternate rounds of upsetting and flattening blows before the end of the bar is straight and perpendicular to the centerline of the bar, along with a consistent lengthwise taper.



7. This is the position of the fishtail on the anvil to refine the shape. Refine at a low heat to reduce buckling.



8. The refined fishtail shape. Note that the centerline of the parent bar is centered also in the fishtail.

Take another medium orange heat. Lay the bar on edge, with the beginning of the fishtail at a rounded portion of the near edge of the anvil, making sure the straight portion of the bar is off the anvil (See image 7.) Lightly hit the side of the fishtail to sharpen the corners. You will note that the corner you hit with the hammer sharpens faster than the corner on the anvil. Alternate sides so the corners sharpen evenly. If the fishtail begins to fold, stop hitting the edge, and flatten the fishtail back down with taps just hard enough to flatten, but not to squeeze the metal, which would further thin your work.

You may need to repeat this step, and take several heats to accomplish the desired shape (See image 8.)

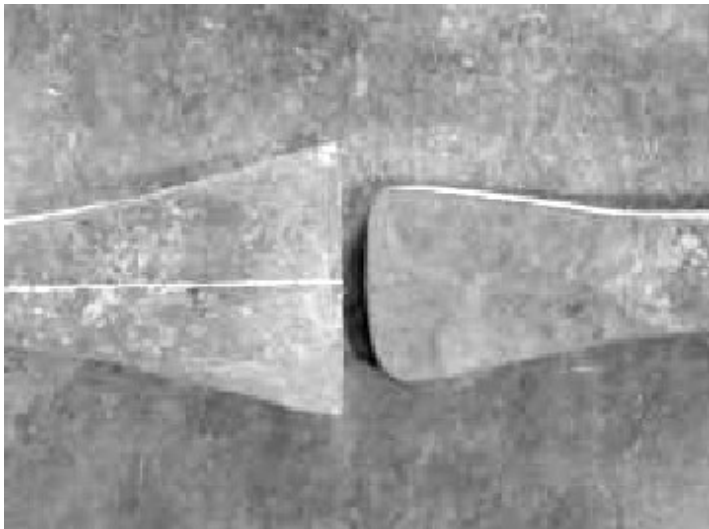
Note: You do not want to get the metal any hotter than medium orange, as the material needs to be stiff enough to support the refining blows without folding over readily. This is one of the few times when cooler material is better.

## CONTROLLED HAND FORGING

Forging dynamics: Image #9 shows the finished fishtail shape (left) that was made by the cross peen. The forging on the right, made by only the hammer face, has the same taper and end thickness, but not the same width as the forging on the left. Because the hammer face spreads material in all directions, for this exercise, it cannot forge the material as wide as the cross peen.

### Targets

- Try to perform Steps 1-3 in one or two heats.
- The length of the fishtail should be 2 1/2" .
- The width of the end of the fishtail should be between 2 3/16" and 2 3/8" .
- The flared sides of the fishtail should be straight, and the end should be perpendicular to the length of the bar.
- The centerline of the fishtail and the parent bar should be the same.
- The fishtail should have a slow and even taper in its length-wise cross-section.
- There should be no cross-peen marks in the bar.



9. The forging on the right was made using only the hammer's face. It has the same taper and end thickness as this lesson's forging on the left, but could not achieve the desired width without sacrificing the other two dimensions.

## Upcoming Events

### Provided By Randy Stoltz

#### Old-Fashioned Farmers' Days

**September 2 - 4, 2011 - 9:00am - 5:00pm**

Silk Hope Farm Heritage Park  
4221 Silk Hope Rd.  
Siler City, NC 27344

[www.silkhopenc.org/Old-Fashioned-Farmers-Day](http://www.silkhopenc.org/Old-Fashioned-Farmers-Day)

This event is like the Thrasher's Reunion at Denton, NC (but smaller) with steam engines, antique tractors, old equipment, farm animals, **blacksmith shop**, and more. General admission is \$7 with children under 6 free and so is the parking.

#### Hillsville, VA annual VFW Gun Show and Flea Market

**Friday - Sept. 2, 2011 through Monday - Sept 5, 2011**

VFW Post 1115 (downtown - actually the whole town and surrounding area)

Hillsville VA 24343

[www.hillsville.com/fmarket.htm](http://www.hillsville.com/fmarket.htm)

This huge gun show and flea market has vendors for all sorts of antiques, tools, and general merchandise. I've found all sorts of blacksmith tools like anvils, hammers, tongs, post vise, and more. This show attracts over 500,000 attendees and vendors from all over the country every Labor Day weekend. Due to the traffic on I-77 I've found it better to take US 52 north through Mount Airy and Fancy Gap, Va to Hillsville, VA. Get there early and there is a large parking area on the left just as you get into Hillsville. It is hilly and involves a lot of walking. If you plan on shopping take a wheeled cart to carry your goods. Admission is like \$2 and parking \$6 - \$8.

#### Yates Mill County Park – Fall Harvest Celebration

Saturday, September 17; 11am-3pm

4620 Lake Wheeler Road, Raleigh, NC 27603

NC ABANA / Triangle Blacksmiths Guild will be setting up and demonstrating at this event. Event Details: Historic Yates Mill County Park will hold its largest event of the year, the 6th Annual Fall Harvest Celebration on Saturday, September 17, 2011, from 11:00 AM - 3:00 PM. Last year, more than 1,500 people attended this family-oriented event, which focuses on historical, agricultural and environmental topics. The event will include corn-grinding tours of Yates Mill with costumed interpreters, a children's scavenger hunt activity, live old-time and bluegrass music along with other harvest-time performances, community displays, hand-craft demonstrations and sales, antique vehicles, a commmeal cook-off contest, food vendors, and much more!

# Francis Whitaker Blacksmith Scholarship

A \$500 scholarship will be awarded for the Traditional Joinery Projects class at the John C. Campbell Folk School, October 30 - November 4, 2011 taught by Clay Spencer. Francis left some money at the Folk School to provide for scholarships for this class. It has grown to the point where we can award 2 or more scholarships each year.

This scholarship is for intermediate and advanced students who have a solid foundation in basic blacksmithing skills, can manage a coal fire and forge weld.

Interested blacksmiths should complete the following application and e-mail it to [clay@otelco.net](mailto:clay@otelco.net). Contact Clay at 256-558-3658, e-mail or 73 Penniston Private Drive, Somerville, AL 35670 on any questions.

Include your name, address, e-mail and phone number.

1. Describe your blacksmithing experience, how many years, classes taken, jobs, kind of work you do, how many hours you forge in an average month.
2. Goals for your blacksmithing career, what you wish to do as a blacksmith.
3. Make a scale drawing of a proposed project (your original drawing, not copied from another source). Should show 2 or 3 views with stock sizes and specify proposed joinery. Include a cut list for the stock. This does not have to be the project actually made in the class.
4. Describe your participation in the blacksmithing community: teaching, demonstrating, craft shows, writing articles, belonging to and attending local groups, attending conferences, etc.
5. Explain why you need a scholarship to attend a class.
6. Do you sell blacksmithing items you make? What type items? How do you sell?
7. Include at least 3, no more than 5, photos of some of your work.

The completed application should be e-mailed (e-mail preferred, regular mail accepted) no later than September 22, 2011. Successful applicants will be notified by September 28, 2011. Your application will be judged against other submissions to determine the winner.

The money will be paid directly to the Folk School. You will be responsible for all other costs such as fuel fee, materials, transportation, etc. The school has dorm rooms and a campground.

After the class you are requested to write a 2 page article explaining some of the blacksmithing techniques used in making your project, (include some photos or sketches) and send it to your state organization.

Francis required that students prepare a drawing before the class and send to him so that any problems could be worked out before class. He emphasized that drawing was another skill that a successful blacksmith must acquire. You must be able to make a drawing to present a proposal for a client or draw your project on steel table so you can make it. Most everyone has done some sketching, doodling or drawing, it is nothing to be afraid of and your first attempts do not need to be professional. Just start sketching, sketching, sketching, refining your ideas until you figure out the joinery and stock sizes you think are right. Then start making it to scale, easiest way is to use quad paper. You can get large sizes, about 2' x 3', with 1" squares.

Chances to win a scholarship have been 100% for the last 3 classes. Good luck.

Clay Spencer

## Blacksmith's Exchange

Have something for sale, or looking for something? This is just the place to look.

*Send your "for sale" or "looking for" requests to Marty Lyon (at the address or email address on the back cover). Please include your name and phone number*

- Welders. Current price is \$250. Selling them for \$150.
- Three hydraulic presses. One is electric powered and the other two are hand pumped.
- E-Z up canopy/tent 10'x 10' with side curtains, a nylon top, and a water proof vinyl top. It has a steel frame and is very strong and durable.
- Hossenfeld Bender #1 with a number of bending parts and manuals to go with it.

Parks Low at 919 818-3036

### For Sale – Antique Forge

I have an antique forge with some tools- it appears to still work. It is from the Champion Blower and Forge Company, Lancaster, Pa. I was told it is about 100 yrs. old. I also have a few blacksmith tools to go with it. I am interested in selling it. I live in Florence, S.C. E-mail me if you are interested in it. I bought it for my brother who has done some blacksmithing, but he has become disabled from cancer and is unable to use it. Thanks Martha Smith - memar-marsc@yahoo.com

### Ray Clontz Tire Hammer Plans by Clay Spencer

Ray Clontz Tire Hammer Plans, \$30, including postage to US and Canadian addresses. Send check or money order, email me for cost to other countries

Tire Hammers for sale, 50 lb. hammer head, approx. 250 blows per minute, 1 hp motor, 6" diameter anvil, 700 lbs., 2 ft. square base, Contact me for price/availability. Reasonable delivery if I am headed to your area..

Beverly Shear blades sharpened, \$35 + postage. Blades must be removed from shear, extra cost for deep nicks or blades previously sharpened at angle.

Clay Spencer, 73 Penniston Private Drive, Somerville, AL 35670, 256-498-1498, cell 256-558-3658, clay@tirehammer.com

### For Sale

#### Blacksmithing/ Knifemaking/ Forging POWER HAMMER - 50# Little Giant

Little Giant 50#, manufactured in 1947, modern style (clutch at rear) excellent condition, Plug and pound! Has drawing dies, 2hp original motor, single phase, runs like a sewing machine can forge up to 2" solid metal. \$3800.00. 919 / 444-1665

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DUES: \$25.00 per year (within USA)

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MAKE CHECK PAYABLE TO: NC ABANA

REMIT TO: Marty Lyon

6 Carolina Meadows, Apt 203

Chapel Hill, NC

If you are renewing your membership and your address and phone number have not changed, you do not need to use this form.

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4222 E.L.G. Road

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## Chapter Calendar

### 2011

<b>January</b>	☞	<u>Regional Meetings</u>
<b>February</b>	☞	<u>Regional Meetings</u>
<b>March</b>	☞	<u>Regional Meetings</u>
	☞	<b><u>1<sup>st</sup> QUARTER CHAPTER MEETING</u></b> <b>March 20, 2011</b> AT 9:00 A.M. DEAN CURFMAN'S, OAK HILL IRON WORKS MORGANTON, NC
<b>April</b>	☞	<u>Regional Meetings</u>
<b>May</b>	☞	<u>Regional Meetings</u>
<b>June</b>	☞	<u>Regional Meetings</u>
	☞	<b><u>2<sup>nd</sup> QUARTER CHAPTER MEETING</u></b> <b>June 25, 2011</b> AT 9:00 A.M. DIXIE FAIRGROUNDS WINSTON SALEM, NC
<b>July</b>	☞	<u>Regional Meetings</u>
<b>August</b>	☞	<u>Regional Meetings</u>
<b>September</b>	☞	<u>Regional Meetings</u>
	☞	<b><u>3<sup>rd</sup> QUARTER CHAPTER MEETING</u></b> <b>September 10, 2011</b> AT 9:30 A.M. Andy Anderson's Shop GOLDSBORO, NC
<b>October</b>	☞	<u>Regional Meetings</u>
	☞	<u>Dixie Classic FAIR</u> SEPTEMBER 30 – OCTOBER 9
	☞	<u>NORTH CAROLINA STATE FAIR</u> OCTOBER 13 - 23
<b>November</b>	☞	<u>Regional Meetings</u>
	☞	<b><u>BONUS MEETING</u></b> <b>November 5, 2011</b> at 9:30 a.m. J.C. Campbell Folk School, Brasstown, NC
<b>December</b>	☞	<u>Regional Meetings</u>
	☞	<b><u>4<sup>th</sup> QUARTER CHAPTER MEETING</u></b> <b>December 3, 2011</b> at 9:30 a.m. Rodger Barbour's Shop, Clayton, NC

## Local Groups

### Triad Area Blacksmiths

Marshall Swaringen Advance, NC  
(336) 998-7827  
1<sup>st</sup> Tuesday 6:30PM for demos  
3<sup>rd</sup> Saturday, 9AM for business  
and all day forging  
Dixie Fairgrounds, Winston Salem, NC

### Southern Foothills Blacksmiths

Steve Barringer Mooresville, NC  
(704) 660-1560  
2<sup>nd</sup> Sunday, each month

### Triangle Blacksmith Guild

Randy Stoltz Cary, NC  
(919) 481-9263  
1<sup>st</sup> Saturday, even # months

### Brasstown Blacksmiths

Paul Garrett Brasstown, NC  
(828) 835-8441  
3<sup>rd</sup> Saturday, even # months  
Noon to 4PM

### B.O.L.T.S. Blacksmith Guild

Amos Tucker Kenly, NC  
(252) – 289-7317  
1st Sat or Sun. Even # months

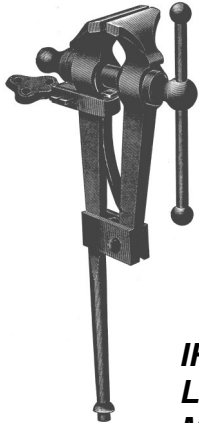
### Wilkes Teaching Forge (WTF)

Lyle Wheeler Millers Creek, NC  
(336) 838-2284  
2nd Tuesday, each month 7:00 PM

Note: Any member is welcome at each of the Regional meetings. Call host to confirm date, time and location.

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northcarolina.abana@gmail.com

**Treasurer**

**James Kennady**  
1171 Cash Road  
Creedmoor, NC 27522  
919 / 528-5636  
jimkennady@gmail.com

**Please Welcome These New Members**

Shawn Emmons	Harrisburg	NC
Davie Stitt	Connelys Springs	NC
Mike Tucker	Sumter	SC
Randy Bechtel	Raleigh	NC
Henry Bibb III	Chapel Hill	NC
Matthew Cross	Raleigh	NC
Mary Catherine Floyd	Raleigh	NC
Cody, Bill, and Tim Howdeshell	Cary	NC
Kate Kaplan	Matthews	NC
Josh Kaplan	Matthews	NC
Alan Shelton	Winston-Salem	NC
Travis Beane	Archdale	NC
Gene Pease	Charlotte	NC
Mike walkup	Kernersville	NC
Andy Wilkins	Four Oaks	NC

**Don't Forget: 2011, 3rd Quarter Chapter Meeting**

Saturday, September 10 - 9:30 AM  
Waynesborough Historical Village, Goldsboro NC

