CHAD GUNTER'S DEMO AT THE ABANA CONFERENCE
NOTICES

We'd like to congratulate your new ABANA Board members, Dan Nauman, Jerry Kagele, and Bob Fredell who were newly elected, as well as Dorothy Stiegler and Scott Lankton who were re-elected. We especially thank those members who ran and were not selected this time, and applaud your willingness to donate your time and energies to the cause of blacksmithing. We hope you will consider running again next year.

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To whom it may concern,

I am a serious beginning blacksmith/artist. I have invested into a very good anvil, collection of hand tools, small library of books and a membership in ABANA. I am at this time using oxyacetylene torch for my heat source, hoping to be able to afford a propane forge within a year. Power hammer, at this time, is just a glimmer in the distant future.

My reason for writing is that I would, as well as others in my position, see a copy of one of your quarterly magazines being dedicated exclusively to forged work done with a hand hammer on the anvil. Books like "The Contemporary Blacksmith" by Dona Z. Meilach are not only full of beautiful metal forged art, but while being inspirational they are also very intimidating to us beginners. A copy of ABANA's publication dedicated to what can be done with only a hammer and the anvil would be very encouraging to us greenhorns. It would help to further perpetuate the Renaissance of this wonderful art form.

Andrew Dean
Andrew has a very good point, though I don't have the luxury of being too choosy. I want to include something of interest to ALL smiths in these pages, especially those just starting out. I want to challenge you to constantly try projects of increasing difficulty, that's how you will improve your skills. It's a constant balancing act. But please remember to judge the HB on its own merits, not on what's in other blacksmithing publications - Editor

Hello,

I am seeking any info on propane safety. I am using a forge heated with propane and air. It is a homemade one. Lately, the past two weeks I have been feeling nauseous, and today I noticed it while I was forging. I thought I had the flu, but after today I think it may be from the forge, running too rich? Ever heard of this before? I am seeking any feedback or experience with this. Please pass this on to any one who might be interested in this topic.

Thank you, Caroline Sumpter
Caroline:

BE CAREFUL!!! You might be poisoning yourself with carbon monoxide. Are you running the forge in an enclosed space, or one with lots of ventilation? Are you experiencing dizziness?

Some folk have gone so far as to enclose their forge with a ventilation hood to contain and vent the carbon monoxide. A CM monitor costs about $40 at Home Depot, and I think that it should be required anywhere propane forges are used. Please go get one... people have DIED from this (though not while forging, that I know of. I remember reading a story where a smith just made it to his door before passing out in his yard. Just a few feet between a smith and a statistic.) - Editor

Editor:

I enjoy blacksmithing and plan to apply as many of the Hammer's Blow ideas as I can. However there were two problems in the Summer 2000 issue.

The article "A Heading Plate" (pp 17-18) did not describe the "rail anchors" at all and since there are dozens of different shapes of these devices, it might be difficult to get the results shown if you start with the wrong rail anchor. At my web site (www2.iixnetx.edu/tjess the link is titled "Rail Anchors") I point out the situation. I bring it up because I had just completed a project using a rail anchor that has a "T" cross section (Fair (tm) rail anchor) which would be extremely difficult to hammer down to the rectangular section shown in the article. (Tried it!) I read the Hammer's Blow article and it took me about 4 days to figure out why the part could be made from a rail anchor. I was thinking about the wrong shape of rail anchor...

The second item is a question and a quandary. In the tip about the Robb Gunter golden divider (p 5) the comment was made "It's so simple that it defies description." This doesn't work! I have a BS degree in Zoology and took Physics, Calculus I and II, etc. and remember lots of it and don't recall this one. It might apply to lots of stuff in blacksmithing, but I am sort of new to this and don't get it. A description sounds in order and assuming too much doesn't leave anyone doing well. So, "What is the golden ratio and how do I use these magical dividers?"

Thank you, Tom Essay - Arlington Texas U.S. of A.

Tom:

These rail anchor things... like I said in the article. I'm not sure what they're properly called, but they're roughly C-shaped, and the steel has a rectangular cross section of 1/2" x 1". The things with the T-shaped cross section would never work... I thought they were cast steel, anyway. You're right, though, a photo of one of these would have helped. Sorry.

The golden ratio is a pythagorean term of 1.41 to 1. I think the story goes that it was determined by ancient architects that a rectangle that was made to these dimensions... say, a building that was 141 feet long and 100 feet high... was "the most beautiful." Some folks like to incorporate this 1.41 to 1 ratio into their designs, and Robb's dividers is a quick and easy way to do it. I figured the actual dimensions of the dividers using an architect's scale and a piece of paper.

Personally, I don't use the golden ratio to design. I like to use what my eye tells me is beautiful, not what a bunch of old dead guys say.

An article about this was written by Boyd Holtan called "Principles of Design." I've written him to ask permission to post his article on the website, and possibly run it again in the HB. It examines the golden ratio in depth, as well as Fibonacci sequences and Phi.

I hope this helps for now, and I'll try to dig up more info on this in the near future - Editor
Metall Design
International 1999
Peter Elgass, Editor
231 pages, hardbound
A yearbook from Verlag Hephaisitos publishing house, Werdenstein 22, D-87509 Immensenstadt, Germany
Reviewed by Brian Gilbert
This is one of my favorites. Written in German and English, it profiles the work of eight artist-blacksmiths from around the world, with European smiths being most represented.

What I like best about this yearbook is that it appeals to both blacksmiths and the general public. So many books about blacksmithing go for the big "Oooh, Ahh" factor... tons of pictures of great, glorious works that are wonderfully impressive, yet lacking in detail. Peter takes the time and space with fewer subjects and examines the work with greater depth. The result is that while there is plenty to interest the non-blacksmith, the close examination results in ideas that the blacksmith can take into his own shop and try.

The range of work runs the spectrum of the quasi-traditional books, door knockers and candlestands to the purely sculptural, but the blacksmiths in this book lean towards the blacksmithing process as art rather than artifact. While there are a few preservation photos, most of the work is about new designs...some functional, some not, but all really neat stuff.

The book is technically a masterpiece. Photos are all very clear and sharp, produced in a black and white duotone (where an additional brown color is added to the photos, giving them additional depth and clarity).

A GREAT though expensive use of this book would be to give copies as Christmas presents to your favorite interior designers or architects. It could really educate people as to the value and beauty that only hand forged, custom designed ironworks can give to a project, and could really start them thinking outside the box. A great investment in education, that just might result in a commission or two!

To sum up, I really can't find anything bad to say about this book. Europeans have always held ironwork in a slightly different light than over here, and it shows in this book...but I don't feel this is a negative at all. I, for one, could use a little of that light now and again, and that's just what this book provides.

The Golden Age of Ironwork
written by Henry Jonas
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BookMasters, price TBA
(1-800-247-6553)
Reviewed by Brian Gilbert
I have been fortunate enough to get my hands on a pre-publication copy of the latest book from Skipjack Press, and as usual, Jack Andrews has made a great contribution to the world of architectural ironwork with the publication of this book.

This book examines ironwork from a completely different perspective. It's about a specific place, Philadelphia, PA, and a specific time, roughly 1840-1930. It is NOT about a specific technique...there's a lot about cast iron in this book as well as forged iron. It's more about the context in which architectural iron was used, both cast and wrought, and how that iron worked with the houses and buildings where it was used.

Before reading this book, I looked down at cast iron as a poor substitute for blacksmithing. In today's world, that opinion may be debatable, but after reading this book, I've changed my views. I'll never look at cast iron the same way again. The examples of early iron casting shown in this book are works of art in the truest sense. Throughout the book are examples of how the ironwork enhances and supports the architecture, both cast iron and wrought iron. And more importantly, the author tells us why the iron works...for example, he examines the symbolism found in a cemetery gate detail, complete with cast weeping willow tree, doves, and lambs as a typical Victorian image for the grief of family members.

While the information about casting is interesting, there is no shortage of wrought iron examples here. Many photos of Yellin's work in Philadelphia are included, which is logical since Philadelphia was the home of his Arch Street studio for so many years. There are many examples of railings and gates by other unknown blacksmiths as well, all in high quality images by photographer Robert Golding. The 168 photos are logically catalogued in the back of the book. There's a glossary, the book's research is documented with references, a bibliography is given, and it's indexed. These details help the book as a research tool.

So I can heartily recommend this book. The approach is unique, the commentary informed, and the examples are beautiful. It would make a great Christmas present for yourself or for your clients.
A Cylinder Lock for a Kinyon Hammer

by Phil Rosche

Phil recently built a Kinyon style air hammer using the plans available from ABANA. I asked him to comment on some of the finer points of building one of these...something that might not be in the plans. Here's one of his improvements-Editor

One of the things that I discovered about my Kinyon-style air hammer was the fact that the air cylinder rod would loosen up from the head adapter. Since the cylinder rod was 5/8" in diameter, and the threaded portion on the end was 1/2" in diameter, it didn't really lend itself to using a lock washer since there was not enough shoulder. I mentioned this problem to Dave Mudge and he provided me with a solution.

The air cylinder shaft has a 'flat' on both sides just above the threaded portion. Use a piece of 1/8" x 1" flat bar (or whatever width your head adapter is). One difference between Dave's solution and what I did is that he uses only one bolt to hold the keeper in place on the head adapter, I use both bolts. Measure the bolt hole(s) and cylinder rod. Drill holes for the bolt(s) and cylinder rod.

This is the tricky part. The flats on your cylinder rod will probably not be perpendicular to the length of the keeper. You could mark the keeper in one of two ways:

1. Screw the head adapter onto the cylinder rod and tighten it up. Hold the keeper next to the head adapter and lay a small straight edge against the flats on the cylinder rod. Mark this angle on the keeper. Measure from the line you just drew to the edge of the hole for the cylinder rod and mark a line parallel to this from the hole to the edge of the keeper. Draw another line parallel to this one from the other side of the hole.

2. Screw the head adapter onto the cylinder rod and tighten it up. Take an square with an adjustable angle attachment and lay the ruler portion along the flats on the cylinder rod. Set the angle to the head adapter and tighten up the square. Transfer this angle to the keeper, one line on either side of the hole.

Carefully cut a notch just the size of the flat portion of the cylinder rod, and at the same angle as the flats relative to the head adapter. As an extra precaution, put some lock-tite on the threads on the cylinder rod and head adapter and screw the two together. Put the keeper in place and put the bolts through that hold the head adapter to the hammerhead. The cylinder rod is now physically incapable of unscrewing from the head adapter.

Phil has promised us more information about his hammer modifications for the next issue...namely specifics on his treadle linkage. For a general overview about building this hammer, see the Summer 2000 issue of the Anvil's Ring.
Jeffrey Funk on Making Hammers

Written by Brian Gilbert

Jeffrey Funk gave a demonstration at the 2000 conference in Flagstaff that was all about making your own hammers. He showed us how to make the diagonal peen hammer. He "rediscovered" the diagonal peen back in 1978, as he measured the angle formed by his arms and made a hammer with the peen to fit. But the design itself is quite old, sometimes being called a "Slash Peen" in old tool catalogs. Some folks dismiss the diagonal peen as a gimmick, but after using one, I think they can be pretty useful. And the techniques he demonstrated can be used for all sorts of personalized hammers.

Jeffrey Funk, from Big Fork, Montana, started making hammers around age 19. He's a professional smith, with about half his business being gates, and half being sculpture. He likes to find a balance between methodical, systematic process and spontaneity in his forging.

For making his hammers, he prefers the slit punch and drift method. This is where a narrow punch, 1/4" by 1 1/8" is driven through the head first, followed by a long drift that shapes the eye. A hammer eye punch with a wrapped handle can be made in three heats. (Or should I say, it takes Jeffrey three heats to make one. He demonstrated making a hammer eye punch after he made the hammer, instructions will follow.)

For a three pound hammer, he began with a chunk of steel roughly 1 1/2" square by 5" long. It was a medium carbon axle steel, 4140, that he had squared earlier on the power hammer. He likes 4140 for hammers, because it's fairly easy to find, and an alloy steel tends to harden more deeply than a straight carbon steel. Scribe a centerline on the top and bottom of the hammer, and centerpunch two marks along the centerline, 2" from each end, on both sides. He likes to balance his hammers...in other words, the eye is centered in the mass of the hammer. This way the hammer is easy to flip for use on both ends.

When you drive the punch through the head, the sides will swell quite a bit. Jeffrey compensated for this by narrowing down the sides a little, being careful to keep the punchmarks centered. Start to punch the eye by taking a good, firm hit with the punch just covering the centerpunch marks. Set both sides, and be as accurate as you can...that first hit is most important. Drive the punch in about two thirds of the way through, then switch to the other side. When you’re punching a deep hole, lubricate the punch with a mixture of graphite, water, and a touch of dish detergent. Proper lubrication and cooling every few hits helps the punch last a long time. Plus, if the punch gets too hot, the tip will spread in the hole, effectively riveting itself to your hammer head. On your last hit, lifting the punch handle a bit can help shake the tool loose.

Once the head was punched, Jeffrey started with a rectangular drift. This is a preliminary drift, and it’s used during forging like a temporary handle to help manipulate the head. The finishing drift is oval and sized to match his handles. He’s found that most handles vary widely in the shape at the top, but Master Mechanic’s 14” Blacksmith’s handle is pretty consistent. He prefers handles that are larger rather than smaller...larger handles seem to last longer if they have more meat in them.

Still using the preliminary drift, Jeffrey upset the face of the hammer. This is mainly aesthetic, but it does help the hammer
reach into corners a bit. Soften the edges, and forge the face as close to it’s finished profile as possible. The goal is to minimize grinding on the finished head. On his last upsetting heat, he worked the steel down into the red range to refine the grain structure.

The diagonal peen was shaped next. Important...draw this out over the horn. Once the angle is set, it’s very hard to change. You’ll get a fishmouth, but don’t worry. Most of it will upset out later. Optionally, you could chamfer the corners before you draw the peen to reduce the fishmouth, but generally it takes some grinding to correct.

Setting the peen is a little tough to explain, so bear with me. With the anvil horn on your left, position the head on the horn, using the drift like a hammer handle. Lower the drift until it is about 45 degrees to the anvil face, and work the peen from this position. This results in a hammer that will normally peen work across the stock, as if you were drawing it lengthwise. If you were to lift the drift and work the other corner, the resulting hammer would have a peen that lies parallel to the stock. Each style has its uses, just as a straight peen and a cross peen do, but be sure that you’re making the style of hammer that you want. Jeffrey solved this particular problem by making a double angle peen hammer, with one peen for drawing and one for spreading.

The trick when setting the peen end is centering the peen in the body of the hammer. Jeff doesn’t like to grind to shape the hammer, but he does grind the faces. Don’t forget to stamp your name.

Next, Jeffrey finished drifting the hammer. The hammer is drifted a little deeper on the top side (the side you stamped with your name). When you drift, you should use a plate that is slightly rounded to back up the drift. Otherwise, you’ll bend your hammer.

At this point, Jeffrey set the hammer aside to cool slowly. A full anneal in vermiculite or ashes is a good idea. The head is now ready to grind. Grind the face flat first, then radius the profile of the face. Soften the edges with a sanding wheel. As a final step, Jeffrey likes to smooth the face with a ScotchBrite wheel. Do the same to the peen end, and the hammer will be ready for hardening and tempering.

Before hardening and tempering, Jeffrey slices three pieces from the parent stock. These are roughly forged into bars, heated to non-magnetic, and quenched... one in water, one in oil, and one is allowed to air cool. Check each for hardness with a file. Then clamp each sample in the vise and break with a hammer. (It’s a good idea to wrap the sample with a rag before you whack it with a hammer, just in case a piece of shrapnel breaks off.)

Look at the broken end and examine the grain structure... the goal is to balance hardness with the finest grain. Testing the steel is especially important when you’re using a particular alloy for the first time, or you’re using unidentified scrap.

Jeffrey hardens his hammers in the forge by heating the entire head to barely a dull red, then bringing the face up to temperature with a torch. Since there is no bending stress on the hammer, he hardened in water. The large mass of the hammer will
slow the cooling rate to that approaching oil. Harden the face first, keeping it moving to prevent steam pockets. Next heat the peen end, keeping the face as cool as possible, then quench the whole thing. Temper the head by bringing the entire thing up to about 200 degrees in a gas forge or oven, then temper the corners of the peen and the face to a light straw.

To make a hammer eye punch, start with 5” of 1-1/8” hex or square 1045. A punch with a wrapped wire handle will have simple fullers on the sides, but Jeffrey’s had a punched eye. Punch the hole the same as for a hammer, but with a slightly smaller slitting punch, 1/4” x 1” at the tip. Drift with a rectangular rather than oval cross sectioned drift to end up with parallel sides to the hole. This is important for tools which will be struck. For the top tool, Jeffrey didn’t measure a centerline, but it came out pretty close. The punch was started about 2 1/2” away from one face. He draws down the short end. Jeffrey’s punch was angled about 45 degrees on the end, but a 90 degree angle works well, too.

You’ve gotta try it…

Since I saw Jeffrey’s demo on making hammers, I can report that his method for making hammers really does work. I’ve made four so far, and I really enjoy forging with hammers that I’ve made. It is a fair amount of work… it takes me three to four hours to complete one…but I’ve found that I often prefer using the newly made hammers over my old favorite that I’ve been using for over ten years.

The most difficult part, for me, is punching the eye cleanly and evenly. Jeffrey made his hammer without using a power hammer but had help from a striker (Doug Hendrickson) when punching the eye. I used a treadle hammer for the heavy work, but a big power hammer with flat dies would be ideal. It would save you a lot of work to start with tool steel that’s already square. I’ve also had some unfortunate results using old railroad car springs. Two of my new hammers have hairline cracks in the faces. I suspect that I hardened these at a bit too bright a heat, because a rounding hammer that I made from the same stock didn’t crack. Or quite possibly the steel was already stressed from a lifetime of flexing under a boxcar. Who knows? Needless to say, I didn’t follow Jeffrey’s advice on testing the steel, since I thought I was familiar with this stuff. I will next time, though.

Another improvement that I’m planning to make in the near future is to make a pair of eye punches from S-7. I made a quickie eye punch from a piece of scrap straight carbon steel, probably 1065 or similar. After punching five eyes, it’s definitely showing signs of wear, and needs to be frequently redressed. Fortunately, this tool is simple to make, as I used a wrapped handle instead of a punched handle. (I used mine under a treadle hammer, so it’s quite stubby as well.)

Making a hammer isn’t something that you’ll want to do every day, but it isn’t as difficult as you would think. Watching Jeffrey Funk at work made a believer out of me. Hammers can be made entirely by hand if you can line up a striker, and you’ll really enjoy forging with a hammer that you’ve made yourself. Make a few, and before you know it you’ll have a whole rack full… have fun!

Special thanks go to Jeffrey Funk for proofreading this article and making several good suggestions for improving it, as well as sharing his experience and information with the ABANA membership.
A Traditional Bellows

By Gunner Jorgensen and Brian Gilbert

I received the following letter a while back describing a forge setup with a traditional type accordion bellows. Gunner and I decided to collaborate and present his letter in the article below. It looked like a really nice setup, and one not often seen these days. It would make a great demo forge...not really portable, but at least "luggable."

Editor

Dear Brian:

Welcome to a thankless (I think) job.

On the contrary..."I'm the luckiest boy in the world," to use a quote from PeeWee Herman. Being the Hammer's Blow editor has allowed me to make many, many friends, and learn lots of new techniques that I wouldn't otherwise be able to do.-Editor

The 2" outlet on the bellows is none too large...2-1/2" would probably be better...and why that particular shape? No reason, any other shape would probably work equally well.

The top of the forge is 3/8" X 24" X 20", but it doesn't need to be that heavy or exactly that size.

Best Wishes, Gunner Jorgensen

A Few Details...

If you decide to build a forge like Gunner's, you'll need a few additional details. Much of this information comes from Alex Bealer's The Art of Blacksmithing, revised edition. One of your considerations is how much leather to use. An efficient design uses enough leather when fully extended to equal the width of the boards at it's widest point...about 29 inches in this case.

Details of Gunner's bellows

Another important consideration is to make sure that only the upper chamber of the bellows blows into the forge, as opposed to both chambers. (Some older designs were built this way.) If both chambers are allowed to blow into the fire, it's possible to pull a bit of explosive coal gas into the bellows, which could result in a backfire. This will most likely destroy the leather sides, requiring a complete rebuild. Gunner says the next one he builds will have the outlet spaced back a few inches. When the bellows deflates, the air outlet gets restricted as the boards come together.

A word about hinges and valves...this type of bellows commonly used hinges made of thick leather, which are both airtight and long lasting. Traditionally the valves are made from a thin board coated with a piece of felt, but Gunner's are just a large flap of leather with an aluminum stiffener stuck to it that's slightly smaller than the valve opening. Like Gunner discovered, you need to make them large enough for the bellows to breathe efficiently.

Valve construction, from Bealer

I promised Jim (or was it Lou?) that I would make a pair of bellows and let everybody in on how I did it. Well, that was quite a while ago, but finally here is the result. Anyhow, I made the bellows by guess and by golly-- and then I had to make a forge to go with it!

I made mistakes-- the main one was the bottom valve. I made it 4" in diameter...too small. It took too long for the bellows to "take a new breath." Then I saw one in a museum. It had two 5" valves. Live and learn. The museum (bellows) also had two bows in addition to the three boards. It's probably better but more work.

The pictures explain almost everything but the size of the bellows. The size of the three 3/4" plywood boards is 40" X 29" (my door to the shop is 30"). The leather I got was split cowhide, 7 ft long by 4-1/2 feet wide.
Gunner's design for the bellows output isn't traditional, but in this case works better than the "old way" of placing a rolled iron tuyere in the end, and it's a lot easier to make as well. The downside to this is that the output tube of the bellows has to be able to flex a bit with each pump, as the top board rises and falls. Gunner used a section of industrial vacuum hose. A traditional tuyere is more complex, but since it's mounted to the center of the bellows, holds still in operation. Bealer recommends heavy leather for the hinges, but conventional hinges would probably work OK as well. Gunner didn't use any hinges, he just wrapped the front section of the boards with two layers of leather, stapled and nailed from the outside.

There are probably several sources for leather, but I've had good luck with The Leather Factory here in Chattanooga (423) 756-4484. The size of the leather you get will probably determine the final size of your bellows. Don't forget that leather needs to be oiled occasionally with neatsfoot oil, especially in extremely cold weather. Other than that, the only maintenance required is an occasional cleaning with a damp rag. If protected from dampness, the bellows maintain this way can last for generations.

Using plywood for the boards simplifies the construction a bit, but isn't historically accurate. If you plan on showing these at a museum or working the reenactment circuit, you might consider using the traditional wide pine boards nailed to battens and sealed with pitch.

There's a three to four pound weight attached to the bottom board of Gunner's bellows. The actual weight you'll need may change based on the size of your valves. An article in MT Richardson's Practical Blacksmithing mentions fitting a leaf spring to press down on the top board, resulting in a greatly improved air flow; but this would depend on the individual bellows, size of the tuyere, etc.

The frame that supports the bellows was built of 1-1/2" square tubing, and was pretty much sized to fit. It's basically a cube shape that the bellows fits into. One side extends up to support the overhead lever that operates the bellows, and a piece of plywood or steel on top makes a great surface for layout or forging tools. Only the center board of the bellows is attached to the frame... the upper and lower boards must be free to move or the bellows won't work. Kind of obvious when you think about it. Gunner used 1/4" by 1" strap to attach the bellows to the frame.

Gunner controls the airflow of his bellows using a sliding blast gate, which he fabricated as well. It's easily made by welding a flat support surfaces on the top and bottom of the air inlet tube, which is cut and gapped just enough to let the gate slide through.

This article isn't intended to be a complete treatise on building forge bellows...for more details, you can refer to "How To Make A Blacksmith's Bellows" by Robert Heath, available through Norm Larson.
Teaching a Blacksmithing Class

By Brian Gilbert

You know, there's more to blacksmithing than swinging a hammer. It's important to have strong chapters, and that's what this new column is about... ways to improve not just your own work, but the work of your ABANA chapter organization. Admittedly, this isn't one of my strong points, with one exception... teaching beginning blacksmithing classes. Through these classes, our local forge group has become one of the largest in our chapter, and I believe it's because of the constant exposure to new members.

Why teach?

Let's back up a bit, and ask the question, "Why hold a beginner's class?" There are several good reasons.

First, it puts you in touch with a group of people who are serious enough to at least try their hand at blacksmithing, and in our case, they are serious enough to pay for the opportunity. We're not talking a huge amount... in Chattanooga, we charge $45 per person for a one-day, hands-on workshop with an experienced blacksmith. This includes a three-hour lecture/demo session the night before.

Second, it is a revenue source for our forge. We hold two sessions per year, one in the spring and one in the fall. We take eight students per session, and it's rare not to fill a class. The costs for the course are very low, and the extra cash really helps supplement our income beyond our iron-in-the-hat money.

Third, we always get a few new members every time we teach a class. Our retention rate for these members isn't what I'd like it to be, for we rarely keep these new members for more than a year, but that's another problem altogether.

What are the drawbacks to holding a class? Well, I can't really think of any, except that it's a lot of work... and all of the blacksmiths I know certainly aren't afraid of that. And you have to talk a lot, which I don't particularly like to do. But I do enjoy teaching, and the classes are usually over before I know it.

Design the course

OK, let's hold a basic blacksmithing class. The first order of business is to design the course. Decide what concepts you'll cover, and most importantly, how much you'll cover. From our experience, I believe it's best to keep beginning classes as simple as possible, but still have the students go home with one or two completed projects.

A simple syllabus for the course is a handy planning tool. It's just an outline that defines the course objective and how you plan to achieve it, followed by a rough schedule of events in the course. A sample syllabus is shown, and remember, it doesn't have to be anything fancy. And if you find, while teaching the class, that your plan isn't exactly working, then no problem, modify as necessary. Just make a note of it for the next time.

The way we've set up our basic course is to have a lecture and demo session the night before where the instructor shows the students around the shop and gives them a quick intro to what they'll be making the next day. I give them some handouts on making hooks, drawing steel, etc., a bibliography of blacksmithing books, and some info about the chapter with a membership application. Most importantly, we go over shop rules and safety on the first night.

Resources

There are a number of great blacksmithing books to recommend, notably Jack Andrews' "New Edge Of The Anvil," and Alex Bealer's "The Art Of Blacksmithing." I just received a copy of Charlie Sutton's "Under A Spreading Chestnut Tree," and it's a good one, especially for designing a course around.

Charlie also has put together a Beginning Blacksmith Instructors Guide and Course Outline that is available to ABANA chapters at no cost. (It's a way for him to promote his book... a great idea!) This is a great resource to have if you're planning a course, and is filled with useful information and tips about teaching blacksmithing. Contact Charlie at Dolphin Press, PO Box 61005, Postal Outlet 511 Maplegrove Rd, Oakville, Ontario, Canada, L6J 6X0.

Another good way to prepare for a course is to watch Robb Gunter's Basic Blacksmithing Video. Robb carefully reviews the basics, just as he does in his course. At $250, I wouldn't recommend that you run out and buy it, but it can be checked out from the ABANA library.
A liability waiver

Now is also the time to get the students to sign a liability waiver. Thankfully, other than one burn where a student tried to grab a piece of steel at a black heat, we've never had an injury. Our liability waiver looks like this:

I, the undersigned, realizing the potential hazards associated with the craft of blacksmithing, will not hold the Appalachian Area Chapter, its officers, demonstrators, or any member responsible or liable in the event of an accident or injury incurred during this class or any chapter function, including but not limited to chapter meetings and demonstrations.

I am aware of the requirement to wear safety glasses during the class, and while working at chapter member forges. I am also aware of the danger of hearing damage due to the nature of the craft and accept the responsibility of taking the necessary steps to protect my hearing.

Signature Date

I don't know if this waiver would be any good in court, but thankfully we haven't had to test it. The intent is to keep us out of court anyway. Certain language has legal meaning, like the term "indemnify and hold harmless" that I don't really understand, and usually, neither do the people signing the document. That's why I like to keep things like this as simple as possible. Also, a signature by itself isn't enough...it must be dated as well to have any validity in a court. But knock on wood, this is just a precaution that can't really hurt to take, and these days is required for a course in contract bridge, let alone anything remotely hazardous like blacksmithing.

Publicity and registration

Now you need to let folks know about the course. We are fortunate in Chattanooga to have a citywide arts program that offers continuing education classes in art. They publish a catalog four times a year and mail out thousands of copies. Our blacksmithing courses are listed in the catalog, and students call the Chattanooga Dept of Parks and Recreation to register. (Yet another reason for the liability waiver...they insist on it.) The Parks department collects the money for us, and mails us a class roll with phone numbers. A few weeks after the class, we get a check for 90% of the class fee. So our costs for publicity and registration come to about $36 bucks per class...a bargain. Check around in your area for an organization that offers adult education, or craft classes. Tech schools and arts organizations come to mind. Museums, both historical or arts-oriented, may be another way to promote your class.

If none of these avenues pan out, don't give up. Things will be a bit harder, though. See if you can find two able volunteers within your chapter, one to do promotion, and one to coordinate the registration. Keep the costs as low as you can...xerox flyers for community bulletin boards and hand them out at meetings, asking each member to post five somewhere. You might try a press release for local TV and radio, but keep it very short, one to two paragraphs max. You could try the internet as well, but unless someone is really net-savvy, you may waste a lot of time and effort by attracting folks far away from your local area.

Registration is a lot more straightforward. All you need is a list of names, but it helps that each student know how to get to the forge and what to bring when they sign up, like safety glasses, gloves, and cotton clothes. It also helps if you collect the money BEFORE the class.

Class day!

Well, the big day arrives, and hopefully everybody shows up. You will always have a few folks arrive about a half hour early, and some will be fifteen minutes late, so be flexible. I like to start the fires ahead of time for the beginning students—you can waste a lot of time playing with a balky forge. I also like to do all the steel cutting ahead of time, as I don't like beginners on the chop saw. (A big pair of bolt cutters is quick, quiet, and reasonably safe, though I grind the ends to remove the sharp rag form the cuts.) Each student gets about three feet of 1/4" square for hooks, and about two feet of 3/8" square for a poker. Have plenty of extras handy, each class seems to have at least one hook-making fool that makes a pile of hooks in no time flat, while some will burn the tips off every other one.

We start off every class with a short discussion about shop safety. Go over all your shop rules. Be sure to have a first aid kit on hand, and show the students where it is. We require all of our students to bring their own safety glasses and work gloves. Be sure to bring a few extra pairs of safety glasses...just in case someone forgets theirs. Remind your students of the danger of wet gloves and steam burns. Extra pairs of work gloves are nice to have in case the pair you're wearing gets wet.

We have a power hammer in our shop. I might demonstrate it, but it's off limits to beginning students, even though it's only a 25 lb Little Giant. We have a tredle hammer also, and I might be a little more inclined to let a new student use it if they really need some help. Be careful, though...in some ways, a tredle hammer can be more dangerous than a power hammer. (More dangerous because a tredle hammer is always "cocked." In other words, the springs have the head lifted, ready to strike a blow. If something fails, like the adjuster bolts, the head comes down by gravity alone. The chance is remote, but it's happened to two people that I know. With a power hammer, things can go just as wrong, but generally it's inert as long as the power is off.)

One of the most important things to do as you teach is to let the student do the work. This is very hard for me. I almost have to shove my hands into my pockets to keep from "helping" the students forge their work. Part of learning to forge is "letting your hands do the thinking." Your brain isn't constantly telling your hands and arm how to hit...through practice, your hands do it themselves. You think about the forging in terms of overall guid-
CHAPTER BUSINESS

ance, but the hands make those microscopic blow-by-blow corrections.

This can only be taught, I think, by doing. The students will develop this ability in their own way. Your role is to guide the student. It's easy to try and teach too much...to try and teach what can only be learned through practice.

Do give them tips on hammer control. Most of your students will take timid pecks at the steel. Have them raise their hammer up until it's level with their head. The old board technique is good for teaching hammer control, it goes like this:

Get an old board, say, about a 1" X 4". Hold it on the anvil, and give it a good hit with your hammer. Examine the mark. What you're looking for is a nice circular dent in about the center of the board. What you'll likely get is a crescent shaped dent. This tells you if you're striking with the heel or toe, or favoring one side. Keep denting up the board, until you've got it filled up with dents. Hopefully some will be circular.

Next is target practice. Flip the board over, if it isn't too splintered...and it will be after this next exercise. Draw an X somewhere on the centerline, and give it five good hits, as hard and fast as you can, trying to hit the center of the X each time. Do this several times down the center of each board.

These are excellent warm-up exercises, and can also be given as homework. You'll end up with a ton of firestarter, and the students, though exhausted, will learn where their weaknesses lie. And to get a feeling of what your students are going through, try it yourself...use only your left hand if you're right-handed! Ain't easy as it looks, is it?

Sometimes you'll get a student who's fairly overwhelmed by the whole thing. They'll nod a lot as you explain a concept, but you can tell by their forging that they're just not getting it. Often, but certainly not always, these will be younger students without much experience with their hands. Here's a couple things to try.

First, slow down. Keep these students on smaller, easier projects until they are comfortable and can move the metal a little bit. Maybe he or she could make a hook rack from three hooks and a piece of drilled 1/8" X 1" stock.

Second, try to get the students more involved in the process. As you introduce an idea, try to think of a question to go along with it. Ask them lots of these questions, get them to show you what they understand.

Third, here's an idea from Lonnie Farmer, who has taught 800+ Boy Scouts smithing over the past three summers. This works especially well with younger folks who are too timid with the hammer. Ask them, Do you have a brother or sister? (Hopefully the answer will be yes...if not maybe a younger cousin.) What's his name? (Let's say his name is Andy.) Tell me, does Andy ever bother you? (The answer will be, in all likelihood, an emphatic yes.) Now, Can you do this? (Here, the instructor raises the hammer, and takes a good hit on the metal with each word.)

Andy (Hit).... Leave (Hit).... Me (Hit)....ALONE! (HIT!)

For better or worse, younger folks can somehow readily identify with pounding a sibling and pounding the metal. You might get this to work on an adult, using an irritating boss or coworker in the role of Andy, but it might take a little more finesse.

Review the class

After the class is over, ask the students for feedback. For beginners, it's probably more important that they have a good time than learning tons about blacksmithing. Going home with a tangible reminder of the class, like a hook and/or a poker, is always a big plus, too. You can usually tell how the course went by general observation, but asking for a written review can sometimes help you prepare for future courses. Do take these reviews with a large grain of salt, but be open to constructive criticisms where they seem warranted.

The Safe Shop...

Lock that treadle hammer!

If you have a treadle hammer, devising some way to lock the head in an upright position is a good idea. A treadle hammer rests under tension...the springs hold the head up, ready for action. If something gives way and the spring attachments fail, gravity will bring the head down with enough force to seriously mangle a hand if it's in the wrong place.

This happened to two smiths I know, both with very large amounts of experience, and both very safety conscious. In each case, the smiths were working on the hammers when they let go. In one case, the smith had his hand on the side of the anvil for balance while working with the other hand, but it was close enough to the top that the head pinched off enough skin to require six stitches.

A head lock might have prevented these accidents, but a foot pedal block would not have helped. A foot pedal block is any sort of device that locks the foot pedal in an upright position, preventing hammer operation if someone accidently steps on the treadle. A head lock is any sort of device, like a hook or chain, that attaches to the head, keeping it elevated in the case of a spring failure. Accidentally stepping on the treadle seems to happen far less often than heads dropping due to some sort of spring failure, especially when the hammer is being worked on or adjusted.
Taper Tongs

Photos by Doug Fritz, Text by Brian Gilbert

Here's another nifty pair of tongs from Doug Fritz. These were old tongs found at a flea market, specially designed to hold different sizes of tapered steel firmly. Phil reports that they work well.

These particular tongs have box jaws. For this application, the box jaws are a good idea, since the bottom jaw is fairly wide, and the top jaw is fairly narrow. I decided to duplicate a pair in my shop... here's what I did.

First, I started off with two pieces of scrap steel, 1/4" x 3/4" for the pivoting top jaw, and 5/8" square for the bottom half. The 5/8" part was forged first. I bent an offset where the jaws will pass through each other using bending forks, leaving a jaw about 3" long. You could trim this to suit, and taper the jaw end a bit to give it a nice shape.

![The original tongs as found by Doug Fritz](image)

I then bent the top piece into shape by inserting the 3/4" x 1/4" into the slot and bent it hot. It will stick a bit, so be prepared to do some "coaxing" with your hammer, and remember to leave some room for the swiveling pad.

The reins were drawn out and trimmed next. A power hammer really saves a lot of arm work if you have one. If not, forge welding a smaller section to the 5/8" is an option.

To make the swiveling pad, I departed from the original a bit by arc welding a U-shaped piece piece of 1/8" x 1/2" to a pad of 1/4" x 1". This was simpler than manipulating two separate checks, or folding up tabs like the original, but both approaches could work if you're so inclined. You could even attach the swiveling pad with a bolt rather than a rivet, and make different pads for different jobs.

If I were to make one improvement, it would be to drift the slot a little larger, say 1/4" x 1". The opening range of the prototype is a little less than ideal, and a larger slot would help.

Next I punched the joint using a slit punch, 7/8" long by 1/8" wide on the face. It was an old chisel with the sharp edge ground square. Try to keep the punch as centered and straight as possible. I went almost all the way through one side before flipping and punching the back. Going halfway through each side would make the sides more even, but would be much harder to align the top and bottom of the punched slot. The slot was drifted out with a piece of 1/4" x 3/4".

![Bending the 1/4" x 3/4" piece using the other as a guide](image)

My copy of Doug's tongs, slightly modified
Chad Gunter on Scrollwork

By Brian Gilbert

One of the demonstrations that I managed to catch at the Flagstaff conference this summer was by Chad Gunter. Chad is a very highly skilled smith. He brought along a number of sample elements that amazed the crowd with their simple, clean lines and accurate execution. Of course, it doesn't hurt when your father is the famous Rebb Gunter, former blacksmith for Sandia Labs and the developer of Super Quench.

Chad Gunter demonstrates a branching scroll element

Chad demonstrated branching scrollwork with a forge welded leaf. He worked on an element that could be incorporated into any number of forged projects. The way that these techniques have so many applications was one of the key points to his demonstration, and kept the crowd watching intensely.

He started with a length of 1/2” square that was about 30” long. He formed halfpenny snubs on each end and welded on a short piece that will become a branching scroll. (See sidebar for more on halfpenny scrolls.)

Do all the cleanup and softening of the form before you scroll it around. Use a catspaw tool, and don't overwork it.

A catspaw tool looks a lot like a thin hardy that has been bent over. Its used to start the bending of the snub end scroll, and it enables you to work the backside without flattening the end. They are made a lot like a hardy, though they don't need to be made of tool steel. Mild steel works well too, since this tool is used as a support behind a hammer, and blows against it are usually pretty light. Case hardening or superquenching would give you tool that would last a long time. Alternatively, you could forge it from solid, just like a hardy. Resist the temptation to shove the piece deeply into the fire if it isn't coming to welding heat quickly.

Keep the fire nice & tight…no hollow fires…to minimize oxidation, but not so tight that the fire can't breathe. When forge welding, it helps to have a well-banked fire, as it concentrates the heat.

Chad takes almost a welding heat before fluxing. Then he quickly dips the piece in water to knock off the scale.

The short branching section was held to the longer piece with a rivet, welded, and carefully blended in. Francis Whitaker always said to take particular care where the branches of scrolls joined, maintaining an even taper on the two pieces. This should be done in the same heat as the weld. (That Critical Shape, by Francis Whitaker, The Anvil's Ring, Spring 1988) Chad set up and bent the scrolls freehand using bending forks and a catspaw tool.

A repoussé leaf was added to the scroll, which really set the piece off. His leaf stock was 1/8” thick. He sketched his patterns freehand, but said that a good source was Metzger’s “Patternbook for Artsmiths,” reprinted in the Anvil’s Ring 10th Anniversary Issue. A few more can be found in Schmirler’s “Work Methods and Tools for the Artist-Blacksmith.”

To run the repoussé lines, he used a hot cut tool with a slight radius. Not too sharp, either, with an edge about like a butter knife. One thing to remember about these lines is that they will open up as you bend them. Sketch the lines in with a silver pen.
cil, then score them lightly. Deepen these lines hot, and be careful to follow your cold lines. It takes a little practice.

The example that Chad made had two side leaves branching off of the main leaf. Once the lines were run, he sank the side leaves in a rose or leaf swedge, then curved the main body of the leaf hot. If you don’t have one of these, a block of wood or a stump would work.

Once it’s curved and formed, rivet the leaf to the scroll to hold it in place for forge welding. Clean your fire well before you try to weld this up. Chad’s favorite flux is a mix of equal parts of sifted EZ Weld, Sure Weld, and Borax. He sifts the EZ Weld to remove any large chunks that could leave weld spatter.

To make the weld, you’ll want a lighter hammer that allows quick blows. With the edge of your hammer, seal the edge of the leaf first... the thin tip will cool off faster than the scroll. Watch out for anything with sharp edges that will bite into your work and scar it. Do a little cleanup filing as you go, because it’ll only get harder as the piece grows.

Chad brought along a bunch of his repoussé stake tools. They were all made from A36 hardened in Superquench. Just in case you missed it, here’s the recipe again:

- 5lbs rock salt
- 5 gallons of water

One of Chad’s samples with branching leafwork

32 oz. Dawn blue dishwashing detergent
8oz. Shaldee Basic I wetting agent (Jet Dry doesn’t work as well)
Superquench will harden mild steel enough to make fairly good tools for cold work. A36 structural steel responds especially well to superquench.

Remember, in an application that’ll be touched a lot, you want it to feel as good as it looks, so clean up those rough edges with a file. Chad’s demo showed that it really isn’t that hard to add a lot of grace and style to scrolls with a little time and effort, and it’s a great skill to have in your blacksmith’s bag of tricks.

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**Pinching Halfpennies...**

One of my personal challenges this year was to improve my halfpenny scrolls. While I have improved my results, I still don’t have the foolproof method. It’s one of those things that sounds really simple when you read about it, but in practice can be quite difficult to get just right.

As an example, a halfpenny on a bar of 3/8” square would be described like this: flatten the end of the bar, then turn the bar on edge. Overhang a bit on the far edge of the anvil and thin the neck down. Round the resulting square of metal, and curve into a scroll. Nothing to it, right?

My first problem was that I was leaving too much metal on the end of my bar. By visualizing a square of slightly different dimensions, I was able to get a cleaner transition into the halfpenny.

My second difficulty came with the neck. By working over a bad edge, I often left a reverse taper that was difficult to bend.

The third problem I identified was in rolling the scroll. I always overdid it, and the thinner neck would bend, leaving an ugly sharp spot.

The thing to remember is that a halfpenny scroll is a combination of bending and forging. The trick is to get the curves made by bending to match the curves you made by forging.

Overworking the scroll leads to all sorts of problems.

To sum it up, halfpenny scrolls require a lot of fussing and tweaking if they’re to look right, and they only get easier and quicker with practice.
Mike and Robin Boone on Design

by Mike & Robin Boone and Craig Campbell

Mike and Robin Boone are a husband and wife blacksmith team based near Paonia, Colorado. Ten years ago they committed themselves to our craft full time. Although they each have their expertise, design for Robin and blacksmithing for Mike, the lines between the two areas are well blurred because they share the work rather than divide it. This article discusses the design process of a gate that will be built and auctioned off at CanIRON III.

Our observations, in pursuing the craft of blacksmithing, have led us to a greater understanding of aesthetic values when viewing and creating art. Certain combinations of elements determine the artistry of a completed artistic project. With this knowledge we approach our designs.

We first consider the logistics of the project. This may include the function, existing architectural features, scheduling, potential design concepts, budget, shop capabilities, and installation considerations. An example of this approach is the following garden gate scenario. The specifications we have are the dimensions of the opening in the wall, that the garden wall is made of stone, and the desired design is of the Arts and Crafts style.

Next, we move on to the design phase of the project. The overall

Early thumbnail sketches of the Caniron gate

look of the piece from a distance must be in harmony with the environment, including a feature that grabs the eye and leads it into the piece. As one approaches, individual characteristics begin to become apparent. The forged elements of the design create new impressions the closer one gets, until, the detail is as much a focus and draw as the whole of the composition. The final sensory experience is touching the ironwork. This is where textures and forms are important.

Mike and I make several sketches together, discussing and developing design possibilities. Theses are called thumbnail sketches and are critical for transferring concepts from the abstract to the concrete of a working drawing. We are able to experiment on paper, referencing nature, divine proportion, personal style exploration, and the overall feel of the design's positive and negative spatial relationships. When we are happy with the outcome of these sketches, we create the client proposal.

As is often the case, the client, architects and designers are not knowledgeable of the possibilities of what can be designed and executed in ironwork. Our presentation to the client includes a drawing that expresses the final product in a way that is possible for the client to understand wrought ironwork better. A forged sample of the design is also very helpful in the presentation. The client is able to see and feel the forged work and understand the three-dimensional quality that is not possible to ascertain from two-dimensional drawings.

The tools used for the drawings are simple. Ink pen, dark leaded pencil, charcoal pencil, and ink washes are all good for representing the mass of metal. A T-square, triangle, compass, and rulers assist. One can use graph paper, vellum, butcher paper, and 40-60 lb. weight papers work well. For making black and white photocopies, a consistent dark line is preferable. In two-dimensional drawings of the three-dimensional quality of ironwork, I like to shade the ironwork, make notations of the dimensions,
required, but also reflects a personal artistic statement. The lower portion of the gate is very confined and restricted. Leaving this area, the geometry changes, leading the viewer’s eye upward through the diamond shapes to a much more open feeling, although the shapes still mirror each other. Then, the apex of the design transposes into a more uninhibited feeling with the three circles and arched supports. Simply put, this design is a reflection of our personal changes in life; of leaving the mold of conformity stock sizes and installation specifics with appropriate symbols. A blow up of joinery detail is helpful, as is rendering the surrounding environment. Another benefit to this is it helps us to decide the final stock sizes, forging techniques, joinery and assembly realities, price estimate and other pertinent details for our proposal. Other critical information to convey on the drawing are the name of the forge, artist’s name, name of residence or client, date and copyright symbol with date. We keep all the original drawings and print copies for the shop to work from and for the client.

Mike and I find our life experiences reflected in our designs. With each project we consider personal philosophies, experiences, perspectives, and aspirations. For example, this gate design not only fulfills the aesthetic criteria and the technical function and growing towards individual expression. All of this leads to what we hope is the successful design and execution of a piece of hand-wrought ironwork that is aesthetically and personally pleasing as well as functional.

Robin and Mike will lecture and build the gate in this article at CanIRON III in North Battleford, Saskatchewan, Canada, on June 29, 30 and July 1, 2001. Other demonstrators appearing at CanIRON will be John and Nancy Little of Nova Scotia, Mark Pearce of Calgary, John MacDonald of Nova Scotia, Dorothy Stiegl of California, Bob Patrick of Missouri, Shona Johnson and Pete Hill of Scotland.

Current information about the conference can be found at the CanIRON Web site, www.geocities.com/caniron, or by calling co-chair Glen Grimer at (306) 933-4985.
2001

January
6 & 7 Bill Gichner's Hammer-In at the Huchison Brother's Farm in Cordova, MD. Questions, call 410-820-2041.


21 General AFC Meeting - Lloyds Restaurant, Highway 280 South of Birmingham.

February

10 PABA workshop at Ernest Frederick's shop in Kutztown, PA
Paul Huf 1-717-768-0197 southpaw@epix.net.

24 Dan Boone's 5th annual Hammerfest.

March

10-14 AFC Tool making workshop Tannehill State Park, McCalla, AL. (Free)

24 Furnace Town Blacksmiths annual joint meeting in Snow Hill, Maryland. The location of Furnace Town is about 4 miles outside Snow Hill, Maryland. We will have Lou Mueller as demonstrator showing off many of Don Streeter's jigs from his book. 410-632-0914 email m_and_mwilliams@juno.com.

April

6-8 Batson Blade Symposium, Tannehill State Park, McCalla, AL.

21 & 22 The Blacksmiths' Guild of the Potomac, Spring Fling. More details TBA.

28 & 29 The Northern Minnesota Metalsmiths Conference, Itasca State Park. Contact Keith Johnson, 218-751-9433, keith@greatriverforge.com or Roger Cook, 218-897-5067.

May


5 & 6 Northwest Ohio Blacksmiths Hammer-in with informal activities Friday evening on the 4th. Held at the historic Auglaize Village just west of Defiance, Ohio, South of US-24. The demonstrator for 2001 will be Clifton Ralph.

18 & 19 SE Regional Blacksmithing Conference in Madison, GA.

19 & 20 Blacksmith Guild of Central Maryland Annual Blacksmith Days, Carroll County Farm Museum, Westminster, MD, featuring Tom Latane. Contact Roger Duncan (410)357-4444.

19 Rock Ledge Ranch Historic Site Blacksmithing Workshop Colorado Springs, Colorado (719) 578-6777, ckniss@ci.colospgs.co.us.

26 & 27 Mississippi Forge Council Blacksmithing Conference, Jackson, Mississippi. Peter Happny to demonstrate.

June

1-3 IronFest in Grapevine, TX. www.ironfest.org.

29- July 1, 2001 CanIRON III Conference/Hammer-in at the Western Development Museum in North Battleford, Saskatchewan, Canada. www.geocities.com/caniron/ for more information, or write Glen Grismer, 115 Riel Crescent Saskatoon, Saskatchewan S7J 2W7 CANADA
Tel: (306) 933-4985 E-mail: grismer@sk.sympatico.ca

30- July 1- Second Western Reserve Artist Blacksmithing Association Conference. Demonstrators will be Bruce Woodward and Mark Segard. This event is held at Century Village In Burton, Ohio. Event will be in late June. Contact Mike Roth, 529 Brownell Ave, Lorain, Ohio 44052. Phone 440-244-2798 or e-mail mcroth@adelphia.net.

July

20-22 Upper Midwest Regional Blacksmithing Conference, Pontiac, IL. Contact John Biewer (847)746-2470.

September

8 & 9 North Texas Blacksmiths Association Hammerfest 2001, Bridgeport, Texas. Peter Ross will be the feature demonstrator for the 13th annual Hammerfest. NTBA home page http://www.flash.net/~dwilson/ntba/. For registration contact Verl Underwood, 613 N. Bailey, Ft. Worth, TX 76107-1005; (817) 626-5909, <vaunders@aol.com>.

October


2002

June

5-9 ABANA 2002 Conference, Lacrosse, WI.
FOR SALE/CLASSIFIEDS

For Sale: 250 lb. Little Giant Power Hammer in excellent working condition. Includes 10HP single-phase motor w/magnetic starter; countershaft; brake; removable guard; and, heavy-duty oak foundation. I am the second owner and it’s currently set up and working - tryouts welcome. Photos available. Will load and ship anywhere. $4500.00 FOB Spencer. Contact: Jeffetty, 1041 Lion Fork, Spencer, WV 25276. 304.927.4338 or jfetty@wirefire.com.

POSITION AVAILABLE: Looking for a person seriously interested in learning the art of blacksmithing through self-motivation, instruction, and position at a historical blacksmith shop under the direction of Artist Blacksmith Payne Junker. Paid position, some experience would be helpful, from late May through mid October. Contact Junker Studio, 422 Ethan Allen Rd, Chester, VT 05143 (802)875-3986.

FOR SALE: 500 lb Beaudry power hammer, located Colorado Springs, CO. Rebuilt, runs great, and is in excellent condition. 10 hp single phase motor. $6k/offers. Call 719-683-4625.

DEMO NOTES WANTED: Anyone willing to share a copy of Loreli Sims demo notes from the Flagstaff conference, please contact Mona or Terry at All American Engine, 520-623-6330.

Black Rose Forge of Rockville MD seeks experienced journeyman blacksmith to assist with increased workload. Salary commensurate with experience and productivity. Successful applicant must be detail and task oriented, able to follow directions and work independently. Please call Greg Campbell at (301) 946-4605 Black Rose Forge, 12615 Viers Mill Rd, Rockville, MD 20853.

WANTED: anvil(s) 500-900 pounds, also a swage block, and cone mandrel. Contact Bill Preece (281)351-9179.

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