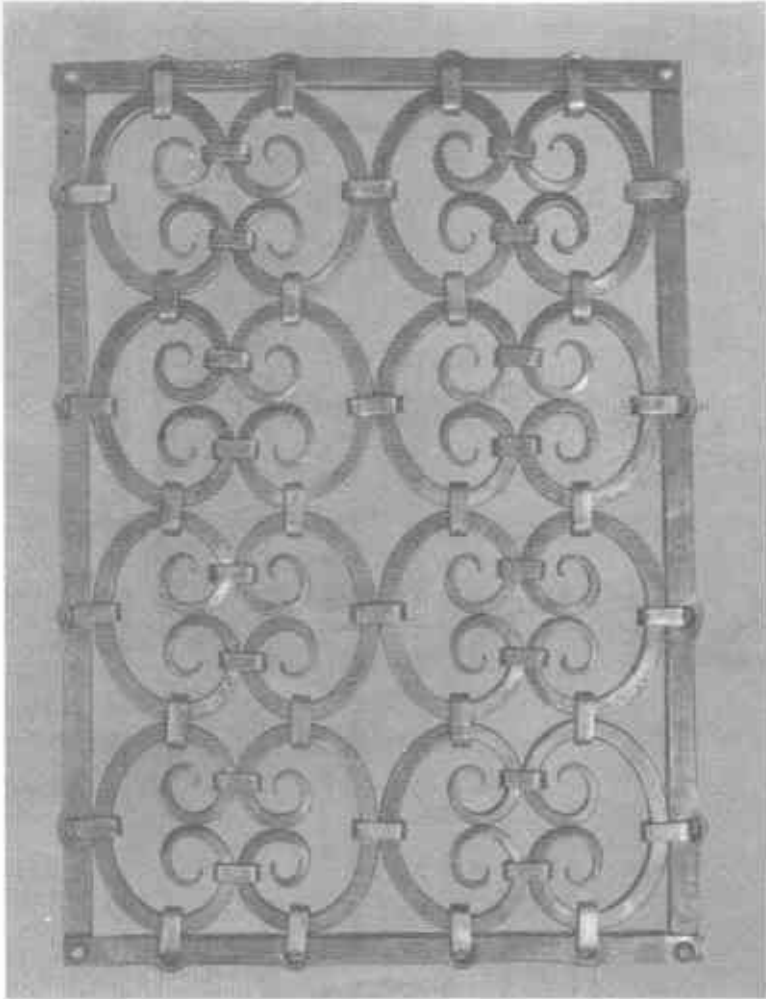


OCTOBER / NOVEMBER 1990

Newsletter ^{of} the Blacksmiths Association of Missouri



The Blacksmiths' Association of Missouri is a chapter of The Artist-Blacksmiths' Association of North America. This organization is devoted to preservation, advancement, and communication between blacksmiths of Missouri and surrounding areas. BAM's newsletter's goal is to support these ideas. Letters to the editor, tech tips, tools for sale, or any ideas which further these ends will be considered for publication.

Occasionally some material included in this publication will be copyrighted and may not be reproduced without written consent of the author. BAM welcomes the use of any other material printed in this newsletter provided the author and this organization be given credit.

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BAM Membership Application

Name: _____

Address: _____

City: _____

State: _____ Zip: _____

Telephone: _____

New Member: _____ Renewal: _____

Memberships are for one year from receipt of dues. Dues are \$20, which includes a subscription to the bimonthly BAM newsletter.

Please make checks payable to Blacksmith Association of Missouri.

SEND CHECKS TO: Steve Austin
44 N.E. Munger Rd.
Claycomo, MO 64119



Membership Renewals

Be sure to check the date on the label of your newsletter. This is your membership renewal date. We will include a renewal reminder in your copy of the newsletter when your membership is due to expire. If the date on your newsletter label is not correct, please notify Bernie Tappel as soon as possible.



Next Meeting

BAM will meet November 17th at John Murray's shop near New Melle, MO. The trade item is a belt buckle. Treats in store for us include a look at John's two big damn hammers, how to make 3 phase electricity from single phase, and perhaps a demo of some sexy welding equipment. New Melle is south of Wentzville, (see map) a natural for those in the eastern end of the state. Don't miss it.

Typist notes. . . .

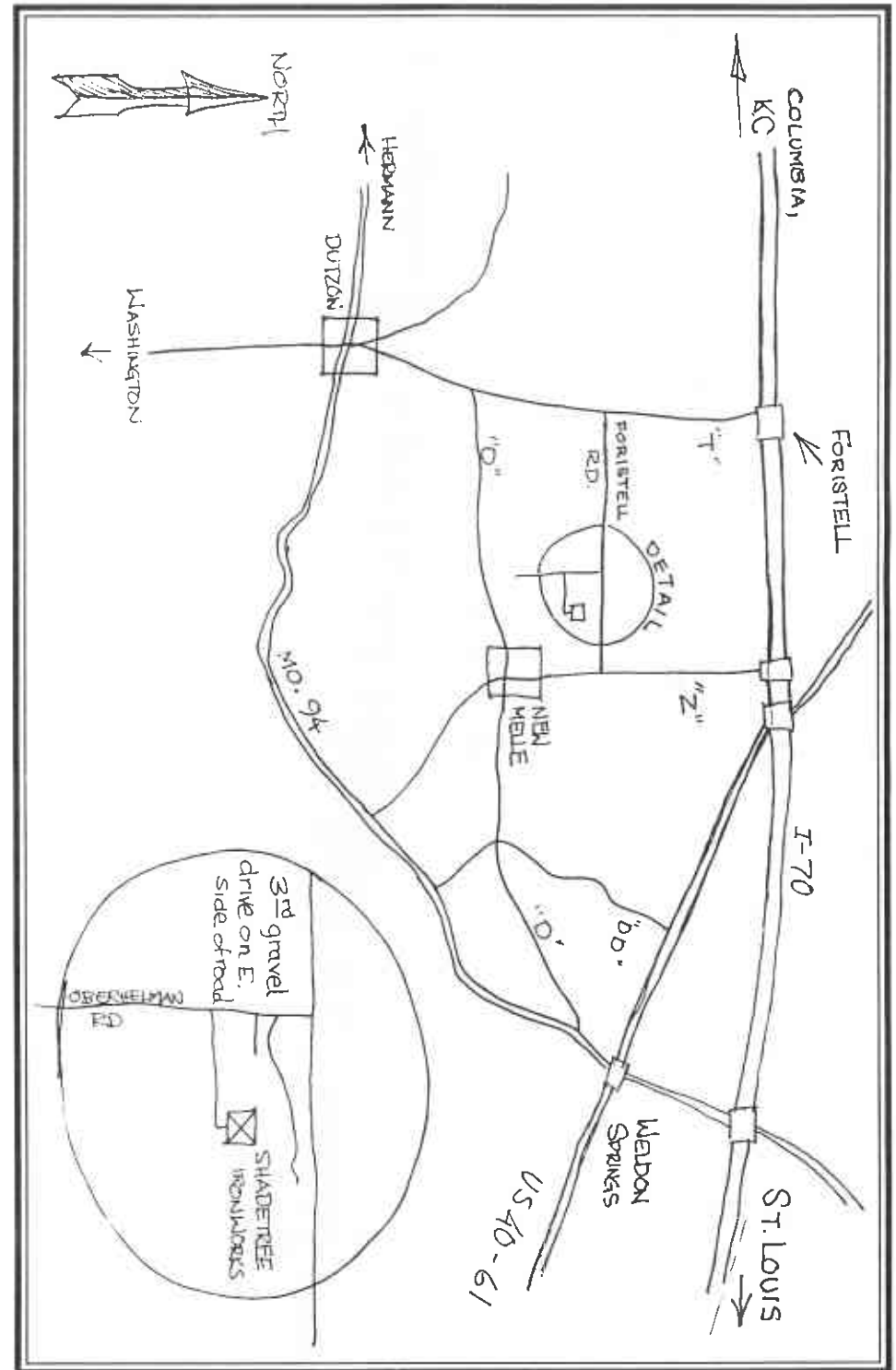
For the ladies that like antiques and/or crafts this would be the meeting to drop the husband off at and hit the road. Hwy. 94 is a great shopping trip. Marthasville, Dutzow (just off 94), Femme Osage and Augusta are loaded with shops. Augusta boasts many things to see. Several bakeries, wineries, a copper shop, wood shop, pottery and stained glass shop, Bed and Breakfast homes and numerous antique shops. This is my favorite town. Once you get to these businesses they will tell you just what is in the area. Washington, MO is south of Hwy. 94 on Hwy. 47. It also has several antique shops, Bed and Breakfast homes, a craft store called Annie's, and a Wal-Mart Super Center complete with its own grocery store.

Okay guys, if you don't want your wife to see this just tear out this article and tell her it was a coupon for a free tool magazine.

Patti

January Meeting

Our January meeting will be hosted by Earl Hawkins in Jefferson County. The trade item is a "vessel" e.g., I suppose, a three-masted schooner, an artery, or an ashtray. Earl promises hickery-smoked barbeque, regardless of the weather. Watch these pages for further developments, and mark Jan. 26 on your calendar.



ABANA

Artist-Blacksmiths' Association of North America



P.O. Box 1181, Nashville, Indiana 47448
Executive Secretary, Janelle Gilbert

Office Hours: 7:30-11:30am & 1:30-4:30pm
Phone: (812) 988-6919

ABANA PRESIDENT'S MESSAGE October 1990

What a Summer! It's almost time for the Fall Board Meeting. I can't believe how quickly time goes by! This meeting will be held once again at Emert and Jane Studebaker's Homestead, Tipp City, Ohio, November 9, 10, & 11. We will be covering several issues, mostly the 1991 budget. We need to elect officers and review the overall game plan of how we conducted business over the year and discuss how we are going to tackle 1991.

At the suggestion of Joe Humble, past president of ABANA, we will also review the way in which we elect officers for the Board and how many board members are really needed to run this operation with the least expense to ABANA. Right now we have all 15 board members working overtime to keep things going smoothly. We run a tight ship in this administration, but, maybe we should take a look at it. I do agree that in times past there were too many board members for the size of the operation, however those times are in the past I'm afraid. Sometimes we wish we had a couple more! Each board member must spend between two and six hours a week on ABANA related issues. I spend closer to fifteen hours . . . I know that Bondi, Callaway, Carr, and Brinegar are up there too. It's hard to find members who can donate any more time than that, so if we decrease the number of members, everyone's load will go up. Even two hours every week, translated into dollars, equals more than a single member pays for a subscription to the organization.

The ABANA Board voted to have two budget meetings every year. We did this several years ago as you recall. There was a time when one meeting would kill the bill, but as the demands on the business end rose, as did the volume of money that ABANA handles, so did the need to have more than one budget meeting. That is why we have the next year budget meeting in November instead of waiting for the Spring meeting to do it. We were always already half way into the year by then and had already lost control of the disbursement of funds for that year. The second budget meeting is held in the Spring to see how we are doing and make any adjustments. As you can see, by the stability of ABANA, it's working. On the off year, the Spring Budget Meeting has been held at the ABANA Conference, wherever it might be. Because the Board is tied up in meetings the entire time and does not spend time participating in the conference, the Board voted to move the Spring meeting to a standard time, such as May, and not have one at the conference. We will of course always have a General Membership Meeting at the conference as directed by the bylaws and the Board will have a short meeting of those in attendance, but it will not be a mandatory meeting nor will we pay any travel for those who do attend. The bylaws indicate that there will be a regular meeting of the Board of Directors immediately after the annual election. That one is the Fall Budget Meeting. It does not provide guidance for deciding upon a second regular budget meeting. I do not say we can or cannot have one. However, it does state that the Board of Directors may: hold meetings at such times and places as it chooses; and devise and execute such other measures as it deems proper to promote the objectives of the Association and to best protect the interest and welfare of the members. The protection of the budget and the direction of spending should fall under the part of protecting the interest and welfare of the members. Without the money, we're out of an organization. You can find this under Article VII, Section 3 if you are interested.

We hope the board members will be more free to donate time helping out at the conference and be more accessible to the members by this move. It also allows the board member to choose whether or not he or she can afford the time and money to attend the event. Of course it is hoped everyone will attend. It was a mandatory attendance until the next time. Board members paid their way to the conference, all their conference fees, room and board fees, and spent 90% of their time in board meetings to keep the organization on track. One of the criticisms of prospective board members has always been that they have to give up seeing the conference even though they pay to get there if they join the board. We hope this will no longer be the case in anyone's decision to run for the ABANA Board.



ABANA Office, P.O. Box 1181
Nashville, Indiana 47448

ABANA PRESIDENT'S MESSAGE October 1990 - page 2

We also voted to pay travel to these two budget meetings because we need everyone in attendance. The budget for travel is established at the budget meetings, depending upon the stability of the budget. Sometimes there may not be any money in the budget that can go toward board meeting travel. Each member will receive a percentage of his/her travel expenses, based upon the allowable amount for the entire board. One time it may only be a small amount. Another it may be 100%. We paid the board members' travel to the conference in New York when it became obvious that this year we were having a three day, near round-the-clock board meeting. We did not cover any conference expenses nor do we ever cover any other board expenses at these meetings. We also did not go to the conference with the thought in mind to cover travel. Some drove to New York and incurred very little in the way of travel expenses. However, many came from a long way and made major dents in family budgets to go to the conference-held Spring Budget Meeting. Many of the board members who drop off before their term is up have done so because of the expenses incurred by them for ABANA. There are several current members who were in that same position. It became apparent that ABANA cannot expect board members to pay travel to board meetings. It is not unreasonable for any board member to expect that ABANA pay travel. The organization should be supported by the membership dues and sales, not by the sacrificing of the board members and their family budgets. It is very important, however, that the board members do not assume they have a free ticket on spending. Only a token amount of phone bills, fax expenses, and postage is ever, fax expenses, and postage is ever reimbursed. There is no reimbursement whatever for time. "Time is money" for most board members and is something that they must sacrifice when they run.

As the organization grows, and as we continue to keep an eye on the money, there is no reason to assume that ABANA cannot continue to be totally self supported. I think we are showing that in order to make money, we need to keep a sharp eye on what we already have. We need the input of every board member at these two budget meetings to ensure that ABANA's monetary holdings are correctly looked after. ABANA was not intended to be run by the Executive Committee or a select few of the self funded board members . . . it is true that with all members in attendance, it takes longer and travel expenses are a little higher but you are not going to pull the wool over the eyes of the fifteen people nearly as quickly as you will five or six. If the board members can, he or she has the option to turn down the travel funds. Several board members do this at this time. However, to select the board members according to their individual bankbook would be very discriminatory against most of the members. We want everyone to feel he or she is a candidate for the ABANA Board, and once the members have elected them, we want them all in attendance at the budget meetings regardless of their personal bank account.

We realize that there will be several people who will wish to find fault in this decision. I invite them to write to me about it. I also invite them to run for the board and help with the heavy work load involved and to take part in the rigors of keeping the organization in the black so that we can continue to grow in size and scope. We do not need nor deserve criticism—we need support for our decisions and we need help with the work. ABANA has grown from a handful to a globe-full. We have come from a modest beginning to a six figure bank account. It is a lot of work but it pays off.

This is an especially long message and I want to thank all the Editors for printing this information. It's vital that all blacksmiths are kept abreast of the workings of the ABANA Board of Directors.

Warm regards,

Dorothy Stiegler
Dorothy Stiegler
ABANA President

DES/jgf

HELP!

Earl Hawkins is collecting pictures
of BAM related subjects and would like
anyone — with anything — to please send
such items to him.
Earl Hawkins, #3 Deep Woods Lane
Barnhart, MO 63012

September Business Meeting

President Steve Baker called to order a brief business meeting at which it was announced that the coal is gone. Ken Rehmer (Cole Camp, near Sedalia) called Walt with the info. that he might have a few bags to spare. BAM came out ahead about \$600 on the coal. There was considerable interest in doing this again, but the question was tabled till the next meeting as most people seem to have enough coal for their immediate needs. Other sources of coal were mentioned: Consumer Sand, Topeka, KS; Ebeling Const., Hutchinson, KS; and Stanley Spencer, Stigler, OK. Walt has used all three and will give you his thoughts if you call.

We voted to purchase Clifton Ralph's video tapes on power hammers, 10 hours of tape for \$200.00 BAM will make copies available to members. For details, contact Steve Austin (816-781-1512).

Walt, Patti, and Jacquie were given a vote of thanks for their work on the newsletter. (Ed. note: Go ahead, flatter us. We eat it up.)

Al Stephens suggested as a possible future meeting sight James Foundation, Meramec Park, near St. James, MO. Al was asked to check it out.

It was announced that the March meeting is to be at SIU in Edwardsville, Illinois, where BAM's bladesmiths will give us a real knifemaking workshop.

September Meeting

By Al Stephens and "Big E" Hawkins, with help from John Sherwood

The September meeting started out like most, with greetings, a search for the coffeepot and a lot of admiring of Walt's new shop. The shop was well planned and roomy, featuring a power shear/punch and a 50 # Little Giant which John Murray promptly put to use in a last minute dash to complete the trade item. One very nice aspect of the shop is that it is next door to a scrap yard, and several members went exploring through a hole in the fence that was reported to have small pieces of overalls hanging around it.

It was a long drive for most of us, but the weather was beautiful. Walt and Ruth were gracious hosts, and attended our every need. The coffee was hot, the beer was good and cold, and the food plentiful.



Jon Havener, Dan Whitmore, John Murray and Steve Austin.



Jon Havener and "Longhorn" stake.

After lunch Jon Havener, a professor of design and metalsmithing at the University of Kansas gave a demonstration of hollow-forming. Jon told us that he works with lighter sheet stock, 20 ga. being about the heaviest, and that much of his work is done in bronze. Though similar forming can be done in steel and in heavier material, he used bronze for the demonstration because he could work much faster with it.

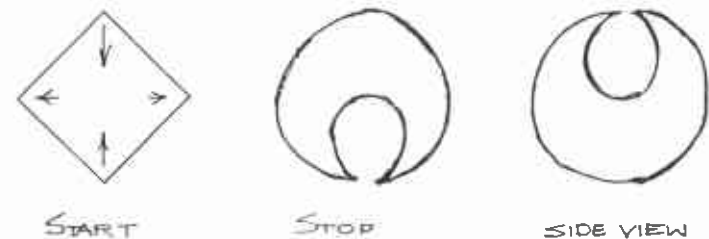
The basic tools for the part were steel and nylon hammers, a sinking form made from butcher block, and a stake that looked like it came off the head of a longhorn steer. He began by driving a bronze circle about 8" in diameter into the butcher block to start the bowl, then moved to the stake to raise the sides. He suggested that scribing a series of concentric lines was very helpful in keeping things straight.

All the work was done cold, and the metal annealed when it began to work-harden by

raising it to a dull red and then quenching. (ed. note: The quenching is not important here it's just faster. This process is not the same as what we do when we soften tool steel by heating and then cooling slowly.)

Jon said he learned to weld and solder to expand his work. He used a Dillon torch to demonstrate how he could weld two pieces. After the area had been worked over, no evidence of the weld could be found. Jon uses strips sheared from the parent material for filler rod.

About this time Al started trying to figure out a piece Jon made from a square sheet about 4" square. He explained he was going to "roll" two of the corners until they met while rolling the other two in the opposite directions:



Jon completed about 80% of the form and took a break. Al tried to complete it, and before long, when people asked what he was working on, he answered as he had been taught long ago "It's an ashtray."

For those interested, Jon recommended a book called Form Emphasis for Metalsmiths by Heikki Seppa, from Kent Press.

Some of the spouses took advantage of the afternoon for a sightseeing, fact-finding, and shopping tour of Lawrence. Rumor has it that one of our more active members is due to become less active due to the acquisition of a reclining chair and the consequent lightening of his wallet.

But enough nasty gossip. Many thanks to Walt for his hospitality and to Prof. Havener for a pleasant and stimulating afternoon.



Members are suitably impressed.

Lost & Found

Found: One red, blue, and green plaid flannel shirt, Arrowsport, size large. Left at Walt's shop 9-15-90. Call 913-842-2954 or write Walt at 2048 Mass., Lawrence, KS 66046.

An Appeal from the Editor

The cover of this issue is one of mine. The reason for this is that I have lots of pictures of my stuff, and no pictures of your stuff. So do your friends a favor. Send me a glossy black and white of something neat, or you're going to get awfully tired of iron from the land of oz. 'Nuff said.

WH

For Sale

For Sale: 25 lb Karrinard hammer with 1 hp motor \$400.00. Round forge with Champion blower \$75.00. Round 4 leg forge with lever handle \$50.00. Dick Korinek, N4 W27374 Hilltop Drive, Waukasha, WI 53188 phone (414) 547-6700

For Sale: Edwards 10B (large) floor model shear, good shape \$120.00. Large industrial coal forge with separate hood. Forge is very heavy, 38" x 47 1/2" x 32" with Buffalo blower, speed control, air gate, and fire pot. It has an attached tong rack and small built in coal hopper. The hood is conical, 50" diameter x 42" height with an 8" discharge and damper. Very Good condition \$300.00. #1 Hossfield Bender with tooling, good shape, \$250.00. 3 phase motors, 2 hp \$25.00, 3 hp \$30.00. Dave Stasiak, 5421 Beaver Dam Road, West Bend, Wisconsin 53095, phone (414) 629-5132.

For Sale or Lease: Complete Blacksmith shop in Galena, Illinois. It is tooled and ready to operate. Contact Elton Mellum, (319) 588-0885.

For Sale: Blacksmith Coal. It is West Virginia Pocahantus, 50 lb bags 25¢ lb. 100 lb or more, 20¢ lb. Jim Bodin, 1826 E Ave. NW, Cedar Rapids, Iowa 52404, phone (319) 366-0801

For Sale: 2 champion #101 post drills in near factory condition. Complete and unused with over 98% original paint, \$400 each plus shipping. Weight 80 lbs each. Glen Winterbottom, PO Box W, Naakehu, Hawaii 96772 or phone (808) 929-9080.

Wanted to Buy: Barstock rolling machine, not for sheet metal. Can be power or manual. Scott Carlsen, 830 Hyer Dr, Jefferson, WI 53549. Phone (414) 674-6381.

For Sale: Bench vises in excellent condition:

- 1 - 6" Parker #958, weight 135 lb.....\$100.00
- 2 - 5" Parker #957A, weight 90 lb.....80.00 each
- 1 - 5" Parker #955 weight 85 lb.....75.00
- 1 - 4 1/2" Rigid #43 swivel base weight 67 lb.....60.00
- 1 - 4 1/2" Rigid CPN weight 70 lb.....50.00
- 1 - 4 1/2" Parker #954 weight 47 lb.....35.00
- 1 - 4" Antique leg vise.....25.00

Bob Ritchie, 3981 Orly Drive, Rockford, IL 61101 Phone after 5:00 PM weekdays or all day on weekends (815) 962-6354.

For Sale: 200 lb Hay-Budden anvil in mint condition. It looks as if no iron has ever been worked on it. \$400.00, cash or cash and trades. For appointment, write to Carol Sakowski, Unicorn Forge, 105 Crescent St., Masomanie, WI 53560. Or call (608) 795-2916 anytime. Leave a message is no one is there.

For Sale: Tool steel, spring steel, 4140, etc. Rounds 5/16" through 4 1/2" diameter, And Hexagonal from 1/2" up through 3" diameter, Regularly 42¢ to 52¢ a pound, now only 15¢ a pound, FOB Warrwen, Michigan. Charlie Heisinger, Commodity Steel and Processing, 8701 E. Eight Mile Road, Warren, Michigan 48089 phone (313) 758-1040.

BLACKSMITH WANTED

Hancock Shaker Village is looking for a blacksmith, call Cheryl Andersen at (413) 443-0188.

Help Wanted: Job opportunity for bladesmiths. Tom Girando, owner of Hand Made Classics is looking for bladesmiths to make knives that he sells. Grinding, polishing, etc, all done in your shop to his specifications. Quality conscious smiths can be trained in what he wants done, and good bladesmiths are needed who have shown certain level of craftsmanship in forging Damascus and other blades. If you are interested, contact Tom Girando, Home Made Classics, 1845 N. Orchard, Chicago, IL 60614, phone (312) 944-4307



Safety

by Walt Hull

Dear Readers

This has not been a great month for Prof. Safety. He failed an intelligence test on Wednesday and it was Friday week before he got his stitches out, so he made himself write a hundred times, "I will not hurry, I will think ahead." See that you, gentle reader, profit from his mistake, that you do not repeat his experience.

And to add insult to trauma, I get questions I can't answer:

Dear Professor Safety,

I've sent a request to the editor for the BAM newsletter for info. on setting up a gas-fired forge. Can you give us some info on the safe setup and use of one of these devils? Some points I'm not real sure about are, type of fuel, how much pressure, venting to the outside, what to use for forced air. Do you follow?

Your help is really appreciated. Thanks.

Jud Hirschfeld

P. S. Ben says "Hey!"

Dear Jud,

I don't know as much as I ought about gas forges/furnaces, mostly 'cause I don't have one, though I expect I will someday. I had hoped to gather some more expert opinion before I answered this, but didn't have time. Still, I was so glad to hear from you I couldn't let the opportunity go by to say "hey" to you and Ben both, so here are few things to start with.

The fuel gas for gas forges is usually propane or natural gas. To burn properly these need to be mixed with air in the right proportions and in the right place. Thorough mixing is important. The usual practice is to introduce the gas into a moving stream of air and to create turbulence in the line to promote mixing. Sometimes the gas is introduced directly into a blower. In any case, you want to be sure that the fire is at the burner, not down in the pipe (same as with your torch, right?) That means that whenever gas and air are mixed, the mixture should be moving out through the burner, whether this is accomplished with a blower or through the design of the forge ("atmospheric" forges are attracting increasing attention). Rob Gunter demonstrated one at Alfred that met a lot of objections to gas: It was quiet, quick, and produced virtually no scale. They had a pyrometer on it, and it held 2300 degrees F, + 2 degrees, as long as I watched, outdoors.) It should also be impossible for gas to flow unless the burner is lit. I would think that a pilot light, thermocouple and gas valve arrangement like the one on your furnace would be in order, and that the blower switch might best be in series with the gas-valve, but I'd talk to a real expert before I did anything.

Pressure I don't know about. I hear numbers in the neighborhood of 4 to 8 psig. Victor's "Welding, Cutting and Heating Guide" says they may be used at up to line/cylinder pressure without shock sensitivity.

Their toxicity and chemical reactivity are "low." The biggest hazard, therefore is explosion or fire. The explosive limits of natural gas in air are 5.0 to 15.0% and for propane. You really don't want an accumulation in this range. In the forge, keep it moving and keep it burning. Outside the forge, keep your lines in good repair, keep the area ventilated, don't use a flame to check for leaks. Keep your propane bottle outdoors. Propane is heavier than air, and will collect in low spots, as workers servicing buried lines sometimes learn the hard way. Again, good ventilation is your first line of defense.

Ventilation is important also to carry off combustion byproducts. Gas fires are very much cleaner than coal fires, and this is one good reason to have one. The stack gas is almost entirely composed of CO₂ and water. These are not poisons, but they will take up space that ought to be filled with air. Also, some of the things you put into the fire (borax, galvanized steel) may emit vapors you don't want to breath. I'd give it the same respect as a coal fire.

That's about all I can give you now. I'll be trying to do some research on this, and pass it on as it comes in.

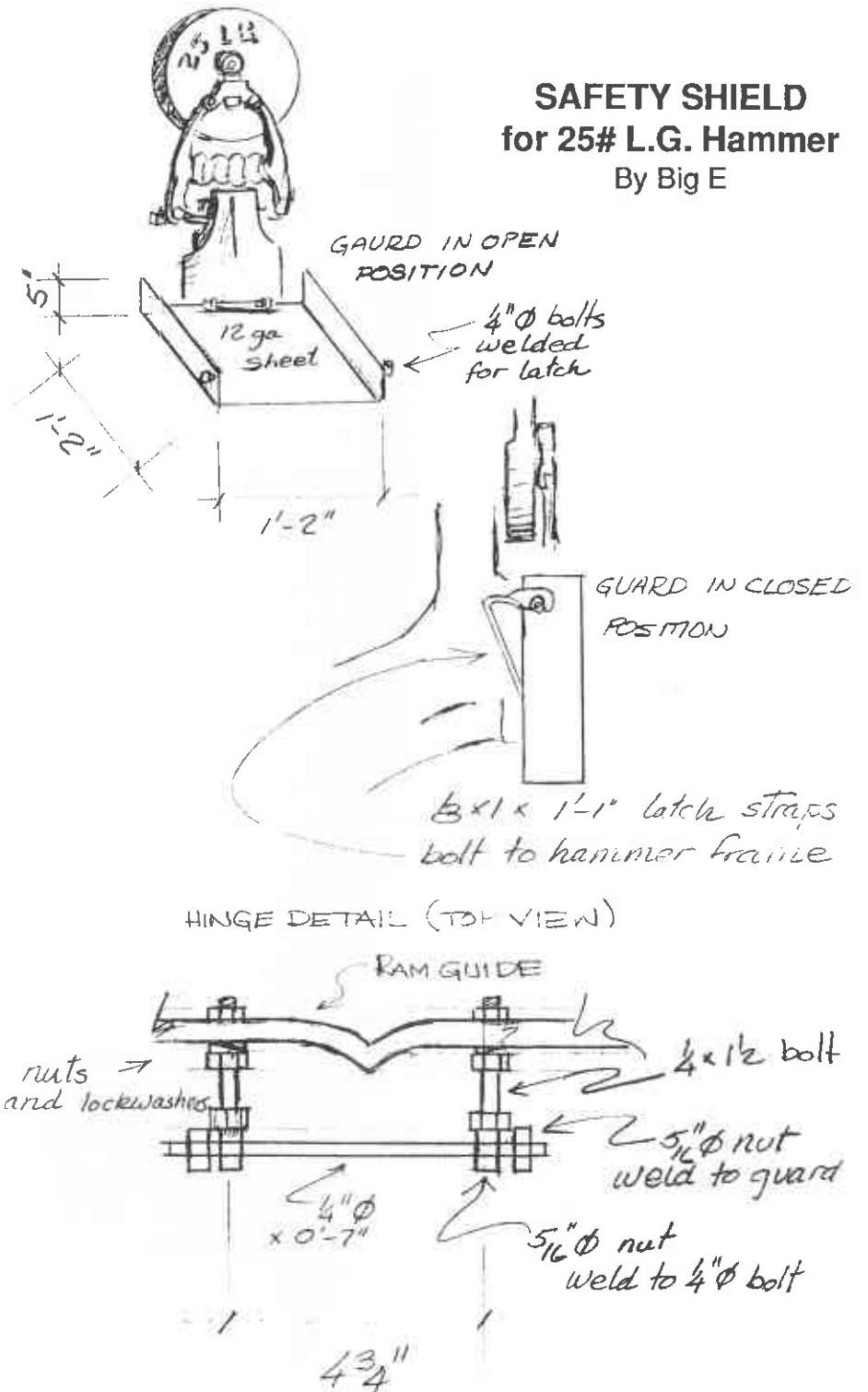
Prof. S.

Dear Prof. Safety,

Here's a sketch of a guard I made for my 25# Little Giant. Easy to build, and it provides easy access to the workin's.

Earl Hawkins

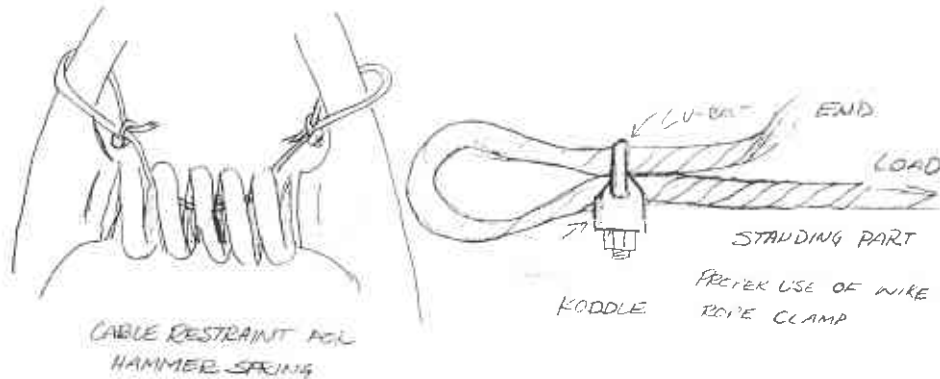
SAFETY SHIELD for 25# L.G. Hammer By Big E



Dear Earl,

I certainly like the idea of having something between me and that spring. I thought of having my striker stand there, but I can't see the work.

Steve Austin passes on the notion of a retainer for the spring made from 8" aircraft control cable.



Let's hear from the readership on this, and on the gas forges, too.

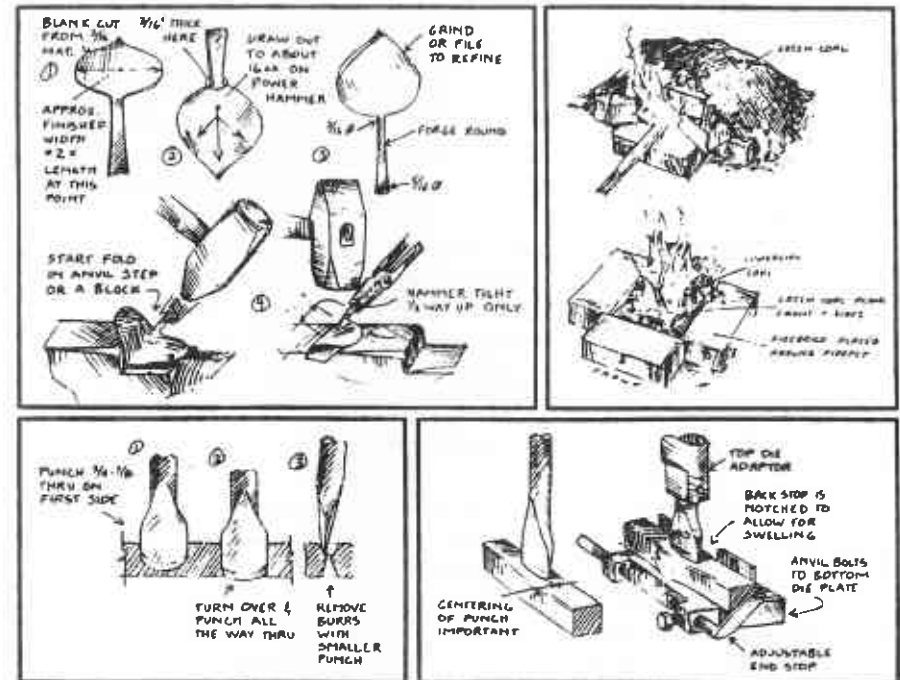
Prof. S.

Please send your safety questions, concerns, tips or corrections to Walt Hull, 2043 Mass., Lawrence, KS 66046. Neither the author, the newsletter, or the Blacksmith's Association of Missouri pretends to be exhaustive or infallible. It's your shop and your safety, and you are responsible for them. We only hope to help by increasing awareness of hazards and steps to avoid them.

• NEW PUBLICATION •

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Some Thoughts on Photography of Iron. . .

by Paul Sperbeck

One of the difficulties of photographing any object of high contrast, such as ironwork, against a white or light background is that the camera's light meter does not 'see' the same thing that our eyes do. While the human mind makes many adjustments to what we 'see' to make things fit our minds-eye image of what we really expect: the light meter in your camera is not quite as intelligent.

While it reads the light levels very accurately, it is designed to render an exposure where the average of the lightest and darkest sources that the meter sees will be recorded on the film so that as much of the light and dark information present in your subject will be able to be recorded on the film. To do this your camera makes a few assumptions.

What your camera assumes is that half of what you are photographing is white, and that the other half of this subject is black. In photography: the mid point between black and white is called '18% gray'. But as you will observe by a casual examination of your surroundings; nothing is 'black and white'...

Most cameras read an area of roughly 30% of the picture area that you see through the view finder. If you point your camera at a large sheet or white background that completely fills the viewfinder, the light meter in the camera will assume that the subject that it is seeing is '18% gray' and will adjust the cameras exposure system to yield a photograph which will then be gray! Not what you wanted to see, but it's what you will get. On the other side of the scale, if you were to photograph a completely black background the metering circuit in your camera will again try to make the final image gray but this time the resulting image will be too light in relation to the original subject matter.

By now you may have recognized some of these results in efforts that you may have made to photograph some of your own ironwork. The problem does not result from having too much or not enough contrast between the background and the subject, but on the ratios of the amount of black (ironwork...delicate flowing black lines) and white (large expanse of white sheet or paper used to provide contrast to the ironwork.)

Now on to the cure... you could modify the ratio of iron to background, an interesting but artistically unacceptable alternative, or lie to the camera. Lying to the camera is by far the easier of the two methods.

Many cameras have a manual override of the shutter speed and f-stop values, and a look into the owners manual at this time may not be out of order. You can purchase a Kodak 18% Gray Card at many camera shops that cater to amateur photographers, and take your light meter readings directly off the gray card. Simply use the gray card by placing it in front of the object that you would like to photograph. Bring the camera close to the card, filling the frame of the viewfinder with the image of the gray card. Do not be concerned with focusing the gray card with your camera, the important things to look for are that the card is parallel to the subject that you would like to photograph, and that the camera body is pointing in the same relationship to the work, only closer, that you will use when you back up to take the picture. Also be careful that you do not block the light that will fall on the gray card when you

move in to take a light meter reading. You may have to move the subject and the background around to achieve all of these goals.

The other method that you may use is the more expensive one. If you purchase or borrow an incident light meter you will be able to read the light that FALLS ON the subject rather than read the light that is REFLECTED FROM the subject to the camera. If you read the light that falls onto the surface of your display rather than that which is reflected from it, you do not have to bother with the lightness or darkness of your subject matter. The only caution is to have the incident light meter facing the camera directly. If you were to draw a line out of the camera to the subject, the axis of the incident light meter must face the camera along that line.

You may also use the meter in your camera without the gray card if you take a meter reading of a white subject and write it down, then take a picture but readjust your exposure by opening up your f-stop three or four more units.

f1.4	f2	f2.8	f4	f5.6	f8	f11	f16	f22
^A			^A			^A		^A
larger opening			adjusted exposure			white background exposure		smaller opening

I know that this may seem to be backwards, but the final rendering of a subject that is primarily white using the internal meter is gray. If instead we meter off a white card and let in more light to the film, we will have a darker image on the negative... this will result in a lighter image on the positive print. Trust me...

Some cameras have a shift feature that allows adjustment of the exposure for highlight and or shadow conditions. Using the highlight feature while photographing an iron display against a predominantly white background will result in an acceptable image on the negative.

All this will give you fine negative, but the lab or service that prints your negatives must also be informed that your film contains images that will have a balance of light that is highlight biased. I have found that if you are going to take your film to an outside source to be processed, it is better to go to a local camera shop and develop a working relationship with them. The knowledgeable camera store employee will more likely be able to help you achieve the results that you want than some kid behind the counter at K-Mart.

I hope that this information will be of some use to you. If nothing else it will highlight some of the problems that you may have experienced and suggest a remedy to you. . . of course you may always call in a professional photographer to record your portfolio, but you may attain very good results by yourself. . .

Remember, all camera meters that are built in will always try to make a black and white print average to gray. Similar results occur with a color film as regards exposure, but color reproduction varies considerably with over exposure (tolerable) and under exposure (unsatisfactory).

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