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To: HABA Distribution List

Re: The August Meeting Of The Proposed Houston Area Blacksmiths' Association (HABA)

THE MEETING IN SUMMARY

Twenty one people came to Tudor Forge on August 15 to enjoy a day of blacksmithing. Four new people joined the group, Bill Preece, Russell Klecka, Eric 'The Smith' Gruel and Bill Cade. We enjoyed your company and look forward to seeing you all again. We also missed a few familiar faces and saw a few members we haven't seen in a while.

The HABA HAT took in a total of \$113. Bill Peck, Charles and Sharon Heathcock and Frank Walters need a special thanks for their efforts to support the organization. And thanks to everyone else who helped to top off the total.

There was a consensus to schedule another guest demonstrator for a monthly meeting. Dave Koenig has a person or two in mind.

There also seemed to be a consensus to build up the HABA funds in order to be able to finance a two-day workshop. A couple of names were mentioned and we all might be thinking about who we would like to ask to come to Houston. We probably should be thinking about the March 1999 time frame.

The Show-N-Tell table is always a popular spot. This meeting started around the table by reviewing some new books, tools and pieces of work from several people. Lots of discussions take place about what is on the table, how it is made, what it does, where do you get it etc. An anvil got dragged out of a truck so the markings could be compared with the information in Richard Postman's book *Anvils In America*. Two of Bill Bastas' new hammers were at the meeting. These beautiful and functional tools always seem to get a discussion going and Tim Bailey filled us in on some particulars.

Sharon Heathcock's beautiful fish sculptor took the prize. Her work was a blown fish that was also etched and then heat colored. The fish was presented on the top of a piece of 'drift wood'.

Sharon filled us all in on the process of cutting out two identical 16 gauge fish patterns and then welding them together along the edge. The welded form includes a blow pipe attachment. The welded piece is then heated evenly in a gas forge. At a red heat the fish is taken out of the forge and inflated like a balloon with compressed air. Next she welded on some eyes and fins and covered the fish with wax. The wax became a resist for an acid bath. She removed the wax where she wanted to define some fin and tail details, and scales. The fish was then placed in an acid bath. After the etching the wax was removed and the acid neutralized with Windex. Color was added last by burning the fish with oil. The result is hard to beat!

Some other pieces included Charles Heathcock's tomahawk made out of an old farrier's rasp. Jesse Kirk donated a small table/plant stand for the next Raffle. Jesse also had a new heart hook with the hook and a butterfly in the middle of the heart. There was a 12" gong from Indonesia forged from bronze and a belt buckle commemorating the first 25 years of ABANA with a Damascus anvil in the middle. Daryl Meier created the buckle.

And there were many other things on the table in the form of iron and paper that kept people talking for some time. The table was also the focal point for other discussions later in the day.

The objective of the meeting was to learn how to forge aluminum. Dave Koenig, Frank Walters and Tim Bailey teamed up to forge a goblet form from a piece of two inch schedule 40, 6061, aluminum pipe. This was the first try at aluminum for almost everyone present. The result was a goblet form that did not look too bad for a first try. As with most experiments, the goblet project taught all of us something new. More importantly, I think there are going to be several more goblets built from 2 in aluminum pipe.

After lunch Jesse Kirk requested a demonstration to make a socket. Dave Koenig used a piece of five eighths square aluminum bar for the demonstration. We all learned that you can spread that five eighths bar to about four and one half inches pretty easily. And as Sharon Heathcock pointed out, forming the socket is a lot easier using a swage block rather than the horn of the anvil. We also found out at the end of the demonstration what happens when aluminum gets too hot. It breaks.

Eric Gruel finished up the days demonstrations with two versions of horseshoe knife/letter openers. These are good looking and functional pieces.

We had a great meeting! Everyone was engaged and contributed to some part of the meeting. Ya just can't get much better.

FORGING ALUMINUM

ABANA CONFERENCE NOTES

By Dave Koenig

While getting ready for the August HABA meeting, I revisited some of the notes I took at the ABANA Conference last June. Jack Kalhm was the aluminum forging demonstrator. Jack demonstrates well and seems to do a lot of his work in aluminum.

Several years ago one of his customers asked him to design and build some exterior grills for a home in California. The customers parting words after giving him the job were something like....and if I see any rust on this work I will be back in your face.... Hmmm Jack thought to himself, guess I better come up with a material for my work that will not rust! The result was his start into forging aluminum.

Aluminum is a really different material when compared to steel.:

- Aluminum is light and steel is heavy.
- Aluminum is soft and steel is hard.
- Steel rusts that nice orange color and aluminum I guess does the same only it's not an orange color and we call it corrosion.
- Steel is relatively inexpensive. Aluminum costs a lot more.
- Steel shows its colors when heated. If aluminum shows any color when heated, the next stop is most likely the recycle bin.
- Iron and steel have about 5000 years of history, myth and related stories. Aluminum has what, maybe 200 years of existence. And whoever heard of forging aluminum!. (I was told recently that Napoleon began to buy-up aluminum at the rate of something like \$2000 per ounce!)
- The feel of forging aluminum is a lot different than forging steel. To me, the feel of forging aluminum is like hammering on a piece of wood. The hammer just stops.

During his demonstration, Jack forged some bar, sheet and pipe. The forging tools were all the same except that the bending forks were covered with hydraulic hose to prevent scaring the piece being bent. He worked the sheet cold and the bar and pipe hot.

There are many different kinds of aluminum just like here are many different kinds of steel. Aluminum is numbered in eight different categories. A 1000 designation is pure aluminum. The 2000 series has predominantly copper as the distinguishing alloy. I understand it is often referred to as aircraft aluminum and does not forge well or at all. The 3000 series is used to

designate sheets. This is forgable. The 5000 series is reserved for welding and anodizing materials. The 6000 series is forgable. 6061 and 6063 are the most common forms of aluminum and are the most desirable for forging...especially 6063. Refer to manufacturers' publications to determine the alloys of any particular series. (I do not have any information on the 4000, 7000 or 8000 series alloys.)

Below are some tips, observations and odds and ends to help you begin forging aluminum:

The melting point of aluminum is about 1400 degrees Fahrenheit.

Get a paint stick or other dry stick. A dry stick is one means to determine the temperature of the aluminum. Heat a piece of aluminum and rub the stick on the surface. A light brown or dark brown stick mark is a suitable forging temperature. A black line is about 900 degrees and do not strike the material. It may break or crumble. Wait until the temperature returns to a brown heat.

If aluminum does not get to a yellow heat, it can still be used.

Anneal aluminum by bringing it up to a dark brown or black heat and quench it in water. For most cold sheet forging it is only necessary to anneal one time. It takes a lot to work-harden aluminum.

Aluminum is easy to bend with a rosebud. Place the aluminum in a vise. Grab the end of the piece to be bent. Move the rosebud over the area to be bent and apply pressure. In a very short period of time the piece will bend with little effort.

Don't concentrate the flame of a rosebud on aluminum...keep it moving.

When working with sheet, Jack did a lot of work over a stake. The sheet got really distorted before he brought it back to the anvil and reshaped it. My first impression was that he was going to crack the sheet because of expected work-hardening but it did not happen.

Initial Clean-up is easy with a 36 grit grinding disk or a neoprene 12 K disk called a 'Rex Cut'. Final clean-up was done with a maroon color Scotch-Brite.

WD 40 or Crisco oil greatly improves clean-up and sawing aluminum.

Enjoy exploring a new forging experience.

The Office and the Shop

By Paul Lundquist

Reprinted from the *1998 ABANA Conference Notebook*, Assembled by Paul Lundquist, Ashville, NC 1998
Thanks to Carol Coats for Scanning This Article

This is about making your blacksmithing operation more profitable by coordinating what you do in the office with what you do in the forge. Some of you are already using these practices. For others, you are my intended audience and your making more money is my goal. It began for me when I wondered what Manfred Bredohl meant when he said in 1977 that as much money is made in the office as in the workshop. That got my attention.

There are several areas of office work that can improve your bottom line. They begin with attitude and include applying office tools to the job, collecting data, seeking efficiencies, and making everything dearly visible and understandable. The attitude that will help you is one of wanting to know in detail just what is going on in your business. What is profitable? How much does everything cost in time and money? When am I working most and least efficiently? When am I working for no pay? What is escaping me? A real passion to know these kinds of things and make them visible can be a great help to you. Then you can go on to design cost out of jobs and increased profits into them.

Making costs visible is the main function of accounting systems. Here I mean accounting as any system you use to collect data and show you what is really going on. Its not limited to what bookkeepers do. This stuff only you can do.

One such accounting can be a simple chart of the time it takes to do each of 3 dozen basic operations (like a cut or a certain scroll) in minutes. When you measure over time you might find that a saw cut can really take 2 minutes rather than the 1 you may have guessed. You can then use that chart to improve your estimating. Make a price based on the sum of the times your chart says it takes to make an item such as a production table. Make a few of the tables and compare the time it

actually takes over several items. Look at it from another viewpoint that is, fractions of days for the whole job rather than minutes for parts. Soon you get to really see what it takes to make things.

Measure your indirectly productive time. Most shops don't and can really find some interesting losses here. If you don't measure it you will always undercharge for it because it is always more than you expect. All the time it takes to do the things you have to do that are not part of actually making what you sell. There are a hundred of them: talking on the phone, loading off material, doing accounting, figuring out how to do a new job, shopping, crating, shipping, going places etc. You need to come up with an indirect cost figure to apply to your pricing formula. Otherwise no one will pay you for that work.

What is a good pricing formula? I use a version of the one Richard Quinnell outlined to us in 1990. First you need to determine your hourly rate. You don't really want to use "the going rate" or "what people make around here". That is their problem. You have a business to run and to understand.

Begin with the amount of money you need to make in a year to live the life you decide you want. Figure out how many billable hours you can work in that year. You get this by subtracting indirectly productive time as outlined above, sick days, vacations, and whatever else you can't bill for directly. So you find you can bill perhaps 1400 hours out of the 2000 reckoned in a work year. Required income divided by billable hours worked equals your hourly rate. If you do this I expect you will compute a higher rate than you are charging now. Time to raise your rate.

This leads to another major problem smiths often share. Having computed your hourly rate you have to actually charge that much. You mustn't cheat yourself by rationalizing that it is too much or people won't pay it. You have to be firm, firstly with yourself. It isn't easy for many of us. After all we want to be liked and we want to have work.

To make your price estimate, write everything down. That means what you figured and the basis on which you figured it for each and every component of the price. Otherwise it is too hard to refigure it which you often need to do for design changes. Things also tend to get left out of estimates so write it all out and use a checklist. I got better at this after I started using a computer spreadsheet I made.

This is my current pricing formula. List and cost each piece of material. Double the price you pay for steel to take care of transport, scrap, etc. List and cost all production time to make and finish the piece. List and cost any subcontracts like shearing or flame cutting done by suppliers, painting, etc. This is my Time & Materials Base (T&M).

To that T&M Base I add overhead of \$3 / production hour. This is everything from electricity and fuel to insurance and broken drill bits. Guess to start with and later you can refine it from the expenses on your income statement.

To that sum I add time in the office spent on this project at my hourly rate. The same rate as the shop; hours are hours and you only have so many.

To that I add 10% for profit. Profit is a separate item for which you budget. It is not what happens to be left over. This is a key point!

To that I add 5% for the cost of getting it sold. Whether you use a sales rep., web site, print advertising, go to fairs, or whatever, you have a cost of getting these sales. You need to recognize and include this cost.

Should you get this all done and then think "I can't charge that! Nobody would pay that." STOP!! Time to be honest with yourself, value yourself, work for your family. Stick to your price! Over half of my price estimates do not result in sales. But I have all the work I can do and when I work I am not giving it away.

I do not discuss what my hourly rate is. I only give the price, not how I figured it. I don't negotiate the price. I will discuss doing less of the work, such as painting. It is too easy for a customer to discount or fail to comprehend all components of price. We are blacksmiths running our own businesses not laborers working for hourly wages. If some do not afford you, find the ones who will. They are your real customers.

There are three basic financial statements. Your most informative is the income statement, the one that gives "the Bottom Line", Net Income. It lists Sales and subtracts Cost of Goods Sold and Expenses. This is the central part of Schedule C on Form 1040. Leave all this to your accountant and you cut yourself off from your business. Ask your accountant what the details mean. You can find many indirect costs here to help figure your prices.

The cash flow analysis is basically a bunch of monthly income statements strung together. Its usually done on a spreadsheet. You want to avoid having to pay for things too soon before you get paid. This is more the concern of fast

growing merchant firms. Smiths have fewer cash flow problems if we take deposits to pay for materials and more, make things and get paid for them on delivery

The balance sheet shows what you own less what you owe to arrive at Net Worth at a point in time like year end.

Another useful tool is a calendar. I use a wall calendar and don't write on it. I write on sticky notes and put them on the paper. Then I can rearrange the plan without erasing. My day changes often. I use different color sticky notes for different categories of time: forge work, office, social, etc. Without the calendar I can't see what I'm committing to do and can easily say yes to too much at the same time.

A corollary to a calendar is a diary of time spent. The sticky notes can move to pages and mostly take care of this one. When you do this you can find what you actually do in a week can be very different from what you thought.

Phone logs are sometimes a good idea if you have enough long distance expense in a project. I did one for this conference but usually don't for the iron shop.

For car expenses I keep a small spiral notebook in the glove box. The car does not leave on business before I write date, destination, reason and beginning mileage. This captures a major expense which comes straight off your income taxes. That book can be worth a couple thousand dollars a year.

If you use a computer you can do everything you need to do with simple integrated software called ClarisWorks for either Mac or Windows. Word Processing, Spreadsheets, Database, Drawing and Painting all in one under \$100. I find using the spreadsheet to make price estimates is a big help. The database can make invoices, track material and time and handle addresses. Drawing makes business cards and simple sketches. Things don't get as lost and you can recycle the information endlessly. Other software: MYOB for full fledged accounting books, MacIn Tax/Turbo Tax for Federal and state Income tax, MiniCAD for CAD.

There are a bunch of other little techniques you will work out for yourself to capture data. The key is to actually do it regularly. So make it easy. And you will do it.

In the forge

Do 2 or 3 things at once while heating steel in a gas forge. Heating steel takes so much time and you can get lots done during that time. It's a dance going between one task and another.

- Measure and cut.
- Bore holes.
- Weld, electric and gas.
- Layout and Plan work.
- Paperwork, time sheets, make shipping cartons or crates, etc.
- Think about how to save more time.

Time savers:

- Proper height of equipment, tables, vises, etc.
- Organized scrap bin and material: steel, paint, abrasives.
- Organized tools including bits, clamps.
- Organized jigs and fixtures including data such as cut length, etc.
- Organized notes, drawings and time sheets. It's easier on computer.
- Electronic welding helmet.

Work for your shop and your shop will work for you. 1 or 2 hours a week

Its an investment which will repay you many times over.

It even feels good!

NEXT MEETING – SATURDAY, SEPTEMBER 19, 1998

The next HABA meeting will be held at the Tudor Forge on September 19, 1998. Things will get underway about 9:00.

The planned activities of this meeting include the First Annual HABA Swap Meet and Open forging!

Dig around your scrap pile, check your bookshelves for duplicates, locate that old beat-up anvil or post vise your uncle gave you and come to the September HABA Meeting. HABA's met for about 18 months now and any self-respecting blacksmith accumulates gems that will probably never get used. The September meeting is an opportunity to unload that stuff. Let someone else store it for a while. Who knows, you may be able to buy it back for less money at the next HABA Swap Meet.

Bring a forge to demonstrate the gem you are trying to sell....well maybe that's not a good idea....you might not be able to overcome the temptation to save it for another year! But bring your forge anyway if you want. It would sure be a good way to get people to look over your wares.

We will also have a HABA Raffle with the items accumulated from the August meeting. I bet there will also be a few priceless Swap Meet items, in the Raffle too.

Please remember to bring your safety glasses with side shields, something for the Show-N-Tell table and a bite to eat.

DIRECTIONS TO TUDOR FORGE

Take 249 NW from Houston. Travel through the towns of Tomball, Decker Prairie and Pinehurst. At Pinehurst, 249 changes to 1774. Stay on 1774. About three miles ahead on 1774 look for a Texaco station on the west side of the road. One half mile past the Texaco station, turn left or west on Tudor Way. You will find the forge about a mile down the road.

From the intersection of 1488 and 1774 in Magnolia, go south on 1774 about 4 miles. Look for Tudor Way just after the Country Jamboree building. If you see the Texaco station you went too far.

COMING EVENTS

Belcones Forge

Belcones Forge will meet Saturday, August 29, 1998 at Bill Bastas's shop. Bill will demonstrate a new 100-pound air hammer he built, a forging press and the Hoffi technique for hand hammering.

To get to his shop from Hwy 290 and I 35 go south to Ben White Blvd. Go west or right on Ben White to South Congress Ave. Go north or right on South Congress Ave. about 5 blocks to a Diamond Shamrock station on the left. Bill's shop is right behind the station.

If you go to Austin on Hwy 71, Hwy 71 turns into Ben White Blvd. at I 35. Just continue on Ben White to South Congress Ave. and follow the directions above.

Bill's shop is located at 121 Pickle Street in Austin. His shop number is 512-447-9091.

North Texas Blacksmiths Association

North Texas Blacksmiths Association. 1998 Hammerfest. Sept. 12-13, 1998.

Sid Richardson Scout Ranch, Bridgeport, Texas. Chad Gunter, Harvey Dean.

Dorms and meals are available at the location. Verl Underwood, Registrar.
613 N. Bailey Ave., Ft. Worth, Texas, 76107-1005, Phone 817-626-5909,
vauder@aol.com. Hammerfest Chairman, David W. Wilson, dwwilson@flash.net.

CHAD GUNTER. A second generation Blacksmith, Chad began at the very early age of five years old. Currently he has his own architectural iron business operating since 1993. Chad has demonstrated at numerous conferences and serves as instructor at the Forgery School of Blacksmithing in Tijeras, NM.

He produces beautiful architectural elements for the adobe style homes in the Santa Fe area. Among these are gates, chandeliers, custom kitchen and door hardware. Some of the Southwestern style items are cattle brands and spurs.

HARVEY DEAN. Harvey has been handcrafting knives since 1981 and began handforging blades in 1986. As a member of the American Bladesmith Society he received his Mastersmith rating in 1992. He has been a voting member of the

Knifemakers Guild since 1995. Harvey is an instructor at the Texarkana College-American Bladesmith Society's "Bill Moran School of Bladesmithing" in Washington, Arkansas. His knives have been featured in many publications and magazines worldwide.

Fanthorp Inn Historical Park

Texian Days At Fanthorp Inn State Park, Anderson, TX, September 26. 1998 from 10:00 AM to 5:00 PM.

Anyone interested in demonstrating at the park during Texian Days should contact Jo Frances Greenlaw, the park superintendent. The park number is: 409-873-2633.

To find the park, drive south from the courthouse on the main street. When the street turns into a dirt road, look for the park on the left. You just cannot miss it.

WANTED

Bill Bastas is looking for a supply of Bois D'Arc or Osage Orange as it is known in some parts. If you know of anyone knocking down a tree or of someone who has some for sale, Bill would appreciate a call at 512-447-9091.