Rocky Forge News

Volume 7, issue 4 – April, 2008

In this issue I have an article by Nol Putnam, formerly published in Anvil, Jan 1996. As most of you know I am envious of being able to earn a living as a blacksmith. This article addresses some of the basics of what you need to know to accomplish this.

Next I some info on 52100 steel and pure iron that may be useful to many and is a boon to steel scroungers everywhere.

Perhaps most important I called Ted today and caught him just as he was finishing up an agreement to get a Rocky Forge building erected at the Illiana Showground. Further information will have to come from Ted. DEC

Meetings

By Ted Stout

The next meeting of the Rocky Forge Blacksmith Guild will be Saturday, April 12th, 9:00 at Ted's shop. Our agenda will be open forge time and hopefully we can forge outside and finally get some real forging time. Please no rain dances for that day.

Be sure to bring some ideas for items we can make and sell at the Illiana show in July. Also, think of items for the iron-in-the-hat drawing.

It looks like we will be building a blacksmith shop, so we need all the help we can get from donations and the sale of items. Many of you have already committed to support the building fund and that is very much appreciated.

Our lunch for the meeting will be chicken and noodles. Dennis Lane and his son Evan donated the best looking old hens I have seen in along time. The meal will be for you to bring whatever sounds good to go with the chicken and noodles.

If you know of anyone interested in blacksmithing tell them about our meetings and extent an invitation.

I am looking forward to a good day of fellowship, forging and a good meal, see you on the 12th.

ps: Bring your own forge, tools, etc if you want.

Ted

New coal will arrive today

Randy Padish just called to say he will be here sometime today (March 28th) to deliver coal. So if you need coal bring 5 gallon buckets and take home a supply of coal at just pennies a pound over our bulk cost.

Be sure to thank Randy for going that extra mile to pickup and deliver our coal for the year. That and other gestures of this nature are the glue that makes a good organization good!

Thank you, Randy!

Blacksmithing as a Business

© Nol Putnam

Published in ANVIL magazine, January, 1996

Blacksmith Bill Gichner once told me that as a beginning smith, I would spend 80% of my time learning the craft and 20% of my time selling. Once I had mastered the craft, the figures would be reversed. I did not believe him - I was wrong. It became imperative to learn what my work was worth.

In smithing, the progression for me has been learning:

- How to smith.
- How to price my work.
- How to market the ironwork to produce a livelihood.
- How to put all of this together to create a life that includes family, friends and being a good citizen in my community.

My process sounds very orderly. That has not been the case. All of the above points have to be worked together; like the tides, intertwined. Some days your hammer will do your wish, and the next, some numbers may fall into place.

Something about my own business first. I did not pick up a hammer until I was 37 years old. Aside from wishing that I had started learning younger, beginning at that age, I knew what I wanted to do. I

did not have to try a lot of avenues until I blundered into my love. No blades, no horses, no wholesale; I knew I wanted to do: large, architectural smithing. Of course, I paid years of dues with hooks, hardware, chandeliers, fairs, galleries, and even some wholesale work. And I still do some of these. One can never start full grown like Venus on the shell. Dues must always be paid.

In 1982, I moved to my present shop and for the next ten years worked with one or two others in the shop as partner, helper or apprentice. Today, I have come full cycle, and once again I work alone on architectural commissions.

My basic business rules are:

- To respond to any inquiry (mail, telephone or fax) within 24 hours. This includes people who call upon me in an emergency to shoe their horses. I cannot. But I always return the call and refer them to farrier friends. Someday they may want some wrought iron.
- To greet everyone who comes into my shop. Customers are the life blood - treat them nicely. And remember, never judge a book by its cover.
- To treat every question as though it is the first time I have ever heard it. It is the first time the questioner has been brave enough to ask (because you greeted them so nicely), and all that's wanted is some correct information. Who better to provide it than you?
- If I have the time and the inclination and they are receptive, to teach them something about the craft. They are future customers or perhaps their friends will be. It pays to be helpful.

The foundation of a successful business is good record keeping. It is a must. You cannot know the value of your work without records. And too, the IRS will not like you, and your accountant will have strong words with you. So do not buy into what I call the Sarah Bernhardt syndrome: "I am artiste I do not keep records!" Nonsense. The flip end of this is just as harmful: "Well, my work isn't very good, so I shouldn't charge a fair price." It is true that the customer should not be charged for your education. But once learned, you deserve to be paid for all of your work. And too, you will be undercutting your smithing neighbor who knows the value of his work. Not fair to them.

My work is priced by how long it takes me to do it. Thus, I must keep track of the hours and then know what to charge per hour. The latter is called your shop rate and is made up of two parts. The first part is what it costs you to open your doors: rent, mortgage, lights, fuel, telephone, advertising, heat, equipment, shop tools, water and more. This is your overhead. The second part of the figure is your salary.

Overhead is everything you need to run your business. At tax time, some of these expenses will be handled in different ways. Costs of major equipment (your power hammer, a new anvil) may be spread over several years. The building, if you own it, may also be depreciated over 15 or 20 years. And the cost of materials used in the creation of your work may be deducted right off the top.

Breakdown of Expenses or Overhead: Advertising, Business Commissions, Donations, Dues & Publications, Equipment, Freight, Hardware, Insurance, Leasehold Improvements, Mail, Mail UPS, Materials, Materials steel, Office Expenses, Other, Payroll Gross, Propane, Rent Paid, Sales Tax, Shop Tools, Show Fees, Supplies, Tax Preparation, Taxes (Federal), Taxes (FUTA), Taxes (Unemployment), Taxes (State), Taxes (Town), Taxes (Personal Property), Taxes (Real Estate), Telephone, Travel, Truck (mileage), Utilities, Water, Welding Gas.

All these bills are to be paid from your business account. Keep your personal and business accounts separate. It is not that someday you won't get stuck and need one for the other, but don't make a practice of it. It is much simpler for all concerned to have those nice checks printed up with the name of your forge boldly at the top. This can take many forms, from a simple checkbook to the One-Write check system (using the carbon strip), to a computer program like Quicken, which greatly simplifies record keeping.

I also keep a record book in my truck to record all the mileage I drive for the business. This is a must for the IRS. It is a log of date, where, mileage in

and out. At 29 cents per mile, this can add up quickly.

Also on the dashboard I keep an envelope to put in all those silly little cash receipts for four screws, one can of black paint, the envelopes for the business, and such items. These are your out-of-pocket expenses. I pay myself back at the start of each month, breaking them down into their categories. I know all of this sounds burdensome. But is really only a matter of training yourself to take a few moments to keep these records as they occur.

The next step is to figure out how many hours a day, week or month you spend actually producing work. It is this activity that produces the income - not answering the phone, not looking at reference books, and not having that cup of coffee. Only when you are at the desk designing it, the anvil creating it or the bench putting it together, are you actually earning money for yourself and your business. You will be amazed, astounded and even shocked at how little of your time actually gets spent productively. I am at my shop seven to eight hours a day. I probably spend five or six hours a week in the evenings at my desk and computer - in theory, that is a 45- to 50-hour work week. In actual fact, my chargeable hours hover between 15 and 25 hours per week. It is from these productive hours that my overhead and salary must be paid.

To find out how many hours you are working or where they go, create a time sheet in half-hour increments and keep track for a month. Do it again in six months, and then again periodically to see that things are still in balance. A time clock is very useful for this (They cost about $300, but are great for keeping track of multiple projects).

The second part of the 'what-to-charge equation' is your salary. How much do you need to earn in a year - $15,000 or $35,000? How do you break this down? Again it must be reduced to the actual productive hours you are working. There are 52 weeks a year. Take out the weekends and you have 260 days. Take holidays (another five), a week of being sick, and finally this year you had better take that week-long vacation with the family. So we are down to 245 actual working days.

Having filled out the time sheets, I know that I average four hours a day of chargeable time. Further, I've decided I need to earn $25,000 a year.

The formula then goes like this:

4 (hours per day) x 245 (actual days) = 980 chargeable hours per year.

$25,000 (my salary) divided by 980 (chargeable hours) = $25.50 per hour.

Now you must add in the cost of overhead.

And having kept GOOD records, I know my monthly overhead averages $2500, or $30,000 per year.

$30,000 (overhead) divided by 980 (chargeable hours) = $30.63 per hour.

$25.50 + $30.63 = $56.13 (basic hourly shop charge).

I would round this up to $60, because I know you will have forgotten to add in something somewhere.

Now, how do you apply this to your finished work? The simplest way is to keep track of your hours on the fireplace poker and multiply by $60. But what about the design fee; cost of materials; replacement of equipment; delivery and installation time; the three hours you spent with the client while they decided on the style? All of these impact upon your final price. (Let me recommend a tape from Walt Scadden, P.O. Box 8116, Buckland Station, Manchester, CT 06040, at $12.95 + 1.95 for shipping, for a detailed and excellent discussion of these charges.)

Properly, these are subjects for articles in themselves.

But in a nutshell, I do the following:

- Design time: The first meeting is free, and then the design fee is 20% of the total cost of the item.
- Materials: I multiply my cost by 50%, and this will cover the extras, such as rivets, etc.
- Delivery: One-half the shop rate per hour, plus mileage, to and from.
- Installation: At the hourly shop rate.

- Profit: (This might also be called fix-up, replacement of equipment, or darn-I-didn't-charge-enough-again.) 20% of the total price.

So Mr. and Mrs. Jones have called you for a fireplace set of three tools and a hanger. You do a drawing of one of the tools so they can see the size and the elegance of the handle. You estimate that you can do a tool every four hours.

4 hours x $60. shop time = $240 per tool; the hanger is 2 hours x $60. = $120. Design fee 20% of one tool (you only did the one drawing) = $48. Materials = $22. Profit (20% of $840 {3 tools and hanger}) = $168. For a grand total of $1,078 plus state tax where applicable. This estimate will give fire tools a new respect in your eyes. You know the actual costs of doing business. You can hold your head high and enjoy the fruits of your labors.

This all may seem a far cry from doing things that make your soul soar. In fact, it is not. My self-esteem is far better knowing (not guessing) that I am charging a fair and honest price for the things I choose to make. I can document it. More important, by charging a fair price, I have time and money to do the things that make my life richer and better, like buying a recording of Dylan Thomas or Yevtushenko; taking a trip to Mexico to see the copper workers or tile makers; a week down the canyons of southern Utah in the late summer; a trip home to see the grandparents and collect some of the old stories; a chance to go back to school to hone skills or learn new ones. This is all possible because I know with certainty how to charge and what to charge for the work. I love my iron work, and most days I love going to the shop. But I do not enjoy subsidizing people who buy my ironwork. I work too hard for that. I have too many things that I want to do in my life. Don't be ashamed to know the nuts and bolts of your work as well as the joy it brings to your soul.

Nol Putnam maintains the White Oak Forge, Ltd. in The Plains, Virginia. Among his many artistic efforts is the Memorial Gate in the West Columbarium at the National Cathedral in Washington, DC.

Smoke and Noise

Articles from e-mail and the Internet

Compiled by David Childress

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From: Don Plummer
Date: Mar 20, 2008 4:12 PM
Subject: Re: [TheForge] 52100
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I have a very large quantity of this steel in 1/8 - 3/4" round that I sell.

The directions I give with it follow:

This high quality tool steel is the steel used in ball bearings and is much used by professional knife makers. It is a very tough tool steel and makes knives with excellent edge holding ability. This is a high chromium, tough steel that resists corrosion. It is well suited for chisels, repousse tools, tongs, hot cutters, fullers and many forming shapes. Makes great, rust-resistant tongs. The smaller rods make the toughest hooks, tie-downs, drifts, etc., I have ever used. Great for pins for hinge barrels. This steel makes quite durable punches, etc., without any tempering. Just grind to shape. But tempering is better

52100 steel is a high-carbon chromium alloy steel, which, because of its versatility, is used in a variety of mechanical applications. In the annealed condition this steel is comparatively easy to machine, yet very high hardness and abrasion resistance can be developed by heat treatment to make the steel particularly suitable for applications requiring extreme wear resistance.

Carbon: 1.04%; Chrome: 1.5%; Manganese: .36%; Silicon: .23%

The steel needs to be worked at a relatively high heat. It will not move at red. High orange to full yellow is best. Do not let it go to white as it will, like most high carbon steel, begin to crumble. Work rapidly when at right heat as it does not last long.

Best to anneal when done shaping. (But if I am in a hurry for a chisel, I cut a lot of corners and it still seems to work fine). Heat to critical (non-magnetic) and place in a container of vermiculite. Depending on the size of your piece, it may take several hours or overnight to cool.

To harden, heat to 1600 degrees, about a low orange (make sure it is non-magnetic) and quench in oil. For chisels or similar edge tools I heat only the working ends with an oxy-acet torch. Temper between 375 and 450, depending on the hardness desired. A toaster oven or kitchen oven works well for this.

Clean all oxide off the piece so you can see the tempering color after heating.

Hold temp for about 1 hour and let cool for 2 hours in still air. Leaving it in the oven is good. Repeating this cycle of multiple tempers two more times will add to the durability of the edge. This steel also responds well to cryogenic and other more sophisticated heat treating techniques. But just using standard heat treating techniques will provide a very hard and tough edge.

The rods have come from a major tubing manufacturer where they are used for mandrels.

Don Plummer

From: "David E. Smucker"
Date: Mar 24, 2008 6:48 PM
Subject: Re: [TheForge] now pure iron -- cost

Andy, I 100 percent agree -- for some reason most smiths have trouble dealing with total cost, including their time, shop overhead, marketing cost, last and often least their material cost. I often hear about that "damn A36" but they will not even try to get 1020 instead. Even for those for whom blacksmithing is just a hobby, material cost are low compared to the real cost of their time.

I wish I had bought more pure iron when it was out there. I still have some, saved for special items. One of the things I have the most fun with is having a student in a heat treating class at John C. Campbell Folk School try to get pure iron "hard" using super quench. "Damn what did I do wrong?"

Nothing, God did not intend for carbon free iron to harden, no matter how fast the quench.

I have not looked for it for some time but at one point you could buy rounds of 1006 or 1008 in sizes up to about 2 inches. If you still can, it comes close to the performance of pure iron.

Dave

From: "Andrew Vida"
Sent: Monday, March 24, 2008 6:53 PM
Subject: Re: [TheForge] Re: File Making, sniffing up wrought iron

David E. Smucker wrote:

If there was a market it would be made. We all (blacksmiths) like working with things like pure iron and wrought iron -- but we don't want to pay for it. Pure Iron is the perfect example.

> I fully agree. Furthermore, the "failure" of Pure Iron in the market was an indication more of the lack of a business clue than any fault of the material. People saw cost as high. I disagreed and attempted to explain to them the idea of cost effectiveness, but apparently those people were either not bright enough to get it, closed minded to the notion, or I simply was too stupid to explain it properly. I'll go with the latter.
>
> By and large, I have found most blacksmiths to be highly clue-challenged where issues of basic business management are concerned. I've never hidden my opinion on this. A material such as Pure Iron, if properly marketed, could be sold at a premium (offsetting the additional material cost, which in the grander scheme of things is almost trivial in any event) and its superior workability would save the smith in terms of labor cost. Apparently none of this ever sank in and Mike's endeavor went toe-up. I thought it was a shame, but the market spoke and that was that. I don't know whether Mike & company engaged in sufficiently effective marketing, so some fault may lie there as well, but I have learned to never underestimate the boorishness of a market.

> Everyone seems to bitch about A36, but most were not ready to pay 5 or 6 times the cost of A36 for Pure Iron. We get what we pay for.

A36 is generally pretty lousy IMO, particularly when compared with PI. The only disadvantage of PI that I ever noticed was that it was next to useless for normally proportioned structural members such as a gate post. So for that you use steel and maybe design the post such that when the metal rots away it can be readily replaced without having to do surgery on the gate itself.

> That, or you make the structural part of PI with about 3 or 4 times the mass to gain the needed rigidity.
>
> > Stainless steel gets paid for because of life cycle cost. For many industrial uses it really pays. In a number of applications we could do the numbers and it said that if mild steel lasted 7 years it was a better deal than stainless -- but it was really hard to put a price on downtime for replacement of the mild steel -- in the end we went with stainless which we guessed had a service live of at least 20 years -- still working fine and that has been 19 years now.

For some apps it is certainly worthwhile, but stainless is a PITA to work. Even the ferritic grades, which do not even work harden to any appreciable extent are slow to move under the hammer. If you have to have the stainless properties, then you go with it, but AFAIK a PI gate would have lasted a very long time when compared with mild steel and it can be worked more rapidly and with fewer heats. There is something to be said for that... probably a lot in some cases.

Businesses most often fail to consider the hidden costs of the decisions they make. One reason for this is that they are not expert in identifying them, which is something I have done professionally for my clients for many years. Even so, they will often make what I consider to be poor decisions even knowing the problems that will come down the pike, but those happen after the decision makers have taken their bonuses, promotions, retirements and have moved on to let their replacements do the suffering.

As for wrought iron, I see no future for it at all. Market is far too small - most people either don't have the patience to learn it and to work it, or the economics just don't add up. Using a cool material won't cut the mustard if you are going to lose your shirt on it in the process.

> Dave

----- Original Message -----
From: "Andrew Vida"
Sent: Sunday, March 23, 2008 9:09 PM
Subject: Re: [TheForge] Re: File Making, sniffing up wrought iron

> From my perspective it is a shame that nobody is making it anymore. It has some very good qualities and I would imagine it would be a lot less costly than stainless. I guess some of the troublesome working characteristics made it unworthy of further consideration.
>
> ries wrote:
>
> > As I understand it, this type of pipe was the last product made of real wrought iron, and was made at least into the early 70's. I have heard the last mill making it was in Sweden. It had certain chemical plant uses that kept in production until various alloys of stainless and newer metals finally did it in in the mid 70's.

Announcements

The Rocky Forge News is available by E-mail and on our website (http://www.rockyforge.org/). If you wish to receive the newsletter via E-mail sent Dave Childress a note at trollkeep@gmail.com, or e-mail directly to rocky@rockyforge.org.