

Rocky Forge News

Volume 5, issue 10 – October, 2006

I don't know how it happened but I feel old and even worse I suspect that I am getting old.
DEC

Meetings

September

The guild met at Ted's shop on Saturday September 9th with 15 members present and 7 forges set up. Carol prepared hamburgers and bean soup to go with all the side dishes brought in by members. We ate very well.

Jim Keith donated a nearly complete set of the "Anvil" magazine, which quit publication in 2002. His gesture was greatly appreciated and will be added to growing library.

The weekend of September 29th, 30th and October 1st will be a busy time for some of the guild members. They will be demonstrating at a big outing on the grounds of the Eiteljorg Indian Museum in Indianapolis and at the Gaithers Fall Festival in Alexandria.

The summer has been very busy with guild members demonstrating at the Illiana History Day, Independence History Day, Independence Heritage Festival, Illiana Steam and Power Show and at the Indiana State Fair. All has been good exposure for our members. Unfortunately, we must turn down a lot of requests for our presence.

Ted

October

The next meeting of the Rocky Forge group will be 9:00 A.M., October 14th at Dominick Andrisani's house in West Lafayette. The program will be Dominick showing us some of the things he learned from his class on repousse' taught by 88-year old blacksmith Hahum Hersom in Boise, Idaho. This should be a good meeting to learn a centuries old trade that is still very useful today. Some of the steps can also be used to embellish hot iron from the forge.

Dominick and his wife, Ourania (Ou-ra-nee'-a), will provide the main course for lunch. Please bring side dishes and deserts to fill out the luncheon. Don't forget iron for Iron-in-the-Hat.

Dominic has provided 2 sets of directions to his house, depending on if you are coming from the South or East, or the North or West. If you are coming from the South or East, use the first set of directions. If you are coming from the North or West, use the second set. There is a map on the next page to help you out.

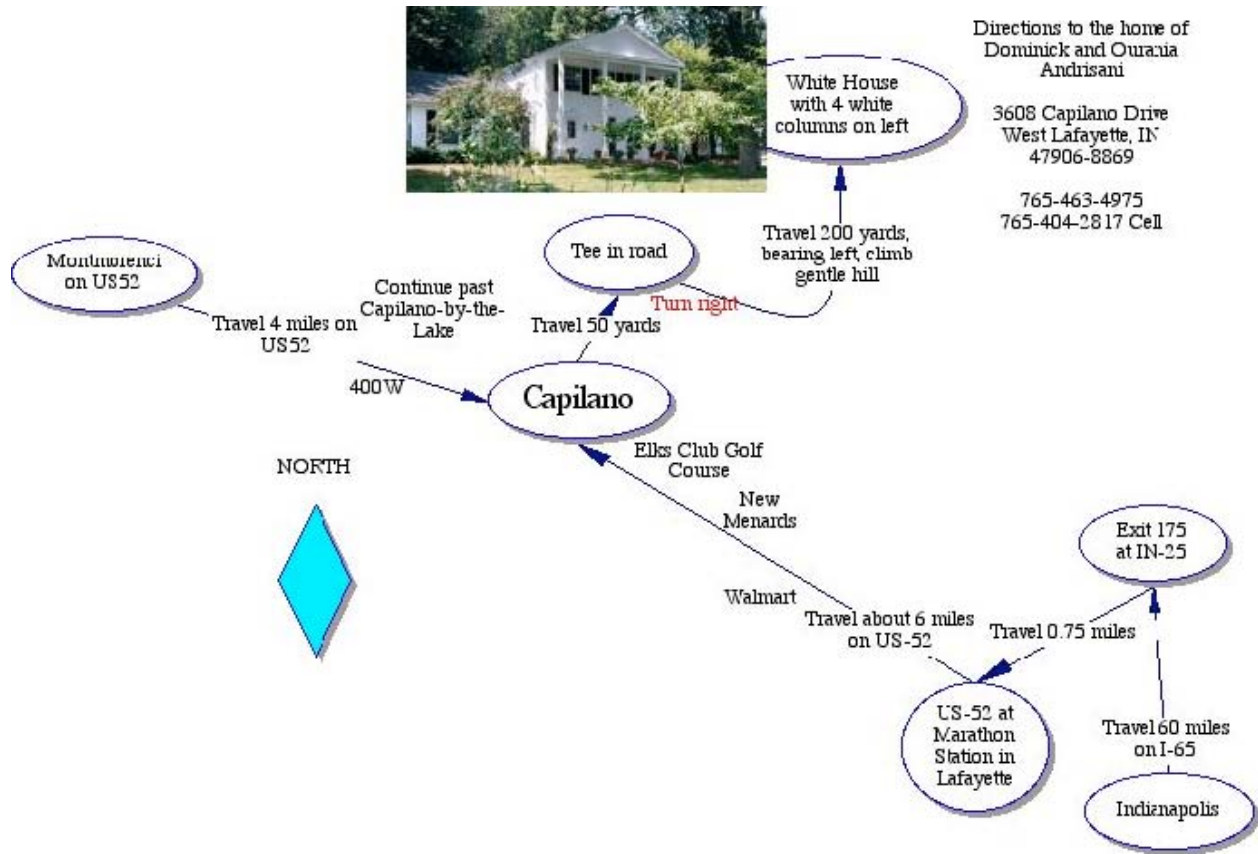
Directions: From the Marathon station on US 52 in Lafayette: Travel about 6 miles on US-52 (north-west). This six miles will take you over the Wabash River and up the valley into West Lafayette. You will come to the Elks Golf Course on the right. 200 yards after the golf course, turn right into Capilano. The road comes to a quick T after 50 yards. Turn right at the T, and travel 200 yards, during which the road turns to the left and you go up a gentle hill. Dominick's white house is on the left and has four white columns.

Directions: From Montmorenci on US 52: Travel about 4 miles on US-52 (south-east) towards West Lafayette. You will go past 400W. Do NOT turn into Capilano-by-the Lake. Turn left into Capilano. The road comes to a quick T after 50 yards. Turn right at the T, and travel 200 yards, during which the road turns to the left and you go up a gentle hill. Dominick's white house is on the left and has four white columns.

November

The November 18th meeting will be at Ted's shop hosting the Indiana Blacksmith Assoc. Demonstrators for the meeting will be Mark Thomas and Rob Evans, talking about their month long trip to South Africa and training the Africans in the art of blacksmithing. They will also demonstrate blacksmithing techniques. Mark is a full time blacksmith and Rob is a practicing dentist.

Map to Dominick Andrisani's house



Smoke and Noise

By David Childress

This is where I will be putting things that I have seen or found out that are of interest, at least of interest to me.

“Hard” and “Tough”

Several times recently I have seen considerable confusion about Hard and Tough in steel. The two terms do not mean the same thing and are not necessarily even related. We will start with the words as they apply to metalurgy.

“Tough”- This is the characteristic that allows a metal to deform and come back to it's original shape. S7 is as “tough” of a steel as I know. 1045 is about as tough of a common steel as is available. When you hit full toughness S7, either hot or cold, often you will not see any mark from your blow. The S7 moved but it moved less than the steel's ability to move

back. When you use enough force to exceed the bounce back of the steel a mark is left and the steel changes shape.

“Hard”- is the characteristic that makes a metal resist deforming. Hardness is the main contributor to wear resistance, the other is crystal size. D2 is about as hard of a steel as I know. 1095 and above is as hard of a common steel as is available. When you hit full hardened D2 you will often not see any mark from your blow. The D2 did not move; your hammer did. When you use enough force to exceed the hardness of the steel the steel changes shape and a the portion of the steel that moves comes loose and probably flies across the room.

If you look at a chart of Characteristics of steel that shows Toughness and Wear Resistance for multiple metals or Toughness for various hardnesses, the two form a “X”. As hardness increases, toughness decreases and as toughness increases, hardness decreases.

Old and New Steel

The following is from the ABANA "The Forge" Internet bulletin board. It is a well put explanation of why the "cheap" steel of today is different every time you get some and is never the same as you remember steel to be when you were young.

----- Forwarded message -----

From: Kenneth Mayer
Date: Oct 2, 2006 10:17 PM
Subject: [TheForge] Re: Iron-Iron Carbide Phase Diagram Example
To: theforge@mailman.qth.net

As I scanned Bruce's discovery on Wikipedia, the diagram mostly relates to solutions of pure iron and carbon, and the gradients between cast iron and carbon steel. That got me back to an old question.

I am simply guessing, but IS cast iron a virtually pure solution of iron and carbon, and is THAT the reason that the scrap is valued higher than vegetable soup scrap steel???

Yes. Cast iron can be recycled into cast iron or steel. Steel can only be recycled into steel. Cast iron contains up to ~4% carbon, which precipitates out of solution as graphite flakes, giving gray iron its characteristic color. If inoculated with magnesium (iirc), the carbon forms nodules instead; a/k/a nodular iron or ductile iron. If inoculated with phosphorus, it can be cast into thin sections.

It is easy for a chef to make a wonderful batch of new soup using all new ingredients, but like the old 100 year old soup, where everything from yesterday's soup gets mixed back into the pot with everything for today's soup, which means that the recipe must always be changed to taste.

Once we have vegetable soup steel, it is only easily as a base mixture for more vegetable soup steel.

Anyway, besides the primary cost factors, one of the reasons I like blacksmithing with salvaged old farm machinery from pre- world war II, is that it seems to be mostly carbon steel, vs. the vegetable soup steels of today. Some of the new hot-rolled mild steel seems to have variable characteristics, purchase to purchase. Could just be my imagination.

No, it's not your imagination. When scrap cars are melted into structural steel, the alloys used in the gears, shafts, bearings and other high-stress components are diluted in the melt, but are still present. This changes the microstructure and metallurgy to make the steel stronger. Depending what went into the melt, some of the recycled steel has yield strength approaching 50KSI. This is why you should use low-hydrogen electrodes when welding it, as it is much more susceptible to hydrogen embrittlement. The A-36 specification requires 36KSI minimum yield strength. Stronger steel meets this requirement, and can be classified as A-36 if it meets the other parts of the specification. The recycled steel does not meet the specifications for 50ksi steel, so it can't be sold as such.

BTW, I recently came across an account of an unmelted ball bearing inside a W-beam. It was discovered because a hole had to be drilled at that location. Sorry, I didn't bookmark the URL.

Ken
:-)

Induction Forges

The last page of the newsletter is a news release that I received. I have seen and heard much discussion of these new "Induction Forges". I have not spoken with anyone that has used, seen, or bought one. They could be wonderful or a useless pain. Like everything they probably have their place and only time will tell how big of a place it is.

Blacksmith's Depot

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Date: September 7, 2006

Blacksmiths Depot / Kayne & Son announce a new addition to their line of forging tools and equipment. The MF-15AB is a 15 kva, 600 amp, single phase, 230v, high frequency induction heating unit. The induction unit can be used to soft solder, silver solder, braze, and is very capable in providing the heats need in forging steel. It can supply the full range of heat needed for forge welding temperatures as well. This fully programmable unit has no noise, no fumes, no pollution, and the operator has full view of the heating process. Kayne & Son uses this unit in many operations in their 3 forge shop and have the experience necessary to help you decide if this product is right for your business. They welcome the opportunity to demo the unit for anyone wishing to see it.

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