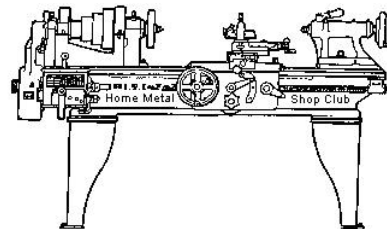




Founder - *John Korman* (deceased)

July 2005 Newsletter



Volume 10, No. 7

Visit Our Home Page
homemetalshopclub.org

Statement of Purpose: To provide a forum for exchanging ideas and information. This includes, to a great degree, education in the art of machine tool practices. We endeavor to publish information that the hobbyist can understand and use. Club membership is open to all those interested in working with metal and tinkering with machines.

Next meeting: Sat. July 9th, 2005 - 1:00pm - Collier Library, 6200 Pinemont - Houston, TX

President - *Doug Chartier*
Vice President - *Jan Rowland*
Secretary - *Steven Clay*
Treasurer - *Emmett Carstens*
Webmaster - *Gene Horr*
Editor - *Mike Gamber*
Librarian - *Dennis Cranston*
SIG Coordinators - *Dennis Cranston*
Richard Pichler

Minutes

June 11th, 2005
by Stephen Clay

Business Meeting

Some more discussion about a small Lathe for the Novice SIG. Chit chat about the elections.

General meeting

39 members attending
3 Guests
Scott Powell (Internet)
Lee Shull
Richard Daugird



SIG meetings Novice, CNC, Casting.

Announcements

George Carson was taking names for TIG welding classes.



A plaque was presented to Rich Pilcher for his time and effort in the Novice SIG.



Elections 2005

President Doug Chartier



Vice-President Jan Rowland



Treasurer Emmett Carstens



Secretary

Steven Clay



Web Master(s)

Gene Horr



Editor

Michael Gamber



Show and tell

Doug Chartier announced the availability of "*Machine Shop Trade Secrets*" to members of the club. He also talked about a machine shop for sale in Conroe.



Van Harper is selling some tools.

Michael Gamber is selling a cool mist system.

Richard Pichler talked about compressed air, proper plumbing layout and calculating effective length of the pipe to determine flow. He went on to talk about indexing on a milling machine and on a lathe. As an example for indexing on a lathe he showed a hexagonal bolt head and a file rest to guide a file.



Joe Williams showed a Carbon Arc Torch.



Joseph Scott showed some rear sight parts for an M1 Garand and was looking for some help from someone with wood working experience on some rifle stocks.



Ed Gladkowski showed a stop for his lathe and some parts he made using it.



Tony Burnett talked about Phase converters and showed a bank of capacitors.



Justin is looking for some prototyping help to make some roller blade rails.



Featured Articles

TIG Welding with George Carlson

by Mike Gamber

I had the pleasure of attending George Carlson's TIG class on Saturday, June 18th, 2005. I would like to thank George for providing this opportunity for us to learn about TIG welding.



Everyone there had a good time.

And we all became expert (and safe) TIG welders!



Chopsaw Fun

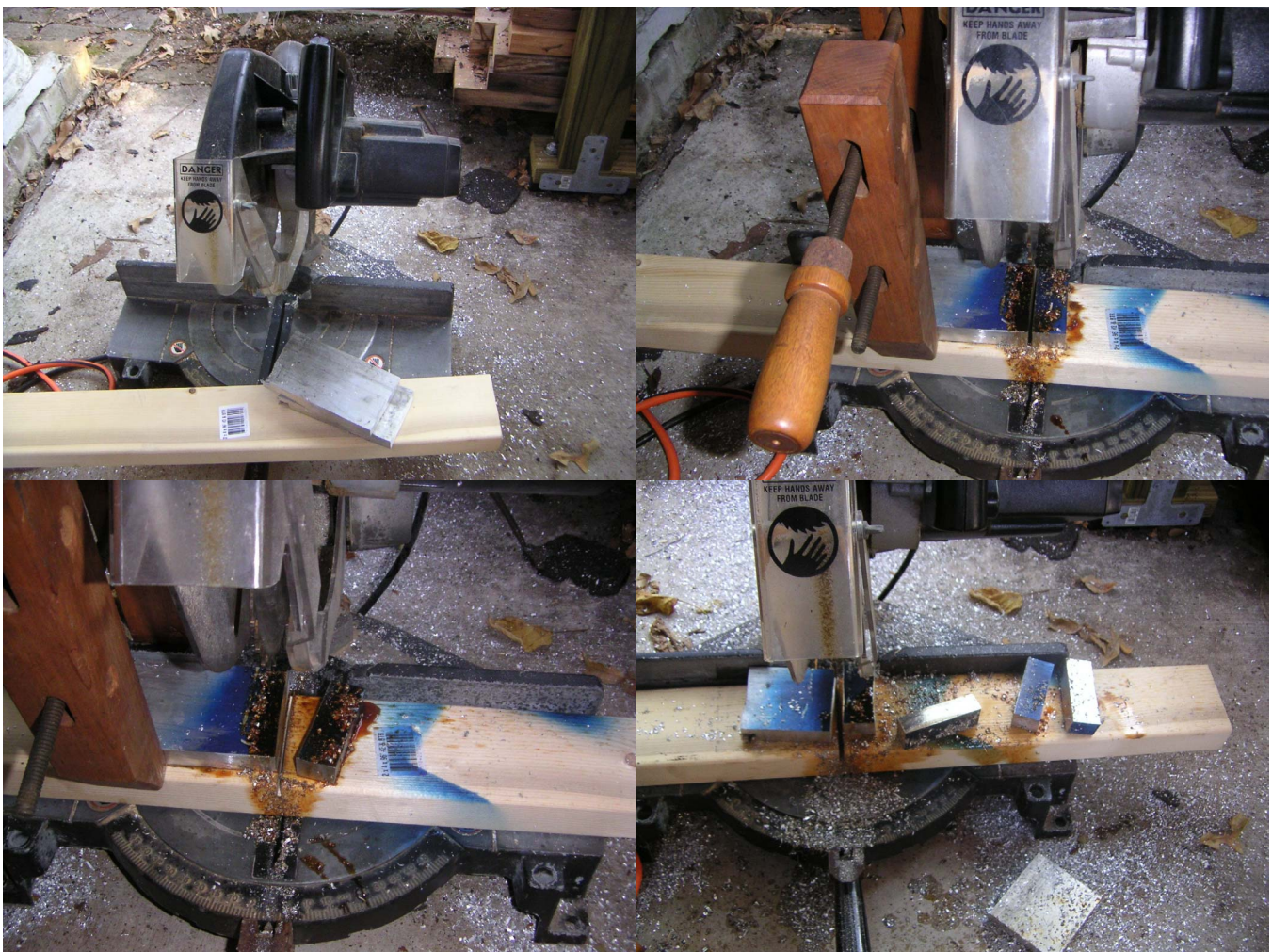
by Gene Horr

My powered hacksaw lost its smoke and I was in a hurry to get some .75" aluminum cut when I asked for help from someone nearby with a bandsaw. In addition to offers of assistance I was advised to try cutting it with a chopsaw. So I decided to give it a try.

In the construction trades a carbide toothed blade is used all of the time for cutting relatively thin extrusions, but I've never heard of it used for cutting something this thick. But I had a somewhat used cheapo (under \$10) blade that I was willing to donate to the test. The saw is a very low end model. I placed a 2x4 under the metal as the blade would not pass all of the way through straight on the table. This gave an added benefit of producing a cloud of sawdust when I was through the aluminum.

It worked quite well. It took about 1 minute to go through the approximately 5" wide piece. The aluminum did get fairly hot but I was also being aggressive in the cut. The blade held up well, no noticeable wear.

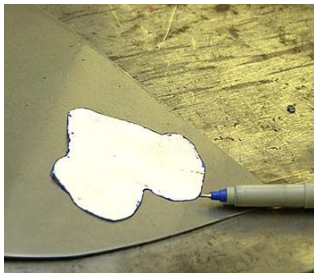
I made the first cut dry and the second with cutting oil. The oil appeared to give no benefit and only made a big mess. Perhaps this is because the blade is so large that oil applied to the aluminum was only aiding the first few teeth. A better test would be with a misting system.



Turning a New Leaf

by George Carlson

Actually, we're not turning anything. This article is about metal shaping, not lathe use, but I thought it was a catchy title. The object in the photo is a stand for a Chiminea. Chimineas are those clay outdoor fireplaces that have become very popular. A friend asked me to build a stand for their Chiminea. He just asked for a simple 15" ring with four legs, to hold it about 10" above the ground. Since the motif of his patio was grape and ivy leaves, I thought he might like this design a bit better. It is easy to make leaves, and they sure do make projects like this look more original.



There are many ways to generate patterns. In this case I placed an ivy leaf in my computer's scanner. I printed out the leaf in several different sizes. The patterns were then cut out and traced on 20ga steel. Tracing is pretty easy. For larger patterns I use magnets to hold the paper pattern in place.



In this exercise I'm going to cut the leaves out using sheet metal shears. Sometimes I make a template from aluminum and cut them with a plasma torch. Tin snips are cheaper. I start by roughing out the shape. I have a corner notcher which works well for this. A bench shear would be even better. The idea is to leave a small amount of metal for the tin snips to remove.



Aviation tin snips are a good way to go. You can get them at Home Depot or Lowes for about \$13 a pair. Red cuts toward Port (left), Green cuts toward Starboard (right) and yellow is for straight cuts.



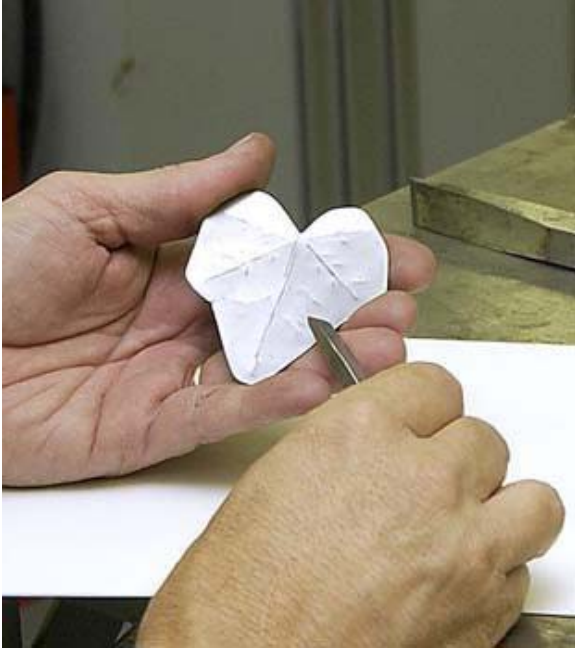
After snipping them out, I like to use a 1" belt sander to smooth the edges a bit.



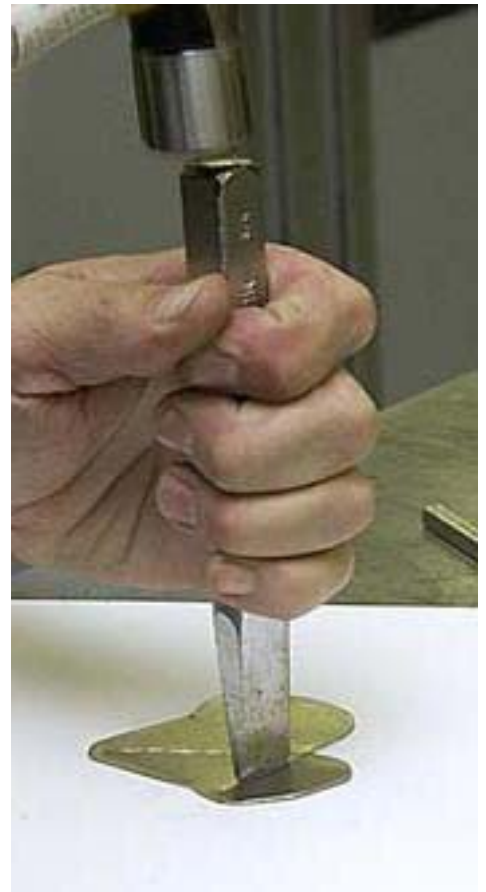
As a final treatment for the edge, I use a fine wire wheel to remove any burrs.



At this point you can use chisels to lay out veins in the leaf. Look at the original leaf to get an idea of what the veins should look like. They don't have to be perfect, just give the impression of a natural leaf. Notice the leaf is on top of a few sheets of paper. This cushions the leaf slightly and softens the sharp line from the chisel. I don't use a real sharp chisel. If you do, you may cut the leaf in half.



This should give you an idea of what we are after. Just a suggestion of veins works well. Since each leaf you make will have a slightly different pattern, they look more natural.



This looks drastic, but bending the leaf along the veins helps generate some shape to the leaf.



The leaf is pretty bent up, but that's a good thing. Notice how after I made a bend I had to bend the leaf back a bit to get the leaf in the press for the next bend. The unbending generates some waviness to the texture of the leaf.



Now I flatten the leaf out a bit, and the areas between the veins rise in nice curves. This is the backside of the leaf.

I have a square bar of steel I can put in the bench vise to act as an anvil (dolly to the sheet metal guys). I work along the edge with light blows from the hammer. This thins out the leaf and gives the impression that the entire leaf is thin. By using the edge of the dolly, you can generate some curve to the edge of the leaf. This generates complex curves that make the steel leaf look almost real.



Now I am preparing the stem for the leaf. The stem is made from soft steel wire. You can use welding rod, but it is pretty stiff. In the photo I am using the torch to heat the end until it forms a ball.



Now I just reflow the ball down to fuse with the leaf. An oxy-acetylene torch would also work for this. When you fasten the stem, keep in mind the way the stem was connected to the real leaf.

Next weld the stem to the branch (or the frame of the Chiminea Stand). Try to make it look natural. Since I plan to wrap the stem around the branch, I welded the stem at a very low angle.



The stem of an ivy leaf doesn't really wrap around its branch, I just did this for effect. Notice I am directing the heat behind the bend. This helps give you a very tight wrap.

Here's the finished leaf. If the item will remain indoors, you could use a torch to produce nice color patterns on the steel, then do a clear coat. I treated mine with a phosphate etch to prepare them for painting.



This is a close-up of the stand. After phosphating, I sprayed on a two-part epoxy primer followed by a black base coat. You can use Rub 'n Buff, or artist's oil paint, to fill the veins with color so that they are more visible.