

November 2004 HABA Meeting

Meeting Location

The 2004 November HABA Meeting will take place at Artistic Iron and Forge on November 20. Sign-in and setup will begin at 8:00 AM. Artistic Iron and Forge is owned by Dave Cruey and is located at 11834 Dula Lane, Cypress, TX. Dave's phone number is 281-807-3440.

The Program

This meeting will be dedicated to casting aluminum. Aluminum casting is something that can be done in the shop on a small scale. The purpose would be to create a decorative element to augment a forged piece or to create a small piece of stand alone sculpture.

Interest in this subject comes from four people, Frank Walters, Dave Cruey, Kent Fowler and Dave Koenig. Dave Cruey purchased casting equipment at auctions but never had an opportunity to put some to work. Dave will be operating a small self contained tilt furnace. Kent Fowler has an old lead melter he would like to try out on aluminum. Frank has a long interest in this process as a result of reading a book about Russian immigrants casting names for inclusion on burial markers in the Dakotas in the early 1900's. Dave Koenig completed a class at Cy-Fair College about a year ago. The class included a trip to La Mar University to take part in their 24th annual iron pour and three aluminum pours at Cy-Fair College. Pictures of Dave's casting from that class are below.

The interest in casting grew as the word spread through meeting notices, word of mouth and the web site. The result is the subject for the November meeting.

The plan is to melt aluminum three different ways at this meeting. Dave Cruey's self contained tilt furnace will hold maybe a half of a cubic foot of aluminum. Dave has some investment material and plans to make a lost wax mould. In addition, he will try to cast a piece made out of styrofoam that is placed in a five gallon bucket surrounded with fine loose sand. This is the casting process Dave Koenig used for aluminum casting during the class.

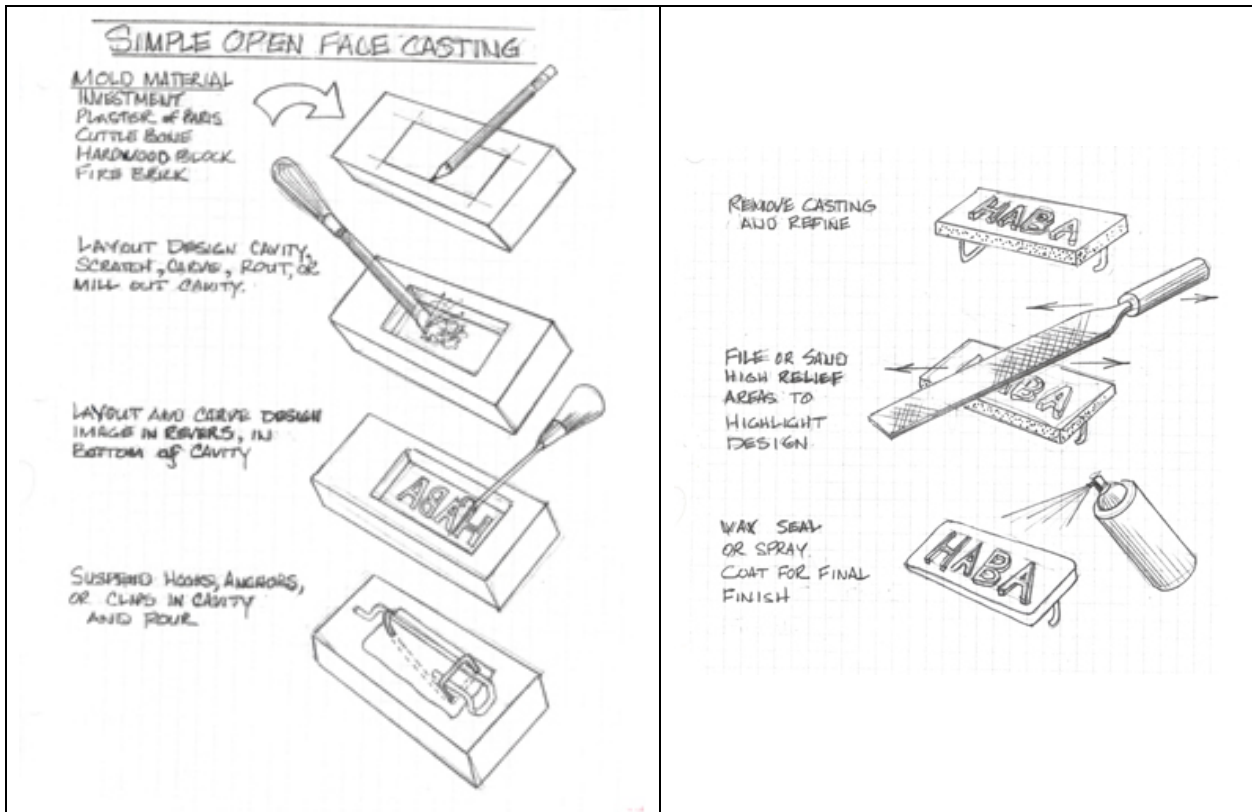
A 'styro' casting is very basic. A form is carved out of styrofoam. A large riser is added and a four inch red clay potting pot is placed around the riser. All of this is placed on top of a few inches of sand in the bottom of a five gallon bucket. The remainder of the bucket is then filled with dry sand and vibrated so that the red clay pot is even with the top of the bucket. Pieces of steel or brick are then laid on top of the sand and bucket at the same time keeping the opening of the red pot open. Molten aluminum is the poured into the red clay pot and the styrofoam is replaced with aluminum.

If things all go well a fine casting can be retrieved from the bucket in about 30 minutes.

The project for this meeting is to do a surface casting. This means carving a form in a piece of hard wood, cuttlebone, soft fire brick, large piece of charcoal, a flat piece of investment, or plaster of paris and fill it with molten aluminum. Below Frank Walters has a drawing of how to cast a belt buckle using the surface casting method.

Think of a design for a belt buckle or any other thing you would like to surface cast and cut that form into one of the materials mentioned above. Bring it along with you to the meeting and we will cast it.

Frank Walter's Drawing



Safety Considerations

Aluminum melts at around 1100 degrees and is poured ideally at 1450 degrees F. This is hot! If it gets loose and touches exposed skin severe burns can result. Unlike some other metals molten aluminum sticks and that can result in more severe burns.

Safety glasses with side shields are required as at every working meeting.

Bring your face shield, welding leathers, leather aprons/chaps, spats if you have them and preferably work boots. It would aggravate a bad situation to trap molten aluminum on the top of your foot where the boot laces come together.

Our work area will be in the sandblast area at Artistic Iron and Forge. This will allow us to work on a pad of sand which is required when casting.

A Resource

For those of you who are interested in learning more about casting, take a look at Chapter 5 of Tim McCreight's book *The Complete Metalsmith*.

Lunch and Drinks

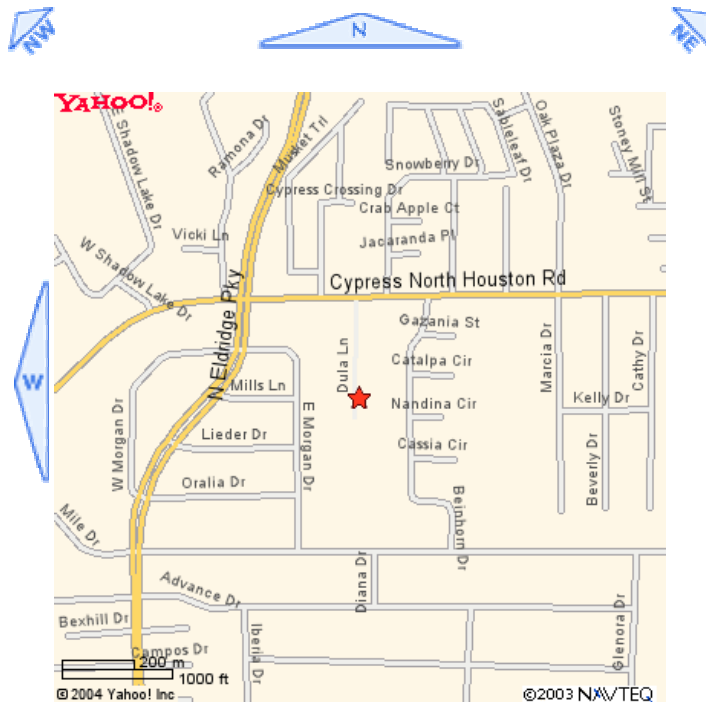
Pack a lunch or plan on eating at one of the local eateries. Dave Cruey will have coffee and doughnuts for us in the morning. HABA will have water and the usual soft drinks available.

Directions to Artistic Iron and Forge

Artistic Iron and Forge is located at 11834 Dula Lane, Cypress, TX.

From Highway 290 in Northwest Houston take the FM 1960/Hwy 6 exit and go north on 1960 almost a mile. Turn left or west onto North Eldridge Parkway. Follow Eldridge Parkway a good two miles to Cypress North Houston Road. Turn Right on Cypress North Houston and look for Artistic Iron and Forge sign at the first gravel road to the right. It's only a tenth of a mile or so to the entrance. The meeting location will be the second house on the left, the one with the white picket fence. Please park on the road if possible.

Map



Dave Koenig's Aluminum Castings



MOLTEN ALUMINUM - LOWER TEMPERATURE, HIGHER RISK

While molten aluminum melts at a lower temperature than ferrous metals, it nevertheless presents a greater metal splash hazard to the foundry worker.

Small droplets of molten iron have a tendency, because of their extremely high temperatures, typically greater than 2800oF, to pop off of exposed skin due to moisture on the skin surface. Molten aluminum, however, sticks to bare skin, producing severe and possibly disfiguring burns.

Wearing proper protective clothing and equipment, including safety glasses, face shield, head and body protection and foot and hand protection is as crucial to safety when working near molten aluminum as it is with ferrous metals.

Safety professionals advise that not all protective clothing provides the same protection against all metals. For example, they report that molten aluminum sticks to some fabrics and not to others. Also, some types of aluminized fabrics ignite when splashed with molten aluminum while others do not. They recommend that splash tests be conducted to evaluate new protective equipment before it is put into use.