Etching

The Long Journey from Copper to Paper

By Gary Eisenberg

what is an etching?

Since the time of Albrecht Durer, artists have been creating images on metal and transferring them to paper. Etching, with its long and rich history, has evolved over centuries, through the works of such artistic luminaries as Rembrandt, Goya, Whistler, and Picasso. While some of the techniques and materials of etching have evolved since its inception, the basic process has essentially remained the same.

Etching is one of several processes that fall into the category of ***intaglio*** printmaking. Intaglio means, "to engrave with a sunk pattern or design." In the case of etching, the artist makes a drawing upon a metal plate (usually copper or zinc) that has been covered with a special coating, using a sharp needle. Wherever the drawing has been done, the coating is removed, exposing bare copper. The plate is then submersed into tray of acid, which eats away at the exposed copper.

The etching adventure begins with a copper ***plate*** that is approximately 1/16" thick. In order to prepare the plate for the artist, it is cut to the desired size and polished to a mirror-like finish.

applying the ground

The artist uses a fine needle to either scribe the lines or make tiny dots (stipple technique) into the ground. As the needle moves across the plate, the ground is removed, exposing a bright copper line beneath the dark brown ground coating.

After the plate has been thoroughly cleaned, it is coated with a varnish-like acid-resistant barrier (called a ground). Once the ground has dried, the plate is ready for work by the artist.

After the artist has scratched an image through the ground, the plate is submersed in a tray of acid. There are several different methods that can be used for biting the plate in the acid. One approach is to make an initial drawing, bite the plate for a certain amount of time, then remove it, re-coat it with ground, and do another biting. Another method is to do the entire drawing on the plate, then cover certain parts of the drawing progressively, so that various parts of the drawing have different amounts of biting in the acid. The longer the exposed copper is in the acid, the deeper the etching. The more deeply etched lines produce a darker, thicker result on the print. The acid- biting process is very hard to control. The combined factors of acid strength, temperature, and ground consistency must all be in perfect balance, if the work is to be successful. It is at this stage of etching where accidents can happen, ruining weeks of careful work upon the plate.

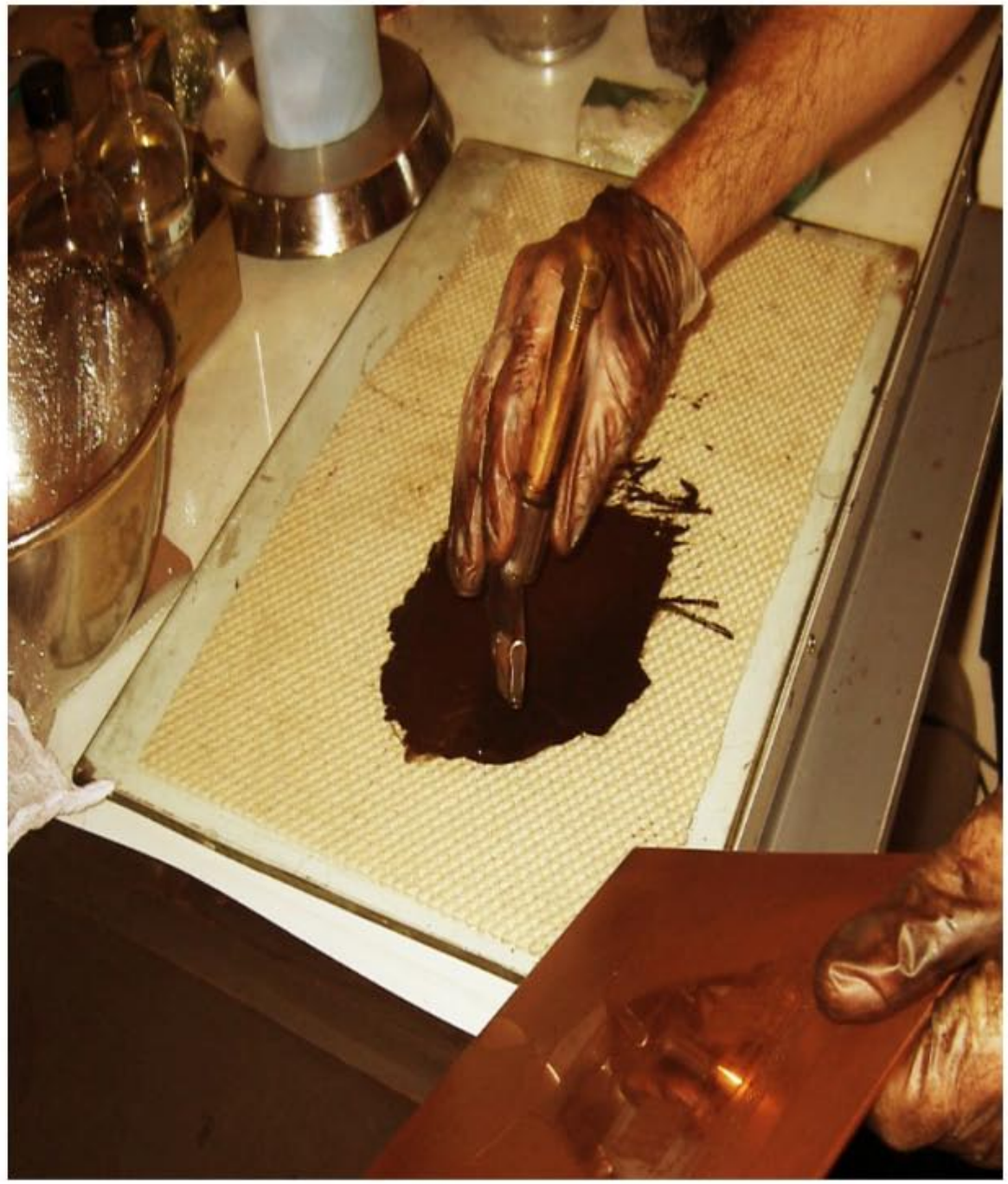
acid bath

As soon as the first acid bath has been completed, the next step is to prepare the plate and then print a ***proof*** of the plate, so that the artist can see how the work is progressing. The edges of the plate are filed into a bevel, which ensures that the plate will not cut the paper as it travels through the press under high pressure. This also produces an attractive border around the image on the plate.

The next step is to soak a sheet of paper in water, so that the paper fibers are softened. The paper is blotted by using a lint-free towel, leaving the printing paper damp but not wet. This is important, as any wet spots will repel the oily ink. Unless the paper is properly soaked and blotted, it will not correctly take up the ink from the plate.

preparing the ink

The ink is then prepared. Etching requires special ink, which is quite thick. Oil is sometimes added to the ink, to reduce its thickness. This depends upon the image being printed, as well as the desired printing effect. Stiffer inks (less oil) produce very dark images, with a high amount of contrast. With more oil, the image becomes softer, creating less contrast between the light and dark areas.



inking the plate

A small quantity of ink is applied to the plate, and is then carefully pressed into the lines on the plate. This can be dangerous, because the plate can be easily scratched. After the plate has been inked, the printer gently wipes the ink across the entire plate, using the tarletan in a rapid circular motion. The printer gently wipes the ink on the plate, using the tarletan in a rapid circular motion. This process takes a great deal of practice to master. As the tarletan wiping progresses, the ink is gradually removed from the smooth surfaces of the plate, while it is driven deeply into all the recessed lines and dots that have been created by the acid. When the wiping has been completed, the smooth areas of the plate are revealed, while the bitten areas of the plate are filled with ink.

pulling the proof

The inked plate is now placed on the bed of the press. The dampened paper is gently placed on top of the inked plate, and a series of wool printing blankets are placed over the paper. These blankets allow the heavy steel roller of the press to squeeze the paper into the recessed lines of the plate, under a tremendous amount of pressure. The handle of the press is slowly turned, causing the bed of the press to travel underneath the steel roller. The blankets are lifted, and the paper is carefully and slowly removed from the inked plate. The finished print is placed in an area to dry.

quality control

The artist examines the proof and the plate, identifying areas of the plate that require more work. The ink is cleaned off the plate. If more work is to be done, another coat of ground is applied, and the above process begins all over again. This process is often repeated several times, until the plate has been through several stages, called states. The artist may also decide that some areas of the plate have been etched too deeply. There are special tools available, including the scraper and the burnisher, which the artist uses to remove and/or press down the overly etched copper, thus resulting in shallower lines or removing them altogether. The artist can also use other non-acid techniques to create lines or other textures on the plate, such as a needle directly on the copper, without acid bath (this is known as drypoint,), or a specially designed small steel wheel with different types of patterns on it, which is called a roulette.

bon a tirée

The artist eventually must determine that the plate has been completed. It is at this point that the plate is ready to be printed in an edition. There are several decisions that must be made by the artist and printer before the finished plate is to be printed. These include ink color and thickness, as well as paper style and size.

limited edition

After the paper has been cut and soaked, and the ink has been mixed, the edition is printed. The artist and printer determine the size of the edition. After a certain number of prints are made, the plate begins to wear down. For this reason, editions are often limited to very small quantities, to ensure that the last print in the edition is of the same quality as the first one. The print studio will sometimes include a small identifying mark, called a printer's "***chop***," in the margins of the print.

printing the edition

The process of printing the edition is the same as making the proof (described above). Before the edition is printed, a final proof (also referred to as a ***bon a tirer*** proof) is made. It is used as a reference print, to ensure that each successive print has precisely the same qualities as the entire edition. This is a painstaking process, involving careful examination of each print as it is made, and one of the many challenges of doing an edition of prints.

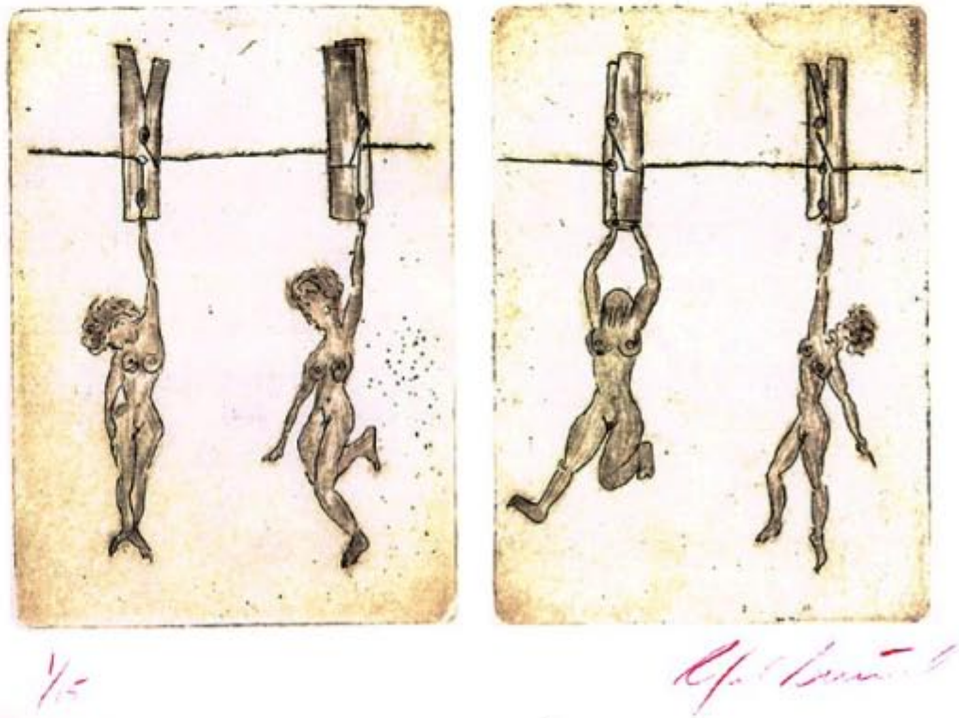
After the prints have been allowed to dry, they are ready for signing and numbering by the artist. Each print is hand-signed and numbered, just below the bottom of the image. For an edition of thirty (for example), the prints are numbered 1/30, 2/30, 3/30, etc. There is also a much smaller edition of a few additional artist's proofs, which are generally not for sale. These artist's proofs are exactly the same as those of the edition, except that they are labeled "A/P" (artist's proof) by the artist, at the time the prints are signed and numbered.

signing the edition

Upon completion of printing, the plate is cancelled. This provides assurance to the buyer that the edition is limited to the stated number. Different methods of cancellation are used, such as drilling holes in the plate, or making scratches on its surface. After the plate has been cancelled, a cancellation proof is made, which documents that the plate has been cancelled and no further prints can be made.

why is etching a unique artform?

Etching is an arduous, time-consuming and expensive process that involves many steps, many risks, and many opportunities for disaster. It is often a very messy affair, as the artist's and printer's hands and wardrobe know all too well. In spite of its cost, challenges, and potential pitfalls however, etching does have its own unique attractions and rewards.



There are certain qualities of line and texture that are unique to the process of etching. For example, because the etching needle has a very sharp point, one can obtain extremely fine lines that would be virtually impossible by other means. Another feature that is unique to etching (as well as other intaglio processes) is the embossed quality of the print. The entire image is raised above the surface of the paper, creating a rich texture. Also, the beveled metal plate produces a plate mark in the paper, creating a "frame" around the image. And, because there are many specialized techniques available to the artist (such as drypoint, aquatint, soft-ground, and mezzotint), the intaglio process can produce a virtually infinite range of characteristics. One need only examine the etchings of the world's great printmakers to realize that there are qualities and characteristics of etching that cannot be created through any other medium.