



INTRODUCTION TO GRAPHIC COMMUNICATIONS Section No.

ENGRAVING AND ETCHING 405

Engraving

Engraving is a technique of printmaking in which the design to be printed is cut into a plate made of wood or metal. When the plate is inked, the ink collects in the cut lines of the design; the rest of the plate is wiped clean before printing. The printing process itself requires the application of heavy pressure so that the paper can actually be forced into the inked incisions.

Engraving belongs to those printmaking techniques collectively called *intaglio*. They are distinguished from relief techniques—such as the woodcut or block printing—by the fact that *intaglio* designs are incised below the surface of the plate. Another *intaglio* process is *photo gravure*.

The tool used to cut the design into the plate in the engraving process is called a *burin*—a metal instrument consisting of a bent rod that is square or diamond-shaped in section. The plate into which the design is cut may be one of various types of metal, although copper and zinc are the most common. The *burin* cuts into the metal at varying depths according to the pressure applied on it by the engraver—the deeper the cut, the wider the engraved line. The metal burr raised by the *burin* at the edge of the engraved line is scraped off before prints are pulled from the plate. This is in contrast to *drypoint*, in which the burr is left on the plate, giving the finished print a characteristic fuzziness of outline. By contrast, the engraved line is sharp and precise. To get more variation of texture, light, and

shadow than is normally achieved with engraving, the artist may use engraving along with other techniques, such as etching or aquatint, all on the same plate. In such instances the engraved line usually will be the strongest line on the finished print.

The final print is made by inking the plate and then carefully wiping the unengraved surface clean of ink. The inked plate is positioned face up on the press bed. Dampened paper is placed on top of the plate, and the plate and paper are passed through the press roller. On the resulting print the ink has been transferred from the plate to the paper. The print will be a mirror image of the design drawn on the plate. Many prints can be pulled from a single plate, although excessive use will coarsen the lines.

Engraving was first used in Germany in the 15th century, and achieved its major impact on the history of northern European art in the 16th century. Engraving was an important technique for illustrating books and was widely practiced throughout Europe from the 16th to the 19th century.

Etching

Etching is one of the *intaglio* processes of printmaking. It is similar to engraving in many respects. The main distinction is that in the engraving process the line is cut directly into the metal plate by the engraver, who applies pressure to the *burin* to cut away the metal; in the etching process the line is cut by the action of acid acting on metal. As a result, the

etched line can be more varied in depth, width, and texture than the engraved line.

The metal plate, usually of copper or zinc but sometimes of other metals, is first coated with an acid-resistant material, usually wax-based, called a *ground*. The design is drawn onto the *ground* with an etching needle or other drawing instrument. The needle scratches away the *ground*, leaving the metal plate exposed. When the design is complete, the entire plate is immersed in a bath of acid, usually nitric or hydrochloric acid. The acid eats away the metal where it has been exposed, forming a cut-in line in the plate. The plate is kept in the acid until the desired depth and width of line have been bitten into the metal. The plate is then removed from the acid, and the *ground* is removed. After being cleaned, the plate is ready for printing. As in engraving, the plate is inked, then wiped clean of surface ink; damp paper is placed on the surface of the plate, and the plate and paper are passed through the rollers of a press under pressure.

A very wide variation of effects can be achieved by the use of different types of *ground*, acid, and etching tools, and by varying the time the plate spends in the acid bath. The amount of ink left on the plate after wiping can also alter the effect of the finished print. For these reasons the technical aspect of etching is an integral part of the artistic process, and slight variations in technique can completely alter the finished effect of a given print.

Etching emerged as the primary printmaking technique in the 17th century. Many of the greatest artists have used the etching technique, including notably Francisco de Goya, Pablo Picasso, and Rembrandt. Etching is frequently used in conjunction with other techniques such as engraving, drypoint, or aquatint to allow the maximum degree of tonal and textural variation.