

WATERLESS LITHOGRAPHIC PROCEDURE

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Waterless lithography was pioneered in the 1960s by the American based 3M company for commercial printing purposes. The technology for this process was soon purchased by a Japanese company, where the procedure was developed further and utilized for offset printing in Tokyo. In the world of fine art printmaking, waterless lithography was researched heavily by Jeff Ryan and Jeffrey L. Sippel at Tamarind Institute in the early '90s, where they reconfigured the procedure to operate in tandem with hand lithography. Printmakers have continued to explore and experiment with the technique, such as Ross Zirkle, who taught printmaking and drawing at the University of Kentucky.

The waterless process provides a versatile and cost-effective alternative to traditional stone lithography. Utilizing extremely portable ball-grained aluminum plates (the printing element I find to perform with the most consistency when employing the waterless technique), lithographs can be printed on an array of presses, and can be done so without the harmful chemicals normally associated with the medium. In my research, I have found that the waterless process offers a constellation of

possibilities to the experimental printmaker, especially when it is used in conjunction with other print media. I have used it with great success alongside silkscreen, monotype, and other lithographic techniques.

PREPARING/DRAWING

Before your ball-grained plate is ready to receive drawing material, it is important to make sure the element is free of any debris. To ensure that it's clean, simply pour hot water over the plate while massaging its surface with a cotton rag. Once the plate has been thoroughly washed, blot it with newsprint to prevent any kind of oxidation. With a clean and dry plate, image preparation can commence. Setting up the element for a composition conforms with standard lithographic procedure. Iron-oxide sheets, graphite papers, and transparent films can all be used to transfer a drawing to the plate. If one prefers to work in a more direct fashion, sketching out the image with a graphite pencil works as well.

A number of materials can be used when drawing, but it is important to note that traditional lithographic drawing materials, such as tusche and greasy crayons, do not perform well. It seems that drawing materials that are both non-greasy and water-

soluble are best suited for this process. The following is a short list of materials that process and print successfully:

Permanent markers

Crayola colored pencils

Bic ballpoint pens

Caran d'Ache crayons

Spray-paint

Stabilo pencils

Stones #5 litho pencils

Gum arabic (used for creating deep solid flats)

Lo-Shu wash techniques

Xerox toner

PROCESSING

After you've completed your drawing, it's time to process the plate. The waterless procedure does not require any of the harsh solvents used for traditional lithography processing, instead all you will need is a tube of GE silicone caulking, some Gamblin Gamsol (odorless mineral spirits), and an empty film canister or pill bottle. Fill the empty canister with a 50/50 mixture of Gamsol and Silicone, creating a syrupy slurry. Once the mixture has reached a uniform consistency, pour your

solution onto the plate. Using a plastic card, spread the silicone across the plate in an even fashion. Covering the entire surface of the element, you will buff the silicone down tightly with an old cheesecloth. Remember to make sure that you've placed a sheet of newsprint underneath your aluminum plate, so that the surface of your support is not damaged by the silicone. Now that the plate has been sealed with a film of silicone, it is crucial to let the silicone cure by allowing it to cure overnight.

After the silicone has had time to set up entirely, the next step is to remove all of the drawing materials. I begin by sticking my plate to the bed of the press using a mixture of gum and water. This locks the plate into a stationary position, making it easier to work with while washing out. Beginning with warm water and a clean sponge, I remove all of the water-soluble media. If you have used any material that contains plastic, such as spray-paint or Xerox toner, a splash of acetone will take it out quickly. No greasy solvents are needed for the waterless wash out process. After all of the visible material has been removed, you should see bare aluminum plate where your drawing used to be, while the negative areas of the image area are still sealed in silicone. To complete the wash out process, degrease the plate with soapy water and fan it dry.

PROOFING/PRINTING

The waterless procedure does not call for any of the roll-up processing that is required in traditional lithography, instead you can immediately begin proofing with any color of your choice (it is always preferable to have your printing area fully situated before rolling out a slab of ink). I have found that rubber based inks (I use Gans and Southern Inks) are most suitable for printing a waterless plate because of their tacky and sticky nature. Traditional lithography inks can also be used, as long as they are modified with a varnish, such as body gum. A stiff ink is needed to successfully snap excess ink from the negative image areas of the drawing. Using a hard (60 durometer) brayer or small roller, roll out a thin slab of ink. Once a smooth inking slab is established, begin rolling on to your plate. A brisk rolling pattern should be used. As ink is laid into the positive image areas (bare aluminum plate), the negative areas of the image, which are sealed in silicone, will also attract ink, but only for a moment. As brisk rolling continues across the surface of the plate, the tacky ink will begin to snap off of all negative image areas, leaving the positive image inked in full. The fully inked image will appear shiny and slightly reflective under light. Proof the plate with newsprint

3-5 times, adding a small bead of ink to my slab between each proof. Once a consistent inking pattern has been identified, yielding a printed image that is homogenous to the original drawing, begin running impressions using your preferred printing paper.

CLEAN UP/STORAGE

After printing is finished, the aluminum plate should be cleaned thoroughly by stripping the remaining ink off the plate with newsprint. Alternatively, the plate can be deep cleaned by washing out the image with acetone. Do not use mineral spirits or lithotine to clean the plate. Using greasy solvents will destroy the silicone stencil. The plate should be stored in flat to prevent any sort of bending or damage.