Cast Intaglio Print Direction Sheets
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Years ago, in 1984 to be exact, I received a Bush fellowship and spent a lot of time developing a way to make large prints using the interference patterns grids I wanted to work with at the time. I had just had an exhibit at the Minneapolis Institute of Arts, the Minnesota Artists Exhibition Program, of large paintings of variations on these grids, and swore I was never going to hand-draw another one. The prints needed to be large (more than human-sized), exact but colorful, archival, not need frames or glass, relatively cheap to make, and non-toxic. Cast Intaglio Prints was my solution, though it took longer than that year to make prints large enough (now up to 8x8 feet). For the most part, I have made monoprint variations on the grids, though in some processes it is possible to make editions.

In the paragraphs below I have described how to do the easiest process I've come up with, Cast Intaglio Prints using polyethelene plastic plates as molds. These can be up to 4x8 feet, though I recommend starting a lot smaller. The process I use for my large prints uses masonite and crochet string for molds, and I'll do a "how to" article on that later.

These direction sheets for making Cast Intaglio Prints using polyethelene plates can be downloaded from my website, *jantjevisscher.com. along* with a list of supplies and suppliers.

Cast Intaglio is a printmaking process I developed and have taught in workshops over several decades. Cast Prints have intriguing low relief surfaces that can be translucent or opaque, shiny or matte, smooth or detailed; the prints can use any color made for acrylic paintings; they can be made with archival materials in any size up to 4 x 8 feet; they are cheap (relative to other print methods); use only non-toxic materials (with one exception, which can be done outdoors); you need no press; prints are washable, sturdy, and do not need framing; the easiest methods can be used safely by children, but yet there has been enough image flexibility, size potential, and archival qualities for me to make many major works via cast intaglio.

A quick summary of the easiest cast intaglio print process: Lines or surface textures are carved into printing plates made of polyethylene plastic or other material that does not stick to acrylic paint; a mold release is applied; the carved plate is then“inked”with a mixture of acrylic paint and acrylic gel, and squeegeed clean. A background color may then be used. One or more backing materials are applied. The print is dried and peeled from the printing plate. The printing plate comes out clean and can then be inked up again to make an edition, or can

be changed by more cutting.

Step 1. Cut and prepare a low or high-density polyethelene printing plate. Polyethelene is a very common form of plastic, often found in food containers such as ice cream pails, grocery bags, milk bottles, painting tarps, flat sleds for kids, plastic storage boxes. These large storage containers and sleds can be used for low budget purposes, but that polyethylene is never without blemishes and usually is not thick enough. The polyethelene I buy from distributors is listed on the Supplies sheet. It can be cut to the desired size by scoring with a plex cutter, then bent to snap it, or cut with a scizzors along the bend line. The print does not have to be a rectangle; you can cut the plate into irregular shapes.

The magic thing about polyethelene that makes it suitable for these prints is that nothing sticks to it. There is not even a glue for it.

I usually file the edges slightly, to take off any rough spots or sharp edges. But basically, you want a relatively square edge, not the beveled edge used on metal intaglio plates. Usually the polythelene available to you will be shiny on both sides, and I prefer a matte finish on my prints. Using the finest possible grade of sand paper (3M 600 ultra fine for de-glossing) on my flat sander, I rough up the surface slightly. Then I polish it with the same sander covered with nylon netting, ending with a smooth but evenly matte surface.

Step 2. Make a drawing on the back of the plate with a magic marker. The final image will be thus be facing the way you drew it. It also makes any lettering readable.

Just a note on borders --- there can be no real borders in these prints. I often make a border on the printing plate by putting masking tape on the back defining the area of the print within which I will make my drawing.

Step 3.
A carving board (flat board with two 'railings' can be attached to a table with C clamps and your printing plate goes next to the carving board rails. Then carve lines with a linoleum cutter such as Grumbacher (their smallest v cutter tip makes a wonderful clean fine line). Always teach people to cut away from themselves, and watch children carefully. Make whatever cuts you want, turning the plate so you are always cutting away from yourself.

If you can afford them, Japanese woodcut tools from McClains.com are very sharp and are made with hard steel so they hold their edge a long time.

Other tools that I use often include a Ryobi Detail Carver. There is a V tool bit

that makes very deep sharply-sided cuts. Electric Dremel type tools will hold dental drill bits that make very nice curved cuts. These are safer for children, so I often use those in classes. Sometimes safer for adults too!

When finished cutting, brush away all the loose fragments and run your fingers over the surface. Finding tail ends and rough spots, cut away all that you can.

Step 4. Take the finished plate outdoors and spray with Krylon Crystal Clear spray until surface appears wet. Allow to dry.

Step 5. Mix acrylic paint and prepared the inking table with newspaper sheets, several layers. To begin with, use about 5 parts clear gel medium to one part colored paint. Later on, experiment with more or less paint. Too much gel medium will make your color seem faded; too little will mean there is a layer of color over the whole surface in the finished print. Especially black will require a greater proportion of gel medium. This is a very forgiving decision; there are a lot of wonderful possibilities.

Step 6. Place the printing plate on clean newspaper. Using a bristle brush, apply the color you have mixed to the printing plate and brush into all the crevasses. Then brush them two more times; first in one direction and then the other. Using the silk screen squeegee, scrape the surface of the plate (preferably only once, but sometimes the squeegee is not big enough) from one side to the other. Hold the plate in place by placing your fingernails about ½ inch from one edge. Hold the squeegee at a 45 degree angle, and applying even and strong pressure, pull away from your fingernails. Then, with the clean side of the squeegee, squeegee that first ½ inch clean. Check the plate over, and if the result is reasonably ok, let it dry. Generally, cleaning up any little streaks or drips makes it worse, so the best advice here is to just finish the print even if you are not totally happy with the results of the first scrape.

After the surface sets up, add any other colors you wish. If you have made very deep cuts, you may want to add a coat or two of clear gel medium, brushing the plate and into all the crevasses again with the clear acrylic paint. This will make the ridges stand up higher on the finished print.

Sometimes I paint a solid cream-white color over the whole plate; this gives the effect of old paper in the finished print. Parts of it can be painted different colors. I often use a simple black background. This stage is the time to paint areas through a stencil if you want.

I can't emphasize too much that each of these coats must be brushed solidly onto the last coat. Bubbles are fatal here; layers will separate as you peel it

later.

Step 7. This is also a critical step. You must brush gel medium over the entire surface making sure everything is coated with fresh medium. You can spray with water if it is too thick to spread easily. Then place a sheet of seikishu rice paper or silk fabric over the surface. Add a little more gel medium, spray with a little more water, and brush the medium evenly over the paper. Then place your fingers more or less in the center of the image and gently rub the air bubbles to the edges. Any bubbles you leave will mean part of the print remains on the polyethelene. Make the surface more or less even, and let dry.

Step 8. Choose the backing materials. I chose the Seikishu rice paper for the first layer because it is archival, it becomes limp when wet but still has wet strength, and because air and acrylic medium will pass through it. It is not particularly strong and/or stiff. Therefore, think about what you want the final result to be. Perhaps you want something strong enough to not need framing? If you want to hang the print on the wall without a frame, two layers of very fine fiberglass veil and a final layer of polyester curtain material make a very strong print that will hang very flat, no buckling with humidity changes. If you want to eventually mount your print on a heavier paper, you will want the print to be very light weight, silk may be the best option, or two layers of Seikishu. These are my main backing materials, but sometimes I use lutradur, plant protection fabric, landscaping materials, silk screen netting, a beautiful piece of silk, among many other materials.

If your print is over 20 inches or so in any direction, I recommend two layers of fiberglass. The dimensional stability is much greater. This will work well up to a 4 x 8 feet panel size.

You can use monofilament materials for backing as long as the weave allows you to encase the material completely in gel medium. I use polyester or dacron curtain netting as a backing for most of my work. I use nylon mosquito netting or silk screen netting when I want an extremely strong backing. The gel medium must go through the spaces, and dry solidly on both sides.

When you have made your decision about backing material, apply it by coating the back of your print with gel medium and water, place the backing over it, flatten down with food scraper (looks like a large credit card) held at a 45 degree angle, using more gel medium until it is solidly adhered. Allow to dry.

Thin prints may be adhered to a heavier print paper or fabric with WonderUnder or similar materials purchased at a fabric store. For archival use, look at Beva. These are heat activated, and the pressure from the iron can lower your 3d

surfaces. I often use gel medium as a contact cement; it is equally archival but the print will need to be dried flat under some pressure to remain flat.

Step 9. Drying time for several thick layers may be as long as 2 days in summer humidity, but for only 2 or 3 light layers, overnight will usually be enough. Peel off the print starting in one corner. Watch carefully for paint left in the polyethelene plate --- if that happens, start again in another corner. If it is not thoroughly dry, give it another day of drying. If you have been careful with bubbles, all should be well.

Keep in mind that acrylic paint has a short drying time, it should feel quite hard in 12 hours. But the cure time is several weeks, and prints must be kept flat for this amount of time after they are made.

Many monoprint options. Painting over the print. Reprinting with different colors. You can cut more lines and reprint. You can put a photographic digital print on the Seikishu and make a cast print over that.

There are many other kinds of cast intaglio prints. I often use liquid latex. Sometimes wood cuts, coated with a release. Other materials can be coated with mold release.