

## **PHOTO LITHO PLATES: NOT JUST FOR PHOTO ANYMORE**

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### Photo Litho Plates

I am currently using the Emerald Green Photo Litho plates. I have been able to use these plates for photo images as well as for drawings similar to what can be achieved on polyester plates. Depending on how you work with images, and how you print, the photo litho plates can be used for a base layer, a second reductive layer, and then yet again for a third drawing layer. This is a starting point for continued experimentation!

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### Film Positives:

A variety of materials will work as film positives:

- a photo image from a computer printed out onto clear film, mylar, or a film such as Pictorico from either an ink-jet printer or a laser printer
- a drawing onto some sort of mylar or acetate
- a photo-copy onto an appropriate film or clear plastic sheet

For small scale work, clear films can be purchased at most office supply stores. Make sure you get the appropriate type of clear film – materials for ink-jet are NOT the same as for laser printers or copiers.

Output from a laser printer or a copier involves toner, which is opaque. Output from an ink-jet printer involves ink, which is not opaque. Depending on the ink-jet printer being used, sometimes one film is sufficient; sometimes it is easiest to print out two copies and align them on a light table. This gives a double thickness layer of ink for your film.

Ink-jet printers output with a variable dot. This gives more of a continuous tone. Laser printers can produce a slightly more mechanical look. Experiment to see what suits your images.

### Test Exposures:

Test exposures will clarify what exposure time you will need for the specific type of film you are using. Different types of film require different exposure times and different machines (even if the same type and brand) have different times.

Cut a strip of plate, approx. 5 – 6" wide by 15 – 20" long. Prepare an extra film to use for your exposure tests. Place your film emulsion-side down on the coated side of the photo plate, making sure at least part of the plate will be clear (no image). Use Rubylith, Amberlith, or some other light safe sheet to protect all but about a 4" part of the image. Engage vacuum and then follow the instructions for your exposure machine or set up and expose for a set amount of time. Release the vacuum and cover the area just exposed with a strip of Rubylith. Move the film 4" to the next part of the plate. Protect the remaining plate strip and engage vacuum. Expose for a longer exposure time. Release the vacuum and continue until the entire strip has been exposed with various times.

Develop the test plate. Rinse thoroughly with water and dry. Mark your times onto the test areas with a Sharpie marker. Look closely at the test strip under good light. An ideal exposure time will result in a variety of tonal values, but will have a clean border where there is no image. Depending on the result you are looking for, exposure times can be varied.

#### Developers:

There are several different developers available on the market currently, and there are several different methods to develop and process the photo-litho plates for stable printing. I will focus on just two methods here.

- a) Developer A: Plate developer, available for purchase from Takach Press
- b) Developer B: Home Brew: 1 gal. water, 2 TBSP powdered Lye, 1 TBSP Soda Ash

As far as I can tell, all of the developers I have come across are strong alkaline solutions. Both of the developers listed here work well, and have pretty much identical results in terms of developing quickly, cleanly, and maintaining a wide variety of tones.

To mix developers: Follow the directions! Wear gloves and eye protection. Use sturdy gallon containers to mix developers – heat is generated by chemical reaction when the powders are added to the water. For the Home Brew: Start with a gallon of water. Add 1 TBSP Lye. Cap and shake gently till dissolved. Add 1 TBSP Lye, cap and shake gently till dissolved. Add 1 TBSP Soda Ash, cap and shake gently till dissolved. Shake thoroughly. Developer is ready for use.

#### To prepare plate:

##### **1. Expose film/plate in exposure unit.**

##### **2. Develop plate:**

- a) For developer A: Wear Gloves. Pour developer in a tray: Using the applicator pad, massage the surface of the plate for 30 sec. to 2 minutes. Non-image areas should be clear, borders clear. Remove from tray and rinse with cold water. Blot dry and fan.
- b) For developer B: Wear Gloves. On a sink: Pour developer over entire plate, flooding the plate. Immediately sponge developer over entire plate surface and massage for 30 seconds. Rinse with cold water. Blot dry and fan.

**NOTE: Remove any unwanted lines or marks in the borders using a small amount of Acetone and a Webril or a Qtip.**

**NOTE 2: If you wish to add drawn elements to your image, do so at this time. Use either a cheap ball point pen or Sharpie markers – same as you would for a Pronto or Smart plate.**

**3. Processing:** Again, there are several ways to process photo-litho plates. Below are two – if one is not working for you, try the other.

**Option 1)** Wear Gloves. Pour a small amount of FPC (Finisher, Preserver, Cleaner) onto the plate. Massage over the entire plate with a sponge for approx.. 2 minutes. Buff smooth and dry using KimWipes or fine cheesecloths. Fan dry. Put the plate away where it will not continue to be exposed to light.

**Option 2)** This is more involved, but I have found it to be fairly bullet-proof, especially with new students.

Pour a small amount of Gum Arabic onto plate and massage over the entire plate with a sponge for approx.. 1 – 2 minutes. Buff smooth with cheesecloth and fan dry.

Set up a smooth roller and a medium thin slab of Shop Mix Black ink, sponge water, sponges. Thoroughly rinse off the dried gum coat with water and a sponge. Proceed to roll up the image with short quick rolls – wet sponge, dry sponge, roll. Repeat. When the image is JUST up – do a final sponge with water and fan dry. Remove any scum or residue in the borders with a small stocking or finger, followed by toothpaste (Crest or Colgate work well). Talc the image. Etch the image using at least 50/50; can use Plate Etch in more dense areas. Buff with cheesecloth and fan dry. If there was a lot of scum in the borders, mix a strong Plate Etch (1 oz. Plate Etch + phosphoric acid = pH of 1 or lower). Paint a thin layer of this hot gum around the borders. Let air dry.

**Option 3)** Pour a small amount of Gum Arabic onto plate and massage over the entire plate with a sponge for approx.. 1 – 2 minutes. Buff smooth with cheesecloth and fan dry. Let rest for approx. 30 minutes (or longer) away from light.

#### **4. Printing:**

If you processed with Option 1 or 3, rinse off buffed FPC layer or buffed gum layer with water and a sponge. Proceed to roll-up in ink and print as usual.

If you processed with Option 2, rinse off thick gum layer with water, dry plate, and re-gum and buff with cheesecloth. Fan dry. Proceed to wash out image and roll up the same as you would with a regular aluminum plate image.

Options to re-work images:

- A) After printing: wet wash away ink; rinse thoroughly with water; dry. Cover image area with a new film (less image area than before) and re-expose. Re-develop and process as before. Print. This works best when the first layer was a flat or heavy image.
- B) After printing: wet wash away ink; rinse thoroughly; dry. Protect areas of image you want to keep with light-safe paper or Rubylith. Allow remaining area to be exposed – either through an exposure unit or general room light for approx. 20 – 30 minutes. Can then use developer and a brush or Qtip to selectively and expressively remove image area. Rinse with cold water when done. Process as before. Print.
- C) After printing: expose remaining image area to light; use developer to remove all image area. Rinse thoroughly with cold water. Dry. Apply aluminum plate counteretch (same method as

you would use on a regular ball-grained aluminum plate). Rinse thoroughly and dry. The plate is now ready to draw onto using same materials you would use for a polyester plate: cheap ball point pens, Sharpie markers, large black permanent markers (Marks-a-lot, Staples brand, etc.). When done drawing, either:

1. gum thoroughly for approx.. 1 minute, rinse off and proceed to roll-up and print or
2. gum thoroughly for approx.. 1 minute, buff with cheesecloth. When ready to print, re-apply fresh gum, massage for approx.. 1 minute, rinse off and proceed to roll-up and print.

#### Trouble-shooting and thoughts:

- Different films will require different exposure times.
- Different images will sometimes require different exposure times.
- If having difficulty stabilizing image for printing, try a different processing method.
- Make sure developer (any kind) is mixed thoroughly before use.
- To remove scum from a photo-litho plate: remove any ink with stocking or small amount of Acetone on a shop towel; follow with cleaning using toothpaste; rinse and gum (or hot etch) that area.
- If you are not keeping your images in black ink, keep processed photo-litho plates away from light sources.
- Start out with fairly stiff ink when printing. Can always loosen the ink slightly as you go if needed.
- If you are getting sponge streaks in your images, consider adding a small amount (approx. 1 T) glycerin (can purchase from drug store) to your sponge water.

#### Resources:

Takach Press Corp. - [www.TakachPress.com](http://www.TakachPress.com) Emerald Green photo plates, developer

Renaissance Graphics -- [www.printmaking-materials.com](http://www.printmaking-materials.com) 1-888-833-3398 soda ash

Hardware stores - powdered lye (sold as drain cleaner)

<http://www.bulkapothecary.com/sodium-hydroxide-lye.html> - powdered or pellet lye

[www.muskatstudios.com](http://www.muskatstudios.com) -- photo-litho notes – see blog