Printing Digital Negatives

First Step: Create the negative in Photoshop

1. If image is in color, turn to Black and White
a. Apply the B/W Adjustment Layer
2. Adjust tonal range with Levels or Curves layers (remember - with cyanotypes the prints will run a little high in contrast - so you could open up your shadows for more details)
3. Invert the Image
a. Image > Adjustments > Invert
4. Check the size of your image
a. Image > Image Size
b. Re-size your photo to the size you want to print, make sure to keep your resolution at 300 dpi.

Second Step: Put multiple negatives into one document to save transparency

1. Create a new document 24" wide by your chosen height. Make sure the resolution is set to 300 dpi. For example if you want to print 4 - 5x7" prints, create a document that is 8" by 24". You want to leave some room for borders - these will help in the printing process

a. After adjusting each negative in the first step. Flatten the image and drag each image into your new document.

Third Step: Print your negatives

1. Make sure the transparency film is loaded into the printer. It gets loaded under the paper type: Glossy Photo 170

a. To unload/load paper press the Load button on the printer, then Roll and Remove Roll. The printer will prompt you to load a new roll.

2. Click Print

3. Choose Print Settings > Set Paper Size to Document Size

4. Layout Menu
Choose Main
Media Type (Match to paper in printer, Glossy Photo Paper 1700
Print Priority: Image
Print Quality: Standard (600 dpi)

Choose Page Set-Up
Paper Source: Roll Paper
Roll Width: 24"
Check: Print Centered
Check: No spaces at top or bottom

5. Click Save

6. Color Handling: Photoshop Manages Colors

a. Set Paper Profile: PremiumGlossyPhotoPaper_2280

Do NOT Turn OFF the Printer

LET THE NEGATIVES DRY for 10 minutes before touching

Spring 2016

Alternative Process Photography

o Students will propose, research and solve creative problems with photography with a strong emphasis upon the physical quality of the print. Each project will consist of a proposal, artist research, critique, artist statement and self-evaluation.

o Students will learn the tools and skills necessary for working in non-silver printing including **Cyanotype, Vandyke brown, tintypes, gum bichromate and liquid emulsion.** This will include the proper mixing and safety considerations of alternative process chemicals as well as the use of unconventional materials as a print surface.

o As a way to frame their work in both a historical and contemporary context, students will learn the historical background of each non-silver process as well as the role of alternative techniques in a digital world.

o Students will work in experimental and manipulative techniques, embracing the unpredictability of the non-silver process.

Liquid Light

WORKING TIPS:

Work in subdued safelight illumination, liquid light fogs easily
Emulsion can stain, so clean up any spills immediately
Dry emulsion hardens, clean brushes and containers immediately
Wear gloves

DIRECTIONS FOR USE:

1. Prep surface material. **(If working with metal or glass)**

a. Sealing surface with gelatin will give the print a glossier finish, more resolved blacks and less brush strokes, it also helps prevent the emulsion from sliding off of the material.

2. Warm the liquid light.

a. Place the sealed bottle of emulsion in a hot water bath. Leave the emulsion in the water for 10 minutes (minimum). Emulsion should become a fluid. *****DO NOT SHAKE THE BOTTLE*****

b. Pour out a small amount of liquid light into a small graduate and keep sitting in a water bath. Only pour as much as you need. as ***Do Not return the liquid light to the bottle.***

c. Optional: To Increase Contrast
Mix in 1 part working developer to 10 parts liquid light. Mix only what you need because this can NOT go back in the bottle.

3. Coat Paper.

a. Brush the emulsion on to evenly cover the paper.
b. Place in light tight box to dry or dry with hairdryer on COOL for 5 minutes (until emulsion is not sticky).
c. Optional: after first coat is dry, apply a second coat of liquid light
d. Store in a light tight box and should age for 24 hours before using.

4. Chemical Set Up:

Dektol (1 part dektol : 2 parts water)
Non-rapid Fixer bath
Non-rapid Fixer bath

5. Exposure

a. Always do a test strip with the same material as your final print
b. Set aperture wide open, no filter
c. Exposure times will be slightly longer (ex. Approx. 20 seconds)
d. Place glass over paper to keep it flat

6. Processing

a. Developer: 2 minutes, continuously agitate
b. First Fix: 15 seconds, continuously agitate
c. Second Fix: 5-10 minutes, frequent agitation (white should become transparent)
d. Wash: 10 minutes (keep wash water running on low, if it is too high the emulsion will peel off of the paper or cause bubbles)

7. Dry & Flatten

Gum Bichromate:

Preparing the Solution:

1. Dichromate sensitizer: 10 g of potassium dichromate + 100ml of water (10% working solution)

a. Produce a saturated dichromate solution, that means it is possible that you have dichromates collecting at the bottom of your bottle.

b. Store this solution in an airtight, plastic brown bottle, labelled with chemical solution and date

2. Prepare your gum solution: The ration of gum to sensitizer will vary depending upon the look you are going for as well as the paint you are working with. What follows is a standard gum:sensitizer ratio. This mixed solution can be stored, just be sure to mix well before each use.

a. Add 6ml of gum Arabic to a paper cup

b. Add ½" to 1" of watercolor paint to the cup and stir well

c. Add 6ml of saturated potassium dichromate and stir together

Coating the paper: (do not precoat, it does not store well)

1. Mark the printing area with pencil registration marks
2. Using a foam or hake brush, brush gum solution on quickly.
3. When emulsion grts gummy, dry brush and whisk it until all of the streaks have blended into a smooth coating
4. Allow the paper to dry in low light, or use a hairdryer on COOL
5. Note sensitizer ratio, number of coat and type of pigment used.

Exposure:

- Exposure times will vary, keep note of all times
- Begin with approx.. 4-8 minute exposures
- Longer exposure brings out highlight details (so work with a pigment that you want to appear in your highlights for longer exposures)

- Single Negative Strategy (wash and dry between each coat)

1.Coat one: little pigment (or none at all) and a longer exposure

2.Coat two: large amount of pigment and a short exposure

3.Coat three: normal amount of pigment and average exposure time

Washing the Print:

1. Place print in a tray of room temperature water
2. Gently agitate the print for 30 seconds, face down
3. Carefully change the water, leaving it face down for 10-30 minutes
   a. Wash time will be determined by the pigment chosen, light colors clear within 10 minutes, dark colors will take much longer.
   b. You are looking for the print to clear - meaning that the highlights are paperbase clean and the shadow values have detail
4. If highlights/borders are tan you have dichromate stains. Clear with a 1% solution of potassium metabisulfite (10g potassium metabisulfite +1000ml distilled water) Clear the print in the bath until the stain goes away, then wash for 30 minutes in running water
5. Allow print to air dry, or dry with hairdryer on cool.

Alternative Process Photography

Cyanotype Start:_____ Due:_____	
Vandyke brown Start:_____ Due:_____	
Tintypes Start:_____ Due:_____	
Gum bichromate Start:_____ Due:_____	
Liquid emulsion Start:_____ Due:_____	

Van Dyke Brown

Chemical Handling:

- " Wear gloves, immediately clean up spills
- " Dump extra chemicals down drain -flush thoroughly with water
- " Take extra caution with Silver Nitrate

Preparing the solutions: Three solutions (A,B,C)

Place distilled water in a beaker, slowly stir in chemical.

Distilled water -room temp, dim light, non-metallic stirrers.

A:27g ferric ammonium citrate (brown or green)-100 ml distilled water

B: 4.5g tartaric acid - 100 ml distilled water, room temperature

C: 12 g silver nitrate 100 ml distilled water, room temperature

Mixing the Solutions:

1. Add B to A. Gently stir into a single solution.
2. Add C to A&B, store in dark bottle. Label with content and date.
3. Allow the solution to age for 24 hours before use.

DIRECTIONS FOR USE:

Set up your sink

a. Tray one: Distilled water + pinch of citric acid
b. Tray two: Tap water + pinch of citric acid (running water available)
c. Tray three: 3 % sodium thiosulfate fixing bath
30g sodium thiosulfate + 1000ml water
d. Tray four: Working Perma-Wash (3 oz to a gallon) diluted 50/50
e. Tray five: Running water

Coat the paper with sensitizer under dim light.

a. Use hake brush or foam brush. No brush with metal parts.
b. Vertical then horizontal strokes, quickly. Sensitizer dries quickly and will look matte as it dries.
c. Let the coated piece of paper sit for 2 minutes before drying.
d. Clean your brush in water and dry.
e. Dry paper with a hairdryer on cool.

Contact print by exposing to UV light. - Negative on top of paper

a. Exposure is complete when you have a moderate over-exposure.
b. There is a significant dry-down factor.
c. Exposure times will range from 3-5 minutes

Process the print.

1 Tray One: 3-5 minutes
2 Tray Two: 1-2 minutes, agitate. Refresh when water is dark yellow
3 Tray Three: Fix - 1 minute (do not over fix)
The print will darken and become brown during this process
Use just enough fixer to cover the print, and discard after 8-10 prints have been fixed
4 Tray Four: 1 minute.
5 Tray Five: 10 minutes
Hang to dry.

Standard Cyanotype Directions:

1. Prepare chemicals and store in two separate brown bottles, labeled A& B. Chemicals should sit for 24 hours before using. Chemicals can be mixed under normal light. Stored in separate containers, the chemicals will last indefinitely, once mixed they have a very short life.

a. Solution A: 25grams Ferric Ammonium Citrate and 100ml distilled water (68□)

b. Solution B: 10grams Potassium Ferricyanide and 100ml distilled water (68□)

2. Prepare Sensitizer.

a. Mix equal amounts of Solution A & Solution B.

b. A healthy sensitizer is clear, yellow-green in color

3. Apply Sensitizer.

a. Brush on your sensitizer quickly and evenly using vertical and then horizontal strokes.

b. Avoid leaving puddles of sensitizer as these will wash off of the paper.

4. Dry your paper with a hair dryer on cool, focusing on the back of the paper. Once dry a coated cyanotype will be light green-yellow in color.

5. Place negative directly on top of paper, and place in contact frame. Place in sun or under UV light. To determine exposure time lift part of the negative and examine the print you want to see details in the highlights and for uncovered areas to turn a silvery gray.

6. Develop the print

a.Tray One: Running Water (3 minutes)

b.Tray Two: A splash of hydrogen peroxide 3% in a liter of water (30 sec)

c. Tray Three: Running Water (5 minutes or until your highlights have cleared to white)

Print ID:	Date:
Process Used:	
Number of Coats:	
Method of Coating:	
Type of Paper:	
Exposure Time:	
Processing Notes:	
Print Alterations	
Final Print Assessment	
Additional Notes:	

Cyanotype Toning:

The first step in any toning process is to create a cyanotype following normal instructions. It is best to allow a cyanotype to dry and age for 24 hours before toning. The length of toning and the type of paper will determine the color changes.

Tea Toner:

1. Make very strong tea in hot water (4 bags in 1 cup)
2. Immerse a print in tea, until desired tone (brown tones appear after about 5 minutes)
3. Highlights will turn tan, and blue will become warmer
4. Rinse print briefly and hang to dry

Redevelopment Toning With Tea:

1. Mix Borax Solution 70 g per quart of water
2. Rinse Print in plain water for 5 minutes
3. Immerse print in borax solution until the desired amount of color has been removed
4. Redevelop in a strong solution of tea (4 bags in a quart of water)

a. Let it steep for at least 5 minutes

5. A new color will be imparted to the cyanotype emulsion, a black-brown rather than the blue

Tannic Acid Toning:

1. Part A: Borax solution 70g per quart of water
2. Part B: 3 teaspoons tannic acid added to 1 Liter water (stir well)
3. Put print in a water bath for 30 sec.
4. Put print in part A until it starts to fade
5. Rinse print for 1 minute
6. Transfer print to part B for the conversion to black/brown (10 minutes)
7. Rinse print for 1 minute

**This approach does the best job of keeping your highlights white

For even more toning possibilities, see the link on the Alt Process page of the blog: 'Toning with Tea' from the book by Tim Rudman.

Print ID:	Date:
Process Used:	
Number of Coats:	
Method of Coating:	
Type of Paper:	
Exposure Time:	
Processing Notes:	
Print Alterations	
Final Print Assessment	
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