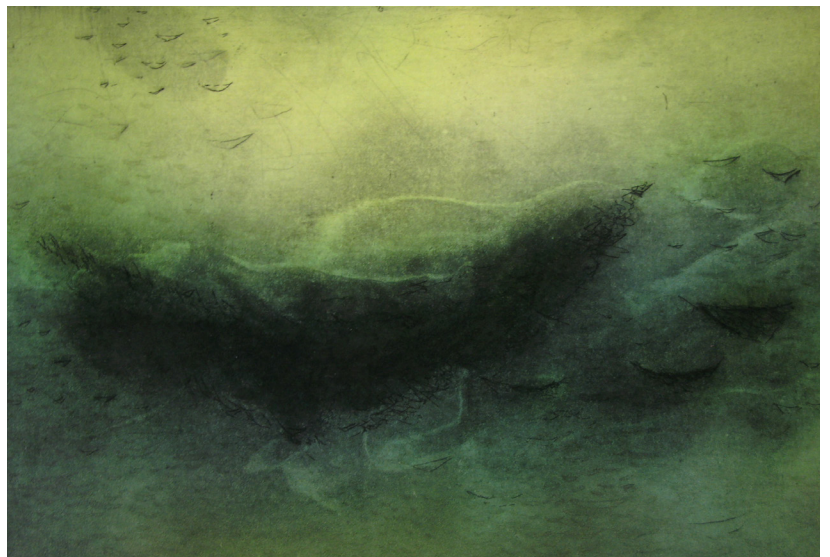
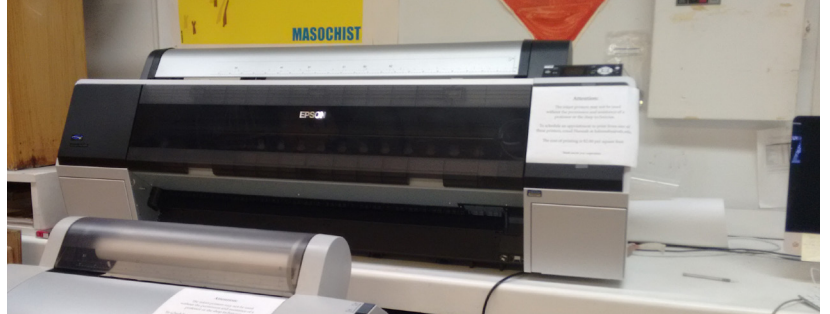


SGCI2015:Demo Handout

# Combining Digital and Traditional Output in Prints

Kelsey Stephenson, University of Tennessee,  
Saturday March 21, 10:00—11:30am, Printshop, AA 241 East



# SGCI Demo Handout — Combining Digital and Traditional Output in Prints

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## Summary

For this demo I will be showing the process I use to combine digital and traditional media through the use of chin-collé. Digital imagery is printed onto thin washi paper, and added to an intaglio print using the chin-collé process to fuse the two layers together. This process can also be used with woodcut, silkscreen, etc. and is not limited to intaglio.

## Process

### 1. Start with an image on the plate

I recommend when starting this process that one have a resolved image on an intaglio plate before utilizing the computer. This image could be line etching, collograph, or otherwise, as long as you have at least one good quality proof of the image to work from.

Digital additions can enhance the plate by adding colour and more layers. If you already have a good idea of what digital elements to add to the image you can also leave room for them on the plate, filling information in later in Photoshop

For this demo I have made two small etchings with some drypoint. Most of the tonal value and photographic imagery comes from digital printing, and it is easier to see where lines have been etched or scratched in the plate in comparison. Adding even a slight amount of tone to the plate will allow it to fuse more seamlessly. (i.e. aquatint or spitbite).

From here, you can scan or photograph the proof to get the image on the computer.



Figure 1

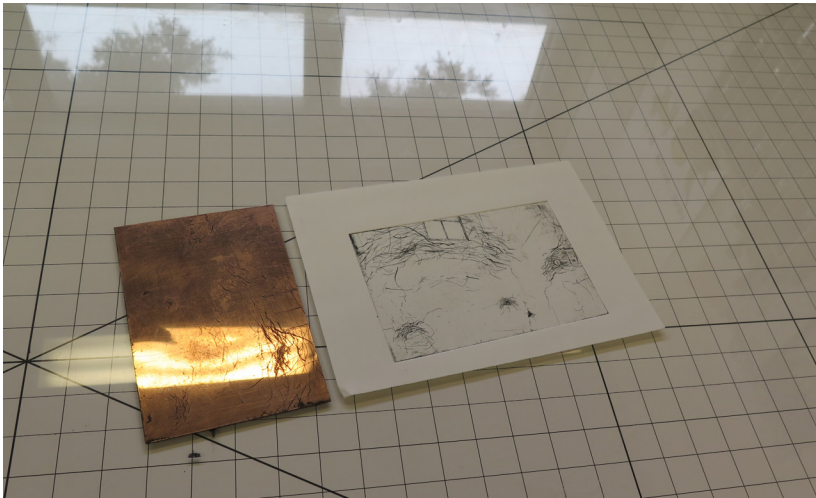


Figure 2

## 2. Scanning or photographing to digitize image

A good digital image of your plate is **crucial for good registration** later on. If your print is small, you might want to scan the image (at 300dpi), or, with a larger print, get a high quality photograph. Make sure that the image file is the same size as the plate in inches, and at print resolution (typically 300ppi).

Scanned images are easier to format; they are already square. A photograph generally isn't; if you don't have access to a scanner or your print is too big to scan, here's my trick for squaring up an image in Photoshop, which even works with the curvature of a lens.

## 3. Squaring up an image

You can make a photographed image perfectly square in Photoshop:

- First **crop** the photo to just outside the plate edge (as shown in Figure 4).

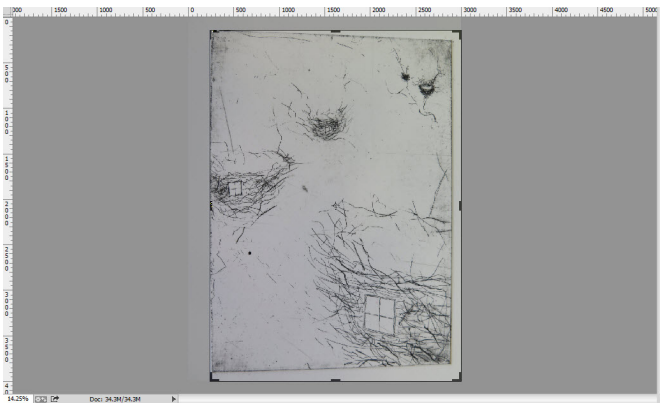


Figure 4

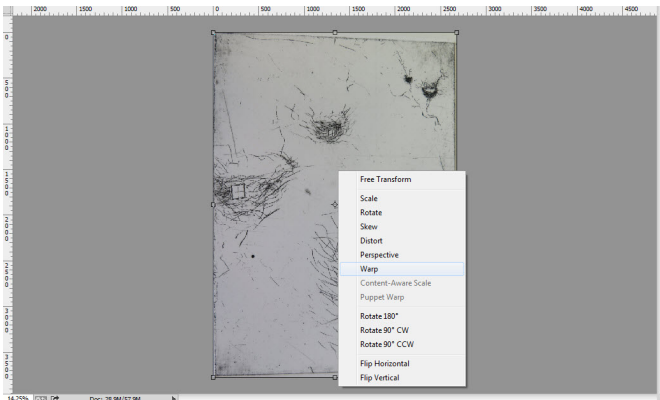


Figure 5



Figure 3

- **Duplicate the layer** (Ctrl-J) and then **transform** (Ctrl-T). Using the transform tool and its subset **warp tool** we can transform the new layer and square the image up.
- To correct curved lines use the **warp tool**.
- Right click on the transformed image area, and choose **warp**. This will allow us to precisely align the image, so that the image is square and easily registered. (Figure 5)
- Drag the corners of the image in — see how they bend to correct the lens curvature; play around to get it lined up with the edge as closely as you can. (Figure 6)
- A final step is to change the image size — go to image, resize and change the dimensions to the plate size in inches, and the dpi to 300. Check allow resampling (Figure 7 and 8).
- I use this trick sometimes when photographing finished artwork to get squared up images of larger work.

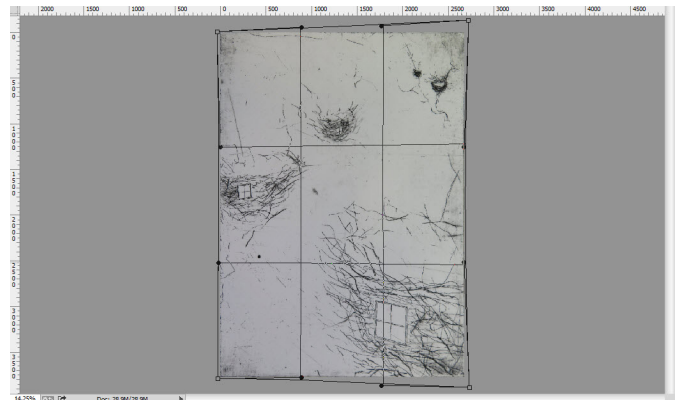


Figure 6

Make sure that the image, scanned or photographed, is **squared up**, and the **right dimensions for inches and dpi**. It is really important to make sure that this step is done well so that registration is set up properly, and that your printer has a 300 dpi file rather than a 72 dpi one at low resolution.

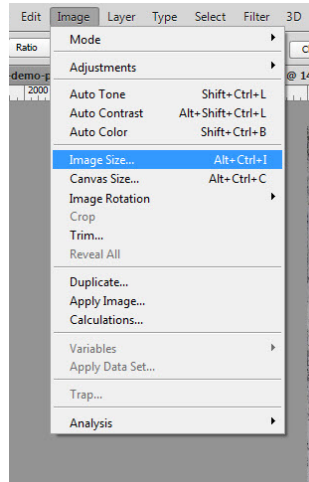


Figure 7

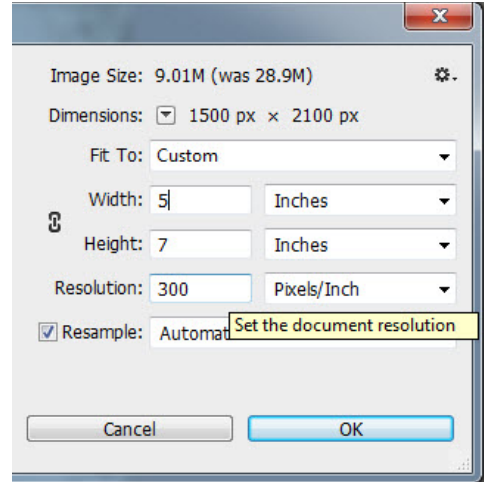


Figure 8

#### 4. Make a 'digital transparency'

Once you have an image formatted to correct scale and at 300 dpi, you will make a digital transparency. Save the file as a .psd (Photoshop document), and you can begin to add digital imagery to later combine with your intaglio image. This is the fun part!

As far as Photoshop goes, I recommend playing around with the image and saving multiple versions. In the back of this handout are some resources and places to look for good Photoshop help online as a starting point.

There is one last step to get registration working well, and that is to create a 'digital' version of a transparency, now that we have a square image the same size as the plate to work with.

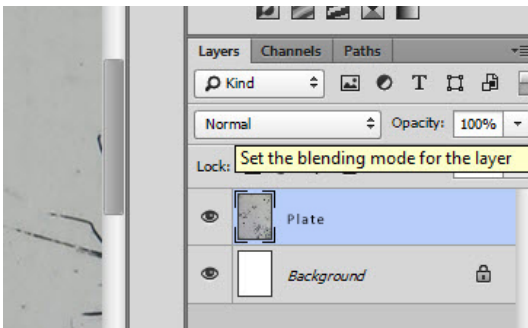


Figure 9

- First, if you haven't already, move the layer with the image of the plate to a new layer, so that Photoshop (1) has a white background layer, and (2) a layer with the image of the plate. (Figure 9)
- Rename this layer 'plate' for easy reference. At this point, change the blending mode of the plate layer to 'multiply.' This allows black on the layer to show up, but white becomes transparent.
- You have effectively made a to-scale transparency of your plate image as the top layer in Photoshop. Now you can digitally add layers and images below this top layer that you can position relative to the plate.
- You can add as many Photoshop layers between the background and plate layers as you like.

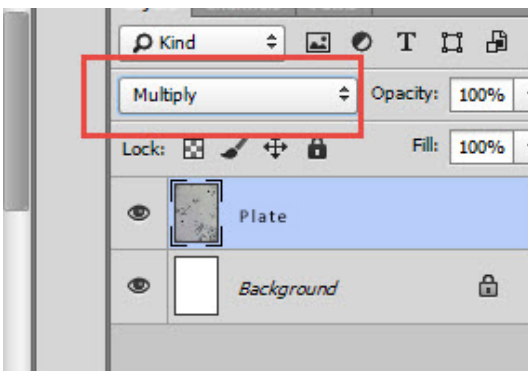


Figure 10

Figure 12 is an example of simple colour on the layer between the plate and the white background – notice how you can see what your final image may look like because of the multiply setting we used.

Most of the images I've created using this method have upwards of thirty layers. As long as you've squared up your photo well, or scanned it, this digital print should register fairly closely to your plate. Your ultimate image may appear slightly different due to screen colour settings or printer colour settings.

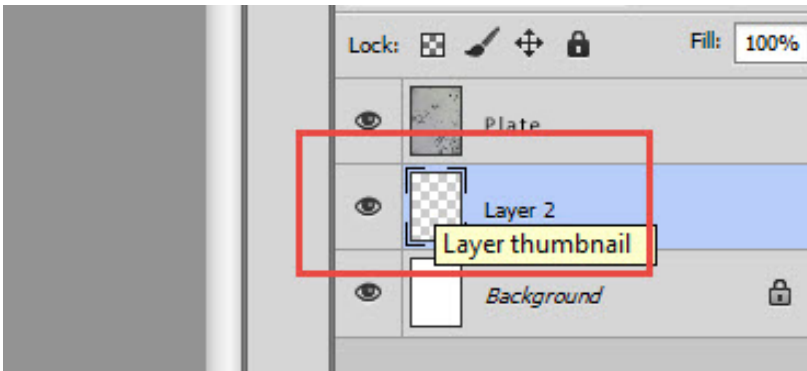


Figure 11

## 5. Save a jpg!

Once your image is completed in Photoshop, **hide the plate layer** (like figure 13) and **save a jpg** of the image for use in printing. This compacts all your changes into one easily moved file; you will print the digital image from a separate Photoshop file.

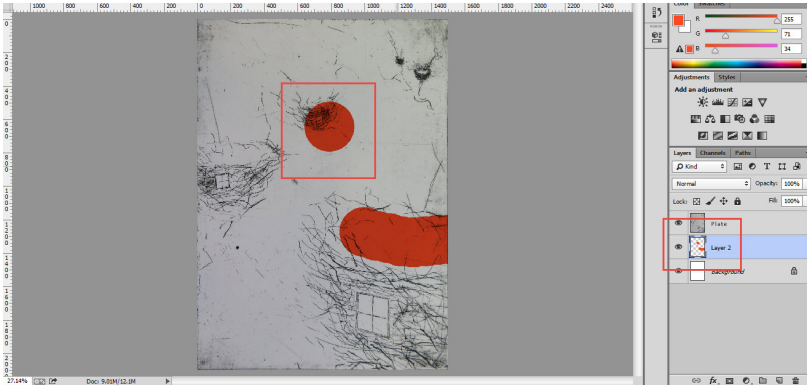


Figure 12

## 6. Printer setup tips

Once you are at a good proofing point, print a test print. For this demo I've tried printing with many types of paper. (For your information, I used Awagami digital paper, some uncoated washi papers, and printed on an Epson 2880 desktop printer with Ultrachrome k3 magenta inks.)

When choosing the printer, be sure that the inkjet has ink which will not run when wet. The Ultrachrome K3 magenta I've had good luck with, and checking the printer ink specifications should tell you if it is water resistant or not, and how archival (some inks will fade). Most large format printers from Epson today have these qualities.

Although most printers have pre-sets for printing on art papers, most don't come with pre-sets for washi. You usually have to make your own. Awagami has some printer profiles for their paper which are a good place to begin. I've found that reducing ink settings so less ink is deposited works best for uncoated general use washi. I also recommend slowing the printer speed, which helps to avoid bleeding and tearing. I've included some **more detailed info on printer settings** at the back of the handout.

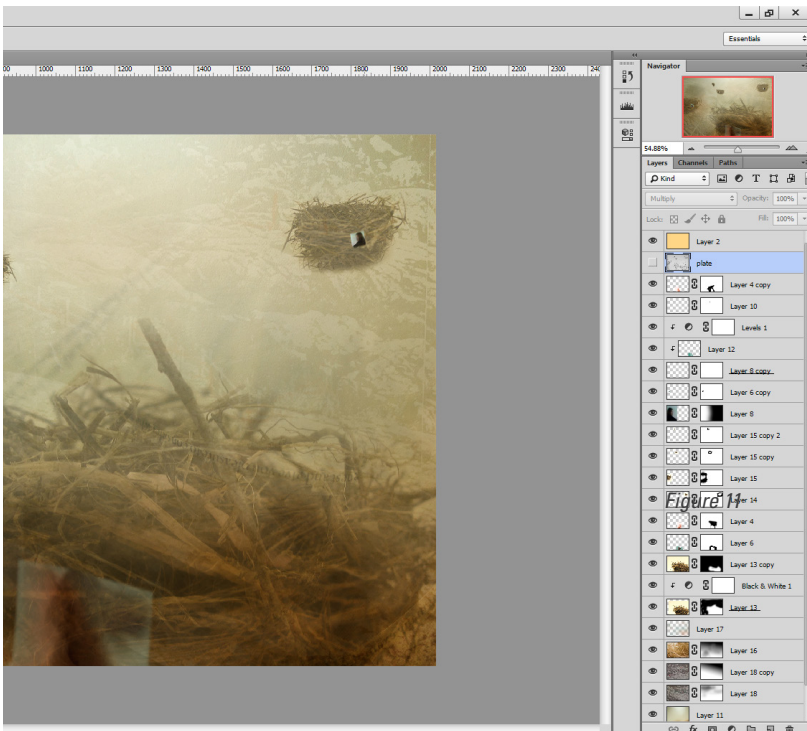


Figure 13

## 7. Printing on a large or small format printer

To set up to print on a larger printer, figure out how large your paper is. (Our example is 25x38in). I create a new Photoshop file the same size as the paper, and at **300 dpi** to print from. This also works on smaller sheets.

From here, open the jpg of the file we want to print in Photoshop, and drag it onto the empty canvas the same size as the paper. (Here is where the **dpi** is important as the size of the image changes if the dpi in the files differs.)

At this point, pick an orientation for the image, and **stick with it**. Always print the images **in the same direction on the paper** – depending on your paper and how it reacts when wet, you may have to slightly adjust the size of the image file to accommodate paper stretch/shrink, which is easier to do with a single orientation.

For a 24x26 inch plate the image may need to be stretched or shrunk by up to an inch in one direction to accommodate wet paper stretching; smaller prints will have less stretch, sixteenths or eighths of an inch.

## 8. Analogue printing

From here, we have the images from the computer printed out and cut down, ready for printing with the plate. It might take some proofs to get the colours to print exactly right, and size right, for each plate.

At this point, we're back into familiar territory of printing an intaglio plate. You can either print and chin-collé all in one process, or print on the washy only and adhere to rag paper via chin-collé later in a two step process.

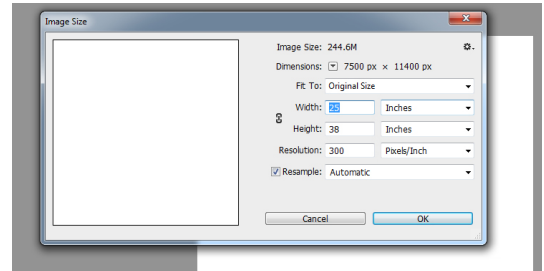


Figure 14

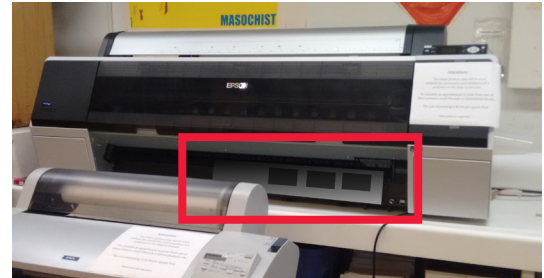


Figure 15



Figure 16



Figure 17



Figure 18



Figure 19

## 9. Quick overview on chin-collé

When doing chin-collé as a two-step process, I prefer to have a small border around the printed images for aesthetics.

I use Yamato paste, although there are many brands out there and it is also possible to mix your own paste. Wet the face down image with a spray bottle, center on the blank plate and brush on glue.

I blot off the excess paste with clean white rags and then clean the borders around the image of excess glue. Then, take it to the press!

**Done right, you should now have a print which fuses digital and traditional methods through the use of chin-collé!**

*Magical Secrets about Chine Colle: Pasting, Printing, Mounting and Leafing Step-by-Step*, by Brian Shure is a wonderful guide.

# Resources

## Photoshop Resources:

- <https://helpx.adobe.com/photoshop/tutorials.html>
- <https://helpx.adobe.com/photoshop/topics.html>
- <http://Lynda.com>

## Printer Settings Guides

For a large scale Epson like the 9890 used in the University of Tennessee printshop, you can control a lot of the settings used. Following are the **setting I find most important**— while the information is specific to this printer, the general outline of what settings and why they are used is useful across printers: One, **sheet vs roll paper settings** (and paper size/types). Two, **how much ink** is laid down at once. Three, **drying time** between the printer head passes.

What I've found tends to work as a good starting point is to do a few tests with the above settings, and when you get a good setup, **save a profile** of those settings for use next time.

Figure 20 is the default screen you see when loading the printer for the first time. Click on print settings to change paper size and type.

Clicking on print settings will bring up the dialog box (Figure 21). At the top, it says 'Presets' — I'm using the default to show here, but you can save your own.

## Awagami Paper Resources:

- <http://www.awagami.com/aijp/print/index.html>
- <http://www.awagami.com/aijp/print/ICC/>

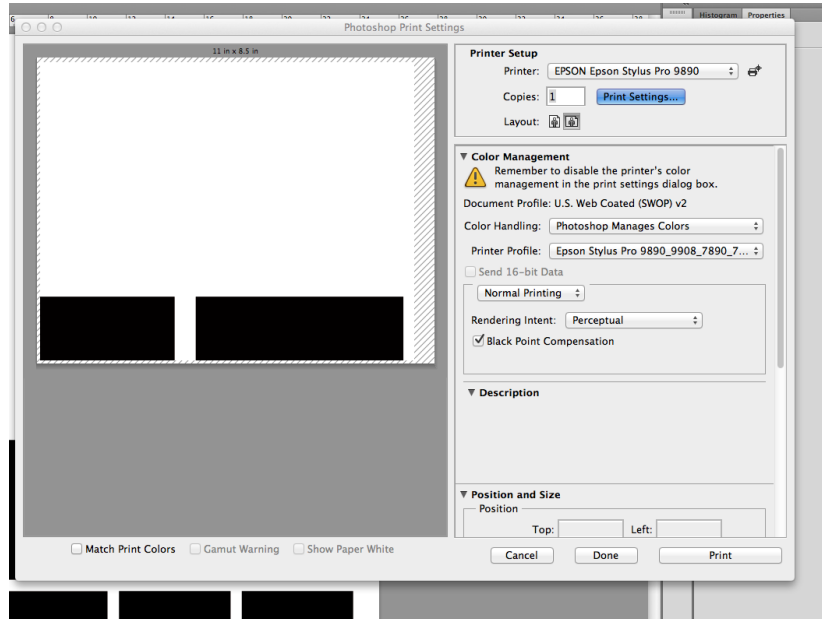


Figure 20

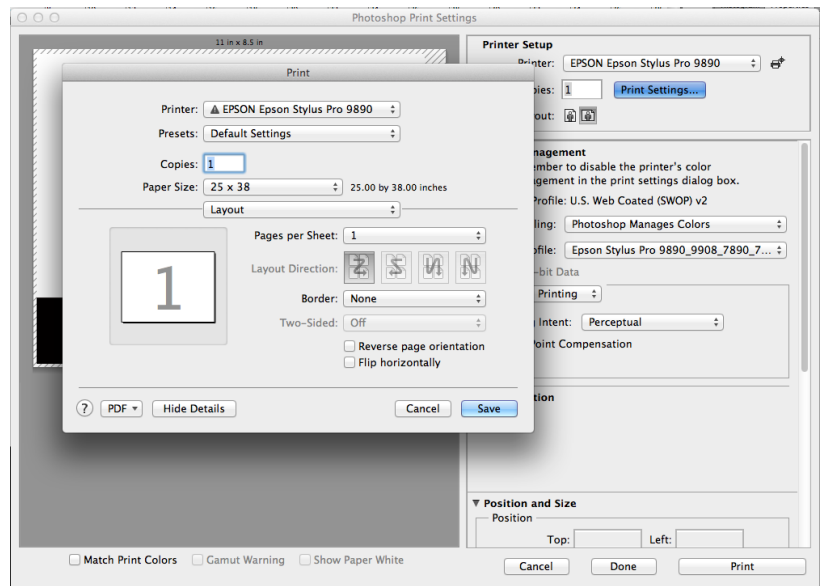


Figure 21

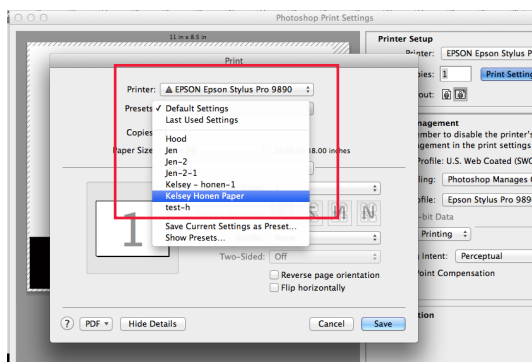


Figure 22

The first thing I like to select is the **paper size**. For this demo we are using a custom size of 25x38 inch paper (Figure 23).

Larger papers work well on large format printers, but if the paper is too small it may not catch in the printer mechanism properly. (For small pages I recommend a desktop printer like the Epson Photo 2880).

Once paper size is set, the second thing to check for is under the **Page setup options**. **Roll Paper, Banner** (Figure 24).

You also set **paper type** here. The default settings for single-weight matte or Velvet fine art works well as a start point. You can also download paper profiles from paper mills, such as Awagami, or Somerset.

Finally, I recommend looking at the **Advanced media control**. This specifies how much ink is being laid down, if it is a thick or a thin density, and how much drying time is allowed between printer head passes, or how fast it will print (Figure 25). You can also adjust paper thickness for thinner or thicker papers.

Sometimes the individual printer may have the same setting but listed in a slightly different place, so hunting through the settings can help if your printer has a different interface than the one used here. By knowing that you are looking for those type of properties and looking around, you can make most printers work for you even if not familiar. Last, you should have a page similar to Figure 26, with paper size and image size the same, and are ready to print!

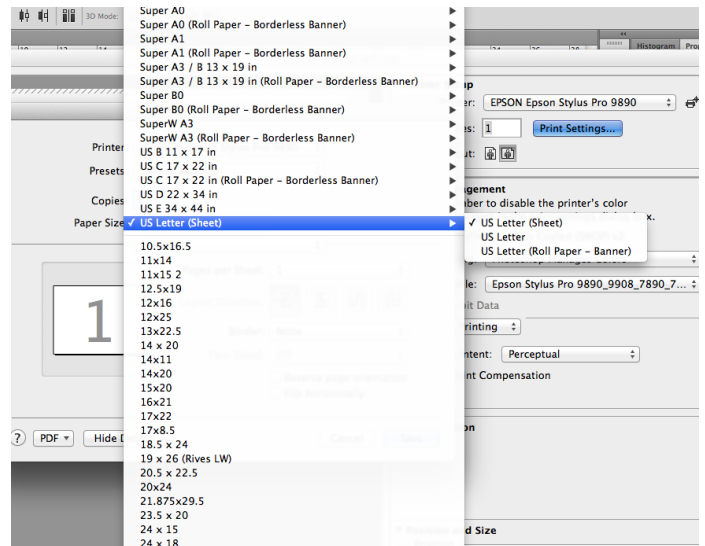


Figure 23

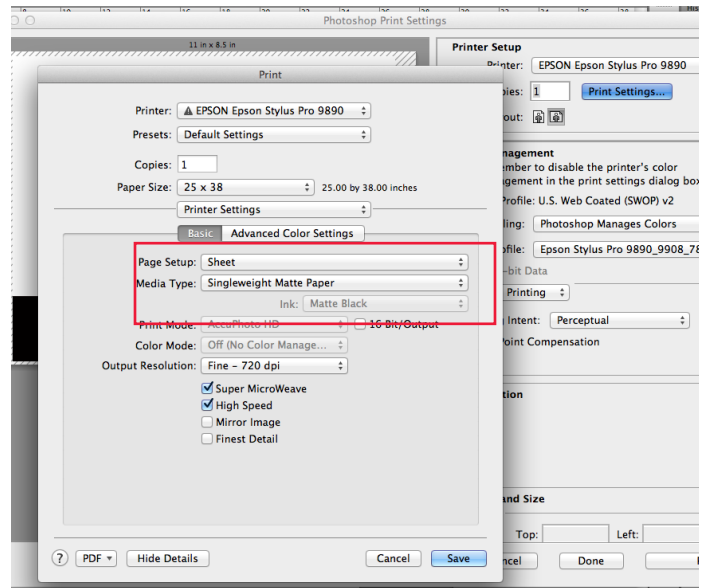


Figure 24

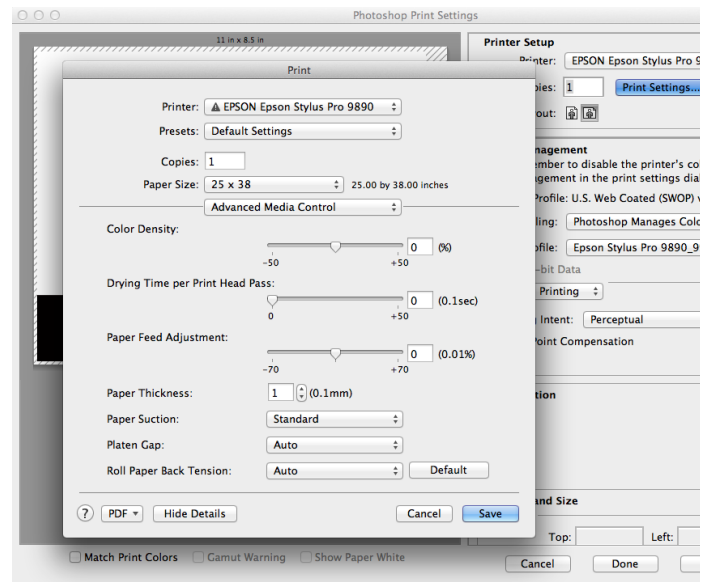


Figure 25

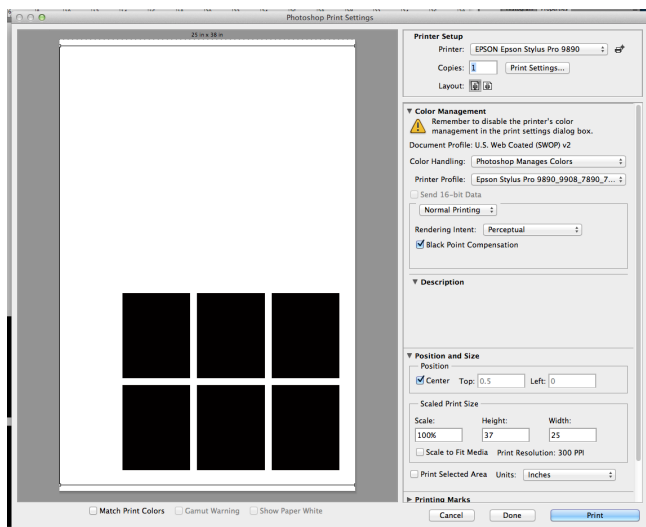


Figure 26



## Printer Troubleshooting:

This is not a comprehensive guide, but is a good place to start. Most printers have information online, and Awagami has a good art / washi paper troubleshooting guide on their website as well.

**Paper stuck or ripped:** If the paper becomes stuck while printing, or rips after the ink head catches, stop the printer and take out the damaged sheet as soon as you can without damaging the printer. Sometimes when working with paper that is as thin as washi, you need to be patient and sometimes retry a piece of paper, and watch it so that it doesn't get caught. Increasing the suction on the printer can help — the paper is very thin and will be held down more. Sometimes it gets caught because the paper is very wet, and has expanded — limiting the amount of ink deposited can help with this, or increasing the time to dry between printer head passes. Sometimes holding the ends of the paper as it comes out and holding away from the printer head to make sure the sheet isn't getting caught can help.

**Paper stains:** Small stains at the edges of a page are normal; sometimes you are cutting down the image and it doesn't matter, sometimes you may need to reprint. If the printer consistently does this in the same place, it could be a sign something else needs to be fixed. If the stains look like they come from the ink-head dragging across the page, sit with the printer while it is running and watch to see if the ink-head is scuffing or dragging across the image. You may need to hold the page, or change your print settings for less ink and or/ more drying time.

**Image is wrong size:** There are two main reasons for this — **image sized wrong in the file** (it is a different size in inches than the plate, or the dpi is off between the jpg file and the printer file) or the **printer is resizing** a correctly sized file for you. The first is a very easy fix— verify the file and place dimensions and dpi, and the printer file dimensions and dpi. Sometimes, however the **printer is resizing a file** for you when it should have been correctly sized. In this case, it check the printer settings and ensure the file is printing at 100% and not 'print to scale' (see Figure 27). Changing these settings so that no scaling is occurring, or moving the image around on the page can also help. If you still keep running into the problem and it is neither of the above solutions, then it is probably something buried a little deeper in the printer settings, and it may be helpful to look up how your specific printer handles scaling in the printer dialogue.

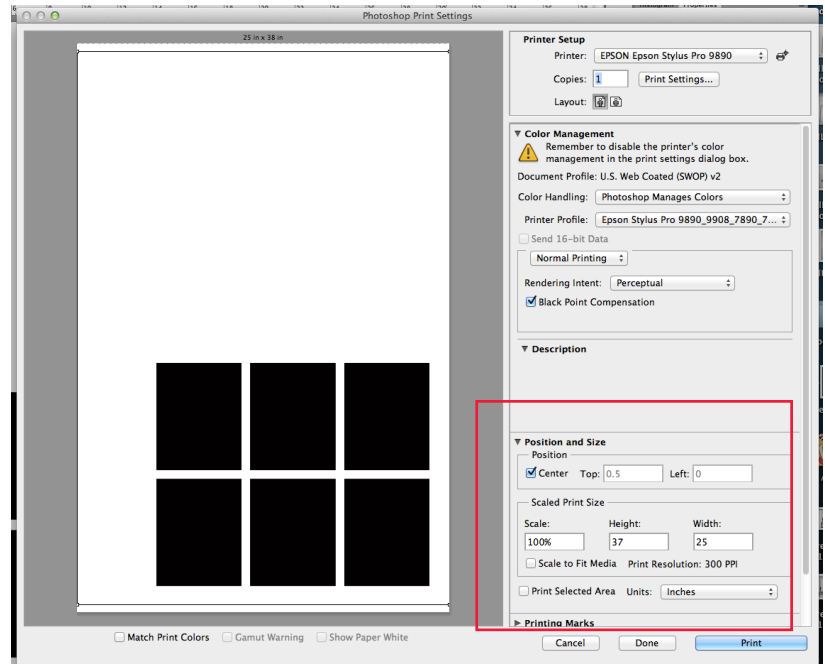


Figure 27