

Step-by-Step Guide: SHADOW/HIGHLIGHT ADJUSTMENTS for Digital Positives for Copper-Plate Photogravure using the Epson Stylus Pro 7800

Version 4.0 © 2014 – Marlene MacCallum and David Morrish

NOTE: The following data was developed without using RIP software. Density and curve data would be different for the Canon IPF Series Printers.

THE IMPORTANCE OF CONTROLLING SHADOW AND HIGHLIGHT DETAIL DENSITY:

A photogravure film positive produced through traditional wet darkroom techniques using lith film typically has a highlight to shadow density range of 1.4 – 1.5 (shadow detail to highlight detail). Solid black would have a density of 2.0 while the film plus base fog would have a density of 0.04, resulting in a density range of 1.9 for black to clear film. Etching a plate with this range maintains shadow detail differentiation from the absolute blacks while fully etching the highlight detail. Any greater density range makes it very difficult to etch a plate that has both visible shadow detail and non-white highlight detail. Note: shadow detail refers to the darkest tones in your image that have perceptible information and are visibly lighter than absolute black. Highlight detail refers to the light tones in your image that have tone and information but are darker than spectral white.

When working with digital output media on the Epson without RIP software, however, the total potential density range of the media is only 1.55. Therefore the available shadow detail to highlight detail density range is reduced to approximately 1.0. The densest portion of the range (1.35 – 1.55) will produce the solid blacks while the light tones (0.00 – 0.14) will provide the spectral highlights and clear plate tone. This reduced density range is advantageous for producing four-colour separation positives. If the goal is to make a black and white photogravure the compressed density range can be compensated for through extended etching times. The etching information is covered in the handout on process considerations for photogravures made with digital output positives. See also the document on Making Digital Film Positives for B&W Photogravure.

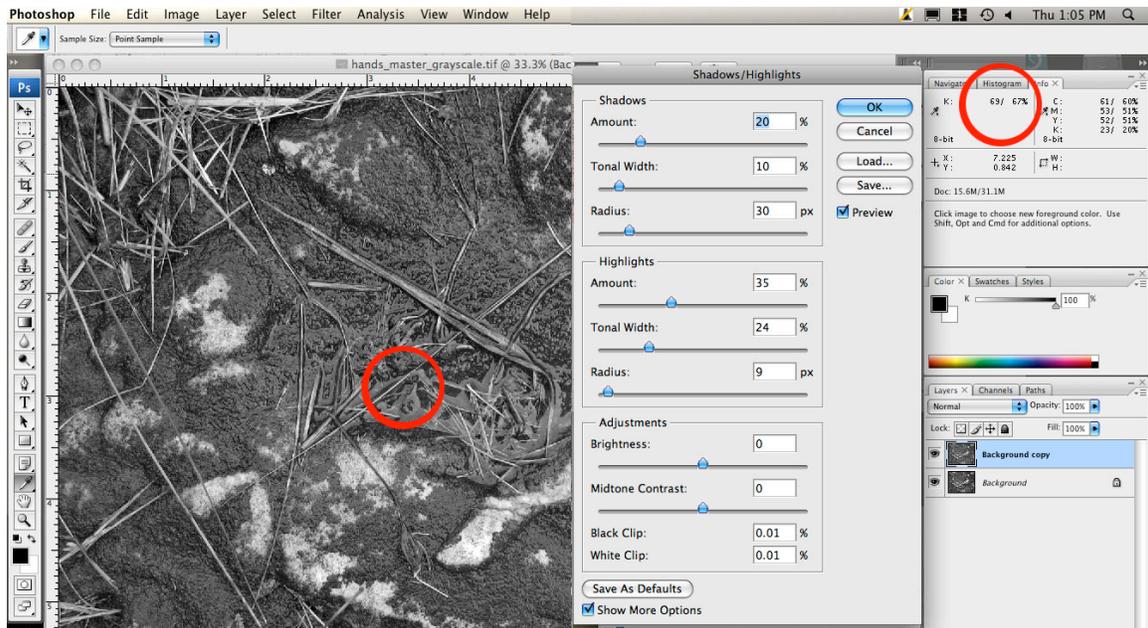
In a digital file, Photoshop allows you to measure and adjust the shadow and highlight tonal values of the image. This is very useful to ensure that the positive will have good separation in the shadow detail and enough density (tone) in the highlight detail to allow the highlights to be fully etched without over-etching the spectral highlights. The correct tonal range and output densities are established through two separate steps. The first is achieved by creating a shadow/highlight adjustment in a duplicate layer. The second is through the application of the printer curve adjustment layer. The shadow/highlight layer and the amount of adjustment necessary will be unique to every image. The printer adjustment curve is a standardized adjustment that you create for your specific printer and output media. It is crucial that the difference between the two steps be understood. The shadow/highlight adjustment step opens up the shadow detail and adds density to the highlight detail, reducing the overall image

contrast. This must be done because the etching and printing process will increase the contrast of the image. Therefore, in order to achieve the target image contrast, the positive requires a reduction in contrast range that is proportional to the increase that will happen at the etching/printing stages. In other words, the highlight/shadow adjustment is critical to maintaining control during the etching and printing stages. The printer adjustment curve compensates for the varying light blocking capacity of the inkjet pigment and dyes so that the final print will achieve the desired tonal range. This adjustment is critical to maintaining control during the exposure stage.

MAKING THE SHADOW/HIGHLIGHT LAYER AND ADJUSTMENTS FOR A B&W GRAVURE POSITIVE:

While in grayscale mode with your image at its finalized resolution, dimension, and with all retouching completed, go to Layer > Duplicate Layer.... Label it as: shadow-highlight, then hit OK. Working in this layer, go to Image > Adjustments > shadow/highlight.... Click on Show More Options to get full options. You will now have three option boxes: Shadows, Highlights and Adjustments. In the Adjustment box, zero the brightness, midtone contrast. The black and white clip should be at 0.01% (default).

In both the Shadows and Highlights boxes, zero the Amount, set the Tonal Width to a low value, up to 10% to start, and leave the Radius at 30 pixels which is the Photoshop default for pixels. You can save this as your default, or leave it at the original Photoshop default. Make sure the preview box is clicked so you can preview the effect of the adjustments. *Please be sure to read the Photoshop Help section on these controls so that you fully understand the function of each and how to control the tool.*



Begin by increasing the amount in your shadow adjustment. This will open up the shadows, making the dark detail more visible. If you place the cursor over an area of shadow detail, you will see the amount of change in the upper left corner of the Information palette (K: *original % / adjusted %*). (see screen shot, above) We

recommend that your shadow detail should be adjusted until the adjusted percentage reads 90%.

The amount of adjustment this requires will vary greatly with each image. The tonal width allows you to control how much of the tonal width this opening up is applied to. This will also vary greatly with each image. As you read the densities across your image, you will notice that the effect of the shadow adjustment is greatest in the darkest tones and then reduced in the mid-tones depending on the tonal width you chose. Avoid over adjustment as this can cause what looks like solarization. You can use the chart below to help you gauge the desired tonalities. Deciding which area is your shadow detail is very subjective. You may find that as you experiment with the shadow and highlight adjustment that your aesthetic preference changes. You should also familiarize yourself with the effect of the pixel radius, as this provides another nuance of control – increasing or decreasing the contrast.

For the highlight adjustment, determine which area in your image represents the highlight detail, or the lightest tones. Measure the original percentage and then use the adjustment tools to bring those tones to 10%. As per the shadow adjustments, decide how much tonal width you need to apply this to and adjust accordingly. Once you have made the adjustments, save these settings using the Save... button in the H/S window. We suggest you save this to the folder containing these image files.

A NOTE ON SHADOW/HIGHLIGHT ADJUSTMENTS IN THE CASE OF 4-COLOUR SEPARATIONS:

Our recommendation is that you work out the Shadow/Highlight adjustments on a grayscale version of your image. After you save these settings to your folder, you can then return to your CMYK file – create the duplicate layer and apply the settings to your colour image using the Load... button. When you do this, you will have a colour correction dialogue open (this does not appear when working on a grayscale file). If you find that the shadow/highlight adjustments adversely affect the colour – then you may have over-adjusted the shadows and/or highlights. Also note that it is important to apply the printer adjustment curve and Shadow/Highlight adjustment at the CMYK stage, not the RGB. Changes during the conversion from RGB to CMYK result in an incorrect application of the curves to the separations if applied to the earlier RGB file.