Refined Digital Black-and-White Print

Based on a workshop by George Schaub

Presented by Bob Matthews, January 2010

5 Basic Steps

1. **Convert to Black and White**
2. **Exposure/Contrast Global**
3. **Local Contrast/Tonal Refinements**
4. **Sharpen**
5. **Print**

Step 1 - Convert to Black & White

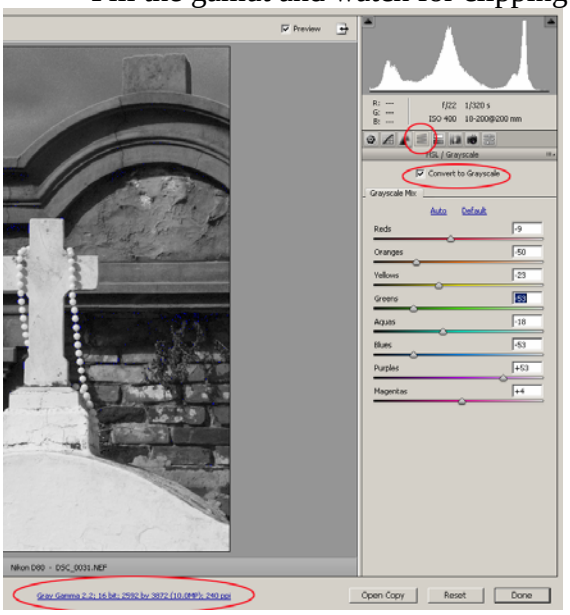
There are a variety of ways to convert a digital image to Black and White, including:

- **ACR – Adobe Camera Raw (Bridge, Lightroom)**
- Photoshop Desaturate
- Photoshop Channel Mixer
- **Photoshop CS3/4 Black and White Filter**
- Other Applications/Plug-ins (nik SilverFX Pro)

Converting to B&W with Adobe Camera Raw

Use the "HSL Grayscale" in ACR to convert to B&W.

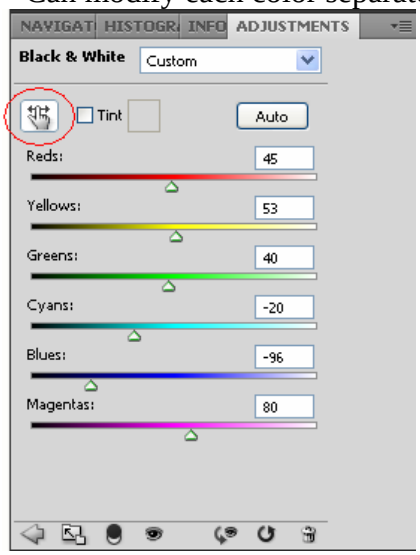
- Click "Convert to Grayscale"
- Move sliders to change brightness/darkness of corresponding color
- Fill the gamut and watch for clipping



Converting to B&W using Photoshop 3/4 B&W Conversion

Photoshop CS 3/4 B&W Conversion is similar to ACR converter, but easier to use.

- Create a New Adjustment Layer – B&W Conversion
- In "Adjustments" pane, click on hand to bring up eye-dropper
- Click on area on the image and move left-to-right (darken to lighten) underlying color
- Watch the sliders move for the underlying color
- Can modify each color separately



Step 2 Global Exposure/Contrast

This step is similar to picking the appropriate paper grade or filter and the correct basic exposure in the traditional wet darkroom.

As with everything else in Photoshop – there are several ways to adjust overall exposure and contrast.

Photoshop's Levels Adjustment Layer can be used to adjust Exposure and Contrast. Levels only allows you to adjust the "end points".

Photoshop's Curves Adjustment Layer gives you more information and control. You can get a non-linear contrast – varying the contrast in highlights differently than the contrast in mid-tones and dark areas.

- To see "first white" - hold <alt> key down and drag white triangle to the left.
- To see "first black" - hold <alt> key down and drag black triangle to the right
- Modify curve to increase/decrease contrast in highlights, mid-tones, and dark areas separately

Step 3 - Local Contrast/Tonal Refinements

Basics

- Analogous to darkroom burning and dodging
- Work on biggest problem areas first
- "Follow the path of the light" – darken areas around highlights and brighten areas around dark areas to increase local contrast

Painting with Mid-Tone Gray to Burn and Dodge

- Create a New Layer and set the **Mode** to **Overlay**
- Click the "Fill with Overlay-neutral color (50% gray)"
- Use the standard Paint brush tool to burn and dodge specific areas (Note: use soft edges on the brush)
    - Black to burn (darken)
    - White to dodge (lighten)

Curves Layers can also be used to adjust brightness and contrast in smaller areas for "burning and dodging"

- Select the area of the image to be dodged/burned – using your choice or combination of Select tools
- Create a new Curves layers for local contrast and tone. This layer will automatically get a "free mask" with your selection "revealed".
- Adjust the curve to lighten or darken what you want.
- You can fine tune the "free mask" by using the Paint Brush tool on the layer mask

Step 4 – Sharpening

- Sharpening can only be done on a flattened image or a "composite layer". A composite layer is a layer that contains a "flattened" image of all the layers below it.
    - To create a composite layer (<alt><ctrl><shift>e)
- Before sharpening, resize your image to your desired print size. Then Zoom in to "Print Size" so that you will be able to see what is going on.

Unsharp Mask - deals with general softness inherent in most digital images by adding contrast to pixel edges

- **Radius** - determines the number of pixels surrounding the edge that will be affected
    - Setting of 1 or 2 is best for most images
- **Amount** – the degree of sharpening that will take place
    - Large files (20MB+) - value between 100 and 200 works well
    - Smaller files – go lower
- **Threshold** - determines when sharpening will be applied – works like a brake
- **Rule of Thumb**
    - Image with lots of detail – higher Amount and lower Radius
    - Image with less detail – lower Amount and higher Radius

High Pass Filter - sharpens mid-tones.

Details are sharpened without over sharpening other areas of the image.

- Create a Composite Layer (<alt><ctrl><shift>e).
- Add a High Pass Filter to the Composite Layer.
    - The High Pass Filter is found under the "Other" Filters.
- Adjust the "Radius" to change the effect. The lower the Radius, the more dramatic the effect.
    - Try for a Radius of around 2
- Set the Blending mode of the layer to "Overlay"

Step 5 - Printing

General Guidelines

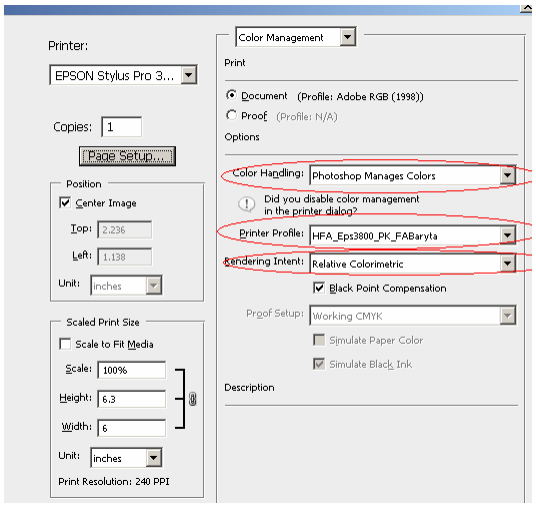
- Follow the instructions from the paper manufacture
- Use **paper** manufacturers' profiles. They can be downloaded from the **paper** manufacturer's web site.
- "Photoshop Manages Color"
- Size your image for printing using 240 dpi
- If the above doesn't work, let "Printer Manages Color"

Prepare your Image for Printing

- Save your work
- Flatten the image
- Resize image to desired print size, at 240dpi

Settings in the Print Dialog Box

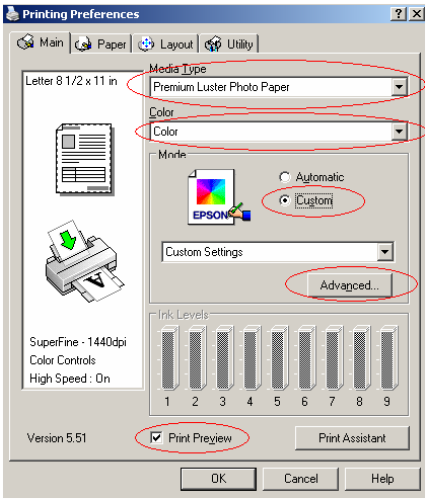
- **Check paper instructions from the paper manufacturer**
- Check "Photoshop Handles Color"
- Printer Profile – select paper manufacturer's profile
- Rendering Intent – "Relative Colormetric"



Refined Digital Black-and-White Print

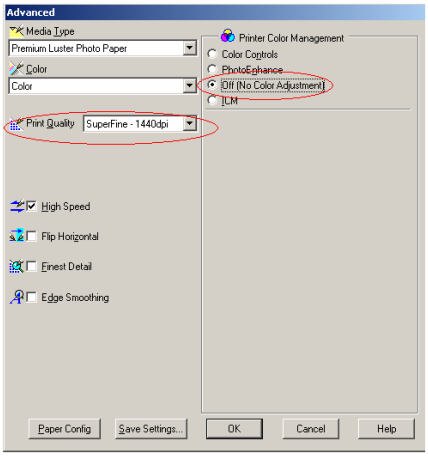
Set the Printer Preferences

- **Set the Media Type according to the paper manufacturer's directions**
- Set Color to "Color"
- Set Mode to "Custom"



Configure the Advanced Mode Settings

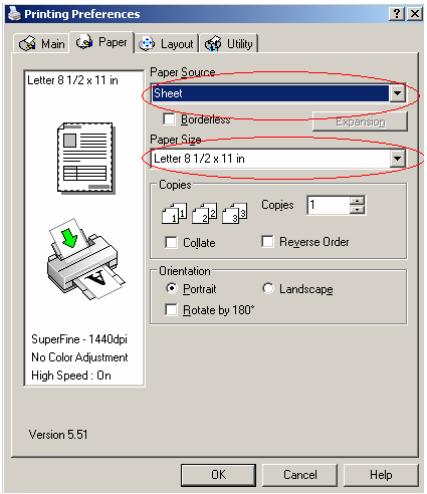
- For Printer Color Management, select "Off (No Color Adjustment)"
- Set Print Quality "Superfine – 1440dpi". For Epson printers, there really isn't any noticeable improvement at 2880dpi, but it does use more ink.



Refined Digital Black-and-White Print

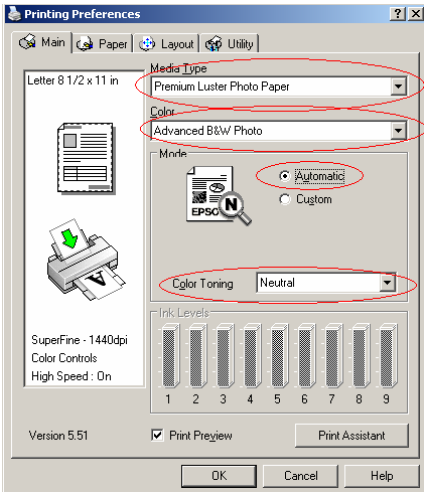
Page Setup

- Set Paper Size to size of the paper
- Set Paper Source per instructions from paper manufacturer
    - Thicker papers may need to be manually fed



When Using Epson Papers with Epson Printers you don't need any special printer profiles. The printers and papers have been developed to work together.

- Select the Media Type specified in the instruction sheet that came with the paper
- Set Color to "Advanced B&W Photo"



Scanning

- "First, do no harm"
- Bring as much information as possible into image processing software
- Scan for "full gamut"
- Maximum **optical** resolution of scanner
- Maximum bit-depth
- Beware of automatic dust removal

Resources

- Maine Media Workshops – www.theworkshops.com
- Book – Digital Photographer's Guide to B+W Landscape Photography, by George Schaub, published by Lark Books
- George Schaub blog: schaubphotoblogspot.com
- Paper Manufacturers
    - Hahnemuhle – www.hahnemuhle.com
    - Harman – www.harmon-inkjet.com
    - Moab, by Legion Paper – www.moabpaper.com
    - Bergger – www.bergger.com
    - Innova – www.innovaart.com
    - Museo – www.museofineare.com
    - Inkpress – www.inkpresspaper.com
    - Ilford Galerie – www.ilford.com
    - Epson – www.epson.com