

I. Basic color correction using Photoshop

A. This process is basic.

1. *It is designed to maximize the speed of recalculations.*
2. *It manipulates basically only three variables: highlights, middle-tones and shadows.*
3. *More complex color corrections can be done using curves: See Margulis for a more complete treatment of curves.*

II. Calibrate your monitor

A. Set the monitor's dials to where you like them (for example, in the built-in notches) and tape them in place.

B. Use the gamma control panel

1. *Found in the control panels folder in the Apple Menu.*
2. *Set gamma slider so the checkerboard pattern disappears.*
3. *Move the highlight color sliders until the white of the screen somehow approximates the color of the white paper (good luck!)*
4. *When you're finished, close the control panel.*
5. *This adjustment will affect how all color images for all programs are displayed on screen.*

C. Set the gray balance

1. *Start Photoshop*
2. *Open the file named Olé no Moiré found as follows: Applications folder: Adobe Photoshop 3.0 folder: Goodies folder: Calibration folder: Separation Sources folder.*
3. *Do nothing to the file.*
4. *Print the file.*

- a) It is best to print file to a calibrated imagesetter, then print the job on a representative press.
 - b) Second best is to print to a proofing system that is calibrated to a representative press. (We use the Rainbow.)
5. *Open the Image:Adjust:Levels dialog box.*
6. *Use the sliders on CMYK INDIVIDUALLY to adjust the image on the screen so that it look as close as possible to what YOU SEE on the printed proof.*
7. *Record on paper the gamma number (the center field at the top of the dialog box) for each color.*
- a) For example: C: 0.80; M: 0.64; Y 0.54; K: 0.83
8. *Click Cancel. Do NOT click OK.*
9. *Open the File:Preferences:Printing Inks Setup dialog box.*
10. *Set the fields as follows:*
- a) Choose the target gamut in the popup menu (usually SWOP).
 - b) Unless told otherwise by a printer, leave the dot gain at 20% (it's more or less the standard)
 - c) Input the gamma numbers you recorded in the Adjust:Levels dialog box into each of the four fields.
 - d) Check Use Dot Gain for Grayscale Images.
 - e) Click Save then name the settings with your name and save it on your disk.
 - (1) *To recall your settings at a future date, click Load and then find and open your gray balance settings.*
11. *Open the File:Preferences:Separation Setup dialog box.*
12. *Set the fields as follows:*
- a) GCR

- b) Black Generation Medium
- c) Black Ink Limit 95%
- d) Total Ink Limit 290% (This is the maximum accepted by most publication printers)
- e) UCA: Undercolor addition (only when necessary) 0
- f) Click Save then name the settings with your name and save it on your disk.

(1) *To recall your settings at a future date, click Load and then find and open your separation settings.*

- D. **You must understand that the changes you have made will not affect any open CMYK document. For the changes to be made, you must convert a document to a color model other than CMYK, then convert it back to CMYK.**

III. Open an RGB image

- A. **Scan a new document using File:Acquire:Agfa Photoscan**
- B. **Open an existing document**

IV. Run Unsharp Masking to eliminate the common softness of desktop-scanned photos.

- A. **The filter adjusts the contrast of edge detail creating the illusion of more image contrast.**
- B. **Choose Filter:Sharpen:Unsharp mask**
- C. **Set the fields as follows: (this is a workable example)**
 - 1. *Amount: 75% (the higher the percentage, the stronger the effect—can be 1–500%.)*
 - 2. *Radius: 1.0 pixels (value can be 0.1 to 250. A high value sharpens more of the pixels surrounding the edge pixels. Avoid too-high values because they cause a keyline effect.)*
 - 3. *Threshold: 3 levels (Values can be 0-255. It defines the required range of contrast between adjacent pixels before sharpening is applied to an edge. Low values produce a more pronounced effect.)*

4. *Click OK.*
5. *Photoshop will remember this setting and place it at the top of the Filter menu. In this way, you can apply the filter again by simply choosing Unsharp Mask from the Filter menu.*

V. Do any gross retouching

- A. **Cloning**
- B. **Eliminate blemishes**
- C. **and so on. Do not correct color in RGB.**

VI. Check and correct image size and resolution.

- A. **Use Image:Image Size.**

VII. Convert the image to Lab color

- A. **Choose Lab from the Mode menu.**

VIII. Display the Channels and the Info Palettes

- A. **Choose Window:Palettes:Show Channels**

- B. **Choose Window:Palettes:Show Info**

1. *If necessary, change the Info Palette Options so that the palette displays grayscale and CMYK readings.*

IX. Adjust the Tonal Range

A. On the Channels Palette, click the Lightness Channel to select it by itself.

B. Choose Image:Adjust:Levels

C. Move the dialog box out of the way

D. Resist the urge to click AUTO.

E. Use the eyedropper tool to move around the image.

1. *Set the eyedropper options to a 5 pixel square eyedropper.*
2. *Look at the Info Palette. It displays the dot percent of each spot.*
3. *Locate the whitest point and darkest point (highlight and shadows),*
4. *The highlight should be 5% and the shadow 95%. Use the input and output sliders until the highlight and shadow measure these amounts.*
 - a) The input levels sliders:
 - (1) *left: increases shadow percent*
 - (2) *center: changes midtones*
 - (3) *right: increases highlight percent*
 - b) The output levels sliders:
 - (1) *left: decreases shadows*
 - (2) *right: increases shadows*
5. *You may wish to move the gamma slider until the image looks like a pleasant overall black and white halftone. This step is not absolutely necessary.*
6. *When you're finished, click OK.*

X. Convert the image to CMYK color

A. Choose CMYK from the Mode menu.

1. *Photoshop now uses the data you supplied in the Printing Inks and Separation Setup dialog boxes to perform a color separation using its lookup table.*

XI. Do Global Color Correction

A. Use Image:Adjust:Levels to set the highlight to 5C2M2Y

B. Use Image:Adjust:Levels to set the shadow to 80C70M70Y70K. (This is 290% total ink coverage as specified in the Printing Inks Setup dialog box.)

XII. Do Specific Color Correction

A. Be most careful for skin tones. Rules of thumb:

1. *Most skin tones have equal amounts of Yellow and Magenta.*
2. *In Caucasian skin, the Cyan should be 1/3–1/5 of the Magenta.*
3. *Hispanic and African-American skin should contain more Cyan.*
 - a) *Darken skin by adding Cyan.*
4. *The Yellow can be up to 25% higher than the Magenta.*

B. Use Image:Adjust:Levels to set the gamma (midtones) of each process color.

C. Use Image:Adjust:Variations for a visual guide to making color changes.

1. *Assumes the color monitor is somewhat accurate.*
2. *You can change the highlights, midtones, shadows, and color saturation.*
3. *You can adjust the degree of alteration from fine to coarse.*
4. *You can display the clipping (total white or total black) that will occur if you make a given change.*

D. Use Image:Adjust:Replace color to change the hue, saturations, or brightness of a given color.

1. *After opening the dialog box, select the color in question with the eyedropper on the photo.*
2. *Choose Selection from the popup menu.*
3. *Set the fuzziness level so that the amount of the selected color you want to adjust is displayed in the preview.*
4. *Change the hue, saturation and brightness sliders until the desired color is achieved.*

E. Use Image:Adjust:Color Balance in place of the Levels Dialog Box.

F. For critical color correction, draw curves in the Image:Adjust:Curves dialog box.

1. *You can make the most accurate changes using curves because you can adjust every point on the tone curve instead of only the highlights, midtones and shadows.*

XIII. Make a proof of the color separation.

- A. Remember all the stuff about proper lighting conditions.**
- B. Discuss the work with the client.**
- C. Make color changes as necessary.**

XIV. Output the job to the imagesetter.

- A. Be sure the imagesetter is properly exposing the film.**