



Preparing screen shots for publication

About the screen shots

This chapter extract is taken from the Photoshop CS4 book. The main screen shot that's used later in this section features a Photoshop CS4 Camera Raw screen grab. Although the Camera Raw UI has now been updated of course, the steps you would actually apply to an image such as this remain exactly the same in Photoshop CS5.

Preparing screen shots for publication

When I first started publishing books on Photoshop I was keen to make sure that the screen shots on the printed page looked as good as possible. Using the knowledge I had then about CMYK reproduction, I was able to devise some special techniques for preparing screen shot images so that they would all look as good as possible in print. I have been using these methods for over 12 years now, but here for the first time I can share the information as a Photoshop output preparation technique.

Scaling dialog screen images

Let's start with the simple stuff first. Screen dialog captures are usually too small to be reproduced at 100% on the page and the dialog text will be barely readable unless you scale these up in size to say, at least 135%, and the ideal is probably somewhere around 200%. It is possible to do this in Quark or InDesign, but the problem here is that when you enlarge images this way you can sometimes end up with jagged edges. If the original screen dialog image has a resolution of 300 pixels per inch and it's enlarged to 150% on the page layout, then the pixel resolution effectively becomes 200 pixels per inch. In the case of photographic images, 200 pixels per inch is a little on the edge of what the desired resolution should be for magazine or book reproduction, but just about acceptable. In the case of screen shot images, the sharp lines will soon break down.

The solution to this is to play safe and make the screen dialogs bigger in Photoshop. You can achieve this by using the Image Size dialog to enlarge the pixels by 200% using the Nearest Neighbor interpolation (see Figure 1). This interpolation method enlarges the pixels precisely without introducing any anti-alias smoothing. The net result is that straight line edges are extended accurately and you end up with files that reproduce more sharply on the page. There is no need to sharpen of course. All you have to do is set up a Photoshop action to do the following: set the image resolution to 300 pixels per inch (without resampling) and then resize the image to 200% document width (using Percent), with 'Constrain Proportions' and 'Resample Image' checked.

What I usually do is write a complete action (Figure 2) that also includes an Image ⇨ Trim... command (to remove surplus pixels around the edges of the screen dialog) as well as a Convert

to Profile step in which I convert the screen shots from the screen capture RGB space to sRGB. Why sRGB and not Adobe or ProPhoto RGB? Unless you are using an Eizo or high-end NEC display, the monitor space is probably closer to sRGB than anything else, so it makes sense to convert to a standard RGB space that has the same kind of color gamut. Lastly, I add a step that saves out the file as a TIFF image.

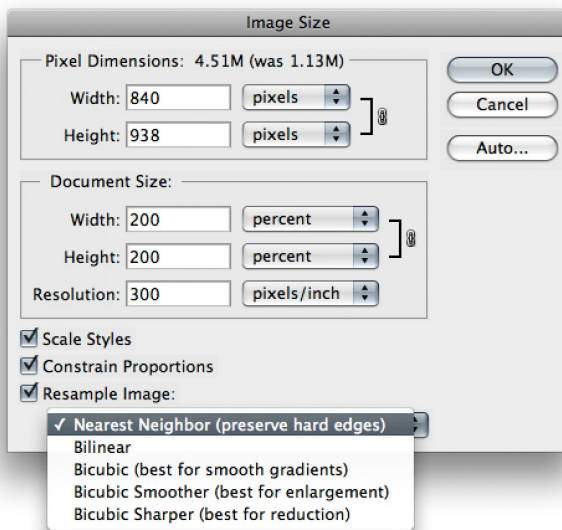


Figure 1 This shows the Image ⇌ Image Size dialog. To resize screen shots, set the Document Size to 200% and the Resolution to 300 pixels per inch with the Constrain Proportions and Resample Image checked. It is also important to set the interpolation method to Nearest Neighbor.

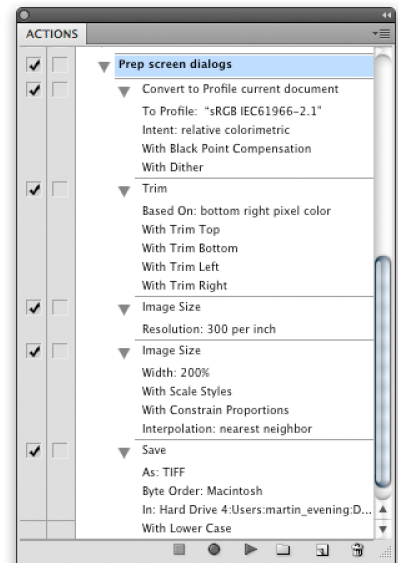


Figure 2 This shows the action steps normally recorded for preparing a screen shot dialog ready for placement in a page layout as an RGB master, before it is converted to CMYK. The key steps are as follows: convert to sRGB and trim the image of any surplus pixels. Go to Image Size and set the resolution to 300 pixels per inch (no resampling). Go to Image Size again and resize to 200% using Nearest Neighbor interpolation. Lastly, a save command using the TIFF format.

Creating a Droplet to process screen shots

The action steps recorded in Figure 6.10 can now be converted to a droplet so that you can then simply drag and drop screen shot files to the droplet and they'll be automatically converted to TIFF RGB images. To create a new droplet, go to the File ⇨ Automate menu and choose Create droplet (see Figure 3). Click on the Choose... button to locate the folder where you wish to save the droplet, name it and click 'Save' to return to the main Create Droplet dialog. In the Play section, the currently selected action will be shown listed, so there is no need to change anything there. In the Destination section, click on the Choose... button and locate the folder where you would like to save the processed screen shots to (usually in the same folder as where you save the droplet). Beneath that is the 'Override Action "Save As" commands' option. This must be checked because the action you are using for the droplet contains a 'save as TIFF' step and you'll need to override the save destination used when the action was recorded.

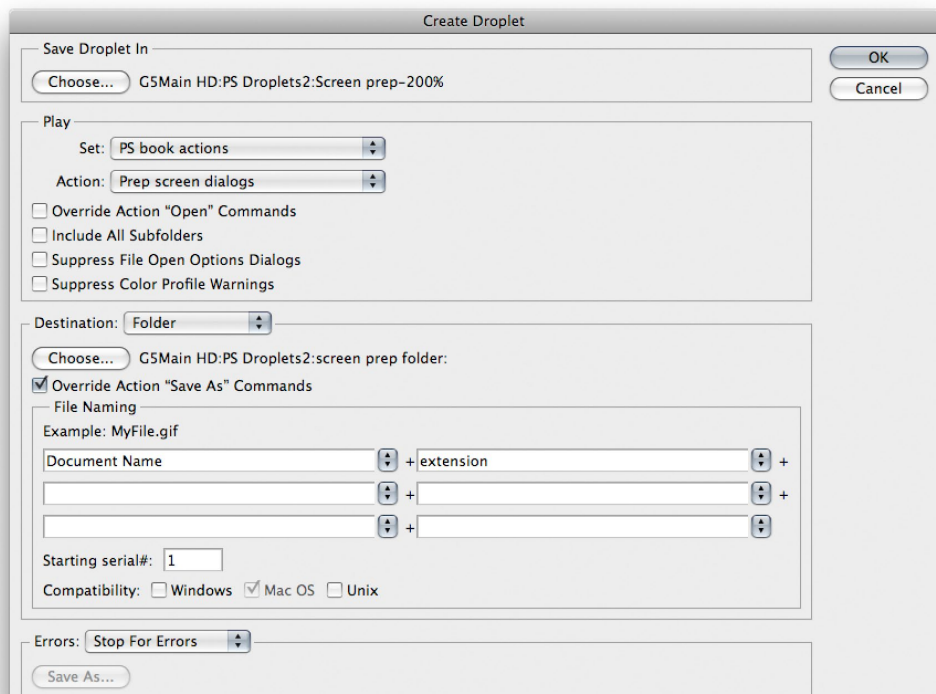


Figure 3 This shows the Create Droplet dialog.

Max Black generations

Screen shot interfaces usually contain a large amount of gray. It is therefore important to make sure that the gray elements are printed as neutral as possible. A standard CMYK conversion will use a certain percentage of cyan, magenta and yellow ink combined with the black plate to produce the gray colors. The problem here is that if there is any color drift in the press during a print run, this will show up in the predominant gray colors. To address this, we can use a custom CMYK conversion where the GCR Black generation is set to Maximum (see Figure 4). If you do this, the CMYK conversion uses the black plate only to generate the neutral gray colors and none of the cyan, magenta and yellow. If you study the channels shown in Figure 5, you can see how the channel makeup of a Max black generation CMYK separation compares to a standard CMYK conversion. The net result is that no matter how much the colors drift during a print run, the dialog gray colors will always print gray, because only the black plate is being used to print the gray colors.

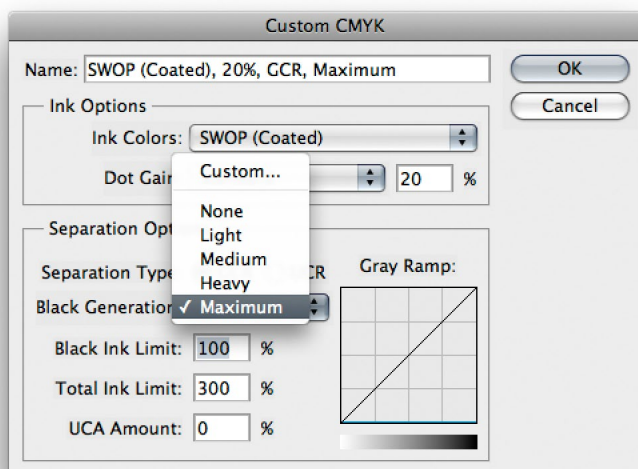


Figure 4 To create a Maximum Black GCR generation separation setting, go to the Edit menu and choose Color Settings... Then go to the Working Spaces section, mouse-down on the CMYK menu and choose Custom CMYK... Make sure the GCR button is checked (and not UCR), then go to the Black Generation menu and choose 'Maximum'. Once done, click the OK button. You can now save this as a custom Color Setting and name it something like 'Maximum Black GCR'.

Dot Gain and Ink limit settings

The settings described in Figure 4 show how to set a Maximum Black GCR setting. Don't forget that you will also need to know from the printer what the dot gain should be plus which Ink Limit settings to use.

Scaling the image previews

This step is optional, but if you intend using a screen shot image large on the page at close to the 200% scaled size and the screen shot contains a large image preview, it can be a good idea to replace the 200% 'scaled up' preview image with an actual pixels resolution image. What I sometimes do is to locate the original image and place it as a layer and scale this image down so that it matches the underlying preview image.

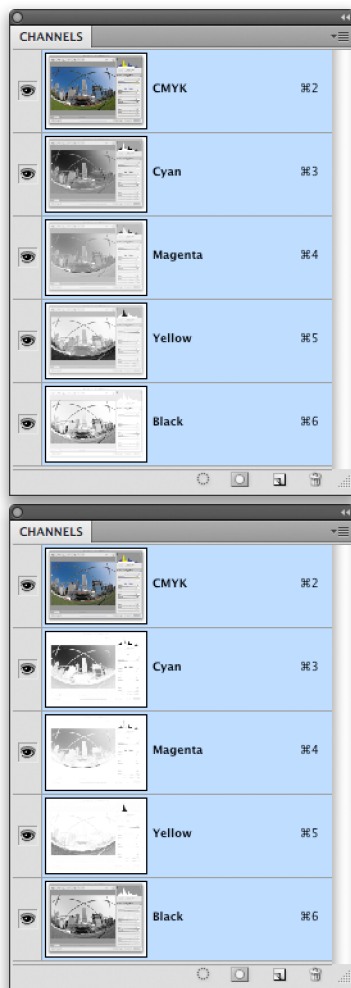


Figure 5 This shows two screen shots of the Channels panel after a CMYK conversion. The one on the top shows the result of a Medium black generation CMYK separation. You will note how the gray colors are generated using a combination of ink from all four plates. The Channels panel on the bottom shows the outcome of a Maximum black generation GCR separation. You will notice here how all the gray colors are printed from the black plate only and a minimal amount of color information is printed using the CMY plates.

Recording a Max black separation action

The next step is to setup another action, this time to record a conversion to a Maximum Black generation CMYK space. Once you have configured a Max Black GCR custom CMYK setting in the Photoshop Edit ⇨ Color Settings, you should save this as a new custom Color Setting (Figure 6). You can then record selecting this setting as part of an action, but don't forget to also record resetting the Color Settings to the normal default at the end.

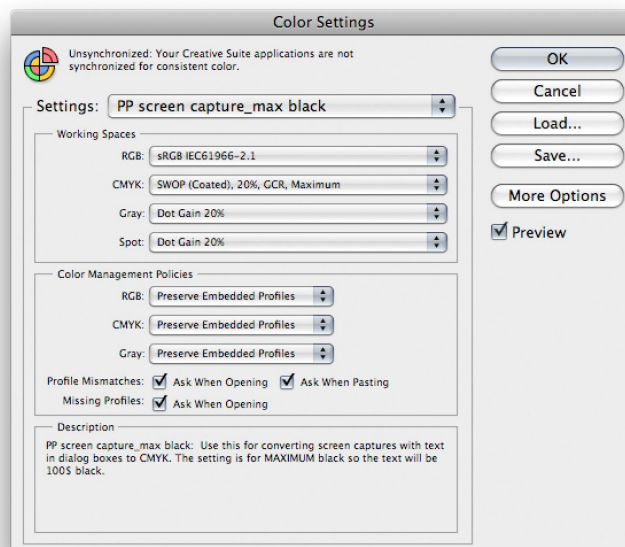


Figure 6 This shows the Color Settings with the Maximum Black GCR separation saved as a custom setting that can be called as part of an action.

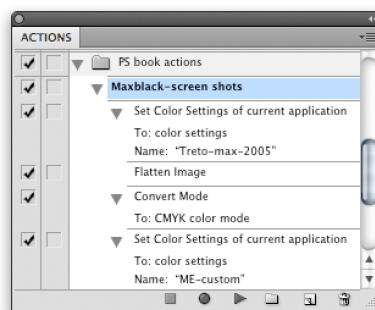
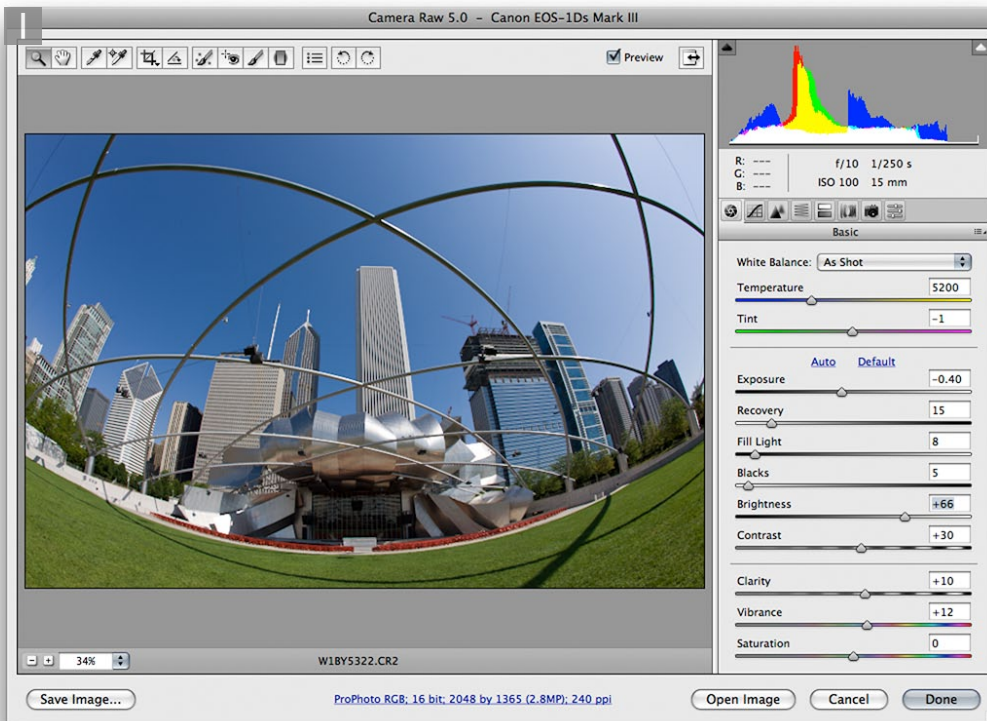


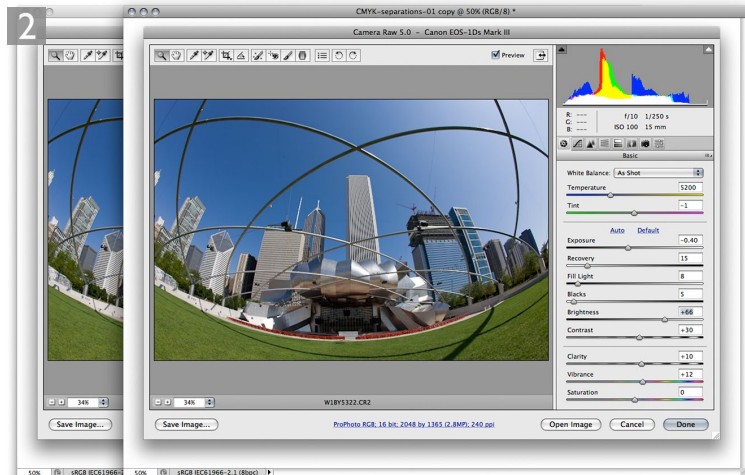
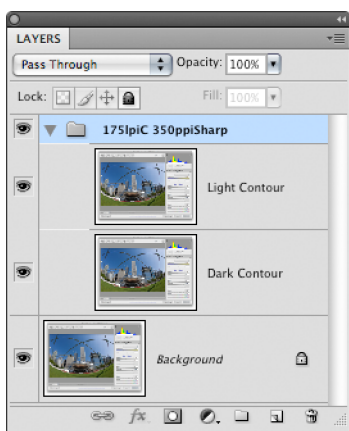
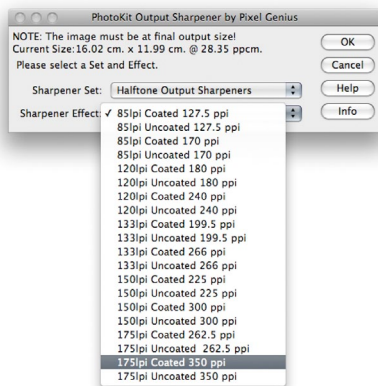
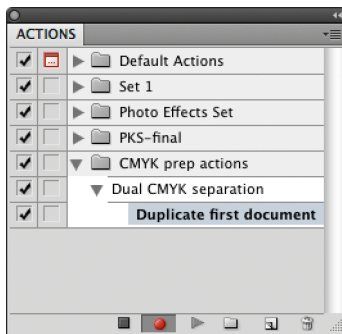
Figure 7 The actions steps recorded for converting an RGB image to a Maximum Black GCR separation and resetting the Color Settings to normal again.

Dual CMYK conversions

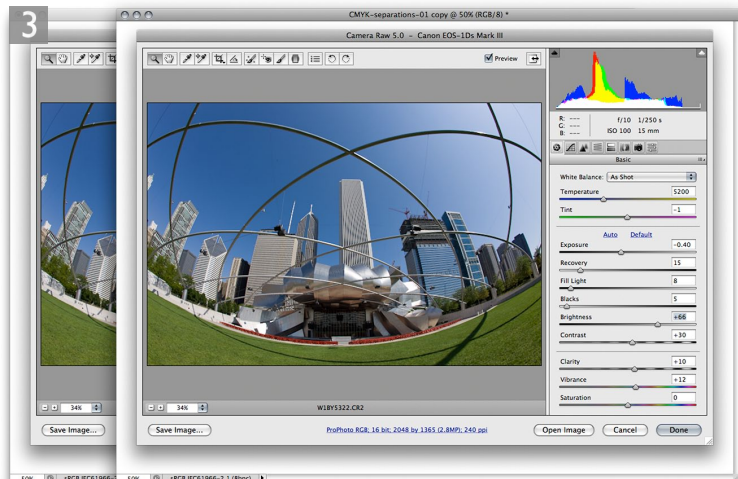
Maximum black generation separations work great with standard dialog shots, but if you convert a photographic image using a Max black separation, the results will look terrible in print and you'll end up with photos that have dull, lifeless shadow detail. So, when converting dialog screen shots that contain large preview images, the ideal solution is to carry out a dual CMYK conversion in which the dialog components with all the gray interface are converted using a max black separation and the image content area is converted using a light or medium black generation separation. This is a tricky technique to carry out, although as you can see, the process can be automated to a certain extent by recording these steps as a Photoshop action.



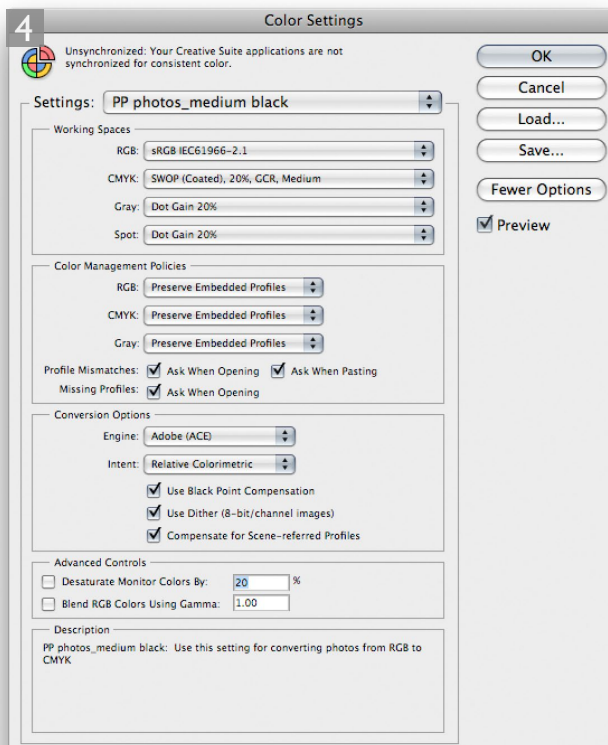
1 We start here with a screen shot in which the screen capture image I used for this step-by-step contained a large image preview. So far all I did here was to follow the steps described earlier. I scaled the screen shot to 200% using nearest neighbor, trimmed the white surround area and converted the capture image to sRGB.



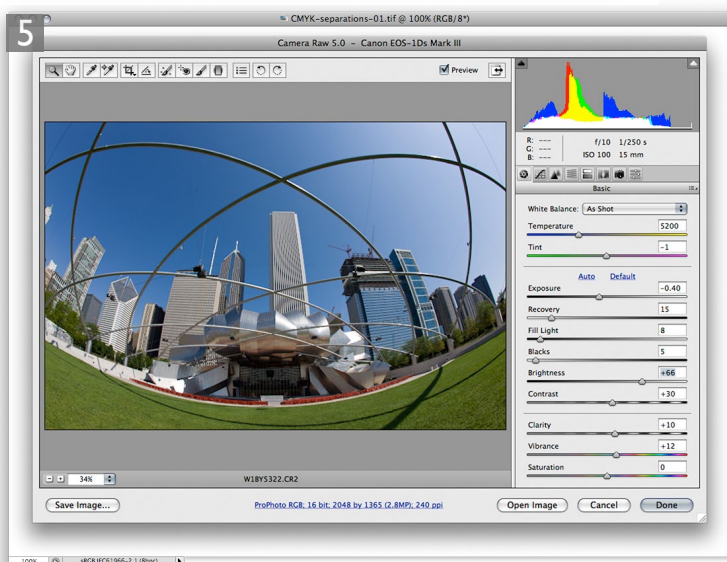
2 I now wanted to record the following steps as a Photoshop action. I created a new action called 'Dual CMYK separation' and clicked the Record button. I then went to the Image menu and chose Duplicate... This created a copy version of the opened screen shot image.



3 With the duplicate image selected, I now needed to optimize the CMYK conversion for the photographic image. To start with I wanted to sharpen the image for CMYK print output. You can use whatever method you prefer here. You could apply an Unsharp Mask filter, but in this instance I chose to use the PhotoKit Sharpener plug-in to apply a half tone sharpening. Now, because the image has been enlarged to 200% and the chances are it will be placed at around 75% on the page, the best sharpening setting to apply here was one for a 350 line screen. I applied the Photokit Sharpening effect, which as you can see added a layer group above the Background layer.

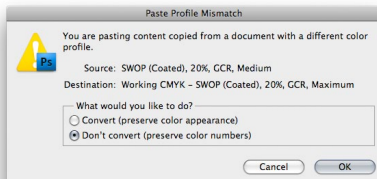
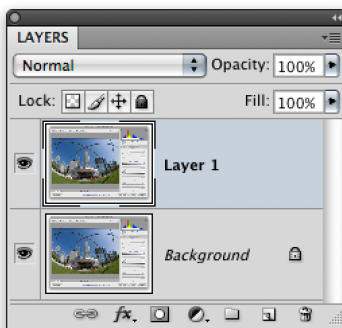
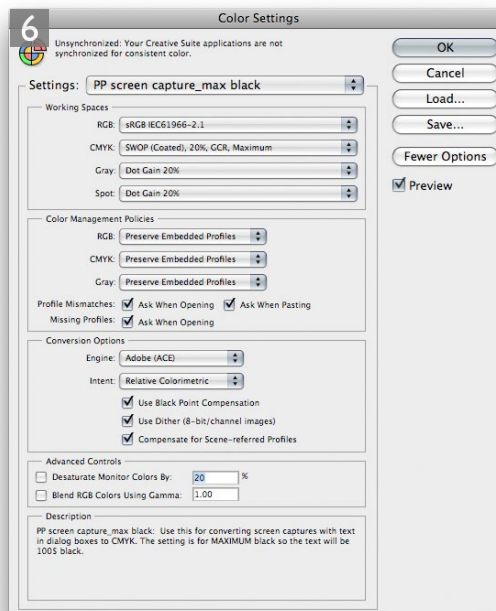


4 I then flattened the image, opened the Color Settings and selected a saved preset for converting photos to the appropriate CMYK setting for converting normal photographic images. I clicked OK and then converted the image to CMYK.



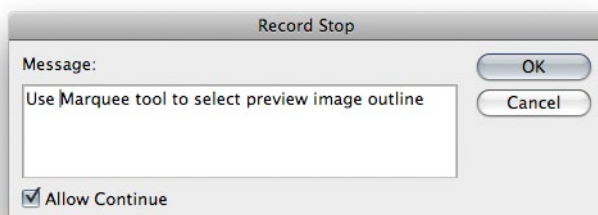
5 With the Duplicate image still selected (which don't forget must be flattened), I chose Select ⇒ Select All, followed by an Edit ⇒ Copy command and closed the Copy image document without saving.

6 This left just the original screen capture image document, I again opened the Color Settings and this time selected a preset for applying a Maximum Black generation separation conversion, clicked OK and converted the image to CMYK.

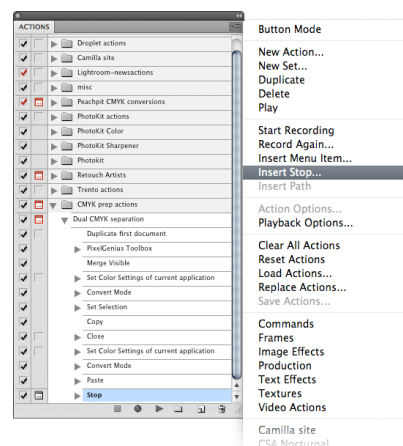


7 I now had just the original screen capture document open and used the Edit ⇨ Paste command to add the duplicate screen capture image as a new layer. This popped a warning dialog alerting me to the fact that the pixels I was about to paste were in a different CMYK space. If I selected 'Convert Colors' I would end up converting the pasted pixels to the Maximum Black GCR generation CMYK space. The correct option here was to choose 'Don't Convert' and preserve the numbers, since the whole point of this technique was to create a single CMYK image that is made up of two separate CMYK conversions.

8



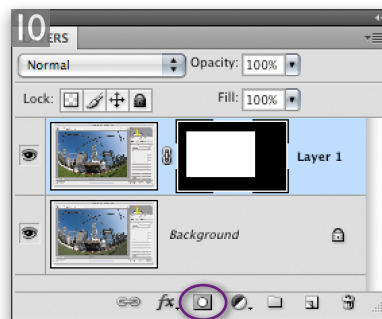
8 We now come to the tricky bit. At this stage I had recorded all the action steps up until the point where the normal CMYK separation version overlaid the Maximum Black GCR separation version as a new layer. Now is a good point to insert a pause into the action so that when replaying the action steps you get a chance to interact with the image before continuing with the final action steps.



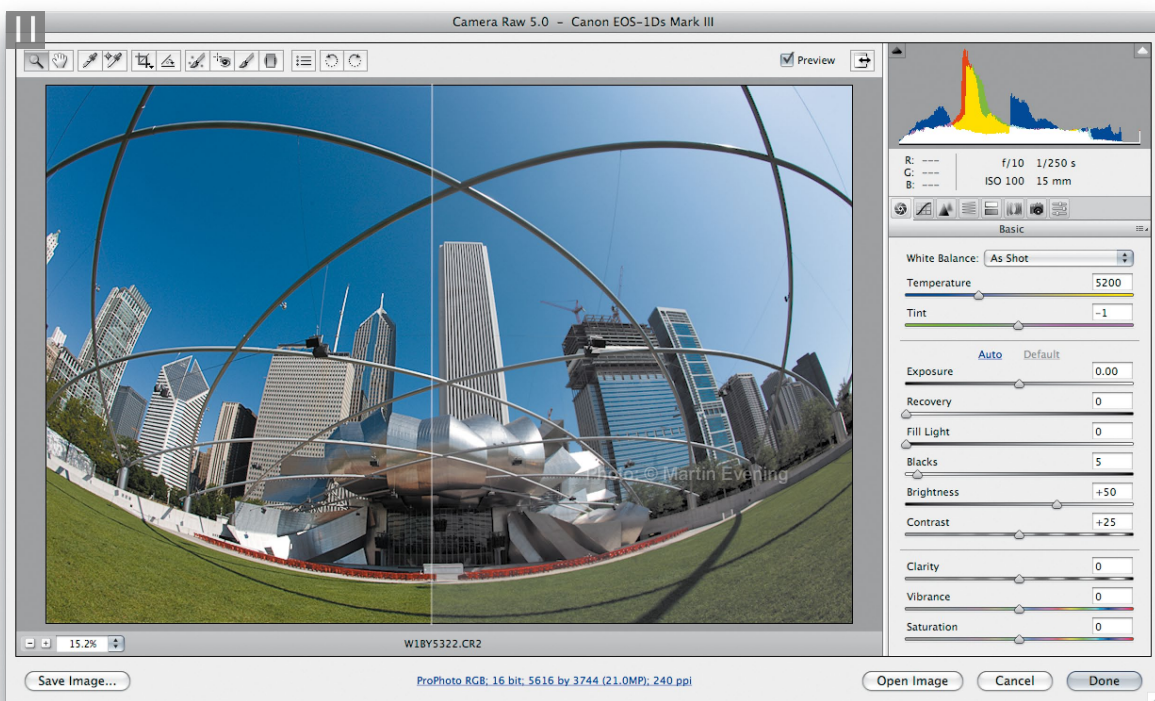
9



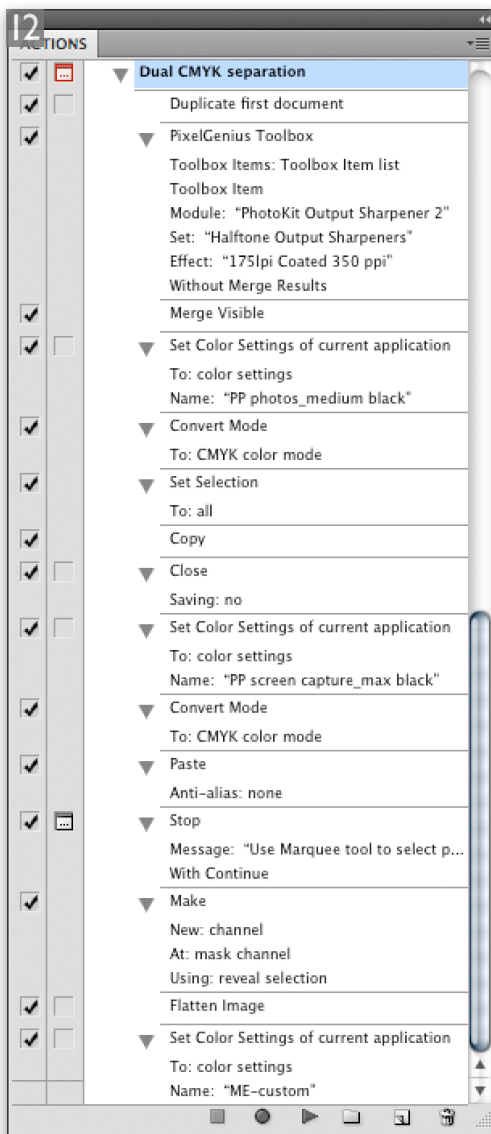
9 Here is the part that has to be done manually. When replaying the action I would at this stage need to select the rectangular marquee tool and drag carefully to select the exact outline of the image preview. It is crucial to make the selection as accurate as possible and define the image area precisely to the nearest pixel. As I say, this step is not something that you would record as part of an action and after inserting the Stop shown in Step 8, you would continue recording the action as directed over the page in step 10.



10 To complete the action steps, I recorded clicking on the Add Layer Mask button (circled), which would add a layer mask based on the marquee selection that revealed the selected area and hid everything that was outside the selection area. All I had to do then was to choose Layer ⇒ Flatten Image and record resetting the Color Settings back to the normal default settings that I would normally use and then click on the Stop button to end the recording.



11 For this last step I created a CMYK separation where the left half shows how the screen capture image would reproduce using a dual Max black plus Medium Black GCR separation (left) and how it would look using a Maximum Black GCR separation only (right). I have no idea how these will print, but you should see a definite decrease in image quality with the Maximum Black GCR separation on the right.



12 This shows the final list of Action steps that were recorded in the previous steps. As before, you can convert this action into a droplet where you can then simply drag and drop a prepared RGB screen shot image to the droplet and let Photoshop process the image automatically. All you have to do is follow the stop prompt and apply a marquee selection to define the preview, before hitting the Continue button to complete the final few action steps.

Book resources

If you want to learn more about printing from Photoshop, I can recommend some further reading: *Mastering Digital Printing* by Harald Johnson is a comprehensive title that does a good job of covering the subject of printing in extensive detail; *Real World Color Management* by Bruce Fraser, Chris Murphy and Fred Bunting; and also *Color Management for Photographers*, by Andrew Rodney. These are the industry bibles on the subject of color management and printing.