Techno-babble

Preparing photos for reproduction

Preparing a photo for publication means **scanning** it, putting it in the right **mode**, **cropping** it, adjusting the **brightness** and **contrast**, **sizing** the photo and **saving** it.

• By Bradley Wilson

As technology advances, people producing publications are expected to more than they've ever had to know before. For example, until the mid-'80s, staffs produced most yearbook pages (something like 98 percent) on paper with typewritten copy sent to the publisher to typeset and place on the page. Then came the Macintosh, PageMaker and the laser printer. For another decade, staff members still sized their photos using cropping devices, proportion wheels and grease pencils. Then came inexpensive, high-quality scanners and Photoshop. Now, students have to learn about subjects and verbs as well as they have to learn about PostScript and pixels per inch.

Preparing a photo for reproduction is relatively painless if you start with a quality negative or print and know in what type of publication it's going to be printed and how big.

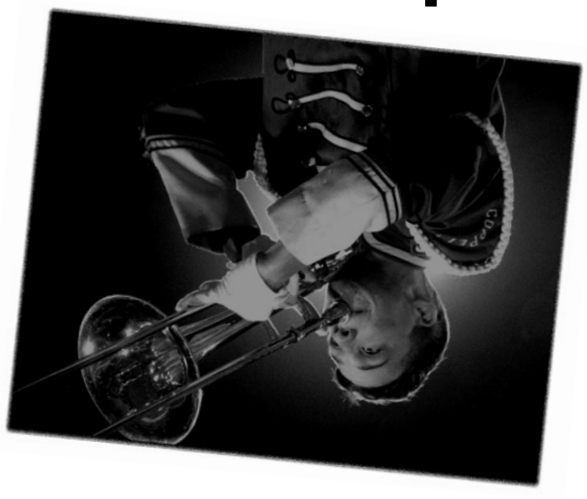
This sounds a lot simpler than it really is. Understanding the relationship between the finished publication's line screen and the resolution at which the photo must be scanned involves algebra, something that scares some students and instructors away. Mathematically, the relationship is simple: the scanning resolution at final size is twice the line screen. So, ppi = 2 * lpi, at final size.

Instructors must also know how the photo is going to be reproduced. If it's a color photo to be placed in a documented to be printed, the color mode is CMYK since the printed page consists of four process colors, cyan, magenta, yellow and black. Computer and television monitors only require red, green and blue, hence RGB mode is used for images to be published in those media. Grayscale is always a satisfactory mode for black-and-white images.

But the learning doesn't stop there. Instructors must also teach their students about all the work that would traditionally be done in the darkroom including cropping, dodging, burning. In the digital world, however, it doesn't require a box of expensive photo paper to teach the difference between contrast and brightness.

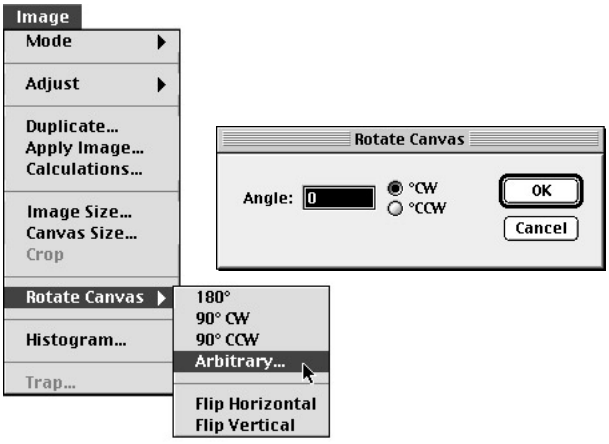
When it's all said and done, the photo must be saved in a file format that's compatible with the program into which it's to be imported.

And just think, this technology is not



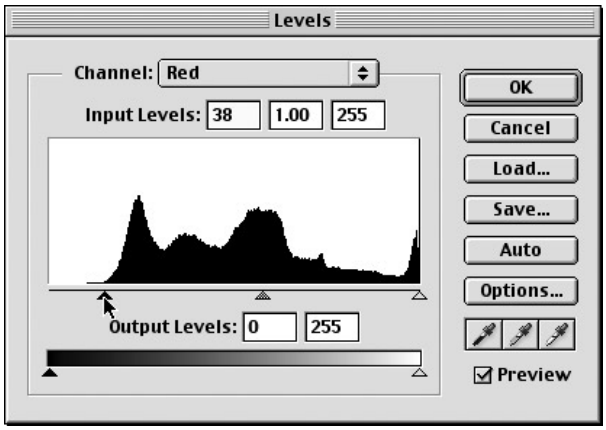
STEP 1: SCAN

Scan the image at a resolution and size slightly higher than you think you're going to need. I scanned this image at 300ppi at about six inches wide even though I knew I would never use it that large and only needed 266ppi for a 133lpi line screen that the printer could hold. You can throw away information in Photoshop but can't just make up new information.



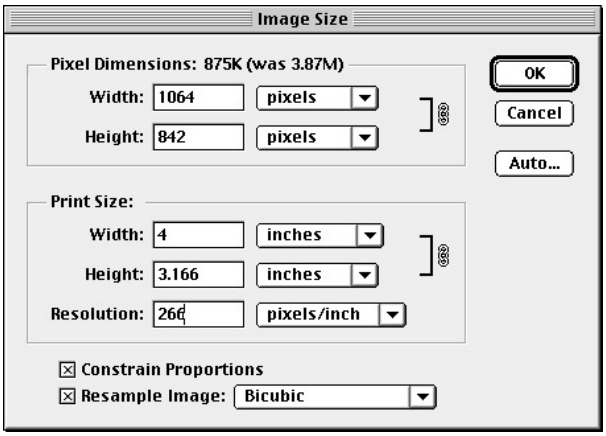
STEP 2: ROTATE AND CROP

Rotate the canvas so you can see the image facing the right direction, if necessary. Then use the cropping tool to crop out unnecessary portions of the photo. Skillful cropping can really improve a photo.



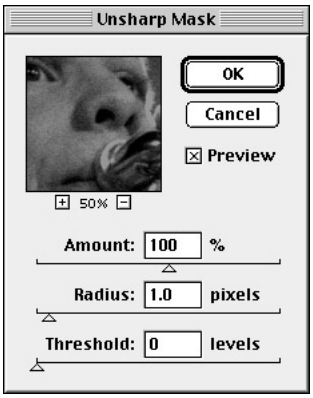
STEP 3: ADJUST LEVELS

Although you can do the same thing a little more precisely with Curves, adjusting levels is a little easier to understand at first. Adjust the highlights arrow and the shadows arrow until the blackest black (shadow) and whitest white (highlight) look right. Then pay careful attention to the mid-tones. Even on the best photo, moving the midtones arrow (gray) to the left (towards the shadow) will improve the way the photo reproduces. Moving the midtones arrow to the left brings out more detail in the dark areas. This photo had a lot of black in it so the curve is weighted on the left side (the shadows).



STEP 4: SIZE

You've got the photo looking good, now it's time to size it. As with the scanning operation, it's better that the photo be a little large. It should never be too small for the space on the page. However, larger photos take up more space. Keep the proportions constrained so you don't stretch a photo in one direction accidentally. In this case, the photo was going to be used just under four inches wide so typing in 4 inches for the width was perfect. Since it's being reproduced in a magazine that the printer says uses a 133 line screen (133 lpi), the resolution was changed to 266 ppi (twice the line screen), lower than the 300 ppi at which the photo was scanned. Notice that the file size was originally 3.87 MB and now it's only 875K, a savings of 76 percent.

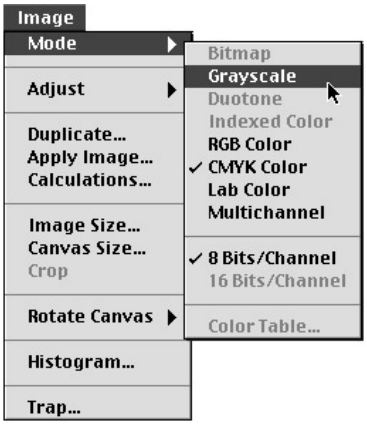


STEP 5: UNSHARP MASK

There is some loss of quality in the scanning process. Unsharp Mask helps bring out the places where shades of gray intersect, improving the reproduction quality. However, the effects should be hardly noticeable on the screen. An amount of 100 percent, with a radius of 1 and a threshold of 0 levels works for the average photo.

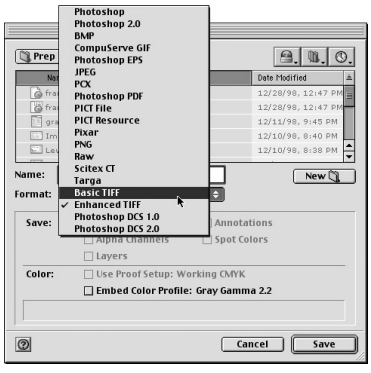
FINAL PHOTO

The final photo, in Grayscale or CMYK mode for print or RGB mode for Web/screen display, should have a good contrast range – a good black, a good white and good shades of gray in between. The subject should fill the frame and should be sharp.



STEP 6: COLOR MODE

Save black and white photos in grayscale mode. Save color photos for printed publications in CMYK mode; and save color photos for electronic publications in RGB mode. Since the monitor only displays RGB, work in RGB or Grayscale, not CMYK.



STEP 7: SAVE

The final photo should be saved in a format that's compatible with the software you're using for publication. For PageMaker and QuarkXPress, that usually means TIFF. EPS files also work well but are larger. For photos that are going to be viewed on the Web, in PowerPoint or on CD, JPEG works best.

PHOTO FORMATS

PRINTED PAGES
TIFF....Tagged-Image File Format
EPS.....Encapsulated PostScript

WEB PAGES, CD, PRESENTATIONS
JPEG...Joint Photographic Experts Group
GIF.....Graphics Interchange Format (not good for photos)

AVOID
PICT....“Picture”