

COLOR CORRECTING PHOTOS:



A Magenta Color Cast

When making color corrections to a photograph, it's tempting to focus on the most obvious color problem, make a selection of that problem area, and apply corrective action only to that area. The problem with the "selection method" of color correcting, is that if there is a color shift, or caste, in one area of a photo, there is probably a color shift in the entire photo.

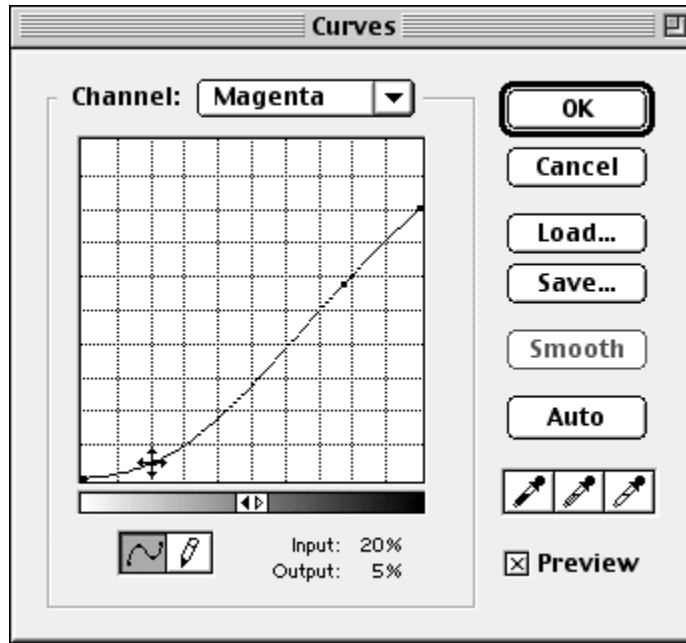
In the instance above, the most obvious problem is too much magenta in the model's skin (unless she is horribly sun burned, which we can assume she is not). If we select just her skin and remove magenta, then we are left with a color-correct model sitting in a pinkish boat on purple water, below a purple sky. Obviously, we then would have to make further selections to correct those areas, and we would stand a great chance of ending up with unrealistic edges on our selection areas. Not to mention the time and effort required to make multiple selection and sets of color corrections.

Again, upon seeing the drastic color shift in the model, we could assume that the entire photo suffers from the same fate, which it does, and make an overall correction.

Using PhotoShop Color Controls

In Photoshop there are several ways to make color corrections, but we will deal only with the "preferred" way: Using Curves (Image>Adjust>Curves) and the Info Palette (Window>Show Info).

Info Palette - The information palette is critical to making informed judgments about your color. It should be relied on more than your eyes and your monitor, because both your eyes and your monitor can lie to you, but the info palette never will. Trust the Info Palette. Use the Info Palette. When making color corrections, make sure that your Info Palette is open and visible before you open the Curves dialog box, and that your photo is in CMYK mode. In the Info Palette Options, set your first color readout to Total Ink, and your second to Actual Color.



Curves - Curves allow the user to adjust the input values (the before) and the output values (the after) in a digital image. This can be performed on the entire image as a whole, or on individual channels. When dealing with a color caste, certain channels will be the primary recipient of attention, and others may be ignored entirely. In the case of the bathing suit beauty, we know that too much red means corrections in the magenta and yellow channels, because red is made up of magenta and yellow.

Following are the steps to evaluate the color balance in a photo:

First, we must define the problem. Our eyes and the monitor tell us that there is too much red. But remember, we don't rely on our eyes and the monitor, so we must use the info palette to confirm and **define** the problem. Without a definition of exactly what values are out by how much, how can we correct anything?

In order to detect a color imbalance, we must first know what a particular color should *be*. This doesn't mean that we must memorize the CMYK makeup of every color known to man. Far from it. We must memorize only three basic colors, one or more of which is in almost every image: Sky Blue, Flesh Tones, and Gray (Neutral).

In our bathing beauty shot, we happen to have all three. (Isn't that a coincidence!) So, let's look at the color values of our sky, flesh tones, and neutrals (grays). First, the sky in one target area is 80% cyan and 60% magenta, with insignificant amounts of yellow and black. We know that the **magenta in sky blue should be half that of the cyan**, so we have confirmed the presence of a magenta caste, and, more importantly, we now have an idea about how much magenta to take out. But that one measurement is not sufficient to get a truly reliable reading, so we continue reading the sky in several places. In this photo, we find that, whether the sky is darker or lighter, there is roughly twice as much

magenta as there should be. We make note of this, and move on to our next target: Skin tones.

Skin tones in a Caucasian person should consist of roughly equal parts of magenta and yellow, and a dash of cyan (equal to 15-25% the value of the magenta and yellow). Darker skinned people will have more cyan, and lighter skinned people will have less. Oriental people will have little cyan, and a smidgen more yellow than magenta.

When we measure the skin tones on our model, we find that she has way too much magenta, (surprise) and a smidgen too much cyan. For that matter, we suspect that she has too much yellow, also. In other words, she has too much of everything, but not all in the same proportions.

OK, on to the grays, or neutral colors, which we will find in the boat and the clouds. Neutral colors should have equal amounts of yellow and magenta, with 10-20% more cyan. (In theory, there should be equal amounts of each color, but cyan is a weak ink, and needs some help.) In the lighter neutral colors, we find an excess of magenta, which by now we expect, but we also find that there is too much cyan, as well.

Let's recap our findings:

- Magenta is the main culprit here, just as we suspected. There is roughly twice as much magenta as is needed throughout the photo.
- Cyan is roughly 20% heavy in the light and medium areas, as evidenced by the excess cyan in the skin tones and light grays.
- Yellow is probably heavy, but it's hard to tell because there's no much of it, besides the model's skin.
- Black is not a problem anywhere.

Following are the steps to color correct the photo:

Our color correction will be made to the entire image, without any area selections. We will also make ALL CORRECTIONS in ONE SESSION of the Curves dialog box.

Step 1, CMYK: Our evaluation found that there is too much of all colors in the midtone range (meaning that the photo is too dark in the midtones), so we will first reduce all colors at the mid point to lighten the photo.

In the curves dialog box, we select the combined CMYK channel, select 50% on the curve, and drag it to 40%.

Step 2, Cyan: Having lightened all channels equally, we now concentrate on each channel, starting with Cyan. All of the correction that was needed in Cyan's midtones was handled in the first CMYK correction. But the highlights are still a little bit heavy. We make a further adjustment by reducing 25% to 18%.

Step 3, Magenta: This channel will receive most of our attention. In the highlights, we stomp on the magenta, reducing 20% to 5%. In doing so, we have also greatly reduced the curve at the mid-point. We then move on to the 100%, reducing it to 80%. But, we notice by using the eyedropper tool and info palette that the three-quarter tones (around 70-80%) is now light in magenta in both the sky and flesh tones. We bring 78% back up a little, to 58%.

Step 4, Yellow: In the entire photo, yellow is only present in any significant amount in the skin tones, where we suspect that it is too heavy. After making the other corrections, we now see that it is, indeed, too heavy. We reduce Yellow at the 100% point to 80%, causing a 20 overall reduction.

Conclusion: Notice in the before and after below that, not only have we purged the offensive color caste, but there is now much more detail visible in the trees, shore, and seat of the boat.



Before and After

Color correction is a matter of balance. It is just about impossible to change one color by itself. In this example, the obvious challenge was the magenta caste, but we ended up making changes to every channel but black.

Experience is also a major part of color correcting. The more you practice, the more confident you will get. Eventually, color correcting even disastrously out-of-wack images will become second nature. The key is to USE AND TRUST the numbers in the Info Palette FIRST, then your eyes and the monitor second. In fact, color guru Dan Margulis claims to be able to color correct an image with his monitor set to grayscale!