

# Color Secrets

*The key to great color is in the exposure*

*by Jack and Sue Drafahl*

Just what makes a good color image? We think that it all boils down to the basic principles of accurate focus, proper exposure, and good subject composition. Most cameras today have excellent autofocus systems, so that is usually not a problem. Good composition is in the mind of the photographer, and varies depending on his or her photographic skills. That means that the most difficult part of creating a good color photo is achieving correct exposure. Although the new high-tech cameras and state-of-the-art color films make it easier, there are still variables that can make or break the creation of a great color image.

So, where do we start our class in Good Exposure 101? The most obvious place is with the film itself. Color film can easily be divided into two groups: slide and print. The difference between the two is simple. Color-slide film yields positive images after processing, which are then mounted to produce the familiar color slides. Color-print film gives you orange-masked negative images, which the lab then exposes

onto color paper to produce the familiar color prints.

The biggest practical difference between the two film types is their exposure latitude. Color-slide films have very little tolerance for incorrect exposure (usually  $\pm\frac{1}{2}$  stop), while most color-print films can yield acceptable prints from negatives that were overexposed up to four stops or underexposed up to three stops. Since amateur photographers are more interested in prints and often have a more difficult time obtaining good exposures, color-print films are their best choice. In fact, 95% of the images taken by amateurs today are on color-print films.

## Film Speed

The next lesson is how do you select a film speed that matches your shooting situation? As the light level drops in intensity, you need a film with greater

**Top:** You can get good exposures and great color without a meter, using the Sunny 16 rule: Expose at f/16 with a shutter speed equal to the reciprocal of the film speed (see text for details).



much exposure, some data in the highlights will be lost. If the exposure is not enough, then data in the shadows will not be recorded on the film. The secret is to capture an exposure that records the majority of the data in a scene. It is very important to reach for the best exposure possible by using the film's ISO rating as the center point of your exposure.

We bet this sounds complicated, but not to worry! A good working understanding of your camera's operation and use of the internal meter is the best way to get good exposures. Before we can move ahead, we need to take a step backwards to Basic Exposure 101. This

**Left:** Multi-segment metering nailed this exposure perfectly. Lacking that, you can take a spot reading of the grass, which is a medium tone.

**Below:** Today's AF 35mm SLRs have amazing metering systems. Here, multi-segment metering combined with flash resulted in a perfectly exposed subject and background.

**Bottom:** The Sunny 16 rule works well whenever there's a sunlit portion in the scene.



PHOTOS BY JACK AND SUE DRAFAHL

sensitivity to light in order to achieve successful exposures. The more sensitive the film, the higher the ISO film speed numbers. In color film's early history, photographers avoided high-speed films whenever possible because of unacceptable increased grain size. With today's high-tech high-speed emulsions, the grain is much finer, so photographers can now use ISO 400 film without reservations.

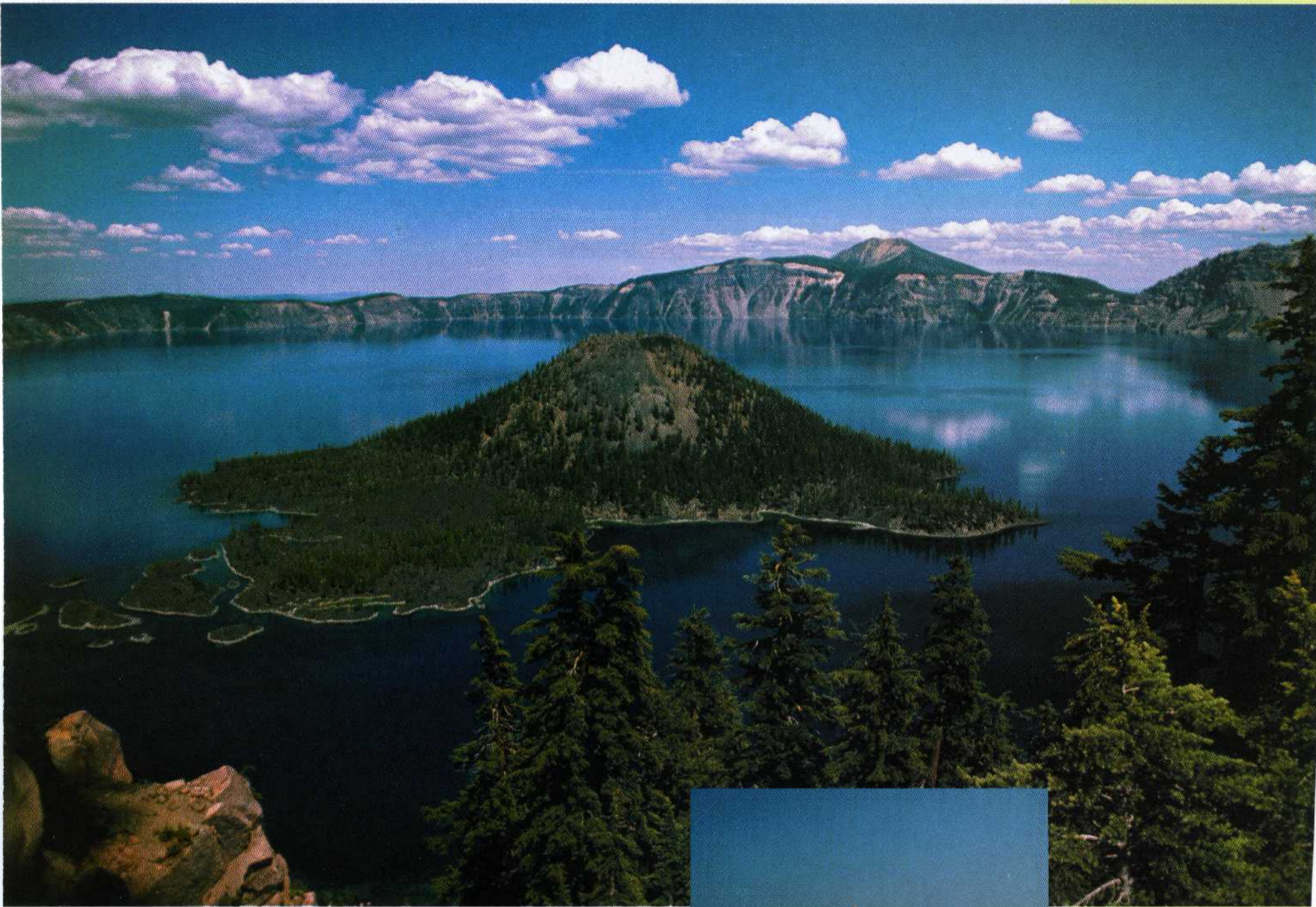
The key to accurate exposures is matching the amount of light in a scene to the speed of the film. Faster shutter speeds are often necessary to capture action scenes, but they decrease the amount of light striking the film. That is also the case when you use a smaller aperture to increase depth of field. In both cases, to get good exposures you need to use a faster film—one with a higher ISO speed. Even in full sunlight you can use the higher-speed films for all shooting situations and achieve great results. If you're not sure which speed to use, ISO 400 film is a good starting point to achieve good color exposures yet maintain great depth of field and sharp action subjects.

So, if color-print film has such a wide exposure latitude, why even worry about exposure? The problem is most every scene will have an exposure range greater than your film can capture, so there is always a trade-off. If you give the film too



way you can better understand your camera's meter readings to trust what it is telling you is accurate.

Believe it not, before exposure meters, photographers had a couple of good systems for calculating exposure. The first and most basic was called the Sunny 16 rule. In full sunlight, the correct exposure is  $f/16$  with  $1/ISO$  as shutter speed. For example, if you're using ISO 125 film in sunlight, the exposure would be  $f/16$  for  $1/125$  second. Using this as a starting point, you would open the lens aperture or decrease



the shutter speed as it became overcast or shady. To make it even easier, film manufacturers placed a manual exposure chart on the inside of most film boxes. Most listed exposure values for situations on sand, in sunlight, cloudy bright and heavy overcast. These charts worked very well for cameras with manual controls.

Camera meters today are very smart. The problem lies in the fact that the manufacturers of the more advanced cameras offer the photographer almost too many variables. Most SLR cameras offer three choices for metering the scene. Many are programmed to recognize thousands of lighting situations and provide exposures within  $\frac{1}{10}$  stop of the correct exposure. The light strikes the subject and is reflected into the metering system in the camera, hence the term reflected meter system. In most point-and-shoot cameras, the problem is simplified because you have no meter choices. Merely point the camera, and it does the rest.

There are three types of reflected-light meters built into today's SLR cameras. Some models offer all three systems; others, just one or two. The center-weighted meter concentrates most of its sensitivity in a circle that covers about 60% of the photo's center. A multi-segment meter should be considered the most intelligent of the three systems as it breaks the scene down into several segments, and uses that data to calculate a proper exposure. For



**Above:** Another example of the Sunny 16 rule in practice.  
**Left:** For this harsh cross-lit scene, multi-segment metering provided a perfect exposure. Alternatively, we could have taken a spot reading of a blue section of sky away from the sun. The multi-segment meters built into many of today's AF SLRs are amazing.

example, if the sun is in the upper left portion of a scene, the multi-segment will recognize the sun and compensate so that the image will not be underexposed, as it would be with the other two systems.

The spot meter is for those photographers who have a firm understanding of film exposure. Spot meters are calibrated to 18% (medium) gray, and exposing as per a spot reading will reproduce whatever you take the reading from as medium gray in the resulting photo. If you point the spot meter at blue sky 90° from the sun, green grass, or in some

cases the back of your hand, you will obtain good exposures. Knowing just what reflects 18% gray is critical to using a spot meter. If you point it at the sun, you will get a drastic underexposure, and if you point it at a dark shadow, a gross overexposure will result. (Ansel Adams' Zone System is an extremely accurate way to use a spot meter to expose black-and-white film, but not so applicable to color work. If you're interested, see his books *The Negative* and *The Print*.)

If you find a subject that is 18% gray but it is outside the scene, don't be discouraged. Most SLR cameras have a button called an exposure lock. Simply meter the 18% gray area, then activate the exposure lock, recompose the scene as desired, and take your picture.

Professional photographers go even one step further, and use hand-held meters that use center or spot metering. These meters can be pointed at the subject for a reflected reading or read from the subject's position to get what is called incident metering.

In most of the situations we have discussed, our light source was the sun and it is not controllable. The best you can do to control the light is move your camera angle so that the sunlight strikes the subject more directly. When that is not possible, fill-flash might be the best solution. Most of the point-and-shoot cameras today will sense the contrast in lighting, or deep shadow, and automatically trigger a flash fill. If your camera doesn't do this, you will need to manually turn on the flash to fill the shadows and equalize the scene's lighting ratio. Most camera meters will consider the added light, and make the necessary correction.

When all else fails, and you absolutely must have a good exposure, the best method is to bracket your exposure. The old adage that film is cheap, is absolutely true when you're photographing a once-in-a-lifetime event. If you are shooting color-print film, setting your camera to  $\pm 1$  stop usually covers just about every situation. Slide films are another story, as you need to know, or test, their exposure latitude before making a bracketed exposure series. It doesn't do any good to make a  $\pm \frac{2}{3}$  exposure bracket when the film only has a  $\pm \frac{1}{2}$ -stop exposure latitude. In that case you would probably miss all the acceptable exposures.

You will hear many professionals recommending that you underexpose for better color saturation, or push-process to



Left: The Sunny 16 rule, stopped down one stop for the backlighting, silhouetted the subject for a dramatic effect.

Below: In overcast conditions, the Sunny 16 rule says to open the lens a stop when shooting in a light overcast, and two stops in a heavy overcast. (Whenever you're in doubt, bracket exposures.)



increase the saturation and contrast. It's true that both these ideas do have an effect on your end results, but we generally don't recommend it. As far as we're concerned, the best way to get the most color out of your color film is by achieving the most accurate exposure possible. Film manufacturers have spent billions of dollars developing the technology in these silver-halide wonders and have determined the true ISO. Just work on perfecting your photo skills to target that perfect exposure. ■