SCANNING PHOTOS AND FILM

You would think that chemical film photography is dead with all the digital cameras flying off the dealer's shelves these days. I certainly haven't taken as many snapshots on film as I used to, but there are certain situations where clicking off some exposures on film can't be beat. Maybe it's when you are on vacation and it's raining, or you are going to the beach. You don't want to get your expensive camera wet, (salt water is especially damaging to electronics), so grab a cheap disposable camera to catch those precious moments.

1. Chemical Film Won't Die

Digital photography has many advantages on the convenience side. You don't have to buy film and the photos are available for viewing immediately. You don't have to wait for a film processing house to send back your slides or even the One-Hour Photo to crank out your prints. Also, digital photography is cheap. Once you own the camera, you just have to feed it batteries or the occasional memory card upgrade to expand your picture-taking capacity.

When digital cameras first appeared on the market, the resolution was pretty coarse. Digital cameras have improved tremendously in that department and high-end digital cameras rival 35mm film for image detail. The one area where digital camera sensors are left behind is tonal range. Chemical film can have a range of tones that covers hundreds or even thousands of times more variation from dark to light. In an image where film can capture shadow details while maintaining highlights, a digital camera will show only black blotches for the shadows and blown out bright spots.

Digital photography is great for a scene with nice bright and flat lighting, but when it comes to the tough situations, film wins hands down. A subject in the shade of a tree with bright sky in the background will either have lots of the shadow detail lost, or the blue sky will turn white in the digital rendition. Film can capture this scene if photographed carefully. Where I still use a film camera is for underwater photography. Catching the eel hiding under the overhanging coral would be lost on a digital sensor. With film, you can pull old Mr. Eel out of the darkness.

2. Viewing Images from Film

Capturing wide tonal range on film is great, but only if you can see the range of light to dark. One way to do this is to project light through the film itself. It's almost a forgotten ritual, viewing slides from a vacation trip, but it's hard to beat the visual impact of blasting 500 Watts of light through a 35mm color slide in a darkened room. The clear film certainly can make eye piercing bright white while the silver (the metal in the film) image can block all but a tiny bit of light leaking through. The tonal range from white to black is much more than our LCD screens can manage.

Using chemical means to print an image on photographic paper also exceeds what our printers can manage when making color prints. The specially treated ultra white paper and the dense color (or black) chemical dyes produce brighter whites and darker blacks than our photo printers.

3. Distributing Images

As good as slides are, there is a reason the slide projector got sold in the last rummage sale. No one wants to sit captive in a darkened room while a tray of 100 slides clunks by at a ten-second interval. The five-pound photo album sits on the shelf gathering dust as the prints fade away. That's because everyone has their face in a computer screen. Photos are sent by e-mail to the folks back East. People don't build photo albums; they produce personal Web sites for friends and family to see their latest shots. No matter how a photographic image is acquired, people want to distribute those photos electronically, and that means turning the image from print or film into a digital computer file.

4. Making the Conversion

If you want to shoot chemical film so you can make prints that win prizes at the photography show, but want to post copies on your Web site, then you have to convert those analog images to digital. Probably the hardest part of the conversion process is deciding which way to do it. You have several choices including commercial processing, flatbed or handheld scanner, or full-on film scanner.

5. Taking a Picture of the Picture

It might be tempting to just whip out your digital camera and take a picture of a photo print to get that digital image file, but you may be disappointed with the results. It's hard to get the focus just right, and you really need a copy stand to hold the camera at just the right spot so the image doesn't come out with a keystone effect. You have to be right over the center of the print to get it square. Of course, the color is going to be shifted by the ambient light during the copy process, and the tonal range is going to be degraded way below what the film can capture and the print can reproduce.

6. Commercial Processing

The chicken way out is to have the film processing house scan your film at the same time that you have it developed. If you have well exposed images that you only need low-resolution files for a Web page, then you can get by with this. I tried the commercial processor route once on my

underwater photos and was very disappointed with the results, then went out and spent the money on a film scanner. We'll get to that one later.

7. Handheld Scanner

At one time, handheld scanners were all the rage for the low end of the photo scanning market. You would grip the handles of this gadget, pull it across the snapshot and hope the picture didn't slip. Getting the scan even by a constant slow speed was a skill most people couldn't master. Flatbed scanners have dropped in price to the point where there is no point in fooling with a handheld scanner unless you were happy with low quality and need a portable device to throw in your laptop computer bag.

8. Flatbed Scanner

The entry level way to scan your photos is to use a flatbed scanner that is also useful for scanning pages out of books, magazines, or any sort of document. Some flatbed scanners can handle only photographic prints, while the high-end Canon CanoScan 8400Fcan pull a decent image out of a slide. The trick is the 3200 dpi sensor.

For every inch of image width, the scanner has 3200 individual sensors for each of the three colors. That's true optical resolution of 3200 dots per inch. You will see cheaper scanners with very high output resolution, but it is often interpolated resolution. They take a lower resolution sensor and calculate the average between two adjacent pixels to invent a new pixel in between. This sort of works once, but you will see bottom-end scanners where they have interpolated between the interpolations to produce an artificially high resolution specification. It's better to pay a bit more for a higher priced scanner that has true 3200 dots per inch resolution.

A cheaper alternative is the HP Scanjet 4070 with a photo door. This unique feature holds a stack of snapshots for quick scanning without fooling around with trying to position the prints just right and manually setting the limits of the scan.

Photographic prints can be of excellent quality for viewing, but still lose detail and tonal range over the original film. Of course, a badly processed print from the corner drug store one-hour lab is going to yield a poor quality digital scan. Make sure you use a quality processing lab for both your film and prints if you want decent digital images.

9. Film Scanner

If you are serious about turning chemical film images into digital scan files, then you are going to want a dedicated film scanner. These units are specialized for extracting the maximum quality image from film, and high-end models even have batch processing features that save you a ton of time. The other major advantage of film scanners is going directly from a film negative to a digital positive image.

One film scanner that would make you happy is the Prime Film PF1800AFL. It can convert slides or strips of uncut film negatives up to 40 exposures long. With a USB interface, this unit is a snap to hook up to most computers.

The Mediamax Workscan 3600 Pro film scanner has higher resolution (3600 dpi optical) and the same batch scanning capability. It handles both slide and negative film too. This unit uses a firewire interface so you probably need a IEEE 1394 firewire adapter for your desktop computer or a PCMCIA firewire adapterfor your laptop. The file size of uncompressed photo image is 102 megabytes so you can probably use some extra storage capability like a 300 gigabyte hard drive.

The clear advantage of film scanners is that they excel at capturing the tonal range of normal print film and converting the images into a digital file. Slide film has wider tonal range than digital image sensors and negative film (normal print film) has a huge range of tonal scale. For optimal results, you need to adjust the digital capture levels before the scan to compress the tonal range down so the shadow details are still there without blowing out the highlights.