

Digital Cameras: A Viable Alternative to Conventional Film-based Cameras

By **JIM LEISY**

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From the inception of Franklin, Beedle & Associates, our authors have prepared their manuscripts using personal computers. But it was only when an industry standard was created, bridging the worlds of personal computing and typesetting, that the redundancy of rekeying manuscripts into type came to an end. No one misses the headaches typesetting created. Photography is now making the same transition.

My Experience in Switching to Digital Still Photography

Two years ago, I photographed books for our catalog using film for the last time. Even this process was partially digital. Contact prints made from my negatives were scanned to create digital image files that we enhanced in Photoshop to suit the look and feel that was wanted. Now these intermediary steps involved in using film are just lost time and resources since digital camera technology has come of age.

Last year I purchased an Epson PC750z digital camera. After I researched the pros and cons of the top digital cameras, it emerged as a satisfying intersection of features and price. It also feels like a modern film camera both in handling and in performance. The lens zooms from wide-angle to the equivalent of a 70mm small telephoto.

The Epson, as do most current-era digital cameras, stores images on CompactFlash media. A phenomenal number of images can be stored on them and they are only about the size of a postage stamp. They are available in capacities ranging

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from 4 MB to 448 MB. With the use of an adapter, they can be popped into the PCMCIA slot of my laptop and become an auxiliary hard drive. They are very convenient and reliable storage media.

Epson designed the camera with several alternatives for transfer and storage of digital files. Cabling allows image transfers from camera to PC or Mac relatively quickly. Other cabling allows it to send images directly to an Epson color printer or to view and store images using a VCR. On-board software permits some editing in the camera, too. The resolution was the highest available at the time, but has been since surpassed.

The first brochure I prepared with it was trouble-free. Within half an hour I had produced 24 attractive images. The same process in film would have taken two days (at best) and would have been a heart-pounding, red-light-running experience. The ability to review an image instantly won me over. What's more, I was able to send the images via my computer and the Internet to the designer in the next town just minutes later. The incubation period from idea to printed brochure was dramatically collapsed. The photography in the finished product was of commercial quality and indistinguishable from a film-generated image.

Some Digital Still Photographs Using the Epson PC750z

Here are some photos I've shot with my own digital camera. Click on the thumbnail to view the full-sized version.



Eiffel Tower



Countryside



Paris

Digital Cameras Are Great for Casual Photographic Applications

After-hours experimentation with this digital camera has been rewarding as well. For example, it is wonderful for making snapshots at family gatherings. Instead of the hassle of getting around to processing film and distributing pictures by mail, the digitized images are loaded on to a computer and sent to family members via email.

What to Think about When Buying a Digital Camera

Are you in the market for a new camera? I strongly suggest you shop the digital section of the camera store. The prices are falling dramatically and the features are robust. Here is a checklist to use when comparing cameras:

- CompactFlash media are currently the best for digital image storage.

- The maximum image resolution should be at least two megapixels (this makes good 8-by-10 prints).

- The software-driven linkage between the shutter release and the shutter should be swift and positive in feel.

- The focal length on digital cameras is based on a different metric---be sure to understand the ratio to a traditional camera lens a particular manufacturer uses.

- LCD screens are hard to see in broad daylight. If this is important to you, look at models that allow the body and lens to rotate independent of each other (most of the Nikon Coolpix line offer this feature).

- Just about all digital cameras have built-in flash units, but look for the newer cameras that have a hotshoe that allows the use of more powerful auxiliary flashes.

- If you have USB (or FireWire) ports on your

computer, you want a camera with USB (or FireWire) compatibility to accelerate the rate of file transfer.

- Brands that lead the field with good quality and features are Canon, Epson, Fujifilm, Kodak, Nikon, and Olympus.

Most of the brands I like use a system of adjustable exposure sensitivity that is equivalent to the ASA rating system for film. Typical ASA equivalents are 100, 200, and 400. Usually, white balance

can be adjusted and there is over/underexposure control.

A lot of the technology found in digital cameras has video camcorder roots. So it is not too surprising that many recent digital still cameras have the ability to record a few seconds of audio with an image.

Auto-focus is standard, but some cameras allow limited manual focus (this feature is accessed through the on-board software, not by twist-

ing the lens barrel). Some high-end models also have aperture-priority exposure for more creative control.

Hotshoes or cable connections for auxiliary strobes start to appear on mid-range cameras. If you frequently need to illuminate scenes some distance from the camera, the built-in flash will be inadequate many times. So a more powerful strobe can be put into service. Also, you can create off-camera lighting effects. However, this is a feature most of us can live without.

One of the best things about digital cameras is their ability to make pictures in very low light conditions. I have been able to get very acceptable results under the most extreme situation. Handheld, no less! To obtain the same results with a film-based camera would have required an exposure of several minutes in length and a tripod to stabilize the camera while making it. This is certainly one of the many compelling reasons to go digital.

The price range for digital cameras is now very comparable to film-based cameras. The low end is be-

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tween \$50 and \$75. As you might expect, the features are minimal. If your budget restricts you to this range, you probably should stick with a conventional camera. From \$300 to \$700 the selection is good. There are great cameras offered by Epson, Kodak, and Nikon. The Epson Photo PC750z can be found in this range, as well as its fuller-featured successor the Epson PC850z.

Manufacturers have named the middle price range “prosumer.” Prosumer cameras offer a lot of features that appeal to professional photographers and serious amateurs. The Nikon Coolpix 990 is the most popular camera in this category and sells for around \$1,000.

Recently Canon introduced a digital camera based on its killer EOS 35mm camera line. It looks like a regular EOS and accepts all the lenses made for the film-based versions. Unfortunately, you have to spend around \$3,000 to get one. This camera compares favorably with the Nikon D1, which has been out for about a year. The D1 is based on the top-of-the-line Nikon F100 35mm body and accepts

Nikon lenses going back to the Nikon F (introduced in the '60s). The price for this camera is just under \$5,000. Both of these cameras have image resolution in excess of three megapixels, light sensitivity equivalent up to ASA 1600, and the ability to make rapid-fire sequential images like a 35mm camera with a high-speed motor drive. You are not surprised, are you, that these cameras are intended for professional applications?

Issues Concerning Color Inkjet Printers

Making color prints requires a color printer. Inkjet printers made by Epson and Hewlett-Packard offer good performance at almost any price level. However, I prefer Epson. I currently own an Epson 1200, a mid-priced model (under \$300) designed specifically for photographic application. Epson has an on-going commitment to improving their line of printers, and so they have already replaced this model with an upgrade.

Issues that drive the decision concerning what printer to buy are as follows (some-what in order of importance):

A Look at Some Digital Cameras

Here's a view of some popular models of digital cameras.



The Olympus 3030



The Epson 850



The Nikon 990



The Canon EOS

- size of dot used to distribute inks
- number of ink colors
- rate of ink consumption
- largest print size possible
- speed of output
- USB/FireWire connection

Printers at the low end of the cost spectrum (under \$200) are amazingly good. They produce excellent-looking 4-by-6-inch prints, on up to 8-by-10-inch prints. What you get when spending more money is sharper resolution, larger prints, and somewhat greater ink economy. Ink consumption is still high with all of them. The business model that printer manufacturers seem to be working off of is that of Gillette, Inc. (that is, make the razor cheap and reap big profits off the repeat sales for razor blades).

Another issue of some concern is the stability or longevity of inkjet prints. The standard inks and papers do not have anywhere near the life expectancy of current photographic materials. The situ-

ation is not unlike that of the early days of color photography. When looking at family albums containing prints from the '40s, '50s, and '60s, it is not unusual to find that the color pigments are not as vibrant and are fading. There are alternatives to the inks and papers distributed by the printer manufacturers that have much greater archival potential. But they cost almost twice as much. When you consider that it is easy to make multiple copies of any image and to make backup copies of the digital files, this is really not that big of a deal. So unless you are involved in producing fine art photography it is not worth the extra expense for archival materials.

Of course inkjet printers can do double-duty as text printers. The selection and look of fonts available on these printers are equivalent to those on more expensive laser printers. The page output from them is a little slower, but still very acceptable. Really their chief advantage is the great quality of the full-color, photographic output. Inkjet printers usually come packaged with a low-end ver-

sion of Photoshop software called Photoshop LE. Photoshop is the standard software tool for fine-tuning photographic images. The LE version is more than adequate for most users, since it contains all the bread-and-butter features (e.g., cropping, sizing, and image adjustments). If you need the ability to create exotic-looking images, you want to upgrade to the full-featured version. In addition, you should probably buy software extensions for Photoshop available from other manufacturers.

A lot of time, energy, and creativity have been invested in the development of hardware and software to meet the demands of photography in the digital domain. As a result, the subject is already quite mature and the possibilities for creative expression are boundless. This is also my way of saying that there is still a lot more that can be written about any part of this topic. My intent is to give some basics to guide you. More thorough information can be obtained online, at the bookstore, from magazines, and from the clerk at the digital camera counter of your local camera store.