JACK & SUE DRAFAHL

TIPS AND TECHNIQUES FOR CAPTURING AND MANIPULATING DIGITAL IMAGES AND VIDEO

Film Fundamentals

INSTEAD OF RELYING ON CONVENTIONAL FILM, DIGITAL CAMERAS USE TINY DISKETES TO CAPTURE IMAGES THAT CAN BE EASILY TRANSFERRED TO YOUR COMPUTER.

■ Silver has served as the common ingredient in photographic film for more than 100 years. That is all about to change, however.

Digital cameras don't use conventional film, but rather collect image data via a CCD chip. Although the chip is exactly where the film was once located, that is where any resemblance ends.

As the image strikes the chip, the data is stored on a memory device commonly called digital film. Digital film comes in several types, but the most common are SmartMedia and CompactFlash disks. Both types are smaller than a matchbook and can hold as much as 512 megabytes of image data. (By the end of this year, there will be digital film with the capacity to hold more than 1 gigabyte of data.)

Often you don't have a choice about which type of digital film to buy, as this is dictated by the choice of camera you purchase. With most digital cameras, the default image compression reduces a 3-megabyte file to less than 1 megabyte.

The SmartDisk is the smaller of the two types of digital film, so it is has less memory capacity than the CompactFlash disks. This is usually not a problem as the SmartDisk is less expensive, so you can purchase more and just change "film" more often. Generally speaking, the cost of digital film runs from $1 to $2 per megabyte, but you keep in mind that you can also reuse it.

Since you can easily change digital film disks, topside photography doesn't present

Hurry Up and Wait

■ **Large image files take some time to record to digital film, which causes you to wait before taking the next shot. To deter impatience, digital film comes in different speed ratings – 1X=150KB/sec. The higher the number, the faster you can capture your data and move on to take the next picture. Of course, the higher the number, the larger the price tag. Lexar's media comes in 4X, 8X, 10X and 12X, to maximize your photo opportunities. The company's compact JumpShot card reader allows you to quickly transfer the files to your computer, so you never have to wait.**

a problem, but underwater is a different story. There's nothing worse than running out of film before the underwater action ends. We recommend at least a 64-megabyte "film" disk for underwater use to ensure the freedom of taking as many images as you want. If you don't use all of the film on one dive, then just continue shooting on the second dive. This is an ideal solution for two-dive photo expeditions where it is difficult to open the camera during the surface interval.

Once you have taken the necessary images, it's time to transfer them to your computer via a cable attached to the camera or with a special device called a card reader. To use the card reader, simply remove the digital film from the camera and insert it into the reader. The images then can be copied to your computer's hard drive. With the cable, simply attach one end to the camera and the other to your computer's USB port. Once the transfer is complete, you can delete the images on the digital film chip and it is ready to be used again.

Digital advantages for travelling divers

- **You can cruise through airport security because digital film is designed to go into X-ray machines without damage.**
- **Of course, the biggest advantage of digital film is its compact size. Thousands of images can be held in the palm of your hand. Isn't technology great?**

The extended dive trip presents a new challenge for the digital photographer. How do you store your images until you return home? If you bring plenty of digital film disks, hopefully they would exceed the number of images you plan to take while on your trip. You could also take a laptop computer and download images onto the hard drive or even burn a CD. Having a laptop computer also permits you to closely examine your images so you could adjust your shooting style.

Another solution involves a gadget called the Digital Wallet from Minds@Work. This compact device contains a tiny 6-gigabyte hard drive that can directly offload all the files from your digital film. If each compressed image is about 1 megabyte, you would have the capacity to store 6,000 images. Upon returning from your dive trip, you can then transfer all the Digital Wallet files to your computer.