



# INTRODUCTION TO GRAPHICS

# Archiving Data

Information  
Sheet No. 

A painful lesson was learned a few years ago: those backups make 8 years ago for safekeeping aren't as safe as thought: After several months spent revising a book written back in the mid-1990s, the data was archived and all but forgotten. Who knew? Maybe there would be a need to release a new edition someday. Lo and behold, that day came eight years later. Unfortunately, the aged backups had deteriorated and were completely unreadable. End of story--literally.

Granted, this is about a book rather than family photos, but data in all its many forms is still just a collection of ones and zeros to your computer. So you need to make absolutely certain that your precious pictures are safe, secure, and up-to-date.

## Back Up There, Partner

Although film fades and prints can become dog-eared, the process of storing your backup negatives, slides, and photographs is relatively easy and straightforward--whether you keep them in a photo album, a filing cabinet, or a shoebox. But storing and retrieving digital images can be complicated and a little trickier. There are several important questions to ponder: What media should you use? Is it better to place it on an online storage site? Is the file format compatible with your current graphics software? Do you have the corresponding drive or device, plus a properly equipped PC that can read and restore it? Do you know where everything is?

Early on, image files from digital cameras were small and tightly compressed, so it was a relatively easy matter to back them up onto cheap, ubiquitous floppies. However, these files have mushroomed in size with the introduction of significantly higher-resolution CCDs, along with larger-density, removable memory cards and the use of file formats that maximize image quality by requiring little or no compression. Also, the explosive growth of sites for posting photos on the Web means that people are shooting and saving far more photographs than ever.

Since most computers now offer large hard drives, most people simply save images directly onto their PCs. This may make life simple in the short run, but that (at best) is living on the edge. You may run out of space on your computer, or even worse, you could fall victim to one of the axioms of Murphy's Law--computers will crash at the worst possible time.

## Compact Archives

Before it comes to that though, you should look at some other solutions. The latest storage strategy is to upload those precious images to an Internet server. Scores of e-photo services offer free or inexpensive sites to safely park your digital images. Besides freeing up disk space, this allows you to edit your images online, share them with friends and family, and even order high-quality prints. However, there are some serious issues you must consider before transferring all your images to Web storage: First, unless you have lots of time and a high-speed Internet connection, it may take more than one sitting to transfer your images to the Web. Next, while the storage service may now be free, that e-photo company might begin charging an arm and a leg sometime in the future.

Even more disconcerting is that in this dot-com-by-night age, who knows if the site where you stored your images will still be around in a couple of weeks. Risks aside, this option is a convenient way to share large batches of images with family members, coworkers, or whomever you choose.

### **MO, DVD/CDs, External Drive or Server?**

First, be clear on one point: there are no permanent data storage systems known to man. That said, there are some pretty reliable ones which can help insure a realistic permanency for your precious files.

Today, there are really only three viable storage options at this point: magneto-optical (MO) disks; and DVD or CD-R/-RWs or media storage. MO disks are great, cheap-and-easy solutions, but they won't last forever. The data eventually degrades, but more importantly, who's to say people will even be using these disks in a few years?

DVDs and CDs, on the other hand, are reliable and will work with most backward-compatible drives. Sure, it may cost more to burn information onto them, but you don't want to lose irreplaceable pictures, do you? You'll get the best, longest-lasting results if you save to more expensive media (those stamped with gold foil) rather than to cheapies. There are important things to remember: DVD or CD-Rs are a one-shot deal; record onto them once, and you're done. Whereas with DVD and CD-RWs, you can rewrite over said discs. Either way, apply a printed label, and you have an instant 650MB archive.

Bear in mind that none of these storage systems are "permanent". They will degrade with time, particularly if they are not stored properly. The estimated life span of these systems varies with the type, CD-R, CD-RW, DVD-R, DVD-RW, etc. Be sure to check the manufacturer's test data. These disks are based on certain types of dyes and are not like the commercial ones you purchase with movies, etc. During the writing process the dye layers are altered to yield the ubiquitous bits of information that make up your file. Regrettably, no dyes are completely stable. They all are subject to deterioration over time.

Another issue is delamination. Always buy the gold standard disks for your archives. The inexpensive ones will work but they have a long history of the dye layer separating from the plastic "platter", rendering them useless. They are manufactured to lower standards and are not as reliable nor long-lived.

Most serious storage experts discourage writing the dual layer disks for archival storage. Admittedly they do put more data on each disk, but they have inherently the least stable type of writing surfaces.

The third possible system should not be confused with on-line storage. Hard disk capacity has skyrocketed in the past several years and the cost has plummeted. It may be worth while to purchase a multi-gig external hard drive, hook it up to your firewire or USB port and port everything to it. It can be removed from your system when you are though so it is secure.

This frees up valuable hard drive space on your computer while providing instant access to anything you may need. Just plug it back in and your system will find it.

You may notice that the title of this section includes servers as a possible route for storage, but do not refer to the large internet servers used by giant corporations.

Home Media Servers are networked drive configurations can be set up to provide total system backup of all of your networked computers in addition to providing large partition areas for file storage. The generally neglected (although highly recommended) process of backing up your computer is no longer an issue. Most of these systems do it on the fly so even if you have a catastrophic failure you can be safe.

While more expensive than a simple MO, DVD/CD disk writer, if you really care about protecting and preserving your digital data they are the way to go.

### **Storage Tips**

Regardless of which system you select, there are some general survival tips for backing up your data, suggestions that could have possibly prevented the calamity mentioned earlier:

Whether you're using CDs or disks, store your files in a cool, dry place. The safest place to store data is either in safety deposit boxes or in fireproof home safes. Zipping up unused files is an easy way to trim space on a hard drive. Try to save your images in industry standard JPEG and TIF formats.

It is important to change with the formats. When new standards come up, such as JPEG 2000, update your pictures. Always check the date of a file to avoid copying over an image. Maintain a photo database so that you can easily track down where you've stashed images.

Remember that with digital data there are no "copies". Each new generation is an "original" in the sense that there is absolutely no degradation. The colors won't fade, the focus will not become soft, nothing. Because of this, when the technology changes it is a simple matter of copying your archived files from their present format to the new one. There will be no quality or data loss.

### **Analog files**

Some of you may have video and audio tapes. It doesn't matter if they are VHS, 8mm, HI-8, miniDV--even Betamax; they are dying--and quickly.

If you have family treasures, births, wedding, birthdays, holiday or vacation videos, etc., get them onto a DVD or CD immediately! It makes it possible to stop the decay which occurs from these sources. Tapes are multiple layers of magnetic oxide wound on a spool. The tiny magnetic forces embedded to record the images and sound are brought in close contact with the next layer. Over time the magnetic fields from adjacent windings interact and deteriorate the color and overall image quality. If left long enough they will be (really) unplayable.

If you can't or won't transfer them to digital media of some type, there are a couple of steps which will help them last a bit longer by delaying the natural breakdown of their signals.

First, store them Vertically--never flat!

Second, play or at least fast forward and rewind them at least once a year. When you do this the layers are displaced--never returned to the same exact spot in relation to one another. The breakdown process will continue but it will be delayed.

### **Film and Negatives**

OK, they are not digital; they should be, and quickly.

Camera film, negatives and photo prints are analog systems. They depend upon dyes to record and create images; they generally do it excellently.

Regrettably all dyes are unstable, especially if not stored with the proper temperature and lighting conditions (totally dark, less than 68 degrees is best). I'll bet that the drawer in your storage cabinet doesn't meet both criteria.

In any case, scan the negatives (preferable) or prints (if they are all you have) and do it quickly. Your prints are fading fast and the negatives are following close behind.

If you scan them now the deterioration will be stopped and you can probably bring them back close to their original state with your computer software. It will take time but remember that these scenes are most one of a kind and cannot be replicated.

To learn just how to scan both your negatives and prints, see the resolution articles among your information sheets. Remember that picking the correct settings will yield the best results with the least amount of precious storage space on your chosen archive system.