QUACK

Newsletter of E.J. Peiker, Nature Photographer and www.EJPhoto.com

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(Vol 7, Issue 4)

Welcome to the quarterly newsletter from E.J. Peiker Nature Photography and www.EJPhoto.com. In this quarterly email publication, I will keep subscribers posted on upcoming workshops including the DuckShop Series as well as sharing some photos and experiences with you. I will also give you brief impressions on any new equipment that I get the opportunity to use and any other general information in the world of digital nature photography. Please feel free to forward this along to other photographers and interested parties but please do so only by forwarding this newsletter in its entirety. Note that all content is copyrighted by E.J. Peiker. If you would like to be added or deleted to the mailing list, just send me an email message at ejpeiker@cox.net. Back issues are available online at http://www.ejphoto.com/newsletter.htm

King Penguins, Falkland Islands (D300, 200-400mm)

Protecting Your Images From Computer Failure

In late March I was working on an image I took in 1998 in Venice Italy for posting on the new NatureScapes.net Travel and Culture Forum. While processing this image after a scan of this old negative on my Nikon Coolscan V Scanner, I noticed a small warning at the bottom right of my screen. My RAID management software was reporting that one of the Seagate 500GB drives in my RAID 5 set-up had failed. This in itself is not a big deal in a RAID setup since they are designed to let you keep working through hardware failure like this without losing data. However, this relatively minor issue quickly escalated into a much bigger problem that would have resulted in the complete loss of my entire library of 120,000 photos from all over the world had I not had an effective multi-tiered backup strategy in place. For years I have been preaching the need for effective backup strategies in online photography forums but I have not written about it in Quack so I thought this would be a good time to remind everyone and to suggest some schemes for safeguarding your images. As an aside this was my 4th Seagate Barracuda 500GB Hard Drive failure in 16 months – needless to say I won't be buying any more of those drives and have eliminated them completely from my data storage scheme.

Mountain Goat, Mount Evans, Colorado (EOS 1D Mark II, 70-200mm)

Before we go on, let me quickly define RAID and the most popular types of RAID set-ups. RAID stands for Redundant Array of Inexpensive Disks. Here are the most common configuration levels:

RAID 0 – this takes two or more drives and stripes the data of a file across them. If you have two drives in a RAID set-up half of each file will be on one disk and half on the other in small chunks of data called stripes. This allows the file, in theory, to be read into memory much faster since both halves of the file can be read simultaneously. In practice with fast modern disks, the controller overhead reduces the performance enough that there is little perceivable gain. The problem with RAID 0 is that there is no redundancy so if you lose either drive, you lose all the data. In RAID 0 100% of your

drive space is available for data – if you have two 500GB drives you get a single volume of 1TB striped across the two physical hard drives.

RAID 1 – this takes two hard disk drives and duplicates the contents on each in real time. Each drive contains all of the files in their entirety so if one fails you can keep working and just change out the broken drive as soon as possible. The performance is in theory not as good as RAID 0 because you have to read the entire file off of a single disk. Again with fast modern drives, the performance difference is negligible in real world applications. Better RAID controllers mitigate this slight performance disadvantage over RAID 0 by reading from both drives simultaneously. In RAID 1 only 50% of your installed drive space is available for data. Two 500GB drives each contain the same data so there is only 500GB of unique storage space available.

RAID 5 – three or more disks are required for RAID 5 and the data is striped across all of them but file parity information is distributed among all of the drives. If a drive fails, the data can be restored from the parity data on the other drives but rebuilding the array takes a long time – about 18 hours for a 500GB and during this time the performance of the array is heavily degraded. RAID 5 is more space efficient than RAID 1 from a storage space standpoint. Three 500GB drives result in 1TB of storage so it is 67% efficient compared to just 50% for RAID 1.

Saddle Mountain, Arizona (EOS 1Ds Mark II, 90mm TS-E)

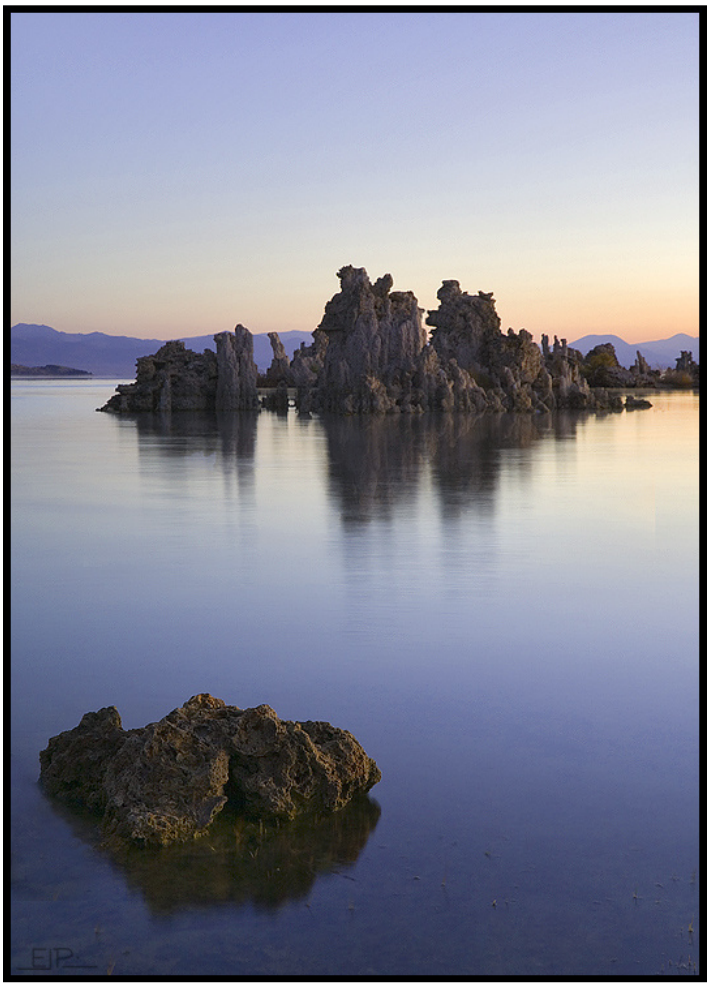
There are several other RAID levels defined but these are the most common and what most people use. Many people feel that RAID 1 and 5 are a good backup strategy. They are however not! RAID is a good "keep running" strategy when a drive breaks but as a backup strategy it is very dangerous because any file corruption propagates immediately to the other drives. Additionally a RAID controller failure or motherboard failure can instantly render both your primary and backup corrupted.

Now back to my story which prompted this article. After noticing the drive failure on my RAID 5 set-up, I finished my work on that file and then shut down and replaced the failed drive with a spare. I always keep a spare drive on hand for any RAID arrays that I have. OEM drives can generally be had for a good price from Amazon or NewEgg. The install went without a hitch and 5 minutes later my system booted back up and the RAID 5 array started rebuilding in the background and my computer was back up. Since this had happened 3 times before with the unreliable Seagate 500GB drives this was no big deal. It would just take 18 hours to rebuild the array but if I wanted to I could keep working although more slowly.

That should have been the end of the story but, as with most accidents, a chain of events can conspire to create a catastrophe. About 8 hours into the RAID rebuild we had several very short duration power failures caused by 60+ MPH spring desert winds. The system rebooted fine and rebuilding of the array continued… or so I thought. After it finally finished the system requested that a chkdsk would be run on the next reboot. This ios a Microsoft utility designed to make sure that the hard drive has no bad sectors and any data is moved from weak sectors to good sectors. This is not unusual. I rebooted the system and chkdsk did it's thing and I was back up. That is until I tried to access my image files which were all scrambled and unrecognizable. Presumably this was due to the power interruptions during the array rebuild. If RAID was my sole backup strategy, I my entire library of photos would have been lost. Fortunately I keep an online external hard disk for backup. So I reformatted the RAID array, ran some diagnostics and found the array to be broken again. I had to again rebuild the array – I was unwilling to go another 18 hours to rebuild an array that would likely fail again due to the 500GB Seagate drives. At this point I decided to switch to RAID 1 which does not have a long rebuild period associated with it and go to the new Western Digital 2TB Caviar green drives which run cooler and consume less power. I have always had good luck with Western Digital drives. I installed them, formatted the RAID 1 set-up and everything was OK and then went to restore the contents to the RAID array from the external backup drive. To my shock the backup drive was inaccessible – it too had been damaged in the power interruptions and short duration power spikes. At this point, most people would be in a horrific situation having lost everything; however, not in my case. I do a weekly backup that stays offline and stored in a separate location. I retrieved it and was then able to restore my images from that backup and no images were lost.

This experience has reinforced several things to me. First and foremost that a strategy of multiple backups with at least one being disconnected from power and in a separate location is key in case of a cascading disaster such as this or worse a fire. It again proves that RAID is not a backup strategy. It is a strategy to keep working and get up and going quickly. I have decided that RAID 5 is not worth the trouble of the higher drive space efficiency in this world of low priced hard disks that we live in today. Finally I need to upgrade my power protection as my simple surge suppression and very cheap UPS was not up to the task after using them for many years.

In conclusion, whether you use RAID or not to keep going when you have a hardware failure, you need a solid backup strategy that preferably includes backup that is always on for quick recovery of lost or damaged files and offline backup in case of a catastrophe.



Mono Lake, California (EOS 1Ds Mark II, 24-105mm)

Two New Exciting Filters

Singh-Ray has recently introduced two new interesting filters. In the Singh-Ray blog, I wrote last summer that I like the Lighter and Brighter Warming Polarizer (LB Warming Polaizer) but that I wished that they had a non-warming version. I was excited about the 2/3 stop brighter viewfinder and the faster shutter speeds that it allows in critical light situations where polarization is needed to bring out the natural saturation of the subject or to cut unwanted reflections. Additionally, greater accuracy and speed of the autofocus system due to more light getting to the AF sensors was also cited as a major benefit especially in the early and late hours that landscape photographers prefer. I also wrote that I wish that Sing-Ray had a non-warming version of this filter. Sing-Ray listened! Well actually they had a non-warming version in development when I wrote that but I didn't know it at the time. Recently the folks at Singh-Ray sent me the non-warming version of the LB Polarizer to test out.

A couple of weeks after receiving it, I did a photo shoot at the Desert Botanical Garden in Phoenix Arizona. This is one of the nation's premiere desertscape botanical gardens. What was special about this shoot was that it featured blown glass art by world famous glass artist Chihuli. This special exhibit incorporated the beautiful and brightly colored art of Chihuli woven into the desert landscape of the botanical garden. I could not have come upon a better situation to test out the new LB polarizer without the warm tone.

Many of the photos were taken in low light so the extra 2/3 stop of light for my D700 and 24-70mm Nikon lens was much appreciated. This gave me a little extra margin of error with any potential movement of the plants or glass induced by the wind. As you can see from the photos, the colors just popped and unwanted reflections were eliminated.

Chihuli Exhibit, Phoenix, Arizona (D700, 24-70mm)

Personally I prefer a filter that does not impose a color cast but really like the idea of not losing a lot of light while still giving me the polarization effect I need. The LB polarizer does just that and I see no negative qualities in this filter whatsoever. There are very few perfect products in this world but I think I would throw this one into that category. This filter will most definitely become my primary polarizing filter.

Singh-Ray also introduced another filter that I haven't had a chance to use much yet but it is very interesting. It combines their very popular Variable Neutral Density Filter with a Polarizer into a single filter. It has two rotating rings – one for polarization and the other for varying the strength of the Neutral Density applied to between 2 2/3 and 8 stops of light loss. This filter is called the Vari-N-Duo. It looks extremely useful. It's downside is that it is very thick so the wider settings of a lens may vignette significantly.

Lesser Scaup, Tempe, Arizona (D300, 500mm)

New Bird Guides

Perhaps the most comprehensive guide to North American Birds has recently been published by Dorling Kindersley. Its Title is American Museum of Natural History Birds of North America. This is a large desktop reference with thousands of photographs. The photos include many images by some of the world's best bird photographers including familiar names such as Neil Fletcher, Garth McElroy, Arthur Morris, Alan Murphy, Robert Royse, Brian Small, and Bob Steele. Oh yeah, there are 170 of my photos in there too ☺

Another very exciting new product is a line of iPhone/iPod Touch bird guides called iBird. Over 100 of my photos are featured in these very slick applications. It is a very handy field guide since it sits on the iPhone or iPod touch. No book is needed in the field and it includes everything field guides include including range maps, pictures, habitat, behavior, etc. plus it actually plays bird calls. A very cool application!

Moving Sucks, New House Doesn't

Well you have all either heard or said that moving sucks. I have just completed the move of my home and photo business from an older house in Chandler to a brand new

semi-custom one in Chandler Heights, Arizona. It was only a 6 mile move but it might as well have been a move across the country considering all the work I did. I have decided that one either needs to move every couple of years or never move at all; otherwise you accumulate way too much junk. I firmly believe that I sold, donated or dumped much more stuff than I moved. It took me a month to do this move largely by myself and my body will spend the next couple of months recovering. Oh yeah, getting old sucks too ☺. Recovery time is just too slow.

For those that do business with me or have other postal communications, please note my new address:

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