

Digital Travel Photography

Introduction

The goal of this book is to educate you, the reader, about Digital Travel Photography. Its point of view is unabashedly digital, its context is travel and its purpose is to optimize the digital photography of your tours, discoveries, vacations, explorations and adventures. This book is written for everyone interested in digital travel photography, from entry-level amateurs picking a camera for an upcoming vacation to passionate photography enthusiast to seasoned professional photographers making the transition from film to digital or seeking to expand their offerings into travel and destination photography.

The travel photography that is addressed in this book is real-world photography by real-world people of real-world destinations. This book is written for people who are on a schedule, with multiple places to see, often packed into a short amount of time. People who can't wait three days for the perfect sunset light playing on the clouds or spend weeks stalking seldom-seen animal behavior by a rare species. Unlike the working professional travel photographers who can afford to spend weeks pursuing one, perfect shot, this book is for the real-world traveler who wishes to optimize the images captured from the scores of sites, experiences and chance encounters of the typical journey. This book is for the everyday traveler who wants to preserve the memories of their travels in high quality digital photographs.

Of all the things you do during your travels, bringing back photos is perhaps the most enduring. Unfortunately, memories will fade. Details will grow foggy, and now vibrant and distinct events will merge together or disappear entirely from your mind. Of all the charming people you meet, sites you see and fantastic cafes, holy sites or mountain trails that you stumble across, very few will stick as lasting memories. For this reason, the photographs created during your journey are the most valuable possession you will bring back from your travels.

Digital cameras open up new possibilities for the travel photographer. Instant review of images allows you to instantly see if you captured the innocent smile of a young child or the beauty of a tropical sunset. Memory cards and backup devices free you from the hassle of carrying film to your destination and back home to a lab, where costly processing awaits. Photo editing software allows you to quickly and easily correct common shooting errors and problems such as red eye.

Combining the power of travel photography with the revolutionary capabilities of digital cameras yields an exciting new era filled with promise for the traveler. However, as we all know, there is no free lunch, and with these new possibilities also comes new challenges: new terminology, new concepts, new technologies, new purchasing decisions and new travel photography techniques.

This Digital Travel Photography guide is your fast route to success in adding the power and exciting possibilities of digital to your travel photography. This guide will lead you through the fundamental concepts and terminologies of digital cameras that are applicable to travel photography. It will give you the knowledge you need to make an informed purchasing decision for a digital camera that will match your travel photography requirements. This guide will also teach you the additional aspects of digital photography technologies and techniques that are prerequisites for successful digital travel photography. It will educate you on the aspects of digital photography workflow that are important to the traveler. And it will help you to prepare for your digital travel photography adventures with step-by-step packing lists and pre-departure preparations.

Digital Travel Photography

The world is waiting to be discovered. There are countless adventures, destinations and unique experiences that await you, the explorer, traveler and tourist. In each instant of those adventures, timeless images that perfectly capture the moment will present themselves. With this guide and your abilities, you can apply your digital camera system to that challenge and return with captivating images to preserve your memories and to share with friends and family.

Welcome to the wonderful world of Digital Travel Photography!

Overview

This book is divided into three sections:

1. Selecting a Digital Camera for Travel Photography
2. Improving Your Travel Photography
3. Workflow for Digital Travel Photography

Section one, Selecting a Digital Camera for Travel Photography, will help you select and purchase a digital camera that meets your skills, photographic interests and budget. Section one includes cameras of all levels, from mobile phones to professional. This section helps you understand the strengths and weaknesses of each main digital camera type. It also lists items required to construct a viable travel photography digital camera system built around each main camera type. By helping you select the camera that best meets your needs, resources and abilities, section one outfits you with a digital camera well suited for your travel photography.

Section two, Improving Your Travel Photography, teaches you digital photography techniques that help you to bring back images that capture the beauty, the peak moments of action, the moods and the cultures of your destination. Section two shows you how to develop an overall shooting strategy and a short mental checklist to follow to dramatically improve the images you capture. This section also teaches you proven techniques to overcome the common challenges you will face in digital travel photography. From poor light to fast changing situations, you will learn the camera settings and shooting techniques required to bring back outstanding images from the toughest situations. Equipped with the techniques from section two, you will be ready to dramatically improve your travel photography and overcome whatever challenges your destinations brings your way.

Section three, Workflow for Digital Travel Photography, teaches you the tools, technologies and processes required to successfully manage, store, print and distribute the digital images you create while traveling. From memory card strategies to electronic distribution on the internet, digital travel photography presents a wide range of opportunities and potential confusion. Section three teaches you the key elements of digital photography workflow that are essential to the traveler. By enabling you to establish your overall processes and understand the critical workflow tools and technologies section three becomes the foundation on which you can build a lifetime of successful, sustainable travel digital photographs.

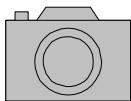
In addition to the three primary sections of the book, appendix A provides you with a trip preparation checklist. Appendix A includes packing lists and final "pre-flight" checklists for general travel, digital photography and associated electronics. This appendix gives you a solid baseline for a well prepared, well packed trip.

Throughout this book there will be a series of sidebars to provide additional information.



Travel Tip

Travel Tips are pieces of wisdom learned during over 25 years of world travel.



Pro Tip

Pro Tips are insights from the advanced end of the digital travel photography spectrum that can be helpful to the beginning and intermediate photographer.



Taj Mahal at sunrise. Agra, India.

Selecting a Digital Camera for Travel Photography

With hundreds of digital cameras available, at price points from \$50 to \$8,000 and beyond, along with a dictionary full of features, capabilities and technologies, it can be a daunting task to select a digital camera that is optimized for your travel photography needs.

The primary photographic concerns for the traveler are being ready to capture the shot and having a camera that can respond to the demands of the moment. If your camera is not readily at hand, you won't bother to dig it out to shoot many of the best images you will witness. If your camera has inadequate zoom capability, slow start up or lacks enough resolution to support the cropping required, your results will be disappointing, if not nonexistent.

The type of camera that best suits your travels is determined by your level of interest in photography and in the uses you plan for the photographs. Some people may be happy with the photos they capture with their mobile phones; some may wish to post photos on the web, while others may desire small prints for a photo album or a few larger prints for the wall. A few may wish to exercise the full creative capabilities of an advanced camera system to create large poster size prints or to generate an album of large prints suitable for competition or display.

In spending the last year traveling around the world by motorcycle, my wife and I used six different digital cameras to photograph everything from lions in Africa to Buddhist monks in the high Himalayas of Bhutan to Roman ruins in the deserts of Syria to the night lights of Tokyo in Japan to sprawling landscapes of the Great Wall of China. In these travels and in shooting everything from snapshots to professional commercial photography over a span of more than 30 years, I have discovered the ideal travel camera combines compact size and weight, quick startup, fast shutter response, adequate resolution to support the occasional large print, and rugged design and construction. The key is to match these characteristics to your level of interest and intended use.

In order to successfully match a digital camera to your needs, it is necessary to understand some fundamentals about digital cameras. The following sections will teach you the key concepts of digital cameras and the main digital camera types suitable for travel photography.



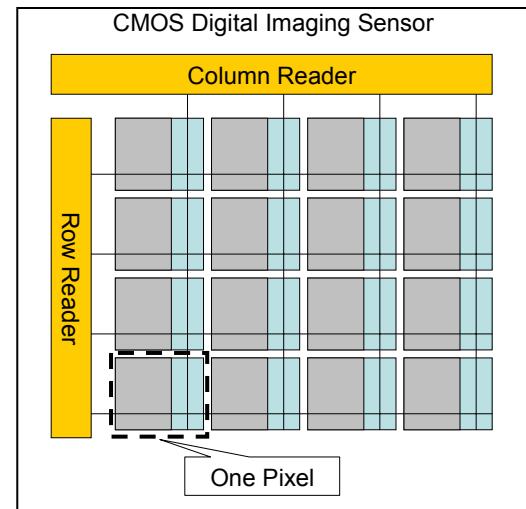
Woman in Imperial era costume.
Forbidden City, Beijing, China.
Canon 1D Mark II, 8.3 megapixels.
28-300mm, 1/160, F6.3.

Understanding Digital Camera Terms and Technologies

There are a plethora of terms that are tossed around by digital camera salespeople that will be new to film photographers such as megapixels, digital zoom, lens multiplier, etc. It is important to understand these terms in order to make an educated and proper selection of a digital camera that best matches your needs and requirements for digital travel photography.

Megapixels

While the relative sharpness of film cameras was somewhat less variable, the potential resolution or sharpness of a digital camera, measured in megapixels, can vary considerably. A digital photographic image is constructed of tiny dots. When you press the shutter button of a digital camera, the light that is focused by the lens is captured by a specialized electronic sensor. You can think of these silicon chips as electronic film that never needs to be advanced, rewound or chemically processed. The electronic sensor is covered with millions of tiny lenses which focus the incoming light onto microscopic sensitized areas that recognize red, green or blue, in the case of CMOS (Complimentary Metal Oxide Semiconductor) or CCD (Charge Coupled Device) type sensors; or all three colors in one spot, in the case of the Foveon technology sensor. Each sensitized area forms a picture element, or pixel.



The potential sharpness or resolution of a digital camera is measured by counting the number of pixels. One megapixel is equal to one million pixels. A camera that had a sensor that measured 1,000 pixels wide by 1,000 pixels tall would contain one million pixels and be called a "one megapixel" camera, although consumer digital cameras all have sensors that are rectangular rather than square.

A one megapixel camera is barely adequate for small (4"x6") prints. A three to six megapixel camera is adequate for medium size (5" x 7") to large (8" x 10") prints. Eight to 12 megapixel cameras can easily make very large prints (11" x 14" and larger).

While a three megapixel camera will yield beautiful small prints, problems arise when it comes time to crop the image to remove unwanted elements such as distracting backgrounds, portions of objects or unwanted people. A three megapixel image will not deliver adequate resolution in the final print if the image is significantly cropped.

Due to these cropping limitations three megapixels should be considered the absolute minimum for digital travel photography. A five megapixel camera will allow you to perform limited cropping on the image and still yield a medium size (5"x7") print. Eight to 12 megapixel cameras will allow you to do extensive cropping and continue to deliver beautiful medium and large (8"x10") prints.

Optical and Digital Zoom

Using the zoom control on a digital camera allows you to either zoom in, or magnify, to fill the photograph with the subject or zoom out, or widen, to include a broad landscape or multiple subjects. The amount of zoom capability is expressed in a zoom ratio. A zoom ratio tells you how much magnification you can achieve from fully zoomed out, or widened, to fully zoomed in, or magnified. Zoom ratios are written as two numbers, usually separated by a colon, such as 3:1. Zoom ratios are spoken as the first number, then "to," and the last number. For instance, 3:1 is spoken as "three to one." This means that a camera with a 3:1 zoom ratio can magnify a subject three times.

There are two types of zoom capability touted by digital camera manufacturers: optical and digital. Optical zoom uses the camera's lens to increase the size of objects in the viewfinder. Optical zoom retains the full resolution (measured in megapixels) capability of the camera while magnifying the subject. If you fully zoom in on a subject using a 4:1 optical zoom on an eight megapixel camera, you will have a subject that is four times the size it was when fully zoomed out, and that subject will be recorded at the cameras full eight megapixel resolution.

Digital zoom crops the image by ignoring the outer rows of pixels on the camera's digital sensor (the electronic component used to record the image). Digital zoom decreases the camera's resolution as you digitally zoom in. If you fully digitally zoom in on a subject using a 4:1 digital zoom on an eight megapixel camera, you will have a subject that is four times the size it was when fully zoomed out, but that subject will be recorded at only two megapixels resolution. Using the digital zoom "crops" the image on the camera's sensor, and only records the inner portion of the sensor, yielding an image with lower resolution. The last thing you want is to return home with digitally zoomed images of a beautiful, exotic location only to discover that when you view or print them, they are useless because of low resolution.

Because of this loss of resolution, it is best to ignore completely digital zoom claims and capabilities of digital cameras. I recommend that if possible, turn the digital zoom completely off on your camera to prevent you from accidentally losing resolution of your zoomed images.



National Championship Archery Match, Thimphu, Bhutan. 3072x2048 pixels, 35mm.



10x Optical Zoom. 3072x2048 pixels, 350mm.



10x Digital Zoom. 307x204 pixels.

Digital Camera Types and Characteristics

There are four major categories of digital cameras suitable for travel photography, Photo Capable Mobile Phones, "Point and Shoot," Electronic Viewfinder (EVF) and Digital SLR (Single Lens Reflex). Each category has inherent strengths and weaknesses when applied to digital travel photography. The following guide will help you select the best type of digital camera to match your travel photography requirements.

1. Photo capable mobile phone

No other photographic option provides the easy accessibility of a mobile phone. Because it will always be with you, always be accessible and be the most used, thus most familiar, electronic device you own, the photo capable cell phone is tops in terms of always being ready to capture a memory of your travels.

For travel purposes, the ideal photo-capable mobile phone will support global roaming, multi-band GSM; a minimum of five megapixels of resolution and a removable memory card. The large number of megapixels is required because the relatively wide angle of the lens will require you to digitally crop the images. Consequently, you will need a large baseline resolution to yield a cropped picture with adequate resolution. United States market GSM phones are "locked" to American cell phone providers, so you will probably want to buy a phone you can "unlock" or purchase the phone overseas, where phones allow the use of market specific "SIM" cards for local providers.

Typical attributes of this segment include:

- Price range from \$50 to \$500+
- Resolution from .25 to 5 megapixels
- Very small size and light weight
- No or very limited digital zoom range
- Ability to send photos via the mobile phone
- Storage of photo files on removable memory card

Key features for travel are:

- 3 to 5 megapixels resolution
- Removable memory card
- Good battery life

Recommended System - Photo Capable Mobile Phone

- Photo capable mobile phone
- Two phone batteries
- Three or more memory cards (number depends on your memory card strategy)
- Mobile phone charger (110-240 volt, 50-60Hz/house current/mains)
- 12 volt mobile phone charger car adapter (12 volt cigarette lighter adapter)
- Hands free adapter
- Local phone carrier market SIM cards (purchased at destination)
- Phone lanyard, belt clip or pouch
- Small padded bag for system accessories (stored in or with clothing bags)



Japanese tourist taking a photo with her cell phone in Tokyo.

2. Point and Shoot (a.k.a. Point and Pray)

This class of camera is the easiest to operate, smallest, lightest and most popular among travelers. There are literally hundreds of different models from dozens of manufacturers in this crowded segment. Many feature innovative designs that make sense for the traveler, such as small size and 3 to 1 optical zoom. Some tout features that are pure marketing hype, such as built in caption balloons, which will be of limited or no value to a traveler. Even if you carry a digital SLR camera system, you will want to have a Point and Shoot camera in your pocket at all times for those moments when the big SLR is not available or appropriate.

Typical attributes of this segment include:

- Price range from <\$100 to \$800+
- Resolution from 2 to 8+ megapixels
- Small size and weight
- Optical zoom range of 3 to 1
- Small built in flash
- Automated camera operating modes (action, portrait, landscape, etc.)
- Fixed electronic (video) image preview and review screens
- Ability to record short video clips at 10 to 30 frames per second
- Simple menu systems & camera capabilities

Key features for travel are:

- Very quick start up. You want a camera that is ready to shoot in less than half a second from the time you turn it on.
- Quick shutter release response. You want a camera that shoots almost instantly after you press the shutter button. Look for a camera with 20 to 60 milliseconds of shutter release delay. (This delay can be mitigated for some shots by pre-focusing the camera by pressing the shutter release button half way down. Once the camera locks focus, then reframe the shot and press the shutter button fully. This technique works great for static shots but won't help much with most fast action situations.)
- Compact size. Cameras in this segment come as small as a credit card. The smaller the camera, the more likely you will have it quickly available. The bulkier the camera, the less likely you will dig it out of a bag to get the shot.
- Optical zoom range (ignore digital zoom capability). The absolute minimum optical zoom range is 3 to 1. The larger the zoom range the better, but keep in mind that the more optical zoom range you have, the bulkier the camera is likely to be. Ignore digital zoom capability, it merely degrades the resolution of your photo.
- Image stabilization / anti-shake / vibration reduction. For cameras with optical zoom ranges of greater than 5 to 1, you need technology that keeps the image sharp as your hands shake. Without this technology, cameras with 8 to 1 and longer zoom ranges are essentially unusable without a tripod at the longer ends of the zoom range.



Wildflowers along the road.
Continental Divide, Southwest
Montana, USA. Canon S500,
five megapixels.

- Resolution. Because most cameras in this segment have a 3 to 1 zoom range, you will be doing a lot of digital cropping of these images. In order to retain adequate sharpness in the image, you need enough baseline resolution to allow you to “throw away” a lot of pixels (the dot-like elements that make up the picture) during cropping and still have enough resolution to make a print that isn’t soft or fuzzy. As a result, you will need at least five megapixels of resolution. Anything over eight megapixels is probably overkill, and not worth the overhead of the larger data files you will need to manage.
- Rugged construction. Look for a camera with rugged, metal construction. Cheap lightweight plastics will not survive the rigors, bangs and bumps of travel.
- Battery life. Nothing is more heartbreaking than lining up the perfect shot in an exotic location and having your camera battery die before you can shoot. Look for a camera with long battery life, and carry at least four charged batteries with you. And don’t forget to bring the camera’s battery charger with you on the trip!
- Mechanical lens protection. Make sure that your camera has a mechanical sliding cover or metal shutter that closes over the lens when the camera is not in use. Your camera will be thrown into pockets with coins, sloshed around in shoulder bags with metal objects, etc. You need to protect that precious lens from scratches and breakage.
- Powerful flash. While traveling, you will need to fill very large and dark spaces with your flash. Some compact cameras have built in flash units that are useless at distances of more than six feet. This will not be adequate for the challenging lighting situations you are likely to encounter. Look for a camera that can provide adequate flash performance for photographing a person in a dark room at distances of at least twelve feet (four meters).



Farm woman separates wheat from the chaff.
Himalayas, Sikkim, India.
Canon S500, five mega-pixels.

Recommended System - Point and Shoot

- Digital “Point and Shoot” Camera
- Three to six camera batteries
- Three to six (or more) memory cards (number depends on your memory card strategy)
- Camera battery charger (110-240 volt, 50-60Hz/house current/mains)
- 12 volt camera battery charger car adapter (12 volt cigarette lighter adapter)
- Lens cleaning blower brush
- Lens cleaning tissue
- Camera strap or lanyard
- Camera bag
- Small padded bag(s) for system accessories (stored in or with clothing bags)
- Optional components
 - o Tabletop tripod (8”)
 - o Portable printer, power supply, cable, paper and ink/ribbon
 - o Photo data file backup/viewing device with power supply

3. Electronic Viewfinder (EVF)

This segment features cameras that answer the needs of long optical zoom range (up to 10 to 1 and longer), advanced features for the serious photographer (the “prosumer”) and high resolutions (12 megapixels and climbing). The EVF segment is arguably the “sweet spot” for travel photography. It combines the light weight and relatively small size of the “point and pray” segment with the high resolution and advanced capabilities of the digital SLR segment, while avoiding the optical zoom limitations of the former and the weight, bulk, and internal dust challenges of the latter.

The EVF segment is arguably the “sweet spot” for travel photography.

Typical attributes of this segment include:

- Price range from \$500 to \$1,500+
- Resolution five to 12 megapixels (and increasing)
- Optical zoom range of 4 to 1 up to 11 to 1
- Moderate size and weight
- Moderate built in flash
- Creative camera operation modes (manual, aperture priority, shutter priority, program)
- Image stabilization / anti-shake / vibration reduction capability
- Electronic (video) viewfinder
- Pivoting electronic (video) image preview and review screen
- Ability to record variable length video clips at 10 to 30 frames per second
- Complex menu systems & camera capabilities



Kirstenbosch Botanical Gardens, Cape Town, South Africa. Nikon 5700, five megapixels. Photo by Stephanie Hackney

As well as the attributes of the “point and shoot” category - features, capabilities and considerations that are important for travel in this segment include:

- You will be unlikely to find mechanical lens protection in this category. Most models require you to manually remove and replace a lens cap.
- Because this segment features very long optical zoom ranges (again, ignore digital zoom capabilities), image stabilization / anti-shake / vibration reduction technology is an absolute requirement. It is essentially impossible to hand hold an 8 to 1 optical zoom camera at full zoom in anything but the brightest light (which yields a high shutter speed).
- Advanced camera modes, including Manual, Shutter Priority, Aperture Priority and Program Mode. These modes allow you to explore the full range of photographic creativity, enabling you to bring back images that fully capture the mood, vitality, beauty and energy of your travel destinations.
- Additional lenses. Although this segment features fixed zoom lenses, many models offer additional telephoto and wide angle lenses that attach to the front of the fixed lens. Some of these attachment lenses, especially the wide angle lenses, are bulky and very heavy. Keep this in mind when you are estimating how much weight and bulk you will be carrying. For instance, this can radically change the size of camera bag required to carry your complete camera system.
- Battery life. Because this segment uses an electronic (video) viewfinder, battery life can be very short. Be sure to carry enough batteries. Some travelers using EVF cameras carry as many as eight to 10 fully charged batteries to ensure they don't run out of power in areas where re-charging may not be available for a few days.
- Large memory cards. Due to their high resolutions, currently 12 megapixels and growing, cameras in this segment create very large data files, especially if shooting in RAW mode. Because of these large data file sizes, multiple two- to four-gigabyte memory cards are a good choice. I recommend a minimum of three four-gigabyte memory cards for an eight megapixel camera if you are planning to shoot in RAW mode. You can use lower capacity cards if you plan to shoot exclusively in JPEG format. I recommend carrying at least three memory cards in case one fails or is lost.
- Backup device. Because you will be generating a lot of large data files, it is likely that you will need a dedicated backup/viewing device for your images. A wide variety of options exist in this segment, including devices that burn your photo data files onto a CD and devices that copy your photo data files to an internal hard disk drive (just like the one in your computer at home). Some devices also include small “video” screens that allow you to review and/or display your photos in a slide show.



Farm woman in typical attire. Along the Sanin Coast, western Japan. Nikon 5700, five mega-pixels. Photo by Stephanie Hackney.

Recommended System - Electronic Viewfinder (EVF)

- EVF Digital Camera
- Four to ten camera batteries
- Three to six (or more) high capacity memory cards (number depends on your memory card strategy)
- Camera battery charger (110-240 volt, 50-60Hz/house current/mains)
- 12 volt camera battery charger car adapter (12 volt cigarette lighter adapter)
- Lens cleaning blower brush
- Lens cleaning tissue
- Camera neck strap or lanyard
- Camera bag
- Small padded bag(s) for system accessories (stored in or with clothing bags)
- Optional components
 - o Photo data file backup/viewing device with power supply (40-80 Gigabyte minimum)
 - o Tabletop tripod (8")
 - o Carbon fiber full size tripod with ball head & quick release plates.
 - o External flash (same manufacturer and/or matched to camera)
 - o Eight to twelve sets of high capacity disposable flash batteries
 - o External flash diffuser
 - o Wide angle lens and adapter
 - o Telephoto lens and adapter
 - o Lens filters and adapters (circular polarizer, neutral density, etc.)
 - o Lens cleaning fluid
 - o Compact laptop with power supply, memory card reader and DVD/CD writer
 - o Blank DVDs and DVD pre-addressed mailers (buy postage at destination)
 - o Blank CDs (used to move files to internet café computers for upload/email)
 - o Portable printer, power supply, cable, paper and ink/ribbon



Firefighter's helmet. Aydin, Turkey.
Nikon 5700, five megapixels. Photo
by Stephanie Hackney.

4. Digital SLR (Single Lens Reflex)

The top tier of photographic options for the traveler is the Digital SLR segment. These cameras and lenses offer the advanced amateur and working professional photographer the ultimate in lens sharpness, camera features, pixel resolution, rugged design and system performance. Offsetting these positives are the downsides of orders of magnitude more weight and camera system bulk that the traveler must carry, protect and manage.

Typical attributes of this segment include:

- Price range from \$500 to \$8,000+ (body only)
- Resolution three to 16 megapixels (and increasing)
- Separate and interchangeable lenses (purchased separately)
- Moderate to very large size
- Moderate to very heavy weight
- Moderate to extremely rugged design and construction
- Moderate built in flash (prosumer models) or no built in flash (professional models)
- Creative camera operation modes (manual, aperture priority, shutter priority, program)
- Image stabilization / anti-shake / vibration reduction capability usually included in the lens systems, sometimes available in the digital SLR body itself
- Optical viewfinders
- Fixed electronic (video) image review screens (note lack of image preview for composition and shooting)
- Moderate to extremely complex menu systems & camera capabilities
- Lens multiplication factors of zero to 1.6



San woman, Northern Namibia. Canon 10D, 6.2 megapixels. 35-350mm, 1/350, F6.7.

In addition to the factors applicable to the “point and shoot” and EVF segments, important considerations for travelers using digital SLRs include:

- Lens selection. Swapping lenses is not an optimum experience for the traveler. It often seems that having interchangeable lenses available merely guarantees that you'll have the wrong lens mounted for any given spontaneous shooting opportunity. While there will be times when you will have hours to wait for the perfect light, it is more common to have fleeting seconds to grab the shot of the farmer and his goats climbing the mountain, the wild carnivore crossing the trail or the laugh of the elderly vendor in the market. Because of this requirement to select from a wide range of focal lengths quickly during rapidly changing conditions, I have found that a wide ratio zoom, such as Canon's 28-300mm IS L, is the best lens to have mounted and ready. For specific shooting situations conducive to their focal lengths and capabilities I also carry an F2.8 16-35mm L and either a 24-70mm F2.8 L or a F2.8 100mm Macro.
- UV filters. Use top quality UV filters on all of your lenses. The front element of my 28-300mm lens, along with my trip's photography, was saved from destruction by my Hoya UV filter while I traveled in China. Using a filter means having more surfaces to clean, and a slight loss of light transmission, but it is much cheaper to replace a filter than the front element of a lens.
- Sensor dust. No matter how careful you are when you change lenses, dust will accumulate on your imaging sensor. If you are traveling for months at a time, you will need to have the digital SLR sensor cleaned during your travels, so either take some appropriate swabs & solution along or make arrangements to get some sent to you while

you're on the road. It is best to practice this procedure in the cleanliness, optimum lighting and comfort of your home or office prior to departure.

- Lens dust. When you change focal lengths with a zoom lens, the glass lens elements move back and forth inside the lens barrel. This movement sucks in air as the lens elements move back and forth in the barrel of the lens. This sucking pumps dust into your zoom lenses as you change focal lengths. Even with professional grade, weather sealed lenses such as Canon's L series, internal dirt will eventually be a problem. Unless all of your travel photography is in studio cleanliness conditions such as museums, dust will eventually find its way inside the lens. Once the dust has infiltrated your lens, shooting at small F stops such as F22 will yield a lot of time editing out dust spots. The only way to get the dust out is to send the lens into the repair depot to have it cleaned and recalibrated. This cleaning can take up to four to six weeks, so plan your back to back trips accordingly.
- Tough, rugged, road-worthy digital SLR bodies. Traveling is tough on equipment. If you are taking an African Safari, a trek through the Himalayas, or a journey through the deserts of the Middle East, you need an SLR body that can stand up to the abuse these hostile environments hold in store. Consumer market SLR bodies that are primarily plastic construction are not optimum choices. SLR bodies that use magnesium frames, tough composite or metal construction and feature weather sealed controls are designs better suited to the rigors, bangs, shocks, dust and moisture of travel.
- Match output / market requirements to your digital SLR's capabilities. It is important to match the fundamental capabilities of your digital SLR body with your intended purposes. If you are shooting stock photography, make sure to check your stock photo agencies' standards prior to departure. Some agencies have strict requirements for specific camera models, pixel resolutions, file formats and file sizes. If you plan to produce images for calendars or other large format uses, a resolution of 11 to 16 megapixels may be required.
- Frame rate and autofocus capability. If you are planning to photograph wild animals in Africa, action sports or other fast moving subjects, your digital SLR body needs to support a frames-per-second rate of at least six, if not eight, and have an image buffer capable of storing at least 18 to 30 images. In addition, a slow autofocus system will cost you many shots while in the field. A high performance autofocus system, with focus points in many portions of the frame, is essential for these types of subjects. For tracking moving subjects such as an approaching race car or a running animal, an autofocus system capable of maintaining focus on a moving target is required.



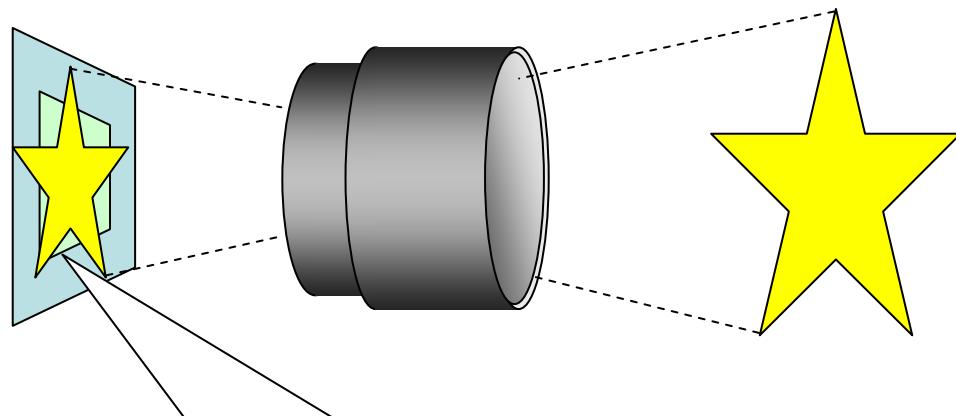
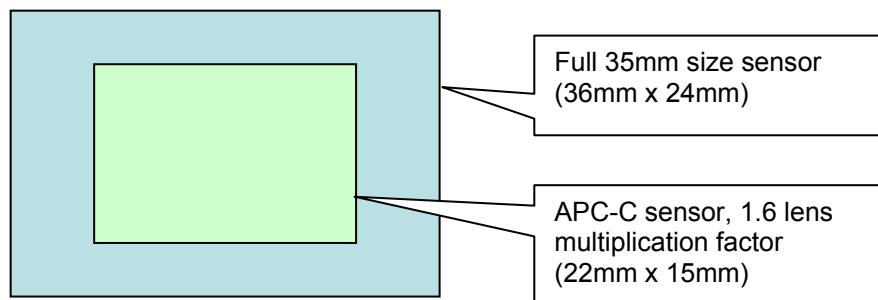
Arab woman walking in a backstage corridor. Roman theater, Bosra, Syria.
Canon 1D Mark II, 8.3 megapixels, 16-35mm, 1/60, F2.8



Canon 1D Mark II, 8.5 frames per second, AI servo auto focus. Baja California, Mexico.

- Lens multiplication factor. Digital SLR sensor sizes range from full 35mm size (36mm x 24mm) to less than 66% of a full 35mm frame. Smaller sensors do not use the full image available created by a standard 35mm lens. In this sense, smaller sensors optically "crop" the image, using only a portion of the center of the optical image formed at the sensor plane by a standard 35mm lens. This optical "crop" becomes an effective lens multiplier, causing a normal 100mm lens to perform like an effective 160mm lens when used with a .6625 sized digital SLR image sensor. This phenomenon has many different terms, ranging from "field of view crop factor" on the esoteric end to "lens multiplication factor" on the digital camera manufacturer marketing end. The upside for travel photographers is that the lens multiplication factor of digital SLR causes telephoto lenses get "extended" by the applicable factor for your digital SLR camera body. An F5.6 300mm lens performs like an F5.6 480mm lens when used on a 1.6 lens multiplication factor digital SLR. The downside is your wide angle lenses are also "extended" by the multiplication factor. Your 24mm lens performs like a 38.4mm lens when used on a 1.6 lens multiplication factor digital SLR.

Full 35mm Size Sensor vs. APC-C Size Sensor Comparison



Due to the cropping of the available image by the smaller sensor, the effective length of the lens is multiplied. In this case, a 100mm lens performs like a 160mm lens on a camera with a 22mm x 15mm sensor. The lens performs normally on a camera with a full 35mm size sensor (36mm x 24mm).

- Flash. Carry a high output flash that is matched to your camera's auto-exposure system. Carry plenty of batteries for your flash and change them often. Don't wait until they are completely dead, keep a fresh set in the flash at all times. It is heartbreaking to miss a shot because you are waiting for the flash to recycle. If your flash does not have a slide-out catchlight screen/reflector, consider carrying a small one that will Velcro to your flash. A plastic diffuser hood is also a good idea if you've got the room in your camera bag.
- Multi-tiered file backup. If you are dedicated to your photography enough to carry, monitor and protect a digital SLR & lens system as you travel the world, then your photographs mean enough to you not to lose them due to data storage system failure. A viable data file backup strategy and systems are vital to ensuring that your once-in-a-lifetime images find their way home. I recommend a three tiered system consisting of a laptop, a backup device and recordable DVDs. I make a copy of all photo image data files from each camera to the laptop every day. I copy the files from the laptop to recordable DVDs and mail them home with pre-addressed mailers I bring along. (I've mailed well over 50 DVDs home from all over the world and every single one of them has arrived safely.) As each memory card is filled, I copy the card's files to the portable backup device. This yields three copies of each file: one on the laptop for field edits, emails & web postings; a second on the DVD that is mailed home; and a third on the portable backup device. The key is to never, ever have the only copy of your data file on a hard drive in a laptop or a portable backup device. It is not a matter of if a hard drive will fail, only a matter of when.
- Filters. After starting with a wide assortment of filters, I ended up carrying a single circular polarizer filter. I happened to have a range of lenses that shared a common filter size, so I was able to share one filter among all lenses. In my case, because we normally travel by motorcycle, this space and weight savings was important.
- Tripod. I carried a carbon fiber tripod around Africa, but did not take it to any other continent. I couldn't justify the weight and space on the motorcycle considering how little I was using it. If you use a tripod, a ball head is much faster to adjust and more convenient than a three axis design.



Entry detail. Forbidden City, Beijing, China. Canon 1D Mark II, 8.3 megapixels, 28-300mm, 1/180, F9

Recommended System - Digital Single Lens Reflex (SLR)

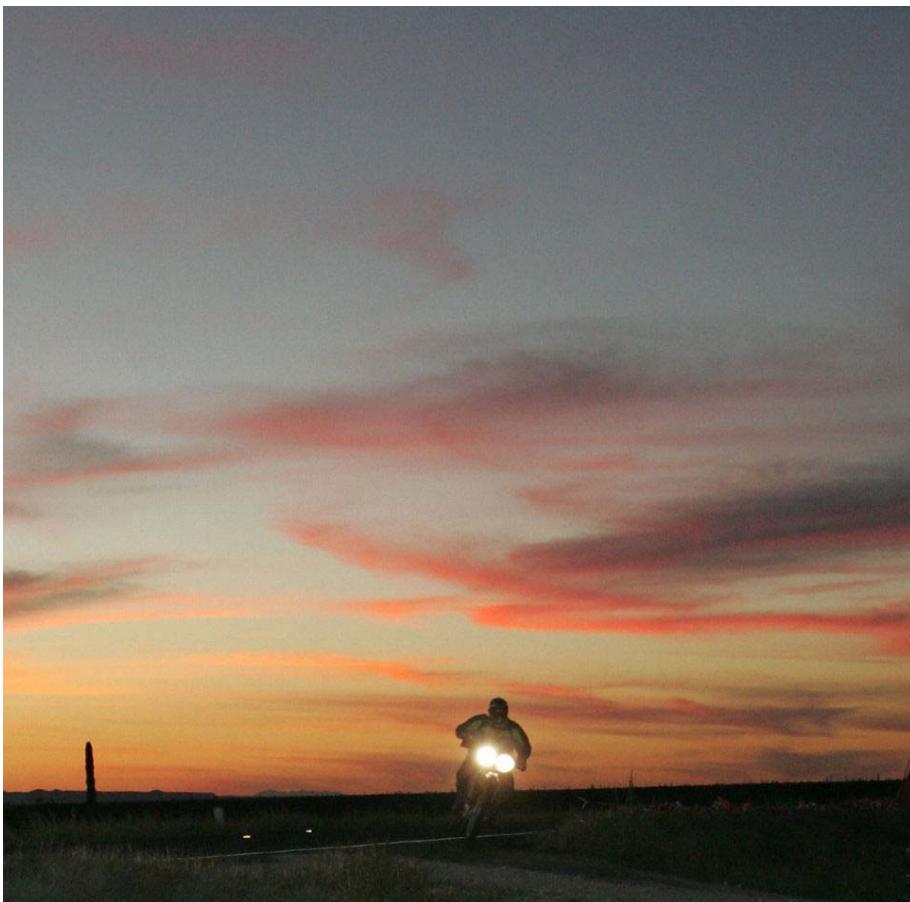
- Digital SLR body
- Battery grip (if required/available) (adds battery capacity and vertical framing shutter button)
- Three to eight camera batteries (depending on battery life)
- Three to six (or more) high capacity memory cards (number depends on your memory card strategy)
- Wide ratio zoom lens (28-300mm or equivalent)
- Wide angle zoom lens (16-35mm or equivalent)
- UV filters for all lenses
- Lens shades for all lenses
- Lens and body caps for all bodies and lenses
- External flash (maximum output, same manufacturer and/or matched to camera)
- Eight to twelve sets of high capacity disposable flash batteries
- Camera battery charger (110-240 volt, 50-60Hz/house current/mains)
- 12 volt camera battery charger car adapter (12 volt cigarette lighter adapter)
- Photo data file backup/viewing device with power supply (40-80 Gigabyte minimum)
- Lens cleaning blower brush
- Lens cleaning tissue
- Lens cleaning fluid
- Camera hand or neck strap
- Spare camera "button" battery (used to retain date/time and camera settings) (if required)
- Camera bag
- Small padded bag(s) for system accessories (stored in or with clothing bags)



Yellow Billed Stork. Okavango Delta, Botswana

Optional components

- Fast prime lens(es) (wide angle, mid-range, telephoto), i.e. F1.4 50mm
- Fast mid-range zoom, i.e. F2.8 24-70mm
- Macro lens(es)
- Spare digital SLR body (with required batteries, chargers, etc.)
- Tabletop tripod (8")
- Carbon fiber full size tripod with ball head & quick release plates
- 12 volt to 110 volt inverter (cigarette lighter male to 110 volt female, match wattage capacity to camera battery charger and data file backup device requirements)
- Lens filters (circular polarizer, neutral density, etc.)
- External flash diffuser
- Compact laptop with power supply, memory card reader and DVD/CD writer



2004 Baja 1000 competitor enters pit #14, Baja California Sur, Mexico.
Canon 1D Mark II, 8.3 megapixel, 28-300mm, 1/200, F4.

Beyond the Camera

Camera Bags

With the hundreds of camera bags available, picking the perfect bag for your travels can seem as overwhelming a task as picking your camera system. Important features to keep in mind when selecting a bag for digital travel photography include:

- Adequate capacity. Travel requires you to keep everything with you for long periods of time. Obviously, you need padded compartments for your camera, lenses, flash, etc. You also need adequate capacity for photography supplies such as extra camera batteries, flash batteries, filters, cleaning supplies, folding reflectors, etc. In addition, you need some room for pens, a small flashlight, a journal, a foreign language phrase book/dictionary, maps, keys, spare/sun/reading glasses, emergency stash of U.S. & foreign currency, medications, laptop, PDA, cell phone, battery chargers, etc.



Photographing Japanese snow monkeys in the rain. Note the integrated rain cover on my LowePro Mini Trekker AW camera backpack. Joshin-Etsu Kogen National Park. Shiga Kogen, Japan. Canon 10D. 6.3 megapixels. 75-300mm, 1/180, F8. Photo by Stephanie Hackney.

- Rugged construction. Travel is tough on equipment, especially on bags that will be shoved into overhead compartments, jammed under seats, banged into walls, dropped onto rocks, plopped down on trails, etc. You need a quality bag from a reliable supplier. Look for double stitched seams; padded lower, side and upper layers; fully adjustable padded dividers; see-through inner pockets; heavy-duty, self-healing zippers; well padded shoulder straps; multiple external attachment points (D-rings, straps, etc.); easily located handles; excellent fully-loaded balance; tripod-carrying attachment points and well designed external bag-system attachment points (used to add additional bag-system components such as lens tubes, camcorder bags, etc.).
- Weather resistance. Extended travel means being exposed to all types of weather. You need a bag that is water resistant (such as LowePro's AW series) or completely waterproof (such as LowePro's DryZone series). Look for bags with weather resistant features, such as integrated rain covers and waterproof inner pockets. Zippers that are protected by an overlapping flap are especially valuable in dusty or windblown sand conditions. I have had good success in increasing weatherproofing by spraying my travel camera bags with a waterproofing treatment, such as 3M's Scotchguard. Check with the directions and the manufacturers to ensure you are using a spray that is suitable for the material used in the external surfaces of the camera bag. Spray a small, hidden portion of the bag first to check on the effects of the waterproofing product.
- Comfort. After hiking around an archeological site for 10 hours or prowling museums for a few days you will be cursing your camera bag, no matter how comfortable and well designed. If you start with a bag that distributes the weight well, is easy to access and

provides a variety of load positions, you'll do a lot to ease the inevitable pain. Bags that locate the weight on your hips are a much better choice for long term wear than ones that put the weight exclusively on your shoulders, especially one that is slung over a single shoulder. For larger systems, camera backpacks that include a hip belt are the best choice.

- Access. The ever changing conditions and imaging opportunities of travel photography demand quick and easy access to your equipment. Look for bags that open fully to completely expose all pockets and camera/lens/accessory storage slots. Easy to operate zippers with large, easy to grasp zipper pulls are essential. Easily accessible outer pockets that provide quick access to pens, journals, keys and filters are also very handy.
- Size. You will soon find that your travel pleasure is inversely proportional to the amount of stuff you are dragging around the planet. Being responsible for moving, monitoring and protecting multiple large bags quickly drains the pleasure out of travel exploration. Maximum travel photography pleasure can be derived from one camera bag that easily fits under an airplane seat.
- Water bottle carrying capability. Travel photography inevitably involves hikes, excursions, explorations or just plain standing in line in places where water is not available. Ensure your camera bag has water bottle carrying capability, either through an integrated pocket or via an additional pouch or bag that attaches to your main camera bag.
- Mesh outer pockets. Another very handy feature is elastic mesh outer pockets. The ability to quickly tuck maps, brochures or other items into an expandable pocket whose mesh allows you to view the pocket's contents is both convenient and practical.
- Stealth. Cameras are natural targets for thieves. Don't advertise yourself and your camera system as a target by picking a brightly colored bag or one adorned with large camera manufacturer logos. Dark and muted colors with non-descript markings are a better choice. Don't be afraid to cover or remove any identification that signals that your bag is carrying photographic equipment. One reason camera backpacks are so popular with traveling photographers is that to the uninitiated, they look like just another backpack. Keep in mind that your goal is to make yourself one or two notches less of a likely target than the next camera toting tourist. A little camera bag stealth goes a long way towards that goal.



Ensure your camera bag is comfortable for long days exploring and well balanced to enable flexibility and multiple shooting positions. Roman ruins, Palmyra, Syria. Canon 1D Mark II, 8.3 megapixels. 28-300mm, 1/1600, F6.4

Tripods
Light weight
Height (# of sections)
Strength
Adaptability (macro)
Head (ball vs. 3 axis)
Required accessories (cable release, viewfinder)

Weather bags

Ziplocks (cold & hot/humid)

Flash

Data backup devices

Workflow

Taking the digital photo is just the beginning. Digital photography also includes the opportunity for image enhancement, editing, cropping, special effects, printing, album creation, web posting and computer and video slide shows. In addition, your digital image data files need to be copied, organized and archived. These functions are performed using various software programs on your laptop or desktop computer. The combination of these activities is called workflow.

It would be wonderful if there was a single “all singing, all dancing” computer software application that was outstanding at every aspect of digital photography workflow. While every photographer has their favorite software to manage workflow, there isn’t a perfect solution that satisfies all types of digital photographers. For many digital photographers, a multi-talented application such as Adobe Elements provides the necessary level of digital photo file organization, editing and archiving. For advanced amateurs and professional photographers, it usually requires a combination of different “best of breed” applications to overcome the various aspects of the workflow challenge.

Regardless of the software utilized, your workflow strategy and software must provide the capabilities to manage your digital photo files through the steps of acquisition, download, edit, modify/enhance, print, electronic distribution and archiving.

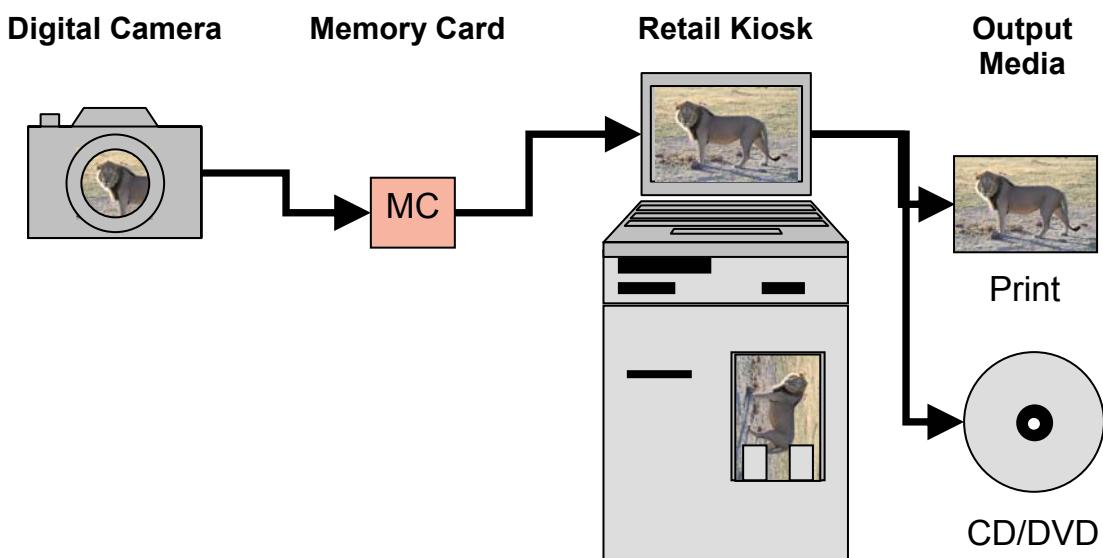
Workflow for Travel

The digital travel photographer faces some unique workflow challenges. If you are traveling to a fully developed economy such as Europe, you have a myriad of retail kiosk options for downloading, editing and printing your images. If, however, you are headed for a developing economy, you cannot count on purchasing additional memory cards, batteries or retail kiosk services of any kind.

Developed Economy Destination

When traveling to developed economies, you may choose to rely on local retail kiosks for backing up your images to CD or DVD. You can then mail a copy of these CDs/DVDs home and keep a copy with you. This relieves you of the burden of carrying blank CD/DVD media and a laptop or CD/DVD backup device, along with its power supply and cables.

Developed Economy Destination Digital Travel Photography Workflow

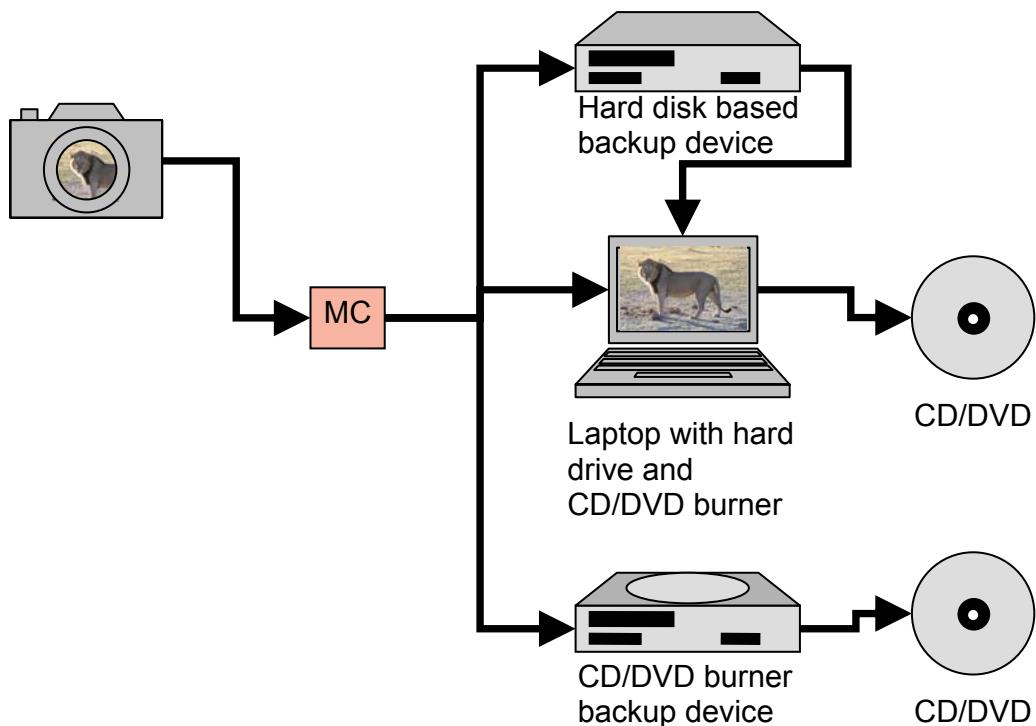


Developing Economy Destination

When traveling to developing economies, you must be completely self-reliant. You must bring all required batteries, blank CD/DVD media, laptop or backup device(s), and all required power supplies, power adapters, outlet strips, cables, CD/DVD mailers, etc. Developing countries are very unlikely to have any memory cards or electronics that you require outside of the major cities, and they may not be available even there.

Developing Economy Destination Digital Travel Photography Workflow

Digital Camera → Memory Card → Backup Devices → Archival Media

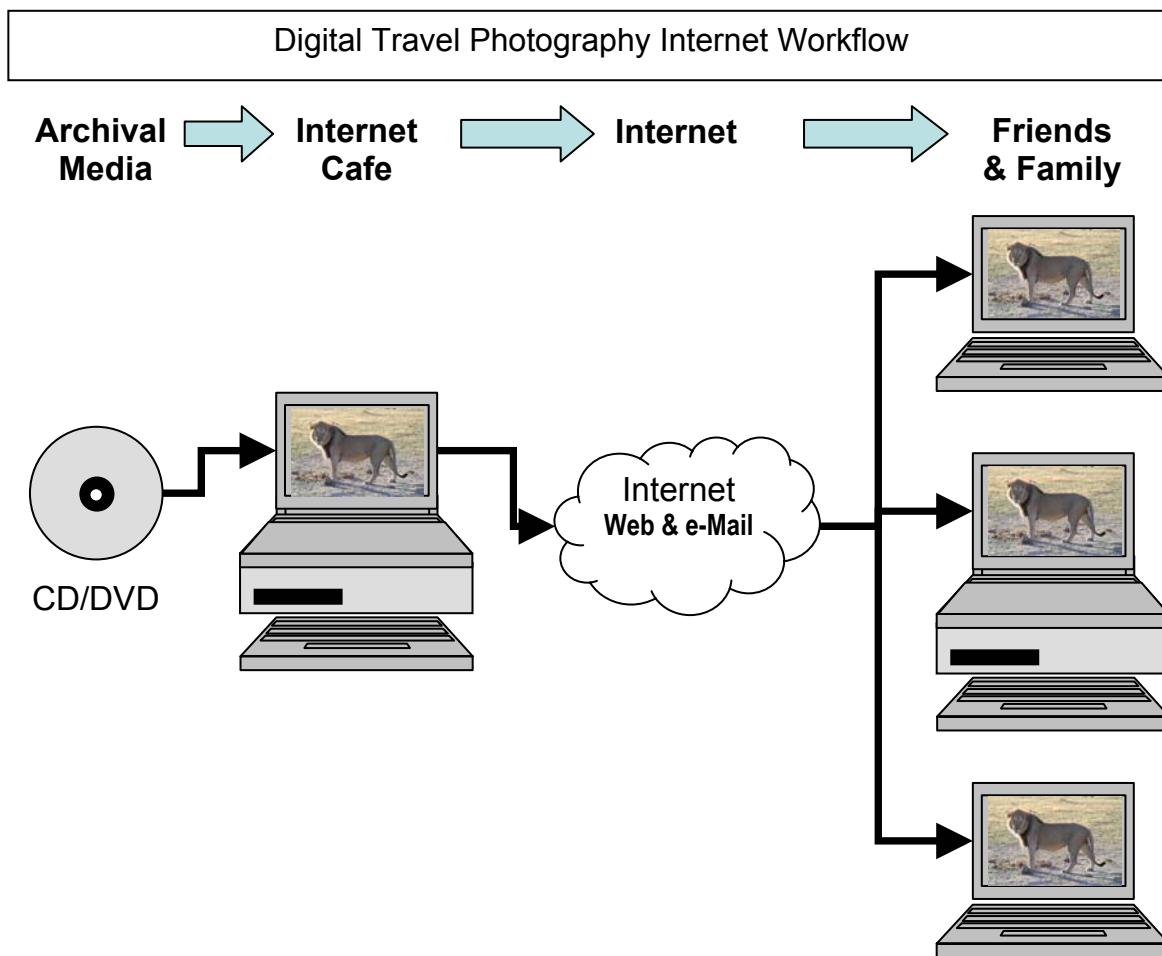


Internet Workflow

To post your images on the web or to send them via email, you will need access to the internet.

In developed economies, you may have a high speed internet connection available in your hotel. You may also have access to a high speed wireless connection for your laptop at your hotel or local retail establishments such as coffee shops or cafes. If these are not available, you may find it more economical and much quicker to copy your files to a CD and use the high speed connection of an internet café rather than a dial-up connection.

In developing countries, dial-up connections can be as slow as 6kbs and wireless connections are virtually non-existent. Internet cafes in developing countries often have a single dial-up modem at 28-56kbs that is shared by up to a dozen computers. In these areas of the world, it is important to allow plenty of time for the upload of your images and it is critical that you properly size your images for internet use as described later in this section.



Workflow Preparation

Workflow actually begins before you take your first travel photo. By keeping your digital photography materials clearly labeled and organized, you will greatly ease the entire workflow process.

Sequentially Number Memory Cards

First, clearly label all of your memory cards with a sequence number. Having your memory cards numbered allows you to use them in sequence, download or copy them in sequence, re-format and re-use them in sequence, and quickly spot if you've misplaced a card. This becomes important on long trips when you are re-using and re-formatting your memory cards.

As memory card prices continue to drop and new cameras continue to increase in resolution, it's inevitable that you will build a collection of ever larger memory cards. For this reason, you may wish to use different sequence numbers for different size cards. For instance, I label my two GB (gigabyte) memory cards 20 through 29 and my four GB memory cards 40 through 49. This allows me to tell at a glance what size of memory card it is, regardless of which side of the memory card is showing through the see-through pockets of my camera bag or memory card organizer.

Sequentially Number Recordable CD/DVDs

Next, add descriptive labeling and a sequence number to the blank recordable CDs and DVDs that you are taking on your trip. The name of the trip, the month and year and the sequence number of the disc are very helpful when you are reconstructing or locating files at a later date.

Pre-address DVD Mailers

If you are mailing data file backup DVDs home during your travels, pre-address your DVD mailers. Be sure to include your home country in your address. It can help if you spell out your home country name in the language of your destination, for instance Arabic or Mandarin. That will ensure that your DVD mailer will at least make it to the main international exit point of the country you are visiting.

Do not use your home address for both the destination and the return address. If you are mailing the DVD to the United States and it arrives with insufficient postage, it will be sent to the dead letter office if the return and destination address are the same. Use the address of a trusted friend or relative for the return address. That way, if there is insufficient postage or another problem, the DVD will be directed to an address you can recover it from.

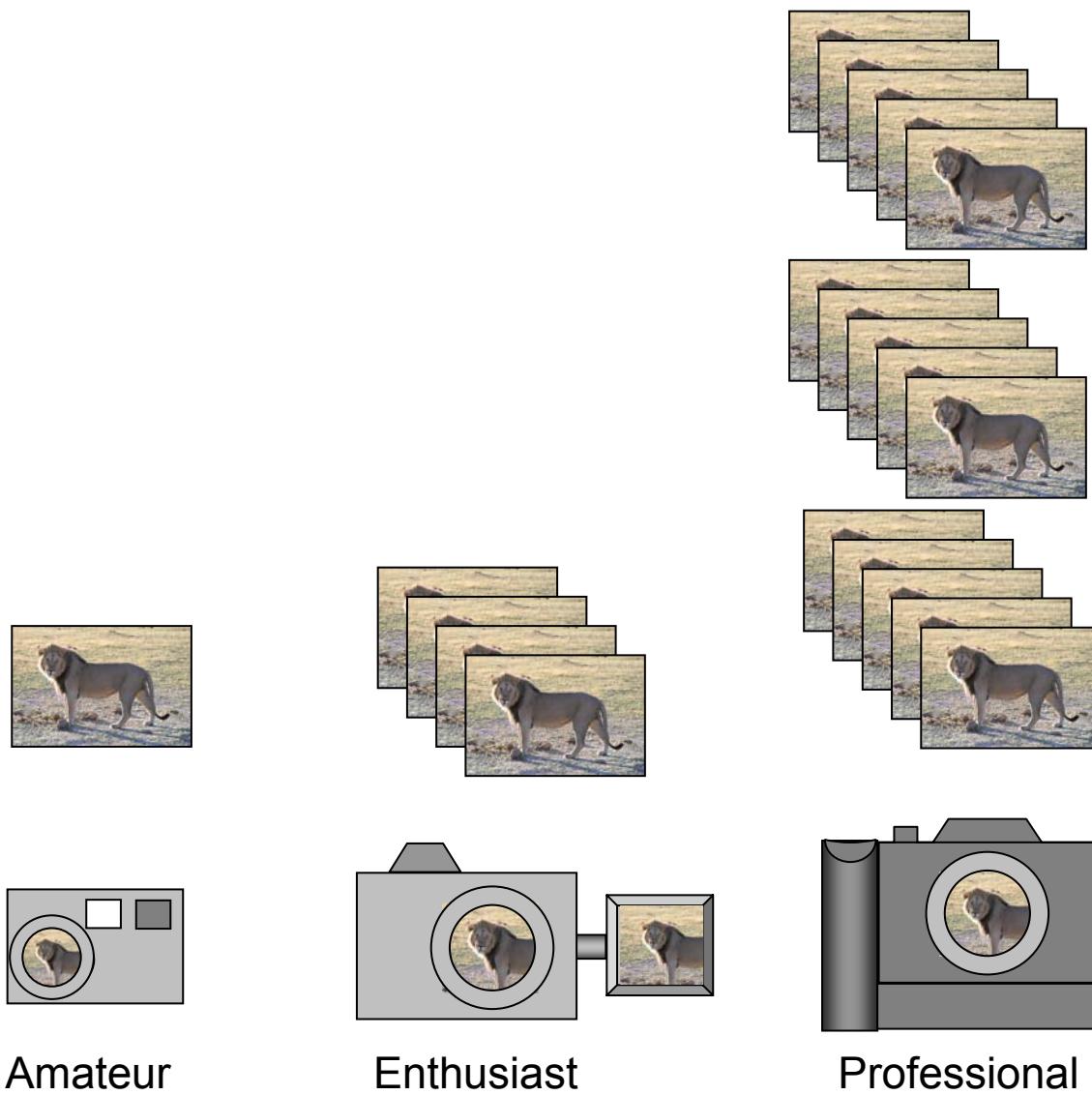
Acquisition

If you are like many travelers, during your travels you will shoot a large number of digital photographs. Because there is no cost to capture an image with your digital camera, it becomes possible to explore your photographic creativity and take photos that provide views, angles and perspectives that you would not have pursued with film. In addition, the "film is free" aspects of digital photography allow us to shoot multiple images of changing subjects without the high costs of film processing.

All this freedom adds up to the typical travel photographer accumulating a large number of digital photo data files. For instance, in one recent year of global adventure travel I personally shot over 50,000 digital images. In comparison, my father shot about 1,700 digital images during a one month tour of Europe. As you can see, regardless of your destination, you are likely to return with a large number of digital photo files that need to be downloaded, organized, edited and archived.

If you are on an extended journey of more than a few weeks, I have found it very valuable to edit and caption the images as the trip progresses. It is much easier to identify and caption images while the memories are still fresh in your mind and the guidebooks and maps are close at hand.

Relative Image Acquisition Rates



Memory Card Strategies

A major difference between digital and film based photography is that the medium we use to store digital images, the memory cards, are re-usable. While this means we only have to buy them once, we also must have a strategy for what we're going to do with our image data files before we re-format and re-use our memory cards. When a memory card is re-formatted, all of the image data files contained on it are erased. Unless we have a strategy for copying those image data files to a safe place prior to re-formatting, we will lose any images we have captured and stored on that memory card.

Memory card strategies are part of digital photography "workflow," the process of capturing, storing, creating safety copies (backing-up), editing, printing, and electronically distributing digital image data files.

There are two primary strategies for the use of memory cards for travel photography: fill and flush.

Each strategy has its strengths and weaknesses. While the fill strategy is very simple and requires no additional electronics, it is also the most risky in terms of losing your images. The flush strategy provides multiple layers of data redundancy, but requires a significant amount of additional electronics, along with their attendant



Backing up image data files under a mosquito net. Victoria Falls, Zambia. Photo by Stephanie Hackney

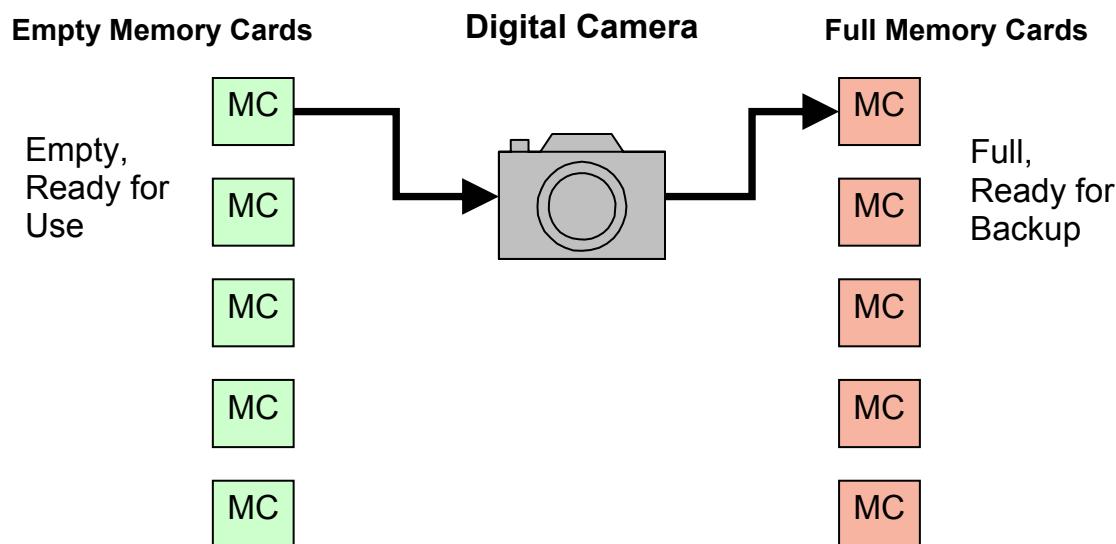
Fill Memory Card Strategy

The fill strategy is an “old school” approach that treats memory cards as if they were rolls of film. In the fill strategy, the memory card is filled with images and then stored until the traveler returns home, where the image data files are copied to a computer and/or taken to a photo processing lab to make prints.

The fill strategy requires the traveler to carry enough memory cards to contain all the images that will be captured during a trip. This number is difficult to estimate, even for seasoned travelers. If you run out of memory cards, then you need to purchase more, which may be impossible in many parts of the world, or delete images from previously used memory cards and re-fill those cards. Re-filling partially full memory cards can lead to many painful challenges in organizing your images once you return home, and depending on your camera settings, can present problems with how your image data files are named and numbered.

The fill strategy is best suited to short trips when the trip’s images can be easily stored on the available memory cards. The fill strategy is well suited to digital photographers who seek the simplest, least complex, easiest to understand and execute digital travel photography workflow.

“Fill” Memory Card Strategy

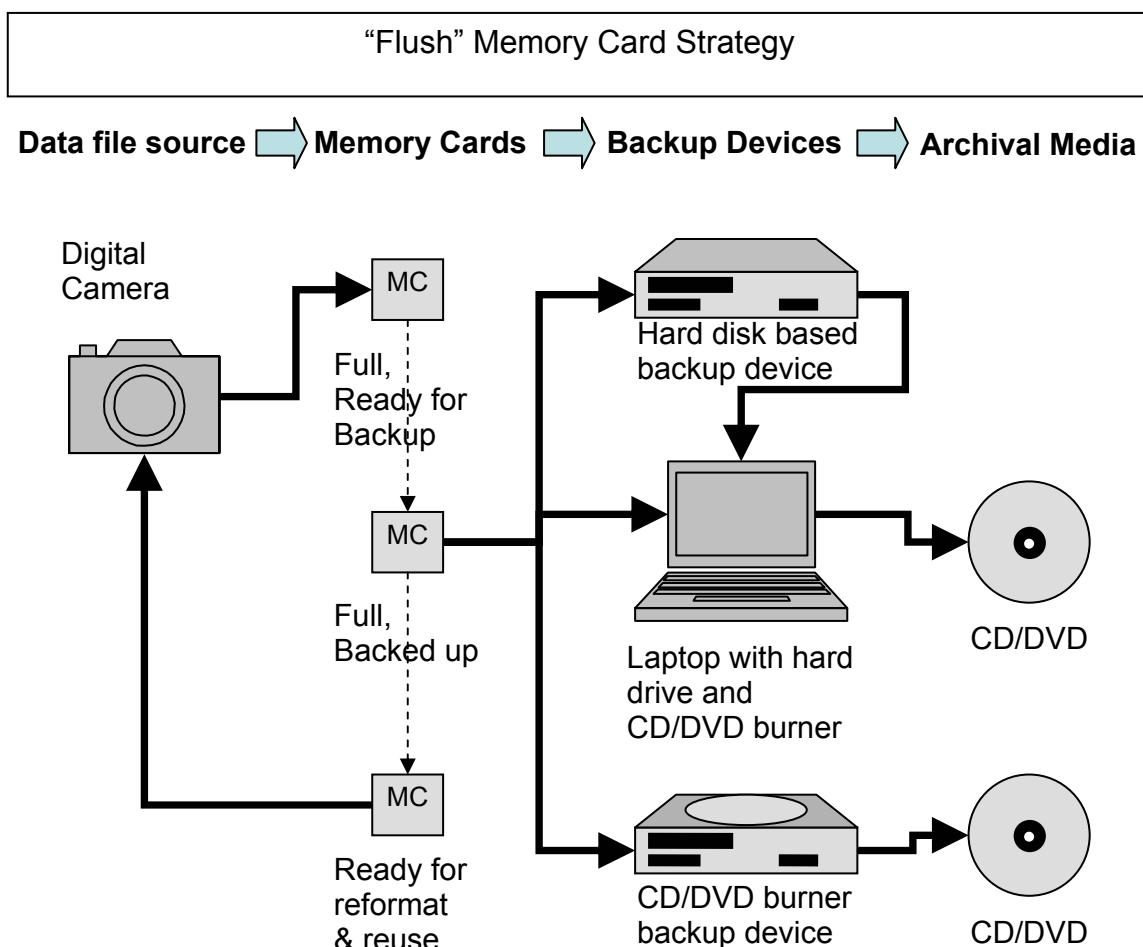


Flush Memory Card Strategy

The flush strategy requires the image data files to be copied from the memory card to a backup device while traveling. Once the image data files are copied, the memory card is re-formatted in the camera and re-used. This cycle is repeated as many times as necessary during the trip.

The flush strategy requires the traveler to carry at least one image data file backup device, along with its power supply and any required cables, adapters, storage bags, recordable media, etc. While the flush strategy minimizes the required investment in memory cards and enables potentially unlimited image capture, it burdens the traveler with additional electronic devices and their attendant requirements for instruction, knowledge, operation, movement, management and security. In the case of image data file backup/storage devices, it also presents the risk of having the only copy of your images stored on a hard disk drive, a highly risky scenario that I recommend avoiding at all costs.

The flush strategy is best suited to longer trips where the number of expected images is impossible to estimate. The flush strategy is well suited to digital photographers who are comfortable with technology, familiar with moving and copying data files and understand the risk profiles of various types of digital file data storage devices and their associated media.



Regardless of which memory card strategy selected, it is important for the travel photographer to think through their memory card strategy and their overall digital image file workflow.

Download

Once a digital photo file has been created on a memory card, it needs to be copied or “downloaded” to a computer system for the remaining steps of the workflow process. As part of the downloading process, computer file folders are created, image data files are renamed and vertical images are auto-rotated to display properly.

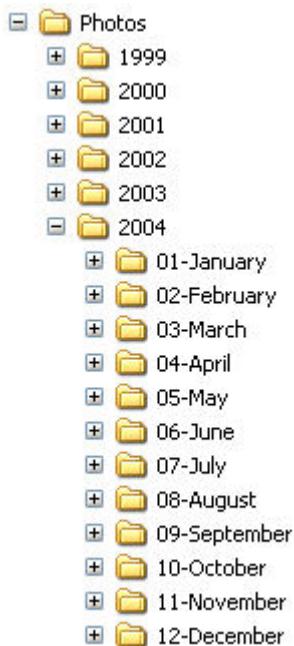
Ideally, your download software provides automatic recognition of your memory card or attached camera. Once the computer recognizes that your camera is attached via a cable or your memory card has been inserted into a memory card reader, your digital photo file download software creates the file folder, copies and re-names the digital photo data file, and auto-rotates the images files.

Folder Structure

One of the important decisions you need to make is the form of the folder structure that your digital photo files will be copied to. Popular computer systems support a file system that allows you to store your images in a hierarchical structure. You can have a master folder named “photos” and sub-folders inside named “2005, 2006 and 2007.” It is important to have a system of folder hierarchy and naming that allows you to quickly locate a digital photo at a later date.

Many digital photographers begin by naming their folders for the event, trip or location where the photos were taken. As they begin to accumulate many folders of digital photo files, it becomes increasingly difficult to locate the folder with the photo you are seeking. After a decade of digital photography, and many different attempts at photo file folder organization, I have settled on a date based hierarchy and file organization system.

Digital Photo Data File Folder Structure Organized by Date



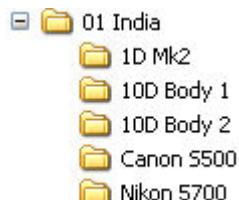
Digital photo file folders organized by date. Note the leading numbers preceding the month names that enable proper sorting and display of the month folders.

Digital Travel Photography

Within the month folders, organize the digital photo data files by destination.



Within the destination folder, organize the files by digital camera.



Grouping the files by camera makes it easier to apply enhancements and modifications that are necessary for all files that a given camera creates. For instance, a camera may create files that can all be improved by a slight change in color balance or sharpness. Having all the files from a given camera in one folder makes it simple to select all the camera's files to apply the modification. It is also easier to do batch file format conversion operations, such as converting camera RAW format files to JPG files if all of a camera's RAW files are in a specific folder.

If you have not created the folders in advance, you will need to create them as part of the digital photo file download process.

File Renaming

The next step in the workflow is to rename your digital camera photo data files. Digital cameras create file names for your photos that are a combination of letters and numbers, such as IMG_7462. The letters are a combination chosen by the camera manufacturer. The number is a sequential count of the photos taken by the camera since it was new or the file number counter was reset.

There are several problems with the default file names created by digital cameras. First, the camera does not generate unique file names. This becomes a big problem when you start accumulating a large number of digital photos. When the camera reaches 10,000 shots, it resets the file name counter. This will create a second file named IMG_0001, just like the first image the camera created, and the file name sequence will be repeated.

Second, a file name of IMG_7462 does not tell you anything about where this image came from or when it was created. This becomes a big problem when you try to figure out the subject of the photo at a later date. Some computer photo editing programs change the date stamp on the photo data file when you edit the photo. Others strip out or delete the internal information the camera stores into the photo data file about the camera settings and the date and time the image was captured. Either case will leave you with a photo data file with no clues in it about when it was captured.

Professional commercial photographers creating images for product advertisements rename their photo data files with a simple sequence number and store them in folders named for their internal project number, possibly including a client name. This methodology, while appealing from simplicity standpoint, doesn't work well for digital travel photography. Digital travel photographers tend to use multiple digital cameras, generating data files with multiple resolutions and formats, i.e. JPG and RAW. Digital travel photographers may convert a RAW image to JPG for web display while traveling and need to later return to that RAW image to generate a large format print. Digital travel photographers also tend to present their work in print and the web using all available images, regardless of the camera that generated the image. Because of this, we need a file naming system that preserves the date the image was captured (to protect us from software that might strip out that information), the camera it was captured on (to preserve the source resolution and type information), and the camera file name (to enable return to the original format file).

A sample file renaming convention that achieves all of these goals is: Year-Month-Day-Camera-Filename. An example of this format applied to a digital photo data file named CRW_8764.CRW is 2004_02_18-10D1-CRW_8764.CRW. This file re-naming convention allows the digital photographer to discern at a glance when a digital photo was created, which camera it was created on and the original file name. Regardless of how many times the photo has been edited, modified, cropped and reduced in resolution, this file name enables you to quickly locate the original format full resolution file using the date, trip and camera based folder hierarchy. This "audit trail" capability tying the file name to the original file and its location is the most important aspect of this file renaming convention.

File Renaming Convention Example

2004_02_18-10D1-CRW_8764.CRW

Year, Month and Day the image was created. Allows easy sorting and painless integration of images from different cameras in the same folder.

Camera Identification. Allows easy identification of source camera.

Original file name. Enables "audit trail" back to original source file at any time if subsequent edits append to rather than replace this name.

In order to retain the powerful capabilities of this approach, you must retain the base file name when editing or changing the file. For instance, if you create a small, cropped version of the file to post on the web, append –web to the file name instead of saving the file as "travel-pic-web.jpg." You may think you'll never forget the location and original file name of that charming shot of the young monk, but chances are it will be very difficult for you to find the original file a few months later without the built-in clues this file naming convention supplies.

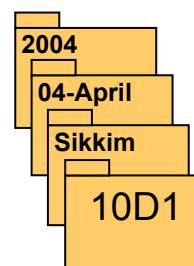
"Audit Trail" File Renaming Convention

**Low resolution, cropped, JPG
web site image**



2004_04_08-10D1-CRW_8764-web.JPG

**High resolution, RAW format
original image**



2004_04_08-10D1-CRW_8764.CRW

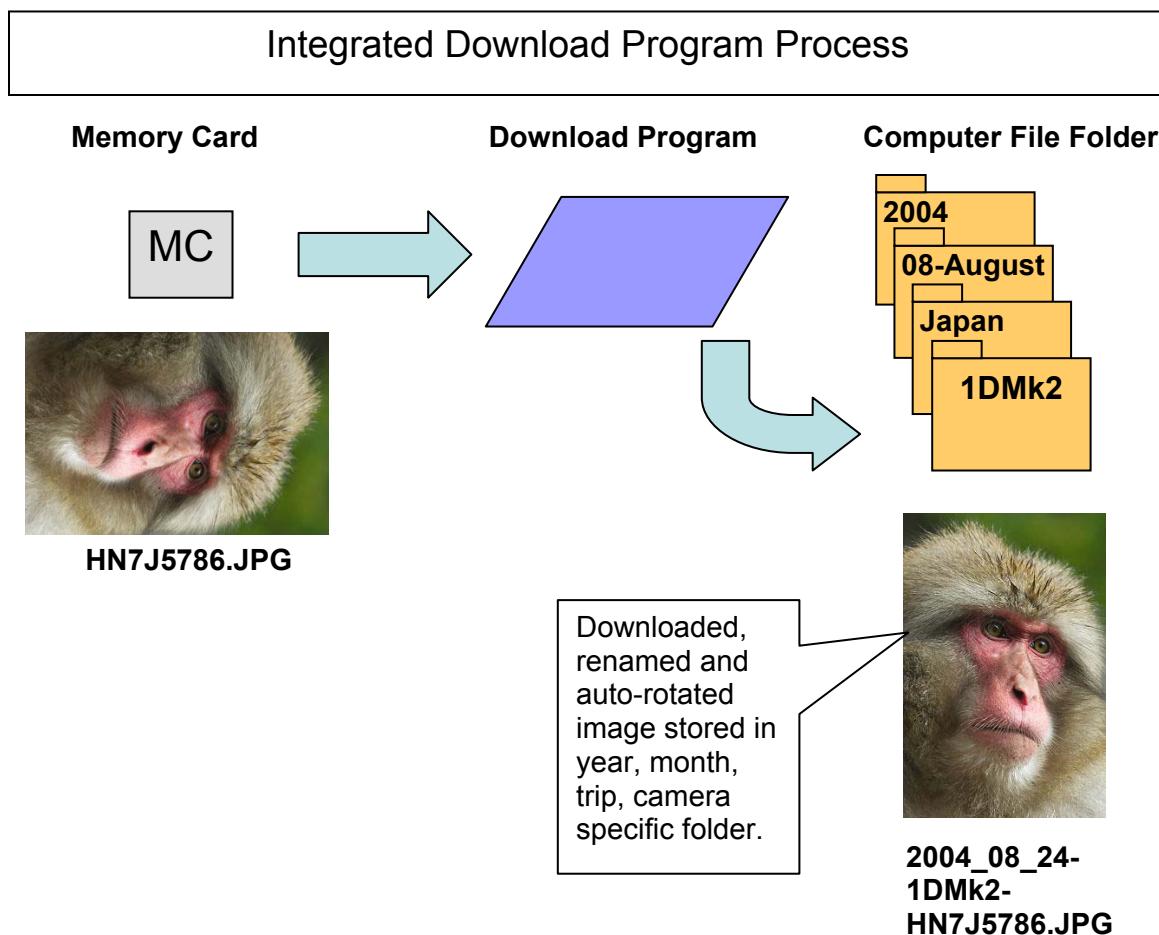
File renaming convention enables quick and easy discovery of full resolution original file.

Auto-Rotation

The next step in the downloading process is to auto-rotate your images. Modern digital cameras contain information embedded into the digital photo data file that provides information about the camera and the image. This information is called "meta data," and the image specific information is EXIF (Exchangeable Image File) information. One piece of EXIF information is the orientation the camera was held in when the photo was taken. As you push the shutter button, the camera records the horizontal or vertical camera orientation information. Computer software can read this EXIF orientation information and automatically rotate your digital photo file so that when you view the image on your computer, it is properly displayed.

Integrated Download Program

Ideally, all three of these steps, creating the image data file folder, downloading the files to the folder, renaming the files and auto-rotating the images will be performed automatically by one computer program. This is much simpler for the photographer than needing to learn and operate multiple software applications to accomplish these goals.



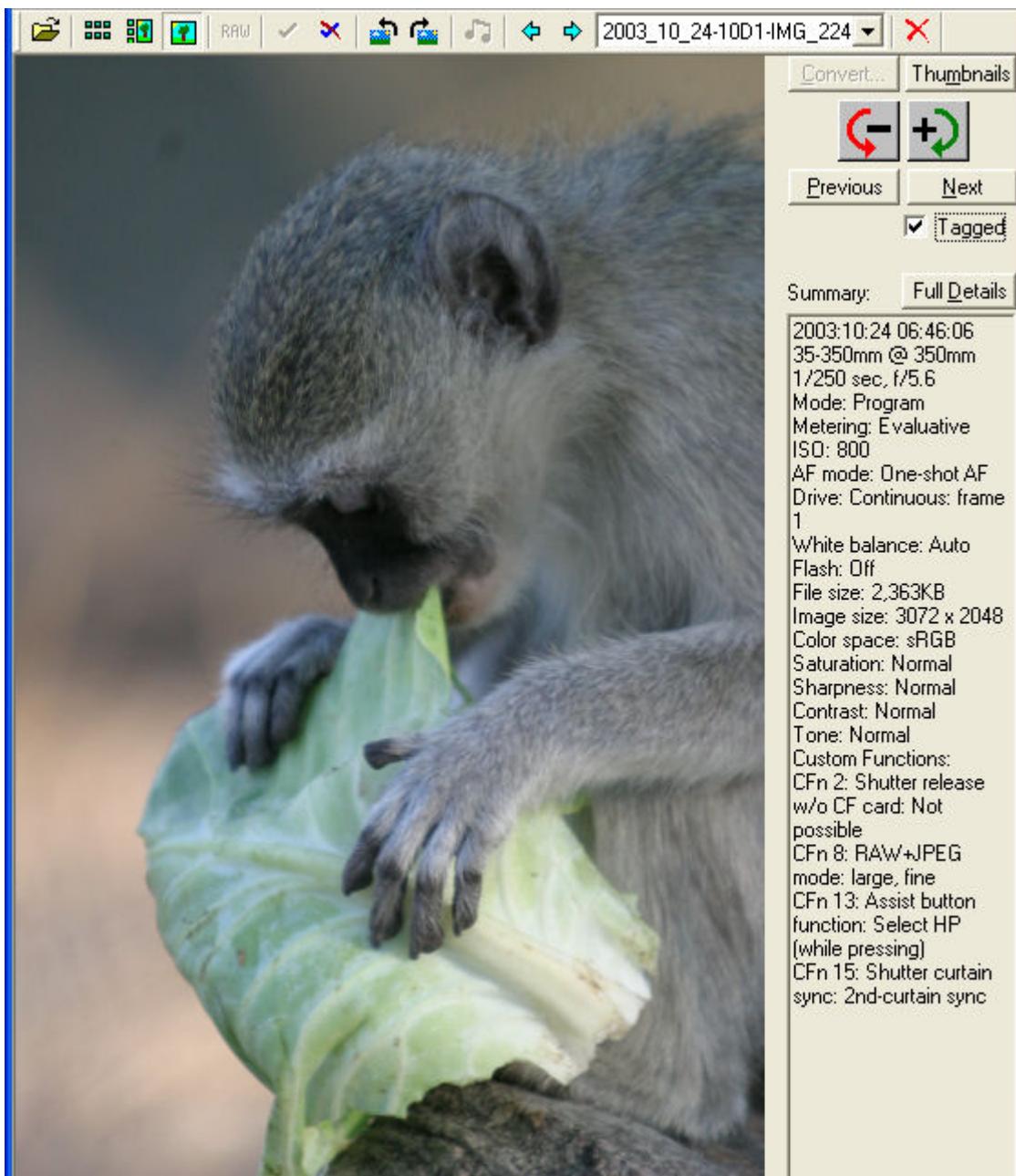
Edit

Once your travel images are downloaded to your computer, you are ready for the editing process. Editing consists of reviewing your images and selecting which images you would like to include in web sites, electronic photo albums, video photo albums and/or prints. Editing requires software that will allow you to view your images as small "thumbnail" sized images for quick review and sorting, large images that fill as much of your computer screen as possible, and zoomed-in images that allow you to examine small details.



BreezeBrowser editing software, thumbnail view of images.

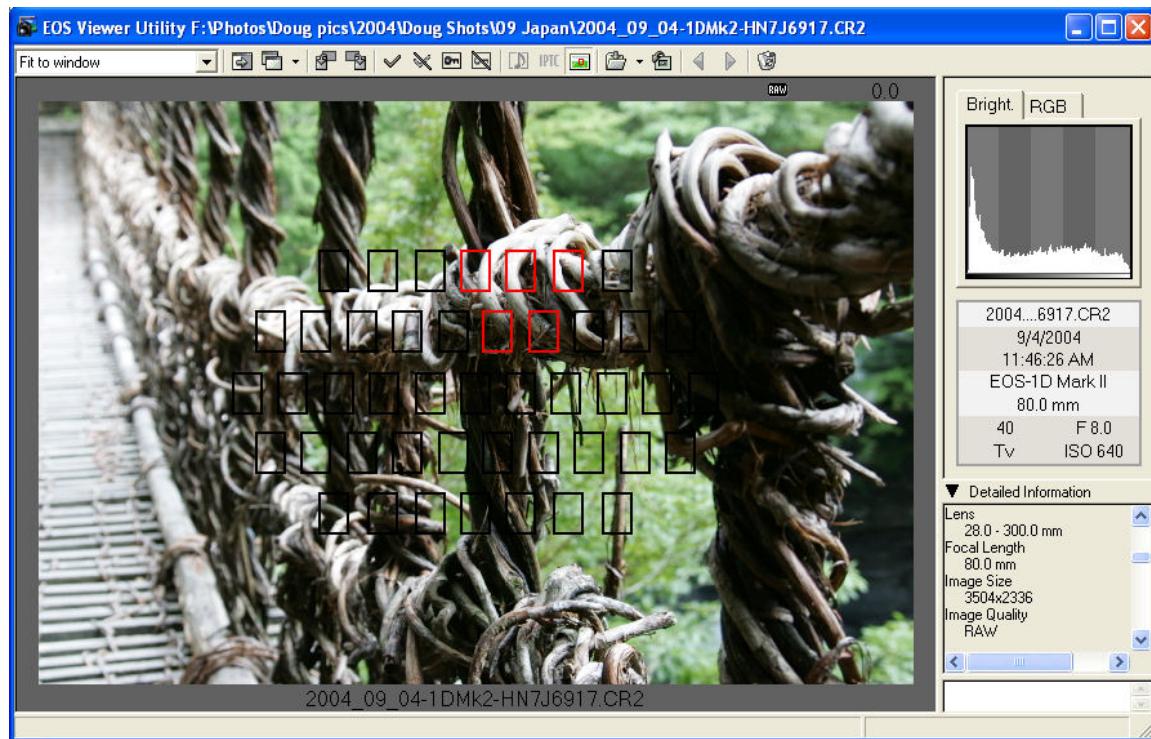
It is essential that the editing software allow you to easily step through your images in full-size viewing mode. One excellent design allows you to advance or reverse step through your images using the keyboard arrow keys and to tag an image as an “in” by hitting the space bar. This capability makes easy work of stepping through your images and quickly building your “ins” for any given segment of your trip. A bad design requires you to individually open and close each image, with a mouse click required to tag an image as an “in.” This multi-step process quickly becomes tiring and is very inefficient.



BreezeBrowser editing software, full size image viewing mode. Note the buttons that provide easy forward or back step-through of the images. Other key features are keyboard or mouse click tagging, one click rotation and full display of EXIF information.

Digital Travel Photography

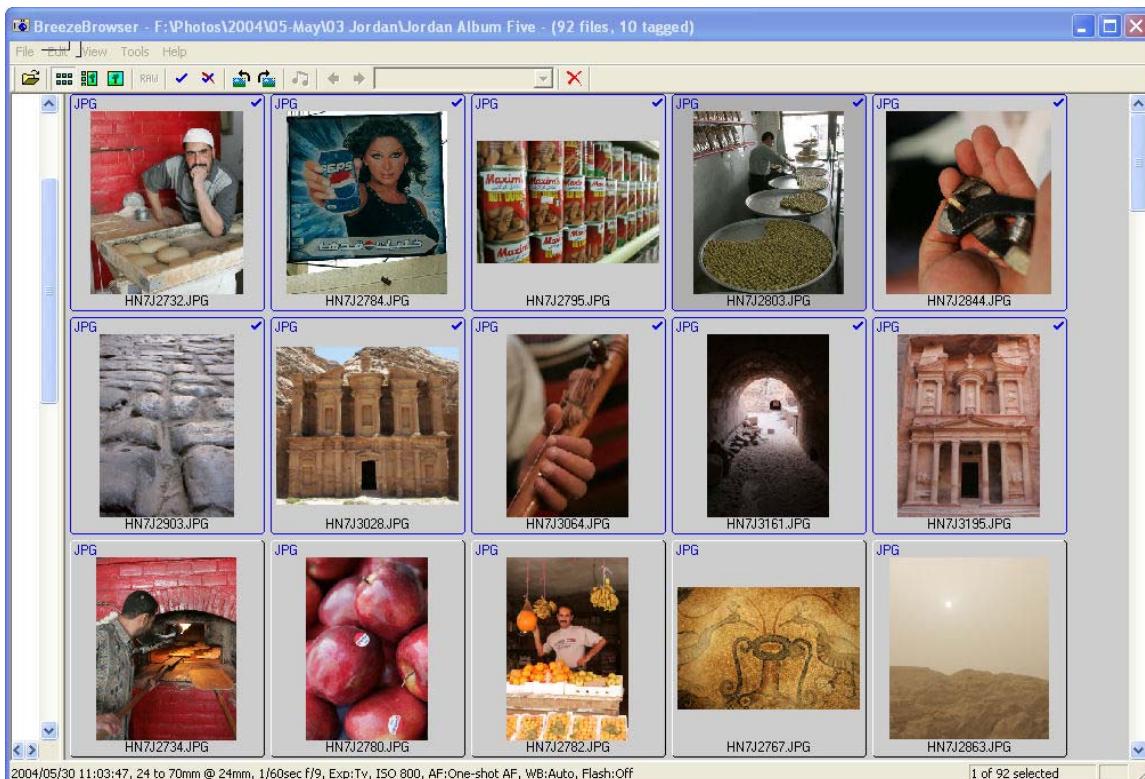
Most digital camera packages include image viewing software provided by the manufacturer. This software may include capabilities that are lacking in third party editing or photo manipulation applications. Features such as display of auto focus point, manufacturer proprietary meta data and optimized RAW file conversion are often available only with the manufacturers software. If these features are important or required for your purposes, you may be limited to using the manufacturer's viewing software.



Canon EOS Viewer Utility showing proprietary display of auto focus points and zoom lens focal length.

Digital Travel Photography

Editing also requires software that will allow you to “tag” images that you would like to select to be included for further processing or printing. Tagging is usually done in the full screen preview mode, by selecting the tagging function from a click-context menu, by tagging a range of images from a menu option or by batch tagging images that meet defined criteria. Once images are tagged, the editing software must allow the tagged images to be processed as a group, i.e. sorted, copied, displayed, etc.



BreezeBrowser thumbnail view with tagged images sorted to the top.

The software also needs to allow you to copy or move selected images to new folders, as well as delete images that you no longer require.

At its core, editing is the process of dividing the “ins,” those images you wish to include, process, share and print, from the “outs,” those images that you do not wish to further process, share or print.

Virtual Edit

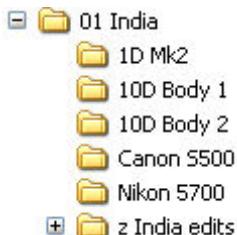
You may choose to do all of your editing within the software program itself. Editing programs allow you to “tag” images and sort those “tagged” images separately. This process will work fine as long as everything you want to do with the images can be handled within that software application, and as long as you continue to use that application. This means that all cropping, color correction, brightness and contrast adjustments and sharpness addition can be accomplished within the same editing program that creates the image “tags.”

If you wish to use other computer programs for special effects, special processing, printing, etc. you may find a physical edit to be better suited to your needs.

Physical Edit

A physical edit consists of copying the “tagged” files to a new folder created exclusively to hold your “ins” from that trip or project. By creating a folder that contains only “ins” images, you can easily apply any computer program or process to your selected images.

Physical Edit “Ins” Folder



A physical edit folder created to contain images selected to be “ins” from this trip. (The “z” was included in the folder name to control where the folder appeared in the folder list.)

A physical edit, with a folder dedicated to holding the “ins” images from your trip is usually the easiest, most flexible and most adaptable approach. It ensures that no matter what software program you wish to use now or in the future, you will always know which images were selected as the best shots from your trip. It also forms an excellent foundation for a segmented, procedural approach to modifying and enhancing your images.

Physical Edit Stage Folders



Physical edit stage folders for each step of the edit process.

Physical edit folders are created for each stage of the editing process. By maintaining physical copies of your image files at each stage of the process, it is always possible to recover from errors by backing up one step and recover the previous version of the image. (The “z” was included in the “India edits” folder name to control where the folder appeared in the parent folder list.)

A physical edit requires folders for each stage of your editing process. The first folder is a “no enhance” folder. It contains copies of the original, unaltered files copied from their source trip and camera folders. It is important to leave the original files in their original folders and only move duplicates of the “ins” image files into the “no enhance” folder. Use your editing program to drag copies of the “ins” files into the “no enhance” folder.

The second folder is the “no sharp” folder. It is used to store the modified and enhanced versions of your “ins” images. These “no sharp” images are cropped, their brightness and contrast has been optimized and their color balance and saturation have been corrected. The images in the “no sharp” folder are as perfect as you can make them, with the exception of final sizing and sharpening.

The third and fourth folders are for your modified and enhanced images that you have resized and sharpened for use on the web or for prints. Image sizing is variable depending on the use, i.e. web, video or print. Sharpening is determined by the final image size and is the last change done to an image file. Images in the “web” or “print” folders are ready to be posted on the web or printed.

Modify and Enhance

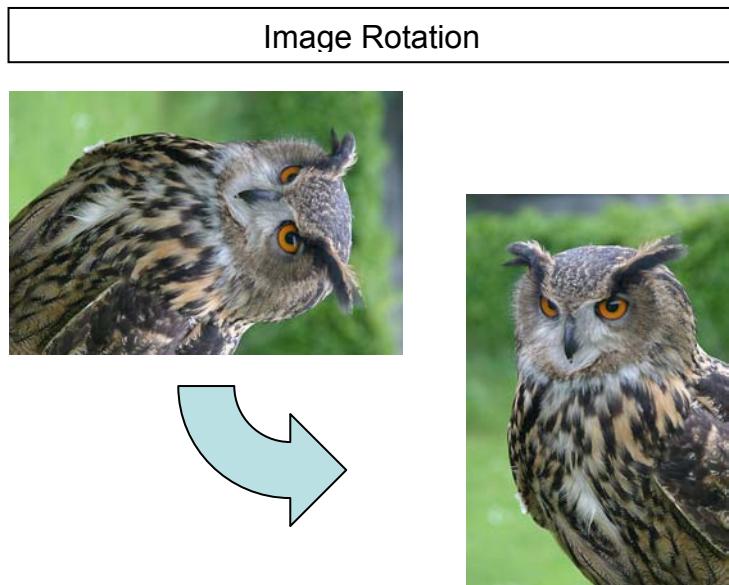
Very few images that you shoot will be as close to perfect as you would like them to be. Most images will require cropping to optimize their composition. Some will require adjustments to the brightness, contrast and shadows. Others will require modification of the color balance or the amount of saturation.

These modifications and enhancements are but a few of the hundreds, even thousands of different variables available in advanced photo editing software. Programs such as Adobe Photoshop often have dozens of adjustments available in a single menu option. We will concentrate on the basic modifications and enhancements that most digital travel images require.

Modifications and enhancements are performed in photo editing software. Some packages, such as Adobe Elements, combine download, organize, editing and display in one software application. Others require you to use a dedicated photo editing package to modify and enhance your images.

Image Rotation

First, any images not auto-rotated as part of the download process will need to be rotated for proper viewing. This is usually accomplished in the file viewer or image organizer by selecting any non-rotated files and then choosing rotate or auto-rotate from the menu.



Correcting Tilt

Correcting tilted images is next. Often the best travel photographs are spontaneous “grab shots” taken as quickly as the camera will start and you can push the shutter release. In these cases, the images are often not perfectly aligned and may be tilted. Use your photo editing software to straighten these images. There are also times when the visible horizon may be slightly non-level in your image. It is visually disconcerting to view an image where everything is tilted to one side or the other. Again, use your photo editing software to tilt your image until the horizon is level.

Correcting Tilted Grab Shots



A classic grab shot. I shot this Bedouin woman calling her goats very quickly. I was more concerned with getting the shot than perfect framing. The resulting shot was poorly framed and badly tilted. Petra, Jordan.

I used my photo editing software to tilt the image 3.5 degrees to the right to correct the poor framing. The steep hillside and the angle of the shot allow some latitude in not having a perfectly vertical subject.

The final, cropped image. This image utilized fill flash to reduce the effects of the harsh overhead mid-day sunlight.

Correcting Tilted Horizons



Original shot of wildflowers along the coast of Ireland with a tilted horizon.

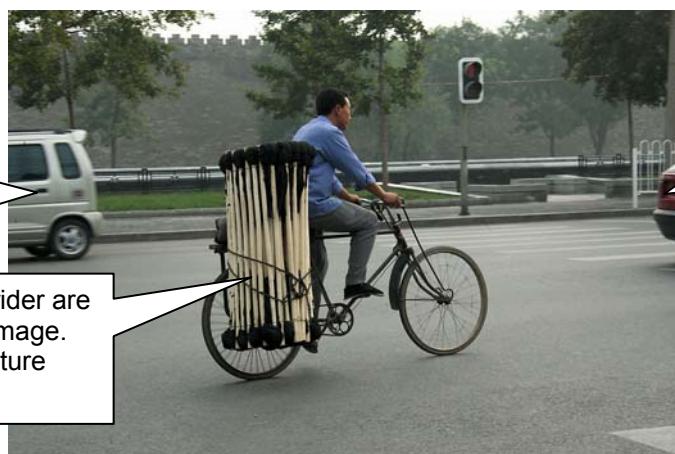


Image rotated 2.25 degrees left to correct the horizon line.

Cropping

Next, you will crop your images. Cropping is used to remove distracting elements from the borders of the image, eliminate all but the main subject of the image, optimize the composition of the image and/or proportion the image for specific reproduction requirements. Cropping can also be used to create visual tension in an image by removing a portion of an object or person.

There are a variety of factors to consider when cropping. Your primary goal is to create an image that tells a story. Eliminate portions of the frame that distract from the story the image has to tell. When cropping, maintain balance in the spaces around objects. Avoid cropping objects in sections, unless you are doing this to create visual tension or create abstraction, such as in a macro image. With objects, people or machines in motion, give them someplace to visually move into. Try different crops of your image by using the “undo” command in your photo editing software.



This car is distracting, eliminate it in the crop.

This car is distracting, eliminate it in the crop.

The bicycle and rider are the focus of the image. Crop down to feature this element.

Original image of a bicycle delivering a load of mops to market. Beijing, China.

The bicycle and rider now dominate the image. They are the story.

This crossing light would have been distracting if it was cut in half by the crop.

Balanced space behind and below the wheel is visually pleasing and gives the image an anchor point.

With objects or people in motion, it is important to give them a place to go. In this case, the crop leaves some area for the bicyclist to move into.

Cropped image of a bicycle delivering a load of mops to market. Beijing, China.

Brightness and Contrast

Brightness and contrast adjustments are used to recover images that were shot in non-optimum lighting, bring out detail in dark areas, restore shadow detail and enhance or emphasize mood. Digital images have tremendous latitude in the dark or underexposed portions of the image's dynamic range. Conversely, they have very little latitude in the light or bright areas of the image. This means that if an image is very dark, it may be possible to "save" it by modification and enhancement with your photo editing software. But if it is overly light, there is very little chance that you will be able to restore any detail or content to the image.



This shot of a Male Nyala, captured in KwaZulu Natal, South Africa very late on a dim, overcast day, looks much too dark to salvage. Canon 10D, ISO 800, 1/1500, F5.6, 35-350mm @350mm, effective 560mm.



Fortunately, digital images have significant amounts of dynamic range on the dark end of the scale. In this version of the image, the RGB Histograms have been adjusted in Paint Shop Pro.



The final, cropped version demonstrates that even images that look beyond salvation can be brought back to life with proper brightness and contrast adjustment.

Color Correction, Balance and Saturation

Color correction, balance and saturation adjustments are used to restore or create proper color in your image. Although modern digital cameras are very good at determining what they think to be “white” in every image you capture, occasionally they are fooled by mixed lighting sources or unusual lighting combinations. In addition, very dusty, cloudy or monochrome environments often profit from an increase in color saturation. There are also images that may have more impact when presented as monochrome images with no color, or with a color tint or overlay.



This image of frozen tuna awaiting auction being reviewed by a buyer was shot under mixed lighting at the Tsukiji fish market, Tokyo, Japan. The image on the left is the original image, as recorded in RAW format using the camera's automatic white balance setting. The image on the right is a corrected image generated by changing the light balance type to incandescent in the RAW file conversion dialog box of the photo editing program. This ability to retroactively change the white balance of images recorded in RAW format can be a life saver, and is one of the many reasons professionals shoot in RAW format.

Dust Spot and Object Removal via Cloning

Dust on the lens of a digital camera can cause spots in the image. This is a particular challenge with digital SLR (Single Lens Reflex) cameras, as dust can settle on the image sensor while changing lenses. When shooting in dusty environments, it is not uncommon to have dust infiltrate into the inside of a zoom lens where it can settle on the internal surfaces of the glass.

Regardless of how it gets into your image, the pesky dark specks from dust are most unwelcome. Fortunately, digital photo editing programs have a handy way to remove dust spots: the clone brush.

The clone brush allows you to duplicate small portions of your image onto the area of the dark dust spot. This allows you to completely remove the dust spot, and in most cases, do it in a completely seamless manner.

With very dusty images, such as those shot at a small aperture with a dusty lens, it may take quite a bit of time, but with patience and a methodical approach, you can salvage a beautiful image from what you thought was a lost cause.



Dust in the lens and on the image sensor is clearly visible in this shot of a sand dune and tree. This image was shot at 1/15th of a second at F32. The small aperture accentuated any dust present in the digital camera system.

Dune Sea, Sossusvlei, Namibia

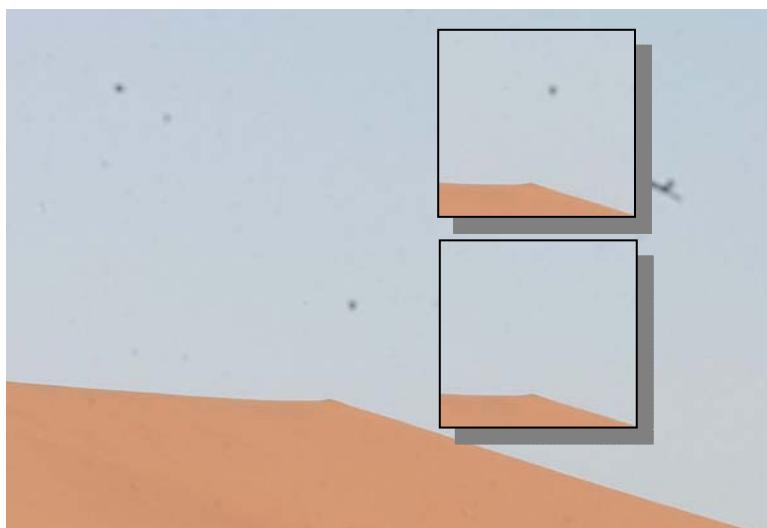
Digital Travel Photography

Start by selecting the clone brush. Then zoom into 100% magnification on your image. Scroll to the upper left corner of the image. Now work methodically, one screen-full at a time, through the image, cloning out each bit of dust you see.

Size your clone brush to match the size of most of the dust spots you will be working with. Too small of a brush will make for too much work. Too large of a brush will make a lumpy, distracting image.

Carefully select the source segment you will copy into the dust area. Once you select the source segment, the same offset from your cursor location will be used for all further clone operations.

Work carefully, in small increments. By repeatedly cloning small areas, you can completely and seamlessly remove troublesome dust.



Detail showing before and after clone removal of dust spots. With methodical application of the clone brush, even the most troublesome images can be cleansed of all visible dust.



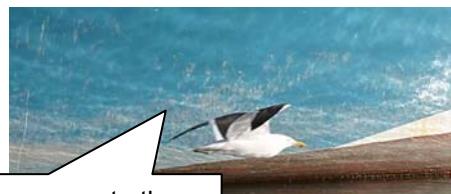
Final "clean" image with dust spots removed. Images with large areas of flat, even color and/or sky easily show dust, but are an easy background to clone.

With some images, you need to be careful to follow the “grain” of the image. For instance, if there is a diagonal pattern to the surface you are copying, then select the source of your clone segment in the direction of the “grain” or pattern.

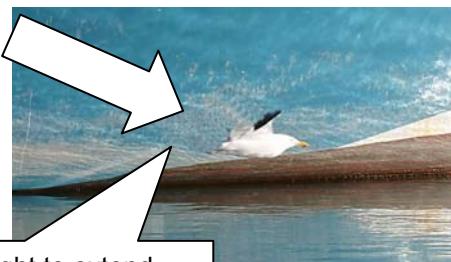


The bird is distracting. When using the clone brush to remove the bird, be careful to select the source along the diagonal axis and work in the same diagonal direction so the cloned areas will appear natural.

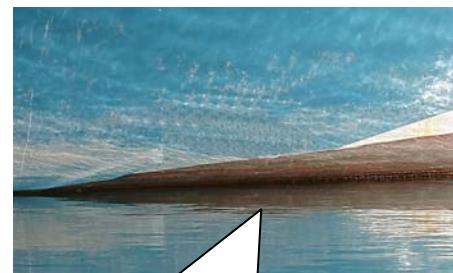
Fishing Boats. Lambert's Bay, South Africa.



Select the clone source to the upper left of the bird. Always work from your clone source toward your target.



Work from left to right to extend the diagonal patterns of the background. Reselect the source as required to vary the pattern and extend color and texture lines.



Final detail with the bird removed. A smoothing brush can be used if required to blend the cloned sections.

Red Eye Correction

When taking flash photos of people in a dark room or outdoors at night, the flash will illuminate the retina of the eye. Seen through the wide open iris of the eye, the retina appears as a red circle in the center of the eye. This phenomenon is known as "red eye." Most popular digital photo editing programs have red eye removal capability.

Red Eye Correction



Original photo. The open iris of the eye allows the flash to illuminate the retina, causing "red eye."

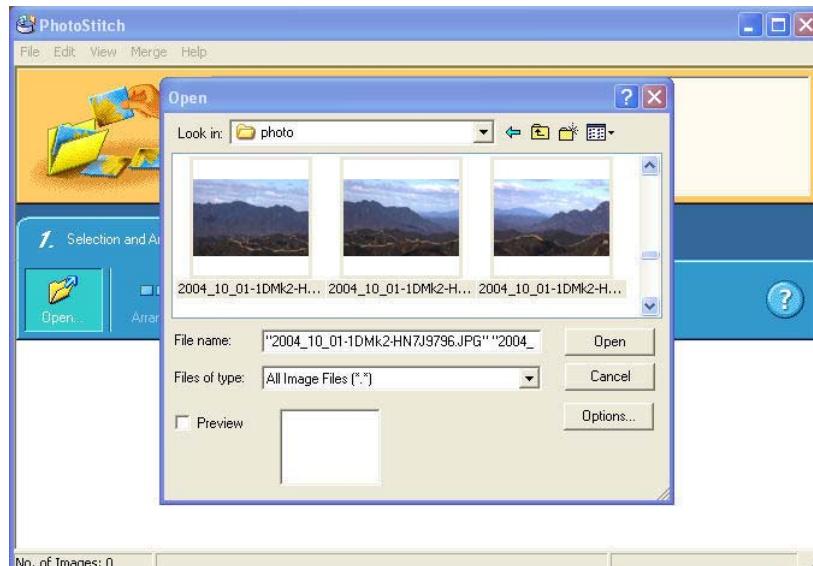
Himalayan guide Patrick Moffat with a traditional Sikkimese greeting of hot red paste applied to the forehead. Pelling, Sikkim, India.



Corrected photo. By using "red eye" correction, the red is removed from the iris of the eye, leaving the eyes with a natural appearance.

Panoramas

One of the delights of digital travel photography is the ease of creating panoramas that capture the awe inspiring beauty or immensity of sights we witness. Most digital cameras include software utilities to create panoramas that make the process as easy as one, two and three. The first step is to select and arrange the images you wish to include in the panorama. Second, merge the images into the panorama. Third, crop and save the panorama image data file. The result is an image that can capture the immensity or grandeur of a location like no single image can.

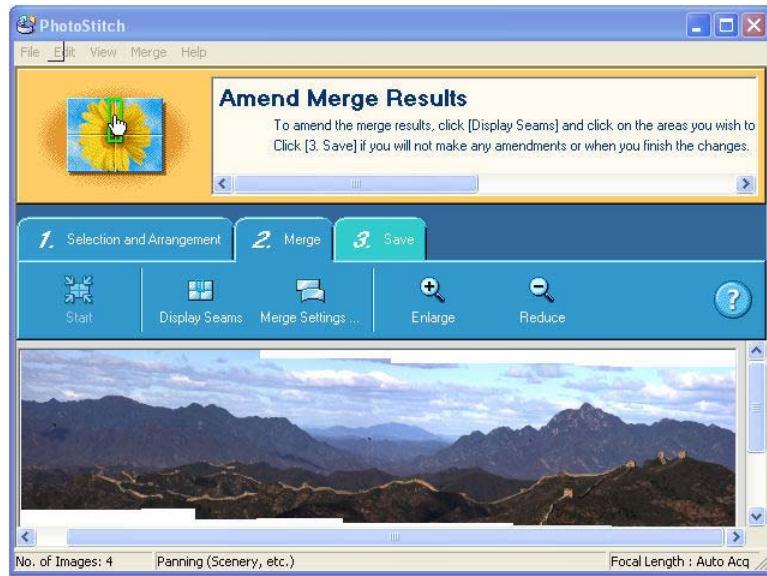


Step One: Select the images you wish to merge.

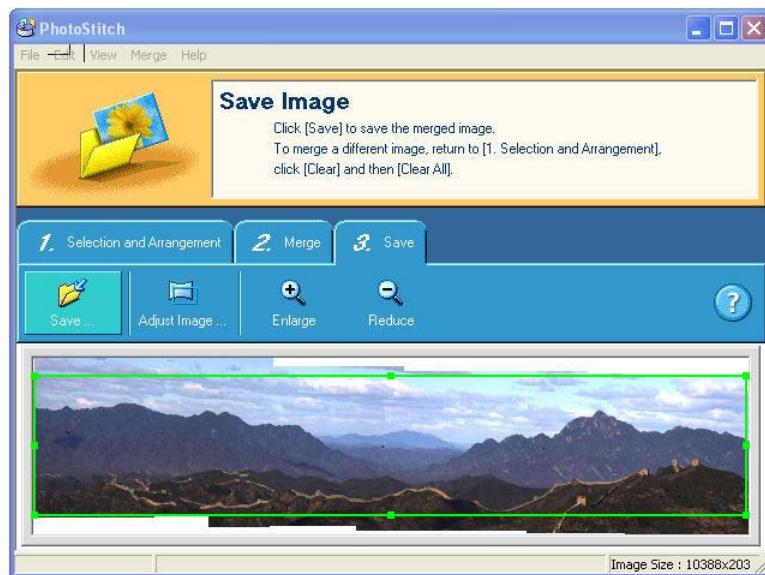


Next arrange the images for the panorama.

Digital Travel Photography



Step Two: Merge the images into the panorama.



Step Three: Crop and save the panorama.



Finished panorama. Simatai Great Wall, Northeastern China.

In addition to stunning large scale subjects such as landscapes, panoramas can be used to overcome the limitations of your camera when attempting to capture large objects in tight spaces. Normally, capturing a large object from a close distance requires a very wide angle or fish-eye lens. When traveling, it is common to be faced with an object that is too big to fully capture with the capabilities of your digital camera. This challenge can be overcome by shooting a series of slightly overlapped images. The images can be later merged together to form a continuous image of the object.



A vertical panorama created in Adobe Photoshop from 12 overlapping images.

This statue of the Buddhist deity Guanyin is over 72 feet (22 meters) high. The statue is inside a building and there is no position within the structure that allows an unobstructed full shot of the statue.

My 16-35mm zoom did not provide enough coverage to capture the entire statue from my shooting position on a balcony approximately twenty feet in front of the statue. By taking a series of matched exposures while panning vertically, I was able to cover the full statue from a very close distance, without the use of a fisheye lens.

I used manual exposure control to ensure each image would have a consistent level of brightness and color. The color balance was exposed on automatic and changed to daylight during the RAW to JPG conversion process to ensure a consistent color balance for the panorama.

A perspective correcting lens would have prevented the image distortion evidenced in the top and bottom portions of this image.

Puning Si (Puning Temple), Chengde, Hebei Province, China.

Print

For many digital travel photographers a printed photo album, large print proudly displayed on a wall or winning entry in a local photography contest is the ultimate goal of their travels. All of these require the production of printed photographs, be they produced at a local photo processing lab or at home on a photo quality ink jet printer.

For digital travel photographers seeking convenience and economy, local discount retailers are the optimum choice for digital photo prints. The printing kiosks are quick and easy to use, and the price per print is generally much lower, by as much as 50%, than printing at home.

If you choose to seek the ultimate home produced print, then you will need to create an optimized digital photo file that is matched to your photo printer.

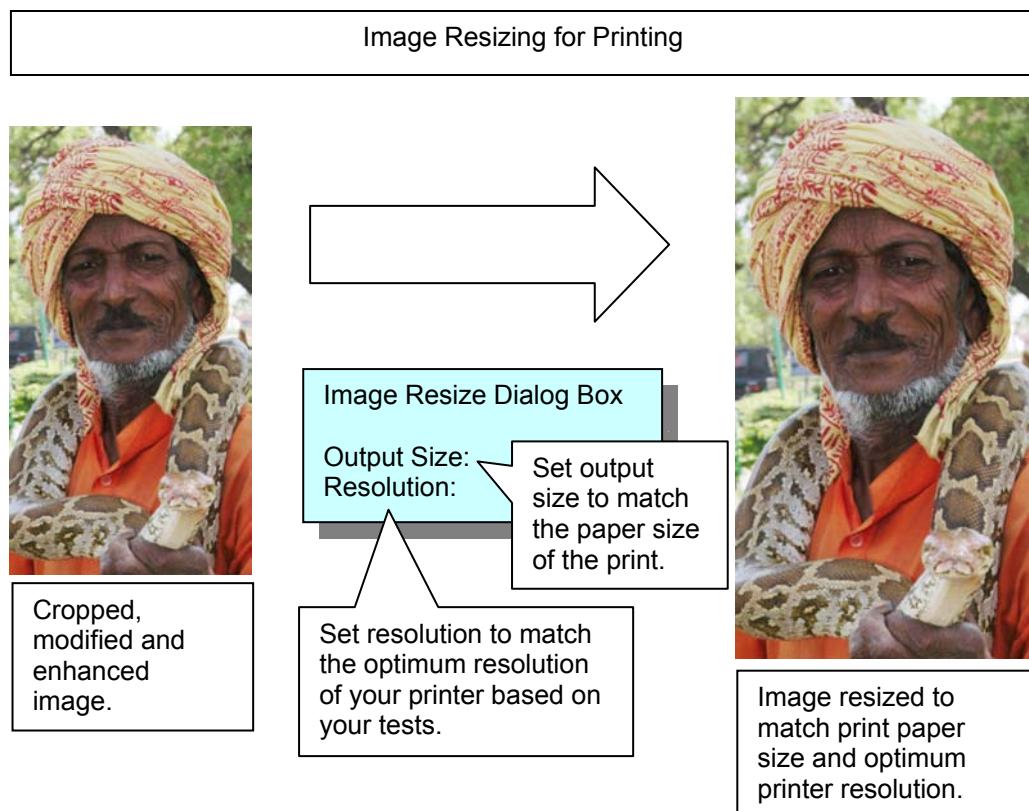
In order to print your digital travel images, you need to resize and sharpen the files to maximize the quality of the resulting prints. Resizing optimizes the digital photo data file to match the size and resolution of the final print. Sharpening adds contrast between adjacent pixels to increase crispness and detail in the image.

Resizing

The first step is to determine what size prints will be produced. Using this final print size as your target, use your photo editing software to re-size your image file to match the paper size to be used. There are two primary variables to adjust in this re-sizing: final image size and resolution. The final image size is usually measured in inches or millimeters/centimeters. The resolution is measured in pixels per inch (PPI) or pixels per centimeter (PPC).

Although photo quality inkjet printer manufacturers tout very high PPI/PPC capabilities, in fact, PPI/PPC settings higher than 240 PPI often don't yield significantly greater image quality. Many times they do little more than create very large file sizes, require long print times, and use significantly more ink during the printing process. Of course, the quality of the finished photo print is nothing if not subjective, so run some tests with your printer of the same photo at various PPI/PPC resolutions and judge for yourself what setting produces the most pleasing high resolution image with your system.

The resized image created by your photo editing software should be saved under a new file name. It is best to append the final print size to the original file name, thus preserving the "audit trail" back to the original file location, and indicating the print size the file is optimized for. An example is 2004_04_02-10D1-CRW_8237-8x10.JPG.



Sharpening for Printing

The next step is to adjust the image sharpness at its final output size. Sharpness is adjusted by adding contrast between adjacent pixels. The human eye perceives this greater contrast difference as increased detail or crispness in the image. Excess sharpening leads to a “halo” effect around the pixels of an image and actually decreases perceived detail or crispness of the image.

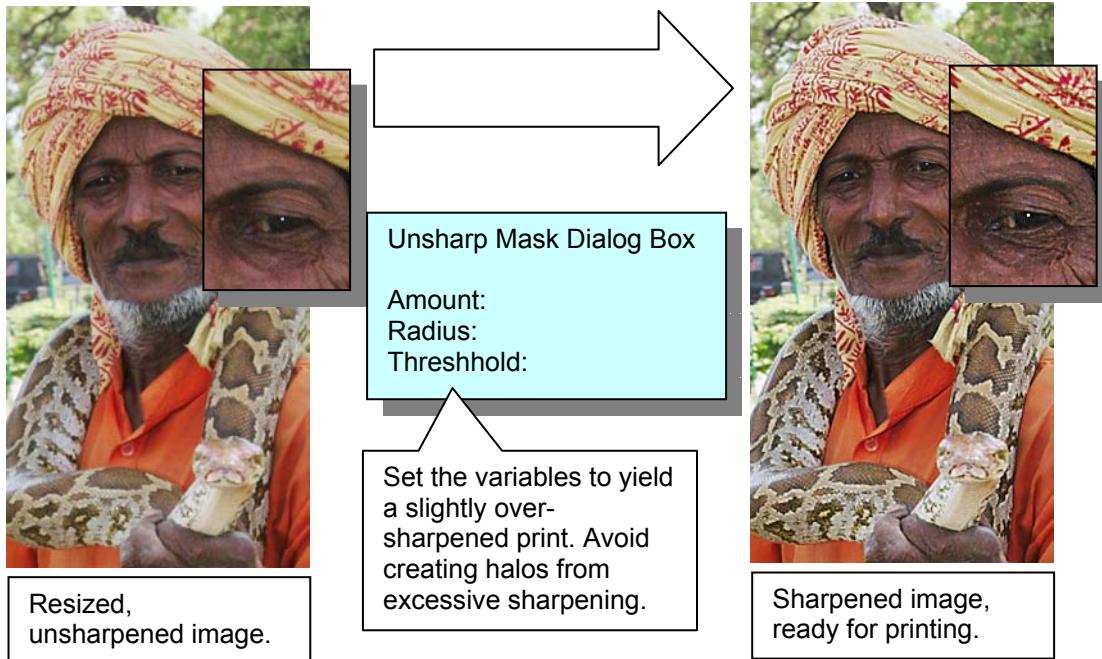
Point and shoot and EVF (Electronic Viewfinder) digital cameras are usually set by the manufacturer to automatically apply sharpening to their digital photo data files. Digital SLR (Single Lens Reflex) cameras usually have variable sharpness controls that are set in the menu system. It is common for the default settings for a Digital SLR to produce images that are relatively “soft” when compared to the automatically sharpened images of a point and shoot or EVF digital camera. RAW format image data files images are usually created by the camera with no sharpening. JPG format image data files usually have variable amounts of sharpening applied, depending on the camera’s sharpening menu selection.

Once you have resized an image in your photo editing program, you may need to apply or re-apply sharpening. Resizing the image can introduce softness due to the resizing process itself. Photo editing programs usually offer “sharpen” and “sharpen more” menu options. These are often adequate for many users. For advanced users, the “unsharp mask” menu option is more suitable.

The “unsharp mask” command in most photo editing programs has three main variables: Amount / Strength, Radius and Threshold/Clipping. Amount/Strength refers to the amount of contrast to be applied between adjacent pixels. Radius refers to the number of pixels to be included in the calculation of determining that a difference in contrast exists. Threshold/Clipping refers to the amount of difference that will be allowed before contrast enhancement is applied. The use of these three variables is somewhat interdependent and is viewed in some circles as more an art than a science. Actually, a few minutes playing with the various controls will give you a basic understanding of their effects.

For printing purposes, your goal is to “over-sharpen” the image to compensate for the ink jet printer’s tendency to have one ink droplet slightly bleed into the next. Experiment with the sharpen menu commands and the unsharp mask commands to create an image that is slightly “over-sharpened” but does not have halos. That will usually yield the best print from your ink jet printer.

Image Sharpening for Printing



Avoid over-application of the sharpen or unsharp mask commands. Too much sharpening, paradoxically, yields an image that is perceptively less crisp and detailed.



Captioning

Lastly, caption your prints via the photo editing software text tool or manually by writing on the print borders or back with a non-penetrating felt tip marker. Although you may remember everything about the turbaned man with the snake at the time you make the print, it can be very challenging to recall the relevant details, or even the country you were in, a few months or years later. Including technical details about the camera, the exposure and especially the file name are very helpful when later attempting to reconstruct or reproduce the image.

Image Captioning



Date: April, 2, 2004

Location: Agra, India. On the lawn outside Akbar's tomb.

Description: Snake charmer with constrictor (captive).

Camera: Canon 10D, Body #1. 1/90, F8, shutter priority (SV)

Lens: Canon F2.8 16-35mm @31mm

Flash: Canon EX550 external flash.

File name: 2004_04_02-10D1-CRW_8237.CRW

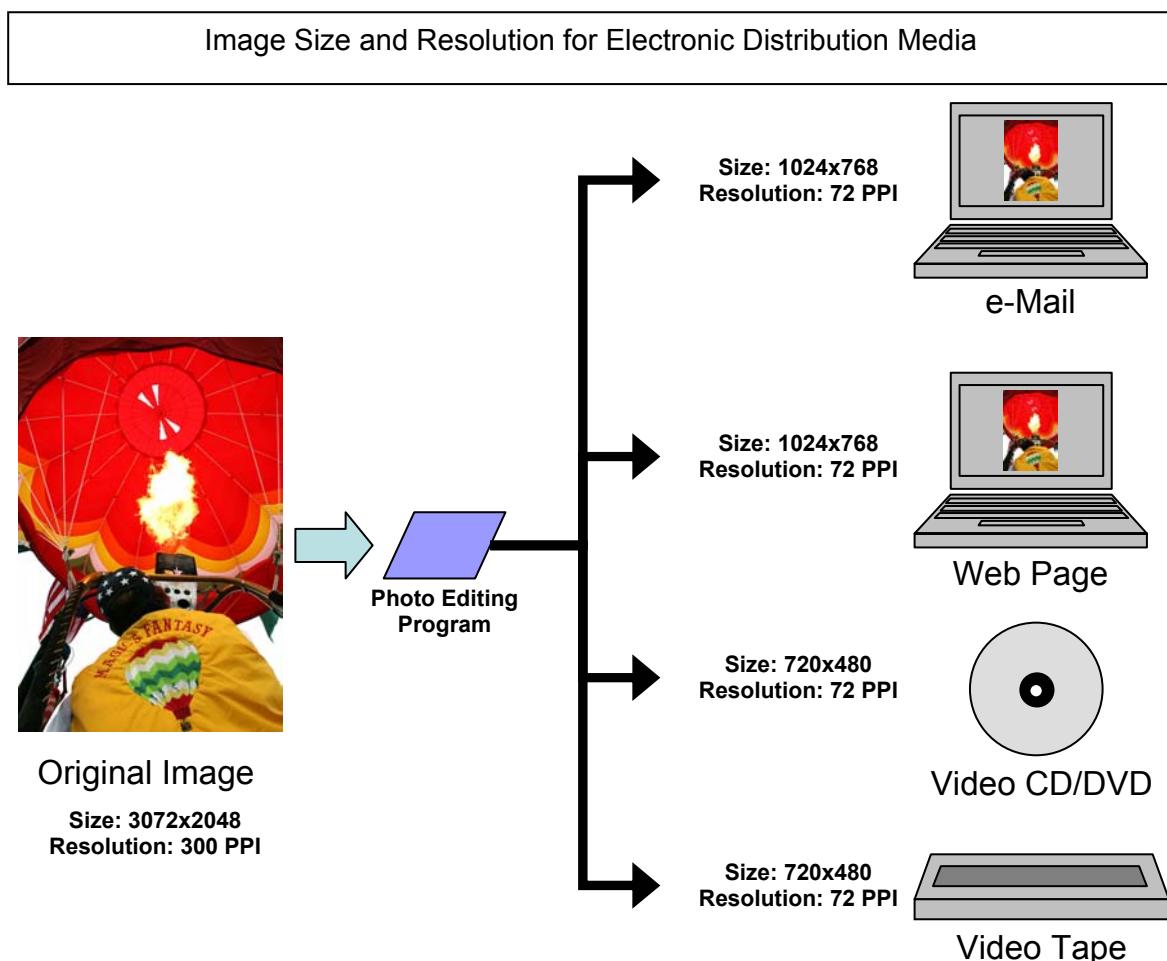
Size & Format: 3027x2048, RAW

Electronic Distribution

One of the most enjoyable aspects of digital travel photography is the opportunity to share the images you capture with friends and family all over the world. The internet allows you the opportunity to email pictures to loved ones and post digital photos of your travels on web blogs or pages almost instantly, wherever you are in the world. Digital travel photographs are also easily distributed on CDs, DVDs and video tape.

The first step to emailing, posting or distributing your digital images is to resize them to a size suitable for the distribution medium. Photos sent via email should be reduced to a manageable size so you don't fill the inbox of the recipients with multi-megabyte digital photo files. Images posted on the web need to be reduced in both size and resolution to match the requirements of web browsers. Images distributed on CD, DVD and video tape for display on televisions can also be reduced in size and resolution to better match the playback medium.

In all cases, it is important to accurately caption your images. Recipients of your emails, viewers of your web pages and those watching your images on television will all get much more out of the experience if you include text describing the context and content of the image.



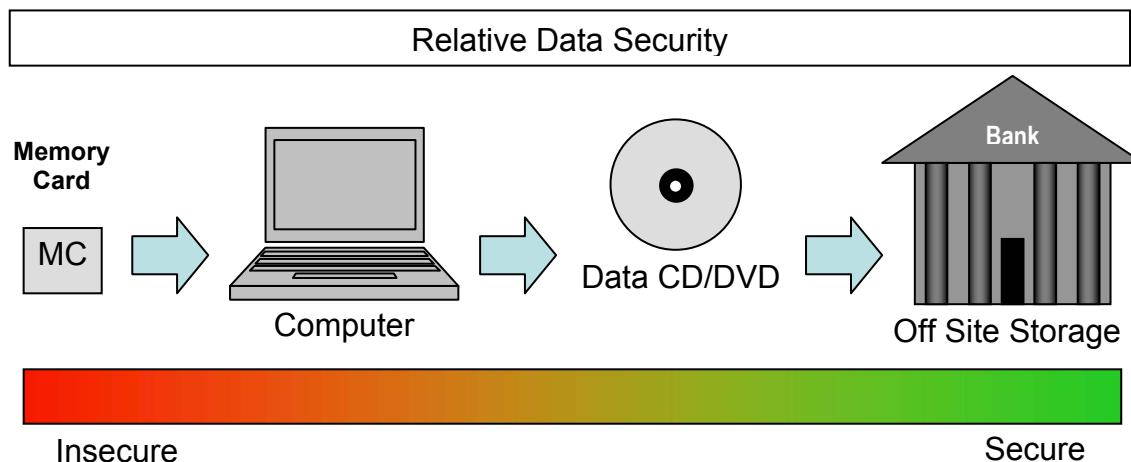
File Backup and Archiving

“The only certain things are death and taxes” says the old maxim. Today’s maxim is “the only certain things are death, taxes and hard drive crashes.” Unfortunately, it is not a matter of *if* a computer hard drive will fail, it is only a matter of *when*. And, as fate would have it, they usually fail at the worst possible moment and when you have data stored on them that is not backed up anywhere else.

If you’ve ever lived through the heartbreak, frustration and loss of a computer hard drive failure, you know the importance of backing up your data in multiple places. If your digital image files exist only on your computer’s hard drive, it is only a matter of time before you lose them. It is critical that you regularly copy your digital photo files to another computer, or better yet, to recordable CDs or DVDs and store them at another location.

Strive to never have the only copy of your digital images existing on a single computer hard drive. Make an immediate backup of your files to optical media (recordable data CD or DVD) and store them in a separate location. This location can be your office, if it is outside your home, a friend or relatives home, or optimally, a safety deposit box or other fire-safe, secure location.

If you carry a laptop while traveling, equip it with a CD/DVD writer drive. Record data CDs/DVDs of your images as you travel. I recommend that you mail one set of backup files of your images recorded onto CDs/DVDs to your home as you travel. This insures that no matter what happens to your photography system, your laptop, your data file backup device or the CDs/DVDs you carry with you, a copy of your images will be safely waiting for your return. It is possible to replace cameras and laptops. The images you create on your travels are irreplaceable.



Another issue to consider is the longevity of the storage media and data format that your images are stored in. A few years ago while cleaning out a closet at my grandfather’s home, my cousin and I found an old photo of my great grandfather, James Hackney, and his siblings. It was one of dozens of family photos we found that were invaluable in filling in gaps in our family history. Will my great-grandson be able to pull a CD or DVD of my digital travel photos out of a closet 100 years from now and be able to view those images?

Considering how fast computer and digital photography technology changes, I find it extremely unlikely that any storage media and/or digital image file format that we use today will be easily readable by anyone 20 years from now, much less 100. Camera manufacturers’ RAW formats, in particular, are extremely susceptible to obsolescence, with some formats from the late 1990’s already unsupported by their manufacturers and rendered unreadable.



Will your great-grandchildren be able to readily view the digital images you are storing today?

Children of Elijah Hackney and Mary Hinshaw Hackney, May 28, 1889.
Front (L-R): Evan Hackney, Nancy Hackney, James Hackney, Milton
Hackney
Back (L-R): Phoebe Hackney Berry, John (Frank) Hackney, Sadie Hackney

It is a very good idea to store your digital travel photography images in a standard, universal format to ensure that they will be accessible and readable for as long as possible. In addition, as standards change you will need to convert your data files from the CDs/DVDs and file formats you use today to tomorrow's storage medium and file formats. Unlike yesterday's timeless prints, today's digital image files require an ongoing commitment to migrate them to the storage medium and data file format of the day.

Improving Your Travel Photography

- Look first, then shoot
- Shoot what the trip brings/offers
- Tell a story (overall, every picture)
- The realities of travel photography
 - o Fleeting moments
 - o No models
 - o Serendipity Photography
 - Preparation + opportunity
 - Animal habits
 - People habits
 - Repeated actions
 -

- Shooting strategy
 - o Day's opportunities
 - o Best light subjects
 - o Soak or shoot
 - o Establishing shot
 - o Record shot (iconic image)
 - o Details
 - o Context
 - o Peak of action
 - o At least one experiment
 - o Explore light, texture, patterns
 - o Capture irony, incongruities
 - o Essence of culture, societies, people
 - o Everyday charms, unique facets
 - o Trip mission/mascot (signs, etc.)
 - o Unique vision

Digital Travel Photography

- Camera settings
 - o Fully Auto mode
 - o Enhanced Auto
 - o Camera preset modes
 - o SV
 - o AV
 - o P

- Technique
 - o Check the edges of the frame
 - o Background awareness
 - o Leading lines
 - o Rule of thirds
 - o Breaking the rules
 - o Use of foreground
 - o Use of shadow/shade (even light)
 - o Fill flash
 - o Pre-focus
 - o Anticipation
 - o Patterns
 - o Angle of view (low, high, up)

- Cropping
 - o for tension
 - o remove distraction
 - o essential elements

Digital Travel Photography

- Overcoming Challenges
 - o Positioning/obstacles
 - o Bad weather (go small)
 - o Harsh light

Security

While almost all of the people you will meet and interact with while traveling are wonderful, you must be prepared if you want to avoid becoming the victim of theft. Areas you are pre-disposed to visit, those with interesting, beautiful or rewarding destinations, are also the places where professional thieves work every day. It is very important for you to understand that as a tourist, typically carrying some cash, some credit cards and highly valuable, easily sold, digital camera equipment, you are an obvious target. Your goal is to make yourself a tougher and/or less obvious target than the tourists who surround you. You can accomplish that goal by adopting the following strategies.

- Awareness. Be aware of your surroundings. Be aware of who is standing next to you. Be aware of tightly packed crowds. Be aware of where your camera equipment is at all times.
- Constant diligence. If you want to return home with your camera system, then it must be essentially attached to your body from the point you leave home until you return. You must sustain constant monitoring of your digital camera equipment. You cannot leave it unprotected in your hotel room. You cannot set it down on a chair in a restaurant and walk away to use the restroom. You cannot lay it on a counter in a store while you make a purchase. You cannot leave it dangling while you bargain in a market. If you want it to remain with you, you must treat your digital camera system like a defenseless infant surrounded by a swirling sea of bloodthirsty kidnappers. The upside is that this gets pretty easy after a while. Like a child, you develop a sixth sense about danger and built-in radar as to the location of your camera.
- Good locking systems. We utilize a locking steel net system (pacsafe, www.pac-safe.com) to lock our camera bags to immovable pipes or objects in our hotel room. After weeks of keeping our bags at your side day and night, there are times when you just need a night off. Having the capability to safely secure your bag can make this possible. Having been with a group whose rooms were invaded by a cat burglar as we slept, we also secure our bags with our pacsafes at night while we sleep. While a pacsafe will not stop a determined, well-prepared thief, it will stop the casual, petty theft by a hotel worker or burglar. We also use padlocks on the zippers of our camera bags in areas of high pickpocket activity. This includes any monument, holy site, crowded market or other area where tightly packed crowds are expected. A determined pickpocket cannot be detected or stopped. Again, your goal is to make yourself a more difficult victim than the tourist standing next to you.
- Discretion and stealth. Dress in subdued clothes and avoid typical tourist looks, such as shorts and white athletic socks and shoes. Avoid the standard-issue photographer vest. In areas where there are suspicious circumstances or characters, don't pull out your camera. If the image you desire requires you to shoot from under a darkened bridge at 2 AM, ask yourself just how much that image is worth. At a minimum, in dodgy surroundings, use your small pocket camera to grab a shot rather than set up a tripod and bring out your most expensive camera and lens. Avoid spending hours waiting for the perfect light in a location where you may be vulnerable. You might get away with a quick grab shot, but news travels fast when there's a rich target available. In areas that seem risky, never shoot solo. Take a group of people with you, and if you feel outnumbered, leave immediately. Most importantly, if your gut tells you that something isn't right, then exit immediately. Your best defense is your sixth sense. For camera bag stealth, please refer to the camera bag section.
- Separate your images from your gear. The first lesson I was taught as a professional photographer was to keep my exposed film in my pocket and not in my camera bag. The gear could be replaced, but the pictures couldn't. The same lesson applies to your hard-earned travel images. Once a memory card is filled, place it into a secure, zippered and Velcro-ed pocket in your clothing. Avoid easily accessed outside pockets.

Ask, Shoot, Share

Before shooting people, and especially children, ask permission to take the photo. Don't worry if you don't speak a word of their language, use hand signals. Almost everyone understands the universal "clicking the shutter" motion. That, coupled with a few hand points, easily conveys the message "can I photograph you?"

This simple act, coupled with sharing the image with your subject, builds invaluable goodwill for yourself and for those who follow you. Don't be surprised if you start a friendship, and get invited home for tea, food or a nights lodging.



Step 1: Ask. Working through an interpreter, Stephanie asked these children's permission to take their photograph. Museum of Mevlana, Konya, Turkey.



Step 2: Shoot. Stephanie established a trusting relationship with her subjects by asking their permission. A candid moment with happy, playful children was the result.



Step 3: Share. By sharing the image with her subjects, Stephanie left behind a trail of goodwill for future travel photographers.

Additional Travel Photography Tips

Whatever camera system you buy, read the manual enough times to know the equipment inside and out. You need to be able to make every major mode, ISO and offset adjustment without thinking about which buttons need to be pushed or having to look down and study the camera controls. Invest the time to practice with every piece of equipment you plan to take with you on your travels.

Experiment. One of the big upsides with digital photography is that it costs nothing to take and review an image, so don't scrimp on experimenting, testing and familiarization. It is much better to make and discover the typical photography mistakes on a local weekend outing than to miss the opportunity to capture the beauty of a remote destination. A digital camera is like having a "Photography 101" course in a box. It costs you nothing to shoot an image, examine it for flaws, delete it, and try again. It costs you nothing to try a new camera setting, see its effects in an image, delete it, and try again. It costs you nothing to experiment with a new angle, different lighting or creative exposures, delete them, and try again. Use and re-use your digital camera prior to your departure. It costs you nothing and the lessons you learn will pay huge dividends in the quality of images you bring back from your travels.

Test Trips. Take a warm up trip or two with all of the photography equipment you plan to utilize to ensure everything is working smoothly and that you have adequate familiarity with each element of the system. It is common to forget to charge your batteries, leave a critical cable at home, pack the wrong lens, overlook putting your UV filters on your lenses, not bring your spare batteries, not erase your backup device, not pack your flash diffuser, bring the wrong journal, and discover unneeded equipment in your camera bag. At least it is for me, since these are all things I have done on past international trips. It is a much happier experience if these things happen while you are close to home or on a short test trip rather than open your camera bag in Istanbul and discover you brought the wrong lens for a two month trip to the Middle East like I did.

Change one thing at a time. As you add new equipment, strive to add only one new element to your system per trip, i.e. a new body, a new flash, a new lens, etc. Having multiple new items to study, understand and familiarize yourself with can be overwhelming when faced with all the other aspects of planning, researching and executing a major trip. When you add a new piece of equipment, always bring the owners manual for that new component on the first trip. Spend a few minutes on the way to your destination reviewing the manual. Practice with the new component prior to using it at your destination. New camera bodies and new flash units deserve a lot of time in study and familiarization. Travel photography presents opportunities nearly every minute for unique images. If you are not ready because you are not familiar with a new piece of equipment, it is very unlikely that you will have a chance to capture that image again.



This is what happens when you lock your camera to the drain pipe under a leaking sink. After traveling halfway around the world, I nearly destroyed two Digital SLRs and all my lenses the day before our photo safari began. Luckily, everything worked after they dried out in the sun. Use common sense when you store your digital camera system. Chobe River, Botswana.

Allocate time for data file copying and archiving activities. Even with a well designed workflow, it can take an hour each evening to back up and archive digital files when using a “flush” memory card strategy. It is important to budget time for these activities into your travel schedule. It is also important to manage the expectations of your travel companions in this regard. While their day may end after dinner, your day may still have hours ahead of digital photography data file management, web page creation and posting, journal entry and email creation and editing. It only takes a week or two of night after night of extended data file management activities to put a crimp in your available energy. It can also easily weigh on relationships with fellow travelers. To avoid these challenges, be realistic about how much exploration and discovery you can accomplish in a day while still having time for data file management and archiving.

Synchronize your clocks. Prior to departure, set all of your camera and camcorder clocks to your destination’s time and date. If you are traveling to Asia, be sure to allow for crossing the international date line. Make sure all of your digital cameras’ clocks are synchronized. This will be a critical factor when you later sort, classify, edit and select images for display. By keeping all of your cameras’ clocks in synch, you can later rename the data files to include the date and time the image was made. This greatly facilitating sorting your images by file name and easily creating integrated albums, slide shows, CDs and DVDs of your favorite images, regardless of which camera they were created on.

Customs forms. The U.S. customs service provides forms that enable you to prove that you have purchased your digital camera system equipment in the U.S. These forms, once signed and stamped by a U.S. customs officer, guarantee that you will not be required to pay import duties or taxes on your digital photography equipment when re-entering the U.S. from a foreign destination.

Be cognizant of your physical safety while traveling. Stay back away from the edges of cliffs. Be aware of oncoming traffic on roads, lanes and pathways. Watch out for loose stones in paths and test every hand- and foot-hold while exploring old structures or natural obstacles. Respect the power of winds. Wear protective clothing and always apply sunscreen to exposed skin. Protect yourself from insect bites with clothing and chemical repellants. Wear high boots to prevent snake bites. No image is worth injury or death to you or to others.



Sitting on a cliff's edge to take a photo along the west coast of Ireland. Was this shot worth the risk?

All of us have taken a chance to capture what we thought was a special image. Before you step out on that ledge or edge out into traffic for that last bit of wide angle coverage, take a moment to consider the risk you are taking versus the image you are capturing. Very few of us are capturing images that will grace the cover of National Geographic. Act accordingly.

Digital Travel Photography

Giving Back

The common phrase for photography is “taking” pictures. For many residents of travel destinations, this is especially true. Tourists and explorers come to their countries and pass through their villages “taking” pictures all the way. Why not try “giving” pictures?

All it takes to give pictures is a small portable printer, paper and ink. All modern digital cameras are capable of printing directly to a compact printer, so you don’t need a laptop. Portable printers are available that run on battery or 12 volt power, so you don’t need to plug them into the wall in order to make prints.

After meeting many people and families in Africa who had never possessed a picture of themselves, their children or their families, we decided to carry a small printer with us to other continents. You cannot imagine the joy it brought to the strangers we met along the way when we stopped and printed pictures for them. For most, if not all, it was the first photo they had ever had of themselves or their children. The next time you travel, instead of taking pictures, try giving pictures instead. (For more information on the Giving Pictures™ program, visit www.givingpictures.org)



Giving Pictures in Bhutan, Turkey and Sikkim, India

Photos by Stephanie Hackney

Summary

There is nothing more important than being very familiar with every major aspect of the digital camera system you carry on your travels. When you have that one chance to capture the giraffe's head silhouetted against the setting sun, you need to have the skills, experience and confidence that both you and your camera system will successfully bring back the image to grace the walls of your home. While in some respects digital photography is literally free, the cost to reproduce a moment in a remote destination can be literally infinite. Make sure you and your digital camera system are as ready as possible to capture that moment when it presents itself.

There are hundreds of digital cameras available on the market today, with new and upgraded models available almost every week. While the challenge of picking the optimum digital camera system for your travel needs and successfully using it during your trip can seem overwhelming, by following these guidelines and recommendations it is possible to find the camera that perfectly suits your travel requirements and use it successfully. By picking the right digital camera system for your travel needs and understanding the unique facets of digital travel photography, you can help to ensure that you will bring back and preserve the precious once-in-a-lifetime memories of travel exploration and discovery.



Male lion, Okavango Delta, Botswana. Canon 10D, 6.2 megapixels. 35-350mm. 1/500, F5.6



Sunset on the Okavango Delta, Botswana.

All text, photos and illustrations by Douglas Hackney unless otherwise noted.

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Appendix A
Trip Preparation Checklist
Master pack list

- Airline tickets
- Rail passes
- passport
- inoculation records
- international driver's license
- carnet for vehicle
- international medical and emergency evacuation insurance
- K&R (Kidnapping & Ransom) insurance information
- Prescription medicines in original bottles
- Copies of prescriptions
- Spare eyeglasses / contacts / contact supplies
- Eyeglass prescription
- Emergency contact information
- Blood type
- Pre-printed mailing labels for friends and family
- Pre-printed mailing labels for friends and family
- International Airbills (be sure to bring your account info, FedEx, DHL, UPS, etc.)

Before you leave:

- check for travel tickets
- check for itinerary
- check for passport
- check for inoculation records
- check for international medical insurance / emergency evacuation
- check for carnet (vehicle)
- check for international drivers license
- check for prescriptions
- check for local guide/interpreter contact info
- confirm reservation(s) with airline/train/ship
- confirm local vehicle rental/vehicle shipping
- confirm pickup service at destination airport/station/terminal
- confirm K&R (Kidnapping & Ransom) insurance notification procedure(s) & contacts

Photo pack list

- main camera (with ID label) with body cap & strap
- pocket camera (with ID label) with strap
- camera batteries (numbered)
- battery charger(s)
- lenses with caps
- lens hoods
- UV filters
- Memory cards (numbered & formatted)
- Flash
- 8 sets disposable flash batteries
- Lens cleaning tissue
- Lens cleaning solution
- Lens cleaning blower brush
- Circular polarizer filter
- Additional filters
- Full size tripod & ball head
- Tabletop tripod
- Remote shutter release
- Camera rain hood
- data file backup device
- backup device power supply/charger
- backup device USB/Firewire-IEEE 1394 cable
- laptop
- laptop power supply
- power adapters
- blank CDs (numbered)
- blank DVDs (numbered)
- pre-addressed DVD mailers (numbered)
- small flashlight
- business cards
- photo releases with local translations
- pen
- sharpie marker
- camera/flash manual
- journal/notebook
- compass

Before you leave:

- charge batteries
- confirm contents of photo bag(s)
- test all packed equipment (function, compatibility)

Electronics Pack List

Laptop System

- Laptop
- Laptop power supply
- AC Power adapter
- Laptop padded carrying case
- Camera memory card reader
- International tech support phone, email and web addresses

Laptop Optional Equipment

- Spare battery
- "JumpDrive" USB solid state memory "drive"
- External mouse
- Airline/car 12V power adapter
- Spare, cloned hard drive in shock case (be sure you have all tools required to access the hard drive)

Backup Device

- Backup Device (hard disk or CD/DVD burner type)
- Backup Device Power Supply
- Backup Device 12V car adapter
- Backup Device padded carrying case

Cables

- Cube tap / outlet strip (if surge protected, confirm safe operation at 220-240 volts)
- AC power adapter(s)
- RJ11 phone / modem cable
- Phone jack adapters
- RJ45 Ethernet cable
- USB 2.0 cable (confirm connectors work with your devices, i.e. camera, backup device)
- Firewire / iLink / IEEE 1394 cable (confirm connectors work with your devices, i.e. camera, backup device)

Recordable Media

- Recordable CDs (for moving files to internet cafes), minimum of five
- Recordable DVDs Mail Set (for mailing copies of your images home), budget at least two-three per week if shooting RAW format images
- Recordable DVDs Travel Set with small spindle storage case (if using a CD/DVD burner backup device, then keep a set of image files with you and mail one set home), budget at least two-three per week if shooting RAW format images
- Cardboard DVD mailers (pre-addressed), pre-load the DVDs into the mailers, one per DVD
- Lightweight CD box for blank CD media
- Four spare recordable DVDs (bad burns, bad media, extra backups, etc.)

Before you leave:

- Clear laptop drive of all unneeded files
- Update Laptop virus software
- Test all software
- Test all cables with all devices
- Test dialup account(s)
- Test internet based email account(s)
- Test web posting / blogging account(s)
- Test CD/DVD burner
- Test Backup Device
- Re-format/erase Backup Device
- Pre-address DVD mailers
- Charge batteries

Travel Tips:

- The less you carry, the more fun you'll have
- Don't drink the water
- If you do, have Imodium ready; surfer's recipie: Coke and Saltines
- Cipro, the travelers friend
- Ex-officio
- Always have a good map
- Guide books are essential, but don't take a guide book trip
- Small phrase book & dictionary
- Learn a few key phrases and use them, regardless of quality, it will be appreciated
- Try local foods
- Stat with a group tour, but try some trips on your own, the flexibility is fun, especially for shooters
- Update homeowners insurance with new equipment receipts and serial #'s
- Noise canceling headphones
- Wheeled luggage

Pro Tips:

- save early, save often
- separate your full memory cards from your gear
- DSLR: invest in glass, bodies are like computers, short half-life
- Leatherman tool
- Shutter priority as default
- RAW file format
- Model releases in local languages
- Location releases in local languages
- Get close to the subject
- Just ask, the worst they can say is no
- Shoot marketable images
- Wear local clothes
- K&R insurance for risky destinations
- Inland marine insurance for global equipment coverage
- Customs forms for equipment