

Pixels, Bells and Whistles

by Nelson Rodriguez

Exploring the benefits of digital photography has lured even the greatest of skeptics to dabble in the novelty. The ability to instantly review your shots, correct exposures on site, share your images over the internet with family and friends, delete unwanted images, and pay only for the ones you want printed are just some of the great attractions to this alternative approach to film.

By now many photo enthusiasts are beginning to feel overwhelmed about the prospect of selecting their first digital camera. Many photographers who already own a digital cameras are contemplating an upgrade as their holiday gift. Regardless of where you fall in this endeavor, feeling overwhelmed is understandable. Digital camera manufacturers bombarded us with an average of 100 new cameras per year from 1999 through 2003. If the choices were not intimidating enough, factor in new jargon like *pixels*, *file compression*, *JPEG*, *TIFF*, *RAW*, *CCD*, and *CMOS* . You love photography, but wonder if you are up to navigating through the landscape of this new technology.

Let's keep it simple. Knowing your budget and photographic needs go a long way in deciding what camera to purchase.

Digital cameras fall into 3 categories: Point and Shoot, Advanced Compact Digital, and Digital SLRs (DSLR). The current price range (as of Oct. 2004) for the Point and Shoot cameras runs between \$100 - \$500. The Advanced Digital Cameras can be purchased from \$500 - \$1300. The DSLRs are sold from \$800 - \$8,000 for the body alone.

The second thing you need to know are the general differences among the three

groups.

Point and Shoot digital cameras are similar in style to the point and shoot film cameras we have been accustomed to seeing in the market. They are designed to fit in your pocket and have a built in flash with a limited shooting range of 3 to 5 feet. Point and Shoot digital cameras appeal to those who want the digital photography experience without the complication of manual camera settings. These cameras are most popular with the infrequent photographer who enjoys capturing special occasions and also enjoys the benefits offered by digital photography. Point and Shoot digital cameras often come with a built-in zoom lens that generally ranges within the 2x to 10x optical zoom.

While enlargements can be made from the point and shoot cameras, their small sensors suffer from *digital noise*. Digital noise is the red and green specks scattered throughout an image especially noticeable in low light and shadow areas and made more visible in enlargements. This artifact is caused by erratic electrical charges generated by sensor pushed beyond their capacity to record low light.

The Advanced Digital Cameras are often referred to as "Prosumer Cameras". Like the Point and Shoot, they are manufactured with a built-in lens. The greater advantage to these cameras is that they provide the serious amateur with additional control over the camera's settings. Also, their sensors tend to be larger and less sensitive to digital noise. They come with a built-in flash and also have a hotshoe for the option of adding an external flash. Many models come with a flip out LCD monitor for viewing the image coming through the lens. One draw back to using the display monitor is the additional drain on the camera's battery.

Digital SLRs offer a photographer the maximum control over an image. They also have the best sensors because they are largest. The millions of microscopic sensor sites (often called pixels) used to record the levels of light are larger and are capable of yielding a much greater dynamic range. Smaller digital cameras can have a digital sensor as small as 6% the size of a 35mm frame, while DSLR sensors are usually between 40% to the actual size of a 35mm frame. A larger sensor is more sensitive to a wider range of light, which means you will see more detail in the highlight and shadow areas of your image. Larger sensors are given the necessary space to perform with less electrical interference from neighboring sensors. Less electrical chatter between the sensor sites means lower noise levels and an overall improvement of your print. The lenses on the more professional DSLR models are also made to higher standards than those for most compact digitals.

I will go on the general assumption that club members are serious about their hobbies and are owners of Single Lens Reflex (SLR) cameras. If we were saving our money for another film camera, chances are we would not be looking for a “point and shoot” or a camera with a fixed lens. Which leads to my recommendation. When thinking about a digital camera, think big and give serious consideration to the purchase of a Digital SLR. The quality of the image sensor is far superior to the sensors of compact digital cameras.

In order to get the best results from digital sensor, manufactures do a decent job of partnering a quality lens with the size of a particular sensor. Despite these efforts, digital cameras differ primarily because

image sensors vary in quality. Think of the digital sensor as a permanent reusable film housed inside the camera, then ask yourself if you would buy the digital camera with reusable film which is grainy or slightly fogged. While the obvious answer to this question is a resounding “no”, unfortunately thousands of serious amateurs and professionals spend big bucks daily to do just that in trying to get their hands on something digital. Like cheap film, inferior sensors cannot produce a quality image even with the best of lenses. Let’s be clear about the use of my term “inferior”. Most people may not notice any substantial difference when comparing 4x6 prints side by side taken by cameras with different sized sensors. Enlargements produced for gallery or competition, however, will certainly reveal the differences within the sensor’s resolving capacity.

Another benefit of the Digital SLR cameras is their faster startup time and ability to shoot higher quality images more rapidly. The higher the image resolution, the more time it takes the camera to write the image on the storage card. Fortunately, thanks to the use of larger *buffers* DSLR cameras are now capable of shooting more frames per second. A “*buffer*” is located inside the camera. It’s function is to serve as a temporary holding bin for every image you capture on the sensor while one image at a time is processed and sent to the image card. This allows you to keep shooting without the bottleneck delay caused by the camera sending images to the storage card.

This holiday, as sales people try to cloud your thinking with the lure of more pixels, bells and whistles, remember that the investment you make in a digital camera is

also in the quality of the built in film (sensor) that will render your work.

With a little courage and peer support, exploring the world of digital photography will serve to add newness and excitement to the craft we love. I think it's well worth the adventure!