TECHNOLOGY

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To improve your camera's shutter response time, try using continuous focus, top, the "burst" mode to take multiple shots rapidly, middle, and the sports mode, left.

WAYNE PALMER/For the Sun-Gazette

Bits&BYTES

WAYNE PALMER

How to take better sports photographs

One of the most frequent complaints people have about digital cameras is the time delay between pressing the shutter and when the picture is actually taken.

This is called lag time or shutter lag. Often this delay can result in the missing the reason for taking the picture.

The quickest fix for this problem is to upgrade to a Digital SLR, a camera with interchangeable lenses. The technology in these cameras allow for instant results when pressing the shutter. However this may not be in everyone's budget and the size of a Digital SLR along with all the accessories in a weekend getaway sized camera bag defeats the purpose of a compact camera.

There are ways to improve your results without having to make a decision of upgrading your camera or forgoing the family vacation.

Get out the owner's manual and learn about some of the options of your camera.

• Use the sports mode if your camera has one.

• Set your camera to take multiple images when you hold down the shutter button. By taking a burst of shots, anticipating the action, you may just get the shot you want

• See if your camera offers different focusing options. If your camera offers continuous focus, use it. With this option, the camera constantly reevaluates focus based upon the subject it senses as moving and does not have to confirm the focus before it takes the picture, which is why there is a delay.

If you don't have any of these features, simply ready the camera for the shot before you take it. In most normal operating modes when you the press the shutter button, the camera powers up, sets the exposure, and confirms the focus before capture.

If you can point the camera where you anticipate the action to be and depress the shutter halfway, the camera will be ready to fire. Simply continue pressing the shutter the rest of the way and should get you a much better result.

There are many devices to choose from in the world of high-definition video, including models from Toshiba, top, and Panasonic, above. Even the Sony Playstation 3 can play Blu-ray discs.

HD DVD vs. Blu-ray

Remember VHS and Betamax? Here we go again

By MIKE BADGER
For the Sun-Gazette

Finally, high definition video has come to DVD players.

However, consumers who want to watch DVDs in high definition need to choose from two competing, incompatible technologies: HD DVD and Blu-ray.

Toshiba backs HD DVD, and Sony supports Blu-ray. Developers of the two formats have not been able to work together to ensure compatibility or develop a standard.

So, what is the difference? From a practical point of view, they are more alike than different, which only helps confound the decision-making process further.

Each format uses a blue laser to read the disc, while standard DVD uses a red laser. The blue laser has a shorter wavelength, which allows more data to be written to the DVD.

The greater disk capacity provides the foundation to store high definition video. At 1080p, both HD DVD and Blu-ray offer the highest quality video resolution available today. (See sidebar for an explanation of resolution measures.)

Each format promises a higher level of user interactivity. For example, you can access the additional features on the disc such as extra scenes or on-screen commentary without leaving the movie – something not possible with traditional DVDs.

The product specs for HD DVD and Blu-ray boast lossless audio and 7.1 surround sound capabilities so that movies sounds as good as they look.

The HD DVD and Blu-ray format

A quick guide to the terminology of screen resolution

High definition resolution measures the vertical lines on the screen. A 1080p resolution is actually 1920 x 1080 lines, which is the format familiar to most computer users.

The "p" in 1080p and 720p stands for progressive scan, which means that each line in the vertical resolution is scanned in order in one pass. The "i" in 1080i denotes interlaced. With an interlaced resolution, every other line in the vertical resolution is scanned in a single pass. Therefore, two scans are required to read all 1080 lines of the picture.

Progressive scan resolutions result in a smoother picture than interlaced.

For more information search for "full HDTV" on www.whatis.com.

war is reminiscent of the VHS and Betamax battle for market dominance in the late 1970s and early 1980s. Unlike VHS and Betamax, HD DVD and Blu-ray use the same size of disc, and they read existing DVDs.

To put the competing formats into perspective, I visited a local "big box" electronics store, where clerks recommended Blu-ray.

They said more movie studios release discs on Blu-ray, which means more movies are available for con-

sumers.

According to the Blu-ray Disc Association Web site at **www.blu-raydisc.com**, seven of the eight major movie studios support Blu-ray. The list includes Disney, Fox, Warner, Paramount, Sony, Lionsgate, and MGM. The HD DVD Web site at www.thelookandsoundofperfect.com lists studio support from Universal, Paramount, and Warner.

Early HD DVD players from Toshiba did not deliver full high-end 1080p resolution. Instead, the players provided lower resolution of 720p and 1080i. Current Toshiba players output 1080p.

Choosing Blu-ray over HD DVD costs more. At a typical big-box store, for example, Blu-ray players start at roughly $700, while HD DVD players start at a more affordable $400.

The Sony Playstation 3 has a Blu-ray player built in, which makes the $600 price tag a relative bargain. Xbox 360 users must buy an add-on HD DVD drive to get high definition video on their game systems. The HD DVD player costs $200 on top of the $300 Xbox 360.

Best Buy offers a multi-format DVD player from LG, but the ability to watch standard DVD, HD DVD, and Blu-ray movies from a single device costs $1,200.

Regardless of which format or player you choose, the most important prerequisite to watching high definition videos is an HD TV. Even though high definition DVD players may work with standard televisions, you cannot get HD output from a standard television tube.

Certainly, the home theatre space draws most of the high definition interest because of the stunning image capability, but the next generation DVDs also offer approximately five times more data storage than standard DVDs.

The HD DVD capacity is 15 GB on a single layer disc and 30 GB on a dual layer disc.

Blu-ray discs hold 25 GB on a single layer disc and 50 GB on a dual layer disc.

So, which one do you choose? The decision carries some risk because either format still a chance to dominate or disappear.

On the other hand, HD DVD and Blue-ray may come to coexist in the marketplace, like Macs and PCs. If that happens, many consumers may end up buying multi-format DVD players, once they drop in price.

On the Web

Official HD DVD – www.thelookandsoundofperfect.com
Blue-ray Disc – www.blu-raydisc.com

High definition DVD players

Player	HD DVD or Blu-ray?	Street Price
Toshiba HD-A20	HD DVD	$500
Toshiba HD-A2	HD DVD	$400
Sony BDP-S1	Blu-ray	$1,000
Samsung BD-P1000	Blu-ray	$700
LG BH100	Both	$1,200
Xbox 360 HD DVD Drive	HD DVD	$200
Sony Playstation 3 60 GB System	Blu-ray	$600

(NOTE: Prices are approximate and subject to change)

Penn College of Technology students win award for video promoting computer security

Five Pennsylvania College of Technology students will share a $400 third prize for their entry in the 2007 Computer Security Awareness Video Contest sponsored by the Educause/Internet2 Computer and Network Security Task Force to raise awareness of and increase computer security at colleges and universities.

The team of Maurizio Bertone, Greenwich, Conn.; Joshua S. Bucknor, Lock Haven; Christopher R. Herbein, Birdsboro; Guy Hershberger, Union City; and Joseph S. Iacona, Pittston, created a two-minute video, "A Short Film About Data Protection," that describes several steps the average user can take to keep personal computer files safe.

The bronze award-winning video was produced as part of the Fundamentals of Information Security course, taught by Lisa R. Bock, an information technology instructor in the college's School of Business and Computer Technologies.

In all, there were 56 submissions from 24 colleges and universities.

PHOTO PROVIDED

From left are Pennsylvania College of Technology students Christopher R. Herbein, Maurizio Bertone, Joseph S. Iacona, Guy Hershberger and Joshua S. Bucknor. The five collaborated on a prize-winning entry in a video contest to raise awareness of the importance of computer security at colleges and universities.

Researchers store data in DNA

FUJISAWA, Japan (AP) — These days, data get stored on disks, computer chips, hard drives and good old-fashioned paper. Scientists in Japan see something far smaller but more durable — bacteria.

The four characters that represent the genetic coding in DNA work much like digital data. Character combinations can stand for specific letters and symbols — so codes in genomes can be translated, or read, to produce music, text, video and other content.

While ink may fade and computers may crash, bacterial information lasts as long as a species stays alive — possibly a mind-boggling million years — according to Professor Masaru Tomita, who headed the research at Keio University.

Tomita's team successfully inserted into a common bacterium Albert Einstein's famous "E equals MC squared" equation and "1905," the year the Nobel Prize-winning physicist published the special theory of relativity.

Genetic coding is so massive that information can be stashed away somewhere in the gene without affecting an organism's overall appearance and other traits. Much genetic information appears to be mere "junk DNA" and has no effect on creatures' traits or development.

Mutation presumably could distort the stored information, but Tomita says the data is stored in four places in the bacteria so that it will stay intact.