



# Antelope Valley Microcomputer Users Group

## Next AVMUG Meeting:

- *Wed. July 21, 2004*
- *7:00 P.M.*
- *Lancaster Senior Center*
- *777 West Jackman*
- *Lancaster, CA*

## July Meeting

This month's meeting will be our second workgroup meeting.

The 103 group will have a member presenter on digital imaging.

The N & B and FAQ workgroups will share a guest presenter program on computer fundamentals by our Regional APCUG Director, Ms. Judy Taylour.



## Our Leaders:

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## Our Phones

### AVMUG

661/942-1912

### MUG Flaps

661/946-3249

## DIGITAL PHOTOGRAPHY AND PRINTING

by Charlotte Semple, President & Editor, Los Angeles Computer Society, California

Charles Mahan, Wi-Fi SIG Leader, Los Angeles Computer Society, California

Lee Otsubo is best known as The Digital Photo Guy. He has become a familiar figure to many user groups as he shares his knowledge and experiences in digital photography. He emphasizes two basic topics in his presentation:

- 1) How to get the most out of a digital camera (or how to buy one) and,
- 2) How to share and display great digital Photos.

### Megapixels

Mega comes from Greek, meaning, great. In technological terms, it's a prefix for millions. A 3.5-inch floppy holds 1.44 mega bytes, which is 1.4 million bytes of data. A megapixel is 1 million pixels.

So, •What the heck is a pixel?• A pixel is a made up tech term for •picture element.• Pixels are square.

If you look closely at a newspaper photo, using a magnifying glass, you will see hundreds of tiny dots, some dark, some light and some in between. As you move the photo away from yourself, setting aside the glass, you will not be able to discern the dots any more, instead you will see the whole photo. Digital cameras work the same way. They use millions of pixels, (mega pixels, or MP), to make a photo. i.e. a 2 MP camera uses 2 million pixels

pixels. A mega pixel is a measure of the camera's capability to capture detail, which is resolution.

You need to be aware of what kind of photography you are interesting in doing and what you are going to do with the photos in order to make the best use of the finite number of pixels you have.

### CCD

The CCD (Charge Coupled Device) is the central processing unit of the digital camera. It is somewhat like the CPU in a computer, but unlike the CPU, the CCD has only one function. It takes images and munches and crunches them. The CCD of a 2 mega pixel camera contains 2 million light sensors. Each light sensor produces 1 pixel. Each pixel represents 1 of 16.7 million different colors. Each pixel has a red, green and blue component of color. Each component is a byte (of data). Each pixel has three bytes of data. A 2 MP camera produces 6 million bytes of data. Enough data to fill five 3.5-inch floppies!

### Cycle Time

The time needed for the CCD to munch and crunch data and get it out of the way in time for the camera to be ready to take another photo.

### Lag Time

The time a digital camera needs to look at a subject and fire enough electrical charge to be ready so that when the shutter button is pressed, the camera will capture the image of the subject.

### Munching and Crunching

After the CCD captures the image it has to compress it. A 2 MP camera uses (munches) 6 million bytes of data for each picture at high resolution. This has to be compressed (crunched) down to 1 mega byte of data. Many cameras have different settings for resolution. Lee recommended that you keeps your camera on the highest setting and leave it there. If you change it for a lower resolution shot and forget to re-set it to the higher level, and you use the camera again, thinking you are taking high-resolution shots, you will be disappointed in the results. You can always throw away extraneous detail, but you cannot put it in if you didn't capture it in the first place.

### Input –The Lens

This is the first and last place where there is any real resemblance between the digital and film camera. The usual focal length of a 35mm point and shoot camera is anywhere from 35mm to 105mm zoom. Most digital cameras have 3 X zoom, which goes down to the equivalent of 35mm, for a moderate wide-angle shot, out to the equivalent of 105mm for a telephoto shot.

There are two types of Zoom: Optical, which is •real• zoom, and Digital, which is electronic trickery. When you activate the zoom function on a 35 mm point and shoot film camera, you can hear the lens moving in and out, increasing or decreasing the size of the image to be captured. This is •real• zoom. When the electronic zoom on a digital camera is activated, the zoom plays a trick on the image. The lens

captures the center section of the image and stretches the pixels out to fill the frame. But one loses some resolution and the photo will not be as clear.

Using a photo imaging tool on your PC, and enlarging a photo large enough so that straight edges are no longer straight, you can see the points of individual pixels. In tech terms, this is called •Jaggies•. Under the same conditions when looking at a photo of a person, you can see individual square pixels. In tech terms, this is called •Pixilation•.

When buying a camera be aware of what component of the camera is optical zoom and what is digital zoom. Some •smart• marketers might advertise their camera as having 6X zoom capability, where they have multiplied the 3X Optical by the 2Xdigital. A 3X Optical camera is a 3X Optical camera. Another way marketers might advertise a 6X Optical camera is where they have taken a cheap 2X optical zoom and bumped up the digital zoom to 3X, calling their product 6X Zoom. You must be really careful to read the fine print. Don't always go by the advertising printed on the box.

#### **About Zoom**

If you are taking photos at a backyard BBQ, and you are able to fill the camera frame with subjects, you probably will not need a zoom. If you are going to be taking outdoor photos with subjects 20 to 30 feet away, a 3X Optical zoom camera is probably all you would need. If you are in the •nose bleed• section of a sports arena, and your subjects seem to be 6-inches tall, you will probably need anywhere from a 6,

8,10 to 12Xm zoom. You should be aware of the kind of photography you want to do so that the right type of zoom lens can be obtained.

#### **Output-USB**

Most modern digital cameras will have a USB (universal serial bus) port connection. If a camera does not have this don't even consider it. A slow serial connection will drive you crazy. Simply plug the USB cord that comes with the camera into the computer and leave the camera end in a convenient place for ready use. A card reader makes an easy job of uploading the data from your camera into the computer. A universal Card Reader accommodates up to 6 different memory cards. Simply insert the memory card into the reader and it will look to a Windows machine, almost like a disk drive, and you can drag and drop photo files from the memory card.

#### **Memory Cards**

These are compact flash memory cards. The particular type of memory card that came with your camera is the type you should use. Not all memory cards are universal. The real advantage of memory cards is that they are removable and are fairly robust. Not like ordinary film. Lee recommends that you should carry at least two memory cards of a moderate range. These are all electronic devices and sooner or later you will corrupt data on a memory card. If you were gullible enough to buy only one very large range memory card, and go on vacation, and the card becomes corrupted, you are up the proverbial tree. You have two choices. Erase all the accumulated

data from the card and reformat the card, losing all your photos, or not take any more photos. Neither choice is desirable. If you had two memory cards, the corrupted card can be removed and stored away safely and the second card can be inserted into the camera and you can continue taking photos. When you get home, the corrupted card can be inserted into the card reader, and a rescue software (Photo Rescue, <http://www.photorecue.com>) can be fired up and most of the photos can be saved.

#### **LCD**

Instant gratification! You can see in an instant the photo just shot (but wait for the Cycle Time). It is not recommended that you waste time trying to decide which shots to keep and which shots to discard while taking the shots. Wait until the photos are transferred to your PC, and then make these decisions. Each time you turn on the LCD the power consumption increases by 2–3 fold, and precious battery life is wasted. Also, when you buy a digital camera, make sure it has an optical viewfinder, and use it for much better shots.

#### **Power**

Most digital cameras use standard rechargeable batteries. If you use regular alkaline batteries a digital camera will just eat them up in no time. The most popular batteries are Nickel Metal Hydride (NiMH). Some people might use Proprietary Lithium Ion batteries, proprietary meaning expensive. The lithium ion batteries are very powerful and long lasting, lasting 3-4 times

longer than the nickel metal hydride batteries. A warning about these batteries-be very careful how and where you store them. Don't carry them loose in a pocket with anything containing metal. You could start a fire. These batteries should be stored safely in some sort of plastic containers.

Now, what do you do with all these great photos? Print them! In order to get the best quality prints, there are 4 components that impact the quality of the prints:

#### **1. The printer**

Use a good quality photo ink-jet printer. Epson, Hewlett Packard, and Canon are the most well known and written up in most photo magazines. They also do have a range of good quality inexpensive printers.

#### **2. Paper**

Use good quality paper. This might be somewhat of a surprise, but Epson produces the best quality prints on expensive Epson paper (about \$1.00 per an 8.5 X 11 sheet). The same goes for Hewlett Packard and Canon. Keep in mind that there are certain combinations of paper and printer that will never work. It is not advisable to use Epson paper with a Hewlett Packard printer, or HP paper with a Canon printer. etc. . If you only print about 20 to 30 photos per month, live a little and buy the expensive paper. If you print hundreds of photos per month, look around for deals, but try a few sheets of the paper first before buying a ream or you might be stuck with a ream of unusable cheap paper.

### 3 Image

As Lee mentioned before, keep your cameras set at the highest resolution and you will get high quality prints. There are two exceptions: a) the use of •raw• or •tiff• mode is mostly for when one needs the highest quality possible. e. g., taking wedding photos where everything is set up, people are standing quietly, the lighting is just right, and the camera is on a tripod. Raw, or Tiff, captures every single pixel and does not compress, creating huge files. b) Taking photos for the Internet, such as for eBay. Use a low resolution that does not require compression and reduces the time between taking the shots and uploading them to eBay. If you keep your cameras at the highest resolution you will have the least compression.

### 4. Software

The software is the most critically important component in producing good prints. Remember when Lee talked about those square pixels where just 1 pixel represented 1 of 16.7 million different colors in a RGB color scheme? Well, printers print round dots, each with a color spectrum of between 5 to 10 thousand different colors in a CMYK (Cyan, Magenta, Yellow and Black) color scheme. For a printer to make the transition from square pixels to round dots, it needs the support of good high quality software that is specifically written to do that job. (Someone actually figured out how to insert a square peg into a round hole!)

### CDs

#### The most important reason for copying

digital photos onto CDs is, digital photos have no negatives. If you transfer you photo to your computer, and if you computer fails (and it will by Murphy's law) and you have not copied them to CDs, you are out there up the proverbial creek. Your photos are history. The CD is your •negative•.

The format used by digital cameras for compression is JPEG (Joint Photographic Experts Group), a powerful technology and an excellent compression log rhythm. There is, however, an insidious idiosyncrasy you must be aware of with JPEG images. After you have downloaded your photos into you PC. and you pick out a photo to examine and admire, do something with it and save it, it is re-compressed. If you open it again and save it, it is re-compressed again. Each time you open a photo and save it after viewing it, it is re-compressed. Each time it loses a little more detail, eventually becoming one ugly photo. When this happens, and you have a pristine copy of the photo on a CD, re-copy it to the PC and you will have a fresh photo to work on. The best advice is not to save it each time you look at it. You can work with a photo, changing its composition and print it without saving the changes. CDs, when used regularly, also degrade. So make 2 CDs of your photos, keeping one in a safe place.

## Microsoft Internet Explorer Navigation

- **CTRL+B** (Open the **Organize Favorites** dialog box)
- CTRL+E (Open the Search bar)
- CTRL+F (Start the Find utility)
- CTRL+H (Open the History bar)
- CTRL+I (Open the Favorites bar)
- CTRL+L (Open the **Open** dialog box)
- CTRL+N (Start another instance of the browser with the same Web address)
- CTRL+O (Open the **Open** dialog box, the same as CTRL+L)
- CTRL+P (Open the **Print** dialog box)
- CTRL+R (Update the current Web page)
- CTRL+W (Close the current window)
- 

### General Keyboard Shortcuts

- CTRL+C (Copy)
- CTRL+X (Cut)
- CTRL+V (Paste)
- CTRL+Z (Undo)
- DELETE (Delete)

# Windows Key Shortcuts

These first twelve (12) shortcuts utilize the **Windows Key** • which is located at the lower left hand corner and, the lower right hand corner of your keyboard between the **Ctrl** and **Alt** keys. If it is not there, then you do not have a Windows keyboard.

## Ctrl • Windows Key Alt

The keyboard image effects that you see above and below are being controlled through an external .css (Cascading Style Sheet) file. These are not actual images, but a carefully thought out list of CSS attributes that gives the appearance of a key on a Windows keyboard.

## • Windows Key + E

Opens a new **Explorer Window**. Probably one of the hottest **Windows keyboard shortcuts**. This one gets a lot of hoorahs!

## • Windows Key

Displays the **Start Menu**.

## • Windows Key + D

**Minimizes** all windows and shows the **Desktop**.

## • Windows Key + D

**Opens** all windows and takes you right back to where you were.

## • Windows Key + F

Displays the **Find** all files dialog box.

## • Windows Key + L

Lock your Windows XP computer.

## • Windows Key + M

**Minimizes** all open windows.

## • Windows Key + Shift + M

**Restores** all previously open windows to how they were before you **Minimized** them.

## • Windows Key + R

Displays the **Run** command.

## • Windows Key + F1

Displays the **Windows Help** menu.

## • Windows Key + Pause/Break

Displays the **Systems Properties** dialog box.

## • Windows Key + Tab

Cycle through the buttons on the **Task Bar**.

## Alt + Tab

**Toggle** (switch) between open windows.

# President's Corner

I am happy to report we now have 37 members and continue to grow every month. Our new members have brought fresh ideas and have contributed their momentum to our expanding activities.

We still have many goals to achieve this year on our small budget. We are always looking for creative ways to increase your benefits and most of our advances have been a result of work by your Board of Directors/ Talent Pool and your continuing support.

Here is our midyear situation: Our Shuttle PC continues to serve us well, with current programs-it might be prudent to optimize it with one more DIMM Ram chip.

Ken Henderson, our Hardware Custodian has been hard at work, salvaging the best parts from our recent hardware donations and is in the process of assembling three more PC's for the club. Thanks to Ray Coronado, we now have current operating systems to load into our workgroup computers and a router to link them. We would like to set up a wireless ISP access to our hallway meeting rooms.

We need DIMM RAM chips, and a few hard drives one gigabyte or larger in size.

We could use some 17 inch monitors.

We could also use three more media projectors, to eventually replace our splitters and our workgroup monitors. We can use more PCs, to continually upgrade our hardware.

If you know of any companies that periodically replace their older PC hardware and media projectors, perhaps we can convince them to make a tax deductible donation. I would appreciate any contact information you could provide.

If you have information or experience in obtaining grants, please contact me.

Thanks for your continued support. Our friendly group continues to grow and provide a forum for learning, trying new things, and having fun with our PCs. This continues to be the year everyone helps to make the club a better place.

Bob Lion

