

ACPCUG

September 2001

Digital Photography *Purchasing a Digital Camera* by Larry Horn

Digital cameras are the latest "Must Have" toys for gadget loving computer users and many others. The reason computer users love digital over regular film is the computer gives them the ability to make endless changes, corrections, and improvements to their pictures and use them in creative projects. (Be sure to attend this month's meeting where MGI will show you some of the digital editing techniques and tricks you can do using their line of products.) This article will be my very opinionated list of what you should consider before purchasing a digital camera, or getting your new one with more features. Remember, technology in this field is advancing so fast with more resolution and features for less money on a monthly basis. Therefore any recommendation for a specific camera is obsolete before the article can be printed.

An Important point: No consumer level digital camera of today under \$3,000 will equal 35MM film for absolute image quality! The structure of film is way be-

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From The Deals

Guy by Bob Click, , Greater Orlando Computer Users Group. **What a Loss To User Groups**

I was distressed to hear that Adobe may dismiss Louise Miller from the user group program. Louise has worked very hard for both Adobe and we user group people. The decision was not final at this writing, but in the user group community, Louise has made Adobe a household name, and dismissal certainly doesn't seem like a just reward for her hard work. Not only will Adobe be the loser, but user groups will also lose. I hope they find a spot for her without dismissal. I understand it's a consolidation of Adobe's user group activities, but I hope it doesn't mean closing us out completely as Ambassadors for Adobe's fine products.

A few other hard-working friends have also gotten the ax for all their hard work during these slow economic times. Ever wonder why anybody should worry about doing a good job when they could be history at any given time, in spite of their best efforts? I guess conscientious employees will always give their best automatically.

A Moment of Carelessness

I thought I had become pretty good at recognizing e-mail with a virus attachment, and I had, but I still found a way to get careless. At the time of my carelessness, I didn't realize I had triggered a virus, but in the middle of the night I woke up realizing what I had done, and that was to click on a file that I actually should have remembered was virus infected. I'll handle them in a different way and will try not to get in a hurry from now on. I'm sure it didn't use my Eudora address book, but the SirCam virus finds other places to get addresses to send a familiar-looking, but infected, file out to friends.

I sent a message of warning to my address book people, but almost nobody in it had received an infected

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Sept. 9, 2001

Stark Technical College,

North Canton, Ohio

Favorite URL's

(Web Sites)

Frank Ramsey & Board

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file. There were a few and I'm not sure where it found those addresses, but I thought perhaps in my trash bin, because I had about 40 returned messages with infected attachments that had addresses looking like the spam type I always delete. That would have been a perfect place to send those infected files, but alas, they all bounced back. The few friends who received an infected file were people I had communicated with recently so that may be a clue.

I receive several newsletters in PDF format and a couple in ZIP format. I decided simply to catch up printing the files by clicking on them right from my "Attachments" folder. In the process, I accidentally clicked the wrong zip file (left there for further AV checking) and had failed to notice the double extensions this time. After this, I'll move suspected files to a safe place and not depend on my 'superior' intelligence.

An interesting sidelight to this disaster is that some of the bounced e-mail containing contaminated attachments were bounced by network administrators who detected the infected file and returned it telling me that. I hope that network administrators trend continues to grow for everybody's sake. My computer is now a mess and I'm ready to reformat and start over.

Still Good

The LapDog is still good so visit [<http://www.laptopoffice.com>].

inKline's Stay Connected is also still good. [<http://www.inklineglobal.com/register>].

Don't forget the Mouse Bungee Pro deal is still good. [<http://www.mousebungee.com>].

inkline Global is Back With Another Special Offer

If you are still using a dialup connection to surf the Net, how about something to improve the performance of your modem. "Modem Booster" from inKline Global is designed for getting the downloading done, but faster and more dependably. Here is their offer: "We are pleased to offer your column readers 15% off 'Modem Booster' (normally \$19.95) in your October column. For the Modem Booster promotion in October, 2001, simply mention "MB-DEALSGUY-1001" in the COMMENTS field of the order form [<http://www.inklineglobal.com/register>] when purchasing Modem Booster. The offer is valid till 30th Nov. 2001."

Again, ordering must be done on their Web

site URL above.

Get Better Organized, Not Unionized, But Yourself

I am not a fan of PIMs (Personal Information Managers), but I must admit that they are popular. It so happens that inKline Global has a very good Personal Information Manager called RedBox Organizer 4.1 and they have offered you a deal on it. I have not had the time to review this product, although they offered it to me. Below is their description:

Now you can manage your daily activities more efficiently, and have the flexibility and ease to plan, organize and schedule virtually whatever you want. Use the Calendar, Planner, Reminder, To-do, Sticky Notes and Globe to manage daily occurrences like Expenses, Reports, Appointments, Contacts, Addresses and Travel information all within an enjoyable 3D interface. Save loads of time, send e-mails, quick-dial your contacts, keep conversation logs and even publish your activities on the Web. Extraordinary features like Multi-User capabilities, password protected program sharing, Time Converter and Global Distance Calculation abilities. All these features in one compact program make it an ideal planner for all home and small businesses. Free CD with online purchase!"

My readers get the program for just \$29.95, regular \$39.95. Use the special code "RBODEALSGUY" (enter in the "comments" field) when ordering. Below are more URLs and info for the product.

Company URL: [<http://www.inklineglobal.com>]

Program URL: [<http://www.inklineglobal.com/products/mb/>]

Download Site 1: [<ftp://inklineglobal.net/win32/mb25.zip>]

Download Site 2: [<http://inklineglobal.net/win32/mb25.zip>]

Filesize: 1.75 MB / 1803 KB / 1,845,295 Bytes
Filename: mb25.zip Version 2.5 Install/Uninstall Included

Security Just For Your Pocket??

Yes, but I meant for your "Pocket PC." I received an announcement recently for Cresotech PocketSafe 1.16 for Windows CE, a Pocket PC security tool for protection of personal data. It's a convenient PDA-based tool for safe storage of confidential information. PocketSafe provides easy management and secure storage of passwords, contact names, credit card numbers, bank account and document data, as well as other confidential information. The records in

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Digital Cameras by Larry Horn

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yond 3 or 4 MegaPixels (MP), and film has grain which softens the edges presenting a more natural picture to your eyes. Additionally, film cameras can be purchased, at a very reasonable cost, with interchangeable lenses which greatly increase the flexibility of the camera use. Yes, you can fake a telephoto lens in the camera but that kills your resolution. (I will get into that below.) You can also scan a photo, but that will also reduce the resolution and ultimate image quality. When you get your film developed and placed on a CD by the camera store, they actually scan the film (with a very good film scanner) and save the file to a disk.

First, why do you want to purchase a digital camera? Because they are fun to use and can actually save you a lot of money over time. It takes the Polaroid® concept of a picture in a minute and speeds that up. You take the picture, preview it on the LCD screen and delete it if you don't like it or save it for future posterity - all at no additional cost for film or developing. Print out the pictures you like (paper quality does matter) or send them as e-mail attachments to friends and relatives.

Let's get down to the actual items to consider when buying a camera. These items are in my order of importance although many of the items are actually of equal ranking and personal preference has influenced it.

Resolution and Sensor Size:

The heart of all digital cameras is the light sensitive electronic chip called a sensor. It takes incoming light and converts it to a digital file. This chip determines the maximum resolution and, ultimately, image quality. This sensor is made up of a number of individual photo-receptors corresponding to pixels. When a digital camera says it has 1MP resolution, the sensor actually has that number of photo-receptors. The density of the sensor determines a camera's overall picture quality.

Using a loose analogy to relate it to your computer screen's resolution, the original default VGA resolution of Windows on a computer monitor was 640x480 which means it has 640 dots or pixels across by 480 down or .3 million pixels making up the screen image. A digital camera with this same resolution would have .3 million image sensors each representing a pixel or .3 MegaPixels (MP). Cameras in the mid-price range (\$150-300) now have 1MP, or 2MP. In the \$400-\$1,000 price range you will get 3MP or 4 MP. This directly impacts the size of a picture you can print as more pixels translate into a larger picture that still looks good. The camera has captured more detail and doesn't have to

"guess" or interpolate at the missing dots or expand the existing ones causing a blotchy print.

I have seen two kind of sensors: a charge coupled device (CCD) which is usually found in high-quality cameras and a complementary metal-oxide semiconductor (CMOS) which is more common in the low-cost "entry-level" cameras. Most of the reviews I have seen favor CCD chips.

What resolution do you need? That depends on how you will be using the final output. Yes, more is always better, but as a rule of thumb related to final use:

- .3MP (640x480) = On screen viewing, Web Sites, sending as e-mail attachments, prints up to 3"x5"
- .8MP (1024x768) above and prints of 3"x5" to 4"x6"
- 1MP (1152x864) = 3"x5" to 5"x7"
- 1.3MP (1280x1024) = 4"x6" to 5"x7"
- 2MP (1600x1200) = 5"x7" to 6"x9"
- 3 MP prints up 8"x10" to 11"x14"
- 4Mp 9"x12"

The above listing was the consensus of several sources but was plagiarized from the April 2001 issue of PC Photo, an excellent magazine for anyone starting out with digital photography. PC Photo generally used the more conservative - smaller sizes.

One last point on resolution: Many people will want to eventually crop their pictures for a better composition. When you crop it down, you effectively throw out the resolution in the area you delete. A 3MP image could quickly reduce to a 1MP with cropping, so if you like to work on your images and make relatively large prints, start with and shoot at the highest resolution you can afford.

The Lens:

There are two main points to consider here, lens material and zoom capability. Lenses can be made of glass or plastic. Glass is the hands down winner for quality.

The stated Zoom range is a bit more complex. You can have Optical Zoom and Digital Zoom. Optical Zoom uses the actual optics of the lens to magnify or zoom in on the image. There is no loss of resolution/quality, but it is more expensive to manufacture. Digital Zooms take the original image from only the center part (how much depends on the degree of magnification) of the sensor and use the camera's internal computer to interpolate or guess at the "missing" pixels between the real ones. It is like cropping the picture and then stretching the image back up and filling in the blank spaces. Image quality is degraded and the greater the magnification, the more you lose. A

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the database are encrypted and password-protected. All popular models of PocketPC are supported: Compaq IPaq, Casio Cassiopeia, HP Jornada, Symbol, etc.

System Requirements: Pocket PC running Windows CE 3.0 or higher. 400Kb free on Pocket PC and 1Mb free on desktop PC. Supported Processors include ARM, SH3, MIPS. I was unable to test this product because I do not own a Pocket PC, but it looks very interesting. The price is only \$19.00 and my readers are even offered a 10% discount by going to [<http://www.regsoft.net/purchase.php3?productid=36402&pc=M6M64>] and using the password "dealsguy." If you simply want a trial version, use [<http://www.cresotech.com/ftp/pocketsafe.exe>]. The company URL is [<http://www.cresotech.com>] should you just want information on the product.

Classes For Office

Keystone Learning Systems is offering all users group members a special. Their offer follows: "Purchase any, that's right any, OFFICE related course at Full Price and get a 2nd set within the OFFICE selections at 40% off! You may get as many additional sets as you want at 40% off. Call now to start enhancing your User Group Library, and help individuals learn skills they can use. Check these courses: Excel, Access, Word, Power Point, PhotoDraw, Publisher, Outlook, Project, or Windows 95, 98, and 2000. This Special Offer will expire Friday, October 26, 2001. Reference Code UGem2.

"If you haven't requested any yet and would like to receive a free demo of our training materials or information please contact Evan Jones at 888-299-3647, EXT. 7002, e-mail: [evanj@keystonelearning.com]. Or fill out the application at: [http://www.keystonelearning.com/about_keystone/user_group/index.html] and indicate in the field provided what products you are interested in."

Also listed are 32 other courses newly introduced or coming soon, and 1000 other topics and titles to choose from. Be aware that these courses are not classes, but come to you on CD, or VHS video format. The offer was signed by Evan Jones, Sales Representative KeyStone Learning Systems, a GlobalLearningSystems Company (888) 299-3647 ext. 7002, (801) 418-7002. Fax: (801) 373-6872

That's it for this month. Meet me here again next month if your editor permits. This column is written to make user group members aware of special offers I have found or arranged, and my comments

should not be interpreted to encourage, or discourage, the purchase of products, no matter how enthused I might sound. Bob (The Cheapskate) Click [Bobclick@mindspring.com]. Visit my Web site at [<http://www.dealsguy.com>] for past columns. Also, I keep adding interesting articles (taken from user group newsletters) to my "Articles of Interest" page for viewing or downloading.

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3MP sensor might actually be using only 1MP at the center and "filling in" the other 2MP. Don't get me wrong, I have seen cameras guess very well and produce good quality images at high digital zoom magnifications but optical is always better than digital. The most common range I have seen in optical zooms is 3X or three times magnification.

Also, be aware that the sensor is not the same size as a piece of 35MM film, so when you see the focal length stated in mm like 38-115mm (3X) this is actually a more telephoto angle lens than you would get in a 35MM camera. PC Photo Magazine list the conversion at approximately 5X. My Olympus camera has a lens of 5.4mm - 16.2mm which they state is equivalent to 35mm-105mm on a 35MM camera which equals slightly wide angle to short (Portrait) telephoto for those not familiar with 35MM cameras.

Framing the Picture:

You can frame the picture in either an optical, ideally through the lens, viewfinder or with an LCD display panel on the back of the camera. I feel a digital camera should have both! Being a long-time photo enthusiast I am accustomed to an optical viewfinder. LCDs also have the bad tendency to "wash out" or become too light to be viewable. I also find it awkward to hold a camera away from my face while trying to frame the image. Another disadvantage is LCDs consume a lot of battery power. You can shoot all day on one set of batteries with an optical viewfinder, but you had better have extras if you use an LCD. I would not purchase a camera without an optical viewfinder. (Our VP, Elliot Glantz, feels just the opposite, and although his camera has both, he always uses the LCD over the optical viewfinder.) I will also admit an LCD is more

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accurate in framing the subject, especially close-ups, unless your optical viewfinder is "through the lens," something generally found only on top-of-the-line digital cameras.

If I am so partial to an optical viewfinder, why do I want a digital camera to have an LCD panel? Because it is invaluable for previewing your pictures to make sure you really got a good shot. If it didn't turn out, you know it instantly and can reshoot it. The bad picture is simply deleted, making room for another shot and with no waste of film. It is also great being able to show off your pictures while still at the party, etc. and see the reaction. One neat feature I saw on a Sony camera was an LCD panel which swivelled so you could still see it if you put the camera over your head or were using the self-timer to take your own picture.

Focus:

Simple, inexpensive, digital and film cameras have a single fixed, or two zone, focus. It is a compromise or zone guess. This is OK as a quick point-and-shoot camera but will not give you the best shots. Most better (\$250+) digital cameras have autofocus lenses. This will give you far better, sharper images. An added feature is a focus lock. This feature allows you to lock the focus on the main subject and then re-frame the picture to a more pleasing composition. When you get up to the professional level (\$2,000+) cameras, you can even get optional full manual focus for real creative effects.

Memory - Storage Cards:

Digital cameras store their images in non-volatile memory cards; they save the memory even when the camera is off. Some very inexpensive have only internal memory which will hold 25-30 pictures before you have to get to a computer to download them. This is OK around the house but would require you to lug a laptop with you on a trip if you wanted to take any additional pictures. A better solution is removable memory cards so you can take several with you and when one is full, just change it like you would film, and keep shooting. There are several, unfortunately non-compatible, options available. These are Smart Media (SM), Compact Flash (CF), Sony's Memory Sticks, Multimedia Cards, Click Disk, the new IBM MicroDrive, and just released CD-R. The 2000 Fall Comdex in Las Vegas also saw the introduction of additional formats but these are not yet available. SM and CF are the most popular at this time. They are all small cards, about the size of a matchbook, which slide into the camera. You purchase them by memory size, in Megabytes, which

range from 4Mb to 64Mb with the MicroDrive going up to 340Mb. These capacities are increasing as I write this. Some Sony cameras still use a standard 3 1/2" floppy disk. These are cheap but are limited to 1.4Mb so they can't hold many pictures as the resolution increases. The number of images you can save per Megabyte is directly related to the resolution and the amount of image compression you use.

Image Compression - File type:

A non-compressed high resolution picture would take up multiple megabytes of storage space so most cameras store the images in a compressed format. The most common formats are TIFF and JPEG. TIFF uses minimal compression and produces the largest file sizes but also the best pictures. JPEG is a "Lossy" compression algorithm. This means that some information is thrown away forever when the file is compressed—so if you compared the "uncompressed" image with the original, you would find some differences. You can, on some cameras, set the amount of compression so you can determine the amount of data you are willing to lose (and reduce file size) before the image becomes pixilated and looks unacceptable. Setting the camera to Fine, Normal or Basic determines the amount of compression. Some brands use different terms but the concept is the same. I discourage the use of the Basic - highest compression - setting as it gives the lowest quality. A good quality camera will give you a choice of file type as well as degree of compression.

So how many pictures do I get on a memory card? A basic camera my neighbor has includes only 2Mb of memory and at 640x480 resolution with what it calls fine compression they can take 16 pictures or 32 pictures at the basic setting. The average camera with removable memory comes with a 8Mb card. Using that as a guide I will reproduce part of a table (with their terms) from the camera I own:

Resolution	Compression	# of pictures
1600x1200	TIFF - Minimum	1
1600x1200	JPEG - Minimum	5
1600x1200	JPEG - Std	16 *
640x480	JPEG - Fine	32
640x480	JPEG - Normal	82

* This is the setting I use most often but I have to go back and Save-As with a higher level of compression if I am sending the files over e-mail to keep the size at a reasonable level for a dial-up download.

The Feel of the Camera

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Next Meeting - Sept 9th
Stark State Technical
College
Main Auditorium

First Class Mail

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Even with the best specs in the world, if a camera does not "feel right" you will not use it. This is very subjective but also very important. Getting the size, weight, design, location and operation of the controls, and the general Ergonomic Fit comfortable to you are important. There are some necessary compromises in size and weight if you want every bell & whistle. You might be carrying the camera all day on vacation so don't overbuy on size just to get a feature you may never use. The box of my still camera says it will take video clips also. But when you look at the spec sheet you find out the video is low resolution and limited to only several seconds, even with a relatively large media card. My camera only gives you 96 seconds with a 32Mb memory

card at 320X240 resolution. No very practical **Viewing and getting the pictures out of the camera.**

I consider it important, but not critical, to have a TV out on the camera. The small LCD screen on the back of the camera makes a poor screen you several people to view the pictures. Being able to plug the camera into the TV, especially if the camera has a slide show feature, is very nice.

There are several ways you can get the pictures into your computer. The oldest and slowest is with a serial connection. All PCs have a serial port so you "guaranteed" a connection. The preferred way is with USB. It is many times faster, almost every computer now supports USB, and you can "hot-sinc" with USB, you don't have reboot to connect the camera as you probably do with a serial connection. Even if your camera only has a direct serial connection, you can still use USB by purchasing a media card reader. Plug the reader into a USB port, remove the memory card from the camera, place it in the reader and your computer now has an additional

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drive letter, making it fast and easy to copy your pictures. They even make adapters that look like 3 1/2" floppies that you can put the memory card into.

That is just about all I have room for this month. Next month we will get into more of the special features that make the camera easier to use. I will also tell you which camera I purchased and why. I welcome your input and questions for what I should include.