

The Virtual Costumer

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President's message Richard Man

I am very honored that Dana asked me to consider volunteering for the SiliconWeb's President.



Now, thanks to the consent of the membership, I have the honor of serving the community.

Being in the "geographical" location of the Web, SiliconWeb's nationwide members have diverse background and

interests. We have many talented folks in the group, and I hope that we will attract even more costumers/cosplayers/furries etc., not because they have no local chapter to join, but because they will find value in joining.

Our chapter's special masquerade award is named the Dream Catcher, to be awarded for the best and most creative use of technology. That is a great summary for our group - the web and other technologies are the means, costuming, sewing, prop making etc. are the process, and the end goal is to realize our dreams. Our challenge is to build this virtual community so that our costumer members can realize their dreams.

As the web is our home base, the first step I would like us to take is to revamp our website. I am looking for a team of volunteers to handle the various tasks. Please help strengthen our community. If you are interested, please email me at richard@imagecraft.com or through the SiliconWeb yahoogroups mailing list.

Thank you and I will see you in the bitstream.

Commedia dell'Arte Masks on the Cheap

By Betsy R. Delaney

I've been working on OutOftheBlackBox Theatre Company's second production, George Herman's *A Company of Wayward Saints*, all spring and into this summer. The show opened on July 7th to reasonably positive reviews. (Not too shabby, considering it's only my second directorial effort.) It concerns the actions and antics of a troupe of nine Commedia actors who have lost their sense of purpose, their ability to work together, and their sense of humor.



Commedia is a very old art form, extending backwards over 400 years. You can see much of what was done in any modern day comedy, but especially in vaudeville routines, the films of The Marx Brothers, The Three Stooges, Buster Keaton, Charlie Chaplin and so on.

This show, unlike our first production (a modern interpretation of Pirandello's *Six Characters in Search of an Author*), required considerably more work costume and set-wise, and necessitated masks for five of the actors. We explored several options, including plastic mask blanks and leatherwork masks, before settling on papier-mâché as the construction method of choice.

Don't know what I'm talking about? You haven't done it since first grade? It was something I'd dabbled in about 10 years prior, while I was still playing around with different art techniques in a failed attempt at being a SF Artist. I had a brilliant idea not long after Costume-Con 7 that I'd make several sets of masks, display them in the art show, and sell them as needed. But I'm getting ahead of myself.

It all started when I participated in a life-mask workshop. Robert Beech, a relatively well known competition costumer and special effects makeup artist in the area offered to run a workshop for creating life-masks. I volunteered to be a guinea pig. The resulting life mask was my starting point.

After the mask-making exercise was over, the mask sat on the shelf for the better part of a couple of years, until I needed to make my Come Lady Death costume for CC7. I took the casting out, layered it in plastic wrap, then took aluminum foil and laid it down on top, smoothing it out completely over the shape of my face cast. Then, taking the standard mix of newspaper, flour and water (and a little white glue), I mixed up the strips and started laying them out on top of the foil. There were enough layers to hold it stiff, but not so many that it was heavy to hold. Some hot glue, a wood dowel, paint and sequins finished the mask off.

I was happy enough with the results that I intended to make another set of masks for the aforementioned art show. Four were supposed to represent the four seasons, and two more would be comedy/tragedy masks. I set out and made the bases for these six masks, in quick succession, intending to come back and finish the masks. That never happened. Instead, the masks, with two or three layers of the glue/paper/flour mix were put away in a box with the remaining materials, and that's where they sat, gathering dust until I needed to find the foundation for our theatre masks.

CONSTRUCTING THE MASKS

I started by chopping off the bottom lip and chin of each of the five masks. I also cut holes in the eyes and nose so that each actor's features could be marked more easily, and so they could breathe (somewhat) through the masks.

Once we had the facial features marked out in marker, we took the scissors to the masks again and trimmed out the eyeholes to better accommodate seeing.





Each mask portrays a different character. Harlequin, Scapino, Capitano, Dottore and Pantalone each have specific features that are recognized as “traits” which needed to be incorporated into the final designs of the masks. (For the examples of a leather set, which we used as our basis for our versions, see these: <http://www.commediamask.com/index.html>.)

We achieved the various wrinkles, carbuncles and other features a variety of ways. For the most part, we used a pre-mixed product called *Fast Maché* (<http://www.activaproducts.com/products/sculpture/fastmache.htm>), but Capitano’s nose proved to be more than we could manage just with the Fast Maché alone.

← Harlequin (with Dottore and Ruffiana looking on)

For the sculpting on Capitano’s nose, I resorted to a cone-shaped section of Play-doh and some additional foil to shape the skeleton, and then more papier-mâché to stabilize it. After attaching it over my original nose, I built the structure down and around the cheeks and lips, building nostrils up with the Fast Maché. In all, there were three additional layers added to the existing masks, to build up on forehead lines, brows, cheekbones, nostrils and so on.



Capitano ↑



←Dottore

Dottore’s nose was handled similarly, but was a round, blob-like structure on a very weak bridge between the forehead and the nose itself. Eventually, I resorted to hot-glue to hold the original “nose” and the new bulbous “nose” together.

Somewhere along the line, I recalled seeing a suggestion to color the different layers so that it would be relatively easy to see what was done and what wasn’t. That worked fairly well, generally speaking, for the paper.

After applying newspaper, we applied a layer of paper towel over the whole mask. This gave the exterior the same sort of strength we got from the foil understructure.

FINISHING THE MASKS

Next, we fitted each mask with a set of eyelets (in some cases, two eyelets glued together, to handle the thickness of the mask’s sides) - two on each side, to make a double-band around the head. When possible, I used a standard eyelet setter to apply each one, after poking the hole in the mask with a small screwdriver and opening the hole for the eyelet.

Although some of the finished masks we saw in our research appear flesh colored, we were really out of time by then, and I opted for a black finish instead. The masks were spray painted, then spray shellacked and allowed to sit and cure for 48 hours, to ensure they’d be really dry by the time we were ready to use them on stage.

Pantalone ↓



The next step was to cut “hair” to apply (to Capitano, Dottore and Pantalone). I chose a grey hair ponytail holder (like you find here: <http://www.wilshirewigs.com/FEATHER-WRAP-by-Put-On-Pieces-pr-505.html>), cut the elastic and unwound it, gluing it down for the eyebrows and mustache, then trimming it down as necessary.

Dottore needed eyebrows, and I found long pile fake fur did the trick. We used the same for Capitano’s mustache and eyebrows. Hot gluing them into place finished the exterior.

Last, I threaded ¼” black elastic (sold by the yard at JoAnn’s – stay away from the packaged version – it’s a LOT more expensive!!!), ran it through both sets of eyelets and knotted at the back so that the masks could be relatively easy to put on and take off again.

**The company (left to right):
Tristano, Isabella, Capitano
(without his hat), Columbine,
Dottore, Harlequin, Pantalone,
Scapino and Ruffiana.**



←Scapino

In all, it’s been a real learning experience, working on these masks. I’m very pleased with the final outcome. They’re light, easy to put on, and relatively comfortable to wear.

For more information about the techniques used, you might want to visit these sites:

- <http://www.papiermache.co.uk/>
- <http://users.belgacom.net/papier-mache/pm/howto.htm>
- <http://www.tpt.org/donnasday/creative/activ14.html>
- <http://www.enchantedlearning.com/crafts/papiermache/>

Happy Mask Making!

Selecting a Camera

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Generally speaking, costume photography doesn't require a special camera, but there may be specific features that are important for photographing costumes and costumers. In this article, I will address some of the issues in selecting a camera and summarize what features you should look for if your focus is specifically on costume photography. Note: the cameras shown in this article are for illustration purposes. The author does not necessarily endorse the cameras. All non-product photographs copyright © Richard Man.

Figure 1 Sony Cybershot T1, one of the earliest ultra-compact and ultra-thin digicams with 3x optical zoom and five megapixels



Film or Digital

One of the biggest changes in the photography industry and the photographic world in general has been the "digital tsunami wave". To wit, some of the most famous camera makers are no longer in business, having been replaced by companies more savvy in selling cameras primarily as electronic equipment, rather than as photographic tools. Minolta-Konica has sold the bulk of its Intellectual Properties to Sony, Samsung is "rebadging" the venerable Pentax cameras, and even Kodak has departed from most of its analog photography business. Digital is everywhere: your latest cell phone can take pictures and sometimes even videos. It may allow you (for a fee) to surf the internet - and by golly, it may even act as a phone! Then you have choices of whether to buy a digicam, a digital SLR (dSLR), or an EVF (uh oh, alphabet soup time), or a "super zoom" camera. Ah, the tempting confusion of so many choices!



Figure 2 The Nikon F6, possibly the last professional film SLR ever released

In most cases, digital is also as - or more convenient than - film. You can take your memory card to your local photo lab or drug store and make 4x6 prints for less than \$.50 a pop. If you are comfortable with computers, you can print your photos at home, and even upload the photos to a myriad of photo-sharing sites for all to see.

However, there are still a small number of reasons to stay with film, at least for a little while longer:

1. Initial cost. It is much cheaper to buy a film camera of comparable capabilities to a digital camera. For example, the lowest price dSLR (the "serious" camera) will run you about \$500 to \$1000. For about \$200 or less, you can get a more capable film SLR and many rolls of film. (The flip side is that, if you shoot a lot, the cost of film and processing will rapidly overwhelm the initial cost savings.)
2. Archival quality. When people are shooting film, they usually make a bunch of 4x6" prints and toss them in a shoebox. They may not even know or care where the negatives are (some people - gasp!! - even throw the far more useful negatives away!) The nice thing about shoeboxes full of photographs is that they are very easy to store and flip through. Most prints when stored like this will not fade too quickly, even after many years. When properly stored, though, negatives will survive for a great many years, and provide endless fresh prints of several sizes. Heck, you can still find photographic glass plates from the Eighteen Hundreds in reasonably good condition!

Most digital shooters, on the other hand, rarely make prints. At best, the images are stored in a computer or saved off to a CD or DVD. Unfortunately, computer storage mediums tend to suffer from failures, particularly since most consumers do not know what the "good" CD/DVD brands are (and no, "traditional big name-brands" such as Sony, TDK, Memorex etc. do not mean anything, since most of them just rebadge stuff from Original Equipment Manufacturers, AKA OEMs). The cost of a digital failure is catastrophic: when a print tears or discolors, it's just one picture, but when a hard disk fails, or if your CD is no longer readable, you may very well lose everything on it.

1. Hybrid imaging. You can start with analogue film and once processed and scanned into the computer, you can treat the rest of the process the same as if you have shot your pictures in digital format to begin with. In some sense, this is the best of both worlds, as you have the flexibility and control of the digital process, and the archival quality of film.



Figure 3 Nikon LS-5000, a 4000 DPI film scanner

2. Fine Art. Lastly, there are people who shoot photographs for their fine art quality (whatever that may be). To them, film, especially black and white film, has certain characteristics that make it special and unique.

All said, shooting digital is probably the best solution today for most people. For myself, I use a digital camera for most of my costuming photo work. The ease of manipulating colors using Photoshop, and the savings of not having to process color slide film, make the latter choice a no-brainer. For my personal work though, I shoot and process my own B&W film and then scan the negatives in for post-processing and printing.

I may write more about using film and the hybrid imaging process in a later article. For the rest of this article, I will concentrate on digital cameras. Most comments apply equally well to digital or film cameras, hence I will often use the term “imaging device” to mean either film or a digital sensor.



Figure 4 Scanned B&W negative

Camera Controls

Some of the newer cameras have a “face recognition” mode. That is, the camera automatically focuses on a face in the frame, and makes all the “right” choices for you. The joke is that future cameras will just not take the picture you see, but give you a more perfect picture that it stores in its vast memory or creates based on the scene before you. All joking aside, the simplest way to use the camera is to put it in auto-idiot mode, and most of the time, it does give you pretty good pictures. However, to make better decisions and to further your photographic abilities, you should understand that regardless how smart the computer is inside the camera, it only makes the following choices:

- Focus. Obviously you want the most interesting subject to be in focus, even if it is not in the center of the frame. There are two autofocus methods that cameras use, differing in speed of response and sensitivity in working in low light (a more costly dSLR may use both.) Some Sony digicams are known to project a grid of red light pattern when they try to focus low light situation. Whether you want a camera that draws so much attention to what it is doing is up to you, of course, but generally you want a camera to be "out of the way".

One problem with the autofocus is that sometimes it does not know what the "object of interest" is. A classic example is when the autofocus focuses on the background instead of the actual subject, leading to some manufacturers investing in a “face recognition” mode as mentioned above. The fix, though, is simple enough: with most cameras, you place the main subject in the center of the frame and half-press the shutter to focus, then move the camera to recompose if needed while holding the shutter button half-pressed. Works great, and there is really no need for too many “smart” autofocus modes.

One thing in favor of the small digicams is that they have physically small sensors, and a side effect of that is that a good part of the image may end up in focus, due to the greater “depth of field.” The flip side is that, for artistic purposes, a photographer usually wants a more narrow depth of field. For example, a portrait where the closer eye is in focus and everything else just blurs away can work beautifully. Such techniques are not possible with small digital sensors.

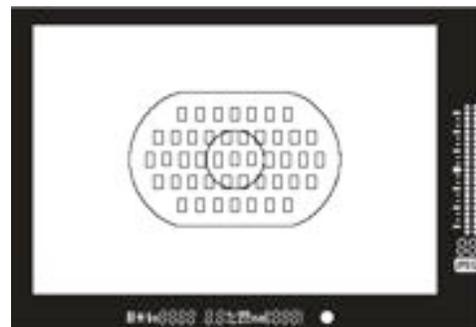


Figure 5 The 45 (!) autofocus points of the Canon 1Ds MKII dSLR

- Exposure. The “right” amount of light has to hit the imaging device for the picture to come out as expected. Otherwise, the scene may appear too dark or too light. The word “right” is in quotation marks, since there really is no absolutely “one correct” amount of light for any given scene. Most of the time a picture can work with different amount of exposure (e.g. a figure in front of a setting sun may work equally well as a silhouette or as a well exposed figure with a strong backlight, or at any number of steps in between) and it really is a matter of interpretation what looks best.

Exposure is controlled by three factors. If a particular scene requires X amount of light to come in for it to be well-exposed, you can adjust any two or three of the following in tandem and still let in the same X amount of light. The reason you may want to adjust any of the controlling factors is that they each affect other aspects of your picture, as explained below:

- Shutter speed. The imaging device is exposed to the light for a certain amount of time that is determined by the shutter speed. In some cameras, a physical shutter opens and closes. In most digicams, a physical shutter is not used, but the digital sensor is activated for that amount of time.

The shutter speed also affects the apparent motion of the picture. For example, a slower shutter speed would show a person in motion as more blurred than if a higher shutter speed is used. Most people can hand-hold a camera steadily down to 1/60th of a second. With slower speeds (e.g. 1/30th of a second, 1/15th of a second etc.), the ambient camera movement may make the picture appear blurry even if the subject is not in motion.

Each change of shutter speed either doubles or halves the amount of light coming in, depending on which direction you are adjusting. For example, a shutter speed of 1/60th of a second lets in half as much light as 1/30th of a second.

Figure 6 Capturing blurred motion with a slow shutter speed

- Aperture size. The lens has an opening that allows the light to come through. The size of the opening is defined as the aperture or “F Stop”. For laypeople, there are two confusing things about apertures: 1) the smaller the F stop number means the opening is bigger and more light can come in, 2) the change in the amount of light it lets in is not a simple scale in accordance with the F stop number. For example, a typical F stop scale on a lens may read: 1.8, 2.8, 3.5, 4.0, 5.6, 8, 11, 16 and 22. The amount of light let in between a lower number and the next higher number is not simply doubled, but increases in a logarithm scale.



Figure 7 Shallow depth of field with F1.4 aperture



ASA “film” speed. A film has a recommended ASA setting you should use. The smaller the number, the higher the quality of images it produces. One really great advantage of the digital cameras over film cameras is that you may change the ASA for each picture, whereas with film cameras, you are stuck with one setting for the entire roll. On the other hand, digital cameras usually have a limited ASA selection, ie: digicams usually only have a range between ASA200 to ASA400. The more expensive dSLRs provides a larger range from ASA100 to ASA800. Some allow as high as ASA1600 or ASA3200, but the images tend to be noisy from the high ASA setting. There are exceptional dSLRs that provides really “clean” high ASA images, but they cost \$5000 to \$8000 for the camera body alone. Contrast this with film where you can get ASA25 film (albeit more difficult to find these days) and high-speed color film of up to ASA1600.

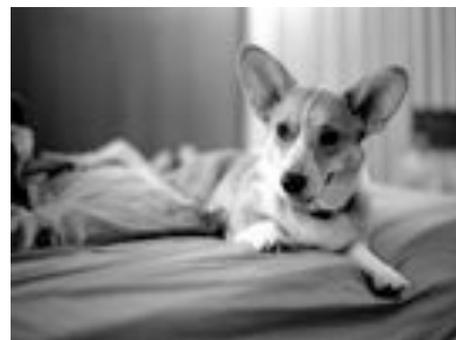


Figure 8 Bellydancer dancing in the dark. Shot in equivalent of ASA6400 (!), manual focusing

- Composition. Placements of the subject and the background, or even lines and

shapes and shades, are important parts of the photograph. Human brains are attracted to patterns and interesting composition. Thankfully we don't have super smart cameras that compose the pictures for you... yet. Sometimes even moving slightly to the left or to the right can change the composition of a picture from so-so to amazing. So, move around, look at the lines, and find a good composition to show off your subject.

Figure 9 Good composition draws your eyes into the picture

- **Zooming and Apparent Perspective.** These two controls are inter-related and are often misused to control the composition. Zooming allows you to select different focal lengths and, in effect, magnify or minify the amount of scenery you want to capture in your picture. There are other optical effects such as a telephoto lens (e.g. 90mm or above in 35mm camera terminology) which "compresses" a far-away scene, and a wide-angle lens (e.g. 35mm or below) which "distorts" the picture. Common wide-angle distortions are actually not true distortions, but artifacts of the apparent change in perspective.



There you have it. An automatic camera may give you a technical good picture by auto-focusing in the right place and selecting the right combination of shutter speed, aperture, and ASA to give a proper exposure. However, at the minimum, you still have to control the zooming and the composition of the picture. Finally, all other factors aside, the most important factor in having a great picture versus a merely good picture is the quality of the light. (I will not go into the details of lights and usage of flash in this article; those subjects will take a full article of their own to address properly, which I expect to do in the relatively near future.)

Camera Features

The following is some general discussion and commentary. (For specific camera comparison, you should visit sites such as <http://www.dpreview.com>, <http://www.steves-digicams.com/> etc.) You should always try to test drive a camera in a store before buying it.

An important question to ask before buying a particular camera is: how will you use the images? For example, the phone cam is the ultimate snapshot machine. Your latest cell phone most likely has a built-in camera. It is perfect for those people who want to capture the moment just to re-live it briefly. With a phone cam (or other digital camera), you can take a shot, pass the cam around to show to your friends and then delete the shot altogether. If you just want to make web-sized photographs, you have a different set of criteria, and if you want to make prints, yet another. In the latter case, the size of the prints you are likely to make will dictate some of the features of the camera you need to buy; in particular, the megapixel count. Some of the features to consider are:

- Size of the camera and the usability of the controls. The greatest photographer in the world cannot take a picture if they do not have a camera because it is too bulky or heavy to tote around all the time. I almost always carry a rangefinder film camera with me. It is bigger than a small digicam, but I am used to it. A small digicam - and of course your phone cam - can easily be carried around everywhere.

The functions, sizes and placements of the control buttons or knobs are also important. Along with how well the camera menus are laid out, they can make the difference between a frustrating and expensive doorstop and a fun camera that you frequently use.

- Response time: Some cameras t.a.k.e..f.o.r.e.v.e.r..t.o..w.a.k.e..u.p. and then take another eon between the time you jab hastily at the shutter (which actually does not make it take pictures faster, but causes camera shake, e.g. blurry pictures) and the time the actual picture is taken. By that time, the subject may have moved, may disappear altogether, or that wonderful smile has turned into a frozen grimace because the subject has been holding the pose too long. The auto-everything camera does have to do a lot of things: zoom the lens out to the requested focal length, focus on the hopeful subject, evaluate the scene to compute the best exposure, and if necessary, turn on the flash and set it to burst the right amount. All this work takes time. Added to that is the actual writing time to the memory card, and the experience can get very frustrating very quickly. Some cameras do respond faster, so definitely find one that has an acceptable response time to you.



Figure 10 "Hurry Up! We can't hold the pose forever!" Anime Expo 2006

- Digital zoom: You may as well ignore this number. It is a useless feature that you can duplicate either on your computer or even when printing pictures out on a store kiosk. It is marketing nonsense, pure and simple.
- Optical zoom: Unlike the digital zoom number, this number IS important. Within limits, you want the widest zoom range possible. However, as with everything about cameras, it's all a matter of tradeoffs, and there are compromises (one of which is the higher cost) for a higher optical zoom range. For a digicam, a current "sweet spot" is the 3x to 4x zoom

range.

- Megapixel count: Since higher is better, is the highest the best?! - Not always true, as higher megapixel images take up more space on the memory card and on your computer; and of course a camera with a higher megapixel count costs more money. So you should only buy "enough" megapixels for your needs. For people who are only producing web photos, then really just about anything counts as good enough. For 4x6" prints and occasional 8x10" prints, then a 3 to 4 megapixel camera will suffice. Only when you frequently do larger enlargements or a lot of cropping would you need a camera with a higher megapixel count.

- Flash control: Most cameras are pretty smart in this department. Just set the camera to fill flash and forget about it. When you want to get creative later, buy a dSLR, a fast prime lens and throw away your flash. (Natural light is a great way to get beautiful photographs, but again, that's a subject for another time.)

- White balance: This is another great feature of a digital camera over a film camera. The color of an object changes under different lighting. For example, the setting sun layers a golden glow on everything, and we all know how sickly-green or oddly-yellow fluorescent lights can make a human face appear. Normally, a digital camera would take the best guess on how to compensate for the colorcast. Better still is that some cameras allow you to set the white balance (basically you photograph a sheet of white paper or white cloth under the chosen light, and tell that the camera that it is supposed to be "white"). This is definitely a useful feature if you care about color accuracy, or pleasing colors.



Figure 11 Proper White Balancing would have eliminated more of the yellow colorcast, but then again, these are "dead people?" Costume Con 24.

- Manual control: Usually the lower the price, the less manual control a camera has. The auto-everything mode is quite capable, but if you think you want to play with creative manual control, make sure to get a camera that allows easy manual changes.

- Macro mode: Macro mode allows you to focus closer; for example, to take close up pictures of detail work, jewelry, etc.

- Sensor Size: "Bigger is indeed better" when it comes to sensor size. (Since sensor size is somewhat tied to the different classes of digital cameras, see below for a more in-depth discussion.) For a visual comparison of different sensor sizes, see

http://www.outbackphoto.com/dp_essentials/dp_essentials_01/essay.html and scroll to the bottom. The smallest sensor is not even 2cm wide!

- **Battery choices:** The two common battery choices are regular AA and rechargeable lithium ion batteries. Unfortunately, few cameras can use both. If you are going to backpack in the High Country for a week, then it may be important to have a camera that can take regular AA batteries, as you can carry spares. Otherwise, a rechargeable lithium ion battery would be a better choice, since it costs less in the long run, and a fully charged set usually lasts longer than a set of new AA batteries.
- **Image Stabilization:** This is usually only available with dSLRs or “super zoom” digicams. It minimizes camera shake due to use of a telephoto lens or the camera not being held steady. This is particularly useful if you like to use telephotos a lot, or like to shoot indoors in natural light or in generally darker places, since it allows you to shoot more clearly at lower shutter speeds.

What About Costume Photography in Particular?

Before deciding what camera to get, you should understand that whatever you get now will be replaced by the next model in a few months time; such is the short product lifecycle of electronic equipment. On the other hand, if a camera serves you well now, there is no reason that it will not be producing the same great images a few years down the road, and there is no reason to chase the "latest and the greatest" just for its sake.

How you are going to use the camera should determine which camera you need:

- Some cameras have better color accuracy than others, and as mentioned, some allow you to set your white balance. These two are important features for good costume photos.

Figure 12 The blue cloth was further custom dyed to just the right shade of blue. Color accuracy matters a lot to many costumers.

- If you want to take detail shots of your or other people’s costumes, then make sure your choice has a good macro mode and a flash that works well with the macro mode. You want the flash to light your subject as evenly as possible.
- It is generally a good thing to get the fastest responding camera as possible. First of all, you want to capture that expression you see NOW. Second, especially with Anime cosplayers who may strike a martial arts pose, you don’t want them to have to hold a difficult pose for too long.
- Taking pictures during the masquerade (without a flash of course) usually requires a telephoto lens and high ASA settings (e.g. ASA1600 or above) and a fast aperture. This unfortunately most likely means using at least an entry-level dSLR.



Figure 13 Costume Con 24: Science Fiction and Fantasy Masquerade Entry, Castlevania



Classes of Cameras

For technical and marketing reasons, there are generally 3 classes of digital cameras¹: digicams, dSLR (digital single lens reflex), and the EVF bridge cameras. Generally, with a digicam, you use the LCD on the back to compose and view the pictures. With a dSLR, you use the optical viewfinder for composing and shooting and the back LCD for photo review. With the dying breed of EVF bridge cameras, you can use either the back LCD or the Electronic Viewfinder (EVF) for shooting and picture reviewing. These 3 classes can be further divided as follows:

1. Phone cams. A digicam that happens to also be a cell phone. Ubiquitous. Generally few controls and relatively low quality, but constantly improving. This may be the future of the “ultimate snapshot machine”.
2. Pocket-sized digicams. These are reasonably low cost (\$200-\$400) with plenty of features, small and have good imaging qualities. The major downside is typically slowness of response (“please hold that pose for a few more seconds!!”), limited zoom range and due to the use of small sensors, limited ASA range (typically only between ASA 200 and 400). This is a huge market with lots of choices from many manufacturers.
3. Super Zoom digicams. Same as above but with long zoom range and usually image stabilization to make the long focal length usable. The zoom range is truly spectacular, in the order of 10x to 12x zoom, from wide angle to long telephoto in a small package. An equivalent lens for the dSLR or the 35mm film camera would be a lens that is huge, unwieldy and would cost an arm and a leg. The small digital sensor size means that the lens can be made much smaller and this will be a big reason that this class of digital cameras will survive in the long run.

Figure 14 Panasonic Lumix FX27, a Super Zoom with a 12x optical “Leica” zoom lens



4. EVF bridge cameras. EVF bridge cameras look and handle like a dSLR except that the lens is not interchangeable with another lens, and they do not have the single lens reflex mirror that gives SLR (Single Lens Reflex) its name. They also usually have larger sensors than the digicams. In fact, the Sony R-1 has a sensor the same size as most dSLRs. As a camera class, these cameras are disappearing due to competition from the low end dSLRs and the Super Zooms. This is a shame in some sense since they offer the best (but also in some cases, worst) of both worlds.

5. “Amateur” dSLRs. The entry-level dSLRs are quite capable of producing professional level results. They are relatively low cost (\$500-\$1500) and can take lenses made for the older film cameras from the same manufacturers. They use a digital sensor that is usually only 30% to 50% smaller than a full 35mm film frame, and may have ASA settings going all the way to ASA3200, allowing more options in low light photography. The major downside is the higher cost, the possible need to purchase and carry more lens, and with one or two exceptions, the inability to see a live image on the optical or digital viewfinder at the moment the shutter is fired.

6. Semi-pro and professional dSLRs. If you need these, you do not need to read this article. Enough said. The major downside is that these weigh a ton, as much as 3 pounds just for the camera body alone. Major arm muscles are needed for sure.

Figure 15 Canon 1DsMkII, one of the best image making machines. All you need is \$8000 plus arm muscles to haul around 3+ pounds. Price and weight do not include the lens.



Summary

Hopefully this article will give you some ideas on how to select a (digital) camera for your needs. Technology moves at a neck-breaking pace and some of this advice will be rapidly outdated. However, photography is photography, whether digital or analog, and some of the things mentioned in this article will still be relevant in years to come.

¹ Well-heeled professionals can get medium format digital backs or scanning backs that cost more than the price of a small car.

In summary, the major appeals of pocket-sized digicams are:

- Small size and “go anywhere”
- Silent
- Often have a video mode
- Low cost

The major appeals of the dSLRs are:

- Interchangeable lenses for lots of lens choices
- Optical viewfinder showing the actual scene being shot
- Bigger sensors for much cleaner high-ASA images and greater enlargement possibilities
- Lots more creative control possible. In particular, depth of field control, using different shutter speeds or apertures, etc.

The major appeals of the Super Zooms are:

- Many of the best attributes of the pocketable digicams in a package not too much bigger
- Super zoom!

Some quick suggestions:

- The best compromise is probably a super zoom digicam. It's small enough to fit in a pouch, provides an unrivaled huge zoom range, and has a lot of other good attributes of a small digicam.
- If size and convenience are the most important considerations, then a pocket-sized digicam is the answer.
- If you think you want to pursue photography seriously, an entry level dSLR is quite a powerful tool that would satisfy your needs for many years to come.

“Keep clicking the shutter.”



Figure 16 The Leica MP. Manual focus. Prime lens only. Manual exposure (although it does provide a meter). Precision engineering and hand assembled. Possibly the finest and the prettiest 35mm film camera ever made.