Camera Equipment Basics

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For this outline I will talk about 35mm film cameras and the equivalent in digital cameras because they are the most popular in our club. That's not to say you can't be a great photographer using a different format.

Camera Bodies

35mm single lens reflex film cameras have a wide price range; they start around $300 and go to about $2000. The $2000 camera is designed for the professional. They will have a metal frame, weather sealing and are extremely rugged. Some of the consumer cameras will have metal frames and some are all plastic. You may hear or read a term "Pro-sumer" this is a camera somewhere between the Professional and consumer cameras. Some of the consumer cameras have as many features as the high-end cameras. The bottom line is finding one that fits your budget and is comfortable for you.

Digital cameras are not as simple as film cameras. The technology is changing so fast, it seems like a new model is introduced every other week. Camera manufacturers have pretty much kept the same basic controls that film cameras have had for years. This has made the jump from a film camera to a digital a little easier. The price range on digital SLRs is much greater than film cameras: they currently range in price from about $700 to $1500 for consumer cameras and they go to about $8000 for a top-level professional camera. Like computers these numbers will be reduced as manufacturing techniques change and improve.

If you plan to purchase a film or digital camera take your time and talk to other club member.

Lenses

If you had to decide between spending extra money on a film camera or a lens I would recommend the lens. I don't think this statement is as true for digital cameras. If you reduce the film camera to its basic function's setting the lens opening and opening and closing the shutter all SLR's (single lens reflex cameras) that are working properly will do this. Digital cameras play a bigger role in image quality than film cameras. Lens quality is so important for film and digital cameras, so before purchasing a lens ask other photographers what they have and if they are happy. Some lenses have plastic mounts (the part that mates to the camera) and some have metal mounts. Obviously the metal mount will last much longer than the plastic, so it depends on how much you plan on changing lenses. For lenses that have the focusing motor built in there are some differences in speed. If you plan on fast action photography you should consider lens-focusing speed. As with most things that we purchase you get what you pay for. Inexpensive lenses will not give you as good an image as professional grade lenses. Most manufacturers make several different grade lenses to fit your pocket book. Get the best you can afford. It may not be obvious to you when you look at an image you have taken with an inexpensive lens until you compare it to the same image taken with a better grade lens.

Should you buy a zoom or a fixed focal length lens? Good quality zoom lenses today, can be as good as fixed lenses. This was not always true, but with computer aided design this has changed. So I would recommend a zoom lens for the versatility you get. There are a couple of things you should consider when purchasing a zoom lens. First when buying zooms do you want a fixed maximum aperture or one that changes the maximum aperture when the focal length is changed. The fixed maximum aperture lens will be heavier, larger and usually more expensive. Professional photographers prefer the fixed maximum aperture for a couple of reasons but for most of us the smaller lens (of good quality) will do very nicely. If you plan to buy more than one lens you may want to purchase (if possible) lenses that take the same size filter. This will be cost effective and keep your camera bag a little lighter.

I'd like to talk about Macro lenses there are three basic sizes that are most commonly used by photographers. The focal length may vary between manufacturers. They are 50mm, 100mm and 200mm. There is a little difference in weight between the 50mm and the 100mm but a big difference between the 100mm and 200mm. If you use the 50mm for a butterfly you will have to get very close which makes this lens difficult to use in the field. The 100mm is a good choice, the distance from the subject is better and they are usually lighter and less expensive than the 200mm. The 200mm can be very useful in the field but they are heavy and costly. Some lenses have a so-called macro mode built into them but usually they do not focus as close as a true macro. There is a less expensive way to do close up work, by using a close up filter. These filters will screw onto your lens and they come in different magnifications and in some cases they will come in sets of different magnifications. Like lenses quality should be a strong consideration.

Using an extension tube is another way of gaining magnification. An extension tube is not a lens rather a tube with no glass that fits between the camera and the lens you're using. They are labeled in millimeters (mm) and may come in various sizes like 12mm, 25mm etc. these numbers may vary by manufacturer. What they do is let you focus closer to a subject than the lens you are using will. This will effectively increase the magnification. These are great tools; if you put one on a telephoto lens they are great for photographing small animals and other small subjects.

Tele-converters are another useful tool. They typically come in two sizes, 1.4X and 2X. What they do is change the focal length of the lens you attach it to. If you attach a 1.4X converter to a 300mm lens (multiply 1.4 x 300=420) it will be a 420mm. If you attach a 2X converter to a 300mm lens (2 x 300=600) it will be a 600mm. Like all lenses the quality of the glass is important. I've owned both from my camera manufacturer, which I think, are good quality. I have been very happy with the image quality of the 1.4, it is outstanding but the 2X was not as good as I had hoped. Tele-converters may not fit on all lenses for example my 1.4 has a protrusion on the front which will limit its use. If you plan to purchase a teleconverter it maybe a good idea to match the lens or lenses you have, in other words purchase one made by the same manufacturer as your lenses.

There are other lenses that have recently appeared on the market which are specifically made for digital cameras with less than full size sensors. These cameras have a sensor smaller than 35mm film frame. These lenses will only work on specific digital cameras and may not work on a future camera you may purchase.

The last thing I'll say about lenses is try to have a hood that fits each lens. If you use the wrong hood on a lens you may get vignetting (dark corners). The hood will protect against flare and protect the front of the lens.

Equipment/Tripods

One of the most important pieces of equipment you can own is a tripod. When choosing a tripod the most important consideration is its sturdiness. Other considerations are height, weight and how low will it go. If you are using your tripod for long periods of time the less bending you do to look through the viewfinder the better your back will like it. A tripod that is tall enough for you without the center column extended is strongly recommended. Also if you plan to carry your tripod long distances your back may not like a heavy tripod although a heavy tripod is typically sturdier. So you may need to make some compromises. Another consideration is whether the tripod can be adjusted to get down low for close up work on the ground. When you use a tripod you can slow the whole picture taking process down, this allows you to study your image before you release the shutter. For some subjects you may want to check depth of field this takes time so using a tripod helps this process. For all subjects you need to look the entire frame over and make sure there is nothing in it you don't want. If you need a slow shutter speed it's easy with a tripod.

There are all types of heads for tripods some are small and light some are large and heavy. If you plan to use long heavy telephoto lenses you should get a head that will accommodate them. Quick connect ball heads are very popular but can be expensive.

Other Equipment

Other equipment I would recommend, are spare batteries, lens cleaning equipment and a cable release or remote switch. I think these three items are a must. A gray card is helpful for exposures, which I will talk about in another section.

Film and Digital Media

There are many types of film out there, but I'm only going to talk about slide film, as it is the most popular at our club. Film is rated by speed or sensitivity to light (ISO), the faster the film the less light it needs to make a correct exposure. The most commonly used slide film today is ISO 100. It is about the slowest speed film now used and slow film typically is the sharpest and can have the most accurate colors (for a neutral film). There are two basic types of film, neutral and saturated, with some variations. Neutral films give accurate colors while saturated films will enhance or saturate some colors. Not all saturated films have the same effect on the same colors. Film also comes in consumer and professional versions. Professional versions require refrigeration while consumer versions do not. Professional film is at its optimum at the time of manufacture and refrigeration will hold it at there until use. Professional photographers need large quantities of film that have the same characteristics when they shoot the same subject. Most of us could never tell the difference between one batch of consumer film and another. It's not a bad idea to try different films and the settle on one that fits your needs for most subjects. You may want to keep some other films on hand for special uses, like a fast film. If you keep it in the refrigerator it will slow the aging process and putting it in a freezer it will stop the aging process. Just leave yourself enough time before use for it to reach room temperature. Try to keep your film out of extreme heat.

The digital equivalent to film is the digital card used to store the images. In my opinion compact flash is best in terms of ruggedness and cost, so consider the type of media used to store

images when you purchase a digital camera. Fortunately, prices for digital media have been dropping rapidly over the past few years.

Filters

There are many filters on the market today and there are several manufacturers. The two most commonly used types are screw-on and rectangular systems. The screw-on type is pretty self-explanatory, the rectangular system usually consists of a holder, which fits on the front of your lens, and rectangular filters slide into the holder.

When I first started in photography it was widely accepted that you should have a skylight or UV filter on the front of all your lenses to protect the glass. Many professional photographers have disagreed with this; they say it is another thing to cause flare or other such problems. I agree a good way to protect your lens is by keeping your cap on except when shooting or by leaving a substantial hood on the lens. The only time I use a skylight filter is near the ocean when there is a risk of salt spray getting on my lens.

There are lots of different filters out there but the only one I think all photographers should have is a polarizer. The first thing you have to decide when purchasing a polarizer is whether I need linear or circular polarizer. This depends on your cameras meter; your manual should tell you the answer to this question. There are standard and warming polarizers; a warming polarizer combines warming and polarizing filters. Thin polarizers are available for use on wide-angle lenses but may not be necessary with your lens. If you plan to purchase a polarizer and have a wide-angle lens check the filter on the lens before you purchase it. You will be looking for dark corners (vignetting); this will show up on your image.

You will probably add several filters to your bag. If you do keep in mind they go in front of your lens so quality is important.