Photography Basics

by M.J. O'Connor

I hope this will help beginners get started in a very enjoyable hobby. I have been a member of S.B.C.C. since the mid 1980's and have learned so much from fellow members. I would encourage you to talk to other club members if you have any questions.

Rules – from time to time I might mention a rule, keep in mind there are no rules in photography. The only way is your way. I think over the years the word "rule" has been used in discussing photography for lack of a better word.

Your Camera

The most important thing you can do as a beginner is to know your camera and be comfortable with the controls. A good place to start is the manual that came with the camera. I like to recommend to beginners that they forget all the bells and whistles on their camera for now and think of their camera in it's most simple terms. What you will need from your camera at this level is an understanding of your metering system and exposure control, which includes aperture (lens opening) and shutter speed. The other important things you will need to understand are depth of field control and the ISO (film speed). Most film cameras today set the ISO automatically; digital cameras may have a default setting or may require the photographer to set it. Whatever the case you need to know what your ISO is set at.

Camera handling is a very important part of successful photography. If you have movement while you are taking your picture you may blur the image so I would recommend that you use a tripod. Another important thing that needs your attention is focus. If you have a manual focus camera you are less likely to have a problem than with an auto focus camera. Of course you can focus in the wrong spot with a manual focus camera but its unlikely. With an auto focus camera it is easy depending what your focus point is set at. For example if your focus point is set in the center of the frame and you have a subject in the upper right corner and don't focus on it and re-compose your focus may be off. So watch where your focus point is in relation to your subject.

Exposure

Most photographers will agree on what is a correct exposure with some exceptions. One that comes to mind is a sunset, which can vary in exposure and still be pleasing depending on your taste

Lets talk about how apertures and shutter speeds affect your exposure. We will discuss them as creative tools later. The aperture is the lens opening, which is variable and its value is described in f-stops. The larger the lens opening the more light is passed through to the film or sensor. The shutter speed is the time the shutter is open when you press the shutter release button. The length of time the shutter is open determines how long the light passing through the lens is allowed to reach the film or sensor. Both of these settings together will determine the exposure. There is a third element in this equation it is the ISO. The ISO represents how sensitive to light the film or sensor is, the lower the number the less sensitive they will be.

Most cameras today have several exposure modes. In the aperture priority mode you select the aperture the camera selects the shutter speed. In the shutter priority mode you select the shutter speed and the camera selects the aperture. In the program mode the camera selects both. All three of these are automatic modes because the camera makes the final decision. Most cameras also have a manual mode in which you select both aperture and shutter speed. If you learn how to shoot in the manual mode and control your exposures you will have a better idea how the process works and take complete control. Today's camera meters have come a long way but they get fooled from time to time. There is nothing more frustrating than to get your film back from the processor and have a great subject and composition and a bad exposure. Of course the people shooting digital can review their images and make adjustments in the field. I think it is important to understand how and why your camera gets fooled so you can make the proper adjustments for a good exposure. In order to do this you need to understand what your cameras meter is looking for. Most meters are looking for a mid-tone equivalent to a gray card, that mid-tone could be any color. That is a very simple way of putting it and you will find that camera meters today are very complex but if you look at them in simple terms it will be much easier for you. If you meter the entire scene and the accumulation of all tones in the image equals the tone of a gray card the exposure should be correct. I think a good example of when meters can be fooled is in the summer at noon when you're photographing trees. If you can visualize what that may look like, the sun is high and lighting the top of the leaves but the undersides are black. Also there are a lot of shadow areas within the trees, that's lots of dark areas. Your meter will add up all the tones and if they don't equal the gray card the exposure set by the camera maybe incorrect. So you need to determine how to recognize these situations and overcome them. Keep in mind that your eye has much more latitude than film. Your eye can see detail in shadow areas and brightly lit areas much better than the film or sensor will record it. Train yourself to look at your image the way the camera looks at it.

How can I get great exposure's every time? As I said you have to take control of your camera. The first thing to remember is the sunny 16 rule, this states if your subject is in bright sun set the shutter speed to the closest number that equals the ISO at f16 or equivalent. For example at ISO 100 set the shutter speed at 125 and aperture at f16. The table below shows equivalent exposures.

2000@f4 (fast shutter speed - large lens opening)

1000@f5.6

500@f8

250@f11

125@f16

60@f22

30@f32 (slower shutter speed - small lens opening)

These settings will all give you the same exposure. Keep in mind some manufacturers may use slightly different numbers but this table will give you an idea where to start. If you are shooting in bright sun and using the “sunny 16 rule” and the subject is white like a swan you may want to close the lens down ½ to 1 stop so you will see the feather detail. Of course other elements in the image will be dark. This is just the opposite for very dark subjects like a black bear. One other thing if you are using a filter with the “sunny 16 rule” you will have to open up the lens compensate for the filter. For example with a polarizer you may have to open up 2 stops this can be done with either aperture, shutter speed or both.

Another great way to check your exposure is to use a gray card. If you hold a gray card in the same light that your subject is in and angle it toward the light source so it reflects the most light available and meter off the card with your camera it should be the correct exposure. Compare the reading the gray card gives you with the reading you get metering off the subject directly. If they are different the gray card reading is probably correct. Set the shutter speed and aperture manually and take the shot.

If you have a spot meter in your camera it can be a very useful tool. If you can spot meter off a mid-tone portion of your subject or something within the scene that is the equivalent tone to a gray card, set your aperture and shutter using that reading. Keep in mind; you need to meter off a mid-tone that is in the same light that your subject is in. I think it is a good idea if you record your settings and how you arrived at that choice, this can be a very useful learning tool.

Depth of Field

I would describe depth of field as how much is in focus in your frame from front to back. Some cameras do not have a depth of field preview button on them. This should not stop you from controlling your depth of field; you will have to develop other ways. The lens opening and focal length of the lens are the keys to depth of field. A small lens opening will give you a greater depth of field than a large opening and wide-angle lenses have greater depth of field than telephoto lenses. For most scenic photographs you may like the entire scene to be in focus from front to back. This can be accomplished by using a very small lens opening and/or a wide-angle lens. On the other hand if you are photographing a large bird you may want shallow depth of field. You would focus on the eye of the bird and the background would be blurry. The larger the lens opening the more the background will blur.

If you have a depth of field preview button on your camera when you press this button it will close the lens to the f-stop setting you have chosen. When you do this, the image will seem dark looking through the viewfinder. You will have to let your eyes adjust for a minute and then you will see what is in focus. By changing the lens opening while you have the depth of field

preview button pushed you can see the changes in focus. If you are doing selective focus that is having a select area in your photo in focus the depth of field preview will help you accomplish this. An example is a flower with only a portion of a petal in focus. If you don't have a depth of field preview button and you are using film you may have to experiment where to focus and what aperture to use. Take several shots at different settings and record what you have done.

Shutter speed

How can I use shutter speed as a creative tool? I'll give you one example, a waterfall. If you shoot a waterfall with a slow shutter speed (maybe 1 second) the water will blur but if you shoot it at a fast shutter speed (maybe 1/500 of a second) the water will be sharp. For slow shutter speeds you will have to use a tripod so that everything else in the scene will be sharp. You can see for moving subjects this can be a very interesting creative tool. Most likely you will need a slow ISO and possible a neutral density filter to achieve a slow enough shutter speed for the blur effect. I'll talk about N.D. filters in the equipment section. Try it both ways you'll have fun doing it. You will need a fast shutter speed if you want to stop the action in sports photography.

Composition

I think that the photographers that are the most successful are the ones that can see a good photograph when they look at the world around them. Then have the ability to record the image with an interesting and pleasing composition. When you are taking pictures don't rush, take your time look around, walk around. Look at things from different angles; try a vertical composition as well as horizontal. Try different focal length lenses or zoom in or out if you're using a zoom. Put your camera on a tripod and look at the whole scene, check the edges of the frame for things you may not want in the photo. You probably will find less is more or a simple composition usually will work best. Too many elements or competing subjects can be distracting. Backgrounds should not compete with your subject so keep the backgrounds simple. This is where depth of field plays a big part in composition, how much of the background is in focus depends on the subject and your personal taste. Watch for mergers of background elements with your subject, a pole that appears to be growing out of a person's head can be very distracting.

As you become more familiar with photography you will probably notice a big difference between the snapshot photographer and serious photographers. I think the most obvious thing may be the compositions. Snapshot photographers tend to place their subject dead center in the frame or "bulls eye" and almost always use a horizontal format. Serious photographers will try to use the rule of thirds, which considers the image to be divided into "thirds" (actually nine sections) by a tick-tac-toe pattern filling the image. Serious photographers more times than not will try to have their subject on one of the intersecting lines of the tick-tac-toe pattern. The preferred intersection is the upper right because we read from left to right and our eye tends to enter the photo from the left and move up to the subject. Serious photographers may also have the horizon line on the upper third or lower third line rather than dead center, as the snapshot

photographer would do. Remember there are no rules but this “non-rule” is something to keep in mind, it may help your compositions.

Leading lines can be used very effectively to lead the viewer to our subject. Diagonal lines can add interest to a composition and also act as a leading line. A photo that comes to mind is a road starting at the lower left of the frame and leading diagonally to a red barn in the upper right.

Lets take a hypothetical situation, you have your camera on a tripod and you are looking through the viewfinder at a nice scene. The first thing you may want to do is decide how much of the scene you want in the photo. You may have to zoom, change lenses or change your location to get what you want. Check the sky, is it a bald sky (no color or clouds) if so you may choose to exclude most or all of it. Where do you want the horizon line? What type of sky may help you decide this question? After doing that look all around the frame to see if there are any objects at the edges that may be a distraction you may have to re-compose. Think about the depth of field you want and where you want to focus. Of course there are many things that make up a great composition, light, balance and asymmetry, shape and form, pattern and texture. These things will become more obvious to you as you develop your own style.

Light

I think lighting is one of the most important parts of a successful composition. As a Camera Club member you will see lots of photograph’s both digital and film. I think you will find that the ones that are most successful are the ones that have great lighting. What is great lighting? Many photographers think the best time of the day for photography is early morning and late afternoon. I agree with this and I also think that the light you have in the fall through spring because of the angle of the sun is better than summer light. That’s not to say you can’t get great photos all day and all year but I think it’s a good idea if you pay attention to the light and use it to your advantage. A good exercise for beginners is to pick a spot near your home and photograph it at different times of the year and a different time of the day in different lighting and weather conditions. Again record your settings and you will learn a lot.

The Bottom Line

I hope that this outline of basic photography will help you and answer some of your questions. You will have many more questions and as a member of the Stony Brook Camera Club you have a great resource to get those questions answered. Another great resource is the annual NECCC conference at Amherst in July. It is a weekend filled with photographic classes, model setups and shows both digital and film.

Try to develop your own style, try different things, photograph, as many different subjects as you can this will help you grow as a photographer.