

Know Your Camera

More About Shutter Speed Control

by Noella Ballenger

(Editor's Note: See photographic examples following the article)



These are images that are just pure fun. Find the article I wrote with Jalien Tulley for PhotoGraphic Magazine (April 1989). Use a slow shutter speed or even put it on the B or bulb setting. Zoom, spin, dance, twirl, write your name or anything else you want to do while the shutter is open. It may take a little experimentation to “get it right” but loosen up and let go!

As we mentioned in the first article of this series, mastering the basics about cameras isn't really as difficult as it seems--even for those of you who are confronting the complexities of cameras for the first time. Now that you've conquered the information and exercises we used to begin, we're ready to advance. With each article, we'll expand your understanding of the basic controls on your camera by adding a few variations on what you already know and by suggesting some exercises for you to try. (If you haven't read the first and second articles and tried the exercises we detailed, please go back and begin at the beginning. Why? You'll find that by going step by step, in order, you'll learn more rapidly.)

In the first of our series, we discussed the four basic camera controls: the film speed (ASA/ISO), the shutter, the aperture (f-stops), and the focus control. We

suggested exercises that were designed to help you become more familiar with the workings of your camera. In the second article, we explored the aperture control. In this third article, we are going to go into the shutter speed as well as when and how to let that nice camera do the work for you. After all, if you are using a more modern camera, you paid quite a bit for all of those “bells and whistles.” If you are using an older model, take heart because while you will have to work a little harder, your knowledge becomes your strength.

Be sure to try the exercises at the end of the article. Some of them are easy than others and some fun. They have all been designed to teach you a skill or help you understanding a feature of your camera. Even the last fun exercise is specifically designed to loosen you up and to push the camera (and you) to the outer boundaries. Remember to take notes ... they help when you get the film back.

To recap, exposure of film is made when a certain amount of light hits the film. To manage the amount of light entering the camera through the lens, there are two controls: the shutter and the aperture. The shutter control is fairly straightforward. The shutter controls the amount of light by regulating the amount of time



A fast shutter speed can freeze the motion. However, the variable is how fast is the water moving. Sometimes, even when you use a fast shutter speed, the water can move faster.

the shutter stays open. The speed at which the shutter opens and closes determines whether you'll freeze the action or allow the motion of the subject to show. The exercise we suggested was for you to set up your camera on a busy street where cars are speeding by. A fast shutter speed freezes the action; a slower shutter speed shows the cars blurring as they whiz by.

There are a number of reasons why shutter speed is important to the photographer. First, it is the other part of the exposure equation. In order to make a proper exposure, you need to have light go through the aperture ("hole") in the lens for a specific amount of time. The aperture controls the size of the "hole" but the shutter controls how long that "hole" will remain open. Think of it in terms the entry to a building. The building has a revolving door with a large opening.

That is great but it is whizzing by so fast that even if you run, it is difficult to get in. On the other hand, there is another building across the street whose revolving door has only a little, tiny space to squeeze in but it goes so slowly that you have lots of time to do it. Can you see the relationship between shutter and aperture more clearly now? This revolving door mental image works for me and I hope that it works for you.



A slower shutter speed allows the camera to be photographing while the action of the water moves. This will cause the water to look blurred or "smoky". It can create a lovely effect



Early in the morning, I was photographing birds. Sometimes they spook easily. These took flight and I got them as they were moving rapidly away. Notice that the shutter speed I was using was a fast one because the wings and tails are sharp. It stopped the action

So, now we know how the shutter and aperture work together to make an exposure. Speed is also important to a photographer because of camera shake. If you are hand holding your camera (not working on a tripod), you want to keep the shutter at a speed where your slight movement will not effect the outcome of the image. A common rule of thumb is to check the focal length of your lens. If you are using a 50 mm lens, your shutter speed should be no less than $1/60^{\text{th}}$ of a second. If you are using a 300 mm lens, your shutter speed should be no less than $1/500^{\text{th}}$ of a second. If you are on a tripod, you should be steady enough to use any shutter speed. Always be sure however to adjust the aperture to balance the exposure.

Now, we have a camera with lots of bells and whistles. On one of the dials or in the "mode" program of most new cameras you will see something like "M", "P", "A" or "S".

You might want to go back to your camera manual to where these controls are located and what you have to do to change from one to the other.

where these controls are located and what you have to do to change from one to the other.

M is for manual control. This means that you control the exposure equation. You set both the aperture and the shutter speed. The camera's light meter will help you, but the responsibility is all yours.

P is for full program. This means that you let the camera control the exposure equation. The camera picks both the aperture and the shutter speed for you. You have no say and no responsibility to do it correctly.

A is for aperture priority. This means that you can select the aperture side of the exposure equation and the camera selects the shutter speed that will work with the aperture you have selected to properly expose the film.

S is for shutter priority. This means that you can select the shutter speed side of the exposure equation and the camera selects the aperture size that will work with that shutter speed to properly expose the film.

When do you select one mode over the other and why? Well here is the easy guide. Pick manual when you know what you are doing and/or when the situation demands you override every bell and whistle. Pick full program when you aren't sure what you are doing and/or can't make a decision. Pick Aperture control most of the time because it will help you make artistic decisions as we discussed in the depth of field section in part 2 of this series. Pick Shutter control when you are at sporting activities or doing active wild animals or where there is movement you need to stop. Most of all learn enough to trust yourself and, if you don't feel you can trust yourself, then trust that expensive, wonderful camera you purchased. If you know how to tell it what you want, it will make good decisions most of the time.

Now for some exercises on creatively using your shutter speed control. If you have a tripod, use it. If you don't, set the camera on a table for stability. What you don't want is your movement to effect the photograph.



It is early, foggy morning at the Santa Anita Racetrack. By setting my camera on shutter priority, I selected a speed that would stop the action of the horse. Notice that I am photographing the horse as it moves away from me rather than as it went directly by. It allowed me more latitude in the shutter speed

Exercise 1: Find a small river or set the garden hose in such a way that you have a stream of water. Put your camera on Shutter Priority (you select the shutter speed and the camera matches the aperture for you to create a proper exposure). Take a series of photographs using a variety of shutter speeds from $1/500^{\text{th}}$ to $1/30^{\text{th}}$ of a second. Try to keep something like a rock or the end of the hose in absolute sharp focus. What you want to see is what effect the shutter speed will have in stopping the action of the water. Although the stream will make a more interesting series of photographs, the hose does have one advantage ... you can make the water run faster in one series and slower in another series.

Exercise 2: This time stabilize your camera near a city street. Photograph the cars whizzing by while you use a fast shutter speed and then a slow shutter speed. Take one series of the cars as you look directly across the street (you are at a 45 degree angle to the cars). Now take another series of the cars as you point the camera down the street. (The cars will now be coming toward you rather than passing you). What is the difference in the two series? What have you now learned about photographing movement?

Exercise 3: Try panning. Panning is where you put the

camera on shutter control and set the shutter speed fast enough to stop the object you are photographing. Then, move your body as your eye follows the action. You should be making a clean, smooth move when you press the shutter control. The result will be that the object you are photographing will be frozen and the background will be soft blurry streaks. A great place to try this is at the races ... horse or otherwise. Or you might focus on one bird as it begins to fly and follow its action. Another excellent place to find movement is at a fair or at a carnival ... check out the rides (but remember what you learned in Exercise 2).



In this photograph, I am panning with the horses. Again, it is a movement of my body following the action of the horses that causes the background and foreground to blur. Because I am moving with the horses, their action freezes

Creativity and having fun seem to go hand-in-hand. Here is one way to have fun with your camera. Years ago my photographic partner and I made monthly trips to the Eastern Sierras from the Los Angeles area. Mojave, a small desert community about 1½ hours from Los Angeles, is loaded with fast food stops and gas stations. We usually got there when it was dark. We knew we still had about 5 hours of driving and we were looking for fun. While one of us was driving carefully, the other would set the camera on a really slow shutter speed or on the B (bulb setting – this setting keeps the shutter open from the time you push the button until you lift your finger off the button). While the shutter is open, you can jiggle and zoom and move the camera any which way while the shutter is open. The lights “paint the film” with interesting designs. Break all of the “rules” about keeping your camera still. It is a great way to loosen up and have fun.

Exercise 4: Look up the article called “Funlights” that Jalien Tulley and I wrote for Petersen’s PhotoGraphic (April 1989). It should still be available in the archives at your library. Try one roll of film using some of the techniques in the article. Be creative, try different things. You have been working hard at learning about your camera and now take some time to relax and have fun.