

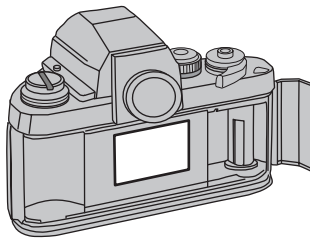


**Aaron Siskind, *Pleasures and Terrors of Levitation* #63, 1956**

*Legendary photographer Siskind made photographs of divers leaping through the air. Positioned below the divers, he emphasized the abstract quality of their twisting shapes by isolating them against the sky's light, neutral background. To stop their motion, Siskind set his camera at a fast shutter speed, possibly 1/250 or 1/500, depending on how fast the figures were moving. © Aaron Siskind Foundation; courtesy of Robert Mann Gallery, New York, NY.*

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## The Shutter



In a 35mm SLR, the shutter is a curtain located inside your camera.

### Controlling Exposure

*Lens apertures:  
pages 35, 38–41*

**Shutter speed is determined in part by the lighting conditions: the more light there is, the faster the shutter speed you will need.**

Cameras usually contain a **shutter**, a curtain (or set of blades) that blocks light from entering and striking the film. To take a picture, you press the **shutter button**, usually located on the top right of the camera. The shutter then opens and closes. Note that in some cameras the shutter is contained in the lens, not in the camera body.

On all but the very simplest cameras, the amount of time the shutter stays open is variable, an interval called the **shutter speed**. Most cameras either allow you to adjust the shutter speed or do it for you. With manual cameras, you must always choose the shutter speed yourself.

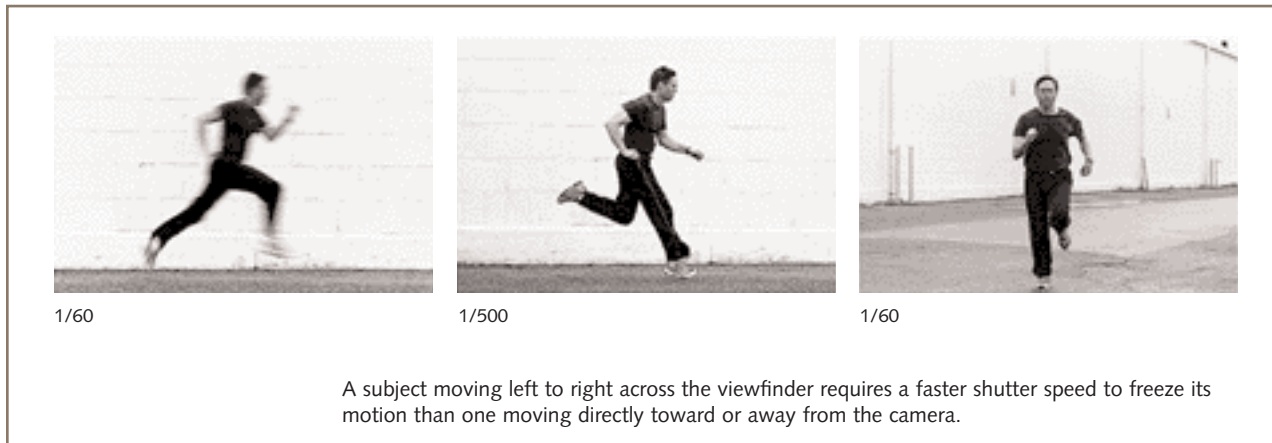
The shutter affects how the final image is rendered in two ways. It controls exposure (how long light is allowed to strike the film) and it determines the appearance of motion or movement (whether a moving subject looks sharp or blurred).

The amount of time the shutter remains open is as critical to correct film exposure as the size of the lens opening. After all, light traveling through the lens doesn't reach the film until the shutter opens. Thus, exposure is controlled by two key variables: the amount of time the shutter stays open and the size of the lens opening.

The correct shutter speed setting is determined first of all by the prevailing light conditions. You have to select a shutter speed that lets in the right amount of light; too much or too little light can affect overall image quality. In low light, you will usually need a long (also called **slow**) shutter speed; the shutter must remain open for a long enough interval to allow what light there is to reach the film. In bright light, you will usually need a short (**fast**) shutter speed to prevent too much light from reaching the film.

You generally make your shutter speed choice by rotating a dial located on the camera body, often on top. With manual cameras, choosing the shutter speed is as simple as rotating the dial to a mark that indicates the desired speed setting. Some automatic cameras show the selected shutter speed in an LCD display screen located on the camera. To change the setting you usually turn a **control wheel**, located on the camera's top or back. Rotate it with your thumb

### Direction of Movement



windy days especially, use a relatively fast shutter speed to guarantee a sharp image; or use a slow shutter speed to create blur, thereby emphasizing the motion.

Deliberately blurring some subjects within an otherwise sharp image is an effective way to show action, movement, or simply to create mood or atmosphere. Keep the shutter speed fast enough so that stationary parts of the subject (such as buildings, cars, and rocks) appear sharp, but slow enough so the moving parts of the subject (such as running water or animals and people in motion) blur. Or place the camera on a tripod, which will allow you to use a very slow shutter speed and still keep many stationary subjects from blurring.

You also might try moving the camera during exposure in the same direction as the subject's motion, a technique called **panning**. For example, suppose someone is riding past you on a bicycle, from left to right. By panning, you can render the bicycle and rider sharp and cause the foreground and background to blur.

As the subject moves past you, follow its motion by turning the camera while pressing the shutter button. For an effective pan, the camera movement must simulate the speed of the moving subject, which you can accomplish by keeping the subject in the same location in the viewfinder as you move the camera. Try panning at  $1/8$  or  $1/15$ , then experiment with different speeds, but not faster than  $1/30$ .

While panning is a choice you can make, any deliberate or accidental camera movement may cause image blurring. Accidental movement, sometimes called **camera shake**, is one of the most common factors in unwanted image blurring. Sometimes blur occurs because you are using a shutter speed that is too slow to hold the camera steady by hand. But blur may result at almost any shutter

*Tripods: pages 99–101*

When properly done, panning the camera makes a moving subject sharp and blurs the background.

*Panning example: page 64*