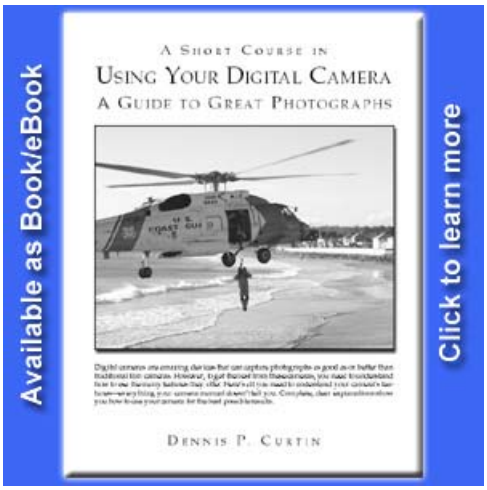
A Short Course in Using Your Digital Camera

6. Using Automatic Flash



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Automatic electronic flash is so convenient and easy to use that you are usually unaware it even fires. With your camera on automatic, it's always ready when your autoexposure system decides it's needed. But this on-camera flash lighting has certain characteristics that can make a difference in the way your pictures look. For example, the pictures will have a "flat" lighting typical of flash-on-camera shooting. Alternative approaches, such as positioning a separate flash off camera (or using a slave unit) may produce more interesting results. In any event, you will be able to use flash to better advantage as you become more familiar with its characteristics and the various forms available.

Many digital cameras have a variety of flash modes that we'll explore in this chapter. Although they go by different names, these modes typically include Auto that fires the flash whenever the light is too dim to take a photo, Anytime Flash that fires the flash regardless of how much available light there is, Red-eye Reduction that fires a separate lamp to reduce red-eye when taking portraits, Flash Cancel that turns the flash off so you can photograph with available light without the flash firing, and Slow Synchronized that keeps the shutter open longer than usual to lighten the background.

Types of Flash

Flash photography has come a long way since the 19th century when a photographer had to ignite a tray filled with gunpowder to illuminate a scene. Almost every digital camera comes with a small built-in automatic flash that is tied into the autoexposure system. These flash units are convenient, however their range is very short; normally around 10 feet or so. They are also so close to the lens, photos of people often capture them with red eyes. They emit a hard, direct light and can't be rotated to bounce flash off a wall or ceiling to soften it.

Flash on camera is convenient to use: every place you and your camera go, the flash goes with you. All flash-on-camera photos look very much the same—a flat, relatively shadowless light that minimizes surface textures and volumes.

To overcome these limitations, a variety of external flash units are made. These units work like those on 35mm SLRs. They either slip into a "hot shoe" on the digital camera that both holds them and connects them to the camera shutter release and autoexposure system, or they are mounted on brackets and connected to the camera by a synch cord, basically a small cable. This synch (pronounced "sink") cord makes the same electrical connection that the hot shoe does but lets you position the flash off camera.

A flash that rotates and swivels lets you bounce flash off walls and ceilings for softer light and more interesting effects.

Another way to use external flash is to buy a slave flash unit that fires automatically when it senses the burst of flash from the camera's built-in flash unit. Since many digital cameras fire the flash twice for each picture (the first is a pre-flash to set color balance), these units have to be adjustable so they fire when the camera's second flash goes off. These units are more powerful than the on-camera flash and also allow you to rotate the head to use bounce flash to soften shadows.

A slave flash unit. Courtesy of Digi-Slave.

How Automatic Flash Works

Every flash has a maximum useful range. How bright the light from a flash is when it reaches a subject depends on the flash's power and on how far the light has to travel. The further the subject is from the flash, the less light will reach it and so the less light will be reflected from the subject back toward the camera.

Flash light falls off (becomes dimmer) the farther it travels. Objects near the flash will be lighter in a picture than objects farther away. You can use this to advantage; for example, at night you can isolate a subject against a dark background.

When the flash fires, the beam of light expands as it moves father from the camera. As a result, subjects nearer the flash will be illuminated with a more intense light than subjects farther away. The rate at which the light falls off is described by the inverse square law. If the distance between the flash and subject is doubled, only one quarter the amount of light will reach the subject because the same amount of light is spread over a larger area. Conversely, when the distance is halved, four times as much light falls on a given area.

When subjects in an image are located at different distances from the camera, the exposure will only be correct for those at one distance—normally those closest to the camera or in the middle of the area metered by the autoexposure system. Subjects located farther from the flash will be increasingly darker the farther they are from the flash.

How To: Using Auto Flash

Auto mode is usually the default settings. Look in your camera manual for a section on **auto flash**.

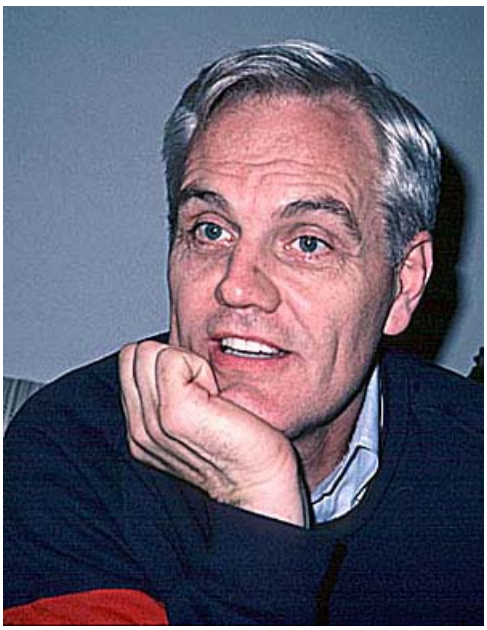
Portraits with Flash

Flash is a good source of light when you want to make portraits, particularly of children. The light from the flash is so fast that you never have to worry about your subject moving during the exposure and blurring the picture. For the same reason you don't have to be quite as careful about camera motion blurring the image; you can hand-hold the camera and shoot as rapidly as the flash will recharge.

Positioning the flash and subjects

You may want to choose carefully the position of the flash. Light from a flash built-into the camera often produces less attractive results than if you bounce the light onto the subject off a wall, ceiling, or umbrella reflector.

When photographing more than one subject, each is given the same importance when lined up parallel to the camera because each receives the same amount of flash illumination. If they are at different distances from the flash, they will be illuminated differently. This is a good way to make one more visually dominant than others in the image.



When a subject is placed close to a wall, there will almost always be a distracting shadow in the image cast by the light from the flash. By moving the subject away from a wall, these shadows disappear.

Red-eye

When photographing people, you'll often see images with what's called "red eye." The light from a flash has entered through the subject's pupil and reflected off the back of the eye (the retina) and back out to the camera. Since the retina is full of thin blood vessels, it takes on a red color. To eliminate red-eye, many cameras have a "red-eye reduction" mode. This mode works by firing a short pre-flash lamp or a burst of flashes to close the subject's iris a moment before the actual flash fires to take the picture.

Here a champion figure skater displays the classic "red eyes."

To minimize red eye, you can also move an external flash farther away from the axis of the camera lens, tell the subject not to look directly at the camera, or increase the overall room lighting. You can also remove red-eye later using software included with the camera, but it's easier to avoid it to begin with.

How To: Combating red-eye

Look in your camera manual for a section on **red-eye** or **red-eye reduction**.

Using Fill Flash

When photographing people or other subjects in bright sun, shadow areas can be so dark in the image that they show little or no detail. If the shadow covers a large part of the subject, the effect can be distracting and unattractive. You can lighten such shadows by using flash to "fill" the shadows to lighten them. In this mode the flash fires even when there is enough available light to take the picture.

With no fill flash (left) the bright background has underexposed the main subjects. Using fill flash (right), the people now stand out from the background.

fill_flash.jpg (52367 bytes)

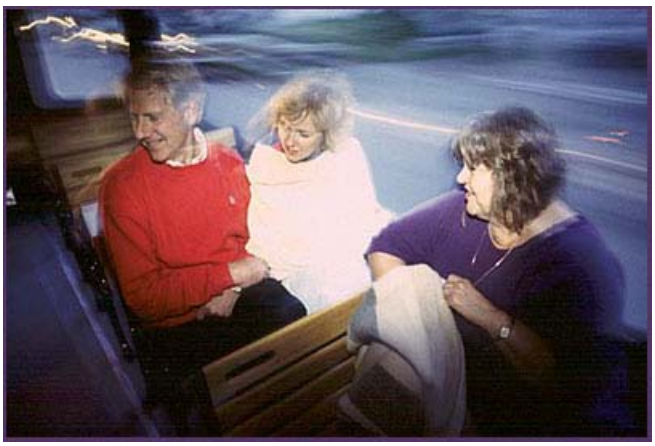
Fill flash eliminates dark shadows in a backlit shot. Photo courtesy of Cathy Morin.

How To: Using Fill Flash

Look in your camera manual for a section on **fill**, **forced on**, or **any time** flash.

Using Slow Sync

Often, pictures taken with flash show a well exposed foreground subject against a black or dark background. The slow synchronized mode is designed to minimize this problem by leaving the shutter open longer than usual to lighten the background.



A slow shutter speed and flash combined to create this photo showing both sharpness and blur.

In many cases, the slow shutter speed used in this mode allows blur from rapidly moving objects or camera shake to appear as blur in the images. To avoid blur, use a tripod and photograph static subjects. Or, use this effect creatively. A short flash burst combined with a long shutter speed gives interesting effects. The flash freezes objects sharply, and then the dim ambient light blurs the image slightly and moving lights appear as streaks.

How To: Using Slow Sync

Look in your camera manual for a section on **slow synchronized flash**. When the flash is set to slow sync, long exposure times may create unwanted blur in the image. At times like this, you may want to use a camera support.

Using Available Light

There are times when the light is dim but you want to capture the unique colors of the available light. In these circumstances you need to turn the flash off and support the camera for a long exposure. If you don't turn off the flash it will fire and the foreground subjects will appear as if photographed in daylight. If you don't support the camera you will likely have blur from camera movement.

Available light can add beautiful colors to a photograph.

When the flash is off, long exposure times may create blur in the image. At times like this, you may want to use a camera support.

How To: Turning off the Flash

Look in your camera manual for a section on **forced off** or **off** flash.

When photographing in dim light there are things you can do to get better results when not using flash. Try the following as described in Chapter 2:

- Increase the camera's sensitivity.
- Use the camera's self-timer or remote control.
- Support the camera or use a tripod.