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*a short course in*

# PHOTOGRAPHY

*an introduction to black-and-white photographic technique*

FOURTH EDITION

INCLUDING DIGITAL IMAGING

BARBARA LONDON
JIM STONE

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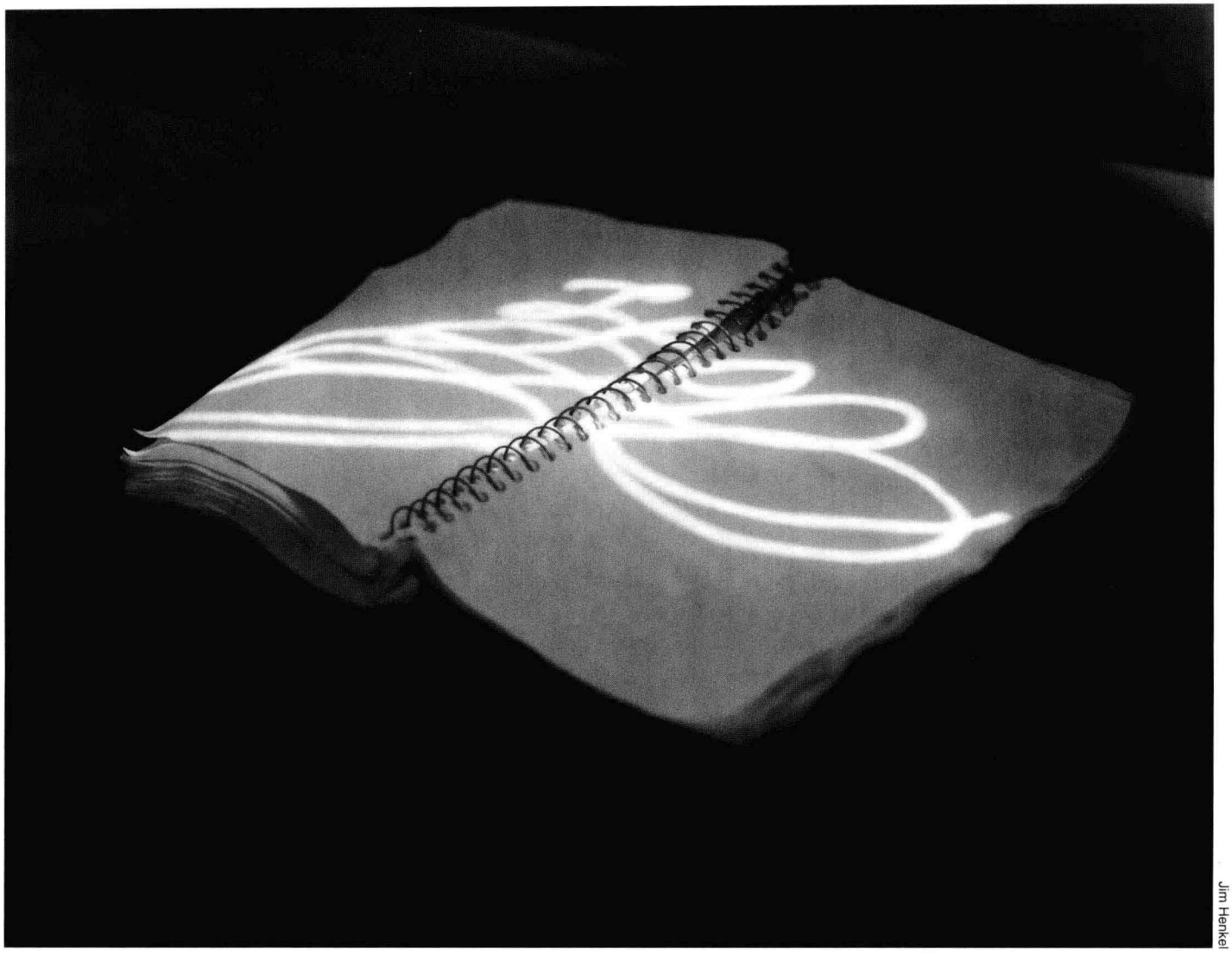
*a short course in*

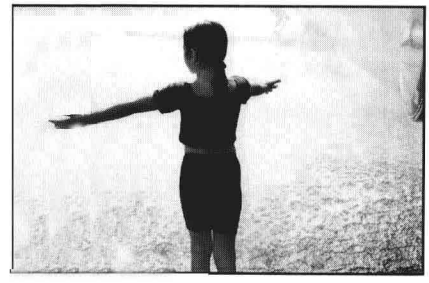
# PHOTOGRAPHY

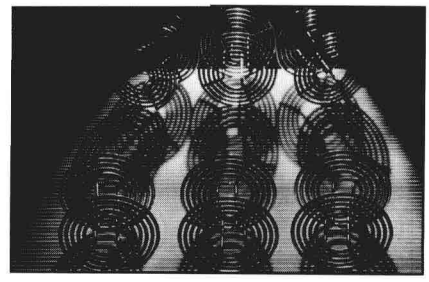


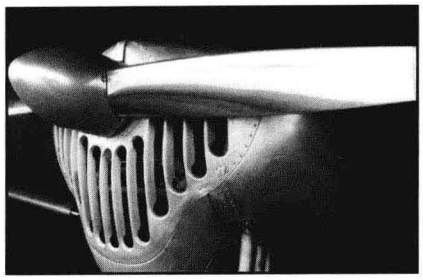
Jim Henkel

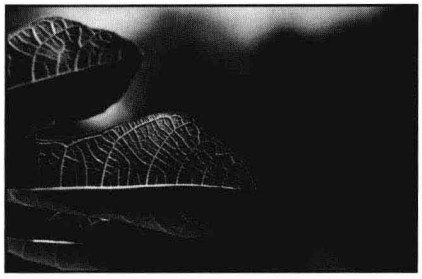
# Contents

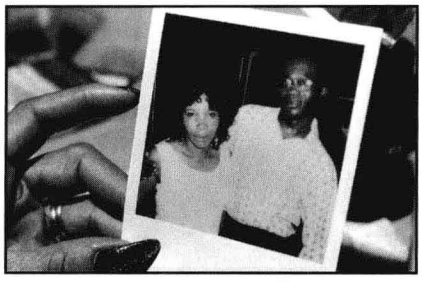






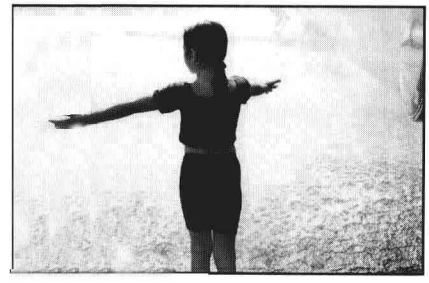


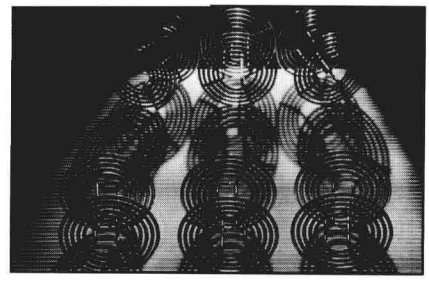


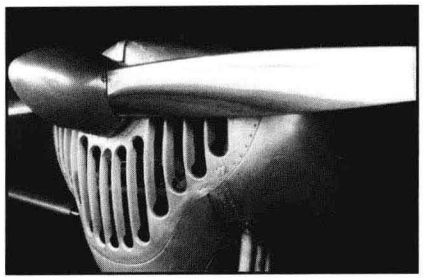


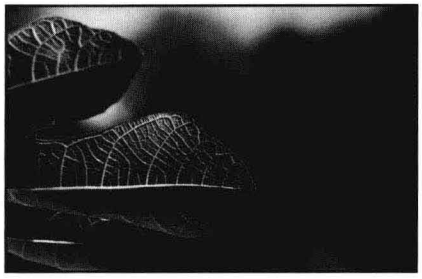
# Contents

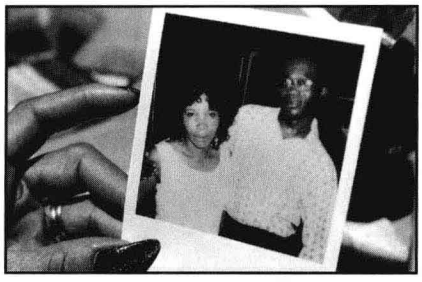












# Camera 1

**This chapter describes your camera's most important controls** and how you can take charge of them, instead of always letting them control you. Cameras have become increasingly automatic in recent years; most new 35mm cameras are equipped with automatic exposure, automatic focus, and automatic flash. If you are interested in making better pictures, however, you should know how your camera makes its decisions, even if it is an automatic model. You will want to override your camera's automatic decisions from time to time and make your own choices.

- You may want to blur the motion of a moving subject or freeze its motion sharply. Pages **16–17** show how.
- You may want the whole scene sharp from foreground to background or perhaps the foreground sharp but the background out of focus. Pages **38–39** show how.
- You may want to override your camera's automatic focus mechanism so that only a certain part of a scene is sharp. Page **37** tells when and how to do so.
- You may decide to silhouette a subject against a bright background, or perhaps you want to make sure that you *don't* end up with a silhouette. See pages **70–71**.

Many professional photographers use automatic cameras, but they know how their cameras operate manually as well as automatically so they can choose which is best for a particular situation. You will want to do the same because the more you know about how your camera operates, the better you will be able to get the results you want.

**If you are just getting started in photography,** the next few pages will help you make your first photographs. You can go directly to page **10** if you prefer more detailed information right away.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***Cropping** is one of the basic controls you have in making a photograph. The two photographs this page and opposite are about music. Would you concentrate on an action or on a gesture? Horizontal or vertical? The whole scene or only a part of it? More about cropping on pages **117** and **158–159.***

## PROJECT ***EXPOSE A ROLL OF FILM***

**YOU WILL NEED**

**Camera.** We suggest a 35mm single-lens reflex.

**Roll of film.** Use black-and-white slide film, such as Agfa Scala or Polaroid PolaPan. If you shoot color slides, it will be harder to imagine what the picture would have looked like in black and white. *Optional, but highly recommended for all the projects:* **Pencil and notepad to keep track of what you do.**

**PROCEDURE** See pages **4–9** if you are just beginning to photograph. Those pages walk you through the first steps of selecting and loading film, focusing an image sharply, adjusting the camera settings so your photographs won't be too light or too dark, and making your first pictures.

Have some variety in the scenes on this roll. For example, photograph subjects near and far, indoors and outside, in the shade and in the sun. Photograph different types of subjects, such as a portrait, a landscape, and an action scene.

**HOW DID YOU DO?** To evaluate your work, you will need to see it. Slides can be projected so you can easily see small details. The slide developing process does not compensate for exposure errors that make your pictures too light or too dark, the way prints from a one-hour lab would. Your exposure accuracy will be apparent. These slides will show how well you make decisions with the camera; developing and printing black-and-white film is coming in later chapters.

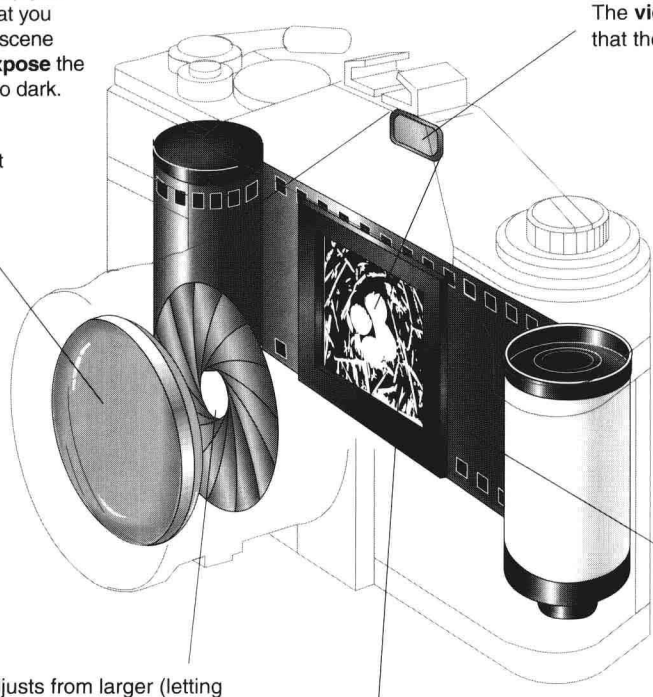
Did some of your camera's operations cause you confusion? It helps to read your instruction book all the way through or to ask for help from someone who is familiar with your camera.

# Getting Started

## Camera and film

**A camera's main functions** are to help you **view** the scene so you can select what you want to photograph, **focus** to get the scene sharp where you want it to be, and **expose** the film so the picture is not too light or too dark.

The **lens** can be moved forward and back to bring objects at different distances into sharp focus. If you have a manual-focusing lens, rotate its collar to move it.



The **viewfinder** shows the picture that the lens will focus on the film.

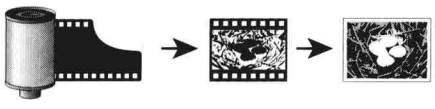
The **film** records the image transmitted by the lens.

The **aperture** adjusts from larger (letting more light pass from the lens to the film) to smaller (letting less light pass).

The **shutter** opens and closes to limit the length of time that light strikes the film.

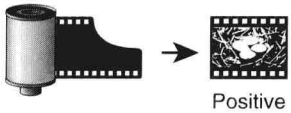
*More about camera controls on pages **12–15**.*

### Choose a Film



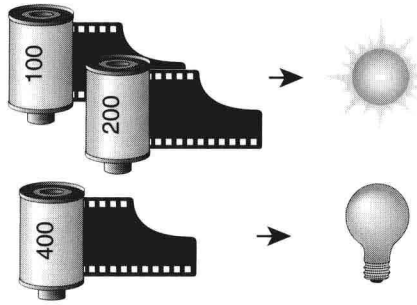
Negative film Negative Print

**If you want prints**, select a negative film, either color or black and white. Developing the film produces a negative image, which is then printed onto paper to make a positive.

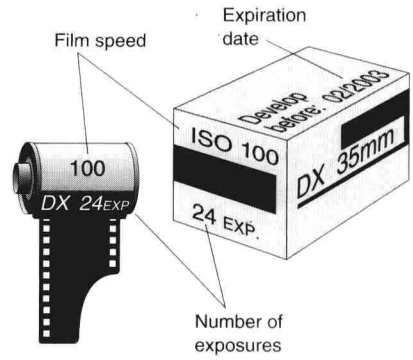


Reversal (slide) film Positive transparency

**If you want slides** (transparencies), select a reversal film, which produces a positive image directly on the film that is in the camera. Most reversal films are for color.



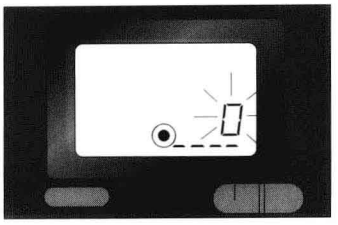

**Film speed** (ISO 100, 200, and so on) describes a film's sensitivity to light. The higher the number, the less light it needs for a correct exposure (one that is not too light or too dark). Choose a film with a speed of 100 to 200 for shooting outdoors in sunny conditions. In dimmer light, such as indoors, use film with a speed of 400 or higher.



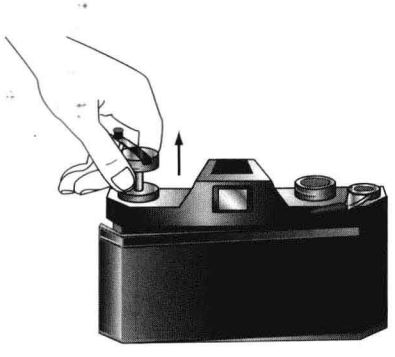

*More about film characteristics on page **49**.*

# Loading film into the camera

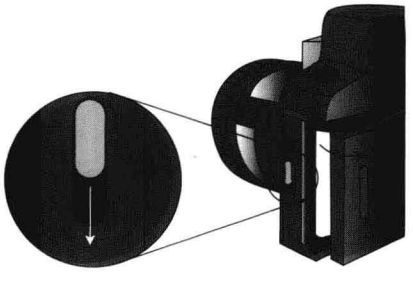
## Open the Camera



**Make sure there is no film in the camera** before you open it. Check that the film frame counter shows empty or that your camera's film rewind knob (if it has one) rotates freely. If there is film in the camera, rewind it (page **8**).



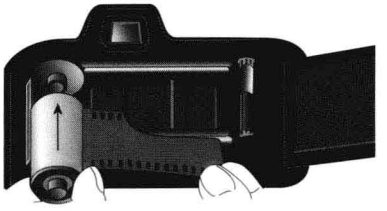
**A camera that loads film manually will** have a rewind knob at the top. This type of camera usually opens for loading when you pull up on the rewind knob.



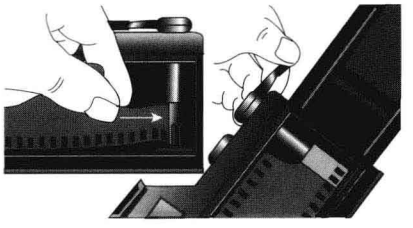
**A camera that loads film automatically** probably will have a release lever, not a rewind knob, to open the camera. Turn on the camera's main power switch. Open the camera back by sliding the release lever to its open position.

## Insert and Thread Film

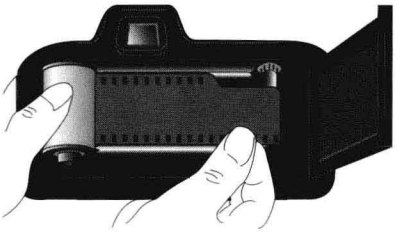
**Keep film out of direct sunlight.** Load film into the camera in subdued light or at least shield the camera from direct light with your body as you load it.



**Insert the film cassette.** A 35mm single-lens reflex camera usually loads film in the left side of the camera with the extended part of the cassette toward the bottom. The film should lie flat as it comes out of the cassette; if needed, rotate the cassette slightly to the right.



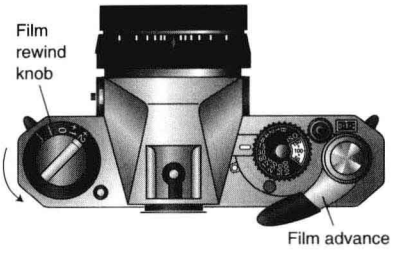
**Manual loading.** Push down the rewind knob. Pull out the tapered end of the film until you can insert it into the slot of the take-up spool on the other side of the camera. Alternately press the shutter release button and rotate the film advance lever until the teeth that advance the film engage the sprocket holes securely at the top and bottom of the film and any slack in the film is reeled up by the take-up spool.



**Automatic loading.** Pull out the tapered end of the film until it reaches the other side of the camera. Usually a red mark or other indicator shows where the end of the film should be. The film won't advance correctly if the end of the film is in the wrong position.

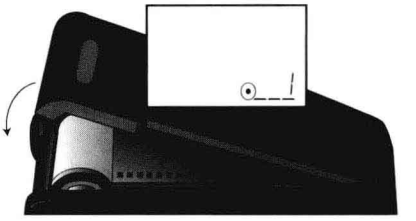
## Advance Film to the First Frame

**Close the camera back.** The part of the film that you pulled out of the cassette has been exposed to light. You'll need to advance the film past this exposed film to an unexposed frame.




**Manual film advance.** With the camera back closed, alternately press the shutter release button and rotate the film advance lever. Repeat two times.

If the film is advancing correctly, the film rewind knob will rotate counterclockwise as you move the film advance lever. If it does not, open the camera and check the loading. Don't rely on the film frame counter; it may advance even though the film does not.



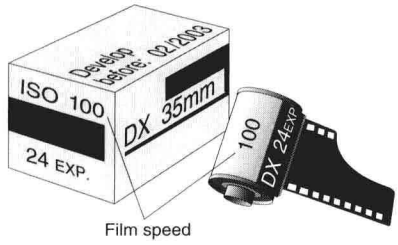
**Automatic film advance.** Depending on your camera, you may simply need to close the camera back to have the film advance to the first frame. Some cameras require you to also depress the shutter button.

If the film has correctly advanced, the film frame counter will display the number 1. If it does not, open the camera back and check the loading.

# Getting Started

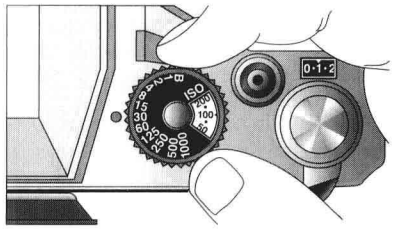
## Focusing and setting the exposure

### Set the Film Speed

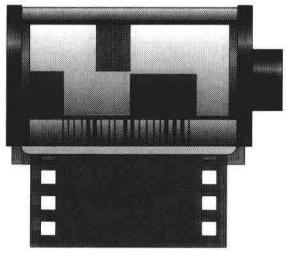


Film speed

**Film speed.** Set the camera to the speed of the film you are using. Film speed is marked on the film box and on the film cassette.



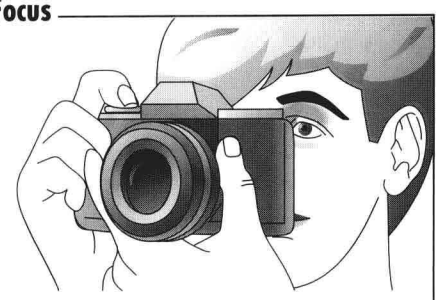
**Manually setting the film speed.** On some cameras, you must set the film speed manually. Turn the film speed dial (marked ISO or sometimes ASA) to the speed of your film. Here it is set to a film speed of 100.



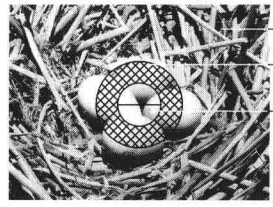
**Automatically setting the film speed.** On some cameras, the film speed is set by the camera as it loads the film. The film must be DX coded, marked with a bar code that is read by a sensor in the camera. DX-coded films have "DX" printed on the cassette and box.

*More about film speed on pages **50–51**.*

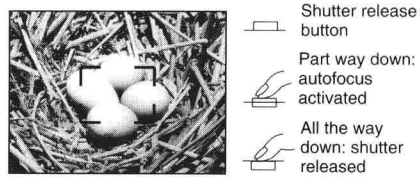
### Focus



**Focus** on the most important part of your scene to make sure it will be sharp in the photograph. Practice focusing on objects at different distances as you look through the viewfinder so that you become familiar with the way the camera focuses.



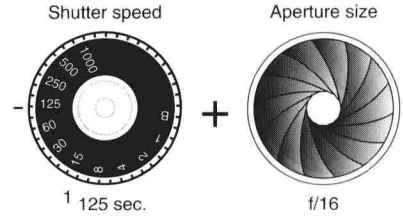

**Manual focusing.** As you look through the viewfinder, rotate the focusing ring at the front of the lens. The viewfinder of a single-lens reflex camera has a ground-glass screen that shows which parts of the scene are most sharply focused. Some cameras also have a microprism, a small ring at the center of the screen in which an object appears coarsely dotted until it is focused. With split-image focusing, part of an object appears offset when it is out of focus.

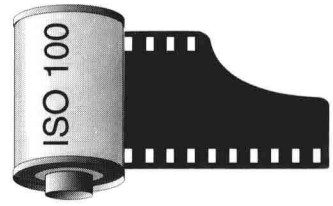


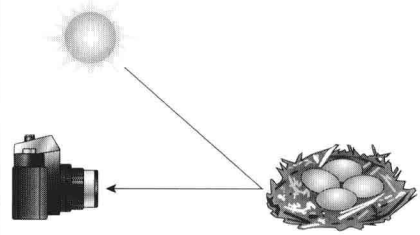

**Automatic focusing.** Usually this is done by centering the focusing brackets (visible in the middle of the viewfinder) on your subject as you depress the shutter release part way. The camera adjusts the lens for you to bring the bracketed object into focus. Don't push the shutter release all the way down until you are ready to take a picture.

*More about focus and when and how to override automatic focus on page **37**.*

### Set the Exposure



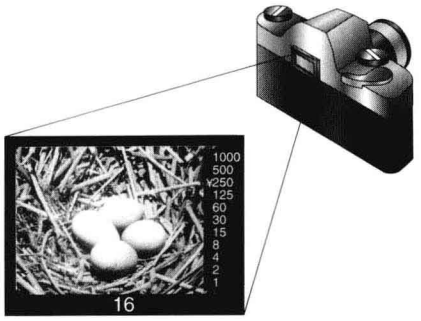



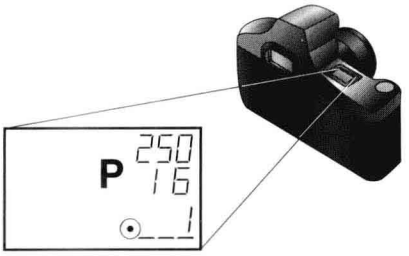
**To get a correctly exposed picture,** one that is not too light (overexposed) or too dark (underexposed), you—or the camera—set the shutter speed and the aperture depending on the sensitivity of the film (its speed) and how light or dark your subject is. The shutter speed determines the length of time that light strikes the film; the aperture size determines how bright the light is that passes through the lens and shutter to the film.

*More about shutter speed and aperture on pages **16–21** and about exposure and metering on pages **57–73**.*

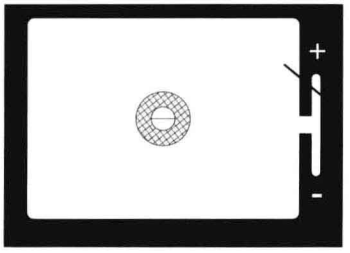
## Exposure Readout




**The shutter speed and aperture settings** appear in the viewfinder of many cameras. Here, 1/250 sec. shutter speed, f/16 aperture.

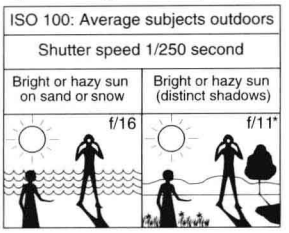


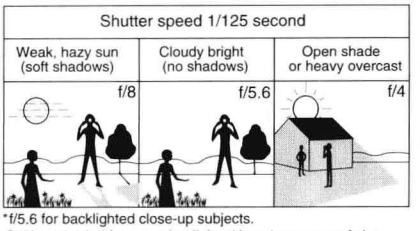

**A data panel** appears on the body of some cameras, displaying shutter speed and aperture settings (here, 1/250 sec. shutter speed, f/16 aperture), as well as other information.




**This needle-centering display** in the camera's viewfinder doesn't show the actual shutter speed and aperture settings, but it does show when the exposure will be correct. You change the shutter speed and/or aperture until the needle centers between + (overexposure) and - (underexposure).

## Manually Setting the Exposure

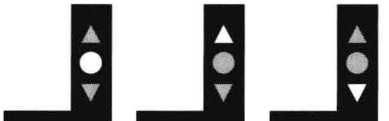



*f/5.6 for backlighted close-up subjects.
Subject shaded from sun but lighted by a large area of sky.

**With manual exposure,** you set both the shutter speed and aperture yourself. How do you know which settings to use? At the simplest level you can use a chart like the one above. Decide what kind of light illuminates the scene, and set the aperture (the f-number shown on the chart) and the shutter speed accordingly.

Notice that the recommended shutter speeds on the chart are 1/250 sec. or 1/125 sec. These relatively fast shutter speeds make it easier for you to get a sharp picture when hand holding the camera (when it is not on a tripod). At slow shutter speeds, such as 1/30 sec. or slower, the shutter is open long enough for the picture to be blurred if you move the camera slightly during the exposure.



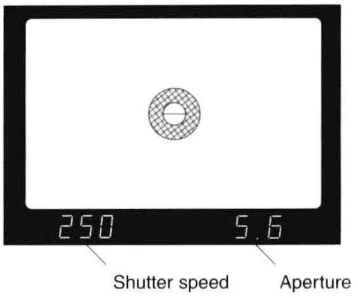
Exposure OK Overexposure Underexposure

**You can use a camera's built-in meter** for manual exposure. Point the camera at the most important part of the scene and activate the meter. The viewfinder will show whether the exposure is correct. If it isn't, change the shutter speed and/or aperture until it is. Here, an arrow pointing up signals overexposure, an arrow pointing down means underexposure. The dot in the center lights up when the exposure is right.

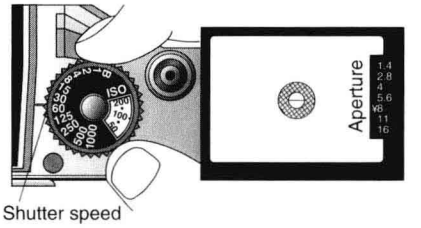
To prevent blur caused by the camera moving during the exposure (if the camera is not on a tripod), select a shutter speed of at least 1/60 sec. A shutter speed of 1/125 sec. is safer.

## Automatically Setting the Exposure

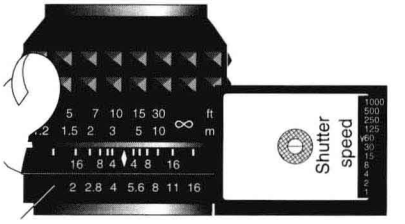
**With automatic exposure,** the camera sets the shutter speed or aperture or both for you.




**With programmed (fully automatic) exposure,** each time you press the shutter release button, the camera automatically meters the light then sets both shutter speed and aperture.




**With shutter-priority automatic exposure,** you set the shutter speed and the camera sets the aperture. To prevent blur from camera motion if you are hand holding the camera, select a shutter speed of 1/60 sec. or faster.




**With aperture-priority automatic exposure,** you set the aperture and the camera sets the shutter speed. To keep the picture sharp when you hand hold the camera, check that the shutter speed is 1/60 sec. or faster. If it is not, set the aperture to a larger opening (a smaller f-number).

*More about how to override automatic exposure on page* ***64****.*

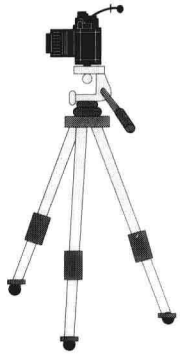
# Getting Started

## Exposing the film

### Hold the Camera Steady

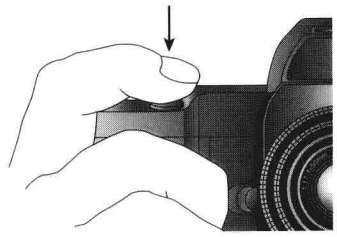
**For horizontal photographs,** keep your arms against your body to steady the camera. Use your right hand to hold the camera and your right forefinger to press the shutter release. Use your left hand to help support the camera or to focus or make other camera adjustments.

**For vertical photographs,** support the camera from below in either your right or left hand. Keep that elbow against your body to steady the camera.

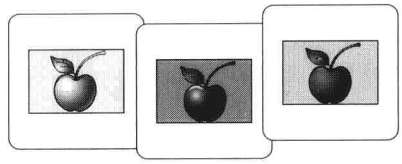


**A tripod** steadies the camera for you and lets you use slow shutter speeds, such as for night scenes or other situations when the light is dim. Make sure to use a cable release with it.

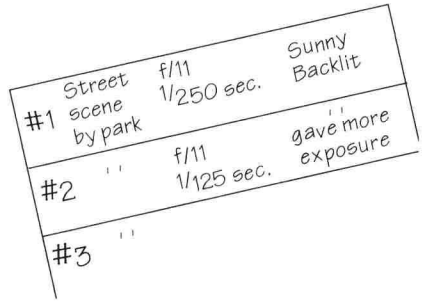
### Expose the Film



**Make an exposure.** Recheck the focus and composition just before exposure. When you are ready to take a picture, stabilize your camera and yourself and *gently* press the shutter release all the way down.

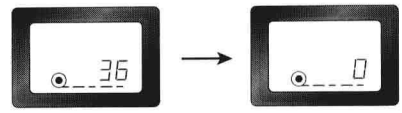


**Make some more exposures.** You might want to try several different exposures of the same scene, perhaps from different angles. See opposite page for some ideas.




**You'll learn faster** about exposure settings and other technical matters if you keep a record of your exposures. For example, write down the frame number, subject, f-stop and shutter-speed settings, direction or quality of light, and any other relevant information. This way you won't forget what you did by the time you develop and print the film.

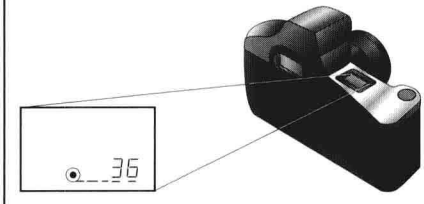
### At the End of the Roll, Rewind the Film




**After your last exposure on the roll,** rewind the film back into the cassette before opening the camera. Store film away from light and heat until it is developed.

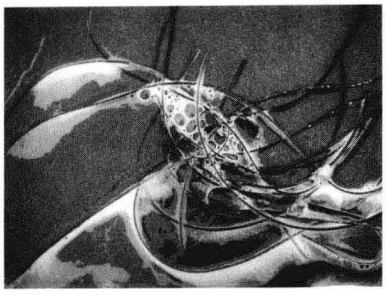
**Manual rewind.** You'll know that there is no more film left on the roll when the film advance lever will not turn. The film frame counter will also show the number of exposures you have made: 36, for example, if you used a 36-exposure roll of film.

Activate the rewind button or catch at the bottom of the camera. Lift the handle of the rewind crank and turn it clockwise until tension on the crank releases.




**Automatic rewind.** Your camera may automatically rewind the film after you make the last exposure on the roll, or it may signal the end of a roll and then rewind when you press a film rewind button.

# What will you photograph?

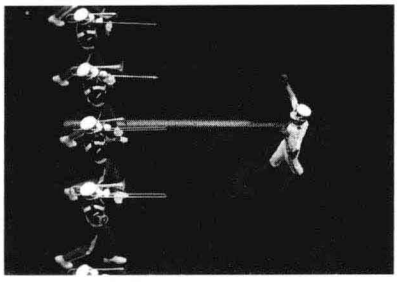


Ernest Braun

**Where do you start?** One place to start is by looking around through the viewfinder. A subject often looks different isolated in a viewfinder than it does when you see it surrounded by other objects. What interests you about this scene? What is it that you want to make into a photograph?

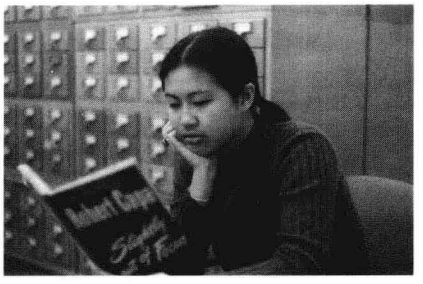
Jim Stone

**Get closer (usually).** Often people photograph from too far away. What part of the scene attracted you? Do you want to see the whole garden, or are you interested in the person working in it? Do you want the whole wall of a building, or was it the graffiti on it that caught your attention?

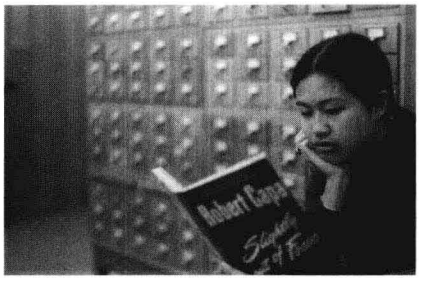


Scott Goldsmith

**Try a different angle.** Instead of always shooting from normal eye-level height, try getting up high and looking down on your subject or kneeling and looking up.



Karl Baden



**Look at the background (and the foreground).** How does your subject relate to its surroundings? Do you want the subject centered or off to one side to show more of the setting? Is there a distraction (like a post or sign directly behind someone's head) that you could avoid by changing position? Take a look.

*More about backgrounds and the image frame on pages **158–161**.*

Bonnie Kamin

**Check the lighting.** If this is your first roll, you are most likely to get a good exposure if you photograph a more or less evenly lit scene, not one where the subject is against a very light background, such as a bright sky.

*More about lighting on pages **127–143**.*

Lois Bernstein

Joe Wrinn

**Experiment, too.** Include a bright light or bright sky in the picture (just don't stare directly at the sun through the viewfinder). In the photograph, darker parts of the scene may appear completely black, or the subject itself may be silhouetted against a brighter background.

# Types of Cameras

What kind of camera is best for you? For occasional snapshots of family and friends, an inexpensive, completely automatic, nonadjustable camera that you just point and shoot will probably be satisfactory. But if you have become interested enough in photography to take a class or buy a book, you will want an adjustable camera, like one of those described here, because it will give you greater creative control. If you buy a camera with automatic features, make sure it is one that allows you to manually override them when you want to make exposure and focus choices yourself.

**Single-lens reflex cameras** (SLRs) show you a scene directly through the lens, so you can preview what will be recorded on the film. You can see exactly what the lens is focused on; with some cameras, you can check the depth of field (how much of the scene from foreground to background will be sharp). Through-the-lens viewing is a definite advantage for close-ups or any work when you want a precise view of a scene. Many different interchangeable lenses for SLRs are available. Automatic exposure is commonly available, as are automatic focus, automatic flash, and automatic film advance and rewind. Most SLRs use 35mm film. A few models are designed for the amateur-market APS film or for larger film, such as 120 (2¼-inch wide) roll film. SLRs are very popular with professionals, such as fashion photographers, and with nonprofessionals who want to move beyond making snapshots.


Minolta Corp.

**Single-lens Reflex Camera**

**Viewfinder cameras** let you see a scene through a peephole, the *viewfinder*, which shows almost—but not quite—the same image as the one formed by the lens that exposes the film. The image in the viewfinder always looks sharp overall. It is used to select the scene to be photographed, but can't be used for focusing because it doesn't show you which part of the scene will be sharply focused on the film. To get the scene in focus, either the camera automatically focuses the image for you, or you set a numbered dial to the approximate distance to the subject. Because the viewing system is in a different position from the lens that exposes the film, you do not see exactly what the lens sees. This difference between the viewfinder image and the lens image, called *parallax error*, increases as objects come closer to the camera. Extremely inexpensive viewfinder cameras, with few adjustments and plastic lenses, are sold to be discarded after use on vacations or for weddings. Others are popular with some artists because they are so badly manufactured they produce pictures with visible, exaggerated defects. *Compact cameras* and *point-and-shoot cameras* are viewfinder cameras.


Canon USA

**Viewfinder Camera**

**Rangefinder cameras** are viewfinder cameras with a visual focusing system that you use as you look through the viewfinder window. The window has a central *rangefinder* portion that shows a split image when an object is not in focus. As you rotate the focusing ring, the split image comes together when the object is focused sharply. Rangefinder cameras let you focus precisely, even in dim light, but you cannot visually assess the depth of field because, except for the split image, all parts of the scene look equally sharp in the viewfinder. Better rangefinder cameras correct for parallax and have interchangeable lenses, although usually not in as many focal lengths as are available for SLRs. Most use 35mm film, although a few (like the one on the page opposite) are designed for wider roll film. Rangefinder cameras are fast, reliable, quiet in operation, and relatively small. A few high-quality brands are in demand among professionals, particularly photojournalists.

**View cameras** have a lens in the front, a ground-glass viewing screen in the back, and a flexible, accordion-like bellows in between. The camera's most valuable feature is its adjustability: the camera's parts