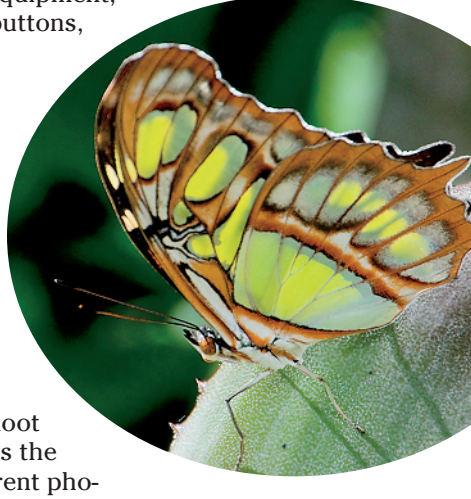
1

Getting the Lay of the Land

In This Chapter

- Using an SLR lens
- Adjusting the viewfinder and monitor
- Practicing touchscreen gestures
- Working with camera memory cards
- Getting acquainted with external camera controls
- Checking and changing camera settings
- Customizing basic camera operations

If you're like me, shooting for the first time with a camera as sophisticated as the Canon EOS 70D produces a blend of excitement and anxiety. On one hand, you can't wait to start using your new equipment, but on the other, you're a little intimidated by all its buttons, dials, and menu options.



Well, fear not: This chapter provides the information you need to start getting comfortable with your 70D. Along with an introduction to the camera's external controls, I offer details about working with lenses and memory cards, viewing and adjusting camera settings, and choosing basic setup options.

Looking at Lenses

One of the biggest differences between a point-and-shoot camera and a dSLR *(digital single lens reflex)* camera is the lens. With a dSLR, you can change lenses to suit different photographic needs, going from an extreme close-up lens to a super-long telephoto, for example. In addition, a dSLR lens has a focusing ring that gives you the option of focusing manually instead of relying on the camera's autofocus mechanism.

I don't have room in this book to go into detail about the science of lenses, nor do I think that an in-depth knowledge of the subject is terribly important to your photographic success. But the next few sections offer advice that may help when you're shopping for lenses, figuring out whether the lenses you inherited from Uncle Ted or found on eBay will work with your 70D, and taking the steps involved in actually mounting and using a lens.

Choosing a lens

To decide which lens is the best partner for your camera, start by considering these factors:

- **Lens compatibility:** Your camera accepts two categories of Canon lenses: those with an EF-S design and those with a plain old EF design.

  The EF stands for *electro focus;* the S stands for *short back focus.* And *that* simply means the rear element of the lens is closer to the sensor than with an EF lens. And no, you don't need to remember what the abbreviation stands for. Just make sure if you buy a Canon lens other than one of the two sold as a bundle with the camera, that it carries either the EF or EF-S specification. If you want to buy a non-Canon lens, check the lens manufacturer's website to find out which lenses work with your camera.

  Two other lens acronyms to note: First, the 18–55mm and 18–135mm lenses that you can buy as part of a 70D kit are *IS* lenses, which means that they offer *image stabilization,* a feature you can explore a few sections from here. Second, they also carry the designation *STM.* That abbreviation refers to the fact that the autofocusing system uses *stepping motor technology,* which is designed to provide smoother, quieter autofocusing.

  Finally, be aware that some lenses can't take full advantage of the Dual Pixel CMOS (*see*-moss) autofocusing system that's used during Live View and Movie recording. Don't worry about what the name means — the important point is that it produces faster, more accurate autofocusing. If you're interested in learning more, go to the 70D product page at the Canon USA website (`www.usa.canon.com`), which has a link to a section that explains the technology and lists lenses that support it.

- **Focal length and the crop factor:** The focal length of a lens, stated in millimeters, determines the angle of view that the camera can capture and the spatial relationship of objects in the frame. Focal length also affects *depth of field,* or the distance over which focus appears acceptably sharp.

  You can loosely categorize lenses by focal length as follows:

  - *Wide-angle:* Lenses with short focal lengths — generally, anything under 35mm — are known as *wide-angle lenses.* A wide-angle lens has the visual effect of pushing the subject away from you and

making it appear smaller. As a result, you can fit more of the scene into the frame without moving back. Additionally, a wide-angle lens has a large depth of field, which means that both the subject and background objects appear sharp. These characteristics make wide-angle lenses ideal for landscape photography.

- *Telephoto:* Lenses with focal lengths longer than about 70mm are *telephoto* lenses. These lenses create the illusion of bringing the subject closer to you, increase the subject's size in the frame, and produce a short depth of field so that the subject is sharply focused but distant objects are blurry. Telephoto lenses are great for capturing wildlife and other subjects that don't permit up-close shooting.
- *Normal:* A focal length in the neighborhood of 35mm to 70mm is considered "normal" — that is, somewhere between a wide-angle and telephoto. This focal length produces the angle of view and depth of field that are appropriate for the kinds of snapshots that most people take.

Figure 1-1 offers an illustration of the difference that focal length makes, showing the same scene captured at 42mm (left image) and 112mm (right image). Of course, the illustration shows just two of countless possibilities, and the question of which focal length best captures a scene depends on your creative goals.

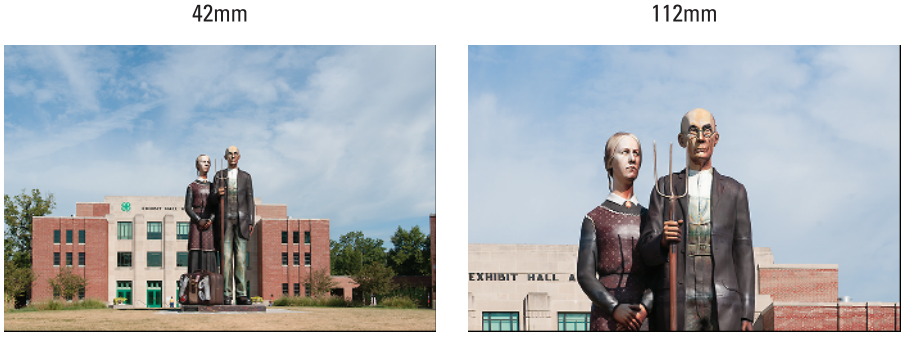


Figure 1-1: I used a focal length of 42mm to capture the first image and then zoomed to a focal length of 112mm to capture the second one.

Note, however, that the focal lengths stated in this book are so-called *35mm equivalent* focal lengths. Here's the deal: When you put a standard lens on most dSLR cameras, including your70D, the available frame area is reduced, as if you took a picture on a camera that uses 35mm film negatives and then cropped it.

This so-called *crop factor* varies depending on the camera, which is why the photo industry adopted the 35mm-equivalent measuring stick as a standard. With the 70D, the crop factor is roughly 1.6. So the 18–135mm kit lens, for example, captures the approximate area you would get from a 29–216mm lens on a 35mm film camera. (Multiply the crop factor by the lens focal length to get the actual angle of view.) In Figure 1-2, the red line indicates the image area that results from the 1.6 crop factor.

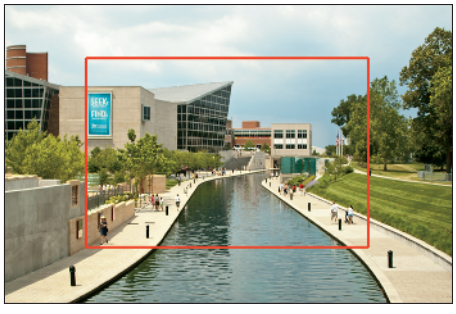


Figure 1-2: The 1.6 crop factor produces the angle of view indicated by the red outline.

When shopping for a lens, remember this crop factor to make sure that you get the focal length designed for the type of pictures you want to take.

- **Prime versus zoom lenses:** A *prime* lens is a single focal-length lens. With a zoom lens, you get a range of focal lengths in one unit. For example, the kit lens I feature in this book has a focal-length range of 18–135mm.

  Why select a lens that offers a single focal length when a zoom lens offers a range of focal lengths? In a word, quality. Because of some lens science I won't bore you with, you typically see some reduction in picture quality at certain points in the range of a zoom lens. On the flip side, a zoom lens is more convenient than carting around a bag of prime lenses, and many zoom lenses today offer very good image quality.

- **Aperture range:** The *aperture* is an adjustable diaphragm in a lens. By adjusting the aperture size, you can control the amount of light that enters through the lens and strikes the image sensor, thereby controlling exposure. The aperture setting also affects depth of field: A wide-open aperture produces a short depth of field, so the subject is sharply focused but distant objects appear blurry; a narrow aperture produces a long depth of field so that both the subject and distant objects appear sharp.

  Chapters 7 and 8 cover these issues in detail. For the purposes of lens shopping, you need to know just a few things.

  - *Every lens has a specific range of aperture settings.* Obviously, the larger that range, the more control you have over exposure and depth of field.
  - *The larger the maximum aperture, the "faster" the lens.* Aperture settings are stated in *f-stops,* with a lower number meaning a larger

aperture. For example, a setting of f/2 results in a more open aperture than f/4. And if you have one lens with a maximum aperture of f/2 and another with a maximum aperture of f/4, the f/2 lens is said to be *faster* because you can open the aperture wider, thereby allowing more light into the camera and permitting the image to be captured in less time. This not only benefits you in low-light situations but also when photographing action, which requires a fast shutter speed (short exposure time). So, all other things being equal, a faster lens is better.

- *With some zoom lenses, the maximum and minimum aperture change as you zoom the lens.* For example, when you zoom to a telephoto focal length, you usually can't open the aperture as much as you can at a wide-angle setting. You can buy lenses that maintain the same maximum and minimum aperture throughout the whole zoom lens, but you pay more for this feature.

After studying these issues and narrowing down your choices, finding the right lens in the category you want is just a matter of doing some homework. Study lens reviews in photography magazines and online photography sites to find the best performing lens in your price range.

Attaching and removing a lens

Whatever lens you choose, follow these steps to attach it to the camera body:

1. **Turn the camera off and remove the cap that covers the lens mount on the front of the camera.**
2. **Remove the cap that covers the back of the lens.**
3. **Locate the proper lens mounting index on the camera body.**

   A *mounting index* is a mark that tells you where to align the lens with the camera body when connecting the two. Your camera has two of these marks, one red and one white, as shown in Figure 1-3.

Figure 1-3: Place the lens in the lens mount with the mounting indexes aligned.

Which marker you use to align your lens depends on the lens type:

- *Canon EF-S lens:* The white square is the mounting index.
- *Canon EF lens:* The red dot is the mounting index.

With a non-Canon lens, check the lens manual for help with this step.

4. **Align the mounting index on the lens with the one on the camera.**

   The lens also has a mounting index. Figure 1-3 shows the one that appears on the 18–135mm EF-S kit lens.

5. **Keeping the mounting indexes aligned, position the lens on the camera's lens mount.**

6. **Turn the lens clockwise until it clicks into place.**

   In other words, turn the lens toward the lens-release button, labeled in Figure 1-3.

To remove a lens, turn the camera off, press the lens-release button, grip the rear collar of the lens, and turn the lens toward the shutter button side of the camera. When you feel the lens release from the mount, lift the lens off the camera. Place the rear protective cap onto the back of the lens, and if you aren't putting another lens on the camera, cover the lens mount with its protective cap, too.

Always switch lenses in a clean environment to reduce the risk of getting dust and dirt inside the camera or lens. For added safety, point the camera slightly down when performing this maneuver to help prevent flotsam in the air from being drawn into the camera by gravity.

Zooming in and out

If you bought a zoom lens, it sports a *zoom ring*. Figure 1-4 shows you the location of the zoom ring on the 18–135mm kit lens; for other lenses, see your lens user guide. With the kit lens, rotate the zoom ring to zoom in and out. A few zoom lenses use a push-pull motion to zoom instead.

The numbers around the edge of the zoom ring, by the way, represent focal lengths. The number that's aligned with the white focal-length indicator, labeled in Figure 1-4, represents the current focal length.

Some lenses, including the 18–135mm kit lens, also have a Lens lock switch, which is located in the position indicated in the figure. When the lens is set to the 18mm position, you can use the switch to lock the lens at that focal length. That way, when the camera is pointing downward, gravity can't cause the lens to extend to a longer focal length (a problem known as *lens creep*).

Figure 1-4: Here's a look at the 18–135mm kit lens.

Using an IS (image stabilizer) lens

Both kit lenses sold with the 70D offer *image stabilization,* indicated by the initials *IS* in the lens name. Image stabilization attempts to compensate for small amounts of camera shake that are common when photographers handhold their cameras and use a slow shutter speed, a lens with a long focal length, or both. Camera shake can result in blurry images, even when your focus is dead-on. Although image stabilization can't work miracles, it enables most people to capture sharp handheld shots in many situations that they otherwise couldn't. The feature works regardless of whether you use autofocusing or manual focusing, and it works for both still photography and movie shooting.

However, when you use a tripod, the system may try to adjust for movement that isn't actually occurring. Although this problem shouldn't be an issue with most Canon IS lenses, if you do see blurry images while using a tripod, try setting the Image Stabilizer (IS) switch (shown in Figure 1-4) to Off. You

also can save battery power by turning off image stabilization when you use a tripod. If you use a monopod, leave image stabilization turned on so it can help compensate for any accidental movement of the monopod. If you shoot in the B (Bulb) mode, Canon recommends that you disable stabilization.

On non-Canon lenses, image stabilization may go by another name: *anti-shake, vibration compensation,* and so on. In some cases, the manufacturers recommend that you leave the system turned on or select a special setting when you use a tripod, so check the lens manual for information.

Whatever lens you use, image stabilization isn't meant to eliminate the blur that can occur when your subject moves during the exposure. That problem is related to shutter speed, a topic you can explore in Chapter 7.

Getting acquainted with focusing

Your camera offers an excellent autofocusing system. With some subjects, however, autofocusing can be slow or impossible, which is why your camera also offers manual focusing. Chapter 8 fully explains automatic and manual focusing for viewfinder photography, and Chapter 4 explains how things work when you're using the monitor to compose images (Live View mode) or are shooting movies. But here's a primer to get you started:

- **Choosing the focusing method:** You set the focusing method via the AF/MF (autofocus/manual focus) switch on the lens. But be careful: If you're in Live View or Movie mode, exit the live preview and return to viewfinder shooting before moving the lens switch from the AF to MF position. This step is needed to avoid damage that can occur if you switch to manual focusing while the continuous autofocusing system that's available for Movie and Live View modes engaged. (Chapter 4 explains this system and everything else about Live View and movie shooting.)
- **Setting focus in MF mode:** Just rotate the lens focusing ring. Figure 1-4 shows you where to find it on the 18–135mm kit lens.
- **Setting focus in AF mode:** Press the shutter button halfway to initiate autofocusing. After the scene comes into focus, press the button the rest of the way to take the picture. A couple pointers to remember:
  - How the camera finds its focusing target and when it locks focus depend on autofocus settings that I detail in Chapters 4 and 8.
  - If you're using the kit lens (or any STM lens from Canon), turning the focus ring when in autofocus mode has no effect on the lens — it won't turn and it will never hit a physical stop.

- **Waking up a sleeping lens:** With both kit lenses (as well as some other STM lenses), the focusing motor doesn't operate if the camera has gone to sleep because of the Auto Power Off feature, which I explain in the section "Setup Menu 2," later in this chapter. The lens itself goes to sleep if you don't perform any lens operations for a while. Either way, manual focus adjustments aren't possible when the lens is in this state, and automatic focusing during zooming may be delayed. You can wake the camera and lens up by pressing the shutter button halfway.

Two final Focusing 101 tips:

- If you have trouble focusing, you may be too close to your subject; every lens has a minimum focusing distance.
- In order to properly asses focus, you need to adjust the viewfinder to accommodate your eyesight, as outlined next.

Adjusting the Viewfinder

Near the upper right of the rubber eyepiece that surrounds the viewfinder is a dial (see Figure 1-5) that enables you to adjust the viewfinder focus to match your eyesight. The dial is officially known as the *diopter adjustment control.*

Figure 1-5: Rotate this dial to adjust the viewfinder focus to your eyesight.

If you don't take this step, scenes that appear out of focus through the viewfinder may actually be sharply focused through the lens, and vice versa. Here's how to make the necessary adjustment:

1. **Remove the lens cap, look through the viewfinder, and press the shutter button halfway to display picture data at the bottom of the viewfinder.**

   In Scene Intelligent Auto mode (represented by the green A+ on the camera's Mode dial), as well as in some of the SCN (Scene) modes, the built-in flash may pop up; ignore it for now and close the unit after you finish adjusting the viewfinder.

2. **Rotate the diopter adjustment dial until the data appears sharpest.**

If your eyesight is such that you can't get the display to appear sharp by using the dioptric adjustment knob, you can buy an additional eyepiece adapter. Prices range from about $15–$30 depending on the magnification you need. Look for an E-series dioptric adjustment lens adapter.

Adjusting the Monitor Position

One of the many cool features of the 70D is its articulating monitor. When you first take the camera out of its box, the monitor is positioned with the screen facing the back of the body, as shown on the left in Figure 1-6, protecting the screen from scratches and smudges. (It's a good idea to place the monitor in this position when you're not using the camera.) When you're ready to start shooting or reviewing your photos, you can place the monitor in the traditional position on the camera back, as shown on the right in Figure 1-6. Or for more flexibility, you can swing the monitor out and away from the camera body and then rotate it to find the best viewing angle, as shown in Figure 1-7.

Figure 1-6: Here you see two possible monitor positions.

Figure 1-7: You also can unlock the monitor from the body and then rotate the screen to get the best view of things.

Because playing with the monitor is no doubt one of the first things you did after unpacking your camera, I won't waste space walking you through the process of adjusting the screen. (If you need help, the camera manual shows you what to do.) But I want to offer a few monitor-related tips:

- **Don't force things.** The monitor twists only in certain directions, and it's easy to forget which way it's supposed to move. So if you feel resistance, don't force things; instead, rely on that feeling of resistance to remind you to turn the screen the other way.
- **Watch the crunch factor.** Before positioning the monitor back into the camera, use a lens brush or soft cloth to clean the monitor housing so there's nothing in the way that could damage the screen.
- **Clean smart.** To clean the screen, use only the special cloths and cleaning solutions made for this purpose. *Do not* use paper products such as paper towels because they can contain wood fibers that can scratch the monitor. And never use a can of compressed air to blow dust off the camera — the air is cold and can crack the monitor.

Using the Touchscreen

Just as cool as the monitor's flexibility is its touchscreen interface. You can choose menu options, change picture settings, and scroll through your pictures by touching one or two fingers to the screen, just as you can with a tablet, smartphone, or other touchscreen device.

Throughout the book, I tell you exactly where and how to touch the screen to accomplish specific actions. For now, get acquainted with the terminology used to indicate these touchscreen moves, called *gestures* by those who feel the need to assign names to things such as this.

- **Tap:** Tap your finger on a screen item to select it. Give it a try: First, press the Menu button to display the menu screen on the monitor, as shown on the left in Figure 1-8. Along the top of the screen, you see one highlighted icon, representing the current menu, and a row of dimmed icons representing other menus. On the left side of Figure 1-8, Shooting Menu 1 is the current menu. To switch to another menu, tap its icon. For example, tap the icon for Setup Menu 2, labeled on the left in the figure, and that menu appears, as shown on the right.

  Tap *gently* — you don't have to use force. To avoid damaging the screen, use the fleshy part of your fingertip, not the nail or any other sharp object, and be sure that your fingers are dry because the screen may not respond if it gets wet. Canon also advises against putting a protective cover over the monitor; doing so can reduce the monitor's responsiveness to your touch.

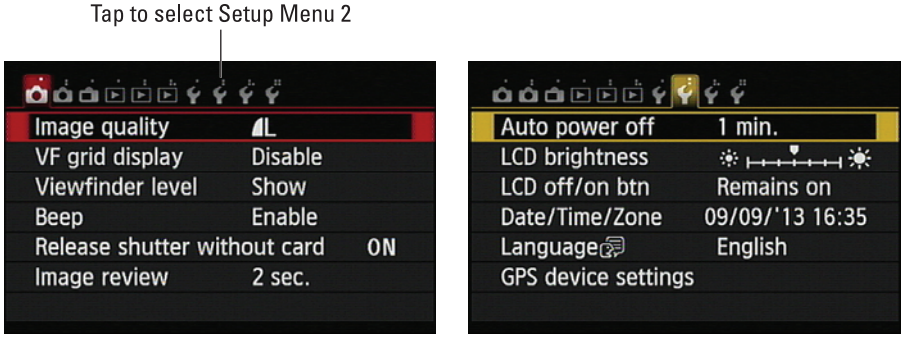


Figure 1-8: Tap a menu icon to display its menu.

Drag: Drag your finger up, down, right, or left across the screen, according to my instruction. To try this gesture, first display Setup Menu 2 and tap LCD Brightness, shown on the left in Figure 1-9, to display the screen shown on the right. Now drag your finger across the scale at the bottom of the screen to adjust the screen brightness. Reset the marker to the middle of the bar after you're done playing around — that setting gives you the most accurate indication of picture brightness.

On this particular screen, you also see triangles at either end of the scale. You can tap those triangles to raise or lower the value represented on the scale. Either way, tap the Set icon to implement the setting and return to the menu.

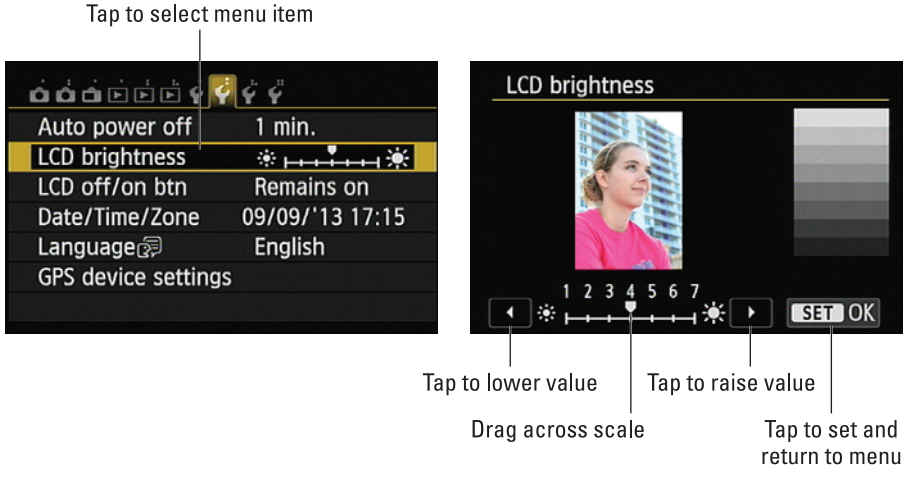


Figure 1-9: Tap the LCD Brightness item (left) and then drag left or right across a scale to adjust the setting (right).

- **Swipe:** Drag a finger quickly across the screen. You use this gesture, known in some circles as a *flick,* to scroll through your pictures in Playback mode, a topic you can explore in Chapter 5.
- **Pinch in/pinch out:** To pinch in, place your thumb at one edge of the screen and your pointer finger at the other. Then drag both toward the center of the screen. To pinch out, start in the center of the screen and swipe both fingers outward. Pinching is how you zoom in and out on pictures during playback; again, Chapter 5 provides details.

You can control two aspects of touchscreen behavior:

- **Touchscreen response:** You can choose from three settings, accessed via the Touch Control option, found on Setup Menu 3 and shown in Figure 1-10.

Figure 1-10: Control the touchscreen response through this menu item.

  - *Standard:* This setting is the default. The touchscreen is enabled and is set to respond to a "normal" amount of pressure. (Don't ask me how the Powers That Be decided what that pressure level is — I don't get invited to those conferences.)
  - *Sensitive:* This setting makes the touchscreen more, er, touchy. That is, it responds to lighter pressure. Oddly, though, Canon says that the camera may be slower to respond to a very quick tap at this setting. Your mileage may vary.
  - *Disable:* Select this setting to disable the touchscreen function.

    To restore the touch function, press the Menu button to bring up the menu screens and then rotate the Main dial — that's the one just behind the shutter button — to select Setup Menu 3. Then rotate the Quick Control dial (the big wheel on the back of the camera) to highlight Touch Control. Press the Set button, rotate the Quick Control dial to highlight Standard or Sensitive, and press the Set button again.

- **Touchscreen sound effects:** By default, the camera emits a little "boop" sound every time you tap a touch-controlled setting. If you're sick of hearing it, visit Shooting Menu 1 and look for the Beep setting, shown

in Figure 1-11. The option that disables the boop is Touch to Silence — *silence* being indicated by a little speaker with a slash through it. The Disable setting turns off both the touchscreen sound and the normal beep tone that occurs when the camera finds its focus point.

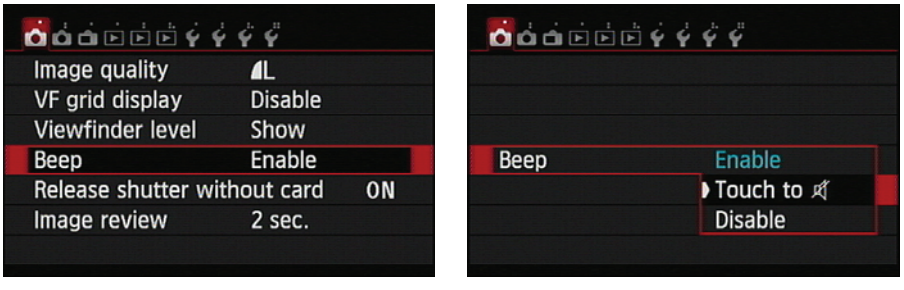


Figure 1-11: Set the Beep option to Touch to Silence to prevent the camera from making a sound when you tap a touch-controlled item.

One final point about the touchscreen: If you connect the camera to a TV or monitor, the touchscreen no longer is available, regardless of the Touch Control option. Don't fret, you just have to use the old-fashioned button-push method of selecting menu options. See "Ordering from Camera Menus," later in this chapter, if you need help.

Working with Memory Cards

Instead of recording images on film, digital cameras store pictures on *memory cards*. Your camera uses a specific type of memory card — an *SD card* (for *Secure Digital*), shown in Figures 1-12 and 1-13.

Most SD cards carry the designation SDHC (for *High Capacity*) or SDXC (for *eXtended Capacity*), depending on how many gigabytes (GB) of data they hold. SDHC cards hold from 4GB to 32GB of data; the SDXC moniker indicates a capacity greater than 32GB. Cards are also assigned a speed rating from 2 to 10, with a higher number indicating a faster data-transfer rate. The memory-card industry recently added a new category of speed rating — Ultra High Speed (UHS). UHS cards also carry a number designation; at present, there is only one class of UHS card, UHS 1. These cards currently are the fastest the planet has to offer. Of course, a faster card means a more expensive card. But to maximize your camera's performance, I recommend that you make the investment in Class 10 or UHS 1 cards. Especially for video recording, a faster

card translates to smoother recording and playback. A faster card also can improve performance when you're shooting a burst of images using the camera's continuous capture feature.

In addition to using regular SD cards, your camera accepts Eye-Fi memory cards, which are special cards that enable you to transmit images from the camera to the computer over a wireless network. It's a cool option, but the cards are more expensive than regular cards and require some configuring that I don't have room to cover in this book. Additionally, Canon doesn't guarantee that everything will work smoothly with Eye-Fi cards and directs you to the Eye-Fi support team if you have trouble. All that said, if an Eye-Fi card is installed in the camera, Setup Menu 1 offers an Eye-Fi Settings option that offers options related to the card. For more details, visit `www.eye.fi`. (See Chapters 6 and 10 for details about using the camera's own wireless connectivity features.)

Whatever cards you choose, safeguarding them — and the images on them — requires a few precautions:

- **Inserting a card:** Turn the camera off and then put the card in the card slot with the label facing the back of the camera, as shown in Figure 1-12. Push the card into the slot until it clicks into place.
- **Formatting a card:** The first time you use a new memory card, *format* it by choosing the Format Card option on Setup Menu 1. This step ensures that the card is properly prepared to record your pictures. See the upcoming section "Setup Menu 1" for details.
- **Removing a card:** First, check the status of the memory card access light, labeled in Figure 1-12. After making sure that the light is off, indicating that the camera has finished recording your most recent photo, turn off the camera. Open the memory card door, as shown in Figure 1-12. Depress the memory card slightly until you hear a little click and then let go. The card pops halfway out of the slot, enabling you to grab it by the tail and remove it.

Figure 1-12: Insert the card with the label facing the camera back.

- **Handling cards:** Don't touch the gold contacts on the back of the card. (See the right card in Figure 1-13.) When cards aren't in use, store them in the protective cases they came in or in a memory card wallet. Keep cards away from extreme heat and cold as well.
- **Locking cards:** The tiny switch on the left side of the card, labeled *Lock switch* in Figure 1-13, enables you to lock your card, which prevents any data from being erased or recorded to the card. Press the switch toward the bottom of the card to lock the card contents; press it toward the top of the card to unlock the data.

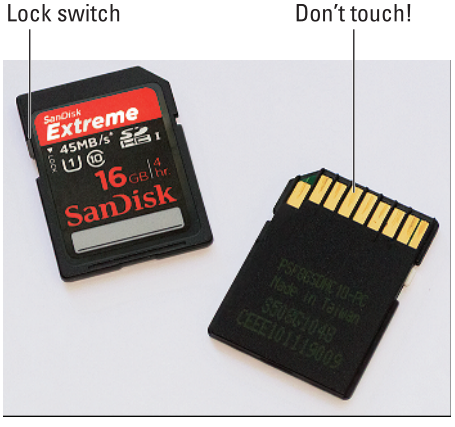


Figure 1-13: Avoid touching the gold contacts on the card.

Exploring External Camera Features

Scattered across your camera's exterior are a number of buttons, dials, and switches that you use to change picture-taking settings, review and edit your photos, and perform various other operations. Later chapters detail all your camera's functions and provide the exact steps to follow to access those functions. The next four sections provide a basic road map to the external controls plus a quick introduction to each.

Topside controls

Your virtual tour begins on the top of the camera, shown in Figure 1-14. The items of note here are

- **On/Off switch:** Okay, you probably already figured this one out. What you may not know is that by default, the camera automatically shuts itself off after one minute of inactivity to save battery power. To wake up the camera, press the shutter button halfway or press the Menu, Info, or Playback button. You can adjust the auto shutdown timing via the Auto Power Off option on Setup Menu 2.
- **Mode dial:** Through this dial, you select an *exposure mode,* which determines whether the camera operates in fully automatic, semi-automatic, or manual exposure mode. To adjust the setting, press and hold the unlock button in the center of the dial as you rotate the dial. Chapter 2 introduces you to the various exposure modes.

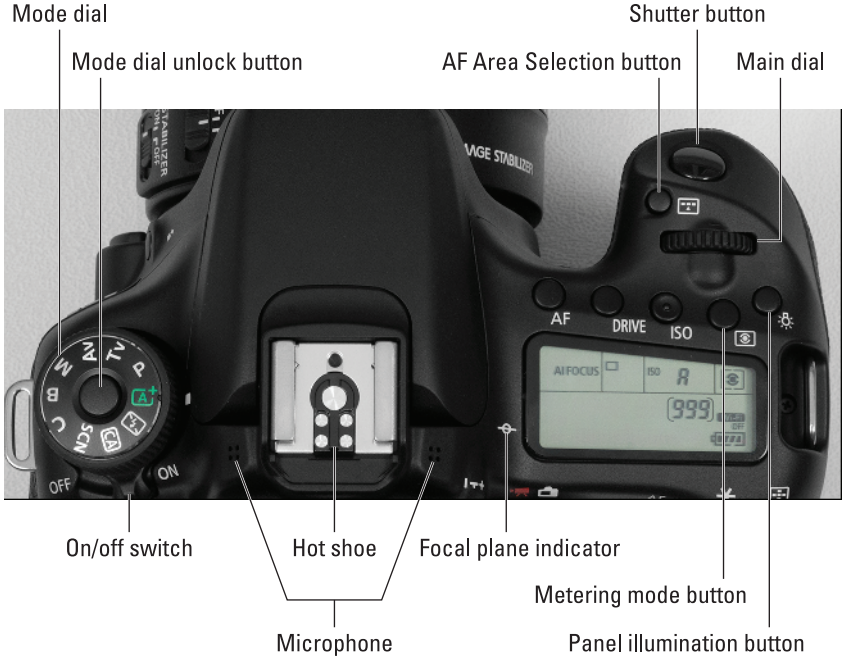


Figure 1-14: The tiny pictures on the Mode dial represent special automatic shooting modes.

- **Hot shoe:** The *hot shoe* is a metal bracket on which you can affix an external flash (or other hot shoe accessory). It's called a hot shoe because it's wired to communicate back and forth from the camera using electrical signals. Don't go poking around the hot shoe: the flash-sync contacts (the little round metal posts) need to be clean and free of debris to work properly.
- **Microphone:** These two clusters of holes lead to the stereo microphone that picks up sound when you record movies.

- **AF Area Selection button:** This button enables you to change the AF Area Selection setting, an autofocus feature that I describe in Chapter 8.
- **Drive button:** This button switches between the various shutter-release (drive) modes, such as single frame, self-timer, or high-speed continuous. See Chapter 2 for more information.
- **ISO button:** Press this button to access the ISO speed setting, which determines how sensitive the camera is to light. Chapter 7 details this critical exposure setting.

- **Metering mode button:** Yup, you guessed it: This button enables you to choose the camera's metering mode, which determines which part of the scene the camera uses to set exposure. Chapter 7 has details.

- **AF button:** This button is related to the AF mode setting, which determines when the camera locks focus when you use autofocusing. See Chapter 8 for the lowdown.
- **Main dial:** You use this dial, labeled in the figure, when selecting many camera settings. In fact, this dial plays such an important role that you'd think it might have a more auspicious name, like The Really Useful Dial, but Main dial it is.
- **Shutter release button:** You probably already understand the function of this button, too. But what you may not realize is that when you use autofocus and autoexposure, you need to use a two-stage process when taking a picture: Press the shutter button halfway, pause to let the camera set focus and exposure, and then press the rest of the way to capture the image. You'd be surprised how many people mess up their pictures because they press that button with one quick jab, denying the camera the time it needs to set focus and exposure.
- **LCD panel illumination button:** This button illuminates the top LCD panel with an amber backlight.
- **Focal plane mark:** Should you need to know the exact distance between your subject and the camera, the *focal plane indicator* is key. This mark indicates the plane at which light coming through the lens is focused onto the image sensor. Basing your measurement on this mark produces a more accurate camera-to-subject distance than using the end of the lens or some other external point on the camera body as your reference point.

Back-of-the-body controls

Traveling over the top of the camera to its back, you encounter the smorgasbord of controls shown in Figure 1-15. Throughout this book, pictures of some of these buttons appear in the margins, as in the upcoming list, to help you locate the button being discussed. Even though I provide the official control names in the following list, don't worry about getting all those straight right now. The list is just to get you acquainted with the *possibility* of what you can accomplish with all these features.

Do note that many buttons have multiple names because they serve different purposes depending on whether you're taking pictures, reviewing images, recording a movie, or performing some other function. In this book, I refer to these buttons by the first label you see in the following list to simplify things. For example, I refer to the AF Point Selection/Magnify button as the AF Point Selection button. Again, though, the margin icons help you know exactly which button is being described.

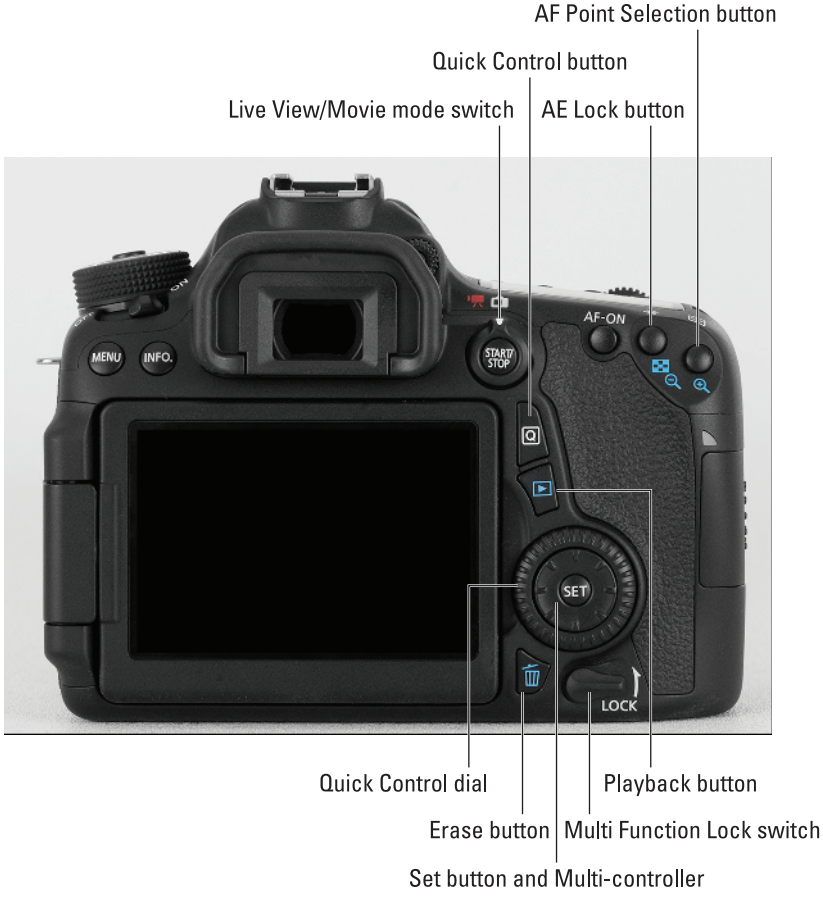


Figure 1-15: Having lots of external buttons makes accessing the camera's functions easier.

With that preamble out of the way, here's the rundown of back-of-the-body features:

- **Menu button:** Press this button to access the camera menus. I discuss navigating menus later in this chapter.
- **Info button:** By default, pressing this button during shooting displays the Camera Settings screen; pressing again displays the Electronic Level; and pressing a third time displays the Shooting Settings display. I describe all three of these screens in the upcoming section, "Monitoring Critical

Camera Settings." A fourth press of the button turns the monitor off. To find out how to customize the button, see "The Info button: Choosing what the screen shows," also later in this chapter.

In Playback, Live View, and Movie modes, pressing this button changes the picture-display style, as outlined in Chapters 4 and 5.

- **Live View/Movie mode button and switch:** *Live View* is the camera feature that enables you to compose photos using the monitor instead of the viewfinder. To shift to this mode, first move the switch to the camera icon above the Start/Stop button. Then press the button to engage Live View; press again to return to regular (viewfinder) shooting.

  To enter Movie mode, move the switch to the red movie camera icon. The live scene appears on the monitor, and you can then press the Start/Stop button to start and stop recording.

- **AF-ON button:** Just like pressing the shutter button halfway, pressing this button initiates autofocus. See Chapter 8 for more information on when this option can come in handy.

- **AE Lock/FE Lock/Index/Reduce button:** As you can guess from the official name of this button, it serves many purposes. The first two are related to still-image capture functions: You use the button to lock in the autoexposure (AE) settings and to lock flash exposure (FE). Chapter 7 details both issues. When using Live View and Movie modes, this button serves only as an exposure lock.

  This button also serves two image-viewing functions: It switches the display to Index mode, enabling you to see multiple image thumbnails at once, and it reduces the magnification of images when displayed one at a time. Chapter 5 explains Playback, and Chapter 4 covers Live View and Movie modes.

- **AF Point Selection/Magnify button:** When you use certain advanced shooting modes, you can press this button to specify which of the autofocus points you want the camera to use when establishing focus. Chapter 8 tells you more. In Playback, Live View, and Movie modes, you use this button to magnify the image display (thus the plus sign in the button's magnifying glass icon). See Chapters 4 and 5 for help with that function.

- **Quick Control, or Q, button:** You press this button to enter Quick Control mode, which offers one avenue for changing critical picture-taking settings. See "Changing Settings Via the Quick Control Screen" to learn more about this camera feature.

  For expediency's sake, I refer to this button from this point forward as just the *Q button.*

- **Playback button:** Press this button to switch the camera into picture-review mode. Chapter 5 details playback features.

- **Set button and Multi-controller:** Figure 1-15 points out the Set button and surrounding controller, known as the *Multi-controller.* These buttons

team up to perform several functions, including choosing options from the camera menus.

You work the Multi-controller by pressing one of the eight tiny arrows around its perimeter. In this book, the instruction "Press the Multi-controller right" means to press the right arrow, for example.

- **Quick Control dial:** The Quick Control dial surrounds the Set button and the Multi-controller. Rotating the dial offers a handy way to quickly scroll through options and settings. It's a time-saver, so I point out when to use it as I provide instructions throughout the book.

- **Erase button:** Sporting a trash can icon (the universal symbol for delete), this button erases pictures from your memory card. Chapter 5 has specifics. In Live View and Movie modes, covered in Chapter 4, this button is involved in the focusing process.
- **Multi Function Lock switch:** You can rotate this switch up, in the direction of the arrow, to lock the Quick Control dial so that you don't accidentally move the dial and change a camera setting that you aren't intending to modify. If you want an even larger safety net, you can set things up so that the switch also locks the Main dial and the Multi-controller. The section "Setting up the Lock switch," toward the end of this chapter, has details.

Front odds and ends

On the front-left side of the camera body are a few more things of note, labeled in Figure 1-16.

- **Flash button:** Press this button to bring the camera's built-in flash out of hiding when you use the P, Tv, Av, M, B, or C exposure modes. In the other modes, whether the flash pops up depends on the flash mode setting, which I explain in Chapter 2.
- **Lens-release button:** Press this button to disengage the lens from the lens mount so that you can remove it from the camera. See the first part of this chapter for details on mounting and removing lenses.

Figure 1-16: Press the Flash button to bring the built-in flash out of hiding.

- **Speaker:** When you play movies, the sound emanates from the speaker.
- **Connection port covers:** The covers hide ports for connecting the camera to other devices; see the next section for details.

A couple of sensors and a button are on the right side of the camera, as shown in Figure 1-17:

Figure 1-17: Here's a look at the right-front doodads.

- **Remote control sensor:** When you use the optional Remote Controller RC-6 (or RC-1 or RC-5) wireless remote, the sensor detects the signal from the remote.
- **Depth-of-field preview button:** When you press this button, the image in the viewfinder offers an approximation of the depth of field that will result from your aperture setting, or f-stop. Chapter 8 provides details.
- **Red-Eye Reduction/self-timer lamp:** When you set your flash to Red-Eye Reduction mode, this lamp emits a brief burst of light prior to the real flash: the idea being that your subjects' pupils will constrict in response to the light, thus lessening the chances of red-eye. If you use the camera's self-timer feature, the lamp blinks to provide you with a visual countdown to the moment at which the picture will be recorded. See Chapter 2 for more details about Red-Eye Reduction flash mode and the self-timer function.

Connection ports

Hidden under the covers on the left side of the camera, you find inputs for connecting the camera to various devices. The left side of Figure 1-18 shows what lurks beneath the first cover; the right side of the figure shows the connections found under the second cover.

Figure 1-18: These two rubber covers conceal terminals for connecting the camera to other devices.

Starting with the left side, the available connections are

- **Microphone jack:** If you're not happy with the audio quality provided by the internal microphone when you record movies, you can plug in an external microphone here. The jack accepts a 3.5mm stereo microphone miniplug.
- **Remote-control terminal:** As an alternative to using a wireless remote controller to trigger the shutter release, you can attach the Canon Remote Switch RS-60E3 wired controller here.

  The controller is a worthwhile investment if you do a lot of long-exposure shooting (such as nighttime shots and fireworks). By using the remote control, you eliminate the chance that the action of your finger on the shutter button moves the camera enough to blur the shot, which is especially problematic during long exposures. And unlike a wireless remote, which must be positioned so that the signal reaches the sensor on the front of the camera, a wired remote can be operated from behind the camera.

- **HDMI terminal:** For playback on a high-definition television or screen, you can connect the camera via this terminal, using the optional HDMI Cable HTC-100.
- **A/V and USB connection terminal:** This connection point serves two purposes: You can connect your camera to a standard-definition television for picture playback via the optional AVC-DC400ST A/V (audio/video) cable. You use the same terminal to connect the camera to a computer via the supplied USB cable for picture downloading, a topic discussed in Chapter 6.

If you turn the camera over, you find a tripod socket, which enables you to mount the camera on a tripod that uses a quarter-inch screw, plus the battery chamber. And finally, hidden inside the battery chamber is a little flap that covers a connection for attaching the optional AC power adapter kit ACK-E6. See the camera manual for specifics on running the camera on AC power.

Ordering from Camera Menus

Camera menus are organized into the categories labeled in Figure 1-19. However, which menus appear depends on the exposure mode. For example, if you're shooting in Scene Intelligent Auto mode — represented by the green A+ on the Mode dial — you see only a handful of menus because you have limited control over camera operation in that mode. To access the full complement of menus, as shown in the figure, set the Mode dial to one of the advanced exposure modes: P, Av, Tv, M, B, or C.

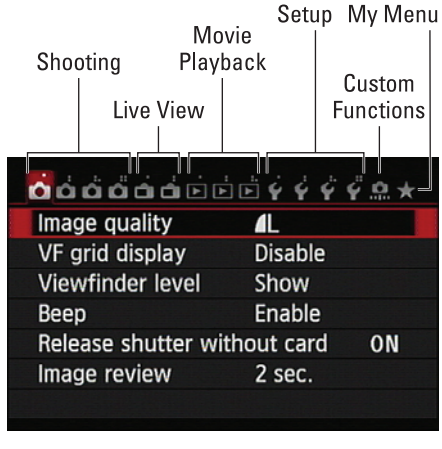


Figure 1-19: All menus appear only when you shoot in an advanced exposure mode.

Note, too, that when you set the camera to Movie mode, the two Live View menus are replaced by Movie menus 1 and 2 (not shown in the figure). The icon changes to a little movie-camera symbol to indicate the shift.

I explain all menu options elsewhere in the book; for now, just familiarize yourself with the process of navigating menus and selecting menu options:

- **Display menus.** Press the Menu button. The highlighted menu icon marks the active menu; options on that menu appear automatically on the main part of the screen. In Figure 1-19, Shooting Menu 1 is active, for example.

  The number of dots above the icon tells you the menu number — one dot for Shooting Menu 1, two dots for Shooting menu 2, and so on.

- **Select a different menu.** You have these options:

  - *Touchscreen:* Tap the menu icon.
  - *Main dial or Multi-controller:* Rotate the Main dial to or press the Multi-controller left or right to scroll through the menu icons.

  As you scroll through the menus, notice that the icons that represent the menus are color coded. The Shooting menus and Live View/Movie menu icons are red; Playback menu icons are blue; Setup menus are a lovely yellow; the Custom Functions menu is orange; and the My Menu icon is green. (Chapter 11 explains the My Menu feature, through which you can create your own, custom menu.)

- **Select and adjust a menu setting.** Again, you have a choice of techniques:

  - *Touchscreen:* Tap the menu item to display a screen of options related to that item. For example, to adjust the picture Image Quality, display Shooting Menu 1, as shown in Figure 1-19, and then tap Image Quality to display the screen shown in Figure 1-20. Tap the setting you want to use and then tap Set to return to the menu.

    Figure 1-20: Tap the option you want to use and then tap the Set icon to lock in your choice.

    In some cases, the available options appear right next to the menu item; just tap the setting you want to use to select it and return to the normal menu display. No need to tap a Set icon.

  - *Quick Control dial and Set button:* Rotate the Quick Control dial to scroll up or down to highlight the feature you want to adjust. Then press the Set button to display the available options. In most cases, you then use the Quick Control dial to highlight the desired option and press Set again. Sometimes, you may need to incorporate the Main dial into the mix; don't sweat it now — I step you through the process when it's necessary.

You can mix and match techniques, by the way: For example, even if you access a menu option via the control keys, you can use the touchscreen techniques to select a setting.

- **Exit menus and return to shooting.** Press the shutter button halfway and release it or press the Menu button again.

Navigating the Custom Functions Menu

When you select the Custom Functions menu, which is available only when the Mode dial is set to P, Tv, Av, M, B, or C, you delve into submenus containing advanced camera settings. Navigating these screens involves a few special techniques.

Initially, you see the screen shown in Figure 1-21. Some explanation may help you make sense of it:

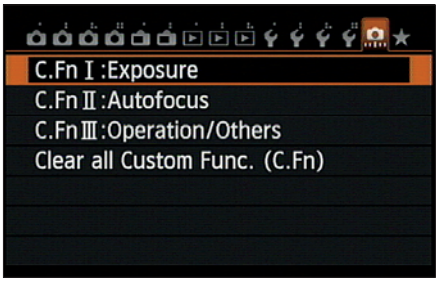


Figure 1-21: Custom Functions are organized into three categories.

- Custom Functions are grouped into three categories: Exposure, Autofocus, and Operation/Others. The fourth item on the menu enables you to reset all Custom Functions to their default settings. (This option doesn't work while the Mode dial is set to C, which represents the Custom User Mode that I detail in Chapter 11.)
- After you select a Custom Functions category, you see a menu option in that category, as shown on the left in Figure 1-22. The category number and name appear in the upper-left corner of the screen. In the figure, for example, Custom Function I (C.Fn I): Exposure, is visible.

Figure 1-22: The Custom Functions screens aren't as complex as they first appear.

- The number of the selected function appears in the upper-right corner, and its name appears to the left. In the figure, the first menu item in the Exposure category, Exposure Level Increments, is selected.
- Settings for the current function appear in the middle of the screen. Some screens contain numbered items, in which case the blue text indicates the current setting, and the default setting is represented by the number 0.

  On other screens, you can turn multiple items on or off via one screen. On these screens, a check mark next to a feature means that it's enabled.
- At the bottom of the screen, the top row of numbers represents the functions in the category, with the currently selected function indicated with a tiny horizontal bar over the number. The lower row shows the number of the current setting for each Custom Function; again, 0 represents the default. So in the figure, all the Custom Functions are currently using the default settings. (A horizontal line instead of a number means that the function is one of those that controls multiple features at a time via the checkmark system.)

To scroll from one Custom Function to the next, tap the left or right scroll arrow at the top of the screen, rotate the Quick Control dial, or press the Multi-controller left or right. When you reach the setting you want to adjust, use either of these techniques:

- **Touchscreen:** Tap the setting you want to use. (In some cases, you may need to tap the up/down arrows on the right side of the screen — not shown in the figures — to scroll the list of settings.)

  From here, the process depends on whether you're looking at a screen that enables you to chose only one option or a screen that enables you to select multiple options. In the first case, the Set icon appears, as shown on the right in Figure 1-22. Tap that icon to lock in your choice and exit the setting screen. Your selected setting appears in blue and the number at the bottom of the screen updates to show the number of the option you selected.

  For screens that contain the check mark lists, toggle the check mark next to an item on and off by tapping it. When you finish, tap OK to wrap things up or tap Cancel to exit the screen without making any changes.
- **Buttons:** Press the Set button to activate the settings. Use the Quick Control dial or press the Multi-controller up/down to move the highlight box over the option you want to use and then press the Set button. In check box lists, press Set to toggle the check mark on and off; highlight the OK symbol and press Set to finalize your changes. Highlight Cancel and press Set to exit the screen instead.

To exit the Custom Function screens, press the Menu button or tap the Menu icon in the lower right of the screen (see the left screen in Figure 1-22).

Monitoring Critical Camera Settings

Your camera offers a plethora of ways to view camera settings during shooting. Upcoming sections introduce you to these important tools; first, though, a little housekeeping is in order: You need to specify which information screens you want to display when you press the Info button, as described next.

The Info button: Choosing what the screen shows

By default, pressing the Info button during shooting gives you access to the three screens shown in Figure 1-23: the Camera Settings screen, the electronic level, and the Shooting Settings screen. Just press the button to cycle through the three screens; a fourth press turns the monitor off.

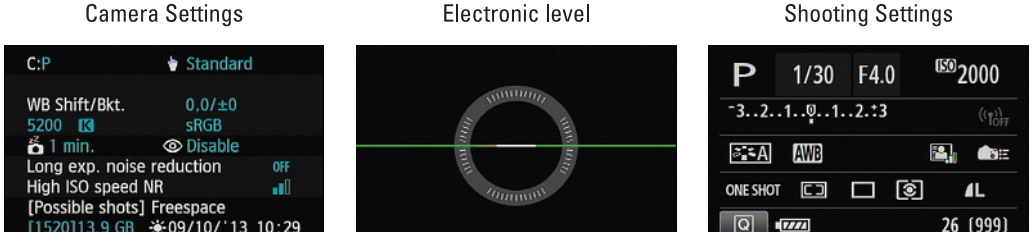


Figure 1-23: Press the Info button to cycle through these three displays.

If nothing happens when you press the button, the camera has gone to sleep to save battery power. Wake it up by pressing the shutter button halfway and then try the Info button again. If you still don't get results or one of the screens shown in the figure doesn't appear, the answer lies with the Info Button Display Options item on Setup Menu 3, which controls which screen displays are enabled.

On this menu screen, shown in Figure 1-24, a check mark indicates that the screen is enabled. If you don't care to view a particular screen, highlight its name and press Set or tap the item to toggle its check mark off. To exit the screen, tap OK or highlight it and press Set. (For now, I suggest that you leave all three items selected and work with the camera a bit before you decide which displays to deactivate, if any.)

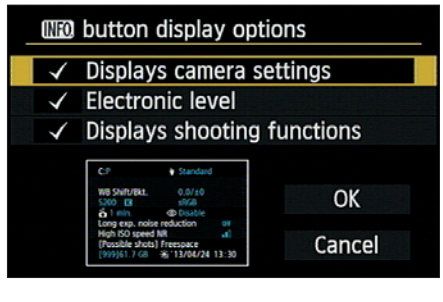


Figure 1-24: Choose which screens the Info button displays during shooting via this menu option.

The next two sections explain more about what you see in the Camera Settings and Shooting Settings displays. There's not much to tell about the electronic level: A green horizontal line through the circle (as shown in Figure 1-23) indicates that the camera is level, and a red line tells you that things are off-kilter. You also can display a level in the viewfinder; see the upcoming section "Decoding Viewfinder Data" to find out how.

If the last screen you displayed before turning the camera off (or before the camera entered sleep mode) was the Shooting Settings screen, you can bring back that screen by simply giving the shutter button a quick half-press.

Checking the Camera Settings display

The screen that appears with your first press of the Info button displays a different collection of settings depending on your exposure mode. In the advanced exposure modes (P, Tv, Av, M, B, and C), you see the data shown in Figure 1-25. In the automatic exposure modes, some of this data is dimmed because you don't have access to the related camera settings in those modes.

Figure 1-25: Press the Info button when the menus are active to view this screen.

Moving from top to bottom of the screen, here's your decoder ring to each line of data:

- **Camera User Setting mode and Touch Control setting:** If you create a custom exposure mode, as I detail in Chapter 11, you can determine which exposure mode you used to set up that custom mode by looking at the C: item on the screen. Here, the letter P indicates that the P (programmed exposure) mode was the basis of the C mode.

  On the right side of the line, you see the current Touch Control setting on Setup Menu 3, which enables you to adjust the sensitivity of the touchscreen or disable it altogether.

- **White Balance Shift/Bracketing:** This line relates to color options I cover in Chapter 8. When all the values are 0, as in the figure, White Balance Shift and White Balance Bracketing are both turned off.

- **Color Temp and Color Space:** Here are two more color settings you can explore in Chapter 8. The first value shows you the Kelvin temperature of your selected white-balance option, and the second shows you the color space, which is either sRGB or Adobe RGB.

- **Auto Power Off and Red-Eye Reduction flash mode:** The first value is linked to the Auto Power Off feature, which puts the camera to sleep after a specified period of inactivity. You can change the value via Setup Menu 2. The second symbol denotes whether Red-Eye Reduction flash is enabled; that feature is controlled via Shooting Menu 2.
- **Long Exposure Noise Reduction:** When you use a slow shutter speed (long exposure time), a grain-like defect called *noise* can creep into your picture. This screen item tells you whether you enabled the Long Exposure Noise Reduction feature, designed to combat this type of noise. See Chapter 7 for details on this option, found on Shooting Menu 4.
- **High ISO Speed NR:** Using a high ISO (light sensitivity) setting can also produce noise, so the camera offers a tool designed to combat that type of noise as well. The High ISO Speed NR item on the Camera Settings screen tells you what strength you selected for related menu item, found on Shooting Menu 4. Two bars, as in the figure, indicates that the Standard setting is in force. See Chapter 7 for more details.
- **Possible Shots/Freespace:** The blue values under this labels indicate how much storage space remains on your camera memory card. How many pictures you can fit into that space depends on the Image Quality setting you select. Chapter 2 explains this issue.
- **Date/Time/Zone:** Here you see what the camera thinks is the current date and time; you can change its clock via the Date/Time/Zone item on Setup Menu 2. The little sun symbol means that you told the camera to automatically adjust its clock to account for daylight saving time.

Viewing the Shooting Settings display

Shown in Figure 1-26, the Shooting Settings display contains the most critical photography settings, including aperture, shutter speed, and ISO. Note that the display is relevant only to regular still-photography shooting, though. When you switch to Live View mode or Movie mode, settings appear superimposed over the image on the monitor.

The data shown in the display depends on the exposure mode. The figure shows data that's included when you work in one of the advanced modes, such as P (programmed autoexposure). In the fully automatic

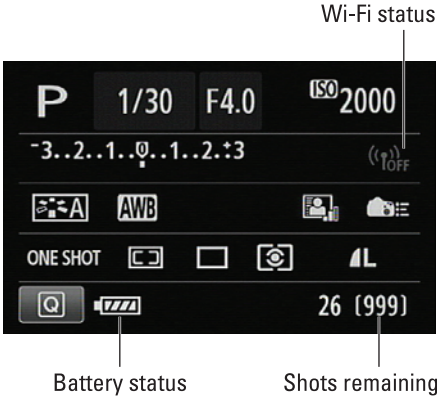


Figure 1-26: Here's a look at the Shooting Settings display as it appears in the P exposure mode.

modes as well as in Creative Auto mode, you see far fewer settings because you can control fewer settings in those modes. Figure 1-26 labels three key points of data that are helpful in any mode, however:

- **Shots remaining:** This number indicates how many more pictures can fit on your memory card at the current settings.

  Don't confuse this number with the value to the left — 26, in the figure. That second value indicates the *maximum burst frames.* This number relates to shooting in one of the Continuous capture Drive modes, where the camera fires off multiple shots in rapid succession as long as you hold down the shutter button. During shooting, picture data is stored temporarily in the camera's *memory buffer* (internal data-storage tank) until it can be recorded to the memory card. If the number drops to 0, give the camera a moment to catch up with your shutter-button finger.

- **Battery status:** A "full" battery icon like the one in the figure shows that the battery is fully charged. If the icon appears empty, you better have your spare battery handy if you want to keep shooting.

- **Wi-Fi status:** Look to this area of the screen to see whether the built-in Wi-Fi system is enabled. (Chapters 6 and 10 explain the Wi-Fi functions.)

You can use the Shooting Settings display to both view and adjust certain picture-taking settings. Here's what you need to know:

- **Turning on the Shooting Settings display:** Press the Info button until the display appears. After you take a picture, the display should reappear automatically. And, if you turn the camera off while the screen is visible, it also reappears automatically when you next fire up the camera. During shooting, you can redisplay the screen at any time by pressing the shutter button halfway *unless* you use the Info button to display one of the other displays between shots.

- **Adjusting settings:** While the Shooting Settings display is active, you can change some shooting settings by rotating the Main dial, the Quick Control dial, or by using a dial in combination with one of the camera buttons. For example, in the shutter-priority autoexposure mode (Tv, on the Mode dial), rotating the Main dial changes the shutter speed. And if you press the ISO button, you're taken to the screen where you can adjust the ISO setting.

  Additionally, if you press the Q button or tap the Q icon in the lower-left corner of the screen, you shift from the Shooting Settings screen to the Quick Control screen, which gives you access to even more camera settings. See "Changing Settings via the Quick Control Screen" for details on how this feature works.

Decoding viewfinder data

When the camera is turned on, you can view critical exposure settings and a few other pieces of information in the viewfinder. Just put your eye to the viewfinder and press the shutter button halfway to activate the display. In Live View mode, you use the LCD monitor as viewfinder; the viewfinder is disabled (ditto for Movie mode), so you don't want to be in these modes if you want to get information from the viewfinder. (See Chapter 4 for details about Live View and Movie modes.)

The viewfinder data changes depending on what action you're undertaking and what exposure mode you're using. For example, if you set the Mode dial to P (for programmed autoexposure), you see the basic set of data shown in Figure 1-27: shutter speed, f-stop (aperture setting), exposure compensation setting, and ISO setting. Additional data appears when you enable certain features, such as Flash Exposure Compensation. The black markings in the center of the screen relate to autofocusing; as with the other data, these markings depend on your autofocusing settings and exposure mode. (Depending on your autofocusing options, you also see one or more rectangles, representing focusing points, flash red briefly when you press the shutter button halfway.)

Figure 1-27: Viewing camera information at the bottom of the viewfinder.

Again, I detail each viewfinder readout as I explain your camera options throughout the book, but I want to point out now one often-confused value. You might expect that the value at the far right end of the viewfinder (34, in Figure 1-27) indicates the number of shots you can take before you memory card is full. Instead, it's the maximum burst frame number I mention in the preceding section: the number of shots you can take in one of the Continuous capture modes before the camera's memory buffer is full. Also make note of the handy battery status icon in the left corner of the display. When the symbol appears full, as in the figure, your battery is fully charged.

In addition to adjusting the viewfinder to your eyesight, as explained earlier in this chapter, you can customize the display via the following menu options:

- **VF Grid Display (Shooting Menu 1):** Enable this option to display a grid like the one shown on the left in Figure 1-28. The grid is especially helpful for checking the camera alignment with respect to objects in the scene, such as making sure the horizon line is level.

Figure 1-28: You can display a grid (left), an electronic level (center), and feature alert (right) in the viewfinder.

- **Viewfinder Level (Shooting Menu 1):** If you turn this option on, you see a little camera symbol at the bottom of the viewfinder, as shown on the middle in the figure. Horizontal lines at the edge of the camera symbol, as shown in the figure, indicate that the camera is level. Note, though, that the tool indicates only horizontal tilt and not forward/backward tilt.

  As another option, you can set the Depth-of-field Preview button to display a level that uses the viewfinder grid and autofocus points to indicate the camera orientation. You assign this function via the Custom Controls option found in the Operation/Others section of the Custom Functions menu. See Chapter 11 for more information about adjusting button functions.

- **Warnings in Viewfinder (Custom Function 3 in the Operation/Others category):** By default, the camera displays the alert symbol you see on the right in Figure 1-28 when you enable the Monochrome Picture Style or apply White Balance correction. (I explain both features in Chapter 8.) You also can choose to display the alert when you enable ISO Expansion or Spot metering, both detailed in Chapter 7. On the Custom Functions menu screen, shown in Figure 1-29, items with a check mark trigger the warning symbol. You can toggle the check mark on and off by tapping the item or by highlighting it and pressing the Set button.

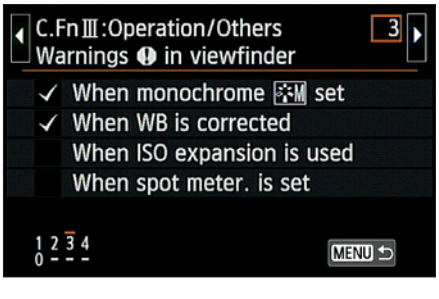


Figure 1-29: Specify when you want the warning symbol to appear via this Custom Functions menu item.

Reading the LCD panel

Another way to keep track of shooting information is through the LCD panel on top of the camera, shown in Figure 1-30. Don't see any data in the panel? The camera is probably in sleep mode; give the shutter button a half-press to wake it up.

As with the viewfinder and Shooting Settings display, the panel shows you the shots remaining value and battery status, as labeled in Figure 1-30. One other critical setting is also present: The status of the camera's built-in Wi-Fi feature. By default, it's turned off, as indicated in the figure. See Chapters 6 and 10 to find out more about this feature.

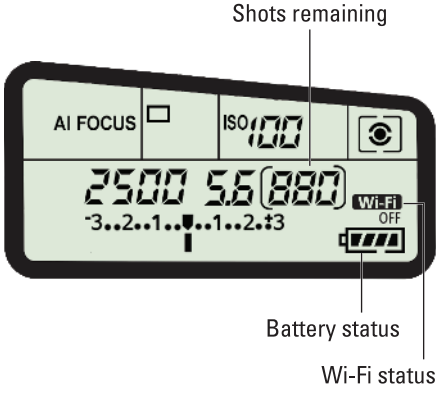


Figure 1-30: The top LCD panel is another useful situational awareness tool.

In dim lighting, you can press the little lightbulb button above the right corner of the display to illuminate the panel. If you take a picture in B (Bulb) mode, the panel won't illuminate while the shutter button is down, however.

Changing Settings via the Quick Control Screen

The Quick Control screen enables you to change certain shooting settings without using the function buttons (ISO button, Metering mode button, and so on) or menus. You can use this screen to adjust settings in any exposure mode, but the settings that are accessible depend on the mode you select.

To try it out, set the Mode dial to Tv (as shown in Figure 1-31) so that what you see on your screen looks like what you see in the upcoming figures. Then display the Shooting Settings screen (press the Info button as needed to get there) and either press the Q button or tap the Q icon in the lower-left corner of the screen.

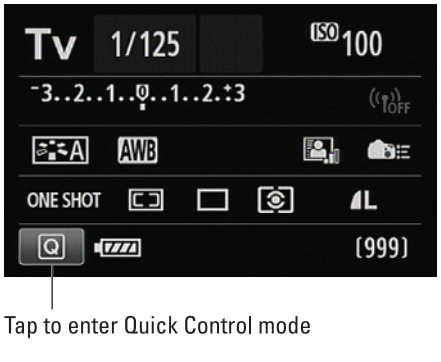


Figure 1-31: To shift to Quick Control mode from the Shooting Settings screen, tap the Q icon or press the Q button.

Either way, the screen shifts into Quick Control mode, and one of the options on the screen becomes highlighted. For example, the White Balance option is highlighted in Figure 1-32. (AWB stands for Auto White Balance.)

Figure 1-32: The active option appears highlighted.

Now take these steps to adjust a setting:

1. **Select the setting you want to adjust.**

   Either tap the setting on the touchscreen or use the Multi-controller to highlight it.

   When you first highlight some options, a little text box pops up to tell you what the setting is designed to do. Tap the x button in the upper right of the box to get rid of it. If you find these text boxes annoying, you can turn them off through the Feature Guide option on Setup Menu 3.

2. **Select the option you want to use.**

   You can use these techniques:

   - *To scroll through the available settings, rotate the Quick Control dial.* The current setting appears at the bottom of the screen. For example, in Figure 1-32, the Auto setting is selected for the White Balance option.
   - *To display all the possible settings on a single screen, tap the option or press the Set button.* For example, if you're adjusting the White Balance setting and tap the icon or press Set, you see the screen shown in Figure 1-33. Then tap the option you want to use or highlight it by rotating the Quick Control dial or using the Multi-controller. After selecting your choice, tap the return icon (the curved arrow in the lower-right corner of the screen) or press the Set button to return to the Quick Control screen.

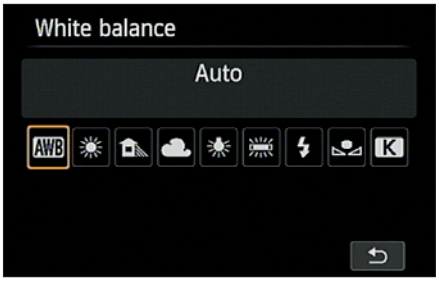


Figure 1-33: From the Quick Control screen, tap the selected item or press the Set button to display all available settings.

A few controls require a slightly different approach, but don't worry — I spell out all the needed steps throughout the book.

3. **Exit Quick Control mode and return to shooting mode using any of these techniques.**

   - Tap the Return symbol, labeled in Figure 1-32.
   - Press the Q button.
   - Press the shutter button halfway and release it.

Getting Help from Your Camera

Your camera has a built-in help system that you can consult if you can't remember what a certain option does. It's easy to use: Any time you see a screen that displays the Info/Help symbol in the lower-left corner, as shown on the left in Figure 1-34, press the Info button or tap the Info screen symbol to reveal the help screen, as shown on the right. Scroll up and down the screen by using the Quick Control dial or the Multi-controller or by tapping the up and down arrows on the right side of the screen. Return to the preceding screen by pressing the Info button or tapping the Info icon again.

Figure 1-34: If you see the Info/Help icon (left), you can tap the icon or press the Info button to display information about the selected feature (right).

Reviewing Basic Setup Options

One of the many advantages of investing in the 70D is that you can customize its performance to suit the way *you* like to shoot. Later chapters explain

options related to actual picture taking; the rest of this chapter details options related to initial camera setup.

Cruising the Setup menus

As you might expect, the majority of the basic operational options live on the Setup menus, which you can explore in the next four sections. Remember that some menus and menu options are unavailable when the camera is set to Scene Intelligent Auto, Flash Off, Creative Auto (CA), or SCN mode.

Setup Menu 1

At the risk of being conventional, start your camera customization by opening Setup Menu 1, shown in Figure 1-35.

Figure 1-35: Start your camera customization on Setup Menu 1.

Here's a quick rundown of each menu item:

- **Select Folder:** Through this option, you can select the folder on the memory card that will store your images. By default, the camera creates the initial folder for you and stores all your images there; stick with the default settings for now. When you're ready to get more sophisticated, check out Chapter 11, which explains how you can create custom folders. You might create one folder to hold your work images and one to store family photos, for example.
- **File Numbering:** This option controls how the camera names your picture files.
  - *Continuous:* This is the default; the camera numbers your files sequentially, from 0001 to 9999, and places all images in the same folder. The initial folder name is 100Canon; when you reach image 9999, the camera creates a new folder, named 101Canon, for your next 9,999 photos. This numbering sequence is retained even if you change memory cards, which helps to ensure that you don't wind up with multiple images that have the same filename.

- *Auto Reset:* The camera restarts file numbering at 0001 each time you put in a different memory card or create a new folder. This isn't a good idea, for the reason just stated.

  With both this option and Continuous, beware one gotcha: If you swap memory cards and the new card contains images, the camera may pick up numbering from the last image on the new card, which throws a monkey wrench into things. To avoid this problem, format the new card before putting it into the camera. (See the upcoming bullet point for help.)

- *Manual Reset:* Select this setting if you want the camera to begin a new numbering sequence, starting at 0001, for your next shot. The camera then returns to whichever mode you previously used (Continuous or Auto Reset).

Auto Rotate: If you enable this feature, your picture files include a piece of data that indicates whether the camera was oriented in the vertical or horizontal position when you shot the frame. Then, when you view the picture on the camera monitor or on your computer, the image is automatically rotated to the correct orientation.

To automatically rotate images both in the camera monitor and on your computer monitor, stick with the default setting. In the menu, this setting is represented by On followed by a camera icon and a monitor icon, as shown in Figure 1-35. If you want the rotation to occur just on your computer and not on the camera, select the second On setting, which is marked with the computer monitor symbol but not the camera symbol. To disable rotation for both devices, choose the Off setting.

Note, though, that the camera may record the wrong orientation data for pictures that you take with the camera pointing directly up or down. Also, whether your computer can read the rotation data in the picture file depends on the software you use; the programs bundled with the camera can perform the auto rotation.

Format Card: The first time you insert a new memory card, use this option to *format* the card, a maintenance function that wipes out any existing data on the card and prepares it for use by the camera.

If you used your card in another device, such as a digital music player, be sure to copy those files to your computer before you format the card. You lose *all* data on the card when you format it, not just picture files. Also, some cards, including Eye-Fi cards, hold software that you need to install on your computer before you format.

When you choose the Format option, you can opt to perform a normal card formatting process or a *low-level* formatting. The latter gives your memory card a deeper level of cleansing than ordinary formatting and thus takes longer to perform. Normally, a regular formatting will do.

- **Eye-Fi Settings:** If an Eye-Fi memory card is installed, this menu option appears to enable you to control the wireless transmission between the camera and your computer. When no Eye-Fi card is installed, the menu option is hidden, as it is in Figure 1-35. I don't cover Eye-Fi cards in this book, but if you want more details about the product, visit `www.eye.fi`.

Setup Menu 2

Setup Menu 2, shown in Figure 1-36, offers these options:

Figure 1-36: Setup Menu 2 offers more ways to customize basic operations.

- **Auto Power Off:** To help save battery power, your camera automatically powers down after a certain period of inactivity. By default, the shutdown happens after 1 minute, but you can change the delay to as long as 30 minutes. You can disable auto shutdown altogether by selecting the Disable setting, but even if you do, the monitor turns off after 30 minutes.
- **LCD Brightness:** This option enables you to make the camera monitor brighter or darker. I show you how to take this step using the touchscreen in the section "Using the Touchscreen," earlier in this chapter, so I won't repeat all the details here.

If you take this step, what you see on the display may not be an accurate rendition of exposure. So keeping the brightness at its default center position is a good idea unless you're shooting in very bright or dark conditions. As an alternative, you can gauge exposure when reviewing images by displaying a Brightness histogram, a tool that I explain in Chapter 5.

- **LCD Off/On BTN:** By default, the Shooting Settings screen remains displayed on the monitor even if you press the shutter button halfway, and you must press the Info button to turn off the display. If you prefer to have the monitor go dark when you press the shutter button, change this setting from Remains On to Shutter Button.
- **Date/Time/Zone:** When you turn on your camera for the very first time, it automatically displays this option and asks you to set the date, time, and time zone. You also can specify whether you want the clock to update automatically to accommodate daylight saving time (accomplish this via the little sun symbol).

  Keeping the date/time accurate is important because that information is recorded as part of the image file. In your photo browser, you can then see when you shot an image and, equally handy, search for images by the date they were taken. Chapter 5 shows you where to locate the date/time data when browsing your picture files.

- **Language:** Set the language of text displayed on the camera monitor. Screens in this book display the English language, but I find it entertaining on occasion to hand our camera to a friend after changing the language to, say, Swedish. I'm a real yokester, yah?

  If you change your language (intentionally or by accident) to something freaky, you'll appreciate the little speech bubble icon next to the Language setting for those times when you can't read the word for *Language*.
- **GPS Device Settings:** If you attach the optional GPS unit (Canon GP-E2), you can access device settings through this menu option.

Setup Menu 3

Continuing to Setup Menu 3, you find the following goodies, shown in Figure 1-37.

- **Video System:** This option is related to viewing your images and movies on a television. Select NTSC if you live in North America or other countries that adhere to the NTSC video standard; select PAL for playback in areas that follow that code of video conduct.

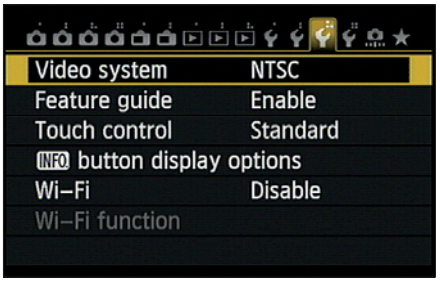


Figure 1-37: Head to Setup Menu 3 to enable or disable the Wi-Fi functions.

- **Feature Guide:** When this option is enabled and you switch exposure modes (via the Mode dial) or choose certain other camera options, notes appear on the monitor to explain the feature. The guide screens disappear after a few seconds automatically or, in some cases, after you tap the little x in the upper right of the message box.

  Although the Feature Guide screens are helpful at first, having them appear all the time is a pain after you get familiar with your camera. So I leave this option set to Disable — and for the sake of expediency in this book, I assume that you keep the option turned off as well. (If not, just don't be concerned when my instructions don't mention the screens in the course of showing you how to work the camera.)

- **Touch Control:** This setting controls the touchscreen interface. For details, flip back to the section "Using the Touchscreen."

- **Info Button Display Options:** As I cover in the earlier section "The Info button: Choosing what the screen shows," this setting determines which information screens appear when you press the Info button during shooting.

- **Wi-Fi:** By default, the Wi-Fi interface is turned off. When you're ready to take advantage of the Wi-Fi features, set the option to Enable. Note that movie recording is disabled when the Wi-Fi feature is turned on.

- **Wi-Fi Function:** Here's the route to the various wireless connectivity options built into your camera; Chapters 6 and 10 get you started on using these features.

Setup Menu 4

Setup Menu 4 contains the offerings shown in Figure 1-38. But note that you get access to all the menu items only when the Mode dial is set to one of the advanced exposure modes (P, Tv, Av, M, B, or C).

Figure 1-38: You can set the camera back to its default settings by choosing Clear All Camera Settings on Setup Menu 4.

- **Sensor Cleaning:** Choose this option to access features related to the camera's internal sensor-cleaning mechanism. These work like so:

  - *Auto Cleaning:* By default, the camera's sensor-cleaning mechanism activates each time you turn the camera on and off.

This process helps keep the image sensor — which is the part of the camera that captures the image — free of dust and other particles that can mar your photos. You can disable this option, but it's hard to imagine why you would choose to do so.

- *Clean Now:* Select this option and press Set to initiate a cleaning cycle. For best results, set the camera on a flat surface during cleaning.
- *Clean Manually:* In the advanced exposure modes, you can access this third option, which prepares the camera for manual cleaning of the sensor. I don't recommend this practice; sensors are delicate, and you're really better off taking the camera to a good service center for cleaning.

- **Battery Info:** Select to see battery information. There's more here than you might think: You can see what type of battery you have in the camera (or if you're connected to the power grid), how much power you have left (as a percentage), the number of photos you've taken on this battery (movie recordings aren't counted), and the battery's recharge performance. For this last feature, three green bars mean that the battery is working fine; two bars means that recharging is slightly below par; and one red bar means that you should invest in a new battery as soon as possible.
- **Certification Logo Display:** You have my permission to ignore this screen, which simply displays logos that indicate a couple electronics-industry certifications claimed by the camera. You can find additional logos on the bottom of the camera.
- **Custom Shooting Mode (C Mode):** You can create your very own exposure mode through this option, which I detail in Chapter 11.
- **Clear All Camera Settings:** Choose this option to restore the default shooting settings. You can't perform this task while the Mode dial is set to C. Also be aware that not all camera settings are reset when you choose this menu option; the camera manual has a list of items that remain unchanged. Look in the "Before You Start" section of the electronic manual provided on the CD in your camera box.

  If you just want to restore the original Custom Functions settings, instead open the Custom Functions menu and choose Clear All Custom Functions.
- **Copyright Information:** If you want to include copyright information in the image *metadata* (invisible text data that gets stored with the image file), this option gets the job done. Chapter 10 provides instructions.

Firmware Version: This screen tells you the version number of the camera firmware (internal operating software). When you select the menu option, you see a firmware item both for the camera and for your lens (assuming that you use a compatible Canon lens). At the time of publication, the current firmware version was 1.1.1 for the camera and 1.5.0 for the 18–135mm kit lens.

Keeping your firmware up to date is important, so visit the Canon website (`www.canon.com`) regularly to find out whether your camera sports the latest version. Follow the instructions given on the website to download and install updated firmware if needed.

Setting up the Lock switch

After working your way through the Setup menus, head for the Custom Functions menu and verify the status of the Multi Function Lock option, found in the Operation/Others section of the menu and shown in Figure 1-39. This setting is critical because it determines the results of moving the Lock switch on the back of the camera to the locked position.

Figure 1-39: This Custom Function determines what control is affected by the Lock switch on the back of the camera.

By default, the switch only affects the Quick Control dial. When the dial is unlocked, rotating it while using the M exposure mode changes the aperture setting (f-stop), and spinning it while using the Av, Tv, or P mode changes the amount of Exposure Compensation. (I explain these exposure controls in Chapter 7.) If you set the switch to the locked position, rotating it has no effect on those settings, a *Lock* alert appears in the Shooting Settings display, and an L appears in the viewfinder and LCD panel to remind you that the dial is locked. You can still use the dial while navigating menus, selecting other camera settings, and while reviewing pictures.

If you prefer, you can also set the switch to lock the Main dial and the Multi-controller so that an errant movement doesn't accidentally adjust a camera setting. A check mark next to the control's name on the menu indicates that the lock will be in force; toggle the check mark on and off by tapping the item or highlighting it and pressing the Set button. (See the earlier section "Navigating the Custom Functions Menu" if you need help.)

While using this book, stick with the default setup, shown in the figure. Otherwise, my instructions won't work.

Taking two final setup steps

Shooting Menu 1, shown in Figure 1-40, offers two more basic setup options:

Figure 1-40: I recommend disabling the Release Shutter without Card option.

- **Beep:** By default, your camera beeps after certain operations, such as after it sets focus when you use autofocusing. If you're doing top-secret surveillance and need the camera to hush up, set this option to Disable.

  This option also controls whether the touchscreen emits a sound with each tap. If you want to hear the focusing and other operational beeps but not the touchscreen sounds, choose the Touch to Silence option instead of Enable.

- **Release Shutter without Card:** Setting this option to Disable prevents shutter button release when no memory card is in the camera. If you turn on the option, you can take a picture and then review the results for a few seconds in the camera monitor. The image isn't stored anywhere, however; it's only temporary.

  If you're wondering about the point of this option, it's designed for use in camera stores, enabling salespeople to demonstrate cameras without having to keep a memory card in every model. Unless that feature somehow suits your purposes, keep this option set to Disable.