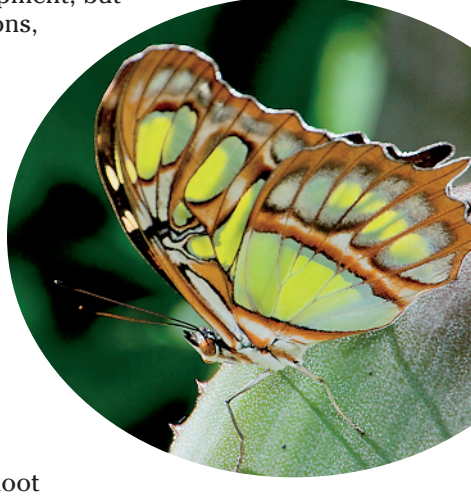
1

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 many people, shooting for the first time with an SLR (single-lens reflex) camera 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 get comfortable with your T4i/650D. Among other things, I show you how to attach and remove lenses, use the touchscreen monitor, and view and adjust camera settings. You'll also get an introduction to the camera's external controls as well as my advice about certain camera setup options.

Getting Comfortable with Your Lens

One of the biggest differences between a point-and-shoot camera and an SLR camera is the lens. With an SLR, you can swap lenses to suit different photographic needs, going from an extreme close-up lens to a super-long telephoto, for example. Additionally, an SLR lens has a movable focusing ring that lets you focus manually instead of relying on the camera's autofocus mechanism.

Of course, those added capabilities mean that you may need some help to take full advantage of your lens. To that end, the next several sections explain the process of attaching, removing, and using this critical part of your camera.

Attaching a lens

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, 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 that if you buy a Canon lens other than one of the two sold as a bundle with the camera, 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 Rebel T4i/650D kit are *IS* lenses, which means that they offer *image stabilization,* a feature you can explore a few sections from here. Second, the 18–135mm kit lens also carries 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.

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

1. **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 simply a marker that tells you where to align the lens with the camera body when connecting the two. Your camera has two of these markers, one red and one white, as shown in Figure 1-1.

   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.

   If you buy a non-Canon lens, check the lens manual for help with this step.

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

   The lens also has a mounting index. Figure 1-1 shows the one that appears on the 18–55mm kit lens. On the 18–135 STM kit lens, the index marker looks the same, but if you buy a different lens, check the lens instruction manual.

5. **Keeping the mounting indexes aligned, position the lens on the camera's lens mount.**
6. **Turn the lens in a clockwise direction until the lens clicks into place.**

   In other words, turn the lens toward the lens-release button, as indicated by the arrow in Figure 1-1.

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

Always attach (or switch) lenses in a clean environment to reduce the risk of getting dust, dirt, and other contaminants inside the camera or lens. For added safety, point the camera slightly down when performing this maneuver; doing so helps prevent any flotsam in the air from being drawn into the camera by gravity.

Removing a lens

To detach a lens from the camera body, take these steps:

1. **Locate the lens-release button on the front of the camera, labeled in Figure 1-1.**
2. **Grip the rear collar of the lens.**

   In other words, hold on to the stationary part of the lens that's closest to the camera body.
3. **Press the lens-release button while turning the lens toward the shutter-button side of the camera.**

   You can feel the lens release from the mount at this point. Lift the lens off the mount to remove it.
4. **Place the rear protective cap onto the back of the lens.**

   If you aren't putting another lens on the camera, cover the lens mount with the protective cap that came with your camera, too.

Zooming in and out

If you bought a zoom lens, it sports a *zoom ring*. Figure 1-2 shows you the location of the zoom ring on the two kit lenses; for other lenses, see your lens user guide. With the kit lenses, just rotate the zoom ring to zoom in and out. A few zoom lenses use a push-pull motion to zoom instead.

Canon USA

Figure 1-2: Here's a look at the two kit lenses.

The numbers around the edge of the zoom ring, by the way, represent *focal lengths*. Chapter 8 explains focal lengths in detail. In the meantime, just note that the number that's aligned with the white focal-length indicator, labeled in Figure 1-2, represents the current focal length.

Shifting from autofocus to manual focus (and back)

Your Rebel T4i/650D offers an excellent autofocusing system. With some subjects, however, autofocusing can be slow or impossible, which is why your camera also offers manual focusing. When using the viewfinder to compose photos, make the shift from auto to manual focus as follows:

1. **Set the AF/MF switch on the side of the lens to the MF position.**

   This switch sets the focus operation to either auto (AF) or manual (MF).

2. **Look through the viewfinder and twist the focusing ring until your subject comes into focus.**

   I labeled the focusing ring as it appears on the kit lenses in Figure 1-2. If you use another lens, the focusing ring may be located elsewhere, so check your lens manual.

   If you have trouble focusing, you may be too close to your subject; every lens has a minimum focusing distance. You also may need to adjust the viewfinder to accommodate your eyesight; the section "Adjusting the Viewfinder Focus" shows you how to take this step.

To return to autofocusing, just set the lens switch back to the AF position. In Movie mode (power switch set to the movie-camera icon) or Live View mode (when you use the monitor to compose images), turn the camera off before setting the lens switch to the MF position. This step is necessary to interrupt the continuous autofocusing system that's available for movie and Live View shooting. (Chapter 4 details Movie and Live View modes.)

Chapter 8 provides more details about focusing. In the meantime, note this important bit of business about the 18–135mm STM kit lens: 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; give the lens a brief moment to wake up fully before you take a picture. (Please look in your camera manual for complete information about using this lens, which I don't have room to provide in this book.)

Using an IS (image stabilizer) lens

Both the kit lenses sold with the Rebel T4i/650D camera 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, image stabilization can have detrimental effects because 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 Stabilizer switch (shown in Figure 1-2) 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.

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. Chapter 8 offers more tips for blur-free shots and provides an explanation of focal length.

Getting Familiar with the Monitor

Perched on the top-right edge of the viewfinder is a tiny black knob, officially known as a *dioptric adjustment control*, that enables you to adjust the magnification of the viewfinder to your eyesight. I highlighted the knob on the left in Figure 1-3.

Adjusting the viewfinder to your eyesight is critical: If you don't, scenes that appear out-of-focus through the viewfinder may actually be sharply focused through the lens, and vice versa. Follow these steps to adjust your viewfinder:

1. **Remove the lens cap.**
2. **Look through the viewfinder and aim the lens at a plain surface.**

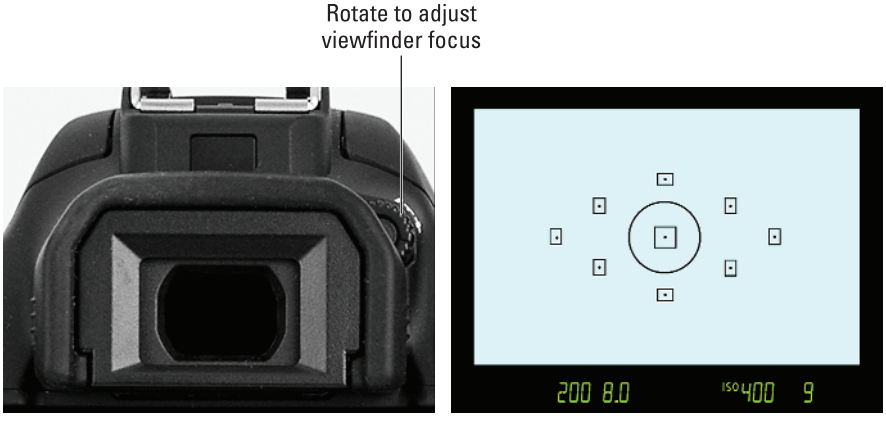


Figure 1-3: Roll the little knob to set the viewfinder focus for your eyesight.

3. **Concentrate on the markings in the center of the viewfinder or the exposure data at the bottom of the viewfinder.**

   In the viewfinder, the little squares with dots inside represent autofocus points, which you can find out about in Chapter 8; the circle that surrounds the center autofocus point is related to exposure metering, discussed in Chapter 7.

   If you don't see any exposure data at the bottom of the screen, press the shutter button halfway and release it to wake up the exposure meter.

4. **Rotate the dioptric adjustment knob until the viewfinder markings and exposure data appear sharp.**

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. This accessory, which you pop onto the eyepiece, enables further adjustment of the viewfinder. 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 T4i/650D 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 1-4, 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 1-4. 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 1-5.

Figure 1-4: Here you see just two of the possible monitor positions.

Because playing with the monitor is no doubt one of the first things you did after unpacking your new camera, I won't waste space here 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:

Figure 1-5: You also can unlock the monitor from the body and then rotate the screen to get the best view of things.

- **Don't force things.** Although the monitor assembly is sturdy, treat it with respect as you adjust the screen position. 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 — you could break the monitor. Instead, rely on that feeling of resistance to remind you to turn the screen the other way.
- **Watch the crunch factor.** When positioning the monitor back into the camera (whether face in or face out), take care that nothing gets in the way. Use a lens brush or soft cloth to clean the monitor housing on the camera back so there's nothing in the way that could damage the monitor.

- **Clean smart.** To clean the screen, use only the special cloths and cleaning solutions made for this purpose. (You can find them in any camera store.) *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.

- **Live View photography has some drawbacks.** *Live View* is the feature that enables you to compose your photos using the monitor rather than the viewfinder. You switch the feature on and off by pressing the Live View button, which is found to the right of the viewfinder and looks like the icon shown in the margin here. The live display is also engaged when you set the camera to Movie mode (by moving the power switch to the movie-icon position).

  Live View may feel more comfortable than using the viewfinder if you're stepping up to the T4i/650D from a point-and-shoot camera that didn't have a viewfinder. But the monitor is one of the biggest drains on battery power, and autofocusing in Live View mode is slower than when you use the viewfinder. For these reasons and a few others you can explore in Chapter 4, I stick with the viewfinder for most photography and reserve the live display for movie recording. (You can't use the viewfinder in Movie mode.) Whatever you decide, note that if Live View or movie mode is enabled and you orient the monitor to face the same direction as the lens, the monitor may display a mirror image of your subject.

Using the Touchscreen

Just as cool as the monitor's flexibility is its touchscreen interface. You can choose menu commands, change picture settings, and scroll through your pictures by touching one or two fingers to the screen, just as you can with a tablet, smart phone, or other touchscreen device. During Live View shooting, you can even touch the screen to select a focus point and trigger the shutter release.

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 gently 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 1-6. 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 1-6, 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.

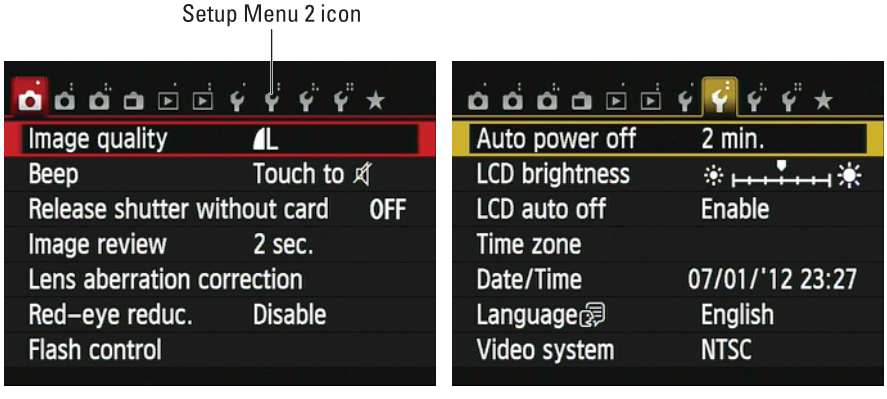


Figure 1-6: Tap the Setup Menu 2 icon to display that menu.

By "tap gently," I mean *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, such as the kind people adhere to their smart phones. Doing so can reduce the monitor's responsiveness to your touch.

- **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 the LCD Brightness item, shown on the left in Figure 1-7. Now you see 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 — the default brightness setting is best for giving you an accurate indication of picture brightness.

  On this particular screen, you also see triangles at either end of the scale. You can also 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.

- **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.

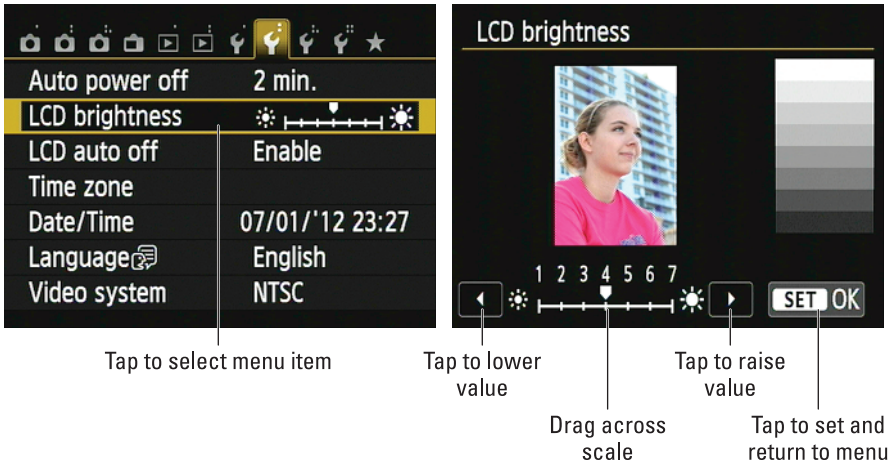


Figure 1-7: Tap the LCD Brightness item (left) and then drag left or right across a scale to adjust the setting (right).

You can control two aspects of touchscreen behavior:

- **Enable/disable the touchscreen:** By default, the touchscreen is enabled and ready to respond to your touch. But if you want to turn it off, you can do so via the Touch Control option on Shooting Menu 3. Tap the icon for Setup Menu 3, highlighted on the left in Figure 1-8, tap Touch Control to display the second screen in the figure, and then tap Disable.

  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 use the up/down *cross keys* — the buttons above and below the Set button, respectively — to highlight Touch Control. Press the Set button, use the cross keys to highlight Enable, and press the Set button again.

- **Drive people crazy with touchscreen sounds:** Here's an option that you can use when you're in the mood to annoy people within earshot of your camera: You can tell the camera to emit a little "boop" sound every time you tap a touch-controlled setting. To do so, visit Shooting Menu 1, and look for the Beep setting, shown in Figure 1-9. The option that keeps the boop silent is Touch to Silence — silence indicated by a little speaker with a slash through it — as shown in the figure. Change the option to Enable to turn on the sound effect. The Disable setting turns off both the touchscreen sound and the normal beep tone that occurs when the camera finds its focus point.

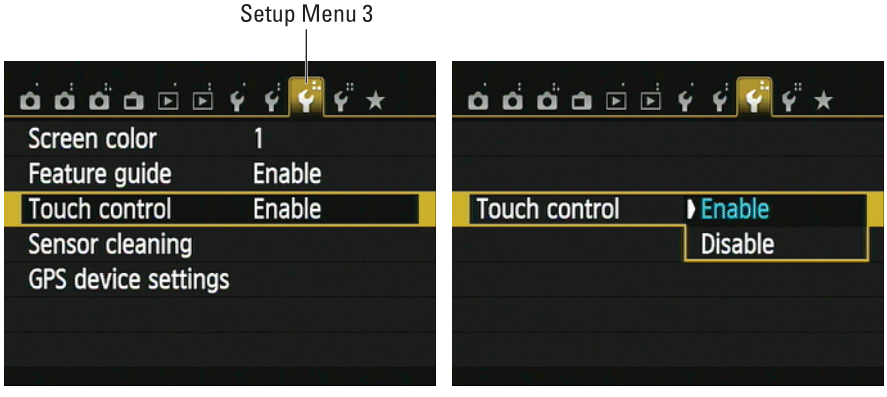


Figure 1-8: Enable or disable touchscreen control through this menu item.

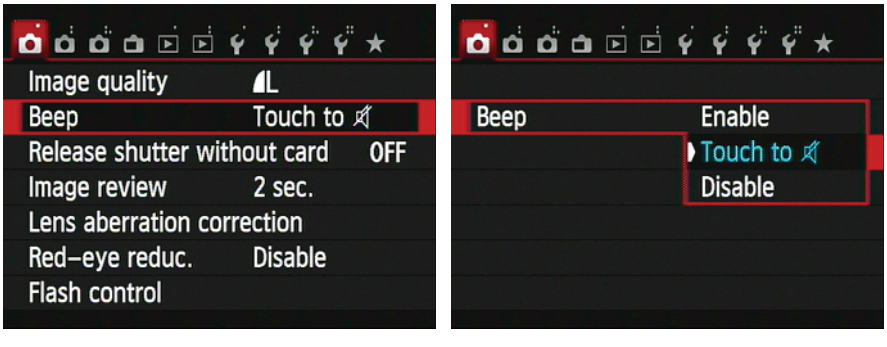


Figure 1-9: Set the Beep option to Touch to Silence to prevent the camera from making a sound when you tap a touch-controlled item.

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 1-10 and 1-11. You can also use *high-capacity* SD cards, which carry the label SDHC and come in capacities ranging from 4–32GB (gigabytes), and *extended-capacity* (SDXC) cards, which offer capacities higher than 32GB.

In addition to using regular SD cards, you 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 themselves 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`.

Figure 1-10: Insert the card with the label facing the camera back.

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 1-10. 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 1-10. 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 1-10. 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 1-11: Avoid touching the gold contacts on the card.

Do you need high-speed memory cards?

Secure Digital (SD) memory cards are rated according to *speed classes:* Class 2, Class 4, Class 6, and Class 10, with the number indicating the minimum number of *megabytes* (units of computer data) that can be transferred per second. A Class 2 card, for example, has a minimum transfer speed of 2 megabytes, or MB, per second. In addition to these speed classes, The Powers That Be recently added a new category of speed rating, UHS, which stands for Ultra High Speed. UHS cards also carry a number designation; at present, there is only one class of UHS card, UHS 1. These cards currently offer the fastest performance. Your camera supports this new card speed.

Of course, with the increase in card speed comes a price increase, which leads to the question: How much speed do you really need? Well, for movie recording, Canon recommends a Class 6 card at minimum — the faster data-transfer rate helps ensure smooth movie-recording and playback performance. For still photography, users who shoot at the highest resolution or prefer the CR2 (Raw) file format may also gain from high-speed cards; both options increase file size and (thus) the time needed to store the picture on the card. (See Chapter 2 for details.)

As for picture downloading, how long it takes files to shuffle from card to computer depends not just on card speed, but also on the capabilities of your computer and, if you use a memory card reader to download files, on the speed of that device.

Long story short, if you want to push your camera to its performance limits, a high-speed card is worth the expense, especially for video recording. But if you're primarily interested in still photography or you already own slower-speed cards, try using them first — you may find that they're more than adequate for most shooting scenarios.

- **Handling cards:** Don't touch the gold contacts on the back of the card. (See the right card in Figure 1-11.) 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 1-11, 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.

Exploring External Camera Controls

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 discuss all these camera functions in detail; the next few sections provide just a basic map to the external controls.

Topside controls

Your virtual tour begins on the top of the camera, shown in Figure 1-12.

The items of note here are

- **On/Off/Movie mode switch:** Okay, you probably already figured the first two points of this switch out, but what may not be clear is that setting the switch to the little movie-camera icon both turns on the camera and sets it to movie-recording mode. Set the switch to On for still photography.

Figure 1-12: Here's a guide to controls found on top of the camera.

- **Mode dial:** Rotate this dial to select an *exposure mode,* which determines whether the camera operates in fully automatic, semi-automatic, or manual exposure mode when you take still pictures. Chapter 2 provides an overview of the exposure modes; the basic auto-everything mode is represented by the green A+ (for Scene Intelligent Auto) setting on the dial.
- **Main dial:** You use this dial when selecting many camera settings. (Specifics are provided throughout the book.) In fact, this dial plays such an important role that you'd think it might have a more auspicious name, but Main dial it is.
- **ISO button:** This button provides access to the ISO setting, which determines how sensitive the camera is to light. Chapter 7 details this critical exposure setting.

- **Shutter 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 can 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.
- **Flash hot shoe:** A *hot shoe* is a connection for attaching an external flash head. The contacts on the shoe are covered by a little black insert when you take the camera out of its shipping box; when you're ready to attach a flash head, remove the insert to reveal the contacts, as shown in Figure 1-12.

- **Focal plane indicator:** Should you need to know the exact distance between your subject and the camera, the *focal plane indicator* labeled in Figure 1-12 is key. This mark indicates the plane at which light coming through the lens is focused onto the negative in a film camera or the image sensor in a digital camera. 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.
- **Microphone:** The two clusters of holes just forward of the hot shoe lead to the camera's internal microphone. See Chapter 4 for details about choosing microphone settings for movie recording.

Back-of-the-body controls

Traveling over the top of the camera to its back, you encounter a smorgasbord of controls, including the knob you use to adjust the viewfinder to your eyesight, as discussed earlier in this chapter. Figure 1-13 gives you a look at the layout of the backside controls.

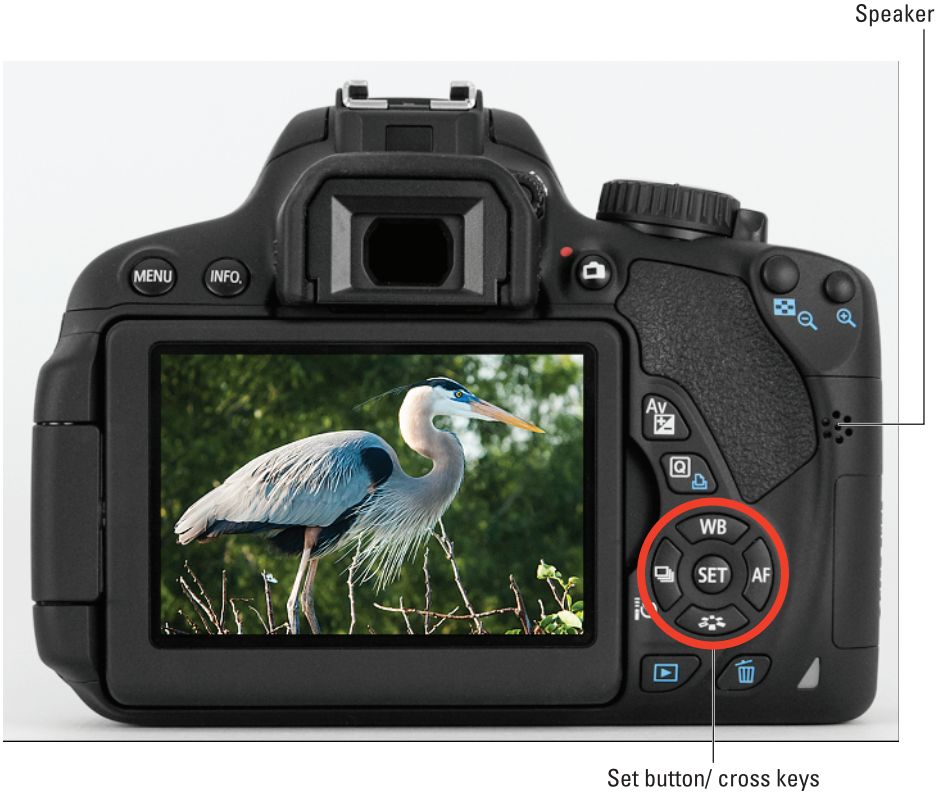


Figure 1-13: Having lots of external buttons makes accessing the camera's functions easier.

Throughout this book, pictures of some buttons appear in the margins to help you locate the button being discussed. So even though I provide the official names in the following list, don't worry about getting all those straight right now. Note, however, that some buttons have multiple names because they serve multiple 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 you're to press.

With that preamble out of the way, it's time to explore the camera back, starting at the top-right corner and working westward (well, assuming that your lens is pointing north, anyway):

- **AF Point Selection/Magnify button:** When you use certain advanced shooting modes, you press this button to specify which of the nine autofocus points you want the camera to use when establishing focus. Chapter 8 tells you more. In Playback mode, covered in Chapter 5, you use this button to magnify the image display (thus the plus sign in the button's magnifying glass icon).

- **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.

  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 picture playback.

- **Speaker:** When you play a movie that contains an audio track, the sound comes wafting through these little holes, which lead to the camera's internal speaker.

- **Live View/Movie-record button:** You press this button to shift the camera into Live View mode and, when shooting movies, to start and stop recording. For the latter, you must first set the On/Off switch to the Movie position.

- **Exposure Compensation/Aperture button:** When you work in M (manual) exposure mode, you press this button and rotate the Main dial to choose the aperture setting, also known as the *f-stop.* In the other advanced exposure modes (P, Tv, and Av), you instead use the button and dial to apply *Exposure Compensation,* a feature that enables you to adjust the exposure selected by the camera's autoexposure mechanism. Chapter 7 discusses both issues.

- **Quick Control/Direct Print button:** You press this button to display the Quick Control screen, which gives you one way to adjust picture settings. (See "Taking advantage of the Quick Control screen," later in this chapter, for help.) As for the Direct Print button, it's used to print directly from the camera to a compatible printer. Chapter 11 covers this function.

- **Set button and cross keys:** Figure 1-13 points out the Set button and the four surrounding buttons, known as *cross keys.* These buttons team up to perform several functions, including choosing options from the camera menus. You use the cross keys to navigate through menus and then press the Set button to select a specific menu setting. You can find out more about ordering from menus later in this chapter.

  In this book, the instruction "Press the left cross key" means to press the one to the left of the Set button, "press the right cross key" means to press the one to the right of the Set button, and so on.

The cross keys and the Set button also have nonmenu responsibilities, as follows:

- *When using the Quick Control screen, press the Set button to access options for the highlighted function.* Again, I provide full details on the Quick Control screen later in this chapter.
- *Press the right cross key to adjust the AF mode.* This option controls one aspect of the camera's autofocus behavior, as outlined in Chapter 8.
- *Press the left cross key to change the Drive mode.* The Drive mode settings enable you to switch the camera from single-frame shooting to continuous capture or self-timer/remote-control shooting. See Chapter 2 for details.
- *Press the down cross key to change the Picture Style.* Chapter 8 explains Picture Styles, which you can use to adjust color, contrast, and sharpness of your pictures.
- *Press the up cross key to change the White Balance setting.* The White Balance control, explained near the end of Chapter 8, enables you to ensure that your photo colors are accurate and not biased by the color of the light source.

You can customize the function of the Set button; Chapter 10 explains how. But while you're working with this book, stick with the default setup, just described. Otherwise the instructions I give won't work. Also note that in Live View and Movie mode, the cross keys don't perform the aforementioned functions; you adjust the settings in other ways, as outlined in Chapter 4.

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

- **Erase button:** Sporting a trash can icon, the universal symbol for delete, this button lets you erase pictures from your memory card during playback. Chapter 5 has specifics.
- **Info button:** In Live View, Movie, and Playback modes, pressing this button changes the picture-display style, as outlined in Chapters 4 and 5, respectively.

  During shooting, you can press the Info button to turn off the monitor and to switch from the Shooting Settings display to the Camera Settings display. (Both displays are explained in detail later in this chapter.)
- **Menu button:** Press this button to access the camera menus, described in more detail later in this chapter.

Front odds and ends

On the front of the camera, you find the following features, labeled in Figure 1-14:

- **Flash button:** Press this button to use the built-in flash in the advanced exposure modes (P, Tv, Av, and M). See Chapter 2 for a flash primer; flip to Chapters 7 and 9 for more tips on flash photography.
- **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.
- **Depth-of-Field Preview button:** When you press this button, the image in the viewfinder (or, in Live View mode, on the monitor) offers an approximation of the depth of field that will result from your selected aperture setting, or f-stop. *Depth of field* refers to how much of the scene will be in sharp focus. Chapter 8 provides details.

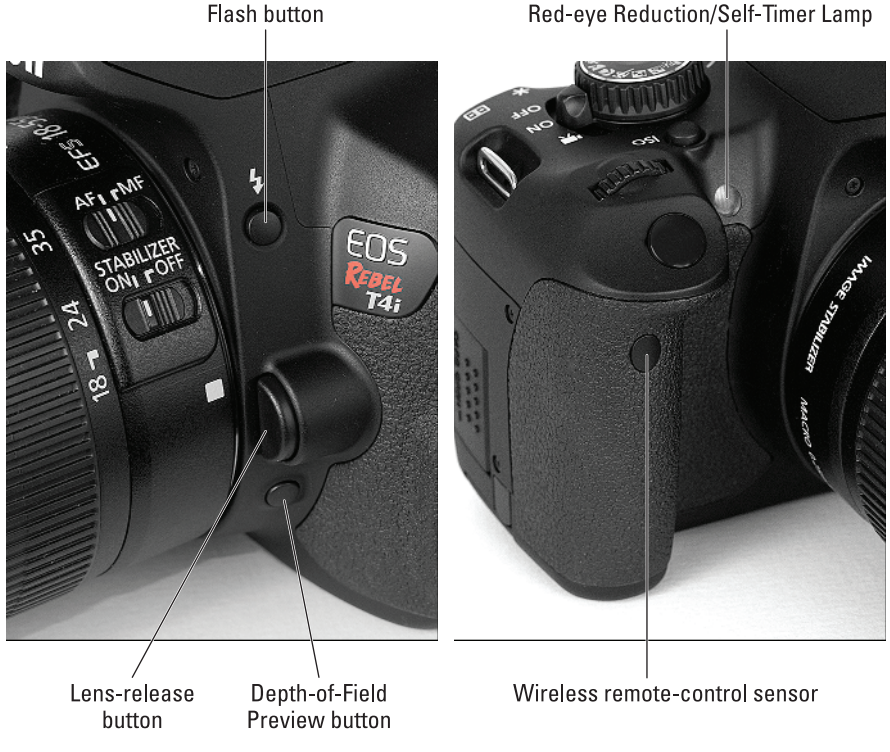


Figure 1-14: Press the Flash button to bring the built-in flash out of hiding when you shoot in the P, Tv, Av, or M exposure modes.

- **Red-Eye Reduction/Self-Timer Lamp:** When you set your flash to Red-Eye Reduction mode, this little lamp (see the right side of Figure 1-14) 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 lights during the countdown period before the shutter is released. See Chapter 2 for more details about Red-Eye Reduction flash mode and the self-timer function.
- **Remote control sensor:** Labeled in the right image in Figure 1-14, the sensor can pick up the signal from the optional Canon wireless remote-control unit. The part number is Canon RC-6, and the remote sells for about $30.

Connection ports

Hidden under the two little covers on the left side of the camera, you find inputs for connecting the camera to various devices. The left side of Figure 1-15 shows you what lurks beneath the first cover; the right side of the figure shows the connections found under the second cover. Starting with the left side, the available connections are

- **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 currently sells for about $30 and is a very 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 (which is why it's my remote controller of choice).
- **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. See Chapter 4 for all things movie-related.
- **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, which sells for about $25. Chapter 5 explains this option. You use the same terminal to connect the camera to a computer via the supplied USB cable for picture downloading (although using a memory-card reader is usually a better alternative, for reasons you can explore in Chapter 6).

Figure 1-15: These two rubber covers conceal terminals for connecting the camera to other devices.

- **HDMI terminal:** For picture or movie playback on a high-definition television or screen, you can connect the camera via this terminal, using an optional HDMI male to mini-C cable. You'll pay about $50 if you buy Canon's version, the HTC-100 cable. (You can use other manufacturer's cables, but be sure they are of high quality.) Again, see Chapter 5 for details on connecting the camera to a TV.

If you turn the camera over, you find a tripod socket, which enables you to mount the camera on a tripod that uses a ¼-inch screw, plus the battery chamber. And finally, tucked just above the battery chamber, on the right side of the camera, is a little flap that covers a connection for attaching the optional AC power adapter kit ACK-E8; it sells for about $65. See the camera manual for specifics on running the camera on AC power.

Viewing and Adjusting Camera Settings

Your camera gives you several ways to monitor current settings and adjust them if needed. The next sections provide a quick introduction to viewing and changing settings; later chapters explain exactly how and where to access individual options.

Ordering from menus

You access many camera features via menus, which are described briefly in Table 1-1. As the table indicates, though, some menus appear only when you set the Mode dial to one of the advanced exposure modes (P, Tv, Av, and M). Similarly, when you switch to Movie mode (by setting the On/Off switch to the Movie position), the Live View menu disappears and the two Movie menus appear.

In case you didn't notice, the icons that represent the menus are color-coded. The Shooting, Live View, and Movie menus have red icons; the Setup menus sport yellow icons; the Playback menus have a blue symbol; and the My Menu icon is green. (Chapter 10 explains the My Menu feature, through which you can create your own, custom menu.)

Table 1-1 Rebel T4i/650D Menus

Symbol	*Open This Menu*	*To Access These Functions*
	Shooting Menu 1	Image Quality setting, Red-Eye Reduction flash mode, and a few other basic shooting settings
	Shooting Menu 2*	Advanced shooting options such as automatic exposure bracketing, metering mode, and color controls
	Shooting Menu 3*	Options for enabling the Dust Delete Data, Auto ISO limits, and noise reduction features
	Live View Menu***	Live View photography options
	Movie Menu 1**	Movie focusing, display, and exposure metering options

(continued)

Table 1-1 *(continued)*

Symbol	*Open This Menu*	*To Access These Functions*
	Movie Menu 2**	More movie settings, including recording size, sound recording, and video snapshot (enable or disable)
	Playback Menu 1	Basic playback features, including protecting, rotating, and erasing images; also contains the Creative Filters and image-resizing features
	Playback Menu 2	Additional playback features, including picture rating, slide shows, histogram display, image jump, and HDMI control
	Setup Menu 1	Memory-card formatting plus basic customization options, such as the file-numbering system and automatic image rotation
	Setup Menu 2	More customization options, such as date/time and interface language
	Setup Menu 3	Touch-control option (enable/disable), additional customization options plus sensor cleaning and GPS device settings
	Setup Menu 4*	Custom Functions, copyright embedding, firmware information, and options for resetting camera functions to factory defaults
	My Menu*	User-customized menu setup

**Menu appears only when Mode dial is set to P, Tv, Av, or M*
***Menu appears only when On/Off switch is set to Movie position*
****Does not appear when camera is set to Movie mode*

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. A screen similar to the one shown on the left in Figure 1-16 appears. Along the top of the screen, you see the icons shown in Table 1-1, each representing a menu. (Remember that the setting of the Mode dial determines which icons appear.)

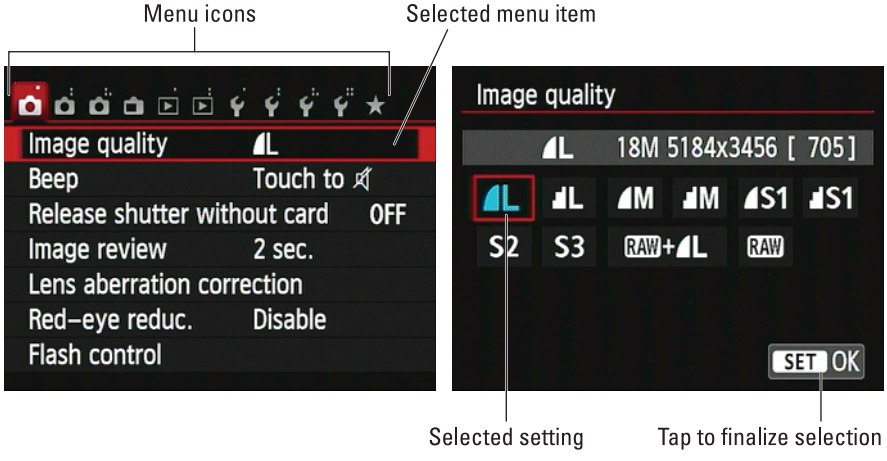


Figure 1-16: The icons at the top of the screen represent the different camera menus.

The highlighted icon marks the active menu; options on that menu appear automatically on the main part of the screen. In the left screen in Figure 1-16, 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.
  - *Cross keys or Main dial:* Press the right or left cross keys or rotate the Main dial to scroll through the menu icons.
- **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 and tap Image Quality to display the right screen in the figure. The current setting is highlighted and shown in blue; in the figure, Large Fine is the current setting, for example. Tap the setting you want to use and then tap Set to return to the menu. (See Chapter 2 for details on the Image Quality options.)

    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.
  - *Cross keys and Set button:* Press the up or down cross key to highlight the feature you want to adjust. Then press the Set button to display the available options. Use the cross keys to highlight your preferred setting and press the Set button again to lock in your choice.

Navigating Custom Functions

When you select Custom Functions from Setup Menu 4 — a menu available only when the Mode dial is set to P, Tv, Av, or M — you delve into submenus containing eight advanced camera settings. Navigating these screens involves a few special techniques.

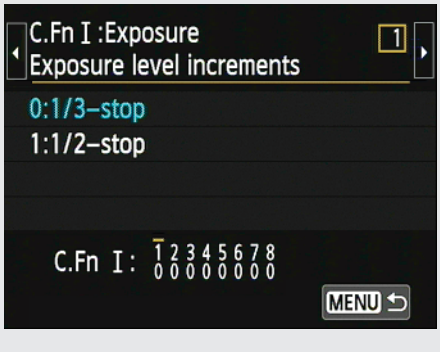
Initially, you see a screen similar to the one shown on the left here. Some explanation may help you make sense of it:

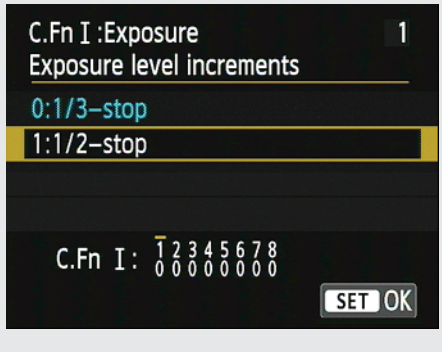
- Custom Functions are grouped into four categories: Exposure, Image, Autofocus/Drive, and Operation/Others. The category number and name appear in the upper-left corner of the screen. In the figure, for example, Category 1, Exposure, is visible.
- The number of the selected function appears in the upper-right corner — Custom Function 1 is indicated in the figure here.
- Settings for the current function appear in the middle of the screen. The blue text indicates the current setting. The default setting is represented by the number 0.
- At the bottom of the screen, the top row of numbers represents the 8 Custom Functions, 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.

To scroll from one Custom Function to the next, tap left or right scroll arrows at the top of the screen or press the left or right cross keys. 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.) The Set icon then appears, as shown on the right in the figure. 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.
- **Buttons:** Press the Set button to activate the settings. Then use the cross keys to move the highlight box over the one you want to use and press the Set button.

To exit the Custom Function screens, press the Menu button or tap the Menu icon in the lower right corner of the screen (see the left screen in the figure).





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.

To save space in this book, I don't spell out both the button-push and touchscreen steps for selecting menu items. Instead, I just tell you to choose the item, using whichever method you prefer. Note that if you connect the camera to a TV or monitor, though, the touchscreen no longer is available, and you have to use the old-fashioned button-push method of selecting menu options.

Exploring the Shooting Settings display

Shown in Figure 1-17, the Shooting Settings screen displays the most critical photography settings — aperture, shutter speed, ISO, and the like. Note that the display shown here is relevant only to viewfinder photography, though. When you switch to Live View mode or Movie mode, you can choose to see some settings superimposed over your image in the monitor, but the process of adjusting settings and customizing the display is different. (See Chapter 4 for details.)

In addition, the data shown in the Shooting Settings display depends on the exposure mode you select. The figure shows data that's included when you work in one of the advanced modes, such as Tv (shutter-priority autoexposure). In the fully automatic modes and Creative Auto mode, you see far fewer settings because you can control fewer settings in those modes. Figure 1-17 labels two key points of data that are helpful in any mode, though: how many more pictures can fit on your memory card at the current settings and the status of the battery. A "full" battery icon like the one in the figure shows that the battery is charged. When the icon appears empty, you better have a spare battery handy if you want to keep shooting.

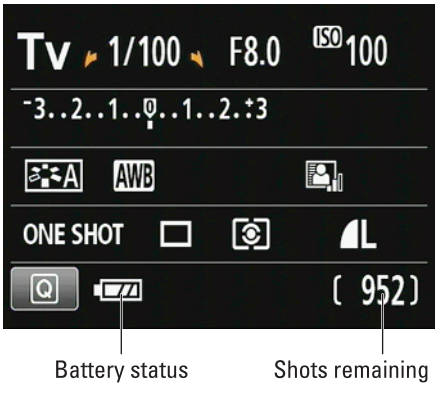


Figure 1-17: The Shooting Settings display gives you an easy way to monitor current picture settings.

Back to the Shooting Settings display: You use it to view settings and as a jumping off point for adjusting certain settings. Here's what you need to know:

- **Turning the display on and off:** By default, the display appears automatically when you turn on the camera and then turns off automatically if either of the following occurs:
  - *No camera operations are performed for about 30 seconds.* You can turn the display on again by pressing the shutter button halfway and then releasing it.
  - *You put your eye to the viewfinder.* See that little black box just above the viewfinder, shown in Figure 1-18? It's a sensor that detects the presence of your eye and tells the camera that because you're looking through the viewfinder, you no longer need the Shooting Settings screen on the monitor. The display comes back to life when you move your eye away from the sensor. ***Note:*** If you're wearing sunglasses, the sensor may not detect your eye. Also, the monitor does not turn off when menus are displayed.

Figure 1-18: The Shooting Information display turns off automatically when the sensor detects your eye covering the viewfinder.

To turn off the Shooting Settings display before the automatic shutoff occurs or if the sensor doesn't do its thing, press the Info button. Press again to display a second information screen, the Camera Settings display (explained a few sections from here); press once more to return to the Shooting Settings display.

- **Adjusting settings via the display:** You can adjust certain settings directly from the Shooting Settings display, as follows:
  - *Curved arrows bordering a setting mean that you can adjust the setting by rotating the Main dial.* For example, in the shutter-priority autoexposure mode (Tv, on the Mode dial), the shutter speed is bordered by the arrows, as shown in Figure 1-19, indicating that the setting is active and that rotating the Main dial changes the setting.

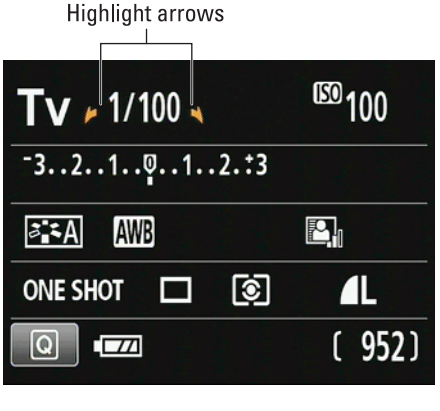


Figure 1-19: The arrows indicate that you can rotate the Main dial to adjust the setting.

Preserving battery power

If the battery indicator on the Shooting Settings display shows that you're running low on battery power, you can extend what power remains by using these tricks:

- Keep the monitor off as much as possible.
- Turn off Image Stabilization. On the kit lenses, set the Stabilizer switch to the Off position.
- Don't use flash. And keep the built-in flash head closed, too, because the camera keeps the flash charged while the head is raised, which drains power even when you're not shooting.
- Avoid keeping the shutter button pressed halfway for long periods; the exposure and autofocusing processes that are activated with a half-press also consume battery power.

- *You can access some settings by pressing the related function button.* For example, while the Shooting Settings screen is displayed and the Mode dial is set to P, Tv, Av, or M, pressing the ISO button takes you to the screen where you can adjust the ISO setting, as shown in Figure 1-20. These screens are officially known as Function Settings screens.

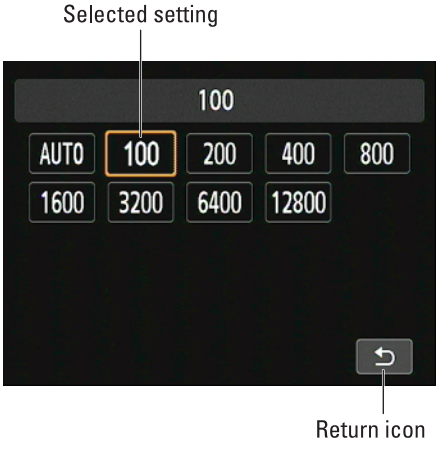


Figure 1-20: Some buttons take you directly to a settings screen; tap your choice and then tap the return arrow to return to the Shooting Settings screen.

After the Function Setting screen is displayed, you can select the setting via the touchscreen — just tap the option you want to use — or by using the cross keys to highlight the setting. To lock in your choice, tap return icon, labeled in the figure, or press the Set button.

Taking advantage of the Quick Control screen

The Quick Control screen enables you to change certain shooting settings without using the function buttons (ISO button, the Exposure Compensation 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 so that what you see on your screen looks like what you see in the upcoming figures. Then follow these steps:

1. **Display the Shooting Settings screen.**

   Either press the shutter button halfway and then release it, or press the Info button. (You may have to press the Info button a couple times to get to the Shooting Settings screen.)

2. **Use one of these methods to shift to Quick Control mode.**

   - *Tap the Q icon in the lower left corner of the screen.* I labeled it in Figure 1-21.
   - *Press the Quick Control button.* I also labeled the button in the figure.

   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 1-22. (AWB stands for Auto White Balance.)

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

   Either tap the setting on the touchscreen or use the cross keys to highlight it.

When you first highlight a setting, a text tip appears to remind you of the purpose of the setting. If you find the text tips annoying, you can get rid of them by disabling the Feature Guide option on Setup Menu 3.

Figure 1-21: To shift to Quick Control mode, tap the Q icon or press the Quick Control button.

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

   You can use these techniques to take this step:

   - *To scroll through the available settings, rotate the Main dial.* The current setting appears at the bottom of the screen, as shown in the figure. Note the little wheel icon at the far right side of the text bar — it's your reminder to use the Main dial for this function.
   - *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 1-23. Then tap the option you want to use or highlight it by rotating the Main dial or using the cross keys. In some cases, the screen contains a brief explanation or note about the option, as shown in the figure, regardless of the setting of the Feature Guide option. After selecting your choice, tap the return icon, labeled in Figure 1-23 or press the Set button to return to the Quick Control screen.

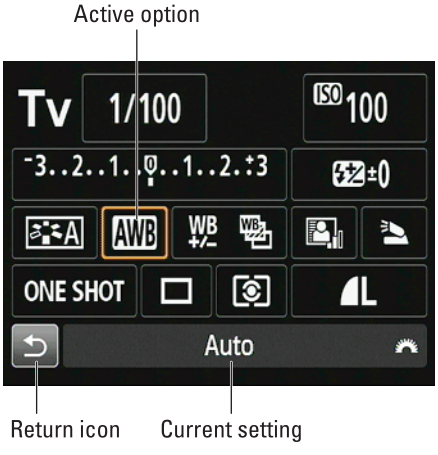


Figure 1-22: The active option appears highlighted.

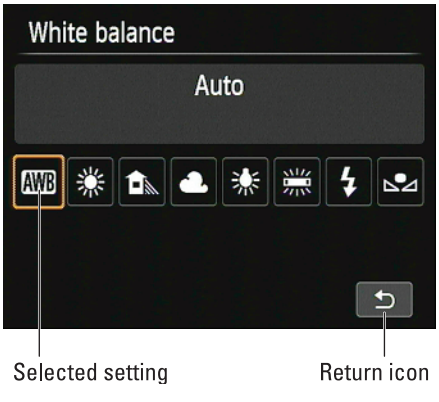


Figure 1-23: From the Quick Control screen, press Set to display all settings available for the currently selected option.

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

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

   - Tap the return symbol, labeled in Figure 1-22.
   - Press the Quick Control button.
   - Press the shutter button halfway and release it.

   You're returned to the Shooting Settings display.

As with menu instructions, when I tell you to choose a certain option from the Quick Control screen, you can do so by using the touchscreen techniques or by using the "old-fashioned" methods involving the cross keys, Main dial, and Set button.

Decoding viewfinder data

When the camera is turned on, you can view critical exposure settings and a few other pieces of information in the data strip at the bottom of the viewfinder. Just put your eye to the viewfinder and press the shutter button halfway to activate the display. The data disappears after a few seconds; just press the shutter button halfway again to bring it back to life.

The 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 Tv (for shutter-priority autoexposure), you see the data shown in Figure 1-24: shutter speed, f-stop (aperture setting), Exposure Compensation setting, and ISO setting. Additional data appears when you enable certain features, such as flash.

I detail each viewfinder readout as I discuss camera options throughout the book. But I want to explain now one often-confused value: The number at the far right end of the viewfinder (9, in Figure 1-24) shows you the number of *maximum burst frames.* This number relates to shooting in the Continuous capture mode, where the camera fires off multiple shots in rapid succession as long as you hold down the shutter button. (Chapter 2 has details.) Although the highest number that the viewfinder can display is 9, the actual number of maximum burst frames may be higher. At any rate, you don't really need to pay attention to the number until it starts dropping toward 0, which indicates that the camera's *memory buffer* (its temporary internal data-storage tank) is filling up. If that happens, just give the camera a moment to catch up with your shutter-button finger.

While you're looking through the viewfinder, you can adjust some shooting settings by using the Main dial alone or in conjunction with the function buttons, as you do with the Shooting Settings screen. For example, if you're working in one of the advanced exposure modes (P, Tv, Av, or M) and press the ISO button, all data but the current ISO setting dims, and you can then rotate the Main dial to change the setting. Press the shutter button halfway to return to the normal viewfinder display after changing the setting.

As for the markings in the center of the screen, the nine rectangles represent focusing points and the circle represents the frame area that's used if you set the Metering mode option to Spot metering. Chapter 8 talks about focusing; Chapter 7 explains how the Metering mode affects exposure.

Figure 1-24: You also can view some camera information at the bottom of the viewfinder.

Checking the Camera Settings display

In addition to the Shooting Settings display, you can view a collection of additional settings data via the Camera Settings display, shown in Figure 1-25. This screen is purely an informational tool, however; you can't actually adjust any of the reported settings from this screen.

You get to the Camera Settings screen via the Info button. Pressing the button cycles you through three monitor states: displaying the Shooting Settings screen; turning the monitor off; and displaying the Camera Settings screen.

Figure 1-25: Press the Info button to cycle from the Shooting Settings screen to monitor off to this screen.

Figure 1-25 shows the settings that you can monitor via the screen when shooting in the advanced exposure modes. Again, that's P, Tv, Av, and M. Here are the details you can glean, with settings listed in the order they appear on the screen. After the first three lines, settings are presented two to a line — for example, the Live View Shooting and Touchscreen enable/disable settings share the fourth line of the screen.

- **Freespace:** This value indicates how much storage space is left 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.
- **Color Space:** This value tells you whether the camera is capturing images in the sRGB or Adobe RGB color space, an advanced option that you can investigate in Chapter 10.
- **White Balance Shift/Bracketing:** I cover these advanced color options in Chapter 8. All zeroes, as in the figure, indicate that White Balance shift and bracketing aren't in force.
- **Live View Shooting and Touchscreen:** The screen indicates whether these features are enabled. Chapter 4 details the first feature, which enables you to use your monitor instead of the viewfinder to compose your shots. See the earlier section "Using the Touchscreen" to find out about that aspect of your camera
- **Auto Sensor Cleaning and Red-Eye Reduction flash mode:** See the section "Setup Menu 3," later in this chapter, for more about automatic sensor cleaning; check out Chapter 2 for information about Red-Eye Reduction flash mode.
- **Auto Power Off and Auto Rotate:** For information on these two settings, see the upcoming sections, "Setup Menu 2" (for Auto Power Off) and "Setup Menu 1" (for Auto Rotate).
- **Beep and LCD Auto Off:** The first setting indicates the current setting of the Beep option on Shooting Menu 1, detailed in Chapter 10 as well as in the earlier section "Using the Touchscreen." For details about the second setting, LCD Auto Off, hop to the upcoming section "Setup Menu 2."
- **Date/Time:** The section "Setup Menu 2" also explains how to adjust the date and time. The little sun icon indicates that the camera is set to automatically spring forward or fall back according to the dictates of Daylight Savings Time.

In exposure modes other than P, Tv, Av, and M, the Color Space and White Balance Shift/Bracketing information items don't appear because those other modes prevent you from adjusting those two features.

Of course, with the exception of the free card space value, you also can simply go to the menu that contains the option in question to check its status. The Camera Settings display just gives you a quick way to monitor some of the critical functions without hunting through menus.

Reviewing Basic Setup Options

One of the many advantages of investing in the Rebel T4i/650D is that you can customize it to suit the way *you* like to shoot. Later chapters explain options related to actual picture taking, such as those that affect flash behavior and autofocusing. The rest of this chapter details options related to initial camera setup, which are scattered throughout the four Setup menus. See Chapters 10 and 11 for a look at a few additional customization options.

Setup Menu 1

Start your camera customization by opening Setup Menu 1, shown in Figure 1-26, to access the following options:

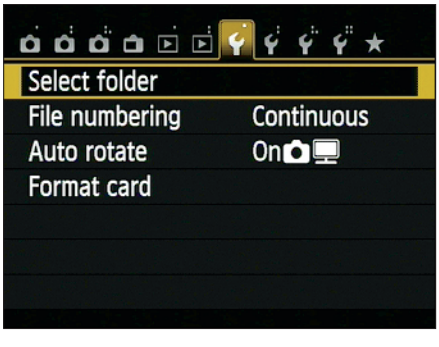


Figure 1-26: Press the Menu button and then choose Setup Menu 1 to display these options.

- **Select Folder:** By default, your camera creates an initial file-storage folder named 100Canon and puts as many as 9999 images in that folder. When you reach image 9999, the camera creates a new folder, named 101Canon, for your next 9999 images. The camera also creates a new folder if you perform a manual file-numbering reset, a choice explained in the next bullet point.

  If your memory card contains multiple folders, you must use the Select Folder option to choose the folder where you want to store the next photos you shoot. But selecting the menu option also leads to another neat feature: You can create your own storage folders at any time. You might create separate folders for each person who uses the camera, for example. Chapter 10 shows you how to create custom folders. Here's how to view which folder is active and choose a different one:

  - *See which folder is currently selected:* Choose Select Folder to display a list of all folders, with the current one highlighted and appearing in blue type. The number to the right of the folder name shows you how many pictures are in the folder. You also see a thumbnail view of the first and last pictures in the folder, along with the file numbers of those two photos.

- *Choose a different folder:* Highlight it by using the cross keys or tapping it. Then tap Set or press the Set button to return to Setup Menu 1.

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 (100Canon, by default) unless you specify otherwise using the Select Folder option described in the preceding bullet point. This numbering sequence is retained even if you change memory cards.

  When you reach picture 9999, the camera automatically creates a new folder (101Canon, by default) and restarts the file numbering at 0001 — again, the folder issue being dependent on the status of the Select Folder option.

- *Auto Reset:* If you switch to this option, the camera restarts file numbering at 0001 each time you put in a different memory card or create a new folder. I don't recommend this option because it's easy to wind up with multiple photos that have the same file number if you're not careful about storing them in separate folders.

  Beware of one gotcha that applies both to the Continuous and Auto Reset options: If you swap memory cards and the new card already 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, as explained two bullet points from here.

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

Auto Rotate: By default, 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 the computer screen, the image is automatically rotated to the correct orientation. You also can choose to rotate the pictures only on the computer monitor or disable rotation altogether.

When both computer and camera display rotation are enabled, you see a little camera icon and computer monitor icon next to the word On, as shown in Figure 1-26. If you see just the computer monitor icon, the pictures aren't rotated on the camera monitor. Choose Off to disable rotation on both displays.

Even if automatic rotation is disabled, you can rotate a picture during playback using the Rotate Image option on Playback Menu 1. Chapter 5 explains how.

- **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 previously used your card in another device, such as a digital music player, copy those files to your computer before you format the card. You lose *all* data on the card when you format it.

When you choose the Format option from the menu, you can perform a normal card formatting process or a *low-level* formatting by tapping the Low Level Format check box or by pressing the Erase button (the one marked with a trash-can symbol) to select the box. This option gives your memory card a deeper level of cleansing than ordinary formatting and thus takes longer to perform. Normally, a regular formatting will do, although performing a low-level formatting can be helpful if your card seems to be running more slowly than usual. However — and this is a however for anyone with a high-security clearance who's shooting pictures that should *never* fall into enemy hands — a regular-level formatting leaves enough bits
of data intact that a determined computer whiz could recover your images. To prevent that possibility, do a low-level formatting or crush the card under your heel. Or run over it with your car. You can never be too safe, with all these spies running around looking just like your mild-mannered neighbor.

- **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 1-26. 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, posing in Figure 1-27, contains these options:

- **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 30 seconds, but you can change the shutdown delay to 1, 2, 4, 8, or 15 minutes. Or you can disable auto shutdown altogether by selecting the Off setting, although even at that setting, the monitor still turns itself off if you ignore the camera for 30 minutes. Just give the shutter button a quick half-press and release or press the Menu, Info, Playback, or Live View button to bring the monitor out of hibernation.

- **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. To use the buttons to control the setting, highlight the menu option, press Set, and then use the left and right cross keys to adjust the brightness value. Press the Set button to finish.

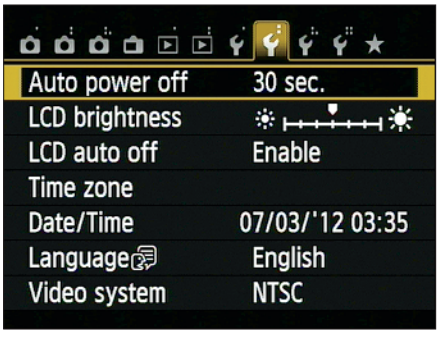


Figure 1-27: Setup Menu 2 offers more ways to customize basic operations.

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 Auto Off:** This option controls whether the eye sensor above the monitor turns off the display when you put your eye to the viewfinder. It's enabled by default; set the option to Disable if you don't want the sensor to respond to your eye. (Refer to Figure 1-18 for a look at the sensor.)
- **Time Zone:** When you turn on your camera for the first time, it displays this option and asks you to set the time zone. I'm guessing that you already took this step, but here's the scoop on a screen value that may have caused you to scratch your head a little: The time displayed in the lower right corner of the screen is the difference between the Time Zone you select and Coordinated Universal Time, or UCT, which is the standard by which the world sets its clocks. For example, New York City is five hours behind UCT. This information is provided so that if your time zone isn't in the list of available options, you can select one that shares the same relationship to the UCT.
- **Date/Time:** You no doubt already set the date and time, too, but here's another fine point you may have missed: The setting directly to the right of the mm/dd/yy option — which enables you to specify the order of the month, day, and year values — tells the camera whether to automatically adjust the time of day for Daylight Savings Time. A sun symbol means the feature is enabled; a sun plus the word Off means that it's disabled. This setting is tied to the Time Zone option, so it should be set correctly automatically. But if not, tap the sun icon to display an arrow above and below the icon. Tap either one (or press the up/down cross keys) to turn the sun off and, with it, Daylight Savings Time adjustment.

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 6 shows you where to locate the date/time data when browsing your picture files.

- **Language:** This option determines the language of any text displayed on the camera monitor.
- **Video System:** This option is related to viewing your images and movies on a television, a topic I cover in Chapter 5. 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.

Setup Menu 3

Setup Menu 3, shown in Figure 1-28, contains the following offerings:

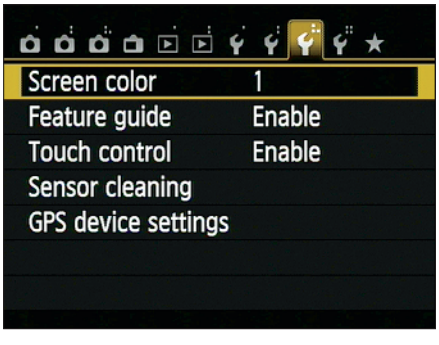


Figure 1-28: Still more customization features await on Setup Menu 3.

- **Screen Color:** If you don't like the default color scheme of the Shooting Settings display, you can choose from other schemes via the Screen Color option.
- **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. For example, the left screen in Figure 1-29 shows the text that appears when you first set the Mode dial to Tv (shutter-priority autoexposure). The guide screens disappear as soon as you press a camera button or rotate the Main dial. You also can tap the explanation to make it go away.

  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 enables or disables the touchscreen interface. For details on the touchscreen, flip back to the section "Using the Touchscreen."

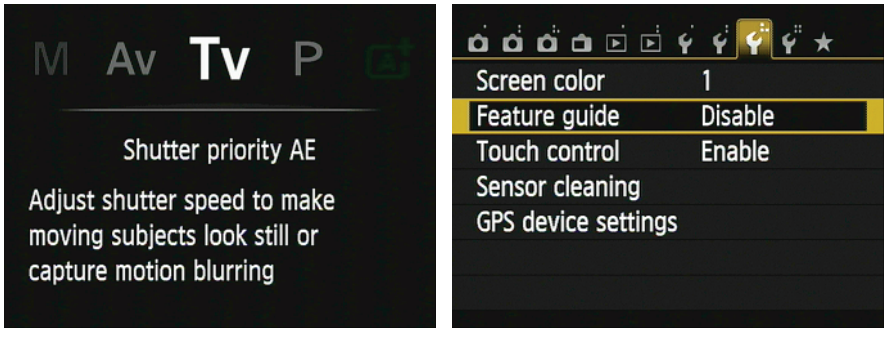


Figure 1-29: To stop the camera from displaying Help screens when you select certain camera options, disable the Feature Guide.

- **Sensor Cleaning:** Choose this option to access options 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 unless you turn your camera on and off a lot between shots, in which case the cleaning routine can get in the way of catching a fleeting moment.
  - *Clean Now:* Choose this option to initiate a cleaning cycle.
  - *Clean Manually:* In the advanced exposure modes (P, Tv, Av, and M), 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.

  For best results when running the internal cleaning mechanism, place the camera on a table or other flat surface.

- **GPS Device Settings:** If you attach the optional GP-E2 GPS unit, settings related to its operation are available through this menu option.

Setup Menu 4

Figure 1-30 shows Setup Menu 4, which you can access only in the advanced exposure modes. Again, those modes are P, Tv, Av, and M.

- **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.

Why does this camera have two names?

You may notice that your camera manual, as well as this book, refers to your camera by two different names — EOS Rebel T4i and EOS 650D. What gives? The answer is that Canon assigns different names to a single camera model depending on the part of the world where it's sold. In fact, it even has a third name, the EOS KISS X6i, used in the Japanese market.

The *EOS* part, by the way, stands for Electro Optical System, the core technology used in Canon's autofocus SLR (single-lens reflex) cameras. According to Canon, the proper pronunciation is *EE-ohs,* which is also how you pronounce the name *Eos,* the goddess of dawn in Greek mythology.

With apologies to the goddess, I elected to save a little room in this book by shortening the camera name to simply T4i/650D.

By the way, shortly after the camera was released, Canon discovered a little glitch with respect to the camera names: On some models, when you look at the camera metadata in photo browsers that can display that data, the camera name shows up as KISS X6i even in countries that use the T4i name. The problem affects some units that have the number 3 as the second digit of the serial number. If this issue bothers you, check the Canon website for a service advisory related to the problem.

- **Custom Functions:** Selecting this option opens the door to *Custom Functions,* a set of features that are designed for people with some photography experience. Check out the sidebar "Navigating Custom Functions," earlier in this chapter, for some tips on making your way through these screens.
- **Copyright Information:** Using this option, explained in Chapter 11, you can embed copyright information in the image metadata. *Metadata* is invisible text data that doesn't appear on the photo itself but can be read in many photo-viewer programs. Chapter 6 shows you how to view the metadata in the free Canon software that ships with your camera.

Figure 1-30: To display Setup Menu 4, you must set the Mode dial to P, TV, Av, or M.

- **Clear Settings:** Via this option, you can restore the default shooting settings. You also can reset all the Custom Functions settings to their defaults.
- **Firmware Ver.:** This screen tells you the version number of the camera firmware (internal operating software). At the time of publication, the current firmware version was 1.0.1.

  Keeping your camera 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.